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# Hitachi Compute Rack 220S Remote Management User's Guide

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Hitachi Data Systems

MK-90CRS004-02

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# Contents

# Preface

This document provides information of the Remote management function and how to use the Web console of the *Compute Rack 220S* (CR 220S).

This preface includes the following information:

- Intended Audience
- Release Notes
- Referenced Documents
- Document Conventions
- Convention for storage capacity values
- Getting Help
- Comments

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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 the Compute Rack 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 Rack will be installed, including knowledge of physical characteristics, power systems and specifications, and environmental specifications.

## 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.

## Referenced Documents

Compute Rack 220S (CR 220S) documents:

- Hitachi Compute Rack 220S Getting Started Giode, MK-90CRS001
- Hitachi Compute Rack 220S User's Guide, MK-90CRS002
- Hitachi Compute Rack 220S CRU Replacement Guide, MK-90CRS003
- Hitachi Compute Rack 220S Windows Installation Guide, MK-90CRS005
- Hitachi Compute Rack 220S BIOS Guide, MK-90CRS000
- Hitachi Compute Blade Series / Hitachi Compute Rack Series OS Installation Guide for Windows Server, MK-99COM076

# Document Conventions

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

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.<br>In a procedure: user interface item |
| *Italic* | 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 |
| < > (angled brackets) | Variable (used when italic is not enough to identify variable). |
| [ ] (square bracket) | Optional values |
| { } braces | Required or expected value |
| \| vertical bar | Choice between two or more options or arguments |
| _(underline) | Default value, for example, [a_\| b] |

This document uses the following symbols to emphasize certain information.

| Symbol | Label | Description |
|---|---|---|
| | WARNING | This indicates the presence of a potential risk that might cause death or severe injury. |
| | 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 | This indicates notes not directly related to injury or severe damage to equipment. |
| Tip | Tip | This indicates advice on how to make the best use of the equipment. |

## Convention 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 |
| 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!**

# 1

# Overview

This chapter describes the overview of remote management functions of the system unit.

- Functional overview
- List of standard and extended functions

# Functional overview

The system unit is equipped with a Baseboard Management Controller (BMC) on its motherboard that has additional functions for monitoring its operating status and power control.
The system unit is also provided with a management interface only for the BMC that enables remote access through a LAN connection and initialization for the BMC. The Web console provided as a standard function is used for remote access.

In addition, using the following application allows function expansion:

- Remote Console application

  Enables you to use the remote console function that displays the system unit screen remotely and operate its keyboard and mouse, as well as the remote device function, such as a virtual floppy disk or virtual CD/DVD. This allows you to operate the BIOS or OS of the system unit remotely, and install utilities on the system from the virtual CD/DVD.

# List of standard and extended functions

The following are the main functions available with the Web console, a standard BMC feature and Remote Console application:

**Table 1-1: Standard and extended functions**

| Function | Web console | Remote Console application |
|---|---|---|
| Remote power control (ON/forced OFF/hard reset) | √ | √ |
| Remote failure monitoring | - | - |
| Remote console/ remote device | - | √ |
| NMI issue | √ | √ |
| User management of Web console | √ | - |
| IPMI Over LAN setting | √ | - |
| Setting of power saving function | √ | - |

**Notes:**
√ Available
- N/A

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# Precaution

This chapter describes the precautions for use of the remote management functions.

## Backing up Management settings

The setting data used for management of the system unit is required for recovery work in case of a failure.

Back up the Management settings in preparation for a failure and keep the data in a safe place whenever you change the settings when using the Web console and the Remote Console application.

For details, see Backup server settings on page 4-32.

## Setting management interface network

To use the Web console, set up the management interface network as BMC network. Before use, set the network in accordance with your system environment.

For details, see Connecting to management interface on page 3-2.

## Launch remote console button

The **Launch remote console** button is displayed on the console screen when the Remote Console application is applied.

## Setting IPMI Over LAN

The setting of IPMI Over LAN is not supported for the backup and restoration of the Management settings. The setting information of IPMI Over LAN may be lost when the motherboard is replaced in maintenance work. We recommend that you should note down the settings and keep in hand.

## Restricting access of BMC network

We strongly recommend that you set a connection restriction IP address for security improvement whenever setting a BMC network.

For the setting of a connection restriction IP address, see Setting BMC network on page 4-24.

## Operating Web console

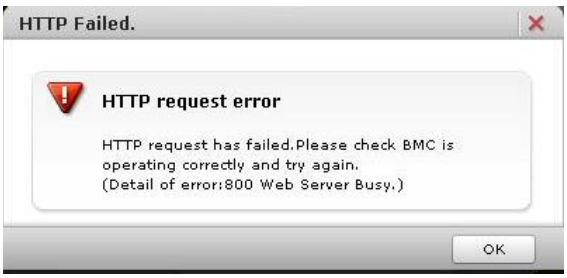
Web console may run slow according to your system console environment when multiple operations are performed continuously in a Web console.

When Web console operation is extremely slow, log out from Web console and log in again.

# Indicating error about HTTP communication

In the Web console of the system unit that is registered in the managed HCSM, you may receive an error about the HTTP communication.

If this error is displayed, operate the Web console after waiting for a while.



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# Preparation

This chapter describes how to connect the Web console for use.

- Connecting to management interface
- Operational environment for the console terminal
- Concidering BMC network setting

# Connecting to management interface

To use the Web console, connect the console terminal to the management interface connector on the rear of the system unit through a switching hub and LAN cables .

The following are required for this connection:

- Console terminal (PC) (100BASE-TX compatible)
- LAN cable of category UTP-5 or higher, and switching hub (100BASE-TX compatible)
- HTTP client software

The connecting topology of each model is as follows:

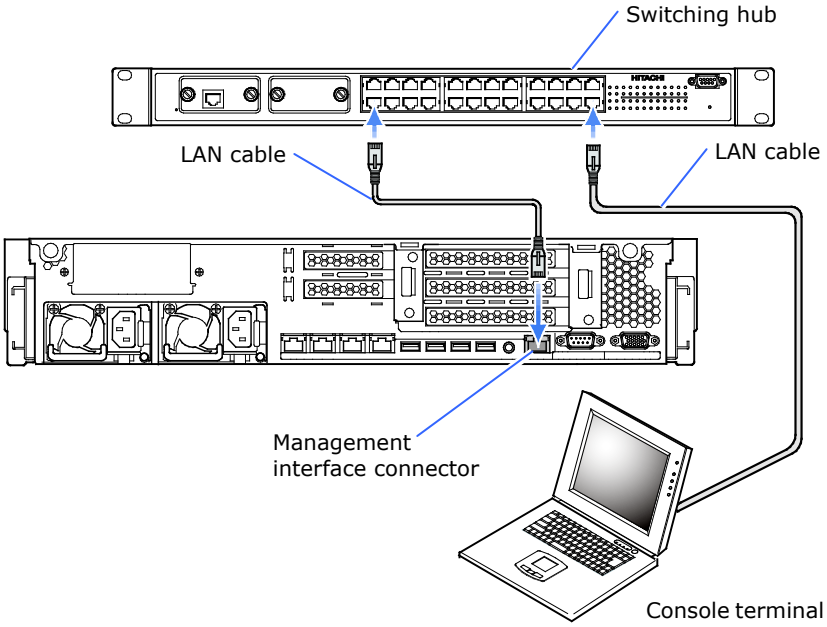


**Figure 3-1: Connecting console terminal to CR 220S**

- When connecting the console terminal directly to the management interface through LAN cable, you should use a cross cable depending on the console terminal specifications.
- When starting the BMC (supplying AC power to the system unit), connect a LAN cable first and turn on the switching hub and the console terminal.
  If you connect the LAN cable after starting the BMC, the BMC may not respond. In such a case, disconnect the AC cable of the system unit after connecting the LAN cable. And then wait at least 30 seconds, reconnect the AC cable.
- We recommend you use the management interface at 100BASE-TX. If the links speed of the management interface is 10 Mbps (10BASE-T link established, the Link LED is OFF), malfunction may occur in communication. In this case you need to reconfigure the network connected to the management interface.
- If you find the communication is unstable, turn off the system unit, shut down the AC power by, for example, disconnecting the AC cable, wait 30 seconds or more, and then reconnect AC power and turn on the system unit.

# Operational environment for the console terminal

The following list shows each item of the operational environment the console terminal needs to satisfy.

The conditions are differed depending on the BMC version.

**Table 3-1: Operational environment for console terminal (BMC version 09-80 or higher)**

| Console terminal | Operational environment |
|---|---|
| Flash Player | Adobe Flash Player 10.2 or higher[1] |
| Java Software | ORACLE Java 6.0 or higher[2] |
| OS | Windows Server 2012 R2 Standard[3 4]<br>Windows Server 2012 R2 Datacenter[3 4]<br>Windows Server 2012 Standard[3 4]<br>Windows Server 2012 Datacenter[3 4]<br>Windows Server 2008 R2 Standard[3]<br>Windows Server 2008 R2 Enterprise[3]<br>Windows Server 2008 Standard<br>Windows Server 2008 Enterprise<br>Windows Server 2008 Standard without Hyper-V<br>Windows Server 2008 Enterprise without Hyper-V<br>Windows Server 2003 R2, Standard Edition<br>Windows Server 2003 R2, Enterprise Edition<br>Windows Server 2003 R2, Standard x64 Edition<br>Windows Server 2003 R2, Enterprise x64 Edition<br>Windows Server 2003, Standard Edition<br>Windows Server 2003, Enterprise Edition<br>Windows Server 2003, Standard x64 Edition<br>Windows Server 2003, Enterprise x64 Edition<br>Windows 8 Pro[3]<br>Windows 7 Professional[3]<br>Windows Vista Business<br>Windows XP Professional<br>Windows XP Professional x64 Edition |
| Web browser | Internet Explorer 7.0 or higher[5] |
| Display | 1024 x 768 resolution or higher |
| LAN | 100BASE-TX compatible |

| Console terminal | Operational environment |
|---|---|
| **Notes:**<br>1 When the web browser is installed "Internet Explorer 9.0" or higher in the console terminal, install "Flash Player 11" or later version.<br>2 The function of the Web console and the Remote Console may not operate properly when the console terminal is not installing ORACLE Java 6.0 or later.<br>See following web site for download and install a newest version of Java.<br>http://java.com/download<br>64bit version Java is not available for Remote Console, even if OS is x64, apply 32bit Java.<br>Use Java 7 update 2 or higher when SSL/TLS communication of remote console is enabled.<br>3 When connecting to the Web Console by TLSv1.1/1.2, use Windows 7 or higher, or Windows Server 2008 R2 or higher.<br>4 You need to install "Desktop Experience" additionally. Select Server Manager > Manage > Add roles and features > Server Selection > Features > User Interface and Infrastructure, and install Desktop Experience from them.<br>5 We recommend using a pre-installed version if the web browser is installed "Internet Explorer 7.0" or higher in the console terminal. | |

## Table 3-2: Operational environment for console terminal (BMC version 09-79 or lower)

| Console terminal | Operational environment |
|---|---|
| OS | Windows Server 2012 Standard<br>Windows Server 2012 Datacenter<br>Windows Server 2008 R2 Standard<br>Windows Server 2008 R2 Enterprise<br>Windows Server 2008 Standard<br>Windows Server 2008 Enterprise<br>Windows Server 2008 Standard without Hyper-V<br>Windows Server 2008 Enterprise without Hyper-V<br>Windows Server 2003 R2, Standard Edition<br>Windows Server 2003 R2, Enterprise Edition<br>Windows Server 2003 R2, Standard x64 Edition<br>Windows Server 2003 R2, Enterprise x64 Edition<br>Windows Server 2003, Standard Edition<br>Windows Server 2003, Enterprise Edition<br>Windows Server 2003, Standard x64 Edition<br>Windows Server 2003, Enterprise x64 Edition<br>Windows 8 Pro[3]<br>Windows 7 Professional[3]<br>Windows Vista Business<br>Windows XP Professional<br>Windows XP Professional x64 Edition |
| Web browser | Internet Explorer 7.0 or higher[1] |
| Java Software | ORACLE Java 6.0 or higher[2] |
| LAN | 100BASE-TX compatible |

| Console terminal | Operational environment |
|---|---|

**Notes:**

1 We recommend using a pre-installed version if the web browser is installed "Internet Explorer 7.0" or higher in the console terminal.

2 The function of the Web console and the Remote Console may not operate properly when the console terminal is not installing ORACLE Java 6.0 or higher.
See following web site for download and install a newest version of Java.
http://java.com/download

64bit version Java is not available for Remote Console, even if OS is x64, apply 32bit Java.

# Considering BMC network setting

The management interface for the BMC network is set to factory defaults shown below:

**Table 3-2: Factory defaults for BMC network**

| Item | Factory default |
|---|---|
| IP address | Not set |
| Subnet mask | Not set |
| Default gateway | Not set |
| DHCP | used |

If you need to change the network settings of the management interface, set with the system BIOS setup menu. Otherwise, set the network of console terminal according to the factory defaults, and then log in the Web console and change the settings.
For details, see Setting BMC network on page 4-24 or ServerMgmt > BMC network configuration in *Hitachi Compute Rack 220S BIOS Guide*.

See Notice for setting up BMC network before setting up the BMC network.

Also, confirm the Web browser setting of the console terminal with regard to the following descriptions before using the Web console. If the setting is not appropriate, the Web console will not work normally.

- Cancel the setting for pop-up blocking.
  Also, cancel the settings by a tool bar or an application as well as browser functions.
- Enable the Java script.
- Set the use setting of Proxy server to connect to BMC network.
- Add IP address of BMC network in "Trusted Sites".
- Enable the screen display.
- Enable the use of cookies.

Tip

- For the BMC network, maintenance personnel may connect a maintenance terminal and collect information for the purpose of fault investigation.
- Information obtained from the BMC is useful for fault investigation. We recommend that you set a network so that you can use the BMC network at any time irrespective of your system environment.

- Before connecting the management interface to the network, make sure that no IP addresses overlap. If there is equipment with IP addresses overlapping on the network, a system unit failure will occur. When connecting the management interface of multiple system units to the same network, change the network settings for each management interface before connection.
  For details, see Setting BMC network on page 4-24.
- If you press the FUNCTION switch continuously for 10 seconds or more while the management interface is not connected to LAN, the system unit gets into the BMC maintenance mode and the ERROR LED will blink.
  BMC maintenance mode is used during maintenance work. Avoid this operation. When into this mode, you can release the system unit from the BMC maintenance mode by pressing the FUNCTION switch continuously for 10 seconds or more using, for example, a ballpoint pen.
  When BMC maintenance mode is canceled, the ERROR LED stops blinking.
- The DHCP address has lease period. We recommend that only using DHCP when setting up the system unit. Set disabled DHCP after setting up the system unit, and then changes a static IP address.

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# How to use the Web console (BMC version: 09-80 or higher)

This chapter describes how to use the Web console in BMC version 09-80 or higher, and its initial setting and functionality.

# Configuration of Web console menu

This section describes the Web console menu items. See the following chart.

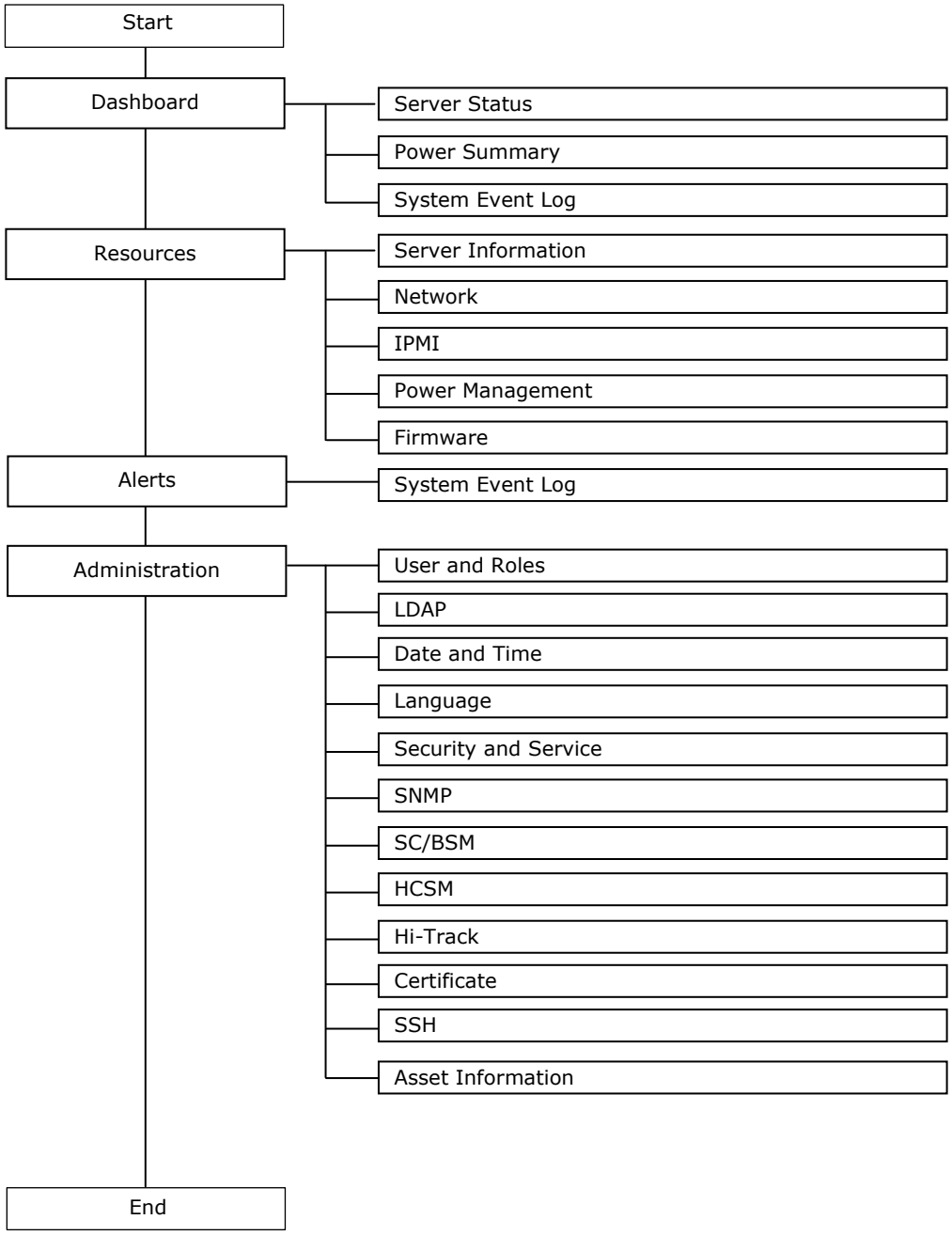



**Figure 4-1: Web console menu (BMC version: 09-80 or higher)**

# Function of Web console

This section describes the functions that you can set from the Web console.

## Functions

The Web console provides the following functions:

**Table 4-1: List of functions**

| No. | Menu | Function |
|---|---|---|
| Dashboard | | |
| 1 | Server Information | Displays the information of the system unit. |
| 2 | Power Summary | Displays the power consumption of the system unit. |
| 3 | System Event Log | Displays the accumulated alert log in the BMC of the system unit. |
| Resources - Server | | |
| 4 | Server Information | ▪ Displays the system unit information.<br>▪ Displays the POST code.<br>▪ Displays the operation of power, reset, NMI, and LED, and the status of power and LED.<br>▪ Backs up of the system unit settings.<br>▪ Restores of the system unit settings.<br>▪ Reboots BMC*. |
| Resources – Systems | | |
| 5 | Network | ▪ Displays network settings and sets connection restrictions<br>▪ Set the DNS server settings. |
| 6 | IPMI | Sets the IPMI Over LAN settings. |
| 7 | Power Management | ▪ Sets a mode for power saving function.<br>▪ Displays the information of the system unit about intake temperature, power status and power consumption. |
| 8 | Firmware | Displays and update BMC firmware information. |
| Alerts | | |
| 9 | System Event Log | Displays and sets BMC firmware information. |
| Administration | | |
| 10 | User and Roles | Displays and sets a user account. |
| 11 | LDAP | Sets user authentication by LDAP. |
| 12 | Date and Time | Displays and sets BMC time and time zone. |
| 13 | Language | Sets a language that you use on the Web console. |
| 14 | Security and Service | Enables or disables a service provided by the system unit and sets a port number. |
| 15 | SNMP | Sets a SNMP server. |
| 16 | SC/BSM | N/A |
| 17 | HCSM | ▪ Sets a Hitachi Compute Systems Manager (HCSM) server.<br>▪ Sends a test alert. |

| No. | Menu | Function |
|---|---|---|
| 18 | Hi-Track | Sets a Hi-Track server. |
| 19 | Certificate | Manages an SSL server certificate. |
| 20 | SSH | Sets an SSH authentication method and displays a host key. |
| 21 | Asset Information | Sets asset information. |
| General Tasks | | |
| 22 | Launch remote console | Launch a remote console |
| 23 | Remote console settings | Sets mouse mode of remote console. |
| 24 | Download logs | Collects and downloads a system unit log. |
| * This function is available only for "user01" users (users for system administration) and "ceconsl" users (users for maintenance work) in initial settings. | | |

## Requiring Role

The Web console is restricted on operation according to the roles assigned to each use. The operations that can be performed on a role basis are as follows:

**Table 4-2: Requiring role to operation**

<table>
<tr><th rowspan="2">No.</th><th rowspan="2">Menu</th><th colspan="7">Operation allowed by role</th></tr>
<tr><th>Admini-strator</th><th>Server Operation</th><th>User Account Manage-ment</th><th>Service Settings</th><th>IPMI Over LAN</th><th>SMASH CLP</th><th>CE</th></tr>
<tr><td colspan="9">Dashboard</td></tr>
<tr><td>1</td><td>Server Information</td><td rowspan="3">All</td><td rowspan="3">All</td><td colspan="3" rowspan="2">All</td><td rowspan="3">All</td></tr>
<tr><td>2</td><td>Power Summary</td></tr>
<tr><td>3</td><td>System Event Log</td><td colspan="3">Information display only</td></tr>
<tr><td colspan="9">Resources – Server</td></tr>
<tr><td>4</td><td>Server Information</td><td>All</td><td>All*</td><td colspan="4">Information display only</td><td>All</td></tr>
<tr><td colspan="9">Resources – Systems</td></tr>
<tr><td>5</td><td>Network</td><td rowspan="4">All</td><td colspan="2" rowspan="4">Information display only</td><td>All</td><td>Information display only</td><td rowspan="4">Infor-mation display only</td><td>All</td></tr>
<tr><td>6</td><td>IPMI</td><td>Informa-tion display only</td><td>All</td><td rowspan="3">Information display only</td></tr>
<tr><td>7</td><td>Power Management</td><td>All</td><td rowspan="2">Information display only</td></tr>
<tr><td>8</td><td>Firmware</td><td>Informa-tion display only</td><td>All</td></tr>
<tr><td colspan="9">Alerts</td></tr>
<tr><td>9</td><td>System Event Log</td><td colspan="5">All</td><td>Informa-tion display only</td><td>All</td></tr>
<tr><td colspan="9">Administration</td></tr>
<tr><td>10</td><td>User and Roles</td><td rowspan="4">All</td><td>Display of general users and setting of own account</td><td>Informa-tion display only</td><td colspan="3">Display of general users and setting of own account</td><td>Information display only</td></tr>
<tr><td>11</td><td>LDAP</td><td colspan="6">None</td></tr>
<tr><td>12</td><td>Date and Time</td><td colspan="2" rowspan="2">Information display only</td><td>All</td><td colspan="2" rowspan="2">Information display only</td><td rowspan="2">All</td></tr>
<tr><td>13</td><td>Language</td><td></td></tr>
</table>

<table>
<tr><th rowspan="2">No.</th><th rowspan="2">Menu</th><th colspan="7">Operation allowed by role</th></tr>
<tr><th>Admini-strator</th><th>Server Operation</th><th>User Account Manage-ment</th><th>Service Settings</th><th>IPMI Over LAN</th><th>SMASH CLP</th><th>CE</th></tr>
<tr><td>14</td><td>Security and Service</td><td rowspan="8">All</td><td colspan="2" rowspan="8">Information display only</td><td rowspan="8">All</td><td colspan="2">Information display only</td><td>All</td></tr>
<tr><td>15</td><td>SNMP</td><td colspan="3">None</td></tr>
<tr><td>16</td><td>SC/BSM</td><td colspan="2">Information display only</td><td>All</td></tr>
<tr><td>17</td><td>HCSM</td><td colspan="2" rowspan="4">None</td><td rowspan="4">None</td></tr>
<tr><td>18</td><td>Hi-Track</td></tr>
<tr><td>19</td><td>Certificate</td></tr>
<tr><td>20</td><td>SSH</td></tr>
<tr><td>21</td><td>Asset Information</td><td colspan="2">Information display only</td><td></td></tr>
<tr><td colspan="9">General Tasks</td></tr>
<tr><td>22</td><td>Launch remote console</td><td rowspan="3">All</td><td colspan="2">All</td><td rowspan="2">All</td><td colspan="2">All</td><td rowspan="3">All</td></tr>
<tr><td>23</td><td>Remote console settings</td><td>None</td><td rowspan="2">None</td><td colspan="2" rowspan="2">None</td></tr>
<tr><td>24</td><td>Download logs</td><td>All</td><td>None</td></tr>
<tr><td colspan="9">* The following operations are restricted.<br>- Backup of the server settings<br>- Restore of the server settings<br>- Restart for BMC</td></tr>
</table>

**Remote Console** and **Remote Media** roles do not affect on the Web console operation. Those roles are used to enabling the each function.

# Starting Web console

This section describes how to log in the Web console.

1. Power on the system unit.
2. Start the consol terminal's Web browser.
3. Enter the following URL into the address bar:

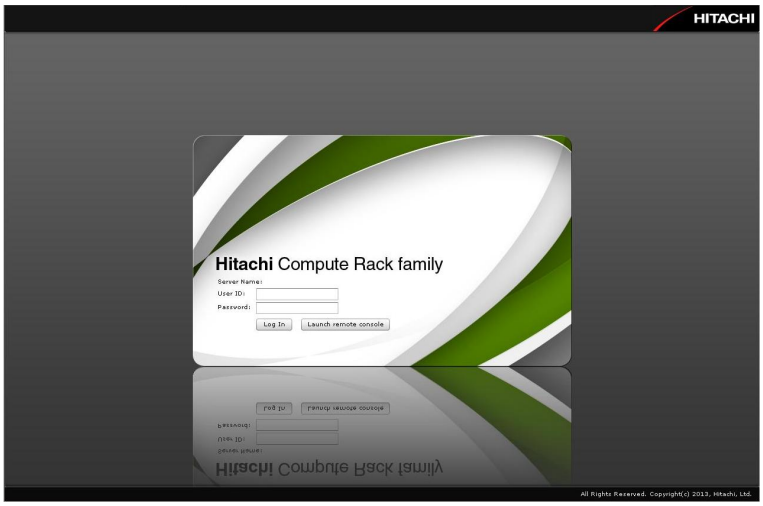
   When the HTTP (Hypertext Transfer Protocol) is used for connection, enter the following into the address bar:

   ```
   http://<IP address of management interface>
   ```

   When the HTTPS (Hypertext Transfer Protocol over Secure Socket Layer) is used for connection, enter the following into the address bar:

   ```
   https://<IP address of management interface>
   ```

   When succeed in the connection, the login window opens.
4. Enter a user name and a password in the login window.

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Tip

- Register the IP address of management interface and "about: blanks" on the trusted site.
- The server certificate is needed to register when connecting by HTTPS protocol.
- A scroll bar of browser may be not displayed under a situation requiring the scroll bar. In this situation, change the window size of browser by a mouse to display a scroll bar of browser.

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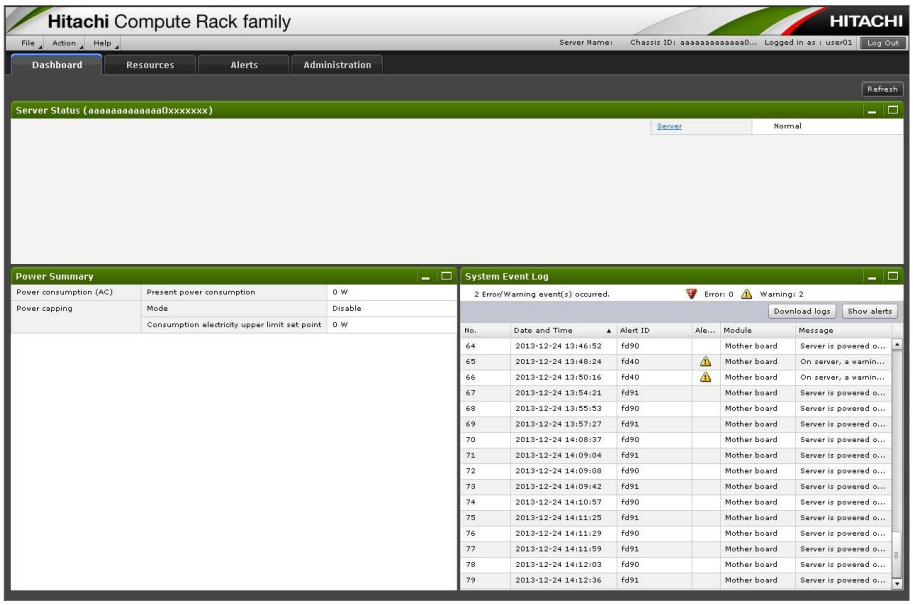
5. Enter a **user name** and a **password** in the login window.

   When your user authentication is successful and you log in to the Web console, the **Dashboard** tab is displayed.

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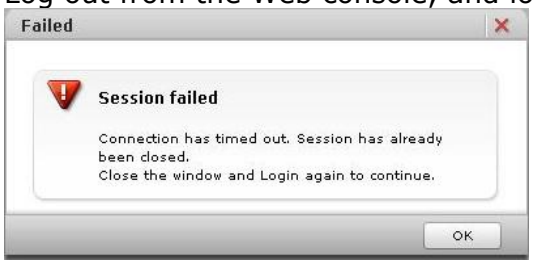
Tip

- With the factory defaults for the system unit, you can login as an administrator by entering `user01` and `pass01` in response to the **user name** and **password** in the login window.
  If you have been changing an above user account setting, you can not log in the Web console. Enter the user name and password that have been already set to log in.
- For your security, we strongly recommend that you set a user account different from the factory default.
  For details, see Setting user account.
- The **Launch remote console** button is displayed on the console screen when the Remote Console application is applied.
  When you click **Launch remote console**, the Remote Console application is started and the user name and password entry window for the Remote Console is displayed.
  For details on how to use the Remote Console application, see the manual attached to the Remote Console application.
- Up to two users can log in to the Web console simultaneously. If two users have already logged in, or a user logs in again without logout after the same user has already logged in, and you cannot log in.

---

- When one of tabs/windows of browser is logged out, disconnect from the system unit under the following conditions:
  - Multiple tabs/windows of browser are opened in the same system console
  - Each tab/window is logged in the same single user account or multiple user accounts to the Web console of the same system unit

    When the action corresponding to the operation including the BMC communication is executed after disconnecting from the system unit, the **Session failed** dialog box is displayed.
    Log out from the Web console, and log in again.




- If no operation is done for 30 minutes or longer when you has logged in to the Web console, an automatic logout will be performed. When the action corresponding to the operation including the BMC communication is executed after disconnecting from the system unit, the **Session failed** dialog box is displayed. Log out from the Web console, and log in again.

# Initializing Web console

This section describes the initial setting of the Web console. You should initially set the following data:

- Setting user account
- Setting mouse mode of Remote Console
- Setting BMC date and time
- Setting BMC network

## Setting user account

The setting of a user account is required for remote operation of the system unit. Each of the registered users can be given a user name, a password, and the authority for the Web console operation as well as can enable or disable own account.
For your security, we strongly recommend that you set a user account different from the factory default.

You can set above information in the **User Account** window. Click **Administration** from the top tab, and click **Users and Roles** in the left pane.

---

- If you forget your user name and password to log in to the Web console, start the system BIOS setup menu and then set **ServerMgmt** > **Reset BMC Web Connection** to **Yes, On next reset**, and save the setting in **Save & Exit**. BMC network setting (connection restriction of Web console network setting, user account setting, and HTTP service setting) is initialized.

  The system unit is restarted after the SERVICE LED on the system unit blinks about 30 to 60 seconds. Log in to the Web console with the factory default user name and password, and then set the Web console network setting (connection restriction of Web console network setting, user account setting, and HTTP service setting) again. When **Reset BMC Web Connection** is executed, **Security and Service** is not initialized, however, **Network** and **HTTP** need to set up again. For the HTTP setting, see Security and Service.
  When **Security strength** is set as **Default** in Security and Service, **Reset BMC Web Connection** is executed, and then **Network** and **Security and Service** (without **HTTP**) are not initialized.
  When **Security strength** is set as **High**, **Reset BMC Web Connection** is executed, and then **Security strength** is set as **Default**, **Security and Service** is initialized. **Network** is not initialized.
- When confirm the BMC network configuration by the system BIOS setup menu, see "BMC network configuration" of the "ServerMgmt" section in *Hitachi Compute Rack 220S BIOS Guide*.

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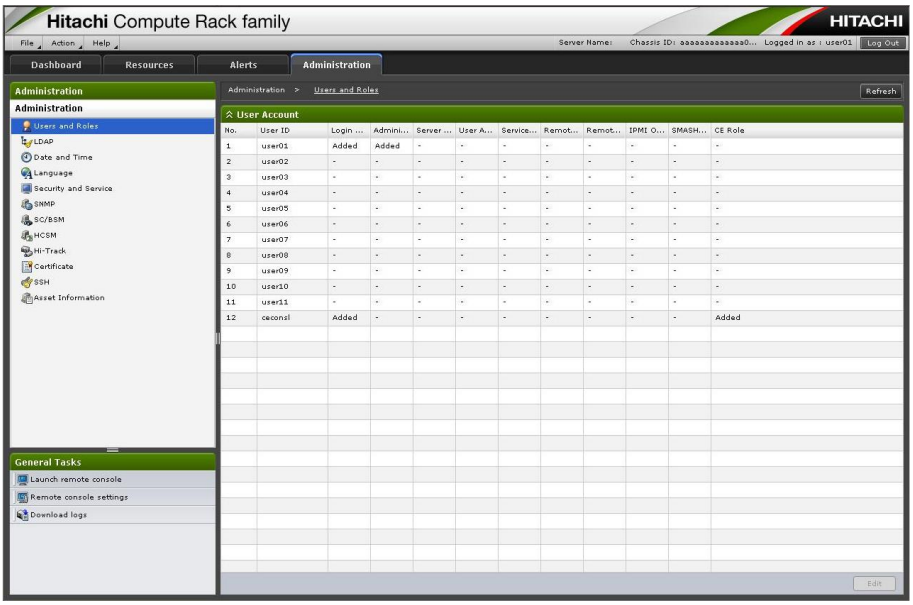
## Configure User Accounts menu

Click **Server Setting** from the top tab, and then click **User Accounts** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 4-3: Configure User Accounts menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes user account information. |
| Username | User account name |
| Role | |
| Login | Displays the roles given to user account. |
| Administrator | |
| Server Operation | |
| User Account Management | |
| Service Settings | |
| Remote Console | |
| Remote Media | |
| IPMI Over LAN | |
| SMASH CLP | |
| CE | |
| Edit | Go to the **Edit User Account** window. |

## Roles

Giving roles to a user account allows the setting of actions that the user can do. Each has the following meaning:

### Table 4-4: Role allowing operation and function

| Role name | Description |
|---|---|
| Login | A role for logging in to the service provided by the Web console. Any user without this role is considered invalid and cannot log in to a service. |
| Administrator | A role representing the user authority for an administrator. Any user with this role can perform all the functions of Web console except setting IPMI Over LAN and BMC restart. |
| Server Operation | A role for controlling the power to the system unit and making a reset operation. |
| User Account Management | A role for setting a user account. |
| Service Settings | A role for setting a service provided by the system unit. |
| Remote Console* | A role for the Remote Console function to display the system unit screen on a console terminal, and remotely manipulating both keyboard and mouse. |
| Remote Media* | A role for using the remote floppy disk function and remote CD/DVD function. |
| IPMI Over LAN | A role for setting a user account and an authentication type for IPMI Over LAN. |
| SMASH CLP | A role for setting user account for SMASH. |
| CE | A role representing the user authority for maintenance work, which can be given to **ceconsl** user only. |
| * The setting becomes valid when the Remote Console application is applied. | |

## Initial setting of a user account

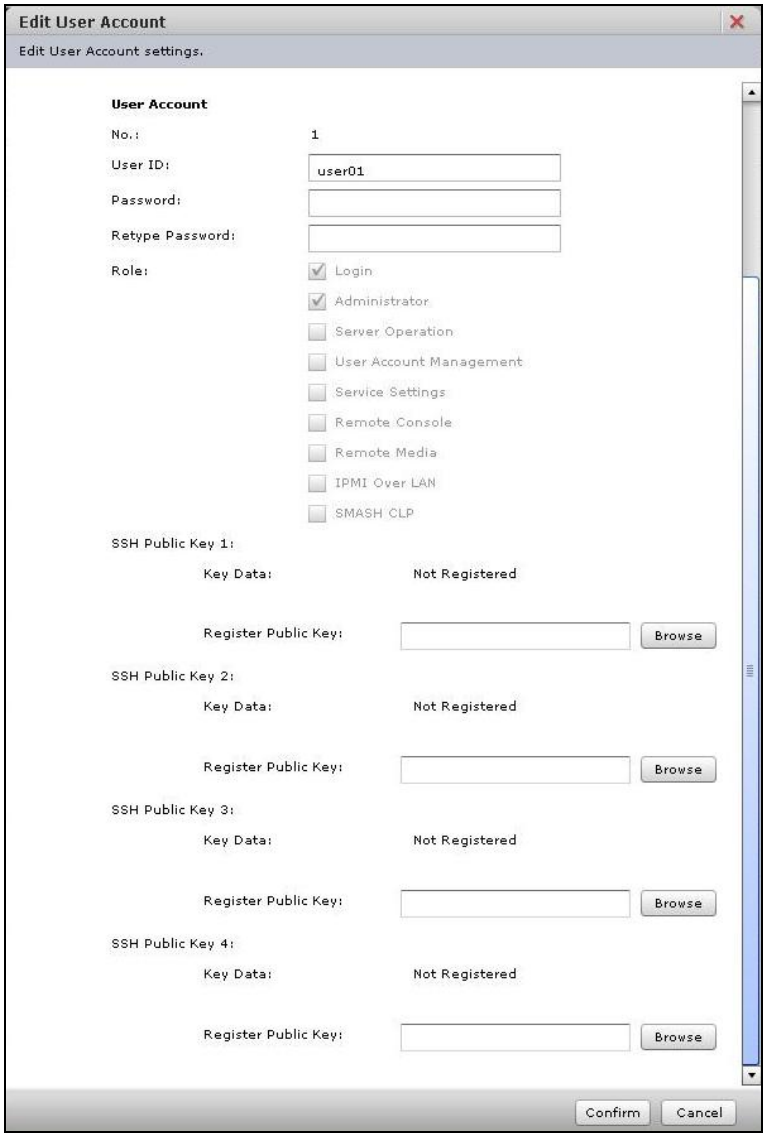
The initial setting of a user account is as follows:

### Table 4-5: Initial settings of user account

| Username | Password | Role | Description |
|---|---|---|---|
| user01 | pass01 | Login<br>Administrator | A user for system unit administration. This role is unchangeable. |
| user02 | pass02 | None | General users |
| user03 | pass03 | | |
| user04 | pass04 | | |
| user05 | pass05 | | |
| user06 | pass06 | | |
| user07 | pass07 | | |
| user08 | pass08 | | |
| user09 | pass09 | | |
| user10 | pass10 | | |
| user11 | pass11 | | |
| ceconsl | Set at shipment | Login<br>CE | A user for maintenance work. Maintenance personnel use this role during maintenance work. This setting is unchangeable. |

## Configure User Accounts > Edit User Accounts

Changes the settings of a user account.



The following table shows description of menu items in the window.

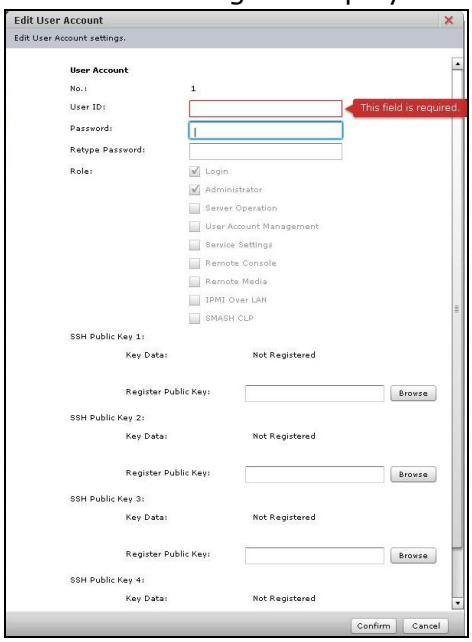
### Table 4-6: Configure User Accounts > Edit User Accounts menu items

| Menu items | | Description |
|---|---|---|
| Username | | User account name (up to 32 characters) |
| Password | | Entry of a password (up to 32 characters) |
| Password (Confirm) | | Re-entry of a password |
| Role | | |
| | Login | A checked role is given to a user account. |
| | Administrator | |
| | Server Operation | |
| | User Account Management | |
| | Service Settings | |
| | Remote Console | |
| | Remote Media | |
| | IPMI Over LAN | |
| | SMASH CLP | |
| SSH Public Key1 to 4: Set the Public Key to use Secure Shell connection. | | |
| | Key Data | Display information of a public key data.<br>If a public key data is not registered, display **Not Registered**. |
| | Register Public Key | Upload a public key data, and register the public key data.<br>If a public key data is not registered, this item is not displayed. |
| | Key Length | Display a key length of registered public key data.<br>If a public key data is not registered, this item is not displayed. |
| | Fingerprint | Display a fingerprint of registered public key data.<br>If a public key data is not registered, this item is not displayed. |
| | Options | Display options of registered public key data.<br>If a public key data is not registered, this item is not displayed. |
| | Comment | Display a comment of registered public key data.<br>If a public key data is not registered, this item is not displayed. |
| | Update Public Key | Update a registered public key data. |
| | Delete Public Key | Delete a registered public key data. |
| Confirm button | | Enables what you edited, and goes to the confirming window. |
| Cancel button | | Disables what you edited, and returns to the status before editing. |

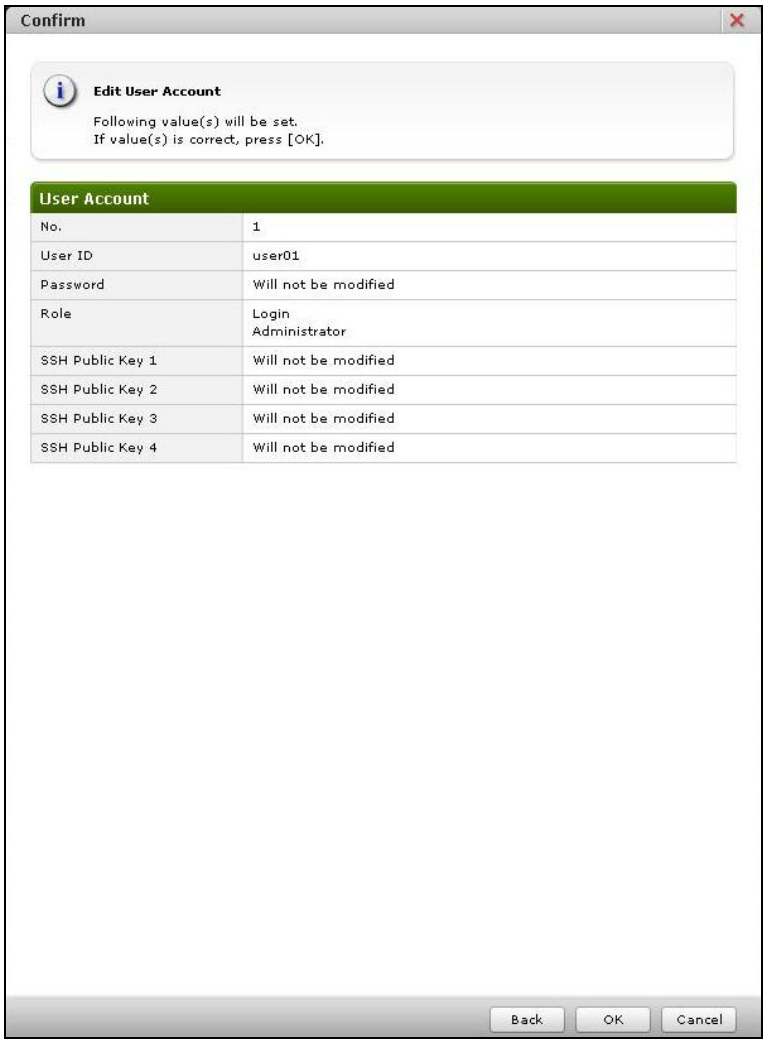
- **Username** is a mandatory input item.
- When you set a password, enter the same value for both **password** and **password (Confirm)**.
- When you edit a user account, a password is not a mandatory item. When you do not enter a password, the BMC decides that the password remains unchanged.
- You can register a SSH public key file made with OpenSSH.
- A maximum size of a SSH public key file which you can register is 2 KB.
- The **user01**, which the administrator user's role is unchangeable.
- Only the user with Administrator role can change a role.
- The **ceconsl** is a user for maintenance personnel. Maintenance personnel use this role when a maintenance service is offered. This setting is unchangeable.

- The following error is displayed when a content of input string is not correct.
  - When a cursor is moved to other input string in a state which a content of input string is not correct, an incorrect input string is displayed with in a red frame.


  - Place the cursor on the input string within the red frame, and the error message is displayed with a speech bubble.



Click **Confirm**, and the following **Confirm** dialog box is displayed.




Click **Back** to go back to **Edit User Account**.
Click **OK** to save the change settings, and go back to **Edit User Account**.
Click **Cancel** to go back to **Edit User Account** without saving.

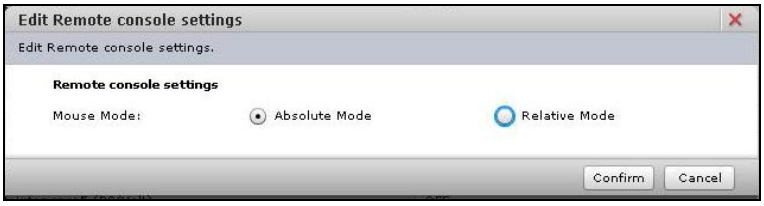
## Setting mouse mode of Remote Console

When the Remote Console application is applied to the system unit, set the mouse mode for remote console operation.

Set the mouse mode on **Remote console settings** from the General Tasks tab.

Click **Resources**, **Alerts**, or **Administration** from the global tabs, and click **Remote console settings** from **General Tasks** in the left pane. The following window is displayed.

Set mouse mode in accordance with the OS that you install.




The following table shows description of menu items in the window.

**Table 4-7: Remote KVM Settings menu items**

| Menu items | Description |
|---|---|
| Mouse Mode | ABSOLUTE Mode:<br>A mode for manipulating the mouse of remote console using the mouse cursor of a console terminal. Use this mode when the OS of the system unit is Windows or RHEL6.<br>RELATIVE Mode:<br>A mode for manipulating the mouse of remote console using the mouse cursor on the system unit screen. For use of a non-Windows OS and non-RHEL6. |
| Confirm button | Enables what you edited, and goes to the confirming window. |
| Cancel button | Disables what you edited, and returns to the status before editing. |

When changing the mouse mode, terminate the remote console first. An attempt to change the mouse mode while the remote console is active, the mouse cursor may not work normally.

For details on how to use the Remote Console application, see *Remote Console Application User's Guide*.

And then click **Confirm**. The following **Confirm** dialog box is displayed.

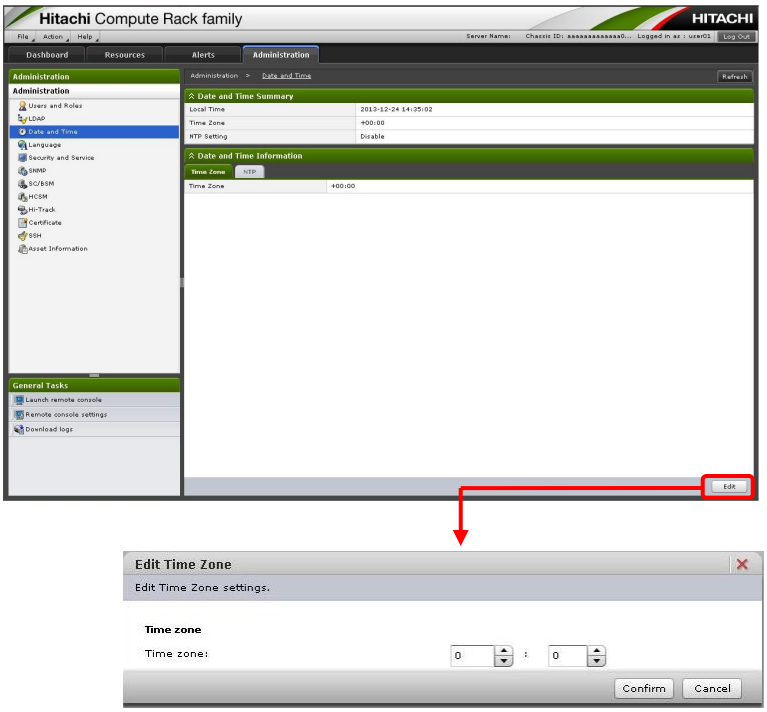

Click **Back** to go back to **Remote console settings**.
Click **OK** to save the change settings, and go back to **Remote console settings**.
Click **Cancel** to go back to **Remote console settings** without saving.

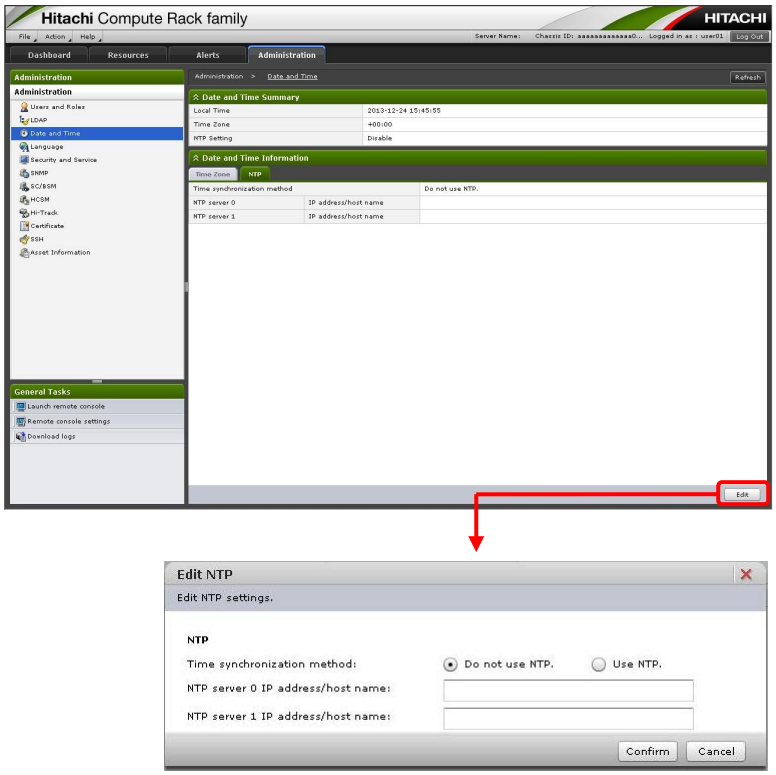
## Setting BMC date and time

Set the BMC time and time zone.

Click **Administration** from the global tabs, and click **Date and Time** in the left pane. The following window is displayed.

The setting of BMC date and time is required for time stamp of an error log.






## Table 4-8: BMC Time menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Edit | Goes to the Edit window. |
| Timezone[1] | Set the time zone of the local area where the system unit is installed, according to its OS. |
| Time Synchronization Method[2] | • **Do Not Use NTP**:<br>BMC reads and synchronizes the system clock of the system unit periodically.<br>• **Use NTP**:<br>BMC time is synchronized with the time distributed by an external NTP server. |
| NTP server 0 to 1[2] | When setting **Time Synchronization Method** to **Use NTP**, enter the IP address of NTP server. |
| Confirm button | Enables what you edited, and goes to the confirming window. |
| Cancel button | Disables what you edited, and returns to the status before editing. |

**Notes:**

1 When change the settings, click the **Time Zone** tab on **Date and Time Information**, and click **Edit**.

2 When change the settings, click the **NTP** tab on **Date and Time Information**, and click **Edit**.

- When change time settings in a system console connected to a Web console, a display that **Local time** of **Date and Times Summary** is changed.
  Click **Refresh** to go back to the original time in the display of **Local time**.
- Displays of **Local time** and **Timezone** are not reflected values retrieved from an NTP server just after setting to **Use NTP** in **Time Synchronization Method**.
  Click **Refresh** to reflect the values retrieved from an NTP server to **Local time** and **Timezone**.

Click **Confirm** in the **Timzone** window, and the following **Confirm** dialog box is displayed.


Click **Back** to go back to the settings window.
Click **OK** to save the change settings, and go back to the **Timezone** window.
Click **Cancel** to go back to the **Timezone** window without saving.

Click **Confirm** in the **NTP** window, and the following **Confirm** dialog box is display displayed.

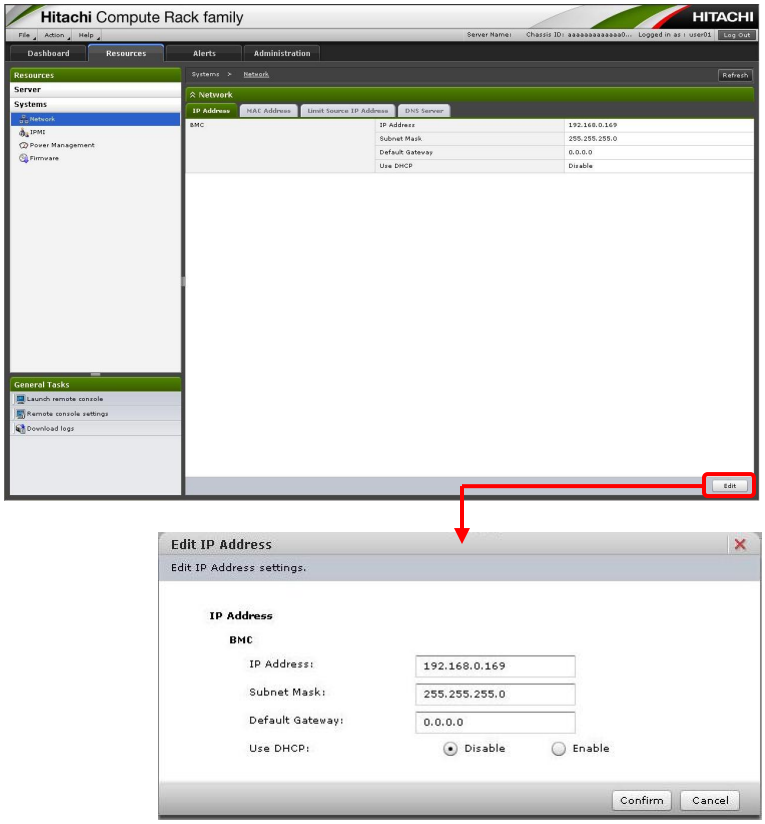

Click **Back** to go back to the settings window.
Click **OK** to save the change settings, and go back to the **NTP** window.
Click **Cancel** to go back to the **NTP** window without saving.

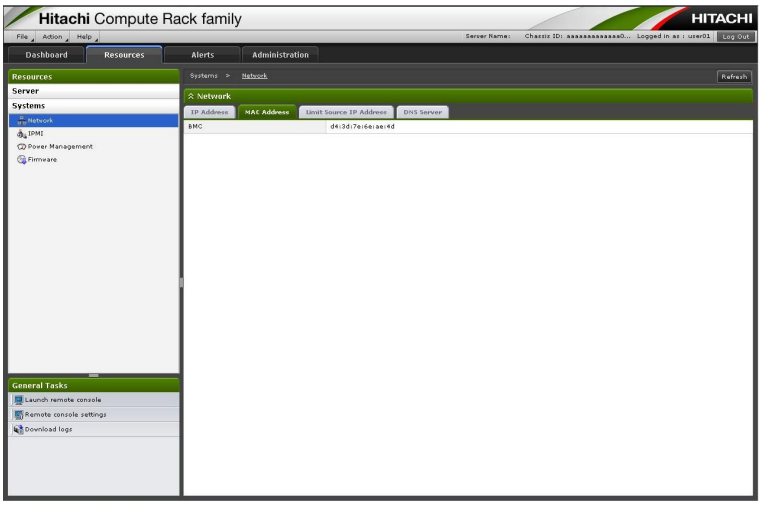
## Setting BMC network

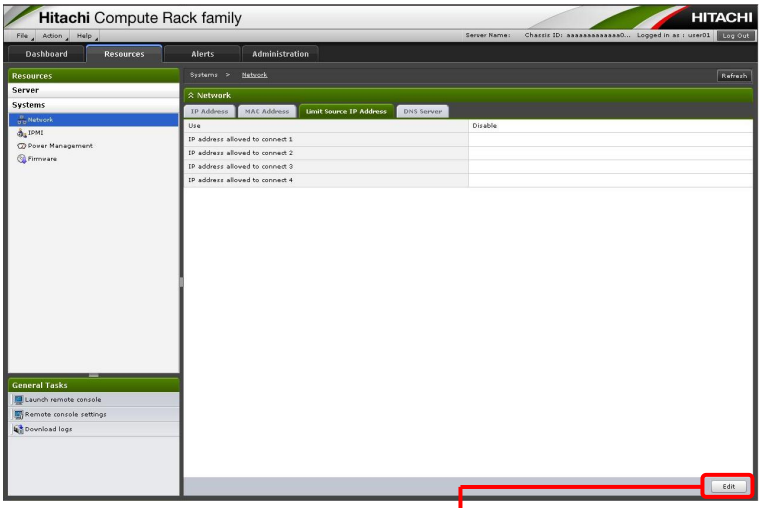
You can change the BMC network setting of the system unit from the factory defaults in accordance with your system environment.
When the BMC network setting is changed, the network is shut off and restarts. After that, you can connect to the BMC network only in the environment changed in setting. Confirm that the settings are correct when changing the BMC network setting.

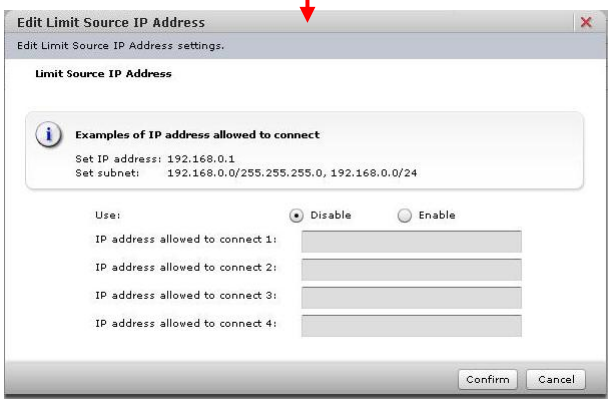
You can make setting to restrict the IP address of network device allowed connecting to the system unit. Up to four IP addresses of the network devices that permits connection to the system unit.

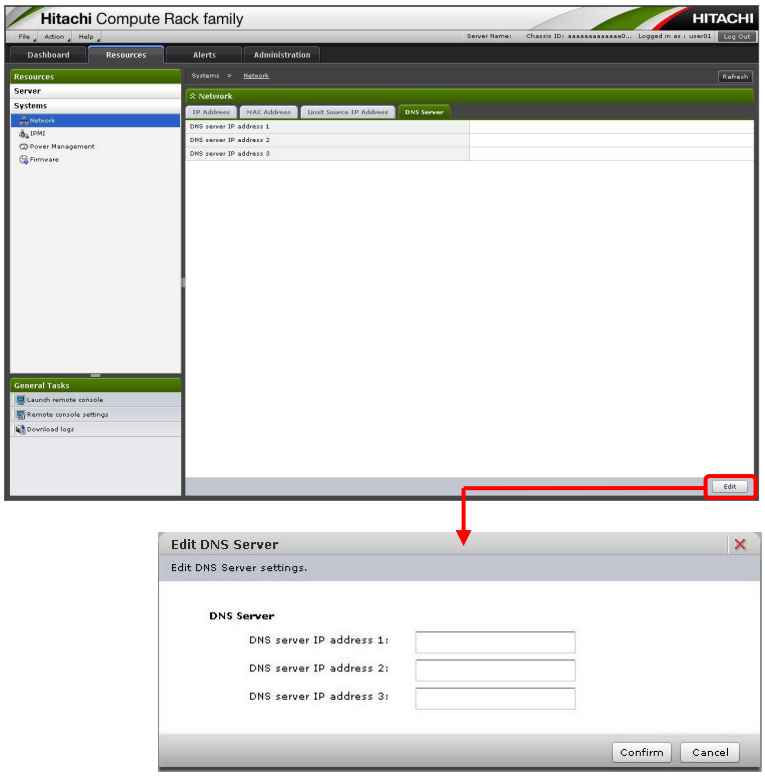
Click **Resources** from the global tab in the **Network** window, and then click **Systems** > **Network** in the left pane.




Hitachi Compute Rack family
HITACHI
File
Action
Help
Server Name:
Chassis ID: aaaaaaaaaaaaa0...
Logged in as : user01
Log Out
Dashboard
Resources
Alerts
Administration
Resources
Server
Systems
Network
IPMI
Power Management
Firmware
General Tasks
Launch remote console
Remote console settings
Download logs
Systems > Network
Refresh
Network
IP Address
MAC Address
Limit Source IP Address
DNS Server
BMC
d4:3d:7e:6e:ae:4d


Hitachi Compute Rack family
HITACHI
File
Action
Help
Server Name:
Chassis ID: aaaaaaaaaaaaa0...
Logged in as : user01
Log Out
Dashboard
Resources
Alerts
Administration
Resources
Server
Systems
Network
IPMI
Power Management
Firmware
General Tasks
Launch remote console
Remote console settings
Download logs
Systems > Network
Refresh
Network
IP Address
MAC Address
Limit Source IP Address
DNS Server
Use
Disable
IP address allowed to connect 1
IP address allowed to connect 2
IP address allowed to connect 3
IP address allowed to connect 4
Edit


Edit Limit Source IP Address
Edit Limit Source IP Address settings.
Limit Source IP Address
Examples of IP address allowed to connect
Set IP address: 192.168.0.1
Set subnet: 192.168.0.0/255.255.255.0, 192.168.0.0/24
Use:
Disable
Enable
IP address allowed to connect 1:
IP address allowed to connect 2:
IP address allowed to connect 3:
IP address allowed to connect 4:
Confirm
Cancel




## Table 4-9: Network Setting menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Edit button | Goes to the Edit window. |
| IP Address<br>Netmask<br>Default Gateway[1] | Sets the BMC network.<br>For the setting of the default IP address, the subnet mask, and the default gateway, see Connecting to management interface. |
| DHCP[1,2] | Enables or disables the DHCP. |
| MAC Address (Only display) | Displays MAC address of BMC network in a system unit. |
| Use[3] | Enables or disables the connection IP address restriction function. |
| IP Address Allowed to connect 1<br>IP Address Allowed to connect 2<br>IP Address Allowed to connect 3<br>IP Address Allowed to connect 4[3] | Enter an IP address to permit connection to the system unit. You can set a single IP address or subnet.<br>(Example)<br>Single IP address: 192.168.10.1<br>Subnet: 192.168.10.0/255.255.255.0 or 192.168.10.0/24 |
| DNA server[4] | Set a DNA server.<br>For the setting of DNA server, see Network > DNA Server. |
| Confirm button | Enables what you edited, and goes to the confirming window. |
| Cancel button | Disables what you edited, and returns to the status before editing. |

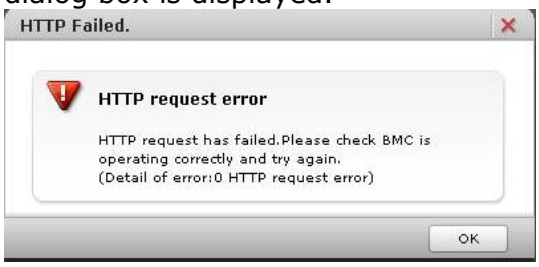
| Menu items | Description |
|---|---|
| **Notes:**<br>1 When changing the settings, click **Network** > **IP Address** > **Edit**.<br>2 When you set **DHCP** to **Used**, settings of **IP Address**, **Netmask**, **and Default Gateway** are disabled.<br>3 When changing the settings, click **Network** > **Limit Source IP Address** > **Edit**.<br>4 When changing the settings, click **Network** > **DNA Server** > **Edit**. | |

When you set **DHCP** to **Enable**, an IP address of the BMC network may be changed depending on the DHCP server.
We recommend you use a DHCP only as temporary use to initialization of an IP address, and set **DHCP** to **Disable** usually.

