

Hitachi Compute Blade 2500 Series

UEFI Setup Guide

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Preface

This document describes how to use the Compute Blade 2500 series.

This preface includes the following information:

Notice: The use of Compute Blade 2500 series and all other Hitachi Data Systems products is governed by the terms of your agreement(s) with Hitachi Data Systems.

- ☐ [Intended Audience](#)
- ☐ [Product Version](#)
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- ☐ [Document Organization](#)
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Intended Audience

This document is intended for the personnel who are involved in planning, managing, and performing the tasks to prepare your site for Compute Blade installation and to install the same.

This document assumes the following:

- The reader has a background in hardware installation of computer systems.
- The reader is familiar with the location where the Compute Blade will be installed, including knowledge of physical characteristics, power systems and specifications, and environmental specifications.

Product Version

This document revision applies to support for CB2500 Web Console Client.

Release Notes

Read the release notes before installing and using this product. They may contain requirements or restrictions that are not fully described in this document or updates or corrections to this document.

Document Organization

The table below provides an overview of the contents and organization of this document. Click the chapter title in the left column to go to that chapter. The first page of each chapter provides links to the sections in that chapter.

| Chapter | Description |
|---|---|
| Chapter 1, UEFI Overview | Describes the types of UEFI settings for server blades. |
| Chapter 2, Before Setting Up the UEFI | Describes how to access server blades before you set up the UEFI, UEFI setting preparations, and the key operations and utility setting values used when you specify disk array settings. |
| Chapter 3, Basic UEFI Settings for CB 520X B1/B2/B3 | Describes the basic UEFI settings for CB 520X B1/B2/B3. |
| Chapter 4, Basic UEFI Settings for CB 520H B3/B4 | Describes the basic UEFI settings for CB 520H B3/B4. |
| Chapter 5, LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility | Describes how to specify disk array settings by using the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility. |
| Chapter 6, PXE Boot Settings | Describes PXE boot settings. |
| Chapter 7, iSCSI Settings | Describes iSCSI settings. |

| Chapter | Description |
|---|--|
| Chapter 8, Fibre Channel Adapter Settings | Describes the fibre channel adapter settings. |
| Chapter 9, Hardware memory dump settings | Describes hardware memory dump settings. |
| Appendix A, About UEFI items whose setting values are fixed | Describes UEFI items whose setting values are fixed. |
| Appendix B, Software License Information | Describes software license information. |

Referenced Documents

- Hitachi Compute Blade 2500 Series Getting Started Guide, MK-99CB2500003
- Hitachi Compute Blade 2500 Series Management Module User Guide, MK-99CB2500004
- Hitachi Compute Blade 2500 Series Logical Partitioning Manager User Guide, MK-99CB2500006
- Hitachi Compute Blade 2500 Series MIB User Guide, MK-99CB2500007
- Hitachi Compute Blade Emulex Adapter User's Guide for Hardware
- Hitachi Gigabit Fibre Channel Adapter USER'S GUIDE (BIOS/EFI Edition)
- Server Installation and Monitoring Tool User's Guide Internal Storage Monitoring Functions

Document Conventions

The term "Compute Blade" refers to all the models of the Compute Blade, unless otherwise noted.





The Hitachi Virtualization Manager (HVM) name has been changed to Hitachi logical partitioning manager (LPAR manager, or LP). If you are using HVM based logical partitioning feature, substitute references to Hitachi logical partitioning manager (LPAR manager, or LP) with HVM.

This document uses the following typographic conventions:

| Convention | Description |
|--------------------------|--|
| Regular text bold | In text: keyboard key, parameter name, property name, hardware labels, hardware button, hardware switch In a procedure: user interface item |
| <i>Italic</i> | Variable, emphasis, reference to document title, called-out term |
| Screen text | Command name and option, drive name, file name, folder name, directory name, code, file content, system and application output, user input |

| Convention | Description |
|-----------------------|--|
| < > (angle brackets) | Variable (used when italic is not enough to identify variable) |
| [] (square brackets) | Optional value |
| { } (braces) | Required or expected value |
| (vertical bar) | Choice between two or more options or arguments. |

This document uses the following icons to draw attention to information:

| Icon | Meaning | Description |
|--|---------|--|
|  WARNING | WARNING | This indicates the presence of a potential risk that might cause death or severe injury. |
|  CAUTION | CAUTION | This indicates the presence of a potential risk that might cause relatively mild or moderate injury. |
| NOTICE | NOTICE | This indicates the presence of a potential risk that might cause severe damage to the equipment and/or damage to surrounding properties. |
|  Note | Note | Calls attention to important or additional information. |
|  Tip | Tip | This indicates advice on how to make the best use of the equipment. |

Conventions for storage capacity values

Physical storage capacity values (for example, disk drive capacity) are calculated based on the following values:

| Physical capacity unit | Value |
|------------------------|-----------------------------|
| 1 kilobyte (KB) | 1,000 (10^3) bytes |
| 1 megabyte (MB) | 1,000 KB or $1,000^2$ bytes |
| 1 gigabyte (GB) | 1,000 MB or $1,000^3$ bytes |
| 1 terabyte (TB) | 1,000 GB or $1,000^4$ bytes |
| 1 petabyte (PB) | 1,000 TB or $1,000^5$ bytes |
| 1 exabyte (EB) | 1,000 PB or $1,000^6$ bytes |

Logical storage capacity values (for example, logical device capacity) are calculated based on the following values:

| Logical capacity unit | Value |
|-----------------------|-----------|
| 1 block | 512 bytes |

| Logical capacity unit | Value |
|-----------------------|-----------------------------|
| 1 KB | 1,024 (2^{10}) bytes |
| 1 MB | 1,024 KB or $1,024^2$ bytes |
| 1 GB | 1,024 MB or $1,024^3$ bytes |
| 1 TB | 1,024 GB or $1,024^4$ bytes |
| 1 PB | 1,024 TB or $1,024^5$ bytes |
| 1 EB | 1,024 PB or $1,024^6$ bytes |

Getting help

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Comments

Please send us your comments on this document: doc.comments@hds.com. Include the document title and number including the revision level (for example, -07), and refer to specific sections and paragraphs whenever possible. All comments become the property of Hitachi Data Systems Corporation.

Thank you!

UEFI Overview

This chapter describes the types of UEFI settings for server blades.

- [Types of UEFI settings for server blades](#)

Types of UEFI settings for server blades

There are five types of UEFI settings for server blades, as follows:

Basic settings for server blades

Using these settings, you can view the basic information about a server blade system, and view the setting items.

In addition, you can specify initial settings (for example for processors and DIMMs in the server blade), OS boot path settings, and whether on-board devices are enabled or disabled.

You can change settings, such as disk array settings and boot options, to suit your operating environment.

The UEFI can be used without changing the default settings.

Disk array settings

Using these settings you can set up a disk array (RAID) in a server blade. These settings enable you to view information about physical and logical drives, and to create a logical drive.

To specify disk array settings, use the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility.

Emulex PXE settings

Emulex PXE is a mechanism for starting a system by loading an OS image and an installer over the network.

For the Emulex PXE settings, specify settings needed to use an OS by a PXE boot from a server blade.

iSCSI settings

iSCSI is a protocol for transmitting data over IP networks, for communication between data storage devices and computers.

For the iSCSI settings, specify settings needed to use an OS by an iSCSI boot from a server blade.

Fibre Channel adapter settings

The fibre channel adapter is a board for transferring data to connect with external storage via a Fibre Channel switch. The fibre channel adapter is installed on an I/O board module.

Related topics

- [Chapter 3, Basic UEFI Settings for CB 520X B1/B2/B3 on page 3-1](#)
- [Chapter 4, Basic UEFI Settings for CB 520H B3/B4 on page 4-1](#)
- [Chapter 5, LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility on page 5-1](#)
- [Chapter 6, PXE Boot Settings on page 6-1](#)
- [Chapter 7, iSCSI Settings on page 7-1](#)
- [Chapter 8, Fibre Channel Adapter Settings on page 8-1](#)

Before Setting Up the UEFI

This chapter describes how to access server blades before you set up the UEFI, UEFI setting preparations, and the key operations and utility setting values used when you specify disk array settings.

- [Accessing the server blade](#)
- [Preparing to specify UEFI settings](#)
- [Operations of the utility](#)

Accessing the server blade

Access the server blade to set up the UEFI. To access the server blade, use the remote console.

The following explains how to access a server by using the remote console:

1. Connect to the web console.
 - **Using the web console from the web browser**
Start a browser on the system console, and enter the URL of the Web console for the management module in the address bar of the browser.

Table 2-1 Factory default settings

| Item | Factory default |
|-------------------------------------|----------------------|
| IP address of the management module | 192.168.0.1 |
| Web console URL | https://192.168.0.1/ |



Tip:

- The above URL example uses the default setting. If you use the default settings, you can omit the port number and enter only the IP address. If you changed the IP address and port number of the management module, enter a URL accordingly.
- Use the following URL format:
http://<IP-address>:<port-number> or
https://<IP-address>:<port-number>
- The default port numbers are as follows:
http: 80
https: 443

- **Using the Web Console Client**
Start a Web Console Client on the system console, and enter the IP address of the management module and the port number to connect with https, and click the connect button.

Table 2-2 Factory default settings

| Item | Factory default |
|-------------------------------------|-----------------|
| IP address of the management module | 192.168.0.1 |
| Port number to connect with https | 443 |

2. Log in to the Web console of the management module.
3. The initial settings (when shipped) are set to the user ID and password for the system administrator. Enter the values in the following table.

Table 2-3 Initial settings (when shipped): The user ID and password of the system administrator

| Item | Initial settings (when shipped) |
|----------|---------------------------------|
| User ID | administrator |
| Password | password |

4. In the **Resources** tab of the menu window, from the menu tree, select a target server blade.
5. From the **Server Blade Action** pull-down menu at the lower right in the **Condition** tab, select **Start remote console**.
The **Remote console** window appears.



Tip:

- When you start up the remote console, a warning message might appear. For details, see the *Hitachi Compute Blade 2500 Series Getting Started Guide*.
- When you use the Web Console Client and click **Start Remote Console**, the login window of server blade Web console is displayed. For login procedure, see the *Hitachi Compute Blade 2500 Series Getting Started Guide*.

The system console can connect to the server blade when the remote console starts up.

Then, start up the UEFI setup menu, disk array utilities, Emulex PXE, iSCSI utilities, and fibre channel adapter setting utilities.

Related topics

- [Chapter 3, Basic UEFI Settings for CB 520X B1/B2/B3 on page 3-1](#)
- [Chapter 4, Basic UEFI Settings for CB 520H B3/B4 on page 4-1](#)
- [Chapter 5, LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility on page 5-1](#)
- [Chapter 6, PXE Boot Settings on page 6-1](#)
- [Chapter 7, iSCSI Settings on page 7-1](#)
- [Chapter 8, Fibre Channel Adapter Settings on page 8-1](#)
- [Chapter 9, Hardware memory dump settings on page 9-1](#)
- Manual: *Hitachi Compute Blade 2500 Series Getting Started Guide*

Preparing to specify UEFI settings

This section describes the UEFI setup menu, keyboard keys used for setup, how to start the setup menu, and the organization of the setup menu.

Organization of the setup menu

The following describes the main items in the setup menu.

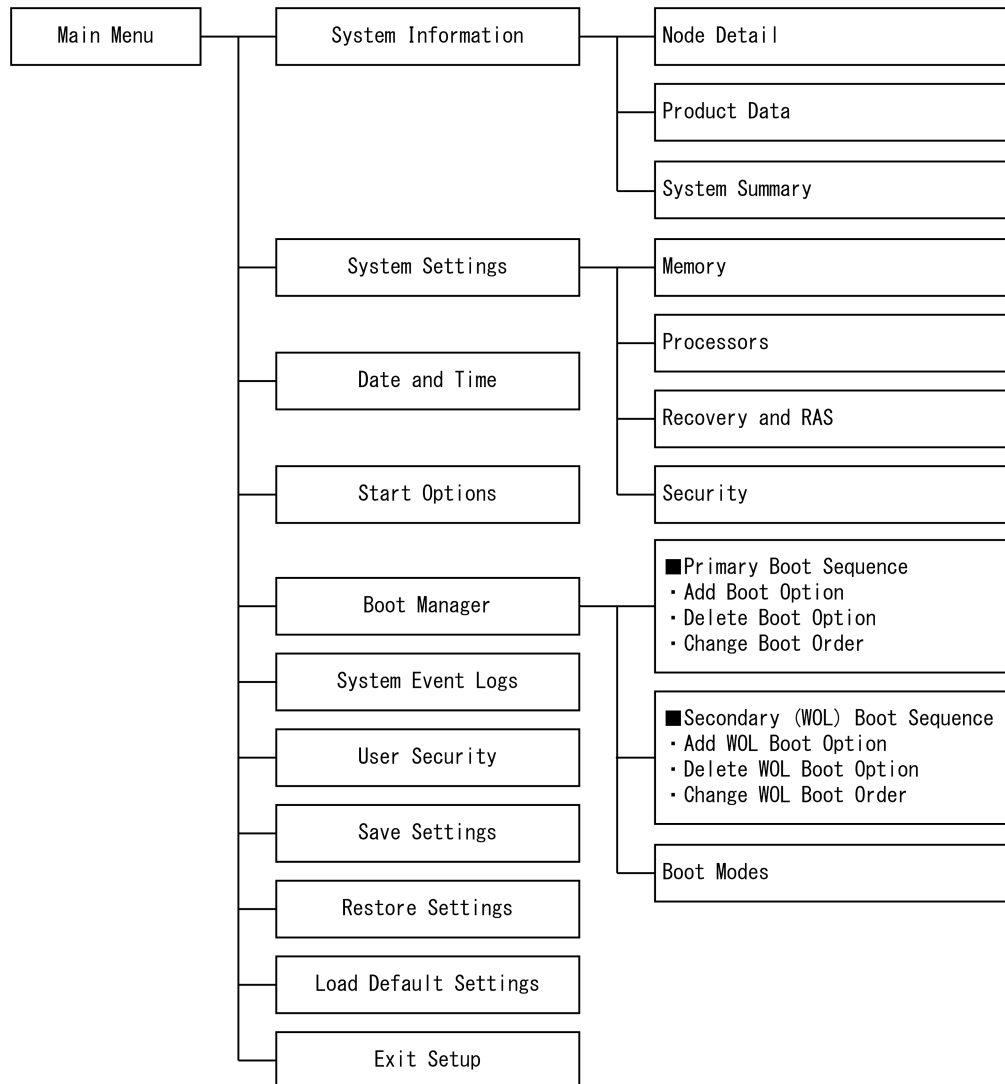


Figure 2-1 Organization of the setup menu

Related topics

- [System Information menu on page 3-3](#)
- [System Settings menu on page 3-5](#)
- [Date and Time menu on page 3-22](#)
- [Start Options menu on page 3-22](#)
- [Boot Manager menu on page 3-23](#)
- [System Event Logs menu on page 3-27](#)
- [User Security menu on page 3-27](#)
- [Save Settings menu on page 3-28](#)
- [Restore Settings menu on page 3-28](#)

- [Load Default Settings menu on page 3-28](#)
- [Exit Setup menu on page 3-28](#)

Operations in the setup menu

The following describes the key operations in the setup menu. You can only use the keyboard in the setup menu.

Table 2-4 Key operations in the setup menu

| Key | Operation |
|--------------|---|
| ↑, ↓, ←, → | Moves the cursor. |
| Enter | <ul style="list-style-type: none"> • Displays a submenu. • Executes a command. |
| Esc | <ul style="list-style-type: none"> • Exits the submenu. • Displays the exit menu. |
| Space | Selects a check box. |
| +, - | Adjusts a value. The + key increases the value, and the - key decreases the value. |

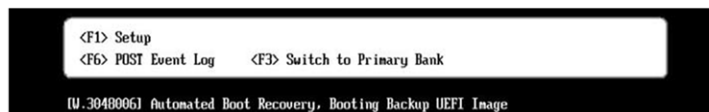
Starting the setup menu

This section explains how to start the UEFI setup menu.

To start the setup menu:

1. Start the remote console.
2. From the **Power** menu of the remote console, select **Power On**.
The Power Control dialog box appears.
3. Select **Yes**.
The server blade starts up.
4. When **<F1> Setup** appears at the bottom of the window while the server blade is starting up, press the **F1** key.

If the UEFI firmware started up from the secondary UEFI ROM due to a failure in the primary UEFI ROM, information similar to the following appears at the bottom of the window.



In this case, too, press the **F1** key to start the setup menu. The setup menu starts up, and System Configuration and Boot Management appears at the bottom of the window.



Tip: If the OS starts before you press the key, shut down the OS, and then restart the server blade. Some OSs including Windows require a

special operation, such as shutdown, when exiting the OS. Check the documentation for your OS.

Organization of the setup menu

When the setup menu starts up, the System Configuration and Boot Management window appears.



Figure 2-2 System Configuration and Boot Management window

Menu title

Displays the menu title.

Items to be set

Displays items to be set. Highlight an item, and then press the **Enter** key to display the submenu of the selected item.

Help

Displays the Help for the selected item.

Tips for key operations

Displays how to use keys.

Related topics

- [Chapter 3, Basic UEFI Settings for CB 520X B1/B2/B3 on page 3-1](#)
- [Chapter 4, Basic UEFI Settings for CB 520H B3/B4 on page 4-1](#)

Operations of the utility

This section describes how to operate the utility.

Key operations in the utility

This section describes key operations in the utility. The utility can only be operated using a keyboard.

Table 2-5 Key operations in the utility

| Key | Operation |
|---------------------|---|
| ↑, ↓, ←, → | Moves the cursor. |
| Enter, Space | <ul style="list-style-type: none">• Selects the highlighted item.• Determines the setting of an item.• Changes a value. |
| 0 to 9 | Enter a numeric value. |
| a to z | Enter an alphabetical character. |
| Esc | Exists the menu. |

Values of utility settings and notation

This section describes values in the SAS 3004 iMR ROMB Configuration Utility settings and how the values are displayed.

- In the table for each menu, default values are enclosed in << >>.
- In the table for each menu, recommended values are enclosed in [].

Example:

[<<Enable>>]/Disable

Enable is both the default value and the recommended value.

[Enable]/<<Disable>>

Disable is the default value, but Enable is the recommended value.
Change the default value to Enable.



Note: Unless otherwise specified, use the recommended values to specify setting items.

If you specify values that are not recommended, we will be unable to provide support for the system. In addition, the system might not operate properly.

If a setting window has more menu items to be displayed, a down arrow in red appears in the window.

Basic UEFI Settings for CB 520X B1/B2/B3

This chapter describes the basic UEFI settings for CB 520X B1/B2/B3.

- ☐ [Setup menu for CB 520X B1/B2/B3](#)
- ☐ [System Information menu](#)
- ☐ [System Settings menu](#)
- ☐ [Date and Time menu](#)
- ☐ [Start Options menu](#)
- ☐ [Boot Manager menu](#)
- ☐ [System Event Logs menu](#)
- ☐ [User Security menu](#)
- ☐ [Save Settings menu](#)
- ☐ [Restore Settings menu](#)
- ☐ [Load Default Settings menu](#)
- ☐ [Exit Setup menu](#)

Setup menu for CB 520X B1/B2/B3

This section describes the setup menu for CB 520X B1/B2/B3.

Highlight the item to be set or displayed, and then press the **Enter** key.

The following table shows items that are displayed in the setup menu and their description.

Table 3-1 Setup menu for CB 520X B1/B2/B3

| Displayed item | Description |
|-----------------------|---|
| System Information | Displays basic information about the server blade system. These settings cannot be changed. |
| System Settings | Displays system settings for the server blade. |
| Date and Time | Displays the date and time of the server blade system. |
| Start Options | Displays and changes boot options including the boot sequence of the server blade, the keyboard NumLock status, the PXE boot option, and the boot priority order for PCI devices. |
| Boot Manager | Displays the boot priority order of devices in the server blade, adds or deletes devices, or changes the boot order. In addition, you can use this menu to boot from a file, select a one-time boot, or set the boot order. |
| System Event Logs | Displays the system event log of the server blade. |
| User Security | Specifies security settings for the server blade. |
| Save Settings | Saves the server blade settings. |
| Restore Settings | Discards any changes you made and restores the original settings. |
| Load Default Settings | Returns the server blade settings to the factory default. |
| Exit Setup | Exits the server blade setup. |

Related topics

- [System Information menu on page 3-3](#)
- [System Settings menu on page 3-5](#)
- [Date and Time menu on page 3-22](#)
- [Start Options menu on page 3-22](#)
- [Boot Manager menu on page 3-23](#)
- [System Event Logs menu on page 3-27](#)
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- [Save Settings menu on page 3-28](#)
- [Restore Settings menu on page 3-28](#)
- [Load Default Settings menu on page 3-28](#)

- [Exit Setup menu on page 3-28](#)

System Information menu

This section describes items displayed in the System Information menu and its submenus.

Highlight the item to be set or displayed, and then press the **Enter** key.

Table 3-2 System Information menu

| Displayed item | Description |
|----------------|--|
| Node Detail | Displays node information. Node information identifies the server blades in an SMP configuration. Node 1 is assigned to the primary server blade. Node 2 and subsequent numbers are assigned to non-primary server blades. (For an SMP configuration that consists of two blades, only Node 2 is assigned. For an SMP configuration that consists of four blades, Node 2 to Node 4 are assigned in order from the smallest server blade number.) |
| Product Data | Displays the product data. |
| System Summary | Displays the basic system information. |

Related topics

- [Node Detail submenu on page 3-3](#)
- [Product Data submenu on page 3-4](#)
- [System Summary submenu on page 3-4](#)

Node Detail submenu

The Node Detail submenu displays the node information. This submenu is displayed only in an SMP configuration.

Table 3-3 Node Detail submenu

| Displayed item | Description |
|------------------|--|
| Node[1] Serial # | Displays information about Node 1. |
| Node[2] Serial # | Displays information about Node 2. |
| Node[3] Serial # | Displays information about Node 3. This is displayed only in an SMP configuration that consists of four blades. |
| Node[4] Serial # | Displays information about Node 4. This is displayed only in an SMP configuration that consists of four blades. |

Product Data submenu

The Product Data submenu displays the build ID, version, and build date of both the host firmware and BMC.

Table 3-4 Product Data submenu (CB 520X B1)

| Displayed item | | Description |
|----------------|------------|-------------------------------|
| Host Firmware | Build ID | Displays the UEFI build ID. |
| | Version | Displays the UEFI version. |
| | Build Date | Displays the UEFI build date. |
| BMC | Build ID | Displays the BMC build ID. |
| | Version | Displays the BMC version. |
| | Build Date | Displays the BMC build date. |

Table 3-5 Product Data submenu (CB 520X B2/B3)

| Displayed item | | Description |
|----------------|------------|-------------------------------|
| Host Firmware | Version | Displays the UEFI version. |
| | Build Date | Displays the UEFI build date. |
| BMC | Version | Displays the BMC version. |
| | Build Date | Displays the BMC build date. |

System Summary submenu

The System Summary submenu displays processor information, and memory information.

Table 3-6 System Summary submenu

| Displayed item | | Description |
|----------------|------------------------|--|
| Processor | Installed CPU packages | Displays the number of installed CPUs. |
| | Processor Speed | Displays the clock rate of the installed CPUs. |
| | QPI Link Speed | Displays the transfer speed of the QPI link. |
| | Processor Details | Displays details about the installed CPUs. |
| Memory | Memory Mode | Displays the operation mode of the memory. |
| | Memory Speed | Displays the clock rate of the memory. |
| | Total Memory Size | Displays the total amount of the installed memory. |

| Displayed item | | Description |
|----------------|----------------|---|
| | Memory Voltage | Displays the operating voltage of the memory. |

System Settings menu

This section describes items displayed in the System Settings menu and its submenus.

Highlight the item to be set or displayed, and then press the **Enter** key.

Table 3-7 System Settings menu

| Displayed item | Description |
|---|---|
| Adapters and UEFI Drivers ¹ | Displays information about the adapters installed on the server blade and also about the UEFI driver. |
| Devices and I/O Ports | Displays the setting window for devices and I/Os. |
| Driver Health ¹ | Displays the driver status. |
| Legacy Support ¹ | Displays the legacy boot support settings window. |
| Memory | Displays and changes the memory settings. |
| Network ¹ | Sets network device options. |
| Power ¹ | Sets power plan options. |
| Processors | Displays and changes CPU settings. |
| Recovery and RAS | Displays the failure recovery setting window. |
| Security | Displays the security setting window. |
| Storage ¹ | Sets storage device options. |
| Notes: 1. ○ Unless otherwise specified, do not change the settings of the items below. The UEFI might not start up. <ul style="list-style-type: none"> • Adapters and UEFI Drivers • Driver Health • Legacy Support • Network • Power • Storage ○ For Emulex Adapter, however, see the <i>Hitachi Compute Blade Emulex Adapter User's Guide for Hardware</i> to set the following two items. <ul style="list-style-type: none"> • Network • Storage ○ For Hitachi Gigabit fibre channel adapter, however, see the <i>Hitachi Gigabit Fibre Channel Adapter USER'S GUIDE (BIOS/EFI Edition)</i> to set the following two items. | |

| Displayed item | Description |
|---|-------------|
| <ul style="list-style-type: none"> Adapters and UEFI Drivers Storage For details about SAS 3004 iMR ROMB, however, see Chapter 5, LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility on page 5-1 to set the following item. <ul style="list-style-type: none"> Storage For details about the following items, see Appendix A, About UEFI items whose setting values are fixed on page A-1. <ul style="list-style-type: none"> Adapters and UEFI Drivers Driver Health Legacy Support Power | |

Related topics

- [Devices and I/O Ports submenu on page 3-6](#)
- [Memory submenu on page 3-8](#)
- [Processors submenu on page 3-12](#)
- [Recovery and RAS submenu on page 3-15](#)
- [Security submenu \(for CB 520X B2 firmware version 09-17 or later, CB 520X B3\) on page 3-16](#)
- [Security submenu \(for CB 520X B1, CB 520X B2 firmware version 09-14 or earlier\) on page 3-20](#)
- [Chapter 5, LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility on page 5-1](#)
- [Chapter 8, Fibre Channel Adapter Settings on page 8-1](#)

Devices and I/O Ports submenu

In the Device and I/O Ports submenu, you can display and change I/O device settings.



Note: You need to change the PCI 64-Bit Resource Allocation, MM Config Base, PCI Express Native Control and USB Configuration setting when using some OSs and applications. Do not change other items.

The following table shows items that are displayed on the left side of the window, and their description. Highlight the selection to be set, and then press the **Enter** key.

Table 3-8 Devices and I/O Ports submenu

| Displayed item | Selection | Description |
|----------------|----------------|--|
| Active Video | Onboard Device | Specifies the output destination of video display. |

| Displayed item | Selection | Description |
|--|---|--|
| | Add-in Device | The initial value is Onboard Device. |
| PCI Express Native Control | Disable Enable | Enables or disables direct control of the PCI Express functionality by the OS. The initial value is Enable. |
| PCI 64-Bit Resource Allocation | Disable Enable | Enables or disables 64-bit resource allocation to PCI devices. The initial value is Enable. |
| MM Config Base | 1GB 2GB 3GB | Sets the starting address of the PCI Express configuration space. <For CB 520X B1> The initial value is 2GB. <For CB 520X B2/B3> The initial value is 3GB. |
| Drive Sharing | Disable Enable | Do not change the setting of this item. The initial value is Disabled. <For CB 520X B1/B3> This item is not displayed. <For CB 520X B2> This item is displayed only when an SMP configuration and the blade firmware version 09-27 or earlier. |
| Intel® VT for Directed I/O (VT-d) | Enable Disable | Enables or disables Intel® VT for Directed I/O (VT-d). The initial value is Enable. |
| Consistent Device Naming | Slot Group Ordering PCI Bus Number Ordering Disable | Change Consistent Device Naming Setting. The initial value is Slot Group Ordering. <ul style="list-style-type: none"> Slot Group Ordering: Instance number is arranged in onboard LAN, I/O adapter, mezzanine card order. PCI Bus Number Ordering: Instance Number is arranged in PCI bus number order. Disable: Disable to Consistent Device Naming. This item is displayed only CB 520X B2/B3. |
| Enable / Disable Onboard Device(s) ¹ | -- | Enables or disables devices. |
| Enable / Disable Adapter Option ROM Support ¹ | -- | Specifies whether to execute the Legacy Option ROM and UEFI Option ROM for PCI devices. |
| Set Option ROM Execution Order ¹ | -- | Sets the order in which the Legacy Option ROMs for PCI devices are to be started. |
| PCIe Gen1/Gen2/Gen3 Speed Selection ¹ | -- | Sets the speed of PCI Express, which can be used in a PCI slot. |

| Displayed item | Selection | Description |
|--|-----------|---|
| Console Redirection Settings ¹ | -- | Sets console redirection and COM ports. |
| USB Configuration | -- | Configures USB ports. |
| Legend: --: None Notes: 1. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |

In USB Configuration, you can change the USB settings.

Table 3-9 Devices and I/O Ports submenu (USB Configuration)

| Displayed item | Selection | Description |
|--------------------------|---------------------|---|
| Front Dongle USB Port #1 | Disabled Enabled | Enables or disables USB ports. The initial value is Enabled. |
| Front Dongle USB Port #2 | Disabled Enabled | Enables or disables USB ports. The initial value is Enabled. |
| Front USB3.0 Port | Disabled Enabled | Enables or disables USB ports. The initial value is Enabled. |

Memory submenu

In the Memory submenu, you can display and change memory settings.

