

EXPRESSSCOPE Engine 3 User's Guide (for ft series)

NEC Express Server

Express5800 Series

- 1. Overview**
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ABOUT THIS USER' S GUIDE

This User's Guide provides the instructions for properly using the EXPRESSSCOPE Engine 3. Please keep this document at hand for a quick reference and use it when you encounter any questions or troubles while using the EXPRESSSCOPE Engine 3 for remote control, monitoring, and management of the server.

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GLOSSARY

Term	Description
Active Directory	This means Microsoft's directory service.
BMC	Baseboard Management Controller This management controller complies with the IPMI specification and provides the monitoring capabilities of system's hardware without depending on the state and OS of the target server. This controller is standard and be equipped with the motherboard.
ESMPRO/Server Manager	The server management software that is introduced to the management PC.
EXPRESSSCOPE Engine 3	This is a server management controller for Express 5800 series and is equipped in the server that has shipped after fiscal year 2011. This contains the function of BMC that complies with IPMI specification, and provides various functions.
FRU	Field Replaceable Unit It is maintenance and replacement parts information that has been defined by the IPMI specification.
IPMI	Intelligent Platform Management Interface It is a standard interface specification for monitoring the server's hardware without depending on the state and OS of the server.
LDAP	Lightweight Directory Access Protocol It is a protocol for connecting to a directory service.
SEL	System Event Log It is hardware log information that has been defined by the IPMI specification.
SDR	Sensor Data Record It is sensor information that has been defined by the IPMI specification.
SNMP	Simple Network Management Protocol A protocol for monitoring/control network equipment and computer and so on. The IPMI compliant SNMP alert function is only used in EXPRESSSCOPE Engine 3.
SSH	Secure Shell It is a secure command line protocol.
RA	Router Advertisement It is one of the mechanisms for automatic allocation of an IPv6 address.
Access log	This function records the information about login/logout and several operations to EXPRESSSCOPE Engine 3.
Remote KVM	Remote Keyboard Video Mouse This function has virtually realized the video output and keyboard/mouse input of the server on management PC.
Remote Media	This function has virtually recognized the USB Memory, CD/DVD ROM, FD media of the management PC on the

	server.
Management PC	The generic name of the personal computer which manages the server from remote in the network.

SYMBOLS

The following symbols are used throughout this manual.



Items to be observed or points to be noted when using this product.



Items to be checked when using this product or software.



Information useful or convenient for you.



Example of troubles occurred.

PREFACE

The EXPRESSSCOPE Engine 3 enables you to monitor the operating status of the server (power supplies, fans, temperature and so forth), to operate the server's keyboard, video, and mouse (KVM) from a remote console and to access to CD-ROM/Floppy disk drives on a remote site. The EXPRESSSCOPE Engine 3 is enabled by a system management LSI called "BMC (Baseboard Management Controller)" and thus referred to as the "BMC" hereinafter in this User's Guide.

1. Overview

The server comes standard with the BMC (system management LSI) and a management LAN port dedicated to the BMC. By connecting the management LAN port to your network, you can monitor and control the server from a remote site via a Web browser and SSH client.

Also, you can operate the server's KVM (keyboard, video, and mouse) from a remote console and access CD-ROM/DVD-ROM/floppy disk drives and USB memory in a remote site(Remote KVM/media).

2. Configuring the Server

This chapter describes the settings necessary to configure the BMC in the server.

DEFAULT NETWORK SETTINGS

The BMC's default network settings are as follows:

IP Address:	192.168.1.1
User Name:	Administrator
Password:	Administrator

- Connect the management LAN port to the private network on which the default IP address "192.168.1.1" is reachable. If the default IP address is not reachable on the network, assign a new IP address to the management LAN by using the BMC Configuration of the Off-line Tool in the server. Refer to "Management LAN Settings" in the next page for the settings.



For security reasons, change the above default settings (IP address, User Name, and Password) to the ones appropriate in your network environment. Refer to "Chapter 5: Using Remote Management" for details.

- The remote management function is enabled by default. (In some systems, the remote management function is disabled by default.) So, if the remote management function is not used, disable this settings by using the BMC Configuration of the Off-line Tool. Refer to "Management LAN Settings" in the next page for the settings.

MANAGEMENT LAN SETTINGS

You can configure basic setting of management LAN settings of BMC for remote management using Web server function and command line interface of BMC by using some tools

- Web Browser
Please refer to Chapter 5 for details.
- BMC Configuration (Off-line)
Press the F4 key during POST(Power on Self test) or displaying logo immediately after power on or reset the server to enter the BMC Configuration.
- BMC Configuration (On-line Windows/Linux).
It is possible to install it from NEC EXPRESSBUILDER of the server attachment.

The item that can be set with each tool is different. Please refer to help of each tool for details of a set item.

Setting item	Web Browser	Off-line BMC Configuration	On-line BMC Configuration Tool (Windows/Linux)
BMC LAN Setting Shared LAN Port or Management LAN Port	NG	NG	NG
IP Address Subnet Mask Default Gateway DHCP IPv6 Address Assignment Mode IPv6 Link Local Address IPv6 Static Address IPv6 Prefix Length IPv6 Global Address IPv6 Gateway Address IPv6 DNS Server Address	NG	OK	OK
Service Settings HTTP/HTTPS/SSH	NG	OK	OK
BMC Initialization	NG	OK	OK

Management LAN / Shared BMC LAN

The function for BMC to use operation LAN of the server is called Shared BMC LAN. Select [Enabled] to share a system LAN port with BMC LAN. If you use a management LAN port for the BMC, select [Disabled]. The management LAN port is not available when this setting is set [Enabled]. (Default setting is [Enabled]. In some systems, this menu is not supported. Please refer to the User's Guide of your host system for more details.)

Shared BMC LAN is unsupported by ft series.

Connection Type

Select appropriate setting for link speed and duplex mode which you need.
Following settings are available for Management LAN.

- Auto Negotiation
- 100Mbps Full Duplex
- 100Mbps Half Duplex
- 10Mbps Full Duplex
- 10Mbps Half Duplex



Select [Auto Negotiation] if the link speed and duplex mode (Connection Type) of the switch (such as HUB) connected to the Management LAN is [Auto Negotiation]. If you would like to use the other setting (not “Auto Negotiation”), at first, select the other setting of the switch (such as HUB) connected to the management LAN, and then select the same setting as the switch to the Connection Type of the management LAN. Selectable menu of Connection Type is depends on the server and its configuration.

IP Address

If DHCP is not used to automatically obtain an IP address, enter the BMC's IP address.

If DHCP has been used, an automatically obtained IP address will appear.
(IPv4 default setting is 192.168.1.1. IPv6 default setting is link local address (*2) rather than global address.)

Subnet Mask

If DHCP is not used to automatically obtain a subnet mask IP address, enter the subnet mask of your management LAN.

If DHCP has been used, an automatically obtained subnet mask IP address will appear. (Default setting is 255.255.255.0.)

Default Gateway

If DHCP is not used to automatically obtain a default gateway IP address, enter the default gateway of your management LAN.

If DHCP has been used, an automatically obtained default gateway will appear. (Default setting is 0.0.0.0.)