- Click **Confirm** in the **Edit IP Address** dialog box, and the **Confirm** window is displayed.


Click **Back** to go back to the **IP Address** window.
Click **OK** to change IP address, and disconnect from a system unit.
Input the changed IP address on a navigation bar of system console, and log in the Web console again after reconnecting the system unit.

When the action corresponding to the operation including the BMC communication is executed after disconnecting from the system unit, the **HTTP request error** dialog box is displayed.
Try to log out from the Web console, and the **HTTP request error** dialog box is displayed.




Click **Cancel** to go back to the **Network** window without saving.

- Click **Confirm** in the **Edit Limit Source IP Address** dialog box, and the **Confirm** window is displayed.

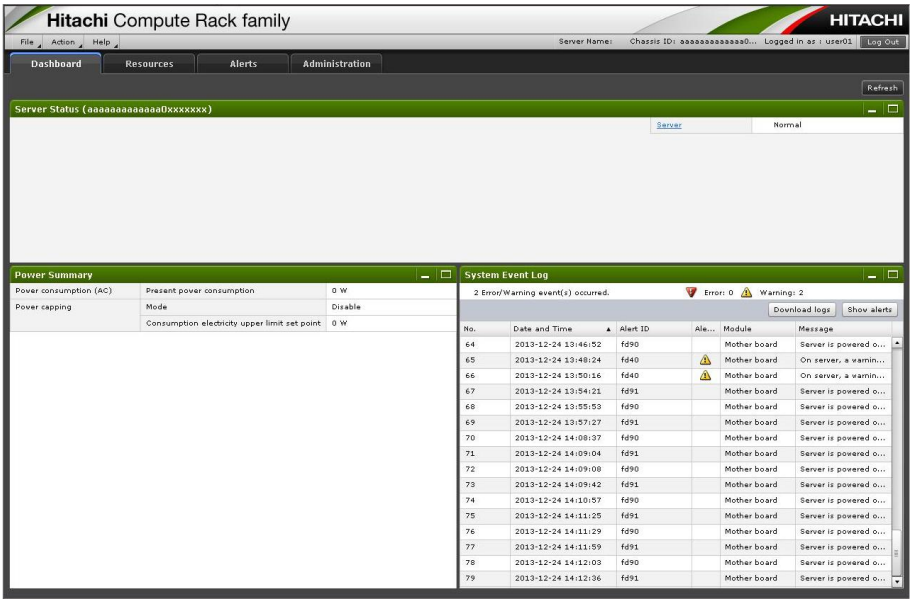

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **Limit Source IP Address** window.
Click **Cancel** to go back to the **Network** window without saving.

# Web console menu items

This section describes the Web console menus and setting items.

## Dashboard

Display **Server Status**, **Power Summary**, and **System Event Log**.




### Server Status

**Table 4-10: Server Status menu items**

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Server | Displays a status of system unit.<br>Normal: Event (error level) does not occur.<br>Error: Event (error level) has occurred. |

### Power Summary

**Table 4-11: Power Summary menu items**

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Power consumption (AC) | Displays current power consumption in a system unit. |
| Power capping | Displays power capping setting in a system unit. |

### System Event Log

For **System Event Log**, see Alerts.

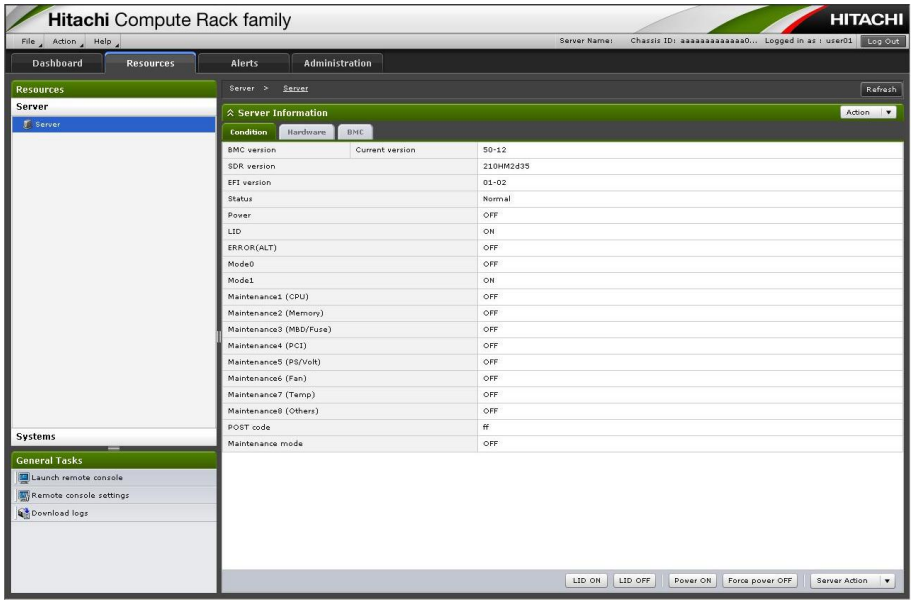
## Resources > Server

The following indications and setups are available in the **Server Information** window.

- Displays the firmware information, power status, and LED status for a system unit.
- Performs the power supply, reset, NMI, or LED for a system unit.
- Displays the object identifier for a system unit.
- Displays the BMC settings for a system unit.
- Performs the backup settings of system unit. (see Backup server settings)
- Performs the restore settings of system unit. (see Restore server settings)
- Restarts BMC. (see Restart BMC)

### Server Information > Condition

Display the firmware information, power status, and LED status for a system unit. Remote control (power ON/forced power OFF/reset/NMI) can be performed for a system unit.



## Table 4-12: Server Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Action selection button | Backs up or restores server settings. |
| BMC version | Displays a BMC's firmware version. |
| SDR version | Displays a SDR's firmware version. |
| EFI version | Displays an EFI's firmware version. |
| Status | Displays the status of system unit. |
| Power | Displays the current power status of system unit.<br>OFF: power off<br>ON: power on |
| LID[1] | Displays the SERVICE LED status of system unit. |
| ERROR (ALT)[1] | Displays the ERROR LED status of system unit. |
| Mode0[1]<br>Mode1[1] | Displays the following LEDs status of system unit.<br>Mode0: MODE0 LED<br>Mode1: MODE1 LED |
| Maintenanace[1] | Displays the Maintenance LEDs status of system unit.<br>(see Maintenance corresponding) |
| POST code | Displays the POST code of BMC. |
| Maintenance mode | Displays that the operation mode of BMC is maintenance mode or not. |
| LID ON button[2] | Turns on the SERVICE LED of system unit.<br>This operation is same as pressing the SERVICE LED switch when the SERVICE LED is turned off. |
| LID OFF button[2] | Turns off the SERVICE LED of system unit.<br>This operation is same as pressing the SERVICE LED switch when the SERVICE LED is turned on. |
| Power ON button[2] | Turns on the system unit. |
| Force power OFF button[2] | Turns off the system unit forcefully. OS is not shut down. Normally, shut down from the OS to turn off the system unit. |
| Server Action selection button[3] | Perform the following operations from the menu.<br>▪ Reset:<br>The system unit is performed a hardware reset. This operation is available when the system unit is turned on.<br>▪ NMI:<br>Issues interrupt signals. The dump processing is started depending on the OS settings. This operation is available when the system unit is turned on. |

**Notes:**

1 For the detail of each LED, see "Name of each component and its functions" section in the "Getting Started Guide".

2 Click the button, and the **Confirm** windows is displayed. Click **OK** to perform the operation.

3 Click the button, and select a menu. The Confirm window is displayed. Click OK to perform the operation.

Types of BMC's operating modes are Normal Mode and Maintenance Mode. Maintenance Mode is used only by maintenance personnel during maintenance work. If **Maintenance Mode** is displayed **ON**, press the FUNCTION switch for at least 10 seconds with the tip of a ballpoint pen to cancel that mode.

## Maintenance corresponding

Each **Maintenance** corresponds to an event code displayed in MAINTENANCE LEDs on a system unit.

The following table shows **Maintenance** that corresponded to the MAINTENANCE LEDs when the event codes are displayed.

**Table 4-13: MAINTENANCE LEDs**

| MAINTENANCE LEDs | Maintenance |
|---|---|
| 1 | Maintenance1 (CPU) |
| 2 | Maintenance2 (Memory) |
| 3 | Maintenance3 (MBD/Fuse) |
| 4 | Maintenance4 (PCI) |
| 5 | Maintenance5 (PS/Volt) |
| 6 | Maintenance6 (Fan) |
| 7 | Maintenance7 (Temp) |
| 8 | Maintenance8 (Others) |

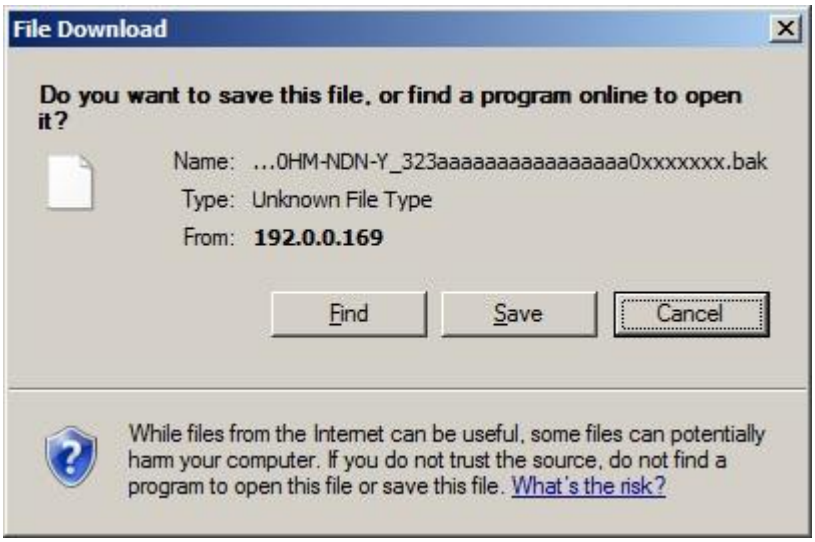
## Backup server settings

Backup server settings that are used for system unit management. Make sure to back up the settings when changing Web console settings.

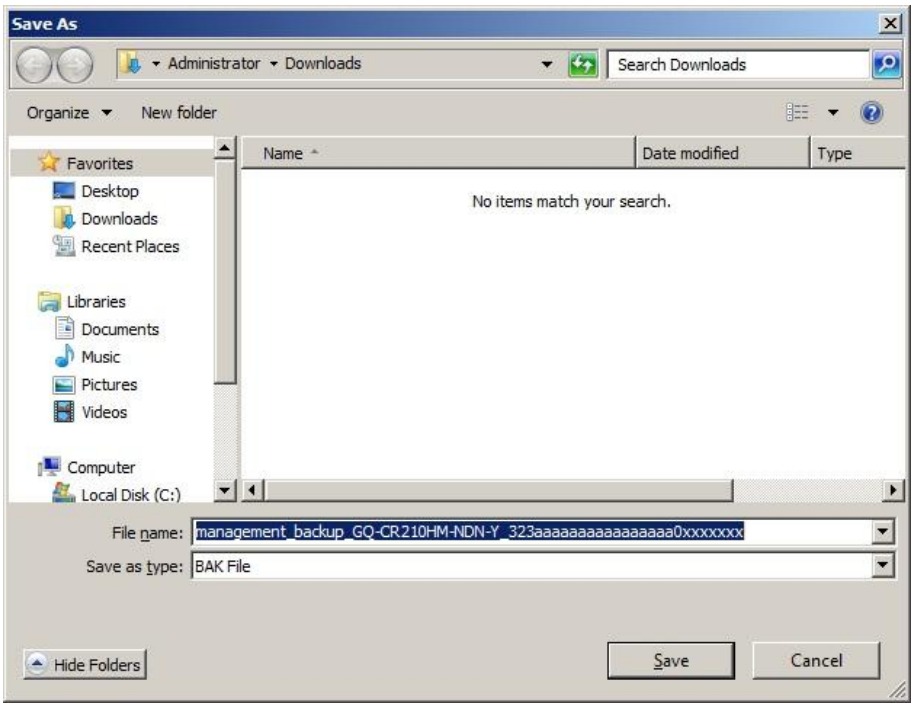
Back up firmware settings when changing BMC firmware image, ADR, or something. Use the latest backup file.

Click the action selection button, and select **Backup server settings**. The following **Confirm** dialog box is displayed.

Click **Save**, and the following dialog box is displayed. Click **Save**.




The following window is displayed, and selects the saved folder. Click **Save**.



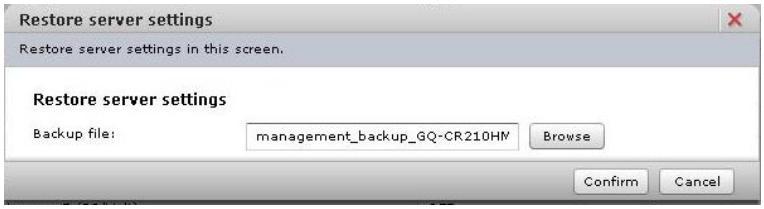

The backup data is saved, and the download complete window is displayed. Click **Close**.

## Restore server settings

Restore the setting of system unit using the backup data that downloaded in Backup server settings. BMC is restarted automatically after restoring.

- For IPMI Over LAN function settings, IP address settings of BMC network, default gateway settings of BMC network, and subnet mask settings of BMC network are not backed up and restored. When a motherboard is replaced by failure and others, set these settings again.
- Do not restore the backup data of firmware settings using Web console to other system units. A unique type name of system unit, a serial number, and hardware configurations are wrote to other system unit, and the system unit might not operate properly. Restore the backup file to the system unit that is executed the backup.
- Do not restore the backup data of firmware settings using the Web console in BMC version 09-80 or higher, to the system units using the Web console in BMC version 09-79 or lower.
  Do not restore the backup data of firmware settings using the Web console in BMC version 09-79 or lower, to the system units using the Web console in BMC version 09-80 or higher.
  If you want to update BMC version 09-80 or higher from BMC version 09-79 or lower, you should note down the settings of the web console and keep in hand.

Click **Action**, and select **Restore server settings**. The following **Restore server settings** dialog box is displayed.




Click **Browse**, and select a backup data file of server settings.

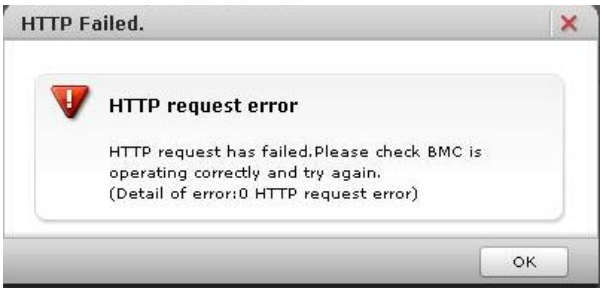
Then click **Confirm**, and the **Confirm** window is displayed. Make sure the backup data file is correct, and click **OK**. Start to restore the settings.

- When click **Confirm** in the **Restore server settings** dialog box while updating the BMC firmware or restoring the server settings, the dialog box that content indicated "wait a little while and try again" is displayed. Click **Close** to exit.
- When the following conditions are met, click OK in the Confirm window. The dialog box that confirms to restart BMC is displayed again. Click **OK** to continue.
  - Running BIOS
  - Running system unit
- When the system unit is not operated over 30 minutes in the **Confirm** dialog box, restore is suspended. Click **Close**, and try again from the start.

After setting restoration is completed, the following dialog box is displayed, and clicks **Close**. The connection is disconnected from the system unit due to restarting BMC.

When perform the operation occurred BMC communication after disconnecting from the system unit, the **HTTP request error** or **Session failed** dialog box is displayed.

Logout and log back in Web console.





SERVIC LED flashes for 30 to 90 seconds in the system unit after restarting BMC. Cut off the power supply after SERVIC LED flashing is completed.

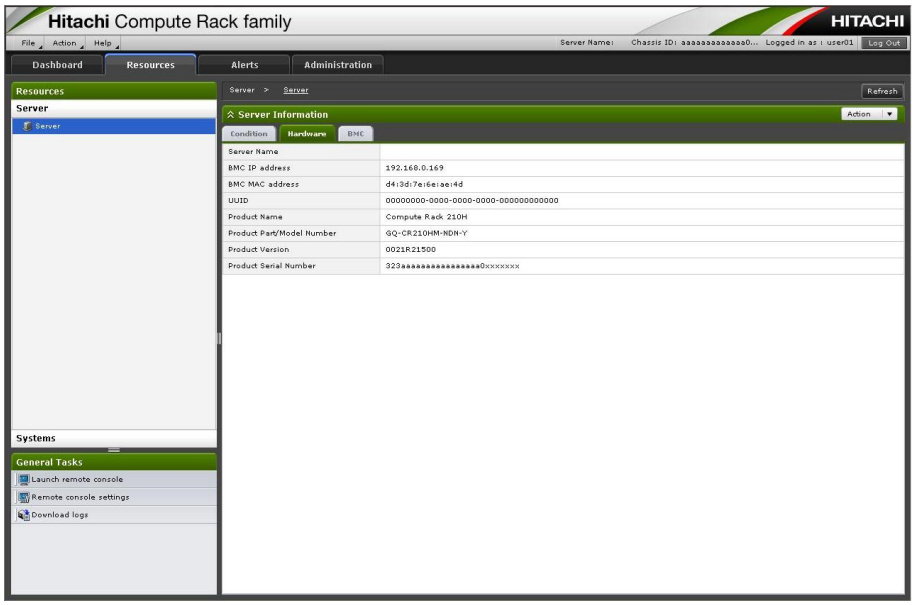
Communications (such as HCSM or BIOS) and BMC functions (such as Web console and Remote console) are stopped after restarting BMC. These communications and functions cannot be available while BMC restart (30 to 90 seconds).

Problem may occur such as displaying error messages due to stopping BMC communication service while restarting BMC. This problem may occur depending on a communication program.

Do not restart BMC during running BIOS or operating a setup menu. BMC cannot communicate with BIOS, and then failures may occur in a system unit. We recommend that you restart BMC while a system unit is shut down.

## Server Information > Hardware

Display the information of identification for a system unit.

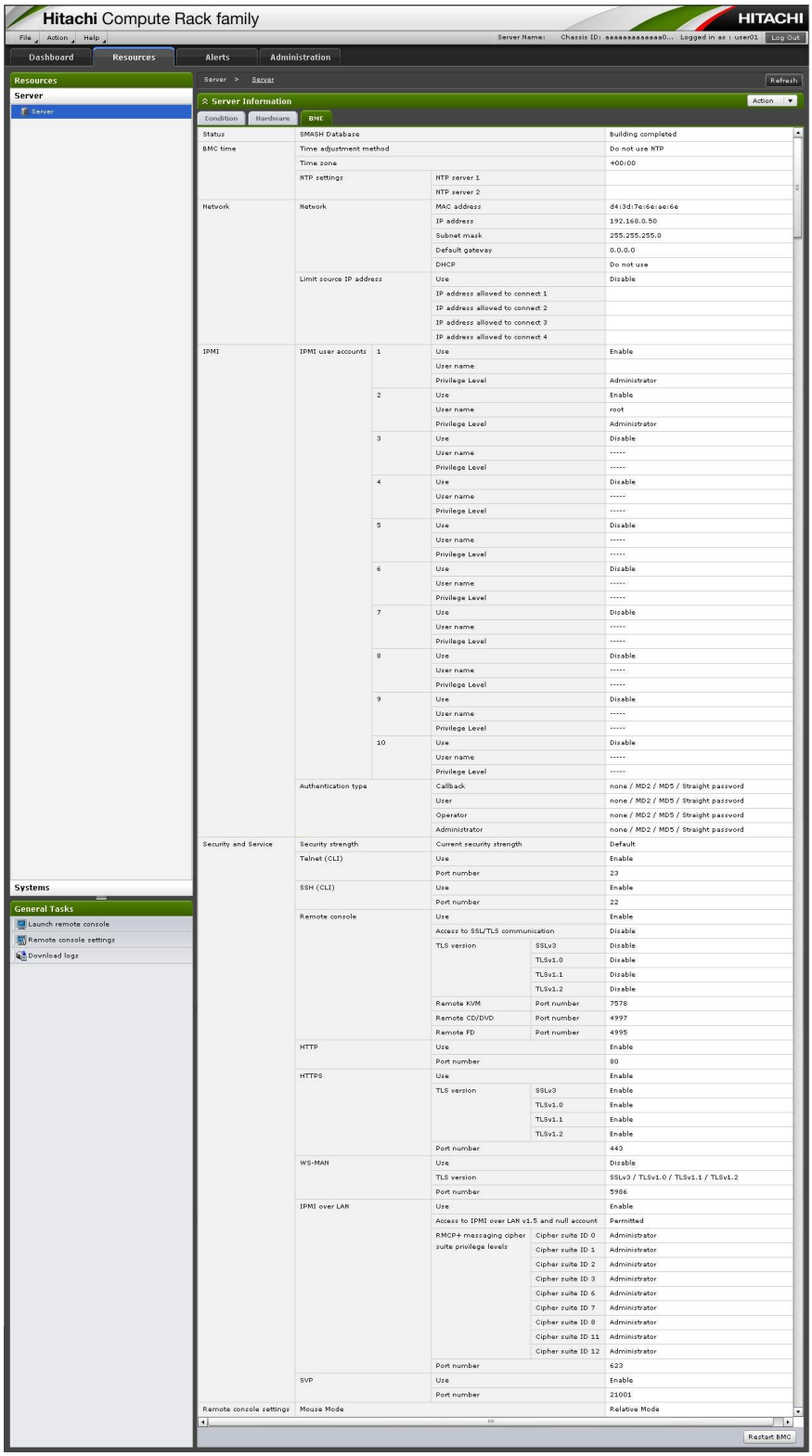



### Table 4-14: Server Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Action selection button | Backs up or restores server settings.<br>See Backup server settings, and Restore server settings. |
| Server name | Displays a server name that is set in Asset Information. |
| BMC IP address | Displays BMC IP address for a system unit.<br>For the initial BMC IP address settings, see Connecting to management interface.<br>For the BMC IP address changing, see Setting BMC network |
| BMC MAC address | Displays BMC MAC address. |
| UUD | Displays UUD. |
| Product Name | Displays a product name of system unit. |
| Product Part/Module Number | Displays product information of system unit |
| Product Version | Hardware version of system unit is displayed. |
| Product Serial Number | Product serial number of system unit is displayed. |

## Server Information > BMC

Display the information of BMC settings.




| | | | | |
|---|---|---|---|---|
| Status | SMASH Database | | | Building completed |
| BMC time | Time adjustment method | | | Do not use NTP |
| | Time zone | | | +00:00 |
| | NTP settings | | NTP server 1 | |
| | | | NTP server 2 | |
| Network | Network | | MAC address | d4:3d:7e:6e:ae:6e |
| | | | IP address | 192.168.0.50 |
| | | | Subnet mask | 255.255.255.0 |
| | | | Default gateway | 0.0.0.0 |
| | | | DHCP | Do not use |
| | Limit source IP address | | Use | Disable |
| | | | IP address allowed to connect 1 | |
| | | | IP address allowed to connect 2 | |
| | | | IP address allowed to connect 3 | |
| | | | IP address allowed to connect 4 | |
| IPMI | IPMI user accounts | 1 | Use | Enable |
| | | | User name | |
| | | | Privilege Level | Administrator |
| | | 2 | Use | Enable |
| | | | User name | root |
| | | | Privilege Level | Administrator |
| | | 3 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | | 4 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | | 5 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | | 6 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | | 7 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | | 8 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | | 9 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | | 10 | Use | Disable |
| | | | User name | ----- |
| | | | Privilege Level | ----- |
| | Authentication type | | Callback | none / MD2 / MD5 / Straight password |
| | | | User | none / MD2 / MD5 / Straight password |
| | | | Operator | none / MD2 / MD5 / Straight password |
| | | | Administrator | none / MD2 / MD5 / Straight password |
| Security and Service | Security strength | | Current security strength | Default |
| | Telnet (CLI) | | Use | Enable |
| | | | Port number | 23 |
| | SSH (CLI) | | Use | Enable |
| | | | Port number | 22 |
| | Remote console | | Use | Enable |
| | | | Access to SSL/TLS communication | Disable |
| | | | TLS version | SSLv3 | Disable |
| | | | | TLSv1.0 | Disable |
| | | | | TLSv1.1 | Disable |
| | | | | TLSv1.2 | Disable |
| | | | Remote KVM | Port number | 7578 |
| | | | Remote CD/DVD | Port number | 4997 |
| | | | Remote FD | Port number | 4995 |
| | HTTP | | Use | Enable |
| | | | Port number | 80 |
| | HTTPS | | Use | Enable |
| | | | TLS version | SSLv3 | Enable |
| | | | | TLSv1.0 | Enable |
| | | | | TLSv1.1 | Enable |
| | | | | TLSv1.2 | Enable |
| | | | Port number | 443 |
| | WS-MAN | | Use | Disable |
| | | | TLS version | SSLv3 / TLSv1.0 / TLSv1.1 / TLSv1.2 |
| | | | Port number | 5986 |
| | IPMI over LAN | | Use | Enable |
| | | | Access to IPMI over LAN v1.5 and null account | Permitted |
| | | | RMCP+ messaging cipher suite privilege levels | Cipher suite ID 0 | Administrator |
| | | | | Cipher suite ID 1 | Administrator |
| | | | | Cipher suite ID 2 | Administrator |
| | | | | Cipher suite ID 3 | Administrator |
| | | | | Cipher suite ID 6 | Administrator |
| | | | | Cipher suite ID 7 | Administrator |
| | | | | Cipher suite ID 8 | Administrator |
| | | | | Cipher suite ID 11 | Administrator |
| | | | | Cipher suite ID 12 | Administrator |
| | | | Port number | 623 |
| | SVP | | Use | Enable |
| | | | Port number | 21001 |
| Remote console settings | Mouse Mode | | | Relative Mode |

### Table 4-15: Server Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Action selection button | Backs up or restores server settings.<br>See Backup server settings, and Restore server settings. |
| Status | Displays current BMC status. |
| BMC time | Displays information of **Time Synchronization Method**, **Timezone**, and **NTP server 0 to 1**.<br>See Setting BMC date and time. |
| Network | Displays information of BMC network settings and **Limit source IP address**.<br>See Setting BMC network. |
| IPMI* | Displays information of **IPMI user accounts** and **Authentication type**.<br>See IPMI > IPMI User Account. |
| Security and Service | Displays the following contents:<br>**Port**: Enable or Disable for each service<br>**Security settings**<br>**Port number information**.<br>See Security and Service. |
| Remote console | Displays information of **Mouse Mode**.<br>See Setting mouse mode of Remote Console. |
| Restart BMC button | Restarts BMC. |
| * When **Security** strength is set as **High**, and **IPMI over LAN** > **Access to IPMI over LAN 1.5 and null account** is set as **Prohibited** in Security and Service, **Authentication type** is not displayed. | |

## Restart BMC

Restart BMC.

---

BMC is usually not necessary to restart. Restart BMC, only when failures occur.

---

Click **Restart BMC** in the **BMC** tab, and the following **Confirm** dialog box is displayed.


Click **OK**, and BMC is restarted and disconnect from a system unit.

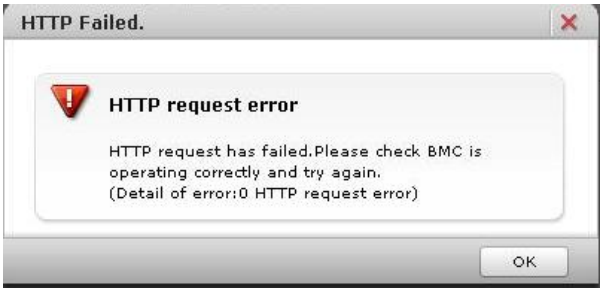
---

- When click **OK** in the **Confirm** dialog box while updating BMC firmware or while restoring server settings, the confirmation dialog box for restart execution is displayed again. Click **OK** to continue.
- When the following conditions are met, click OK in the **Confirm** dialog box. The window that confirms to restart BMC is displayed again. Click **OK** to continue.
  - Running BIOS
  - Running system unit

---

- When perform the operation occurred BMC communication after disconnecting from the system unit, the **HTTP request error** or **Session failed** dialog box is displayed.

  Logout and log back in Web console.





SERVIC LED flashes for 30 to 90 seconds in the system unit after restarting BMC. Cut off the power supply after SERVIC LED flashing is completed.

Communications (such as HCSM or BIOS) and BMC functions (such as Web console and Remote console) are stopped after restarting BMC. These communications and functions cannot be available while BMC restart (30 to 90 seconds).

Problem may occur such as displaying error messages due to stopping BMC communication service while restarting BMC. This problem may occur depending on a communication program.

Do not restart BMC during running BIOS or operating a setup menu. BMC cannot communicate with BIOS, and then failures may occur in a system unit. We recommend that you restart BMC while a system unit is shut down.

## Resources > Systems

The following indications and setups are available in the **Network**, **IPMI**, **Power Management**, and **Firmware** window.

- Performs the network settings and connection restriction.
- Performs the DNS server settings.
- Performs the IPMI Over LAN settings.
- Performs the mode settings for power capping function. (see Power capping settings)
- Displays the temperature and power consumption in BMC of system unit.
- Displays and updates the BMC firmware information. (see BMC firmware / SDR update)

### Network > DNS Server

For the **IP address** tab, **MAC address** tab, and **Limit Source IP Address** tab, see Setting BMC network.

In the **DNS Server** tab, you can set DNS server IP address, and execute name resolution using DNS server. You can set for up to three DNS server IP address.

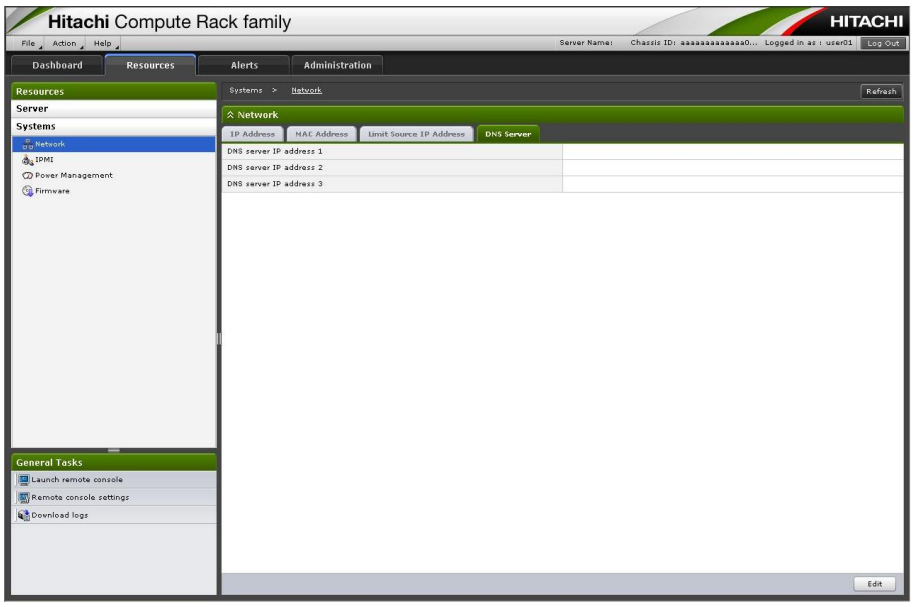
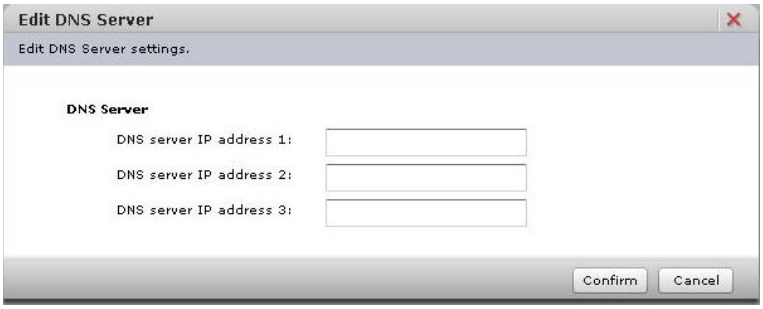


**Table 4-16: Network menu items**

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| DNS server IP address 1 to 3 | Displays DNS server IP address.<br>You can set for up to three DNS server IP addresses, and DNS server IP address is used in order from top to bottom. When you do not set a second or third DNS server, enter "0.0.0.0".<br>When you do not use DNS server, enter "0.0.0.0" in all three DNS server IP addresses or leave them null. |
| Edit button | Edits DNS server IP address. |

Click **Edit**, and the **Edit DNS Server** dialog box is displayed.

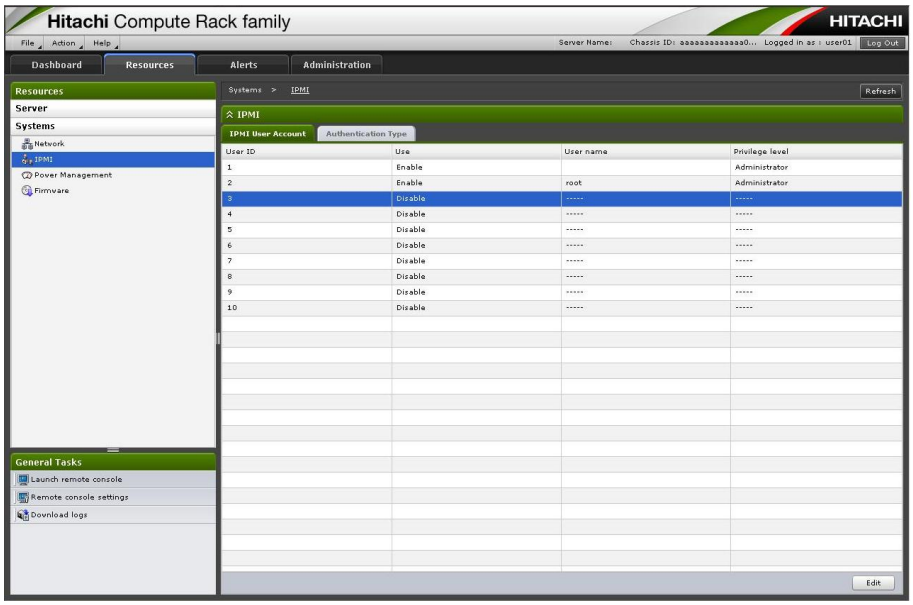



Click **Confirm** after entering each item, the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **DNS** tab.
Click **Cancel** to go back to the **DNS** tab without saving.

## IPMI > IPMI User Account

Set a user account for the IPMI Over LAN function.

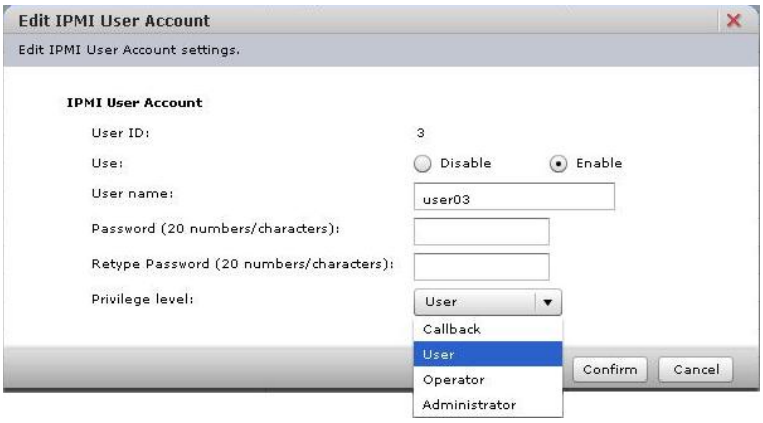



### Table 4-17: IPMI menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| User ID | Displays IPMI user account ID. |
| Use | Displays that IPMI user account is enabled or disabled. |
| User name | Displays IPMI user account name. |
| Password | Sets a password (20 numbers/characters) for IPMI user account. |
| Retype Password | Retype the password to confirm. |
| Privilege level | Displays the granted privilege level for IPMI user account. |
| Edit button | Edits IPMI user account. |

- For User ID 1 and 2, change of condition is only available.
- User ID 1 and 2 are set at the time of factory shipment. The setting value is as follows:
  - User ID 1
    Condition: Enable
    User name: Blank
    Password: Blank
    Privilege level: Administrator
  - User ID 2
    Condition: Enable
    User name: root
    Password: superuser
    Privilege level: Administrator

Click **Edit**, and the **Edit IPMI User Account** dialog box is displayed.




- When **Use** is disabled, **User name** and **Privilege level** are displayed as "-----" in the **IPMI User Account** tab.
- **User name** is up to 32 numbers/characters
- User ID 1 and 2 cannot be changed their settings.
- User ID 8, 9, and 10 cannot be set blank as their password.
- A password that can be set is 20byte password having compatibility with IPMI 2.0.

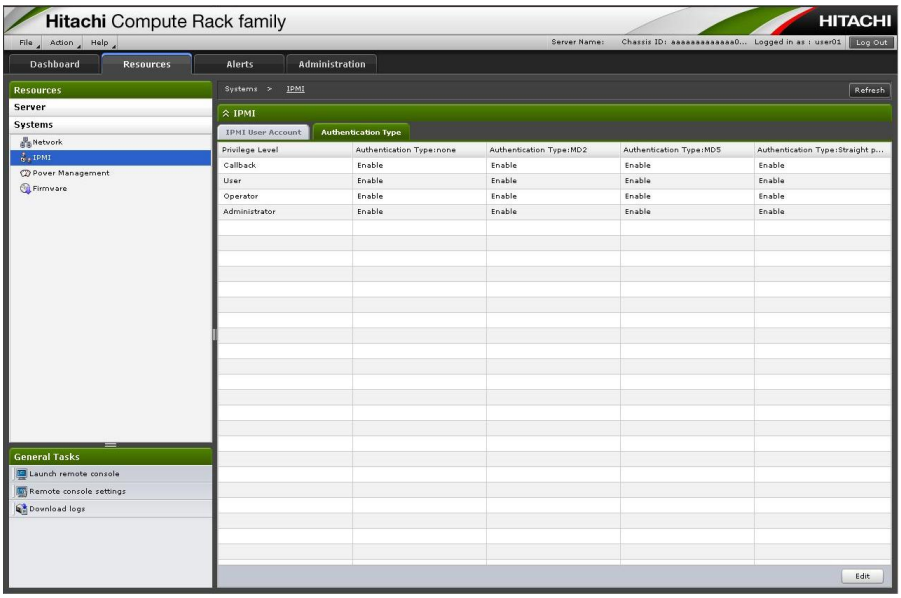
Click **Confirm** after entering each item, the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **IPMI User Account** tab.
Click **Cancel** to go back to the **IPMI User Account** tab without saving.

- IPMI Over LAN function settings are saved even though a power code is drawn out from a system unit.
- When a server settings are backed up and restored in the **Server Information** window (see Server Information > Condition), IPMI Over LAN function settings are not backed up and restored. When a motherboard is replaced by failure and others, set the settings again.
- User ID is enabled when **Security strength** is set as **High**, or **IPMI over LAN** > **Access to IPMI over LAN v1.5 and null account** is set as **Prohibited** (see Security and Service).

## IPMI > Authertication Type

Set Authentication Type for the IPMI Over LAN function.



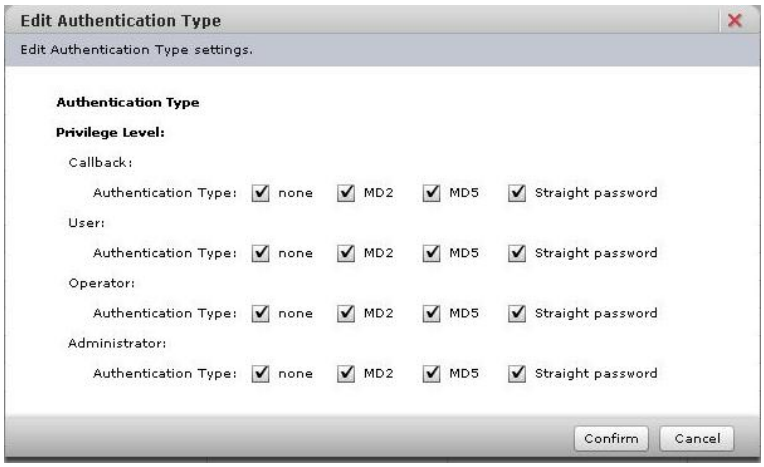

### Table 4-18: IPMI menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Privilege Level | Displays the privilege level. |
| Authentication Type | Displays that the authentication type is enabled or disabled for the privilege level. |
| Edit button | Edits the authentication type for the privilege level. |

Tip

IPMI > Authentication Type tab is not displayed when **Security strength** is set as **High**, or **IPMI over LAN** > **Access to IPMI over LAN v1.5 and null account** is set as **Prohibited** (see Security and Service).

Click **Edit**, and the **Edit Authentication Type** dialog box is displayed.

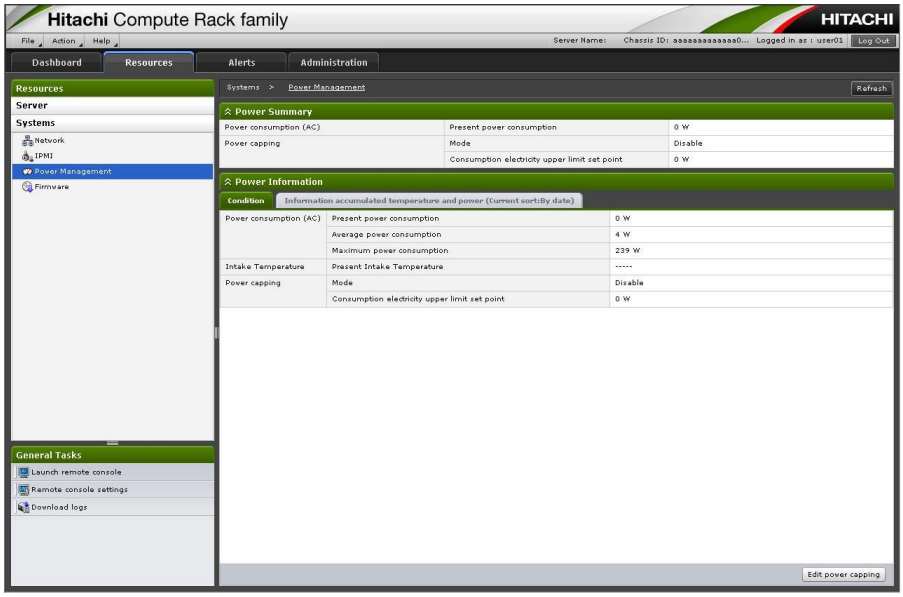



Click **Confirm** after entering each item, the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **Authentication Type** tab.
Click **Cancel** to go back to the **Authentication Type** tab without saving.

## Power Information > Condition

Display the information of Power consumption, Intake Temperature, and Power capping for a system unit. Set the power capping settings.




### Table 4-19: Power Information menu items

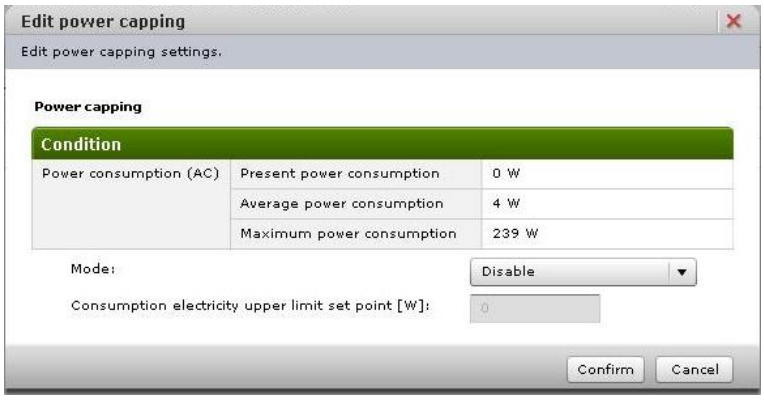
| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Power consumption (AC) | Displays the power consumption of system unit.<br>- Present power consumption<br>Displays Present power consumption.<br>- Average power consumption<br>Displays Average power consumption after setting the power consumption (Mode or Consumption electricity upper limit set point).<br>- Maximum power consumption<br>Displays Maximum power consumption after setting the power consumption (Mode or Consumption electricity upper limit set point). |
| Intake Temperature | Displays Intake Temperature for system unit. |
| Power capping | Displays the power capping settings.<br>- Mode<br>Displays power capping function mode (see Power capping settings).<br>- Consumption electricity upper limit set point<br>Displays a target value of power consumption to reduce power consumption (see Consumption electricity upper limit value). |
| Edit power capping button | Edits the power capping for system unit. |

## Power capping settings

Set power capping settings for system unit.

Power capping is a function that reduces the maximum power consumption for system unit. The power consumption that can be reduced differs depending on the installed processor type.

Click **Edit power capping** in **Power Information > Condition**, and the **Edit power capping** dialog box is displayed.




Select **Mode** from the pull-down menu, and enter a value in **Consumption electricity upper limit set point**. Click **Confirm**, the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **Condition** tab.
Click **Cancel** to go back to the **Condition** tab without saving.

## Power capping modes

Modes that can be set for the power capping are as follows.

### Table 4-20: Power capping modes menu items

| Modes | Description |
|---|---|
| NM mode | It is a mode enabled Node Manager (NM) command. NM command bridges to BMC from management LAN, and NM command is published to Node Manager. When NM mode is set, a software used NM command can rewrite Policy settings of Node Manager that BMC firmware has set. However, power management functions cannot be used by BMC due to rewriting Policy settings. Do not set NM mode when normal use especially using power management functions by BMC. You can configure settings that the power source of system unit is forcedly turned off due to the value of temperature or power consumption depending on Policy parameter settings by NM command. However, if you configure incorrect settings, a normal system operation may be hindered. Therefore, we strongly recommend that use NM mode after performing evaluation of software used NM command sufficiently. When switching to other mode after using NM mode once, delete all Policy of NM that is set in the target software, and then switch to other mode. When using NM command, a software corresponded NM command is required separately. |
| DCMI mode | It is a mode that executes the power capping by DCMI command. When using DCMI command, a software corresponded DCMI command is required separately. |
| Dynamic capping mode | Enable Dynamic capping mode. |
| Disable | Disable Dynamic capping mode. Inhibit to NM command and DCMI command. |

## Consumption electricity upper limit value

For the power capping function, when you set **Consumption electricity upper limit set point** to too low value, the CPU performance may be lowered constantly due to the state of being active for the power capping.
In this state, it can not control the actual power consumption to less than or equal to the **Consumption electricity upper limit set point** setting value.

When you set a value equal to or greater than the maximum power consumption of the system unit for **Consumption electricity upper limit set point**, the power capping function will not work.

Therefore, you can use the power capping function effectively when set a **Consumption electricity upper limit set point** as follows:

| |
|---|
| Maximum power consumption of the system unit ≥<br>Setting value of **Consumption electricity upper limit set point** ≥<br>Maximum power consumption of the system unit -<br>Maximum value of the power consumption that can be suppressed by power capping |

- Setting value of **Consumption electricity upper limit set point** ≥
  Maximum power Consumption of the system unit -
  Maximum value of the power Consumption that can be suppressed by power capping
  If this condition is not satisfied, the power saving function can work using the power capping, but the actual power consumption may exceed the setting of **Consumption electricity upper limit set point**.
- Maximum power consumption of the system unit ≥
  Setting value of **Consumption electricity upper limit set point**
  If this condition is not satisfied, the actual power consumption does not exceed the setting of **Consumption electricity upper limit set point**, but the power saving function does not have effect.

### Maximum power consumption value of the system unit

When estimating the system unit, refer to the specification of the system unit for the maximum power consumption of the system unit.
However, the power consumption of the system unit is dependent upon the operating environment (such as temperature) and running program on the system unit.

In order to make fine adjustments, we recommend you that check the maximum power consumption of system unit by trial operation in an environment that uses the system unit.
Maximum power consumption of the system unit can be found in the following procedure.

1. **Edit Power Capping Setting > Mode** set to **Disable**.
2. Continuous operation under the maximum load condition in the system unit.
3. Check the value of **Power Information > Condition** > **Maximum power consumption**.

### Maximum power consumption value that can be suppressed by the power capping

The degree of suppression of power consumption is different depends on the model of the system unit, the CPU type of the mounted on the system unit, and the load condition of the program running on the system unit.

Approximate of the maximum value of the power consumption that can be suppressed are as follows:

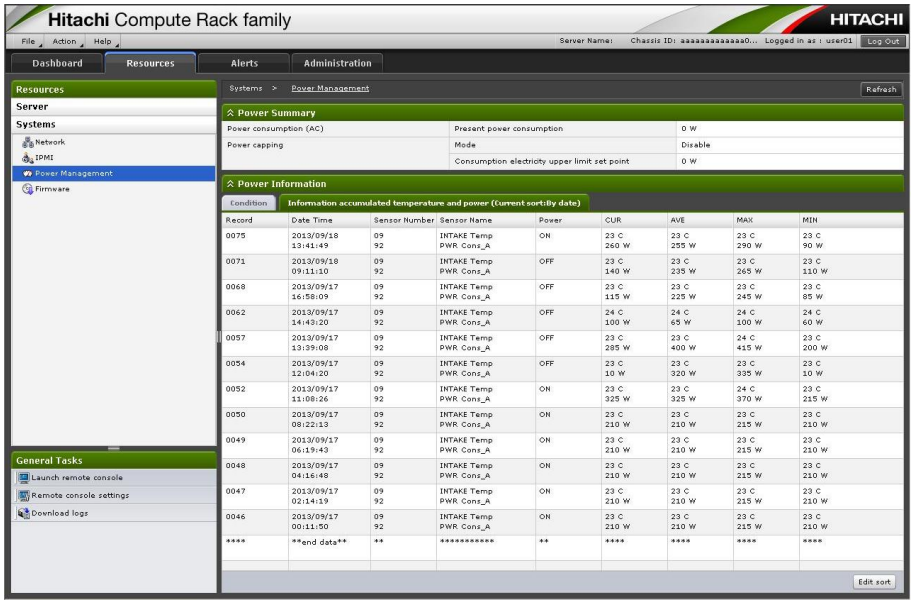
**Table 4-21: Approximate of the maximum value of the power consumption that can be suppressed**

| CPU type | Clock speed | power consumption that can be suppressed (approximate of the maximum value)* | |
|---|---|---|---|
| | | 1 CPU | 2 CPU |
| Xeon processor E5-2470 | 2.30 GHz | 60 W | 120 W |
| Xeon processor E5-2440 | 2.40 GHz | 50 W | 100 W |
| Xeon processor E5-2420 | 1.90 GHz | 20 W | 40 W |
| Xeon processor E5-2403 | 1.80 GHz | 10 W | 20 W |
| Xeon processor E5-2430L | 2 GHz | 25 W | 50 W |

* Power consumption that can be suppressed shows the values based on the measurement result of the model.
Power consumption that can be suppressed includes the effect that the power consumption of the peripheral circuit is reduced by reduced the power consumption of CPU.

## Power Information > Information accumulated temperature and power

Display an accumulated temperature and power consumption in a management module of system unit.



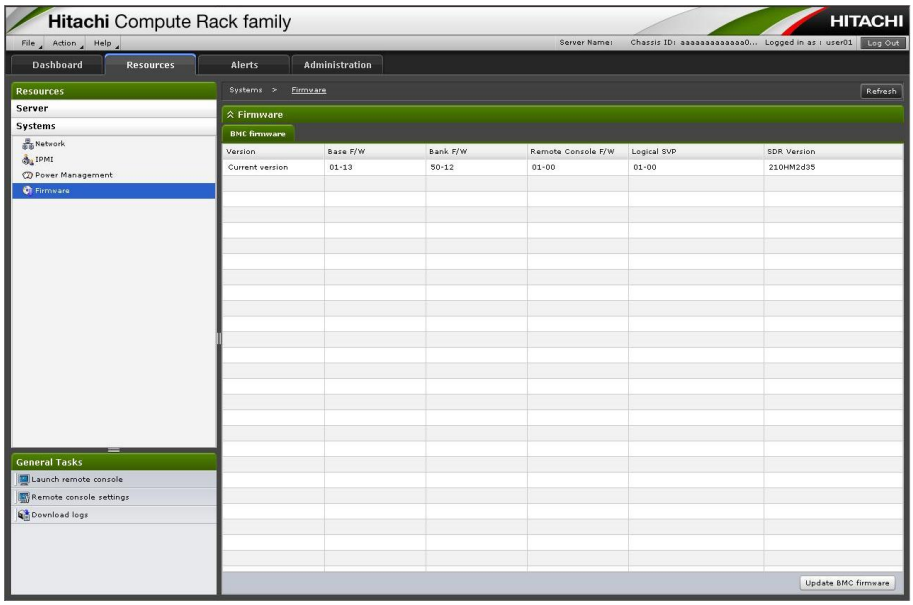

### Table 4-22: Power Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Power consumption (AC) | Displays power consumption in a system unit.<br>-Present power consumption<br>Displays Present power consumption. |
| Power capping | Displays the power capping settings.<br>- Mode<br>Displays power capping function mode (see Power capping settings).<br>Consumption electricity upper limit set point<br>- Displays a target value of power consumption to reduce power consumption (see Power consumption upper limit value). |
| Information accumulated temperature and power* | Displays an accumulated temperature and power consumption in a system unit. |
| Edit sort button | Displays temperature and power consumption in a system unit. |
| * Information is registered every two hours, and up to two years information can be stored. | |

- When click **Refresh** after changing **Edit sort** from initial settings, the changed **Edit sort** is saved. When log out Web console after changing **Edit sort** from initial settings, **Edit sort** is backed to initial settings.
- The type of **Edit sort** is as follows:
  - Order of date:
    Displays information up to 12 items in order from the latest date in "Date time" of the accumulated information.
  - Order of power:
    Displays information up to 12 items in order from the largest value of "***W" in "MAX" of the accumulated information.
  - Order of temperature:
    Displays information up to 12 items in order from the largest value of "**C°" in "MAX" of the accumulated information.

## Firmware > BMC firmware

Display and update BCM firmware.



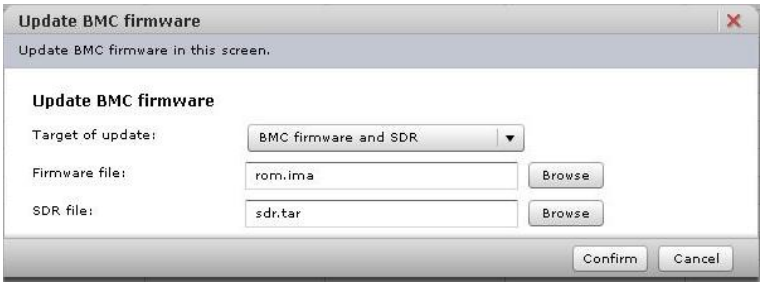

### Table 4-23: Firmware menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Base F/W | Displays version of base firmware. |
| Bank F/W | Displays version of firmware. |
| Remote Console F/W | Displays version of remote console function. |
| Logical SVP | Displays version of logical SVP. |
| SDR Version | Displays SDR version. |
| Update BMC firmware | Updates BMC firmware. |

## BMC firmware / SDR update

Update BMC firmware and SDR from a Web console.

Click **Firmware** > **BMC firmware** > **Update BMC firmware**, the **Update firmware** dialog box is displayed.




Click **Browse**, and select a BMC firmware image file or SDR file.

Click **Confirm** after specifying BMC firmware image file or SDR file, and the **Confirm** dialog box is displayed.

Confirm that the selected file is correct, and click **OK**. Writing to BMC firmware image file or SDR file is started.

---

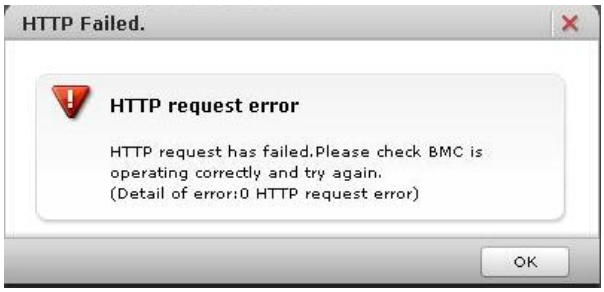
**Note** Do not perform other operations during writing to BMC firmware image file or SDR file. Do not write to BMC firmware image file or SDR file during running BIOS or operating a setup menu. BMC firmware image file or SDR file may not be written normally.

---

- Communications (such as HCSM or BIOS) and BMC functions (such as Web console and Remote console) are stopped during writing to BMC firmware image file or SDR file. We recommend that BMC firmware image file or SDR file is written while a system unit is shut down.
- When click **Confirm** in the **Update firmware** dialog box while updating the BMC firmware or restoring the server settings, the dialog box that content indicated "wait a little while and try again" is displayed. Click **Close** to exit.
- When the following conditions are met, click OK in the Confirm window. The window that confirms to restart BMC is displayed again. Click OK to continue.
  - Running BIOS
  - Running system unit
- When BMC firmware image file or SDR file that a system unit is not supported is specified, BMC firmware image file or SDR file is not written.
- When the system unit is not operated over 30 minutes in the **Confirm** dialog box, update is suspended. Click **Close**, and try again from the start.

After writing to BMC firmware image file or SDR file is completed, the following dialog box is displayed, and click **Close**. The connection is disconnected from the system unit due to restarting BMC.

When perform the operation occurred BMC communication after disconnecting from the system unit, the HTTP request error or Session failed dialog box is displayed. Logout and log back in Web console.





SERVIC LED flashes for 30 to 90 seconds in the system unit after restarting BMC. Cut off the power supply after SERVIC LED flashing is completed.

Communications (such as HCSM or BIOS) and BMC functions (such as Web console and Remote console) are stopped after restarting BMC. These communications and functions cannot be available while BMC restart.

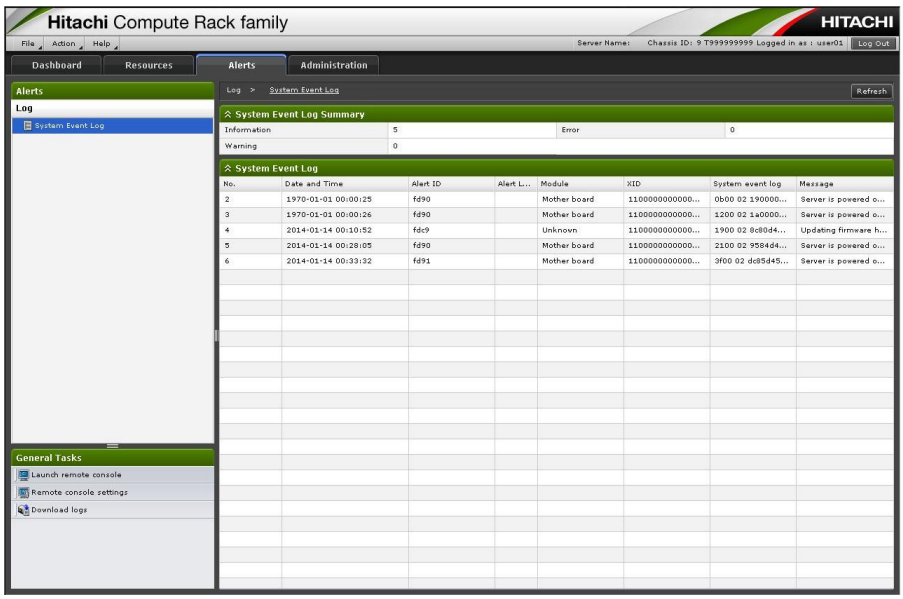
Problem may occur such as displaying error messages due to stopping BMC communication service while restarting BMC. This problem may occur depending on a communication program.

Do not restart BMC during running BIOS or operating a setup menu. BMC can not communicate with BIOS, and then failures may occur in a system unit. We recommend that you restart BMC while a system unit is shut down.

# Alerts

In the **System Event Log** window, accumulated system event logs (alert logs) are displayed in a management module of system unit.

Event logs are displayed up to the latest 255 logs (maximum) that are accumulated when the **System Event Log** window is displayed.




## Table 4-24: Alerts menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Information | Displays a number of event log as Information level. |
| Warning | Displays a number of event log as Warning level. |
| Error | Displays a number of event log as Error level. |
| No. | Displays event numbers. |
| Date and Time | Displays the date and time on which an event occurred. |
| Alert ID | Displays Alert ID that indicates the type of event. |
| Alert Level | Alert Level is separated into 3 levels. 3 levels displays as follows:<br>Blank: Information level<br>: Warning level<br>: Error level |

| Menu items | Description |
|---|---|
| Module | Displays the module that an event occurred.<br>Mother board: temperature, power source voltage, mother board, CPU, memory, PCI<br>Power Supply Module: Power supply unit<br>Fan Module: Fan<br>Front/Rear Panel: Intake temperature<br>Unknown: Other hardware (HDD or something) |
| XID<br>System event log | Displays the code that indicates the event. |
| Message | Displays the message of event summary. |

- **No.** may not start with 1, because event logs are always displayed up to the latest 255 logs.
- When resuming the power or restarting BMC, BMC time reads and synchronizes a system clock of system unit. At this time, Date and Time of alert log recorded from BMC is displayed as [1970-01-01 00:00:XX] that is different from the actual date and time.
- When sorting **Date and Time** in increasing or decreasing order, [1970-01-01 00:00:XX] as event logs are consolidated at the top of list or the bottom of list. Therefore, context of other event log is not easily checked.

  You should sort **No.** in increasing or decreasing order.

# Administration

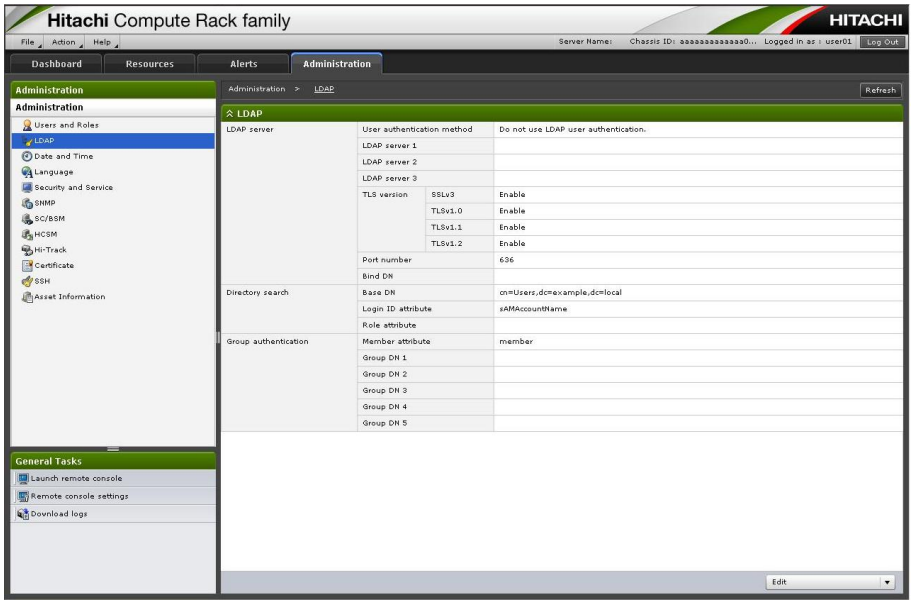
Function settings can be configured for system unit management in the **Administration** tab.

## User and Roles

For details, see Setting user account.