Table 3-10 Memory submenu

| Displayed item | Selection | Description |
|-----------------------|--------------------------|---|
| System Memory Details | -- | Displays details of each memory module in the system unit. You can use the System Memory Details window to view memory details. In the System Memory Details window, select a node (for SMP configurations) and processor whose memory details you want to check. |
| Total Memory Size | -- | Displays the total memory size. |
| Memory Voltage | -- | Displays the operating voltage of the memory. |
| Memory Mode | Lockstep Independent | Sets the operation mode of the memory. The initial value is Independent. |
| Memory Speed | <For CB 520X B1> Auto | Sets the maximum clock rate of the memory. The initial value is Auto. |

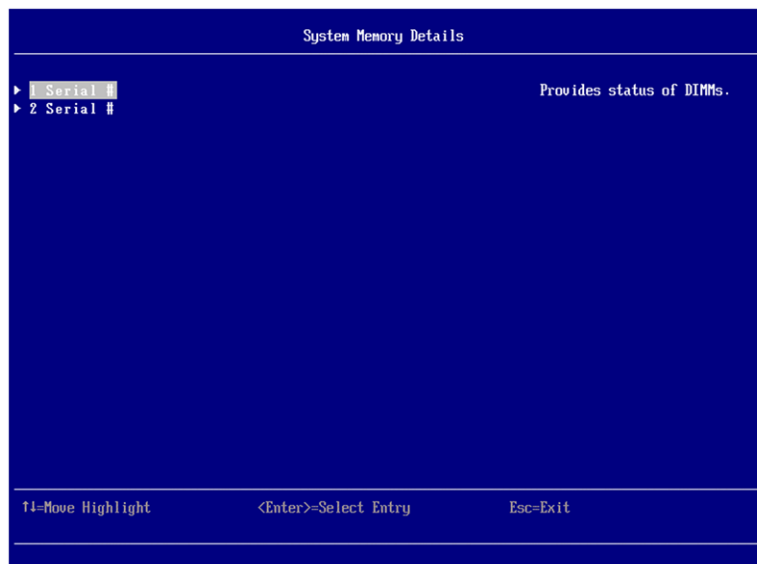
| Displayed item | Selection | Description |
|--------------------------------------|--|--|
| | Force DDR3 1066 Force DDR3 1333 Force DDR3 1600 <For CB 520X B2/B3> Auto Force DDR4 1600 Force DDR4 1866 | |
| DDR Voltage Level | Auto Force to 1.50V | Sets the operating voltage of the memory. The initial value is Force to 1.50V. (CB 520X B1 only) |
| Memory Power Management ¹ | Disable Automatic | Sets the memory power management. The initial value of CB 520X B1/B2 is Automatic. Also, the initial value of the other server blade is Disable. For CB 520X B2 firmware version 09-27 or earlier, the factory default settings might differ from the initial values provided in the manual. In such a case, change the settings to the initial values provided in the manual. |
| Socket Interleave | Non-NUMA NUMA | Sets memory interleave. The initial value is NUMA. |
| Patrol Scrub ¹ | Enable Disable | Sets patrol scrubbing to detect memory failures. The initial value is Enable. |
| Memory Data Scrambling ¹ | Enable Disable | Sets memory data scrambling. The initial value is Enable. |
| Mirroring ² | Disable Enable | Sets memory mirroring. When Disable value selected, do not specify Mirroring Type item. Also, when Enable value selected, do not specify Sparing item and Multi Rank Sparing item. The initial value is Disable. |
| Mirroring Type | Full Partial | Select full or partial memory mirroring. (CB 520X B2/B3 only). The initial value is Full. <For CB 520X B2> This item is displayed only. <For CB 520X B3> When Mirroring is disabled, you cannot set this menu item. |

| Displayed item | Selection | Description |
|--|--|--|
| Sparing ² | Disable Enable | Sets memory sparing. The initial value is Disable. |
| Multi Rank Sparing | One Rank Two Rank Three Rank Auto | Set Multi Rank Sparing number, Auto can Support 50% ranks per channel. (CB 520X B2/B3 Only) The initial value is One Rank. When Mirroring is enabled, you cannot set this menu item. Shown with the CB 520X B2 firmware version 09-11 or later and CB 520X B3. |
| Memory Deconfigure Mode | -- | Sets whether to use installed memory in reduced-configuration mode. For each memory controller, in the Memory Deconfigure Mode window, you can set or cancel reduced-configuration mode. |
| <p>Legend:</p> <p>--: None</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. 2. If you set Mirroring to Enable, you cannot select Sparing. Conversely, if you set Sparing to Enable, you cannot select Mirroring. | | |

System Memory Details window

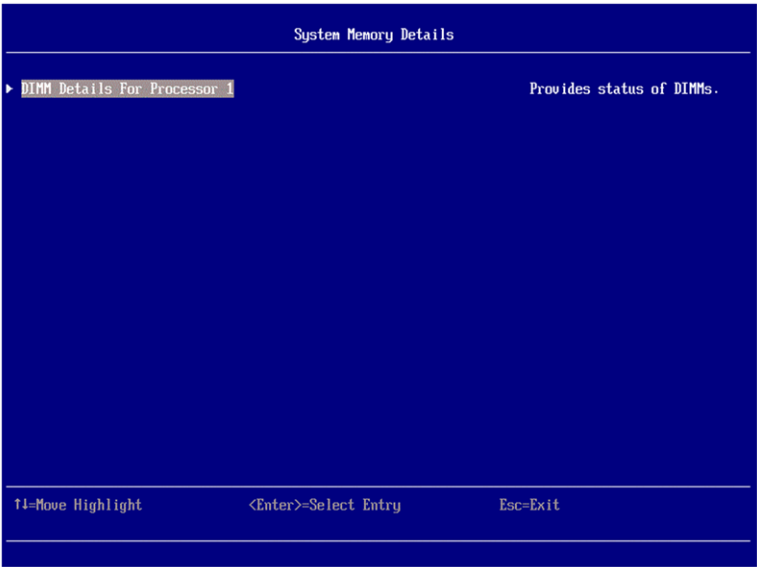
Highlight the node to be displayed, and then press the **Enter** key.

Nodes are only displayed in SMP configurations.



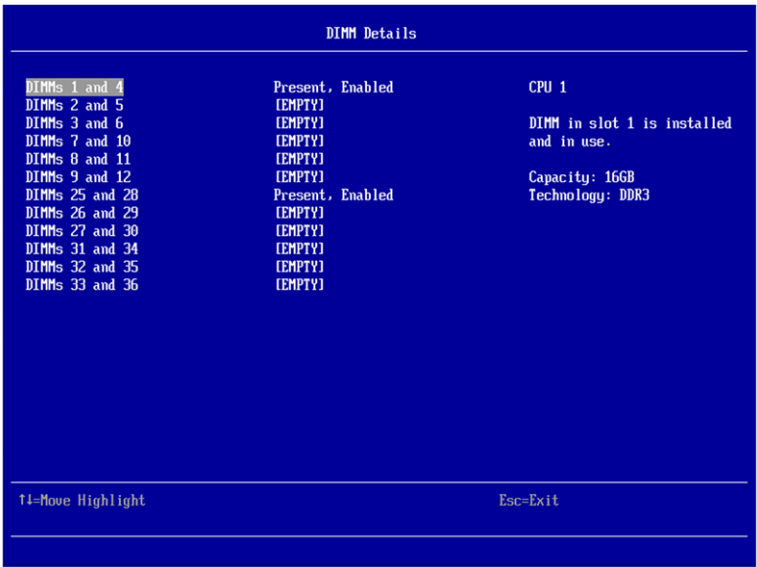
Tip: The number of displayed nodes varies depending on the number of installed nodes.

Highlight the processor to be displayed, and then press the **Enter** key.



Tip: The number of displayed processors varies depending on the number of installed processors.

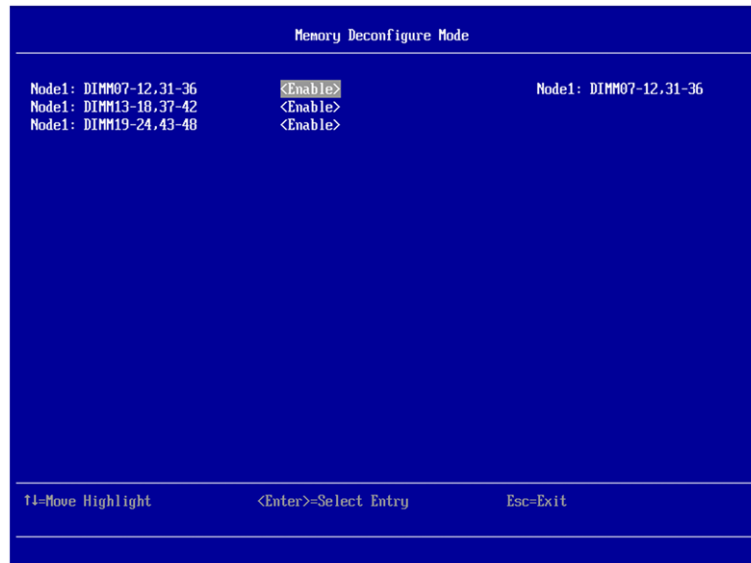
When you select a processor, details about memory connected to the processor are displayed.



Tip: EMPTY: DIMM is not mounted in the DIMM slot.
Present, Enabled: The DIMM is available.

Memory Deconfigure Mode window

Highlight the DIMM group for which you want to set or cancel reduced-configuration mode, and then press the **Enter** key.



Processors submenu

In the Processors submenu, you can display and change CPU settings.

Table 3-11 Processors submenu

| Displayed item | Selection | Description |
|---|--|---|
| Turbo Mode | Disable Enable | Sets the Turbo Mode for the CPU. This setting is enabled after reboot. The initial value is Enable. This item appears only if the installed CPU supports the mode. |
| Processor Performance States ¹ | Disable Autonomous Enable Cooperative Legacy | Sets CPU EIST. The setting is enabled after reboot. Autonomous, Cooperative, and Legacy are not displayed in CB 520X B1/B2. Enable is not displayed in CB 520X B3. <For CB 520X B1/B2> The initial value is Enable. <For CB 520X B3> The initial value is Autonomous. |
| C-States | Disable Autonomous Enable Legacy | Sets the power saving functionality for the CPU. The setting is enabled after reboot. Autonomous and Legacy are not displayed in CB 520X B1/B2. Enable is not displayed in CB 520X B3. <For CB 520X B1/B2> The initial value is Enable. <For CB 520X B3> The initial value is Autonomous. |

| Displayed item | Selection | Description |
|--|--|---|
| Package ACPI C-State Limit ¹ | ACPI C2 ACPI C3 | Sets the C-state upper limit for when the CPU is idle. The initial value is ACPI C3. <For CB 520X B1/B2> This item is displayed only when C-States value is Enable. <For CB 520X B3> This item is displayed only when C-State value is Legacy. |
| C1 Enhanced Mode ¹ | Disable Enable | Sets Enhanced C1E State for the CPU. The setting is enabled after reboot. The initial value is Enable. |
| Hyper-Threading | Enable Disable | Sets Hyper-Threading for the CPU. The initial value is Enable. This item appears only if the installed CPU supports the mode. |
| Execute Disable Bit | Disable Enable | If you specify Disable, 0 is always returned for the XD feature flag. The initial value is Enable. |
| Intel Virtualization Technology ¹ | Disable Enable | Sets Intel Virtualization Technology. The initial value is Enable. |
| Enable SMX ¹ | Disable Enable | Sets the safe mode. The initial value is Disable. |
| Hardware Prefetcher | Enable Disable | Sets the hardware prefetcher for the CPU. The initial value is Enable. |
| Adjacent Cache Prefetch ¹ | Enable Disable | Sets the adjacent cache prefetcher. The initial value is Enable. |
| DCU Streamer Prefetcher ¹ | Enable Disable | Enables the data cache unit streamer prefetcher. The initial value is Enable. |
| DCU IP Prefetcher ¹ | Enable Disable | Sets the instruction pointer-based prefetcher. The initial value is Enable. |
| Direct Cache Access (DCA) ¹ | Enable Disable | Enables the I/O device to directly transfer data to the CPU cache. The initial value is Enable. |
| Cores in CPU Package | All 1 to x ³ | Sets the number of active cores in the CPU package. The initial value is All. |
| QPI Link Frequency ¹ | Minimal Power Balanced Max Performance | Sets the clock rate for QPI Link (data path between CPUs). The initial value is Max Performance. |

| Displayed item | Selection | Description |
|-----------------------------------|---|--|
| Energy Efficient Turbo | Enable Disable | Sets the energy efficient turbo. The initial value is Enable. <For CB 520X B2/B3> <ul style="list-style-type: none"> Shown with the CB 520X B2 firmware version 09-11 or later and CB 520X B3. You can set only when Turbo Mode is Enable. <For CB 520X B1> This item is not displayed. |
| Uncore Frequency Scaling | Enable Disable | Sets the functionality to dynamically adjust the uncore operation frequency. The initial value is Enable. <For CB 520X B2/B3> Shown with the CB 520X B2 firmware version 09-11 or later and CB 520X B3. <For CB 520X B1> This item is not displayed. |
| COD Preference ¹ | Auto Enable Disable | Sets the COD preference. The initial value is Disable. <For CB 520X B1/B2> This item is not displayed. <For CB 520X B3> This submenu is displayed only in a 2-blade SMP configuration. |
| MWAIT/MMONITOR | Disable Enable | Sets the MWAIT / MMONITOR. The initial value is Enable. Shown with the CB 520X B1 firmware version 07-41 or later. Shown with the CB 520X B2 firmware version 09-11 or later. Shown with the CB 520X B3 firmware version 11-01 or later. |
| Per Core P-State ^{1, 2} | Enable Disable | Sets the Per Core P-State. The initial value is Disable. <For CB 520X B3> This item is displayed only when Processor Performance States is Legacy. |
| CPU Frequency Limits ² | Full turbo uplift Restrict maximum frequency | Sets an upper limit for the CPU frequency. The initial value is Full turbo uplift. This item cannot set when Turbo Mode is Disable. |
| AES-NI ^{1, 2} | Disable | Sets the AES-NI. |

| Displayed item | Selection | Description |
|--|-----------|------------------------------|
| | Enable | The initial value is Enable. |
| Notes: 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. 2. This item is not displayed for CB 520X B1/B2. 3. x is the value of the maximum number of cores of the mounted CPU -1. | | |

Recovery and RAS submenu

The Recovery and RAS submenu displays the failure recovery setting window.

Table 3-12 Recovery and RAS submenu

| Displayed item | Selection | Description |
|---|-----------|--|
| Advanced RAS | -- | Sets reduced-configuration mode when a CPU or DIMM failure occurs. |
| Backup Bank Management ¹ | -- | Sets backup bank management. |
| Disk GPT Recovery ¹ | -- | Sets the Disk GPT recovery option. |
| System Recovery ¹ | -- | Sets system recovery. |
| Legend: --: None Notes: 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |

Advanced RAS

In Advanced RAS, you can specify reduced-configuration mode when a CPU or DIMM failure occurs.

Table 3-13 Recovery and RAS submenu (Advanced RAS)

| Displayed item | Selection | Description |
|--------------------------------------|-------------------|--|
| Machine Check Recovery | Disable Enable | Sets machine check recovery. The initial value is Enable. |
| PCI Live Error Recovery ¹ | Disable Enable | Sets PCI error recovery. The initial value is Disable. |
| PCIe Isolation ^{1, 2} | Disable Enable | Sets PCIe isolation. The initial value is Disable. |

| Displayed item | Selection | Description |
|---|-------------------|---|
| Hardware Memory Dump | Disable Enable | Sets hardware dump. The initial value is Disable. |
| Dump Partition | Not Present | Displays the Dump Partition |
| Post Process | Spinloop Reset | Sets the POST process. The initial value is Spinloop. |
| Deconfigured Mode | Disable Enable | Sets the Deconfigured mode. The initial value is Enable. |
| POST Fail Retry | Disable Enable | Sets whether to retry a diagnosis when a POST DIMM failure is detected. The initial value is Enable. |
| Notes: 1. If you set PCI Live Error Recovery to Enable, you cannot select PCIe Isolation. Conversely, if you set PCIe Isolation to Enable, you cannot select PCI Live Error Recovery. 2. If PCIe Isolation is set to Enable, you should set PCI Express Native Control in the Devices and I/O Ports submenu to Disable. | | |

Security submenu (for CB 520X B2 firmware version 09-17 or later, CB 520X B3)

The Security submenu displays the security setting window.

The contents of this submenu apply to the following server blade:

- CB 520X B2 whose firmware version is 09-17 or later
- CB 520X B3

For details about server blade models and firmware versions other than the above, see [Security submenu \(for CB 520X B1, CB 520X B2 firmware version 09-14 or earlier\) on page 3-20](#).

Table 3-14 Security submenu (CB 520X B2 firmware version 09-17 or later, CB 520X B3)

| Displayed item | Selection | Description |
|---|-----------|---|
| Rollback Configuration ^{1, 2} | -- | Sets the rollback option. |
| Secure Boot Configuration ^{1, 2} | -- | Sets the secure boot option. |
| Trusted Platform Module | -- | Displays the TPM option setting window. |
| Legend: --: None Notes: | | |

| Displayed item | Selection | Description |
|---|-----------|-------------|
| <ol style="list-style-type: none"> 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. 2. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1. | | |

Trusted Platform Module

Trusted Platform Module displays TPM status and TPM settings.

Table 3-15 Security submenu (Trusted Platform Module)

| Displayed item | | Selection | Description |
|----------------------------------|-------------------------------------|-----------|---|
| TPM 1.2 | | -- | Displays the TPM option settings window. This item is displayed only when the TPM firmware version is 1.2. |
| TPM 2.0 | | -- | Displays the TPM option settings window. <For CB 520X B3> This item is displayed only when the server blade being used is the CB 520X B3, the blade firmware version is 11-05 or later, and the TPM firmware version is 2.0. <For CB 520X B2> This item is not displayed. |
| TPM Firmware Update ¹ | Update TPM Firmware from 1.2 to 2.0 | -- | Updates the TPM firmware version from 1.2 to 2.0. <For CB 520X B3> <ul style="list-style-type: none"> ◦ This item is displayed only when the server blade being used is the CB 520X B3, the blade firmware version is 11-05 or later, and the TPM firmware version is 1.2. ◦ If TPM 2.0 is applied and you want to downgrade the server blade firmware to version 11-04 or earlier, you must first downgrade the TPM firmware to version 1.2 by using the menu |

| Displayed item | | Selection | Description |
|--|-------------------------------------|-----------|--|
| | | | item Update TPM Firmware from 2.0 to 1.2. <For CB 520X B2> This item is not displayed. |
| | Update TPM Firmware from 2.0 to 1.2 | -- | Updates the TPM firmware version from 2.0 to 1.2. <For CB 520X B3> This item is displayed only when the server blade being used is the CB 520X B3, the blade firmware version is 11-05 or later, and the TPM firmware version is 2.0. <For CB 520X B2> This item is not displayed. |
| Legend: --: None Notes: 1. For this item to be displayed, TPM Activate License is required. | | | |

TPM1.2

In TPM 1.2, specify settings of the TPM 1.2 options.

Table 3-16 Security submenu (Trusted Platform Module / TPM 1.2)

| Displayed item | | Selection | Description |
|----------------|-----------------------|-------------------|--|
| TPM Status | TPM Firmware Version | -- | Displays the firmware version of TPM. Note that TPM firmware versions 2.0 and 1.2 are not compatible, and the version numbers are not intended to represent a continuous progression. |
| | TPM Physical Presence | -- | Displays the physical presence of TPM. |
| | TPM Device State | -- | Displays the status of TPM. |
| | Refresh TPM Status | -- | Refreshes the TPM status. |
| TPM Settings | TPM Device | Enable Disable | Enables or disables the TPM. The initial value is Disable. For CB 520X B2 firmware version 09-24 or earlier, the |

| Displayed item | | Selection | Description |
|---------------------|-----------------|------------------------|---|
| | | | factory default settings might differ from the initial values provided in the manual. |
| | TPM State | Activate Deactivate | Activates the TPM. The initial value is Deactivate. This item is displayed only when TPM Device is Enable. For CB 520X B2 firmware version 09-24 or earlier, the factory default settings might differ from the initial values provided in the manual. |
| | TPM Force Clear | -- | Deletes the TPM data. |
| Legend: --: None | | | |

Specifying TPM settings

Enables the Trusted Platform Module (TPM). If TPM 2.0 is applied, this setting is unnecessary.

Follow the procedure below to specify TPM settings:

1. Confirm that the value of **TPM Physical Presence** is **Asserted** in Trusted Platform Module (TPM 1.2).
2. Highlight the value **Disable** for **TPM Device**, and then press the **Enter** key.
3. When **Enable** becomes highlighted, press the **Enter** key again.
The following message appears: Success!!Reboot required to enable this change.
When the **TPM Device** value becomes **Enable**, the **TPM State** menu appears.
4. Highlight the value **Deactivate** for **TPM State**, and then press the **Enter** key.
5. When **Activate** becomes highlighted, press the **Enter** key again.

Rebooting the server blade activates the TPM.

TPM2.0

In TPM 2.0, specify settings of the TPM 2.0 options.

Table 3-17 Security submenu (Trusted Platform Module / TPM 2.0)

| Displayed item | | Selection | Description |
|----------------|----------------------|-----------|---------------------------------------|
| TPM Status | TPM Firmware Version | -- | Displays the firmware version of TPM. |

| Displayed item | | Selection | Description |
|---------------------|-----------------------|--|---|
| | | | Note that TPM firmware versions 2.0 and 1.2 are not compatible, and the version numbers are not intended to represent a continuous progression. |
| | TPM Physical Presence | -- | Displays the physical presence of TPM. |
| Refresh TPM Status | | -- | Refreshes the TPM status. |
| TPM Settings | TPM2 Operation | No Action TPM2 ClearControl(NO) + Clear | Sets the TPM2 operation. |
| Legend: --: None | | | |

Security submenu (for CB 520X B1, CB 520X B2 firmware version 09-14 or earlier)

The Security submenu displays the security setting window.

The contents of this submenu apply to the following server blade:

- CB 520X B1
- CB 520X B2 whose firmware version is 09-14 or earlier

For details about server blade models and firmware versions other than the above, see [Security submenu \(for CB 520X B2 firmware version 09-17 or later, CB 520X B3\) on page 3-16](#).

Table 3-18 Security submenu

| Displayed item | Selection | Description |
|--|-----------|--|
| Rollback Configuration ^{1, 2} | -- | Sets the rollback option. <For CB 520X B1> This item is not displayed. |
| Secure Boot Configuration ^{1, 2} | -- | Sets the secure boot option. |
| Trusted Platform Module (TPM 1.2) | -- | Displays the TPM option setting window. |
| Legend: --: None Notes: 1. Do not change the setting. The UEFI might not start. | | |

| Displayed item | Selection | Description |
|----------------|--|-------------|
| 2. | For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | |

Trusted Platform Module (TPM 1.2)

Trusted Platform Module (TPM 1.2) displays TPM status and TPM settings.

Table 3-19 Security submenu (Trusted Platform Module (TPM 1.2))

| Displayed item | | Selection | Description |
|--|------------------------|------------------------|---|
| TPM Status | TPM Physical Presence | -- | Displays the physical presence of TPM. |
| | TPM Device State | -- | Displays the status of TPM. |
| | MOR Status | -- | Displays the Memory Overwrite Request (MOR) status. |
| | Refresh TPM Status | -- | Refreshes the TPM status. |
| TPM Settings | TPM Device | Enable Disable | Enables or disables the TPM. The initial value is Disable. For CB 520X B2, the factory default settings might differ from the initial values provided in the manual. |
| | TPM State | Activate Deactivate | Activates the TPM. The initial value is Deactivate. This item is displayed only when TPM Device is Enable. For CB 520X B2, the factory default settings might differ from the initial values provided in the manual. |
| | MOR State ¹ | Enable Disable | Enables or disables Memory Overwrite Request (MOR). The initial value is Disable. |
| | TPM Force Clear | -- | Deletes the TPM data. |
| Legend: --: None Notes: 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. | | | |

Specifying TPM settings

Enables the Trusted Platform Module (TPM).

Follow the procedure below to specify TPM settings:

1. Confirm that the value of **TPM Physical Presence** is **Asserted** in Trusted Platform Module (TPM 1.2).
2. Highlight the value **Disable** for **TPM Device**, and then press the **Enter** key.
3. When **Enable** becomes highlighted, press the **Enter** key again.
The following message appears: Success!!Reboot required to enable this change.
When the **TPM Device** value becomes **Enable**, the **TPM State** menu appears.
4. Highlight the value **Deactivate** for **TPM State**, and then press the **Enter** key.
5. When **Activate** becomes highlighted, press the **Enter** key again.

Rebooting the server blade activates the TPM.

Date and Time menu

This section describes the items displayed in the Date and Time menu.

Highlight the item to be set, and then press the **Enter** key.

Table 3-20 Date and Time menu

| Displayed item | Selection | Description |
|----------------|---|---|
| System Date | Use the + or - key to adjust the value. | Sets the date of the server. Sets the date in the mm/dd/yyyy format. |
| System Time | Use the + or - key to adjust the value. | Sets the time of the server. Sets the time in 24-hour format (hh:mm:ss). |

Start Options menu

In the Start Options menu, you can boot from a target device.

Highlight the item to be set, and then press the **Enter** key.

Different items are displayed depending on the settings of Boot Manager.

Related topics

- [Boot Manager menu on page 3-23](#)

Boot Manager menu

This section describes items to be displayed in the Boot Manager menu and its submenus.

Highlight the item to be set, and then press the **Enter** key.

Table 3-21 Boot Manager menu

| Displayed item | | Description |
|---|---|---|
| Primary Boot Sequence | Add Boot Option | Adds a device or file system to the boot option. |
| | Delete Boot Option | Deletes a device or file system from the boot option. The setting is enabled at the next startup. |
| | Change Boot Order | Changes the boot order. The setting is enabled at the next startup. |
| Secondary (WOL) Boot Sequence | Add WOL Boot Option | Adds a device or file system to the WOL boot option. |
| | Delete WOL Boot Option | Deletes a device or file system from the WOL boot option. The setting is enabled at the next startup. |
| | Change WOL Boot Order | Changes the WOL boot order. The setting is enabled at the next startup. |
| Boot Other | Boot From File ¹ | Boots from a specific device or file. |
| | Boot From Device ¹ | Boots from a specific device path. |
| | Select Next One-Time Boot ^{1, 2} | Tries to boot from a specific target only at the next startup. |
| System | Boot Modes | Displays the window for changing the boot settings. |
| | Reset System | Restarts the system. |
| Notes: | | |
| 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. | | |
| 2. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |



Tip: If the OS image cannot be found in the boot device or PXE server, the system might continue rebooting.

In this case, confirm the connection of the boot device or the PXE server.

Related topics

- [Add \(WOL\) Boot Option submenu on page 3-24](#)
- [Delete \(WOL\) Boot Option submenu on page 3-25](#)
- [Change \(WOL\) Boot Order submenu on page 3-25](#)

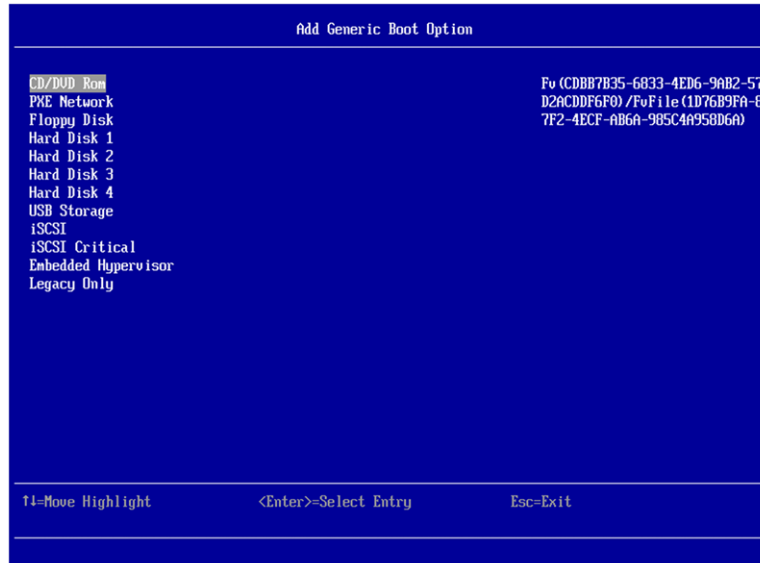
- [Boot Modes submenu on page 3-25](#)

Add (WOL) Boot Option submenu

In the Add Boot Option submenu, you can add a device or file system to the boot option.

The Add WOL Boot Option submenu displays the same menu items as Add Boot Option, but under different submenu names.

1. Highlight **Generic Boot Option**, and then press the **Enter** key.
2. Highlight the item to be added to boot options, and then press the **Enter** key.



To return to the **Boot Manager** menu, highlight a target item, press the **Enter** key, and then press the **Esc** key twice.



Note:

- You can only add standard boot options. Do not add advanced boot options.
 - Do not add unnecessary items. If you add unnecessary items, problems such as longer boot times occur.
- You can add a maximum of 10 items.



Tip: To boot from a device that is not included in the boot order, you need to add the device to the boot options.

This is the same for Primary Boot Sequence and Secondary (WOL) Boot Sequence.

Select the Add Boot Option menu of either category according to your purpose.

Delete (WOL) Boot Option submenu

In the Delete Boot Option submenu, you can delete a device or file system from the boot options.

The Delete WOL Boot Option submenu displays the same menu items as Delete Boot Option, but under different submenu names.

1. Select the device to be deleted from the boot options, and then press the **Space** key.
X appears in the [] displayed to the device's right.
2. Highlight **Commit Changes and Exit**, and then press the **Enter** key.
The selected device is deleted from the boot options.



Note: If you delete a device from the boot options, you might be unable to boot the server blade.

Change (WOL) Boot Order submenu

In the Change Boot Option submenu, you can change the boot order.

Highlight the item to be set, and then press the **Enter** key.

The Change WOL Boot order submenu displays the same menu items as Change Boot Order, but under different submenu names.

Table 3-22 Change Boot Order submenu

| Displayed item | Description |
|-------------------------|---|
| Change the order | Bootable devices are displayed in order from the top. Use the ↑ or ↓ key to select (highlight) a device, and then press the Enter key. Then, use the + or - key to change the order, and then press the Enter key again. |
| Commit Changes and Exit | Commits changes. Note that you need to save the changes before exiting the Setup menu. |

Boot Modes submenu

You can use the Boot Modes submenu to change the boot settings.

Highlight the item to be set, and then press the **Enter** key.

Table 3-23 Boot Modes submenu items

| Displayed item | Selection | Description |
|-------------------------------|--------------------------|---|
| System Boot Mode ¹ | UEFI Mode Legacy Mode | Sets whether the Boot Manager uses the UEFI Driver or Option ROM. UEFI Mode Uses the UEFI Driver. Select this to boot the OS in UEFI Mode. |

| Displayed item | Selection | Description |
|---|---------------------|--|
| | | <p>Legacy Mode</p> <p>Uses the Option ROM, not the UEFI Driver.</p> <p>Select this to boot the OS in Legacy Mode.</p> <p>The initial value is UEFI Mode.</p> |
| Optimized Boot ² | Disabled Enabled | <p>Sets whether to optimize the boot time by loading the minimum drivers only.</p> <p><For CB 520X B1></p> <p>The initial value is Enabled.</p> <p><For CB 520X B2/B3></p> <p>The initial value is Disabled.</p> |
| Quiet Boot ² | Disabled Enabled | <p>Sets whether to prevent the system summary from being displayed.</p> <p>The initial value is Enabled.</p> |
| Fast Boot ³ | Enabled Disabled | <p>Sets whether to shorten the boot time by not executing part of the initialization processing at startup.</p> <p>Although Fast Boot is quicker than Optimized Boot, some restrictions apply: for example, some functionality cannot be used.</p> <p>The initial value is Disabled.</p> |
| <p>Notes:</p> <ol style="list-style-type: none"> <p><For CB 520X B1></p> <p>UEFI mode is strongly recommended to avoid any unexpected behavior.</p> <p>However, to use the Legacy mode, to avoid the unexpected behavior, users are required to adjust the total amount of Option ROM by disabling Option ROM of each bootable I/O device.</p> <p><For CB 520X B2/B3></p> <p>This server blade model does not support booting in Legacy Mode. Do not change the System Boot Mode setting.</p> <p>Unless specified otherwise, do not change the setting of this item. The UEFI might not start up.</p> <p>You cannot use the following functionality when Fast Boot is enabled:</p> <ul style="list-style-type: none"> N+M cold standby Retry when a memory error is detected PCIe Link Check High reliability log base (only the log collection functionality) | | |



Note: To use Fast Boot, the UEFI system configuration data must have already been created. This UEFI system configuration data is created at OS startup.