DHCP

If you want to obtain an IP address, choose [Enabled].

If you want to manually configure an IP address, choose [Disabled].

(Default setting is [Disabled>(*1).)

IPv6 Address Assignment Mode

Please choose “Static” or “Dynamic”. (Default setting is [Dynamic].)

IPv6 Link Local Address

BMC's IPv6 Link Local Address is displayed.

IPv6 Static Address

It is displayed for "Static" IPv6 Assignment Mode. Please set a static address.

IPv6 Prefix Length

Please set a prefix length. (Default setting is [64].)

IPv6 Global Address

It is displayed for "Dynamic" IPv6 Assignment Mode. IPv6 global address which is assigned by RA (Router Advertisement) is displayed.

IPv6 Gateway Address

It is displayed for "Static" IPv6 Assignment Mode. Please set IPv6 Gateway address. (Default setting is [0::0].)

IPv6 DNS Server Address

It is displayed for "Static" IPv6 Assignment Mode. Please set IPv6 DNS server address. (Default setting is [0::0].)

Web Interface:

HTTP Interface

Select [Enabled] to use the Web Server function using the HTTP. If not, select [Disabled]. (Default setting is [Enabled>(*1).)

HTTP Port Number

Specify the HTTP port number. (Default setting is 80.)

HTTPS Interface

Select [Enabled] to use the Web Server function using the HTTPS(SSL). If not, select [Disabled]. (Default setting is [Enabled>(*1).)

HTTPS Port Number

Specify the HTTPS(SSL)port number. (Default setting is 443.)

Command Line Interface:

SSH

Select [Enabled] to use the Command Line Interface using SSH. If not, select [Disabled]. (Default setting is [Enabled>(*1).)

SSH Port Number

Specify the BMC's SSH port number. (Default setting is 22.)

BMC Initialization

The BMC Configuration will be cleared. Please use this function when you forgot your user name and password, etc. for remote management via a Web browser and command line interface. This function will be executed when you select "YES" on confirmation menu which appears after pressing the "Enter" key. This menu invokes the BMC configuration clear operation after selecting the "YES".



- These BMC Management LAN-related settings of BMC are not changed to default settings by executing the "Load Setup Default" of BIOS Setup Utility. (Execute the "BMC Initialization" to set default settings to the BMC Management LAN settings.)
- When "BMC Initialization" is executed, BMC of both modules is reset. It will take about 3 minutes by the time initialization is completed after it executes it. During the initialization, Do not shutdown the system, reboot the system, or perform any switch operation after pressing the BMC reset button



The BMC Initialization also deletes the settings for ESMPRO/ServerManager(a software application bundled for remote management). Be sure to perform a backup for the ESMPRO/ServerManager settings before you change the BMC settings.

*1 In some systems, the default settings are different for DHCP, HTTP, HTTPS, and/or SSH.

*2 This address is granted to BMC network interface and It is automatically generated to be unique form as (FE80 :: /64) within one subnet. Even if IPv6 setting is disabled, this address is granted.

IPv6 supports both of manual setting and RA (Router Advertisement) setting, but does not support DHCP server. Also, the user interface available in IPv6 is only connection from Web browser and command line interface.

The following list shows the available function menu in each IPv4 and IPv6.

Function items		IPv4	IPv6
Connection to Web server	DNS Server	OK	OK
	DHCP Server	OK	NG
	Active Directory	OK	NG
	LDAP	OK	NG
	Mail Alert	OK	OK
	SNMP Alert	OK	NG
	Remote KVM/Media	OK	OK
	Access log	OK	OK
Command line interface(SSH)		OK	OK
WS-Management		OK	NG

3. Configuring a Management PC

This chapter describes the settings necessary for the remote management PC that will be connected to the server.

SETTING YOUR BROWSER

Configure the following settings:

- Allow Java Script execution.
- Allow Java execution.
- Accept Cookies.
- Allow Popup.
- Enable Stylesheet.
- Enable HTTP1.1.

* If you use Microsoft Internet Explorer or Microsoft Edge, the following configurations are required.

In case of Microsoft Edge, it's settings from the "internet option" of a Control Panel.

- Add BMC's address to Trusted Sites.
- Set Trusted Site's security level to Medium.
- If Enhanced Security is enabled, adding [about:blank] to Trusted Sites is required.
- If the "Do Not Save Encrypted Pages To Disk" of [Security]-[Advanced]- [Internet Options] is check on, un-check this item is required.
- If the "Play animations in web pages" of [Multimedia]-[Advanced]- [Internet Options] is check off, check this item is required.

- Because the security settings of browser are enhanced on server OS, if you use browser, you might find that some of the buttons has no response. In this case, it is necessary to be off the IE SEC settings.
- To avoid from the vulnerability issue of SSL protocol 3.0 (CVE-2014-3566), please disable "Use SSL 3.0" and enable TLS protocol 1.0 or later from [Advanced]-[Internet Options].

* If you use Mozilla Firefox (Supported only on Linux OS), below configuration is required.

- Enter URL "about:config" and change the value of "network.http.max-persistent-connections-per-server" to 4.
- If IPMI Information window can not be opened and Java Plug-in is crushed, change the value of "network.http.max-persistent-connections-per-server" to 1.
- To avoid from the vulnerability issue of SSL protocol 3.0 (CVE-2014-3566), enter URL "about:config" and change the following value to disable SSL protocol 3.0.
For ESR31 or later, "security.tls.version.min" to "1"

SUPPORTED BROWSERS

The following browsers are supported by Windows 7, Windows 8, Windows 8.1, Windows 10, Windows Server 2008 R2 (SP1), Windows Server 2012, Windows Server 2012 R2 and Windows Server 2016:

- Microsoft Internet Explorer 10.0
- Microsoft Internet Explorer 11.0
- Microsoft Edge

The following browser is supported by Red Hat Enterprise Linux WS (version 6.9 or more/version 7.0 or more) and Red Hat Enterprise Linux Client (version 6.9 or more/version 7.0 or more):

- Firefox ESR52

*It's recommended that a browser be applied the latest service pack and the security patch.

*Beginning January 12, 2016, only the most current version of Internet Explorer available for a supported operating system will receive technical support and security upgrades. About Microsoft Lifecycle Support policy for Internet Explorer, please refer the following URL.

<https://www.microsoft.com/en-us/WindowsForBusiness/End-of-IE-support>

<https://support.microsoft.com/en-us/lifecycle#gp/Microsoft-Internet-Explorer>

*Operation guarantee of Firefox is only for ESR version.

JAVA RUNTIME ENVIRONMENT

The management PC requires Java Runtime Environment (JRE), Standard Edition 8.0.

JRE is available free of charge from Oracle Corporation. For security reasons, you are recommended to use the latest JRE update.

It is necessary to set the following in the Java control panel.

- Add BMC's IP address (both HTTP/HTTPS) to [Exception Site List]-[Security].
- If the [Enable the next-generation Java Plug-in (requires browser restart)]-[Java Plug-in]-[Advanced] is not checked, please check. This item is required.
- To avoid from the vulnerability issue of SSL protocol 3.0 (CVE-2014-3566), please disable "Use SSL 3.0" and enable TLS protocol 1.0 or later from [Advanced Security Settings]-[Advanced].