## LDAP

Set a user authentication using LDAP server.




### Table 4-25: LDAP menu items

| No. | Menu items | Description |
|---|---|---|
| 1 | Refresh button | Refreshes information. |
| 2 | User authentication method | Sets User authentication method by User authentication method LDAP.<br>● No using LDAP for user authentication:<br>Perform user authentication by specified user account.<br>● Perform user authentication in the order of local and LDAP:<br>Perform user authentication by specified user account. If user authentication fails, perform user authentication by user account in LDAP server. |
| 3 | LDAP server 1 to 3 | Specifies LDAP servers by IP address or FQDN.<br>(up to 127 characters) |
| 4 | TLS version | Specifies TLS version used for connecting a LDAP server. |
| 5 | Port number | Specifies Port number as a decimal number. (1 to 65535) |
| 6 | Bind DN | Specifies DN used for binding to LDAP server. (up to 256 characters) Displays “Anonymous” here when no input. |

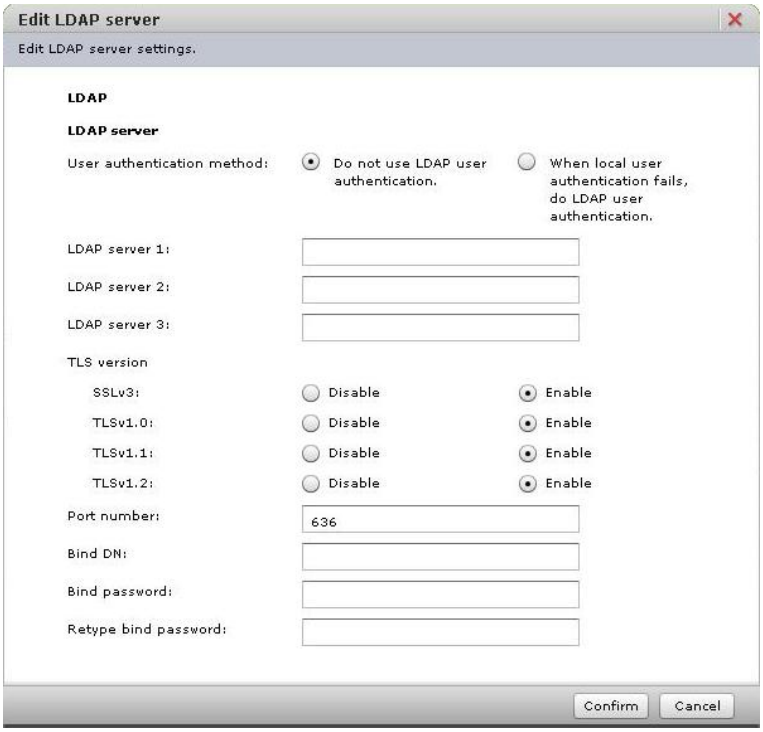
| No. | Menu items | Description |
|---|---|---|
| 7 | Base DN | Specifies DN for user search. (up to 256 characters) |
| 8 | Login ID attribute | Specifies a login ID in a user entry attribute. (up to 64 characters) |
| 9 | Role attribute | Specifies a string representing a role in a user entry attribute. (up to 64 characters) |
| 10 | Member attribute | Specifies a user of member in a group entry attribute. (up to 64 characters) |
| 11 | Group DN 1 to 5 | Specifies a group DN allowed login. (up to 256 characters)<br>Group authentication is not performed when no input of all DNs. |
| 12 | Edit button | The following settings are performed from a menu.<br>● LDAP server settings:<br>Performs "LDAP server settings" for item 1 to 5.<br>● Directory search settings:<br>Performs "Directory search settings" for item 6 to 8.<br>● Group authentication settings:<br>Performs "Group authentication settings" for item 9 and 10. |

Tip

All SSL/TLS versions cannot be disabled. When security strength is set as High, SSL/TLS versions cannot be enabled or disabled. Only TLS1.2 can be enabled or disabled.

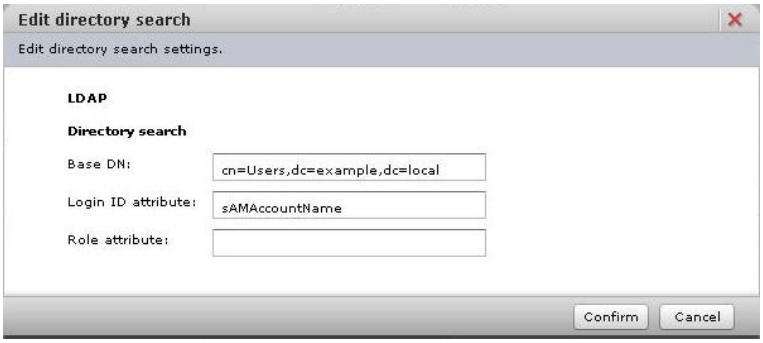
Click **Edit** and select each menu, and the following dialog box is displayed

- LDAP server settings

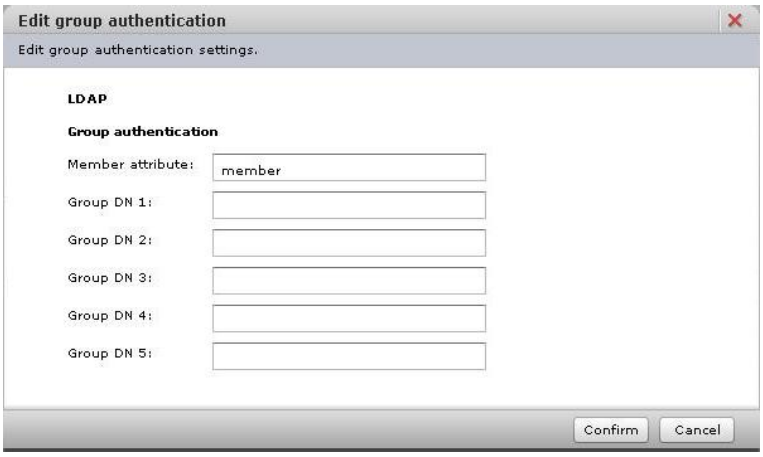


> **Tip**
> In **Bind password**, specify a password when binding to LDAP server. (up to 32 characters)
> A password is disabled when no input.

- Directory search settings




- Group authentication settings




Click **Confirm** after entering each item, and the **Confirm** dialog box is displayed.

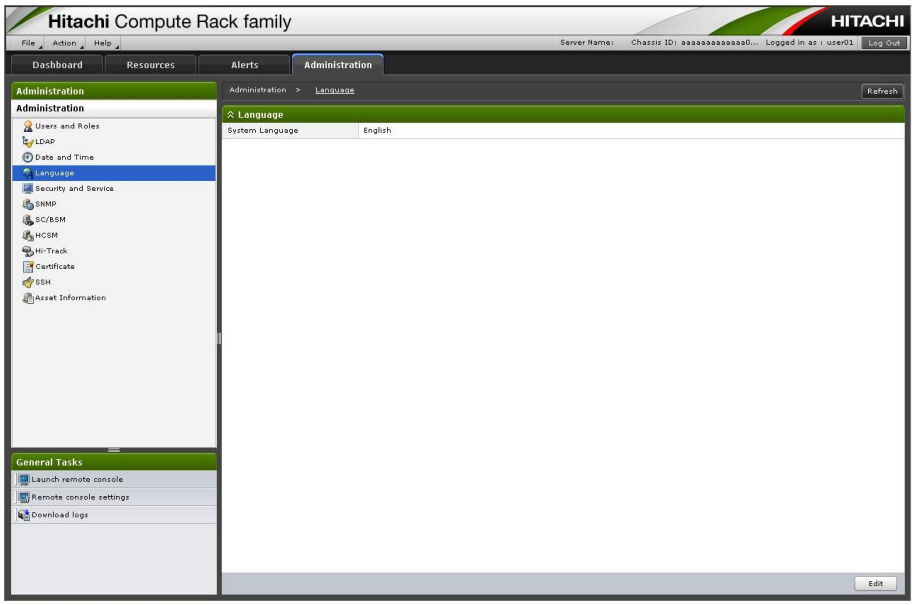
Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **LDAP** window.
Click **Cancel** to go back to the **LDAP** window without saving.

## Date and Time

For details, see Setting BMC date and time.

## Language

Set a system language on Web console.




### Table 4-26: Language menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| System Language | Displays a language set in Web console.<br>● English<br>System language of Web console is set as English.<br>● Japanese<br>System language of Web console is set as Japanese. |
| Edit button | Edits System Language. |

Click **Edit**, the **Edit System Language** dialog box is displayed.

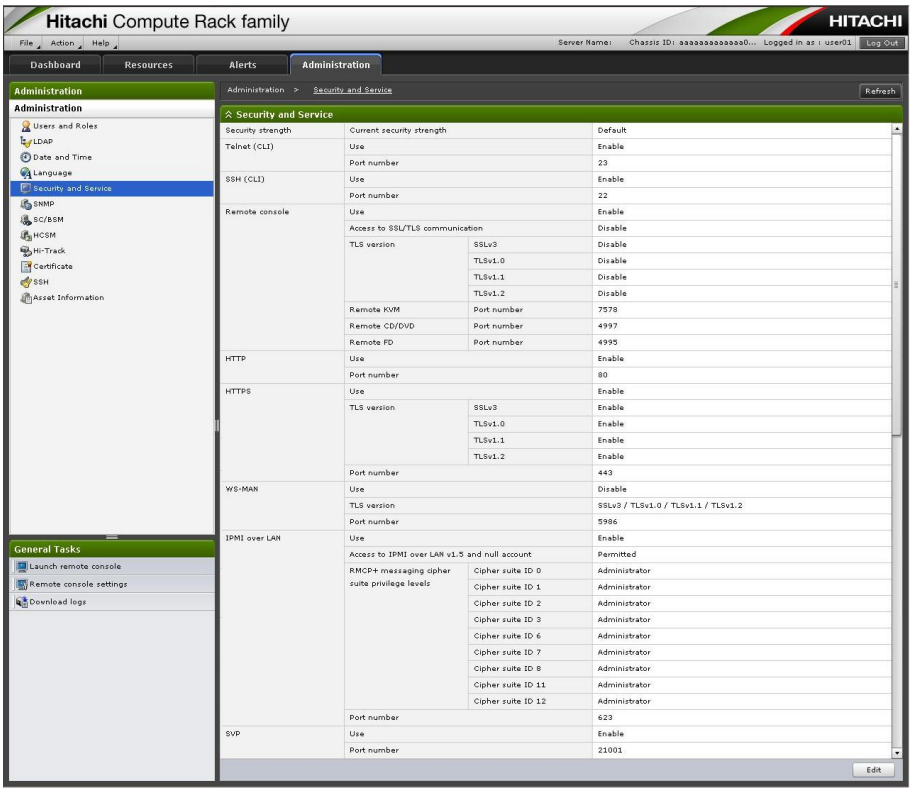
Click **Confirm** after selecting a system language from a pull down menu, and the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **Language** window.
Click **Cancel** to go back to the **Language** window without saving.

When change the settings, the changed settings are available after next login.

## Security and Service

Set a Security and Service.



## Table 4-27: Security and Service menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Security strength | Sets Security strength (see Security strength) |
| Telnet (CLI)<br>SSH (CLI) | Enables or disables a port used Telnet or SSH.<br>Not supported. |
| Remote Console[1] | Enables or disables a port used a Remote Console application, or set a port number. And sets Access to SSL/TLS communication or TLS version. |
| HTTP<br>HTTPS | Enables or disables a HTTP port or HTTPS port used Web console<br>And sets TLS version used HTTPS connection. |
| WS-MAN[2] | Enables or disables a port used WS-Manager, or set a port number. And displays TLS version. |
| IPMI Over LAN[3] | Enables or disables a port used IPMI Over LAN functions.<br>And sets permission/ inhibition connection between IPMI over LAN v1.5 and null account, or set RMCP+messaging cipher suite privilege levels (Cipher suite ID[4]). |
| SVP | Enables or disables a port used SVP functions. |
| Edit button | Edits Security and Service. |

**Notes:**

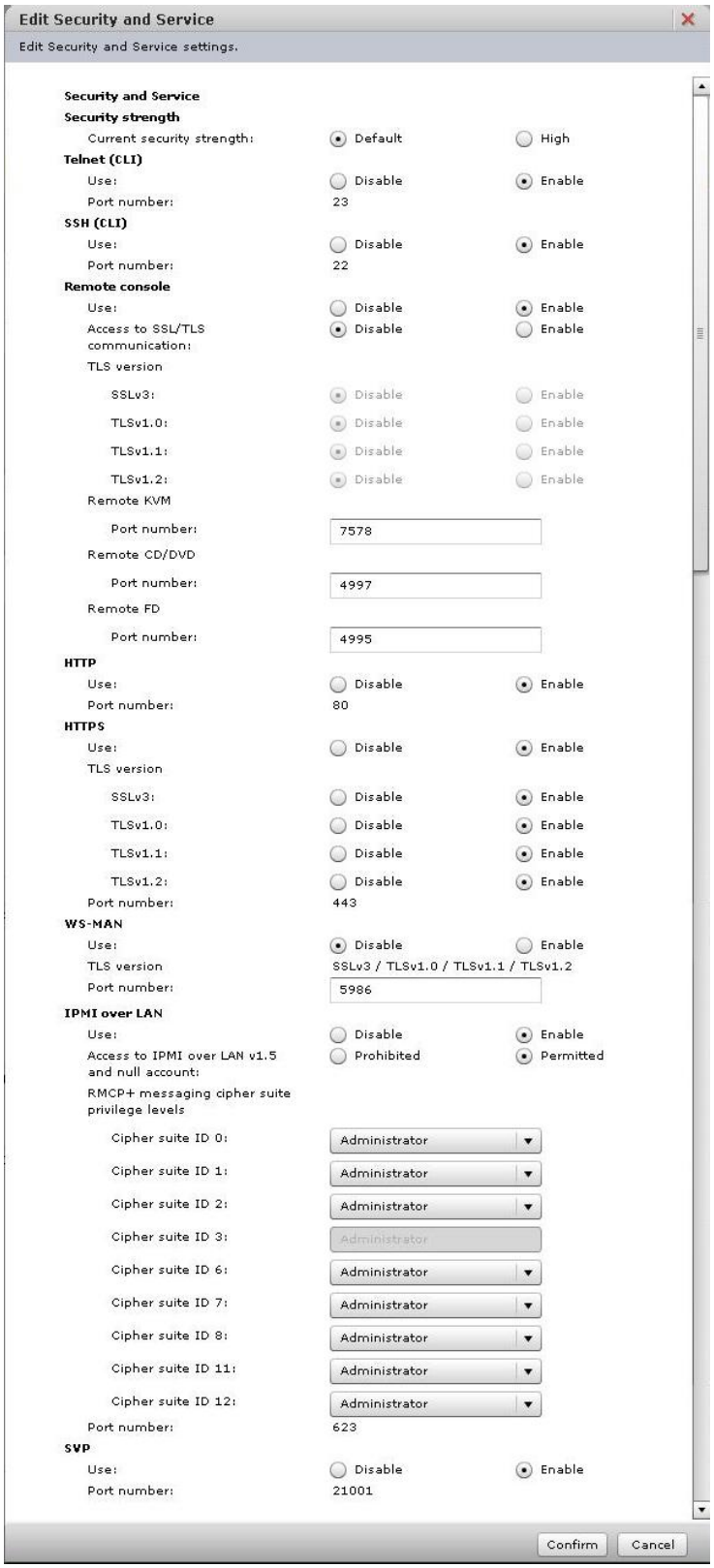
1 Only display when Remote Console application is applied.

2 While HTTPS is set as Disable, WS-MAN cannot be set as Enable.

3 IPMI Over LAN can only be available for some commands.

4 Cipher suite ID is defined IPMI specifications. Initial setting value of Cipher suite ID is compatible with setting value of conventional system unit.

Click **Edit**, and the **Edit Security and Service** dialog box is displayed.



Click **Confirm** after setting and entering each item, the **Confirm** dialog box is displayed.

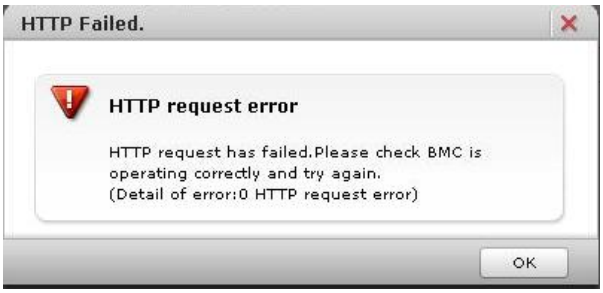
Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **Security and Service** window.
Click **Cancel** to go back to the **Security and Service** window without saving.

---

- All SSL/TLS versions cannot be disabled. When security strength is set as High, SSL/TLS versions cannot be enabled or disabled. Only TLS1.2 can be enabled or disabled.
- Do not disable both of HTTP service and HTTPS service. If you disable both of HTTP service and HTTPS service, Web console cannot be connected. If you disable both of HTTP service and HTTPS service, start the system BIOS setup menu and then set **ServerMgmt** > **Reset BMC Web Connection** to **Yes, On next reset**, and save the setting in **Save & Exit**. BMC network setting (connection restriction of Web console network setting, user account setting, and HTTP service setting) is initialized. The system unit is restarted after the SERVICE LED on the system unit blinks about 30 to 60 seconds. Log in to the Web console with the factory default user name and password, and then set the Web console network setting (connection restriction of Web console network setting, user account setting, and HTTP service setting) again. When **Reset BMC Web Connection** is executed, **Service** and **Security and Service** are not initialized. When **Security strength** is set as Default in Security and Service, **Reset BMC Web Connection** is executed, and then **Network and Security and Service** (without HTTP) are not initialized. When **Security strength** is set as **High, Reset BMC Web Connection** is executed, and then **Security strength** is set as Default, **Security and Service** is initialized. **Network** is not initialized.
- When confirm the BMC network configuration by the system BIOS setup menu, see "BMC network configuration" of the "ServerMgmt" section in *Hitachi Compute Rack 220S BIOS Guide*.
- When click **OK** in the **Confirm** dialog box after changing **Security strength** while updating the BMC firmware or restoring the server settings, the dialog box that content indicated "wait a little while and try again" is displayed. Click **Close** to exit.
- When click **OK** in the **Confirm** dialog box after changing **Security strength** while running BMC firmware or while turning on the system unit, the confirmation dialog box for restart execution is displayed again. Click **OK** to continue.

---

- When perform the operation occurred BMC communication after disconnecting from the system unit, the HTTP request error or Session failed dialog box is displayed. Logout and log back in Web console.

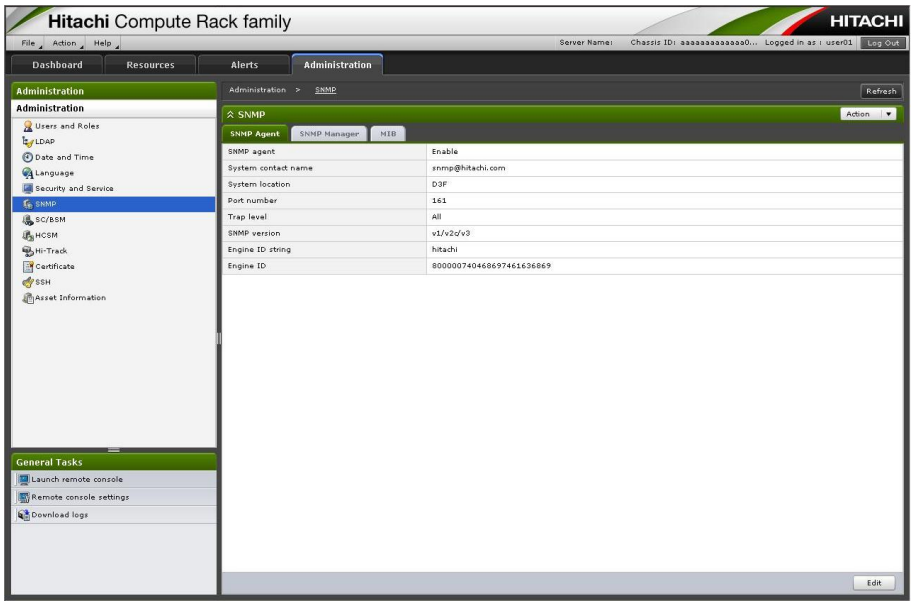




- Communications (such as HCSM or BIOS) and BMC functions (such as Web console and Remote console) are stopped after restarting BMC. These communications and functions cannot be available while BMC restart (30 to 90 seconds). Problem may occur such as displaying error messages due to stopping BMC communication service while restarting BMC. This problem may occur depending on a communication program. Do not restart BMC during running BIOS or operating a setup menu. BMC cannot communicate with BIOS, and then failures may occur in a system unit. We recommend that you restart BMC while a system unit is shut down.

## SNMP > SNMP Agent

Set a SNMP Agent.




### Table 4-28: SNMP Agent menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Action select button | Sents SNMP Trap. (see Send SNMP Trap) |
| SNMP agent | Displays enabling/disabling SNMP agent. |
| System contact name | Displays information of System contact name. |
| System location | Displays System location. |
| Port number | Displays a port number used SNMP agent. |
| Trap level | Displays Trap level. |
| SNMP version | Displays SNMP version of SNMP agent. |
| Engine ID string* | Displays Engine ID string used SNMP agent. |
| Engine ID* | Displays Engine ID that is created from Engine ID string. |
| Edit button | Sets a SNMP Agent. |
| * Only display when SNMP version is set as v1/v2c/v3. | |

Tip

- When **Security strength** is changed from Default to High in Security and Service while SNMP agent is set as Enable and SNMP version is set as v1/v2c, SNMP agent is changed to Disable.

  When **Security strength** is changed from Default to High in Security and Service while SNMP agent is set as Enable and SNMP version is set as v1/v2c/v3, SNMP agent is still set as Enable.

- When **Security strength** is changed from High to Default in Security and Service, SNMP agent is changed to Disable and SNMP version is changed to v1/v2c.

Click **Edit**, the **Edit SNMP** dialog box is displayed.


Click **Confirm** after setting and entering each item, the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **SNMP Agent** window.
Click **Cancel** to go back to the **SNMP Agent** window without saving.

## Send SNMP Trap

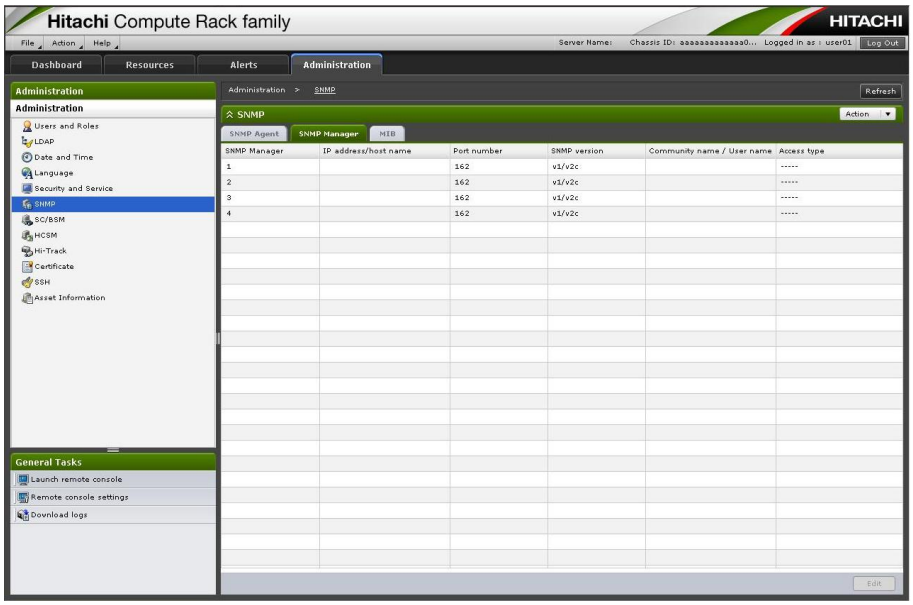
You can send SNMP Trap to all registered SNMP manager.

Click **Action** in the SNMP window, and select **Send SNMP Trap**. The following **Send SNMP Trap** window is displayed.


Click **OK** to send the SNMP Trap, and go back to the **SNMP** window.
Click **Cancel** to go back to the **SNMP** window without sending the SNMP Trap.

## SNMP > SNMP Manager

Set a SNMP Manager.




### Table 4-29: SNMP Manager menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Action select button | Sents SNMP Trap. (see Send SNMP Trap) |
| SNMP Manager | Displays a registration Number. |
| IP address/host name | Displays IP address/host name. |
| Port number | Displays a port number of Trap report destination. |
| SNMP version | Displays SNMP version. |
| Community name/User name[1, 2] | Displays Community name/User name. |
| Access type[3, 4] | Displays Access type. |
| Edit button | Sets a SNMP Manager. |

**Notes:**

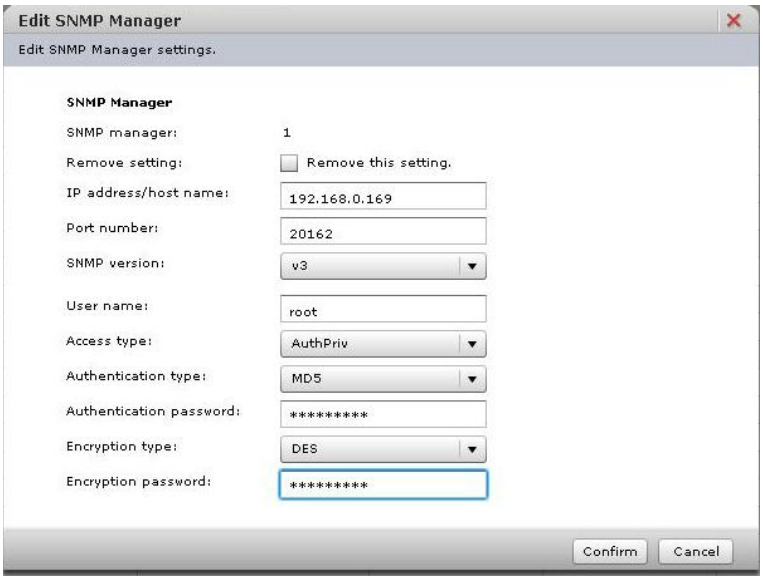
1 While SNMP version is set as “v1/v2c”, “Community name” is displayed.

2 While SNMP version is set as “v3”, “User name” is displayed.

3 While SNMP version is set as “v1/v2c”, “-----” is displayed.

4 While SNMP version is set as “v3”, “Access type” is displayed.

Select a SNMP Manager and Click **Edit**, the **Edit SNMP Manager** dialog box is displayed.



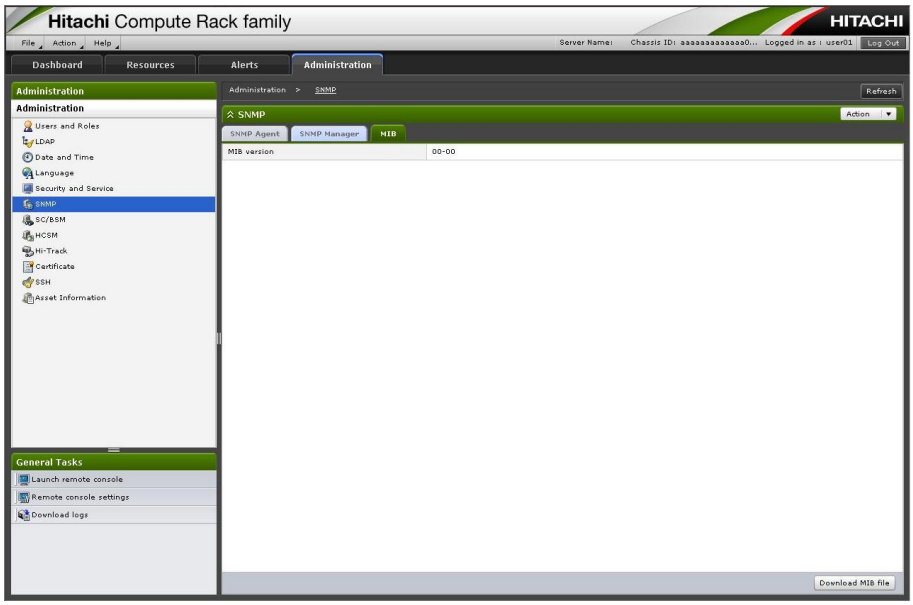

- Community name is only displayed While SNMP version is set as “v1/v2c”.
- User name and Access type are only displayed while SNMP version is set as “v3”.
- Authentication type and Authentication password are only displayed while SNMP version or Access type is set as “v3”, “AuthnoPriv”, or “AuthPriv”.
  Sets each Authentication type and Authentication password.
- Encryption type and Encryption password are only displayed while SNMP version or Access type is set as “v3” or “AuthPriv”.
  Sets each Encryption type and Encryption password.

Click **Confirm** after entering each item, and the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **SNMP Manager** window.
Click **Cancel** to go back to the **SNMP Manager** window without saving.

## SNMP > MIB

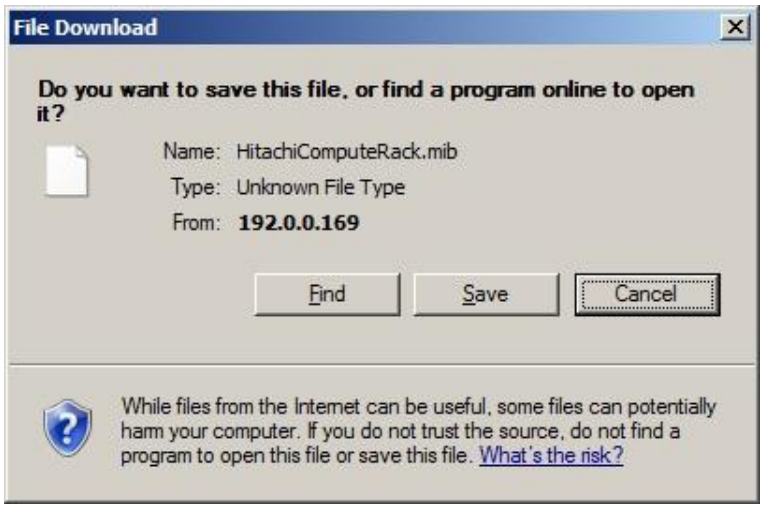
Download a Management Information Base (MIB) file.



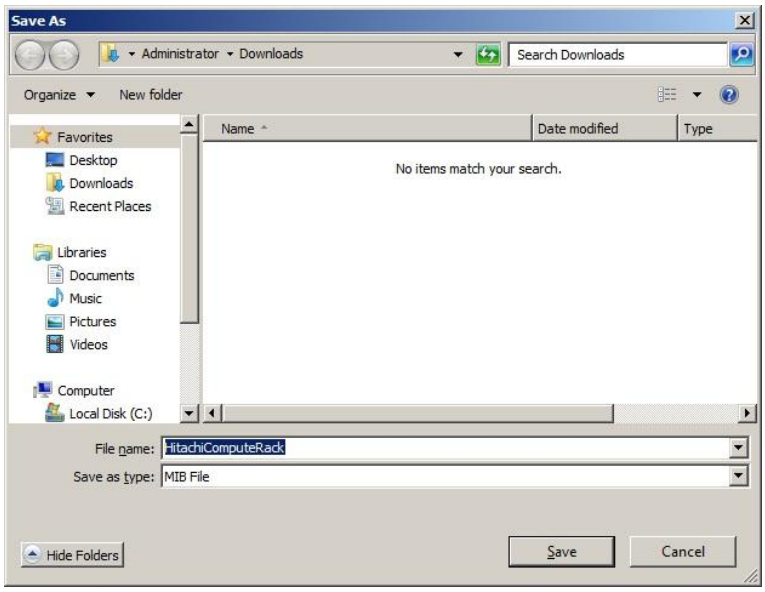

### Table 4-30: MIB menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Action select button | Sents SNMP Trap. (see Send SNMP Trap) |
| MIB version | Displays MIB file version. |
| Download MIB file button | Downloads MIB file. |

Click **Download MIB file**, and the following dialog box is displayed. Click **Save**.



The following dialog box is displayed, and click **Save** after selecting a destination.




MIB file is saved, and the download complete dialog box is displayed. Click **Close**.

## SC / BSM Servers > SVP Alert Destination

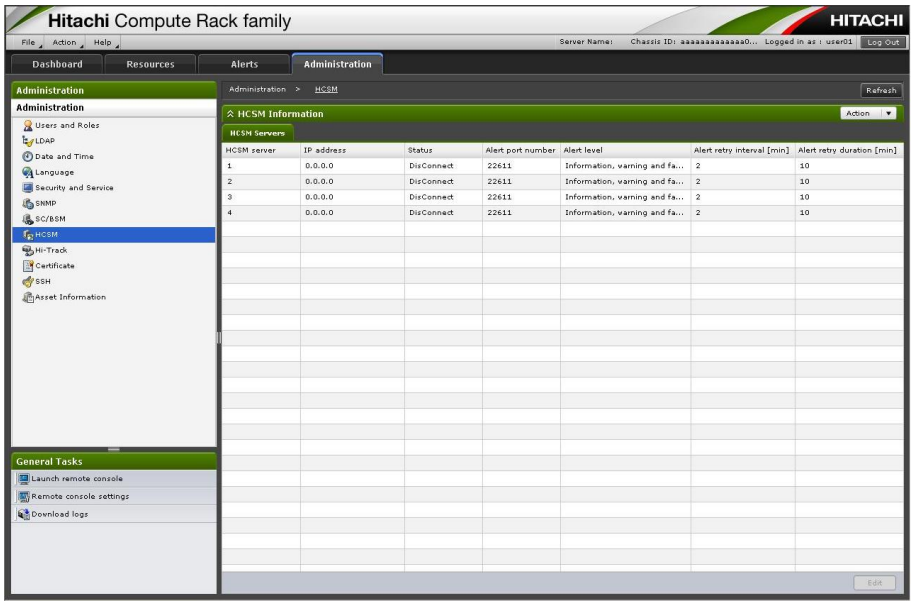
This menu is not supported.

## SC / BSM Servers > SVP Alert Notification

This menu is not supported.

## HCSM Information

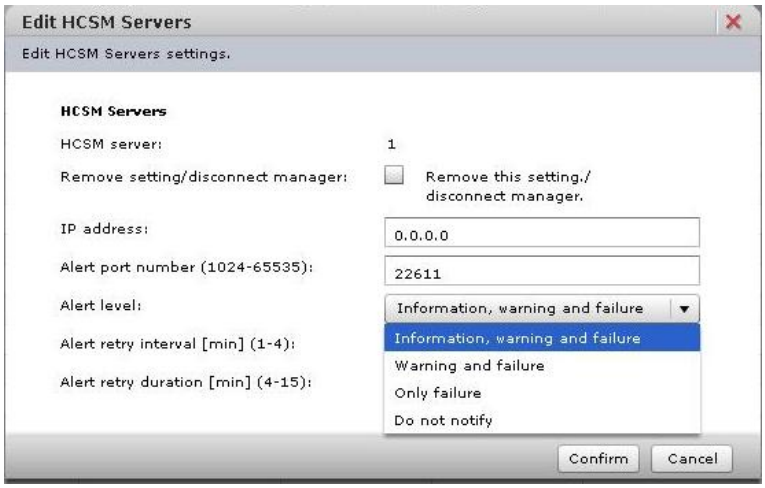
Set Hitachi Compute Systems Manager (HCSM).




### Table 4-31: HCSM Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Action select button | Sents HCSM test alert. (see Send HCSM Test Alert) |
| HCSM server | Displays a registration number of management server. |
| IP address | Displays IP address of management server. |
| Status | Displays a connection status to a management server. |
| Alert port number | Displays a port number used HCSM alert. |
| Alert level | Displays Alert level of HCSM alert.<br>● Do not notify: Alert is not notified.<br>● Only failure: Alert as failure level is notified.<br>● Warning and failure: Alert as warning and failure level is notified.<br>● Information, warning and failure: Alert as information, warning and failure level is notified. |
| Alert retry interval [min] | Displays Alert retry interval.<br>Setting possible range is 1 to 4 minutes. |
| Alert retry duration [min] | Displays Alert retry duration.<br>Setting possible range is 4 to 15 minutes. |
| Edit button | Sets HCSM. |

Select a management server (HCSM server), and click **Edit**. The **Edit HCSM Servers** dialog box is displayed.




Click **Confirm** after entering each item, and the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **HCSM Information** window.
Click **Cancel** to go back to the **HCSM Information** window without saving.

---

Note

When you forcibly disconnect to HCSM from Web console due to failure, set to check **Remove setting/disconnect manager** in the **Edit HCSM Servers** dialog box. However, all other settings are deleted in HCSM.

---

Tip

- Only when the Connection Status is “Unconnect”, you can change Management server Information each setting.
- Enter Alert port number same as destination settings. Default value of Alert port number is 22611.
- VMware vSphere ESXi regards system BIOS time as UTC time, but system BIOS manages internal time as local time. So the time of BIOS is changed to the time a difference of local time and the UTC slipped off (it is not local time) when you set time by vSphere Client after installing VMware vSphere ESXi. You can confirm the difference of time on BIOS setup screen. HCSM's Alert time and BMC Web console time also refer System BIOS time, so these times also have difference of time from VMware vSphere ESXi set time.

---

## Send HCSM Test Alert

You can send test alert to all registered management servers (HCSM).

Click the **Action** select button and select **Send HCSM Test Alert**, the following **Send HCSM Test Alert** dialog box is displayed.


Select **Alert level** as follows:

- Information: Send the alert as information level
- Warning: Send the alert as warning level
- Error: Send the alert as error level

Click **Confirm** after selecting the alert level, and the **Confirm** dialog box is displayed.

Click **OK** to send a test alert and go back to the **HCSM Information** window. Click **Cancel** to go back to the **HCSM Information** window without sending.

---

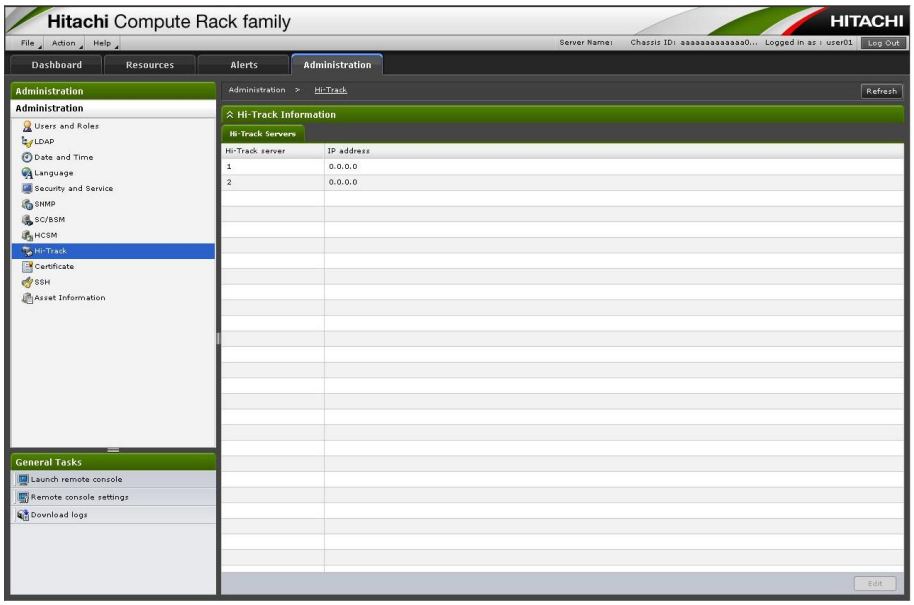
Tip

Test alert is sent to all registered SNMP managers.

---

## Hi-Track Information menu

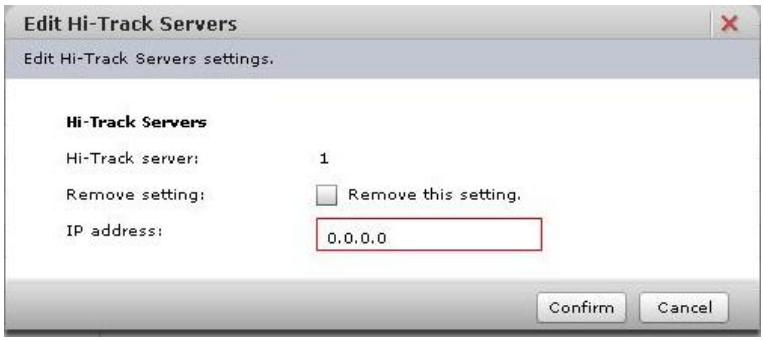
Set Hi-Track Information menu.




### Table 4-32: Hi-Track Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Hi-Track server | Displays a registration number of Hi-Track server. |
| IP address | Displays IP address of Hi-Track server. |
| Edit button | Sets Hi-Track. |

Select a Hi-Track server and click **Edit**, the **Edit Hi-Track Servers** dialog box is displayed..

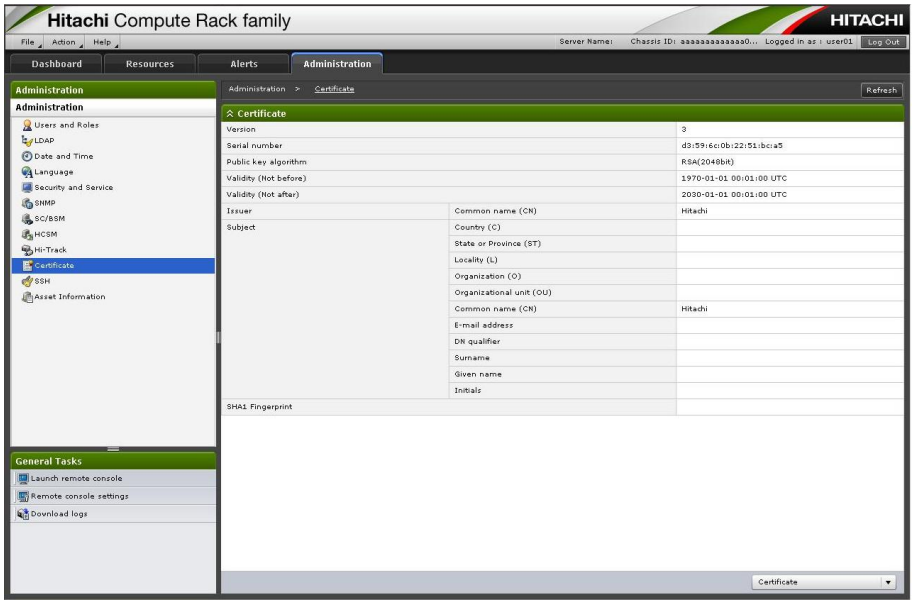



Click **Confirm** after entering each item, and the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **Hi-Track Information** window.
Click **Cancel** to go back to the **Hi-Track Information** window without saving.

## Certificate

Manage SSL server certificate. Display a registered server certificate, create self-signed certificate, create and down load CSR, and you can also import and download server certificate.



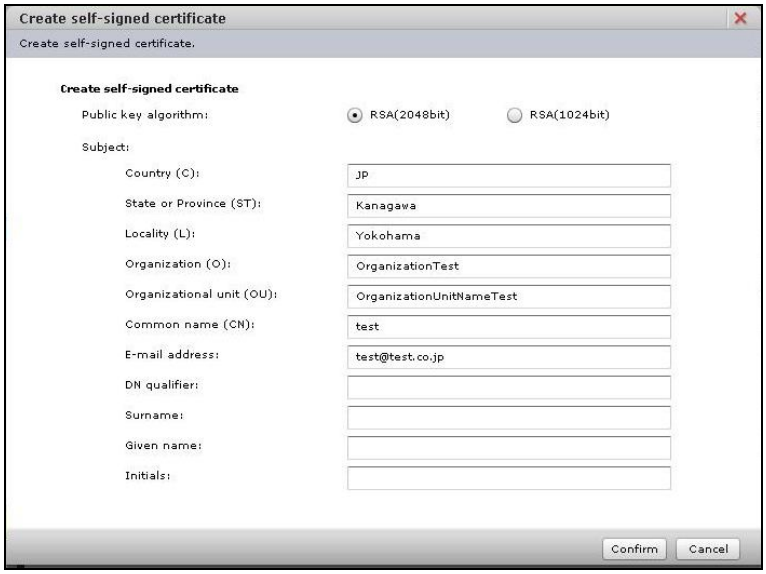

### Table 4-33: Certificate menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Version | Displays server certificate version. |
| Serial number | Displays serial number. |
| Public key algorithm | Displays information for Public key algorithm. |
| Validity (Not before) | Displays a start day of a valid term. |
| Validity (Not after) | Displays an end day of a valid term. |
| Issuer | Displays Common name (CN). |
| Subject | Displays information for Subject.<br>Country (C): Upper-case 2 alphabets.<br>State or Province (ST), Locality (L), Organization (O), Organizational unit (OU):<br>1 to 60 alphanumeric characters and symbols<br>Common Name (CN): 1 to 60 alphanumeric characters including a hyphen (-) and a period (.)<br>Email Address: ASCII character string of up to 60 characters<br>DN Qualifier, Surname, Given Name: 1 to 60 alphanumeric characters and symbols<br>Initials: 1 to 30 alphanumeric characters and symbols |
| SHA1 Fingerprint | Displays information for SHA1 Fingerprint. |

| Menu items | Description |
|---|---|
| Certificate button | Sets the following items from a menu.<br>Create self-signed certificate:<br>Enters required information to create self-signed certificate.<br>(see Create self-signed Certificate)<br>Create and download CSR:<br>Enters required information to create CSR, and download CSR.<br>(see Create and download CSR)<br>Import server certificate:<br>Specifies server certificate that is imported.<br>(see Import server certificate)<br>Download server certificate:<br>Downs load registered server certificate.<br>(see Download server certificate) |

## Create self-signed Certificate

Click **Certificate**, and select **Create self-signed Certificate**. The following **Create self-signed Certificate** dialog box is displayed.



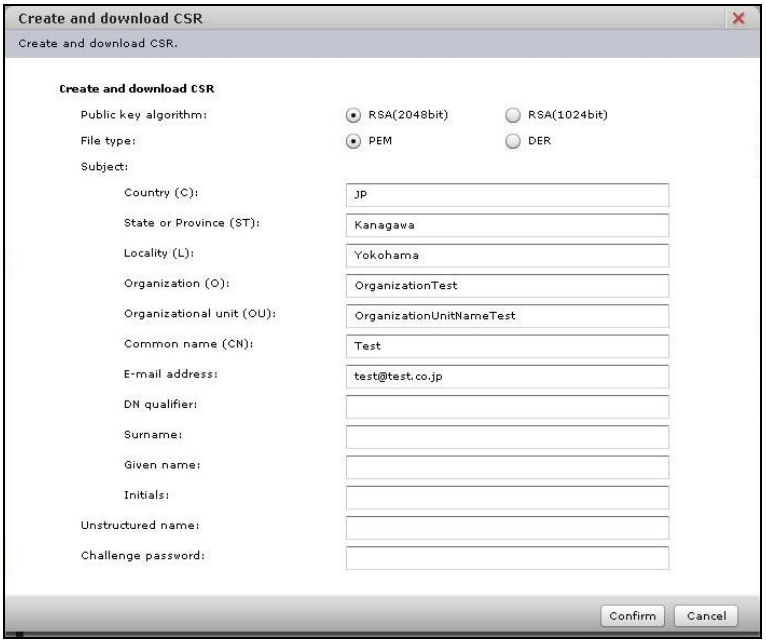

- Subject items are omissible except Common name (CN).
- The following symbols can be used for State or Province (ST), Locality (L), Organization (O), Organizational unit (OU), DN Qualifier, Surname, Given Name, Initials:
  Blank symbol, '(apostrophe), - (hyphen), , (comma), = (equal), / (slash), ()(parentheses), . (period), : (colon), + (plus), and ? (question)

Click **Confirm** after entering each item, the **Confirm** dialog box is displayed.

Click **Back** to go back to the **Create self-signed Certificate** dialog box.
Click **Cancel** to go back to the **Certificate** window without saving.

## Create and down load CSR

Click **Certificate**, and select **Create and down load CSR**. The following **Create and down load CSR** dialog box is displayed.

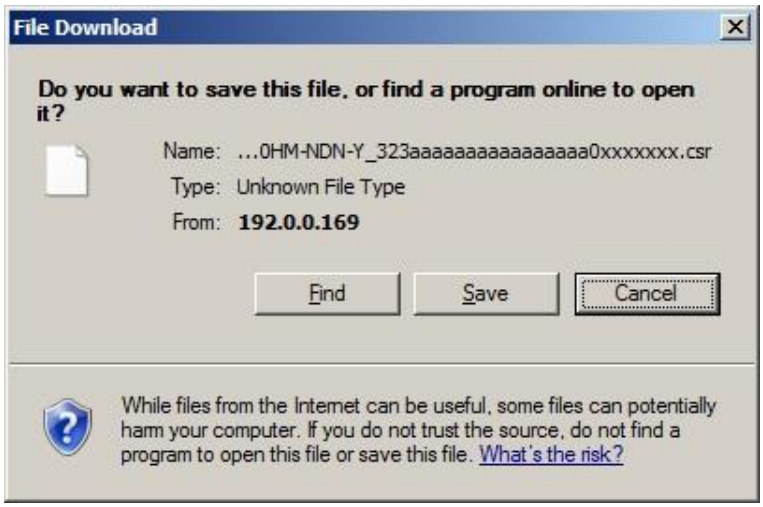



- File type: Select CSR file type that is downloaded, PEM or DER.
- Subject items are omissible except Common name (CN).
- The following symbols can be used for State or Province (ST), Locality (L), Organization (O), Organizational unit (OU), DN Qualifier, Surname, Given Name, Initials:
  Blank symbol, '(apostrophe), - (hyphen), , (comma), = (equal), / (slash), ()(parentheses), . (period), : (colon), + (plus), and ? (question)
- Unstructured name: 1 to 60 alphanumeric characters and symbols (omissible)
- Challenge password: 1 to 30 alphanumeric characters and symbols (omissible)

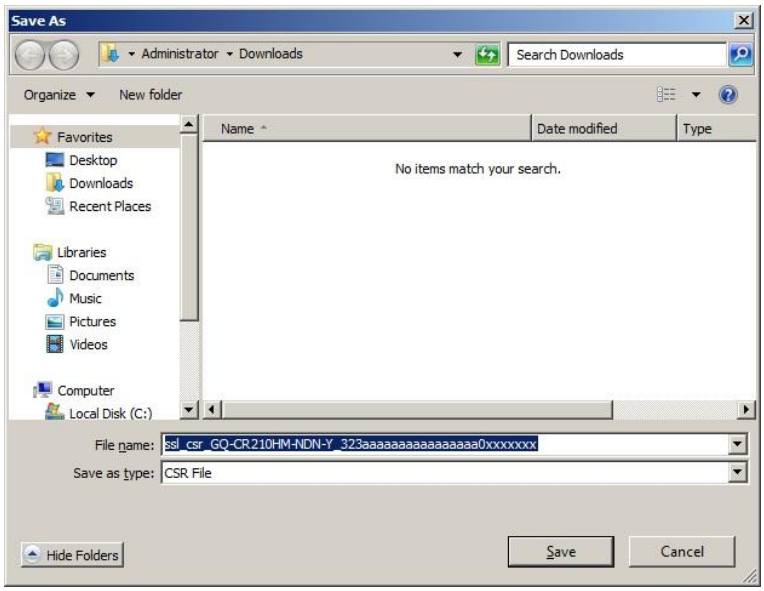
Click **Confirm** after entering each item, and the **Confirm** dialog box is displayed.

Click **Back** to go back to the **Create and down load CSR** dialog box.
Click **Cancel** to go back to the **Certificate** window without saving.

Click **OK**, and the following dialog box is displayed. Click **Save**.



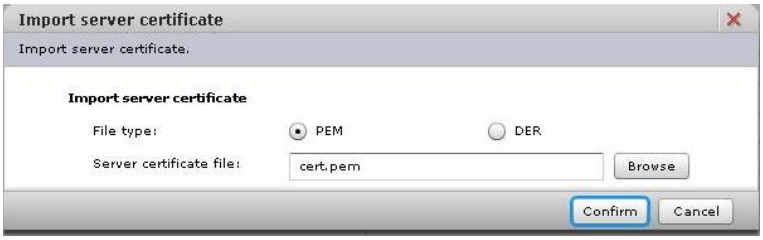

The following dialog box is displayed, and click **Save** after selecting a destination.




Certificate file is saved, and the download complete dialog box is displayed. Click **Close**.

## Import server certificate

Click **Certificate**, and select **Import server certificate**. The following **Import server certificate** dialog box is displayed.




- File type: Select certificate file type that is downloaded, PEM or DER.

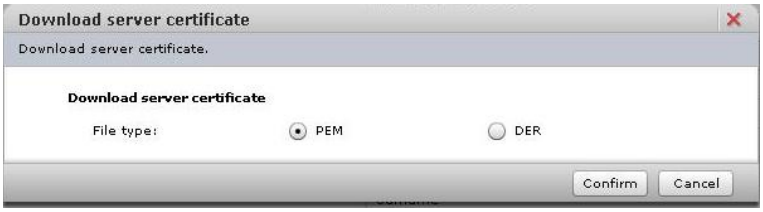
Click **Browse** to select an imported server certificate file.

Click **Confirm** after selecting a server certificate file and file type, the **Confirm** dialog box is displayed. Confirm the selected file, and then click **OK** to start importing.

Click **Back** to go back to the **Import server certificate** dialog box.
Click **Cancel** to go back to the **Certificate** window without importing.

## Download server certificate

Click **Certificate**, and select **Download server certificate**. The following **Download server certificate** dialog box is displayed.

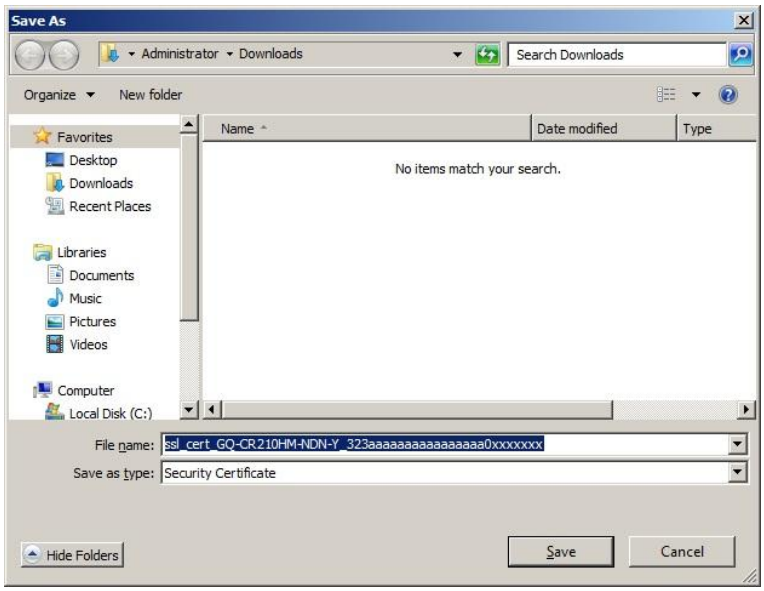



- File type: Select certificate file type that is downloaded, PEM or DER.

Click **Cancel** to go back to the **Certificate** window without downloading.

Click **Confirm** after selecting file type, and the following dialog box is displayed. Click **Save**.

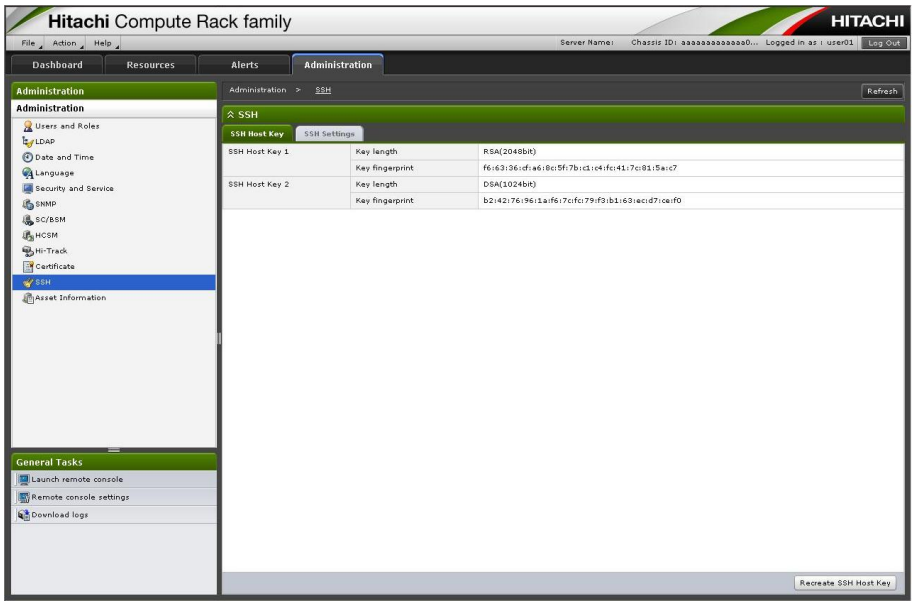

The following dialog box is displayed, and click **Save**.




Certificate file is saved, and the download complete dialog box is displayed. Click **Close**.

## SSH > SSH Host Key

Display and recreate SSH Host Key.




### Table 4-34: SSH Host Key menu items

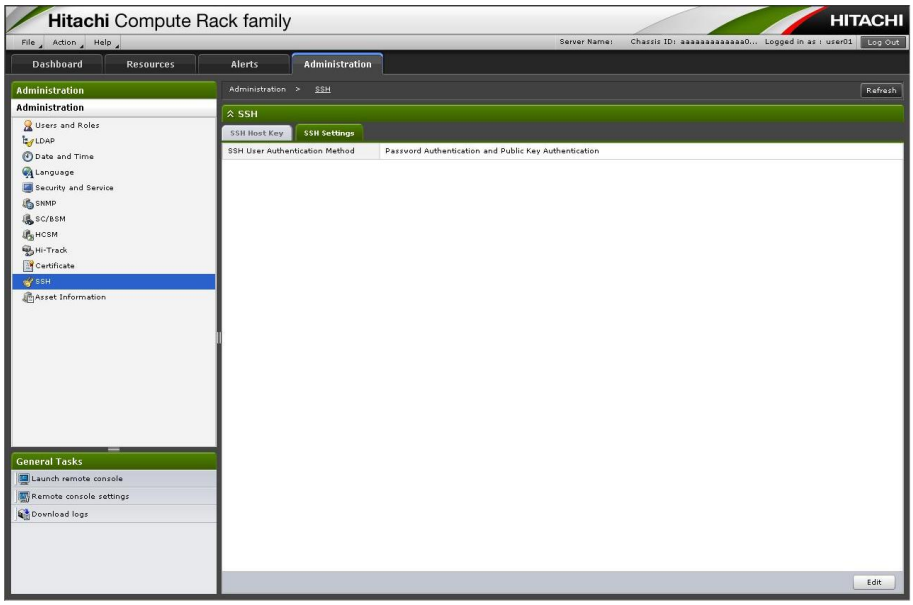
| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Key length | Displays host key length of SSH server. |
| Key fingerprint | Displays host key fingerprint of SSH server. |
| Recreate SSH Host Key button | Recreates host key of SSH server. |

Click the **Recreate SSH Host Key** button, and the **Confirm** dialog box is displayed.

Click **OK** to recreate a host key, and go back to the **SSH Host Key** window. Click **Cancel** to go back to the **SSH Host Key** window without recreating.

## SSH > SSH Settings

Set Authentication Method for SSH server.




### Table 4-35: SSH menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| SSH User Authentication Method | Displays SSH User Authentication Method. |
| Edit button | Edits SSH User Authentication Method. |

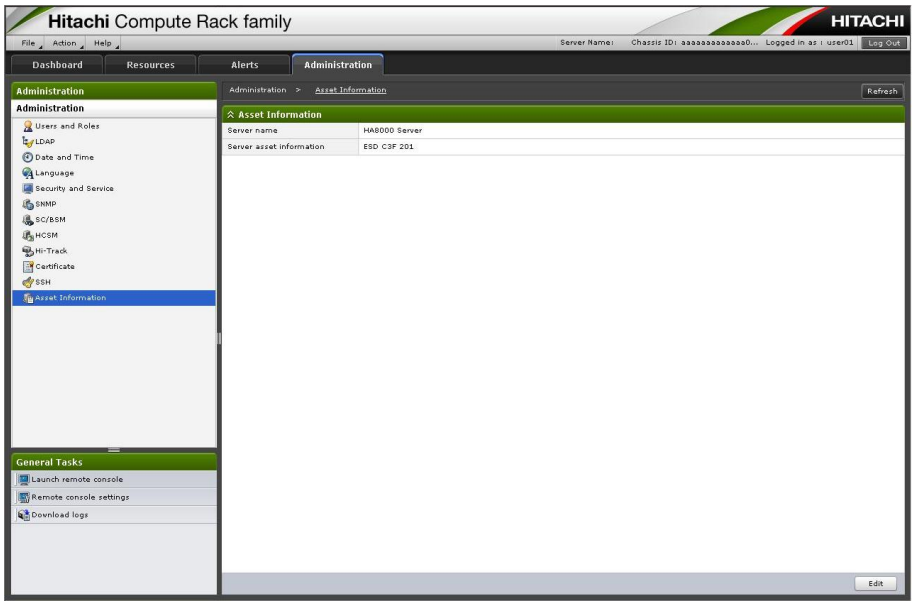
Click the **Edit** button, and the **Edit SSH Settings** dialog box is displayed.


Click **Confirm** after selecting **SSH User Authentication Method**, and the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **SSH Settings** window.
Click **Cancel** to go back to the **SSH Settings** window without saving.

## Asset Information

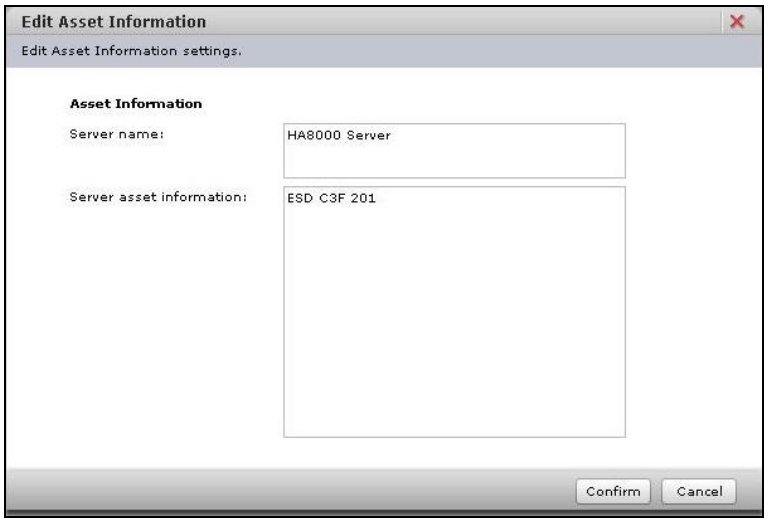
Set  Asset Information for a system unit.




### Table 4-36:  Asset Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Server name* | Displays Server name.<br>(1 to 63 alphanumeric characters and symbols)<br>This information identifies a system unit as a log-in destination in Web console. |
| Server asset information* | Displays Server asset information.<br>(1 to 63 alphanumeric characters and symbols)<br>This information can be checked such as locality and administrator. |
| Edit button | Edits Server asset information. |
| * We recommend that the number of input character of Server name is 20 alphanumeric characters and symbols, and the number of input character of Server asset information is 25 alphanumeric characters and symbols. The information (such as server name, user name, and last login time) may not be displayed normally in the title. | |

Click the **Edit** button, and the **Edit Asset Information** dialog box is displayed.




Click **Confirm** after entering each item, and the **Confirm** dialog box is displayed.

Click **Back** to go back to the setting window.
Click **OK** to save the change content, and go back to the **Asset Information** window.
Click **Cancel** to go back to the **Asset Information** window without saving.

# General Tasks

**General Tasks** is displayed on the left bottom pane of the **Resources** tab, the **Alerts** tab, and the **Administration** tab.

You can launch and set Web console, and download logs that BMC collected in **General Tasks**.

## Launch remote console

When Remote Console application is applied to a system unit, **Launch remote console** is displayed. Remote Console is launched from this menu.