If you boot the OS by using system settings that are different from the system configuration data created at OS startup, Fast Boot is disabled. The following shows the conditions in which Fast Boot operates:

- The OS was started at least once before you enabled Fast Boot.

- There was no change to the system configuration: for example, there was no change to the I/O or memory configuration.
- Fast Boot must not be used immediately after the firmware is updated or the factory default settings are restored.
- The Memory RAS settings or other settings have not been changed.

System Event Logs menu

The System Event Logs menu displays system event logs of the server blade.

Table 3-24 System Event Logs menu

| Displayed item | Description |
|--|---|
| POST Event Viewer | Displays POST event of the server blade. |
| System Event Log | Displays system event logs of the server blade. |
| Clear System Event Log ¹ | Deletes system event logs of the server blade. |
| Notes: | |
| 1. Do not select this item except when the support service instructed to delete system event logs. | |

User Security menu

In the User Security menu, you can specify security settings.



Note:

- Once a Power-On Password is set, you need to enter the password when completing the system boot. Once an Admin Password is set, you need to enter the password when accessing Configuration/Setup menu.
In an N+M or HA configuration, or if you specify automatic booting of the OS, password authentication interferes with switching systems at failover or server blade startup. In such configurations, do not set a power-on password.
- A password must consist of 6 to 20 characters.
In addition, a password must be a combination of any ASCII printable characters.

Highlight the item to be set, and then press the **Enter** key.

Table 3-25 User Security menu

| Displayed item | Description |
|--|---|
| Password Complexity Strength ^{1, 2} | Set level of password complexity strength. The initial value is Low. |
| Set Power-On Password | Sets the password for startup. |

| Displayed item | Description |
|---|-------------------------------------|
| Clear Power-On Password | Deletes the password for startup. |
| Set Admin Password | Sets the administrator password. |
| Clear Admin Password | Deletes the administrator password. |
| Notes: 1. Do not change the setting. The EFI might not start. 2. This item is not displayed in CB 520X B1/B2. | |

Save Settings menu

The Save Settings menu saves changed settings.

Highlight Save Settings, and then press the **Enter** key.

Restore Settings menu

The Restore Settings menu discards any changes and restores the previous settings.

Highlight Restore Settings, and then press the **Enter** key. After that reboot the server blade.

Load Default Settings menu

The Load Default Settings menu discards any changes and restores the factory default settings.

Highlight Load Default Settings, and then press the **Enter** key.

Exit Setup menu

The Exit Setup menu exits the setup menu.

Highlight Exit Setup, and then press the **Enter** key.

When a dialog box appears for selecting whether to exit the setup menu or to return to the setup menu, press the **Y** key.



Tip: If you have unsaved changes, <Y> Save And Exit the Setup Utility appears.
Press the **Y** key.

Basic UEFI Settings for CB 520H B3/B4

This chapter describes the basic UEFI settings for CB 520H B3/B4.

- ☐ [Setup menu for CB 520H B3/B4](#)
- ☐ [System Information menu](#)
- ☐ [System Settings menu](#)
- ☐ [Date and Time menu](#)
- ☐ [Start Options menu](#)
- ☐ [Boot Manager menu](#)
- ☐ [System Event Logs menu](#)
- ☐ [User Security menu](#)
- ☐ [Save Settings menu](#)
- ☐ [Restore Settings menu](#)
- ☐ [Load Default Settings menu](#)
- ☐ [Exit Setup menu](#)

Setup menu for CB 520H B3/B4

This section describes the setup menu for CB 520H B3/B4.

Highlight the item to be set or displayed, and then press the **Enter** key.

The following table shows items that are displayed in the setup menu and their description.

Table 4-1 Setup menu for CB 520H B3/B4

| Displayed item | Description |
|-----------------------|---|
| System Information | Displays basic information about the server blade system. These settings cannot be changed. |
| System Settings | Displays system settings for the server blade. |
| Date and Time | Displays the date and time of the server blade system. |
| Start Options | Selects the boot target from the boot options in Primary Boot Sequence of the Boot Manager menu and starts booting. |
| Boot Manager | Displays the boot priority order of devices in the server blade, adds or deletes devices, or changes the boot order. In addition, you can use this menu to boot from a file, select a one-time boot, or set the boot order. |
| System Event Logs | Displays the system event log of the server blade. |
| User Security | Specifies security settings for the server blade. |
| Save Settings | Saves the server blade settings. |
| Restore Settings | Discards any changes you made and restores the original settings. |
| Load Default Settings | Returns the server blade settings to the initial settings (settings at the time of shipping). |
| Exit Setup | Exits the server blade setup. |

Related topics

- [System Information menu on page 4-3](#)
- [System Settings menu on page 4-4](#)
- [Date and Time menu on page 4-18](#)
- [Start Options menu on page 4-18](#)
- [Boot Manager menu on page 4-18](#)
- [System Event Logs menu on page 4-22](#)
- [User Security menu on page 4-22](#)
- [Save Settings menu on page 4-23](#)
- [Restore Settings menu on page 4-23](#)
- [Load Default Settings menu on page 4-23](#)

- [Exit Setup menu on page 4-23](#)

System Information menu

This section describes items displayed in the System Information menu and its submenus.

Highlight the item to be set or displayed, and then press the **Enter** key.

Table 4-2 System Information menu

| Displayed item | Description |
|----------------|--|
| Product Data | Displays the product data. |
| System Summary | Displays the basic system information. |

Related topics

- [Product Data submenu on page 4-3](#)
- [System Summary submenu on page 4-3](#)

Product Data submenu

The Product Data submenu displays the version and build date of both the host firmware and BMC.

Table 4-3 Product Data submenu

| Displayed item | | Description |
|----------------|------------|-------------------------------|
| Host Firmware | Version | Displays the UEFI version. |
| | Build Date | Displays the UEFI build date. |
| BMC | Version | Displays the BMC version. |
| | Build Date | Displays the BMC build date. |

System Summary submenu

The System Summary submenu displays information about System Identification Data, processors and memory.

Table 4-4 System Summary submenu

| Displayed item | | Description |
|----------------------------|--------------------|-----------------------------|
| System Identification Data | Machine Type/Model | Displays the machine type. |
| | Serial Number | Displays the serial number. |
| | UUID Number | Displays the UUID. |

| Displayed item | | Description |
|----------------|------------------------|--|
| | Asset Tag Number | Displays the asset tag. |
| Processor | Installed CPU packages | Displays the number of installed CPUs. |
| | Processor Speed | Displays the clock rate of the installed CPUs. |
| | QPI Link Speed | Displays the transfer speed of the QPI link. |
| | Processor Details | Displays details about the installed CPUs. |
| Memory | Memory Mode | Displays the operation mode of the memory. |
| | Memory Speed | Displays the clock rate of the memory. |
| | Total Memory Size | Displays the total amount of the installed memory. |
| | Memory Voltage | Displays the operating voltage of the memory. |

System Settings menu

This section describes items displayed in the System Settings menu and its submenus.

Highlight the item to be set or displayed, and then press the **Enter** key.

Table 4-5 System Settings menu

| Displayed item | Description |
|--|---|
| Adapters and UEFI Drivers ¹ | Displays information about the adapters installed on the server blade and also about the UEFI driver. |
| Devices and I/O Ports | Displays the setting window for devices and I/Os. |
| Driver Health ¹ | Displays the driver status. |
| Legacy Support ¹ | Displays the legacy boot support settings window. |
| Memory | Displays and changes the memory settings. |
| Network ¹ | Sets network device options. |
| Power ¹ | Sets power plan options. |
| Processors | Displays and changes CPU settings. |
| Recovery and RAS | Displays the failure recovery setting window. |
| Security | Displays the security setting window. |
| Storage ¹ | Sets storage device options. |
| Notes: | |

| Displayed item | Description |
|----------------|---|
| 1. | <ul style="list-style-type: none"> ○ Unless otherwise specified, do not change the settings of the items below. The UEFI might not start up. <ul style="list-style-type: none"> • Adapters and UEFI Drivers • Driver Health • Legacy Support • Network • Power • Storage ○ For Emulex Adapter, however, see the <i>Hitachi Compute Blade Emulex Adapter User's Guide for Hardware</i> to set the following two items. <ul style="list-style-type: none"> • Network • Storage ○ For Hitachi Gigabit fibre channel adapter, however, see the <i>Hitachi Gigabit Fibre Channel Adapter USER'S GUIDE (BIOS/EFI Edition)</i> to set the following two items. <ul style="list-style-type: none"> • Adapters and UEFI Drivers • Storage ○ For details about SAS 3004 iMR ROMB, however, see Chapter 5, LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility on page 5-1 to set the following item. <ul style="list-style-type: none"> • Storage ○ For details about the following items, see Appendix A, About UEFI items whose setting values are fixed on page A-1. <ul style="list-style-type: none"> • Adapters and UEFI Drivers • Driver Health • Legacy Support • Power |

Related topics

- [Devices and I/O Ports submenu on page 4-5](#)
- [Memory submenu on page 4-7](#)
- [Processors submenu on page 4-10](#)
- [Recovery and RAS submenu on page 4-12](#)
- [Security submenu \(for CB 520H B4\) on page 4-13](#)
- [Security submenu \(for CB 520H B3\) on page 4-16](#)
- [Chapter 5, LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility on page 5-1](#)
- [Chapter 8, Fibre Channel Adapter Settings on page 8-1](#)

Devices and I/O Ports submenu

In the Device and I/O Ports submenu, you can display and change I/O device settings.



Note: You need to change the PCI 64-Bit Resource Allocation setting, the MM Config Base setting, and the USB Configuration setting when using some OSs and applications. Do not change other items.

The following table shows items that are displayed on the left side of the window, and their description. Highlight the selection to be set, and then press the **Enter** key.

Table 4-6 Devices and I/O Ports submenu

| Displayed item | Selection | Description |
|--|---|---|
| Active Video | Onboard Device Add-in Device | Specifies the output destination of video display. The initial value is Onboard Device. |
| PCI Express Native Control | Enable Disable | Enables or disables direct control of the PCI Express functionality by the OS. The initial value is Enable. |
| PCI 64-Bit Resource Allocation | Disable Enable | Enables or disables 64-bit resource allocation to PCI devices. The initial value is Enable. |
| MM Config Base | 2GB 1GB 2.5GB 3GB 3.5GB | Sets the starting address of the PCI Express configuration space. The initial value is 2GB. 2.5GB is displayed in the CB 520H B3 firmware version 08-29 or later and CB 520H B4. 3.5GB is not displayed in CB 520H B3. |
| Intel® VT for Directed I/O (VT-d) | Enable Disable | Enables or disables Intel® VT for Directed I/O (VT-d). The initial value is Enable. |
| Consistent Device Naming | Slot Group Ordering PCI Bus Number Ordering Disable | Change Consistent Device Naming Setting. The initial value is Slot Group Ordering. <ul style="list-style-type: none">Slot Group Ordering: Instance number is arranged in onboard LAN, I/O adapter, mezzanine card order.PCI Bus Number Ordering: Instance Number is arranged in PCI bus number order.Disable: Disable to Consistent Device Naming. |
| Enable / Disable Onboard Device(s) ¹ | -- | Enables or disables devices. |
| Enable / Disable Adapter Option ROM Support ¹ | -- | Specifies whether to execute the Legacy Option ROM and UEFI Option ROM for PCI devices. |
| Set Option ROM Execution Order ¹ | -- | Sets the order in which the Legacy Option ROMs for PCI devices are to be started. |
| PCIe Gen1/Gen2/Gen3 Speed Selection ¹ | -- | Sets the speed of PCI Express, which can be used in a PCI slot. |

| Displayed item | Selection | Description |
|--|-----------|---|
| Console Redirection Settings ¹ | -- | Sets console redirection and COM ports. |
| USB Configuration | -- | Configures USB ports. |
| Legend: --: None Notes: 1. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |

USB Configuration

In USB Configuration, you can change the USB settings.

Table 4-7 Devices and I/O Ports submenu (USB Configuration)

| Displayed item | Selection | Description |
|--------------------------|---------------------|---|
| Front Dongle USB Port #1 | Disabled Enabled | Enables or disables USB ports. The initial value is Enabled. |
| Front Dongle USB Port #2 | Disabled Enabled | Enables or disables USB ports. The initial value is Enabled. |
| Front USB3.0 Port | Disabled Enabled | Enables or disables USB ports. The initial value is Enabled. |
| XHCI Mode | Disabled Auto | Configures the mode of USB 3.0 controllers. The initial value is Auto. |

Memory submenu

In the Memory submenu, you can display and change memory settings.

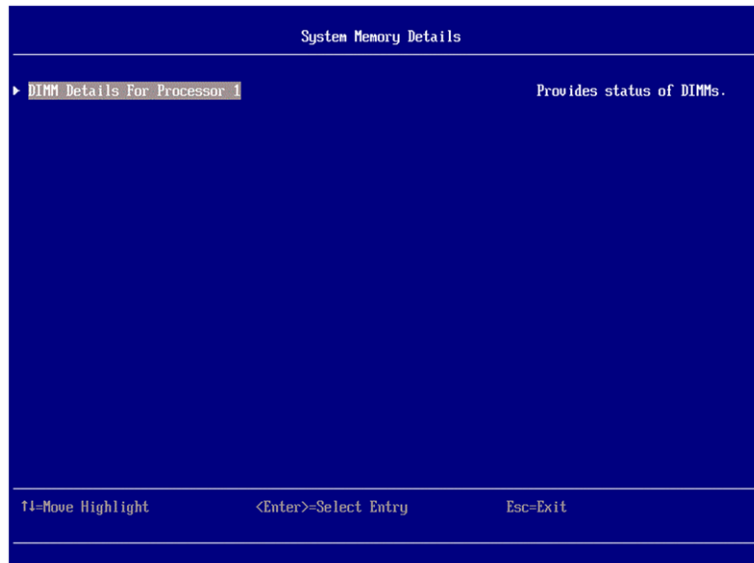
Table 4-8 Memory submenu

| Displayed item | Selection | Description |
|-----------------------|-----------|---|
| System Memory Details | -- | Displays details of each memory module in the system unit. You can use the System Memory Details window to view memory details. In the System Memory Details window, select the processor for which you want to check memory details. |
| Total Memory Size | -- | Displays the total memory size. |
| Memory Voltage | -- | Displays the operating voltage of the memory. |

| Displayed item | Selection | Description |
|---|--|---|
| Memory Mode ² | Independent Mirroring | Sets the operation mode of the memory. The initial value is Independent. |
| Sparing ² | Disable Enable | Sets memory sparing. The initial value is Disable. |
| Memory Speed | Auto Force DDR4 1600 Force DDR4 1866 Force DDR4 2133 Force DDR4 2400 | Sets the maximum clock rate of the memory. The initial value is Auto. Force DDR4 2400 is not displayed in CB 520H B3. |
| Memory Power Management ¹ | Disable Automatic | Sets the memory power management. The initial value is Disable. |
| Socket Interleave | Non-NUMA NUMA | Sets memory interleave. The initial value is NUMA. |
| Patrol Scrub ¹ | Enable Disable | Sets patrol scrubbing to detect memory failures. The initial value is Enable. |
| Memory Data Scrambling ¹ | Disable Enable | Sets memory data scrambling. The initial value is Enable. |
| Page Policy ¹ | Closed Open Adaptive | Sets the page policy. The initial value is Adaptive. |
| Cold Boot Fast ¹ | Disable Enable | Sets the Cold Boot Fast. The initial value is Disable. <For CB 520H B3> This item is not displayed. |
| Memory Deconfigure Mode | -- | Sets whether to use installed memory in reduced-configuration mode. For each memory controller, in the Memory Deconfigure Mode window, you can set or cancel reduced-configuration mode. |
| Legend: --: None Notes: 1. Do not change the setting. The UEFI might not start. 2. If you set Memory Mode to Mirroring, you cannot select Sparing. Conversely, if you set Sparing to Enable, you cannot select Mirroring for Memory Mode. | | |

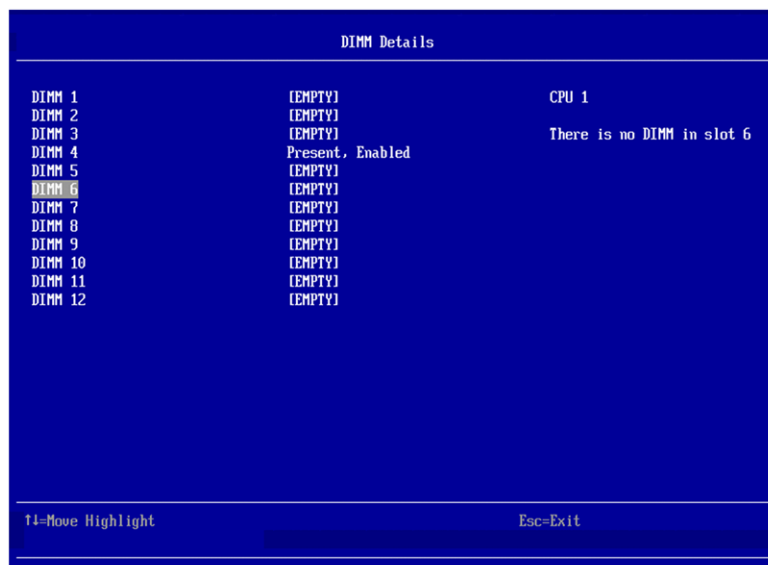
System Memory Details window

Highlight the processor to be displayed, and then press the **Enter** key.



Tip: The number of displayed processors varies depending on the number of installed processors.

When you select a processor, details about memory connected to the processor are displayed.



Tip: EMPTY: DIMM is not mounted in the DIMM slot.
Present, Enabled: The DIMM is available.

Memory Deconfigure Mode window

Highlight the DIMM group for which you want to set or cancel reduced-configuration mode, and then press the **Enter** key.



Processors submenu

In the Processors submenu, you can display and change CPU settings.

Table 4-9 Processors submenu

| Displayed item | Selection | Description |
|---|---|---|
| Turbo Mode | Disable Enable | Sets the Turbo Mode for the CPU. The setting is enabled after reboot. This item appears only if the installed CPU supports the mode. The initial value is Enable. |
| Processor Performance States ¹ | Disable Enable Cooperative Efficiency Mode | Sets CPU EIST. The setting is enabled after reboot. The initial value is Enable. Cooperative, and Efficiency Mode are not displayed in CB 520H B3. |
| C-States | Disable Enable | Sets the power saving functionality for the CPU. The setting is enabled after reboot. The initial value is Enable. |
| C1 Enhanced Mode ¹ | Disable Enable | Sets Enhanced C1E State for the CPU. The setting is enabled after reboot. The initial value is Enable. |
| Hyper-Threading | Enable Disable | Sets Hyper-Threading for the CPU. The initial value is Enable. This item appears only if the installed CPU supports the mode. |
| Execute Disable Bit | Disable Enable | If you specify Disable, 0 is always returned for the XD feature flag. The initial value is Enable. |

| Displayed item | Selection | Description |
|---------------------------------------|------------------------------------|---|
| Enable TXT ¹ | Disable Enable | Sets Trusted Execution Technology. The initial value is Disable. |
| VMX ¹ | Enable Disable | Sets Intel Virtualization Technology. If you set Enable TXT to Enable, you cannot select VMX. The initial value is Enable. |
| Hardware Prefetcher | Enable Disable | Sets the hardware prefetcher for the CPU. The initial value is Enable. |
| Adjacent Cache Prefetch ¹ | Enable Disable | Sets the adjacent cache prefetcher. The initial value is Enable. |
| DCU Streamer Prefetcher ¹ | Enable Disable | Enables the data cache unit streamer prefetcher. The initial value is Enable. |
| DCU IP Prefetcher ¹ | Enable Disable | Sets the instruction pointer-based prefetcher. The initial value is Enable. |
| DCA ¹ | Enable Disable | Enables the I/O device to directly transfer data to the CPU cache. The initial value is Disable. |
| Energy Efficient Turbo ¹ | Enable Disable | Sets the energy efficient turbo. You can set only when Turbo Mode is Enable. The initial value is Enable. <For CB 520H B4> This item is displayed only when Turbo Mode is Disable. |
| Uncore Frequency Scaling ¹ | Enable Disable | Sets the functionality to dynamically adjust the uncore operation frequency. The initial value is Enable. |
| MWAIT/MMONITOR | Disable Enable | Sets the MWAIT / MMONITOR. You can set only when C-States is Disable. The initial value is Enable. |
| QPI Link Disable ¹ | Enable All Links Disable 1 Link | Disables one QPI Link to save power. Ensure that the value of this setting is "Enable All Links". If another value is set, you might not be able to start the UEFI. The initial value is Enable All Links. <For CB 520H B3> You cannot change to the value when Early Snoop Preference value is Enable. <For CB 520H B4> This item is displayed only. |
| COD Preference ¹ | Enable Disable | Sets the COD preference. The initial value is Disable. |

| Displayed item | Selection | Description |
|--|--|---|
| Early Snoop Preference ¹ | Disable Enable | Sets the early snoop preference. (CB 520H B3 only) The initial value is Disable. |
| Per Core P-state ¹ | Disable Enable | Sets the per core P-state. The initial value is Enable. |
| Cores in CPU Package | All 1-x ² | Sets the number of active cores in the CPU package. The initial value is All. |
| QPI Link Frequency ¹ | Minimal Power Balanced Max Performance | Sets the clock rate for QPI Link (data path between CPUs). The initial value is Max Performance. |
| Snoop Response hold off | 6 | This item is displayed only. <For CB 520H B3> This item is not displayed. |
| Turbo Limits ¹ | Full turbo uplift Restrict turbo | Can be used to limit the Maximum turbo frequency. This item is displayed only when Turbo Mode is Enable. The initial value is Full turbo uplift. |
| Notes: 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. 2. x is the value of the maximum number of cores of the mounted CPU -1. | | |

Recovery and RAS submenu

The Recovery and RAS submenu displays the failure recovery setting window.

Table 4-10 Recovery and RAS submenu

| Displayed item | Selection | Description |
|--|-----------|--|
| Advanced RAS | -- | Sets reduced-configuration mode when a CPU or DIMM failure occurs. |
| Backup Bank Management ¹ | -- | Sets backup bank management. |
| Disk GPT Recovery ¹ | -- | Sets the Disk GPT recovery option. |
| System Recovery ¹ | -- | Sets system recovery. |
| Legend: --: None Notes: 1. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |

Advanced RAS

In Advanced RAS, you can specify reduced-configuration mode when a CPU or DIMM failure occurs.

Table 4-11 Recovery and RAS submenu (Advanced RAS)

| Displayed item | Selection | Description |
|-------------------|-------------------|---|
| PCIe Isolation | Enable Disable | Sets PCIe isolation. The initial value is Disable. |
| Deconfigured Mode | Disable Enable | Sets the Deconfigured mode. The initial value is Enable. |
| POST Fail Retry | Enable Disable | Sets whether to retry a diagnosis when a POST DIMM failure is detected. The initial value is Enable. |

Security submenu (for CB 520H B4)

The Security submenu displays the security setting window.

Table 4-12 Security submenu (for CB 520H B4)

| Displayed item | Selection | Description |
|---|-----------|---|
| Rollback Configuration ^{1, 2} | -- | Sets the rollback option. |
| Secure Boot Configuration ^{1, 2} | -- | Sets the secure boot option. |
| Trusted Platform Module | -- | Displays the TPM option setting window. |
| Legend: --: None | | |
| Notes: | | |
| 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. | | |
| 2. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |

Trusted Platform Module

Trusted Platform Module displays TPM status and TPM settings.

Table 4-13 Security submenu (Trusted Platform Module)

| Displayed item | Selection | Description |
|----------------|-----------|--|
| TPM 1.2 | -- | Displays the TPM option settings window. |

| Displayed item | | Selection | Description |
|--|-------------------------------------|-----------|---|
| | | | This item is displayed only when the TPM firmware version 1.2. |
| TPM 2.0 | | -- | Displays the TPM option settings window. This item is displayed only when the server blade being used is the CB 520H B4, the blade firmware version is 10-07 or later, and the TPM firmware version is 2.0. |
| TPM Firmware Update ¹ | Update TPM Firmware from 1.2 to 2.0 | -- | Updates the TPM firmware version from 1.2 to 2.0. <ul style="list-style-type: none"> This item is displayed only when the server blade being used is the CB 520H B4, the blade firmware version is 10-07 or later, and the TPM firmware version is 1.2. If TPM 2.0 is applied and you want to downgrade the server blade firmware to version 10-06 or earlier, you must first downgrade the TPM firmware to version 1.2 by using the menu item Update TPM Firmware from 2.0 to 1.2. |
| | Update TPM Firmware from 2.0 to 1.2 | -- | Updates the TPM firmware version from 2.0 to 1.2. This item is displayed only when the server blade being used is the CB 520H B4, the blade firmware version is 10-07 or later, and the TPM firmware version is 2.0. |
| Legend: --: None Notes: 1. For this item to be displayed, a TPM Activate License is required. | | | |

TPM1.2

In TPM 1.2, specify settings of the TPM 1.2 options.

Table 4-14 Security submenu (Trusted Platform Module / TPM 1.2)

| Displayed item | | Selection | Description |
|---------------------|-----------------------|------------------------|--|
| TPM Status | TPM Firmware Version | -- | Displays the firmware version of TPM. Note that TPM firmware versions 2.0 and 1.2 are not compatible, and the version numbers are not intended to represent a continuous progression. |
| | TPM Physical Presence | -- | Displays the physical presence of TPM. |
| | TPM Device State | -- | Displays the status of TPM. |
| | Refresh TPM Status | -- | Refreshes the TPM status. |
| TPM Settings | TPM Device | Enable Disable | Enables or disables the TPM. The initial value is Disable. |
| | TPM State | Activate Deactivate | Activates the TPM. The initial value is Deactivate. This item is displayed only when TPM Device is Enable. |
| | TPM Force Clear | -- | Deletes the TPM data. |
| Legend: --: None | | | |

Specifying TPM settings

Enables the Trusted Platform Module (TPM). If TPM 2.0 is applied, this setting is unnecessary.

Follow the procedure below to specify TPM settings:

1. Confirm that the value of **TPM Physical Presence** is **Asserted** in Trusted Platform Module (TPM 1.2).
2. Highlight the value **Disable** for **TPM Device**, and then press the **Enter** key.
3. When **Enable** becomes highlighted, press the **Enter** key again.
The following message appears: Success!!Reboot required to enable this change.
When the **TPM Device** value becomes **Enable**, the **TPM State** menu appears.
4. Highlight the value **Deactivate** for **TPM State**, and then press the **Enter** key.
5. When **Activate** becomes highlighted, press the **Enter** key again.

Rebooting the server blade activates the TPM.

TPM2.0

Table 4-15 Security submenu (Trusted Platform Module / TPM 2.0)

| Displayed item | | Selection | Description |
|---------------------|-----------------------|--|--|
| TPM Status | TPM Firmware Version | -- | Displays the firmware version of TPM. Note that TPM firmware versions 2.0 and 1.2 are not compatible, and the version numbers are not intended to represent a continuous progression. |
| | TPM Physical Presence | -- | Displays the physical presence of TPM. |
| Refresh TPM Status | | -- | Refreshes the TPM status. |
| TPM Settings | TPM2 Operation | No Action TPM2 ClearControl(NO) + Clear | Sets the TPM2 operation. |
| Legend: --: None | | | |

Security submenu (for CB 520H B3)

The Security submenu displays the security setting window.

Table 4-16 Security submenu (for CB 520H B3)

| Displayed item | Selection | Description |
|---|-----------|---|
| Rollback Configuration ^{1, 2} | -- | Sets the rollback option. |
| Secure Boot Configuration ^{1, 2} | -- | Sets the secure boot option. |
| Trusted Platform Module (TPM 1.2) | -- | Displays the TPM option setting window. |
| Legend: --: None | | |
| Notes: | | |
| 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. | | |
| 2. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |

Trusted Platform Module (TPM 1.2)

Trusted Platform Module (TPM 1.2) displays TPM status and TPM settings.

Table 4-17 Security submenu (Trusted Platform Module (TPM 1.2))

| Displayed item | | Selection | Description |
|---|------------------------|--------------------------|---|
| TPM Status | TPM Physical Presence | -- | Displays the physical presence of TPM. |
| | TPM Device State | -- | Displays the status of TPM. |
| | MOR Status | -- | Displays the Memory Overwrite Request (MOR) status. |
| | Refresh TPM Status | -- | Refreshes the TPM status. |
| TPM Settings | TPM Device | Enable Disable | Enables or disables the TPM. The initial value is Disable. For CB 520H B3 firmware version 08-22 or earlier, the factory default settings might differ from the initial values provided in the manual. |
| | TPM State | Activated Deactivated | Activates the TPM. The initial value is Deactivate. This item is displayed only when TPM Device is Enable. For CB 520H B3 firmware version 08-22 or earlier, the factory default settings might differ from the initial values provided in the manual. |
| | MOR State ¹ | Enable Disable | Enables or disables Memory Overwrite Request (MOR). The initial value is Disable. |
| | TPM Force Clear | -- | Deletes the TPM data. |
| <p>Legend:</p> <p>--: None</p> <p>Notes:</p> <p>1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up.</p> | | | |

Specifying TPM settings

Enables the Trusted Platform Module (TPM).

Follow the procedure below to specify TPM settings:

1. Confirm that the value of **TPM Physical Presence** is **Asserted** in Trusted Platform Module (TPM 1.2).
2. Highlight the value **Disable** for **TPM Device**, and then press the **Enter** key.
3. When **Enable** becomes highlighted, press the **Enter** key again.

The following message appears: Success!!Reboot required to enable this change.

When the **TPM Device** value becomes **Enable**, the **TPM State** menu appears.

4. Highlight the value **Deactivate** for **TPM State**, and then press the **Enter** key.
5. When **Activate** becomes highlighted, press the **Enter** key again.

Rebooting the server blade activates the TPM.

Date and Time menu

This section describes the items displayed in the Date and Time menu.

Highlight the item to be set, and select one of the following methods to adjust the value.

- Use the **+** or **-** key to adjust the value.
- Press the **Enter** key, and specify the value. And then, press the **Enter** key again.

Table 4-18 Date and Time menu

| Displayed item | Description |
|----------------|---|
| System Date | Sets the date of the server. Sets the date in the mm/dd/yyyy format. |
| System Time | Sets the time of the server. Sets the time in 24-hour format (hh:mm:ss). |

Start Options menu

In the Start Options menu, you can boot from a target device.

Highlight the item to be set, and then press the **Enter** key.

Different items are displayed depending on the settings of Boot Manager.

Related topics

- [Boot Manager menu on page 4-18](#)

Boot Manager menu

This section describes items to be displayed in the Boot Manager menu and its submenus.

Highlight the item to be set, and then press the **Enter** key.