If you open multiple BMC Web using Tab browser, you may not use Remote KVM/Media successfully. In this case, please use another browser instead of browser's tab.



If you use Java8, you may see the dialog of 'Running this application may be a security risk'. In this case, you need to check 'I accept the risk and want to run this application' and press Run button.



If you use Java8, you may see the dialog of ‘Block potentially unsafe components from being run?’. In this case, you need to press ‘Don’t Block’ button or please choose the ‘Enable-hide warning and run with protections’ from the Mixed code of Advanced menu of Java control panel.



If you use Java8, it may take some time to start for certificate revocation checking of the signed Java Applet/Application. In this case, once you need to close the browser and choose the ‘Do not check (not recommended)’ from the [Perform signed code certificate revocation checks on] of Advanced menu of Java control panel and then login again from the browser.

4. Networking

TCP/IP PORTS

The BMC uses the TCP/IP ports listed below. If you use the BMC in a firewall environment, you need to allocate the port numbers (shown in the right column) to the individual non-block ports.

Module name	Port #	Protocol	Direction	Module name	Port #
Remote Media (Non-Encryption)	Dynamic(*1)	TCP	↔	BMC	5120(CD/DVD) 5122(USB MEM) 5123(FD) (*2)
Remote Media (Encryption)	Dynamic(*1)	TCP	↔	BMC	5124(CD/DVD) 5126(USB MEM) 5127(FD) (*2)
Web browser (Non-Encryption)	Dynamic(*1)	TCP	↔	BMC	80(*3)
Web browser (Encryption)	Dynamic(*1)	TCP	↔	BMC	443(*3)
Remote KVM Console (Non-Encryption)	Dynamic(*1)	TCP	↔	BMC	7578(*2)
Remote KVM Console (Encryption)	Dynamic(*1)	TCP	↔	BMC	7582(*2)
SSH client	Dynamic(*1)	TCP	↔	BMC	22(*3)
SMTP server	25(*4)	TCP	↔	BMC	Dynamic
LDAP server	389(*5)	TCP	↔	BMC	Dynamic
SNMP server	162	UDP	↔	BMC	Dynamic

*1 The Dynamic ports are dynamically allocated ports and usually ranged from 1024 to 65535.

*2 Go to [Configuration]-[System Operation] to change the port number.

*3 Use BMC Configuration Tool to change the port number.

*4 Use BMC Configuration Tool to change the port number.

*5 Use BMC Configuration Tool to change the port number.



BMC doesn't support connection via HTTP proxy server.



It is recommended to use the network in more than 100BASE-TX (10Mbps bandwidth or more) for remote management feature.

5. Using Remote Management

OVERVIEW

The BMC Web Server function allows you to control the server's power and KVM from a remote console via a Web browser.

Part of the above function is implemented by Java Application.

CONNECTING TO THE WEB SERVER

Access the following URL from the Web browser on the remote management PC:

`http://BMC_HostPort` or `https://BMC_HostPort`



Tips

The “BMC_HostPort” URL includes the BMC’s IP address or host name and a colon followed by a port number for HTTP or HTTPS connection: e.g. 192.168.1.1:80 If the port number is 80 for HTTP or 443 for HTTPS (default), you may omit the port number.



Tips

For security reasons, you are recommended to use HTTPS (SSL) connection. For better communication performance, use HTTP on a secured network.



Tips

When you connect via SSL, security warning messages may appear.



Tips

If you did not register the SSL server certificate, the following page is displayed and HTTPS connection is blocked. In this case, select “Continue to this website” to continue (The image if you are using Internet Explorer is as follows).



There is a problem with this website's security certificate.

The security certificate presented by this website was not issued by a trusted certificate authority.

Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.

We recommend that you close this webpage and do not continue to this website.

 [Click here to close this webpage.](#)

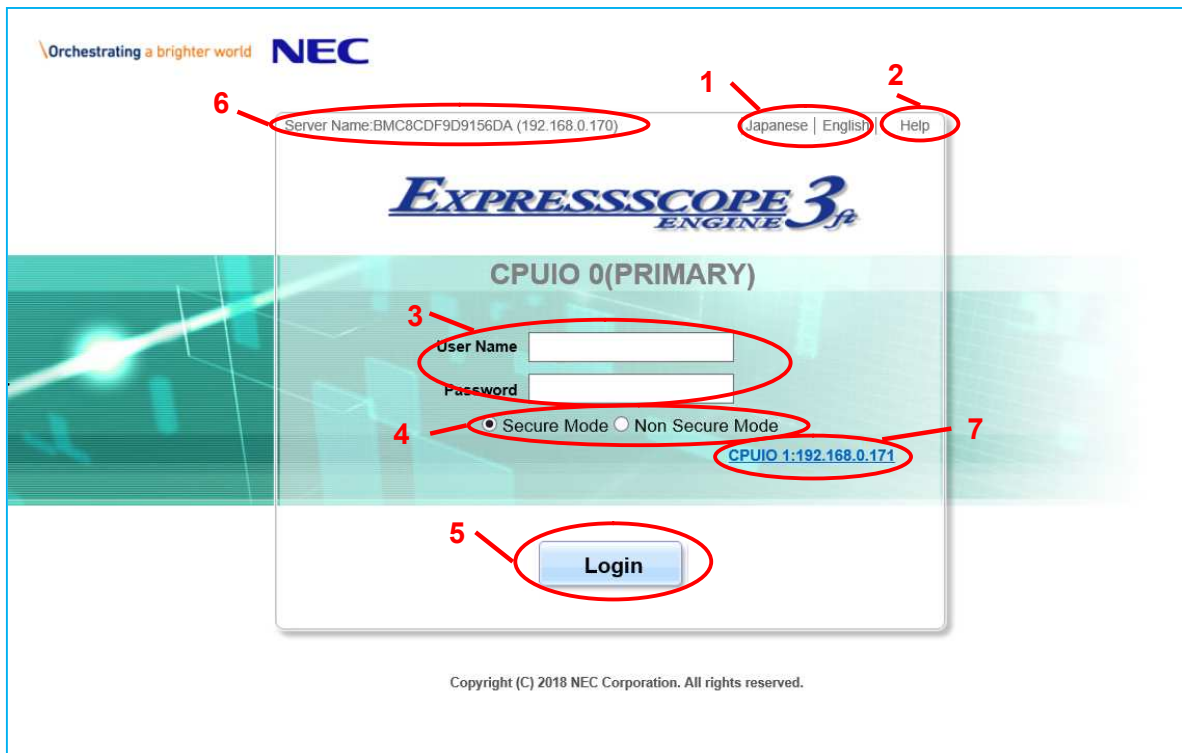
 [Continue to this website \(not recommended\).](#)

 [More information](#)

LOGIN AND LOGOUT

Login

When the login page appears, input the user name and password, and then click [Login].



