MCS-2040

Media Cloud Server
with Four Dual-System Nodes

User's Manual



Manual Revision:	1.0
Revision Date:	May 30, 2018
Part No.:	50-1G041-1000

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Leading **EDGE COMPUTING**

Preface

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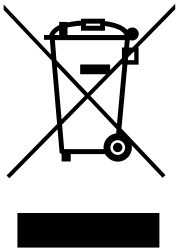
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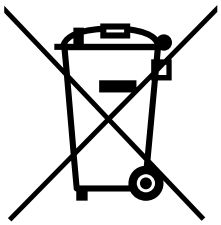
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ADLINK is committed to fulfill its social responsibility to global environmental preservation through compliance with the European Union's Restriction of Hazardous Substances (RoHS) directive and Waste Electrical and Electronic Equipment (WEEE) directive. Environmental protection is a top priority for ADLINK. We have enforced measures to ensure that our products, manufacturing processes, components, and raw materials have as little impact on the environment as possible. When products are at their end of life, our customers are encouraged to dispose of them in accordance with the product disposal and/or recovery programs prescribed by their nation or company.



Battery Labels (for products with battery)









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Revision History

Revision	Release Date	Description of Change(s)
1.0	2018-05-30	Initial release

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1 Overview

1.1 Introduction

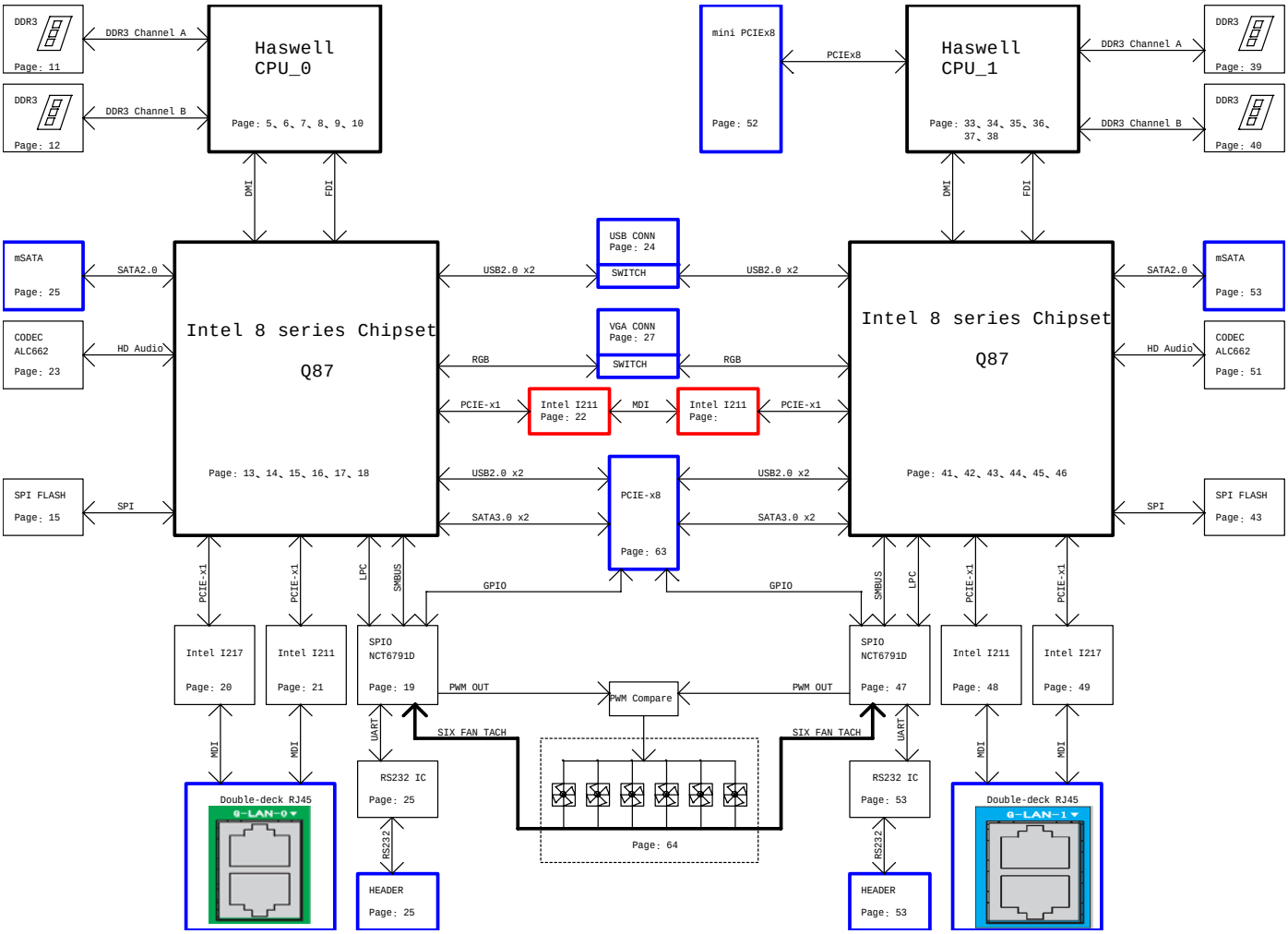
The ADLINK MCS-2040 is a high density 2U 19” rackmount media cloud server with 4 dual-system computer nodes. Each node has two 4th Generation Intel® Core™ i7 processor or Intel® Xeon® processor E3 Family (formerly “Haswell”) for two independent systems.

Detailed features are outlined below.

- Four hot-pluggable compute nodes
  - Two independent systems per node communicate via GbE
  - 2x 4th Gen Core™ i7 processor or Intel® Xeon® processor E5 Family per node (one CPU per system)
  - 4x DIMMs per node support DDR3 up to 32GB (16GB/system)
  - 4x GbE RJ-45 ports (2 per system)
  - 4x hot-swappable 2.5” SATA drive bays (2 per system)
  - 2x mSATA slots for 3Gb/s SSD modules up to 512GB (1 per system)
- 2x 1600W redundant power supplies
- ADLINK MediaManager

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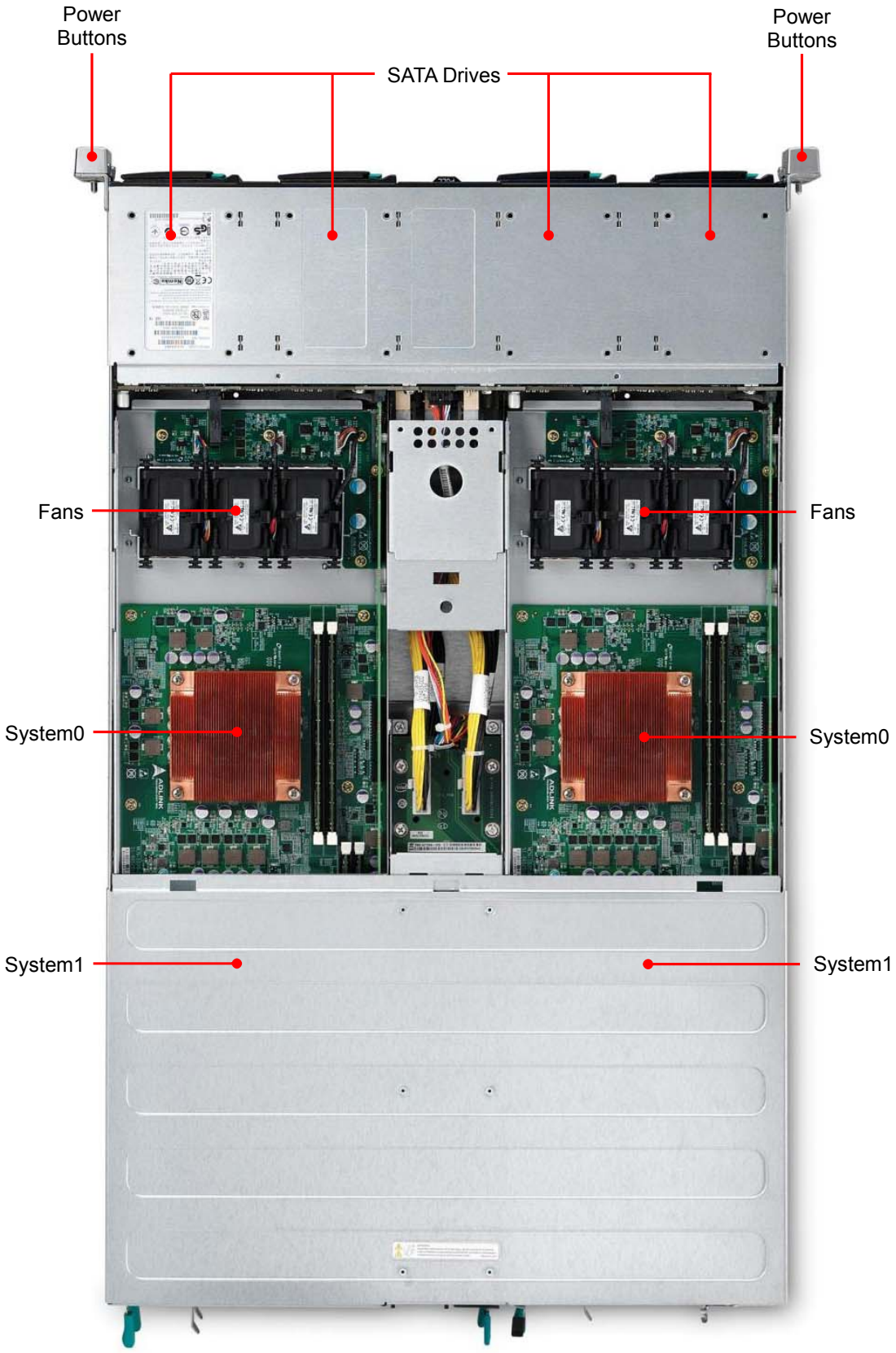
1.2 Block Diagram



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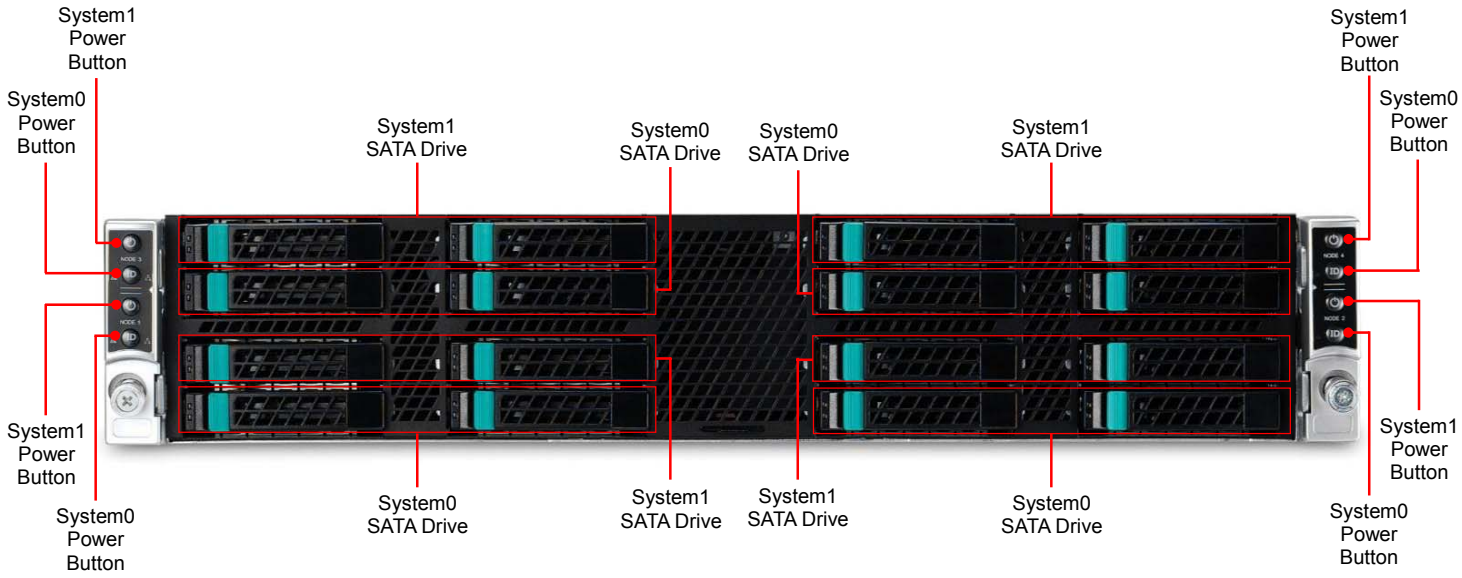
1.3 Mechanical Overview

1.3.1 Top View Layout

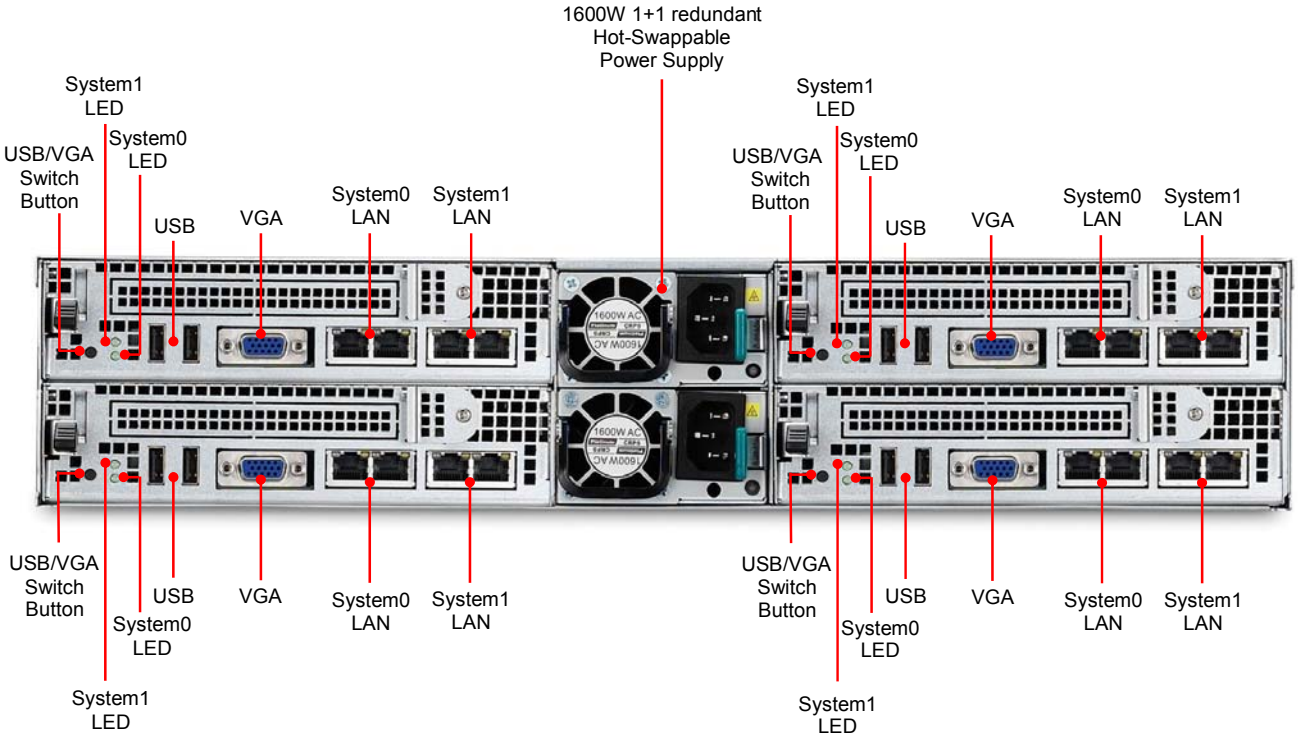


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1.3.2 Front View Layout

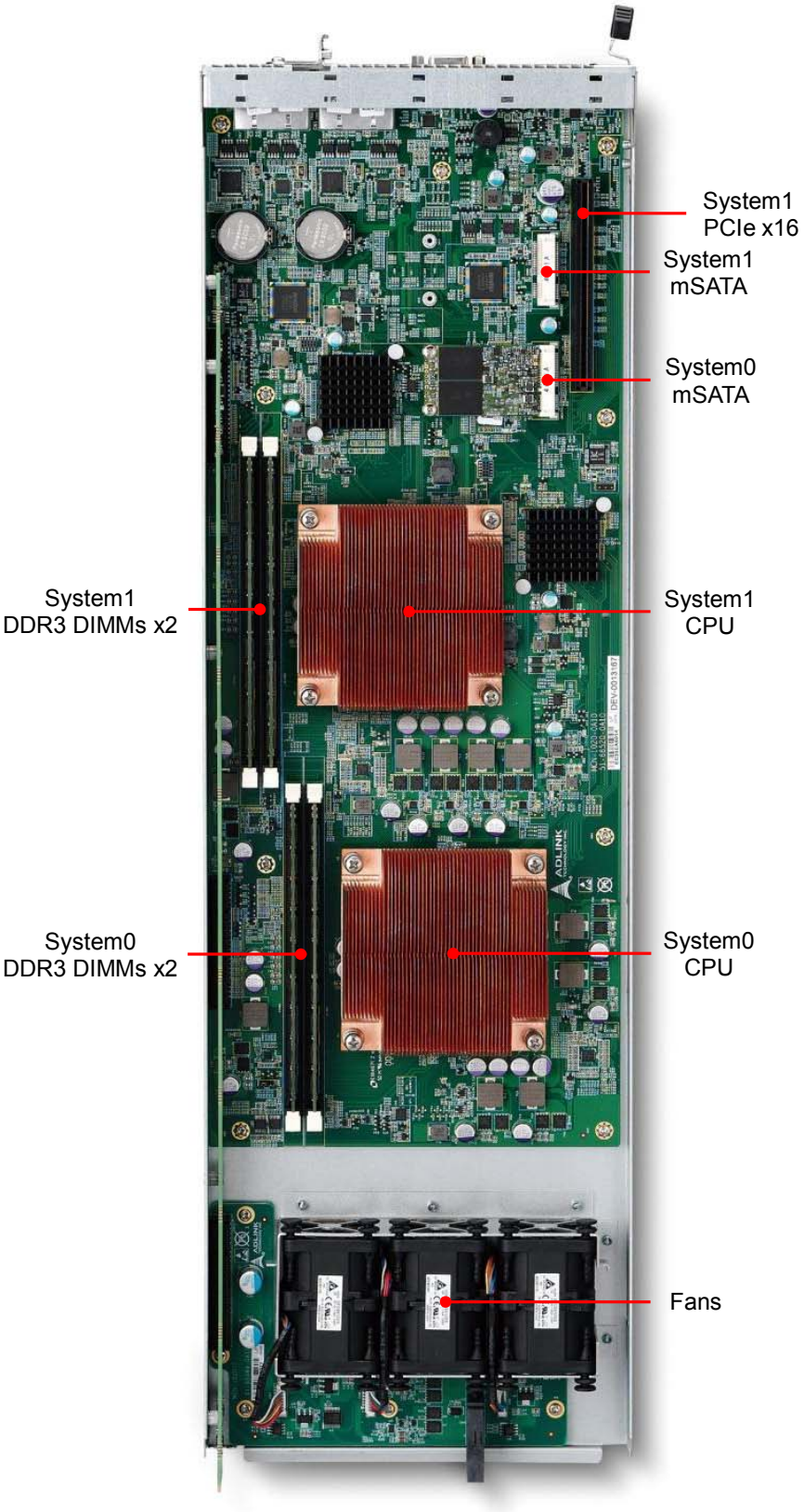


1.3.3 Rear View Layout



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1.3.4 Node Layout



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1.4 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:

