Dell PowerEdge C5220

Using the Baseboard Management Controller

Typographic Conventions

Several different typographic conventions are used throughout this manual. Refer to the following examples for common usage.

Bold type face denotes menu items, buttons and application names.

NOTE: A note indicates important information that will help a user make better use of a computer system.

CAUTION: A caution indicates a potential for property damage, personal injury, or death.

April 2011 **P/N** **Rev. A00**

Contents

Introduction

This section introduces the Baseboard Management Controller (BMC) and includes the requirements for web-based graphical user interface (GUI), keyboard, video, and mouse (KVM), and virtual media.

Supported Platform

PowerEdge C5220

BMC Key Features and Functions

The following lists the supported features of the BMC:

- Support for IPMI v1.5 and v2.0
- Out-of-band monitoring and control for server management over LAN
- Dedicated NIC for remote management via network
- FRU information report, which includes main board part number, product name, manufacturer, and so on.
- Health status/hardware monitoring report
- View and clear events log
- Event notification by lighting chassis LED indicator and Platform Event Trap (PET)
- Platform Event Filtering (PEF) to take selected action for selected events including NMI
- Chassis management, which includes power control, status report, front panel buttons, and LEDs control
- Watchdog and auto server re-start and recovery
- Support for multi-session user and alert destination for LAN channel

Using the Web UI

The BMC firmware features an embedded web server, enabling users to connect to the BMC using an Internet browser (Microsoft Internet Explorer) without needing to install KVM and virtual storage software on a remote console.

Web-based GUI is supported on the following browsers:

Microsoft Windows:

- Internet Explorer 6, 7 or later
- Mozilla Firefox 2.0 or later

Linux:

- Mozilla Firefox 2.0 or later

NOTE: Before using the web user interface, ensure that the firewall settings are configured to enable access to the following ports: 8890 (KVM), 9000 (storage), 9001, 9002, and 9003.

Logging in to the Web User Interface

Enter the IP address or URL (default DHCP\static IP address) into the address bar of the web browser.

When connecting to the BMC, the login screen prompts for the username and password. This authentication with Secure Sockets Layer (SSL) protection prevents unauthorized intruders from gaining access to the BMC web server. Once authentication is passed, you can manage the server by privilege.

Table 1-1. Default User Name And Password

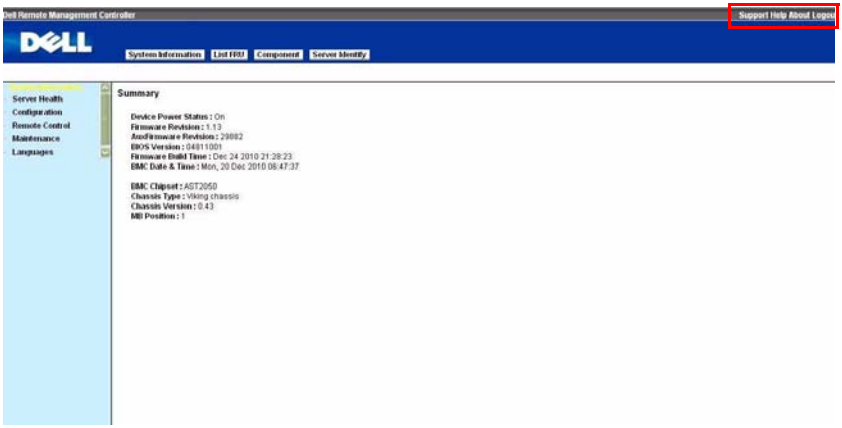
Field	Default
User Name	root

Table 1-1. Default User Name And Password

Field	Default
Password	root

NOTE: The default username and password are in lowercase characters. It is advised to change the root password once you have logged in.

Click the **Help** button on the top right corner for assistance. Click **Logout** to exit.



Menu Item	Description
System Information	Displays the system information.
Server Health	Displays the monitoring status of the server.
Configuration	Allows the user to configure the IPMI settings.
Remote Control	Allows the user to launch KVM console and perform power control.
Maintenance	Allows the user to do firmware update.
Language	Allows the user to select a language setting. (Currently, only support English.)

System Features

System Information

The System Information page enables you to view the BMC firmware version, BIOS version, and Chassis version. Click **System Information** to view the Remote Management Controller.

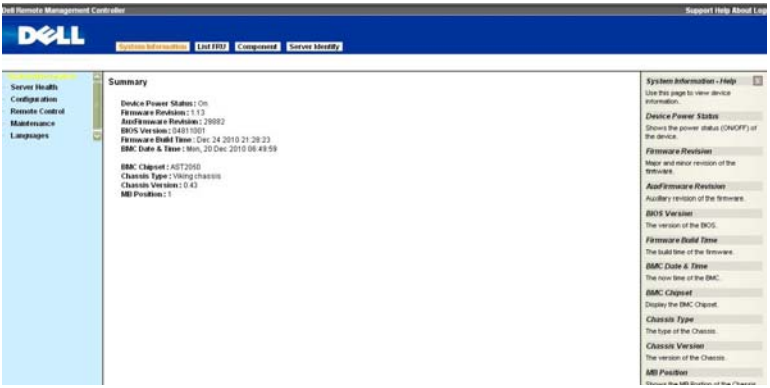
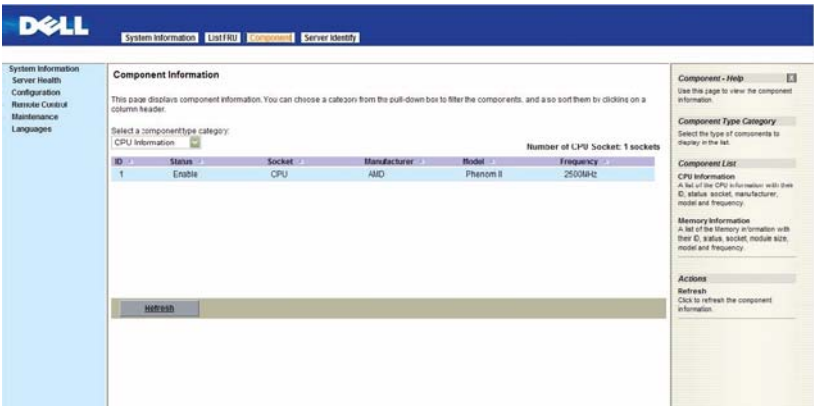


Table 1-2. BMC Summary

BMC Information	Description
Device Power Status	Current power state of the system.
Firmware Revision	Dell Remote Management Controller firmware version.
Aux Firmware Revision	Firmware build number.
BIOS Version	BIOS version for the system.
Firmware Build Time	Date the firmware was last flashed in the form: M DD YYYY HH:MM:SS
BMC Date & Time	Current date and time in the form: W, DD M YYYY HH:MM:SS
BMC Chipset	Dell Remote Management Controller type.
Chassis Type	Displays the chassis type.
Chassis Version	Displays the chassis version number.
MB Position	Displays the current position of the mainboard within the chassis.

Component Information



The Number of CPU Socket field and the Number of Memory Slot field display the total number of motherboard supported.

CPU Information

Including CPU ID, Status, Socket, Manufacturer, Model, and Frequency.

Memory Information

Including Memory ID, Status, Socket, Module Size, Model, and Frequency.

Server Identify

The Server Identify page displays the indicator LED status. You can select a Server Identify Operation to control the indicator LED functions.