For details, see the manual attached to the Remote Console application.

## Remote console settings

When Remote Console application is applied to a system unit, **Remote console settings** is displayed. Set the mouse mode for remote console operation.

For details, see Setting mouse mode of Remote Console.

## Download logs

Download logs that BMC collected.

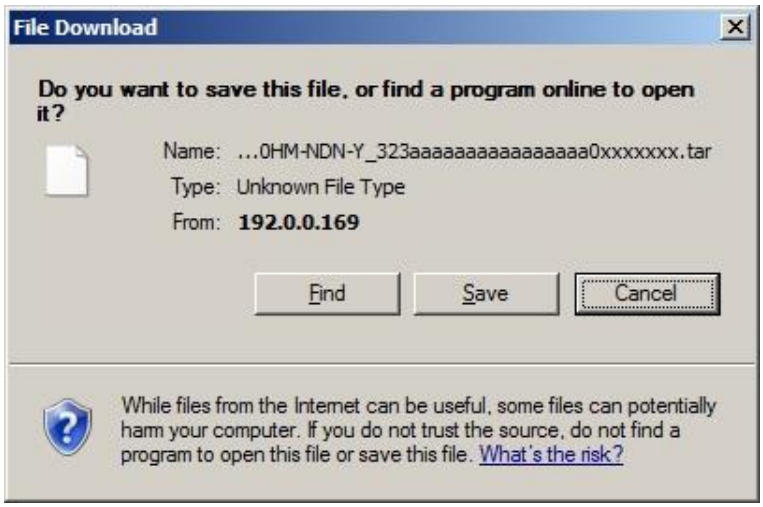
> Tip
>
> Logs are used for at the time of investigating hardware failure. It is not necessary to collect logs in normal operation.
>
> If failure occurs, we may request you to collect logs using Web console for a cause investigation.

In other ways, you can download logs from the following menus.

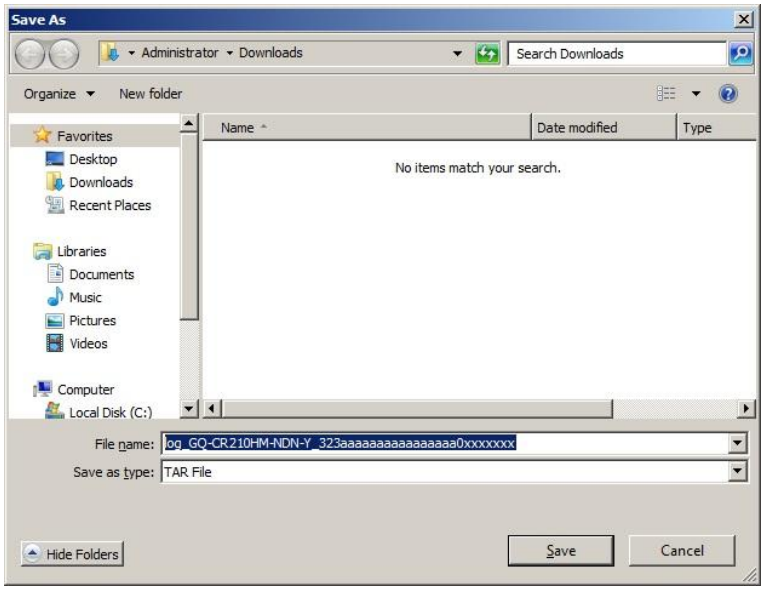
- **Dashboard** tab > **System Event Logs** > **Download logs** button
- **Operation** of menu > **Download logs**

Click **Download logs**, and the **Confirm** dialog box is displayed.

Click **Download**, and the following dialog box is displayed. Click **Save**.



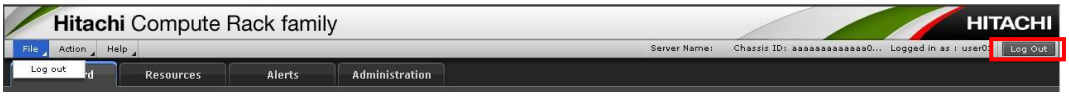

The following window is displayed, and selects the saved folder. Click **Save**.




The logs are saved, and the download complete window is displayed. Click **Close**.

# Exiting Web console

By pressing **Log Out** on the right of the window or pressing **File** from menu > **Logout**, you can log out of the Web console.




> **Tip** If you close the Web browser without logging out, the user login state will continue until the automatic logout is performed in 30 minutes. Therefore, if you repeat this action of closing the Web browser without logging out, you cannot log in to the Web console again until a lapse of 30 minutes. Before closing the Web browser, be sure to press **Logout** and log out of the Web console.

5

# How to use the Web console (BMC version: 09-79 or lower)

This chapter describes how to use the Web console in BMC version 09-79 or lower, and its initial setting and functionality.

# Configuration of Web console menu

This section describes the Web console menu items. See the following chart.

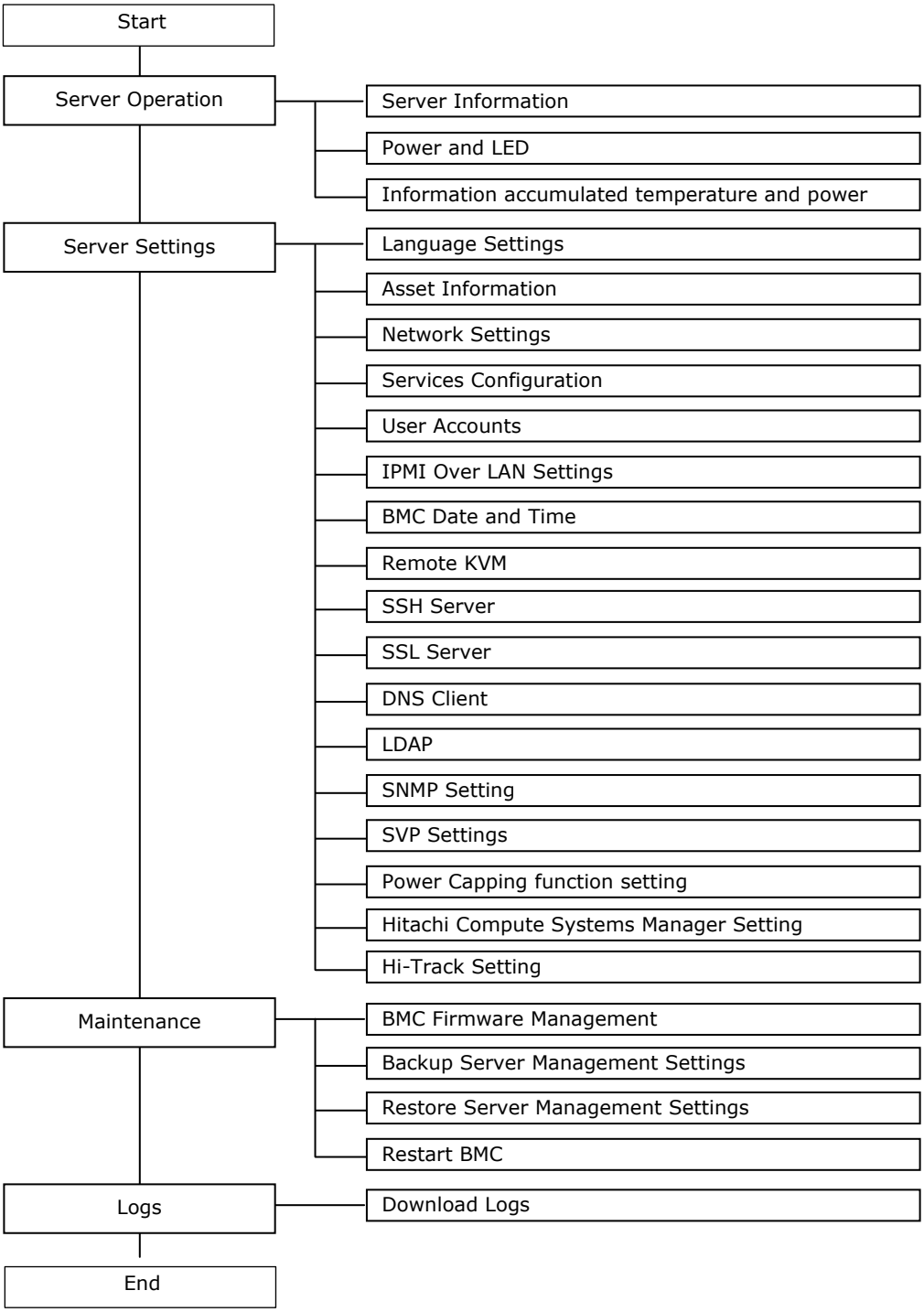



**Figure 5-1: Web console menu (BMC version: 09-79 or lower)**

# Function of Web console

This section describes the functions that you can set from the Web console.

## Functions

The Web console provides the following functions:

**Table 5-1: List of functions**

| No. | Menu | Function |
|---|---|---|
| Server Operation | | |
| 1 | Server Information | Displays the information of the system unit. |
| 2 | Power and LED | Displays the power, reset operation, and LED status. |
| 3 | Information accumulated temperature and power | Displays information about the temperature and the accumulation of power. |
| Server Settings | | |
| 4 | Language Settings | Sets a language that you use on the Web console. |
| 5 | Asset Information | Sets asset information. |
| 6 | Network Settings | Displays network settings and sets connection restrictions. |
| 7 | Services Configuration | Enables or disables a service provided by the system unit and sets a port number. |
| 8 | User Accounts | Displays and sets a user account. |
| 9 | IPMI Over LAN Settings | Sets IPMI Over LAN. |
| 10 | BMC Date and Time | Displays and sets BMC time and time zone. |
| 11 | Remote KVM | Sets mouse mode of remote console. |
| 12 | SSH Server | Sets an SSH authentication method and displays a host key. |
| 13 | SSL Server | Manages an SSL server certificate. |
| 14 | DNS Client | Sets a DNS server. |
| 15 | LDAP | Sets user authentication by LDAP. |
| 16 | SNMP Setting | Sets a SNMP server. |
| 17 | SVP Settings | Displays and sets a destination where a SVP alert is reported. |
| 18 | Power Capping function setting | Sets a mode for power saving function. |
| 19 | Hitachi Compute Systems Manager Setting | Sets a Hitachi Compute Systems Manager (HCSM) server. |
| 20 | Hi-Track Setting | Sets a Hi-Track server. |

| No. | Menu | Function |
|---|---|---|
| Maintenance | | |
| 21 | BMC Firmware Management | Displays and update BMC firmware information. |
| 22 | Backup Server Management Settings | Backs up the settings of system unit. |
| 23 | Restore Server Management Settings | Restores the settings of system unit. |
| 24 | Restart BMC* | Restarts BMC. |
| Logs | | |
| 25 | Download Logs | Collects and downloads a system unit log. |
| * This function is available only for "ceconsl" users (users for maintenance work). | | |

## Requiring Role

The Web console is restricted on operation according to the roles assigned to each use. The operations that can be performed on a role basis are as follows:

**Table 5-2: Requiring role to operation**

| No. | Menu | Operation allowed by role | | | | | |
|---|---|---|---|---|---|---|---|
| | | Administrator | Server Operation | User Account Management | Service Settings | IPMI Over LAN | CE |
| Server Operation | | | | | | | |
| 1 | Server Information | All | All | Information display only | Information display only | Information display only | All |
| 2 | Power and LED | | | | | | |
| 3 | Information accumulated temperature and power | | | | | | |
| Server Settings | | | | | | | |
| 4 | Language Settings | All | Information display only | Information display only | All | Information display only | All |
| 5 | Asset Information | | | | | | None |
| 6 | Network Settings | | | | | | All |
| 7 | Services Configuration | | | | | | |
| 8 | User Accounts | | Only own account setting | Display and setting of general users | Only own account setting | | None |
| 9 | IPMI Over LAN Settings | None | None | None | None | All | |
| 10 | BMC Date and Time | All | Information display only | Information display only | All | Information display only | All |
| 11 | Remote KVM | | | | | | |
| 12 | SSH Server | | | | | | None |
| 13 | SSL Server | | | | | | |

| No. | Menu | Operation allowed by role | | | | | |
|---|---|---|---|---|---|---|---|
| | | Administrator | Server Operation | User Account Management | Service Settings | IPMI Over LAN | CE |
| 14 | DNS Client | All | Information display only | Information display only | All | Information display only | All |
| 15 | LDAP | | None | None | None | None | None |
| 16 | SNMP Setting | | Information display only | Information display only | All | Information display only | |
| 17 | SVP Settings | | All | All | | | All |
| 18 | Power Capping function setting | | Information display only | Information display only | | | None |
| 19 | Hitachi Compute Systems Manager Setting | | | | | | |
| 20 | Hi-Track Setting | | | | | | |
| Maintenance | | | | | | | |
| 21 | BMC Firmware Management | All | Information display only | Information display only | Information display only | Information display only | All |
| 22 | Backup Server Management Settings | | None | None | None | None | |
| 23 | Restore Server Management Settings | | | | | | |
| 24 | Restart BMC | None | | | | | |
| Maintenance | | | | | | | |
| 25 | Download Logs | All | All | None | None | None | All |

Tip

**Remote Console** and **Remote Media** roles do not affect on the Web console operation. Those roles are used to enabling the each function.

# Starting Web console

This section describes how to log in the Web console.

1. Power on the system unit.
2. Start the consol terminal's Web browser.
3. Enter the following URL into the address bar:

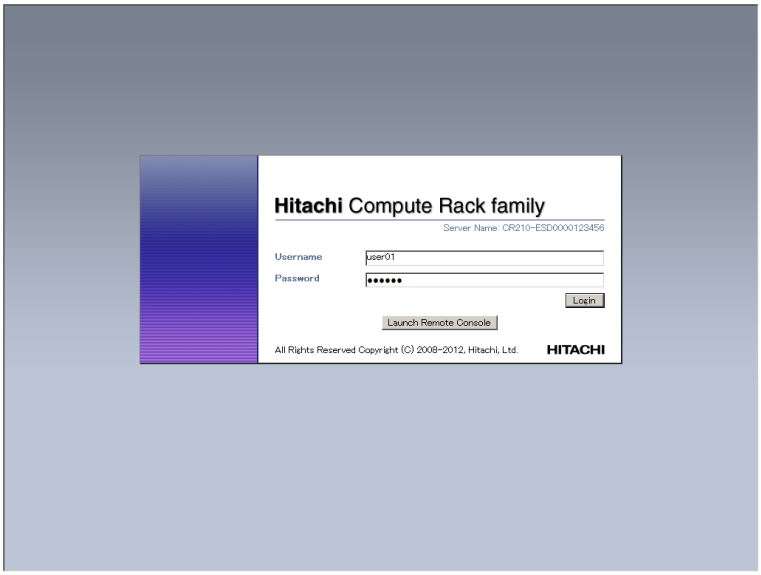
   When the HTTP (Hypertext Transfer Protocol) is used for connection, enter the following into the address bar:

   ```
   http://<IP address of management interface>
   ```

   When the HTTPS (Hypertext Transfer Protocol over Secure Socket Layer) is used for connection, enter the following into the address bar:

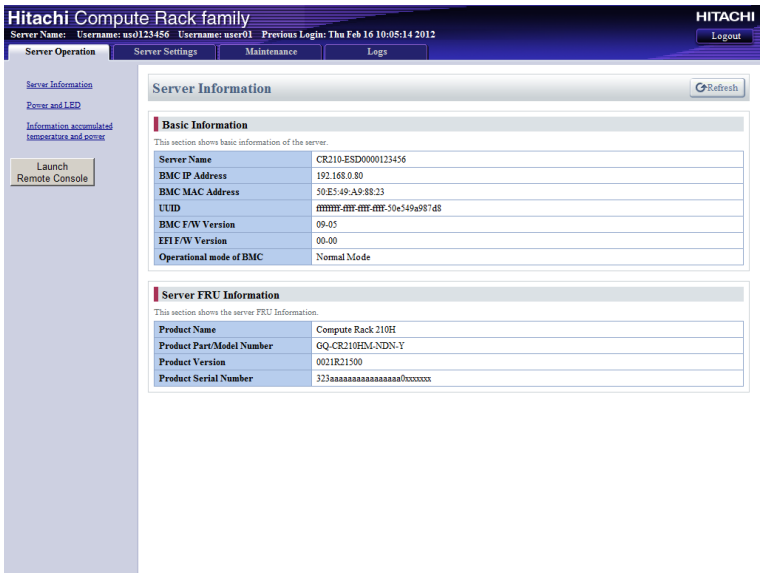
   ```
   https://<IP address of management interface>
   ```

   When succeed in the connection, the login window opens.
4. Enter a user name and a password in the login window.



5. Enter a **user name** and a **password** in the login window.

   When your user authentication is successful and you log in to the Web console, the **server information** is displayed.

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- With the factory defaults for the system unit, you can login as an administrator by entering `user01` and `pass01` in response to the **user name** and **password** in the login window.
  If you have been changing an above user account setting, you can not log in the Web console. Enter the user name and password that have been already set to log in.
- For your security, we strongly recommend that you set a user account different from the factory default.
  For details, see Setting a user account.
- The **Launch Remote Console** button is displayed on the console screen when the Remote Console application is applied.
  When you click **Launch Remote Console**, the Remote Console application is started and the user name and password entry window for the Remote Console is displayed.
  For details on how to use the Remote Console application, see *Remote Console Application User's Guide*.
- Up to two users can log in to the Web console simultaneously. If two users have already logged in, **Could not login on the Web console since it reached max sessions.** is displayed, and you cannot log in.
- If no operation is done for 30 minutes or longer when you has logged in to the Web console, an automatic logout will be performed.

---

# Initializing Web console

This section describes the initial setting of the Web console. You should initially set the following data:

- Setting user account
- Setting mouse mode of Remote Console
- Setting BMC date and time
- Setting BMC network

## Setting user account

The setting of a user account is required for remote operation of the system unit. Each of the registered users can be given a user name, a password, and the authority for the Web console operation as well as can enable or disable own account.
For your security, we strongly recommend that you set a user account different from the factory default.

You can set above information in the **Configure User Accounts** window. Click **Server Setting** from the top tab, and then click **User Accounts** in the left pane.

---

Tip

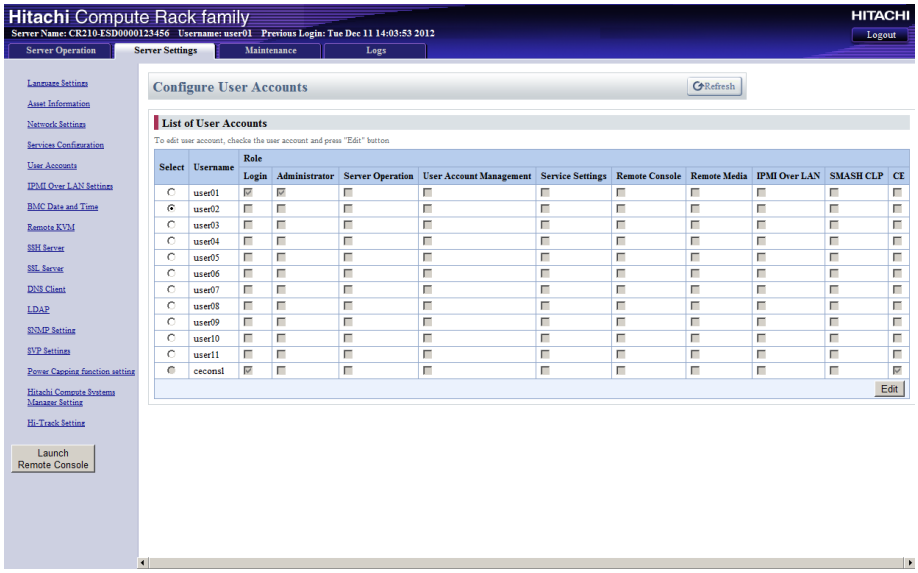
If you forget your user name and password to log in to the Web console, start the system BIOS setup menu and then set and save ServerMgmt > Reset BMC Web Connection to **Yes, On next reset**. BMC network setting is initialized.

When BMC is restarted, the SERVICE LED on the system unit blinks about 30 to 60 seconds. Log in to the Web console with the factory default user name and password after restarting BMC, and then set BMC network again.

---

## Configure User Accounts menu

Click **Server Setting** from the top tab, and then click **User Accounts** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-3: Configure User Accounts menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes user account information. |
| Select | Radio button for selecting a user account. |
| Username | User account name |
| Role | |
| Login | Displays the roles given to user account. |
| Administrator | |
| Server Operation | |
| User Account Management | |
| Service Settings | |
| Remote Console | |
| Remote Media | |
| IPMI Over LAN | |
| SMASH CLP | |
| CE | |
| Edit | Go to the **Configure User Accounts** window. However, this is valid only when the Radio button is checked. |

## Roles

Giving roles to a user account allows the setting of actions that the user can do. Each has the following meaning:

### Table 5-4: Role allowing operation and function

| Role name | Description |
|---|---|
| Login | A role for logging in to the service provided by the Web console. Any user without this role is considered invalid and cannot log in to a service. |
| Administrator | A role representing the user authority for an administrator. Any user with this role can perform all the functions of Web console except setting IPMI Over LAN and BMC restart. |
| Server Operation | A role for controlling the power to the system unit and making a reset operation. |
| User Account Management | A role for setting a user account. |
| Service Settings | A role for setting a service provided by the system unit. |
| Remote Console* | A role for the Remote Console function to display the system unit screen on a console terminal, and remotely manipulating both keyboard and mouse. |
| Remote Media* | A role for using the remote floppy disk function and remote CD/DVD function. |
| IPMI Over LAN | A role for setting a user account and an authentication type for IPMI Over LAN. |
| SMASH CLP | A role for setting user account for SMASH. |
| CE | A role representing the user authority for maintenance work, which can be given to **ceconsl** user only. |
| * The setting becomes valid when the Remote Console application is applied. | |

## Initial setting of a user account

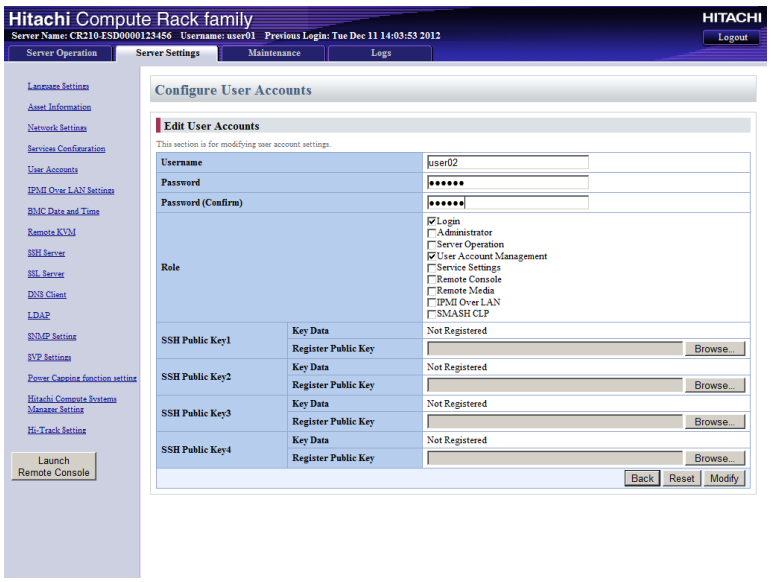
The initial setting of a user account is as follows:

### Table 5-5: Initial settings of user account

| Username | Password | Role | Description |
|---|---|---|---|
| user01 | pass01 | Login<br>Administrator | A user for system unit administration. This role is unchangeable. |
| user02 | pass02 | None | General users |
| user03 | pass03 | | |
| user04 | pass04 | | |
| user05 | pass05 | | |
| user06 | pass06 | | |
| user07 | pass07 | | |
| user08 | pass08 | | |
| user09 | pass09 | | |
| user10 | pass10 | | |
| user11 | pass11 | | |
| ceconsl | Set at shipment | Login<br>CE | A user for maintenance work. Maintenance personnel use this role during maintenance work. This setting is unchangeable. |

## Configure User Accounts > Edit User Accounts

To change a user account, check the radio button of a user account that you want to change in the **Configure User Accounts** window, and click **Edit**.
The following window for setting the selected user account is displayed.



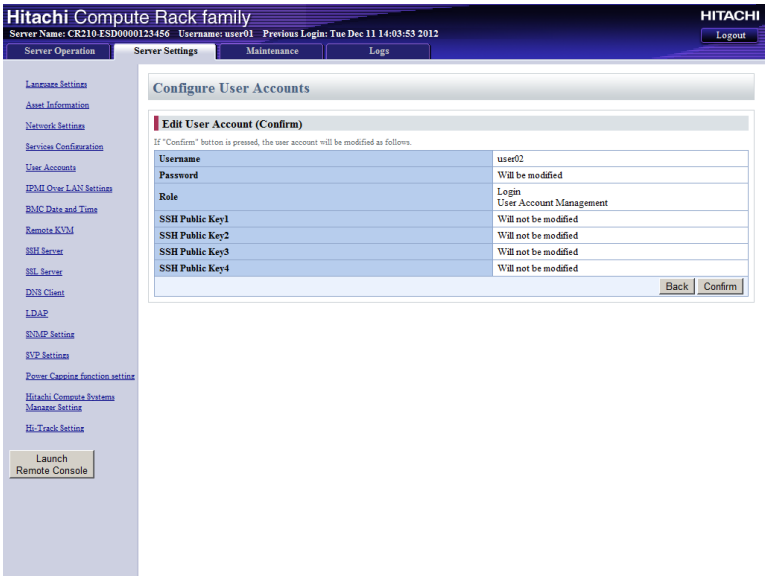
The following table shows description of menu items in the window.

### Table 5-6: Configure User Accounts > Edit User Accounts menu items

| Menu items | | Description |
|---|---|---|
| Username | | User account name (up to 32 characters) |
| Password | | Entry of a password (up to 32 characters) |
| Password (Confirm) | | Re-entry of a password |
| Role | | |
| | Login | A checked role is given to a user account. |
| | Administrator | |
| | Server Operation | |
| | User Account Management | |
| | Service Settings | |
| | Remote Console | |
| | Remote Media | |
| | IPMI Over LAN | |
| | SMASH CLP | |
| SSH Public Key1, SSH Public Key2, SSH Public Key3, SSH Public Key4 | | |
| | Key Data | Display information of a public key data.<br>If a public key data is not registered, display **Not Registered**. |
| | Key Type | |
| | Fingerprint | |
| | Options | |
| | Comment | |
| | Update Public Key | Update a specified public key data. |
| | Delete Public Key | Delete a public key data. |
| | Register Public Key | Register a specified public key. |
| Back button | | Disables what you edited, and returns to the **Configure User Accounts** window. |
| Reset button | | Disables what you edited, and returns to the status before editing. |
| Modify button | | Enables what you edited, and goes to the confirming window. |

- **Username** is a mandatory input item.
- When you set a password, enter the same value for both **password** and **password (Confirm)**.
- When you edit a user account, a password is not a mandatory item. When you do not enter a password, the BMC decides that the password remains unchanged.
- You can register a SSH public key file made with OpenSSH.
- A maximum size of a SSH public key file which you can register is 2 KB.
- The **user01**, which the administrator user's role is unchangeable.
- Only the user with Administrator role can change a role.
- The **ceconsl** is a user for maintenance personnel. Maintenance personnel use this role when a maintenance service is offered. This setting is unchangeable.

Changes the settings of a user account.
And then click **Modify**. The following Confirm window is displayed.



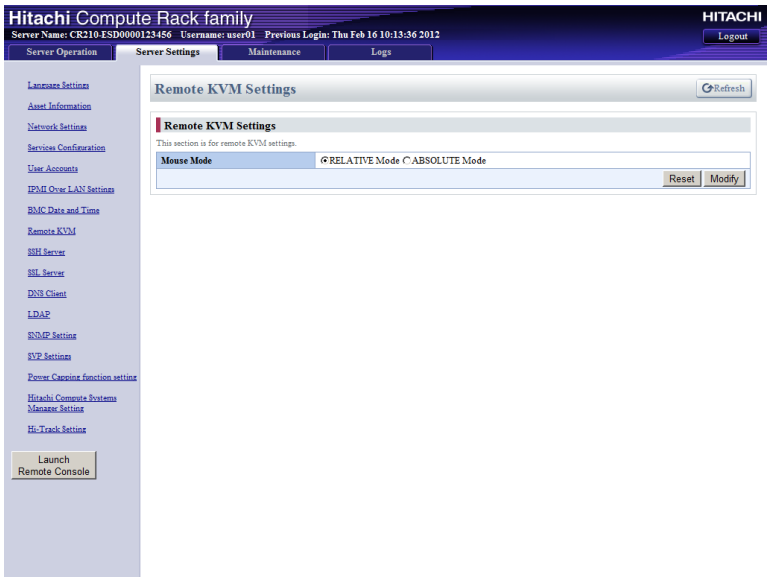

Click **Confirm** to save the change settings of a user account.

If you want to return to the status before editing, click **Back**.

## Setting mouse mode of Remote Console

When the Remote Console application is applied to the system unit, set the mouse mode for remote console operation. Otherwise, no setting is required.

Click **Server Setting** from the top tab, and then click **Remote KVM** in the left pane. The following window is displayed.

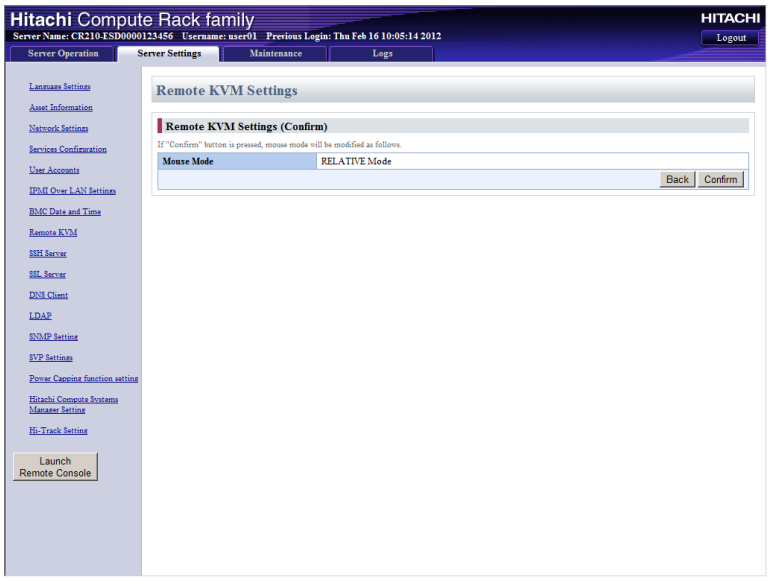



The following table shows description of menu items in the window.

### Table 5-7: Remote KVM Settings menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Mouse Mode | RELATIVE Mode:<br>A mode for manipulating the mouse of remote console using the mouse cursor on the system unit screen. For use of a non-Windows OS.<br>ABSOLUTE Mode:<br>A mode for manipulating the mouse of remote console using the mouse cursor of a console terminal. Use this mode when the OS of the system unit is Windows. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

Set mouse mode in accordance with the OS that you install.
And then click **Modify**. The following Confirm window is displayed.




Click **Confirm** to save the change settings of mouse mode.

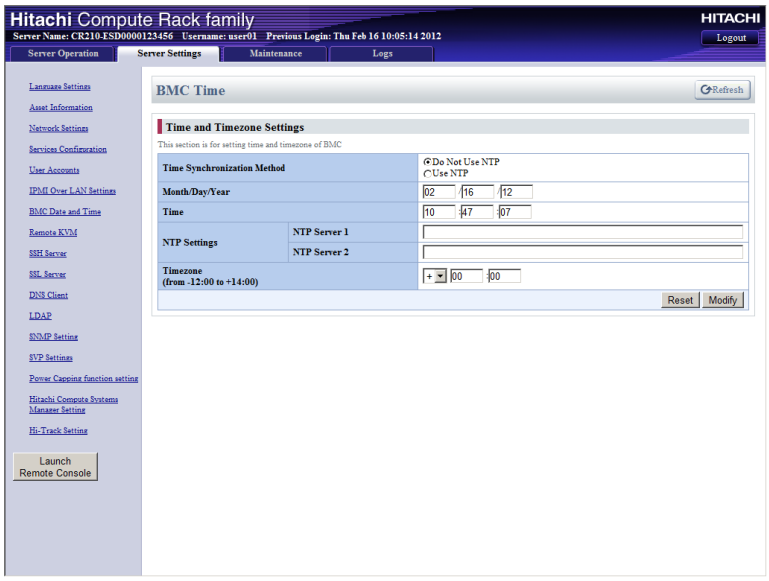
| | |
|---|---|
| Note | When changing the mouse mode, terminate the remote console first. An attempt to change the mouse mode while the remote console is active, the mouse cursor may not work normally. |
| Tip | • If you want to return to the status before editing, click **Back**.<br>• For details on how to use the Remote Console application, see *Remote Console Application User's Guide*. |

## Setting BMC date and time

The setting of BMC date and time is required for time stamp of an error log.

Before operating the system unit, set the date and time of both Web console and system BIOS. For the setting of the system BIOS, see *Hitachi Compute Rack 220S BIOS Guide*.

Click **Server Setting** from the top tab, and then click **BMC Date and Time** in the left pane. The following window is displayed.

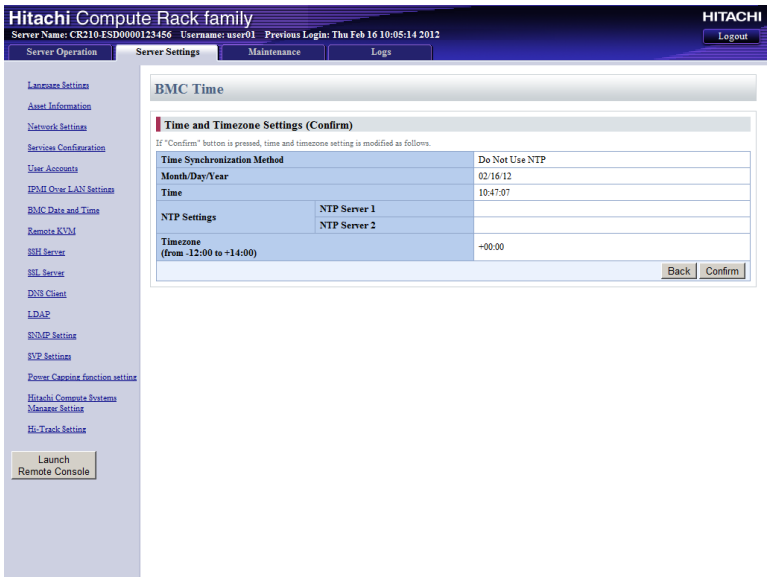



The following table shows description of menu items in the window.

## Table 5-8: BMC Time menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Time Synchronization Method | • **Do Not Use NTP**:<br>BMC reads and synchronizes the system clock of the system unit periodically.<br>• **Use NTP**:<br>BMC time is synchronized with the time distributed by an external NTP server. Set an NTP server address according to **NTP Settings**. |
| Month/Day/Year<br>Time | Enter a date and local time. |
| NTP Settings | When setting **Time Synchronization Method** to **Use NTP**, enter the IP address of NTP server. |
| Timezone<br>(from -12:00 to +14:00) | Set the time zone of the local area where the system unit is installed, according to its OS. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

Set BMC date and time, and then click **Modify**. The following Confirm window is displayed.



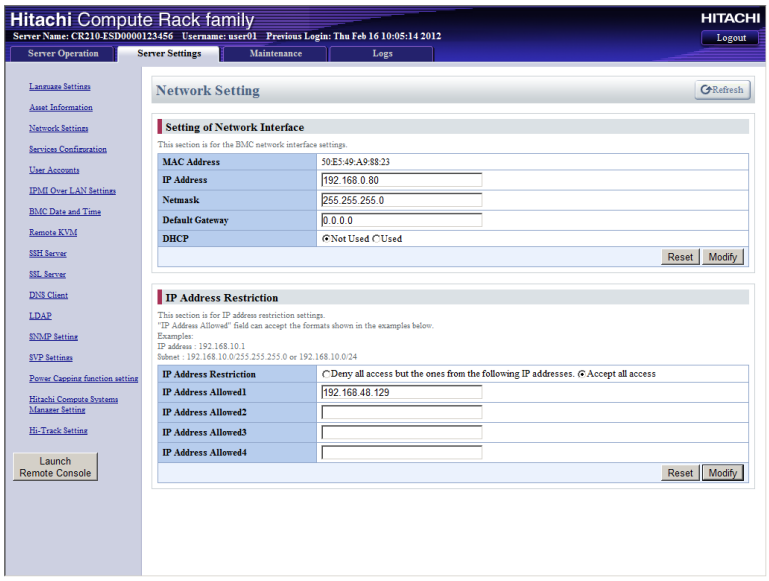

Click **Confirm** to save the change settings of BMC date and time.

## Setting BMC network

You can change the BMC network setting of the system unit from the factory defaults in accordance with your system environment.
When the BMC network setting is changed, the network is shut off and restarts. After that, you can connect to the BMC network only in the environment changed in setting. Confirm that the settings are correct when changing the BMC network setting.

You can make setting to restrict the IP address of network device allowed connecting to the system unit. Up to four IP addresses of the network devices that permits connection to the system unit.

Click **Server Setting** from the top tab, and then click **Network Settings** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-9: Network Setting menu items

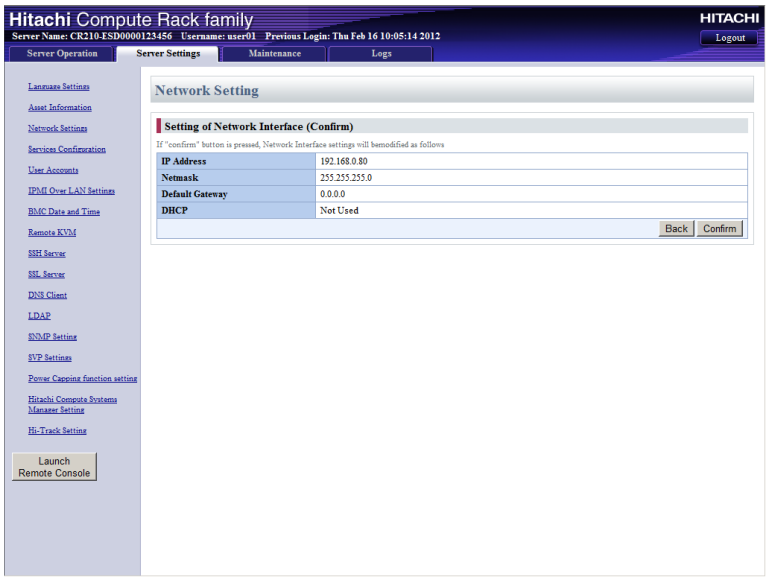
| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| MAC Address<br>IP Address<br>Netmask<br>Default Gateway | Sets the BMC network.<br>For the factory defaults of BMC network settings which are IP address, subnet mask, and default gateway, see Concidering BMC network setting.<br>For the DNS setting, see DNS Client Settings menu. |
| DHCP | Enables or disables the DHCP*. |
| IP Address Restriction | Enables or disables the connection IP address restriction function. |
| IP Address Allowed1<br>IP Address Allowed2<br>IP Address Allowed3<br>IP Address Allowed4 | Enter an IP address to permit connection to the system unit. You can set a single IP address or subnet.<br>(Example)<br>Single IP address: 192.168.10.1<br>Subnet: 192.168.10.0/255.255.255.0 or 192.168.10.0/24 |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |
| * When you set **DHCP** to **Used**, settings of **IP Address**, **Netmask**, and **Default Gateway** are disabled. | |

Tip

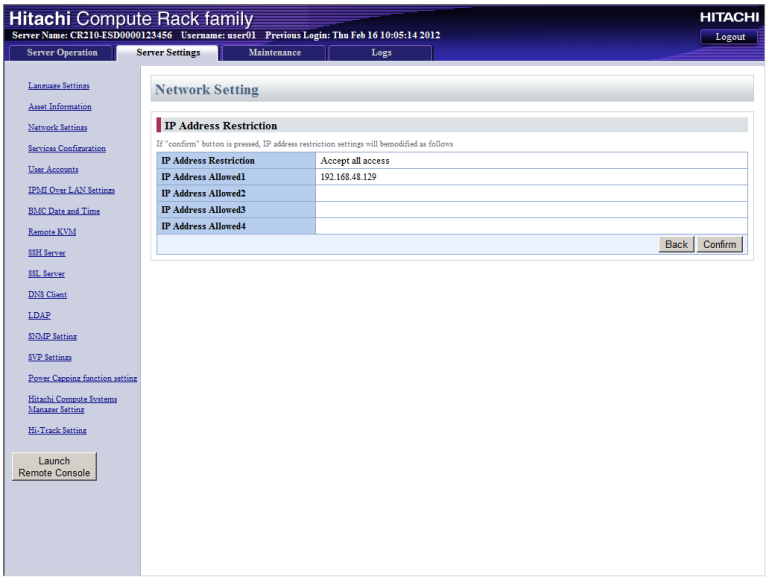
When you set **DHCP** to **Used**, an IP address of the BMC network may be changed depending on the DHCP server.
We recommend you use a DHCP only as temporary use to initialization of an IP address.

Set BMC network items and restriction IP address. And then click Modify. The following Confirm window is displayed.

- When changing **Setting of Network Interface** items:



- When changing **IP Address Restriction** items:




Click **Confirm** to save the change settings of BMC network.

When you change **Setting of Network Interface** items, the BMC terminates the Web console, and shuts off the network to change the network settings.

After that, enter the changed IP address to the Web browser, and then log in to the Web console.

# Web console menu items

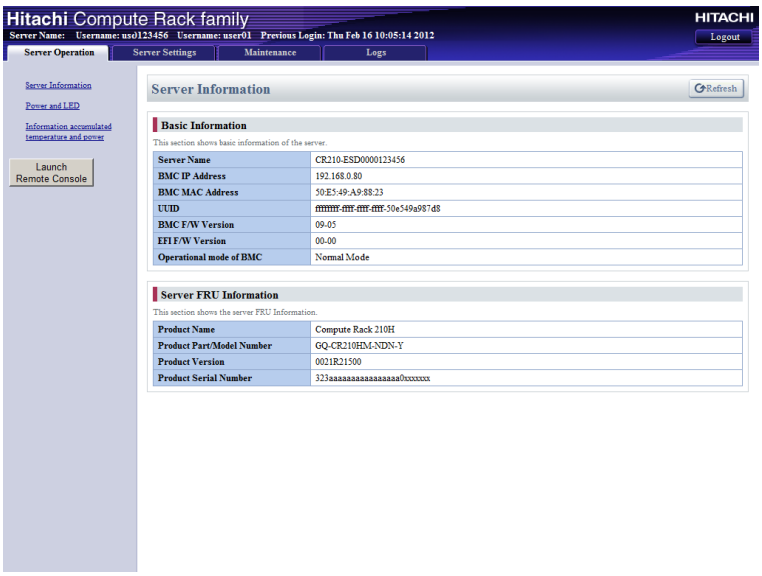
This section describes the Web console menus and setting items.

## Server Operation tab

**Server Operation** tab enables you to refer to the system unit identification information and set remote power operations.

### Server Information menu

Click **Server Operation** from the top tab, and then click **Server Information** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-10: Server Information menu items

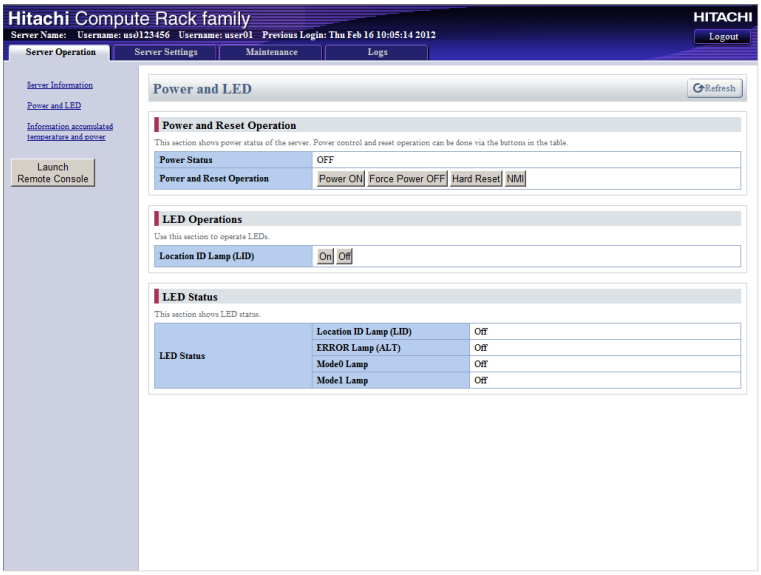
| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Server Name | Displays a server name set in Asset Information menu |
| BMC IP Address | Displays a BMC's IP address for system unit.<br>For BMC's IP address factory defaults, see Concidering BMC network setting.<br>For the change of BMC's IP address, see Setting BMC network. |
| BMC MAC Address | Displays a BMC's MAC address. |
| UUID | Displays a UUID. |
| BMC F/W Version | Displays a BMC's firmware version. |
| EFI F/W Version | Displays an EFI's firmware version. |
| Operational mode of BMC | Displays BMC's operating mode. |
| Product Name* | Displays the product name of system unit. |
| Product Part/Module Number* | Displays the model information of system unit. |
| Product Version* | Displays the hardware version of system unit. |
| Product Serial Number* | Displays the product serial number of system unit. |
| * Those items are displayed about Field-Replaceable Unit information (FRU).<br>When the information has not been set, "N/A" is displayed. | |

Tip

Types of BMC's operating modes are Normal Mode and Maintenance Mode. Maintenance Mode is used only by maintenance personnel during maintenance work. If **Maintenance Mode** is displayed in **Operational mode of BMC**, press the FUNCTION switch for at least 10 seconds with the tip of a ballpoint pen to cancel that mode.

## Power and LED menu

Click **Server Operation** from the top tab, and then click **Power and LED** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

## Table 5-11: Power and LED menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Power Status | Displays the power supply status of the current system unit.<br>• **OFF**: Power-OFF status<br>• **ON**: Power-ON status<br>• **OFF (Power-ON suppressed)**:<br>Power cannot be turned on due to a power failure. |
| Power and Reset Operation | Operations the power to the system unit.<br>• **Power ON**<br>Turns on the power to system unit.<br>• **Force Power OFF**<br>Forcibly turns off the power to system unit. OS shutdown is not performed. To turn off the power normally, shut down the system in the OS window.<br>• **Hard Reset**<br>Applies a hardware reset to the system unit. This button is enabled with the power to system ON.<br>• **NMI**<br>Issues an NMI interrupt signal.<br>A dump process is activated according to the OS setting. This button is enabled with the power to system unit ON. |
| Location ID Lamp (LID) | • **On**<br>Turns on the ID LED.<br>Clicking this button provides the same operation as pressing the SERVICE switch.<br>• **Off**<br>Turns off the ID LED.<br>Clicking this button provides the same operation as pressing the SERVICE switch. |
| LED Status * | Displays following the LED status of the system unit.<br>• Location ID Lamp (LID)<br>• ERROR Lamp (ALT)<br>• Mode0 Lamp<br>• Mode1 Lamp |

* The correspondence between the LEDs displayed in **LED status** and the system unit's LEDs is as follows:

**Location ID Lamp (LID)** SERVICE LED

**ERROR Lamp (ALT)**: ERROR LED

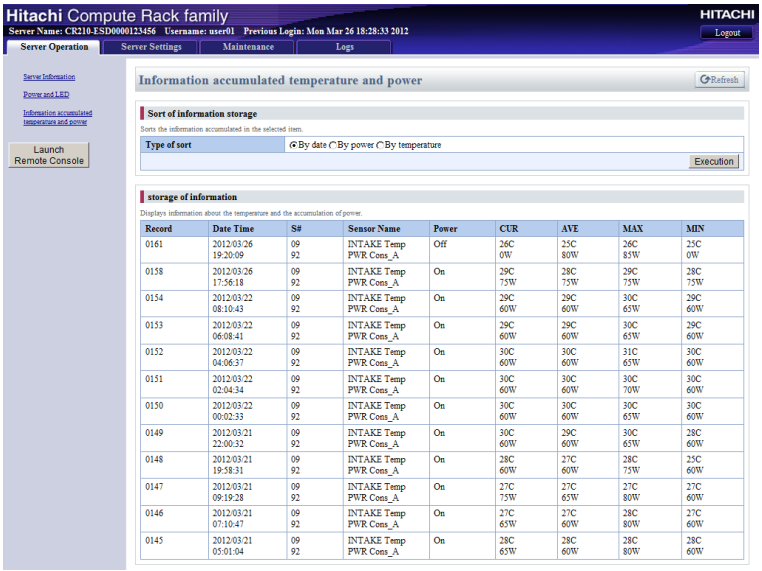
**Mode0 Lamp** : MODE0 LED

**Mode1 Lamp** : MODE1 LED

For details on LEDs, see *Hitachi Compute Rack 220S Getting Started Guide*.

## Information accumulated temperature and power

Click **Server Operation** from the top tab, and then click **Information accumulated temperature and power** in the left pane. The following window is displayed.




| Record | Date Time | S# | Sensor Name | Power | CUR | AVE | MAX | MIN |
|---|---|---|---|---|---|---|---|---|
| 0161 | 2012/03/26 19:20:09 | 09 92 | INTAKE Temp PWR Cons_A | Off | 26C 0W | 25C 80W | 26C 85W | 25C 0W |
| 0158 | 2012/03/26 17:56:18 | 09 92 | INTAKE Temp PWR Cons_A | On | 29C 75W | 28C 75W | 29C 75W | 28C 75W |
| 0154 | 2012/03/22 08:10:43 | 09 92 | INTAKE Temp PWR Cons_A | On | 29C 60W | 29C 60W | 30C 65W | 29C 60W |
| 0153 | 2012/03/22 06:08:41 | 09 92 | INTAKE Temp PWR Cons_A | On | 29C 60W | 29C 60W | 30C 65W | 29C 60W |
| 0152 | 2012/03/22 04:06:37 | 09 92 | INTAKE Temp PWR Cons_A | On | 30C 60W | 30C 60W | 31C 65W | 30C 60W |
| 0151 | 2012/03/22 02:04:34 | 09 92 | INTAKE Temp PWR Cons_A | On | 30C 60W | 30C 60W | 30C 70W | 30C 60W |
| 0150 | 2012/03/22 00:02:33 | 09 92 | INTAKE Temp PWR Cons_A | On | 30C 60W | 30C 60W | 30C 65W | 30C 60W |
| 0149 | 2012/03/21 22:00:32 | 09 92 | INTAKE Temp PWR Cons_A | On | 30C 60W | 29C 60W | 30C 65W | 28C 60W |
| 0148 | 2012/03/21 19:58:31 | 09 92 | INTAKE Temp PWR Cons_A | On | 28C 60W | 27C 60W | 28C 75W | 25C 60W |
| 0147 | 2012/03/21 09:19:28 | 09 92 | INTAKE Temp PWR Cons_A | On | 27C 75W | 27C 65W | 27C 80W | 27C 60W |
| 0146 | 2012/03/21 07:10:47 | 09 92 | INTAKE Temp PWR Cons_A | On | 27C 65W | 27C 60W | 28C 80W | 27C 60W |
| 0145 | 2012/03/21 05:01:04 | 09 92 | INTAKE Temp PWR Cons_A | On | 28C 65W | 28C 60W | 28C 80W | 28C 60W |

The following table shows description of menu items in the window.

### Table 5-12: Information storage temperature power menu items

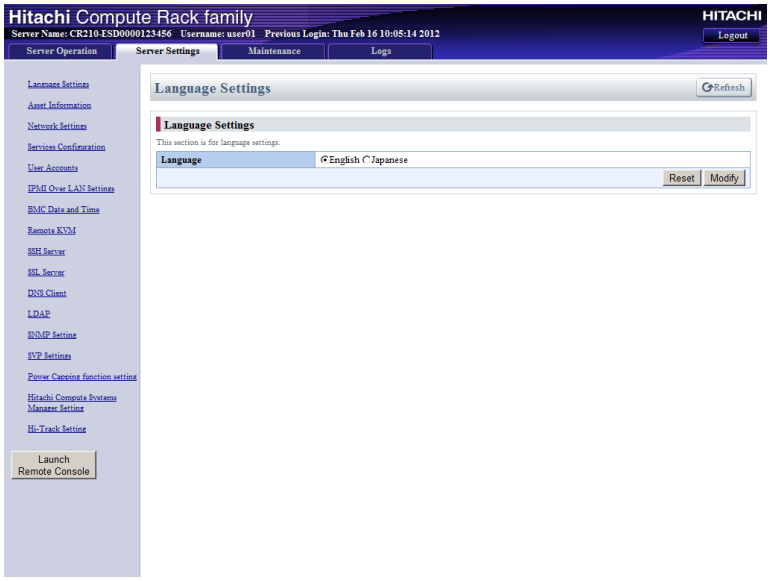
| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Type of sort | Sorts the information accumulated in the selected item (maximum twelve).<br>• **By date**: Sorts the information by date.<br>• **By Power**: Sorts the information by power consumption.<br>• **By Temperature**: Sorts the information by temperature. |
| Execution | Perform the sort by selected item. |
| storage of information* | Displays the information of the system unit about intake temperature, power status and power consumption. |
| * The information is recorded automatically every two hours and is accumulated for up to two years. | |

# Server Settings

**Server Settings** tab enables you to set the functions for managing the system unit.

## Language Settings menu

Click **Server Settings** from the top tab, and then click **Language Settings** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

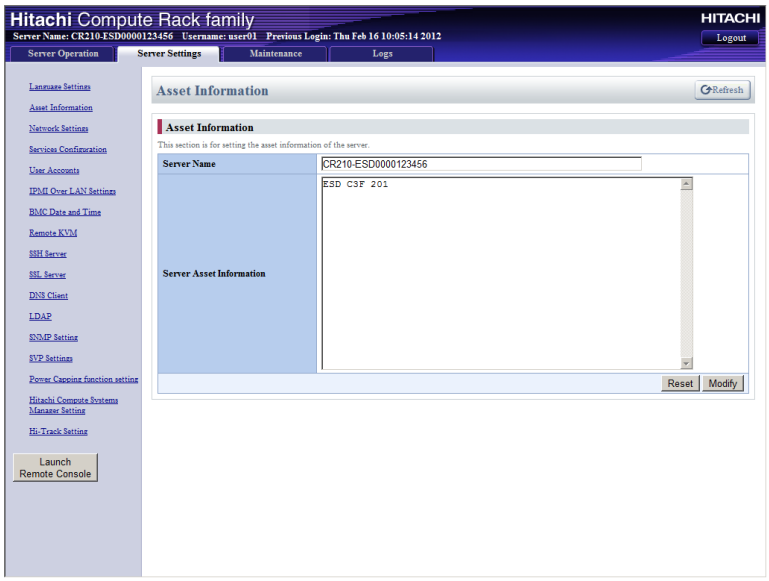
### Table 5-13: Language Settings menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Language | • **English**<br>Sets English as a Web console display language.<br>• **Japanese**<br>Sets Japanese as a Web console display language. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## Asset Information menu

Click **Server Settings** from the top tab, and then click **Asset Information** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-14: Asset Information menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Server Name | Sets a system unit name.<br>This setting is displayed in the **Server Name** column at top of the window, and in the **Server Information** window on the **Server Operation** tab. |
| Server Asset Information | Enables you to register sentences including information on the system unit installation site or administrators. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

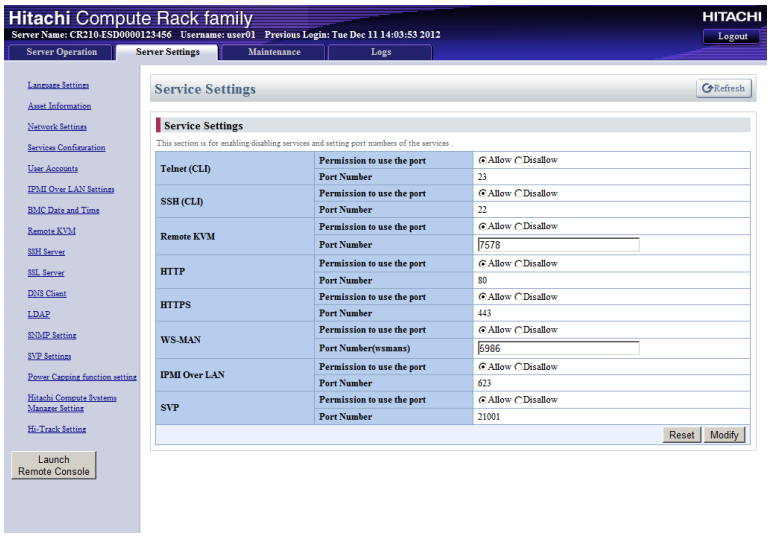
If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## Network Settings menu

See Setting BMC network on page 5-18.

## Service Settings menu

Click **Server Settings** from the top tab, and then click **Service Configuration** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-15: Service Settings menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Telnet (CLI) | Sets a permission to use the port for the telnet (CLI) functions.<br>And displays a port number used by the telnet (CLI) functions. |
| SSH (CLI) | Sets a permission to use the port for the SSH (CLI) functions.<br>And displays a port number used by the SSH (CLI) functions. |
| Remote KVM | Sets a permission to use the port for the Remote Console application. And sets a port number used by the Remote Console application. |
| HTTP<br>HTTPS | Sets a permission to use the port for the HTTP and HTTPS.<br>And displays the HTTP port number and HTTPS port number that are used by the Web console. |
| WS-MAN[1] | Sets a permission to use the port for WS-MAN.<br>And sets a port number used by WS-MAN. |
| IPMI Over LAN[2] | Sets a permission to use the port for the IPMI Over LAN functions.<br>And displays a port number used by the IPMI Over LAN functions. |
| SVP | Sets a permission to use the port for the SVP functions.<br>And displays a port number used by the SVP functions. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

**Notes:**

1 If HTTPS setting is set to "Disallow", WS-MAN setting cannot be set to "Allow".

2 The IPMI Over LAN function is enabled only for part of commands.

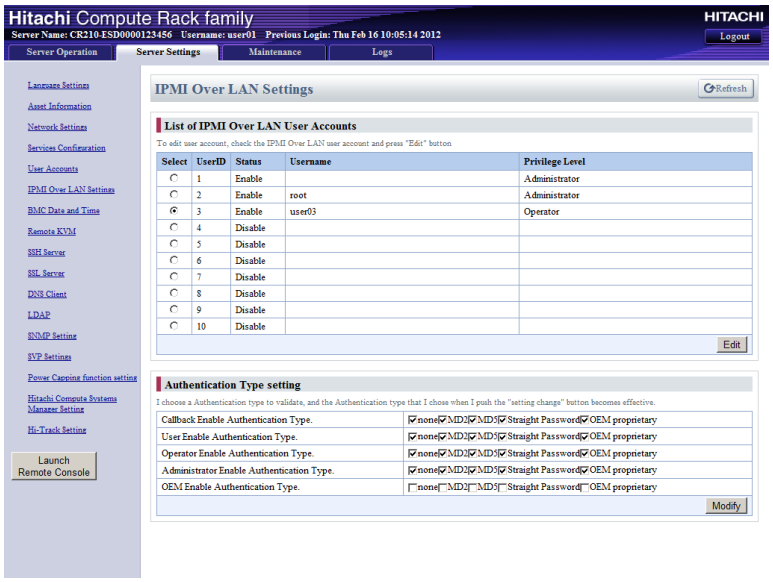
If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## Configure User Accounts menu

See Setting user account on page 5-8.

## IPMI Over LAN Settings menu

Click **Server Settings** from the top tab, and then click **IPMI Over LAN Settings** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

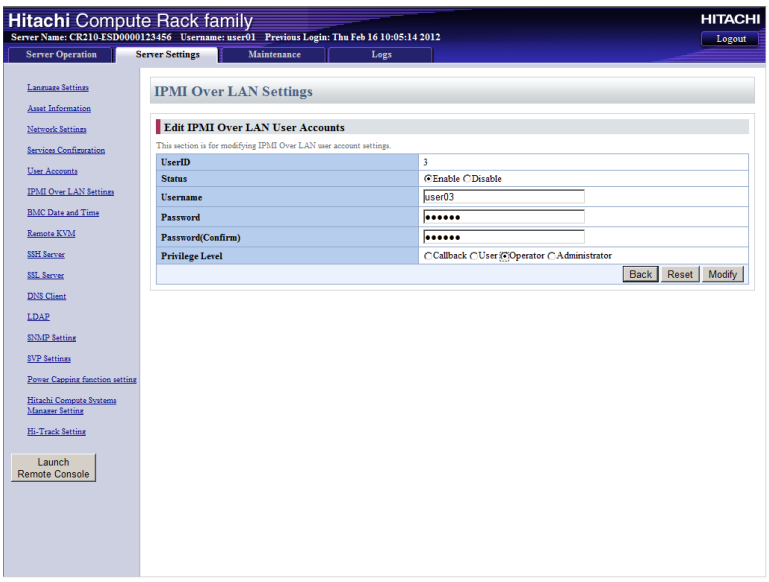
### Table 5-16: IPMI Over LAN Settings menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes user account information. |
| Select | Radio button for user account selection |
| UserID | User account ID |
| Status | Displays whether a user account is enabled or disabled. |
| Username* | User account name |
| Privilege Level* | Displays a privilege granted to a user account. |
| Edit button | Goes to the **Edit IPMI Over LAN User Accounts** window, except when the radio button is checked. |
| Authentication Type | Sets an authentication type on each privilege level. |
| Modify button | Goes to the **Authentication Type setting (Confirm)** window. |
| * **N/A** is displayed if the user account status is set to disabled. | |

- UserID 1 and 2 are enabled only for status change.
- UserID 1 and 2 are set to factory defaults as follows:
  - UserID 1
    Status is Enable, Username is (blank), password is (blank), and Privilege Level is Administrator.
  - UserID 2
    Status is Enable, Username is "root", password is "superuser", and Privilege Level is Administrator.

If you change **Authentication Type setting** items, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

If you change **List of IPMI Over LAN User Accounts** items, click **Edit** to go to following editing window.




## Table 5-17: Edit IPMI Over LAN User Accounts menu items

| Menu items | Description |
|---|---|
| UserID | Displays a user ID. |
| Status[1] | Enables or disables a user account. |
| Username[2] | User account name (up to 32 alphanumeric characters) |
| Password[2 3 4] | Entry of a password (up to 16 alphanumeric characters) |
| Password(Confirm)[2 3 4] | Re-entry of a password |
| Privilege Level[2] | Sets a privilege level. |
| Back button | Disables what you edited, and returns to the **IPMI Over LAN Settings** window. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

| Menu items | Description |
|---|---|
| **Notes:**<br>1 If this item is set to Disable, the user name and privilege level in the **IPMI Over LAN Settings** window are displayed as N/A.<br>2 UserID 1 and 2 cannot be changed.<br>3 For userID 8, 9, and 10, a blank cannot be set as a password.<br>4 A 16-byte password compatible with IPMI1.5 can be set. | |

If you change **Edit IPMI Over LAN User Accounts** items, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

Tip

- IPMI Over LAN function setting information is retained even when the AC cables are disconnected.
- Setting information of the IPMI Over LAN is not included in Backup or restored the Management settings data with a Web console. When restore the Management settings, set an IPMI Over LAN again.

## BMC Date menu

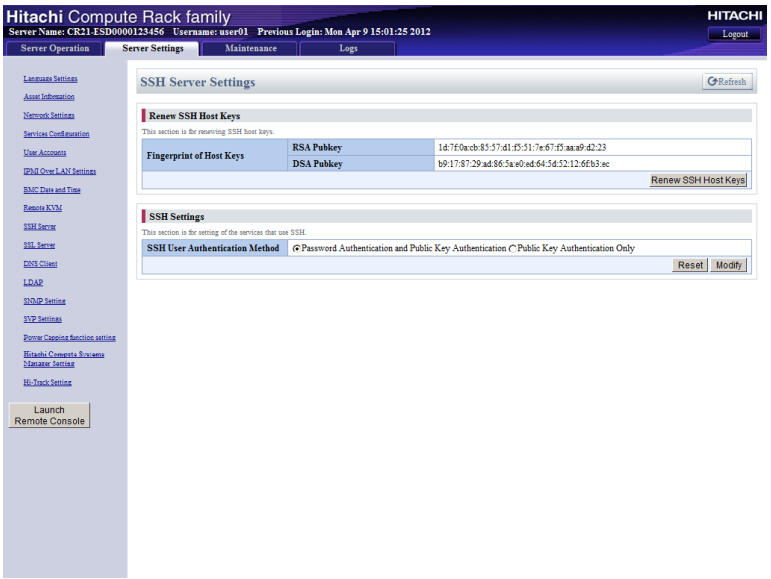
See Setting BMC date and time on page 5-16.