- MCS-2040 (not including compute nodes)
- 2x power supplies (installed)
- 2x power cables
- Slide rail kit (for installation in EIA-310-D server rack)
- Additional accessories dependent on configuration ordered

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2 Specifications

2.1 MCS-2040 Specifications

Main System (per node)

CPU	2x 4th Generation Intel® Core™ i7 processor or Intel® Xeon Processor E3 v3 Family in LGA1150 socket (one CPU per system)
Chipset	2x Intel® Q87 Chipset (one per system)
Memory	Four DDR3-1600 240-pin DIMM sockets, up to 32 GB (16GB per system)
BIOS	AMI UEFI BIOS on SPI flash memory Intel® PXE pre-boot, ACPI 1.0/2.0 support

I/O Interfaces (per node)

Graphics	Intel® HD Graphics, 1x VGA, up to 1920 x 1440 resolution (switchable between systems)
Ethernet	4x 10/100/1000BASE-T Base Interface Channels (two per system) Supports Intel® AMT, remote power on/off/reboot
USB	Two USB 2.0 ports on front panel (switchable between systems)
PCIe Expansion	1x PCIe x16 slot

Storage (per node)

Drive Bays (per node)	4x 2.5” SATA hot-swap drive trays
Other	2x mSATA slots for 3Gb/s SSD modules up to 512GB (1 per system)

Chassis

Form Factor	2U rackmount
Power Supply	2x 1600W hot-swappable redundant power modules
Dimensions	438mm x 88mm x 733mm
Fans	12x fans with PWM speed control (3 mounted on each node)

Environmental

Operating Temp.	0 to 40˚C
Storage Temp.	0°C to 55°C
Humidity	5% to 95%, non-condensed
Certification	CCC, CB, UL, RoHS compliant

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2.2 Software Support

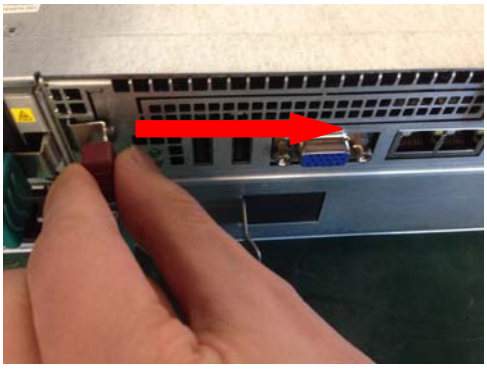
Supported Software	**Intel® Media SDK:** GPU based video processing, supports both Linux and Windows operating systems
	OpenCL SDK: provides customers with the ability to offload portions of their own codec/video filter implementations to the GPU
	ADLINK MediaManager: supports file-to-stream, stream-to-streaming, file-to-file and streaming-to-file media processing
3rd Party Software	Flexible Encoder Infrastructure (FEI) for Intel® Media SDK, designed for customers who need to tweak or augment the h264 encode process
	Open source H.265 encoder from f265.org

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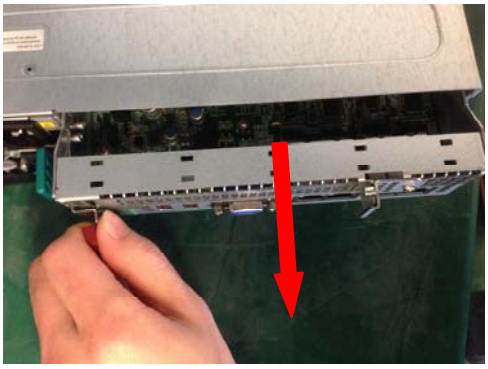
3 Getting Started

3.1 Removing a Node Tray from the Chassis

1. Unlock the node tray by pulling the lever to the right as shown



2. Pull the node tray out of the chassis. It may be necessary to pull very firmly to unplug the SATA drive connectors inside the chassis.



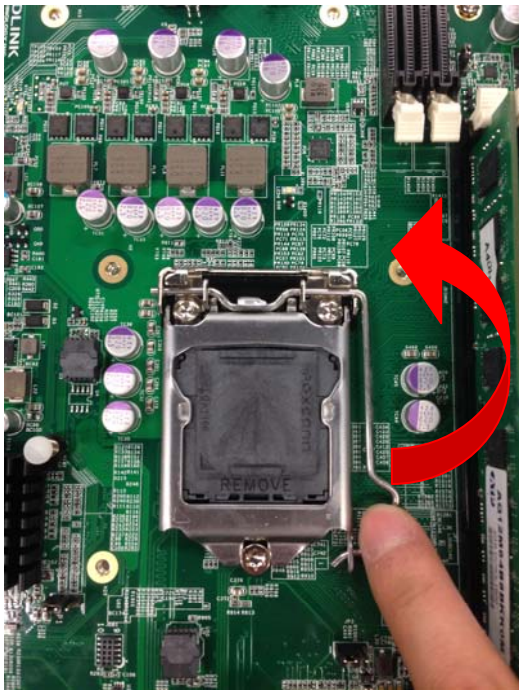
3.2 Installing the CPU

1. Locate the CPU sockets on the board.

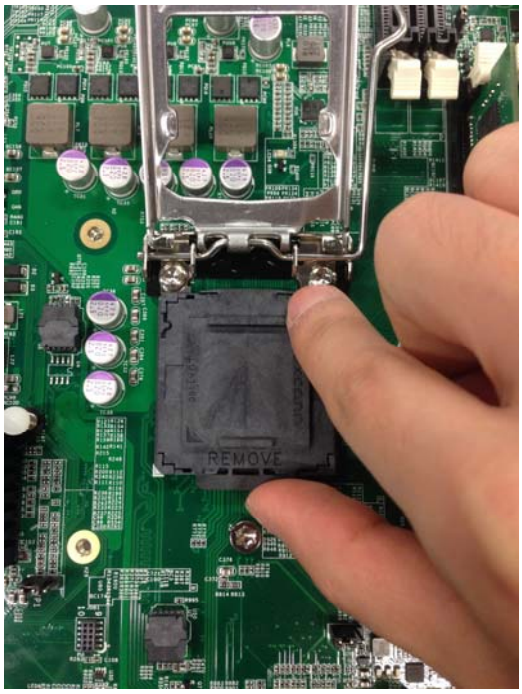


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2. Press the load lever, move it outwards until it is clear of the retention tab, then raise it



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.



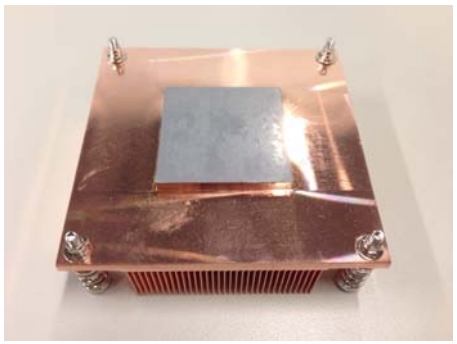
5. Close the load plate, push the load lever back down, and engage it with the retention tab.



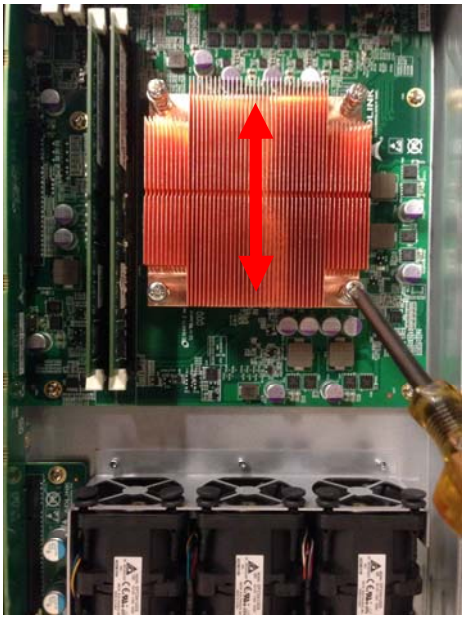
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3.3 Installing the Heatsink

1. Make sure there is sufficient thermal paste on of the heatsink



2. Place the heatsink on the CPU with the cooling fins aligned with the DIMM slots as shown.

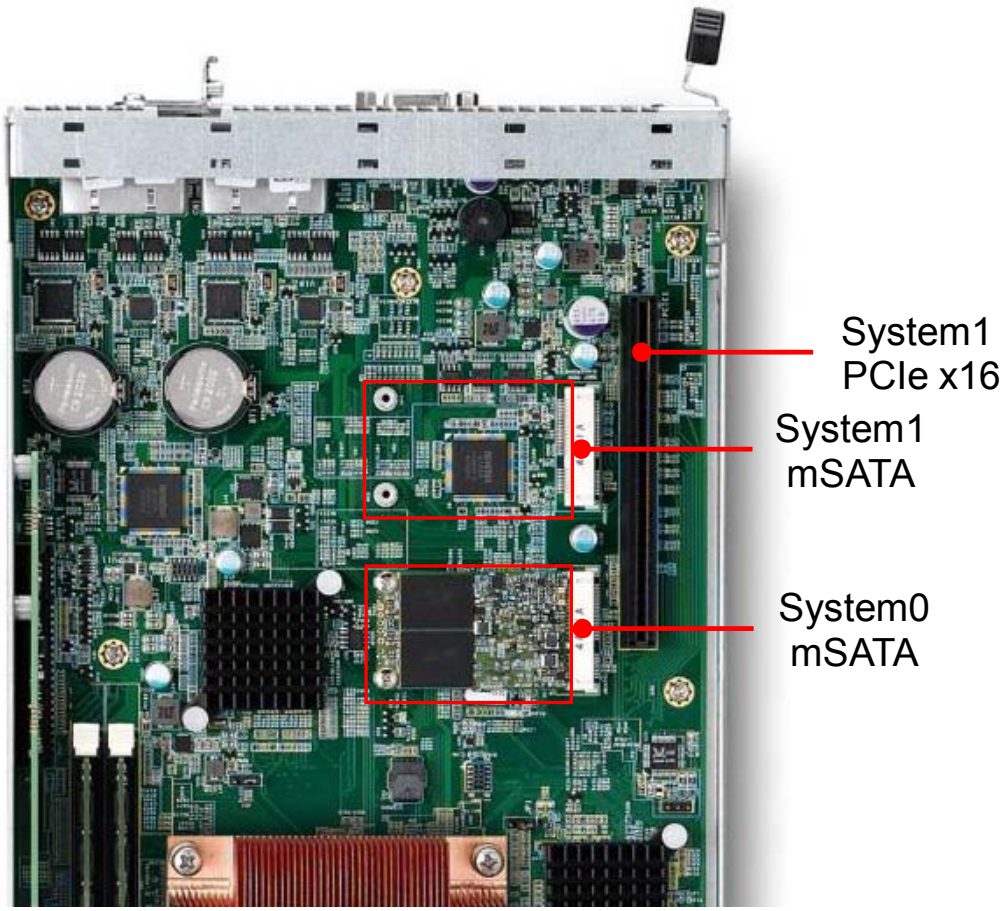


3. Tighten the captive screws in an "X" pattern until the heatsink is secured on the CPU. Do NOT over tighten the screws

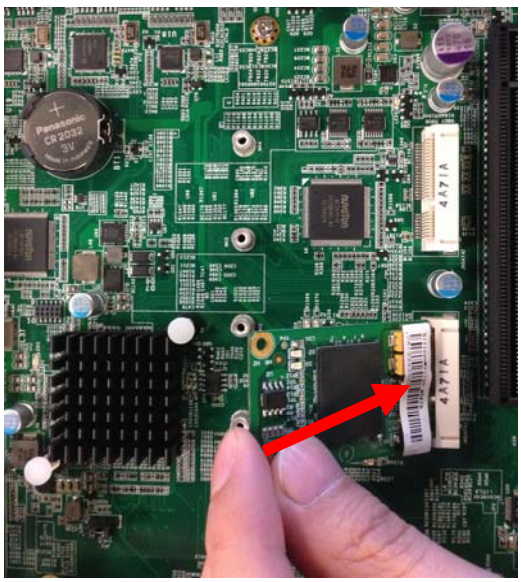
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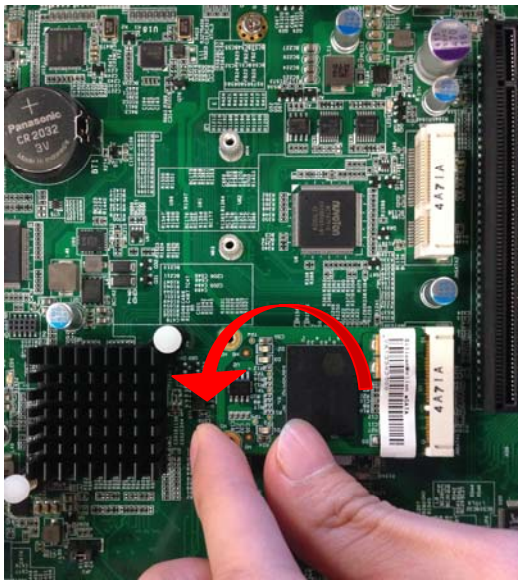
3.4 Installing the mSATA Drives

Each node has 2x mSATA slots for 3Gb/s SSD modules up to 512GB (1 per system).



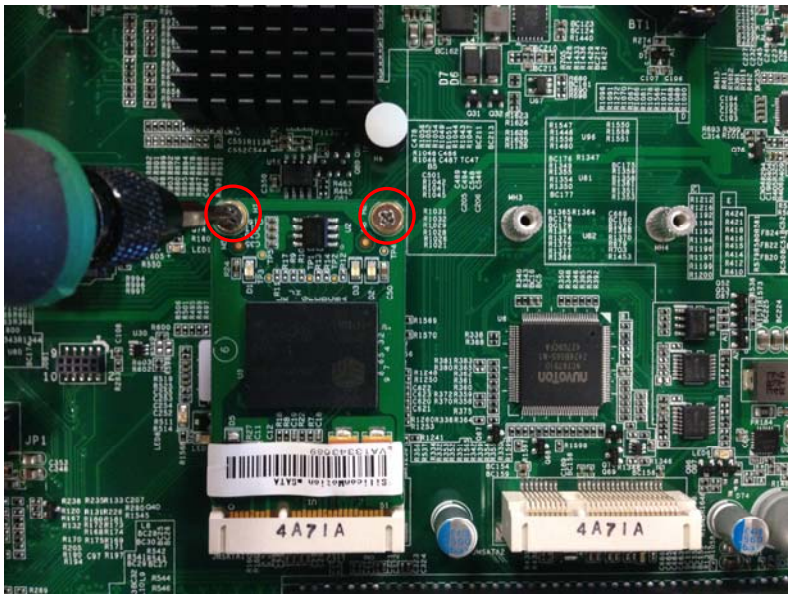
1. Insert the mSATA module into the socket at an angle as shown, then press it down flat against the standoffs on the PCB.





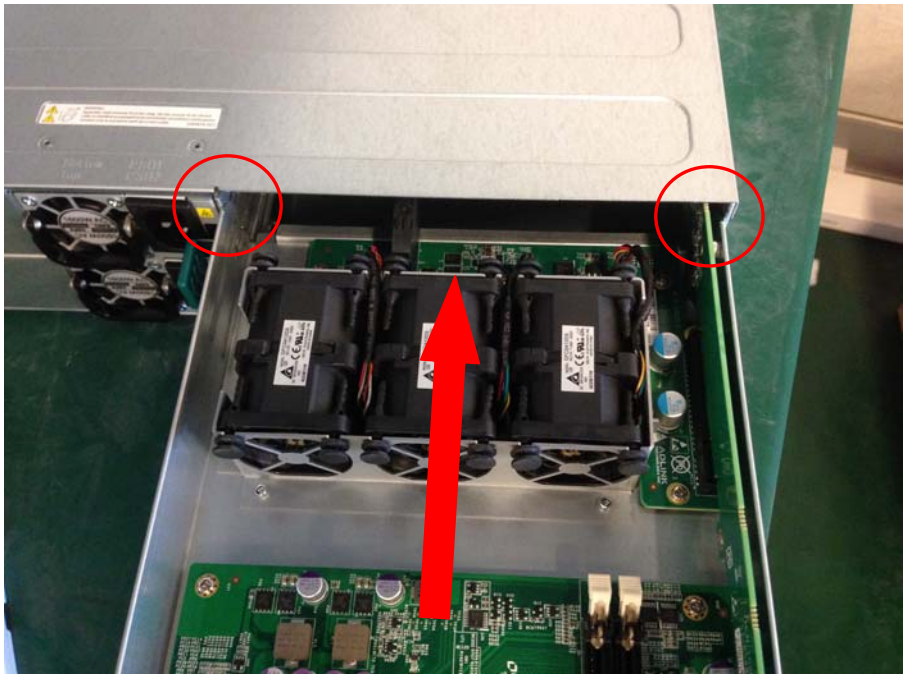
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2. Secure the mSATA modules to the node with 2 screws provided with the module.



3.5 Reinserting a Node Tray into the Chassis

1. Carefully insert the node tray into the chassis, checking that the sides of the tray are aligned with guides in the chassis.



2. Slowly push the tray into the chassis until it is fully inserted. Press firmly until the locking tab makes a clicking sound.