1. The display language can be selected to English or Japanese.
2. The online help is displayed.
3. Please input username and password.
4. Secure Mode(HTTPS) or Non Secure Mode(HTTP) can be selected.
5. Please push "Login" button.
6. Server Name (BMC's IP address) is displayed (*1).
7. Other CPU/IO module's BMC IP address is displayed (*2).

(*1) When IPv6 of BMC becomes enabled, IPv6 address is displayed.

(*2) When IPv6 of other CPU/IO module's BMC becomes enabled, IPv6 address is displayed.



You can select the display language only in the login page. If you want to change the language after login, log out once and change the language in the login page.



Do not use the “Forward”, “Back” or “Reload” button in your browser after login.

Logout

Click “Logout” in the upper right corner of the window. When a confirmation dialog appears, click [OK] to log out.



After you log out, you return to the login page. Besides, all the remote device windows that were opened during login will be closed.



If the browser is slow during login procedure, please restart your browser or logout.



If the BMC becomes high loaded, BMC will be restarted very rare for recovery. In this case, an existing connection will be disconnected, so, please re-connect again.



If it is repeatedly login to the BMC without logout normally, you cannot login to the BMC because it is reached to the maximum number of simultaneous login users caused by the Web sessions that are not terminated and are remained or because it is reached to the maximum number of simultaneous login users (4). In this case, please wait for the BMC’s automatic logout time (30 minutes or more), and try again.



Login failure may occur after network setting to the BMC or shortly after the BMC reset. In this case, please try to login again.



Login page of BMC may be displayed when you open BMC Web from NEC ESM PRO Manager. In this case, please log-in from login page or reopen the BMC Web from NEC ESM PRO Manager.

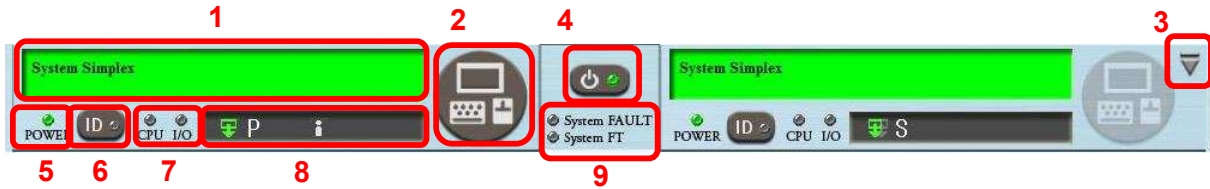
HEADER MENU



1. Login user name is displayed.
2. Login user's privilege is displayed.
3. The environment of management PC is displayed, and set by clicking "Environment"..
4. License information is displayed.
5. The online help is displayed.

SERVER PANEL

The server panel is displayed under a browser after log in. The server panel has following functions.



The server panel of CPU / IO module 0 is displayed to the left side and the server panel of CPU / IO module 1 is displayed to the right side.

1. The virtual LCD that displays the state of the server.
2. The Button to start RemoteKVM/Media
3. The button that minimizes the server panel.
4. The power switch and a system POWER lamp of the server. The state of the power supply of the server is shown.
5. The module POWER lamp of the CPU / IO module.
6. The UID(Unit ID) switch and a ID lamp of the CPU / IO module.
7. The CPU FAULT lamp and the I/O FAULT lamp of the CPU / IO module. The state of the CPU / IO module is shown.
8. The state of both the SAFE TO PULL lamp and the PRIMARY lamp of the CPU / IO module are displayed. Also the log in situation and the remote media usage condition of BMC are displayed.
9. The system FAULT lamp and the system FT lamp of the server. The state of the server is shown.

 **Even if actual UID LED is not mounted into the server, the UID LED indicator of the Server Panel functions as virtual UID LED.**

 **For the message displayed in the Virtual LCD, refer to Maintenance Guide of the system.**

SYSTEM



- A. The system tab. BMC supported functions are displayed.
- B. The menu that can be selected in the system tab is displayed.
- C. Information selected by B is displayed. The screen of "Summary" is displayed in the above-mentioned example.

檔・蜻 u

1 Summary

The state of information and BMC of the server is displayed.

2 Component

Only items supported with the server are displayed for each item of composition information. (processor, memory, temperature, voltage, fan, power, power supply). Moreover, the item supported with the server might not be displayed depending on the state of the system power supply and the presence state of the components such as devices.

3 IPMI Information

When Launch Viewer button is pressed, IPMI Information viewer starts and information (SEL,SDR,FRU,MC) is displayed in accordance with IPMI and it backs up. The preserved backup data can be referred to from the server management software (ESRAS utility and NEC ESMPRO/Manager).

4 Access Information

Login/Logout information and operation log are displayed.



About the information which is indicated when choosing "processor" or "memory" of "Component", it includes the following notice.

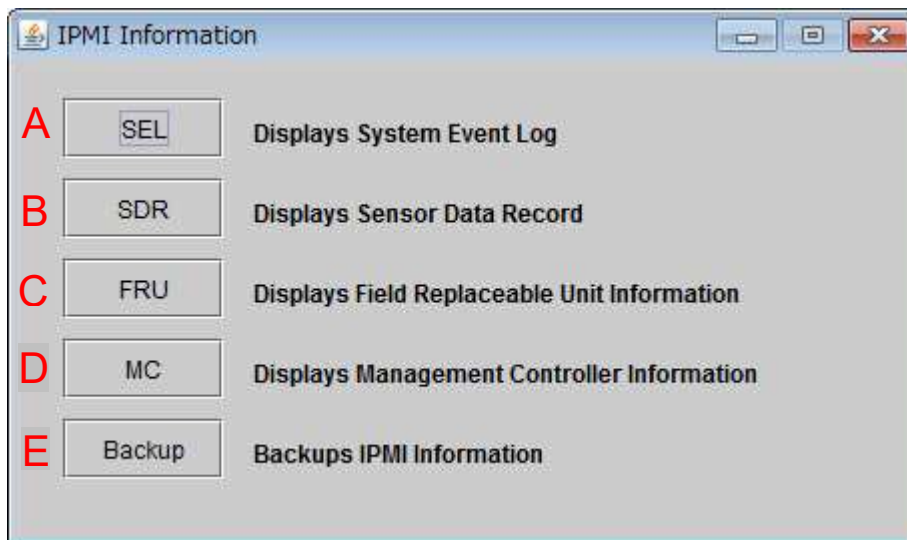
It's sometimes different in information on CPU and memory each module.

It's different in the information displayed in this case, but it doesn't influence operation of equipment.

When renewing displayed information, please do the following operation.

- The module which renews information is changed primarily.
- Power on FT server and do an OS boot, Or restart OS.

IPMI Information Viewer



Button

A. SEL button

System Event Log screen is displayed.

B. SDR button

Sensor Data Record screen is displayed.

C. FRU button

Field Replaceable Unit Information screen is displayed.

D. MC button

Management Controller Information screen is displayed.

E. Backup button.

Backups IPMI Information dialog box is displayed.



If the hardware clock setting (RTC) is set by the server OS to the time in UTC offset, The timestamp of SEL (System Event Log) will be set to the time in UTC offset instead of local timestamp. Please notice that the time difference between UTC time and local time will occur.