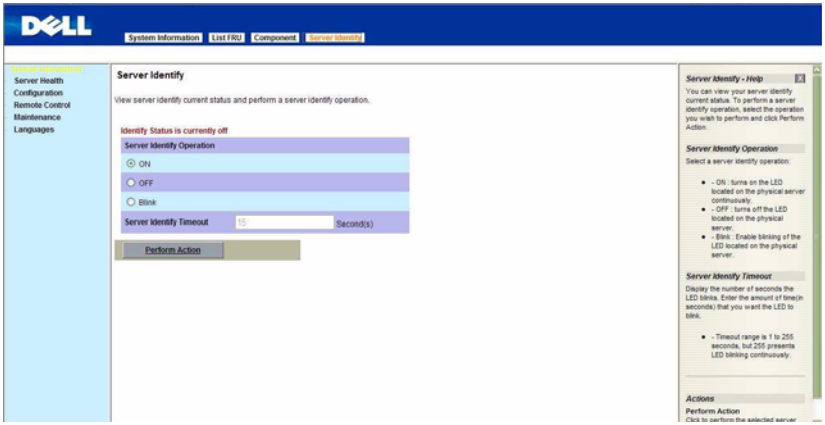


Table 1-3. Server Identify

Item	Description
Current Server Identify	Displays the current server identify status is on or off.
Server Identify Operation	Select the server identify LED operation: • ON • OFF • Blink
Server Identify Timeout	You can set the timeout value when you select the Blink operation. The range is between 1 to 255 seconds, but note 255s is blinking continuously.
Perform Action	Click to execute the selected Server Identify Operation.

Firmware Update

Use the Firmware Update feature to upgrade to the latest firmware version. The following data is included in the BMC firmware package:

- Compiled BMC firmware code and data
- Web-based user interface, JPEG, and other user interface data files
- Default configuration files

Updating the BMC Firmware

NOTE: Before beginning the firmware update, download the latest firmware version and save it on your local system. During the process of firmware update, the AC power of the managed system cannot be unplugged and the Web GUI cannot be closed.

NOTE: Once you enter into Update Mode and choose to cancel the firmware flash operation, the BMC must be reset. This means that you must close the Internet browser and log back onto the BMC card before you can perform any other types of operations.

Select the **Enter Update Mode** button from the **Maintenance** tab to put the device in a special mode that allows firmware update. You can now follow the instructions presented below to successfully update the card's firmware. The device resets if update is cancelled. The device also resets upon successful completion of firmware update.

1. Browse to, or enter the path on your system where the firmware image file resides.

   Example:

   C:\Updates\V1.0\<image_name>

   The default firmware image name is s81k*XXX*.bin (whereas XXX is the version number).

2. Select **Auto Reset BMC** if you want the BMC to auto reset after the update.
3. BMC will not check if the Firmware image belongs to C5220 platform when selecting **Force Update**.
4. Click the **Upload Firmware** button.
5. BMC will save configure settings when **Preserve Configuration** is selected.

6 Click **Start Upgrade**.

The update might take several minutes. When the update is completed, a dialog box appears.

7 Click **OK** to close the session and automatically log out.

8 After the BMC resets, click **Log In** to log in to the BMC again.

Front Panel User Interface

The BMC provides control panel interface functionality including indicators (fault, status, and ID LEDs) and buttons (power/ID).

Power Button

The power button turns the device on and off.

The power button has a deferred mechanism. When the DC is off the power button ignores one (1) second or less activation to protect against accidental DC power on.

LEDs

BMC Heartbeat LED

The green LED provides an easy way to indicate that BMC is now enabled.

ID LED

A blinking LED indicates the Chassis Identify command has been accepted.

System Status LED

There is a dual-color LED to show the system status. The BMC turns the LED off after all event logs are cleared.

The behavior of Status LED and ID LED is listed in Table 1-2.

Table 1-4. LED Status

LED	Color	Status	Occurrence	Note
Status LED	Amber	Blinking	See "Blinking Fault LED Conditions" on page 14.	
		Off	Normal status	
	Green	Solid On	Power On (S1/S0)	The power LED status is controlled by BIOS.
		Off	Power Off (S4/S5)	

Table 1-4. LED Status

LED	Color	Status	Occurrence	Note
ID LED	Blue	Off	Normal status (by IPMI Chassis Identify command or System ID Button)	Turn off the ID LED. 1. ipmitool raw 0x00 0x04 0x00 2. ipmitool raw 0x00 0x04 0x00 0x00
		Solid On	Identify the system	Turn on the ID LED. 1.ipmitool raw 0x00 0x04 0x3c 01
		Blinking	Identify the system with interval	1. IPMI chassis identify command without request data ipmitool raw 0x00 0x04 2. IPMI chassis identify command with only 1 parameter data ipmitool raw 0x00 0x04 0x3c (blink 60 sec) 3. IPMI chassis identify command with 2 parameter data ipmitool raw 0x00 0x04 0x3c 0x00 (blink 60 sec)
Heartbeat LED	Green	Off	BMC is not ready	
		Blinking	BMC is ready	

Table 1-5. Blinking Fault LED Conditions

Index	Sensor Name	Event Triggers
1	CPU Temp Ambient Temp, DIMM Temp Rear Temp 1 Rear Temp 2 Rear Temp 3	• Upper Critical Going High • Upper Non-Critical Going High
2	SLED 12V	• Upper Critical Going High • Upper Non-Critical Going High

Index	Sensor Name	Event Triggers
3	BMC Watchdog	• Timer expired • Hard reset • Power down • Power cycle
4	Processor	• IERR • Thermal trip
5	BMC SEL	• SEL full (909 records) • SEL almost full (909 x 75% = 681 records)
6	Processor Hot	State Asserted
7	System Event	PEF action
8	PCIE Error	Bus correctable error Bus Uncorrectable error Bus fatal
9	POST Error	System firmware error
10	CPU1_DIMM A1 CPU1_DIMM A2 CPU1_DIMM A3 CPU1_DIMM A4	• Correctable error • Uncorrectable error • Correctable ECC error logging limit reached
11	SYS FAN 1 ~ SYS FAN 8	• Lower critical going low • Lower non-critical going low
12	PSU 1 Status PSU 2 Status	• Presence detected • TEMPERATURE Failure detected • IOUT Failure detected • VOUT Failure detected • FANS Failure detected • INPUT Failure detected
13	PSU Redundancy	Redundancy lost
14	Mixed MB	• Mixed MB detected • Key Slot error detected

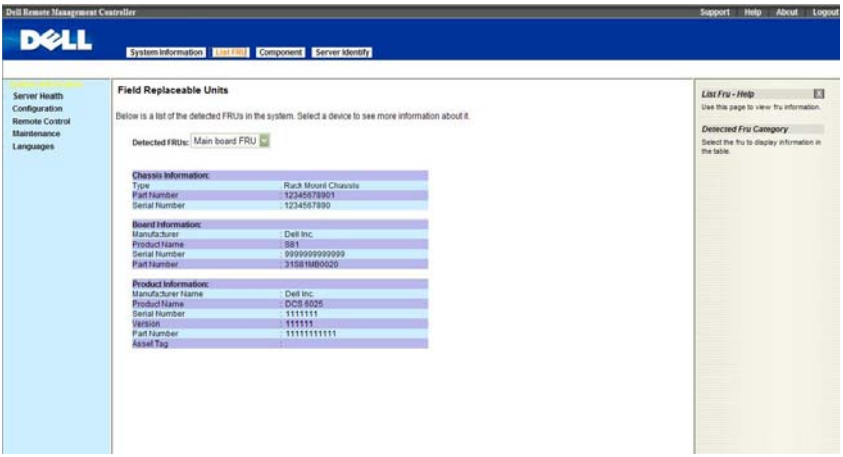
System Information

System Information

The System Information page shows general information about the system including Device Power Status, Firmware Revision, AuxFirmware Revision, Firmware Build Time, BMC Chipset, BIOS Version, and Chassis Version.