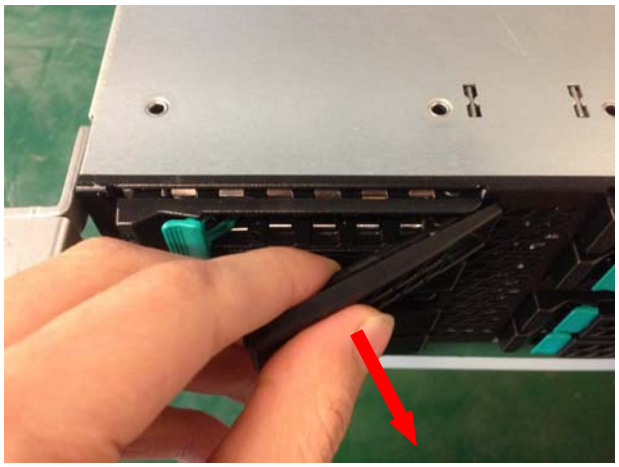
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3.6 Installing 2.5’’ SATA Drive

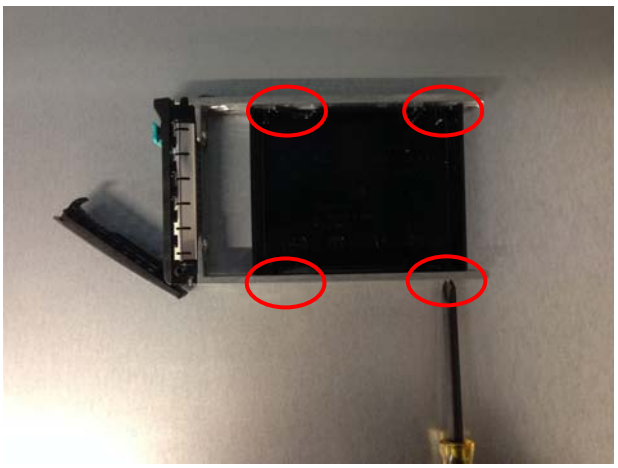
1. Push the green tab to unlock the drive tray.



2. Eject the drive tray by lifting the handle as shown. Pull the tray out of the chassis.



3. Loosen the 4 screws shown below and remove the plastic place holder. Install a 2.5’’ SATA drive with the connectors facing towards the back of the tray. Secure the SATA drive to the bracket with the 4 screws.

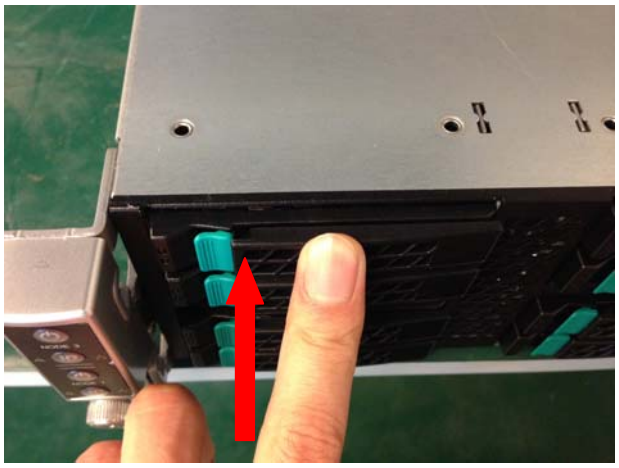


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4. Insert the drive tray back into the chassis.



5. Push the handle until it clicks into the green tab.



3.7 Install the Slide Rail Kit

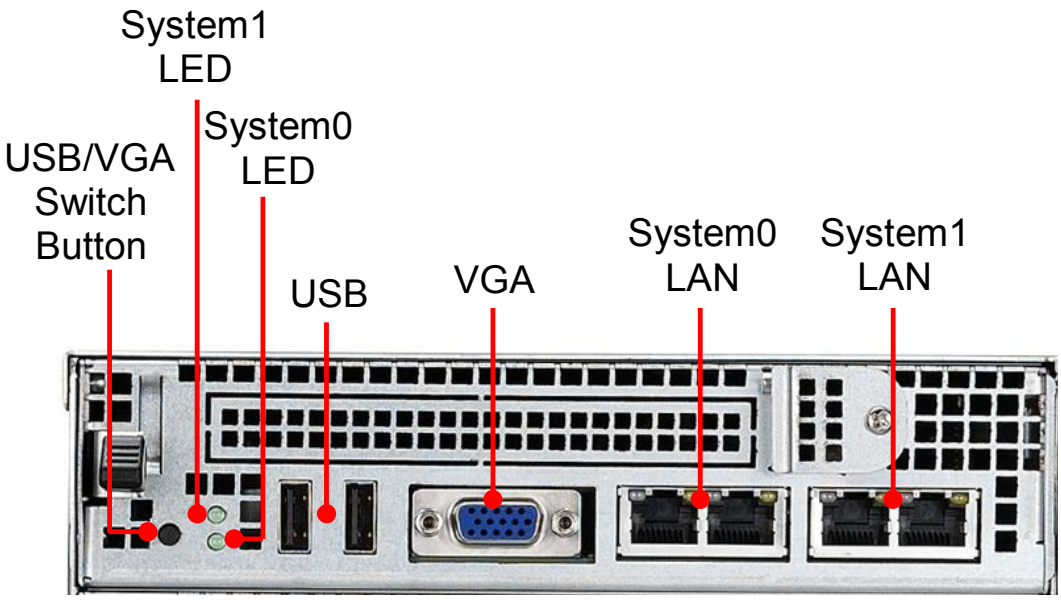
The MCS-2040 is shipped with an AXXELVRAIL slide rail kit for use with EIA-310-D compatible server racks. To install the slide rail kit, download the PDF file from the URL below and follow the instructions.
https://www.intel.com/content/dam/support/us/en/documents/motherboards/server/sb/railinstallation.pdf.

For information on compatible server racks, please visit:
https://ark.intel.com/products/66584/Enhanced-Value-RAIL-AXXELVRAIL.

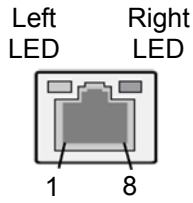
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4 System Interfaces

4.1 Node Rear I/O Layout



4.1.1 LAN Connector (RJ-45)



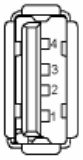
Pin	Signal
1	MID0+
2	MID0-
3	MID1+
4	MID2+
5	MID2-
6	MID1-
7	MID3+
8	MID3-

4.1.2 LAN Status LEDs

LED	Status	LED Color
Left	10 Mbps	Off
	100 Mbps	Amber
	1000 Mbps	Green
Right	LINK with no activity	Yellow
	LINK with activity	Yellow Blinking
	Link down	Off

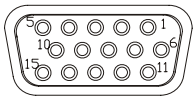
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4.1.3 USB 2.0 Connectors



Pin	Signal
1	Vcc
2	USB_D-
3	USB_D+
4	GND

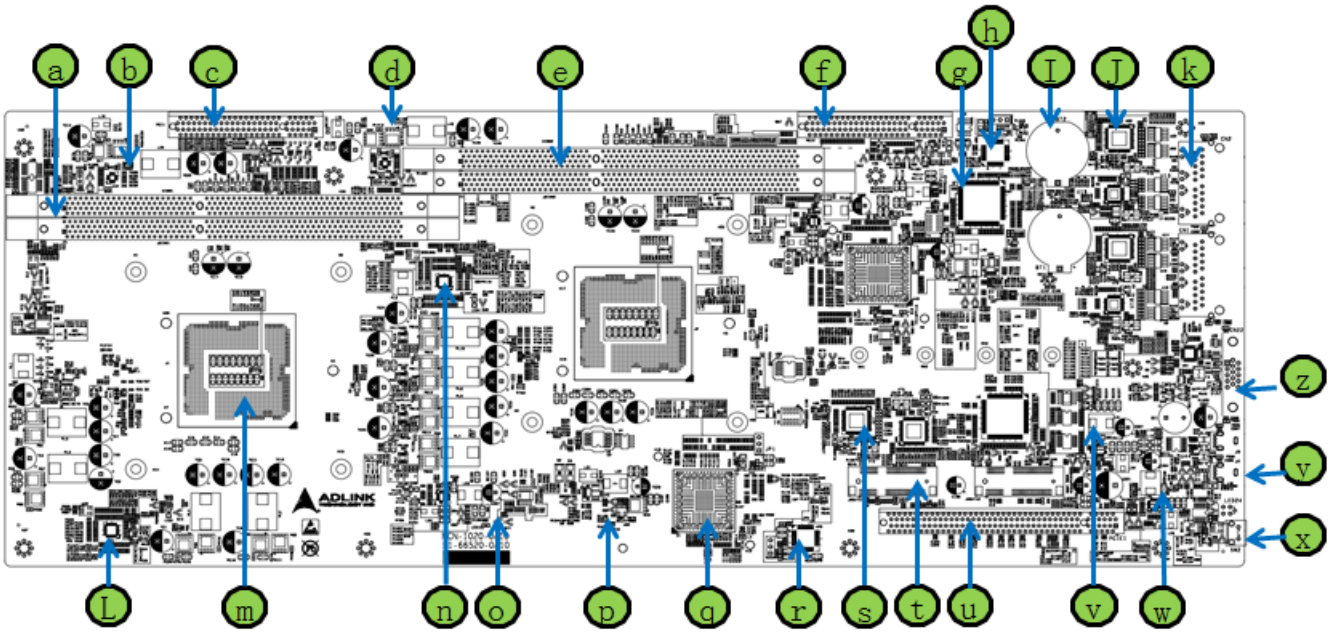
4.1.4 VGA Connector



Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	N.C.
5	GND	6	GND
7	GND	8	GND
9	+5V.	10	GND
11	N.C.	12	CRTDATA
13	HSYNC	14	VSYNC
15	CRTCLK	8	

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4.2 Internal Node Layout

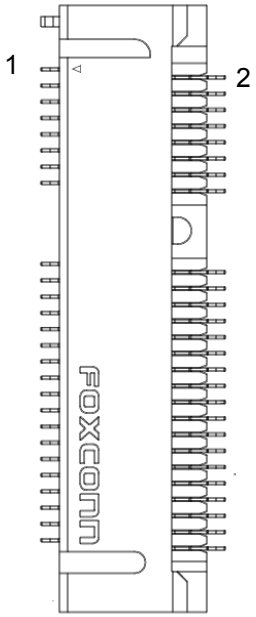


A: System 0 DIMM slot
B: System 0 MEM power
C: PCIe x8 slot – supply +12V power
D: System 1 MEM power
E: System 1 DIMM slot
f: PCIe x8 slot – SATA, USB, FAN ctrl and Power ctrl signal
G: System 1 SIO – HW monitor and FAN ctrl
H: System 1 audio codec
I: System 0/1 battery
J: System 0/1 LAN PHY
K: 1x 2 RJ-45 connector
L: System0 CPU core power
M: System 0 CPU
N: System1 CPU core power
O: System 0 +3.3V power
P: System 0 +1.05V power
Q: System 0 PCH
R: System 0 audio codec
S: System 0/1 LAN PHY(w/ MAC) internal connected
T: System 0 Mini PCIE slot- used as mSATA interface
U: Standard PCIEx16 slot – connect to system 1
V: System 1 +5V power
W: System 0 +5V power
X: Switch button – switch USB and VGA signal between System 0 and 1
Y: USB connector
Z: VGA connector

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4.3 Connectors and Jumpers

4.3.1 mSATA Connectors



Pin	Signal	Pin	Signal
1	NC	2	P3V3
3	NC	4	GND
5	NC	6	P1V5
7	NC	8	NC
9	GND	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	NC	22	NC
23	RXP0_R	24	P3V3
25	RXN0_R	26	GND
27	GND	28	P1V5
29	GND	30	NC
31	TXN0_R	32	NC
33	TXP0_R	34	GND
35	GND	36	NC
37	GND	38	NC
39	P3V3	40	GND
41	P3V3	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	P1V5
49	NC	50	GND
51	NC	52	P3V3

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5 BIOS Setup

The following chapter describes basic navigation for the MCS-2040 BIOS setup utility.

5.1 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.

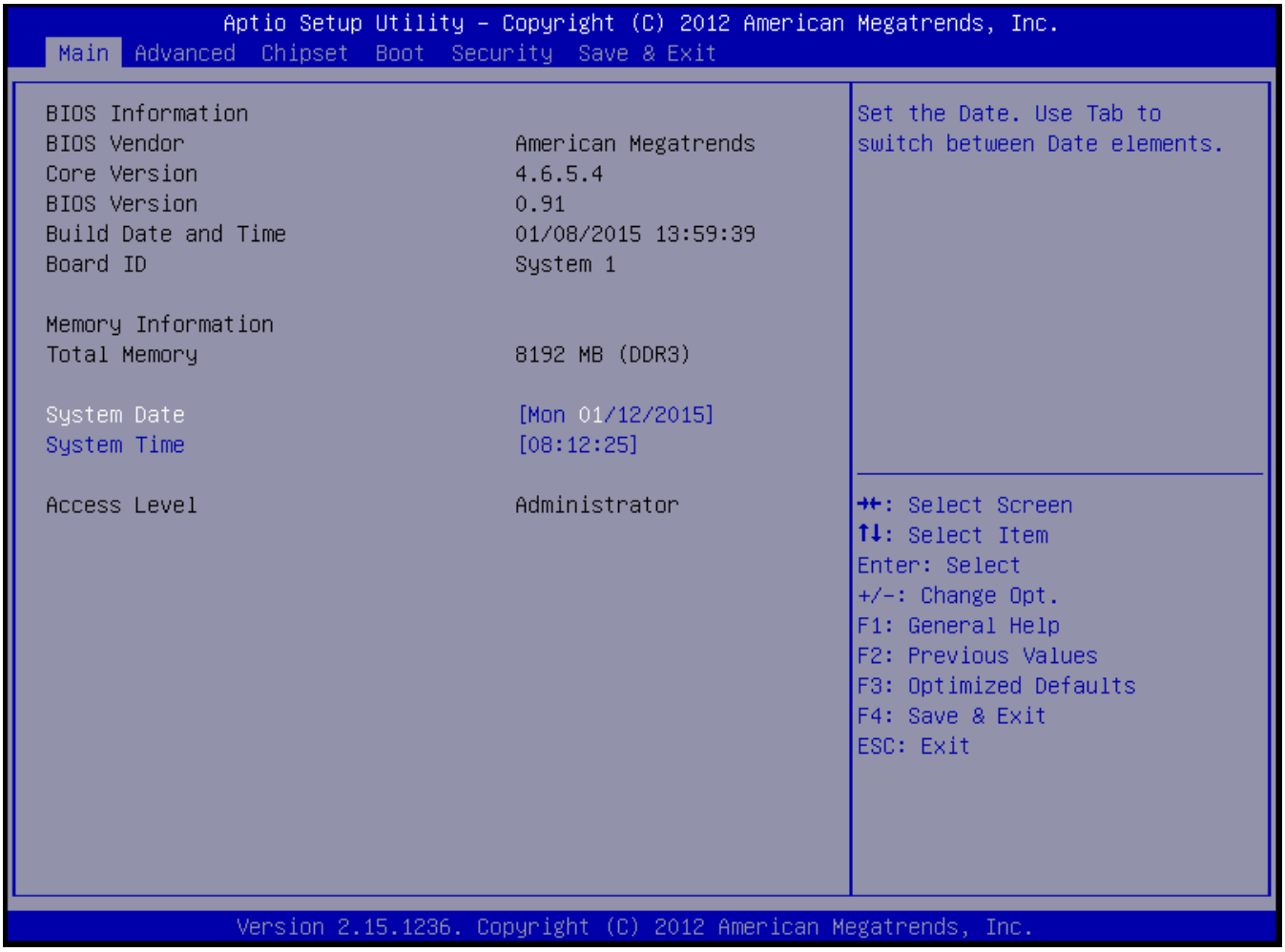


NOTE: In most cases, the < Delete > key is used to invoke the setup screen. However, there are several cases that use other keys, such as < F1 >, < F2 >, and so on.

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5.2 Setup Menu

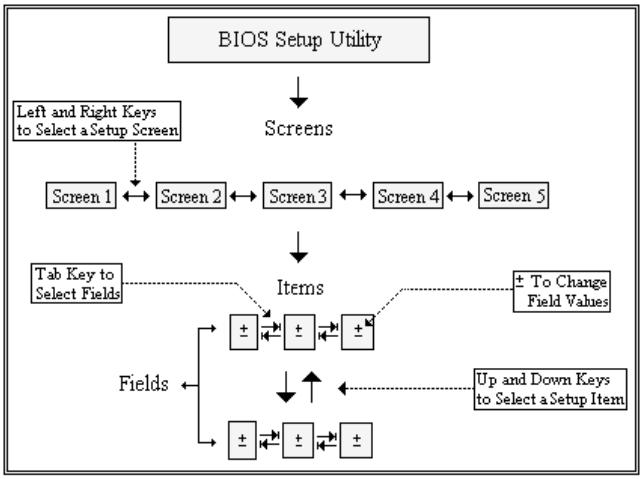
The Main BIOS setup menu is the first screen that you can navigate to. The Main BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. “Grayed” options cannot be configured, and “Blue” options can be. The right frame displays the key legend. Above 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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5.3 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.



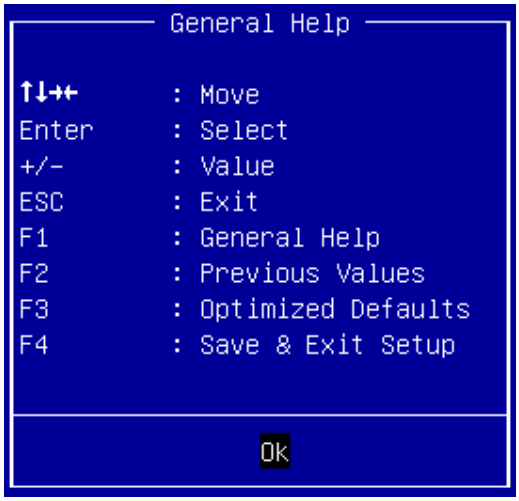
NOTE: There is a hot key legend located in the right frame on most setup screens.

→←	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.

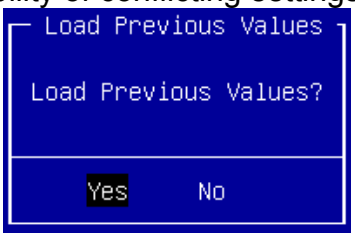
Hot Key	Description
Enter	The < Enter > key allows you to display or change the setup option listed for a particular setup item. The < Enter > key can also allow you to display the setup sub-screens.

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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.