On some browsers, if you want to start the IPMI Information viewer, you may see the dialog 'ipmiviewer.jnlp couldn't be downloaded'. In this case, please download again by pressing 'Retry'.



After logout from EXPRESSSCOPE Engine 3, the screen indicated below will be the screen which doesn't close automatically.

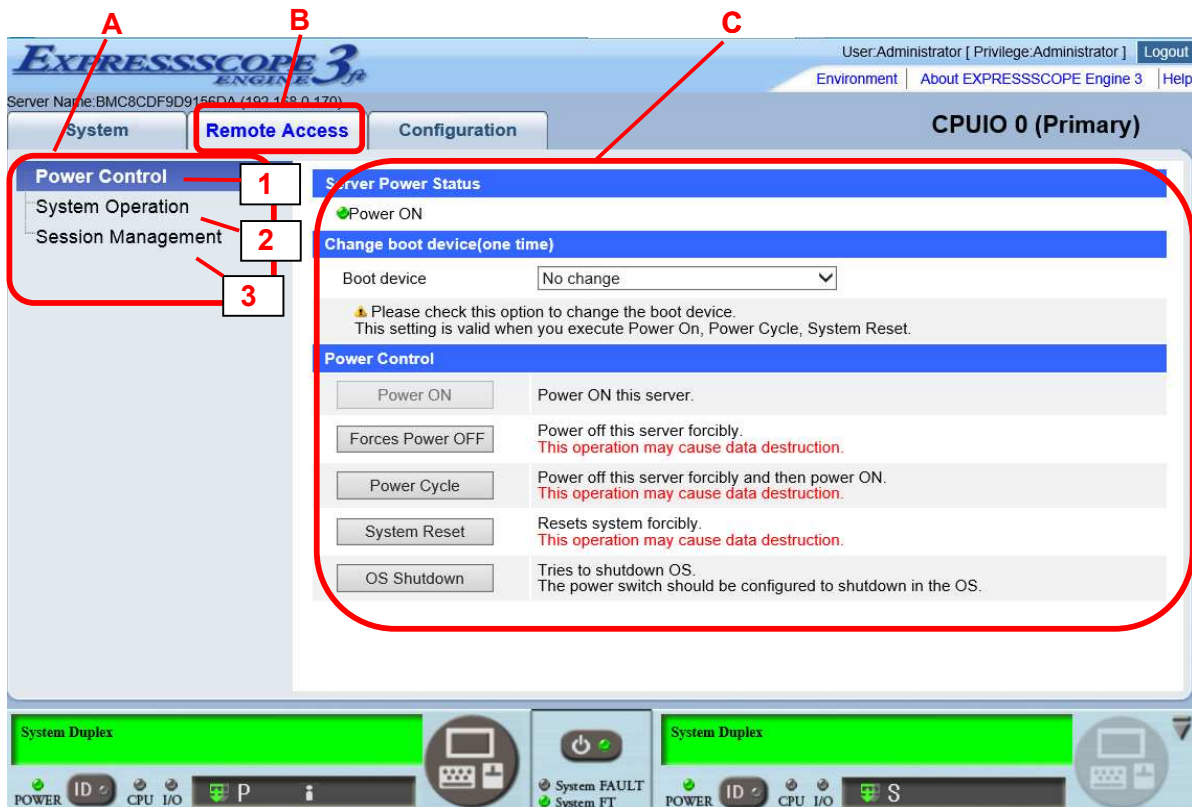
- IPMI Information viewr
- System Event Log screen
- Sensor Data Record screen
- Field Replaceable Unit Information screen
- Management Controller Information screen
- Backups IPMI Information dialog box

Please manually close remaining screens.

Moreover when after logout from EXPRESSSCOPE Engine 3, each screen is displayed or reload is performed, an error message is displayed.

In this case, after all screens are closed, please do each operate after login to EXPRESSSCOPE Engine 3 once again.

REMOTE ACCESS



- A. The remote access tab. BMC supported functions are displayed.
- B. The menu that can be selected in the remote access tab is displayed
- C. Information selected by B is displayed. The screen of "Power Control" is displayed in the above-mentioned example.

Menu

1 Power Control

Select Boot device of the server, powering on/off and reset the system, shutdown the OS.

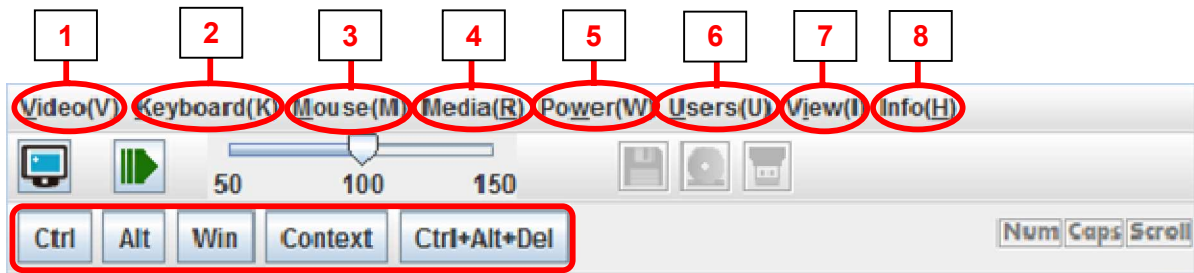
2 System Operation

Start RemoteKVM/Media, turn on/off of UID lamp, press Dump switch.

3 Session Management

The user who is logging in BMC can be managed.

REMOTE KVM/MEDIA



- A. The hot keys to support special keys operation. When Ctrl, Alt, Win and Context click this hot key once, each key is locked in the push state. Lock status can be released by clicking hot keys once again or pressing one of keys of keyboard of the remote management PC.



Notice

Usual keys operation is impossible by keyboard of the server because lock can't be released by keyboard of the server when hot keys is pressed and it's lock state. Therefore please don't leave while locking hot keys.

Menu

1. Video
The features such as Refresh screen, Low bandwidth mode (Normal, 8bpp, 8bpp B&W, 16bpp display mode are supported depending on the network bandwidth.), manual video recording, capture screen, full screen are available.
2. Keyboard
The features such as user defined macros, virtual keyboard (software keyboard) for Japanese/English/French/German are available.
3. Mouse
The features such as changing or synchronizing the mouse cursor, changing the mouse coordinate mode are available.
4. Media
Enable or disable the remote device and open the remote media window to connect or disconnect the remote media.
5. Power
You can do the power on, power off, power cycle, reset, OS Shutdown, NMI dump (If the memory dump is set on the server OS.) to the server.
6. Users
Display the user information that is using the Remote KVM/Media. Up to 2 users can use Remote KVM/Media simultaneously. (*)
7. View
Control the visibility of tool bar (control box area and hot key area). The 'Request Full Control' menu will be displayed for the Remote KVM/Media that is launched as view only mode and it is possible to request for permission to the Remote KVM/Media that is launched as full control mode.

8. Info

Display the version information.

(*) If you change access privilege between multiple Remote KVM Console, in order to use stable Remote KVM Console, please grant partial access privilege (only video) and then grant full access privilege to one of the Remote KVM Console.



