

BIOS Setup

(for Cavium Platform)

User's Guide

Rev.1.0

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Chapter 1 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the EFI on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the key during the POST when the power is turned on.



- BIOS flashing is potentially risky, if you do not encounter problems of using the current BIOS version, it is recommended that you don't flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the **Exit** section in this chapter or introductions of the battery/clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)

BIOS Setup Program Function Keys

<←><→>	Move the selection bar to select the screen
<↑><↓>	Move the selection bar to select an item
<+>	Increase the numeric value or make changes
<->	Decrease the numeric value or make changes
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<F1>	Show descriptions of general help
<F3>	Restore the previous BIOS settings for the current submenus
<F9>	Load the Optimized BIOS default settings for the current submenus
<F10>	Save all the changes and exit the BIOS Setup program

■ Main

This setup page includes all the items in standard compatible BIOS.

■ Advanced

This setup page includes all the items of AMI BIOS special enhanced features.

(ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

■ Security

Change, set, or disable supervisor and user password. Configuration supervisor password allows you to restrict access to the system and BIOS Setup.

A supervisor password allows you to make changes in BIOS Setup.

A user password only allows you to view the BIOS settings but not to make changes.

■ Boot

This setup page provides items for configuration of boot sequence.

■ Save & Exit

Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

■ Server Management

Server additional features enabled/disabled setup menus.

1-1 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter other sub-menu.

Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.



- When the system is not stable as usual, select the **Restore Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.

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Main Advanced Security Boot Save & Exit Server Mgmt

BIOS Information

Access Level	Administrator
Project Name	MT60-SC0
Project Version	T26
Build Date and Time	12/30/2016 17:19:28

BMC Information

BMC Firmware Version	07.69
SDR Version	00.04
FRU Version	01.00

CPLD Information

MB CPLD Version	R08
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Processor Information

CPU 0 : CN8890-1900BG2601-AAP-Y-G	
CPU 1 : CN8890-1900BG2601-AAP-Y-G	
Max CPU Speed	1900 MHz

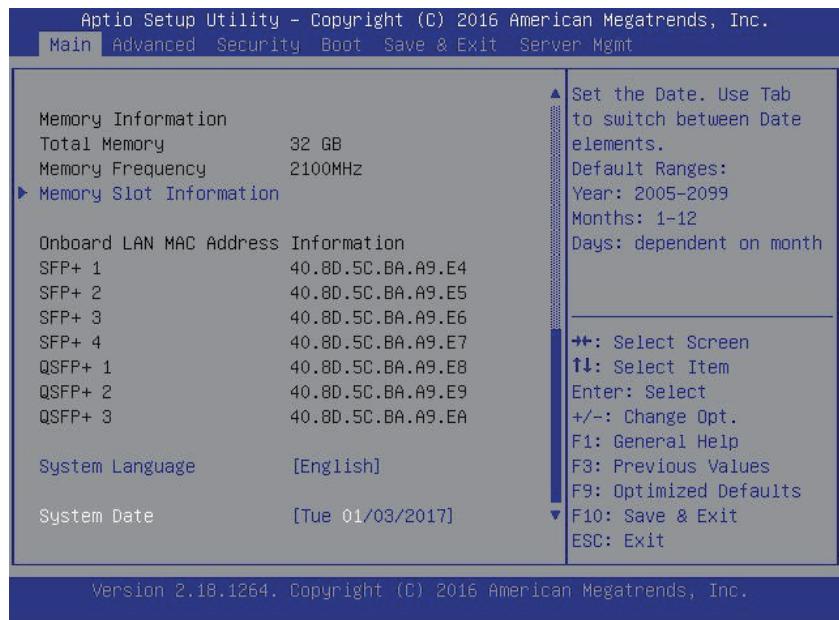
Memory Slot Information.

▲

▼

++: Select Screen
↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Previous Values
F9: Optimized Defaults
▼ F10: Save & Exit
ESC: Exit

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☞ **BIOS Information**

☞ **Access Level**

Display the privileges level information.

☞ **Project Name** (Note)

Display the project name information.

☞ **Project Version**

Display version number of the BIOS setup utility.

☞ **BIOS Build Date and Time**

Displays the date and time when the BIOS setup utility was created.

☞ **BMC Information**

☞ **BMC Firmware Version**

Display BMC firmware version information.

☞ **SDR Version**

Display the SDR version information.

☞ **FRU Version**

Display the FRU version information.

☞ **CPLD Information**

☞ **MB CPLD Version**

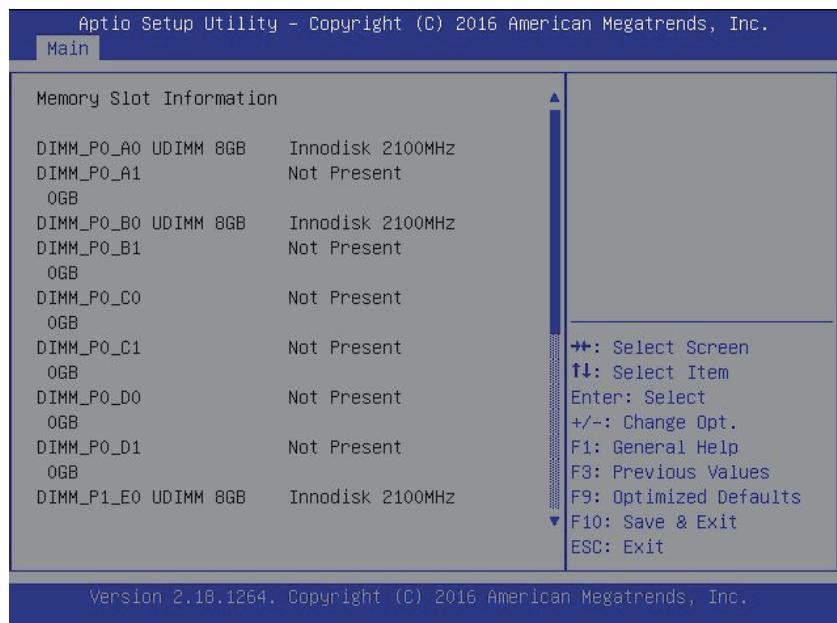
Display the CPLD version information.

(Note) This parameter will be variable depends on select models.