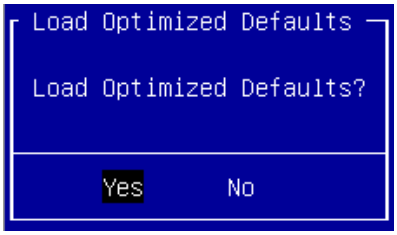


F2 The < F2 > key on your keyboard is the previous values key. It is not displayed on the key legend by default. To set the previous values settings of the BIOS, press the < F2 > key on your keyboard. It is located on the upper row of a standard 101 keyboard. The previous value settings allow the motherboard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



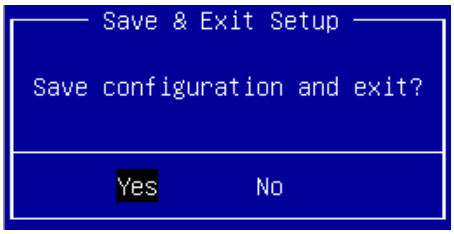
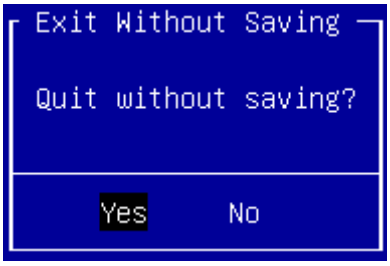
Press the < Enter > key to load previous values. You can also use the < Arrow > key to select *Cancel* and then press the < Enter > key to abort this function and return to the previous screen.

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.

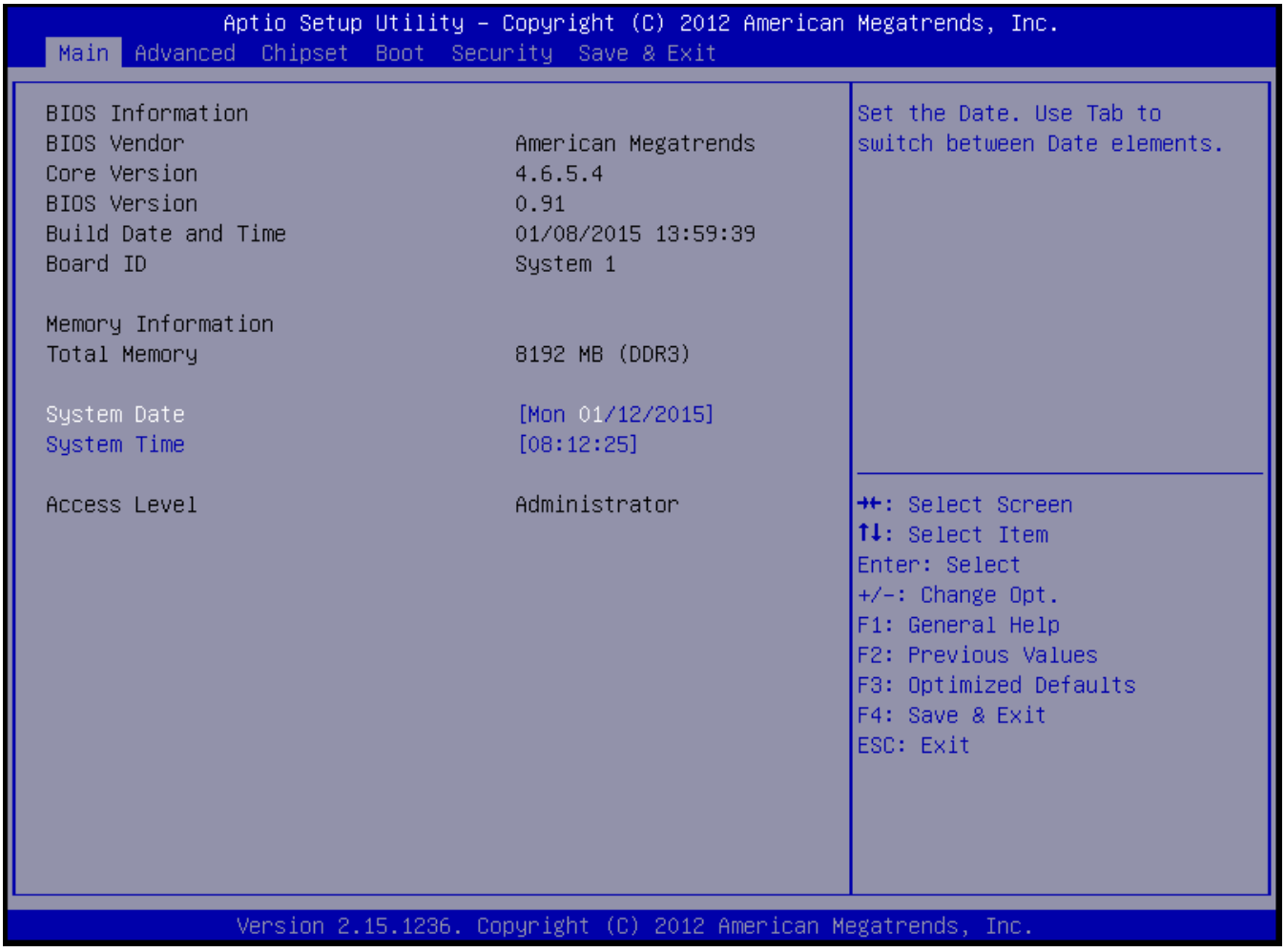
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F4	The < F4 > key allows you to save any changes you have made and exit Setup. Press the < F4 > key to save your changes. The following screen will appear:  Press the < Enter > key to save the configuration and exit. You can also use the < Arrow > 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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5.4 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.



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5.4.1 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.

BIOS Version
Displays the current BIOS version.

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

System Language
Displays default system language.

Board ID
Displays the system in use (System 0 or System 1).

5.4.2 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.

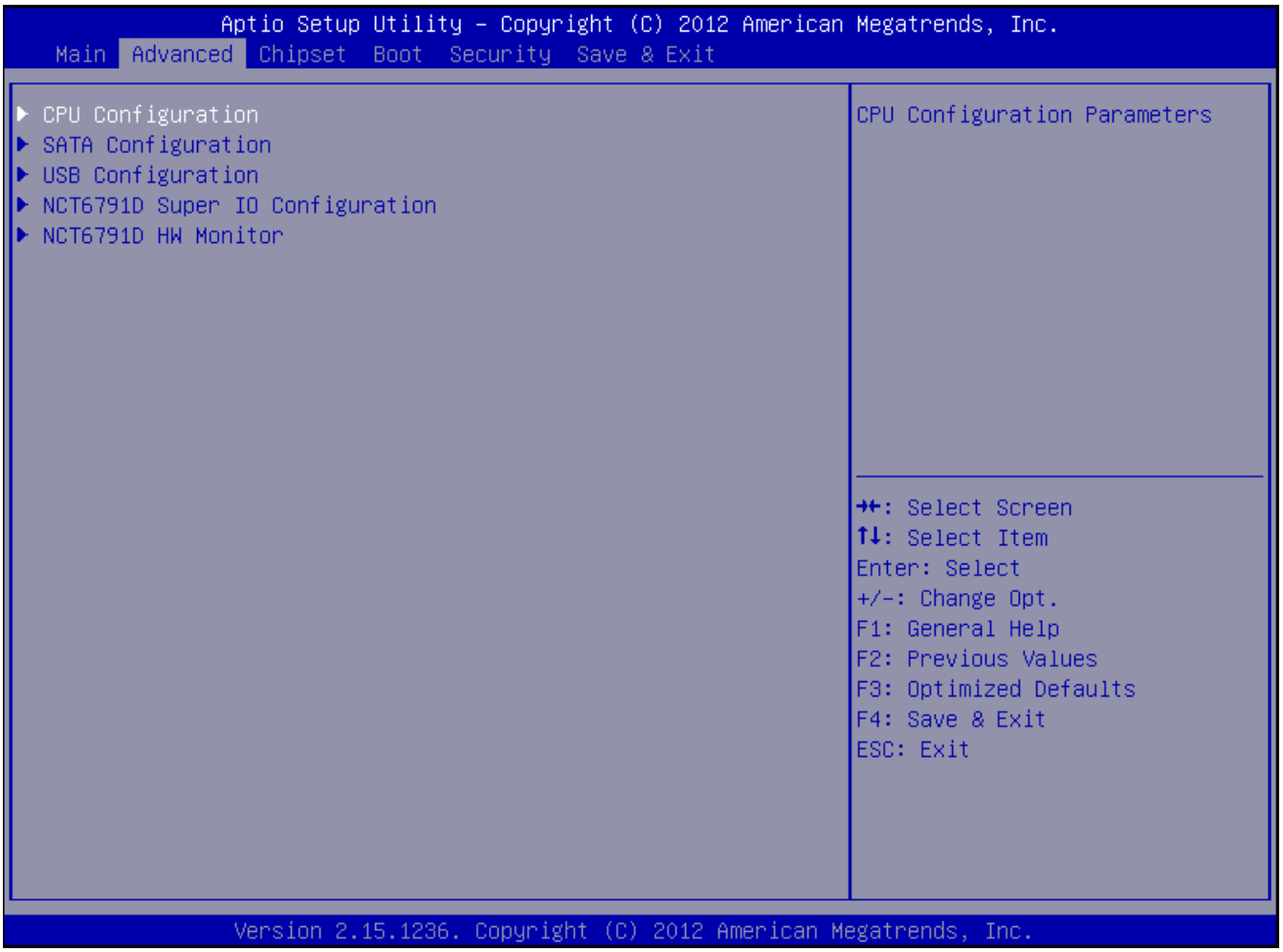


The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

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5.5 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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5.5.1 CPU Configuration

You can use this screen to select options for the CPU 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 *CPU 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).

Active Processor Core

Number of cores to enable in each processor package.
Set this value to **All, 1, 2, 3.**

Limit CPUID Maximum

The Limit CPUID Maximum allows you to circumvent problems with older operating systems that do not support Hyper-Threading Technology. When enabled, the processor will limit the maximum CPUID input value to 03h when queried, even if the processor supports a higher CPUID input value. When disabled, the processor will return the actual maximum CPUID input value of the processor when queried.

Execute Disable Bit

Execute Disable Bit (EDB) is an Intel hardware-based security feature that can help reduce system exposure to viruses and malicious code. EDB allows the processor to classify areas in memory where application code can or cannot execute. Set this value to **Enabled/Disabled**.

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capability provided by Vanderpool Technology. Set this value to **Enabled/Disabled.**

Hardware Prefetcher

When **Enabled**, the processor's hardware prefetcher will be enabled and allowed to automatically prefetch data and code for the processor. When **Disabled**, the processor's hardware prefetcher will be disabled.

Adjacent Cache Line Prefetch

The processor has a hardware adjacent cache line prefetch mechanism that automatically fetches an extra 64-byte cache line whenever the processor requests for a 64-byte cache line. This reduces cache latency by making the next cache line immediately available if the processor requires it as well. When enabled, the processor will retrieve the currently requested cache line, as well as the subsequent cache line. When disabled, the processor will only retrieve the currently requested cache line.

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CPU AES

Select Enable for Intel CPU Advanced Encryption Standard (AES) Instructions support to enhance data integrity. The options are **Enabled** and **Disabled**.

Boot Performance Mode

This feature selects the performance state the BIOS will set before the OS hand-off. The options are **Max Non-Turbo Performance** and **Turbo Performance.**

EIST

Enable Intel SpeedStep Technology support. Set this value to **Enabled/Disabled.**

Turbo Mode

Enable Intel Turbo Boost support. Set this value to **Enabled/Disabled.**

Energy Performance

Use this feature to select an appropriate fan setting to achieve the maximum system performance (with maximum cooling) or maximum energy efficiency (with maximum power saving). The fan speeds are controlled by the firmware management. The options are **Performance**, **Balanced Performance**, **Balanced Energy**, and **Energy Efficient**.

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5.5.2 SATA Configuration

You can use this screen to select options for the SATA Configuration Settings. An example of the *SATA Configuration* screen is shown below.



SATA Controller(s)

Enables or disables SATA device.

SATA Mode Selection

The SATA can be configured as a legacy **IDE, AHCI** and **RAID** mode.

SATA Port 0-4

Displays SATA device name string.

Port 0-4

Enable or disable the SATA Port.

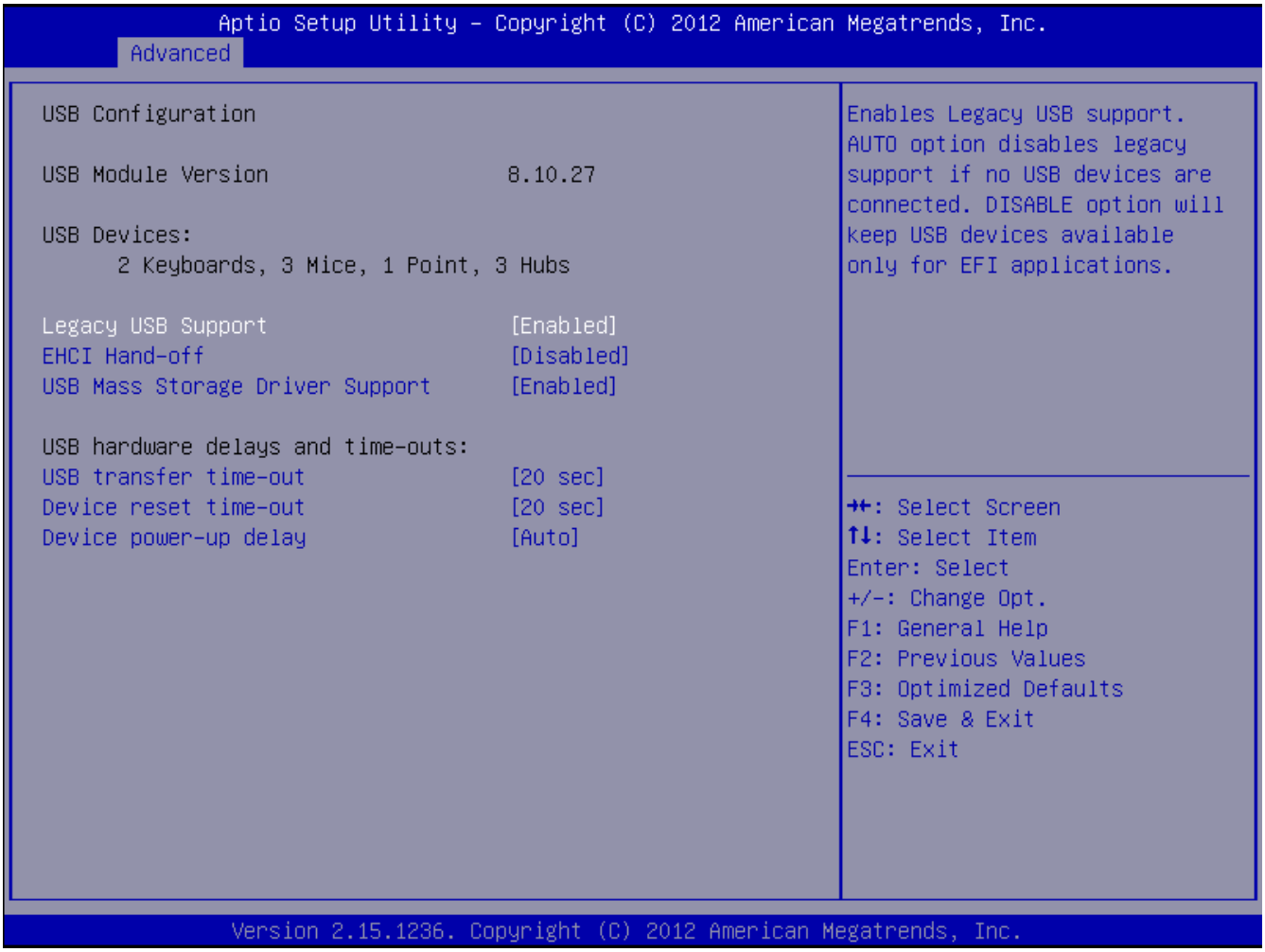
Hot Plug

Appears when SATA mode is set to AHCI. SATA Ports Hot Plug support. Set this value to **Enabled/Disabled.**

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5.5.3 USB Configuration

You can use this screen to select options for the USB 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 *USB Configuration* screen is shown below.