When [Shift]+[Alt]+[PrintScreen] are input from keyboard of the remote management PC in remote KVM, several keys operation becomes impossible sometimes by both of remote KVM and on the screen of the server.

In this case, When following one of them are operated, you can make it recover.

- [Shift] key of keyboard of the remote management PC or virtual keyboard is pressed.
- Make remote KVM end, and after that, please start remote KVM once again.



The server detects remote media as following devices:

- AMI Remote FD
- AMI Remote CD/DVD
- AMI Remote USB Mem
- AMI Virtual Flash



The access lamp comes to remain lighting after it connects it according to the kind of the floppy disk drive of management PC.



When the operation into which the resolution on the server side frequently changes after remote KVM is started, the remote KVM connection might be disconnect. In that case, please start remote KVM again.



When you log on to the BMC from the server, do not access the Remote KVM Console from a Web browser in the server. You will not be able to use keyboard and mouse.



On some browsers, if you want to start the Remote KVM/Media, you may see the dialog 'jviewer.jsp couldn't be downloaded'. In this case, please download again by pressing 'Retry'.



If the mouse pointer is not displayed properly on Remote KVM/Media, please try the following setting on the server OS.

- Lowered one scale from "Full" to "None" side on the [Hardware acceleration]-[Troubleshoot]-[Advanced settings]-[Screen Resolution]-[Display] of Control Panel.

- Uncheck the box for [Enhance pointer precision]-[Motion]-[Pointer Options]-[Mouse Properties] of Control Panel. Also, try to check the box for [Display pointer trails]-[Visibility].



If you change keyboard language after adding user defined macro on the Remote KVM/Media, the user defined macro that was created with the previous keyboard language might not work well because some keyboard key has different key code depending on the language. In this case, please create the macro again with the current keyboard language.



If the manual video recording is run under '8bpp B&W' mode which was set by Low bandwidth mode, the created video file (AVI formatted) might not be playback by Windows Media Player. In this case, please try to install the codec pack which includes Motion JPEG codec to the management PC or try the other playback software.



If the Remote KVM/Media setting is changed on [Setting]-[Operation] during the BIOS POST is running or the EXPRESSBUILDER is running, Remote Device (Internal Flash) might be detached and will be in the invalid status. So please do not change the Remote KVM/Media setting while BIOS POST is running.



If you use Windows OS on the server and connect media by Remote Media or Image Redirection, the following system event log might be collected. There is no problem on system operation.

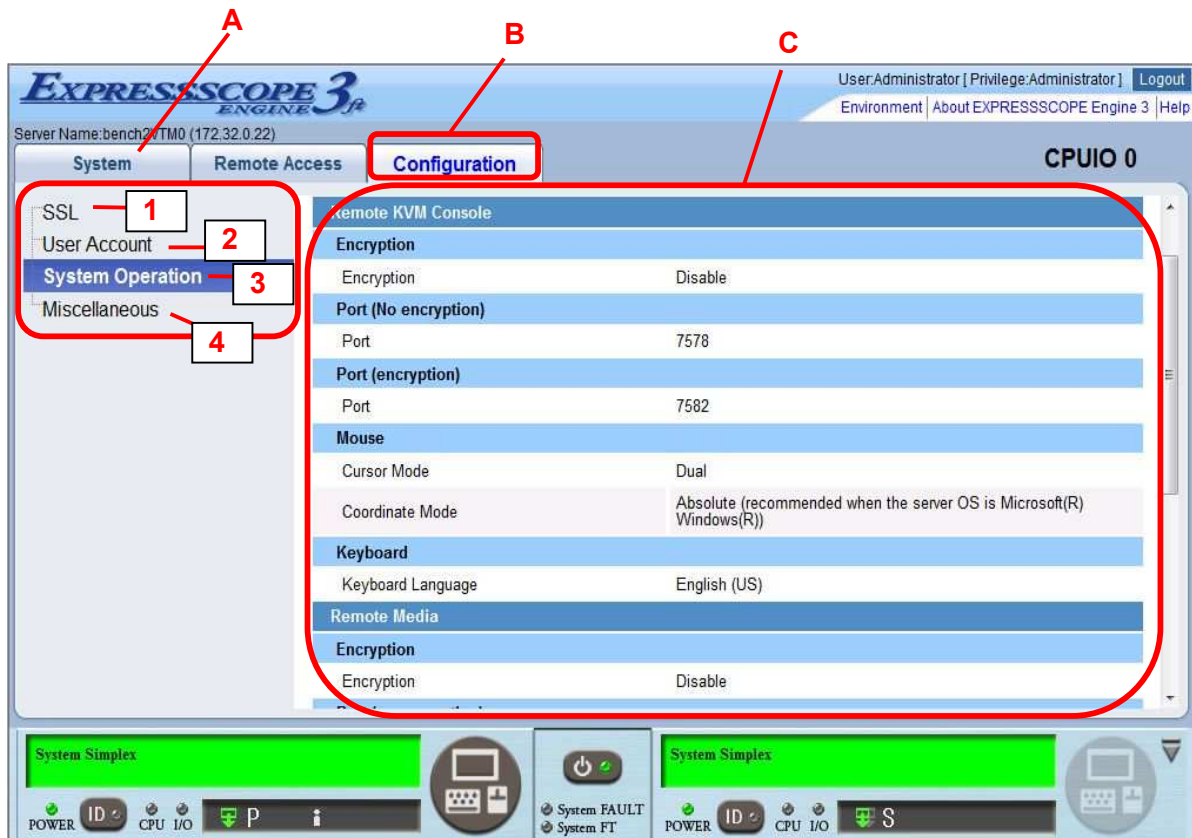
Event ID: 1

Source: VDS Basic Provider

Level: Error

Message: Unexpected failure. Error code: 32@01000004

CONFIGURATION



- A. The configuration tab. BMC supported functions are displayed.
- B. The menu that can be selected in the configuration tab is displayed
- C. Information selected by B is displayed. The screen of "System Operation" is displayed in the above-mentioned example.

Menu

1 SSL

Create a signing request (CSR) for the SSL server certificate and upload the SSL server certificate signed by a certificate authority to the BMC.

2 User Account

Maintain user setting, register the SSH public Key.

3 System Operation

Set the Remote KVM/Media configuration.

4 Miscellaneous

Set the access log.



The strings “root”, “MWA”, “AccessByEM-Poem”, “eng” are reserved by BMC. Please do not add or remove these characters as User Name. The user account is synchronized with the IPMI user account. If you want to add or remove users in the IPMI command tool, you can use User ID from 6 to 16.



Please do not remove character “Administrator” if there is no administrator privilege user except for “Administrator”. If you remove it and logout, you cannot add any new account at next login because there is no longer administrator privilege user.

For each BMC setting, the “Default” value of the setting from Web browser of BMC and the initial value of BMC Initialization are as the following table.