- ☛ **Processor Configuration**
- ☛ **CPU 0/1/MAX CPU Speed/ICPU Data Cache/CPU Instruction Cache**
Displays the technical specifications for the installed processor.
- ☛ **Memory Information**
- ☛ **Total Memory/Memory Frequency**
Displays the technical specifications for the installed memory.
- ☛ **Onboard LAN MAC Address Information**^(Note)
Display onboard LAN device MAC address.
- ☛ **System Language**
Select preference language.
Option available: English.
- ☛ **System Date**
Set the date following the weekday-month-day- year format.
- ☛ **System Time**
Set the system time following the hour-minute- second format.

(Note) This parameter will be variable depends on select models.

1-1-1 Memory Slot Information

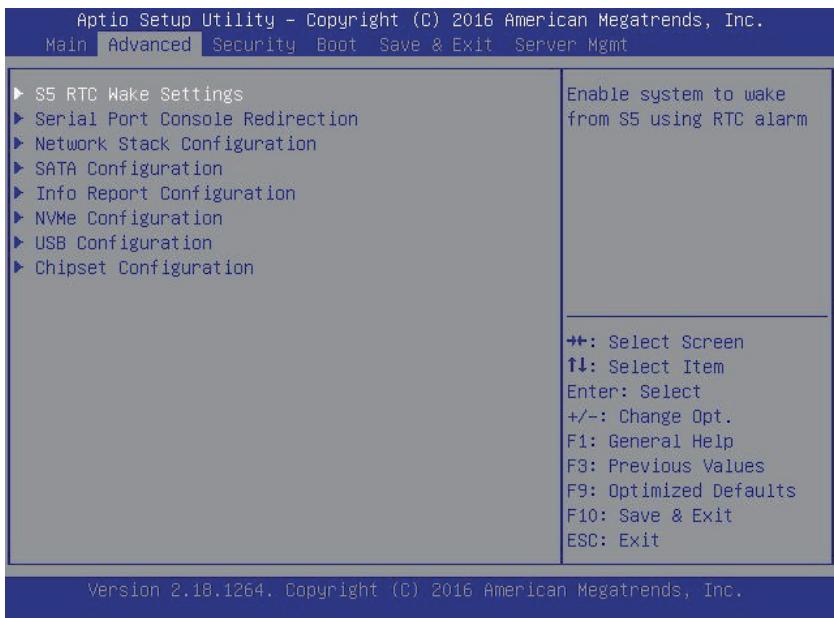


Memory Slot Information

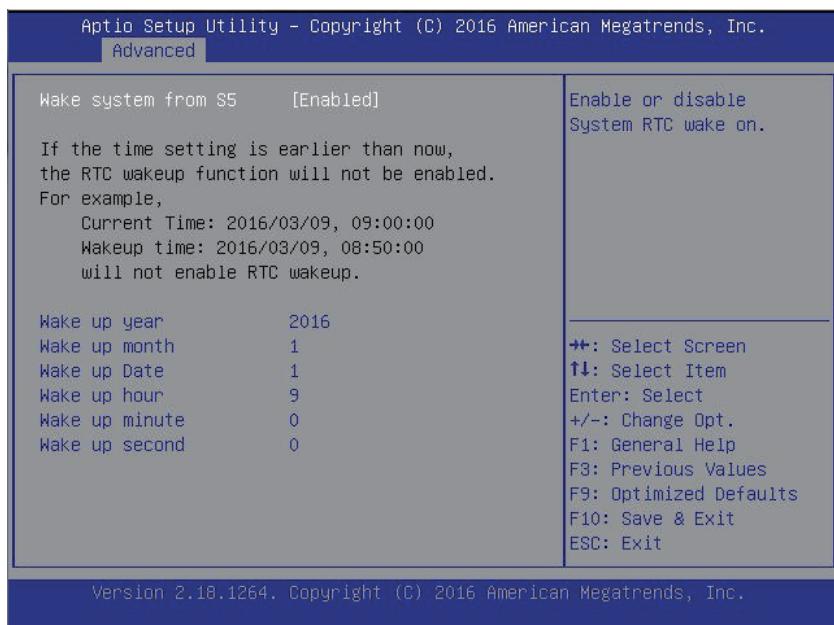
Display the installed memory technical specification.

1-2 Advanced Menu

The Advanced menu display submenu options for configuring the function of various hardware components. Select a submenu item, then press Enter to access the related submenu screen.



1-2-1 S5 RTC Wake Settings



☛ Wake system from S5

Enable or disable System wake on alarm event. When enabled, System will wake on the hr:min:sec specified. Default setting is **Disabled**.

☛ Wake up year^(Note)

Press <+> and <-> to define the wake up year.

☛ Wake up month^(Note)

Press <+> and <-> to define the wake up month.

☛ Wake up Date^(Note)

Press <+> and <-> to define the wake up date.

☛ Wake up hour^(Note)

Press <+> and <-> to define the wake up hour.

☛ Wake up minute^(Note)

Press <+> and <-> to define the wake up minute.

☛ Wake up second^(Note)

Press <+> and <-> to define the wake up second.

(Note) This item appears when **Wake system from S5** is set to **Enabled**.

1-2-2 Serial Port Console Redirection

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Advanced

COM1 / SOL	Console Redirection Enabled	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.
▶ Console Redirection Settings		
Serial Port for Out-of-Band Management/ Emergency Management Services (EMS)		
▶ Console Redirection Settings		
POST Debug Message	[Enabled]	 ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

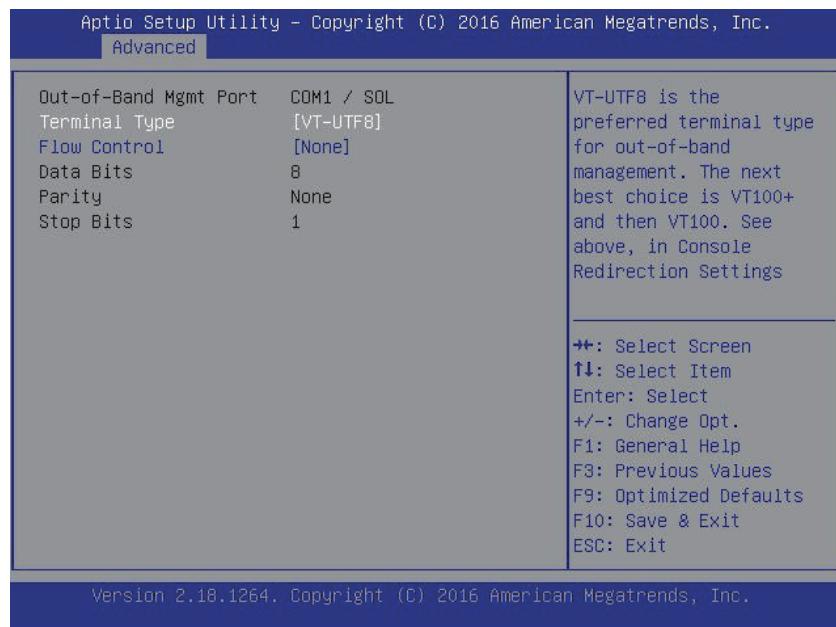
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Advanced

Out-of-Band Mgmt Port	COM1 / SOL	VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. See above, in Console Redirection Settings
Terminal Type	[VT-UTF8]	
Flow Control	[None]	
Data Bits	8	
Parity	None	
Stop Bits	1	
		 ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

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☞ COM1/SOL/Serial Port for Out-of Band Management/Windows Emergency Management Service (EMS)

☞ Console Redirection (Note)

Select whether to enable console redirection for specified device. Console redirection enables users to manage the system from a remote location.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Console Redirection Settings

☞ Terminal Type

Select a terminal type to be used for console redirection.