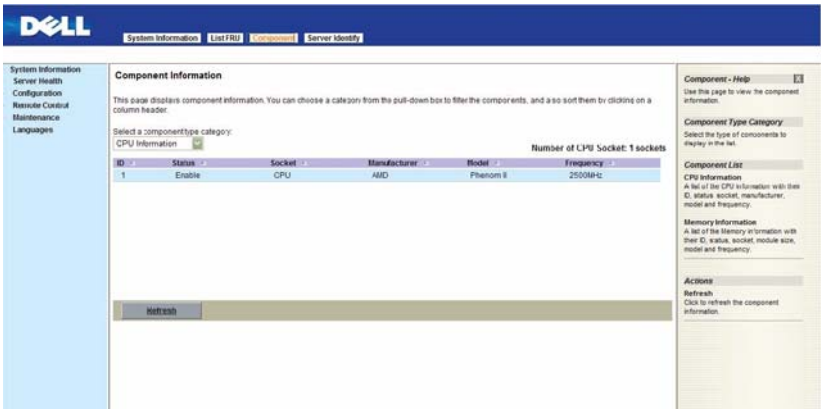
List FRU

The List FRU page shows a list of the detected Field Replaceable Units (FRUs) in the system. Select a FRU item from the drop down list to show more information.



Component Information

The Component Information page shows a table of the components. The components can be filtered by category and can be sorted by the column header. The table shows the Socket, Manufacturer, and Model of each component.The Number of CPU Socket field and the Number of Memory Slot field display the total number of motherboard supported.



Server Health

The Server Health page provides information about the server's health such as sensor readings and the event log. The sensor readings can be shown with or without thresholds in the table.

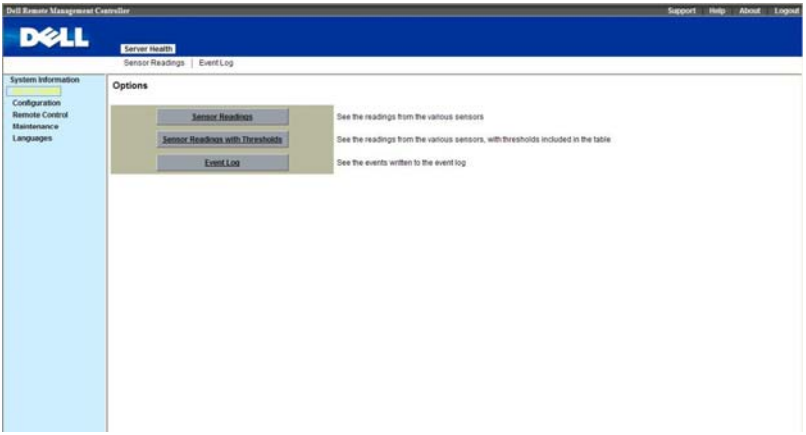


Table 1-6. Server Health Options

Button	Description
Sensor Readings	This button allows you to view the readings from the various sensors.
Sensor Readings with Thresholds	This button allows you to view the readings from the various sensors, with thresholds included in the table.
Event Log	This button allows you to view the event logs written to the event log table.

Sensor Readings

The Sensor Readings page shows all sensor readings from the system.

NOTE: The sensor type category displays the full sensor (threshold-base) type only.

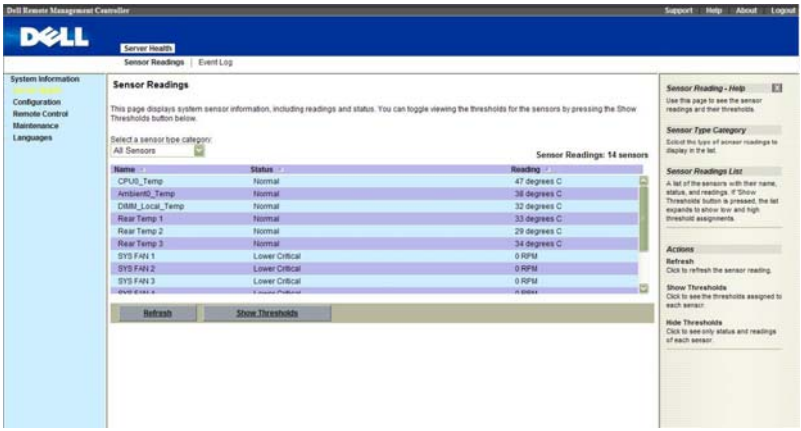


Table 1-7. Sensor Readings

Button	Description
Name	Name of the sensor.
Status	Shows the current status of the sensor.
Reading	The current value of the sensor.
Refresh	Click to refresh the current table.
Show Thresholds	Click to see the threshold value of the sensor.

Sensor Readings With Thresholds

The Sensor Readings with Thresholds page shows all sensor readings and thresholds from the system.

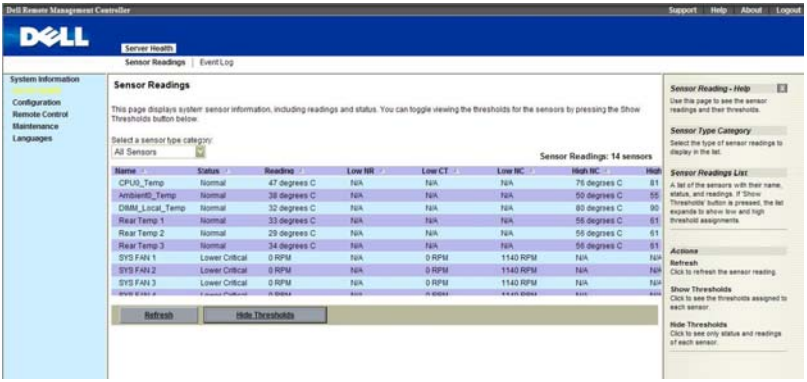


Table 1-8. Sensor Readings With Thresholds

Item	Description
Sensor Selection Drop Down Menu	This drop-down menu allows you to select the type of sensor readings that you want to show in the list. • All Sensors • Temperature Sensors • Current Sensors • Fan Sensors
Sensor Readings List	This field shows the individual sensor's name, reading and the current status of the sensor. It also shows the following threshold settings for every sensor. • Low NR: lower non-recoverable • Low CT: lower critical • Low NC: lower non-critical • High NC: upper non-critical • High CT: upper critical • High NR: upper non-recoverable
Refresh Button	Click to refresh the current table.

Table 1-8. Sensor Readings With Thresholds

Item	Description
Hide Thresholds Button	Clicking **Hide Thresholds** button reduces the sensor reading table and hides the various threshold settings for every sensor.

Temperature Monitoring

The system supports the following temperature sensors.

Table 1-9. Temperature Sensors (8-Sled Chassis)

Temperature	Sensor Number	UNCT	UCT
CPU Temp	0x44	77	82
Ambient Temp	0x40	44	47
DIMM Temp	0x4C	68	72
Rear Temp 1	0x54	46	47
Rear Temp 2	0x55	46	47
Rear Temp 3	0x56	46	47

Table 1-10. Temperature Sensors (12-Sled Chassis)

Temperature	Sensor Number	UNCT	UCT
CPU Temp	0x44	71	76
Ambient Temp	0x40	44	47
DIMM Temp	0x4C	68	72
Rear Temp 1	0x54	46	47
Rear Temp 2	0x55	46	47
Rear Temp 3	0x56	46	47

Current Monitoring

BMC supports current sensor as shown in Table 1-11. The current sensor monitoring aims to gain the SLED power consumption for power management used.

Table 1-11. Current Monitoring

Current	Sensor Number	UNCT	UCT
SLED 12V	0x4E	216	252

FAN Control and Monitoring

The BMC receives all fan tachometers of the threshold base from the chassis controller. The following is the table of the fan speed thresholds.