Legacy USB Support

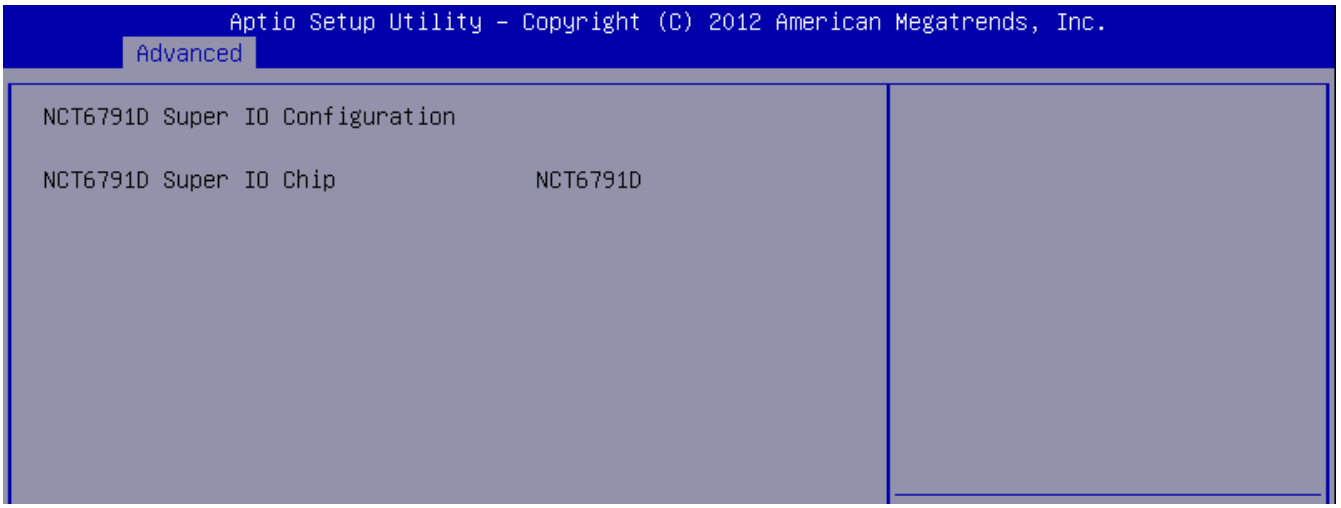
Enables legacy USB support. Auto option disables legacy support if no USB devices are connected. The disable option will keep USB devices available only for EFI applications. Set this value to **Enabled/Disabled/Auto.**

EHCI Hand-off

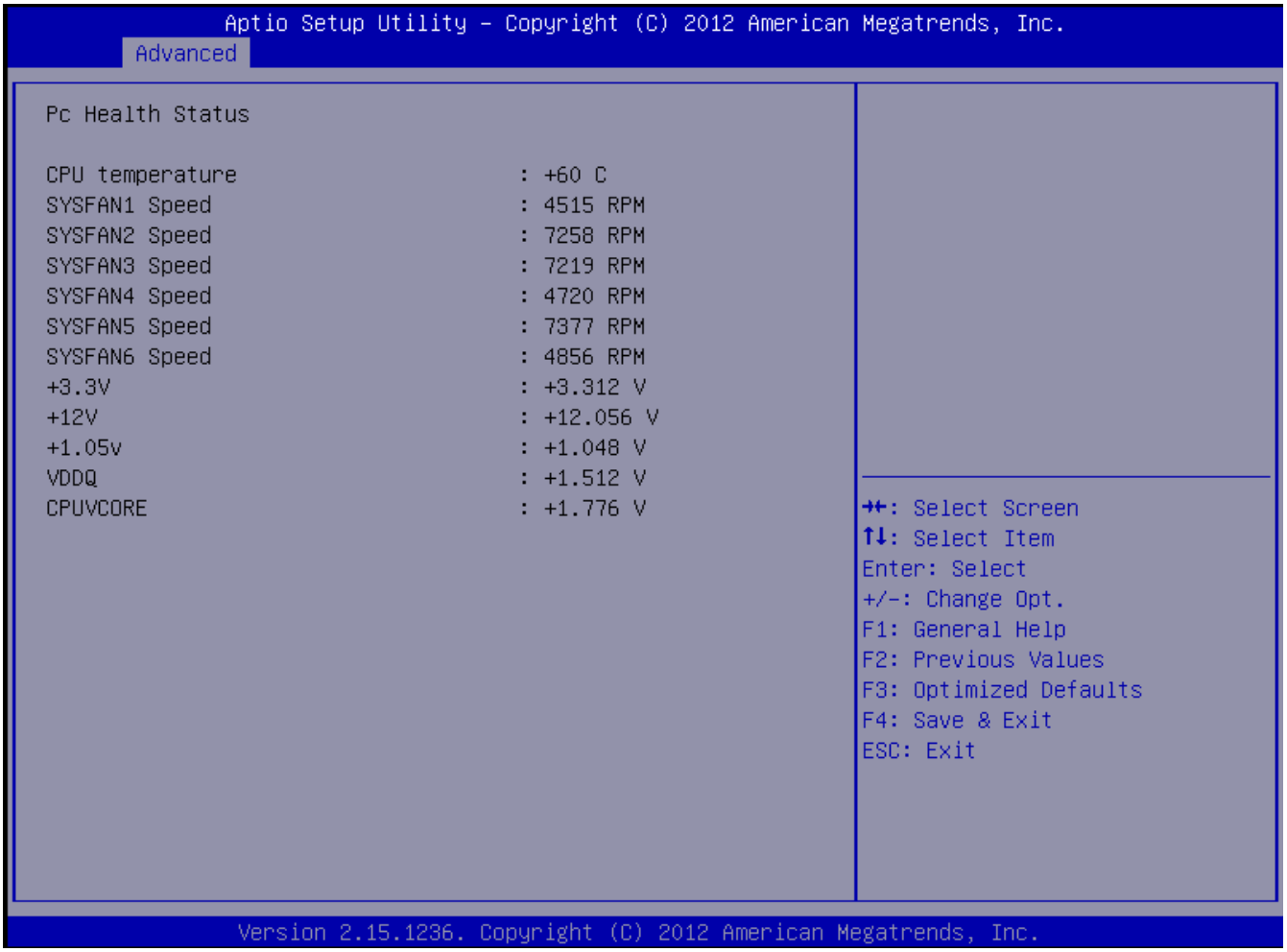
This item is for Operating Systems that do not support Enhanced Host Controller Interface (EHCI) hand-off. When this item is enabled, EHCI ownership change will be claimed by the EHCI driver. The settings are **Enabled** and **Disabled**.

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5.5.4 Super IO Configuration



NCT6791D HW Monitor



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CPU Temperature

Displays current CPU temperature.

SYSFan1 - SYSFan5 speed

Displays current system Fan RPM.

3.3V

Displays current system 3.3V voltage.

12V

Displays current system 12V voltage.

1.05V

Displays current system 1.05V voltage.

VDDQ

Displays current system VDDQ voltage.

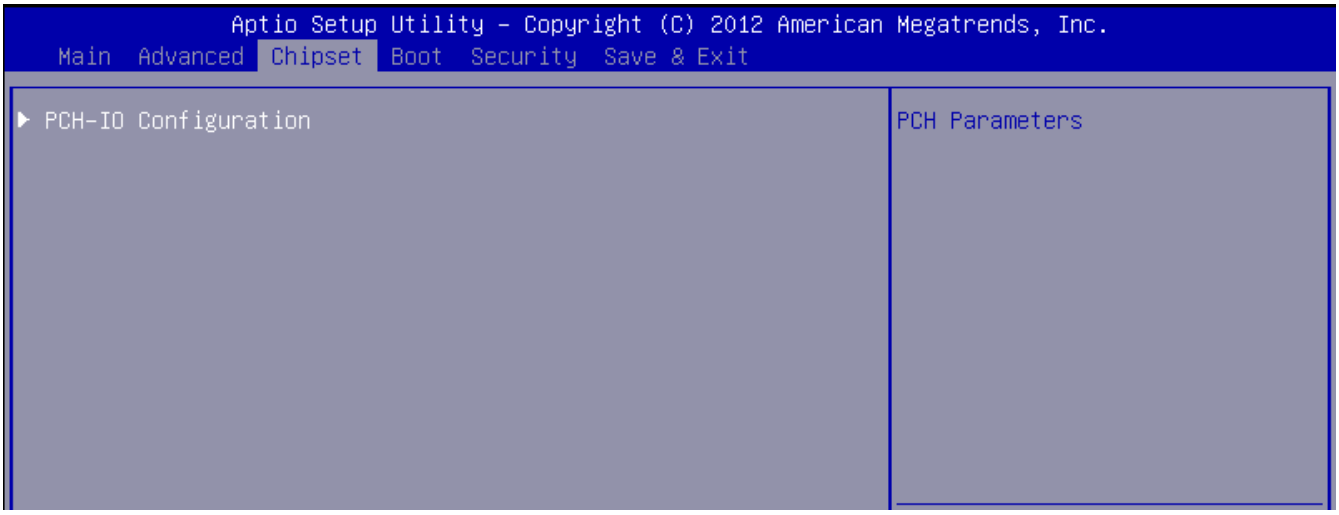
CPUVcore

Displays current system Vcore voltage.

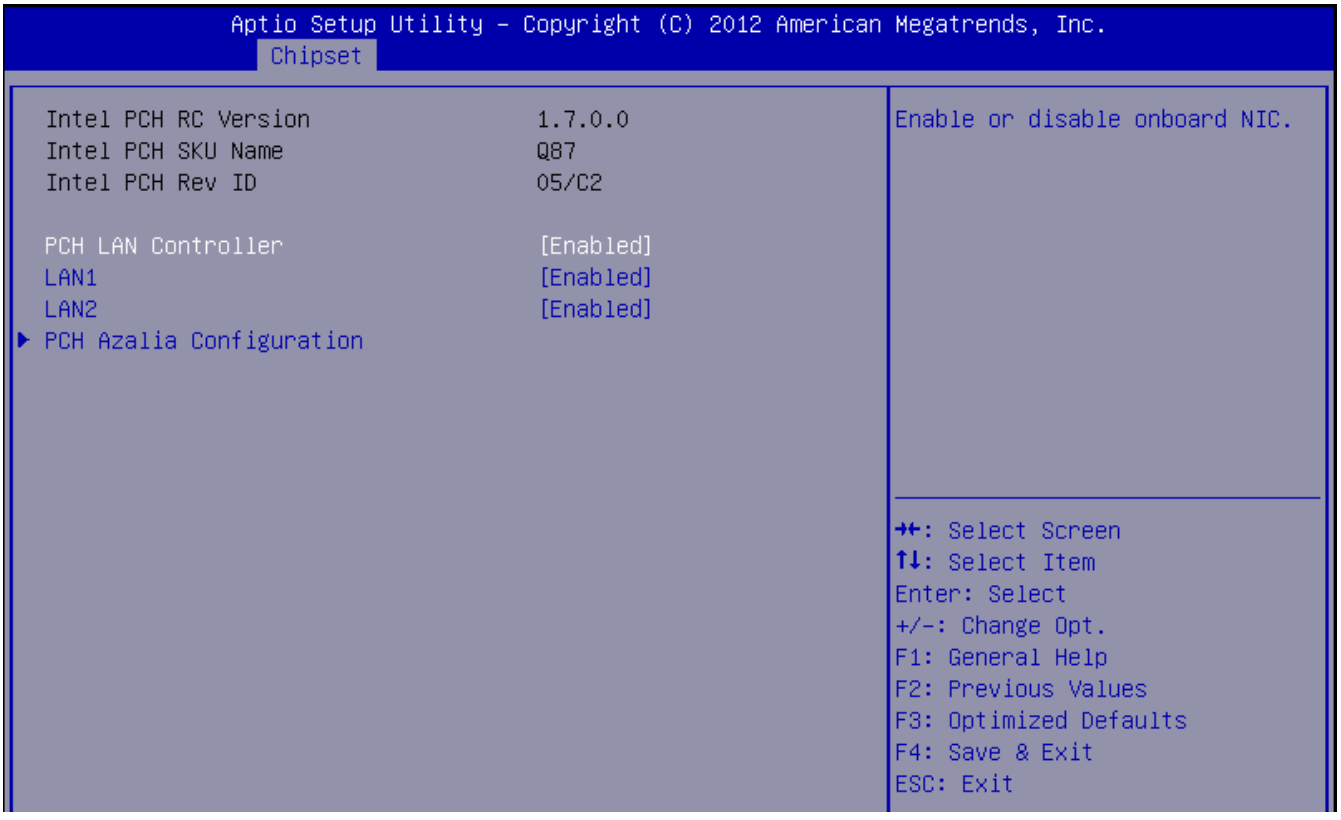
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5.6 Chipset Setup

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



5.6.1 PCH-IO Configuration

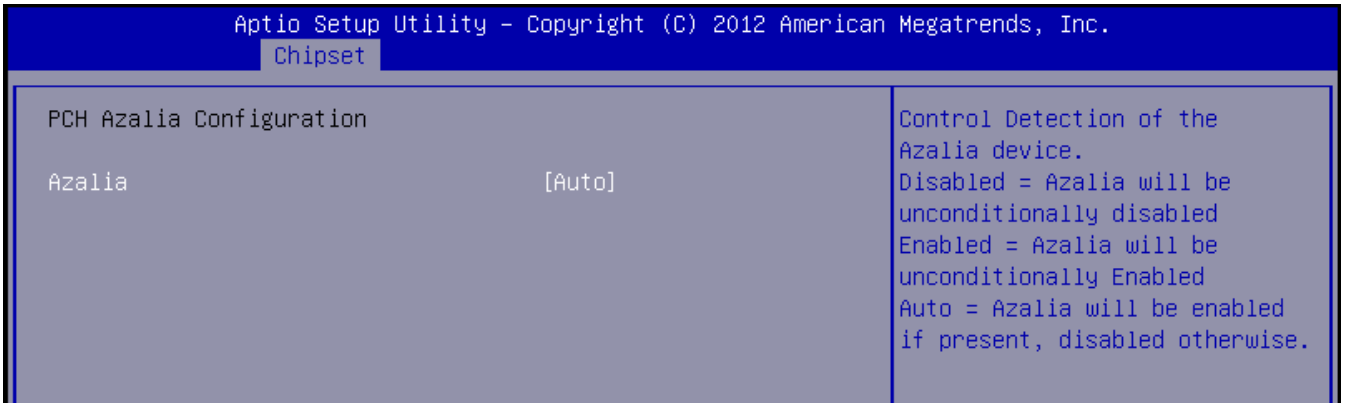


PCH LAN Controller

Enable or **Disable** the Intel Platform Controller Hub LAN controller.

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5.6.1.1 PCH Azalia Configuration



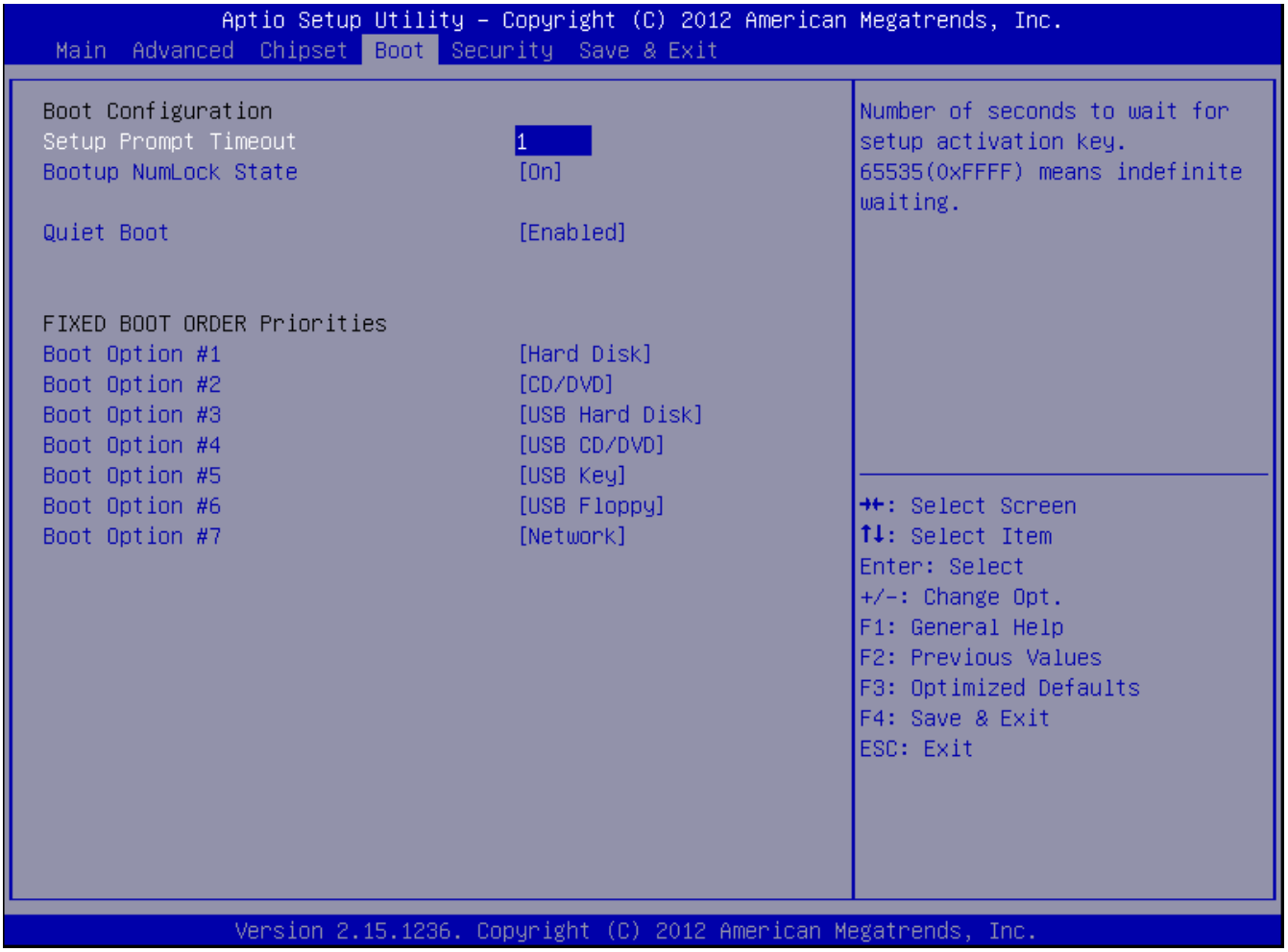
Azalia

When set to **Disabled**, Azalia will be unconditionally disabled. When set to **Enabled**, Azalia will be unconditionally Enabled. When set to **Auto**, Azalia will be enabled if present, disabled otherwise.

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5.7 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

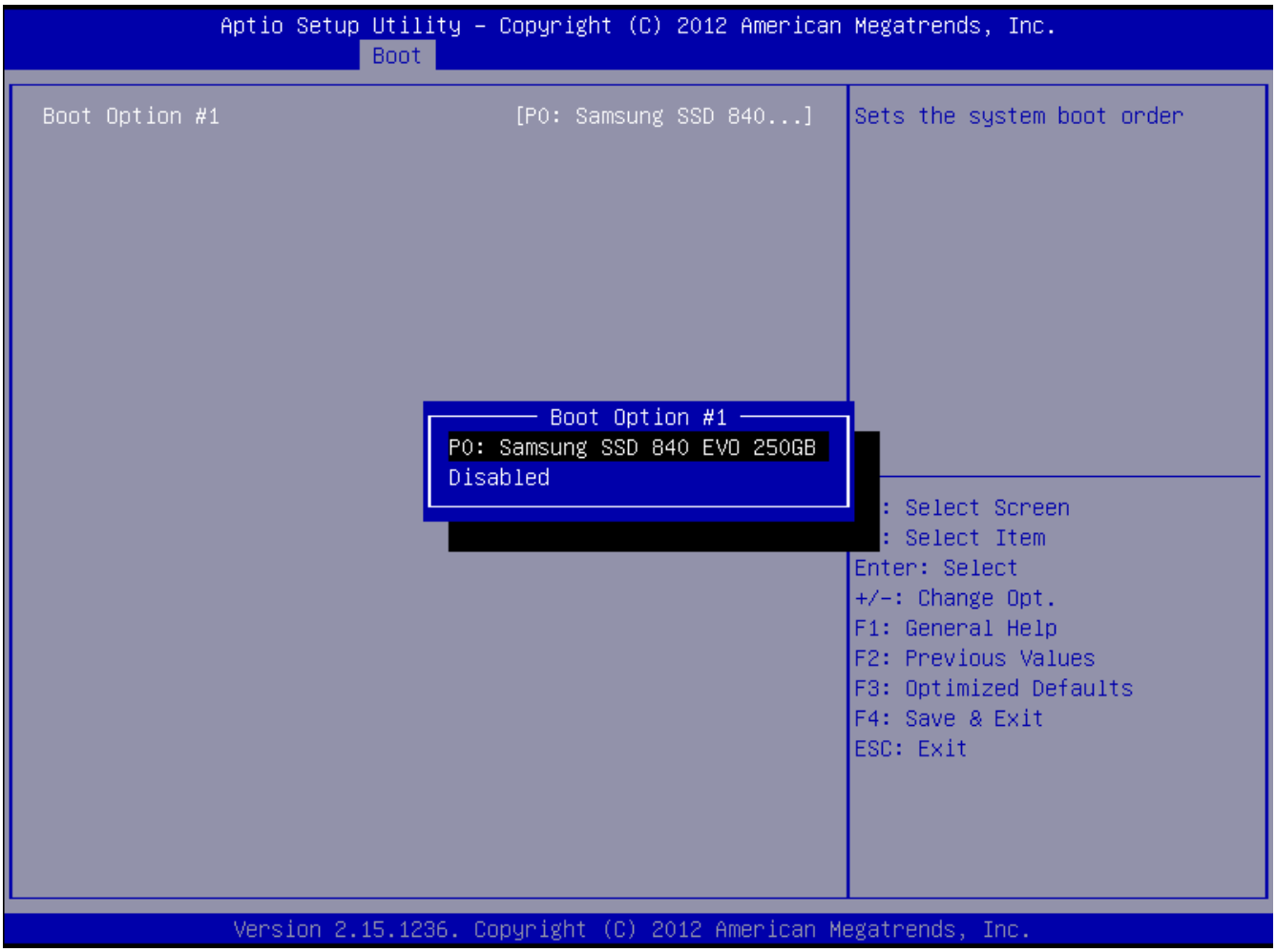
Disabled - Set this value to allow the computer system to display the POST messages.