Options available: VT100/VT100+/ANSI /VT-UTF8.

☞ Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

Options available: None/Hardware RTS/CTS.

☞ Bits per second

Select the baud rate for console redirection.

Options available: 9600/19200/57600/115200.

☞ Data Bits

Select the data bits for console redirection.

Options available: 7/8.

(Note) Advanced items prompt when this item is defined.

Parity

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

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

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

Mark: parity bit is always 1. Space: Parity bit is always 0.

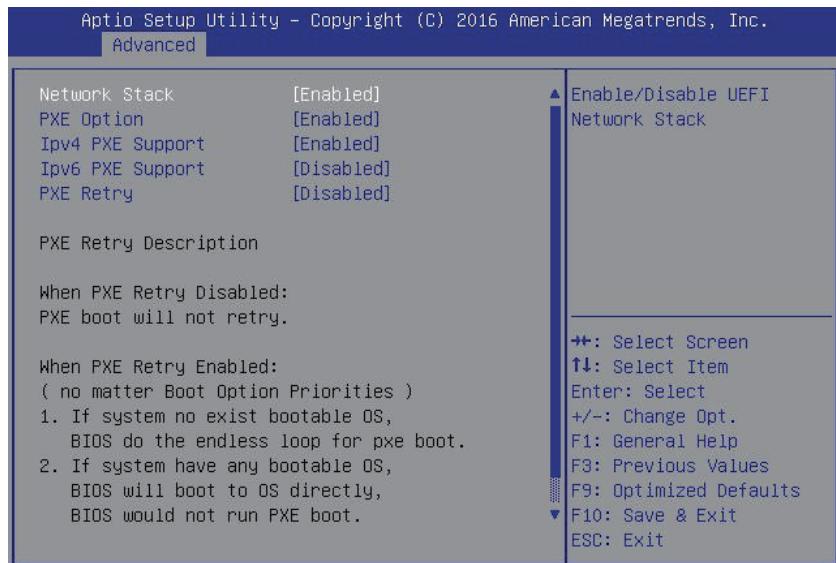
Mark and Space Parity do not allow for error detection.

Options available: None/Even/Odd/Mark/Space.

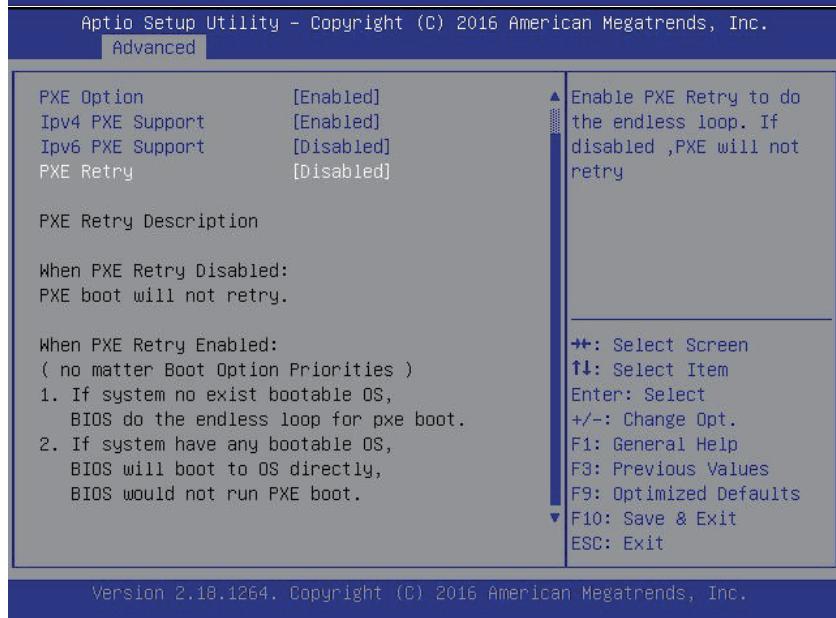
Stop Bits

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.

1-2-3 Network Stack



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☛ **Network stack**

Enable/Disable UEFI network stack.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☛ **PXE Option**

Enable/Disable PXE option.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☛ **Ipv4 PXE Support**

Enable/Disable Ipv4 PXE feature.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☛ **Ipv6 PXE Support**

Enable/Disable Ipv6 PXE feature.

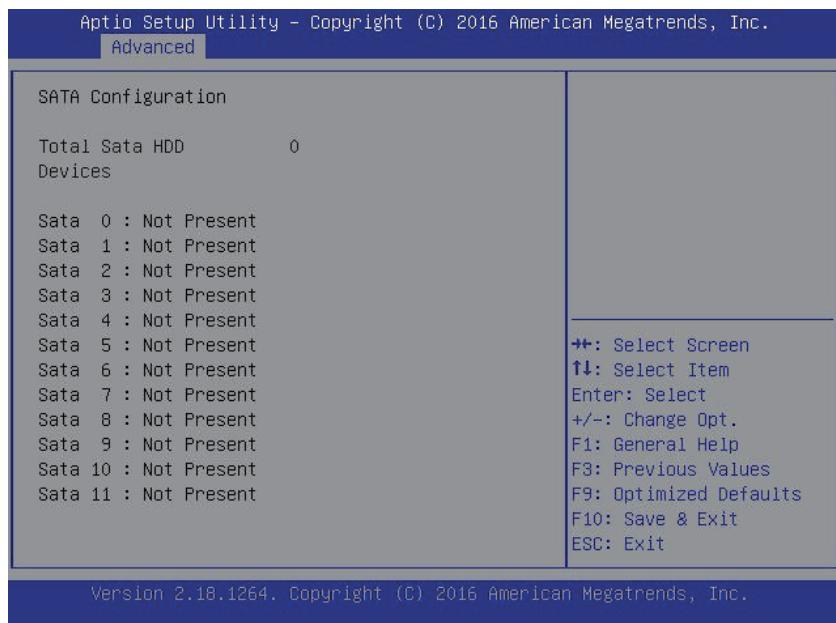
Options available: Enabled/Disabled. Default setting is **Disabled**.