## Remote KVM Settings menu

See Setting mouse mode of Remote Console on page 5-14.

## SSH Server menu

Click **Server Settings** from the top tab, and then click **SSH Server** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-18: SSH Server menu items

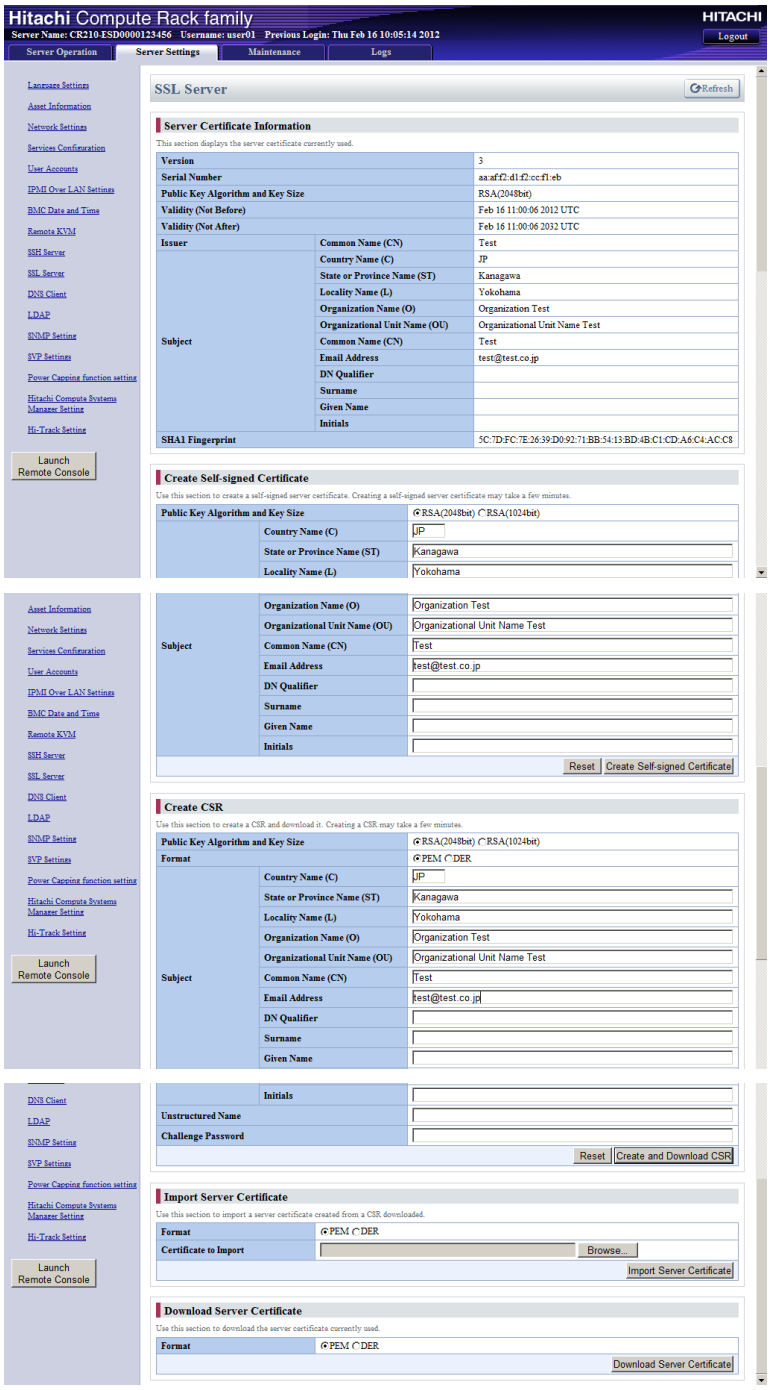
| Menu items | Description |
|---|---|
| Refresh button | Refreshes user account information. |
| Fingerprints of Host Keys | Displays the fingerprint of a host key (public key) used by an SSH server. |
| Renew SSH Host Keys button | Renewal the SSH host keys. |
| SSH User Authentication Method | Selects an authentication method used by an SSH server. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

If you want to renew the SSH keys, click **Renew SSH Host Keys** to go to confirming window. And then, click **Confirm** to save the change settings.

If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## SSL Server menu

Click **Server Settings** from the top tab, and then click **SSL Server** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

## Table 5-19: SSL Server menu items

| Menu items | | Description |
|---|---|---|
| Server Certificate Information | | |
| Refresh button | | Refreshes user account information. |
| Version | | Displays the version of a server certificate. |
| Serial Number | | Displays a serial number. |
| Public key Algorithm and key Size | | Displays information on public key. |
| Validity (Not Before) | | Displays a start date of validity period. |
| Validity (Not After) | | Displays an end date of validity period. |
| Issuer | | |
| | Common Name (CN) | Displays information on common names (CN). |
| Subject | | |
| | Country Name (C) | Displays information on a target of issuance |
| | State or Province Name (ST) | |
| | Locality Name (L) | |
| | Organization Name (O) | |
| | Organizational Unit Name (OU) | |
| | Common Name (CN) | |
| | Email Address | |
| | DN Qualifier | |
| | Surname | |
| | Given Name | |
| | Initials | |
| SHA1 fingerprint | | Displays SHA1 fingerprint information. |

| Menu items | Description |
|---|---|
| Create Self-signed Certificate | |
| Public key Algorithm and key Size | Selects information on public key. |
| Subject | |
| Country Name (C) [1] | Entry country name. You can enter upper-case 2 alphabets. |
| State or Province Name (ST) [1] | Entry state or province name (ST), locality name (L), organization name (O), and organizational unit name (OU). You can specify 1 to 60 alphanumeric characters and symbols[2]. |
| Locality Name (L) [1] | |
| Organization Name (O) [1] | |
| Organizational Unit Name (OU) [1] | |
| Common Name (CN) | Entry common name (CN).<br>You can specify 1 to 60 alphanumeric characters including a hyphen (-) and a period (.). |
| Email Address[1] | Entry Email address.<br>You can enter an ASCII character string of up to 60 characters. |
| DN Qualifier[1] | Entry DN qualifier, surname and given name.<br>You can enter 1 to 60 alphanumeric characters and symbols[2]. |
| Surname[1] | |
| Given Name[1] | |
| Initials[1] | Entry initials.<br>You can enter 1 to 30 alphanumeric characters and symbols[2]. |
| Reset button | Disables what you edited in **Server Certificate Information** column, and returns to the status before editing. |
| Create Self-signed Certificate button | Enables what you edited in **Server Certificate Information** column, and goes to the confirming window. |
| Create CSR | |
| Public key Algorithm and key Size | Selects information on public key. |
| Format | Selects the format of CSR to be downloaded. |
| Country Name (C) [1] | Entry country name. You can enter upper-case 2 alphabets. |
| State or Province Name (ST) [1] | Entry state or province name (ST), locality name (L), organization name (O), and organizational unit name (OU). You can specify 1 to 60 alphanumeric characters and symbols[2]. |
| Locality Name (L) [1] | |
| Organization Name (O) [1] | |
| Organizational Unit Name (OU) [1] | |
| Common Name (CN) | Entry common name (CN).<br>You can specify 1 to 60 alphanumeric characters including a hyphen (-) and a period (.). |
| Email Address[1] | Entry Email address.<br>You can enter an ASCII character string of up to 60 characters. |
| DN Qualifier[1] | Entry DN qualifier, surname and given name.<br>You can enter 1 to 60 alphanumeric characters and symbols[2]. |
| Surname[1] | |
| Given Name[1] | |
| Initials[1] | Entry initials.<br>You can enter 1 to 30 alphanumeric characters and symbols[2]. |

| Menu items | Description |
|---|---|
| Unstructured Name[1] | You can specify 1 to 60 alphanumeric characters and symbols[2]. |
| Challenge Password[1] | You can specify 1 to 30 alphanumeric characters and symbols[2]. |
| Reset button | Disables what you edited in **Create CSR** column, and returns to the status before editing. |
| Create and Download CSR button | Enables what you edited in **Create CSR** column, and goes to the confirming window. |
| `Import Server Certificate` | |
| Format | Selects the format of a server certificate to be imported. |
| Certificate to Import | Specifies a server certificate file. |
| Import Server Certificate button | Goes to the confirming window to imports the server certificate file specified in **Certificate to Import**. |
| `Download Server Certificate` | |
| Format | Selects the format of a server certificate to be downloading. |
| Download Server Certificate button | Downloads a registered server certificate in the format specified in **Format**. |

**Notes:**

1 This Item is omissible.

2 The following symbols can be used:
Blank symbol, '(apostrophe), - (hyphen), , (comma), = (equal), / (slash), () (parentheses), . (period), : (colon), + (plus), and ? (question)

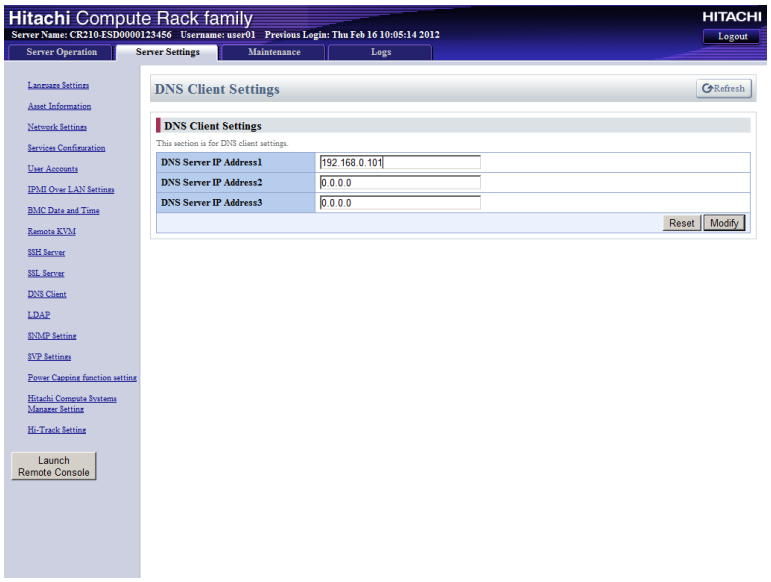
If you change **Create Self-signed Certificate** items, click **Create Self-signed Certificate** to go to confirming window. And then, click **Confirm** to save the change settings.

If you change **Create CSR** items, click **Create and Download CSR** to go to confirming window. And then, click **Confirm** to save the change settings.

If you select an importing server certificate file, click **Import Server Certificate** to go to confirming window. And then, click **Confirm** to perform the file importation.

## DNS Client Settings menu

Click **Server Settings** from the top tab, and then click **DNS Client** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

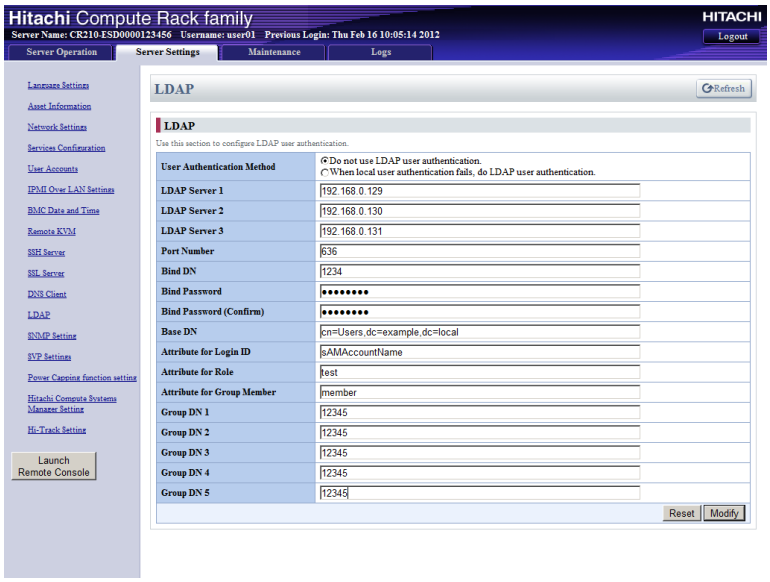
### Table 5-20: DNS Client Settings menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| DNS Server IP Address1<br>DNS Server IP Address2<br>DNS Server IP Address3 | Used to enter an IP address for DNS server.<br>Up to three IP addresses for DNS server can be set, each of which is used beginning at the top.<br>If you do not set second and third DNS servers, enter "0.0.0.0".<br>If you do not use DNS, set all of three IP addresses to "0.0.0.0". |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## LDAP menu

Click **Server Settings** from the top tab, and then click **LDAP** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

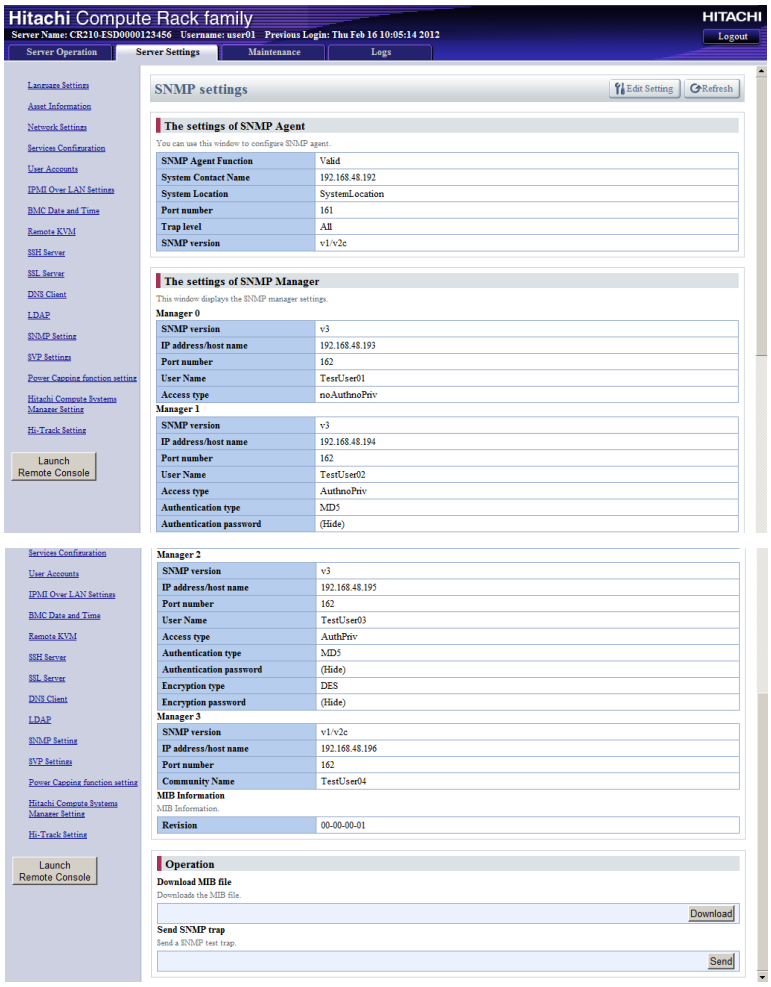
### Table 5-21: LDAP menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| User Authentication Method | Sets a user authentication method using LDAP.<br>• **Do not use LDAP user authentication.**<br>A set user account is used for user authentication.<br>• **When local user authentication fails, do LDAP user authentication.**<br>A set user account is used for user authentication. If the user authentication is not successful, a user account for LDAP server is used for user authentication. |
| LDAP Server 1<br>LDAP Server 2<br>LDAP Server 3 | Specifies an LDAP server using an IP address or FQDN (up to 127 characters). |
| Port Number | Specifies a destination port number as a decimal number (1 to 65535). |
| Bind DN | Specifies DN used when binding to an LDAP server (up to 256 characters). If nothing is entered, Anonymous bind is specified. |
| Bind Password | Specified a password used when binding to an LDAP server (up to 32 characters). If nothing is entered, no password is used. |
| Bind Password (Confirm) | Used to enter confirmation of a bind password. |
| Base DN | Specifies basic DN for user search (up to 256 characters). |
| Attribute for Login ID | Specifies a user entry attribute used as a login ID (up to 64 characters). |
| Attribute for Role | Specifies a user entry attribute in which a character string representing a role is embedded (up to 64 characters). |
| Attribute for Group Member | Specifies a group entry attribute that represents user membership (up to 64 characters). |
| Group DN 1<br>Group DN 2<br>Group DN 3<br>Group DN 4<br>Group DN 5 | Specifies DN of a group authorized for login (up to 256 characters). If no DN is entered, no group authentication is performed. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## SNMP settings menu

Click **Server Settings** from the top tab, and then click **SNMP Setting** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

## Table 5-22: SNMP settings menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Edit Setting button | Goes to the edit settings window. |
| The settings of SNMP Agent | |
| SNMP Agent Function | Displays enable or disable the SNMP agent. |
| System Contact Name | Displays system administrator's contact information. |
| System Location | Displays a system installation site. |
| Port number | Displays a port number that the SNMP uses. |
| Trap level | Displays a trap notification level.<br>● **Disable**: Disables every trap notification.<br>● **Alert**: Enables an alert trap notification.<br>● **Information**: Enables an information trap notification.<br>● **All**: Enables every trap notification. |
| SNMP version | Displays an SNMP version that the SNMP agent uses.<br>You can choose **v1/v2c** or **v1/v2c/v3**. |
| Engine ID string[1] | Sets a character string for creating an engine ID that is used by the SNMP agent (1 to 27 lowercase alphanumeric characters and symbols). |
| Engine ID[1] | Represents an engine ID that is used by the SNMP agent and created from a character string for creating an engine ID. |
| The settings of SNMP Manager | |
| Manager 0, Manager 1, Manager 2, Manager 3 | |
| SNMP version | Displays an SNMP version that the SNMP manager uses.<br>You can choose **v1/v2c** or **v3**. |
| IP address/host name | Displays an IP address for the SNMP manager. |
| Port number | Displays a port number a trap notification destination for the SNMP manager. |
| Community Name[2] | Displays a community name for the SNMP manager. |
| User Name[3] | Displays a user name for the SNMP manager. |
| Access type[3] | Displays an access type for the SNMP manager.<br>You can choose **noAuthnoPriv**, **AuthnoPriv** or **AuthPriv**. |
| Authentication type[4] | Displays an authentication type for the SNMP manager.<br>You can choose **MD5** or **SHA**. |
| Authentication password[4] | Displays an authentication password for the SNMP manager. |
| Encryption type[5] | Displays an encryption type for the SNMP manager.<br>You can choose **DES** or **AES**. |
| Encryption password[5] | Displays an encryption password for the SNMP manager. |
| MIB Information | |
| Revision | Displays a revision of the MIB file. |

| Menu items | Description |
|---|---|
| Operation | |
| Download button | Goes to the save window to downloads a MIB file. |
| Send button | Sends a SNMP test file. |

**Notes:**

1 This item is displayed when **SNMP version** in **The settings of SNMP Agent** is set **v1/v2c/v3**.

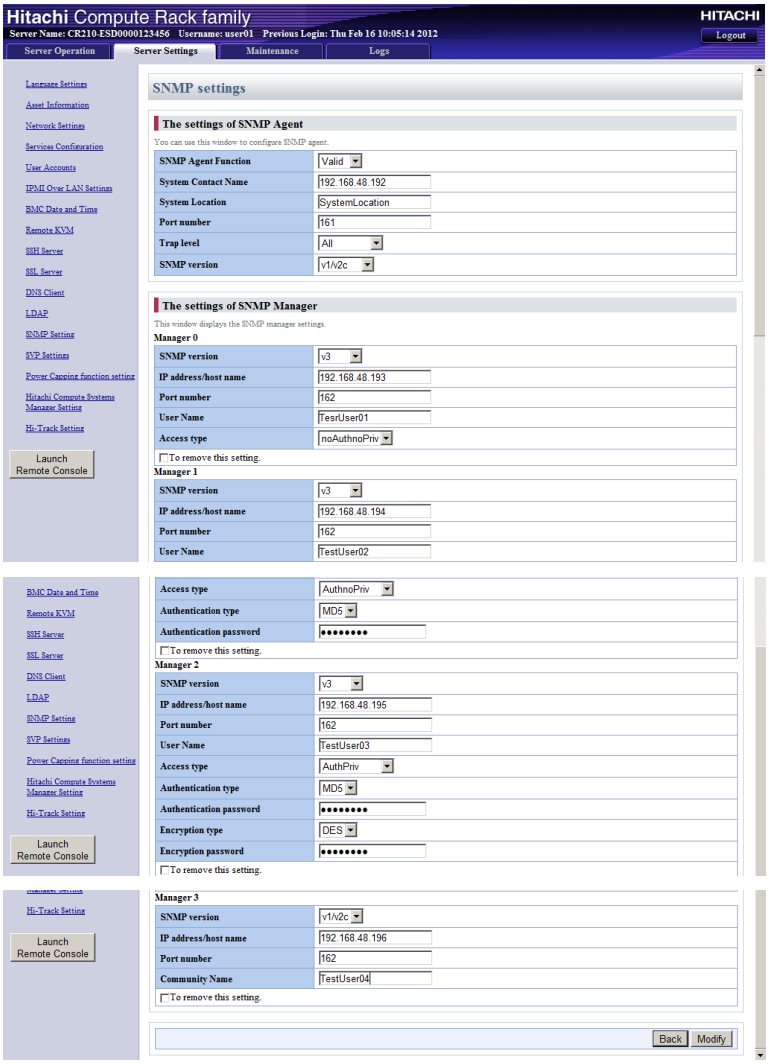
2 This item is displayed and enabled when **SNMP version** in **The settings of SNMP Manager** is set **v1/v2c**.

3 This item is displayed and enabled when **SNMP version** in **The settings of SNMP Manager** is set **v3**.

4 This item is displayed and enabled when **SNMP version** and **Access type** in **The settings of SNMP Manager** are each set **v3** and **Authnopriv** or **Authpriv**.

5 This item is displayed and enabled when **SNMP version** and **Access type** in **The settings of SNMP Manager** are each set **v3** and **Authpriv**.

If you want to change settings, click **Edit Setting** to go to following editing window.



## Table 5-23: SNMP settings > Edit Setting menu items

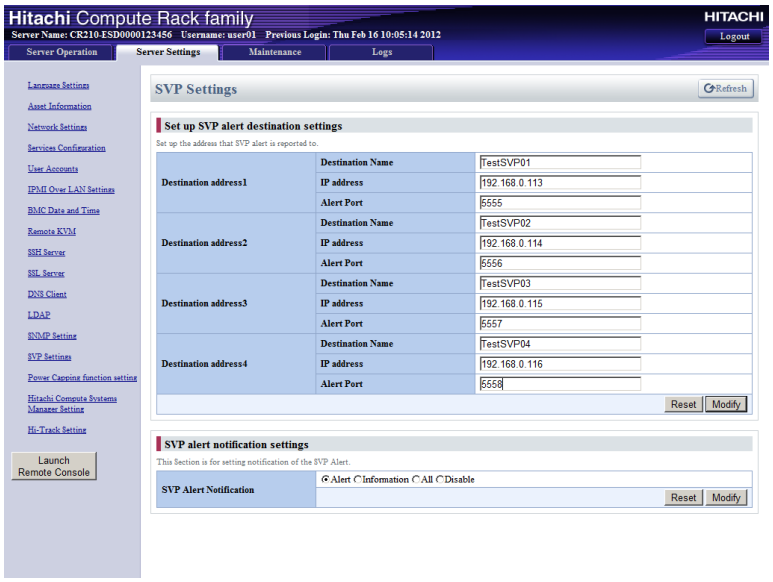
| Menu items | Description |
|---|---|
| The settings of SNMP Agent | |
| SNMP Agent Function | Enables or disables the SNMP agent. |
| System Contact Name | Sets system administrator's contact information (up to 60 lower-case alphanumeric characters). |
| System Location | Sets a system installation site (up to 60 lower-case alphanumeric characters). |
| Port number | Sets a port number that the SNMP uses (1 to 65535). |
| Trap level | Sets a trap notification level.<br>● **Disable**: Disables every trap notification.<br>● **Alert**: Enables an alert trap notification.<br>● **Information**: Enables an information trap notification.<br>● **All**: Enables every trap notification. |
| SNMP version | Sets an SNMP version that the SNMP agent uses.<br>You can choose **v1/v2c** or **v1/v2c/v3**. |
| Engine ID string[1] | Sets a character string for creating an engine ID that is used by the SNMP agent (1 to 27 lowercase alphanumeric characters and symbols). |
| Engine ID[1] | Represents an engine ID that is used by the SNMP agent and created from a character string for creating an engine ID. |
| The settings of SNMP Manager | |
| Manager 0, Manager 1, Manager 2, Manager 3 | |
| SNMP version | Sets an SNMP version that the SNMP manager uses.<br>You can choose **v1/v2c** or **v3**. |
| IP address/host name | Sets an IP address for the SNMP manager. |
| Port number | Sets a port number a trap notification destination for the SNMP manager (1 to 65535). |
| Community Name[2] | Sets a community name for the SNMP manager (up to 60 lowercase alphanumeric characters and symbols). |
| User Name[3] | Sets a user name for the SNMP manager (1 to 31 lowercase alphanumeric characters and symbols). |
| Access type[3] | Sets an access type for the SNMP manager.<br>You can choose **noAuthnoPriv**, **AuthnoPriv** or **AuthPriv**. |
| Authentication type[4] | Sets an authentication type for the SNMP manager.<br>You can choose **MD5** or **SHA**. |
| Authentication password[4] | Sets an authentication password for the SNMP manager (8 to 64 lowercase alphanumeric characters and symbols). |
| Encryption type[5] | Sets an encryption type for the SNMP manager.<br>You can choose **DES** or **AES**. |
| Encryption password[5] | Sets an encryption password for the SNMP manager (8 to 64 lowercase alphanumeric characters and symbols). |

| Menu items | Description |
|---|---|
| **Notes:**<br>1 This item is displayed when **SNMP version** in **The settings of SNMP Agent** is set **v1/v2c/v3**.<br>2 This item is displayed and enabled when **SNMP version** in **The settings of SNMP Manager** is set **v1/v2c**.<br>3 This item is displayed and enabled when **SNMP version** in **The settings of SNMP Manager** is set **v3**.<br>4 This item is displayed and enabled when **SNMP version** and **Access type** in **The settings of SNMP Manager** are each set **v3** and **Authnopriv** or **Authpriv**.<br>5 This item is displayed and enabled when **SNMP version** and **Access type** in **The settings of SNMP Manager** are each set **v3** and **Authpriv**. | |

If you change setting, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## SVP Settings menu

Click **Server Settings** from the top tab, and then click **SVP Setting** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

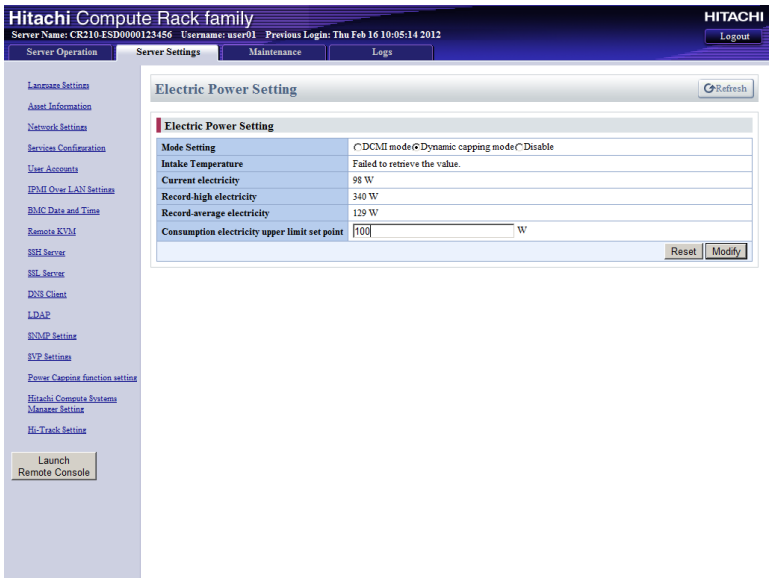
### Table 5-24: SVP Settings menu items

| Menu items | | Description |
|---|---|---|
| Refresh button | | Refreshes information. |
| `Set up SVP alert destination settings` | | |
| Destination address1, Destination address2, Destination address3, Destination address4 | | |
| | Destination Name | Sets a name to SVP alert notification destination. |
| | IP address | Sets an IP address to SVP alert notification destination. |
| | Alert Port | Sets a port number to SVP alert notification destination. |
| Reset button | | Disables what you edited in **Set up SVP alert destination settings** column, and returns to the status before editing. |
| Modify button | | Enables what you edited in **Set up SVP alert destination settings** column, and goes to the confirming window. |
| `SVP alert notification settings` | | |
| SVP Alert Notification | | Sets an SVP alert notification level.<br>• **Alert**: Notifies an alert of caution, warning or failure level.<br>• **Information**: Notifies an alert of information level.<br>• **All**: Notifies an alert of every level.<br>• **Disable**: Notifies no alert. |
| Reset button | | Disables what you edited in **SVP alert notification settings** column, and returns to the status before editing. |
| Modify button | | Enables what you edited in **SVP alert notification settings** column, and goes to the confirming window. |

If you change settings, click each **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## Electric Power Setting

Click **Server Settings** from the top tab, and then click **Power Capping function setting** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-25: Electric Power Setting menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Mode setting | Sets a power saving mode.<br>• **DCMI mode**:<br>Electric power is controlled by the DCMI command.<br>When sets DCMI mode, application software to use DCMI command is required.<br>• **Dynamic capping mode**:<br>Enables the dynamic power capping.<br>• **Disable**:<br>Disables the DCMI command and the dynamic power capping. |
| Intake Temperature | Displays an intake temperature. |
| Current electricity | Displays current power consumption. |
| Record-high electricity | Displays highest power consumption after **Mode setting** or **Consumption electricity upper limit set point** item is set (changed). |
| Record-Average electricity | Displays a mean power consumption after **Mode setting** or **Consumption electricity upper limit set point** item is set (changed). |
| Consumption electricity upper limit set point | Sets an upper limit of power consumption. |
| Reset button | Disables what you edited, and returns to the status before editing. |
| Modify button | Enables what you edited, and goes to the confirming window. |

If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

## Consumption electricity upper limit set point

For the power capping function, when you set **Consumption electricity upper limit set point** to too low value, the CPU performance may be lowered constantly due to the state of being active for the power capping.
In this state, it can not control the actual power consumption to less than or equal to the **Consumption electricity upper limit set point** setting value.

When you set a value equal to or greater than the maximum power consumption of the system unit for **Consumption electricity upper limit set point**, the power capping function will not work.

Therefore, you can use the power capping function effectively when set a **Consumption electricity upper limit set point** as follows:

| |
|---|
| Maximum power consumption of the system unit ≥<br>Setting value of **Consumption electricity upper limit set point** ≥<br>Maximum power consumption of the system unit -<br>Maximum value of the power consumption that can be suppressed by power capping |

- Setting value of **Consumption electricity upper limit set point** ≥
  Maximum power Consumption of the system unit -
  Maximum value of the power Consumption that can be suppressed by power capping

  If this condition is not satisfied, the power saving function can work using the power capping, but the actual power consumption may exceed the setting of **Consumption electricity upper limit set point**.

- Maximum power consumption of the system unit ≥
  Setting value of **Consumption electricity upper limit set point**

  If this condition is not satisfied, the actual power consumption does not exceed the setting of **Consumption electricity upper limit set point**, but the power saving function does not have effect.

## Maximum power consumption of the system unit

When estimating the system unit, refer to the specification of the system unit for the maximum power consumption of the system unit.

However, the power consumption of the system unit is dependent upon the operating environment (such as temperature) and running program on the system unit.

In order to make fine adjustments, we recommend you that check the maximum power consumption of system unit by trial operation in an environment that uses the system unit.
Maximum power consumption of the system unit can be found in the following procedure.

1. **Power Capping Function Setting** > **Mode setting** set to **Disable**.
2. Continuous operation under the maximum load condition in the system unit.
3. Check the value of **Power Capping Function Setting** > **Record-High electricity**.

The power consumption of the system unit may increase due to the rotational speed of FAN increased dependent upon the operating environment. You should check the value of **Power Capping Function Setting** in the environment that the temperature is near the actual temperature.

## Maximum value of the power consumption that can be suppressed by power capping

The degree of suppression of power consumption is different depends on the model of the system unit, the CPU type of the mounted on the system unit, and the load condition of the program running on the system unit.

Approximate of the maximum value of the power consumption that can be suppressed are as follows:

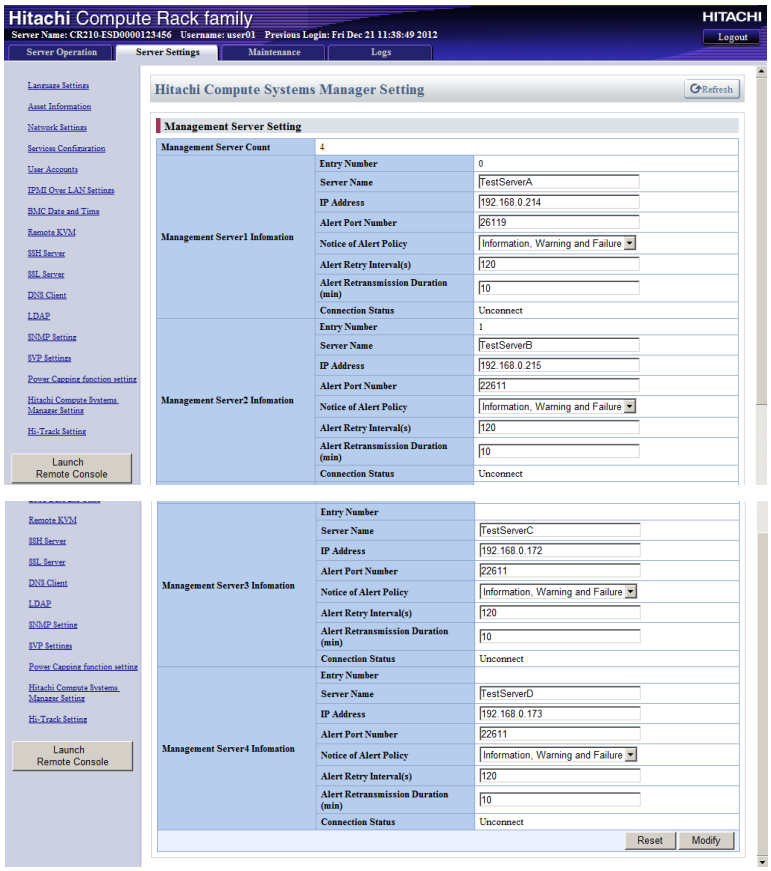
**Table 5-26: Approximate of the maximum value of the power consumption that can be suppressed**

| CPU type | Clock speed | power consumption that can be suppressed (approximate of the maximum value)* | |
|---|---|---|---|
| | | 1 CPU | 2 CPU |
| Xeon processor E5-2470 | 2.30 GHz | 60 W | 120 W |
| Xeon processor E5-2440 | 2.40 GHz | 50 W | 100 W |
| Xeon processor E5-2420 | 1.90 GHz | 20 W | 40 W |
| Xeon processor E5-2403 | 1.80 GHz | 10 W | 20 W |
| Xeon processor E5-2430L | 2 GHz | 25 W | 50 W |

* Power consumption that can be suppressed shows the values based on the measurement result of the model.
Power consumption that can be suppressed includes the effect that the power consumption of the peripheral circuit is reduced by reduced the power consumption of CPU.

## Hitachi Compute Systems Manager Setting menu

Click **Server Settings** from the top tab, and then click **Hitachi Compute Systems Manager Setting** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-27: Hitachi Compute Systems Manager Setting menu items

| Menu items | | Description |
|---|---|---|
| Refresh button | | Refreshes information. |
| Management server Count | | Displays the number of Hitachi Compute Systems Manager (HCSM) servers. |
| Management server1 Information, Management server2 Information, Management server3 Information, Management server4 Information | | |
| | Entry Number | Displays a registration number. |
| | Server Name | Sets a server name. |
| | IP Address* | Used to enter an IP address. |
| | Alert Port Number | Sets a port number to be used. |
| | Notice of Alert Policy | Sets an alert policy.<br>• **Do not notify**: Issues no alert notification.<br>• **Only Failure**:<br>Notifies an alert of failure level<br>• **Warning and Failure**:<br>Notifies an alert of warning or failure level.<br>• **Information, Warning and Failure**:<br>Notifies an alert of information, warning or failure level |
| | Alert Retry Interval(s) | Sets an alert retry interval within an allowable range from 60 to 240 seconds. |
| | Alert Retransmission Duration(min) | Sets an alert retry duration time within an allowable range from 4 to 15 minutes. |
| | Connection Status | Displays the HCSM server connection status. |
| Reset button | | Disables what you edited, and returns to the status before editing. |
| Modify button | | Enables what you edited, and goes to the confirming window. |
| * If you forcibly disconnect HCSM server because of HCSM connection problem reason, you set 0.0.0.0 to this IP **address** item.<br>In this case, other information of the HCSM server is also cleared. | | |

If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

Tip

- Only when the Connection Status is “Unconnect”, you can change Management server Information each setting.
- VMware vSphere ESXi regards system BIOS time as UTC time, but CR 220S's BIOS manages internal time as local time.

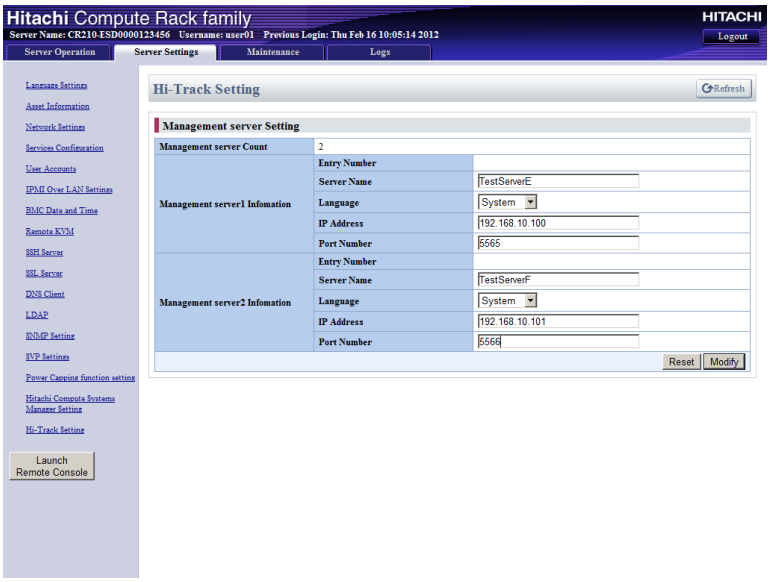
  So the time of BIOS is changed to the time a difference of local time and the UTC slipped off (it is not local time) when you set time by vSphere Client after installing VMware vSphere ESXi.

  You can confirm the difference of time on BIOS setup screen.

  HCSM's Alert time and BMC Web console time also refer System BIOS time, so these times also have difference of time from VMware vSphere ESXi set time.

## Hi-Track Setting menu

Click **Server Settings** from the top tab, and then click **Hi-Track Setting** in the left pane. The following window is displayed.




The following table shows description of menu items in the window.

### Table 5-28: Hi-Track Setting menu items

| Menu items | | Description |
|---|---|---|
| Refresh button | | Refreshes information. |
| Management server Count | | Displays the number of Hi-Track servers. |
| Management server1 Information, Management server2 Information | | |
| | Entry Number | Displays a registration number. |
| | Server Name | Sets a server name. |
| | Language | Sets a langue to be used.<br>• **System**: Uses a language configured by the system unit.<br>• **English**: Uses English.<br>• **Japanese**: Uses Japanese. |
| | IP Address | Used to enter an IP address. |
| | Port Number | Sets a port number to be used. |
| Reset button | | Disables what you edited, and returns to the status before editing. |
| Modify button | | Enables what you edited, and goes to the confirming window. |

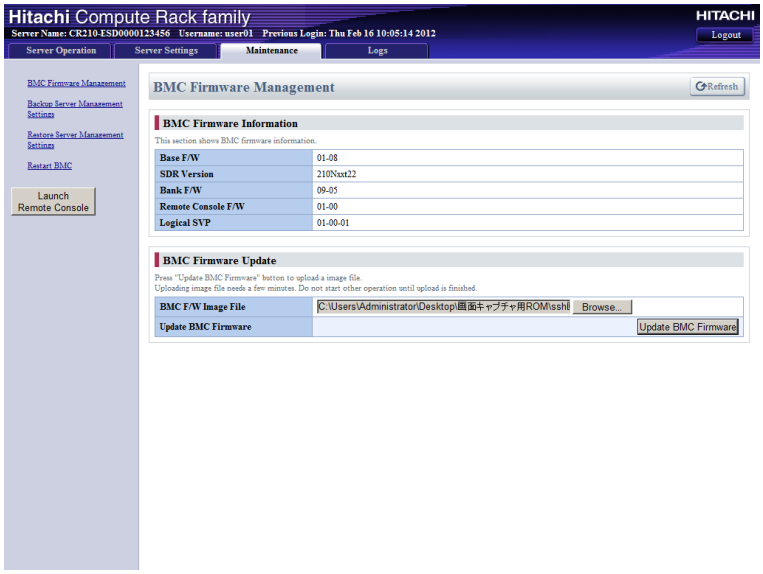
If you change settings, click **Modify** to go to confirming window. And then, click **Confirm** to save the change settings.

# Maintenance

**Maintenance** tab enables you to update the firmware, backs up and restores the data that is managed by the firmware, and restarts BMC.

## BMC Firmware Management menu

Click **Maintenance** from the top tab, and then click **BMC Firmware Management** in the left pane. The following window is displayed.

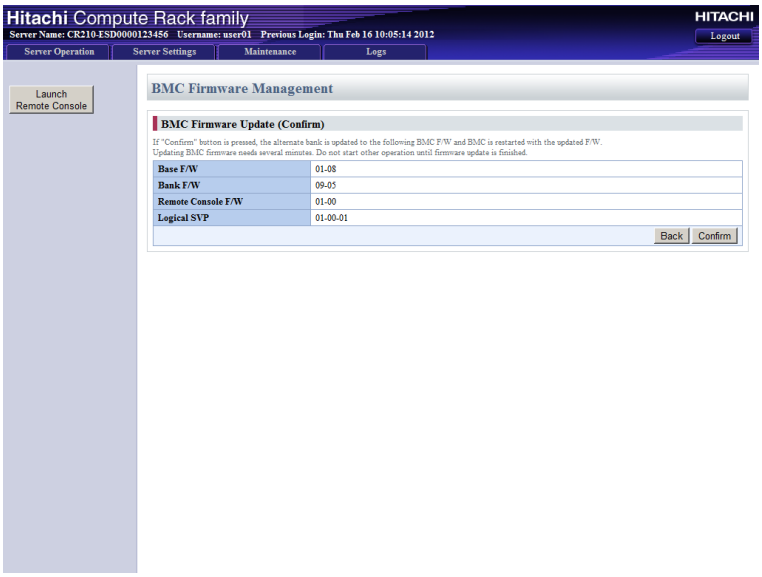



The following table shows description of menu items in the window.

### Table 5-29: BMC Firmware Management menu items

| Menu items | Description |
|---|---|
| Refresh button | Refreshes information. |
| Base F/W | Displays the version of base firmware. |
| SDR Version | Displays the SDR version. |
| Bank F/W | Displays the version of firmware. |
| Remote Console F/W | Displays the version of a remote console function. |
| Logical SVP | Displays the version of the logical SVP function. |
| Browse button | Specifies a BMC firmware image file to be uploaded. |
| Update BMC Firmware button | Uploads a specified image file. It takes a few minutes to upload the file. After the end of uploading, the confirming window is displayed. |

If you want to update the BMC firmware, click **Browse** to select an image file. And then, click **Update BMC Firmware** to go to following the confirming window.




Confirm the information of updating firmware version, and then click **Confirm** to update the firmware.

---

Note

Do not start other operation until firmware update is finished. Otherwise, updating firmware may not finish properly.

---

Tip

While a BMC firmware is updating, communication with the BIOS is shut off. Therefore, you must turn off the system unit before updating a BMC firmware.
If the system unit does not boot after updating a BMC firmware, turn off the system unit, shut down the AC power by disconnecting the AC cable, wait 30 seconds or more, and then reconnect AC power and turn on the system unit.

---

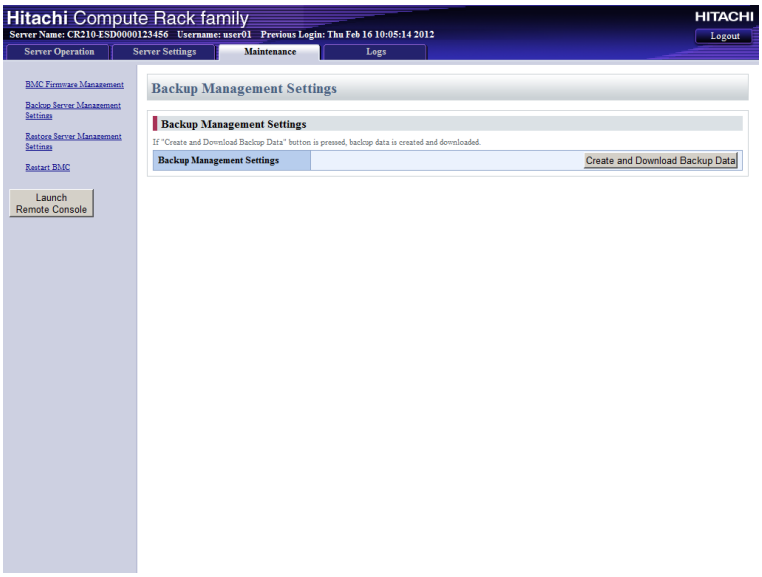
After the updating is completed, BMC is restarted. Therefore, the system unit is logged out of the Web console and disconnected.
When BMC is restarted, the SERVICE LED on the system unit blinks about 30 to 60 seconds.

Wait until the SERVICE LED stops blinking, and then turn off the system unit.

- Restarting the BMC terminates both Web console and Remote Console application, also disconnects from these services.
  The above services cannot be restart until restarting the BMC is finished.
- If you specify a BMC firmware image file which is not supported by the system unit, the BMC will be restarted without updating the firmware.

## Backup Management Settings menu

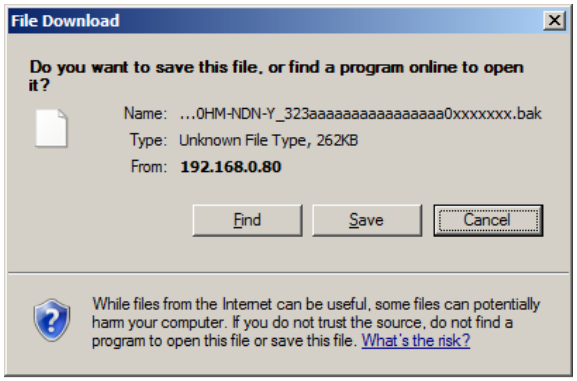
Click **Maintenance** from the top tab, and then click **Backup Management Settings** in the left pane. The following window is displayed.



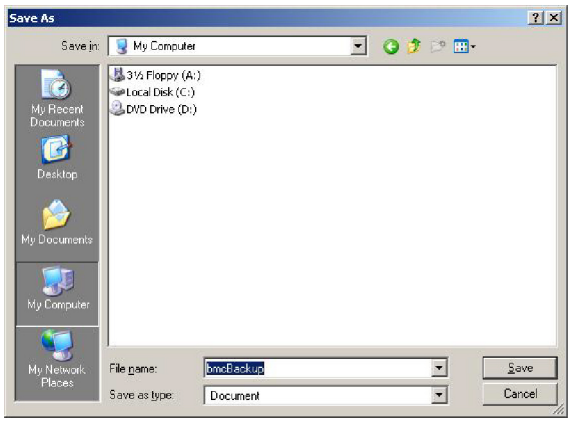

### Table 5-30: Backup Management Settings menu item

| Menu items | Description |
|---|---|
| Create and Download Backup Data | Creates and downloads a backup data file. |

If you want to update the BMC firmware, click **Create and Download Backup Data**. Following the dialog box is displayed.



Click **Save**. Following the window is displayed.

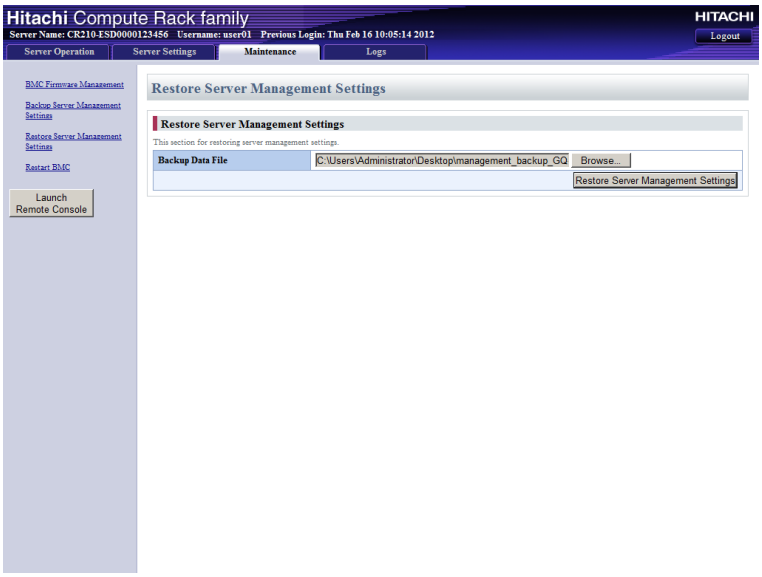



Select a saving location and then click **Save**.

Backup data is saved. When The **Download Complete** window is displayed, click **Close**.

## Restore Server Management Settings menu

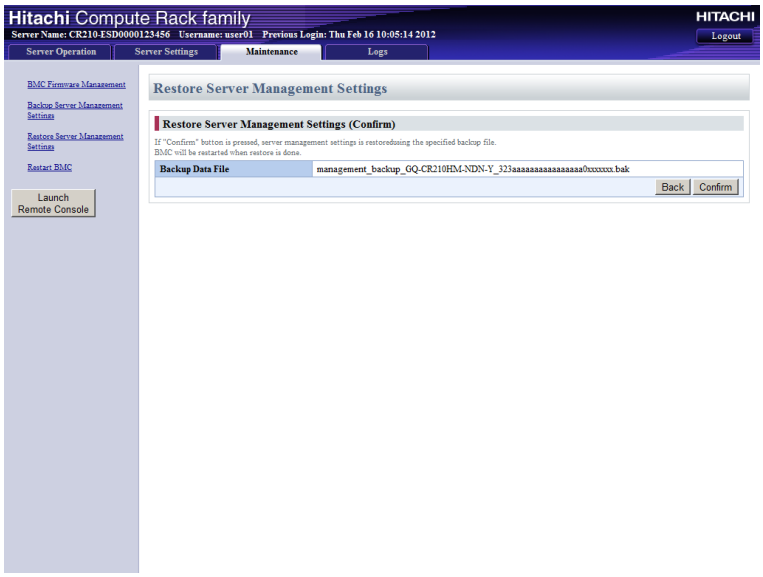
Click **Maintenance** from the top tab, and then click **Restore Server Management Settings** in the left pane. The following window is displayed.



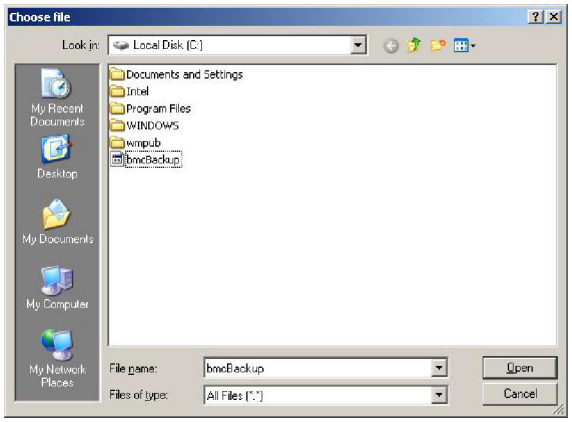

### Table 5-31: Restore Server Management Settings items

| Menu items | Description |
|---|---|
| Browse button | Specifies a backup data file downloaded in the Backup Management Settings menu. |
| Restore Server Management Settings | Uploads a specified backup data file and goes to the confirming window. |

If you want to restore the Management Settings, click **Browse** to select a backup data file. And then, click **Restore Server Management Settings** to go to following the confirming window.




Confirm the file information, and then click **Confirm**. Following the window is displayed.




Confirm the selected file, and then click **Open** to start restoring.

---

Tip

While a management setting is restored, communication with the BIOS is shut off. Therefore, you must turn off the system unit before restoring a management setting.

If the system unit does not boot after restoring a management setting, turn off the system unit, shut down the AC power by disconnecting the AC cable, wait 30 seconds or more, and then reconnect AC power and turn on the system unit.

---

After the restoring is completed, BMC is restarted. Therefore, the system unit is logged out of the Web console and disconnected.
When BMC is restarted, the SERVICE LED on the system unit blinks about 30 to 60 seconds.

Wait until the SERVICE LED stops blinking, and then turn off the system unit.

> **Tip** Restarting the BMC terminates both Web console and Remote Console application, also disconnects from these services.
> The above services cannot be restart until restarting the BMC is finished.

## Restart BMC menu

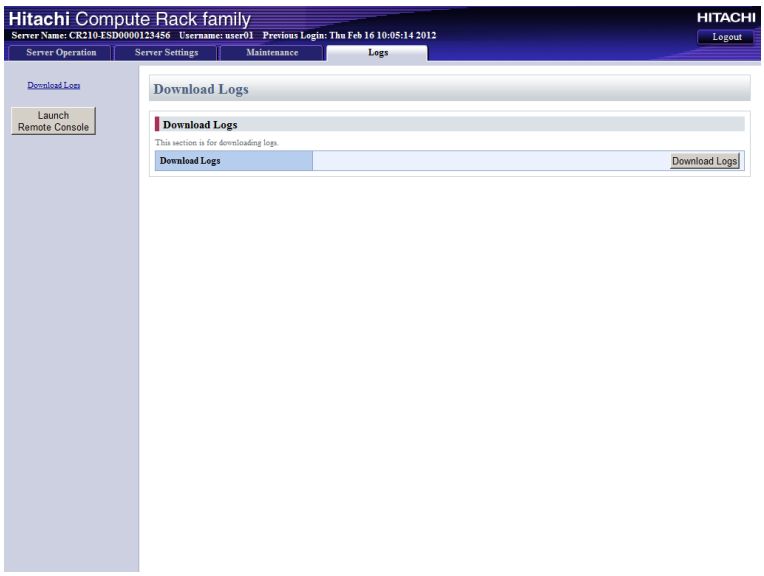
This window is available only with "ceconsl" users (users for maintenance work), and inaccessible to unauthorized personnel.

# Logs

**Logs** tab enables you to download log taken by BMC.

## Download Logs menu

Click **Logs** from the top tab, and then click **Download Logs** in the left pane. The following window is displayed.




### Table 5-32: Download Logs menu item

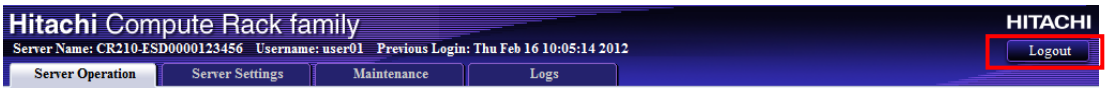
| Menu items | Description |
|---|---|
| Download Logs button | Downloads a log taken by BMC. |

This log is used to investigate a hardware failure.
Under normal operation, you do not need to take a log.

# Exiting Web console

If you changed any settings, perform the backup of Management settings before exiting the Web console. See Backup Management Settings menu on page 5-57.

By pressing **Logout** on the right of the window, you can log out of the Web console.




> **Tip** If you close the Web browser without logging out, the user login state will continue until the automatic logout is performed in 30 minutes. Therefore, if you repeat this action of closing the Web browser without logging out, you cannot log in to the Web console again until a lapse of 30 minutes. Before closing the Web browser, be sure to press **Logout** and log out of the Web console.

6

# Notice for setting up BMC network

This chapter describes the notice for setup of a BMC network.

# Types and settings of BMC network setup methods

This section describes the types and settings of BMC network setup methods.

## Types of BMC network setup methods

The following two types of BMC network setup methods are available when you use the remote management functions:

- Setup by the system BIOS setup menu
- Setup by the Web console
  (Setup from the client by connecting to a BMC network according to initial network setup)

The following table lists the relationship between the main items of remote management function and the tools used for setup. The thick frame displays the tools recommended setting the function.

Particularly, multiple BMC network setup methods are available but we recommend that you adopt the same setup method as other setting items.

**Table 5-1: Types of BMC network setup methods**

| Function | Main setup items | Methods that can be set | |
|---|---|---|---|
| | | Web console | System BIOS |
| SVP Emulation[1] | BMC network setup | √ | √ |
| | SVP alert connection destination setting | √ | - |
| | SVP alert notification level | √ | - |
| | Detailed setting of error monitoring | √ | - |
| Web console | BMC network setup | √ | √ |
| | Restrictions on connection destination address | √ | - |
| | User account setup | √ | - |
| Remote console | BMC network setup | √ | √ |
| | Mouse mode setup | √ | - |
| | Restrictions on connection destination address | √ | - |
| | User account setup | √ | - |
| IPMI Over LAN | BMC network setup | √ | √ |
| | Restrictions on connection destination address | √ | - |

| Function | Main setup items | Methods that can be set | |
|---|---|---|---|
| | | Web console | System BIOS |
| Setup recovery when network connections are disabled | BMC network setup | - | √ |
| | Restrictions on connection destination address | - | √ |
| | User account setup | - | √ |

**Notes:**

√ Available

- N/A

1 The SVP emulation function is a function that supports emulating on the BMC firmware, such as remote power supply control, power supply control scheduling, and remote failure monitoring.

## BMC network settings

Properly configure the BMC network settings (IP addresses, subnet masks and default gateway) according to your network environment.

For setting items, the following values are specifiable: The IP address of each setting tool is noted as a decimal number of IPv4's IP address.

- IP address

  An IP address can be set within the range from 1.0.0.0 to 223.255.255.255, except the following addresses:

  – An address whose value becomes all "1" when the host part is expressed in a binary number (Because overlapping with a broadcast address)

  – An address whose value becomes all "0" when the host part is expressed in a binary number (Because overlapping with the network address)

  – Addresses ranging from 127.0.0.0 to 127.255.255.255

  If Windows systems exist within the same network, **do not use** any address whose low-order 8 bites become all "1" in binary notation, such as "xxx.xxx.xxx.**255**".

  For example, if an IP address is "192.168.0.0" and a subnet mask is "255.255.252.0", this address cannot be used because a broadcast address becomes "192.168.3.**255**". Similarly, do not use such addresses as "xxx.xxx.0.255", "xxx.xxx.1.255", and "xxx.xxx.2.255".

- Subnet mask

  You can set a value having continuous mask bits in binary notation within the range from "255.0.0.0" to "255.255.255.255".

  For instance, you cannot set 255.255.255.64 (binary notation: 1111 1111 1111 1111 1111 1111 **0100** 0000) because its mask bits are not successive.

  Also, you cannot set any value not having two or more IP addresses which can be set at a specified host part (in a subnet).

  For instance, you cannot set 255.255.255.254 (binary notation: 1111 1111 1111 1111 1111 1111 1111 1110) because there is no value which can be set as an IP address at the host part (in a subnet).
  No IP address for specifying a host cannot be assigned because both of a network address and a broadcast address are used.

- Default gateway

  You can set a value which can be specified as an IP address existing in a network (subnet) defined by an IP address and a subnet mask.

  For example, the following combinations cannot be set:

  – An address not existing in a network (subnet) defined by an IP address and a subnet mask.
    - IP address 192.168.0.1
    - Subnet mask 255.255.255.0
    - Default gateway **192.168.10.20**

    Because addresses that can be set within a subnet must range from 192.168.0.1 to 192.168.0.254.

  – An address that cannot be set as an IP address
    - IP address 192.168.0.1
    - Subnet mask 255.255.255.0
    - Default gateway **192.168.0.255**

    Because 192.168.0.255 is a broadcast address.
    Also 192.168.0.0 cannot set because it is a network address.

The setup tool does not always determine whether any value other than the above can be set if specified. If a wrong value is specified, however, the setup tool accepts such a value normally but the value is judged abnormal when you attempt to set it on the BMC side. The value may not be set normally.

If a BMC network does not work normally after setup, reconfirm the network setup with the setup tool and try to specify normal values.

7

# Software license

This chapter describes the license information of the software embedded into components of the system unit.

# Software license information

Software embedded in this product consists of independent multiple pieces of software. Each of them is copyrighted by Hitachi, Ltd. or third parties.

The property rights and the intellectual property rights of software embedded in this product, which Hitachi, Ltd. itself has developed or created, are owned by Hitachi, Ltd. The property rights and the intellectual property rights of documents related to the software are owned by Hitachi, Ltd. Those are protected by the copyright and other laws.

This product uses the following open source software in compliance with each software license agreement as well as software developed or created by Hitachi, Ltd.

### Table 7-1: BSD license

| Embedded software | Software license agreement |
|---|---|
| XML_RPC | BSD-style License<br>Refer to the next URL:<br>http://xmlrpc-c.svn.sourceforge.net/viewvc/xmlrpc-c/trunk/doc/COPYING?view=markup |
| Net-SNMP | BSD License<br>Refer to the next URL:<br>http://www.net-snmp.org/about/license.html |

### Table 7-2: GNU General Public License (GPL)

| Embedded software | Software license agreement |
|---|---|
| Linux kernel<br>U-Boot<br>busybox<br>iptables<br>mii-tool<br>gawk<br>rsync<br>liblzo<br>cron<br>ethtool<br>logrotate<br>mtd-utils<br>e2fsprogs | GNU General Public License version 2<br>Refer to the next URL:<br>http://www.gnu.org/licenses/gpl-2.0.html |
| zlib | zlib license<br>Refer to the next URL:<br>http://www.zlib.net/zlib_license.html |

| Embedded software | Software license agreement |
|---|---|
| openssl | OpenSSL License<br>Refer to the next URL:<br>http://www.openssl.org/source/license.html |
| openssh | BSD License<br>Refer to the next URL:<br>http://www.openbsd.org/cgi-bin/cvsweb/src/usr.bin/ssh/LICENCE?rev=HEAD |
| openldap | The OpenLDAP Public License<br>Refer to the next URL:<br>http://www.openldap.org/software/release/license.html |
| pam_ldap | GNU LESSER GENERAL PUBLIC LICENSE<br>Refer to the next URL:<br>http://www.gnu.org/copyleft/lesser.html |
| perl | GNU General Public License/Artistic License<br>Refer to the next URL:<br>http://dev.perl.org/licenses/ |
| netkit-tftp<br>syslogd | BSD License<br>Refer to the next URL:<br>http://www.freebsd.org/copyright/license.html |
| stunnel | stunnel license<br>Refer to the next URL:<br>https://www.stunnel.org/sdf_copying.html |
| ntp<br>ntpdate | NTP License<br>Refer to the next URL:<br>http://opensource.org/licenses/NTP |

We provide you with source code of software licensed under the terms of the license, such as GNU General Public License (GPL), which says that we must distribute the source code, on CD-ROM/DVD-ROM by your request. Please take note that you will be charged for the media, shipping fee, and commission then. When you need to have source code media, check the BMC firmware version, jot it down, and contact your reseller to give them the version.

For the above open source software, consult your reseller.

# A

# SMASH

This Appendix-A describes the functions of SMASH.

# Overview

This section overviews what SMASH is and what you can do with SMASH functions.

## What SMASH is

SMASH is a management standard tool for server hardware provided by DMTF.