Table 1-12. Fan Thresholds

Fan Sensor	Sensor Number	LCT	LNCT
SYS FAN 1	0x68	600 rpm	720 rpm
SYS FAN 2	0x69	600 rpm	720 rpm
SYS FAN 3	0x6A	600 rpm	720 rpm
SYS FAN 4	0x6B	600 rpm	720 rpm
SYS FAN 5	0x6C	600 rpm	720 rpm
SYS FAN 6	0x6D	600 rpm	720 rpm
SYS FAN 7	0x6E	600 rpm	720 rpm
SYS FAN 8	0x6F	600 rpm	720 rpm

Event Log

The Event Log page shows the event logs from the managed system.

NOTE: If the event log belongs to the OEM SEL Record, the Sensor Type field will display the Manufacturer ID and the Description field will display the raw data of the OEM Defined field. Because these logs are recorded by the OS, and need to be decoded by OS, please use the Windows Event Viewer to get further data.

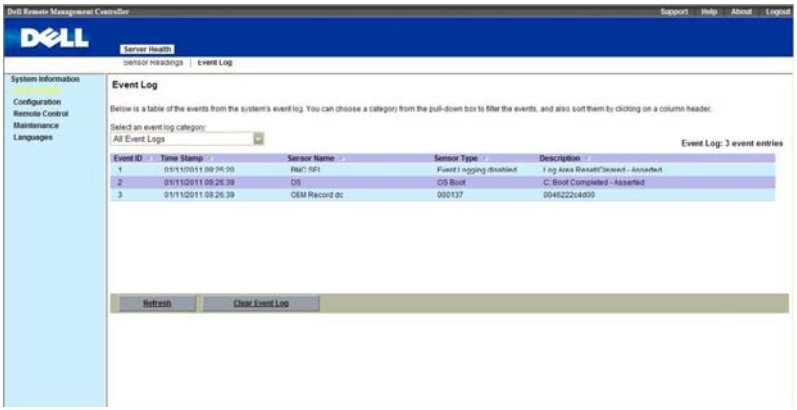


Table 1-13. Event Log

Item	Description
Select An Event Log Category	Select one of the following event categories: • All Event Logs • Sensor-Specific Events • BIOS-Generated Events • System Management Software Events
Event Log	You can obtain the following information for each event: • Event ID • Time Stamp • Sensor Name • Sensor Type • Description
Refresh Button	Use this button to refresh the event logs view.
Clear Event Log Button	Click the **Clear Event Log** button to clear the event logs.

Configuration

The **Configuration** menu allows you to access various configuration settings including Alerts, Mouse Mode, Network, SOL, SNMP, SMTP, Users, PEF, SSL Certification and Web Session settings.

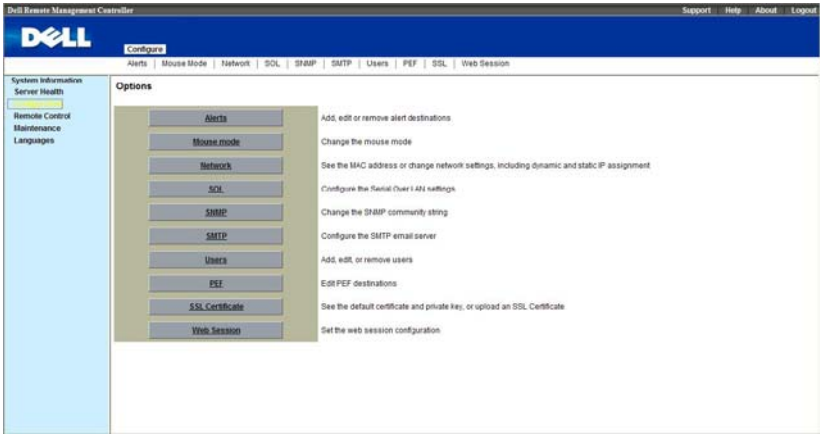


Table 1-14. Configuration Options

Button	Description
Alerts Button	This button takes you to the Alert list page where you can add, edit or remove alert destinations.
Mouse Mode Button	This button takes you to the Mouse Mode settings page where you can view the current setting and/or change the mode of your pointing device to/from either Relative or Absolute.
Network Button	This button takes you to the Network settings page where you can view the MAC address or change network settings, including the dynamic and static IP assignment.
SOL	This buttons takes you to the Serial Over Lan settings page, where you can enable SOL and channel privilege level limits.
SNMP	This button takes you to the SNMP community string page for the SNMP trap server where you can modify the string and save the settings.

Table 1-14. Configuration Options

Button	Description
SMTP	This button takes you to the SMTP settings page where you can configure the SMTP mail server.
Users	This button takes you to the user list page where you can add, edit or remove users.
PEF	This button takes you to the PEF list page where you can configure PEF settings including Event Filter Action, Alert Policy Number, Sensor Type, and Event Trigger.
SSL Certificate	This button takes you to the SSL certificate page where you can upload an SSL Certificate.
Web Session	This button takes you to the Web session configuration page where you can modify the web session timeout value.

Alerts

When BMC sends a platform event, such as an environment warning or a component failure, an alert message may be sent to one or more email addresses / IP addresses. On the Alerts page, you can configure alert destinations. To delete an alert, select it and press **Delete**. To create a new alert, select a destination address that has not been configured, yet, from the alert table entry and click **Modify**. To send a test alert, select the alert from the list and click the **Send Test Alert** button.

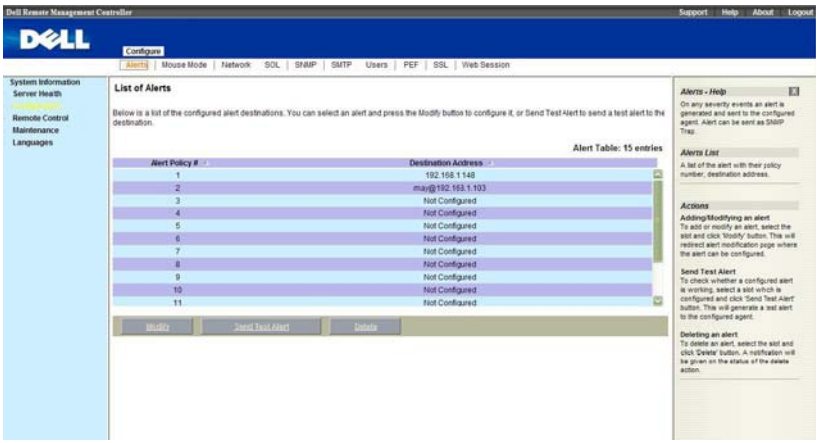


Table 1-15. Alerts

Item	Description
Alert Policy #	Lists all alert entries.
Destination Address	Lists the SNMP trap destination IP address or email address for the listed entries.
Modify Button	This button takes you to the Modify Alerts page. You can add a new alert configuration entry or modify an existing entry.
Send Test Alert Button	Select an alert entry and press **Send Test Alert** to send a test alert.
Delete Button	Select an alert configuration entry and press **Delete** to delete the entry.