Table 4-19 Boot Manager menu

| Displayed item | | Description |
|--|---|---|
| Primary Boot Sequence | Add Boot Option | Adds a device or file system to the boot option. |
| | Delete Boot Option | Deletes a device or file system from the boot option. The setting is enabled at the next startup. |
| | Change Boot Order | Changes the boot order. The setting is enabled at the next startup. |
| Secondary (WOL) Boot Sequence | Add WOL Boot Option | Adds a device or file system to the WOL boot option. |
| | Delete WOL Boot Option | Deletes a device or file system from the WOL boot option. The setting is enabled at the next startup. |
| | Change WOL Boot Order | Changes the WOL boot order. The setting is enabled at the next startup. |
| Boot Other | Boot From File ¹ | Boots from a specific device or file. |
| | Boot From Device ¹ | Boots from a specific device path. |
| | Select Next One-Time Boot ^{1, 2} | Tries to boot from a specific target only at the next startup. |
| System | Boot Modes | Displays the window for changing the boot settings. |
| | Reset System | Restarts the system. |
| Notes: 1. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. 2. For details about this item, see Appendix A, About UEFI items whose setting values are fixed on page A-1 . | | |



Tip: If the OS image cannot be found in the boot device or PXE server, the system might continue rebooting.

In this case, confirm the connection of the boot device or the PXE server.

Related topics

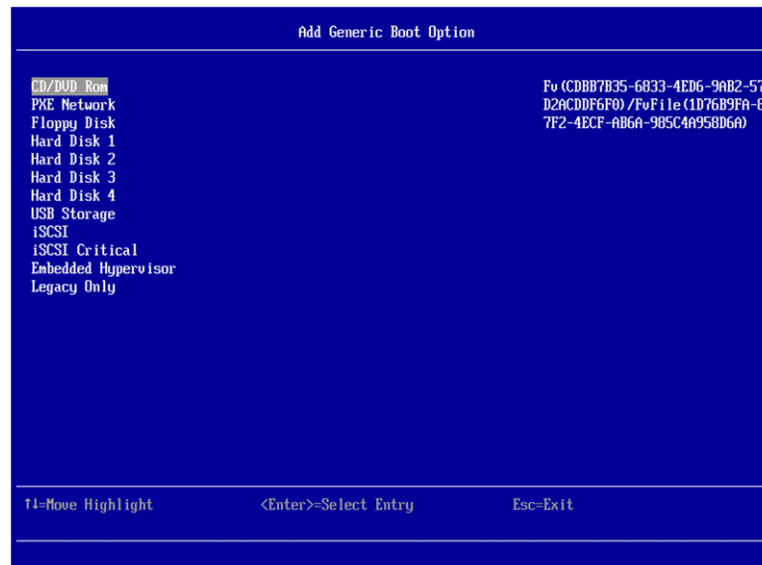
- [Add \(WOL\) Boot Option submenu on page 4-19](#)
- [Delete \(WOL\) Boot Option submenu on page 4-20](#)
- [Change \(WOL\) Boot Order submenu on page 4-21](#)
- [Boot Modes submenu on page 4-21](#)

Add (WOL) Boot Option submenu

In the Add Boot Option submenu, you can add a device or file system to the boot option.

The Add WOL Boot Option submenu displays the same menu items as Add Boot Option, but under different submenu names.

1. Highlight **Generic Boot Option**, and then press the **Enter** key.
2. Highlight the item to be added to boot options, and then press the **Enter** key.



To return to the **Boot Manager** menu, highlight a target item, press the **Enter** key, and then press the **Esc** key twice.



Note:

- You can only add standard boot options. Do not add advanced boot options.
- Do not add unnecessary items. If you add unnecessary items, problems such as longer boot times occur.



Tip:

- To boot from a device that is not included in the boot order, you need to add the device to the boot options.
- This is the same for Primary Boot Sequence and Secondary (WOL) Boot Sequence.
- Select the Add Boot Option menu of either category according to your purpose.

Delete (WOL) Boot Option submenu

In the Delete Boot Option submenu, you can delete a device or file system from the boot options.

The Delete WOL Boot Option submenu displays the same menu items as Delete Boot Option, but under different submenu names.

1. Select the device to be deleted from the boot options, and then press the **Space** key.

X appears in the [] displayed to the device's right.

- Highlight **Commit Changes and Exit**, and then press the **Enter** key.
The selected device is deleted from the boot options.



Note:

- If you delete a device from the boot options, you might be unable to boot the server blade.

Change (WOL) Boot Order submenu

In the Change Boot Option submenu, you can change the boot order.

Highlight the item to be set, and then press the **Enter** key.

The Change WOL Boot order submenu displays the same menu items as Change Boot Order, but under different submenu names.

Table 4-20 Change Boot Order submenu

| Displayed item | Description |
|-------------------------|---|
| Change the order | Bootable devices are displayed in order from the top. Use the ↑ or ↓ key to select (highlight) a device, and then press the Enter key. Then, use the + or - key to change the order, and then press the Enter key again. |
| Commit Changes and Exit | Commits changes. Note that you need to save the changes before exiting the Setup menu. |

Boot Modes submenu

Select an item to display or set, and press **Enter**.

Table 4-21 Boot Modes sub menu items

| Menu items | Selection ¹ | Description |
|-------------------------------|--------------------------|---|
| System Boot Mode ¹ | UEFI Mode Legacy Mode | Sets which Boot Manager uses to boot, UEFI Driver or Option ROM. UEFI Mode: Uses UEFI Driver. Select this for OS boot in UEFI mode. Legacy Mode: Uses Option ROM, not UEFI Driver. Select this for OS boot in Legacy mode. The initial value is UEFI Mode. |
| Optimized Boot ² | Disabled Enabled | Sets Optimized Boot where minimum drivers are loaded to optimize the boot time. The initial value is Enabled. |
| Quiet Boot ² | Disabled Enabled | Sets Quiet Boot where the system summary view is prevented. |

| Menu items | Selection ¹ | Description |
|--|------------------------|-------------------------------|
| | | The initial value is Enabled. |
| Notes: 1. <For CB 520H B3> UEFI mode is strongly recommended to avoid any unexpected behavior. However, to use the Legacy mode, to avoid the unexpected behavior, users are required to adjust the total amount of Option ROM by disabling Option ROM of each bootable I/O device. <For CB 520H B4> This server blade model does not support booting in Legacy Mode. Do not change the System Boot Mode setting. 2. Unless specified otherwise, do not change the setting of this item. The UEFI might not start up. | | |

System Event Logs menu

The System Event Logs menu displays event logs of the server blade.

Highlight the item to be set or display, and then press the **Enter** key.

Table 4-22 System Event Logs menu

| Displayed item | Description |
|--|---|
| POST Event Viewer | Displays POST event of the server blade. |
| System Event Log | Displays system event logs of the server blade. |
| Clear System Event Log ¹ | Deletes system event logs of the server blade. |
| Notes: 1. Do not select this item except when the support service instructed to delete system event logs. | |

User Security menu

In the User Security menu, you can specify security settings.



Note:

- Once a Power-On Password is set, you need to enter the password when completing the system boot. Once an Admin Password is set, you need to enter the password when accessing Configuration/Setup menu.
In an N+M or HA configuration, or if you specify automatic booting of the OS, password authentication interferes with switching systems at failover or server blade startup. In such configurations, do not set a power-on password.
- A password must consist of 6 to 20 characters.

In addition, a password must be a combination of any ASCII printable characters.

Highlight the item to be set, and then press the **Enter** key.

Table 4-23 User Security menu

| Displayed item | Description |
|--|---|
| Password Complexity Strength ^{1, 2} | Set level of password complexity strength. The initial value is Low. |
| Set Power-On Password | Sets the password for startup. |
| Clear Power-On Password | Deletes the password for startup. |
| Set Admin Password | Sets the administrator password. |
| Clear Admin Password | Deletes the administrator password. |
| Notes: | |
| 1. Do not change the setting. The EFI might not start. | |
| 2. This item is not displayed in CB 520H B3. | |

Save Settings menu

The Save Settings menu saves changed settings.

Highlight Save Settings, and then press the **Enter** key.

Restore Settings menu

The Restore Settings menu discards any changes and restores the previous settings.

Highlight Restore Settings, and then press the **Enter** key.

Load Default Settings menu

The Load Default Settings menu discards any changes and returns the settings to the initial settings (settings at the time of shipping).

Highlight Load Default Settings, and then press the **Enter** key. After that reboot the server blade

Exit Setup menu

The Exit Setup menu exits the setup menu.

Highlight Exit Setup, and then press the **Enter** key.

When a dialog box appears for selecting whether to exit the setup menu or to return to the setup menu, press the **Y** key.



Tip: If you have unsaved changes, <Y> Save And Exit the Setup Utility appears.
Press the **Y** key.

LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility

This chapter describes how to specify disk array settings by using the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility.

- ☐ [Configuration of the utility](#)
- ☐ [Starting the Configuration Utility](#)
- ☐ [Setting items of the utility](#)
- ☐ [Specifying hardware settings of the disk array controller](#)
- ☐ [Creating RAID 0 or RAID 1 logical drives](#)
- ☐ [Adding logical drives](#)
- ☐ [Initializing logical drives](#)
- ☐ [Deleting all logical drives](#)
- ☐ [Deleting individual logical drives](#)
- ☐ [Consistency check on logical drives](#)
- ☐ [Rebuilding logical drives](#)
- ☐ [Exiting the utility](#)
- ☐ [If a physical drive that does not match the configuration information is detected](#)

- ☐ [Status list of logical drives or physical drives](#)
- ☐ [Display settings for error messages](#)
- ☐ [Handling error messages at system startup](#)
- ☐ [List of error messages](#)

Configuration of the utility

The following shows the configuration of the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility menus.

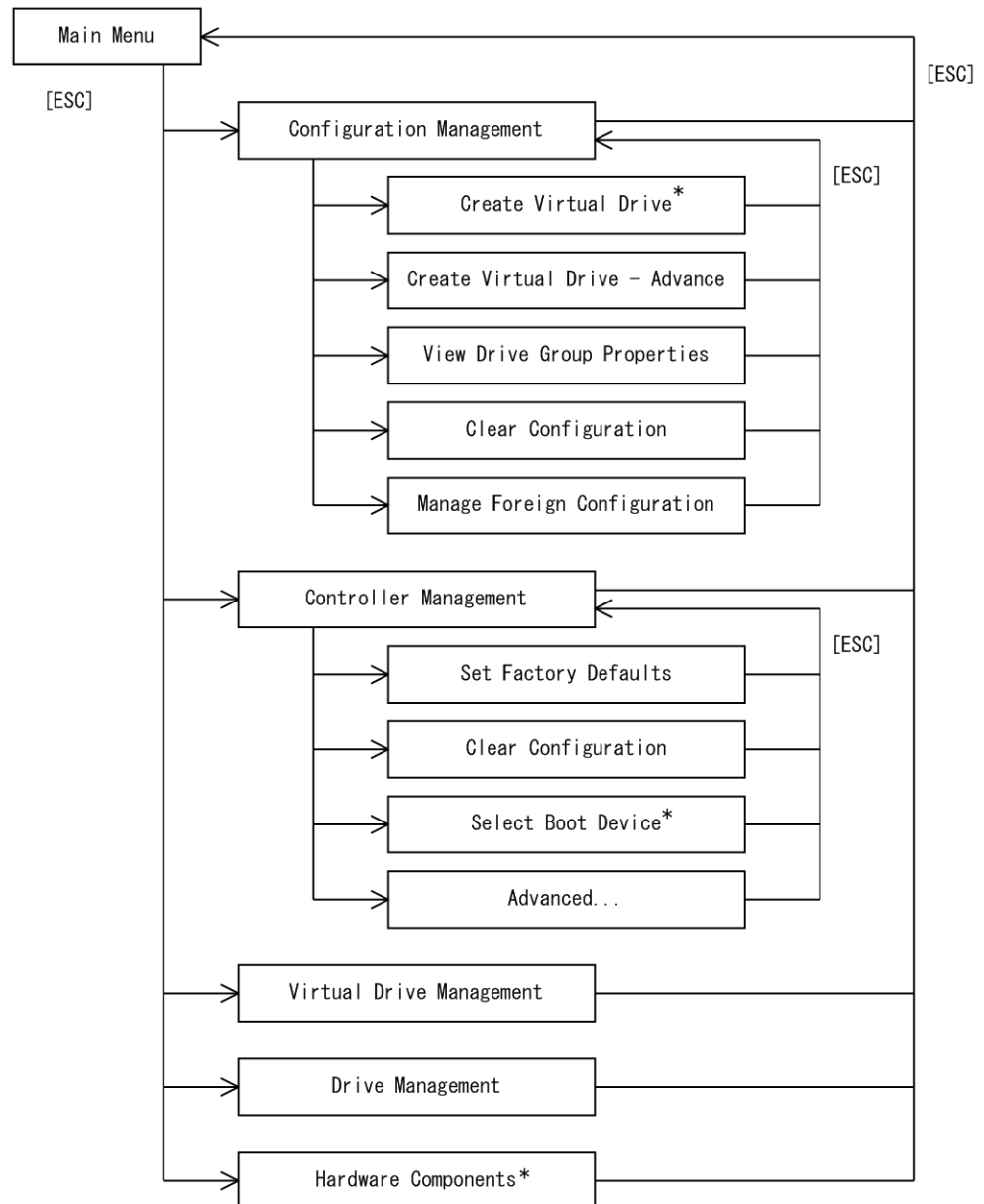


Figure 5-1 Menu organization of the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility

Related topics

- [Main Menu window on page 5-5](#)
- [Configuration Management window on page 5-6](#)
- [Controller Management window on page 5-7](#)

- [Virtual Drive Management window on page 5-8](#)
- [Drive Management window on page 5-11](#)

Starting the Configuration Utility

Follow this procedure to start up the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility.

Start the remote console in advance, and then power on the server blade.

To start the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility:

1. In the **System Configuration and Boot Management** window, select **System Settings**, and then press the **Enter** key.
The **System Settings** window appears.
2. Select **Storage**, and then press the **Enter** key.
The **Storage** window appears.
3. Select **LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility**, and then press the **Enter** key.



Tip: If an SMP configuration is used, a maximum of four RAID controllers are recognized. In this case, select a target RAID controller based on the information of **Bus xx** under **PCI Function Address:** that is displayed on the right side of the window when you select **LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility**.



For an SMP configuration connected to a 2-blade SMP connect board:

- The RAID controller of the primary server blade: **Bus** is identified with a number from 0 to 127.
- The RAID controller of a non-primary server blade: **Bus** is identified with a number from 128 to 255.

For an SMP configuration connected to a 4-blade SMP connect board:

- The RAID controller of the primary server blade: **Bus** is identified with a number from 0 to 63.
- The RAID controller of the second non-primary server blade from the bottom: **Bus** is identified with a number from 64 to 127.
- The RAID controller of the third non-primary server blade from the bottom: **Bus** is identified with a number from 128 to 191.
- The RAID controller of the fourth non-primary server blade from the bottom: **Bus** is identified with a number from 192 to 255.

The **Main Menu** window of the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility appears.



Figure 5-2 Main Menu window

Setting items of the utility

This section describes the window layout of the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility.

Main Menu window

When you start up the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility, the Main Menu window appears.

The following shows the menu items in the Main Menu window.

Table 5-1 Main Menu (Main Menu)

| Menu item | Description |
|--------------------------|---|
| Configuration Management | <ul style="list-style-type: none"> Creates logical drives. Deletes logical drives. Displays logical drive information. Imports configuration information. |
| Controller Management | <ul style="list-style-type: none"> Displays disk array controller information. Specifies disk array controller settings. Deletes logical drives. |
| Virtual Drive Management | <ul style="list-style-type: none"> Specifies logical drive settings. Executes logical drive tasks. Displays logical drive information. |
| Drive Management | <ul style="list-style-type: none"> Displays physical drive information. Executes physical drive tasks. |

| Menu item | Description |
|--|--------------------|
| Hardware Components ¹ | Manages batteries. |
| Notes: | |
| 1. Not supported. Do not select this item. | |

Related topics

- [Configuration Management window on page 5-6](#)
- [Controller Management window on page 5-7](#)
- [Virtual Drive Management window on page 5-8](#)
- [Drive Management window on page 5-11](#)

Configuration Management window

The logical drive creation and management menu in the Configuration Management window creates, adds, or deletes logical drives, or displays logical drive information.

1. In the **Main Menu** window, select **Configuration Management**, and then press the **Enter** key.
The **Configuration Management** window appears.
The following table shows the menu of the **Configuration Management** window.

Table 5-2 logical drive creation and management menu

| Menu item | Description |
|--|--|
| Create Virtual Drive ¹ | Creates logical drives. You cannot individually specify values. |
| Create Virtual Drive - Advanced | Builds or adds logical drives. You can individually specify values. |
| View Drive Group Properties | Displays logical drive information. |
| Clear Configuration | Deletes all logical drives. |
| Manage Foreign Configuration | Displays configuration information. |
| Notes: | |
| 1. Not supported. Do not select this item. | |



Tip:

- If physical drives that can be used to create logical drives exist, the Create Virtual Drive menu and the Create Virtual Drive - Advanced menu appear.
- If logical drives are created, the View Drive Group Properties menu appears.

- If the configuration information is inconsistent, the Manage Foreign Configuration menu appears.
-

Related topics

- [Creating RAID 0 or RAID 1 logical drives on page 5-17](#)
- [Adding logical drives on page 5-21](#)
- [Deleting all logical drives on page 5-26](#)
- [If a physical drive that does not match the configuration information is detected on page 5-30](#)

Controller Management window

The controller management menu in the Controller Management window displays or sets hardware information of the disk array controller, or deletes all the created logical drives together.

1. In the **Main Menu** window, select **Controller Management**, and then press the **Enter** key.

The **Controller Management** window appears.

The following table shows the menu of the **Controller Management** window.

Table 5-3 controller management menu

| Menu item | Description |
|---|---|
| Set Factory Defaults ¹ | Return all settings to the default. |
| Clear Configuration | Deletes all logical drives under the disk array controller. |
| Select Boot Device ² | Specifies a logical drive to be used as a boot drive. |
| Advanced... | Specifies disk array controller settings. |
| Notes: | |
| 1. Do not use the Set Factory Defaults menu. If you do, you will need to change settings to the recommended values. | |
| 2. Not supported. Do not select this item. | |

Related topics

- [Virtual Drive Management window on page 5-8](#)
- [Deleting all logical drives on page 5-26](#)
- [Deleting individual logical drives on page 5-27](#)

Virtual Drive Management window

The logical drive management menu in the Virtual Drive Management window creates logical drives, displays information, executes tasks, or deletes all created logical drives together.

1. In the **Main Menu** window, select **Virtual Drive Management**, and then press the **Enter** key.

The **Virtual Drive Management** window appears.

2. Select the logical drive whose information is to be viewed, and then press the **Enter** key.

The logical drive information is displayed.

The following table shows the menu of the **Virtual Drive Management** window.

Table 5-4 logical drive management menu

| Menu item | Display/Setting | Values |
|------------------------|---|--------------------------------|
| Operation | Executes a task on the logical drive. | -- |
| Name | Displays or sets a logical drive name. | -- |
| Raid Level | RAID level of the logical drive | RAID0 RAID1 |
| Status | Status of the logical drive | Optimal Degraded Offline |
| Size | Capacity of the logical drive | -- |
| View Associated Drives | Displays information of the physical drives that make up the logical drive. | -- |
| Advanced... | Displays or sets the logical drive details. | -- |
| Legend: --: None | | |

To execute a task on a logical drive:

Follow the steps below to execute a task on a logical drive:

1. Select **Operation**, and then press the **Enter** key.

A task list appears in the middle of the screen.

The following table shows the task list menu.

Table 5-5 Logical drive management menu (the task list after Operation is selected)

| Menu item | Task |
|--|--|
| Select operation | Initial value. |
| Start Locate ¹ | Turns on the LEDs on the physical drives that configure the logical drive or makes them blink. |
| Stop Locate ¹ | Turns off the LEDs on the physical drives that configure the logical drive. |
| Delete Virtual Drive | Deletes the logical drive. |
| Reconfigure Virtual Drives ¹ | Expands the capacity of the logical drive. |
| Fast Initialization ¹ | Initializes the entire area of the logical drive at high speed. |
| Slow Initialization | Initializes the entire area of the logical drive. |
| Check Consistency | Checks the consistency of the logical drive. |
| Virtual Drive Erase ¹ | Formats the logical drive. |
| Notes: | |
| 1. Not supported. Do not select this item. | |

To configure a logical drive:

Follow the steps below to name a logical drive:

1. Select **Name**, and then press the **Enter** key.
A window for entering a logical drive name appears in the middle of the screen.
2. Enter a name using up to 16 characters, and then press the **Enter** key.
3. Check the logical drive name.
The **Virtual Drive Management** window appears.
Confirm that the logical drive name displayed in **Name** is the one you entered.

To change the advanced settings for a logical drive:

Follow the steps below to change advanced settings for a logical drive:

1. Select **Advanced...**, and then press the **Enter** key.
The **Advanced** window appears.
Press the ↓ key to display the more menu items.
2. Select the menu item to be set, and change the value.
The following table shows the menu of the **Advanced** window.

Table 5-6 Logical drive management menu (the menu list of the Advanced window)

| Menu item | Display/Setting | Values |
|---|---|--|
| Apply Changes | Applies settings. | -- |
| Mirror Data Size | Capacity of the logical drive | -- |
| Logical Sector Size | Logical sector size | 512B |
| Segment Size | Access size of the logical drive | 64KB |
| Starting Logical Block | Starting address of the logical drive | -- |
| Addressing (LBA) Protected | Data protection functionality | No |
| Bad Blocks | Existence of bad blocks | -- |
| SSD Caching | SSD cache settings | Disabled |
| Access | Access to the logical drive | Blocked Read Only [<<Read/Write>>] |
| Current Write Cache Policy | Current write cache settings | Write Through |
| Default Write Cache Policy | Default write cache settings | Write Through |
| Disable Background Initialization (BGI) | Background initialization setting | <<No>> (Background initialization enabled) [Yes (Background initialization disabled)] |
| Read Cache Policy | Read cache setting | No Read Ahead |
| Drive Cache | Write cache setting on the physical drive | [Disable] Enable <<Unchanged>> |
| Input/Output (I/O) | Read cache operating setting | Direct |
| Apply Changes | Applies settings. | -- |
| Legend: --: None | | |

Related topics

- [Values of utility settings and notation on page 2-7](#)

Drive Management window

The physical drive management menu in the Drive Management window displays physical drive information, executes tasks, assigns or unassigns hot spares, or displays hot spare setting information.

1. In the **Main Menu** window, select **Drive Management**, and then press the **Enter** key.
The **Drive Management** window appears.
2. Select the logical drive whose information is to be viewed, and then press the **Enter** key.
The physical drive information is displayed.
The following table shows the displayed physical drive information:

Table 5-7 physical drive management menu

| Menu item | Display/Setting | Values |
|--------------------------|---|--|
| Operation | Executes a task on the physical drive. | Executing a task on the physical drive |
| Drive ID | Physical drive ID | Port0 Port1 Port2 Port3 |
| Status | Status of the physical drive | Online Offline Unconfigured Good Unconfigured Bad |
| Size | Physical drive capacity | -- |
| Type | Physical drive type | Disk |
| Model | Serial number of the physical drive | -- |
| Hardware Vendor | Physical drive vendor | -- |
| Associated Virtual Drive | Displays the logical drive associated with the physical drive | -- |
| Advanced... | Advanced settings of the physical drive | Changing advanced settings of the physical drive |
| Legend: --: None | | |

To execute a task on a physical drive:

Follow the steps below to execute a task on a physical drive:

1. Select **Operation**, and then press the **Enter** key.
A list of available tasks appears in the middle of the window.



Tip: Available tasks vary depending on the physical drive status.
Select one from the list.

Table 5-8 Physical drive management menu (the task list after Operation is selected)

| Menu item | Task |
|--|---|
| Select operation | -- |
| Start Locate | Turns on the LEDs on the physical drive. |
| Stop Locate | Turns off the LEDs on the physical drive. |
| Place Drive Offline ¹ | Changes the physical drive status to Offline. |
| Place Drive Online ¹ | Changes the physical drive status to Online. |
| Initialize Drive ¹ | Performs a full initialization of the physical drive. |
| Drive Erase ¹ | Performs a full initialization of the physical drive. |
| Make Unconfigured Bad ¹ | Changes the physical drive status to Unconfigured Bad. |
| Make Unconfigured Good ¹ | Changes the physical drive status to Unconfigured Good. |
| Assign Global Hot Spare Drive | Assigns hot spares. |
| Unassign Hot Spare Drive | Unassigns hot spares. |
| Rebuild ¹ | Starts rebuilding. |
| Notes: | |
| 1. Not supported. Do not select this item. | |

To change the advanced settings of a physical drive:

Follow the steps below to change advanced settings of a physical drive:

1. Select **Advanced...**, and then press the **Enter** key.
The **Advanced** window appears.
Press the ↓ key to display the more menu items.
2. Select the item to be set, and then change the value.

Table 5-9 Physical drive management menu (the menu list of the Advanced window)

| Menu item | Description |
|----------------------|----------------------------|
| Certified | Certification |
| Logical Sector Size | Logical sector size |
| Physical Sector Size | Physical sector size |
| SMART Status | Sets S.M.A.R.T. reporting. |

| Menu item | Description |
|--------------------------------|---|
| Revision | Physical drive revision |
| Connected Port | Port number recognized by the disk array controller |
| Media Errors | Number of detected media errors |
| Predicted Fail Count | Number of reported S.M.A.R.T. warnings |
| SAS Address | SAS address |
| Cache Setting | Physical drive cache setting |
| Available Size (GB) | Size available for the logical drive configuration |
| Used Space (GB) | Space used for the logical drive configuration |
| Disk Protocol | Physical drive protocol |
| Negotiated Disk Transfer Speed | Physical drive connection speed |
| Number of Connections | Number of connected physical drives |
| FDE Capable | Availability of the encryption functionality |
| Protection Capable | Availability of the protection functionality |
| Temperature | Physical drive temperature |

Specifying hardware settings of the disk array controller

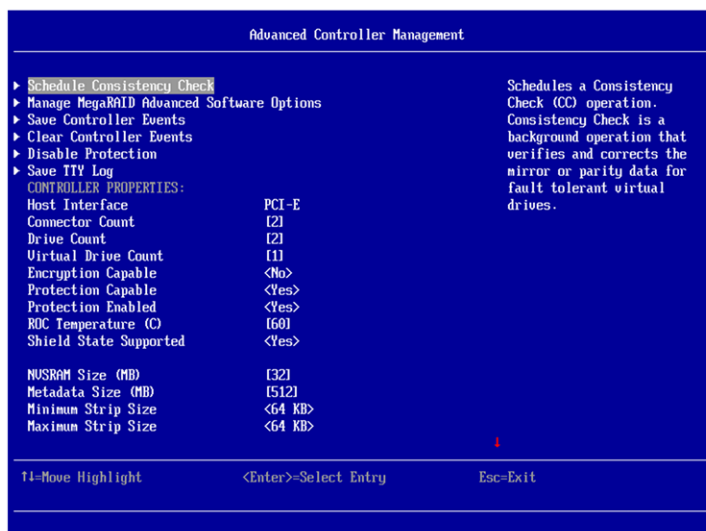
You can specify hardware settings of the disk array controller.

1. In the **Main Menu** window, select **Controller Management**, and then press the **Enter** key.

The **Controller Management** window appears.

2. Select **Advanced...**, and then press the **Enter** key.

The **Advanced Controller Management** window appears.



Press the ↓ key to display more menu items.

The following table shows the menu of the **Advanced Controller Management** window.

Table 5-10 Menu list of the Advanced Controller Management window

| Menu item | Display/Setting | Values |
|--|--|--------|
| Schedule Consistency Check ¹ | Specifies when to execute a consistency check. | -- |
| Manage MegaRAID Advanced Software Options ¹ | Checks RAID advanced options. | -- |
| Save Controller Events ¹ | Saves event logs of the disk array controller. | -- |
| Clear Controller Events ¹ | Deletes event logs of the disk array controller. | -- |
| Disable Protection ¹ | Sets the data protection functionality. | -- |
| Save TTY Log ¹ | Saves trace logs of the disk array controller firmware. | -- |
| Host Interface | Interface of the disk array controller | PCI-E |
| Connector Count | Number of connectors | 2 |
| Drive Count | Displays the number of mounted physical drives. | -- |
| Virtual Drive Count | Displays the number of configured logical drives. | -- |
| Encryption Capable | Setting of the controller encryption functionality | No |
| Protection Capable | Support for RAID controller data protection functionality | Yes |
| Protection Enabled | Displays the status of the data protection functionality. | Yes |
| ROC Temperature (C) | Displays the chip temperature. | -- |
| Shield State Supported | Status of the physical drive diagnostic functionality of the disk array controller | Yes |
| NVSRAM Size (MB) | NVSRAM size | 32 |
| Metadata Size (MB) | Metadata size | 512 |
| Minimum Strip Size | Minimum strip size | 64KB |
| Maximum Strip Size | Maximum strip size | 64KB |

| Menu item | Display/Setting | Values |
|--------------------------------------|--|--|
| CacheCade - SSD Caching | CacheCade setting | Disabled |
| Write Cache Capable | Write cache setting | No |
| Configured Cache Size (GB) | Current cache size (GB) | 0 |
| Maximum Allowed Cache Size (GB) | Maximum cache size (GB) | 0 |
| Replace Drive | Copyback functionality | Enabled [<<Disabled>>] |
| Replace Drive on SMART Error | SMART copyback functionality | Enabled [<<Disabled>>] |
| Rebuild Rate | Priority of rebuild processing | 0 to 100 [<<30>>] |
| Background Initialization (BGI) Rate | Priority of background initialization processing | 0 to 100 [<<30>>] |
| Consistency Check Rate | Priority of consistency check processing | 0 to 100 [<<30>>] |
| Reconstruction Rate | Priority of capacity expansion processing | 0 to 100 [<<30>>] |
| Controller BIOS | Enables the disk array controller. | [<<Enabled>>] Disabled |
| Coercion Mode | Specifies physical hard disks for creating a logical drive. | [<<None (All capacity used)>>] 128M (Multiples of 128MB are used) 1G (Multiples of 1GB are used) |
| SMART Polling | Specifies the interval for S.M.A.R.T. reporting. | 0 to 65535 [<<600>>] |
| Alarm Control | Sounds the disk array controller buzzer when a connected device fails. | Enabled/[<<Disabled>>] |
| Boot Error Handling | Sets error notification for the disk array controller at system startup. | Safe mode (Starts up in safe mode) [Ignore (Ignores errors and continues running)] (Recommended value when SAS 3004 iMR is not used) [Pause on errors] (Recommended value when SAS 3004 iMR is used) |

| Menu item | Display/Setting | Values |
|---------------------------------|--|---|
| | | <<Stop on errors>> |
| Stop Consistency Check on Error | Specifies the behavior for when an error is detected while checking inconsistency. | Enabled (Stops the inconsistency checks) [<<Disabled (Continues running)>>] |
| Maintain Drive Fail History | Specifies whether to use the failed hard disk. | [<<Enabled (Records information of the failed hard disk)>>] Disabled (Does not record information of the failed hard disk) |
| Load Balance | Sets load balancing. | [<<Auto (Enabled)>>] Disabled |
| Enable Auto Import | Automatically loads the foreign configuration. | [<<Enabled>>] Disabled |
| Persistent Hot Spare | Automatically sets a spare. | [<<Enabled>>] Disabled |
| Manage Link Speed ¹ | Specifies the transfer speed of the physical drive. | -- |
| Spin Down Unconfigured Good | Sets the power-saving mode for unused hard disks. | Enabled [<<Disabled>>] |
| Spin Down Hot Spare Drives | Sets the power-saving mode for hard disks that are assigned as hot spares. | Enabled [<<Disabled>>] |
| Drive Standby Time | Time it takes a drive to go into power-saving mode. | 10 Mins to 24 Hours [<<30Mins>>] |
| Spinup Drive Count | Number of hard disk motors to start at system startup | [<<2>>] |
| Spinup Delay | The timing for hard disk motor startup at system startup. | [<<6>>] |
| Patrol Read State | Displays the operating status of a patrol read. | -- |
| Patrol Read Iteration | Displays the number of patrol read operations. | -- |
| Patrol Read Mode | Operational conditions for patrol read | [<<Auto>>] Disabled Enabled |
| Patrol Read Rate | Priority of patrol read | [<<30>>] |
| Start Patrol Read ¹ | Starts a patrol read. | -- |

| Menu item | Display/Setting | Values |
|---|--|--------|
| Suspend Patrol Read ¹ | Suspends a patrol read. | -- |
| Resume Patrol Read ¹ | Resumes a patrol read. | -- |
| Stop Patrol Read ¹ | Stops a patrol read. | -- |
| Patrol Read Setting for Unconfigured Space ¹ | Specifies patrol read settings for unused physical drives. | -- |
| Apply Changes | Applies settings. | -- |
| Notes: 1. Not supported. Do not select this item. | | |



Note: When not using SAS 3004 iMR, specify **Ignore** for **Boot Error Handling**.