### What you can do with SMASH

You can use SMASH to perform operations including powering on or off a server system and referring to FRU information. Both SMASH-CLP and WS-Management are supported. See DMTF web site shown below for details about SMASH-CLP and WS-Management.

http://dmtf.org/

### Operations

The following operations are available for SMASH with CR 220S.

**Table A-1: SMASH Operations**

| # | Operation |
|---|---|
| 1 | Server System operation (Retrieving status, powering on/off and rebooting) |
| 2 | Retrieving processor status |
| 3 | Retrieving memory status |
| 4 | Retrieving power supply module status |
| 5 | Retrieving fan module status |
| 6 | Retrieving sensor information |
| 7 | Retrieving FRU information |
| 8 | Changing boot device |
| 9 | Retrieving account information |
| 10 | Restarting BMC |

### Profiles

SMASH can perform many types of operations defined by CIM profiles. CR 220S support the profiles in the following table.
For details, see the following DMTF web site:

http://dmtf.org/standards/profiles

### Table A-2: Supported CIM Profiles

| DSP# | Profile | Organization | Version |
|---|---|---|---|
| DSP1004 | Base Server | DMTF | 1.0.0 or later |
| DSP1006 | SMASH Collections | DMTF | 1.0.0 or later |
| DSP1007 | SM CLP Admin Domain | DMTF | 1.0.0 or later |
| DSP1009 | Sensors | DMTF | 1.0.0 or later |
| DSP1011 | Physical Asset | DMTF | 1.0.0 or later |
| DSP1012 | Boot Control | DMTF | 1.0.0 or later |
| DSP1013 | Fan | DMTF | 1.0.0 or later |
| DSP1015 | Power Supply | DMTF | 1.0.0 or later |
| DSP1018 | Service Processor | DMTF | 1.0.0 or later |
| DSP1022 | CPU | DMTF | 1.0.0 or later |
| DSP1026 | System Memory | DMTF | 1.0.0 or later |
| DSP1033 | Profile Registration | DMTF | 1.0.0 or later |
| DSP1034 | Simple Identity Management | DMTF | 1.0.0 or later |

# Setting up SMASH

This section describes how to set up SMASH before starting to use it.

## Setting user account

Configure user accounts to operate the server system remotely. Privileges to operate the server system, validity, username and password can be configured for each user account.

Give the roles of "Login" and "SMASH CLP" to a user account that you wish to use the SMASH.
For details, see Setting user account.

## Enabling ports for SMASH

After setting up a user account, set up a port for SMASH. For details of how to enable ports.

Set the **WS-MAN** > **Use** > **Enable** on **Security and Service**".
For details, see Security and Service.

---

Note

WS-Management and SMASH-CLP default port number are as following.

- SMASH (WS-Management) to its default (5986).
- SMASH (CLP) to its default (Telnet (23)/SSH (22)).

---

## Importing digital certificate

Connection via WS-Management requires installing the digital certificate on the client PC prior to the connection. For details on the how to use the digital certificate, see Certificate.

---

Tip

To download the digital certificate from the BMC directly, run the web browser on the client PC, and then, enter “https://<BMC's IP address>”; for example, “https://192.168.0.1/” . For details on how to download and how to install the digital certificate, see help for web browser.

---

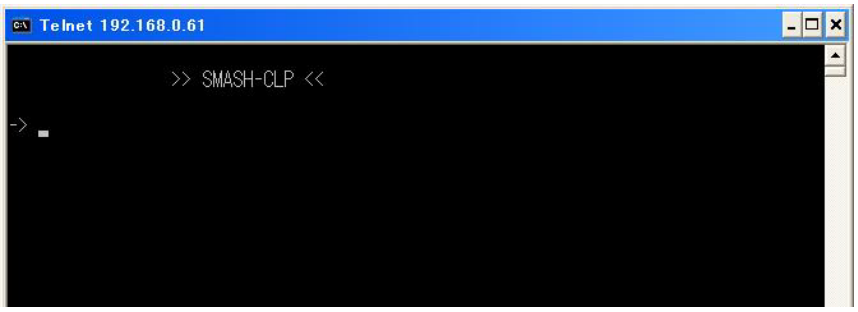
# SMASH-CLP

This section describes how to use SMASH-CLP.

## Connecting SMASH-CLP

You can use SMASH-CLP (Command Line Protocol) using terminal software on a console terminal connected via Telnet or SSH. To connect SMASH-CLP, follow these steps:

1. Start the terminal software on a console terminal, and connect to a server system, on which you use SMASH-CLP, via Telnet or SSH.
2. Enter a user name and a password via Telnet or SSH to connect to SMASH-CLP. Successful authentication displays the following prompt.




When using SMASH-CLP, check if there is SMASH-CLP role in the user account. If not, the terminal software directly connects to CLI.

If your user account includes either roles: “Administrator and SMASH-CLP” or “Service Setting and SMASH-CLP”, the following console menu screen is displayed for selection.

## Using SMASH-CLP

With SMASH-CLP, you can operate “target” shown in a hierarchical structure using “verb”. Type the following string in SMASH-CLP command line to operate an item shown in the table: SMASH Operations.

```
<verb> [<options>] [<target>] [<properties>]
```

For the SMASH-CLP, see Table A-3 Verbs and Their Options. For the targets corresponding to items in Table A-1 SMASH Operations, see Table A-4 Targets for Operations. To view verb option details, enter the following command.

```
help <verb>
```

Example:

```
->help show
Description:
   The show command is used to display information about Managed
   Elements. It can be used to view information about a single Managed
   Element, a tree of Managed Elements, or Managed Elements matching
   a property value filter.
Syntax:
   show [{options}] [{target}] [{properties}] [{propertyname}==
   {propertyvalue}]
Options:
-a, all
   The all option instructs the Command Processor to select all values
      :
      :
```

To view target properties, move to a target and enter the following.

```
cd <target>
show -display properties
```

Example:

```
-> cd /admin1/system1
-> show -display properties
Command Status: COMMAND COMPLETED
ufip=/admin1/system1
Properties:
HealthState=5
RequestedState=0
EnabledState=2
ElementName=IPMI BMC DeviceID.32
    CreationClassName=CIM_ComputerSystem
    Name=IPMI BMC DeviceID.32
    Dedicated={0}
    OperationalStatus={2}
```

```
    OtherIdentifyingInfo={HITACHI::GQxT20xM-xxxxxxx:
                          323aaaaaaaaaaaaaaa0xxxxxxx}
    IdentifyingDescriptions={CIM:Model:SerialNumber}
```

## Table A-3: Verbs and Their Options

| Verb | Options | Description |
|---|---|---|
| cd | -default, -examine, -help, -output, -version | Changes the current default target. |
| show | -all, -default, -display, -examine, -help, -level, -output, -version | Views properties and verbs for a target. |
| exit | -help, -output, -version | Finishes SMASH-CLP. |
| help | -examine, -help, -output, -version | Shows help for a target. |
| version | -examine, -help, -output, -version | Shows a version of a target. |
| set | -examine, -help, -output, -version | Sets properties for a target. |
| start | -examine, -force, -help, -output, -version | Requests the target to start. |
| stop | -examine, -force, -help, -output, -state, -version, -wait | Requests the target to stop. |
| reset | -examine, -help, -output, -version | Requests the target to reset. |

## Table A-4: Targets for Operations

| Target | Object | Operation |
|---|---|---|
| /admin1/system1 | Server system | Displays the server system status, powers on/off, or reboots. |
| /admin1/hdwr1/mainchassis1 | Server system | Displays FRU information. |
| /admin1/system1/cpu<N><br>/admin1/hdwr1/mainchassis1/card1/chip<N><br>/admin1/system1/capabilities1/cpucap<N> | Processor | Displays the processor status. |
| /admin1/system1/memory1<br>/admin1/hdwr1/mainchassis1/card1/pmem<N> | Memory | Displays the memory status. |
| /admin1/system1/pwrsupply<N> | Power supply module | Displays the power supply status. |
| /admin1/system1/fan<N> | Fan module | Displays the fan status. |
| /admin1/system1/sensors1/sensor<N><br>/admin1/system1/sensors1/currentsensor<N><br>/admin1/system1/sensors1/tachsensor<N><br>/admin1/system1/sensors1/tempsensor<N><br>/admin1/system1/sensors1/voltsensor<N> | Sensor | Displays the sensor status. |
| /admin1/system1/sp1 | BMC | Displays the BMC status or restarts BMC. |
| /admin1/system1/settings1/bootcfgsetting1/bootsrcsetting<N> | Boot device | Changes the boot device. |
| /admin1/system1/sp1/account<N> | Account | Displays account information. |

# WS-Management

This section describes how to use WS-Management.

## Connecting WS-Management

Use software which supports WS-Management protocol. In this chapter, WinRM is used as an example.

> **Tip** You can download Windows management framework including WinRM from Microsoft web site.

## Using WinRM

To perform operations shown in the table OPERATION below, enter the following command line at the command prompt on the WinRM-installed console terminal or in Windows PowerShell.

```
winrm <OPERATION> <RESOURCE_URI> [-SWITCH:VALUE] [@{KEY=VALUE}]
```

For available WinRM operations, see the tables below: Table A-5 OPERATION, Table A-6 RESOURCE_URI, and Table A-7 –SWITCH:VALUE. For WinRM details, see help for WinRM.

### Table A-5: OPERATION

| OPERATION | Description |
|---|---|
| g(et) | Retrieves management information. |
| s(et) | Sets management information. |
| c(reate) | Creates a new instance of management resources. |
| d(elete) | Deletes an instance of management resources. |
| e(numerate) | Enumerates all instances of management resources. |
| i(nvoke) | Invokes a method to management resources. |
| id(entify) | Identifies if WS-Management is executed on the server system connected. |

### Table A-6: RESOURCE_URI

| RESOURCE | Description |
|---|---|
| cimv2/CIM_ComputerSystem | Powers on/off, reboots server systems, or restarts the BMC. |
| cimv2/CIM_Processor | Retrieves the processor status. |
| cimv2/CIM_Chip | |
| cimv2/CIM_ProcessorCapabilities | |

| RESOURCE | Description |
|---|---|
| cimv2/CIM_Memory | Retrieves the memory status. |
| cimv2/CIM_PhysicalMemory | |
| cimv2/CIM_PowerSupply | Retrieves the power status. |
| cimv2/CIM_Fan | Retrieves the fan status. |
| cimv2/CIM_Sensor | Retrieves sensor information. |
| cimv2/CIM_NumericSensor | |
| cimv2/CIM_Chassis | Retrieves FRU information. |
| cimv2/CIM_BootConfigSetting | Switches boot device. |
| cimv2/CIM_Account | Retrieves account information. |

## Table A-7: -SWITCH:VALUE

| -SWITCH | VALUE | Description |
|---|---|---|
| -r(emote) | [TRANSPORT] | Sets a URI scheme: HTTP or HTTPS. The default value is HTTP but select HTTPS. |
| | HOST | Sets a host address. Valid formats: DNS name, NetBIOS name or IP address. |
| | [PORT] | By default, 5985 is used for HTTP; 5986 for HTTPS. |
| | [PREFIX] | By default, wsman is set. |
| -u(sernam e) | USERNAME | Specifies the user name for a server system connected. |
| -p(assword) | PASSWORD | Specifies the user password for a server system connected. |
| -a(uthentication) | VALUE | Specifies authentication mechanism used for server connection<br>- None<br>- Basic<br>- Digest<br>- Negotiate |
| -encoding | VALUE | Specifies the encoding for communication with a server system connected. |
| -file | VALUE | Specifies an XML file read from a file when s(et), c(reate) and i(nvoke) operations are executed. |

The following shows an example of command for using WinRM. The example assumes that you have created an account with user name “user02” and password “pass02”. Also assumes BMC's IP address is “192.168.0.1”.

To view sensor information, start WinRM by a command like the following.

```
C:\>winrm e cimv2/CIM_Sensor -r:https://192.168.0.1:5986/wsman
-u:user02 -p:pass02 -a:basic -encoding:utf-8
```

Example:

```
C:\>winrm e cimv2/CIM_Sensor -r:https://192.168.0.1:5986/wsman
-u:user01 -p:pass01 -a:basic -encoding:utf-8
CIM_NumericSensor
   Accuracy = null
   Availability = null
   BaseUnits = 2
   Caption = Temperature(206.0.32)
   CommunicationStatus = null
   CreationClassName = CIM_NumericSensor
   CurrentReading = 2800
   CurrentState = Normal
   Description = HDD PLT2 TEMP1(206.0.32):Temperature for Drive
Backplane 3
   DetailedStatus = null
   DeviceID = 1.206.0.32.1.99
   ElementName = HDD PLT2 TEMP1(206.0.32)
   EnabledDefault = null
   EnabledState = 1
   EnabledThresholds = 3, 1, 2, 0
   ErrorCleared = null
   ErrorDescription = null
   HealthState = 5
   Hysteresis = null
   InstallDate = null
   IsLinear = TRUE
   LastErrorCode = null
   LocationIndicator = null
   LowerThresholdCritical = 0
   LowerThresholdFatal = null
   LowerThresholdNonCritical = 300
   MaxQuiesceTime = null
   MaxReadable = 12700
   MinReadable = 12800
   Name = null
   NominalReading = 4500
   NormalMax = null
   NormalMin = null
   OperatingStatus = null
      :
      :
```

Tip

When an error message saying that the envelope is too large is displayed, enter the following command to avoid troubles.

```
C:\>winrm s winrm/config @{MaxEnvelopeSizekb="4096"}
```

# SMASH operation

This section describes how to operate SMASH.

## Retrieving server system information

You can retrieve identification and status of server systems by SMASH.; for example, to know the product serial number .You can extract them from **OtherIdentifyingInfo** property in the instance of CIM_ComputerSystem class.

### WS-Management

By using WS-Management to retrieve server system information, you can find the information in the instance of which **Dedicated** property is 0 (Not dedicated) among the instances in the CIM_ComputerSystem class.

### SMASH-CLP

Enter the following command.

```
cd /admin1/system1
show
```

### Properties

**Table A-8: CIM_ComputerSystem class properties for server system**

| Property | Description |
|---|---|
| EnabledState | Shows the power status of the server system.<br>2 (Enabled) : Power is ON.<br>3 (Disabled) : Power is OFF. |
| HealthState | Shows whether a failure occurred or not.<br>5 (OK) : Normal<br>10 (Degraded/Warning) : Warning<br>25 (Critical error) : Failure |
| OperationalStatus | Shows whether a failure occurred or not.<br>2 (OK) : Normal<br>3 (Degraded) : Warning<br>6 (Error) : Failure |
| IdentifyingDescriptions | Shows the character string that represents the **OtherIdentifyingInfo** property. The order of items corresponds to that of **OtherIdentifyingInfo** property. |
| OtherIdentifyingInfo | Shows the server identifying character string. The format corresponds to **IdentifyingDescriptions** "HITACHI::LocationID" is "<Chassis serial number>". |

## Powering on/off or rebooting server system

You can power on/off and reboot server system. Note that SMASH does NOT shut down the OS automatically in powering off or rebooting.

### WS-Management

1. Find the instance of which **Dedicated** property is 0 (Not dedicated) among the instances in the CIM_ComputerSystem class.
2. Invoke **RequestStateChange()** method of the instance with appropriate **RequestedState** parameter shown below.

**Table A-9: RequestedState parameters**

| RequestedState parameter | Operation |
|---|---|
| 2 (Enabled) | Powers on. |
| 3 (Disabled) | Powers off. |
| 11 (Reset) | Reboots. |

### SMASH-CLP

You can power on/off and reboot server systems by entering the following commands:

To power on

```
start /admin1/system1
```

To power off

```
stop /admin1/system1
```

To reboot

```
reset /admin1/system1
```

## Retrieving processor status

You can retrieve the processor status.

### WS-Management

You can get the status by retrieving the CIM_Processor class instances.

### SMASH-CLP

You can get the status by entering the following command.

```
cd /admin1/system1/cpu<N>
show
```

### Properties

**Table A-10: CIM_Processor class properties**

| Property | Description |
|---|---|
| ElementName | Shows the name of the processor. If the value is "Unknown", the processor is not installed. |
| HealthState | Shows whether a failure occurred or not.<br>5 (OK) : Normal<br>10 (Degraded/Warning) : Warning<br>25 (Critical error) : Failure |
| OperationalStatus | Shows whether a failure occurred or not.<br>2 (OK) : Normal<br>3 (Degraded) : Warning<br>6 (Error) : Failure |

## Retrieving memory status

You can retrieve the memory status.

### WS-Management

You can get the status by retrieving the CIM_PhysicalMemory class instances.

### SMASH-CLP

You can get the status by entering the following command.

```
cd //admin1/hdwr1/mainchassis1/card1/pmem<N>
show
```

### Properties

**Table A-11: CIM_PhysicalMemory class properties**

| Property | Description |
|---|---|
| Capacity | Shows the memory capacity. If the value is "0" (zero), memory module is not installed. |
| HealthState | Shows whether a failure occurred or not.<br>5 (OK) : Normal<br>10 (Degraded/Warning) : Warning<br>25 (Critical error) : Failure |
| OperationalStatus | Shows whether a failure occurred or not.<br>2 (OK) : Normal<br>3 (Degraded) : Warning<br>6 (Error) : Failure |

## Retrieving power supply module status

You can retrieve the power supply module status.

### WS-Management

You can get the status by retrieving the CIM_PowerSupply class instances.

### SMASH-CLP

You can get the status by entering the following command.

```
cd /admin1/system1/pwrsupply<N>
show
```

### Properties

**Table A-12: CIM_PowerSupply class properties**

| Property | Description |
|---|---|
| HealthState | Shows whether a failure occurred or not.<br>5 (OK) : Normal<br>10 (Degraded/Warning) : Warning<br>25 (Critical error) : Failure |
| OperationalStatus | Shows whether a failure occurred or not.<br>2 (OK) : Normal<br>3 (Degraded) : Warning<br>6 (Error) : Failure |

## Retrieving fan module status

You can retrieve the fan module status.

### WS-Management

You can get the status by retrieving the CIM_Fan class instances.

### SMASH-CLP

You can get the status by entering the following command.

```
cd /admin1/system1/fan<N>
show
```

### Properties

**Table A-13: CIM_Fan class properties**

| Property | Description |
|---|---|
| HealthState | Shows whether a failure occurred or not.<br>5 (OK) : Normal<br>10 (Degraded/Warning) : Warning<br>25 (Critical error) : Failure |
| OperationalStatus | Shows whether a failure occurred or not.<br>2 (OK) : Normal<br>3 (Degraded) : Warning<br>6 (Error) : Failure |

## Retrieving fan rotating speed

You can retrieve the fan rotating speed.

### WS-Management

You can get the information in the following steps:

1. Find the CIM_Fan class instance.
2. Extract the sensor number (<SensorNumber>) from the **DeviceID** property in the instance.
3. Find the instance corresponding to the <SensorNumber> from among the CIM_NumericSensor class instances.
4. The **CurrentReading** property in the instance found in the step 3 shows the rotating speed.

The format of the **DeviceID** property in the CIM_Fan class is:

```
<EntityID> ":" <EntityInstance> ":" <SensorNumber> ":Fan"
```

<SensorNumber> is surrounded by second and third colons(":").

The format of the **DeviceID** property in the CIM_NumericSensor class is:

```
<1 or 2>.<SensorNumber>.<OwnerLUN>.<OwnerID>.<Event/Reading Type Code>.<Sensor Specific Offset or 99>
```

<SensorNumber> is surrounded by first and second periods(".").

### SMASH-CLP

You can get the rotating speed from the target **/admin1/system1/sensors1/tachsensor<N>** of which **ElementName** property begins with "FAN".

## Retrieving FRU information

You can retrieve FRU information.

### WS-Management

You can get FRU information by retrieving the CIM_Chassis class instance.

### SMASH-CLP

You can get the status by entering the following command.

```
cd //admin1/hdwr1/mainchassis1
show
```

### Properties

**Table A-14: CIM_Chassis class properties**

| Property | Description |
|---|---|
| Manufacturer | Shows manufacturer of the server system. |
| Model | Shows model name of the server system. |
| PartNumber | Shows part number of the server system. |
| SerialNumber | Shows serial number of the server system |

## Changing boot device

You can change boot device for next single boot.

### WS-Management

You can change the boot device in the following steps:

1. Find the CIM_BootSourceSetting class instance that containing the **StructuredBootString** property for the boot device you want to use.
2. Find the CIM_BootConfigSetting class instance and invoke **ChangeBootOrder()** method, designating the CIM_BootSourceSetting class instance found above as a parameter.

To use WinRM, execute the following command:

```
C:\>winrm i ChangeBootOrder cimv2/CIM_BootConfigSetting?InstanceID=
CIM:bcs1 -r:https://192.168.0.1:5968/wsman -a:basic -u:userA -p:pas
s01 -encoding:utf-8 -file:input-ChangeBootOrder.xml
```

The contents of the input-ChangeBootOrder.xml are shown below:

```
<n1:ChangeBootOrder_INPUT
    xmlns:n1="http://schemas.dmtf.ofg/wbem/wscim/1/cim-schema/2/CIM
_BootConfigSetting"
    xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
    xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
  <n1:Source>
    <wsa:ReferenceParameters>
      <wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-
schema/2/CIM_BootSourceSetting</wsman:ResourceURI>
     <wsman:SelectorSet>
       <wsman:Selector Name="InstanceID">BootSource</wsman:Selector>
     </wsman:SelectorSet>
    </wsa:ReferenceParameters>
  </n1:Source>
</n1:ChangeBootOrder_INPUT>
```

Replace **BootSource** in the file by **InstanceID** property value of the CIM_BootSourceSetting instance which you want to use.

## SMASH-CLP

You can change the boot device in the following steps:

1. Find the target **bootsrcsetting<N>** under **/admin1/system1/settings1/bootcfgsetting1**, which **StructuredBootString** property is the device you want to boot from.
2. Execute the following command.

```
cd /admin1/system1/settings1/bootcfgsetting1
set bootorder="/admin1/system1/settings1/bootcfgsetting1/bootsrcsetting
<N>"
```

The following table shows the relationship between **StructuredBootString** property values and the boot device.

### Table A-15: StructuredBootString property values

| StructuredBootString property | Boot device |
|---|---|
| HITACHI:None:1 | None. Cancels the boot device designation. |
| CIM:Network:1 | PXE boot |
| CIM:Hard-Disk:1 | Hard disk |
| CIM:CD/DVD:1 | CD/DVD ROM |

## Restarting BMC

You can restart BMC. Note that this operation terminates current SMASH session immediately.

### WS-Management

You can restart BMC in the following steps:

1. Find the instance of which **Dedicated** property is 28 (Management Controller) among the instances in the CIM_ComputerSystem class.
2. Execute the **RequestStateChange()** method in the instance, designating 11 (Reset) as a **RequestedState** parameter.

### SMASH-CLP

You can restart BMC by entering the following command.

```
reset /admin1/system1/sp1
```

# CIM classes, properties and methods

This section provides the list of CIM classes, properties and methods.

## List of CIM classes, properties and methods

The following tables show supported CIM classes, properties and methods. This list covers only major ones.

**Table A-16: Support Profiles Classes**

| Profile | Class | Element Name |
|---|---|---|
| Base Server | CIM_ComputerSystem | Name |
| | | CreationClassName |
| | | EnabledState |
| | | RequrestedState |
| | | OperationalStatus |
| | | HealthState |
| | | ElementName |
| | | Dedicated |
| | | IdentifyingDescriptions |
| | | OtherIdentifyingInfo |
| | | RequestStateChange() |
| | CIM_ComputerSystemPackage | Dependent |
| | | Antecedent |
| | CIM_ElementCapabilities | ManagedElement |
| | | Capabilities |
| | CIM_EnabledLogicalElementCapabilities | RequestedStatesSupported |
| | CIM_PhysicalPackage | Tag |
| | | CreationClassName |
| | | PackageType |
| | | ChassisPackageType |
| | | Manufacturer |
| | | Model |
| | | SerialNumber |
| | | PartNumber |
| | | VendorCompatibilityStrings |
| | | ElementName |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |

| Profile | Class | Element Name |
|---|---|---|
| SMASH Collection | CIM_ConcreteCollection | InstanceID |
| | | ElementName |
| | CIM_MemberOfCollection | Collection |
| | | Member |
| | CIM_OwningCollectionElement | OwningElement |
| | | OwnedElement |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |
| SM CLP Admin Domain | CIM_AdminDomain | Name |
| | CIM_ConcreteCollection | InstanceID |
| | | ElementName |
| | CIM_MemberOfCollection | Collection |
| | | Member |
| | CIM_OwningCollectionElement | OwningElement |
| | | OwnedElement |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |
| | CIM_SystemComponent | GroupComponent |
| | | PartComponent |
| Sensors | CIM_Sensor | SystemCreationClassName |
| | | SystemName |
| | | CreationClassName |
| | | DeviceID |
| | | SensorType |
| | | PossibleStates |
| | | CurrentStates |
| | | ElementName |
| | | OtherSensorTypeDescription |
| | | EnabledState |
| | | RequestedState |
| | | OperationalStatus |
| | | HealthState |
| | | SystemCreationClassName |
| | CIM_NumericSensor | SystemCreationClassName |
| | | SystemName |
| | | CreationClassName |

| Profile | Class | Element Name |
|---|---|---|
| Sensors | CIM_NumericSensor | DeviceID |
| | | BaseUnits |
| | | UnitModifier |
| | | RateUnits |
| | | CurrentReading |
| | | LowerThresholdNonCritical |
| | | UpperThresholdNonCritical |
| | | LowerThresholdCritical |
| | | UpperThresholdCritical |
| | | LowerThresholdFatal |
| | | UpperThresholdFatal |
| | | SupportedThresholds |
| | | SettableThresholds |
| | | SensorType |
| | | PossibleStates |
| | | CurrentStates |
| | | ElementName |
| | | OtherSensorTypeDescription |
| | | EnabledState |
| | | RequestedState |
| | | OperationalStatus |
| | | HealthState |
| | CIM_SystemDevice | GroupComponent |
| | | PartComponent |
| | CIM_AssociatedSensor | Antecedent |
| | | Dependent |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |
| Physical Asset | CIM_Chassis | Tag |
| | | CreationClassName |
| | | PackageType |
| | | ChassisPackageType |
| | | Manufacturer |
| | | Model |
| | | SerialNumber |
| | | PartNumber |
| | | VendorCompatibilityStrings |

| Profile | Class | Element Name |
|---|---|---|
| Physical Asset | CIM_Chassis | ElementName |
| | CIM_ComputerSystemPackage | PlatformGUID |
| | CIM_Container | GroupComponent |
| | | PartComponent |
| | CIM_PhysicalMemory | Tag |
| | | CreationClassName |
| | | FormFactor |
| | | MemoryType |
| | | Speed |
| | | Capacity |
| | | BankLabel |
| | | ElementName |
| | | HealthState |
| | | OperationalStatus |
| | CIM_PhysicalAssetCapabilities | InstanceID |
| | | ElementName |
| | | FRUInfoSupported |
| | CIM_PhysicalPackage | Tag |
| | | CreationClassName |
| | | PackageType |
| | | ChassisPackageType |
| | | Manufacturer |
| | | Model |
| | | SerialNumber |
| | | PartNumber |
| | | VendorCompatibilityStrings |
| | | ElementName |
| | CIM_Realizes | Antecedent |
| | | Dependent |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |
| Boot Control | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |
| | CIM_BootService | CreationClassName |
| | | Name |
| | | SystemCreationClassName |

| Profile | Class | Element Name |
|---|---|---|
| Boot Control | CIM_BootService | SystemName |
| | | ElementName |
| | CIM_BootConfigSetting | InstanceID |
| | | ElementName |
| | | ChangeBootOrder() |
| | CIM_BootSourceSetting | InstanceID |
| | | ElementName |
| | | BootString |
| | | BIOSBootString |
| | | StructuredBootString |
| | | FailThroughSupported |
| | CIM_ElementCapabilities | ManagedElement |
| | | Capabilities |
| | CIM_ElementSettingData | |
| | CIM_HostedService | Antecedent |
| | | Dependent |
| | CIM_OrderedComponent | GroupComponent |
| | | PartComponent |
| | | AssignedSequence |
| | CIM_ServiceAffectsElement | AffectingElement |
| | | AffectedElement |
| | | ElementEffects |
| Fan | CIM_Fan | SystemCreationClassName |
| | | SystemName |
| | | CreationClassName |
| | | DeviceID |
| | | OperationalStatus |
| | | HealthState |
| | | VariableSpeed |
| | | DesiredSpeed |
| | | ActiveCooling |
| | | EnabledState |
| | | RequestedState |
| | | ElementName |
| | CIM_NumericSensor | SensorType |
| | | BaseUnits |
| | | RateUnits |
| | CIM_RegisteredProfile | RegisteredName |

| Profile | Class | Element Name |
|---|---|---|
| Fan | CIM_RegisteredProfile | RegisteredVersion |
| | | RegisteredOrganization |
| | CIM_Sensor | SensorType |
| | CIM_SystemDevice | GroupComponent |
| | | PartComponent |
| Power Supply | CIM_PowerSupply | SystemCreationClassName |
| | | SystemName |
| | | CreationClassName |
| | | DeviceID |
| | | TotalOutputPower |
| | | ElementName |
| | | OperationalStatus |
| | | HealthState |
| | | EnabledState |
| | | RequestedState |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |
| | CIM_SystemDevice | GroupComponent |
| | | PartComponent |
| Service Processor | CIM_ComputerSystem | Dedicated |
| | | Name |
| | | CreationClassName |
| | | OtherIdentifyingInfo |
| | | IdentifyingDescriptions |
| | | EnabledState |
| | | RequrestedState |
| | | OperationalStatus |
| | | HealthState |
| | | ElementName |
| | | RequestStateChange() |
| | CIM_ElementCapabilities | ManagedElement |
| | | Capabilities |
| | CIM_EnabledLogicalElementCapabilities | RequestedStatesSupported |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |
| Profile Registration | CIM_RegisteredProfile | InstanceID |

| Profile | Class | Element Name |
|---|---|---|
| Profile Registration | CIM_RegisteredProfile | RegisteredOrganization |
| | | RegisteredName |
| | | RegisteredVersion |
| | | AdvertiseTypes |
| | CIM_ElementConformsToProfile | ConformantStandard |
| | | ManagedElement |
| | CIM_ReferencedProfile | Antecedent |
| | | Dependent |
| Simple Identity Management | CIM_Account | SystemCreationClassName |
| | | SystemName |
| | | CreationClassName |
| | | Name |
| | | UserID |
| | | UserPassword |
| | | OrganizationName |
| | | ElementName |
| | | RequestedState |
| | | EnabledState |
| | CIM_AccountManagementService | SystemCreationClassName |
| | | CreationClassName |
| | | SystemName |
| | | Name |
| | | RequestedState |
| | | EnabledState |
| | | ElementName |
| | CIM_AccountOnSystem | GroupComponent |
| | | PartComponent |
| | CIM_AssignedIdentity | IdentityInfo |
| | | ManagedElement |
| | CIM_ElementCapabilities (CIM_AccountManagementService) | ManagedElement |
| | | Capabilities |
| | CIM_HostedService | Antecedent |
| | | Dependent |
| | CIM_Identity | InstanceId |
| | | ElementName |
| | CIM_RegisteredProfile | RegisteredName |
| | | RegisteredVersion |
| | | RegisteredOrganization |

| Profile | Class | Element Name |
|---|---|---|
| Simple Identity Management | CIM_ServiceAffectsElement | AffectingElement |
| | | AffectedElement |
| | | ElementAffects |
| CPU | CIM_Processor | CPUStatus |
| | | CreationClassName |
| | | CurrentClockSpeed |
| | | DeviceID |
| | | ElementName |
| | | EnabledState |
| | | ExternalBusClockSpeed |
| | | Family |
| | | HealthState |
| | | MaxClockSpeed |
| | | OperationalStatus |
| | | RequestedState |
| | | SystemCreationClassName |
| | | SystemName |
| | CIM_ProcessorCapabilities | InstanceID |
| | | NumberOfHardwareThread |
| | | NumberOfProcessorCores |
| System Memory | CIM_Memory | Access |
| | | BlockSize |
| | | ConsumableBlocks |
| | | CreationClassName |
| | | DeviceID |
| | | ElementName |
| | | EnabledState |
| | | HealthState |
| | | NumberOfBlocks |
| | | OperationalStatus |
| | | RequestdState |
| | | SystemCreationClassName |
| | | SystemName |
| | | Volatile |

# Troubleshooting

This section describes examples of basic troubleshooting with the SMASH.

### Table A-17: Troubleshooting

| # | Problem | Description |
|---|---|---|
| 1 | Cannot connect to BMC | Check the following from web console.<br>1) BMC's IP address and ports are properly configured.<br>2) IPMI/SMASH user account is properly configured.<br>3) Secure transport protocol (HTTPS or SSH) is used.<br>4) Connection from your client PC's IP address is allowed. |
| 2 | An error message displayed when "`show //admin1/hdwr1/mainchassis1`" is executed in CLP. | The error message is below.<br>`cmdstat`<br>`status : 2`<br>`status_tag : COMMAND PROCESSING FAILED`<br>`error : 246`<br>`error_tag : INVALID TARGET`<br><br>This message appears when asset tag contains non-ASCII characters. Compute Rack 210/220 series only support ASCII encoding for asset tag.<br>Set asset tag containing only ASCII characters from web console. |

# B

# CLI Console

This Appendix-B describes the functions of CLI Console.

- Common function
- CLI command

# Common function

## Login/logout

### Login

1. Start the terminal emulator as a system console (SSH or telnet).
2. Set the IP address of the BMC, and terminal emulator connect BMC IP address through SSH or telnet.
3. When you have successfully logged in, the login prompt window is displayed.
4. The following user account and password of the system administrator are set to the factory default settings. Enter the following values in the table.

**Table B-1: Factory default settings**

| Item | Factory default settings |
|---|---|
| User account | user01 |
| Password | pass01 |

We strongly recommend that the password of the system administrator changed for security.

5. Enter the user account in the login prompt to connect the management module, and then press **Enter**.

```
Login:user01
```

6. Enter the password, and then press **Enter**.

```
Login:user01
Password:pass01
```

7. The following initial window is displayed after logging in to the management module.

The following item appear on the initial window after logging in to the management module.

Example:

```
7PESE
 ALL RIGHTS RESERVED, COPYRIGHT (C), 2011, 2012, HITACHI, LTD.
Chassis ID       : 9 T999999999
Firmware Revision :
$
```

## Logout

Enter **`exit`** in the CLI prompt, and then press **Enter**.

```
$ exit
```

# Command input assistance

The CLI console provides command input assistance which helps an operator to type a command line.

## Characters available to input

' ' (space), '!' , '"' (double quotation), '#' , '$' , '%' , '&' , "'(single quotation) , '(' , ')' , '*' , '+' , ',' , '-' , '.' , '/' ,':' , ';' , '<' , '=' , '>' , '? ','@' ,'[' , '\' , ']' , '^' , '_' ,'`' , '{' , '}' , '~' , '0' ~ '9' , 'A' ~ 'Z' , 'a' ~ 'z' ,

## Deleting characters

[BackSpace] key

Moves the cursor backward and deletes the character to the left of the cursor.

[Delete] key

Moves the cursor backward and deletes the character to the left of the cursor.

- If no command matches, the command line remains the same.
- Auto-completion works only on command name, and doesn't on parameter.

# CLI command

This section describes CLI command.

## Chassis

### show chassis setting

#### Command

```
show chassis setting
```

#### Description

Shows the setting of chassis.

#### Parameters

None

#### Show items

```
-- chassis setting --
Chassis ID
    Chassis ID
        Maximum of 21 characters

Maintenance classification
    Setting of long life support
        normal  : standard service.
        long    : long life support service.

-- chassis FRU setting --
Part/model number
    Part/model number of the chassis
        Maximum of 32 characters

Serial number
    Serial number of the chassis
        Maximum of 27 characters

Model ID
    Chassis type

Midplane ID
    Midplane type
```

First WWN

First additional WWN

The smallest WWN in 256 WWNs assigned the additional WWM chassis.

## Message

None

## Example

[Shows the setting of server chassis.]

```
show chassis setting
```

## Comment

None

## set chassis id

### Command

```
set chassis id -c <cid> [-F]
```

### Description

Edits the Chassis ID.

### Parameters

-c <cid>
    Chassis ID
        Maximum of 21 characters

-F
  Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Edits the Chassis ID into “SERVER1”]

```
set chassis id -c SERVER1
```

### Comment

None

# Front panel

## show front-panel status

### Command

```
show front-panel status
```

### Description

Shows the status of front panel.

### Parameters

None

### Show items

```
-- Front panel status --
Install
     Install status of a module
              Install   : The module is installed.
              Not Install       : The module is not installed.

-- LED status --
LED type
     LED type

         Power Led
         Location Led: Location ID
         Error Led
         Mode Led
         Maintenance Led

 Light
     Lighting status of LED.
              on       : turn-on
              off      : turn-off
```

### Message

None

### Example

[Show status of front panel.]

```
  show front-panel status
```

## Comment

None

## set front-panel led

### Command

```
set front-panel led -l <led_type> -t <led_on_off> [-F]
```

### Description

Turns on or turn off the LID of chassis.

### Parameters

-l <led_type>
  LED type
    lid : Location ID

-t <led_on_off>
  Turn on or turn off of LED.
    on : turn-on
    off : turn-off

-F
  Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Turns on the LID of chassis.]

```
set front-panel led -l lid -t on
```

[Turns off the LID of chassis.]

```
set front-panel led -l lid -t off
```

### Comment

None

# Server

## show server status

### Command

```
show server status [<server_no>]
```

### Description

Shows the status of server.

### Parameters

<server_no>
Slot number is always 0.

### Show items

-- Server status --
Slot
Slot number is always 0.

Initialize
Initialize status.

Init comp : Server is completed to initialize.

Power detail
Power status of server.
off : Server is powered off.
On : Server is powered on.

Power
Status of power
off : Powered off
on : Powered on

Fail
Status of Fail.
normal : Not fail
fail : Fail

Mass(kg)
Mass of module(kg)

```
-- LED status --
LED type
     LED type
             lid                : Shows Location ID.

Light
  Lighting status of LED
             on                 : turned on
             off                : turned off
```

## Message

None

## Example

[Shows the status of server 0.]

```
show server status 0
```

## Comment

None

## show server mgmt-lan

### Command

```
show server mgmt-lan [<server_no>]
```

### Description

Shows the management LAN of BMC in the server.

### Parameters

<server_no>
Slot number of server in the server chassis.
Range is fixed value 0 .
Multiple selection is available.
If 'all' is specified for this parameter or this parameter is omitted, the command shows all servers.

### Show items

-- Server LAN interface setting --
Slot
Slot number of server in the server chassis.
Range is fixed value 0.

IP address
IP address

Subnetmask
Subnet mask

Default gateway
Default gateway of the module

DHCP
Show current DHCP setting

### Message

None

### Example

[Show management LAN of BMC in the server 0.]

```
show server mgmt-lan 0
```

### Comment

None

## set server mgmt-lan

### Command

```
set server mgmt-lan <server_no> [-i <ip_addr>] [-s <subnet_mask>] [-g
<default_gateway>] [-F]
```

### Description

Edits the management LAN of BMC in the server.

### Parameters

<server_no>
Slot number of server in the server chassis
Range is fixed value 0 .
Multiple selection is not available.

-i <ip_addr>
IP address

-s <subnet_mask>
Subnet mask

-g <default_gateway>
Default gateway of module

-d <DHCP setting>
Set DHCP setteing
Enabled : enabled DHCP
Disabled : disabled DHCP

-F
Executes the command without inquiry.

### Show items

None

### Message

None

## Example

[Set IP address, subnet mask, and default gateway of the management LAN of BMC in the server 0.]

```
    set server mgmt-lan 0 -i 192.168.0.50 -s 255.255.255.0 -g
192.168.0.1
```

[Edit IP address of management LAN of BMC on server 0.]

```
    set server mgmt-lan 0 -i 192.168.0.60
```

## Comment

None

## poweron server

### Command

```
poweron server [<server_no>][-F]
```

### Description

Power on the server.

### Parameters

<server_no>
Slot number of server in the server chassis
Range is fixed value 0 .
Multiple selection is available.
If 'all' is specified for this parameter or this parameter is omitted, the command shows all servers.

-F
Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Power on server 0.]

```
poweron server 0
```

### Comment

The server will not power on when the chassis is in silent mode and the server is not supporting silent mode.

## poweroff server

### Command

```
poweroff server [<server_no>] [-h|-s] [-F]
```

### Description

Power off the server.

### Parameters

<server_no>
Slot number of the server in the server chassis
Range is fixed value 0.
Multiple selection is available.
If 'all' is specified for this parameter or this parameter is omitted, the command shows all servers.

-h
Force power off the server.

-s
Shutdown the server.
If omitted -h and -s parameter, this parameter is applied.

-F
Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Shuts down the OS which is operated by the server 0.]

```
poweroff server 0
```

[Force power off server 0.]

```
poweroff server all -h
```

### Comment

None

## bmc-reset server

### Command

```
bmc-reset server [<server_no>] [-h|-s] [-F]
```

### Description

Resets BMC on the server.

### Parameters

<server_no>
Slot number of the server in the server chassis
Range is from 0 .
Multiple selection is available.
If 'all' is specified for this parameter or this parameter is omitted, the command shows all servers.

-s
Restart the BMC.

-F
Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[The sub power supply of the server 0 is turned off / on.]

[BMC of all the servers are rebooted.]

```
bmc-reset server all -s
```

### Comment

None

## reset server

### Command

```
reset server [<server_no>] [-h|-s] [-F]
```

### Description

Resets the server.

### Parameters

<server_no>
Slot number of the server in the server chassis
Range is fixed value 0.
Multiple selection is available.
If 'all' is specified for this parameter or this parameter is omitted, the command shows all servers.

-h
Hard reset the server.
If omitted -h and -s parameter, this parameter is applied.

-s
Issues NMI (Non-Maskable Interrupt).

-F
Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Reset server 0.]

```
reset server 0
```

[NMI is sent to all the servers.]

```
reset server all -s
```

### Comment

None

## show server firmware

### Command

```
show server firmware [<server_no>]
```

### Description

Shows the firmware version of server.

### Parameters

<server_no>
Slot number of server in the server chassis.
Range is fixed value 0
Multiple selection is available.
If 'all' is specified for this parameter or this parameter is omitted, the command shows all servers.

### Show items

-- Server firmware version --
Slot
Slot number of the server in the server chassis.
Range is fixed value 0.

-- BMC version --
Current version
Current BMC firmware version

Next version
Next BMC firmware version

-- EFI version --
Current version
Current EFI firmware version

Next version
Next EFI firmware version

### Message

None

### Example

[Shows the firmware version of server 0.]

```
show server firmware 0
```

## Comment

None

# Fan module

## show fan-module status

### Command

```
show fan-module status [<fan_no>]
```

### Description

Show status of the fan module.

### Parameters

<fan_no>
Slot number of cooling fan module in the server chassis

Multiple selection is available.
If 'all' is specified for this parameter or this parameter is omitted, the command shows all servers.

### Show items

-- Fan module status --
Slot
Slot number of cooling fan module in the server chassis
Range is fixed value 0 .

Install
Install status of a module
installed : Module is installed.
not installed : Module is not installed.

Power
Status of power
off : Power-off
on : Power-on

Fail
Status of Fail.
normal : Not fail
fail : Fail

Tachometer (rpm)
Revolution of cooling fan

## Message

None

## Example

[Shows the status of cooling fan module 0.]

```
show fan-module status 0
```

## Comment

None

# Time

## show time local

### Command

```
show time local
```

### Description

Shows the local time of management module.

### Parameters

None

### Show items

-- Local time --
Date
    Date uses 'YYYY-MM-DD' format.
        'YYYY' is from '1970' to '2037'. 'MM' is from '01' to '12'. 'DD' is from '01' to '31'.

Time
    Time uses 'hh:mm:ss' format.
        'hh' is from '00' to '23'. 'mm' is from '00' to '59'. 'ss' is from '00' to '59'.

### Message

None

### Example

[Shows the local time of management module. ]

```
show time local
```

### Comment

None

## set time local

### Command

```
set time local -d <date_time> [-F]
```

### Description

Edits the local time of management module.

### Parameters

-d <date_time>
  Date and time.
    Format is "YYYY-MM-DD hh:mm:ss". Date and time is divided with a space. Input string must be enclosed in double quotes because including a space.

-F
  Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Edits the local time of management module. ]

```
set time local -d "2013-05-01 15:00:00"
```

### Comment

None

## show time timezone

### Command

```
show time timezone
```

### Description

Shows the time zone of management module.

### Parameters

None

### Show items

-- Timezone --
Timezone
    Range is from '-24:59' to '+24:59'.

### Message

None

### Example

[Shows the time timezone of management module.]

```
show time timezone
```

### Comment

None

## set time timezone

### Command

```
set time timezone -z <timezone> [-F]
```

### Description

Edits the time zone of management module.

### Parameters

-z <timezone>
  Range is from '-24:59' to '+24:59'.

Enclose the value within double quotation marks to input a minus value.

-F
  Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Edits the time zone of management module.]

```
    set time timezone -z +09:00
```

### Comment

None

# Language

## show language system

### Command

```
show language system
```

### Description

Shows the language mode of management module.

### Parameters

None

### Show items

```
-- System language --
Language
   Language mode
            english : English
            japanese        : Japanese
```

### Message

None

### Example

[Shows the language mode of management module.]

```
show language system
```

### Comment

None

## set language system

### Command

```
set language system [-l <language>] [-F]
```

### Description

Edits the language mode of management module.

### Parameters

-l <language>
Language mode

| | |
|---|---|
| english | : English |
| japanese | : Japanese |

-F
Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Sets the language mode of management module to Japanese. ]

```
set language system -l japanese
```

### Comment

None

# Remote access

## show remote-access protocol http

### Command

```
show remote-access protocol http
```

### Description

Shows the setting of connection allowance of http

### Parameters

None

### Show items

-- HTTP setting --
Port number
    Port number of protocol.
        Range is from 1 to 65535.

Allow
    Allowance or denial
        allow : Allowance
        deny : Denial

Network address
    Network address.

Subnetmask
    Subnet mask.

### Message

None

### Example

[Shows the setting of connection allowance of http.]

```
show remote-access protocol http
```

### Comment

None

## set remote-access protocol http

### Command

```
set remote-access protocol http [-a <allow>] [-p <protocol_port>] [-n
<network_addr>] [-s <subnet_mask>] [-F]
```

### Description

Edits the setting of connection allowance of http.

### Parameters

-a <allow>
    Allowance or denial
        allow : Allowance
        deny : Denial

-p <protocol_port>
    Port number of protocol.
        Range is from 1 to 65535.

-n <network_addr>
    Network address.

-s <subnet_mask>
    Subnet mask.

-F
    Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Allows the HTTP connection of IP address from 192.168.0.0 to 192.168.0.255.]

```
set remote-access protocol http -p 80 -a allow -n 192.168.0.0 -s
255.255.255.0
```

[Deny all the HTTP connection.]

```
set remote-access protocol http -a deny
```

## Comment

None

## show remote-access protocol https

### Command

```
show remote-access protocol https
```

### Description

Shows the setting of connection allowance of https.

### Parameters

None

### Show items

-- HTTPS setting --
Port number
    Port number of protocol.
        Range is from 1 to 65535.

Allow
    Allowance or denial
        allow  : Allowance
        deny   : Denial

Network address
    Network address.

Subnetmask
    Subnet mask.

### Message

None

### Example

[Shows the setting of connection allowance of https]

```
show remote-access protocol https
```

### Comment

None

## set remote-access protocol https

### Command

```
set remote-access protocol https [-a <allow>] [-p <protocol_port>] [-n
<network_addr>] [-s <subnet_mask>] [-F]
```

### Description

Edits the setting of connection allowance of https.

### Parameters

-a <allow>
    Allowance or denial
        allow : Allowance
        deny : Denial

-p <protocol_port>
    Port number of protocol.
        Range is from 1 to 65535.

-n <network_addr>
    Network address.

-s <subnet_mask>
    Subnet mask.

-F
    Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Sets the HTTPS port number to 443 and allows the HTTP connection of IP address from 192.168.0.0 to 192.168.0.255.]

```
set remote-access protocol https -p 443 -a allow -n 192.168.0.0
-s 255.255.255.0
```

[Deny all the HTTPS connection.]

```
set remote-access protocol https -a deny
```

## Comment

None

## show remote-access protocol ssh

### Command

```
show remote-access protocol ssh
```

### Description

Shows the setting of connection allowance of SSH.

### Parameters

None

### Show items

```
-- SSH setting --
Allow
    Allowance or denial
            allow    : Allowance
            deny     : Denial

Network address
    Network address.

Subnetmask
    Subnet mask.
```

### Message

None

### Example

[Shows the setting of connection allowance of SSH.]

```
show remote-access protocol ssh
```

### Comment

None

## set remote-access protocol ssh

### Command

```
set remote-access protocol ssh [-a <allow>] [-n <network_addr>] [-s
<subnet_mask>] [-F]
```

### Description

Edit the setting of connection allowance of SSH.

### Parameters

-a <allow>
    Allowance or denial
        allow : Allowance
        deny : Denial

-n <network_addr>
    Network address.

-s <subnet_mask>
    Subnet mask.

-F
    Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Allows the SSH connection of IP address from 192.168.0.0 to 192.168.0.255.]

```
set remote-access protocol ssh -a allow -n 192.168.0.0 -s
255.255.255.0
```

[Deny all the SSH connection.]

```
set remote-access protocol ssh -a deny
```

### Comment

None

## show remote-access protocol telnet

### Command

```
show remote-access protocol telnet
```

### Description

Shows the setting of connection allowance of TELNET.

### Parameters

None

### Show items

```
-- TELNET setting --
Allow
    Allowance or denial
            allow    : Allowance
            deny     : Denial

Network address
    Network address

Subnetmask
    Subnet mask
```

### Message

None

### Example

[Shows the setting of connection allowance of TELNET.]

```
show remote-access protocol telnet
```

### Comment

None

## set remote-access protocol telnet

### Command

```
set remote-access protocol telnet [-a <allow>] [-n <network_addr>] [-s
<subnet_mask>] [-F]
```

### Description

Edits the setting of connection allowance of TELNET.

### Parameters

-a <allow>
    Allowance or denial
        allow : Allowance
        deny : Denial

-n <network_addr>
    Network address

-s <subnet_mask>
    Subnet mask

-F
    Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Allows the TELNET connection of IP address from 192.168.0.0 to 192.168.0.255.]

```
set remote-access protocol telnet -a allow -n 192.168.0.0 -s
255.255.255.0
```

[Deny all the TELNET connection.]

```
set remote-access protocol telnet -a deny
```

### Comment

None

## show hitrack setting

### Command

```
show hitrack setting
```

### Description

Shows the setting of HiTrack setting.

### Parameters

None

### Show items

```
-- HiTrack agent setting --
Server cooperation
    HiTrack Enable or Disable
            enable      : HiTrack enable
            disable : HiTrack disable

-- HiTrack management server setting --
IP address
    IP address of HiTrack management server.
```

### Message

None

### Example

[Shows the setting of HiTrack]

```
show hitrack setting
```

### Comment

None

## set hitrack agent

### Command

```
set hitrack agent -c <hitrack_permit_con> [-F]
```

### Description

Sets the HiTrack agent.

### Parameters

-c <hitrack_permit_con>
HiTrack Enable or Disable
enable : HiTrack enable
disable : HiTrack disable

-F
Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Sets the HiTrack agent.]

```
set hitrack agent -c enable
```

### Comment

None

## set hitrack manager

### Command

```
set hitrack manager -i <hitrack_ip_addr> [-F]
```

### Description

Sets the HiTrack management server.
Adds server when IP address is not registered and updates the setting when registered.

### Parameters

-i <hitrack_ip_addr>
    IP address of HiTrack management server

-F
    Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Sets the HiTrack management server.]

```
set hitrack manager -i 192.168.0.20
```

### Comment

None

## delete hitrack manager

### Command

```
delete hitrack manager -i <hitrack_ip_addr> [-F]
```

### Description

Deletes the HiTrack management server.

### Parameters

-i <hitrack_ip_addr>
    IP address of HiTrack management server.

-F
    Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Deletes the HiTrack management server.]

```
delete hitrack manager -i 192.168.0.20
```

### Comment

None

# SNMP

## show snmp agent

### Command

```
show snmp agent
```

### Description

Shows the setting of SNMP agent.

### Parameters

None

### Show items

-- SNMP agent setting --
Agent
Enabled or disabled of SNMP agent.
Enable : Enabled
Disable : Disabled

Contact name
Contact name of SNMP agent.
Maximum of 60 characters.

Location
Location of SNMP agent.
Maximum of 60 characters.

Port number
Port number of SNMP agent which should be different from the one SNMP agent uses
Range is from 1 to 65535.

Trap level
Trap level of SNMP agent.
Disable : Not send any reports.
Alert : Send only level “non-recoverable” and “serious”.
Information : Send only level “information” .
ALL : Send all levels.

SNMP version
Version of SNMP agent.

Engine ID string
Engine ID string of SNMP manager.
Available when SNMP version is v3.
From 1 to 27 characters.

Engine ID
Engine ID of SNMP manager.
Available when SNMP version is v3.
From 12 to 64 characters.

## Message

None

## Example

[Shows the setting of SNMP agent.]

```
show snmp agent
```

## Comment

None

## set snmp agent

### Command

```
set snmp agent [-v <snmp_valid>] [-c <snmp_contact>] [-l <snmp_loc>] [-p
<snmp_port>] [-t <snmp_trap>] [-s <snmp_version>] [-e <snmp_engine_str>]
[-F]
```

### Description

Edits the setting of SNMP agent.

### Parameters

-v <snmp_valid>
Enabled or disabled of SNMP agent.
enable : Enabled
disable : Disabled

-c <snmp_contact>
Contact name of SNMP agent.
Maximum of 60 characters.

-l <snmp_loc>
Location of SNMP agent.
Maximum of 60 characters.

-p <snmp_port>
Port number of SNMP agent.
Range is from 1 to 65535.

-t <snmp_trap>
Trap level of SNMP agent.
disable : Not send any reports.
alert : Send level “non-recoverable” and “serious”.
information : Send only level “information”.
all : Send all levels.

-s <snmp_version>
Version of SNMP agent.

-e <snmp_engine_str>
Engine ID string of SNMP manager.
Available when SNMP version is v3.
From 1 to 27 characters.

-F
Executes the command without inquiry.

## Show items

None

## Message

None

## Example

[Edit SNMP agent setting.]

```
set snmp agent -v enable -c contact_name -l location -p 161 -t
information -s v1/v2c
```

## Comment

None

## show snmp manager

### Command

```
show snmp manager [-n <snmp_mgr_num>]
```

### Description

Shows the setting of SNMP manager.

### Parameters

-n <snmp_mgr_num>
    Number of SNMP manager.
        Up to 8 SNMP managers can be set.
        Range is fixed value 0.

### Show items

-- SNMP Manager setting --
SNMP version
    Version of SNMP agent.

Host name
    Domain name (FQDN) or IP address of SNMP manager.
        Maximum of 255 characters.

Port number
    Port number of SNMP manager.
        Port number must be different from SNMP agent.
        Range is from 1 to 65535.

Community name
    Community name of SNMP manager.
        Maximum of 60 characters.
        Available when SNMP version is v1/v2c.

User name
    User name of SNMP manager.
        From 1 to 32 characters.
        Available when SNMP version is v3.

Access type
    Access type of SNMP manager.
        noauth-nopriv : without authentication, without encryption.
        auth-nopriv : with authentication, without encryption.
        auth-priv : with authentication, with encryption.
        Available when SNMP version is v3.

Authentication type

Type of authentication.

| | |
|---|---|
| md5 | : MD5. |
| sha | : SHA. |

Available when access type is auth-nopriv or auth-priv.

Encrypt type

Type of encryption.

| | |
|---|---|
| des | : DES. |
| aes | : AES. |

Available when access type is auth-priv.

## Message

None

## Example

[Shows the setting of SNMP manager.]

```
show snmp manager -n 0
```

## Comment

None

## set snmp manager

### Command

```
set snmp manager -n <snmp_mgr_num> [-s <snmp_version>] [-h
<snmp_mgr_host_name>] [-p <snmp_mgr_port>] [-c
<snmp_mgr_community_name>] [-u <snmp_mgr_user_name>] [-a
<snmp_mgr_access_type>] [-at <snmp_mgr_auth_type>] [-ap
<snmp_mgr_auth_password>] [-et <snmp_mgr_encrypt_type>] [-ep
<snmp_mgr_encrypt_password>] [-F]
```

### Description

Edits the setting of SNMP manager.

### Parameters

-n <snmp_mgr_num>
Number of SNMP manager.
Up to 8 SNMP managers can be set.
Range is fixed value 0.

-s <snmp_version>
Version of SNMP agent.

-h <snmp_mgr_host_name>
Domain name (FQDN) or IP address of SNMP manager.
Maximum of 255 characters.

-p <snmp_mgr_port>
Port number of SNMP manager. Range is from 1 to 65535.

-c <snmp_mgr_community_name>
Community name of SNMP manager.
Maximum of 60 characters.
Available when SNMP version is v1/v2c.

-u <snmp_mgr_user_name>
User name of SNMP manager.
From 1 to 32 characters.
Available when SNMP version is v3.

-a <snmp_mgr_access_type>
Access type of SNMP manager.
noauth-nopriv : without authentication, without encryption.
auth-nopriv : with authentication, without encryption.
auth-priv : with authentication, with encryption.
Available when SNMP version is v3.

-at <snmp_mgr_auth_type>
Type of authentication.

| | |
|---|---|
| vmd5 | : MD5. |
| sha | : SHA. |

Available when SNMP version is v3

-ap <snmp_mgr_auth_password>
Password for authentication.
Available when SNMP version is v3

-et <snmp_mgr_encrypt_type>
Type of encryption.

| | |
|---|---|
| des | : DES. |
| aes | : AES. |

Available when SNMP version is v3.

-ep <snmp_mgr_encrypt_password>
Password for encryption.
Available when SNMP version is v3.

-F
Executes the command without inquiry.

## Show items

None

## Message

None

## Example

[Edits the setting of SNMP manager.(v1/v2)]

```
set snmp manager -n 0 -s v3 -h 0.0.0.0 -p 162 -c community name
```

[Edits the setting of SNMP manager. (v3)]

```
set snmp manager -n 0 -s v3 -h 0.0.0.0 -p 162 -u user name
-a auth-priv -at md5-ap password -et des -ep password
```

## Comment

None

## show snmp mib

### Command

```
show snmp mib
```

### Description

Shows the SNMP MIB file version.

### Parameters

None

### Show items

-- MIB information --
Version
    Version of MIB.

### Message

None

### Example

[Shows the SNMP MIB file version.]

```
show snmp mib
```

### Comment

None

## test snmp trap

### Command

```
test snmp trap [-F]
```

### Description

Sends the SNMP test trap.

### Parameters

-F
    Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Send the SNMP test trap.]

```
test snmp trap
```

### Comment

None

# Log

## show log sel

### Command

```
show log sel [-f <filter>] [-l <level>]
```

### Description

Shows the system event log(SEL).

### Parameters

-f <filter>
Filter to select rows to show.
M, M0 ~ M1, B, B0, FAN, FAN0 ~ FAN5,
PS, PS0 ~ PS3

-l <level>
Level of system event log.

| | |
|---|---|
| 0 | : all level |
| 1 | : caution, warning, fail level only |
| 2 | : warning, fail level only |
| 3 | : fail level only |

### Show items

-- System event log --

Seq
Sequence number of system event log.

Timestamp
Timestamp of system event log.

Level
Level of system event log.

| | |
|---|---|
| Info | : information level. |
| Caution | : caution level. |
| WARNING | : warning level. |
| FAIL | : fail level. |

Module
Symbol name and slot number of module which generates the system event log.

| | |
|---|---|
| Bn | : Server , 'n' is fixed value 0. |
| FANn | : fan module, 'n' is 0 to 5. |
| PSn | : power supply module, 'n' is 0 to 3. |
| FP | : front panel. |
| C | : chassis. |

XID
XID of system event log.

System event log
Code of system event log.

Message
Message of system event log.
Maximum of 255 characters.

## Message

None

## Example

[Shows the system event log (SEL).]

```
show log sel
```

[Shows the system event log (SEL) of server.]

```
show log sel -f B0
```

[Shows the system event log (SEL) of all server.]

```
show log sel -f B
```

[Shows the system event log (SEL) of fail level.]

```
show log sel -l 3
```

## Comment

None

# Backup

## backup server bmc

### Command

```
backup server bmc <server_no>
```

### Description

Backup data of BMC.

### Parameters

<server_no>
Range is always 0.

### Show items

None

### Message

None

### Example

[Backups the BMC setting of the server 0 with backup file.]
backup `server bmc 0 -n 0`

### Comment

None

## restore server bmc

### Command

```
restore server bmc <server_no> -n <bank_no> [-F]
```

### Description

Restores the BMC setting of the server with backup file.

### Parameters

<server_no>
Slot number of server in the server chassis.
Range is fixed value 0.
Only one server can be selected.

-n <bank_no>
Bank number of backup.
Range is from 0 to 4.

-F
Executes the command without inquiry.

### Show items

None

### Message

None

### Example

[Restores the BMC setting of the server 0 with backup file.]

```
restore server bmc 0 -n 0
```

### Comment

None

# Console

## exit

### Command

```
exit
```

### Description

Exit CLI console.

### Parameters

None

### Show items

None

### Message

None

### Example

[Exit CLI console.]

```
exit
```

### Comment

None

C

# MIB

This Appendix-C describes the method and items of MIB.

# Overview

This section describes the method of MIB description.

## MIB structure

The following figure describes the MIB tree structure.

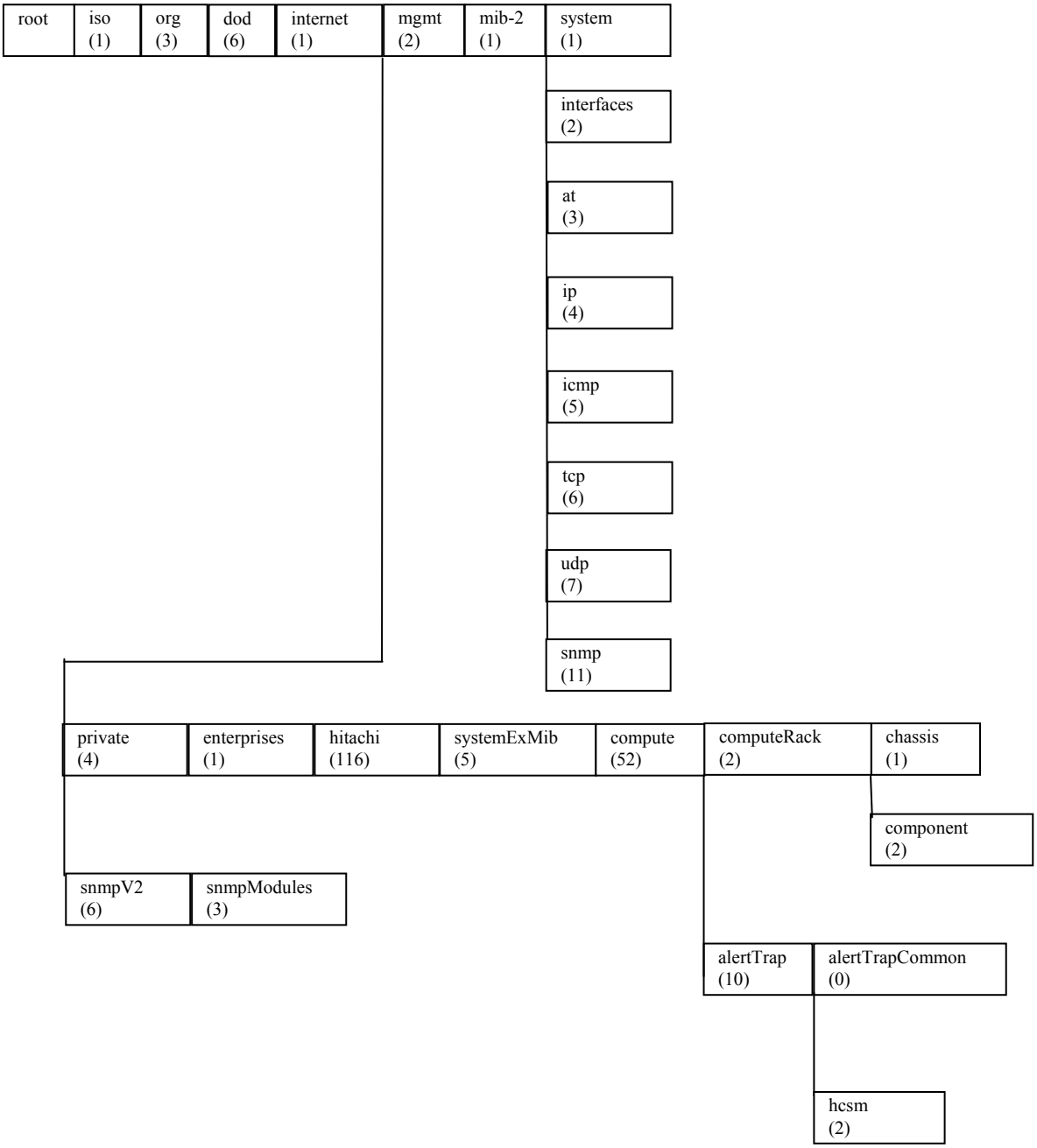



**Figure C-1: MIB tree structure**

## Method of MIB description

This section describes the symbolic convention that is used in this guide.