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

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Fixed Boot Option Priorities

Set Boot Option #1 to #7 boot priority.

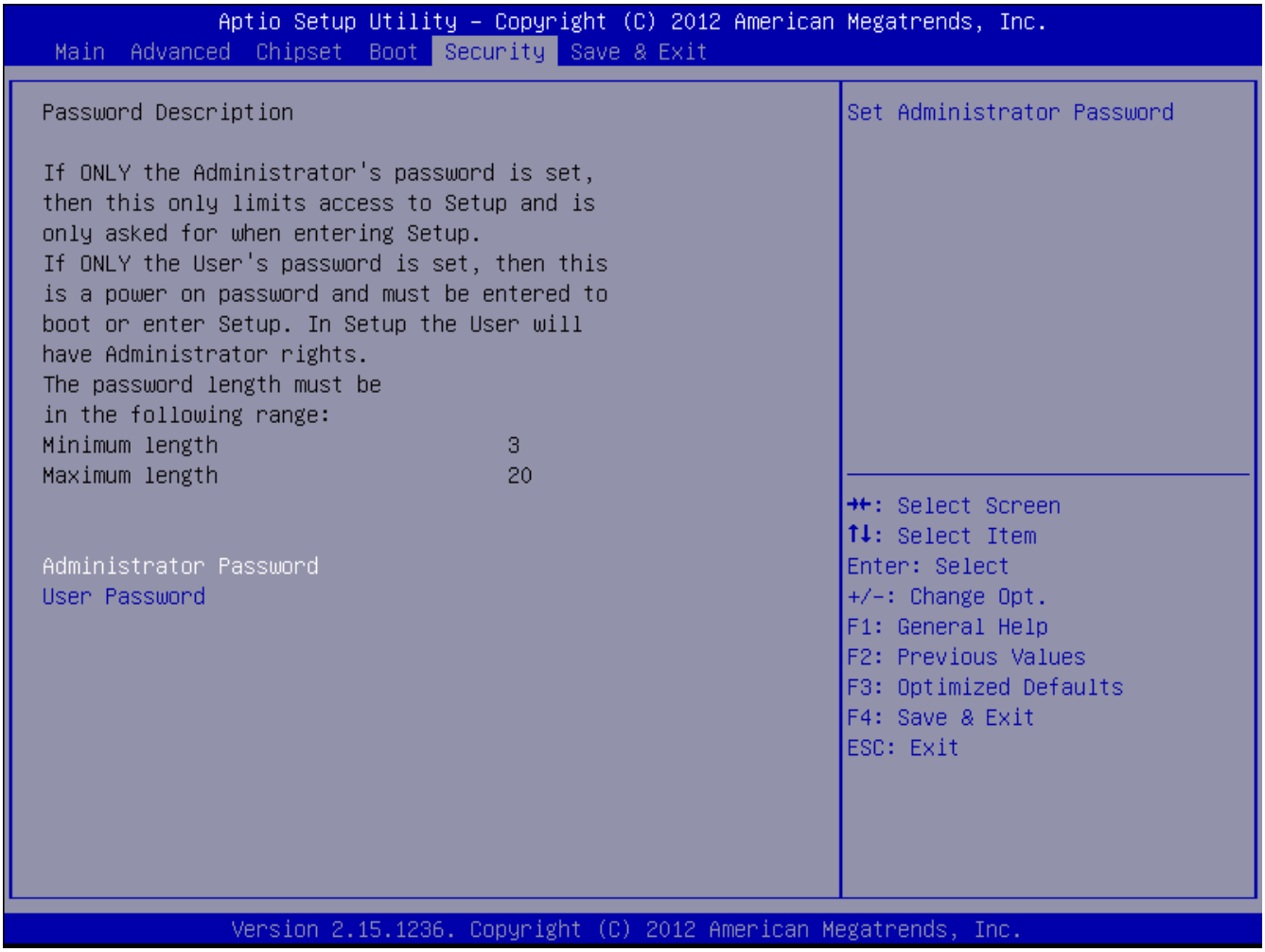


Hard Drive BBS Priorities

Specifies the boot device priority sequence from available hard drives.

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5.8 Security Setup



Administrator / User Password

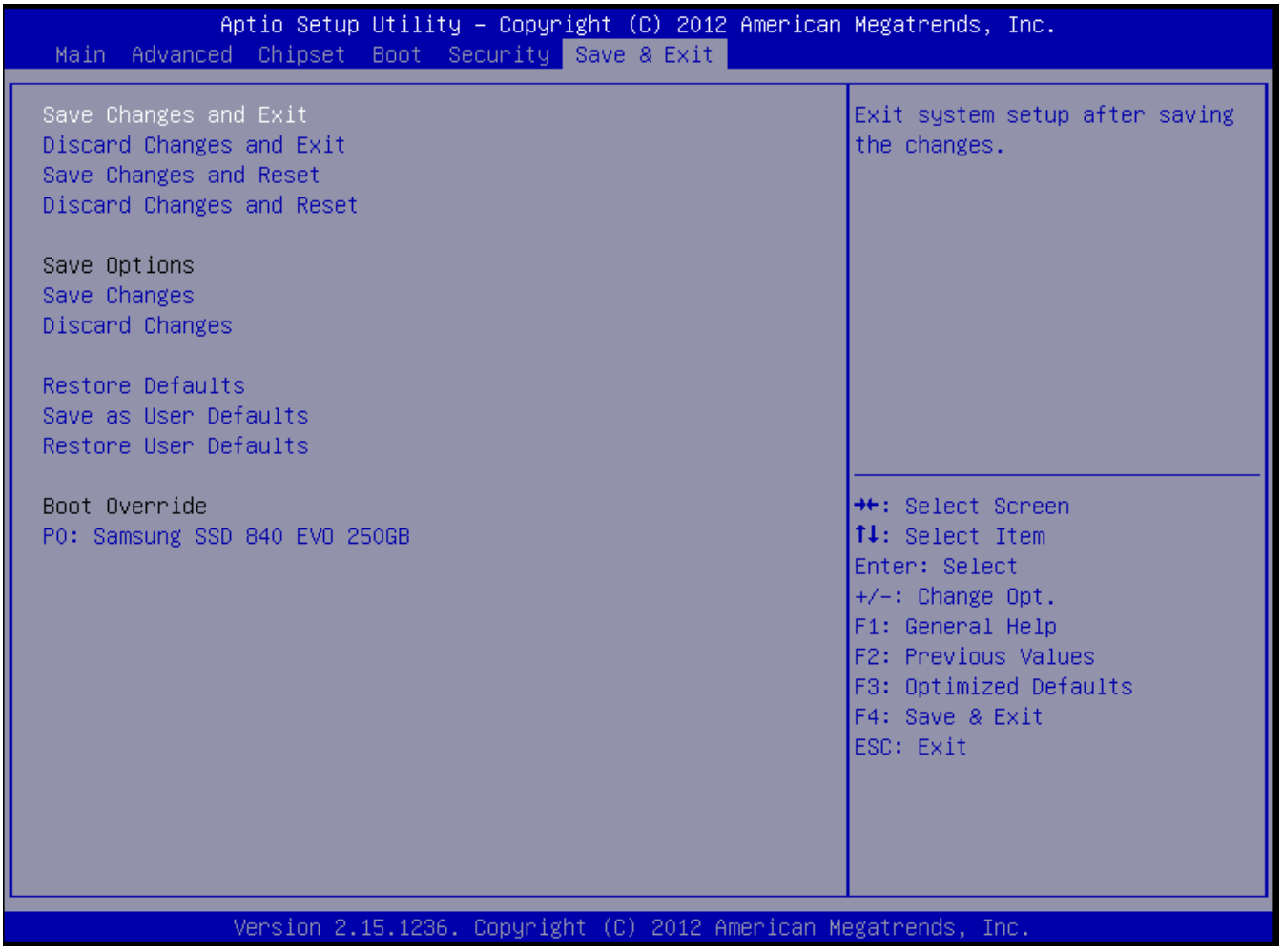
If only the administrator's password is set, then this limits access to setup and is only asked for when entering setup.

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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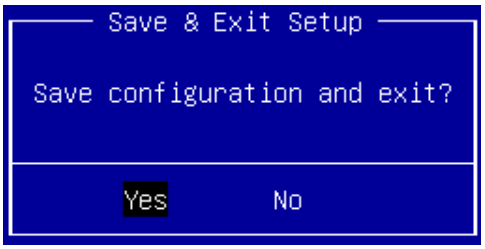
5.9 Save & Exit Menu

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

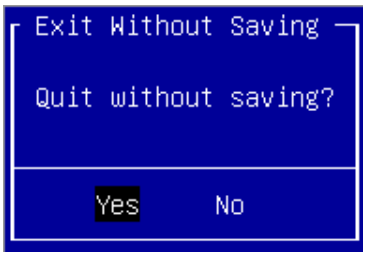
Exit system setup after saving the changes.



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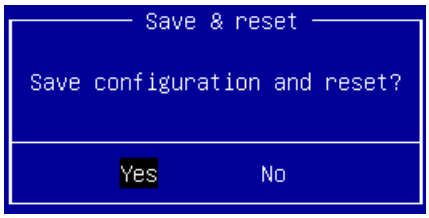
Discard Changes and Exit

Exit system setup without saving any changes.



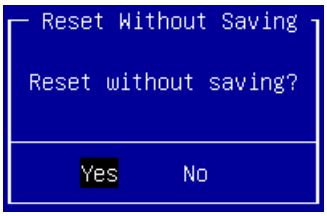
Save Changes and Reset

Reset the system after saving the changes.



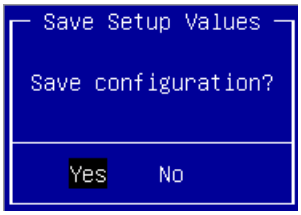
Discard Changes and Reset

Reset system setup without saving any changes.



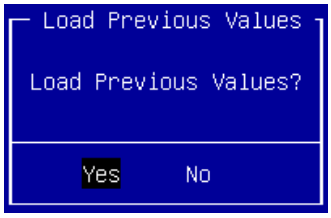
Save Changes

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



Discard Changes

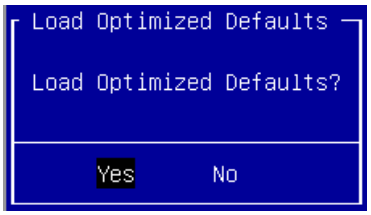
Discard Changes done so far to any of the setup options.



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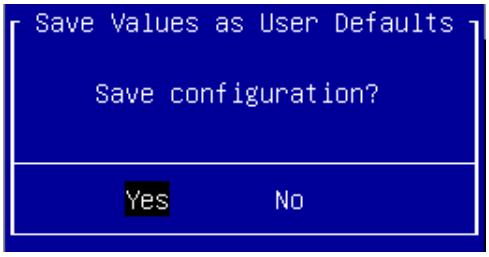
Restore Defaults

Restore/Load Defaults values for all the setup options.



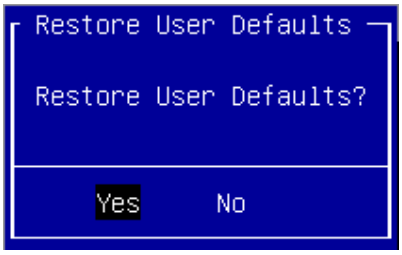
Save as User Defaults

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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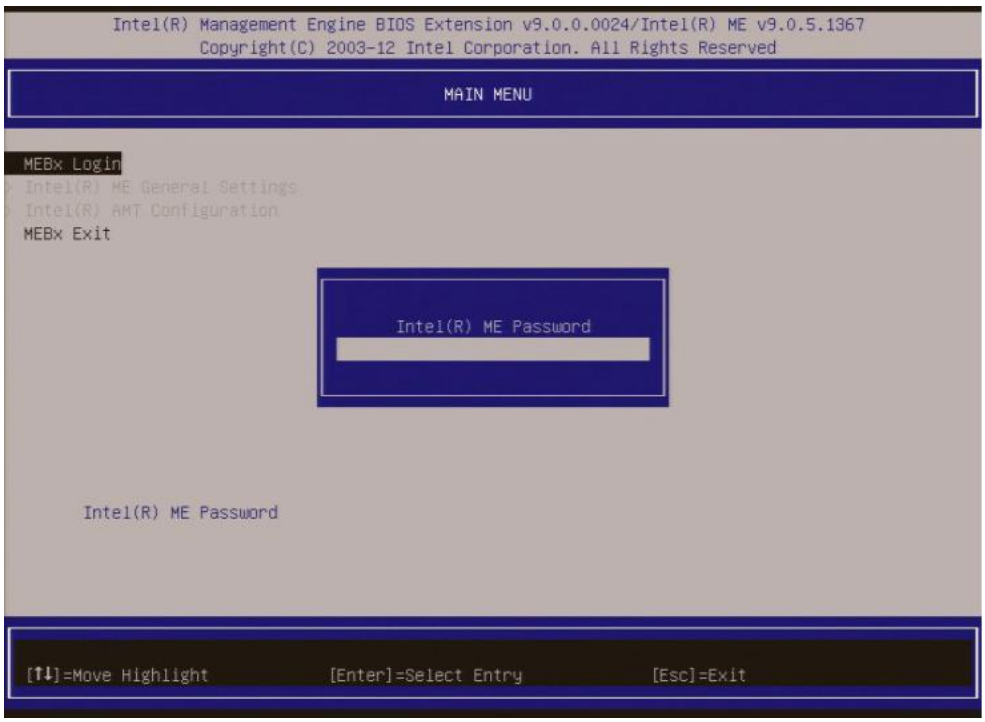
Appendix I. Intel® AMT Setup Guide

Intel® AMT Configuration

When you explore MEBx options for the first time (Factory phase), default settings are in place. This section details the settings recommended by ADLINK, some of which may be the same as the default selections.

Even though the default setting is used for many options, it is good practice to double-check important options. For setup and configuration, perform the following procedure:

1. Reboot the system and enter the main menu for MEBx setup shown below by pressing <CTRL-P> during POST.



2. Select **MEBx Login** and enter the case-sensitive, default password (**admin**), which must be changed before making any changes in the MEBx.

3. Provide a strong, new MEBx password using the criteria listed below. Repeat the password for verification.

   - 8 – 32 characters long
   - Upper- and lower-case Latin characters (for example: A, a, B, b)
   - At least one digit (for example: 0, 1, 2… 9).
   - One of the following non-alphanumeric characters:
     - Exclamation !
     - At @
     - Number #
     - Dollar $
     - Percent %

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- Caret ^
- Asterisk *

Note that the underscore character "_" is considered alpha-numeric.

The following characters are not allowed:

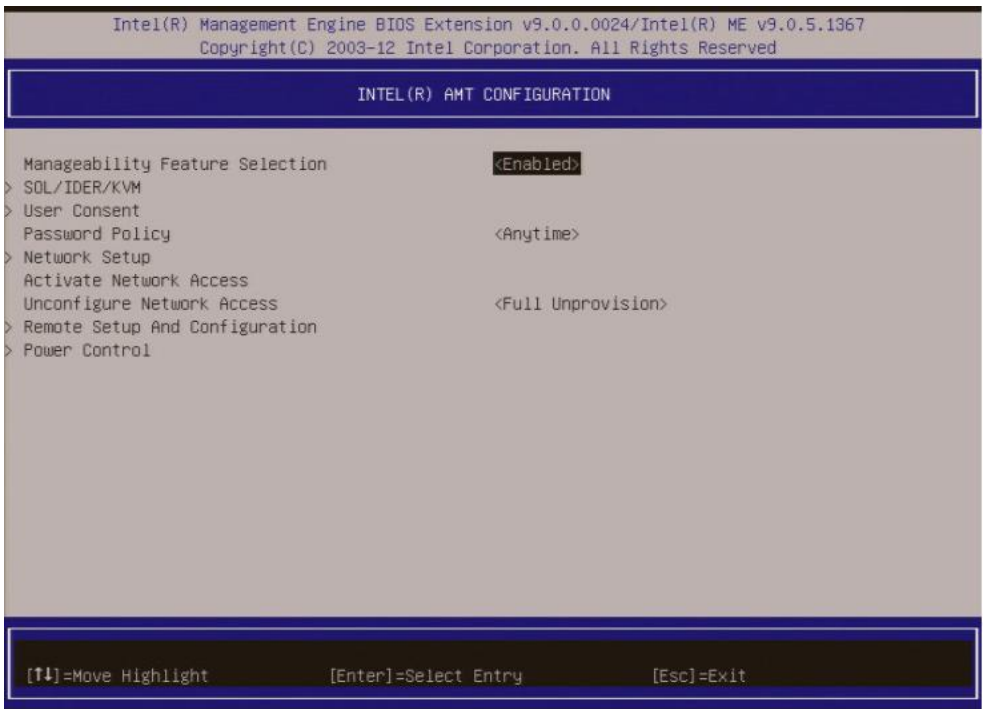
- Quotation mark "
- Apostrophe '
- Comma ,
- Greater than >
- Less than <
- Colon :
- Ampersand &
- Space

Changing the password establishes Intel AMT ownership and moves the system from Factory to In-Setup phase. As a result, ME and Intel AMT options are now accessible within the MEBx; the system can be accessed via the Intel AMT WebUI (WebUI).