☛ **PXE Retry**

Enable/Disable PXE Retry.

Options available: Enabled/Disabled. Default setting is **Disabled**.

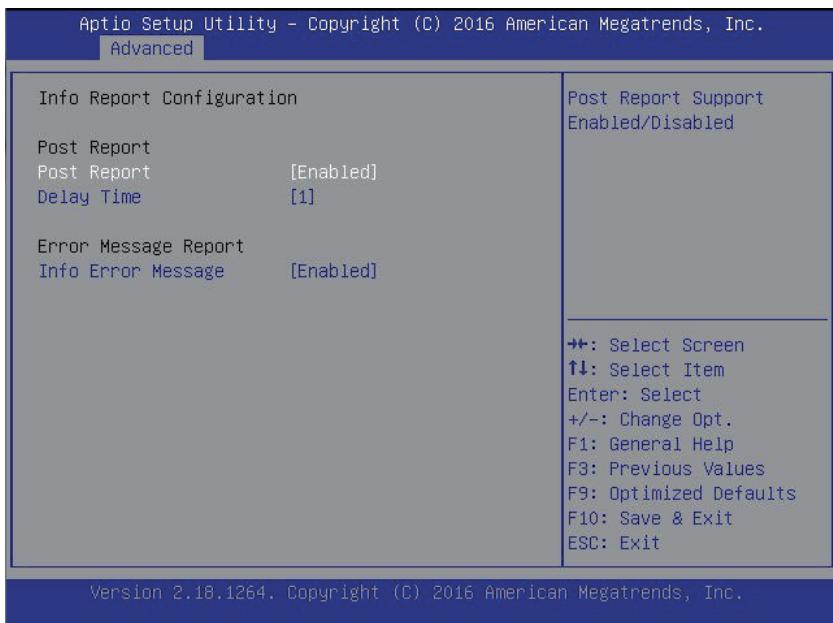
1-2-4 SATA Configuration



☞ SATA Configuration

The category shows Serial ATA of hard disk that are installed in the system. System will automatically detect HDD type.

1-2-5 Info Report Configuration



☞ Info Report Configuration

☞ Post Report

Enable/Disable Post Report support.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Delay Time

Press <+> / <-> keys to increase or decrease the desired values.

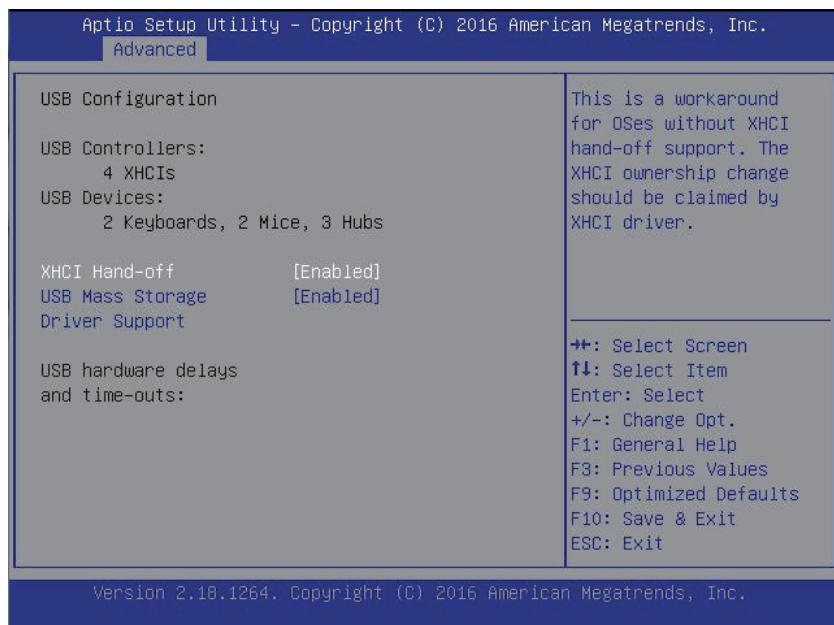
☞ Error Message Report

☞ Info Error Message

Enable/Disable Info Error Message support.

Options available: Enabled/Disabled. Default setting is **Enabled**.

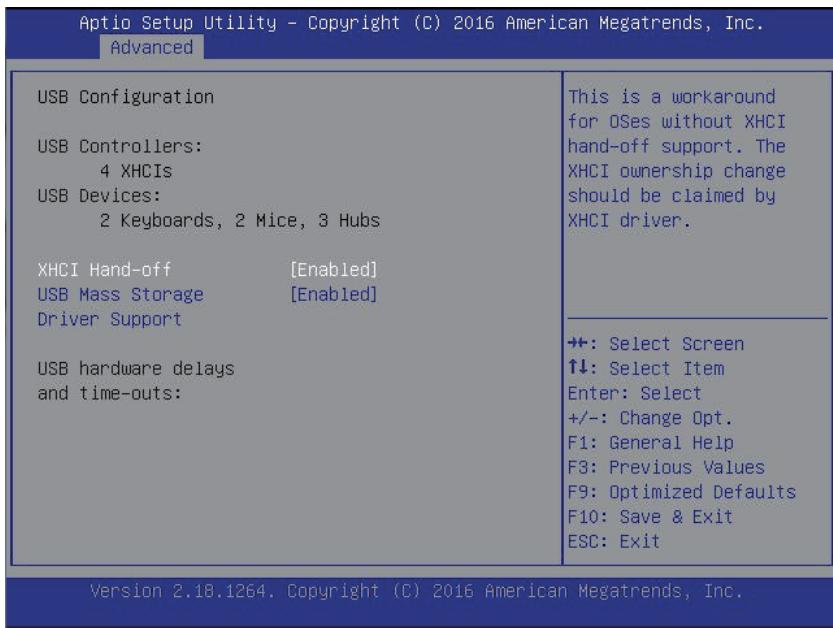
1-2-6 NVME Configuration



☞ NVME Configuraiton

This page shows NVMe device that are installed in the system. System will detect automatically. Functions are available on selected models.

1-2-7 USB Configuration



☞ USB Configuration

☞ XHCI Hand-off

Enable/Disable XHCI (USB 3.0) Hand-off function.