## Object identifier

The object identifier displays the name of MIB object identifier.

## OID

The OID displays the OID that is corresponded to the MIB object identifier.

## SYNTAX

The following table describes the syntax that is used in the private MIB.

**Table C-1: Syntax of MIB**

| No. | SYNTAX | Description |
|---|---|---|
| 1 | Not-Accessible | Access is disabled. |
| 2 | Display String | 0 to 255 characters are enabled. |
| 3 | INTEGER | Integer value range: -2147483648 to 2147483647 are enabled. |
| 4 | Integer32 | Integer value range: -2147483648 to 2147483647 are enabled. |
| 5 | OBJECT IDENTIFIER | Object identifier |

## Access

- RO: Displays MIB access is read-only.
- RW: Displays MIB access is read-write.
- NA: Displays MIB access is not-accessible.

# Standard MIB

This section describes the items of standard MIB.

## Support items

The following table describes the nine supported groups by the standard MIB.

**Table C-2: Supported standard MIB objects**

| No. | Object identifier | OID | Description |
|---|---|---|---|
| 1 | system | .1.3.6.1.2.1.1* | Device information |
| 2 | interfaces | .1.3.6.1.2.1.2 | Interface information |
| 3 | at | .1.3.6.1.2.1.3 | ARP information |
| 4 | ip | .1.3.6.1.2.1.4 | IP information |
| 5 | icmp | .1.3.6.1.2.1.5 | ICMP information |
| 6 | tcp | .1.3.6.1.2.1.6 | TCP information |
| 7 | udp | .1.3.6.1.2.1.7 | UDP information |
| 8 | snmp | .1.3.6.1.2.1.11 | SNMP information |
| 9 | snmpModules | .1.3.6.1.6.3 | SNMPv3 information |
| * "1.3.6.1.2.1.1.8" and "1.3.6.1.2.1.1.9" are not contained. | | | |

Tip

- The attribute access that in the standard of SNMP is read-write (RW) displays read-only (RO) in this guide.
- The contents of object are according to the regulation of RFC1213, RFC1285, and RFC1398.
  For details of contents, see the website or the manual of SNMP manager.

# Private MIB

This section describes the private MIB.

## Specification of SNMP Trap

The following table describes the notification of SNMP trap.

**Table C-3: Specification of SNMP Trap**

| Item | | Description |
|---|---|---|
| Content of messaging | Binding of the first variable | Time of alert transmission |
| | Binding of the second variable | Chassis ID |
| | Binding of the third variable | Alert level |
| | Binding of the fourth variable | Alert ID |
| | Binding of the fifth variable | Alert message |
| | Binding of the sixth variable* | Alert outbreak part |
| | Binding of the seventh variable | Alert module type |
| | Binding of the eighth variable | Alert module location |
| | Binding of the ninth variable | Alert module model name |
| | Binding of the tenth variable | Alert module serial number |
| | Binding of the eleventh variable | Alert event code |
| * This is not bound in HCSM alert. | | |

## Event contents of SNMP Trap

The following table describes the event contents of SNMP trap.

**Table C-4: Contents of SNMP Trap**

| SNMP trap event name | OID | Description |
|---|---|---|
| hcsmAlertTrapMonitoringError | 1.3.6.1.4.1.116.5.52.10.2.1.1.1 | The event of the fault level was encountered as monitoring alert. |
| hcsmAlertTrapMonitoringWarning | 1.3.6.1.4.1.116.5.52.10.2.1.1.2 | The event of the warning level was encountered as monitoring alert. |
| hcsmAlertTrapMonitoringInformation | 1.3.6.1.4.1.116.5.52.10.2.1.1.3 | The event of the information level was encountered as monitoring alert. |
| hcsmAlertTrapEventError | 1.3.6.1.4.1.116.5.52.10.2.1.2.1 | The event of the fault level was encountered as event alert. |
| hcsmAlertTrapEventWarning | 1.3.6.1.4.1.116.5.52.10.2.1.2.2 | The event of the warning level was encountered as event alert. |
| hcsmAlertTrapEventInformation | 1.3.6.1.4.1.116.5.52.10.2.1.2.3 | The event of the information level was encountered as event alert. |
| hcsmAlertTrapStatusChangeError | 1.3.6.1.4.1.116.5.52.10.2.1.3.1 | The event of the fault level was encountered as state change alert. |
| hcsmAlertTrapStatusChangeWarning | 1.3.6.1.4.1.116.5.52.10.2.1.3.2 | The event of the warning level was encountered as state change alert. |
| hcsmAlertTrapStatusChangeInformation | 1.3.6.1.4.1.116.5.52.10.2.1.3.3 | The event of the information level was encountered as state change alert. |

## Support Groups

The following table describes the support groups of private MIB.

**Table C-5: Information of System**

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5 | systemExMib | Not-Accessible | NA | - | This shows the information of inside system. |
| 1.3.6.1.4.1.116.5.52 | compute | Not-Accessible | NA | - | This shows the information of "compute". |
| 1.3.6.1.4.1.116.5.52.2 | computeRack | Not-Accessible | NA | - | This shows the information of "Compute Rack". |

## Table C-6: Basic Information of Server Chassis

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1 | chassis(1) | NA | NA | NA | This shows the information of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1 | chassisBasicInfo(1) | NA | NA | NA | This shows the basic information of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.1 | chassisInfoType(1) | INTEGER | RO | Rackmount(1)/Blade(2)/Tower(3)/unknown(4) | This shows the chassis type of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.2 | chassisInfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.3 | chassisInfoModel(3) | DisplayString | RO | (SIZE(0..40)) | This shows the model of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.4 | chassisInfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.5 | chassisInfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | This shows the model version of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.6 | chassisInfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.7 | chassisInfoChassisID(7) | DisplayString | RO | (SIZE(0..40)) | This shows the chassis ID of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.8 | chassisInfoBoardProductName(8) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of board. |
| 1.3.6.1.4.1.116.5.52.2.1.1.9 | chassisInfoBoardSerialNum(9) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of board. |
| 1.3.6.1.4.1.116.5.52.2.1.1.10 | chassisInfoBoardManufacturer(10) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of board. |
| 1.3.6.1.4.1.116.5.52.2.1.1.11 | chassisInfoUUID(11) | DisplayString | RO | (SIZE(0..40)) | This shows UUID(universal Unique ID) of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.12 | chassisInfoLogicalPartitionSupport(12) | INTEGER | RO | not-support(1)/ support(2)/unknown(3) | This shows whether the chassis supports HVM or not. |
| 1.3.6.1.4.1.116.5.52.2.1.1.13 | chassisInfoRemoteKVMSupport(13) | INTEGER | RO | not-support(1)/ support(2)/unknown(3) | This shows whether the server chassis supports remote KVM or not of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20 | chassisInfoSpec(20) | NA | NA | NA | This shows the specification of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.1 | chassisSpecInputCurrentType(1) | INTEGER | RO | ac(1)/dc(2)/unknown(3) | This shows the currency type of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.2 | chassisSpecRateVoltage(2) | Integer32 | RO | 0.1 V | This shows the voltage of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.1.20.3 | chassisSpecTempUpperLimit(3) | Integer32 | RO | 0.1 degrees C | This shows the upper temperature of sensor in server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.4 | chassisSpecTempLowerLimit(4) | Integer32 | RO | 0.1 degrees C | This shows the lower temperature of sensor in server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.5 | chassisSpecConsumptionCurrent(5) | Integer32 | RO | 0.1 A | This shows the maximum currency of server chassis in current configuration. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.6 | chassisSpecPowerConsumption(6) | Integer32 | RO | 0.1 kW | This shows the maximum power consumption of server chassis in current configuration. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.7 | chassisSpecConsumptionCurrentMaxConfig(7) | Integer32 | RO | 0.1 A | This shows the maximum currency of server chassis in largest configuration. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.8 | chassisSpecPowerConsumptionMaxConfig(8) | Integer32 | RO | 0.1 kW | This shows the maximum power consumption of server chassis in largest configuration. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.9 | chassisSpecMaxAirVolume(9) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.10 | chassisSpecHeight(10) | Integer32 | RO | U | This shows the height of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.11 | chassisSpecTotalMass(11) | Integer32 | RO | 0.1 kg | This shows the total mass of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.1.20.12 | chassisSpecSize(12) | DisplayString | RO | (SIZE(0..40)) | This shows the size of server chassis. |

## Table C-7: Capacity Information of Server Chassis

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.2 | chassisCapacity(2) | NA | NA | NA | This shows the capacity of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.1 | chassisCapacityCPUSocket(1) | Integer32 | R0 | | This shows the capacity of CPU sockets of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.2 | chassisCapacityDIMMSlot(2) | Integer32 | R0 | | This shows the capacity of DIMM slots of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.3 | chassisCapacityPCISlot(3) | Integer32 | R0 | | This shows the capacity of PCI slots of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.4 | chassisCapacityLOM(4) | Integer32 | R0 | | This shows the capacity of onboard LAN ports of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.5 | chassisCapacityFan(5) | Integer32 | R0 | | This shows the capacity of onboard fans of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.2.6 | chassisCapacityHDDSlot(6) | Integer32 | R0 | | This shows the capacity of HDDs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.7 | chassisCapacityMediaDriveSlot(7) | Integer32 | R0 | | This shows the capacity of Peripheral drives of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.8 | chassisCapacityFanModuleSlot(8) | Integer32 | R0 | | It shows the maximum number of slots for Fan modules. |
| 1.3.6.1.4.1.116.5.52.2.1.2.9 | chassisCapacityPowerSupplySlot(9) | Integer32 | R0 | | It shows the maximum number of slots for Power Supply modules. |
| 1.3.6.1.4.1.116.5.52.2.1.2.10 | chassisCapacityVoltageSensor(10) | Integer32 | R0 | | This shows the capacity of voltage sensors of chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.11 | chassisCapacityTempSensor(11) | Integer32 | R0 | | This shows the capacity of temperature sensors of chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.2.12 | chassisCapacityPhysicalPartition(12) | Integer32 | R0 | | This shows the capacity of physical partition of server chassis. |

## Table C-8: Setting Information of Server Chassis

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.3 | chassisSettings(3) | NA | NA | NA | This shows the setting of chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.3.1 | chassisSettingsBelongPartitionNum(1) | Integer32 | R0 | | This shows the partition number of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.3.2 | chassisSettingsDetailHVMLicence(2) | DisplayString | R0 | (SIZE(0..40)) | This shows the HVM license of detailed server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.3.3 | chassisSettingsManagementPortIPAddress(3) | DisplayString | R0 | (SIZE(0..40)) | This shows the IP address of management port of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.3.4 | chassisSettingsPowerCapping(4) | INTEGER | R0 | invalid(1)/PCAP(2)/DCMI(3)/unknown(4) | This shows the power cap setting server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.3.5 | chassisSettingsAddMAC(5) | DisplayString | R0 | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.1.3.6 | chassisSettingsAddWWN(6) | DisplayString | R0 | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.1.3.7 | chassisSettingsRackInfo(7) | DisplayString | R0 | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.1.3.8 | chassisSettingsAssetTag(8) | DisplayString | R0 | (SIZE(0..40)) | Reserved. |

## Table C-9: State Information of Server Chassis

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4 | chassisState(4) | NA | NA | NA | This shows the state of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.1 | chassisStatePower(1) | INTEGER | RO | Poweroff(1)/ standby(2)/ PowerOn(3)/ unknown(4)/ Power-on-executing(5)/ Power-off-executing(6) | This shows the power supply state of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.2 | chassisStateHealth(2) | DisplayString | RO | (SIZE(0..40)) | This shows the state of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.3 | chassisStateCurrentVoltage(3) | Integer32 | RO | 0.1 V | This shows the current voltage of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.4 | chassisStateConsumptionCurrent(4) | Integer32 | RO | 0.1 A | This shows the consumption current of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.5 | chassisStatePowerConsumption(5) | Integer32 | RO | 0.1 kW | This shows the power consumption of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.6 | chassisStateIntakeTemp(6) | Integer32 | RO | 0.1 degrees C | This shows the state of intake temperature of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.7 | chassisStateFanAirVolume(7) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.1.4.8 | chassisRedundancy(8) | NA | NA | NA | This shows the redundancy of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.8.1 | chassisRedundancyFan(1) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.8.2 | chassisRedundancyPowerSupply(2) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of power supply module of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.9 | chassisFrontPanelLEDTable(9) | NA | NA | NA | This shows the table of front panel LED of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.9.1 | chassisFrontPanelLEDEntry(1) | NA | NA | NA | This shows the entry of front panel LED of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.9.1.1 | chassisFrontPanelLEDIndex(1) | Integer32 | RO | | This shows the index of front panel LED of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.9.1.2 | chassisFrontPanelLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of front panel LED of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.9.1.3 | chassisFrontPanelLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4.9.1.4 | chassisFrontPanelLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of front panel LED of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.9.1.5 | chassisFrontPanelLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of front panel LED of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.10 | chassisPostCodeLED(10) | Integer32 | RO | | This shows the post code of front panel seven segment LED of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.20 | chassisStateOther(20) | NA | NA | NA | This shows the other state of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.20.1 | chassisMaintMode(1) | INTEGER | RO | Normal(1)/ CE-Maint-mode(2)/ User-Maint-mode(3) / unknown(4) | This shows the maintenance mode of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.30 | chassisLatestHWLogInfo(30) | DisplayString | RO | (SIZE(0..40)) | This shows the information on the newest HW logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31 | chassisHWLogTable(31) | NA | NA | NA | This shows the table on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1 | chassisHWLogEntry(1) | NA | NA | NA | This shows the table on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1.1 | chassisHWLogIndex(1) | Integer32 | RO | | This shows the index on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1.2 | chassisHWLogExist(2) | INTEGER | RO | not-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1.3 | chassisHWLog GenerateID(3) | DisplayString | RO | (SIZE(0..40)) | This shows the occurred part on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1.4 | chassisHWLog RecordID(4) | DisplayString | RO | (SIZE(0..40)) | This shows the recorded ID on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1.5 | chassisHWLog Date(5) | DisplayString | RO | (SIZE(0..40)) | This shows the occurred date and time on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1.6 | chassisHWLog Code(6) | DisplayString | RO | (SIZE(0..40)) | This shows the occurred event code on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.31.1.7 | chassisHWLog Detail(7) | DisplayString | RO | (SIZE(0..40)) | This shows the occurred event detail on the hardware logs of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40 | chassisInstall(40) | NA | NA | NA | This shows the installed state of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4.40.1 | chassisInsFrontPanel(1) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the installed state of front panel of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2 | chassisInsCPUSocketTable(2) | NA | NA | NA | This shows the table of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1 | chassisInsCPUSocketEntry(1) | NA | NA | NA | This shows the entry of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.1 | chassisInsCPUSocketIndex(1) | Integer32 | RO | | This shows the index of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.2 | chassisInsCPUSocketNum(2) | Integer32 | RO | | This shows the number of CPU sockets of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.3 | chassisInsCPUSocketExist(3) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.4 | chassisInsCPUSocketCPUName(4) | DisplayString | RO | (SIZE(0..40)) | This shows the CPU name of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.5 | chassisInsCPUSocketCPUFrequency(5) | Integer32 | RO | MHz | This shows the CPU frequency of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.6 | chassisInsCPUSocketCPUStepping(6) | DisplayString | RO | | This shows the CPU stepping of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.7 | chassisInsCPUSocketCPUCoreNum(7) | Integer32 | RO | | This shows the CPU core number of CPU socket of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.8 | chassisInsCPUSocketCPUUpperLimitTemp(8) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature threshold of CPU0 sensor in server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.2.1.9 | chassisInsCPUSocketCPULowerLimitTemp(9) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature threshold of CPU0 sensor in server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.3 | chassisInsDIMMCapacity(3) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4 | chassisInsDIMMSlotTable(4) | NA | NA | NA | This shows the table of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1 | chassisInsDIMMSlotEntry(1) | NA | NA | NA | This shows the entry of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.1 | chassisInsDIMMSlotIndex(1) | Integer32 | RO | | This shows the index of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.2 | chassisInsDIMMSlotNum(2) | Integer32 | RO | | This shows the registrated state of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.3 | chassisInsDIMMSlotExist(3) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the capacity of DIMM slots of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.4 | chassisInsDIMMSlotDIMMCapacity(4) | Integer32 | RO | GB | This shows the DIMM type of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.5 | chassisInsDIMMSlotDIMMType(5) | DisplayString | RO | (SIZE(0..40)) | This shows the DIMM frequency of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.6 | chassisInsDIMMSlotDIMMFrequency(6) | Integer32 | RO | MHz | This shows the DIMM cas latency of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.7 | chassisInsDIMMSlotDIMMCasLatency(7) | INTEGER | RO | normal(1)/unknown(2)/degenerated(3)/planned-degenerated(4) | This shows the DIMM state of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.4.1.8 | chassisInsDIMMSlotDIMMStatus(8) | INTEGER | RO | normal(1)/unknown(2)/degenerated(3)/planned-degenerated(4) | This shows the DIMM state of DIMM slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5 | chassisInsPCISlotTable(5) | NA | NA | NA | This shows the table of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1 | chassisInsPCISlotEntry(1) | NA | NA | NA | This shows the entry of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.1 | chassisInsPCISlotIndex(1) | Integer32 | RO | | This shows the index of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.2 | chassisInsPCISlotNum(2) | Integer32 | RO | | This shows the slot number of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.3 | chassisInsPCISlotType(3) | DisplayString | RO | (SIZE(0..40)) | This shows the type of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.4 | chassisInsPCISlotExist(4) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.5 | chassisInsPCISlotPCIType(5) | DisplayString | RO | (SIZE(0..40)) | This shows the PCI type of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.6 | chassisInsPCISlotPCIProductName(6) | DisplayString | RO | (SIZE(0..40)) | This shows the PCI product name of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.7 | chassisInsPCISlotPCISerial(7) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.5.1.8 | chassisInsPCISlotPCIManufacturer(8) | DisplayString | RO | (SIZE(0..40)) | This shows the manufacturer of PCI slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6 | chassisInsLOMTable(6) | NA | NA | NA | This shows the table of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1 | chassisInsLOMEntry(1) | NA | NA | NA | This shows the entry of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1.1 | chassisInsLOMIndex(1) | Integer32 | RO | | This shows the index of onboard LAN of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1.2 | chassisInsLOMType(2) | DisplayString | RO | (SIZE(0..40)) | This shows the type of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1.3 | chassisInsLOMLinkSpeed(3) | Integer32 | RO | | This shows the link speed of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1.4 | chassisInsLOMMAC(4) | DisplayString | RO | (SIZE(0..40)) | This shows the MAC address of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1.5 | chassisInsLOMLinkStatus(5) | INTEGER | RO | up(1)/down(2)/unknown(3) | This shows the link state of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1.6 | chassisInsLOMPortDivide(6) | INTEGER | RO | possible(1)/Impossible(2)/unknown(3) | This shows the port divide propriety of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.6.1.7 | chassisInsLOMPortDivideNum(7) | Integer32 | RO | | This shows the port divide number of onboard LAN of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7 | chassisInsFanTable(7) | NA | NA | NA | This shows the table of fan of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1 | chassisInsFanEntry(1) | NA | NA | NA | This shows the entry of fan of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.1 | chassisInsFanIndex(1) | Integer32 | RO | | This shows the index of fan of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.2 | chassisInsFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.3 | chassisInsFanExist(3) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state of fan. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.4 | chassisInsFanMaxRPM(4) | Integer32 | RO | rpm | This shows the maximum rpm of fan. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.5 | chassisInsFanMaxAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.6 | chassisInsFanRPM(6) | Integer32 | RO | rpm | This shows the rpm value of fan. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.7 | chassisInsFanAirVolume(7) | Integer32 | RO | 0.1 m^3/min | This shows the air volume of fan. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.8 | chassisInsFanRPMValid(8) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.7.1.9 | chassisInsFanStateHealth(9) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8 | chassisHDDSlotTable(8) | NA | NA | NA | This shows the table of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1 | chassisHDDSlotEntry(1) | NA | NA | NA | This shows the entry of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.1 | chassisHDDSlotIndex(1) | Integer32 | RO | | This shows the index of HDD slot of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.2 | chassisHDDSlot1Num(2) | Integer32 | RO | | This shows the number of HDD slots of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.3 | chassisHDDSlot1Exist(3) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.4 | chassisHDDSlot1HDDType(4) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD type of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.5 | chassisHDDSlot1HDDProductName(5) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD product name of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.6 | chassisHDDSlot1HDDModel(6) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD model of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.7 | chassisHDDSlot1HDDSerialNum(7) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD serial number of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.8 | chassisHDDSlot1HDDCapacity(8) | Integer32 | RO | GB | This shows the HDD capacity of HDD slots of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.9 | chassisHDDSlot1HDDRPM(9) | Integer32 | RO | rpm | This shows the HDD drive speed of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.10 | chassisHDDSlot1HDDStatePower(10) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the HDD power supply state of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.11 | chassisHDDSlot1HDDStateHealth(11) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the HDD health state of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.12 | chassisHDDSlot1HDDStateLEDACT(12) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the LED state of HDD slot of server chassis(activity). |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.13 | chassisHDDSlot1HDDStateLEDSTS(13) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the LED state of HDD slot of server chassis(status). |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.20 | chassisHDDSlot1HDDFWInfo1Name(20) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD firmware name of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.21 | chassisHDDSlot1HDDFWInfo1CurrentVer(21) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD firmware current version of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.8.1.22 | chassisHDDSlot1HDDFWInfo1NextVer(22) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD firmware next version of HDD slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9 | chassisMediaDriveSlotTable(9) | NA | NA | NA | This shows the table of Peripheral drive slot of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1 | chassisMediaDriveSlotEntry(1) | NA | NA | NA | This shows the entry of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.1 | chassisMediaDriveSlotIndex(1) | Integer32 | RO | | This shows the index of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.2 | chassisMediaDriveSlotNum(2) | Integer32 | RO | | This shows the number of Peripheral drive slots of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.3 | chassisMediaDriveSlotExist(3) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.4 | chassisMediaDriveSlotDriveType(4) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD type of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.5 | chassisMediaDriveSlotDriveProductName(5) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD product name of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.6 | chassisMediaDriveSlotDriveModel(6) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD model of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.7 | chassisMediaDriveSlotDriveSerialNum(7) | DisplayString | RO | (SIZE(0..40)) | This shows the HDD serial number of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.10 | chassisMediaDriveSlotDriveStatePower(10) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the Peripheral drive power supply state of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.9.1.11 | chassisMediaDriveSlotDriveStateHealth(11) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the Peripheral drive health state of Peripheral drive slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.10 | chassisInsFanSlotTable(10) | NA | NA | NA | This shows the table of fan module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.10.1 | chassisInsFanSlotEntry(1) | NA | NA | NA | This shows the entry of fan module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.10.1.1 | chassisInsFanSlotIndex(1) | Integer32 | RO | | This shows the index of fan module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.10.1.2 | chassisInsFanSlotNum(2) | Integer32 | RO | | This shows the number of fan module slots of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.10.1.3 | chassisInsFanSlotExist(3) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state of fan module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.10.1.4 | chassisInsFanSlotObjectID(4) | OBJECT IDENTIFIER | RO | | This shows the object ID of fan module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.11 | chassisInsPowerSupplySlotTable(11) | NA | NA | NA | This shows the table of power supply module slot of server chassis. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.4.40.11.1 | chassisInsPowerSupplySlotEntry(1) | NA | NA | NA | This shows the entry of power supply module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.11.1.1 | chassisInsPowerSupplySlotIndex(1) | Integer32 | RO | | This shows the index of power supply module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.11.1.2 | chassisInsPowerSupplySlotNum(2) | Integer32 | RO | | This shows the number of power supply module slots of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.11.1.3 | chassisInsPowerSupplySlotExist(3) | INTEGER | RO | non-exist(1)/ exist(2)/ unknown(3) | This shows the registrated state of power supply module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.40.11.1.4 | chassisInsPowerSupplySlotObjectID(4) | OBJECT IDENTIFIER | RO | | This shows the object ID of power supply module slot of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.50 | chassisVoltageSensorTable(50) | NA | NA | NA | This shows the table of voltage sensor of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.50.1 | chassisVoltageSensorEntry(1) | NA | NA | NA | This shows the entry of voltage sensor of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.50.1.1 | chassisVoltageSensorIndex(1) | Integer32 | RO | | This shows the index of voltage sensor of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.50.1.2 | chassisVoltageSensorName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the voltage sensor name of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.50.1.3 | chassisVoltageSensorValue(3) | Integer32 | RO | 0.1 V | This shows the voltage sensor value of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.50.1.4 | chassisVoltageSensorValid(4) | INTEGER | RO | invalid(1)/valid(2)/unknown(3) | This shows the validity of voltage sensor value of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.51 | chassisTempSensorTable(51) | NA | NA | NA | This shows the table of temperature sensor of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.51.1 | chassisTempSensorEntry(1) | NA | NA | NA | This shows the entry of temperature sensor of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.51.1.1 | chassisTempSensorIndex(1) | Integer32 | RO | | This shows the index of temperature sensor of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.51.1.2 | chassisTempSensorName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the temperature sensor name of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.51.1.3 | chassisTempSensorValue(3) | Integer32 | RO | 0.1 degrees C | This shows the temperature sensor value of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.4.51.1.4 | chassisTempSensorValid(4) | INTEGER | RO | invalid(1)/valid(2)/unknown(3) | This shows the validity of temperature sensor value of server chassis. |

## Table C-10: Firmware Information of Server Chassis

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.1.5 | chassisFWInfo(5) | NA | NA | NA | This shows the firmware information of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.5.1 | chassisFWInfoTotalVer(1) | DisplayString | RO | (SIZE(0..40)) | This shows the total current version of firmware of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.5.2 | chassisFWInfoTable(2) | NA | NA | NA | This shows the table of firmware information of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.5.2.1 | chassisFWInfoFWInfoEntry(1) | NA | NA | NA | This shows the entry of firmware information of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.5.2.1.1 | chassisFWInfoIndex(1) | Integer32 | RO | | This shows the index of firmware information of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.5.2.1.2 | chassisFWInfoName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the firmware name of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.5.2.1.3 | chassisFWInfoCurrentVer(3) | DisplayString | RO | (SIZE(0..40)) | This shows the firmware current version of server chassis. |
| 1.3.6.1.4.1.116.5.52.2.1.5.2.1.4 | chassisFWInfoNextVer(4) | DisplayString | RO | (SIZE(0..40)) | This shows the firmware next version of server chassis. |

## Table C-11: Information of Component

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2 | component(2) | NA | NA | NA | This shows the information of component. |

## Table C-12: Information of Fan Module

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1 | fanModule(1) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1 | fanModule1(1) | NA | NA | NA | This shows the information of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1 | fanModule1BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.1 | fanModule1InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.2 | fanModule1InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.3 | fanModule1InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.4 | fanModule1InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.5 | fanModule1InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.6 | fanModule1InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.7 | fanModule1InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.8 | fanModule1InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.9 | fanModule1InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.20 | fanModule1InfoSpec(20) | NA | NA | NA | This shows the specification of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.20.1 | fanModule1SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.20.2 | fanModule1SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.20.3 | fanModule1SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.1.20.4 | fanModule1SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.2 | fanModule1Capacity(2) | NA | NA | NA | This shows the capacity of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.2.1 | fanModule1CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.3 | fanModule1Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4 | fanModule1State(4) | NA | NA | NA | This shows the state of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.1 | fanModule1StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.2 | fanModule1StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.3 | fanModule1StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module1. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.4 | fanModule1StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.5 | fanModule1StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.6 | fanModule1StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.6.1 | fanModule1StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.6.1.1 | fanModule1StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.6.1.2 | fanModule1StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.6.1.3 | fanModule1StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.6.1.4 | fanModule1StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.6.1.5 | fanModule1StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.10 | fanModule1StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.10.1 | fanModule1StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.10.1.1 | fanModule1StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.10.1.2 | fanModule1StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.10.1.3 | fanModule1StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.1.4.10.1.4 | fanModule1StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module1. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2 | fanModule2(2) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1 | fanModule2BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.1 | fanModule2InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.2 | fanModule2InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.3 | fanModule2InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.4 | fanModule2InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.5 | fanModule2InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.6 | fanModule2InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.7 | fanModule2InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.8 | fanModule2InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.9 | fanModule2InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.20 | fanModule2InfoSpec(20) | NA | NA | NA | This shows the specification of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.20.1 | fanModule2SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.20.2 | fanModule2SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.20.3 | fanModule2SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.1.20.4 | fanModule2SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.2 | fanModule2Capacity(2) | NA | NA | NA | This shows the capacity of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.2.1 | fanModule2CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.3 | fanModule2Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4 | fanModule2State(4) | NA | NA | NA | This shows the state of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.1 | fanModule2StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.2 | fanModule2StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.3 | fanModule2StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module2. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.4 | fanModule2StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.5 | fanModule2StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.6 | fanModule2StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.6.1 | fanModule2StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.6.1.1 | fanModule2StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.6.1.2 | fanModule2StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.6.1.3 | fanModule2StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.6.1.4 | fanModule2StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.6.1.5 | fanModule2StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.10 | fanModule2StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.10.1 | fanModule2StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.10.1.1 | fanModule2StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.10.1.2 | fanModule2StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.10.1.3 | fanModule2StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.2.4.10.1.4 | fanModule2StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module2. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3 | fanModule3(3) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1 | fanModule3BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.1 | fanModule3InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.2 | fanModule3InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.3 | fanModule3InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.4 | fanModule3InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.5 | fanModule3InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.6 | fanModule3InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.7 | fanModule3InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.8 | fanModule3InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.9 | fanModule3InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.20 | fanModule3InfoSpec(20) | NA | NA | NA | This shows the specification of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.20.1 | fanModule3SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.20.2 | fanModule3SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.20.3 | fanModule3SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.1.20.4 | fanModule3SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.2 | fanModule3Capacity(2) | NA | NA | NA | This shows the capacity of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.2.1 | fanModule3CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.3 | fanModule3Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4 | fanModule3State(4) | NA | NA | NA | This shows the state of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.1 | fanModule3StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.2 | fanModule3StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.3 | fanModule3StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module3. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.4 | fanModule3StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.5 | fanModule3StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.6 | fanModule3StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.6.1 | fanModule3StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.6.1.1 | fanModule3StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.6.1.2 | fanModule3StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.6.1.3 | fanModule3StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.6.1.4 | fanModule3StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.6.1.5 | fanModule3StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.10 | fanModule3StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.10.1 | fanModule3StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.10.1.1 | fanModule3StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.10.1.2 | fanModule3StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.10.1.3 | fanModule3StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.3.4.10.1.4 | fanModule3StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module3. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4 | fanModule4(4) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1 | fanModule4BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.1 | fanModule4InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.2 | fanModule4InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.3 | fanModule4InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.4 | fanModule4InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.5 | fanModule4InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.6 | fanModule4InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.7 | fanModule4InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.8 | fanModule4InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.9 | fanModule4InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.20 | fanModule4InfoSpec(20) | NA | NA | NA | This shows the specification of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.20.1 | fanModule4SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.20.2 | fanModule4SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.20.3 | fanModule4SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.1.20.4 | fanModule4SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.2 | fanModule4Capacity(2) | NA | NA | NA | This shows the capacity of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.2.1 | fanModule4CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.3 | fanModule4Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4 | fanModule4State(4) | NA | NA | NA | This shows the state of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.1 | fanModule4StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.2 | fanModule4StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.3 | fanModule4StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module4. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.4 | fanModule4StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.5 | fanModule4StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.6 | fanModule4StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.6.1 | fanModule4StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.6.1.1 | fanModule4StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.6.1.2 | fanModule4StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.6.1.3 | fanModule4StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.6.1.4 | fanModule4StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.6.1.5 | fanModule4StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.10 | fanModule4StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.10.1 | fanModule4StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.10.1.1 | fanModule4StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.10.1.2 | fanModule4StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.10.1.3 | fanModule4StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.4.4.10.1.4 | fanModule4StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module4. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5 | fanModule5(5) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1 | fanModule5BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.1 | fanModule5InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.2 | fanModule5InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.3 | fanModule5InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.4 | fanModule5InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.5 | fanModule5InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.6 | fanModule5InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.7 | fanModule5InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.8 | fanModule5InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.9 | fanModule5InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.20 | fanModule5InfoSpec(20) | NA | NA | NA | This shows the specification of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.20.1 | fanModule5SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.20.2 | fanModule5SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.20.3 | fanModule5SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.1.20.4 | fanModule5SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.2 | fanModule5Capacity(2) | NA | NA | NA | This shows the capacity of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.2.1 | fanModule5CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.3 | fanModule5Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4 | fanModule5State(4) | NA | NA | NA | This shows the state of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.1 | fanModule5StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.2 | fanModule5StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.3 | fanModule5StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module5. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.4 | fanModule5StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.5 | fanModule5StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.6 | fanModule5StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.6.1 | fanModule5StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.6.1.1 | fanModule5StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.6.1.2 | fanModule5StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.6.1.3 | fanModule5StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.6.1.4 | fanModule5StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.6.1.5 | fanModule5StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.10 | fanModule5StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.10.1 | fanModule5StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.10.1.1 | fanModule5StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.10.1.2 | fanModule5StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.10.1.3 | fanModule5StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.5.4.10.1.4 | fanModule5StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module5. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6 | fanModule6(6) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1 | fanModule6BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.1 | fanModule6InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.2 | fanModule6InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.3 | fanModule6InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.4 | fanModule6InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.5 | fanModule6InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.6 | fanModule6InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.7 | fanModule6InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.8 | fanModule6InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.9 | fanModule6InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.20 | fanModule6InfoSpec(20) | NA | NA | NA | This shows the specification of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.20.1 | fanModule6SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.20.2 | fanModule6SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.20.3 | fanModule6SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.1.20.4 | fanModule6SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.2 | fanModule6Capacity(2) | NA | NA | NA | This shows the capacity of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.2.1 | fanModule6CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.3 | fanModule6Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4 | fanModule6State(4) | NA | NA | NA | This shows the state of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.1 | fanModule6StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.2 | fanModule6StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.3 | fanModule6StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module6. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.4 | fanModule6StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.5 | fanModule6StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.6 | fanModule6StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.6.1 | fanModule6StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.6.1.1 | fanModule6StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.6.1.2 | fanModule6StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.6.1.3 | fanModule6StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.6.1.4 | fanModule6StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.6.1.5 | fanModule6StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.10 | fanModule6StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.10.1 | fanModule6StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.10.1.1 | fanModule6StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.10.1.2 | fanModule6StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.10.1.3 | fanModule6StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.6.4.10.1.4 | fanModule6StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module6. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7 | fanModule7(7) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1 | fanModule7BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.1 | fanModule7InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.2 | fanModule7InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.3 | fanModule7InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.4 | fanModule7InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.5 | fanModule7InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.6 | fanModule7InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.7 | fanModule7InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.8 | fanModule7InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.9 | fanModule7InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.20 | fanModule7InfoSpec(20) | NA | NA | NA | This shows the specification of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.20.1 | fanModule7SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.20.2 | fanModule7SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.20.3 | fanModule7SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.1.20.4 | fanModule7SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.2 | fanModule7Capacity(2) | NA | NA | NA | This shows the capacity of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.2.1 | fanModule7CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.3 | fanModule7Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4 | fanModule7State(4) | NA | NA | NA | This shows the state of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.1 | fanModule7StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.2 | fanModule7StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.3 | fanModule7StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module7. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.4 | fanModule7StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.5 | fanModule7StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.6 | fanModule7StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.6.1 | fanModule7StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.6.1.1 | fanModule7StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.6.1.2 | fanModule7StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.6.1.3 | fanModule7StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.6.1.4 | fanModule7StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.6.1.5 | fanModule7StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.10 | fanModule7StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.10.1 | fanModule7StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.10.1.1 | fanModule7StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.10.1.2 | fanModule7StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.10.1.3 | fanModule7StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.7.4.10.1.4 | fanModule7StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module7. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8 | fanModule8(8) | NA | NA | NA | This shows the information of fan module. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1 | fanModule8BasicInfo(1) | NA | NA | NA | This shows the basic information of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.1 | fanModule8InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the type of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.2 | fanModule8InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.3 | fanModule8InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.4 | fanModule8InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.5 | fanModule8InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.6 | fanModule8InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.7 | fanModule8InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.8 | fanModule8InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.9 | fanModule8InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.20 | fanModule8InfoSpec(20) | NA | NA | NA | This shows the specification of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.20.1 | fanModule8SpecMaxRPM(1) | Integer32 | RO | rpm | This shows the maximum rpm of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.20.2 | fanModule8SpecMaxAirVolume(2) | Integer32 | RO | 0.1 m^3/min | This shows the maximum air volume of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.20.3 | fanModule8SpecMinRPM(3) | Integer32 | RO | rpm | This shows the minimum rpm of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.1.20.4 | fanModule8SpecMinAirVolume(4) | Integer32 | RO | 0.1 m^3/min | This shows the minimum air volume of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.2 | fanModule8Capacity(2) | NA | NA | NA | This shows the capacity of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.2.1 | fanModule8CapacityFan(1) | Integer32 | RO | | This shows the capacity of fans of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.3 | fanModule8Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4 | fanModule8State(4) | NA | NA | NA | This shows the state of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.1 | fanModule8StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.2 | fanModule8StatePower(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.3 | fanModule8StateHealth(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of fan module8. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.4 | fanModule8StateRedundancy(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the redundancy of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.5 | fanModule8StateAirVolume(5) | Integer32 | RO | 0.1 m^3/min | This shows the current air volume of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.6 | fanModule8StateLEDTable(6) | NA | NA | NA | This shows the table of LED of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.6.1 | fanModule8StateLEDEntry(1) | NA | NA | NA | This shows the entry of LED of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.6.1.1 | fanModule8StateLEDIndex(1) | Integer32 | RO | | This shows the index of LED of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.6.1.2 | fanModule8StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the name of LED of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.6.1.3 | fanModule8StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.6.1.4 | fanModule8StateLEDState(4) | INTEGER | RO | turn-off(1)/ turn-on(2)/ unknown(3)/ blink(4)/ blink-fast(5)/ blink-slow(6) | This shows the state of LED of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.6.1.5 | fanModule8StateLEDColor(5) | INTEGER | RO | blue(1)/green(2)/red(3)/amber(4)/unknown(5) | This shows the color of LED of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.10 | fanModule8StateFanTable(10) | NA | NA | NA | This shows the table of fan of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.10.1 | fanModule8StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.10.1.1 | fanModule8StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.10.1.2 | fanModule8StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.10.1.3 | fanModule8StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of fan module8. |
| 1.3.6.1.4.1.116.5.52.2.2.1.8.4.10.1.4 | fanModule8StateFanRPMValid(4) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of fan rpm value of fan module8. |

## Table C-13: Information of Power Supply Module

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2 | powerSupply(2) | NA | NA | NA | This shows the information of power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1 | powerSupply1(1) | NA | NA | NA | This shows the information of power supply module1. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1 | powerSupply1BasicInfo(1) | NA | NA | NA | This shows the basic information of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.1 | powerSupply1InfoType(1) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.2 | powerSupply1InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.3 | powerSupply1InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | This shows the model name of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.4 | powerSupply1InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.5 | powerSupply1InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | This shows the product version of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.6 | powerSupply1InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.7 | powerSupply1InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.8 | powerSupply1InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.9 | powerSupply1InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20 | powerSupply1InfoSpec(20) | NA | NA | NA | This shows the specification of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.1 | powerSupply1SpecRateVoltageMain(1) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module1.(main) |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.2 | powerSupply1SpecRateVoltageSub(2) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module1.(sub) |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.3 | powerSupply1SpecAmbientTempUpperLimit(3) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.4 | powerSupply1SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.5 | powerSupply1SpecHotSpotTempUpperLimit(5) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.6 | powerSupply1SpecHotSpotTempLowerLimit(6) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of hot spot in power supply module. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.7 | powerSupply1SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.8 | powerSupply1SpecExhaustTempLowerLimit(8) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.2 | powerSupply1Capacity(2) | NA | NA | NA | This shows the capacity of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.2.1 | powerSupply1CapacityFan(1) | Integer32 | RO | | This shows the capacity fans of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.3 | powerSupply1Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4 | powerSupply1State(4) | NA | NA | NA | This shows the state of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.1 | powerSupply1StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.2 | powerSupply1StatePower(2) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the power supply state of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.3 | powerSupply1StateHealth(3) | INTEGER | RO | normal(1)/ fail(2) / unknown(3) | This shows the health state of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.4 | powerSupply1StateAmbientTemp(4) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of ambient sensor of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.5 | powerSupply1StateHotSpotTemp(5) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of hot spot sensor of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.6 | powerSupply1StateExhaustTemp(6) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of exhaust sensor of power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.7 | powerSupply1StateMainVoltage(7) | Integer32 | RO | 0.1 V | This shows the main voltage of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.8 | powerSupply1StateSubVoltage(8) | Integer32 | RO | 0.1 V | This shows the sub voltage of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.9 | powerSupply1StateInputVoltage(9) | Integer32 | RO | 0.1 V | This shows the input voltage of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.10 | powerSupply1StateMainCurrent(10) | Integer32 | RO | 0.1 A | This shows the main current of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.11 | powerSupply1StateSubCurrent(11) | Integer32 | RO | 0.1 A | This shows the sub current of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.12 | powerSupply1StateInputCurrent(12) | Integer32 | RO | 0.1 A | This shows the input current of power supply module1. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13 | powerSupply1StateLEDTable(13) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1 | powerSupply1StateLEDEntry(1) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.1 | powerSupply1StateLEDIndex(1) | Integer32 | RO | | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.2 | powerSupply1StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.3 | powerSupply1StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.4 | powerSupply1StateLEDState(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.5 | powerSupply1StateLEDColor(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14 | powerSupply1StateFanTable(14) | NA | NA | NA | This shows the table of fan of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1 | powerSupply1StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1.1 | powerSupply1StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1.2 | powerSupply1StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1.3 | powerSupply1StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of power supply module1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2 | powerSupply2(2) | NA | NA | NA | This shows the information of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1 | powerSupply2BasicInfo(1) | NA | NA | NA | This shows the basic information of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.1 | powerSupply2InfoType(1) | Integer32 | RO | | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.2 | powerSupply2InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.3 | powerSupply2InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | This shows the model name of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.4 | powerSupply2InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of power supply module2. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.5 | powerSupply2InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | This shows the product version of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.6 | powerSupply2InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.7 | powerSupply2InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.8 | powerSupply2InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.9 | powerSupply2InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20 | powerSupply2InfoSpec(20) | NA | NA | NA | This shows the specification of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.1 | powerSupply2SpecRateVoltageMain(1) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module2.(main) |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.2 | powerSupply2SpecRateVoltageSub(2) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module2.(sub) |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.3 | powerSupply2SpecAmbientTempUpperLimit(3) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.4 | powerSupply2SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.5 | powerSupply2SpecHotSpotTempUpperLimit(5) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.6 | powerSupply2SpecHotSpotTempLowerLimit(6) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.7 | powerSupply2SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.8 | powerSupply2SpecExhaustTempLowerLimit(8) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.2 | powerSupply2Capacity(2) | NA | NA | NA | This shows the capacity of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.2.1 | powerSupply2CapacityFan(1) | Integer32 | RO | | This shows the capacity fans of power supply module2. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.2.3 | powerSupply2Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4 | powerSupply2State(4) | NA | NA | NA | This shows the state of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.1 | powerSupply2StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.2 | powerSupply2StatePower(2) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the power supply state of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.3 | powerSupply2StateHealth(3) | INTEGER | RO | normal(1)/ fail(2) / unknown(3) | This shows the health state of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.4 | powerSupply2StateAmbientTemp(4) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of ambient sensor of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.5 | powerSupply2StateHotSpotTemp(5) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of hot spot sensor of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.6 | powerSupply2StateExhaustTemp(6) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of exhaust sensor of power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.7 | powerSupply2StateMainVoltage(7) | Integer32 | RO | 0.1 V | This shows the main voltage of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.8 | powerSupply2StateSubVoltage(8) | Integer32 | RO | 0.1 V | This shows the sub voltage of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.9 | powerSupply2StateInputVoltage(9) | Integer32 | RO | 0.1 V | This shows the input voltage of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.10 | powerSupply2StateMainCurrent(10) | Integer32 | RO | 0.1 A | This shows the main current of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.11 | powerSupply2StateSubCurrent(11) | Integer32 | RO | 0.1 A | This shows the sub current of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.12 | powerSupply2StateInputCurrent(12) | Integer32 | RO | 0.1 A | This shows the input current of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13 | powerSupply2StateLEDTable(13) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1 | powerSupply2StateLEDEntry(1) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.1 | powerSupply2StateLEDIndex(1) | Integer32 | RO | | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.2 | powerSupply2StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.3 | powerSupply2StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.4 | powerSupply2StateLEDState(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.5 | powerSupply2StateLEDColor(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14 | powerSupply2StateFanTable(14) | NA | NA | NA | This shows the table of fan of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1 | powerSupply2StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1.1 | powerSupply2StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1.2 | powerSupply2StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1.3 | powerSupply2StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of power supply module2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3 | powerSupply3(3) | NA | NA | NA | This shows the information of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1 | powerSupply3BasicInfo(1) | NA | NA | NA | This shows the basic information of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.1 | powerSupply3InfoType(1) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.2 | powerSupply3InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.3 | powerSupply3InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | This shows the model name of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.4 | powerSupply3InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.5 | powerSupply3InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | This shows the product version of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.6 | powerSupply3InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.7 | powerSupply3InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.8 | powerSupply3InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.9 | powerSupply3InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20 | powerSupply3InfoSpec(20) | NA | NA | NA | This shows the specification of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.1 | powerSupply3SpecRateVoltageMain(1) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module3.(main) |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.2 | powerSupply3SpecRateVoltageSub(2) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module3.(sub) |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.3 | powerSupply3SpecAmbientTempUpperLimit(3) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.4 | powerSupply3SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.5 | powerSupply3SpecHotSpotTempUpperLimit(5) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.6 | powerSupply3SpecHotSpotTempLowerLimit(6) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.7 | powerSupply3SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.8 | powerSupply3SpecExhaustTempLowerLimit(8) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.2 | powerSupply3Capacity(2) | NA | NA | NA | This shows the capacity of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.2.1 | powerSupply3CapacityFan(1) | Integer32 | RO | | This shows the capacity fans of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.3 | powerSupply3Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4 | powerSupply3State(4) | NA | NA | NA | This shows the state of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.1 | powerSupply3StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.2 | powerSupply3StatePower(2) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the power supply state of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.3 | powerSupply3StateHealth(3) | INTEGER | RO | normal(1)/ fail(2) / unknown(3) | This shows the health state of power supply module3. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.4 | powerSupply3StateAmbientTemp(4) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of ambient sensor of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.5 | powerSupply3StateHotSpotTemp(5) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of hot spot sensor of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.6 | powerSupply3StateExhaustTemp(6) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of exhaust sensor of power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.7 | powerSupply3StateMainVoltage(7) | Integer32 | RO | 0.1 V | This shows the main voltage of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.8 | powerSupply3StateSubVoltage(8) | Integer32 | RO | 0.1 V | This shows the sub voltage of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.9 | powerSupply3StateInputVoltage(9) | Integer32 | RO | 0.1 V | This shows the input voltage of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.10 | powerSupply3StateMainCurrent(10) | Integer32 | RO | 0.1 A | This shows the main current of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.11 | powerSupply3StateSubCurrent(11) | Integer32 | RO | 0.1 A | This shows the sub current of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.12 | powerSupply3StateInputCurrent(12) | Integer32 | RO | 0.1 A | This shows the input current of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13 | powerSupply3StateLEDTable(13) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1 | powerSupply3StateLEDEntry(1) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.1 | powerSupply3StateLEDIndex(1) | Integer32 | RO | | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.2 | powerSupply3StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.3 | powerSupply3StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.4 | powerSupply3StateLEDState(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.5 | powerSupply3StateLEDColor(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14 | powerSupply3StateFanTable(14) | NA | NA | NA | This shows the table of fan of power supply module3. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1 | powerSupply3StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1.1 | powerSupply3StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1.2 | powerSupply3StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1.3 | powerSupply3StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4 | powerSupply4(4) | NA | NA | NA | This shows the information of power supply module4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1 | powerSupply4BasicInfo(1) | NA | NA | NA | This shows the basic information of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.1 | powerSupply4InfoType(1) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.2 | powerSupply4InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.3 | powerSupply4InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | This shows the model name of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.4 | powerSupply4InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.5 | powerSupply4InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | This shows the product version of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.6 | powerSupply4InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.7 | powerSupply4InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.8 | powerSupply4InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.9 | powerSupply4InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20 | powerSupply4InfoSpec(20) | NA | NA | NA | This shows the specification of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.1 | powerSupply4SpecRateVoltageMain(1) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module3.(main) |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.2 | powerSupply4SpecRateVoltageSub(2) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module3.(sub) |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.3 | powerSupply4SpecAmbientTempUpperLimit(3) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.4 | powerSupply4SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.5 | powerSupply4SpecHotSpotTempUpperLimit(5) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.6 | powerSupply4SpecHotSpotTempLowerLimit(6) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.7 | powerSupply4SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.8 | powerSupply4SpecExhaustTempLowerLimit(8) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.2 | powerSupply4Capacity(2) | NA | NA | NA | This shows the capacity of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.2.1 | powerSupply4CapacityFan(1) | Integer32 | RO | | This shows the capacity fans of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.3 | powerSupply4Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4 | powerSupply4State(4) | NA | NA | NA | This shows the state of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.1 | powerSupply4StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.2 | powerSupply4StatePower(2) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the power supply state of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.3 | powerSupply4StateHealth(3) | INTEGER | RO | normal(1)/ fail(2) / unknown(3) | This shows the health state of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.4 | powerSupply4StateAmbientTemp(4) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of ambient sensor of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.5 | powerSupply4StateHotSpotTemp(5) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of hot spot sensor of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.6 | powerSupply4StateExhaustTemp(6) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of exhaust sensor of power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.7 | powerSupply4StateMainVoltage(7) | Integer32 | RO | 0.1 V | This shows the main voltage of power supply module3. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.8 | powerSupply4StateSubVoltage(8) | Integer32 | RO | 0.1 V | This shows the sub voltage of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.9 | powerSupply4StateInputVoltage(9) | Integer32 | RO | 0.1 V | This shows the input voltage of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.10 | powerSupply4StateMainCurrent(10) | Integer32 | RO | 0.1 A | This shows the main current of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.11 | powerSupply4StateSubCurrent(11) | Integer32 | RO | 0.1 A | This shows the sub current of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.12 | powerSupply4StateInputCurrent(12) | Integer32 | RO | 0.1 A | This shows the input current of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13 | powerSupply4StateLEDTable(13) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1 | powerSupply4StateLEDEntry(1) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.1 | powerSupply4StateLEDIndex(1) | Integer32 | RO | | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.2 | powerSupply4StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.3 | powerSupply4StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.4 | powerSupply4StateLEDState(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.5 | powerSupply4StateLEDColor(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14 | powerSupply4StateFanTable(14) | NA | NA | NA | This shows the table of fan of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1 | powerSupply4StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1.1 | powerSupply4StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1.2 | powerSupply4StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of power supply module3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1.3 | powerSupply4StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of power supply module3. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.5 | powerSupply5(5) | NA | NA | NA | This shows the information of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1 | powerSupply5BasicInfo(1) | NA | NA | NA | This shows the basic information of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.1 | powerSupply5InfoType(1) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.2 | powerSupply5InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.3 | powerSupply5InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | This shows the model name of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.4 | powerSupply5InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.5 | powerSupply5InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | This shows the product version of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.6 | powerSupply5InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.7 | powerSupply5InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.8 | powerSupply5InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.9 | powerSupply5InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20 | powerSupply5InfoSpec(20) | NA | NA | NA | This shows the specification of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.1 | powerSupply5SpecRateVoltageMain(1) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module5.(main) |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.2 | powerSupply5SpecRateVoltageSub(2) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module5.(sub) |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.3 | powerSupply5SpecAmbientTempUpperLimit(3) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.4 | powerSupply5SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.5 | powerSupply5SpecHotSpotTempUpperLimit(5) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of hot spot in power supply module. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.6 | powerSupply5SpecHotSpotTempLowerLimit(6) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.7 | powerSupply5SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.8 | powerSupply5SpecExhaustTempLowerLimit(8) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.2 | powerSupply5Capacity(2) | NA | NA | NA | This shows the capacity of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.2.1 | powerSupply5CapacityFan(1) | Integer32 | RO | | This shows the capacity fans of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.3 | powerSupply5Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4 | powerSupply5State(4) | NA | NA | NA | This shows the state of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.1 | powerSupply5StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.2 | powerSupply5StatePower(2) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the power supply state of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.3 | powerSupply5StateHealth(3) | INTEGER | RO | normal(1)/ fail(2) / unknown(3) | This shows the health state of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.4 | powerSupply5StateAmbientTemp(4) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of ambient sensor of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.5 | powerSupply5StateHotSpotTemp(5) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of hot spot sensor of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.6 | powerSupply5StateExhaustTemp(6) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of exhaust sensor of power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.7 | powerSupply5StateMainVoltage(7) | Integer32 | RO | 0.1 V | This shows the main voltage of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.8 | powerSupply5StateSubVoltage(8) | Integer32 | RO | 0.1 V | This shows the sub voltage of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.9 | powerSupply5StateInputVoltage(9) | Integer32 | RO | 0.1 V | This shows the input voltage of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.10 | powerSupply5StateMainCurrent(10) | Integer32 | RO | 0.1 A | This shows the main current of power supply module5. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.11 | powerSupply5StateSubCurrent(11) | Integer32 | RO | 0.1 A | This shows the sub current of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.12 | powerSupply5StateInputCurrent(12) | Integer32 | RO | 0.1 A | This shows the input current of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13 | powerSupply5StateLEDTable(13) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1 | powerSupply5StateLEDEntry(1) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.1 | powerSupply5StateLEDIndex(1) | Integer32 | RO | | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.2 | powerSupply5StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.3 | powerSupply5StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.4 | powerSupply5StateLEDState(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.5 | powerSupply5StateLEDColor(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14 | powerSupply5StateFanTable(14) | NA | NA | NA | This shows the table of fan of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1 | powerSupply5StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1.1 | powerSupply5StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1.2 | powerSupply5StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1.3 | powerSupply5StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of power supply module5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6 | powerSupply6(6) | NA | NA | NA | This shows the information of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1 | powerSupply6BasicInfo(1) | NA | NA | NA | This shows the basic information of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.1 | powerSupply6InfoType(1) | DisplayString | RO | (SIZE(0..40)) | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.2 | powerSupply6InfoProductName(2) | DisplayString | RO | (SIZE(0..40)) | This shows the product name of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.3 | powerSupply6InfoModel(3) | DisplayString | RO | (SIZE(0..40)) | This shows the model name of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.4 | powerSupply6InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the serial number of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.5 | powerSupply6InfoProductVersion(5) | DisplayString | RO | (SIZE(0..40)) | This shows the product version of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.6 | powerSupply6InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the product manufacturer of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.7 | powerSupply6InfoBoardProductName(7) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.8 | powerSupply6InfoBoardSerialNum(8) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.9 | powerSupply6InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20 | powerSupply6InfoSpec(20) | NA | NA | NA | This shows the specification of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.1 | powerSupply6SpecRateVoltageMain(1) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module6.(main) |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.2 | powerSupply6SpecRateVoltageSub(2) | Integer32 | RO | 0.1 V | This shows the rated voltage of power supply module6.(sub) |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.3 | powerSupply6SpecAmbientTempUpperLimit(3) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.4 | powerSupply6SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of ambient in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.5 | powerSupply6SpecHotSpotTempUpperLimit(5) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.6 | powerSupply6SpecHotSpotTempLowerLimit(6) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of hot spot in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.7 | powerSupply6SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 degrees C | This shows the highest temperature of exhaust in power supply module. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.8 | powerSupply6SpecExhaustTempLowerLimit(8) | Integer32 | RO | 0.1 degrees C | This shows the lowest temperature of exhaust in power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.2 | powerSupply6Capacity(2) | NA | NA | NA | This shows the capacity of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.2.1 | powerSupply6CapacityFan(1) | Integer32 | RO | | This shows the capacity fans of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.3 | powerSupply6Settings(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4 | powerSupply6State(4) | NA | NA | NA | This shows the state of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.1 | powerSupply6StateSlotNum(1) | Integer32 | RO | | This shows the number of installed slots of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.2 | powerSupply6StatePower(2) | INTEGER | RO | poweroff(1)/ poweron(2)/ unknown(3) | This shows the power supply state of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.3 | powerSupply6StateHealth(3) | INTEGER | RO | normal(1)/ fail(2) / unknown(3) | This shows the health state of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.4 | powerSupply6StateAmbientTemp(4) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of ambient sensor of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.5 | powerSupply6StateHotSpotTemp(5) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of hot spot sensor of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.6 | powerSupply6StateExhaustTemp(6) | Integer32 | RO | 0.1 degrees C | This shows the temperature value of exhaust sensor of power supply module. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.7 | powerSupply6StateMainVoltage(7) | Integer32 | RO | 0.1 V | This shows the main voltage of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.8 | powerSupply6StateSubVoltage(8) | Integer32 | RO | 0.1 V | This shows the sub voltage of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.9 | powerSupply6StateInputVoltage(9) | Integer32 | RO | 0.1 V | This shows the input voltage of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.10 | powerSupply6StateMainCurrent(10) | Integer32 | RO | 0.1 A | This shows the main current of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.11 | powerSupply6StateSubCurrent(11) | Integer32 | RO | 0.1 A | This shows the sub current of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.12 | powerSupply6StateInputCurrent(12) | Integer32 | RO | 0.1 A | This shows the input current of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.13 | powerSupply6StateLEDTable(13) | NA | NA | NA | Reserved. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.13.1 | powerSupply6StateLEDEntry(1) | NA | NA | NA | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.13.1.1 | powerSupply6StateLEDIndex(1) | Integer32 | RO | | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.13.1.2 | powerSupply6StateLEDName(2) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.13.1.3 | powerSupply6StateLEDType(3) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.13.1.4 | powerSupply6StateLEDState(4) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.13.1.5 | powerSupply6StateLEDColor(5) | DisplayString | RO | (SIZE(0..40)) | Reserved. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.14 | powerSupply6StateFanTable(14) | NA | NA | NA | This shows the table of fan of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.14.1 | powerSupply6StateFanEntry(1) | NA | NA | NA | This shows the entry of fan of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.14.1.1 | powerSupply6StateFanIndex(1) | Integer32 | RO | | This shows the index of fan of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.14.1.2 | powerSupply6StateFanLocation(2) | DisplayString | RO | (SIZE(0..40)) | This shows the location of fan of power supply module6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.14.1.3 | powerSupply6StateFanRPM(3) | Integer32 | RO | rpm | This shows the rpm value of power supply module6. |