When using SAS 3004 iMR, specify **Pause on errors** for **Boot Error Handling**.

3. Select the item to be set, and then change the value.

Related topics

- [Values of utility settings and notation on page 2-7](#)

Creating RAID 0 or RAID 1 logical drives

This section describes how to configure RAID 0 or RAID 1 logical drives.



Note: Do not select **Create Virtual Drive** in the Configuration Management window.

If you select **Create Virtual Drive**, you cannot create logical drives with correct settings values.

1. In the **Configuration Management** window, select the **Create Virtual Drive - Advanced** menu, and then press the **Enter** key.
2. The **Create Virtual Drive - Advanced** window appears.

Create Virtual Drive - Advanced

| | | |
|-----------------------|-------------------------|--|
| ► Save Configuration | | |
| Select RAID Level | <RAID0> | Selects the desired RAID level. The RAID levels that can be configured are 0, 1, 5, 6 (if supported), 10, 50, and 60 (if supported). |
| Protect Virtual Drive | [] | |
| Select Drives From | <Unconfigured Capacity> | |
| ► Select Drives | | |

| | | |
|-------------------------------------|-----------------|--|
| CONFIGURE VIRTUAL DRIVE PARAMETERS: | | |
| Virtual Drive Name | - | |
| Virtual Drive Size Unit | <GB> | |
| Strip Size | <64 KB> | |
| Read Policy | <No Read Ahead> | |
| Write Policy | <Write Through> | |
| I/O Policy | <Direct> | |
| Access Policy | <Read/Write> | |
| Drive Cache | <Unchanged> | |
| Disable Background Initialization | <No> | |
| Default Initialization | <No> | |
| ► Save Configuration | | |

RAID 0 -- uses drive striping to provide high data throughput, especially for large files in an environment that requires no data redundancy.

RAID 1 -- uses drive mirroring so that data written to one drive is simultaneously written to another drive. RAID 1 is good for small databases or other applications that

[More \(D/d\)](#)

↑↓=Move Highlight <Enter>=Select Entry Esc=Exit

3. Select **Select RAID Level**, and then press the **Enter** key.
4. Select the RAID level to be created, and then press the **Enter** key. For **Select Drives From**, use the specified value **Unconfigured Capacity**.
5. Select **Select Drives**, and then press the **Enter** key. The **Select Drives** window appears.
6. Specify **HDD** or **SSD** for **Select Media Type**.

Select Drives

| | | |
|-----------------------|--------|--|
| ► Apply Changes | | Submits the changes made to the entire form. |
| Select Media Type | <HDD> | |
| Select Interface Type | <Both> | |
| Logical Sector Size | <Both> | |

CHOOSE UNCONFIGURED DRIVES:

| | |
|----------------------------------|-----|
| Drive Port 0 - 3:01:00: SAS, | [] |
| 558GB, Unconfigured Good, (512B) | |
| Drive Port 0 - 3:01:02: SAS, | [] |
| 558GB, Unconfigured Good, (512B) | |
| Check All | |
| Uncheck All | |
| ► Apply Changes | |

↑↓=Move Highlight <Enter>=Select Entry Esc=Exit



Note: Select the type of drives installed in the system unit. The default value for **Select Media Type** is **HDD**. If SSD drives are installed in the system unit and you do not select SSD for **Select Media Type**, drives required for configuring RAID do not appear on the menu.

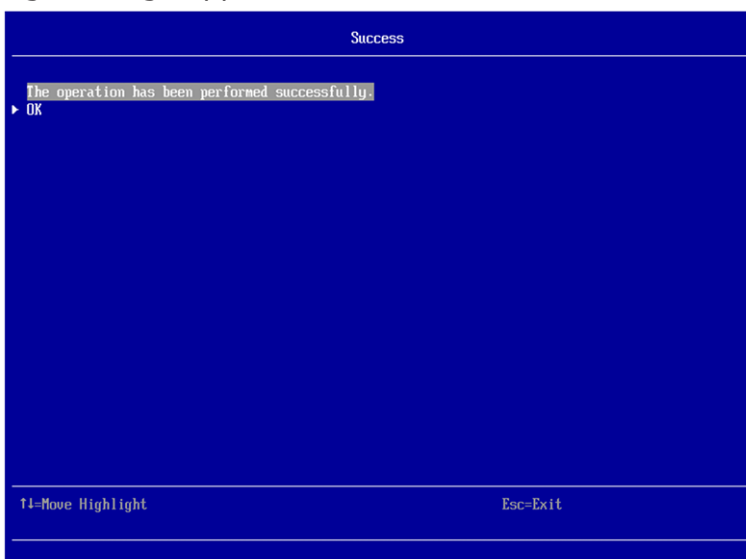
For both **Select Interface Type** and **Logical Sector Size**, use the specified value **Both**.

7. From the physical drives displayed in **CHOOSE UNCONFIGURED DRIVES**, select a physical drive to be used, and then press the **Space** key to select it.



Tip: For RAID 0, you can use one or two physical drives.
For RAID 1, you need two physical drives.

8. Select **Apply Changes**, and then press the **Enter** key.
The following message appears.



9. Change setting values as necessary.
The following table shows the menu in the **Create Virtual Drive - Advanced** window.

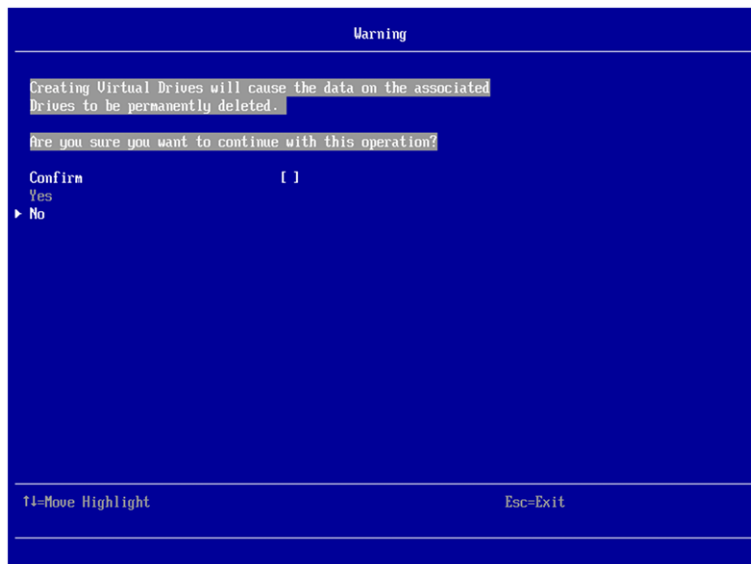
**Table 5-11 Menu list of the Create Virtual Drive - Advanced window
(for creating RAID 0 or RAID 1 logical drives)**

| Menu item | Description | Values |
|-------------------------|------------------------------|--|
| Virtual Drive Name | Sets a logical drive name. | Specify any name. |
| Virtual Drive Size | Logical drive size | Specify any value. |
| Virtual Drive Size Unit | Sets the size unit. | MB [<<GB>>] TB |
| Strip Size | Strip size | 64KB |
| Access Policy | Access policy | [<<Read/Write>>] Read only Blocked |
| Drive Cache | Physical drive cache setting | Enable [Disable] <<Unchanged>> |

| Menu item | Description | Values |
|-----------------------------------|---|--------------------------|
| Disable Background Initialization | Executes background initialization. | [Yes] <<No>> |
| Default Initialization | Initialization after creating logical drives. | Full Fast [<<No>>] |

10. When settings are complete, select **Save Configuration**, and then press the **Enter** key.

The following warning appears.



11. Select **Confirm**, and then press the **Space** key.
 12. Select **Yes**, and then press the **Enter** key.

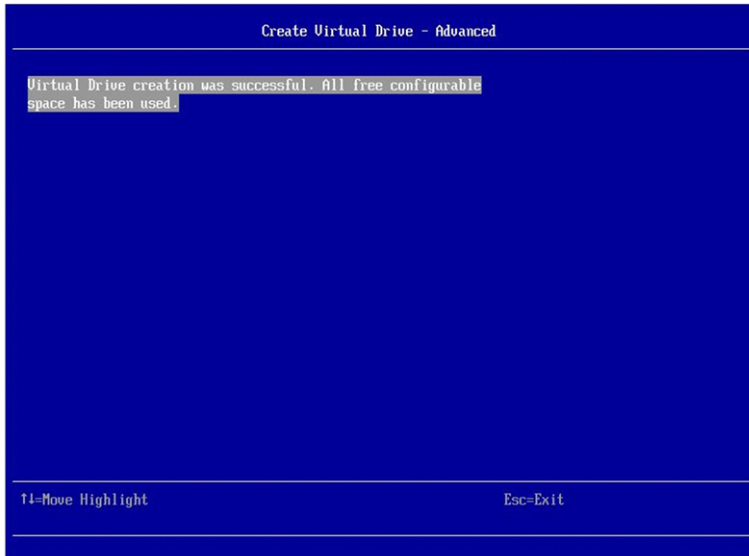
The following message appears.



13. Select **OK**, and then press the **Enter** key.

The logical drives have been configured.

If the created logical drive fills the capacity of the physical drive, the following message appears: Press the **Esc** key.



Next, initialize the logical drives.

Related topics

- [Values of utility settings and notation on page 2-7](#)
- [Initializing logical drives on page 5-24](#)

Adding logical drives

This section describes how to add logical drives.

1. In the **Configuration Management** window, highlight **Create Virtual Drive - Advanced**, and then press the **Enter** key.



Note: Do not select **Create Virtual Drive** in the **Configuration Management** window.

If you select **Create Virtual Drive**, you cannot create logical drives with correct settings values.

2. The **Create Virtual Drive - Advanced** window appears.
3. Select **Select Drives From**, and then press the **Enter** key.
4. Select **Free Capacity**, and then press the **Enter** key.
5. Select **Select Drive Groups**, and then press the **Enter** key.
The **Select Drive Groups** window appears.
6. Select the drive group to which you will add logical drives, and then press the **Space** key.
7. Select **Apply Changes**, and then press the **Enter** key.

The following message appears.



8. Select **OK**, and then press the **Enter** key.
Change setting values as necessary.
The following table shows the menu of the **Create Virtual Drive - Advanced** window.

**Table 5-12 Menu list of the Create Virtual Drive - Advanced window
(for adding logical drives)**

| Menu item | Description | Value/Reference |
|-----------------------------------|---|--|
| Virtual Drive Name | Sets a logical drive name. | Specify any name. |
| Virtual Drive Size | Logical drive size | Specify any value. |
| Virtual Drive Size Unit | Sets the size unit. | MB [<<GB>>] TB |
| Strip Size | Strip size | 64KB |
| Access Policy | Access policy | [<<Read/Write>>] Read only Blocked |
| Drive Cache | Physical drive cache setting | Enable [<<Disable>>] Unchanged |
| Disable Background Initialization | Executes background initialization. | [Yes] <<No>> |
| Default Initialization | Initialization after creating logical drives. | Full Fast [<<No>>] |

9. When settings are complete, select **Save Configuration**, and then press the **Enter** key.

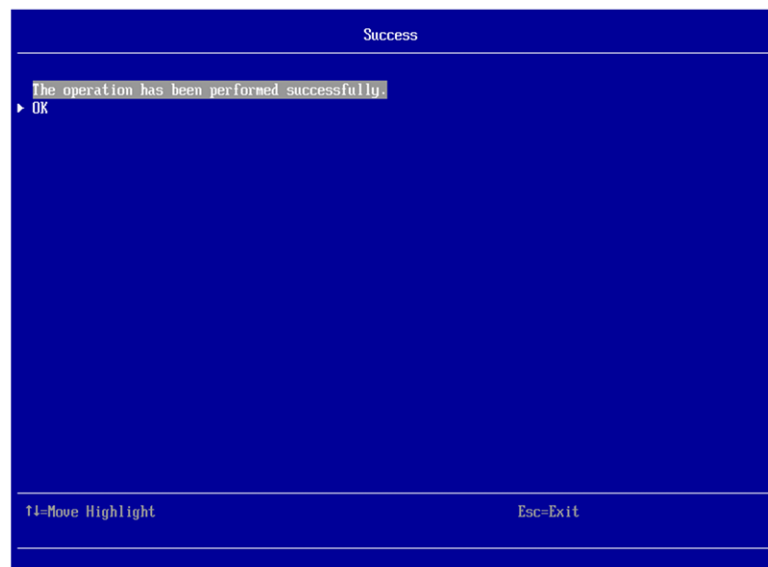
The following warning appears.



10. Select **Confirm**, and then press the **Space** key.

11. Select **Yes**, and then press the **Enter** key.

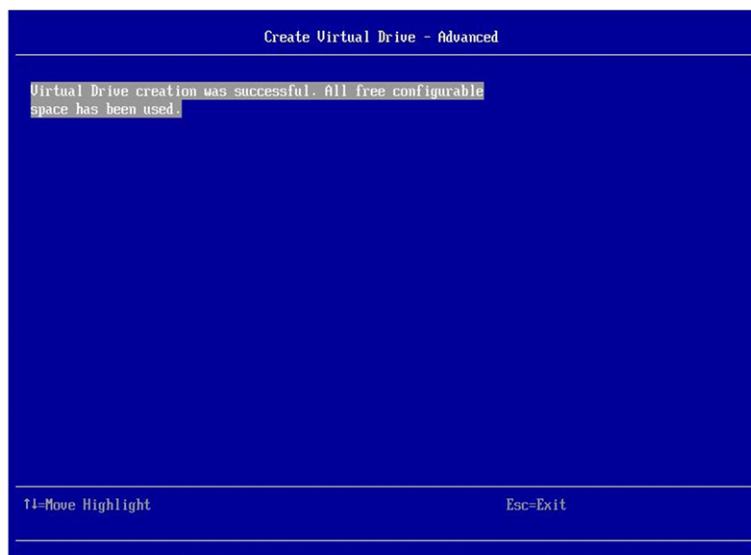
The following message appears.



12. Select **OK**, and then press the **Enter** key.

The logical drives have been configured.

If the created logical drive fills the capacity of the physical drive, the following message appears: Press the **Esc** key.



Next, initialize the logical drives.

Related topics

- [Values of utility settings and notation on page 2-7](#)
- [Initializing logical drives on page 5-24](#)

Initializing logical drives

This section describes how to initialize logical drives.

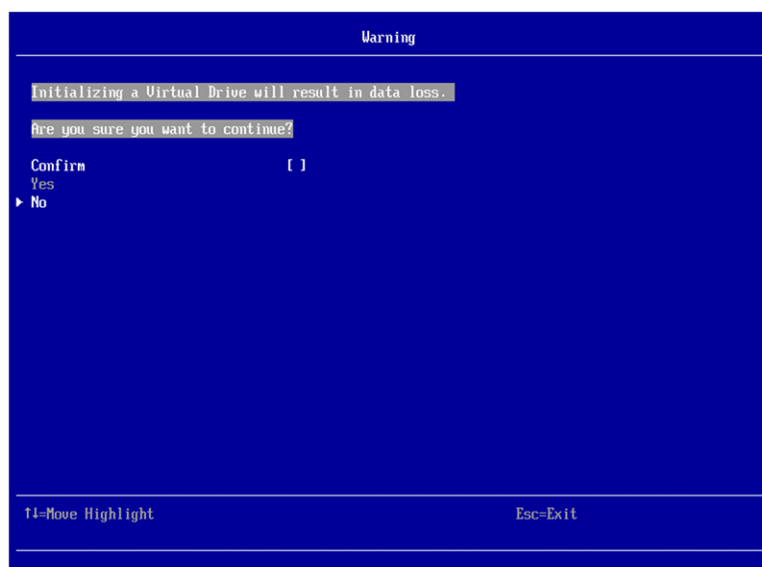


Note:

- When you initialize logical drives, data in the drives that is required for OS operation including logical drive information will be lost. Back up the data before initialization if the drives contain necessary data.
- If a consistency check is running on a logical drive or a logical drive is being rebuilt, the logical drive cannot be initialized. Initialize the logical drive after the processing is completed.
- Until initialization finishes, you cannot perform operations such as installing an OS onto the logical drive that is being initialized.

This section describes how to initialize the entire area of a logical drive.

1. In the **Main Menu** window, select **Virtual Drive Management**, and then press the **Enter** key.
2. Select the logical drive to be initialized, and then press the **Enter** key.
3. Select **Operation**, and then press the **Enter** key.
4. Select **Slow Initialization**, and then press the **Enter** key.
5. Select **Go**, and then press the **Enter** key.
The following warning appears.



6. Select **Confirm**, and then press the **Space** key.
 7. Select **Yes**, and then press the **Enter** key.
- The following message appears.



8. Select **OK**, and then press the **Enter** key.
- Initialization starts, and **Progress** displays the current progress rate. The following table shows an estimated duration of slow initialization (initialization of the entire drive).

| Physical drive capacity | Time required for slow initialization (initialization of the entire drive) |
|-------------------------|---|
| 300 GB (SAS 2.5 HDD) | About 40 minutes |
| 900 GB (SAS 2.5 HDD) | About 110 minutes |
| 1.8 TB (SAS 2.5 HDD) | About 220 minutes |

| Physical drive capacity | Time required for slow initialization (initialization of the entire drive) |
|-------------------------|---|
| 400 GB (SAS 2.5 SSD) | About 20 minutes |
| 800 GB (SAS 2.5 SSD) | About 40 minutes |



Tip:

- Time required for initialization is proportional to the single disk capacity regardless of the RAID level or disk array capacity.
- Because slow initialization (initialization of the entire drive) rewrites the contents of a physical drive to "0", zero, one after another, contents of the physical drive have been rewritten even if you stop the initialization in the middle of the processing.
- **Progress** is not updated in this window. Proceed to step 9.

9. In the window displaying **Progress**, press the **Esc** key.
The **Virtual Drive Management** window appears.
10. Select the logical drive whose initialization progress is to be checked, and then press the **Enter** key.
The logical drive information is displayed.
Confirm that the **Progress** item is not displayed.
If the progress rate is displayed in the **Progress** item, check the estimated time required for the process in step 8 and return to step 9.
Logical drives have been successfully initialized.

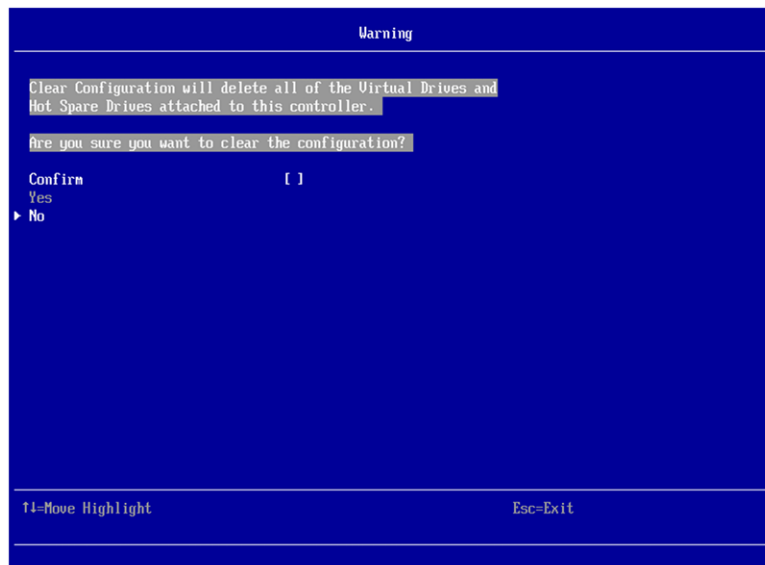
Deleting all logical drives

This section describes how to delete all configured logical drives together.



Note:

- When you delete logical drives, the logical drives can no longer work because their logical drive information is lost.
Back up the data in advance if the drives contain necessary data.
 - If any of the logical drives is being initialized, a consistency check is running on a logical drive, or a logical drive is being rebuilt, all the logical drives cannot be deleted. Delete the logical drives after all the processing is completed.
1. In the **Main Menu** window, select **Configuration Management**, and then press the **Enter** key.
The **Configuration Management** window appears.
 2. Select **Clear Configuration**, and then press the **Enter** key.
The following warning appears.



3. Select **Confirm**, and then press the **Space** key.
 4. Select **Yes**, and then press the **Enter** key.
- The following message appears.



5. Select **OK**, and then press the **Enter** key.
- Deletes all logical drives together.

Related topics

- [Deleting individual logical drives on page 5-27](#)

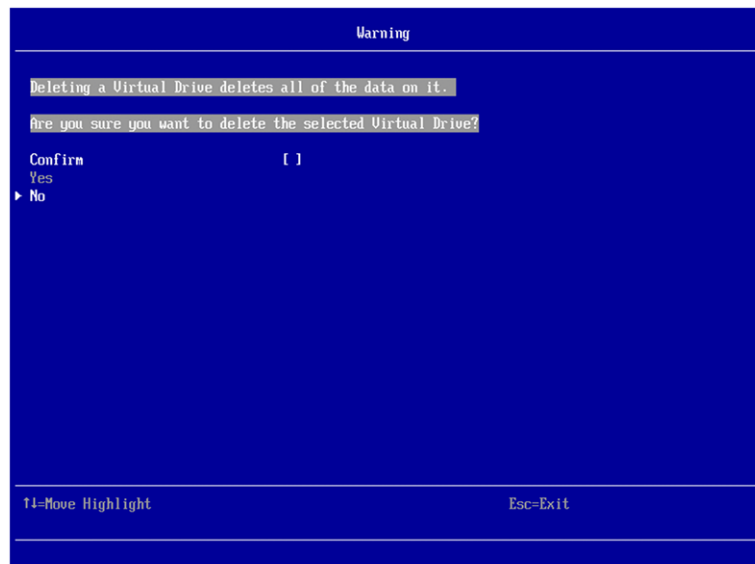
Deleting individual logical drives

This section describes how to individually delete configured logical drives.

**Note:**

- When you delete logical drives, the logical drives can no longer work because their logical drive information is lost.
Back up the data in advance if the drives contain necessary data.
- If any of the logical drives is being initialized, a consistency check is running on a logical drive, or a logical drive is being rebuilt, all the logical drives cannot be deleted. Delete the logical drives after all the processing is completed.

1. In the **Main Menu** window, select **Virtual Drive Management**, and then press the **Enter** key.
The **Virtual Drive Management** window appears.
2. Select the logical drive to be deleted, and then press the **Enter** key.
3. Select **Operation**, and then press the **Enter** key.
4. Select **Delete Virtual Drive**, and then press the **Enter** key.
5. Select **Go**, and then press the **Enter** key.
The following warning appears.



6. Select **Confirm**, and then press the **Space** key.
7. Select **Yes**, and then press the **Enter** key.
The following message appears.



8. Select **OK**, and then press the **Enter** key.
The selected logical drive is deleted.

Related topics

- [Deleting all logical drives on page 5-26](#)

Consistency check on logical drives

Use the Server installation and monitoring tool internal storage monitoring functions to execute a consistency check to a logical drive.

To execute a consistency check by using the RAID utility, see the description in the manual "Server Installation and Monitoring Tool User's Guide Internal Storage Monitoring Functions" in the flash memory mounted on the server chassis.



Note:

- A consistency check can be executed in RAID 1 that has redundancy.
 - When a logical drive status is Degraded, a consistency check cannot be executed.
You need to execute a consistency check after recovering the logical drives from failures.
 - If a logical drive is being initialized, you cannot execute a consistency check on the logical drive.
Execute a consistency check on the logical drive after the initialization is complete.
-

Rebuilding logical drives

Use the Server installation and monitoring tool internal storage monitoring functions to rebuild logical drives.

To rebuild logical drives by using the RAID utility, see the description in the manual "Server Installation and Monitoring Tool User's Guide Internal Storage Monitoring Functions" in the flash memory mounted on the server chassis.



Note: Rebuild can be executed in RAID 1 that has redundancy.



Tip:

- When a hot spare is specified, logical drives will automatically be rebuilt if a failure occurs in a physical drive.
 - When a hot spare is not specified, logical drives will automatically be rebuilt by hot swapping the failed physical drive.
 - Only when automatic rebuilding does not start for some reason, manually rebuild logical drives.
-

Exiting the utility

This section describes how to exit the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility.

1. In the **Main Menu** window, press the **Esc** key several times to return to the main window of UEFI Menu.
2. Press the **Esc** key in the main window of UEFI Menu. The following window appears.

```
Settings were changed.  
Do you wish to save it?  
<Y> Save and Exit the Setup Utility  
<N> Exit the Setup Utility without Saving  
<ESC> Return to Setup Utility
```

3. Press the **Y** key.
4. If the following window appears, press the **Enter** key to restart the system.

```
Settings have been changed, and a reboot is required to apply the settings  
<ENTER> Reboot now, <ESC> Continue without rebooting
```

If a physical drive that does not match the configuration information is detected

This section describes what to do when a physical drive that does not match the configuration information in the disk array controller board is detected.

Displaying configuration information

If a physical drive that does not match the configuration information is detected, display the configuration information to check whether the information is correct.

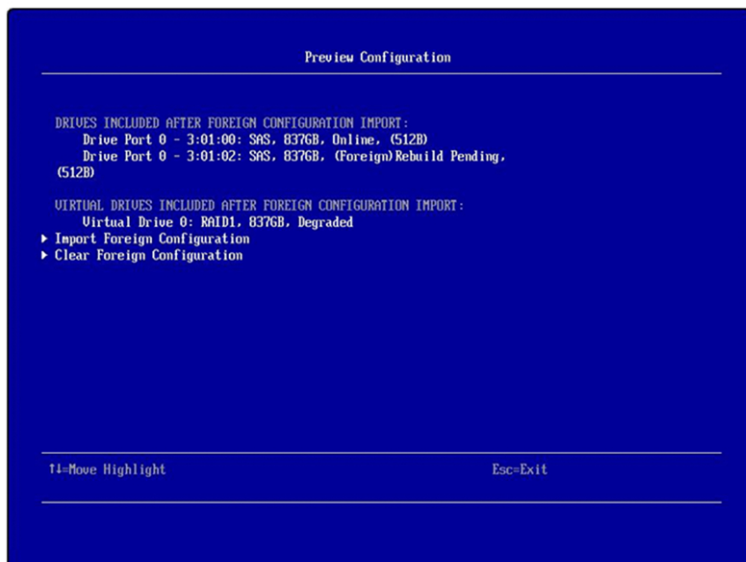
Possible causes of configuration mismatches are the following:

Conditions

- A physical drive failed in an unrecognizable state. Then the physical drive recovered to a recognizable state.
- A physical drive that was used in other equipment and contains a logical drive configuration was used.

Follow the steps below to display the configuration information, and then check the information.

1. In the **Main Menu** window, select **Configuration Management**, and then press the **Enter** key.
The **Configuration Management** window appears.
2. Select **Manage Foreign Configuration**, and then press the **Enter** key.
The **Manage Foreign Configuration** window appears.
3. Select **Preview Foreign Configuration**, and then press the **Enter** key.
The configuration information is displayed.



Check whether the configuration information is correct. If the configuration information is correct, import the configuration information. If the configuration information is incorrect, delete the configuration information.

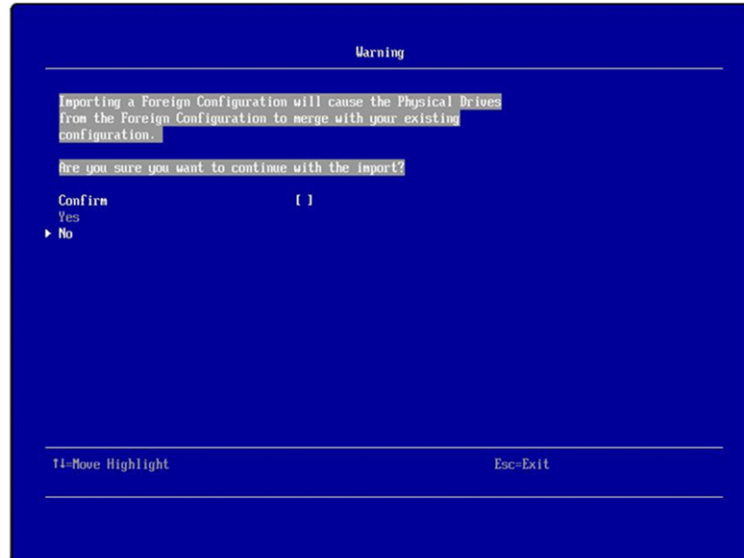
Related topics

- [Importing the configuration information on page 5-32](#)
- [Clearing the configuration information on page 5-33](#)

Importing the configuration information

If the configuration information in the disk array controller board and the physical drive configuration are correct, follow the steps below to import the configuration information.

1. Select **Import Foreign Configuration**, and then press the **Enter** key.
The following warning appears.



2. Select **Confirm**, and then press the **Space** key.
3. Select **Yes**, and then press the **Enter** key.
The following message appears.