Modify Alert

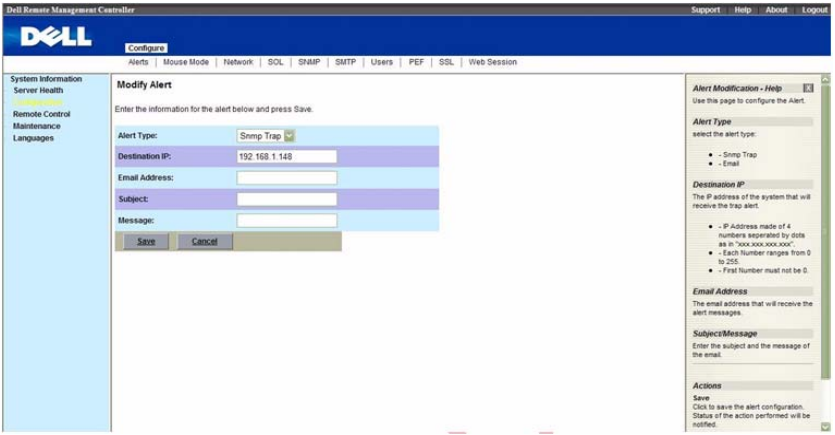


Table 1-16. Modify Alerts

Items	Description
Alert Type	You can select the way an alert is sent when it is triggered by an event. • SNMP Trap • Email **NOTE:** If you select SNMP Trap as the Alert Type, Email Address, Subject, Message is disabled. If you select Email as the Alert Type, Destination IP is disabled.
Destination IP	Type the SNMP destination IP address into this field, when you select SNMP Trap as the Alert Type.
Email Address	Type the Email address into this field, when you select Email as the Alert Type.
Subject	Type a Subject into this field, when you select Email as the Alert Type.
Message	Type a Message into this field, when you select Email as the Alert Type.
Save	Use this button to save your settings.
Cancel	Use this button to cancel your action.

Mouse Mode

On the Mouse Mode page, you can configure the mouse mode options.

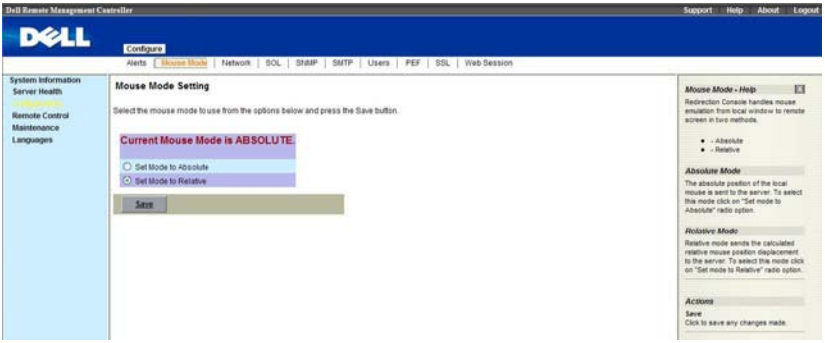


Table 1-17. Mouse Mode

Item	Description
Current Mouse Mode	Absolute or Relative. **NOTE:** Both Absolute and Relative modes enable you to see two mouse cursors where, the redirected host mouse cursor and the actual local mouse cursor. When the single cursor checkbox is selected, only the redirect mouse cursor is visible.
Set Mode to Absolute Option	Select this option to select mouse mode to **Absolute**, depending upon your system.
Set Mode to Relative Option	Select this option to select mouse mode to **Relative**, depending upon your system. If you select the single mouse checkbox, it locks the local mouse cursor inside the redirected window and the user has to press **<Alt+M>** to unlock and stop mouse redirection. Here **<Alt+M>** is basically used to start or stop mouse redirection.
Save Button	Use this button to make the settings active.

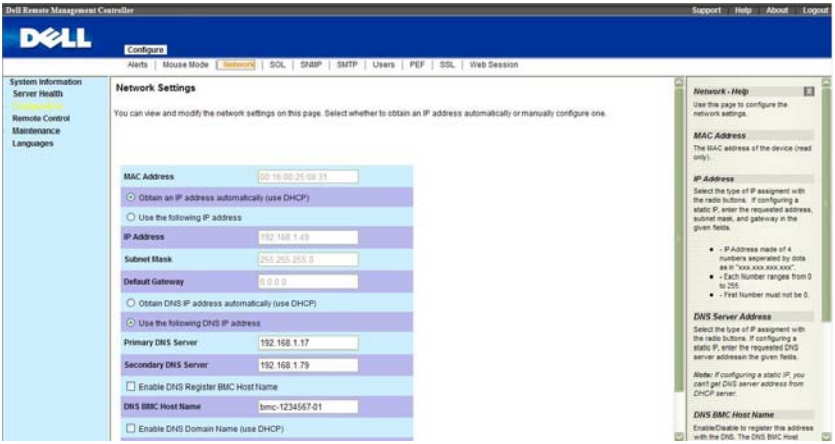
IPMI is an OS-independent platform, and KVM support is an added feature for IPMI. For your mouse to function properly, please configure the mouse mode settings according to the mouse is absolute coordinates or relative

coordinates on your host server. For example, it is recommended to use absolute / relative mouse mode when your host server is running in Windows or Linux.

NOTE: When you choose the relative mouse mode. The redirected host mouse cursor may not overlap with the actual local mouse cursor (depending on the mouse cursor acceleration setting of the host OS). If this situation occurs, it is recommended to select the single cursor checkbox.

Network

The Network page allows you to view and modify the network settings. Select whether to obtain an IP address automatically or manually configure one.



NOTE: To change any of the settings on the Network Configuration page, you must have permission to configure the BMC. Do not do network configuring when the server is in BIOS mode; the network configuration may be conflict with the BIOS.

Table 1-18. Network

Item	Description
MAC Address	This field shows the MAC address.
Obtain an IP address automatically (use DHCP)	This option allows the BMC's IP to be configured by a DHCP server (dynamically).

Table 1-18. Network

Item	Description
Use the following IP address	This option allows you to configure a static IP. The IP Address, Subnet Mask, and Gateway fields become editable when this option is selected.
IP Address	This field allows you to set the BMC's IP address.
Subnet Mask	This field allows you to set the Subnet Mask.
Default Gateway	This field allows you to set the BMC's Gateway access address.
Obtain DNS IP address automatically	This option allows the DNS IP to be configured by a DHCP server (dynamically).
Use the following DNS IP address	This option allows you to configure the DNS IP address with a static IP. The Primary and Secondary DNS Server will become editable when this option is selected.
Primary DNS Server	Specify the IP address of the preferred DNS server.
Secondary DNS Server	Specify the alternative IP address to be used when the preferred DNS server is not available.
Enable DNS Register BMC Host Name	When checked, it will register with the Domain Name Server. DNS BMC Host Name field will become read-only when this option is selected.
DNS BMC Host Name	Specifies the DNS BMC host name.
Enable DNS Domain Name (use DHCP)	Enable / disable acquisition of DNS Domain Name from DHCP server. DNS Domain Name field will become read-only when this option is selected.
DNS Domain Name	Specified the DNS domain name.
Save Button	Use this button to save your settings.

NOTE: If you configure the IP address with a static IP, you can't get the DNS IP address from the DHCP server.

NOTE: If you want to update the DNS information with the DNS server, you must select "Obtain an IP address automatically" to get IP address dynamically. And the DNS server IP will provide by the DHCP server.