## Table C-14: Information of Partition

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2 | powerSupply(2) | NA | NA | NA | This shows the information of partition. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1 | powerSupply1(1) | NA | NA | NA | This shows the information of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1 | powerSupply1BasicInfo(1) | NA | NA | NA | This shows the basic information of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.1 | powerSupply1InfoType(1) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of information of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.2 | powerSupply1InfoProductName(2) | Integer32 | RO | 0.1 A | This shows the maximum current of partition1. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.3 | powerSupply1InfoModel(3) | Integer32 | RO | W | This shows the maximum power of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.4 | powerSupply1InfoSerialNum(4) | Integer32 | RO | | This shows the total number of CPU core of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.5 | powerSupply1InfoProductVersion(5) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.6 | powerSupply1InfoProductManufacturer(6) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.7 | powerSupply1InfoBoardProductName(7) | NA | NA | NA | This shows the setting of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.8 | powerSupply1InfoBoardSerialNum(8) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.9 | powerSupply1InfoBoardManufacturer(9) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20 | powerSupply1InfoSpec(20) | NA | NA | NA | This shows the state of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.1 | powerSupply1SpecRateVoltageMain(1) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.2 | powerSupply1SpecRateVoltageSub(2) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.3 | powerSupply1SpecAmbientTempUpperLimit(3) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.4 | powerSupply1SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 A | This shows the consumption current of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.5 | powerSupply1SpecHotSpotTempUpperLimit(5) | Integer32 | RO | W | This shows the current power consumption of partition1. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.6 | powerSupply1SpecHotSpotTempLowerLimit(6) | NA | NA | NA | This shows the information of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.7 | powerSupply1SpecExhaustTempUpperLimit(7) | NA | NA | NA | This shows the basic information of partition2. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.1.1.20.8 | powerSupply1SpecExhaustTempLowerLimit(8) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.2 | powerSupply1Capacity(2) | Integer32 | RO | 0.1 A | This shows the maximum current of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.2.1 | powerSupply1CapacityFan(1) | Integer32 | RO | W | This shows the maximum power of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.3 | powerSupply1Settings(3) | Integer32 | RO | | This shows the total number of CPU core of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4 | powerSupply1State(4) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.1 | powerSupply1StateSlotNum(1) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.2 | powerSupply1StatePower(2) | NA | NA | NA | This shows the setting of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.3 | powerSupply1StateHealth(3) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.4 | powerSupply1StateAmbientTemp(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.5 | powerSupply1StateHotSpotTemp(5) | NA | NA | NA | This shows the state of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.6 | powerSupply1StateExhaustTemp(6) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.7 | powerSupply1StateMainVoltage(7) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.8 | powerSupply1StateSubVoltage(8) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.9 | powerSupply1StateInputVoltage(9) | Integer32 | RO | 0.1 A | This shows the consumption current of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.10 | powerSupply1StateMainCurrent(10) | Integer32 | RO | W | This shows the current power consumption of partition2. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.11 | powerSupply1StateSubCurrent(11) | NA | NA | NA | This shows the information of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.12 | powerSupply1StateInputCurrent(12) | NA | NA | NA | This shows the basic information of partition3. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13 | powerSupply1StateLEDTable(13) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1 | powerSupply1StateLEDEntry(1) | Integer32 | RO | 0.1 A | This shows the maximum current of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.1 | powerSupply1StateLEDIndex(1) | Integer32 | RO | W | This shows the maximum power of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.2 | powerSupply1StateLEDName(2) | Integer32 | RO | | This shows the total number of CPU core of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.3 | powerSupply1StateLEDType(3) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.4 | powerSupply1StateLEDState(4) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.13.1.5 | powerSupply1StateLEDColor(5) | NA | NA | NA | This shows the setting of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14 | powerSupply1StateFanTable(14) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1 | powerSupply1StateFanEntry(1) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1.1 | powerSupply1StateFanIndex(1) | NA | NA | NA | This shows the state of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1.2 | powerSupply1StateFanLocation(2) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.1.4.14.1.3 | powerSupply1StateFanRPM(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2 | powerSupply2(2) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1 | powerSupply2BasicInfo(1) | Integer32 | RO | 0.1 A | This shows the consumption current of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.1 | powerSupply2InfoType(1) | Integer32 | RO | W | This shows the current power consumption of partition3. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.2 | powerSupply2InfoProductName(2) | NA | NA | NA | This shows the information of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.3 | powerSupply2InfoModel(3) | NA | NA | NA | This shows the basic information of partition4. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.4 | powerSupply2InfoSerialNum(4) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.5 | powerSupply2InfoProductVersion(5) | Integer32 | RO | 0.1 A | This shows the maximum current of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.6 | powerSupply2InfoProductManufacturer(6) | Integer32 | RO | W | This shows the maximum power of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.7 | powerSupply2InfoBoardProductName(7) | Integer32 | RO | | This shows the total number of CPU core of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.8 | powerSupply2InfoBoardSerialNum(8) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.9 | powerSupply2InfoBoardManufacturer(9) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20 | powerSupply2InfoSpec(20) | NA | NA | NA | This shows the setting of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.1 | powerSupply2SpecRateVoltageMain(1) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.2 | powerSupply2SpecRateVoltageSub(2) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.3 | powerSupply2SpecAmbientTempUpperLimit(3) | NA | NA | NA | This shows the state of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.4 | powerSupply2SpecAmbientTempLowerLimit(4) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.5 | powerSupply2SpecHotSpotTempUpperLimit(5) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.6 | powerSupply2SpecHotSpotTempLowerLimit(6) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.7 | powerSupply2SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 A | This shows the consumption current of partition4. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.1.20.8 | powerSupply2SpecExhaustTempLowerLimit(8) | Integer32 | RO | W | This shows the current power consumption of partition4. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.2.2 | powerSupply2Capacity(2) | NA | NA | NA | This shows the information of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.2.1 | powerSupply2CapacityFan(1) | NA | NA | NA | This shows the basic information of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.3 | powerSupply2Settings(3) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of information of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4 | powerSupply2State(4) | Integer32 | RO | 0.1 A | This shows the maximum current of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.1 | powerSupply2StateSlotNum(1) | Integer32 | RO | W | This shows the maximum power of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.2 | powerSupply2StatePower(2) | Integer32 | RO | | This shows the total number of CPU core of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.3 | powerSupply2StateHealth(3) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.4 | powerSupply2StateAmbientTemp(4) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.5 | powerSupply2StateHotSpotTemp(5) | NA | NA | NA | This shows the setting of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.6 | powerSupply2StateExhaustTemp(6) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.7 | powerSupply2StateMainVoltage(7) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.8 | powerSupply2StateSubVoltage(8) | NA | NA | NA | This shows the state of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.9 | powerSupply2StateInputVoltage(9) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.10 | powerSupply2StateMainCurrent(10) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.11 | powerSupply2StateSubCurrent(11) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.12 | powerSupply2StateInputCurrent(12) | Integer32 | RO | 0.1 A | This shows the consumption current of partition5. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13 | powerSupply2StateLEDTable(13) | Integer32 | RO | W | This shows the current power consumption of partition5. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1 | powerSupply2StateLEDEntry(1) | NA | NA | NA | This shows the information of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.1 | powerSupply2StateLEDIndex(1) | NA | NA | NA | This shows the basic information of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.2 | powerSupply2StateLEDName(2) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.3 | powerSupply2StateLEDType(3) | Integer32 | RO | 0.1 A | This shows the maximum current of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.4 | powerSupply2StateLEDState(4) | Integer32 | RO | W | This shows the maximum power of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.13.1.5 | powerSupply2StateLEDColor(5) | Integer32 | RO | | This shows the total number of CPU core of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14 | powerSupply2StateFanTable(14) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1 | powerSupply2StateFanEntry(1) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1.1 | powerSupply2StateFanIndex(1) | NA | NA | NA | This shows the setting of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1.2 | powerSupply2StateFanLocation(2) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.2.4.14.1.3 | powerSupply2StateFanRPM(3) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3 | powerSupply3(3) | NA | NA | NA | This shows the state of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1 | powerSupply3BasicInfo(1) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.1 | powerSupply3InfoType(1) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.2 | powerSupply3InfoProductName(2) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.3 | powerSupply3InfoModel(3) | Integer32 | RO | 0.1 A | This shows the consumption current of partition6. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.4 | powerSupply3InfoSerialNum(4) | Integer32 | RO | W | This shows the current power consumption of partition6. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.5 | powerSupply3InfoProductVersion(5) | NA | NA | NA | This shows the information of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.6 | powerSupply3InfoProductManufacturer(6) | NA | NA | NA | This shows the basic information of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.7 | powerSupply3InfoBoardProductName(7) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of information of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.8 | powerSupply3InfoBoardSerialNum(8) | Integer32 | RO | 0.1 A | This shows the maximum current of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.9 | powerSupply3InfoBoardManufacturer(9) | Integer32 | RO | W | This shows the maximum power of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20 | powerSupply3InfoSpec(20) | Integer32 | RO | | This shows the total number of CPU core of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.1 | powerSupply3SpecRateVoltageMain(1) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.2 | powerSupply3SpecRateVoltageSub(2) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.3 | powerSupply3SpecAmbientTempUpperLimit(3) | NA | NA | NA | This shows the setting of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.4 | powerSupply3SpecAmbientTempLowerLimit(4) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.5 | powerSupply3SpecHotSpotTempUpperLimit(5) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.6 | powerSupply3SpecHotSpotTempLowerLimit(6) | NA | NA | NA | This shows the state of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.7 | powerSupply3SpecExhaustTempUpperLimit(7) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.1.20.8 | powerSupply3SpecExhaustTempLowerLimit(8) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.2 | powerSupply3Capacity(2) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.2.1 | powerSupply3CapacityFan(1) | Integer32 | RO | 0.1 A | This shows the consumption current of partition7. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.3.3 | powerSupply3Settings(3) | Integer32 | RO | W | This shows the current power consumption of partition7. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4 | powerSupply3State(4) | NA | NA | NA | This shows the information of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.1 | powerSupply3StateSlotNum(1) | NA | NA | NA | This shows the basic information of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.2 | powerSupply3StatePower(2) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.3 | powerSupply3StateHealth(3) | Integer32 | RO | 0.1 A | This shows the maximum current of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.4 | powerSupply3StateAmbientTemp(4) | Integer32 | RO | W | This shows the maximum power of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.5 | powerSupply3StateHotSpotTemp(5) | Integer32 | RO | | This shows the total number of CPU core of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.6 | powerSupply3StateExhaustTemp(6) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.7 | powerSupply3StateMainVoltage(7) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.8 | powerSupply3StateSubVoltage(8) | NA | NA | NA | This shows the setting of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.9 | powerSupply3StateInputVoltage(9) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.10 | powerSupply3StateMainCurrent(10) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.11 | powerSupply3StateSubCurrent(11) | NA | NA | NA | This shows the state of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.12 | powerSupply3StateInputCurrent(12) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13 | powerSupply3StateLEDTable(13) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1 | powerSupply3StateLEDEntry(1) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.1 | powerSupply3StateLEDIndex(1) | Integer32 | RO | 0.1 A | This shows the consumption current of partition8. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.2 | powerSupply3StateLEDName(2) | Integer32 | RO | W | This shows the current power consumption of partition8. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.3 | powerSupply3StateLEDType(3) | NA | NA | NA | This shows the information of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.4 | powerSupply3StateLEDState(4) | NA | NA | NA | This shows the basic information of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.13.1.5 | powerSupply3StateLEDColor(5) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14 | powerSupply3StateFanTable(14) | Integer32 | RO | 0.1 A | This shows the maximum current of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1 | powerSupply3StateFanEntry(1) | Integer32 | RO | W | This shows the maximum power of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1.1 | powerSupply3StateFanIndex(1) | Integer32 | RO | | This shows the total number of CPU core of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1.2 | powerSupply3StateFanLocation(2) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.3.4.14.1.3 | powerSupply3StateFanRPM(3) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4 | powerSupply4(4) | NA | NA | NA | This shows the setting of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1 | powerSupply4BasicInfo(1) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.1 | powerSupply4InfoType(1) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.2 | powerSupply4InfoProductName(2) | NA | NA | NA | This shows the state of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.3 | powerSupply4InfoModel(3) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.4 | powerSupply4InfoSerialNum(4) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.5 | powerSupply4InfoProductVersion(5) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.6 | powerSupply4InfoProductManufacturer(6) | Integer32 | RO | 0.1 A | This shows the consumption current of partition9. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.7 | powerSupply4InfoBoardProductName(7) | Integer32 | RO | W | This shows the current power consumption of partition9. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.8 | powerSupply4InfoBoardSerialNum(8) | NA | NA | NA | This shows the information of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.9 | powerSupply4InfoBoardManufacturer(9) | NA | NA | NA | This shows the basic information of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20 | powerSupply4InfoSpec(20) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.1 | powerSupply4SpecRateVoltageMain(1) | Integer32 | RO | 0.1 A | This shows the maximum current of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.2 | powerSupply4SpecRateVoltageSub(2) | Integer32 | RO | W | This shows the maximum power of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.3 | powerSupply4SpecAmbientTempUpperLimit(3) | Integer32 | RO | | This shows the total number of CPU core of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.4 | powerSupply4SpecAmbientTempLowerLimit(4) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.5 | powerSupply4SpecHotSpotTempUpperLimit(5) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.6 | powerSupply4SpecHotSpotTempLowerLimit(6) | NA | NA | NA | This shows the setting of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.7 | powerSupply4SpecExhaustTempUpperLimit(7) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.1.20.8 | powerSupply4SpecExhaustTempLowerLimit(8) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.2 | powerSupply4Capacity(2) | NA | NA | NA | This shows the state of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.2.1 | powerSupply4CapacityFan(1) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.3 | powerSupply4Settings(3) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4 | powerSupply4State(4) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition10. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.1 | powerSupply4StateSlotNum(1) | Integer32 | RO | 0.1 A | This shows the consumption current of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.2 | powerSupply4StatePower(2) | Integer32 | RO | W | This shows the current power consumption of partition10. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.3 | powerSupply4StateHealth(3) | NA | NA | NA | This shows the information of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.4 | powerSupply4StateAmbientTemp(4) | NA | NA | NA | This shows the basic information of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.5 | powerSupply4StateHotSpotTemp(5) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.6 | powerSupply4StateExhaustTemp(6) | Integer32 | RO | 0.1 A | This shows the maximum current of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.7 | powerSupply4StateMainVoltage(7) | Integer32 | RO | W | This shows the maximum power of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.8 | powerSupply4StateSubVoltage(8) | Integer32 | RO | | This shows the total number of CPU core of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.9 | powerSupply4StateInputVoltage(9) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.10 | powerSupply4StateMainCurrent(10) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.11 | powerSupply4StateSubCurrent(11) | NA | NA | NA | This shows the setting of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.12 | powerSupply4StateInputCurrent(12) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13 | powerSupply4StateLEDTable(13) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1 | powerSupply4StateLEDEntry(1) | NA | NA | NA | This shows the state of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.1 | powerSupply4StateLEDIndex(1) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.2 | powerSupply4StateLEDName(2) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.3 | powerSupply4StateLEDType(3) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition11. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.4 | powerSupply4StateLEDState(4) | Integer32 | RO | 0.1 A | This shows the consumption current of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.13.1.5 | powerSupply4StateLEDColor(5) | Integer32 | RO | W | This shows the current power consumption of partition11. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14 | powerSupply4StateFanTable(14) | NA | NA | NA | This shows the information of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1 | powerSupply4StateFanEntry(1) | NA | NA | NA | This shows the basic information of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1.1 | powerSupply4StateFanIndex(1) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of information of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1.2 | powerSupply4StateFanLocation(2) | Integer32 | RO | 0.1 A | This shows the maximum current of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.4.4.14.1.3 | powerSupply4StateFanRPM(3) | Integer32 | RO | W | This shows the maximum power of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5 | powerSupply5(5) | Integer32 | RO | | This shows the total number of CPU core of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1 | powerSupply5BasicInfo(1) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.1 | powerSupply5InfoType(1) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.2 | powerSupply5InfoProductName(2) | NA | NA | NA | This shows the setting of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.3 | powerSupply5InfoModel(3) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.4 | powerSupply5InfoSerialNum(4) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.5 | powerSupply5InfoProductVersion(5) | NA | NA | NA | This shows the state of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.6 | powerSupply5InfoProductManufacturer(6) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.7 | powerSupply5InfoBoardProductName(7) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.8 | powerSupply5InfoBoardSerialNum(8) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition12. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.9 | powerSupply5InfoBoardManufacturer(9) | Integer32 | RO | 0.1 A | This shows the consumption current of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20 | powerSupply5InfoSpec(20) | Integer32 | RO | W | This shows the current power consumption of partition12. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.1 | powerSupply5SpecRateVoltageMain(1) | NA | NA | NA | This shows the information of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.2 | powerSupply5SpecRateVoltageSub(2) | NA | NA | NA | This shows the basic information of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.3 | powerSupply5SpecAmbientTempUpperLimit(3) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.4 | powerSupply5SpecAmbientTempLowerLimit(4) | Integer32 | RO | 0.1 A | This shows the maximum current of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.5 | powerSupply5SpecHotSpotTempUpperLimit(5) | Integer32 | RO | W | This shows the maximum power of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.6 | powerSupply5SpecHotSpotTempLowerLimit(6) | Integer32 | RO | | This shows the total number of CPU core of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.7 | powerSupply5SpecExhaustTempUpperLimit(7) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.1.20.8 | powerSupply5SpecExhaustTempLowerLimit(8) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.2 | powerSupply5Capacity(2) | NA | NA | NA | This shows the setting of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.2.1 | powerSupply5CapacityFan(1) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.3 | powerSupply5Settings(3) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4 | powerSupply5State(4) | NA | NA | NA | This shows the state of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.1 | powerSupply5StateSlotNum(1) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.2 | powerSupply5StatePower(2) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition13. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.3 | powerSupply5StateHealth(3) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.4 | powerSupply5StateAmbientTemp(4) | Integer32 | RO | 0.1 A | This shows the consumption current of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.5 | powerSupply5StateHotSpotTemp(5) | Integer32 | RO | W | This shows the current power consumption of partition13. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.6 | powerSupply5StateExhaustTemp(6) | NA | NA | NA | This shows the information of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.7 | powerSupply5StateMainVoltage(7) | NA | NA | NA | This shows the basic information of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.8 | powerSupply5StateSubVoltage(8) | INTEGER | RO | invalid(1)/ valid(2) /unknown(3) | This shows the validity of information of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.9 | powerSupply5StateInputVoltage(9) | Integer32 | RO | 0.1 A | This shows the maximum current of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.10 | powerSupply5StateMainCurrent(10) | Integer32 | RO | W | This shows the maximum power of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.11 | powerSupply5StateSubCurrent(11) | Integer32 | RO | | This shows the total number of CPU core of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.12 | powerSupply5StateInputCurrent(12) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13 | powerSupply5StateLEDTable(13) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1 | powerSupply5StateLEDEntry(1) | NA | NA | NA | This shows the setting of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.1 | powerSupply5StateLEDIndex(1) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.2 | powerSupply5StateLEDName(2) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.3 | powerSupply5StateLEDType(3) | NA | NA | NA | This shows the state of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.4 | powerSupply5StateLEDState(4) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition14. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.13.1.5 | powerSupply5StateLEDColor(5) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14 | powerSupply5StateFanTable(14) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1 | powerSupply5StateFanEntry(1) | Integer32 | RO | 0.1 A | This shows the consumption current of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1.1 | powerSupply5StateFanIndex(1) | Integer32 | RO | W | This shows the current power consumption of partition14. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1.2 | powerSupply5StateFanLocation(2) | NA | NA | NA | This shows the information of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.5.4.14.1.3 | powerSupply5StateFanRPM(3) | NA | NA | NA | This shows the basic information of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6 | powerSupply6(6) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1 | powerSupply6BasicInfo(1) | Integer32 | RO | 0.1 A | This shows the maximum current of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.1 | powerSupply6InfoType(1) | Integer32 | RO | W | This shows the maximum power of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.2 | powerSupply6InfoProductName(2) | Integer32 | RO | | This shows the total number of CPU core of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.3 | powerSupply6InfoModel(3) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.4 | powerSupply6InfoSerialNum(4) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.5 | powerSupply6InfoProductVersion(5) | NA | NA | NA | This shows the setting of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.6 | powerSupply6InfoProductManufacturer(6) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.7 | powerSupply6InfoBoardProductName(7) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.8 | powerSupply6InfoBoardSerialNum(8) | NA | NA | NA | This shows the state of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.9 | powerSupply6InfoBoardManufacturer(9) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition15. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20 | powerSupply6InfoSpec(20) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.1 | powerSupply6SpecRateVoltageMain(1) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.2 | powerSupply6SpecRateVoltageSub(2) | Integer32 | RO | 0.1 A | This shows the consumption current of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.3 | powerSupply6SpecAmbientTempUpperLimit(3) | Integer32 | RO | W | This shows the current power consumption of partition15. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.4 | powerSupply6SpecAmbientTempLowerLimit(4) | NA | NA | NA | This shows the information of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.5 | powerSupply6SpecHotSpotTempUpperLimit(5) | NA | NA | NA | This shows the basic information of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.6 | powerSupply6SpecHotSpotTempLowerLimit(6) | INTEGER | RO | invalid(1)/ valid(2)/unknown(3) | This shows the validity of information of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.7 | powerSupply6SpecExhaustTempUpperLimit(7) | Integer32 | RO | 0.1 A | This shows the maximum current of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.1.20.8 | powerSupply6SpecExhaustTempLowerLimit(8) | Integer32 | RO | W | This shows the maximum power of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.2 | powerSupply6Capacity(2) | Integer32 | RO | | This shows the total number of CPU core of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.2.1 | powerSupply6CapacityFan(1) | Integer32 | RO | GB | This shows the total amount of DIMM capacity of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.3 | powerSupply6Settings(3) | DisplayString | RO | (SIZE(0..40)) | This shows the HVM license information of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4 | powerSupply6State(4) | NA | NA | NA | This shows the setting of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.1 | powerSupply6StateSlotNum(1) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode setting of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.2 | powerSupply6StatePower(2) | INTEGER | RO | redundancy(1)/ non-redundancy(2)/ unknown(3) | This shows the DIMM redundancy of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.3 | powerSupply6StateHealth(3) | NA | NA | NA | This shows the state of partition16. |

| OID | Object identifier | Syntax | Access | Value | Description |
|---|---|---|---|---|---|
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.4 | powerSupply6StateAmbientTemp(4) | INTEGER | RO | poweroff(1)/ standby(2)/ poweron(3)/ unknown(4)/poweron-executing(5)/poweroff-executing(6) | This shows the power supply state of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.5 | powerSupply6StateHotSpotTemp(5) | INTEGER | RO | normal(1)/fail(2)/unknown(3) | This shows the health state of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.6 | powerSupply6StateExhaustTemp(6) | INTEGER | RO | basic(1)/ hvm(2)/ unknown(3) | This shows the hvm mode of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.7 | powerSupply6StateMainVoltage(7) | Integer32 | RO | 0.1 A | This shows the consumption current of partition16. |
| 1.3.6.1.4.1.116.5.52.2.2.2.6.4.8 | powerSupply6StateSubVoltage(8) | Integer32 | RO | W | This shows the current power consumption of partition16. |

# D

# IPMI Commands List

This Appendix-D provides the list of IPMI Commands.

# IPMI Commands List

Table D-1 shows supported IPMI Commands.

### Table D-1: Supported IPMI Commands

| Command | NetFn | CMD | Remark |
|---|---|---|---|
| **IPMI Device "Global" Commands** | | | |
| Get Device ID | App(06h,07h) | 01h | |
| Get ACPI Power State | App(06h,07h) | 07h | |
| **BMC Watchdog Timer Commands** | | | |
| Reset Watchdog Timer | App(06h,07h) | 22h | |
| Set Watchdog Timer | App(06h,07h) | 24h | |
| Get Watchdog Timer | App(06h,07h) | 25h | |
| **BMC Device and Messaging Commands** | | | |
| Get System GUID | App(06h,07h) | 37h | |
| Get Channel Authentication Capabilities | App(06h,07h) | 38h | |
| Set Session Privilege Level | App(06h,07h) | 3Bh | |
| Close Session | App(06h,07h) | 3Ch | |
| Get Session Info | App(06h,07h) | 3Dh | |
| Set Channel Access | App(06h,07h) | 40h | |
| Get Channel Access | App(06h,07h) | 41h | |
| Set User Access | App(06h,07h) | 43h | |
| Get User Access | App(06h,07h) | 44h | |
| Set User Name | App(06h,07h) | 45h | |
| Get User Name | App(06h,07h) | 46h | |
| Set User Password | App(06h,07h) | 47h | |
| Activate Payload | App(06h,07h) | 48h | |
| Deactivate Payload | App(06h,07h) | 49h | |
| Get Payload Activation Status | App(06h,07h) | 4Ah | |
| Get Payload Instance Info | App(06h,07h) | 4Bh | |
| Set User Payload Access | App(06h,07h) | 4Ch | |
| Get User Payload Access | App(06h,07h) | 4Dh | |
| Get Channel Cipher Suites | App(06h,07h) | 54h | |
| **Chassis Device Commands** | | | |
| Get Chassis Capabilities | Chassis(00h,01h) | 00h | |
| Get Chassis Status | Chassis(00h,01h) | 01h | |
| Chassis Control | Chassis(00h,01h) | 02h | |
| Chassis Identify | Chassis(00h,01h) | 04h | |
| Set System Boot Options | Chassis(00h,01h) | 08h | |

| Command | NetFn | CMD | Remark |
|---|---|---|---|
| Get System Boot Options | Chassis(00h,01h) | 09h | |
| **Sensor Device Commands** | | | |
| Get Sensor Threshold | Sensor/Event(04h,05h) | 27h | |
| Get Sensor Reading | Sensor/Event(04h,05h) | 2Dh | |
| **FRU Device Commands** | | | |
| Get FRU Inventory Area Info | Storage(0Ah,0Bh) | 10h | |
| Read FRU Data | Storage(0Ah,0Bh) | 11h | |
| **SDR Device Commands** | | | |
| Get SDR Repository Info | Storage(0Ah,0Bh) | 20h | |
| Reserve SDR Repository | Storage(0Ah,0Bh) | 22h | |
| Get SDR | Storage(0Ah,0Bh) | 23h | |
| **SEL Device Commands** | | | |
| Get SEL Info | Storage(0Ah,0Bh) | 40h | |
| Reserve SEL | Storage(0Ah,0Bh) | 42h | |
| Get SEL Entry | Storage(0Ah,0Bh) | 43h | |
| Clear SEL | Storage(0Ah,0Bh) | 47h | |
| Get SEL Time | Storage(0Ah,0Bh) | 48h | |
| Set SEL Time | Storage(0Ah,0Bh) | 49h | |
| **LAN Device Commands** | | | |
| Set LAN Configuration Parameters | Transport(0Ch,0Dh) | 01h | * |
| Get LAN Configuration Parameters | Transport(0Ch,0Dh) | 02h | |
| **Serial/Modem Device Commands** | | | |
| SOL Activating | Transport(0Ch,0Dh) | 20h | |
| Set SOL Configuration Parameters | Transport(0Ch,0Dh) | 21h | |
| Get SOL Configuration Parameters | Transport(0Ch,0Dh) | 22h | |
| **DCMI Command** | | | |
| Get Asset Tag | DCGRP(2Ch,2Dh) | 06h | |
| Set Asset Tag | DCGRP(2Ch,2Dh) | 08h | |
| * "Commit write" option for Set In Progress Parameter does not work.<br>Any changes made during "commit write" set affect immediately. | | | |

# LDAP Server Linkage

This Appendix-E describes the LDAP Server Linkage.

# Overview of the LDAP Server Linkage

BMC search the LDAP directory on the LDAP server by using the Lightweight Directory Access Protocol (LDAP) to authenticate users. With this function, you can perform the following:

- Login to BMC as a user registered with the LDAP director
- Group authentication that allows only the account belonging to a specific group in the LDAP directory to login

## Logging in As a User registered with the LDAP Directory

BMC judge whether to allow a user to log in based on the user account information registered with each module and the user account information in the LDAP directory at user authentication.

Adding user account information to the LDAP directory on the LDAP server allows all BMC using the LDAP server to use the added user account information. Besides, it is not necessary to register the user account information with each module.

## Group Authentication

During user authentication, the group information in the LDAP directory is viewed and only the user accounts belonging to the group are allowed to log in. By using the group authentication function, you can construct an LDAP server linkage environment between BMC without drastically changing the already constructed LDAP directory.

# Supported LDAP Server

CR 220S supports Active Directory, attached to the following OSes, as the LDAP server with linkage.

- Windows Server 2008 R2, Standard
- Windows Server 2008 R2, Enterprise
- Windows Server 2008 Standard
- Windows Server 2008 Enterprise
- Windows Server 2008 Standard without Hyper-V
- Windows Server 2008 Enterprise without Hyper-V
- Windows Server 2003 R2, Standard Edition
- Windows Server 2003 R2, Enterprise Edition

# Environmental Setting for Active Directory

This section describes settings required when Active Directory is used as an LDAP server.

The following items show the required setting items.

- Server certificate
- Bind DN for the LDAP server
- User account for logging in to BMC
- Group that is allowed to login to the BMC

## Server Certificate

Because all communications between BMC and LDAP servers are carried out through Secure Socket Layer (SSL), the server certificate must be registered for Active Directory to be used as an LDAP server.

For details about how to register the server certificate, see the documentation of your OS.

Tip

There are two different server certificates. One is self- signed certificate, and the other one is a certificate certified by an external certificate authority. You can use either of them for communication between BMC and Active Directory.

## Bind DN for the LDAP Server

To search an LDAP directory at user authentication, you must connect to an LDAP server. There are two methods for connecting to an LDAP server as below. Perform either of the following methods:

- Connect to an LDAP server by using an LDAP bind DN and the password.
- Connect to an LDAP server as an anonymous user.

Tip

We recommend to use an LDAP bind DN and the password.

## Connect to an LDAP server by using an LDAP bind DN and the password

Register a user account to use as an LDAP bind DN with your Windows. For details about how to register user accounts, see the documentation of your OS.

You must grant the access permission for the LDAP directory to use when authenticating users to the user account to be used as the LDAP bind DN.

## Connect to an LDAP server as an anonymous user

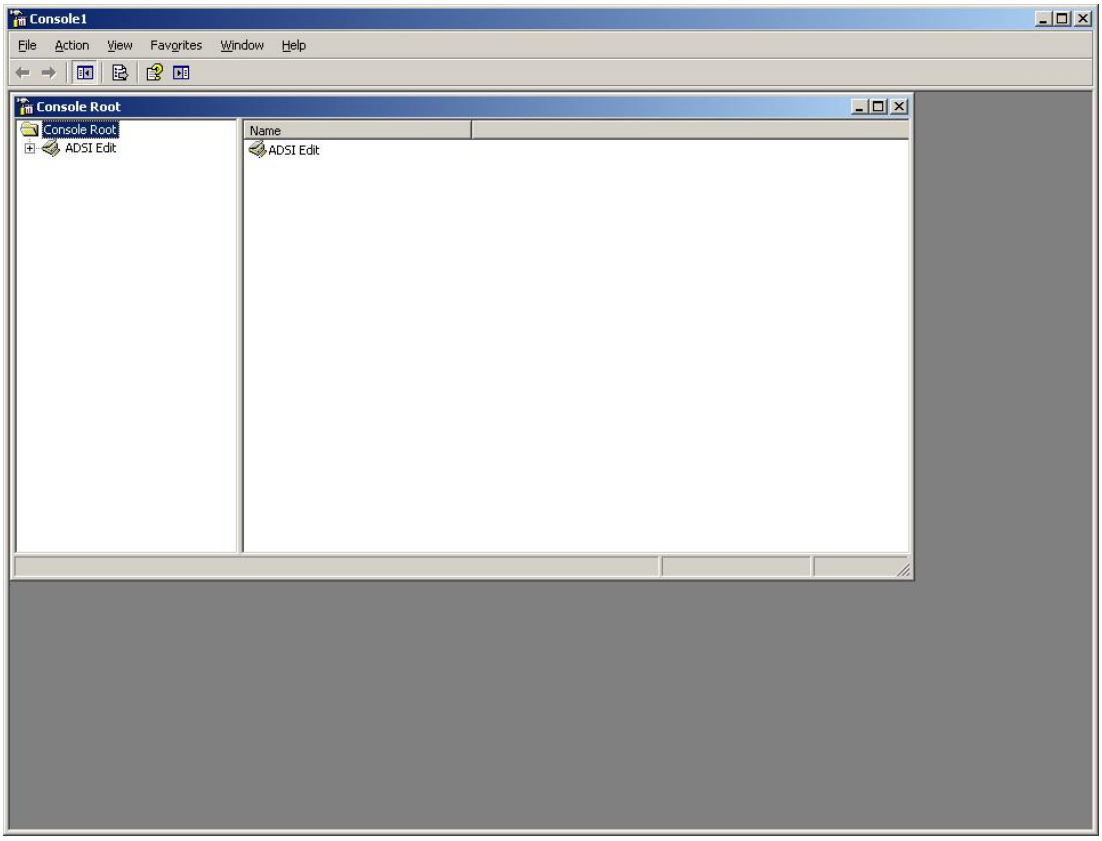
Follow the procedure below to register an anonymous user.

---

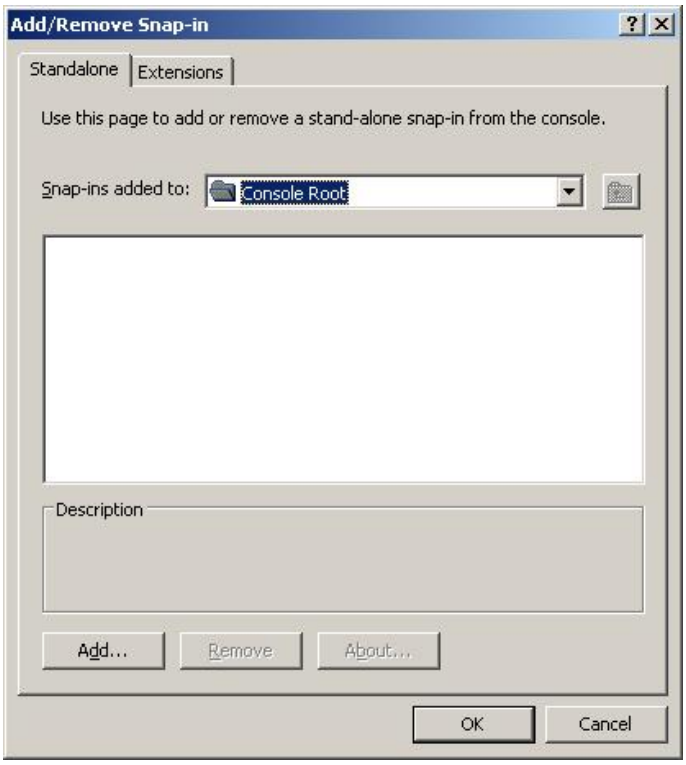
When registering a user for LDAP connection, skip this procedure.

---

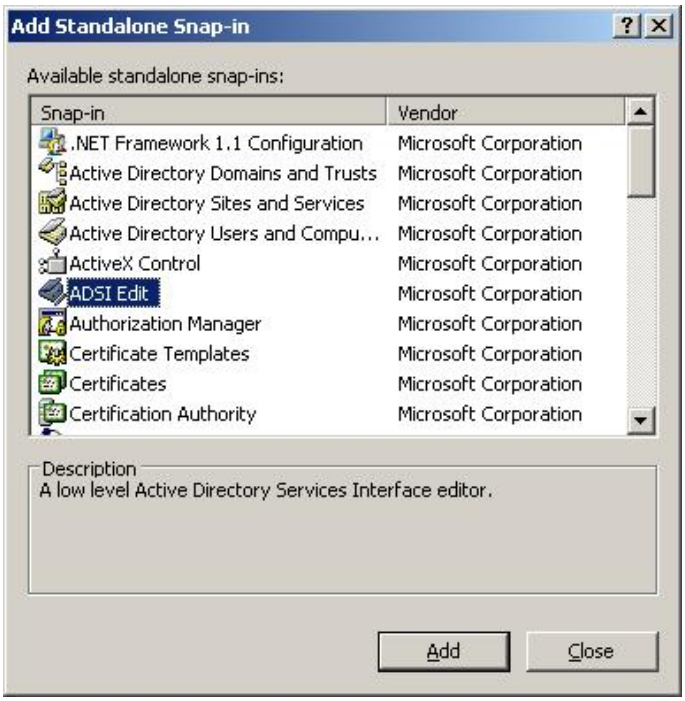
1. Select **Start** > **Run...**, type "mmc" and click **OK**.
   The Console Root screen is displayed.



2. Select **Menu** > **File** > **Add/Remove Snap-in**.
   Add/Remove Snap-in screen is displayed.

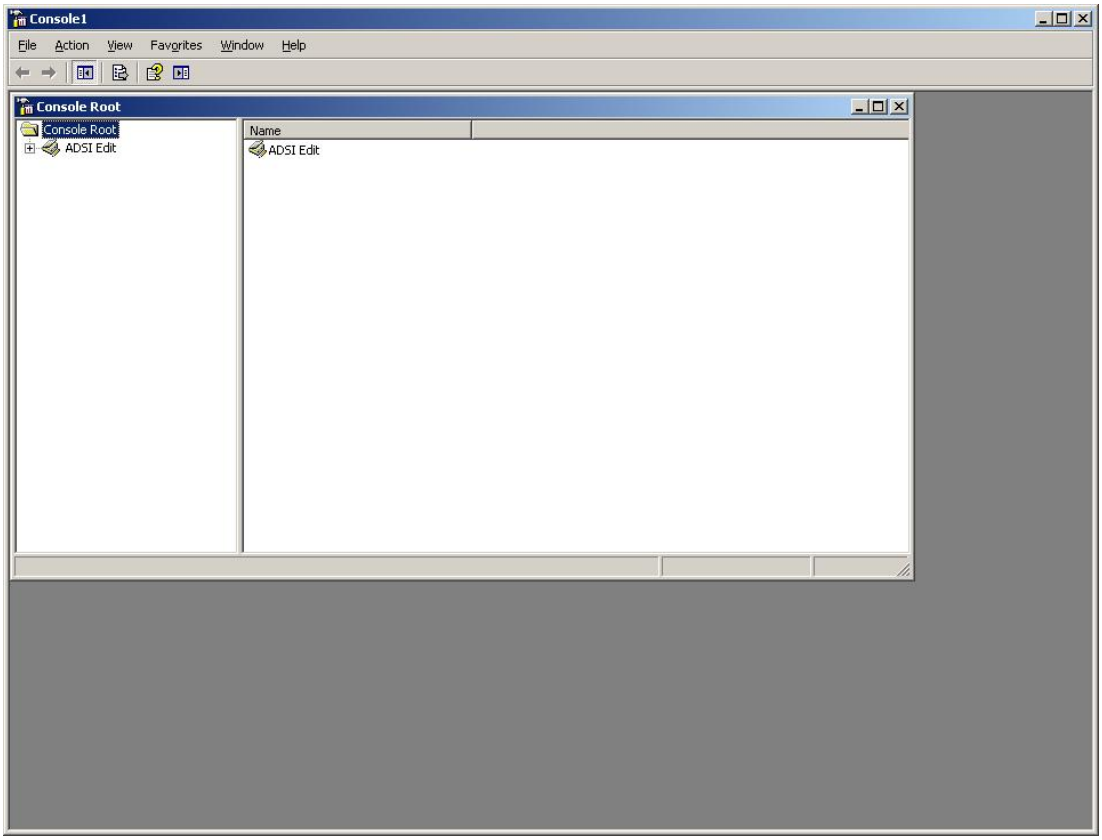



3. In the Add Standalone Snap-in screen, click **Add...**, select **ADSI Edit** from "Available standalone snap-ins:", click **Add**, and then click **Close**.



When ADSI Edit is not available, see Windows Support Tools.

4. When Add/Remove Snap-in screen is displayed once again, confirm that [ADSI Edit] is added, and click **OK**.
   [ADSI Edit] is added to the Console Root screen.

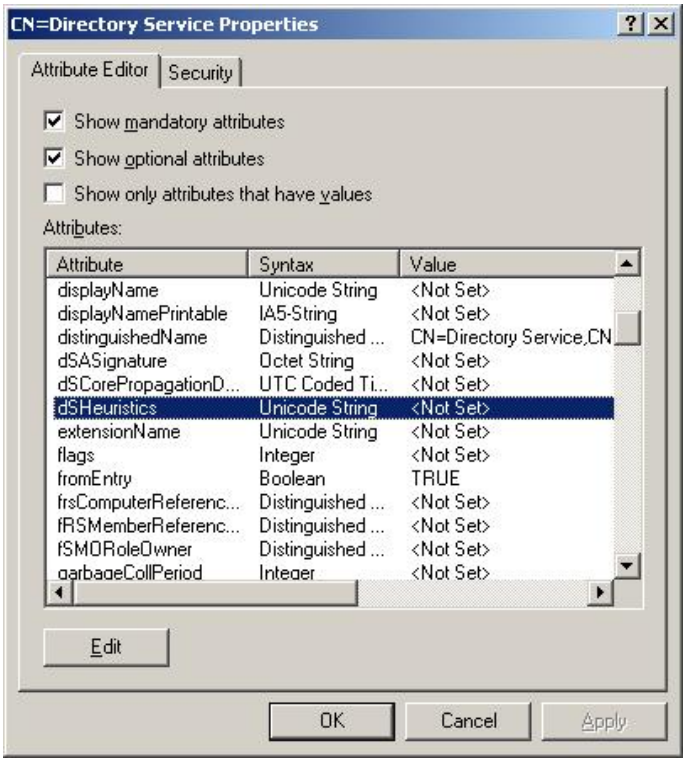



5. Place and right-click the mouse on **ADSI Edit**, and select **Connect to...**.

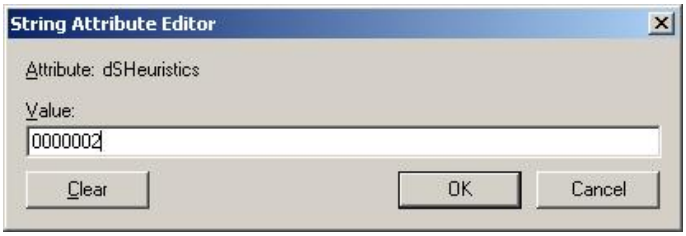
6. Select **Domain** for the domain context of Active Directory to connect, and click **OK**.


7. When the Console Root screen is displayed once again, right-click **ADSI Edit** once more, and select **Connect to...**.
8. Select **Configuration** as Context, and click **OK**.

9. When the Console Root screen is displayed once again, place and right-click the mouse on **¥ADSI¥Edit¥configuration¥CN=Configuration¥DC=domain base¥CN-Services¥CN=Windows NT¥CN=Directory Service**, and select **properties**.
   The Properties screen is displayed.




10. Click **dSHeuristics,** and then click **Edit** to set a value in the properties screen. When the value is <Not Set>, type "0000002" in the field. When a value is set, change the 7th figure from the left to "2". Do not change other figures.




11. When setting is completed, click **OK**, and the Console Root screen is displayed. Click **OK** in the properties screen to apply the setting.

The procedure above can allow you to register an anonymous user.

Then select Registering the User Account for Logging in to the BMC to give access to an anonymous user.

## Registering the User Account for Logging in to the BMC

In [Start > Management Tools > Active Directory Users and Computers], register the user account for the LDAP directory. For details about how to register user accounts, see the documentation of your OS.

This section describes the limitations for user names and passwords to be registered and the procedure for granting role information to be used after logging in to BMC.

### User name

The following characters and the number of characters are available for user names.

- Number of characters: from 1 to 32 characters
- Available characters for the head of a name: [A-Z] [a-z]
- Available characters for from the second to the end of a name: [A-Z] [a-z] [0-9], "-" (hyphen), "_" (underscore), "." (period)

### Password

The following characters and the number of characters are available for passwords.

- Number of characters: from 1 to 32 characters
- Available characters: Printable characters in ASCII (0x20-0x7e)

---

Tip

The complexity of passwords depends on the security policy of your OS.

---

## Granting Role Information

By granting role information to a user account registered with the LDAP directory, you can set the range of operations to be performed after the login.

---

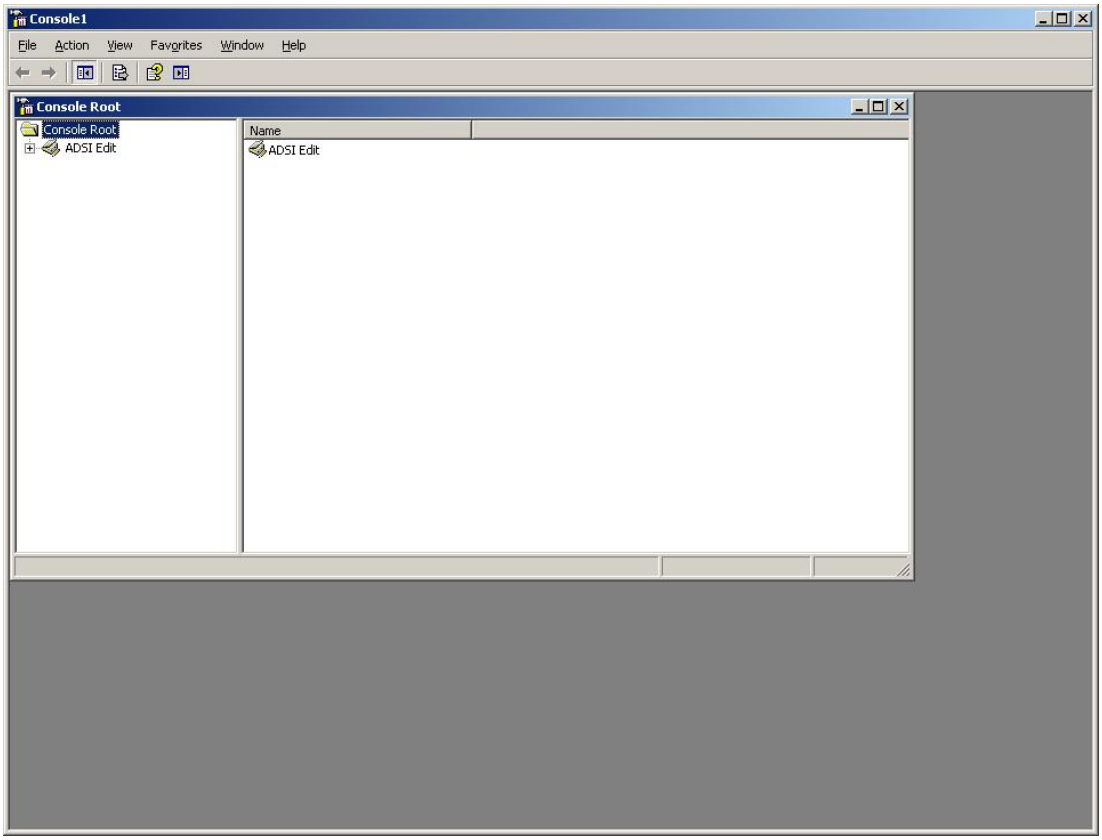
Tip

If you do not grant role information, operations you can perform after the login are minimized.

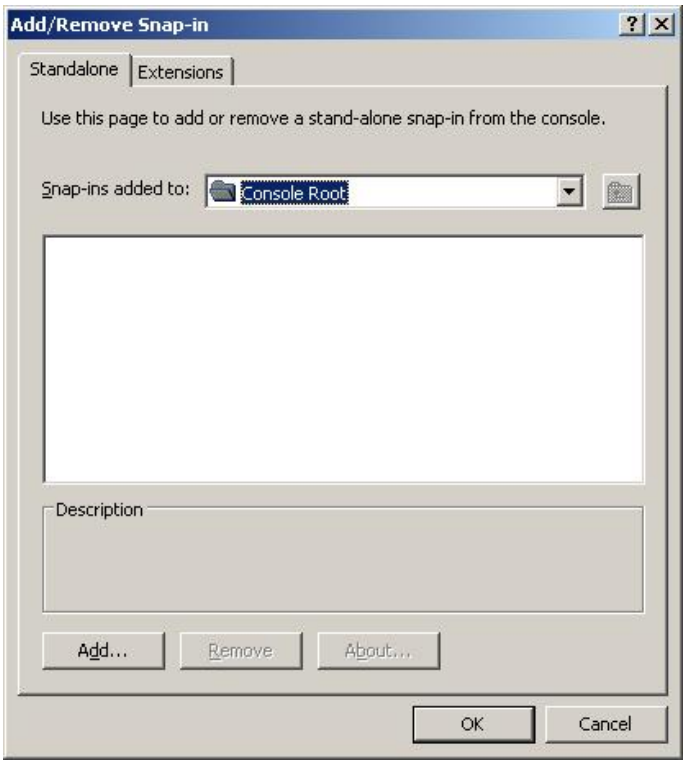
---

Follow the procedure below to assign role information.

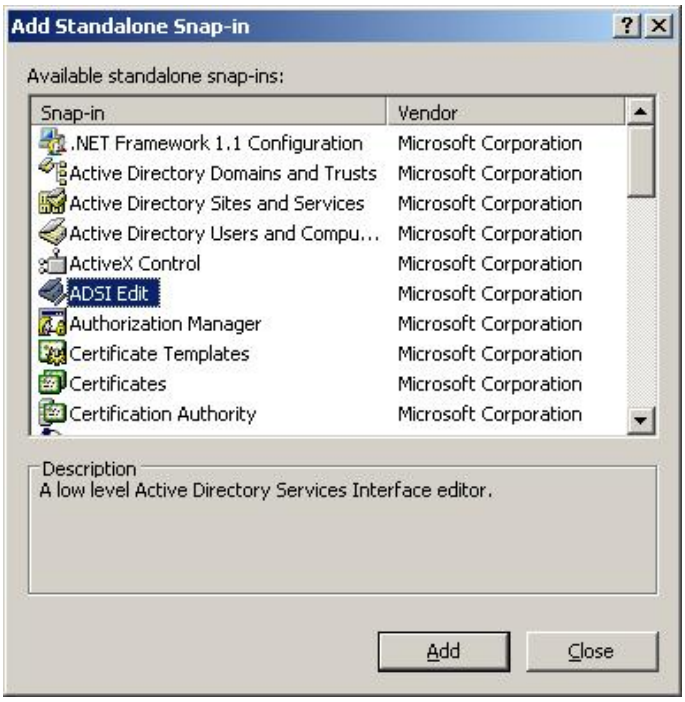
1. Select **Start** > **Run...**, type “mmc” and click **OK**.
   The Console Root screen is displayed.



2. Select **Menu** > **File** > **Add/Remove Snap-in**.
   Add/Remove Snap-in screen is displayed.

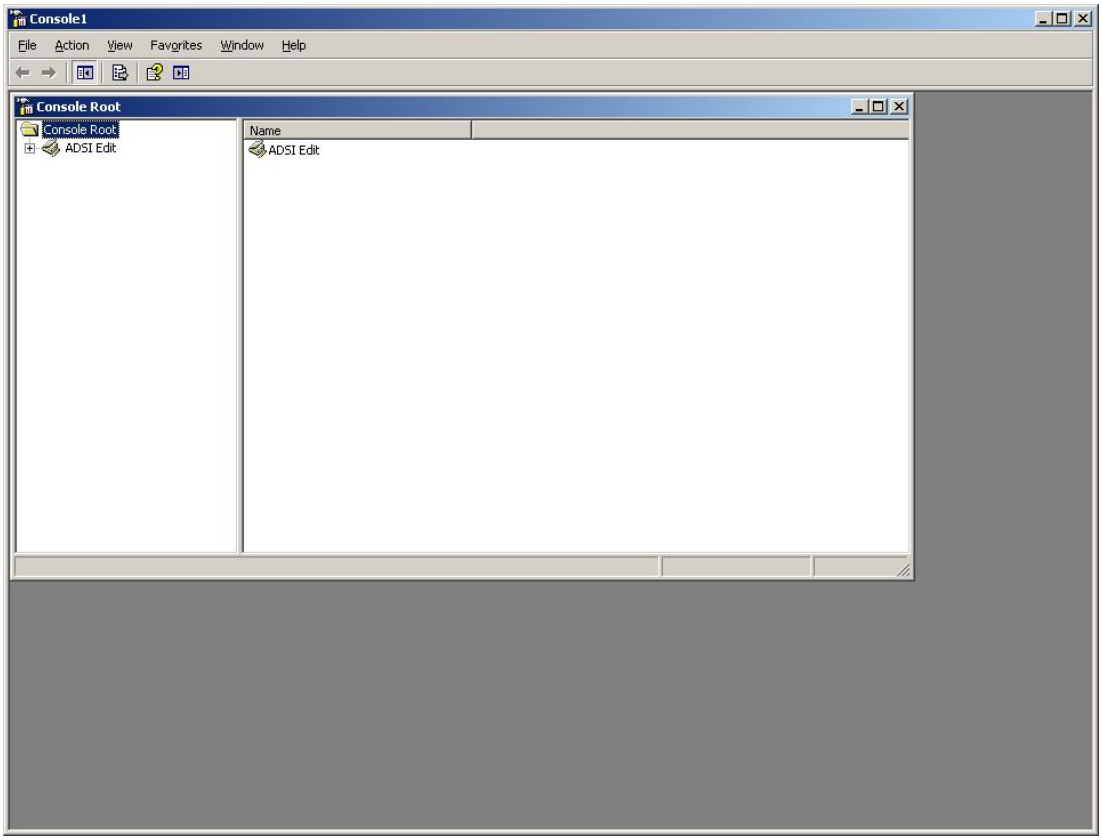



3. In the Add Standalone Snap-in screen, click **Add...**, select **ADSI Edit** from [Available standalone snap-ins:], click **Add**, and then click **Close**.



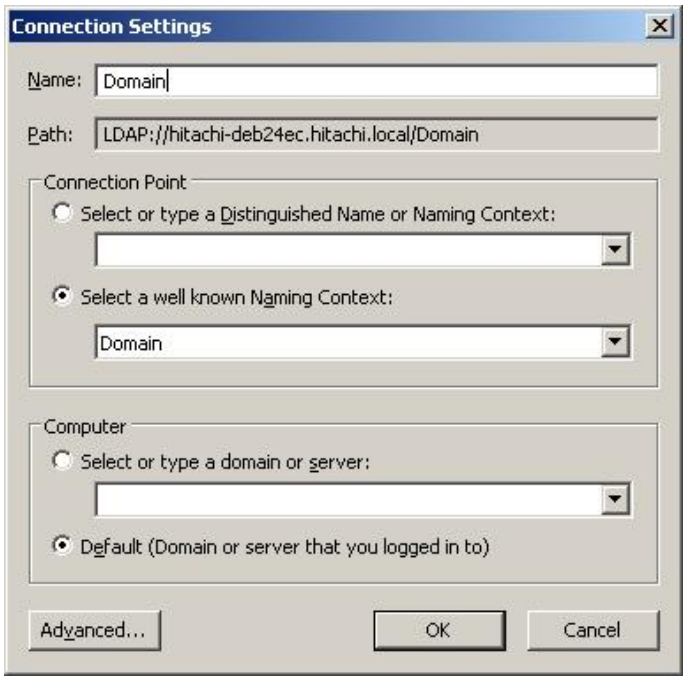
When ADSI Edit is not available, see Windows Support Tools.

4. When Add/Remove Snap-in screen is displayed once again, confirm that **ADSI Edit** is added, and click **OK**.
   **ADSI Edit** is added to the Console Root screen.




5. Place and right-click the mouse on **ADSI Edit**, and select **Connect to...**.

6. Select **Domain** for the domain context of Active Directory to connect, and click **OK**.




7. Open the ADSI Edit tree. Right-click a user account to give roles on the LDAP directory. Open **Properties**.
   The Properties screen opens and the attributes list assigned to the user account is displayed.
8. Select the attribute with "Unicode String" for Syntax and "<Not Set>" for Value from the attributes list, and click **Edit**.
9. Set roles for BMC.
   Set roles for BMC with the following character string.

| |
|---|
| ServerBladeRole=XXXXXXXX (X: "0" or "1")<br>XXXXXXXX: each X from the head to the end corresponds to a following role in the numerical order.<br>1 Login<br>2 Administrator<br>3 Server Operation<br>4 User Account Management<br>5 Service Settings<br>6 Remote Console<br>7 Remote Media<br>8 SMASH CLIP |

10. After setting roles, click **OK**. When the screen returns to Properties, click **OK**.

The procedure above completes the role setting for users to log in to BMC.

## Group that is allowed to login to the BMC

Register the group to use for group authentication.

---

If you do not use group authentication, this setting is not required.

---

Open [Start > Management Tools > Active Directory Users and Computers], create a group you allow login to BMC in the LDAP directory. After you create the groups, register user accounts you allow login with the group.

For details about how to create groups and how to register user accounts with groups, see the documentation of your OS.

## Windows Support Tools

Windows Support Tools is a package software program that contains "ADSI (Active Directory Service Interface) Edit" for operating objects registered with Active Directory, and "ldp" for performing Active Directory operations through LDAP.

Select [Control Panel] and open [Add and Remove Programs]. The list of installed programs is displayed. When “Windows Support Tools” is displayed in the list, “ADSI Edit” and “ldp” are available. If not, install “Windows Support Tools” form the install media.

---

When Windows Server 2008 or higher versions are equipped with this package, skip this procedure.

---

# Setting BMC

This section describes necessary settings for connecting BMC to LDAP servers. For details about BMC, see LDAP.

## User Authentication Method

Select **When local user authentication fails, do LDAP user authentication**. The system authenticates users by using the user account information set for BMC. If the system fails to authenticate users, the system authenticates users by using the user account information on the LDAP servers.

- If the LDAP connection function is enabled, you can log in to BMC by using the user account you already set.
- If you register a user account name you already set for BMC with the LDAP directory, the system authenticate users by using the user account information set for BMC.

## Registering LDAP Servers

A maximum of three LDAP servers can be registered. If you register multiple LDAP servers, BMC tries to connect to the LDAP servers in the order they were registered. BMC searches the LDAP directory on the server of which connection was established first, and tries to authenticate users.

If BMC fails to connect to all the registered LDAP servers, user authentication using the LDAP servers also fails.

Even if BMC fails to connect to all registered LDAP servers, BMC can authenticate users by using a user account registered with BMC correctly.

## Setting the LDAP Server Connection

### Port Number

Specify the port number to use for connecting to the LDAP server. Normally, the 636 port is used, however, depending on your environment, you might have to use another port. Check your network environment before you specify a port.

### Bind DN and Bind Password

Set the method for connecting the LDAP server at user authentication.

You must set the method according to the settings you specified during user registration for LDAP connection. See LDAP.

## Setting for Searching the LDAP Directory

### Base DN

Specify the DN for the root directory of the LDAP directory to be searched. The directories under the specified root directory are to be searched at user authentication.

### Attribute for Login ID

Specify the attribute of each entry in the LDAP directory to be compared with the user ID specified at user authentication.

For Active Directory, the attribute name “sAMAccountName” is used for searching login IDs usually.

### Attribute for Role

If you grant a role to the user account for logging in to BMC during the operation described in "Granting Role Information", specify the attribute used for granting the role.

---

Tip

If you did not grant a role, you do not need to perform this operation.

---

## Setting Group Authentication

> **Tip** If you do not specify group settings during the operation described in Group that is allowed to login to the BMC, you do not need to perform this operation.

### Attribute for Group Member

Specify the attribute in which the list of user accounts whose login is to be allowed is stored.

For Active Directory, the list of user accounts is normally stored in the attribute name “member”.

### Group DN

Specify the group DN created in Group that is allowed to login to the BMC.

A maximum of five groups can be specified. User accounts of which login you want to allow must belong to one of the specified groups

# Security strength

This Appendix-F describes the security strength.

# Overview of security strength

For BMC network, security strength can be enhanced by the user settings. You can set “Default” or “High”, and the factory default settings is “Default”.

Security strength can be enhanced in BMC network by setting to "High".
When security strength is set to“High”, the following restrictions are required.

- When an encryption communication is available, a plaintext communication is not available.
- For the encryption communication, only use a cipher algorithm with high security strength.

# Relationship between security strength and functions

When changing the settings of security strength, each function of system unit use the following protocols and encryption methods depending on settings.

**Table F-1: BMC**

| Function | Protocol | Security strength | |
|---|---|---|---|
| | | Default | High |
| Web | HTTP | Available | N/A |
| | HTTPS | Available<br>(SSL 3.0, TLS1.0/1.1/1.2) | Available<br>(TLS 1, 2)[1 2] |
| IPMI over LAN | IPMI v1.5 | Available | N/A[3] |
| | IPMI v2.0 | Available | Available[4] |
| Remote console | Original protocol of Hitachi | Available<br>(Plaintext/SSL 3.0, TLS 1.0/1.1/1.2) | Available<br>(TLS 1.2)[1] |
| LDAP | LDAPS | Available<br>(SSL 3.0, TLS 1.0/1.1/1.2) | Available<br>(TLS 1.2) |
| SNMP | SNMP (v1/v2c) | Available | N/A<br>(No response to a demand of manager / No trap issue) |
| | SNMP (v3) | Available | Available |
| HCSM | HTTPS and original protocol of Hitachi | Available<br>(SSL 3.0, TLS 1.0/1.1/1.2) [5] | Available<br>(TLS 1.2)[5] |

**Notes:**

1. When using a certificate less than 2048 bit, cannot connect. Set back to “Default” for security strength, and register a certificate over 2048 bit. Set to "High" for security strength again.
2. Need to a web browser corresponded SSL/TLS version to use.
3. Connection is refused when executing when executing “IPMI v1.5 LAN Session Startup”.
4. When the CipherSuite ID is 3 and the both of UserName and Password are set, "High" is available.
5. Need to an application corresponded SSL/TLS version to use.

# Security strength settings

Security strength can be set using Web console in BMC version 09-80 or higher. The settable functions are as follows.

For details of security strength settings, see Security and Service.

**Table F-2: Security strength settings**

| Function | Description |
|---|---|
| Exchanging "default" and "high" for security strength | BMC is restarted after changing settings. Settings is reflected after restarting BMC. |
| Specifying version of supported SSL/TLS | The change of settings is reflected dynamically. |

Tip

- When change the settings of security strength, BMC is restarted automatically.
- The settings of security strength are executed backup and restore.

# Comparing functions for security strength settings

### Table F-3: SSL/TLS

| Cipher suite | Security strength | |
|---|---|---|
| | Default | High |
| TLS_ECDHE_RSA_WITH_3DES_EDE_CBC_SHA | - | - |
| SSL_RSA_WITH_RC4_128_MD5 | - | - |
| SSL_RSA_WITH_RC4_128_SHA | - | - |
| TLS_RSA_WITH_AES_128_CBC_SHA | √ | √ |
| TLS_RSA_WITH_AES_256_CBC_SHA | √ | √ |
| TLS_DHE_RSA_WITH_AES_128_CBC_SHA | - | - |
| TLS_DHE_DSS_WITH_AES_128_CBC_SHA | - | - |
| SSL_RSA_WITH_3DES_EDE_CBC_SHA | - | - |
| SSL_DHE_RSA_WITH_3DES_EDE_CBC_SHA | - | - |
| SSL_DHE_DSS_WITH_3DES_EDE_CBC_SHA | - | - |
| SSL_RSA_WITH_DES_CBC_SHA | - | - |
| SSL_DHE_RSA_WITH_DES_CBC_SHA | - | - |
| SSL_DHE_DSS_WITH_DES_CBC_SHA | - | - |
| SSL_RSA_EXPORT_WITH_RC4_40_MD5 | - | - |
| SSL_RSA_EXPORT_WITH_DES40_CBC_SHA | - | - |
| SSL_DHE_RSA_EXPORT_WITH_DES40_CBC_SHA | - | - |
| SSL_DHE_DSS_EXPORT_WITH_DES40_CBC_SHA | - | - |
| TLS_EMPTY_RENEGOTIATION_INFO_SCSV | - | - |
| TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 | - | - |
| TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 | - | - |
| TLS_RSA_WITH_AES_128_CBC_SHA256 | √ | √ |
| TLS_RSA_WITH_AES_256_CBC_SHA256 | √ | √ |
| TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA256 | - | - |
| TLS_ECDH_RSA_WITH_AES_128_CBC_SHA256 | - | - |
| TLS_DHE_RSA_WITH_AES_128_CBC_SHA256 | - | - |
| TLS_DHE_DSS_WITH_AES_128_CBC_SHA256 | - | - |
| TLS_RSA_WITH_3DES_EDE_CBC_SHA | √ | - |
| TLS_RSA_WITH_RC4_128_MD5 | √ | - |
| TLS_RSA_WITH_RC4_128_SHA | √ | - |
| TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA | - | - |
| TLS_ECDH_RSA_WITH_AES_128_CBC_SHA | - | - |
| TLS_ECDHE_RSA_WITH_RC4_128_SHA | - | - |
| TLS_ECDH_RSA_WITH_RC4_128_SHA | - | - |

| Server certificate [Public key algorithm] | Security strength | |
|---|---|---|
| | Default | High |
| RSA1024 verification | √ | - |
| RSA1024 creation | √ | - |
| RSA2048 verification | √ | √ |
| RSA2048 creation | √ | √ |
| RSA4096 verification | - | - |
| RSA4096 creation | - | - |
| DSA1024 verification | √ | - |
| DSA1024 creation | √ | - |

| Server certificate [Signature algorithm] | Security strength | |
|---|---|---|
| | Default | High |
| SHA1 verification | √ | √ |
| SHA1 creation | √ | - |
| SHA256 verification | √ | √ |
| SHA256 creation | √ | √ |

## Table F-4: SSH

| Host key algorithm | | Security strength | |
|---|---|---|---|
| | | Default | High |
| Password verification | RSA1024 verification | - | - |
| | RSA1024 creation | - | - |
| | RSA2048 verification | √ | √ |
| | RSA2048 creation | √ | √ |
| | RSA4096 verification | - | - |
| | RSA4096 creation | - | - |
| | DSA1024 verification | √ | - |
| | DSA1024 creation | √ | - |
| Public key verification | RSA1024 verification | √ | √ |
| | RSA1024 creation | - | - |
| | RSA2048 verification | √ | √ |
| | RSA2048 creation | - | - |
| | RSA4096 verification | √ | √ |
| | RSA4096 creation | - | - |
| | DSA1024 verification | √ | √ |
| | DSA1024 creation | - | - |

| Key exchange algorithm | Security strength | |
|---|---|---|
| | Default | High |
| diffie-hellman-group1-sha1 | √ | √ |
| diffie-hellman-group14-sha1 | √ | √ |
| diffie-hellman-group-exchange-sha1 | √ | √ |
| diffie-hellman-group-exchange-sha256 | √ | √ |

| Cipher algorithm | Security strength | |
|---|---|---|
| | Default | High |
| 3des | - | - |
| 3des-cbc | √ | √ |
| aes128-cbc | √ | √ |
| aes192-cbc | √ | √ |
| aes256-cbc | √ | √ |
| aes128-ctr | √ | √ |
| aes192-ctr | √ | √ |
| aes256-ctr | √ | √ |
| blowfish-cbc | √ | - |
| cast128-cbc | √ | - |
| arcfour | √ | - |
| arcfour128 | √ | - |
| arcfour256 | √ | - |
| rijndael-cbc@lysator.liu.se | √ | - |

| Message authentication algorithm | Security strength | |
|---|---|---|
| | Default | High |
| hmac-md5 | √ | - |
| hmac-sha1 | √ | √ |
| hmac-ripemd160 | √ | - |
| hmac-ripemd160@openssh.com | √ | - |
| umac-64@openssh.com | √ | - |
| hmac-sha1-96 | √ | √ |
| hmac-md5-96 | √ | - |
| hmac-sha2-256 | √ | √ |
| hmac-sha2-512 | √ | √ |

### Table F-5: SNMP v3

| Cipher algorithm | Security strength | |
|---|---|---|
| | Default | High |
| None | √ | - |
| DES | √ | - |
| AES128 | √ | √ |

| Authentication algorithm | Security strength | |
|---|---|---|
| | Default | High |
| None | √ | - |
| MD5 | √ | - |
| SHA1 | √ | √ |

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