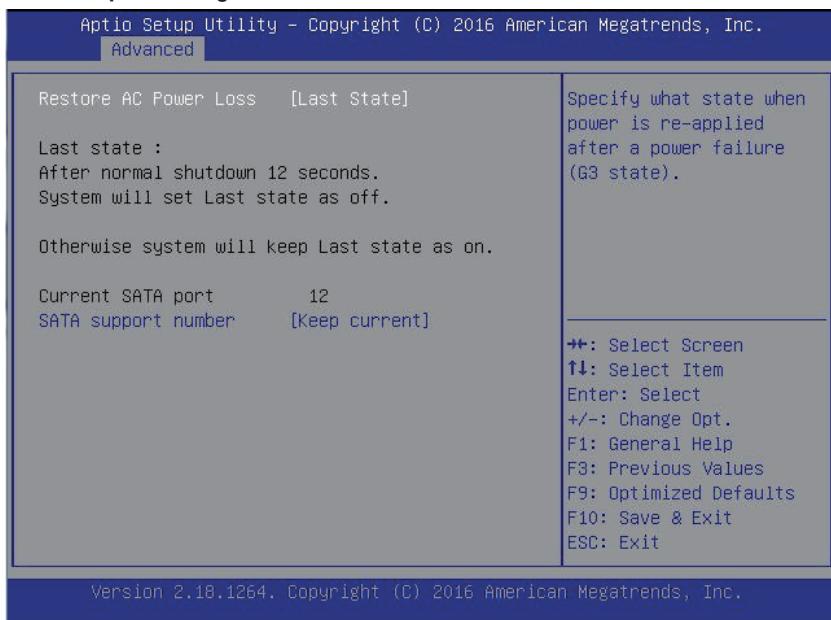
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ USB Mass Storage Driver Support

Enable/Disable USB Mass Storage Drive.

Options available: Enabled/Disabled. Default setting is **Enabled**.

1-2-8 Chipset Configuration



☞ **Restore on AC Power Loss** (Note1)

Defines the power state to resume to after a system shutdown that is due to an interruption in AC power. When set to Last State, the system will return to the active power state prior to shutdown. When set to Stay Off, the system remains off after power shutdown.

Options available: Last State/Stay Off/Power On. The default setting depends on the BMC setting.

☞ **SATA Support number** (Note2)

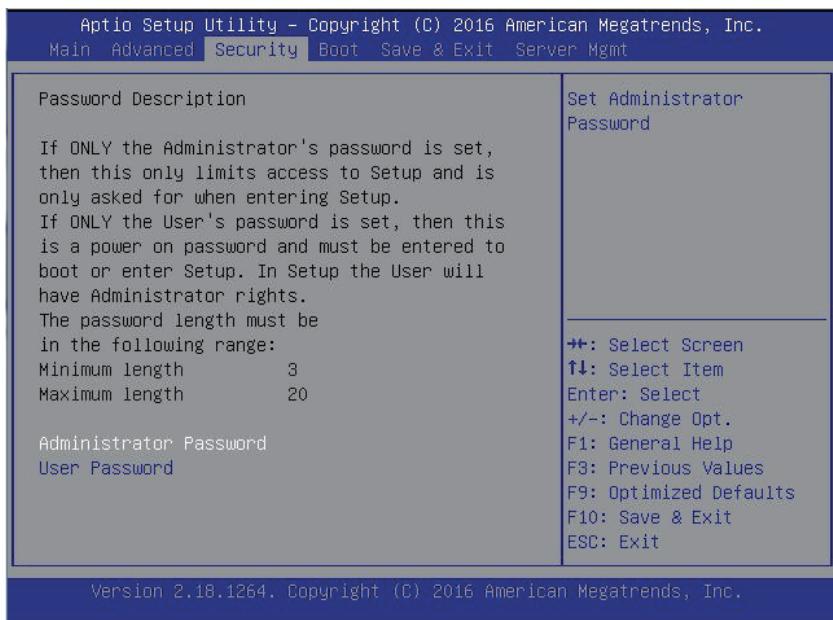
Option available: Keep current/4 SATA/12 SATA/24 SATA/32 SATA.

(Note1) When the power policy is controlled by BMC, please wait for 17 seconds for BMC to save the last power state.

(Note2) Functions are available on selected models.

1-3 Security Menu

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.



There are two types of passwords that you can set:

- Administrator Password

Entering this password will allow the user to access and change all settings in the Setup Utility.

- User Password

Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.

☞ Administrator Password

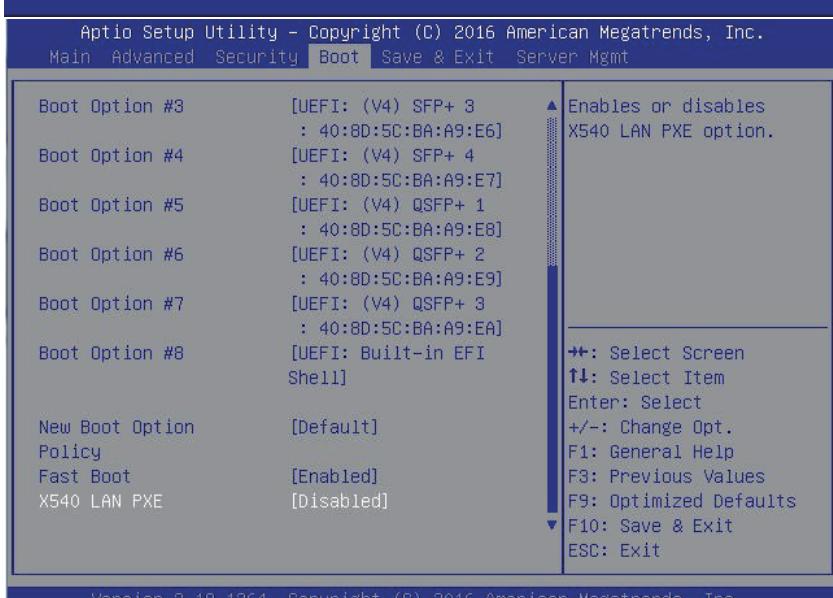
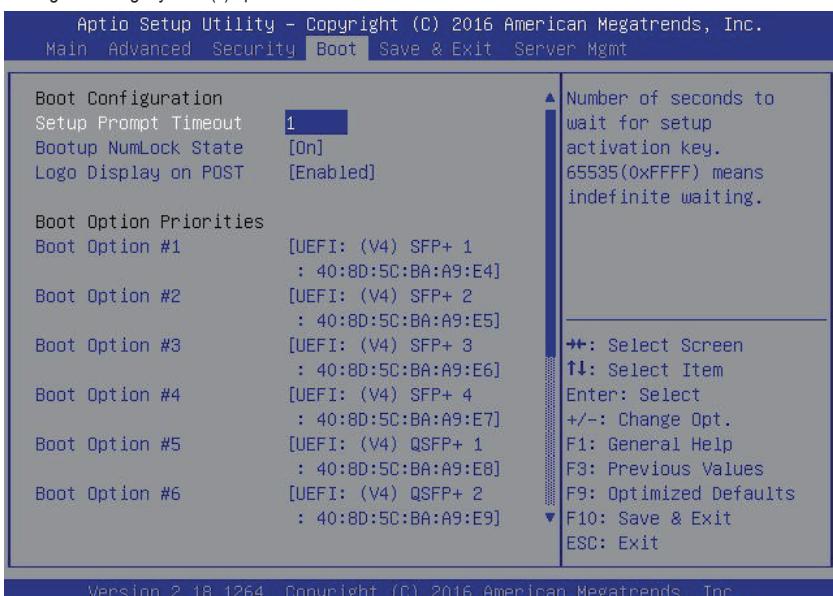
Press Enter to configure the Administrator password.