VLAN Settings

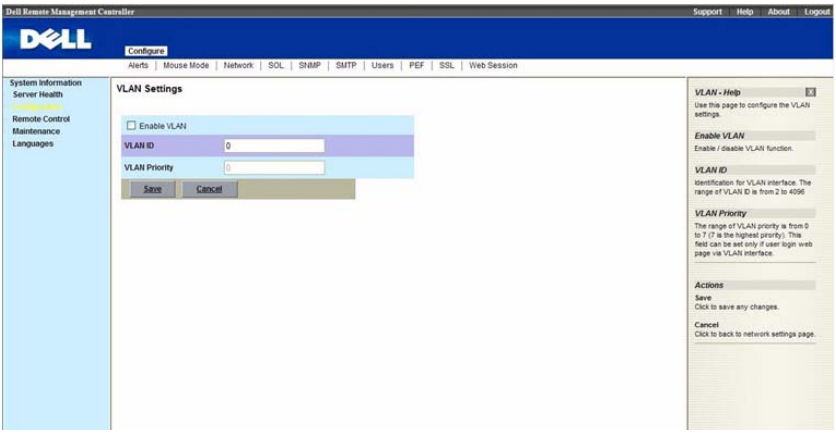


Table 1-19. VLAN Settings

Items	Description
Enable VLAN	Enable / disable VLAN function. Note: If enabled, BMC will only accept packets for this channel if they have 802.1q fields and their VLAN ID matches the VLAN ID field.
VLAN ID	Identification for VLAN Interface. The range of VLAN ID is from 2 to 4094.
VLAN Priority	The range of VLAN Priority is from 0 to 7 (7 is the highest priority). This field can be set only if user login web page via VLAN interface.
Save	Use this button to save your settings.
Cancel	Use this button to cancel your action, and back to network settings page.

SOL

The SOL page allows you to configure the Serial Over LAN settings, select or change pertinent values for each attribute and save any changes.

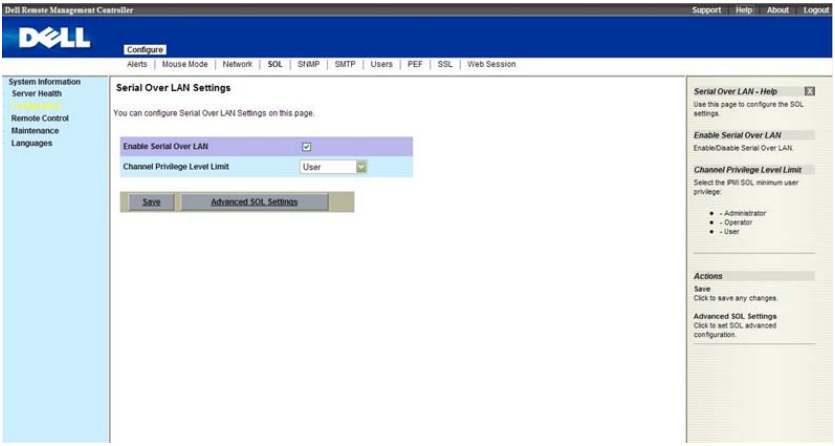


Table 1-20. Serial Over LAN Settings

Item	Description
Enable Serial Over LAN	Check this field to enable (checked) or disable (unchecked) Serial Over LAN.
Channel Privilege Level Limit	Select the IPMI Serial Over LAN (minimum) user privileges: • Administrator • Operator • User
Save	Use this button to save any settings changes.
Advanced SOL Settings	Use this button to enter the Advanced SOL page.

SOL Advanced Settings

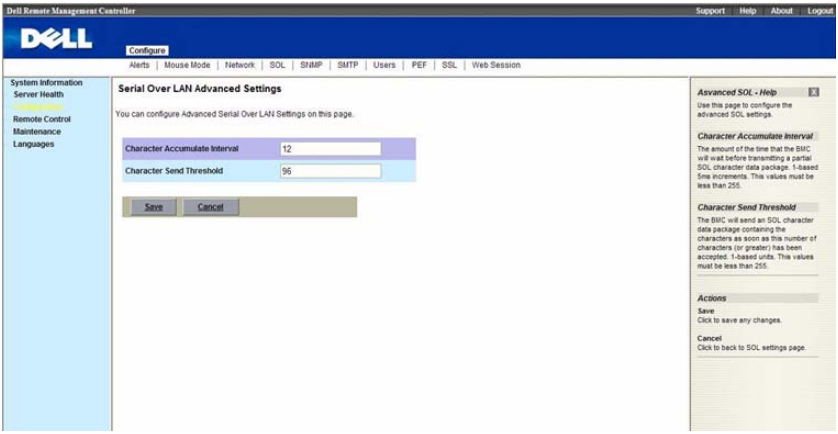


Table 1-21. Advanced SOL settings

Item	Description
Character Accumulate Interval	The amount of time that the BMC will wait before transmitting a partial SOL character data package. 1-based 5ms increments. This value must be less than 255.
Character Send Threshold	The BMC will send an SOL character data package containing the characters as soon as this number of characters (of greater) has been accepted. 1-based units. This value must be less than 255.
Save	Use this button to save your advanced settings.
Cancel	Use this button to back to SOL page.

SNMP

The SNMP page displays the community string page for the SNMP trap server. You can modify the community string and save the new settings.

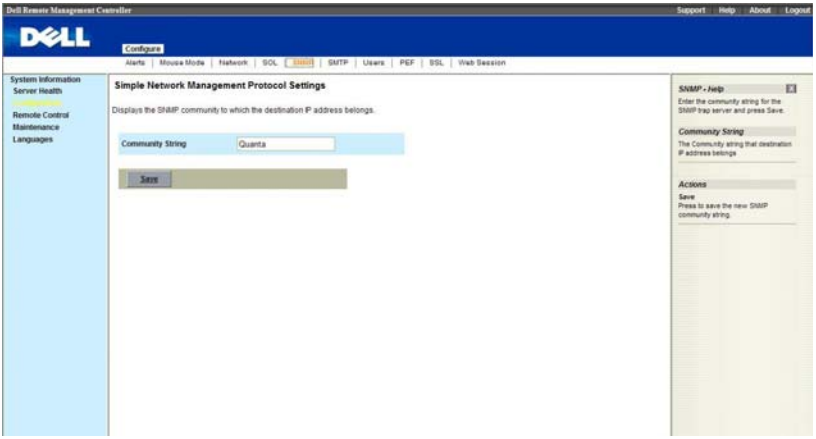


Table 1-22. SNMP

Item	Description
Community String	In the field, enter the SNMP community string for the destination IP address.
Save Button	Use this button to save the new settings.

SMTP

The SMTP page allows you to configure the SMTP mail server.

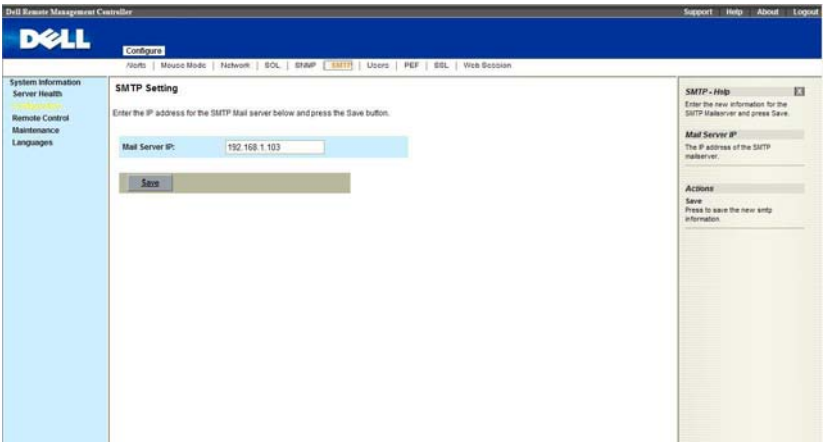


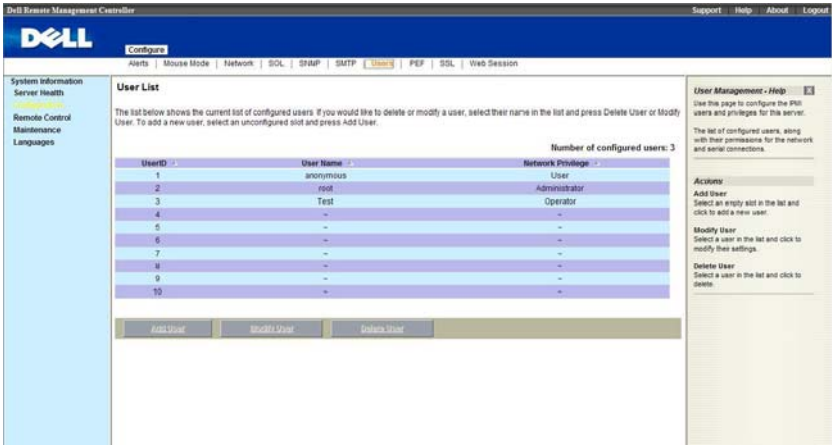
Table 1-23. SMTP

Item	Description
Mail Server IP	This field allows you to configure the IP address of the SMTP mail server.
Save Button	Use this button to save your settings.