4. From the MEBx main menu, select **Intel AMT Configuration**.
5. From the Intel AMT Configuration menu shown below, select **Manageability Feature Selection**.

This option allows Intel AMT to be enabled (recommended) or disabled.

Note that disabling Manageability Feature Selection also disables all remote management capabilities and unprovisions any Intel AMT settings.



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6. From the Intel AMT Configuration menu, select **SOL/IDER/KVM**. The SOL/IDER/KVM screen appears, as shown below. Review the following settings:

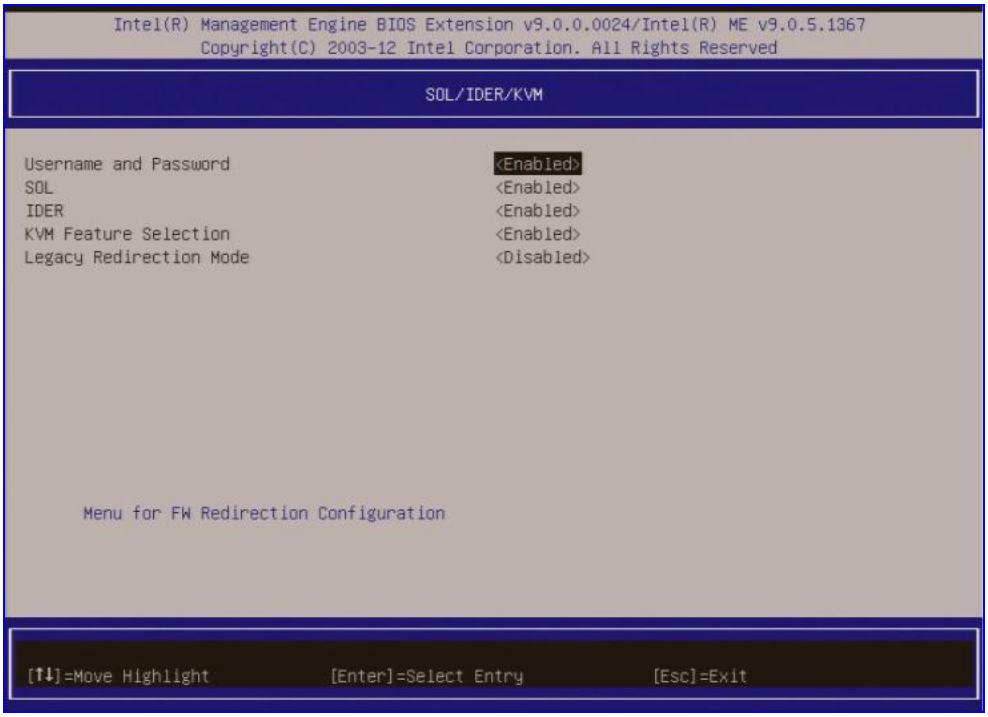
   Username and password: **Enabled** (Recommended setting; default)
   When enabled, this setting allows users and passwords to be added via the WebUI; if it is disabled, only the administrator has MEBx remote access.

   SOL: **Enabled** (Recommended setting; default)
   This setting enables or disables Serial-over-LAN (SOL) functionality.

   IDER: **Enabled** (Recommended setting; default)
   This setting enables or disables IDE Redirection (IDE-R) functionality.

   KVM Feature Selection: **Enabled** (Recommended setting; default)
   This setting enables or disables the keyboard/video/mouse feature.

   Legacy Redirection Mode: **Enabled** (Recommended setting; **Enabled**)
   This setting allows the redirection feature to work with a pre-Intel AMT 6.0 SCS.



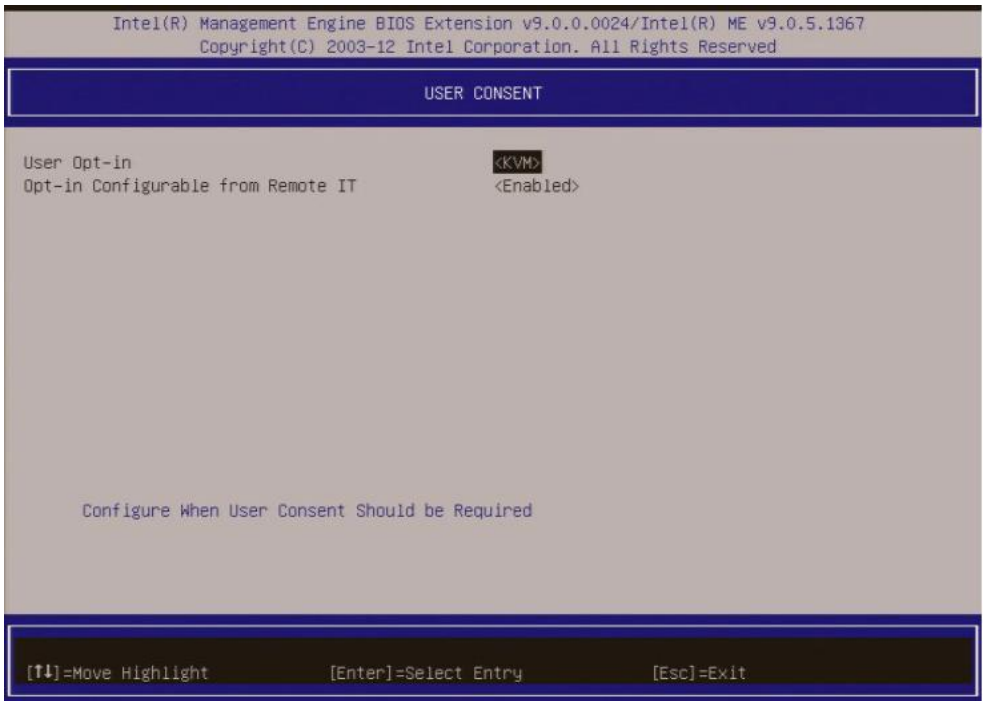
7. From the Intel AMT Configuration menu, select **User Consent**.

   The User Consent screen appears, as shown below. Review the following settings:

   User Opt-in: **NONE** (Setting is user-dependent; recommended setting; **NONE**)
   This setting is used to control remote KVM operating, the server must provide one-time password for remote KVM.

   Opt-in Configurable from Remote IT: Enabled (Setting is user-dependent; Enabled by default). This setting enables or disables a remote user's ability to select user opt-in policy. If set to disabled, only the local user can control the opt-in policy.

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8. Review the **Password Policy** setting shown in the Intel AMT Configuration screen.

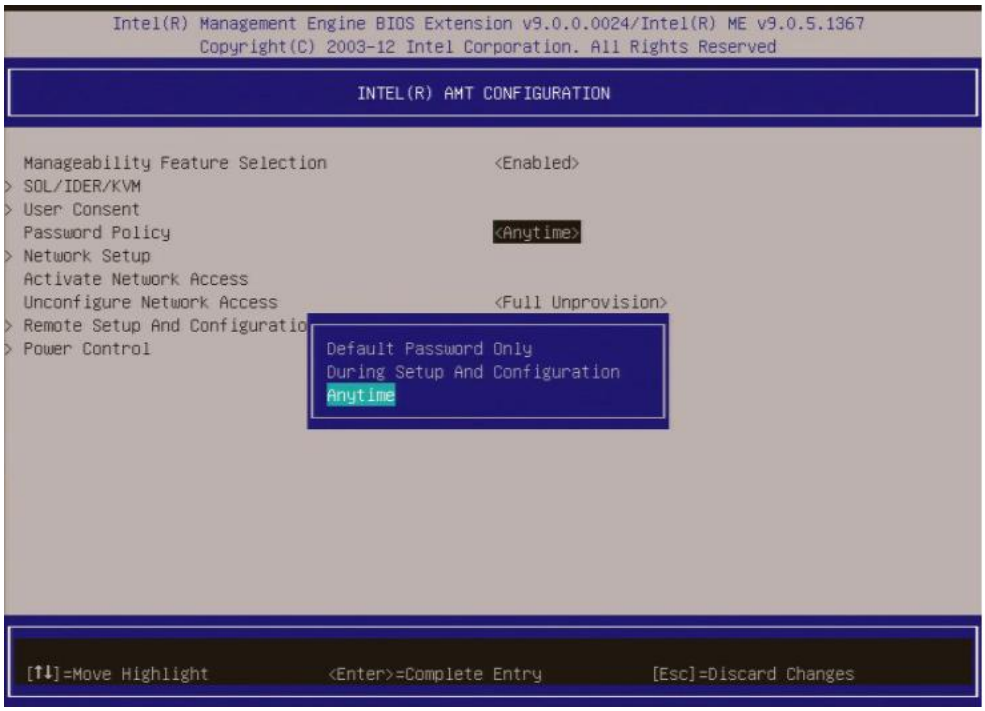
   This setting specifies when it is possible to change the MEBx password over the network. As shown below, options are:

   Default Password Only
   You can change the MEBx password via the network interface if the default password has not yet been changed.

   During Setup and Configuration
   You can change the MEBx password via the network interface during the setup and configuration process but at no other time. Once setup and configuration is complete, the password cannot be changed via the network interface.

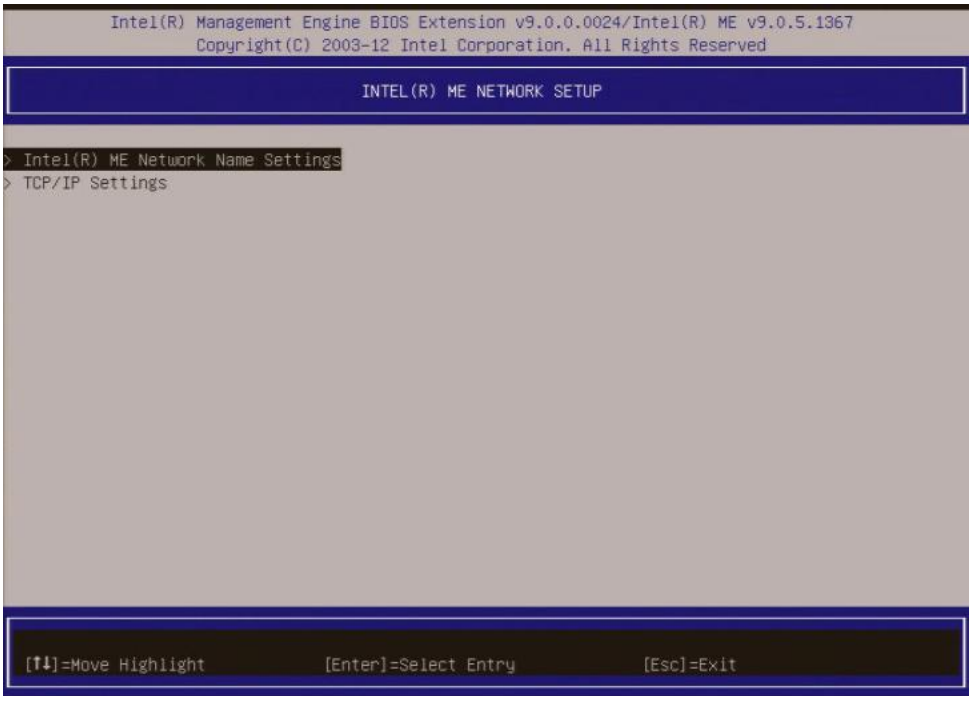
   Anytime (recommended; default setting)
   You can change the MEBx password via the network interface at any time.

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9. Select **Network Setup** from the Intel AMT Configuration menu.

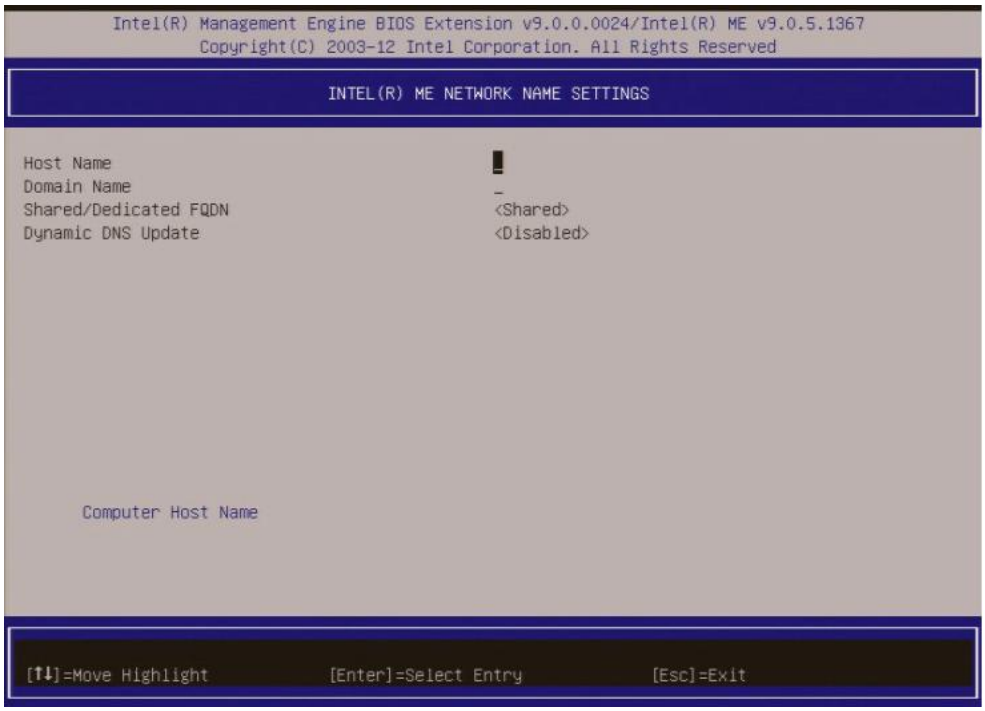
   The Intel ME Network Setup screen appears, as shown below, allowing you to configure Intel AMT so that it can be accessed by a remote system.



10. Select **Intel ME Network Name Settings** from the Intel ME Network Setup menu.

    The Intel ME Network Name Settings screen appears, as shown below.

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Review the following settings:

Host Name: (Setting is user-dependent; there is no default)
Host names can be used in place of the system's IP address for any application that requires this address.

Domain Name: (Setting is network-dependent; there is no default)
If a domain name is not specified, then the default domain name of **Provisionserver** will be used when connecting to the SCS. If a domain name is not specified and the domain name for the SCS is not **Provisionserver**, you must set up an alias in the DHCP server to redirect the connection for **Provisionserver** to the appropriate domain. If a domain name is specified, then that domain will be used. However, if there is no response after four DNS queries to the specified domain, **Provisionserver** will be used instead.

Shared/Dedicated FDQN: **Shared** (Recommended setting; default)
This setting determines whether the Intel ME Fully Qualified Domain Name (FQDN) – that is, the HostName. DomainName – is shared with the operating system or is in a separate domain.

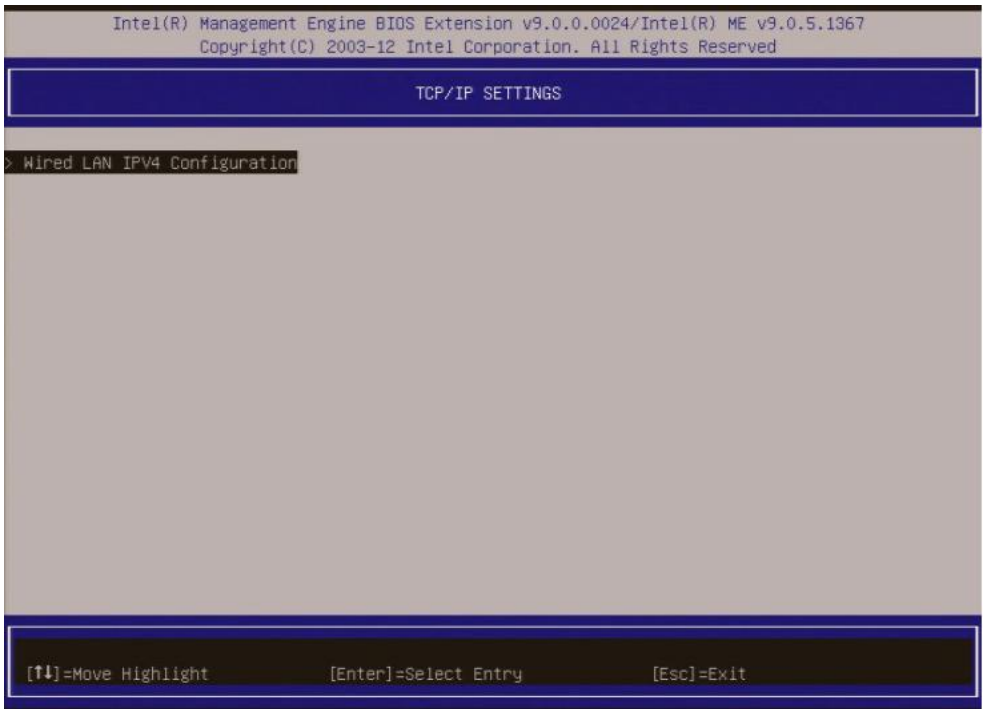
Dynamic DNS Update: **Disabled** (Recommended setting; default)
If Dynamic DNS (DDNS) update is enabled, the firmware will actively try to register its IP addresses and FQDN in DNS using DDNS update protocol. You must set the appropriate host and domain names; in addition, the MEBx menu displays the following options:

- **Periodic Update Interval**: Specify a time from 20 to 1,440 minutes
- **TTL** (time-to-live): Specify a time in seconds

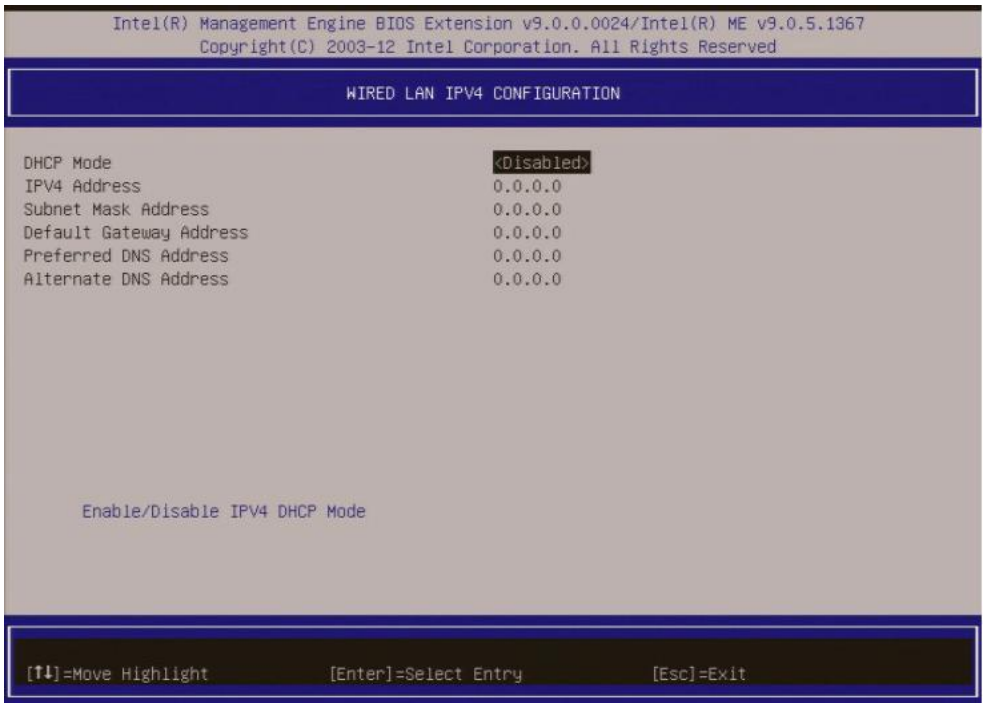
If DDNS update is disabled, the firmware will make no attempt to update DNS using DHCP option 81 or DDNS update protocol. If DDNS update has not been set (that is, it is neither enabled nor disabled), the firmware will use DHCP option 81 for DNS registration; it will not directly update DNS using DDNS update protocol.