☞ User Password

Press Enter to configure the user password.

1-4 Boot Menu

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error message if the legacy drive(s) specified is not bootable.



☞ Boot Configuration

☞ Setup Prompt Timeout

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

Press the numeric keys to input the desired value.

☞ Bootup NumLock State

Enable or Disable Bootup NumLock function.

Options available: On/Off. Default setting is **On**.

☞ Logo Display on POST

Enables or disables showing the logo during POST.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Boot Priority Order

☞ Boot Option #1/#2/#3/#4/#5/#6/#7/#8

Press Enter to configure the boot priority.

By default, the server searches for boot devices in the following sequence:

1. UEFI device.
2. Hard drive.
3. Removable device.
4. Hard drive.
5. Network device.
6. Built-in UEFI device
7. Built-in UEFI device
8. Built-in UEFI device

☞ New Boot Option Policy

Controls the placement of newly detected UEFI boot options.

Options available: Default/Place First/Place Last. Default setting is **Default**.

☞ Fast Boot

Enable/Disable the Fast boot feature.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ X540 LAN PXE (Note)

Enable/Disable LAN PXE option.

Options available: Enabled/Disabled. Default setting is **Disabled**.

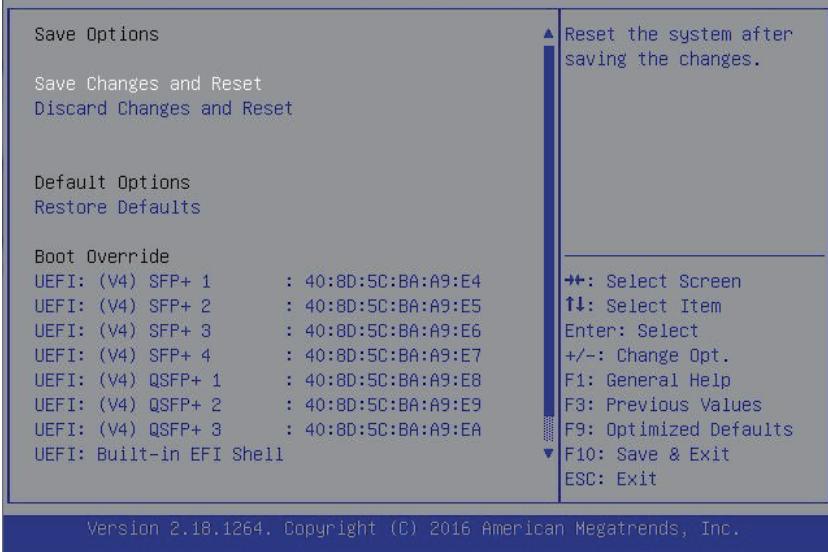
(Note) This parameter will be variable depends on select models.

1-5 Exit Menu

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press **Enter**.

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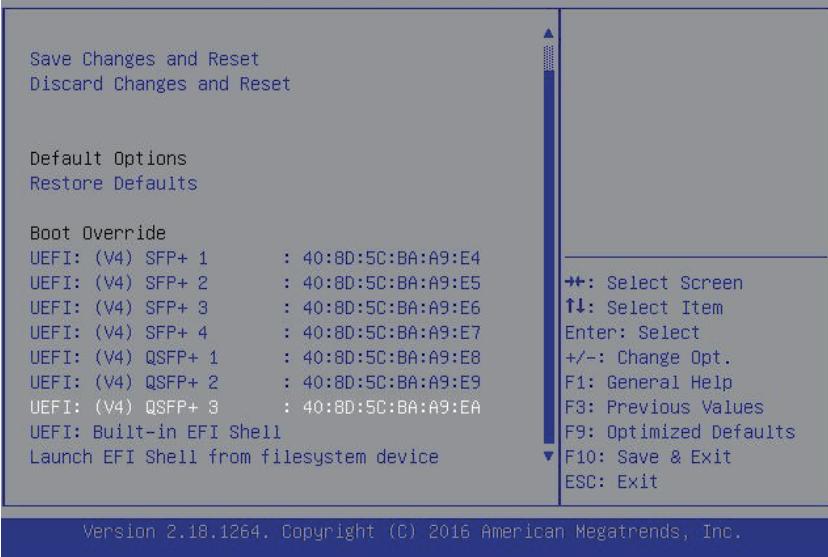
Main Advanced Security Boot Save & Exit Server Mgmt



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Main Advanced Security Boot Save & Exit Server Mgmt



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☞ **SaveOptions**

☞ **Save Changes and Reset**

Saves changes made and reset the system.

Options available: Yes/No.

☞ **Discard Changes and Reset**

Discards changes made and reset the system.

Options available: Yes/No.

☞ **Default Options**

☞ **Restore Defaults**

Loads the default settings for all BIOS setup parameters. Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly.

Options available: Yes/No.