Users

The Users page allows you to view the current list of user for the server. If you would like to delete or modify a user, select their name in the list and click **Delete User** or **Modify User**. To add a new user, select an un-configured slot and select **Add User**

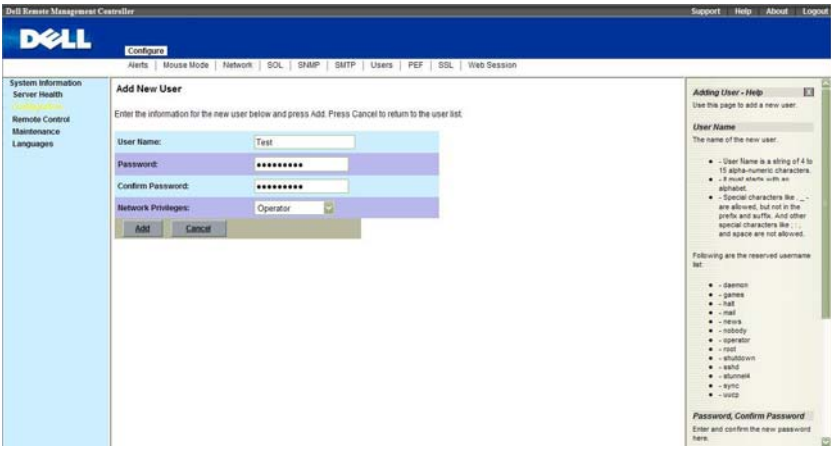
NOTE: Only user accounts over administrative rights are allowed to add, edit and delete users, but administrative level privileges still can't delete root, anonymous and itself. If a new user is given administrative privileges, permissions are automatically granted for all interfaces.



Item	Description
UserID Column	This column shows the ID number used in association with the User Name.
User Name Column	This column shows a list of all users who are able to access this BMC. **NOTE:** The default administrator is root. It is prudent for you to change the root password.
Network Privilege Column	This column shows the network rights associated with the account.
Add User Button	Use this button to add a new user. Select an open field first.

Item	Description
Modify User Button	Use this button to modify an existing user. Select a user first.
Delete User Button	Use this button to delete an existing user. Select a user first.

Add New User



Add New User

Item	Description
User Name	Enter a user name in the user name field. Your user name must be a string of 4 to 15 alpha-numeric characters.User names are case-sensitive and must start with an alphabetical character.
Password	Enter a password in the Password field. Your password must be a string of 8 to 20 alpha-numeric characters. **NOTE:** Use a combination of alphanumeric and special characters for better security. The password is case-sensitive.
Confirm Password	Confirm your password by entering your password again in the **Confirm Password** field.

Add New User

Item	Description
Network Privileges Drop Down Menu	Assign network permissions and access rights to any of the following: • User • Operator • Administrator • OEM Proprietary • No Access
Add Button	Use this button to add the new user.
Cancel Button	Use this button to cancel this action.

Modify User

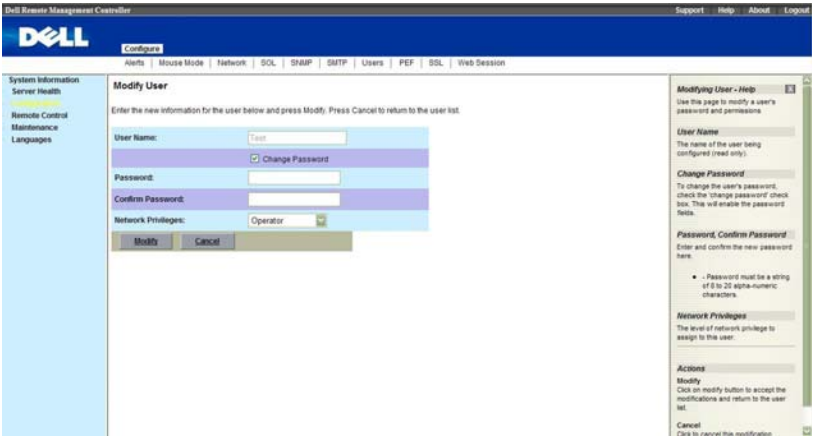


Table 1-24. Modify User

Item	Description
User Name	This field contains the user name being modified. This field cannot be modified.
Change Password Box	Select this box to change the password.
Password	Enter a password in the Password field. Your password must be a string of 8 to 20 alpha-numeric characters. **NOTE:** Use a combination of alphanumeric and special characters for better security. The password is case-sensitive.
Confirm Password	Confirm your password by entering your password again in the **Confirm Password** field.
Network Privileges Drop Down Menu	Modify network permissions and access rights to any of the following: • User • Operator • Administrator • OEM Proprietary • No Access
Modify Button	Use this button to update the user account.
Cancel Button	Use this button to cancel this action.

PEF

The PEF page allows you to configure the platform event filters. The Platform Event Filters List displays the actions that will execute when an event occurs. An event occurs when the status of a system element is outside a set limit. You can select a PEF and press the **Modify** button to configure it. Or you can press **Delete** to remove it.

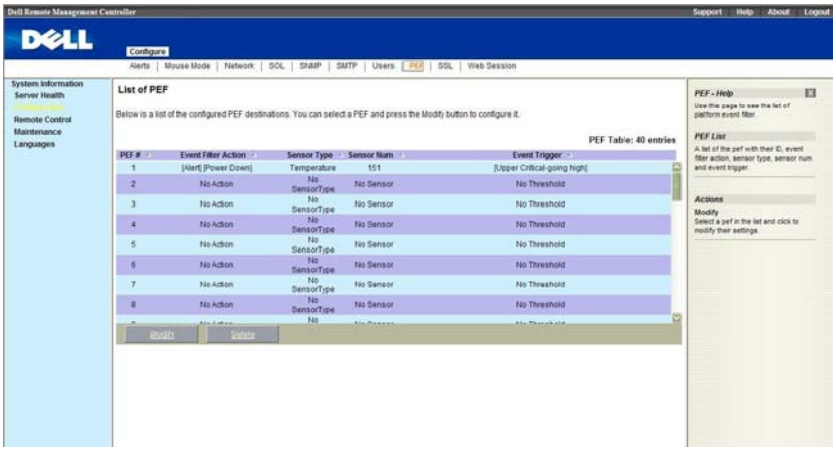


Table 1-25. PEF

Item	Description
PEF#	Number of PEF configuration entry. There are 40 PEF configuration entries in the system.
Event Filter Action	Specify the corresponding action for a PEF triggered event.
Sensor Type	Displays the sensor type.
Sensor Num	Displays the sensor number.
Event Trigger	Show the threshold type to cause the event occurs.

Modify PEF

Change the attributes, and click the **Save** button to save any changes. If you want to cancel this action, click the **Cancel** button to return to PEF list page.