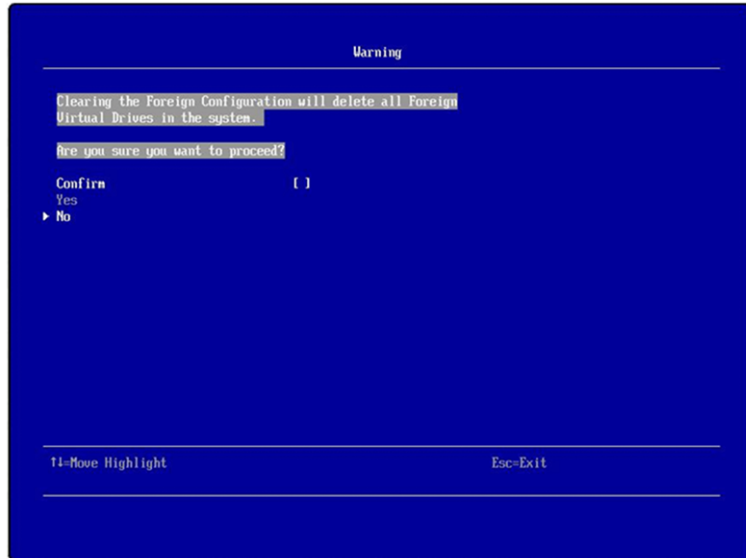


4. Select **OK**, and then press the **Enter** key.

Clearing the configuration information

If the configuration information in the disk array controller board and physical drive configuration are incorrect, follow the steps below to clear the configuration information.

1. Select **Clear Foreign Configuration**, and then press the **Enter** key.
The following warning appears.



2. Select **Confirm**, and then press the **Space** key.
3. Select **Yes**, and then press the **Enter** key.
The following message appears.



4. Select **OK**, and then press the **Enter** key.

Status list of logical drives or physical drives

This section describes the lists of logical drive statuses and physical drive statuses.

List of logical drive statuses

The following shows logical drive statuses.

Table 5-13 List of logical drive statuses

| Status | Description |
|----------|---|
| Optimal | Normal The logical drive is fully functioning. |
| Degraded | A physical drive of redundant, RAID 1 logical drives failed. |
| Offline | The logical drive is inoperable either because multiple physical drives of a redundant logical drive (RAID 1) failed, or because a physical drive of a non-redundant logical drive (RAID 0) failed. |

List of physical drive statuses

The following shows physical drive statuses.

Table 5-14 List of physical drive statuses

| Status | Description |
|-------------------|---|
| Online | Normal The disk is used for logical drives. |
| Hot Spare | Normal The disk is assigned as a hot spare. |
| Offline / Failed | A failure occurred. The disk is isolated from the logical drives due to a failure. |
| Rebuild | The disk is being rebuilt. |
| Unconfigured Good | The disk is not used for logical drives. |
| Unconfigured Bad | A failure occurred. A physical drive in an unrecognizable state recovered to a recognizable state. |
| Missing | A failure occurred. The physical drive that was in the normal status was removed. |

Display settings for error messages

In the following cases, you need to change display settings for error messages (Boot Error Handling settings):

- You want to prevent SAS 3004 iMR error messages from appearing at system startup.
- You do not use the internal disk array controller.

In addition, if you are using N+M cold standby, you also need to change the settings of server blades in the standby partition.

This section describes how to change the Boot Error Handling setting of the disk array controller.



Tip: If you are using N+M cold standby, the disk array embedded in a server blade is not supported. Follow the steps below to disable the display of error messages.

1. In the **Main Menu** window, select **Controller Management**, and then press the **Enter** key.
The **Controller Management** window appears.
 2. Select **Advanced...**, and then press the **Enter** key.
The **Advanced Controller Management** window appears.
 3. Select **Boot Error Handling**, and then press the **Enter** key.
 4. Select one of the values shown below, and then press the **Enter** key.
-



Note: Do not select a value other than the following two values.

Value: Stop on errors

Enables the display of error messages at system startup (recommended when the disk array controller is used).

Value: Ignore errors

Disables the display of error messages at system startup (recommended when the disk array controller is not used).

5. Select **Apply Changes**, and then press the **Enter** key.

Handling error messages at system startup

Handling error messages

If a critical error occurs (for example, the disk array controller is not functioning properly at system startup, or drives are not recognized), an error message appears, and you are prompted to enter a key.



If an error message appears, press the **Esc** key, and then follow the message to take necessary actions.



Tip: In the following cases, change the **Boot Error Handling** setting to **Ignore Errors**.

- You want to prevent error messages from appearing at system startup.
- You no longer use the disk array controller.

Related topics

- [Display settings for error messages on page 5-35](#)
- [List of error messages on page 5-37](#)

Starting up from an error message

To proceed on the startup from the condition in which an error message is displayed, follow the steps below.

Depending on the error message, startup processing might be unable to continue. In that case, contact your reseller or call maintenance personnel.

1. In the window that displays an error message, press the **Enter** key.
The **Please type in your data** window appears.
2. Type a character string such as "failure" or "trouble", press the **Enter** key.
The **Critical Message** window appears.
If the **Critical Message** window does not appear, follow the error message to take actions.
3. Press the **Esc** key to exit the window.
The following window appears.

```

Settings were changed.
Do you wish to save it?
<Y> Save and Exit the Setup Utility
<N> Exit the Setup Utility without Saving
<ESC> Return to Setup Utility

```

4. Press the **Y** key to exit the Setup Utility.

5. Press the **F1** key.

Confirm that the following information is displayed

- **<Enter> Key pressed. Preparing to boot normally Pressed. Entering Setup**

- **<F1> Setup Pressed. Entering Setup**

When the UEFI setup menu opens, start the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility.

Related topics

- [Starting the Configuration Utility on page 5-4](#)

List of error messages

The following shows messages for the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility that are displayed at system startup.

Table 5-15 Messages for the LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility

| Message | Description |
|--|---|
| A discovery error has occurred. Power-cycle the system and all the enclosures attached to this system. | <p>Cause:</p> <p>The disk array controller was not recognized.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> <p>In addition, if this message appeared, the system startup cannot continue.</p> |
| <p>All of the disks from your previous configuration are gone. If this is an unexpected message, then power off your system and check your cables to ensure all disks are present.</p> <p>Press any key to continue or press C to load the configuration utility</p> | <p>Cause:</p> <p>No logical drives are recognized.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. Press the Esc key. Press the Y key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <p>The selection window appears.</p> <p>System startup continues.</p> |

| Message | Description |
|--|---|
| | <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message is displayed even though the physical drive is properly mounted, contact your reseller or call maintenance personnel.</p> |
| <p>An enclosure was found that contains both SAS and SATA drives, but this controller does not allow mixed drive types in a single enclosure.</p> <p>Correct the problem and restart your system.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause:</p> <p>The disk array controller is operated by incorrect parameters.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. Press the Y key. <p>The selection window appears.</p> <p>System startup continues.</p> <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>A snapshot rollback is in progress on VDs %s, controller cannot boot until the rollback operation completes. Press any key to enter the configuration utility.</p> | <p>Cause:</p> <p>The disk array controller parameter is incorrect.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Cache data was lost because of an unexpected power-off or reboot during a write operation, but the adapter has recovered.</p> | <p>Cause:</p> <p>An invalid power-off or reboot was executed during a write operation.</p> <p>Action 1:</p> |

| Message | Description |
|---|---|
| <p>This could be because of memory problems, bad battery, or you may not have a battery installed.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message is displayed even though an incorrect power-off or reboot has not been executed during write operation, contact your reseller or call maintenance personnel.</p> |
| <p>Consecutive power loss detected during IOs on non-optimal write-back volume/s.</p> <p>This may have resulted in data integrity issues.</p> <p>Press 'X' to proceed.</p> | <p>Cause:</p> <p>An invalid power-off or reboot was executed during a write operation.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <p>If this message is displayed even though an incorrect power-off or reboot has not been executed during write operation, contact your reseller or call maintenance personnel.</p> |
| <p>DKM new key request failed; controller security mode transition was not successful.</p> <p>Reboot server to retry request, or press any key to continue</p> | <p>Cause:</p> <p>The hard disk security functionality is not supported.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. |

| Message | Description |
|--|---|
| | <p>c. Press the Y key. System startup continues.</p> <p>Action 2: If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Drive security is enabled on this controller and a pass phrase is required. Please enter the pass phrase</p> | <p>Cause: The disk array controller parameter is incorrect.</p> <p>Action: If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Entering the configuration utility in this state results in drive configuration changes. Press Y to continue loading the configuration utility or power off your system and check your cables to ensure that all the disks are present, and then restart.</p> | <p>Cause: An inconsistency was found in the logical drive configuration information.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the Y key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2: If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>External Enclosure does not support in controller's Direct mapping mode. Contact your system support. System has halted due to unsupported configuration.</p> | <p>Cause: The enclosure of the external disk array system is incorrect.</p> <p>Action: If this message appeared, contact your reseller or call maintenance personnel. In addition, if this message appeared, the system startup cannot continue.</p> |
| <p>Firmware did not find valid NVDATA image. Program valid NVDATA image and restart your system. Press any key to continue</p> | <p>Cause: Valid firmware setting files were not found.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. |

| Message | Description |
|---|---|
| | <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Incompatible secondary iButton present!</p> <p>Please insert the correct iButton and restart the system. Press any key to continue but OEM-specific features are not upgraded.</p> | <p>Cause:</p> <p>The iButton is invalid.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Invalid memory configuration detected.</p> <p>Contact your system support.</p> <p>System has halted.</p> | <p>Cause:</p> <p>Invalid memory information was detected.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> <p>In addition, if this message appeared, the system startup cannot continue.</p> |
| <p>Invalid pass phrase.</p> <p>Please enter the pass phrase.</p> | <p>Cause:</p> <p>Valid firmware setting files were not found.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Invalid pass phrase.</p> <p>If you continue, there is a drive security key error and all secure configurations are marked as foreign.</p> <p>Reboot the machine to retry the pass phrase or press any key to continue.</p> | <p>Cause:</p> <p>The hard disk security functionality is not supported.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Invalid SAS Address present in SBR.</p> <p>Contact your system support.</p> <p>Press any key to continue with the default SAS address.</p> | <p>Cause:</p> <p>An invalid SAS address exists.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. |

| Message | Description |
|--|---|
| | <p>The selection window appears.</p> <p>c. Press the Y key.</p> <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Invalid SAS topology detected.</p> <p>Check your cable configurations, repair the problem, and restart your system.</p> | <p>Cause:</p> <p>Invalid SAS topology was detected.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> <p>In addition, if this message appeared, the system startup cannot continue.</p> |
| <p>IR to MR Migration failed.</p> <p>Press any key to continue with MR defined NVDATA values</p> | <p>Cause:</p> <p>Migration is not supported.</p> <p>Action 1:</p> <p>a. Enter a character, and then press the Enter key.</p> <p>The following message appears: Critical Message handling completed. Please exit.</p> <p>b. Press the Esc key.</p> <p>The selection window appears.</p> <p>c. Press the Y key.</p> <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>L2/L3 Cache error was detected on the RAID controller. Please contact technical support to resolve this issue. Press 'X' to continue or else power off the system, replace the controller and reboot.</p> | <p>Cause:</p> <p>An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> <p>a. Press the X key, and then press the Enter key.</p> <p>The following message appears: Critical Message handling completed. Please exit.</p> <p>b. Press the Esc key.</p> <p>The selection window appears.</p> <p>c. Press the Y key.</p> <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |

| Message | Description |
|---|---|
| <p>Number of devices exceeded the maximum limit of devices per quad.</p> <p>Remove the extra drives and reboot the system to avoid losing data.</p> <p>System has halted due to unsupported configuration.</p> | <p>Cause:</p> <p>The number of recognized drives exceeds the maximum number supported by the disk array controller.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> <p>In addition, if this message appeared, the system startup cannot continue.</p> |
| <p>Number of disks exceeded the maximum supported count of 16 disks.</p> <p>Remove the extra drives and reboot the system to avoid losing data. Press Y to continue with extra drives.</p> | <p>Cause:</p> <p>The number of installed drives exceeds the maximum number supported by the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the Y key, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Multibit ECC errors were detected on the RAID controller.</p> <p>If you continue, data corruption can occur.</p> <p>Contact technical support to resolve this issue.</p> <p>Press X to continue or else power off the system, replace the controller and reboot.</p> | <p>Cause:</p> <p>An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Multibit ECC errors were detected on the RAID controller. The DIMM on the controller needs replacement. Contact technical support to resolve this issue.</p> | <p>Cause:</p> <p>An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> |

| Message | Description |
|--|--|
| <p>If you continue, data corruption can occur. Press X to continue or else power off the system and replace the DIMM module and reboot.</p> <p>If you have replaced the DIMM press X to continue</p> | <ol style="list-style-type: none"> Press the X key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2: If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Multiple Single-bit ECC errors were detected during the previous boot of the controller.</p> <p>The DIMM on the controller needs replacement.</p> <p>If you continue, data corruption can occur.</p> <p>Press X to continue or else power off the system, replace the DIMM module, and reboot.</p> <p>If you have replaced the DIMM, press X to continue.</p> | <p>Cause: An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2: If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>On-board expander firmware or mfg image is corrupted.</p> <p>Flash expander firmware and mfg image using recovery tools.</p> | <p>Cause: The expander is invalid.</p> <p>Action: If this message appeared, contact your reseller or call maintenance personnel. If this message appeared, the system startup cannot continue.</p> |
| <p>SAS drives were detected, but this controller does not support SAS drives.</p> <p>Remove the SAS drives and restart your system.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause: Incorrect enclosures were detected.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. |

| Message | Description |
|--|--|
| | <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>SATA drives were detected, but this controller does not support SATA drives.</p> <p>Remove the SATA drives, and restart your system.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause:</p> <p>Incorrect enclosures were detected.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Single-bit ECC errors were detected during the previous boot of the RAID controller. The DIMM on the controller needs replacement.</p> <p>Contact technical support to resolve this issue.</p> <p>Press X to continue or else power off the system and replace the DIMM module and reboot. If you have replaced the DIMM press X to continue.</p> | <p>Cause:</p> <p>An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |

| Message | Description |
|--|---|
| <p>Single-bit overflow ECC errors were detected during the previous boot of the RAID controller.</p> <p>The DIMM on the controller needs replacement. Contact technical support to resolve this issue.</p> <p>If you continue, data corruption can occur.</p> <p>Press X to continue or else power off the system and replace the DIMM module and reboot.</p> <p>If you have replaced the DIMM press X to continue</p> | <p>Cause:</p> <p>An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Single-bit overflow ECC errors were detected on the RAID controller.</p> <p>If you continue, data corruption can occur.</p> <p>Contact technical support to resolve this issue.</p> <p>Press X to continue or else power off the system, replace the controller and reboot.</p> | <p>Cause:</p> <p>An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Single-bit overflow ECC errors were detected during the previous boot of the controller. The DIMM on the controller needs replacement.</p> <p>If you continue, data corruption can occur.</p> <p>Press X to continue or else power off the system, replace the DIMM module, and reboot.</p> <p>If you have replaced the DIMM, press X to continue.</p> | <p>Cause:</p> <p>An error occurred in the cache memory of the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> |

| Message | Description |
|---|--|
| | If this message appeared, contact your reseller or call maintenance personnel. |
| <p>Snapshot Repository VDs %s have been removed from your system, or are no longer accessible. Please check your cables and ensure all disks are present.</p> <p>If you continue to boot the system, the snapshot-related data is lost.</p> <p>Press any key to continue, or press C to load the configuration utility.</p> | <p>Cause:</p> <p>The disk array controller parameter is incorrect.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Some configured disks have been removed from your system, or are no longer accessible.</p> <p>Check your cables and also ensure all disks are present.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause:</p> <p>A physical drive that has logical drive configuration information is not recognized.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message is displayed even though the physical drive is properly mounted, contact your reseller or call maintenance personnel.</p> |
| The cache contains dirty data, but some VDs are missing. | Cause: |

| Message | Description |
|---|---|
| <p>The cached data cannot be written to the disk.</p> <p>If this is an unexpected error, then power off your system and check your cables to ensure all disks are present.</p> <p>If you continue, the data in the cache is permanently discarded.</p> <p>Press X to acknowledge and permanently destroy the cached data.</p> | <p>An invalid power-off or reboot was executed during a write operation.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the X key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <p>If this message is displayed even though an incorrect power-off or reboot has not been executed during write operation, contact your reseller or call maintenance personnel.</p> |
| <p>The controller's I/O processor has a fault that can potentially cause data corruption.</p> <p>Your controller needs replacement. Contact your system support.</p> <p>Press Y to acknowledge</p> | <p>Cause:</p> <p>An error occurred in the processor of the disk array controller.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Press the Y key, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. |
| <p>The following VD's have missing disks:</p> <p>If you proceed (or load the configuration utility), these VD's are marked OFFLINE and are inaccessible.</p> <p>Check your cables and ensure all disks are present.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause:</p> <p>The logical drive is set to Offline because some physical drives are not recognized.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. |

| Message | Description |
|--|---|
| | <p>Action 3:</p> <p>If this message is displayed even though the physical drive is properly mounted, contact your reseller or call maintenance personnel.</p> |
| <p>The firmware version inconsistency was detected.</p> <p>The adapter was recovered, but cached data was lost.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause:</p> <p>An inconsistency in firmware versions was detected.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>The following VD's are missing:</p> <p>If you proceed (or load the configuration utility), these VD's are removed from your configuration.</p> <p>If you wish to use them at a later time, they have to be imported.</p> <p>If you decide these VD's should be present, power off your system and check your cables to ensure all disks are present.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause:</p> <p>Some logical drives are not recognized.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message is displayed even though the physical drive is properly mounted, contact your reseller or call maintenance personnel.</p> |

| Message | Description |
|---|---|
| <p>The following VD's are missing complete spans.</p> <p>If you proceed (or load the configuration utility), these VD's are removed from your configuration and the remaining drives marked as foreign.</p> <p>If you wish to use them at a later time, restore the missing spans and use foreign import to recover the VD's.</p> <p>If you believe these VD's should be present, please power off your system and check your cables to ensure all disks are present.</p> <p>Press any key to continue, or 'C' to load the configuration utility.</p> | <p>Cause:</p> <p>Some logical drives are not recognized.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <ol style="list-style-type: none"> Press the C key, and then press the Enter key. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts. <p>Action 3:</p> <p>If this message is displayed even though the physical drive is properly mounted, contact your reseller or call maintenance personnel.</p> |
| <p>The native configuration is no longer supported by the current controller and firmware.</p> <p>Please ensure that correct controller firmware is being used.</p> <p>Press any key to continue, the configuration is marked foreign and part of it may be imported if possible.</p> | <p>Cause:</p> <p>The settings for this disk array controller do not support the original configuration information.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. The selection window appears. Press the Y key. System startup continues. <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>The native configuration is no longer supported by the current controller settings.</p> <p>Please ensure that correct controller, iButton or key vault is being used.</p> <p>If you continue, the configuration is marked foreign and part of it may be imported if possible.</p> <p>Press any key to continue.</p> | <p>Cause:</p> <p>The settings for this disk array controller do not support the original configuration information.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. The following message appears: Critical Message handling completed. Please exit. Press the Esc key. |

| Message | Description |
|--|---|
| | <p>The selection window appears.</p> <p>c. Press the Y key.</p> <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>The memory/battery problems were detected.</p> <p>The adapter was recovered, but cached data was lost.</p> <p>Press any key to continue or press C to load the configuration utility.</p> | <p>Cause:</p> <p>An invalid power-off or reboot was executed during a write operation.</p> <p>Action 1:</p> <p>a. Enter a character, and then press the Enter key.</p> <p>The following message appears: Critical Message handling completed. Please exit.</p> <p>b. Press the Esc key.</p> <p>The selection window appears.</p> <p>c. Press the Y key.</p> <p>System startup continues.</p> <p>Action 2:</p> <p>a. Press the C key, and then press the Enter key.</p> <p>b. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts.</p> <p>Action 3:</p> <p>If this message is displayed even though an incorrect power-off or reboot has not been executed during write operation, contact your reseller or call maintenance personnel.</p> |
| <p>The most recent configuration command could not be committed and must be retried.</p> <p>Press any key to continue, or press C to load the configuration utility.</p> | <p>Cause:</p> <p>The disk array configuration information was cleared or was not found.</p> <p>Action 1:</p> <p>a. Enter a character, and then press the Enter key.</p> <p>The following message appears: Critical Message handling completed. Please exit.</p> <p>b. Press the Esc key.</p> <p>The selection window appears.</p> <p>c. Press the Y key.</p> <p>System startup continues.</p> <p>Action 2:</p> <p>a. Press the C key, and then press the Enter key.</p> |

| Message | Description |
|---|--|
| | <p>b. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts.</p> <p>Action 3:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>There are more enclosures connected to the port than what is allowed for a single SAS port.</p> <p>Remove the extra enclosures, and then restart your system.</p> | <p>Cause:</p> <p>Incorrect enclosures were detected.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> <p>In addition, if this message appeared, the system startup cannot continue.</p> |
| <p>There are offline or missing virtual drives with preserved cache.</p> <p>Check the cables and ensure that all drives are present.</p> <p>Press any key to enter the configuration utility.</p> | <p>Cause:</p> <p>Some logical drives are not recognized.</p> <p>Action 1:</p> <p>a. Enter a character, and then press the Enter key.</p> <p>The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>There was a drive security key error.</p> <p>All secure drives is marked as foreign.</p> <p>Press any key to continue, or C to load the configuration utility.</p> | <p>Cause:</p> <p>The hard disk security functionality is not supported.</p> <p>Action 1:</p> <p>a. Enter a character, and then press the Enter key.</p> <p>The following message appears: Critical Message handling completed. Please exit.</p> <p>b. Press the Esc key.</p> <p>The selection window appears.</p> <p>c. Press the Y key.</p> <p>System startup continues.</p> <p>Action 2:</p> <p>a. Press the C key, and then press the Enter key.</p> <p>b. The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts.</p> <p>Action 3:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |

| Message | Description |
|--|---|
| <p>The VDs: %s have Rollback active and corresponding Repository missing.</p> <p>If you continue to boot the system or enter the configuration utility, these VDs becomes unusable.</p> <p>Press any key to continue.</p> | <p>Cause:</p> <p>The disk array controller parameter is incorrect.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The LSI MegaRAID <HITACHI SAS 3004 iMR ROMB> Configuration Utility restarts.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Upgrade Key Missing! An upgrade key was present on a previous power cycle, but it is not connected. This can result in inaccessible data unless it is addressed.</p> <p>Reattach the upgrade key and reboot.</p> | <p>Cause:</p> <p>The upgrade key is not supported.</p> <p>Action:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> <p>If this message appeared, the system startup cannot continue.</p> |
| <p>Unable to change security to EKMS as not able to communicate to EKMS.</p> <p>If you continue, the drive security remains to existing security mode.</p> <p>Please check connection with the EKMS, reboot the machine to retry the EKMS or press any key to continue</p> | <p>Cause:</p> <p>The hard disk security functionality is not supported.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> <p>Action 2:</p> <p>If this message appeared, contact your reseller or call maintenance personnel.</p> |
| <p>Unable to communicate to EKMS.</p> <p>If you continue, there is a drive security key error and all secure configurations are marked as foreign.</p> <p>Please check connection with the EKMS, reboot the machine to retry the EKMS or press any key to continue.</p> | <p>Cause:</p> <p>The hard disk security functionality is not supported.</p> <p>Action 1:</p> <ol style="list-style-type: none"> Enter a character, and then press the Enter key. <p>The following message appears: Critical Message handling completed. Please exit.</p> <ol style="list-style-type: none"> Press the Esc key. <p>The selection window appears.</p> <ol style="list-style-type: none"> Press the Y key. <p>System startup continues.</p> |

| Message | Description |
|---------|--|
| | Action 2: If this message appeared, contact your reseller or call maintenance personnel. |

PXE Boot Settings

This chapter describes PXE boot settings.

- [Prerequisites for the PXE boot](#)
- [Setting the PXE boot](#)

Prerequisites for the PXE boot

A PXE boot is a mechanism that loads an OS image or installer over a network to start up the system.

Requirements for the PXE boot

The following are required to use the PXE boot (network boot):

- When using an Emulex 10Gb 4-port onboard converged network:
The PXE boot is enabled in Emulex PXE. (Default: enabled)
- When using a Broadcom 1Gb 4-port LAN mezzanine card:
The PXE boot is enabled. (Default: enabled)
The mezzanine card is installed in mezzanine card slot 1. (You can only use Port0/Port1 for a PXE boot.)
- When using the deployment functionality of Hitachi Compute Systems Manager
Enable the PXE boot for only one port. (Disable the PXE boot for all other ports.)

Setting the PXE boot

Setting the ports that are not used for the PXE boot (UEFI mode)

To disable the PXE boot for a port that does not use the PXE boot, perform the following steps:



Note: If you perform the following operations after you perform the procedure described in this section, the settings in this section will be returned to their initial values. If this happens, perform the procedure described in this section again.

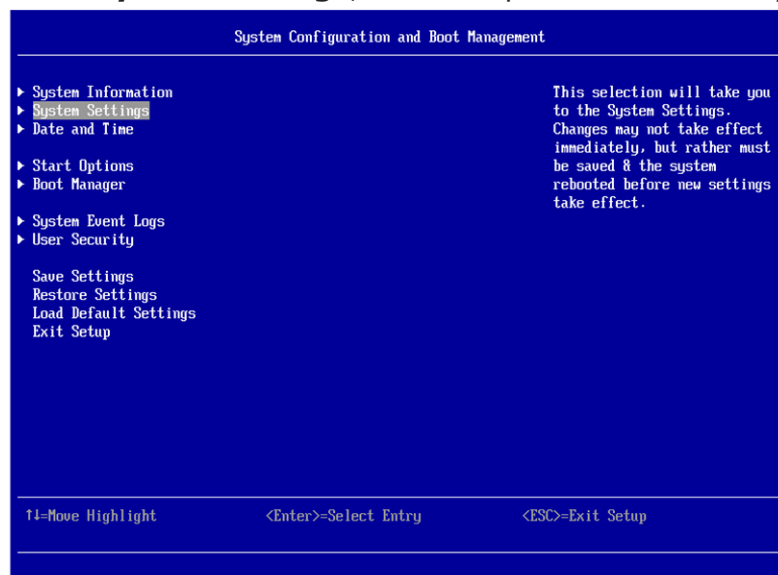
- Changing the MAC address of the system device from the Original MAC address to an Additional MAC address by using the management module
- Changing the MAC address of the system device from an Additional MAC address to the Original MAC address by using the management module

For details about the MAC addresses of system devices, see the *Hitachi Compute Blade 2500 Series Management Module User Guide*.

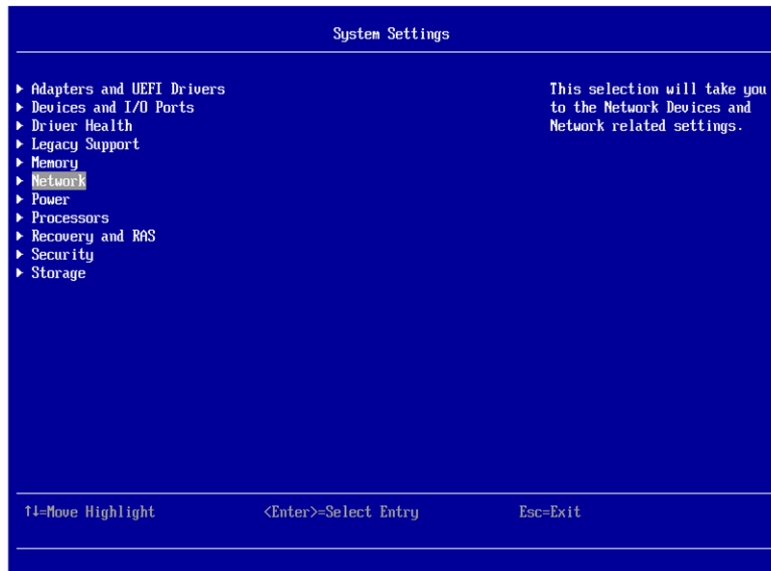
1. Start the remote console, and turn on the power of the server blade.
In the toolbar of the remote console, click **Power** and then **Power On**.
2. After the following window appears, press the **F1** key.



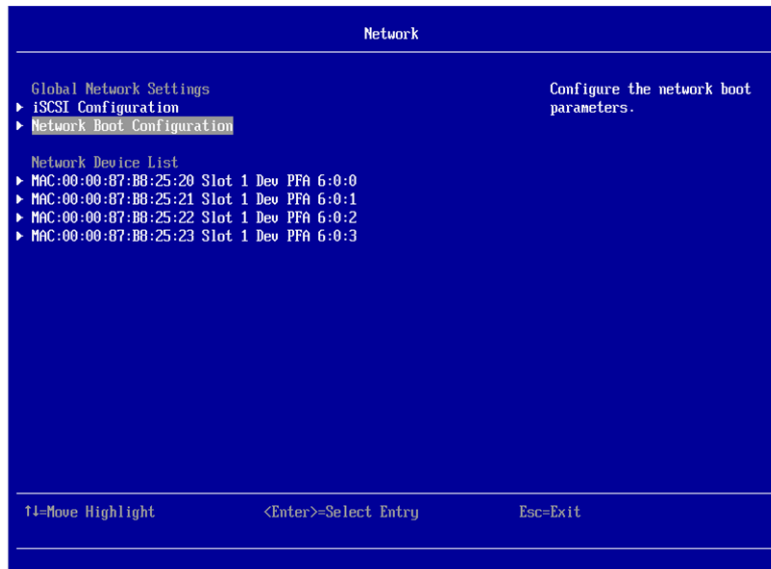
3. In the **System Configuration and Boot Management** menu that appears, select **System Settings**, and then press the **Enter** key.



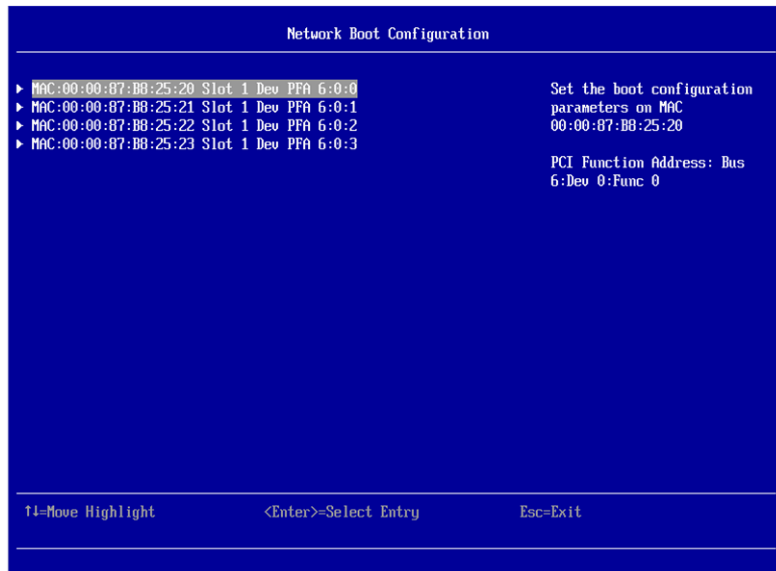
4. In the **System Settings** menu that appears, select **Network**, and then press the **Enter** key.