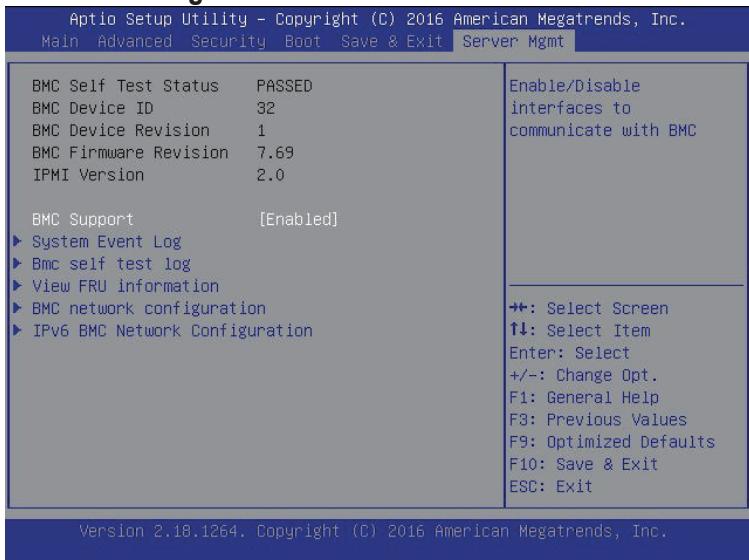
☞ **Boot Override**

Allows you to select a device to boot immediately. Press <Enter> on the device you select and select Yes to confirm. Your system will restart automatically and boot from that device.

☞ **UEFI: Built-in in EFI Shell**

Press <Enter> on this item to Launch EFI Shell from filesystem device.

1-6 Server Management Menu



☞ **BMC Self Test Status**

Display BMC test status.

☞ **BMC Device ID**

Display BMC device ID information.

☞ **BMC Device Reversion**

Display the BMC device version information.

☞ **BMC Firmware Reversion**

Display BMC firmware version information.

☞ **IPMI Version**

Display the IPMI version information.

☞ **BMC Support**

Enable/Disable interface to communicate with BMC

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **System Event Log**

Press [Enter] for configuration of advanced items.

☞ **BMC Self Test Log**

Press [Enter] for configuration of advanced items.

☞ **View FRU Information**

Press [Enter] to view the advanced items.

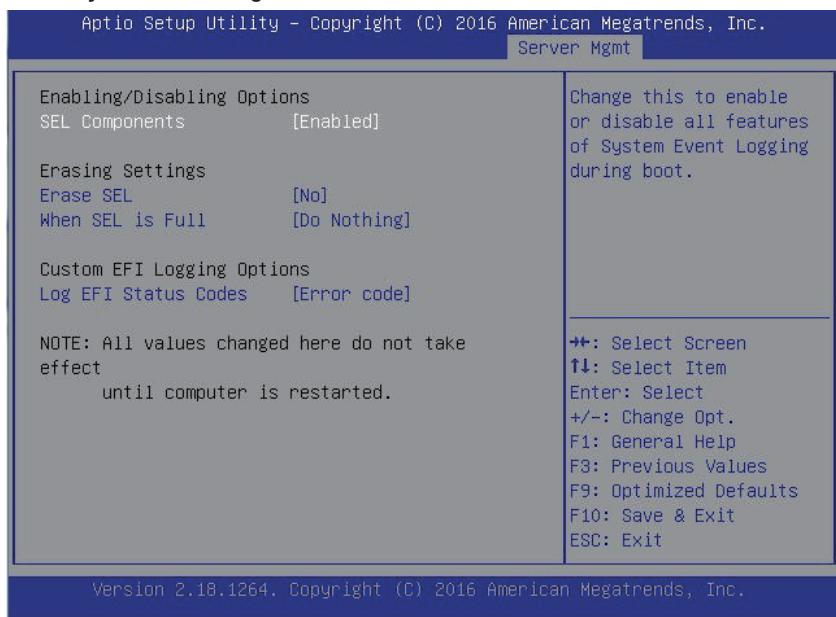
☞ **BMC network configuration**

Press [Enter] for configuration of advanced items.

☞ **IPv6 BMC network configuration**

Press [Enter] for configuration of advanced items.

1-6-1 System Event Log



☞ Enabling/Disabling Options

☞ SEL Components

Change this to enable or disable all features of System Event Logging during boot.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Erasing Settings

☞ Erasing SEL

Choose options for erasing SEL.

Options available: No/Yes, On next reset/Yes, On every reset. Default setting is **No**.

☞ When SEL is Full

Choose options for reactions to a full SEL.

Options available: Do Nothing/Erase Immediately. Default setting is **Do Nothing**.

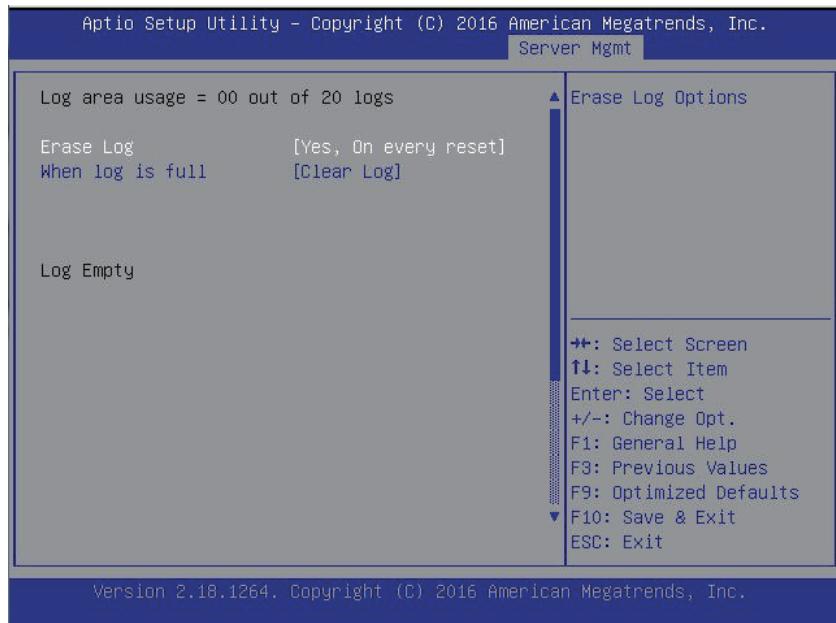
☞ Custom EFI Logging Options

☞ Log EFI Status Codes

Enable/Disable the logging of EFI Status Codes (if not already converted to legacy).

Options available: Disabled/Both/Error code/Progress code. Default setting is **Error code**.

1-6-2 BMC Self Test Log



☞ Erase Log

Choose options for erasing log.

Options available: No/Yes, On next reset/Yes, On every reset. Default setting is **No**.