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11. At the Intel ME Network Setup menu (Step 9 above), select **TCP/IP Settings**. The TCP/IP Settings screen appears, as shown below.



12. Select **Wired LAN IPV4 Configuration** and then configure the parameters shown below.



DHCP Mode: **Enabled** (Recommended setting; default)
If DHCP is enabled (recommended), skip to Step 16. If DHCP is disabled, configure an IPv4 static IP address for Intel AMT.

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IPV4 Address: (Network-dependent; default is **0.0.0.0**
Specify the desired static IP address (such as **192.168.0.1**). Ensure that each Intel AMT system has a unique IP address. Multiple systems sharing the same IP address may result in network collisions that would cause the systems to respond incorrectly.

Subnet Mask Address: (Network-dependent; default is 255.255.255.0)

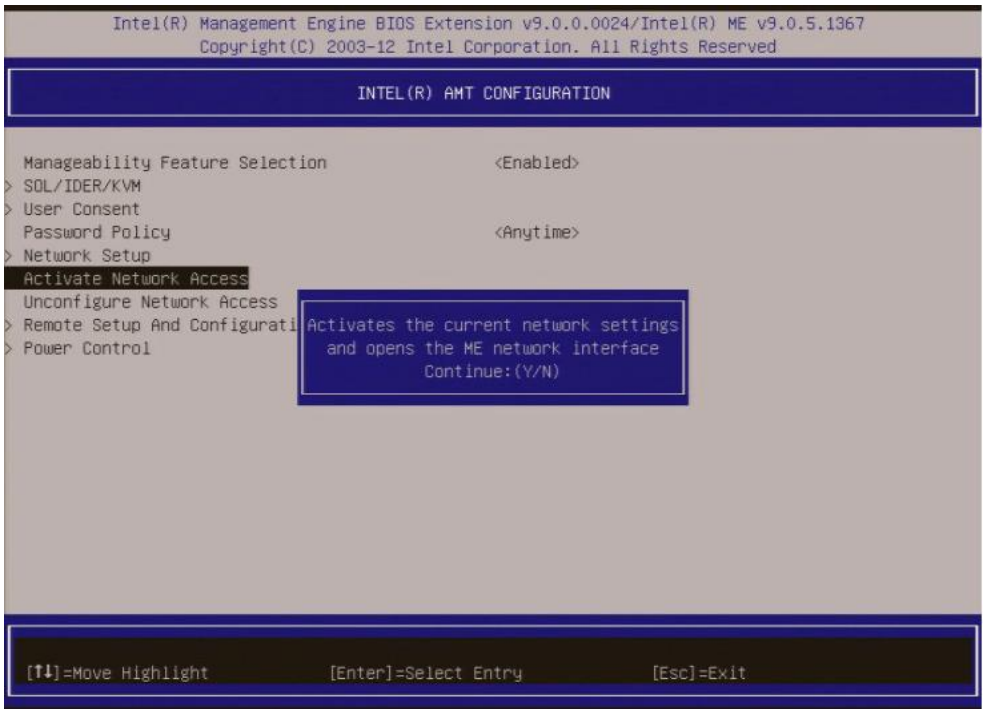
Default Gateway Address: (Network-dependent; default is 0.0.0.0)

Preferred DNS Address: (Network-dependent; default is 0.0.0.0)

Alternate DNS Address: (Network-dependent; default is 0.0.0.0)

13. Having completed the network setup, select **Activate Network Access** from the Intel AMT Configuration menu, as shown below. This setting causes the ME to transition to the newly-provisioned state if all required settings have been configured.

    The **Unconfigure Network Access** option causes the ME to transition to the pre-provisioned state.



14. When MEBx displays **Update Network Settings** in the **General Settings** menu, press **Enter**.

15. At the MEBx CAUTION prompt, press **Y**.

16. Press the ESC key to return to the MEBx Main Menu and select **MEBx Exit** to exit the MEBx setup and save settings. The system will reboot.

    Once the system reboots, it changes from Intel AMT In-Setup phase to Operational phase. Now, the system can be remotely managed through the WebUI or a remote console and can be provided to the end-user for regular use.

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Using the Web UI

The WebUI is a browser-based interface that provides limited support for remote system management. It is often used to verify that Intel AMT setup and configuration has been performed properly on a system. Obtaining a successful connection between a remote system and the system running the WebUI indicates proper Intel AMT setup and configuration on the remote system.

The WebUI is accessible from the following web browsers:

- Microsoft Internet Explorer 6 SP1 or newer
- Mozilla Firefox

Remote system management capabilities include:

- Hardware inventory
- Event logging
- Remote system reset
- Updating network settings
- Adding new users and passwords
- Updating ME firmware

WebUI support is enabled by default for Manual mode setup and configuration.

Connecting with the WebUI in Manual mode

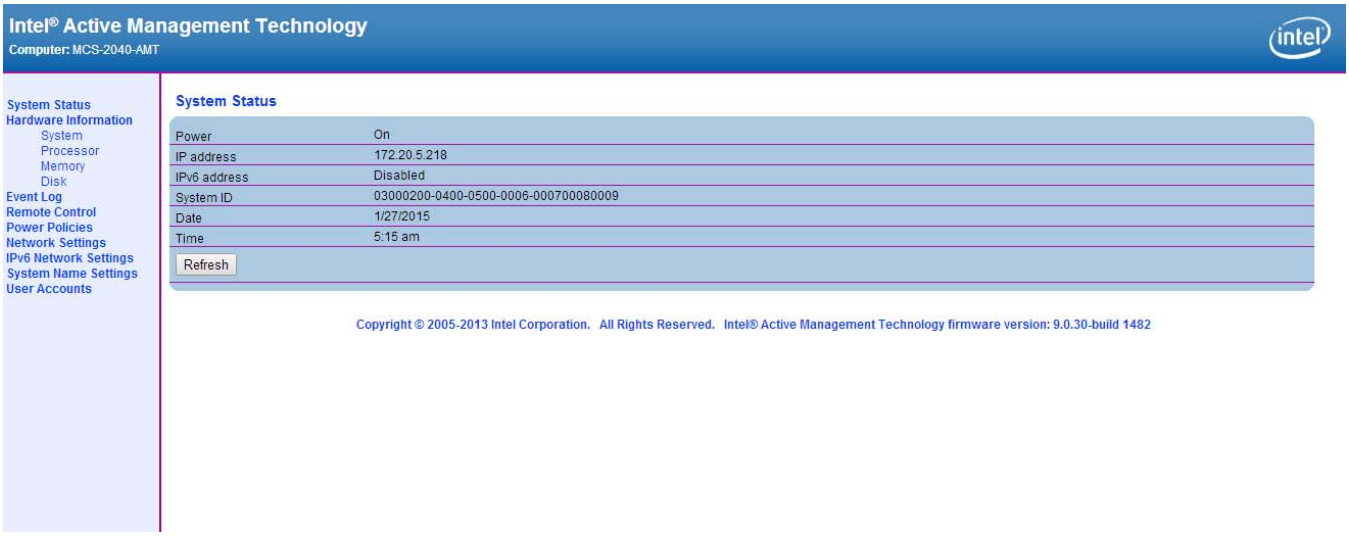
1 Power on an Intel AMT system that is in its operational phase.
2 Invoke a web browser on a separate system (such as a management PC) that is on the same subnet as the Intel AMT system.
3 Connect to the Intel AMT system using the IP address and port specified in the MEBx.

- By default, the port is 16992
- If DHCP has been specified, then use the Fully Qualified Domain Name (FQDN) for the ME, which is a combination of the hostname and domain as in the following examples:
  - IPv4 address: http://172.20.5.218:16992
  - Host names (see Host Name in Step 10 of AMT Configuration above) http://MCS-2040-AMT:16992

The remote system makes a TCP connection to the Intel AMT system and accesses the top-level web page embedded within the ME.

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4. Enter your username and password. The default username is admin, while the password is the one specified during ME setup. After login, the System Status screen appears, as shown below.



5. Review the system information and make any necessary changes.

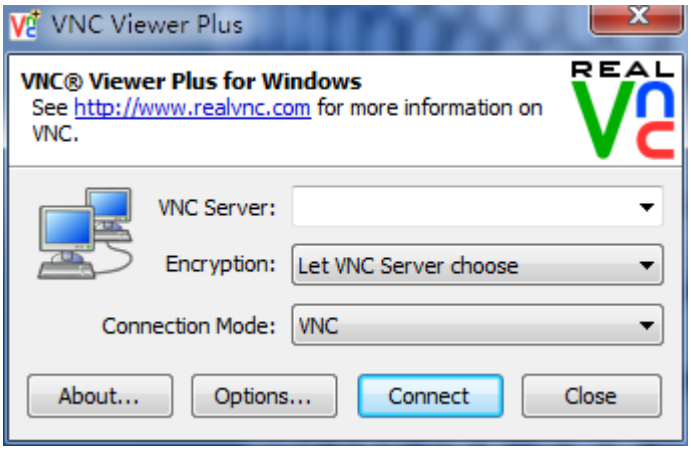
6. Exit.

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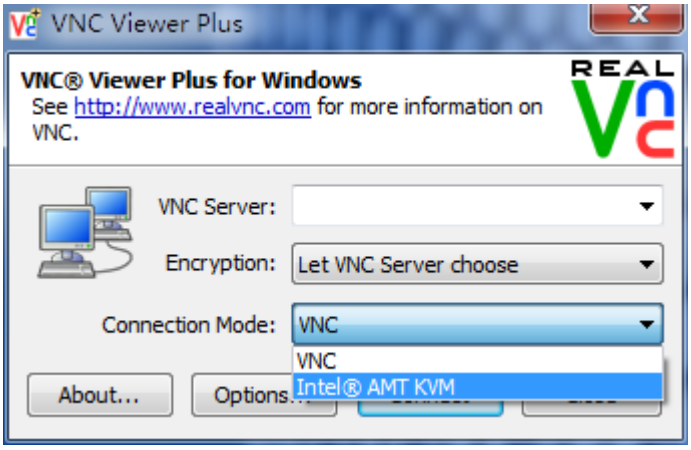
Using the Remote KVM

1. Download VNC Viewer Plus from http://www.realvnc.com/download/viewerplus/ and install it on a separate system (such as a management PC) that is on the same subnet as the Intel AMT system.

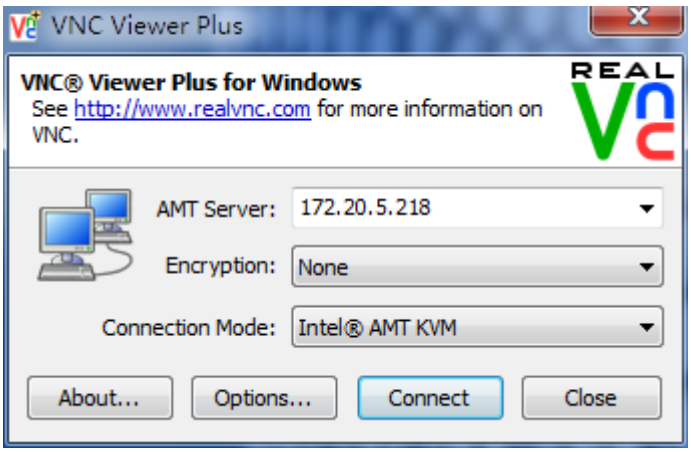
2. Invoke VNC Viewer Plus



3. Change the Connection Mode to “Intel® AMT KVM”



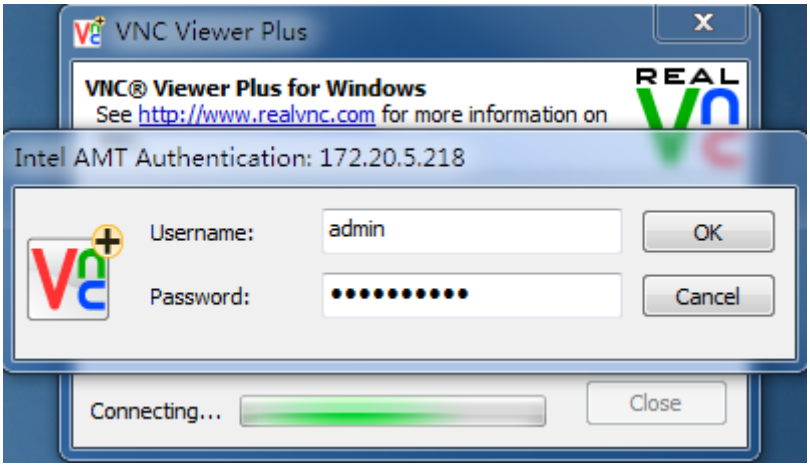
4. Connect to the Intel AMT system using the IP address specified in the MEBx.



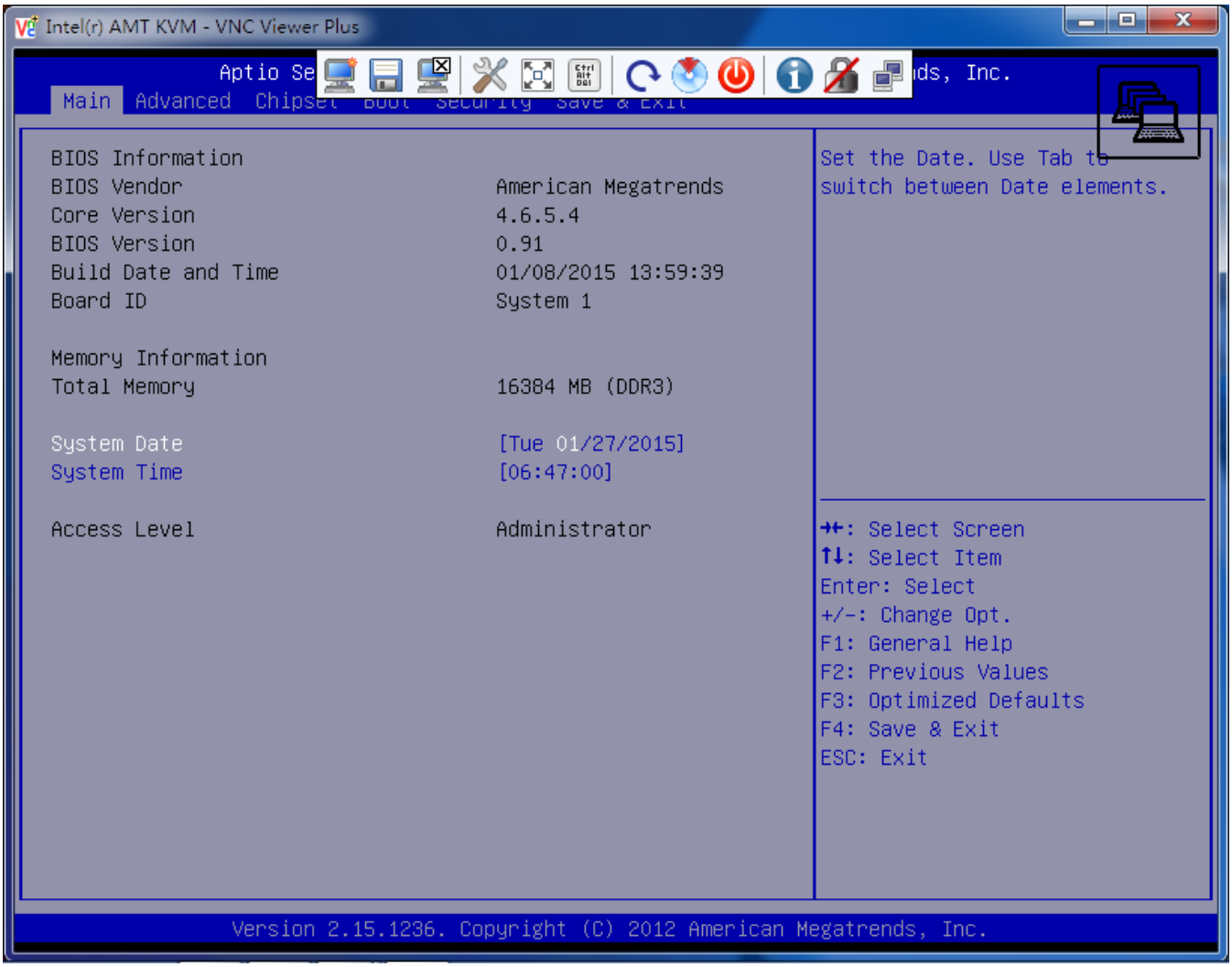
5. Enter your username and password. The default username is admin, while the password

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is the one specified during ME setup.



6. After login, the system screen appears.



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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 55°C.
5. When installing/mounting or uninstalling/removing equipment; or when removal of the chassis lid required for user servicing:
   - Turn off power and unplug any power cords/cables, and
   - Reinstall the chassis lid before restoring power.
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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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.
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.
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.

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Getting Service

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

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