Menu	Setting	Web Browser “Default” value	BMC Initialization
System Operation	Remote KVM Console Encryption	Enable	Disable
	Port (No Encryption)	7578	7578
	Port (Encryption)	7582	7582
	Cursor Mode	Dual	Single
	Coordinate Mode	Absolute	Absolute
	Keyboard Language	When login in Japanese; Japanese, When login in English; English	English
	Remote Media Encryption	Enable	Disable
	Port (No Encryption)	5120	5120
Port (Encryption)	5124	5124	
Miscellaneous	Access Log HTTP	Disable	Disable
	HTTPS	Disable	Disable
	SSH	Disable	Disable
	Operation	Disable	Disable

6. Command Line Interface

Please refer to the following link regarding "Command Line Interface" support on Express5800/R320g.

<http://www.58support.nec.co.jp/global/Download/index.html>

OVERVIEW

With the BMC Command Line Interface, you can control the server from a remote SSH client. The BMC supports SSH (Version 2) protocol.

7. WS-Management (Web Service for Management)

OVERVIEW

With the WS-Management Protocol, you can control the server and check the sensor of host system.



Tips

EXPRESSSCOPE Engine 3 implementation of WS-Management complies with the specification, DTMF Web Services for Management 1.0.0.



Tips

EXPRESSSCOPE Engine 3 is confirmed the WS-Management operation with the following tools that support the WS-Management protocol.

- **Windows Remote Management (WinRM) 2.0**



Notice

To use WS-Management, you need to configure HTTPS connection to be enabled. Refer to the “Management LAN Settings” in the “Chapter 2: Configuring the ”.

POWER CONTROL

You can perform power control of the server.



Tips

The user must have an account as operator or administrator for power control.



Notice

Performing power control when the operating system is running may cause the loss of data in the server.

Power ON

Create the file `input-RequestPowerStateChange2.xml` and enter the following command, if you use WinRM.

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?_
_cimnamespace=root/cimv2+Name=Host Power Management
Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown.IPMI_BM
C_DeviceID.DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD -auth:basic
-encoding:utf-8 -format:xml -file:input-RequestPowerStateChange2.xml
-skipCNcheck -skipCAcheck - skipRevocationcheck
```

input-RequestPowerStateChange2.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>2</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_HostComputerSystem
</wsman:ResourceURI>
<wsman:SelectorSet>
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
<wsman:Selector Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
<wsman:Selector Name='Name'>Unknown.IPMI BMC DeviceID.DEVICEID_VALUE</wsman:Selector>
</wsman:SelectorSet>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



Tips

Please change according to your environment.

“IP_ADDRESS” : IP address of EXPRESSSCOPE Engine 3.

“USERNAME/PASSWORD”: username/password of EXPRESSSCOPE Engine 3.

“DEVICEID_VALUE”: Specify according to the following one of procedures.

1. Log in to the EXPRESSSCOPE Engine 3, and click the MC button at the IPMI Information page in the system tab. Since "Management Controller(MC)" is shown, refer to the "Device ID" value for the primary FRU Device. Specify that value to DEVICEID_VALUE. If value is 88h, specify 136 to DEVICEID_VALUE.
2. Run enumeration¹ for the CIM_PowermanagementService class by the WinRM, and specify the numeric value in SystemName shown in the response data.
(Ex: SystemName = Unknown.IPMI BMC DeviceID.136)

```
1 "winrm enumerate
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"
```

Forced Power OFF

Create the file input-RequestPowerStateChange6.xml and enter the following command, if you use WinRM.

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?__cimnamespace=root/cimv2+Name=Host Power Management Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown.IPMI_BMC_DeviceID.DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD
-auth:basic -encoding:utf-8 -format:xml -file:input-RequestPowerStateChange6.xml
-skipCNcheck -skipCAcheck -skipRevocationcheck
```

input-RequestPowerStateChange6.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Power
ManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>6</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/
CIM_HostComputerSystem</wsman:ResourceURI>
<wsman:SelectorSet>
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
<wsman:Selector
Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
<wsman:Selector Name='Name'>Unknown.IPMI BMC
DeviceID.DEVICEID_VALUE</wsman:Selector>
</wsman:SelectorSet>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



Tips

Please change according to your environment.

“IP_ADDRESS” : IP address of EXPRESSSCOPE Engine 3.

“USERNAME/PASSWORD”: username/password of EXPRESSSCOPE Engine 3.

“DEVICEID_VALUE”: Specify according to the following one of procedures.

1. Log in to the EXPRESSSCOPE Engine 3, and click the MC button at the IPMI Information page in the system tab. Since "Management

Controller(MC)" is shown, refer to the "Device ID" value for the primary FRU Device. Specify that value to DEVICEID_VALUE. If value is 88h, specify 136 to DEVICEID_VALUE.

2. Run enumeration² for the CIM_PowermanagementService class by the WinRM, and specify the numeric value in SystemName shown in the response data.

(Ex: SystemName = Unknown.IPMI BMC DeviceID.136)

² "winrm enumerate
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

OS Shutdown

Create the file `input-RequestPowerStateChange8.xml` and enter the following command, if you use WinRM.

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?__cimnamespace=root/cimv2+Name=Host Power Management Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown.IPMI_BMC_DeviceID.DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD
-auth:basic -encoding:utf-8 -format:xml -file:input-RequestPowerStateChange8.xml
-skipCNcheck -skipCAcheck -skipRevocationcheck
```

input-RequestPowerStateChange8.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>8</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_HostComputerSystem</wsman:ResourceURI>
<wsman:SelectorSet>
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
<wsman:Selector
Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
<wsman:Selector Name='Name'>Unknown.IPMI BMC
DeviceID.DEVICEID_VALUE</wsman:Selector>
</wsman:SelectorSet>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



The above OS shutdown is equivalent to pressing the POWER switch when the power of the server is on. Your operating system must be set to shut down when you power off the system.



Please change according to your environment.

“IP_ADDRESS” : IP address of EXPRESSSCOPE Engine 3.

“USERNAME/PASSWORD” : username/password of EXPRESSSCOPE Engine 3.

“DEVICEID_VALUE” : Specify according to the following one of procedures.

1. Log in to the EXPRESSSCOPE Engine 3, and click the MC button at the IPMI Information page in the system tab. Since "Management

Controller(MC)" is shown, refer to the "Device ID" value for the primary FRU Device. Specify that value to DEVICEID_VALUE. If value is 88h, specify 136 to DEVICEID_VALUE.

2. Run enumeration³ for the CIM_PowermanagementService class by the WinRM, and specify the numeric value in SystemName shown in the response data.

(Ex: SystemName = Unknown.IPMI BMC DeviceID.136)

³ "winrm enumerate

"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

System Reset

Create the file input-RequestPowerStateChange10.xml and enter the following command, if you use WinRM.

Create the file input-RequestPowerStateChange10.xml and enter the following command, if you use WinRM.

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?__cimnamespace=root/cimv2+Name=Host Power Management Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown.IPMI_BMC_DeviceID.DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD
-auth:basic -encoding:utf-8 -format:xml -file:input-RequestPowerStateChange10.xml
-skipCNcheck -skipCAcheck -skipRevocationcheck
```

input-RequestPowerStateChange10.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Power
ManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>10</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/
CIM_HostComputerSystem</wsman:ResourceURI>
<wsman:SelectorSet>
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
<wsman:Selector
Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
<wsman:Selector Name='Name'>Unknown.IPMI BMC DeviceID.DEVICEID__
VALUE</wsman:Selector>
</wsman:SelectorSet>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



Tips

Please change according to your environment.