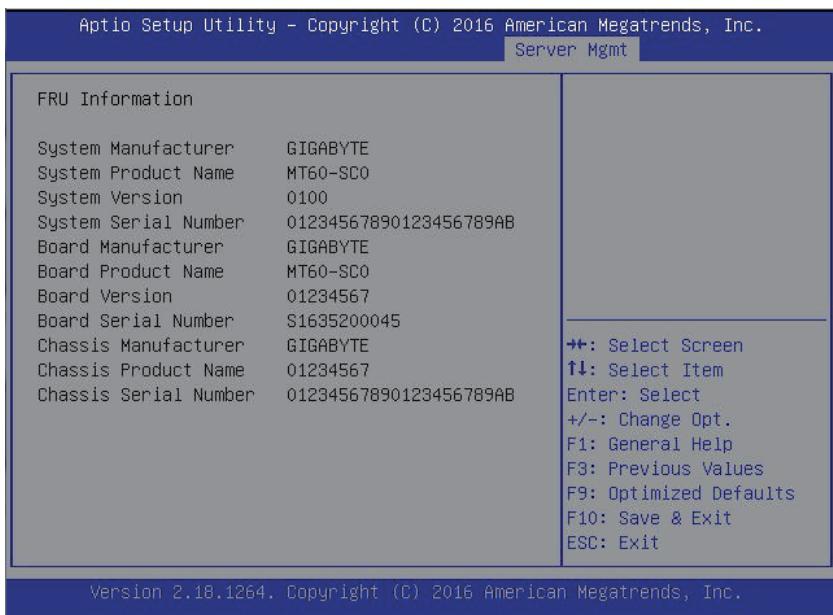
☞ When Log is Full

Choose options for reactions to a full log.

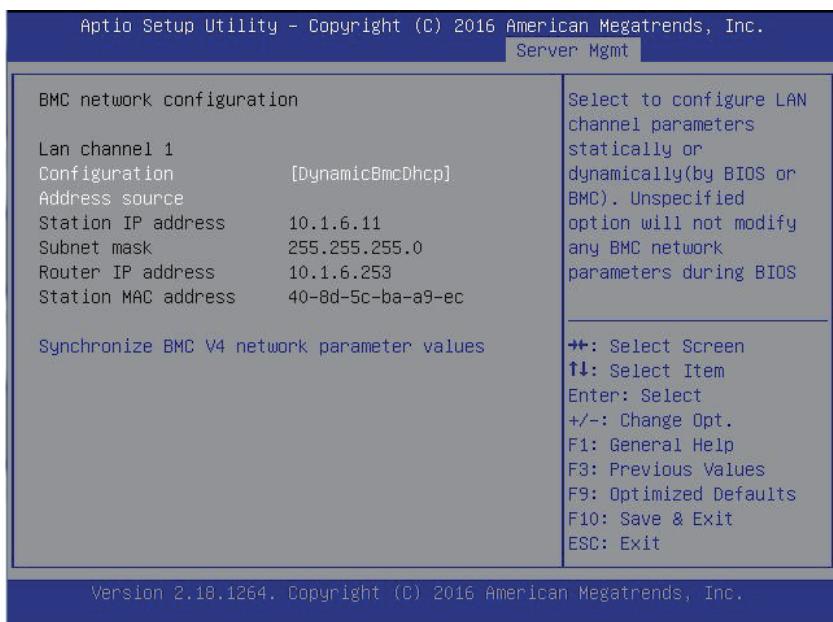
Options available: Do Nothing/Clear Log. Default setting is **Clear Log**.

1-6-3 View FRU Information

The FRU page is a simple display page for basic system ID information, as well as System product information. Items on this window are non-configurable.



1-6-4 BMC network configuration



☞ BMC network configuration

☞ Lan Channel 1

☞ Configuration Address source

Select to configure LAN channel parameters statically or dynamically (DHCP). Do nothing option will not modify any BMC network parameters during BIOS phase.

Options available: Unspecified/Static/DynamicBmcDhcp. Default setting is **DynamicBmcDhcp**.

☞ Station IP Address

Display IP Address information.

☞ Subnet mask

Display Subnet Mask information.

Please note that the IP address must be in three digits, for example, 192.168.000.001.

☞ Station MAC Address

Display the MAC Address information.

☞ Router IP address

Display the Router IP Address information.

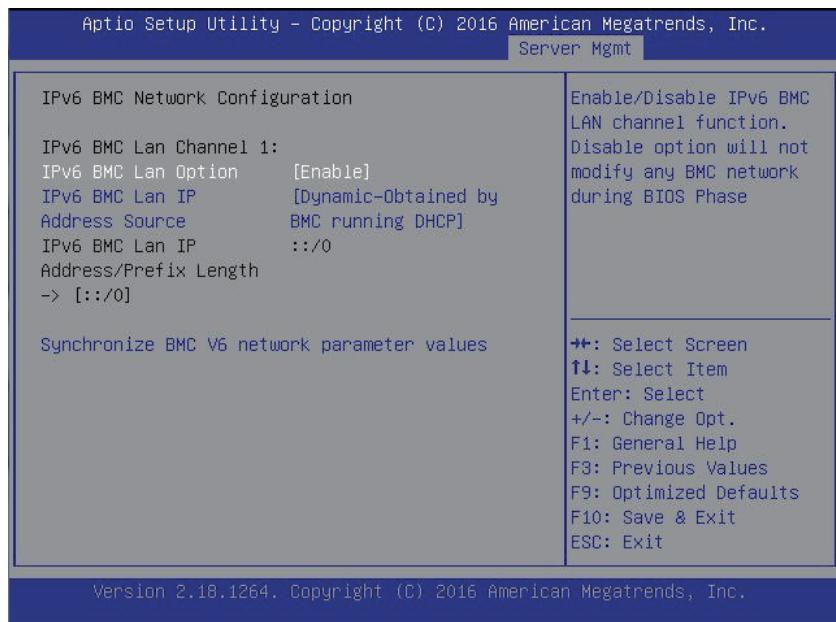
☞ Router MAC address

Display the Router MAC Address information.

☞ Synchronize BMC V4 network parameter values

Press [Enter] to start synchronization.

1-6-5 IPv6 BMC network configuration



☞ IPv6 BMC network configuration

☞ IPv6 Lan Channel 1

☞ IPv6 BMC Lan Option

Option available: Unspecified/Enabled/Disabled. Default setting is Enabled.

☞ IPv6 BMC LAN IP Address Source

Select to configure IPv6 BMC LAN channel parameters statically or dynamically (DHCP).

Options available: Unspecified/Static/Dynamic-Obtained by BMC running DHCP.

Default setting is Dynamic-Obtained by BMC running DHCP.

☞ IPv6 BMC Lan IP Address/Prefix Length

DisplayIPv6 BMC Lan IP Address/Prefix Length information.

☞ Synchronize BMC V6 network parameter values

Press [Enter] to start synchronization.