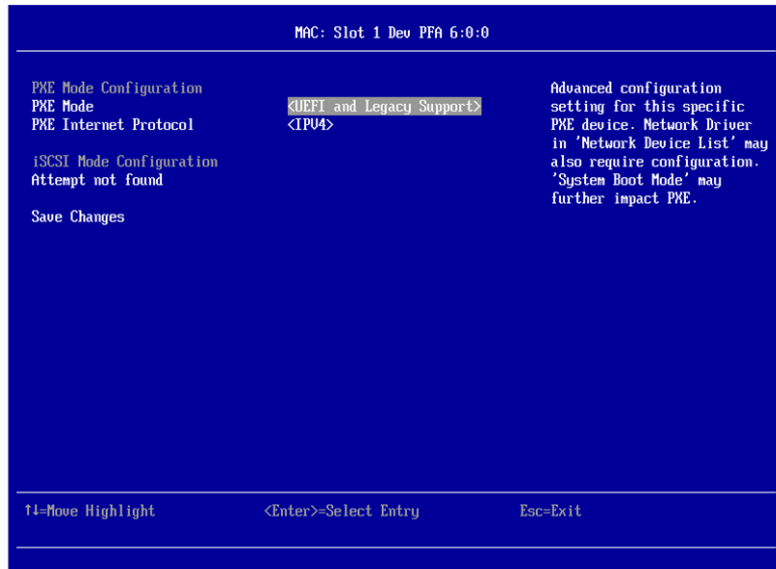
5. In the **Network** menu that appears, select **Network Boot Configuration**, and then press the **Enter** key.

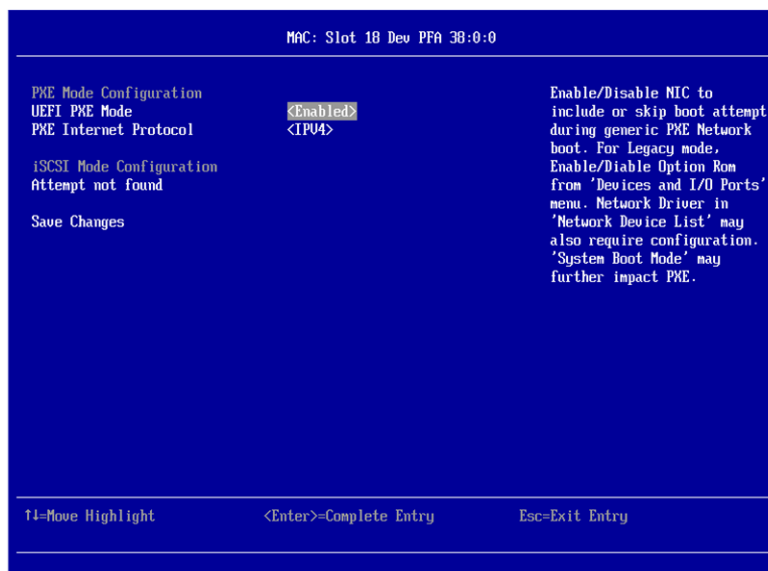


6. Select the port for which you want to disable the PXE boot, and then press the **Enter** key.

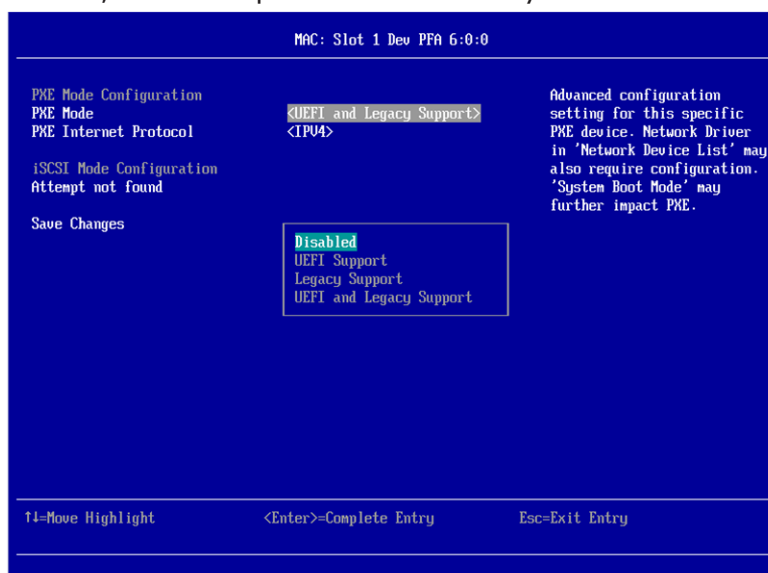


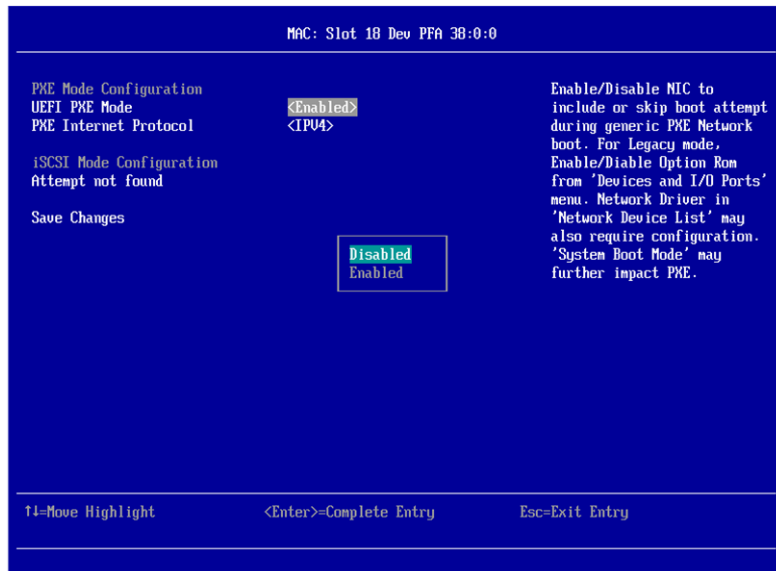
7. In the **MAC: Slot x Dev PFA x:x:x** menu that appears (where x varies according to the selected device), select **PXE Mode** or **UEFI PXE Mode**, and then press the **Enter** key.





8. Select **Disabled**, and then press the **Enter** key.

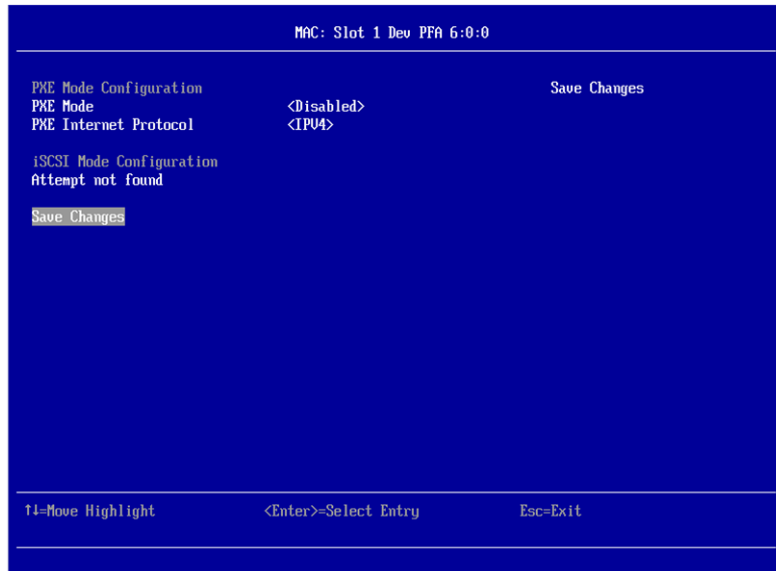




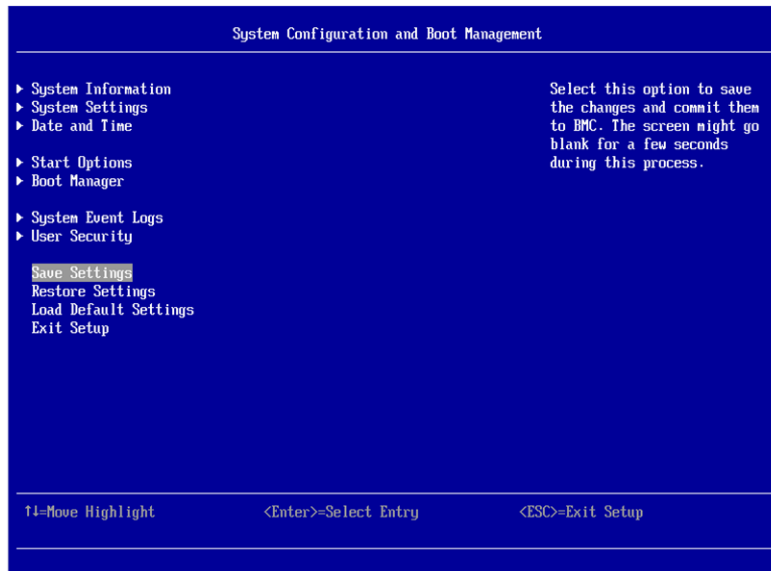
Tip:

- To re-enable the setting, select **UEFI and Legacy Support** or **Enabled**.

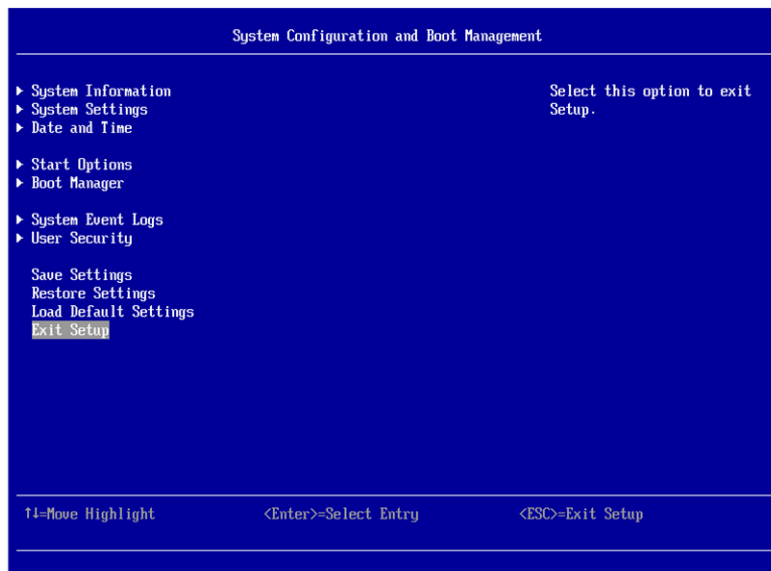
- Select **Save Changes**, and then press the **Enter** key.



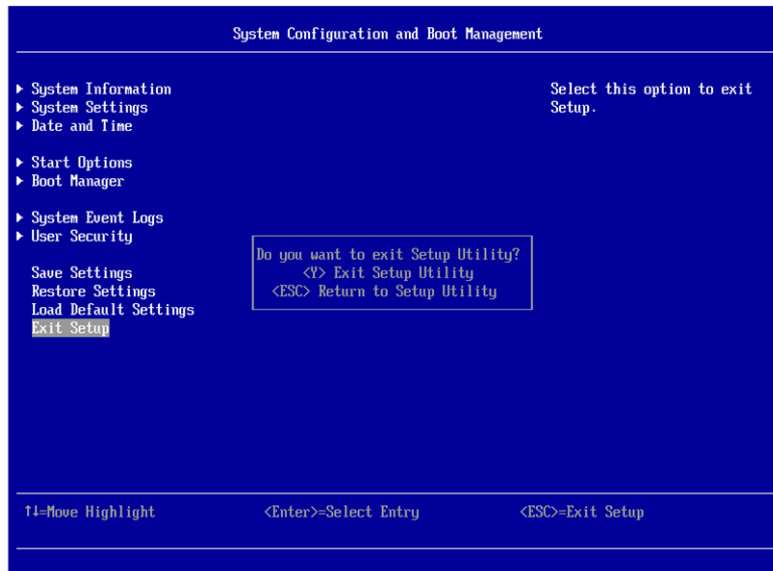
- Press the **ESC** key to return to the **System Configuration and Boot Management** menu. Select **Save Settings**, and then press the **Enter** key.



11. Select **Exit Setup**, and then press the **Enter** key.



12. Press the **Y** key to exit the UEFI menu.



Setting the Boot Order

There are the following two types of Boot Order settings. Set the Boot Order according to your usage.

- Primary Boot Order:
Power on a server blade using a power button or remote console menu, or restart it by reboot.
- Secondary Boot Order:
Power on a server blade through Wake On LAN (WOL).



Tip:

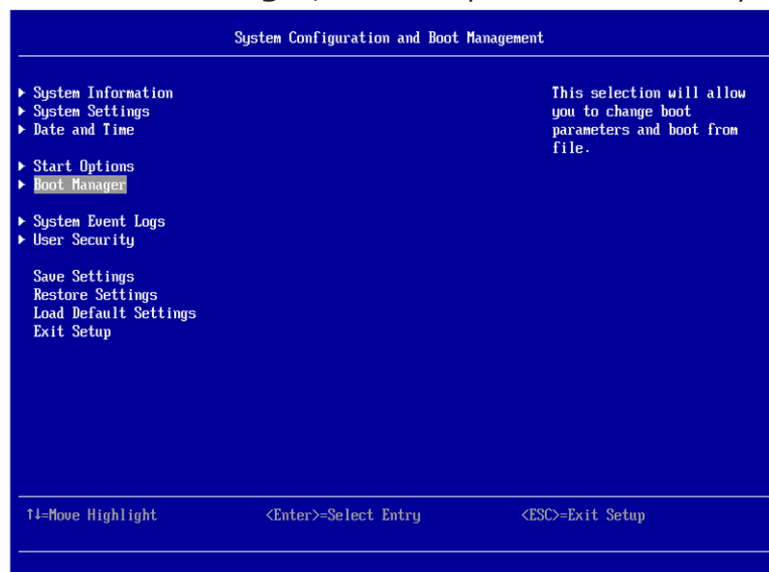
- If the OS image cannot be found in the boot device or PXE server, the system might continue rebooting. In this case, confirm the connection of the boot device or the PXE server.
- If the deployment functionality for Hitachi Compute Systems Manager is used, set both Primary Boot Order and Secondary Boot Order.

To set the Boot Order:

1. Start the remote console, and then turn on the power of the server blade. In the toolbar of the remote console, click **Power** and then **Power On**.
2. In the following window, press the **F1** key.



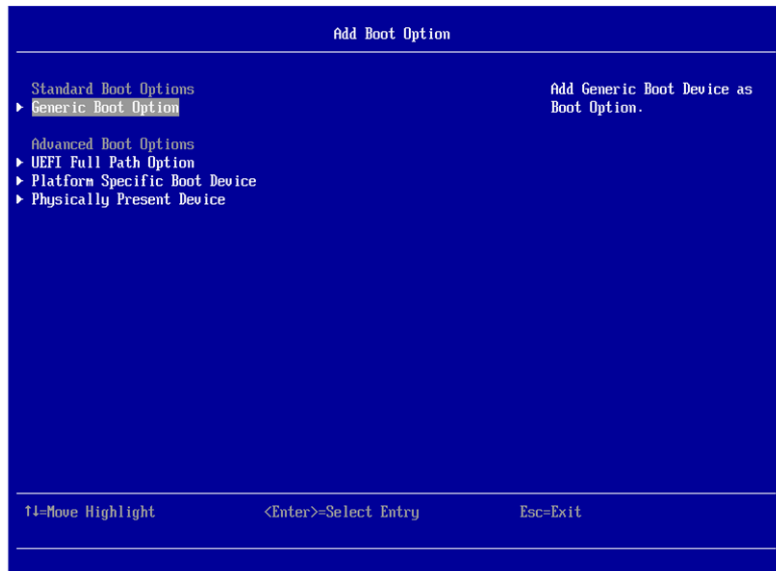
3. In the **System Configuration and Boot Management** menu that appears, select **Boot Manager**, and then press the **Enter** key.



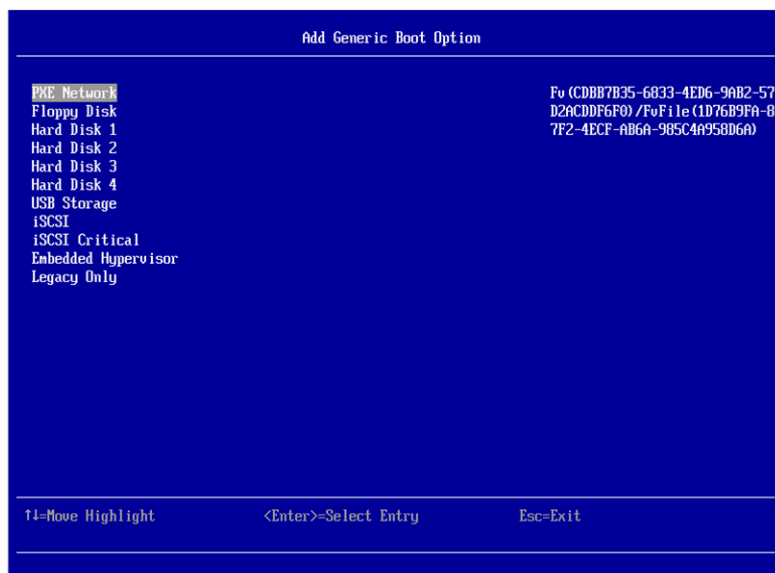
4. In the **Boot Manager** menu, select **Add Boot Option** (or **Add WOL Boot Option**), and then press the **Enter** key.



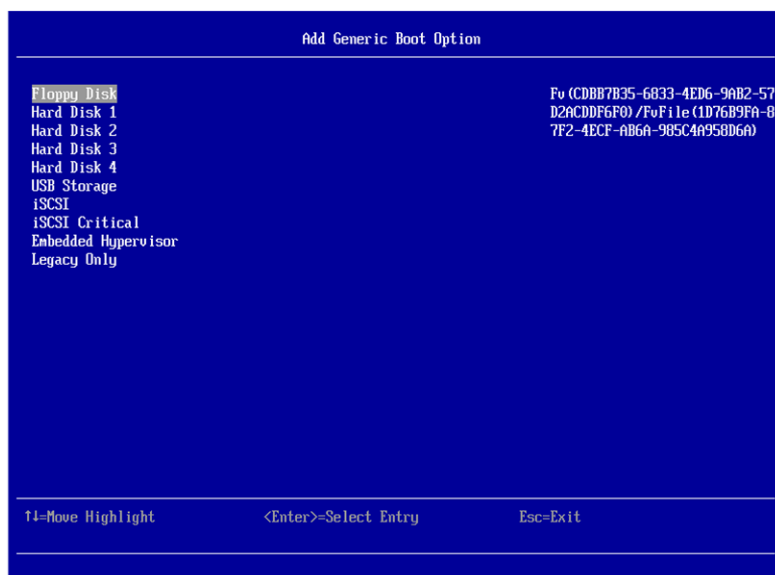
5. In the **Add Boot Option** menu, select **Generic Boot Option**, and then press the **Enter** key.



6. In the **Add Generic Boot Option** menu, select **PXE Network**, and then press the **Enter** key.



PXE Network is removed from the list.

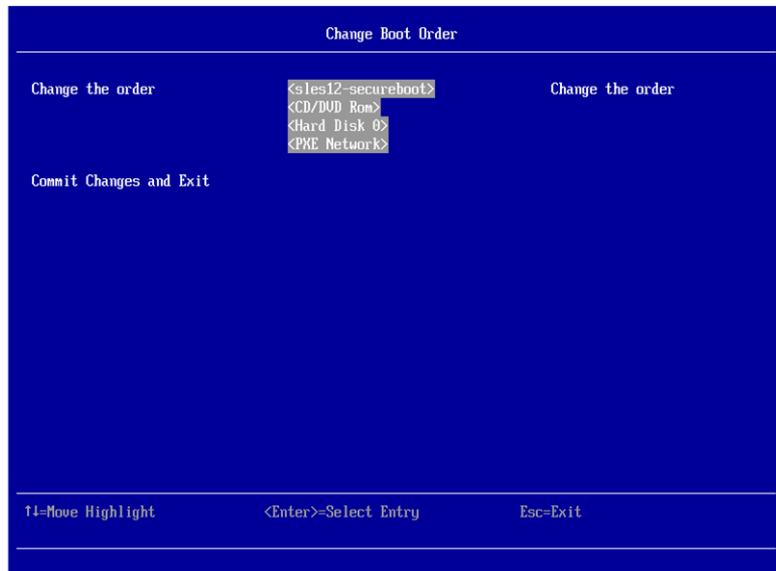


Note: It might take one to two minutes to remove **PXE Network** from the list. Do not perform any other operation until **PXE Network** disappears from the list.

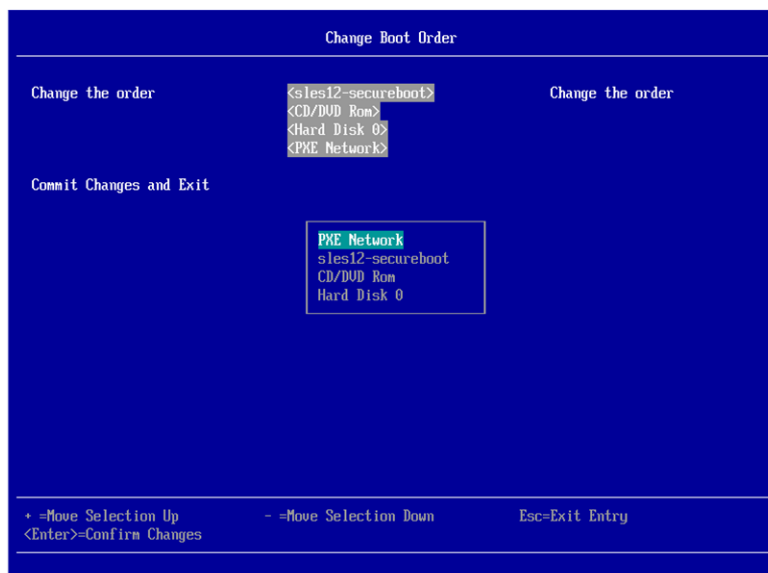
7. Press the **ESC** key to return to the **Boot Manager** menu.
8. In the **Boot Manager** menu, select **Change Boot Order** (or **Change WOL Boot Order**), and then press the **Enter** key.



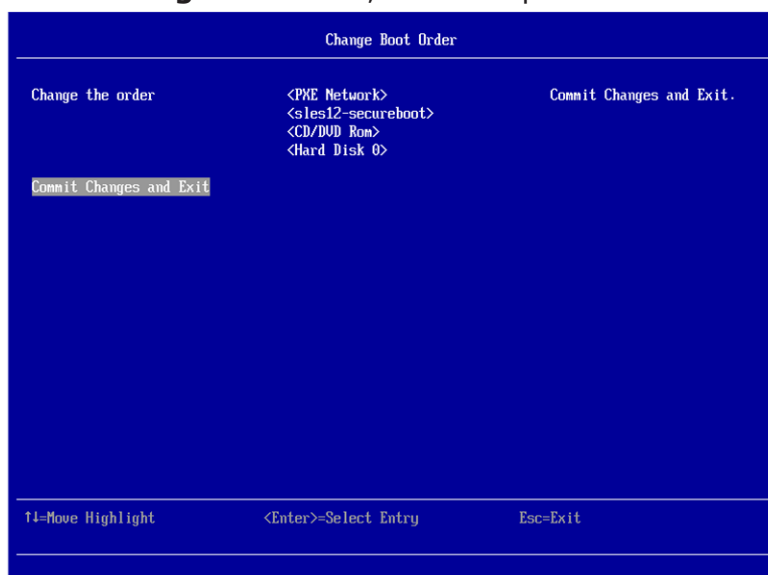
9. In the **Change Boot Order** menu, select **Change the order**, and then press the **Enter** key.



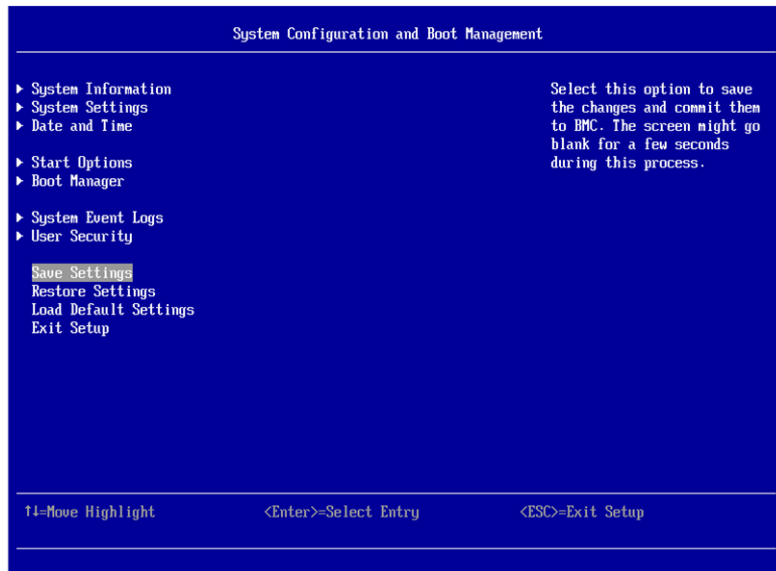
10. Move the cursor to **PXE Network**, and then press the **+** key to move the item to the top of the list.



11. Select **Commit Changes and Exit**, and then press the **Enter** key.



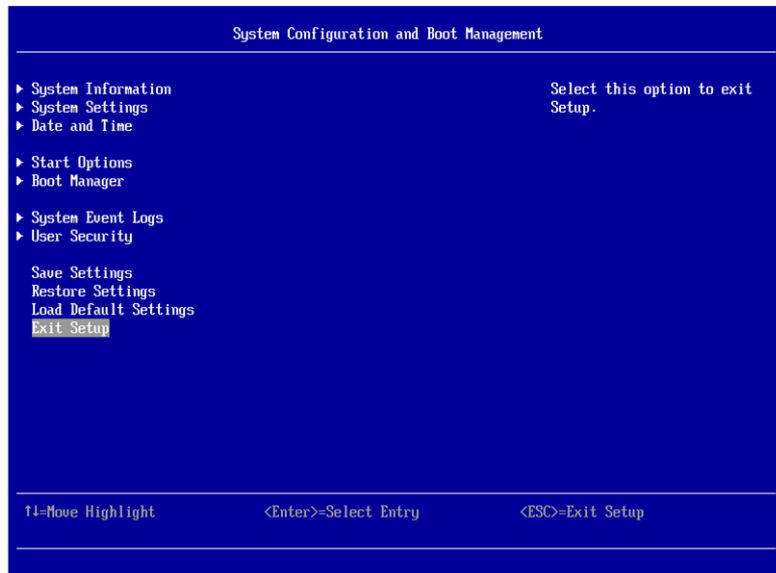
12. Press the **ESC** key to return to the **System Configuration and Boot Management** menu. Select **Save Settings**, and then press the **Enter** key.



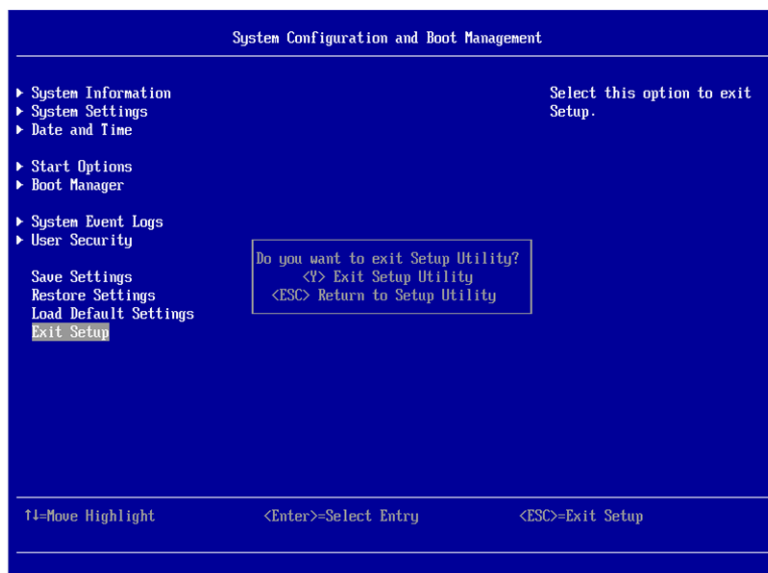
Note:

- It might take one to two minutes to update **Save Settings**.
- The window might become dark while **Save Settings** is being updated. Do not perform any other operation during the update.

13. Select **Exit Setup**, and then press the **Enter** key.



14. Press the **Y** key to exit the UEFI menu.



Related topics

The manual *Hitachi Compute Blade Emulex Adapter User's Guide for Hardware*

iSCSI Settings

This chapter describes iSCSI settings.

- [Specifying iSCSI settings](#)

Specifying iSCSI settings

Specify settings needed to use an OS by an iSCSI boot from a server blade.

To specify iSCSI boot settings, use the following menu to open the iSCSI Configuration window:

From the System Settings menu in the System Configuration and Boot Management window, select Network and then iSCSI Configuration.

For details, see the manual *Hitachi Compute Blade Emulex Adapter User's Guide for Hardware*.

Fibre Channel Adapter Settings

This chapter describes the fibre channel adapter settings.

- [Specifying fibre channel adapter settings](#)

Specifying fibre channel adapter settings

Specify settings needed to use an OS from a server blade by a Fibre Channel boot.

To specify fibre channel adapter settings, perform the following procedure:

- For the Hitachi 8Gb 2-port fibre channel adapter:
From the System Settings menu in the System Configuration and Boot Management window, select Adapters and UEFI Drivers and then Hitachi PCI-X/PCIe Fibre channel Controller.
For details, see the manual *Hitachi Gigabit Fibre Channel Adapter USER'S GUIDE (BIOS/EFI Edition)*.
- For the Hitachi 16Gb 2-port fibre channel adapter:
From the System Settings menu in the System Configuration and Boot Management window, select Storage and then Hitachi FibreChannel Adapter Setting.
For details, see the manual *Hitachi Gigabit Fibre Channel Adapter USER'S GUIDE (BIOS/EFI Edition)*.
- For the Emulex 8Gb 2-port fibre channel adapter or Emulex 16Gb 2-port fibre channel adapter:
From the System Settings menu in the System Configuration and Boot Management window, select Storage, and then select a fibre channel adapter to be set.
For details, see the manual *Hitachi Compute Blade Emulex Adapter User's Guide for Hardware*.

Hardware memory dump settings

This chapter describes hardware memory dump settings.

- ☐ [Hardware memory dump](#)
- ☐ [Configuring hardware memory dumps](#)
- ☐ [Starting hardware memory dump processing](#)
- ☐ [Checking the progress and end of the hardware memory dump processing](#)
- ☐ [Collecting hardware memory dump data](#)

Hardware memory dump

With the CB 520X B1 (server blade firmware 07-18 or later) and CB 520X B2, you can take snapshots of the main memory, CPU register, and PCI config header by using only the device functionality with the hardware memory dump functionality. A hardware memory dump is started by a user operation, and dumped images are stored in a partition on the device set beforehand. Before performing a hardware memory dump, you need to enable the functionality.