“IP_ADDRESS” : IP address of EXPRESSSCOPE Engine 3.

“USERNAME/PASSWORD”: username/password of EXPRESSSCOPE Engine 3.

“DEVICEID_VALUE”: Specify according to the following one of procedures.

1. Log in to the EXPRESSSCOPE Engine 3, and click the MC button at the IPMI Information page in the system tab. Since "Management Controller(MC)" is shown, refer to the "Device ID" value for the primary FRU Device. Specify that value to DEVICEID_VALUE. If value is 88h, specify 136 to DEVICEID_VALUE.

2. **Run enumeration⁴ for the CIM_PowermanagementService class by the WinRM, and specify the numeric value in SystemName shown in the response data.
(Ex: SystemName = Unknown.IPMI BMC DeviceID.136)**

⁴ "winrm enumerate
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

Interrupt Generation for OS Dump

Create the file input-RequestPowerStateChange11.xml and enter the following command, if you use WinRM.

Create the file input-RequestPowerStateChange11.xml and enter the following command, if you use WinRM.

```
winrm invoke RequestPowerStateChange
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowerManagementService?__cimnamespace=root/cimv2+Name=Host Power Management Service+CreationClassName=CIM_PowerManagementService+SystemName=Unknown.IPMI_BMC_DeviceID.DEVICEID_VALUE+SystemCreationClassName=CIM_HostComputerSystem"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD
-auth:basic -encoding:utf-8 -format:xml -file:input-RequestPowerStateChange11.xml
-skipCNcheck -skipCAcheck -skipRevocationcheck
```

input-RequestPowerStateChange11.xml

```
<n1:RequestPowerStateChange_INPUT
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Power
ManagementService"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
<n1:PowerState>11</n1:PowerState>
<n1:ManagedElement>
<wsa:ReferenceParameters>
<wsman:ResourceURI>http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/
CIM_HostComputerSystem</wsman:ResourceURI>
<wsman:SelectorSet>
<wsman:Selector Name='__cimnamespace'>root/cimv2</wsman:Selector>
<wsman:Selector
Name='CreationClassName'>CIM_HostComputerSystem</wsman:Selector>
<wsman:Selector Name='Name'>Unknown.IPMI BMC
DeviceID.DEVICEID_VALUE</wsman:Selector>
</wsman:SelectorSet>
</wsa:ReferenceParameters>
</n1:ManagedElement>
</n1:RequestPowerStateChange_INPUT>
```



The above command behavior is equivalent to pressing the DUMP switch on the server.



Performing interrupt generation for OS dump when the operating system is running may cause the loss of data in the server.



Change according to your environment.

“IP_ADDRESS” : IP address of EXPRESSSCOPE Engine 3.

“USERNAME/PASSWORD”: username/password of EXPRESSSCOPE Engine 3.

“DEVICEID_VALUE”: Specify according to the following one of

procedures.

1. Log in to the EXPRESSSCOPE Engine 3, and click the MC button at the IPMI Information page in the system tab. Since "Management Controller(MC)" is shown, refer to the "Device ID" value for the primary FRU Device. Specify that value to DEVICEID_VALUE. If value is 88h, specify 136 to DEVICEID_VALUE.
2. Run enumeration⁵ for the CIM_PowermanagementService class by the WinRM, and specify the numeric value in SystemName shown in the response data.
(Ex: SystemName = Unknown.IPMI BMC DeviceID.136)

⁵ "winrm enumerate

"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_PowermanagementService"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

SENSOR INFORMATION

You can get sensor information either by enumeration of all sensors or by retrieving specified sensor.

Enumeration of All Sensors

Enter the following command, if you enumerate numeric sensors (e.g.: temperature, voltage) with WinRM.

```
winrm enumerate
http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_NumericSensor
-username:USERNAME -password:PASSWORD -r:https://IP_ADDRESS/wsman
-auth:basic -encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck
```

Enter the following command, if you enumerate non-numeric sensors (e.g.: PSU, HDD) with WinRM.

```
winrm enumerate
http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Sensor
-username:USERNAME -password:PASSWORD -r:https://IP_ADDRESS/wsman
-auth:basic -encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck
```



Tips

Change according to your environment.

“IP_ADDRESS” : IP address of EXPRESSSCOPE Engine 3.

“USERNAME/PASSWORD”: username/password of EXPRESSSCOPE Engine 3.

Retrieving Specified Sensor

You can retrieve the sensor by specifying sensor number.

Enter the following command, if you retrieve the sensor of sensor number 48 with the WinRM.

```
winrm get
"http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_NumericSensor?SystemCreationClassName=CIM_ComputerSystem+CreationClassName=CIM_NumericSensor+SystemName=Unknown.IPMI BMC DeviceID.32+DeviceID=1.48.0.32.1.99"
-r:https://IP_ADDRESS/wsman -username:USERNAME -password:PASSWORD
-auth:basic -encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck
```



Tips

Change according to your environment.

“IP_ADDRESS” : IP address of EXPRESSSCOPE Engine 3.

“USERNAME/PASSWORD”: username/password of EXPRESSSCOPE Engine 3.

“DEVICEID_VALUE”: Specify according to the following one of procedures.

1. Log in to the EXPRESSSCOPE Engine 3, and click the MC button at the IPMI Information page in the system tab. Since "Management Controller(MC)" is shown, refer to the "Device ID" value for the

- primary FRU Device. Specify that value to DEVICEID_VALUE. If value is 88h, specify 136 to DEVICEID_VALUE.
2. Run enumeration⁶ for the CIM_Sensor class by the WinRM, and specify the numeric value in SystemName shown in the response data.
(Ex: SystemName = Unknown.IPMI BMC DeviceID.136)



Specify the “Device ID” returned in the response of enumerating all sensors.

⁶ "winrm enumerate "http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/CIM_Sensor"
-r:https:IP_ADDRESS/wsman -username:USERNAME -password: PASSWORD -auth:basic
-encoding:utf-8 -skipCAcheck -skipCNcheck -skipRevocationcheck"

8. Troubleshooting

ERROR MESSAGES

Abnormality occurs while using remote management, and the error dialog might be displayed in management PC. Please refer to the list of the message of the online help for the main message and the coping process.

OTHERS TIPS

Should you have troubles while using the BMC for remote control, monitoring, and management of the server, please first check the system according to the online help to troubleshoot your issue prior to sending it for repair.

For the issues regarding your system operation, please refer to the User's Guide attached to your system.

If your issue is not described below, or should the provided instructions do not resolve your issue, please contact your service center.

License Notes

This product includes open source software programs described below.

GNU General Public License

- Busybox
- Linux Kernel
- U-Boot
- stunnel

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

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 * FIPS 180-2 SHA-224/256/384/512 implementation
 * Last update: 02/02/2007
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HMAC-SHA2

```
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 * HMAC-SHA-224/256/384/512 implementation
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 * Issue date: 06/15/2005
 *
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*
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*
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* @author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>
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*/

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