You can use hardware memory dumps in Red Hat Enterprise Linux 6.5 or later where a virtualization environment is not being used.



Tip:

- Be aware that when the hardware memory dump setting is enabled, the UEFI uses approximately 500 MB more memory than usual (when the setting is disabled).
- For CB 520X B3, hardware memory dump is not supported.

Configuring hardware memory dumps

The following describes how to configure hardware memory dumps.

Creating a dump partition

Create a disk partition (dump partition) that can be accessed from the server blade by following the requirements below. Use a tool that runs in the OS (for example, fdisk or parted) to create a partition.

| # | Requirements | Necessary information |
|---|-----------------------------|--|
| 1 | Device | HDD connected to the following fibre channel adapters: Hitachi 8Gb 1-port fibre channel adapter Hitachi 8Gb 2-port fibre channel adapter Hitachi 16Gb 1-port fibre channel adapter Hitachi 16Gb 2-port fibre channel adapter |
| 2 | File system | FAT32 |
| 3 | Partition size ¹ | Arbitrary value We recommend that the size be equal to or greater than the amount of installed physical memory. |
| Notes: | | |
| 1. To use a disk partition to store the dump files from a hardware memory dump, the size of the partition must be no more than 1.9 TB. This is because of the restrictions on FAT32 file systems. A hardware memory dump cannot be performed in a system which installed exceeds 1.9 TB memory. | | |



Tip:

Procedure for creating a dump partition in RHEL 6.5

1. Create a partition by using fdisk.

```
fdisk /dev/sdx {x: ID of the disk for dump processing}
(Operation procedure)
- (d) Delete the partition.
- (n) Create a partition (primary area 1).
- (t) Change the partition system ID to 'W95 FAT32 (LBA)'.
- (w) Write the table to the disk to finish the operation.
```

2. Format the partition to FAT32 by using mkdosfs.

```
mkdosfs -n LABEL -F 32 /dev/sdx1 {x: ID of the disk for dump
processing}
LABEL: Arbitrary volume label (up to 11 ASCII characters)
```

We recommend that you create a dump partition in an exclusive LU, and do not create another partition in the same LU.

If you share a dump partition with Linux Tough Dump, even if you have formatted the dump partition, execute the above mkdosfs command, and then format the partition and set the volume label again.



Tip:

- If the total size of dump files exceeds the remaining partition size, those that do not fit within the partition size are not saved.
- Dump files are not automatically deleted. Users need to delete them as needed.
- During a hardware memory dump, areas where the memory page is in the initial state (all 0x00) are not stored in dump files.
- When setting the volume label for a dump partition, use a name that is identifiable by users.
- We recommend that you connect a dump partition to a path other than boot paths.
- If there are multiple dump partitions or multipath connection is performed for a dump partition, the device that is recognized first at UEFI startup is used as a dump partition.

Creating a dump partition identification file

You can specify a dump partition by placing a dump partition identification file in the root directory of the partition. Of the partitions connected to the system, only one partition serves as the dump partition. Create an identification file according to the name and contents shown below.

| Item | Setting value |
|-------------------|---|
| File name | DumpSignature.dat |
| File size | 16 bytes |
| Contents (binary) | B4 91 61 32 6E C0 A4 23 C3 75 55 15 37 55 A6 1D |

Checking the HBA BIOS settings

Check the item below about the HBA port to which an LU including a dump partition is connected. For details on the setting procedure, see the following sections in the manual *Hitachi Gigabit Fibre Channel Adapter USER'S GUIDE (BIOS/EFI Edition)*.

The Fibre Channel boot setting is enabled on the LU for dump processing.

"Procedure to set a HBA-BIOS to Enable"

"Procedure to set a Boot Priority"

Enabling the dump functionality

Enable the dump functionality from the Web console of the management module. For details on how to use the Web console, see the *Hitachi Compute Blade 2500 Series Management Module User Guide*. Log in to the Web console, and then enable the dump functionality by following the procedure described below.

1. In the **Resources** tab, from the tree view under **Modules**, select the target server blade.
2. In the **EFI** tab, from the **Edit** pull-up menu, select **Advanced RAS**. The **Advanced RAS** dialog box appears.
3. In the **Advanced RAS** dialog box, change the **Hardware Memory Dump** setting to **Enable**.
4. In the **Advanced RAS** dialog box, from **Post Process**, select the UEFI behavior after dump processing finishes from the following two options.
 - Spin Loop: The UEFI stops in that state after the dump processing finishes.
 - Reset: The UEFI is automatically reset, and the server blade is restarted after the dump processing finishes.
5. After you finish the settings, in the **Advanced RAS** dialog box, click the **Confirm** button.

If you restart the server blade after finishing the settings, the settings are applied.

Starting hardware memory dump processing

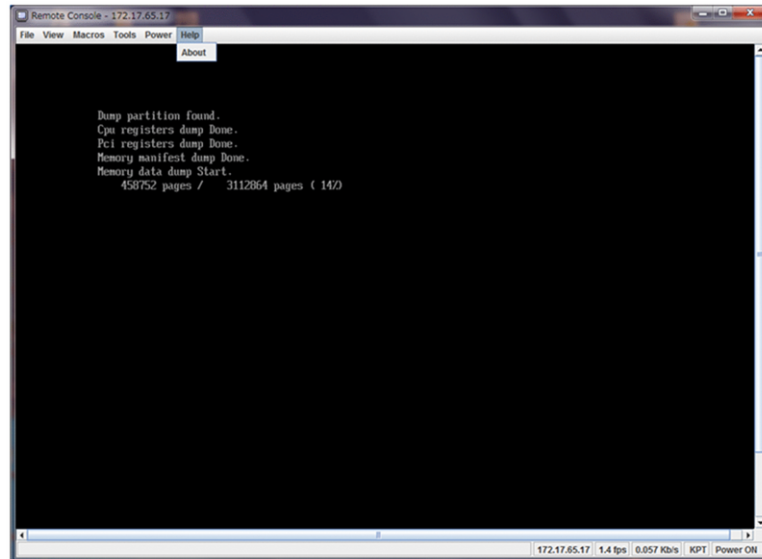
You can perform hardware memory dump processing from the Web console of the management module.

Log in to the Web console, and then start dump processing by following the procedure described below.

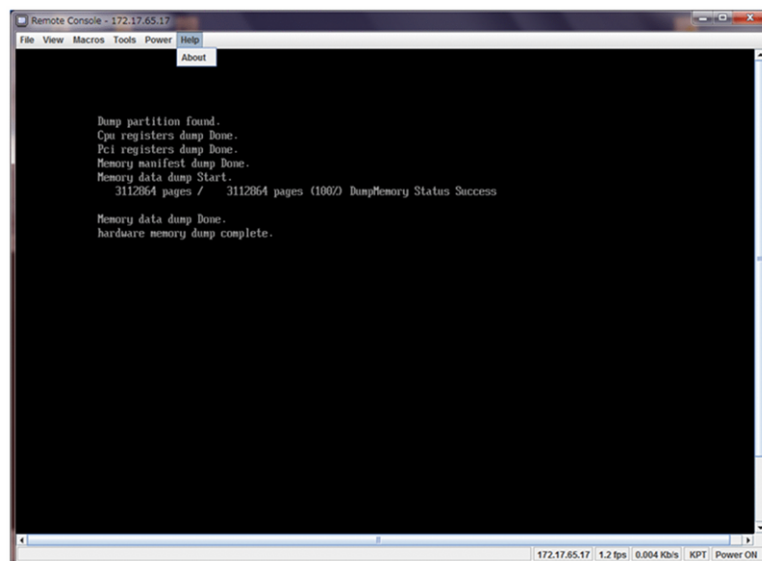
1. In the **Resources** tab, from the tree view under **Modules**, select the target server blade.
2. From the **Action** pull-down menu, select **Hardware Memory Dump**. The **Hardware Memory Dump** dialog box appears.
3. Click **OK** to start dump processing.

Checking the progress and end of the hardware memory dump processing

After a while after you perform an operation to start hardware memory dump processing from the Web console, the following window is displayed on the remote console, and dump processing starts.



If the processing ends successfully, "hardware dump complete" is displayed as shown in the following figure.



The following shows an estimated time for dump processing.

Example: When dumping images to an LU connected to a Hitachi 16 Gb 2-port fibre channel adapter, in a single-blade configuration where an Intel Xeon processor E7-8891 v2 @ 3.20GHz is installed

Time until the start of dump processing: approximately 1 minute and 40 seconds

Time required for dump processing: Approximately 2 minutes per 2 GB of dump memory size.

After the dump processing finishes, the UEFI works according to the value of "Post process" that you set from the Web console.



Tip:

- If there is not enough space in the dump partition, "Memory data dump Fail" message is displayed, and processing is suspended.
You cannot resume suspended memory dump processing. Images that are dumped before the suspension are stored successfully.
If hardware memory dump processing ends abnormally, the validity of the dumped images is not guaranteed.

Collecting hardware memory dump data

Hardware memory dump data is stored as a file on a dump partition by using the following directory structure.

| Directory structure | | Description |
|---------------------|---|-----------------|
| /HDUMP_YYMMDD_hhmm/ | register.dat | CPU register |
| | pci.dat | PCI register |
| | manifest.dat | Memory manifest |
| | memory_{head page address: in hexadecimal notation}.dat | Memory data |



Tip: Dump files are not automatically deleted. After collecting the data, delete the files as necessary for operations.

About UEFI items whose setting values are fixed

This Appendix describes the UEFI items of the submenus whose setting value are fixed.

Do not change the setting values for the UEFI items described in this appendix.

- ☐ [Submenus whose menu items are variable](#)
- ☐ [Submenus whose menu items are fixed](#)

Submenus whose menu items are variable

For each of the following submenus, the UEFI items to be displayed differ depending on the installed device:

- **Adapters and UEFI Drivers**
A submenu that allows you to set a device for the driver that supports UEFI 1.x. The UEFI items displayed for this submenu differ depending on the device type.
- **Driver Health**
A submenu that displays the operational status of a device. The UEFI items displayed for this submenu differ depending on the device type.
UEFI Full Path Option
- **A submenu that adds an EFI application or removable file system as a BootOption.** The UEFI items displayed for this submenu differ depending on the device type.
- **Platform Specific Boot Device**
A submenu that adds a platform-specific boot device as a BootOption. The menu items and their item names change depending on the server blade type.
- **Physically Present Device**
A submenu that adds a physically installed device as a BootOption. The menu items and their item names change depending on the server blade type and the device type.
- **Boot from Device**
A submenu that directly selects the device to be booted. The menu items and their item names change depending on the server blade type and the device type.
If you add the [X] mark to Legacy Mode and then boot the OS, the OS is booted in Legacy mode. For CB 520H B3/B4, CB 520X B1/B2/B3, booting the OS in Legacy mode is not supported, so do not attempt to boot the OS in Legacy mode.
- **User Defined Boot Option**
A submenu that adds the BootOption set by a user as a WOL Boot Option.

Submenus whose menu items are fixed

Legacy Support sub menu

Table A-1 Legacy Support sub menu

| Displayed item | Selection | Description |
|----------------------------|---------------------|--|
| Force Legacy Video on Boot | Disabled Enabled | Enables forced Int 0x10h video support. If the OS does not support the UEFI video specifications, this setting is required. The initial value is Enabled. |

| Displayed item | Selection | Description |
|----------------------|---------------------|--|
| Rehook INT 19h | Disabled Enabled | Prevents the device from controlling the boot process. The initial value is Disabled. |
| Legacy Thunk Support | Disabled Enabled | Supports a PCI mass storage device that does not support UEFI. The initial value is Enabled. |
| Infinite Boot Retry | Disabled Enabled | Continues to indefinitely retry a boot operation if the OS cannot be booted, The initial value is Disabled. |
| BBS Boot | Disabled Enabled | Boots the OS according to the BIOS Boot Specification. The initial value is Enabled. |
| Non-Planar PXE | Disabled Enabled | Enables Non-Planar PXE in Legacy Mode. The initial value is Enabled. |

Related topics

- [System Settings menu on page 3-5](#)
- [System Settings menu on page 4-4](#)

Power sub menu

Table A-2 Power sub menu

| Displayed item | Selection | Description |
|--------------------------|--|--|
| Active Energy Manager | Capping Disabled Capping Enabled | Enables AEM Power Capping. If AEM Power Capping is enabled, the AEM application can restrict the maximum power consumption of the system. The initial value is Capping Enabled. |
| Power/Performance Bias | Platform Controlled OS Controlled | Decides whether the OS or platform controls Turbo. The initial value is Platform Controlled. |
| Platform Controlled Type | Maximum Performance Efficiency - Favor Performance Efficiency - Favor Power Minimal Power | Decides whether performance or power consumption has priority. The initial value is Efficiency - Favor Performance. |
| Workload Configuration | Balanced I/O sensitive | Selects I/O sensitive if the CPU core is in the idle state and is equipped with an I/O device that requires a broad bandwidth. The initial value is Balanced. |

Related topics

- [System Settings menu on page 3-5](#)
- [System Settings menu on page 4-4](#)

Enable / Disable Onboard Device(s) sub menu

Table A-3 Enable / Disable Onboard Device(s) sub menu

| Displayed item | Selection | Description |
|----------------------|-------------------|--|
| SAS Controller | Disable Enable | If you select Disable, the device is disabled. |
| Ethernet | Disable Enable | If you select Disable, the device is disabled. |
| Video | Disable Enable | If you select Disable, the device is disabled. |
| I/O Expansion 1 Card | Disable Enable | If you select Disable, the device is disabled. |
| I/O Expansion 2 Card | Disable Enable | If you select Disable, the device is disabled. |
| Ethernet 1 | Disable Enable | If you select Disable, the device is disabled. |
| Sas | Disable Enable | If you select Disable, the device is disabled. |
| Mezzanine Slot 1 | Disable Enable | If you select Disable, the device is disabled. |
| Mezzanine Slot 2 | Disable Enable | If you select Disable, the device is disabled. |
| Mezzanine Slot 3 | Disable Enable | If you select Disable, the device is disabled. |
| Mezzanine Slot 4 | Disable Enable | If you select Disable, the device is disabled. |



Note:

- The menu items, their item names, and the initial values change depending on the server blade type or whether the device is installed.
- For CB 520X B1/B2/B3 in an SMP configuration, a menu for selecting a server blade is displayed when you select this submenu.

Related topics

- [Devices and I/O Ports submenu on page 3-6](#)
- [Devices and I/O Ports submenu on page 4-5](#)

Enable / Disable Adapter Option ROM Support sub menu

Table A-4 Enable / Disable Adapter Option ROM Support sub menu

| Displayed item | | Selection | Description |
|--------------------------------------|-------------------------|-------------------|---|
| Enable /Disable Legacy Option ROM(s) | SAS Controller | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Ethernet | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Video | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | I/O Expansion 1 Card | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | I/O Expansion 2 Card | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_Video | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_Ethernet 1 | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_Sas | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_Mezzanine Slot 1 | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_Mezzanine Slot 2 | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_Mezzanine Slot 3 | Disable Enable | If you select Disable, loading of Legacy OPROM of the device is disabled. |

| Displayed item | Selection | Description |
|------------------------------------|---------------------------|--|
| | | The initial value is Enable. |
| | Legacy_Mezzanine Slot 4 | Disable Enable If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_IOBD Slot 1A | Disable Enable If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_IOBD Slot 1B | Disable Enable If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_IOBD Slot 2A | Disable Enable If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| | Legacy_IOBD Slot 2B | Disable Enable If you select Disable, loading of Legacy OPROM of the device is disabled. The initial value is Enable. |
| Enable /Disable UEFI Option ROM(s) | UEFI_SAS Controller | Disable Enable If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_Ethernet | Disable Enable If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_Video | Disable Enable If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_I/O Expansion 1 Card | Disable Enable If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_I/O Expansion 2 Card | Disable Enable If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_Mezzanine Slot 1 | Disable Enable If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |

| Displayed item | | Selection | Description |
|----------------|-----------------------|-------------------|---|
| | UEFI_Mezzanine Slot 2 | Disable Enable | If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_Mezzanine Slot 3 | Disable Enable | If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_Mezzanine Slot 4 | Disable Enable | If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_IOBD Slot 1A | Disable Enable | If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_IOBD Slot 1B | Disable Enable | If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_IOBD Slot 2A | Disable Enable | If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |
| | UEFI_IOBD Slot 2B | Disable Enable | If you select Disable, loading of the EFI Driver of the device is disabled. The initial value is Enable. |



Note:

- The menu items and their item names change depending on the server blade type.
- For CB 520X B1/B2/B3 in an SMP configuration, a menu for selecting a server blade is displayed when you select this submenu.

Related topics

- [Devices and I/O Ports submenu on page 3-6](#)
- [Devices and I/O Ports submenu on page 4-5](#)

Set Option ROM Execution Order sub menu

Table A-5 Set Option ROM Execution Order sub menu

| Displayed item | Selection | Description |
|--------------------------------|--|---|
| Set Option ROM Execution Order | SAS Controller Ethernet Video Ethernet 1 Sas I/O Expansion 1 Card I/O Expansion 2 Card Mezzanine Slot 1 Mezzanine Slot 2 Mezzanine Slot 3 Mezzanine Slot 4 | Decides the execution order of Legacy OPRM. |



Note:

- The menu items and their item names change depending on the server blade type.

Related topics

- [Devices and I/O Ports submenu on page 3-6](#)
- [Devices and I/O Ports submenu on page 4-5](#)

PCIe Gen1/Gen2/Gen3 Speed Selection sub menu

Table A-6 PCIe Gen1/Gen2/Gen3 Speed Selection sub menu

| Displayed item | Selection | Description |
|------------------|----------------------|---|
| Mezzanine Slot 1 | Gen1 Gen2 Gen3 | Decides the execution order of Legacy OPRM. The initial value is Gen3. |
| Mezzanine Slot 2 | Gen1 Gen2 Gen3 | Decides the execution order of Legacy OPRM. The initial value is Gen3. |
| Mezzanine Slot 3 | Gen1 Gen2 Gen3 | Decides the execution order of Legacy OPRM. The initial value is Gen3. |
| Mezzanine Slot 4 | Gen1 Gen2 Gen3 | Decides the execution order of Legacy OPRM. The initial value is Gen3. |

| Displayed item | Selection | Description |
|----------------------|----------------------|--|
| I/O Expansion 1 Card | Gen1 Gen2 Gen3 | Decides the execution order of Legacy OPROM. The initial value is Gen3. |
| I/O Expansion 2 Card | Gen1 Gen2 Gen3 | Decides the execution order of Legacy OPROM. The initial value is Gen3. |



Note:

- The menu items and their item names change depending on the server blade type.
- For CB 520X B1/B2/B3 in an SMP configuration, a menu for selecting a server blade is displayed when you select this submenu.

Related topics

- [Devices and I/O Ports submenu on page 3-6](#)
- [Devices and I/O Ports submenu on page 4-5](#)

Console Redirection Settings sub menu

Table A-7 Console Redirection Settings sub menu

| Displayed item | Selection | Description |
|-------------------------|--|---|
| COM Port 1 | Disable Enable | Enables COM Port 1. The initial value is Enable. |
| COM Port 2 | Disable Enable | Enables COM Port 2. The initial value is Enable. |
| Remote Console | <for CB 520X B1> Enable Disable <for CB 520X B2/B3, CB 520H B3/B4> Disable Enable Auto | Sets remote console redirection. <for CB 520X B1> The initial value is Disable. <for CB 520X B2/B3, CB 520H B3/B4> The initial value is Auto. |
| Serial Port Sharing | Enable Disable | Sets the IPMI status. The initial value is Disable. |
| Serial Port Access Mode | Shared Dedicated Disable | Sets the access mode. The initial value is Disable. |

| Displayed item | Selection | Description |
|---------------------------|---|---|
| Legacy Option ROM Display | COM Port 2 COM Port 1 | Decides what port Legacy OPRM uses. The initial value is COM Port 1. |
| Com1 Baud Rate | 9600 19200 38400 57600 115200 | Sets the baud rate. The initial value is 115200. |
| Com1 Data Bits | <for CB 520X B1/B2/B3, CB 520H B3> 5 6 7 8 <for CB 520H B4> 7 8 | Sets the data bits. The initial value is 8. |
| Com1 Parity | None Odd Even | Sets the parity. The initial value is None. |
| Com1 Stop Bits | 1 2 | Sets the stop bits. The initial value is 1. |
| Com1 Terminal Emulation | VT100 ANSI | Sets the terminal emulation. The initial value is ANSI. |
| Com1 Active After Boot | Enable Disable | Decides whether to enable COM Port 1 after the OS is booted. The initial value is Disable. |
| Com1 Flow Control | Disable Hardware | Sets the flow control. The initial value is Disable. |
| Com2 Baud Rate | 9600 19200 38400 57600 115200 | Sets the baud rate. The initial value is 115200. |
| Com2 Data Bits | <for CB 520X B1/B2/B3, CB 520H B3> 5 6 7 8 <for CB 520H B4> 7 | Sets the data bits. The initial value is 8. |

| Displayed item | Selection | Description |
|-------------------------|---------------------|--|
| | 8 | |
| Com2 Parity | None Odd Even | Sets the parity. The initial value is None. |
| Com2 Stop Bits | 1 2 | Sets the stop bits. The initial value is 1. |
| Com2 Terminal Emulation | VT100 ANSI | Sets the terminal emulation. The initial value is ANSI. |
| Com2 Active After Boot | Enable Disable | Decides whether to enable COM Port 2 after the OS is booted The initial value is Disable. |
| Com2 Flow Control | Disable Hardware | Sets the flow control. The initial value is Disable. |

Related topics

- [Devices and I/O Ports submenu on page 3-6](#)
- [Devices and I/O Ports submenu on page 4-5](#)

Backup Bank Management sub menu

Table A-8 Backup Bank Management sub menu

| Displayed item | Selection | Description |
|--|--------------------------------|---|
| Backup Bank Management Method | User Managed Auto Promotion | If the versions of the surface and the back side differ and Auto Promotion is selected, the version of the backup bank is overwritten by that of the primary bank after the specified number of weeks or if an attempt to boot the OS succeeds the specified number of times. The initial value is Auto Promotion. |
| Number Of Successful Consecutive Boots | 1 - 109 | This value is used if Auto Promotion is set. The initial value is 1. |
| Number Of Weeks | 1 - 52 | This value is used if Auto Promotion is set. The initial value is 2. |

Related topics

- [Recovery and RAS submenu on page 3-15](#)
- [Recovery and RAS submenu on page 4-12](#)

Disk GPT Recovery sub menu

Table A-9 Disk GPT Recovery sub menu

| Displayed item | Selection | Description |
|-------------------|--|---|
| Disk GPT Recovery | <for CB 520X B1> None Automatic <for CB 520X B2/B3, CB 520H B3/B4> None Automatic Manual | If you select Automatic, the corrupted GUID Partition Table (GPT) is overwritten for restoration by a GPT version that is not corrupted. <for CB 520X B1> The initial value is Automatic. <for CB 520X B2/B3, CB 520H B3/B4> If you select Manual, a dialog box is displayed when the corrupted GPT is detected. Select the appropriate action. The initial value is Manual. |

Related topics

- [Recovery and RAS submenu on page 3-15](#)
- [Recovery and RAS submenu on page 4-12](#)

System Recovery sub menu

Table A-10 System Recovery sub menu

| Displayed item | Selection | Description |
|---------------------------|-------------------|--|
| POST Watchdog Timer | Disable Enable | Sets whether to enable the POST Watchdog Timer. The initial value is Disable. |
| POST Watchdog Timer Value | 5 - 20 | Enters the value (in minutes) for the POST loader Watchdog timer. The initial value is 5. This item cannot set when POST Watchdog Timer is Disable. |
| Reboot System on NMI | Disable Enable | Sets whether to enable rebooting after an NMI is issued. <for CB 520X B1/B2/B3> The initial value is Disable. <for CB 520H B3/B4> The initial value is Enable. |
| Halt On Severe Error | Disable Enable | If this is enabled, the OS is not booted if an error is detected during POST processing. The initial value is Disable. |

Related topics

- [Recovery and RAS submenu on page 3-15](#)
- [Recovery and RAS submenu on page 4-12](#)

Rollback Configuration sub menu

Table A-11 Rollback Configuration sub menu

| Displayed item | Selection | Description |
|--------------------|---------------------|--|
| Rollback Policy is | Disabled Enabled | If you specify Disable, you will be unable to update to an earlier version of UEFI. The initial value is Enabled. |

Related topics

- [Security submenu \(for CB 520X B2 firmware version 09-17 or later, CB 520X B3\) on page 3-16](#)
- [Security submenu \(for CB 520X B1, CB 520X B2 firmware version 09-14 or earlier\) on page 3-20](#)
- [Security submenu \(for CB 520H B4\) on page 4-13](#)
- [Security submenu \(for CB 520H B3\) on page 4-16](#)

Secure Boot Configuration sub menu

Table A-12 Secure Boot Configuration sub menu

| Displayed item | Selection | Description |
|-------------------|---|--|
| Physical Presence | - | Displays the physical presence status of the TPM. |
| Secure Boot is: | Disabled Enabled | Sets whether to enable Secure Boot. The initial value is Disable. |
| Secure Boot Mode | Standard Mode Custom Mode OS Setup Mode | Selects a type of Secure Boot Mode. The initial value is Standard Mode. |

Related topics

- [Security submenu \(for CB 520X B2 firmware version 09-17 or later, CB 520X B3\) on page 3-16](#)
- [Security submenu \(for CB 520X B1, CB 520X B2 firmware version 09-14 or earlier\) on page 3-20](#)
- [Security submenu \(for CB 520H B4\) on page 4-13](#)
- [Security submenu \(for CB 520H B3\) on page 4-16](#)

Select Next One-Time Boot sub menu

Table A-13 Select Next One-Time Boot sub menu

| Displayed item | Selection | Description |
|-----------------|--|---|
| Boot Next Value | <for CB 520X B1> CD/DVD Rom Hard Disk 0 PXE Network NONE <for CB 520X B2/B3, CB 520H B3/B4> CD/DVD Rom Hard Disk 0 PXE Network F1 Setup NONE | Sets a Boot Option to be used for the next booting. The initial value is NONE. Note that you change the boot order settings, to change the selection items. |

Related topics

- [Boot Manager menu on page 3-23](#)
- [Boot Manager menu on page 4-18](#)

Software License Information

This appendix describes software license information.

- ☐ [License information for UEFI software](#)

License information for UEFI software

The UEFI and software embedded in the UEFI contain material that is copyrighted or owned by Hitachi and/or third parties, or material for which Hitachi and/or third parties have intellectual property rights.

Similarly, documents that accompany the software include material that is owned by Hitachi or for which Hitachi has intellectual property rights. These rights are protected by the Copyright Act or other laws.

In addition to the software developed and created by Hitachi, the UEFI uses the following open source software in accordance with software license agreements:

Table B-1 Open source software

| Software name | Related software license agreement |
|---------------|--|
| tianocore EFI | BSD License/Eclipse License/FAT32 License/TianoCore.Org Contribution Agreement See the following links: http://sourceforge.net/apps/mediawiki/tianocore/index.php?title=BSD_License_from_Intel http://sourceforge.net/apps/mediawiki/tianocore/index.php?title=Eclipse http://sourceforge.net/apps/mediawiki/tianocore/index.php?title=FAT32_License http://sourceforge.net/apps/mediawiki/tianocore/index.php?title=Contribution_Agreement |



Glossary

This section explains the terminology you need to know when using the CB2500.

A

active blade

When using the N+M cold standby function, the active blade is the server blade that is actively running your applications.

APC (Accurate Power Control)

A function that uses power capping to limit the power consumption of the system unit. The APC function reduces power consumption by controlling the CPU clock rate of the system unit when power consumption exceeds a predetermined level.

B

BMC

Baseboard Management Controller

A controller that monitors and controls the status of server blades. The BMC monitors and controls server blades by connecting to the system console and the management module.

D

Deployment Manager

Software provided as part of Compute Systems Manager. Deployment Manager is a function that allows you to back up and restore the disk data of a server blade as an image file. You can also use a backed up image file to replicate the environment of a managed resource on another managed resource.

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| # | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

DIMM

Dual Inline Memory Module

H

HBA

Host Bus Adapter

I

iSCSI

Internet Small Computer System Interface

IP

Internet Protocol

L

LAN

Local Area Network

LID (Location Identifier lamp)

An LED lamp that you can use to identify the location of server chassis and modules. By controlling the LIDs of a server blade or server chassis remotely from the system console or Hitachi Compute Systems Manager, you can easily identify a managed resource in the system unit.

logical partitioning

A function that uses Hitachi's server logical partitioning framework to logically partition a blade server composed of one or several server blades. Each logical partition can then be used to create a discrete server environment.

LPAR (Logical PARTition)

When using logical partitioning, an LPAR is the term for each logical partition that can accommodate a discrete server environment.

LPAR Manager (Logical PARTitioning Manager)

A function of logical partitioning. A component that manages LPARs on a blade server.

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| # | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

M

management module

A module that monitors and configures the system unit as a whole. The management module allows you to centrally manage the server blades and modules in the system unit.

memory dump

A file containing the memory contents of a server at a particular time. When a failure occurs in the OS, you can use a memory dump to diagnose the nature of the failure.

N

N+M cold standby

When a failure occurs in a server, the N+M cold standby function allows the server to failover to a machine that is in standby with power off. When a failure occurs in an active server blade, failover to the standby blade takes place automatically. The server that is actively running applications is called the "active blade". The server blade that is in standby is called the "standby blade".

NMI (Non-Maskable Interrupt)

A hardware interrupt issued to the CPU from an external device. An NMI can be used, for example, to collect OS dump files.

P

PXE

Preboot eXecution Environment

R

RAID

Redundant Arrays of Inexpensive Disks

remote console

Software provided with the CB2500. You can use the remote console to remotely control the server OS and LPARs on a server blade.

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| # | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
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S

SAS

Serial Attached SCSI

server chassis

A frame in which server blades and modules are mounted.

S.M.A.R.T

Self-Monitoring, Analysis and Reporting Technology

standby blade

When using the N+M cold standby function, the standby blade remains in standby with its power off until a failover occurs from a failed active blade.

system console

A computer from which a user monitors and configures the CB2500 system unit.

switch module

A module that connects the system unit to LANs, SANs, and other networks.

T

terminal software

Software that allows a user to operate a remote host computer from a terminal computer. The CB2500 remote console can be operated using generic terminal software.

U

UEFI

Unified Extensible Firmware Interface

URL

Uniform Resource Locator

V

virtual media

An image file that contains the data recorded on media such as a CD or DVD. By converting the installation media for the OS and other software to virtual media, you can make the software available for installation on a server blade.

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W

Web console

A console that operates by using a GUI of the system console. You can use the Web console to view hardware information for a server chassis or server blade, or to control the hardware remotely.

WoL

Wake-on LAN

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
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