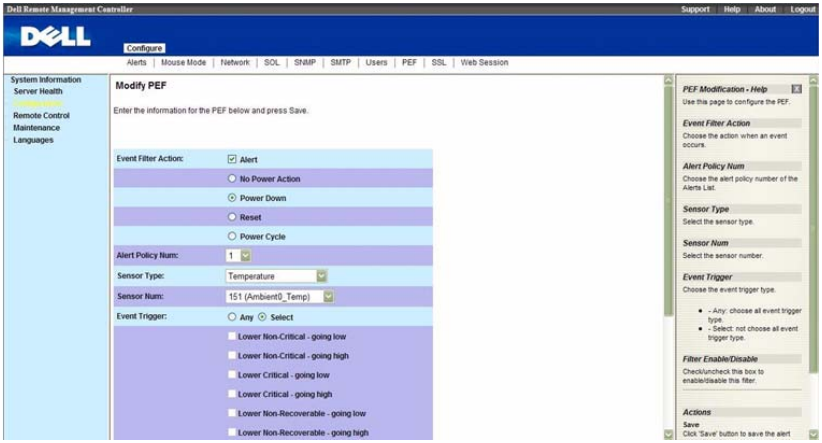


Table 1-26. Modify PEF

Item	Description
Event Filter Action	Check/uncheck the Alert box to enable/disable alert occurs. You can select one of power operation. If event occurs, the power action will perform. • No Power Action • Power Down • Reset • Power Cycle
Alert Policy Num	Choose the alert policy number of the Alerts List.
Sensor Type	Select the sensor type.
Sensor Num	Enter the sensor number.
Event Trigger	Choose the event trigger type. • Any: choose all trigger type events • Select: choose a single trigger type event
Filter Enable/Disable	Check/uncheck this box to enable/disable this filter.

SSL Certificate

The SSL Certificate page allows you upload a new SSL certificate.

The SSL page does not support encryption of private keys, for example: DES, AES, etc. Upload unencrypted private key to access support.

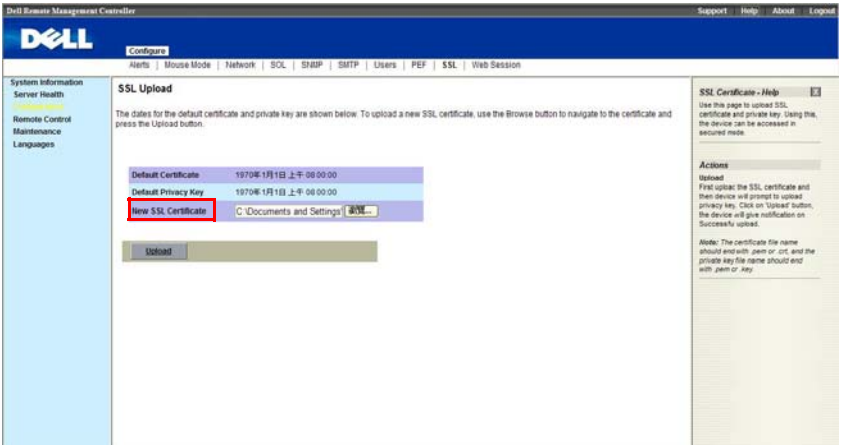


Table 1-27. PEF

Item	Description
Default Certificate	Displays the time of creation of the default certificate.
Default Privacy Key	Displays the time of creation of the existing privacy key.
New SSL Certificate	Use the Browse button to select a new certificate to upload.
Upload Button	Use this button to upload the previously selected certificate.

The Certificate file name should end with the file suffix *.pem* or *.crt*. After you click on the Upload button, the new SSL certificate will replace the existing certificate.

Uploading Private Key

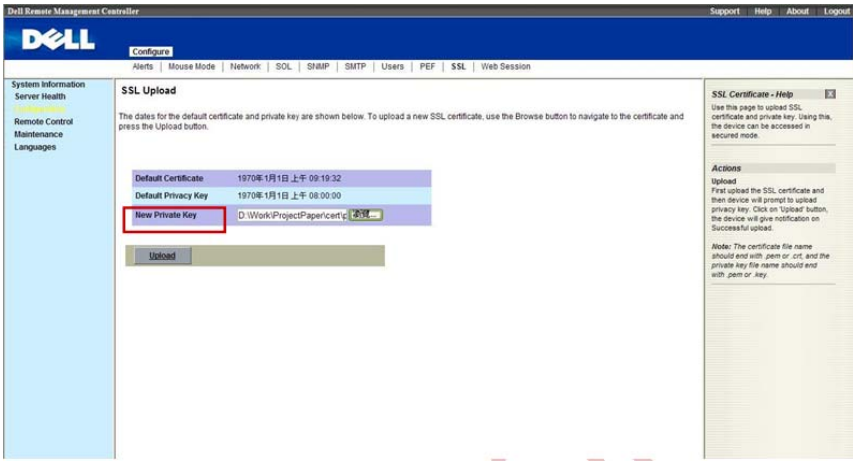


Table 1-28. SSL Private Key Upload web page

Item	Description
Default Certificate	Displays the creating time of the existing certificate.
Default Privacy Key	Display the creating time of the existing privacy key.
New Private Key	Click to choose the new Private Key that you want to upload.
Upload	Click to start upload Private Key.

The Private Key file name should end with *.pem* or *.key.* After you upload the new Private Key, the web server will restart. You must close this browser session and open a new browser session to reconnect to the device.

Web Session

The Web Session page allows you to change web session time out values. The default value is 300 seconds. If you don't active web within 300 seconds, the web session will time out and you must login again.

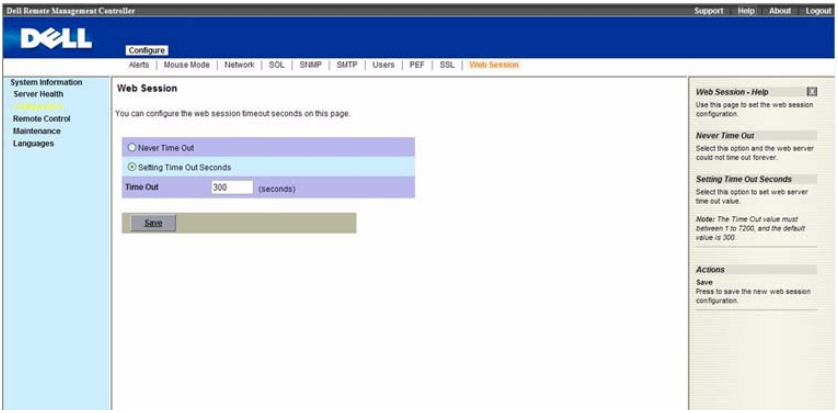


Table 1-29. PEF

Item	Description
Never Time Out	This option allows the web session never time out.
Setting Time Out Seconds	This option allows you to configure the web session time out value. The Time Out field will become editable when this option is selected.
Time Out	Specify the time out value. **NOTE:** The Time Out value must be between 30 to 7200 seconds. The default value is 300 seconds.
Save	Use this button to save your settings.

Remote Control

The **Remote Control** menu allows you to initiate Console Redirection and to view the Power Control options.

NOTE: The Console Redirection page is ONLY enabled in the AST2050 BMC chipset.

Console Redirection

The Console Redirection page enables you to use the display, mouse, and keyboard on the local management station to control the corresponding devices on a remote managed system. Click on **Java Console** to launch the Java-based remote console.

NOTE: Before you can use the Console Redirection feature, your browser must have the JRE installed in your operating system. The umber of sessions allowed is two.

NOTE: The recommended display resolution on the management station (or client) is at least 1024 x 768 pixels at 60 Hz with 32 bit color. You cannot view the console in full screen mode if your monitor resolution is less than the minimum.

NOTE: If Console Redirection is launched and not closed, the web session timeout function is closed.

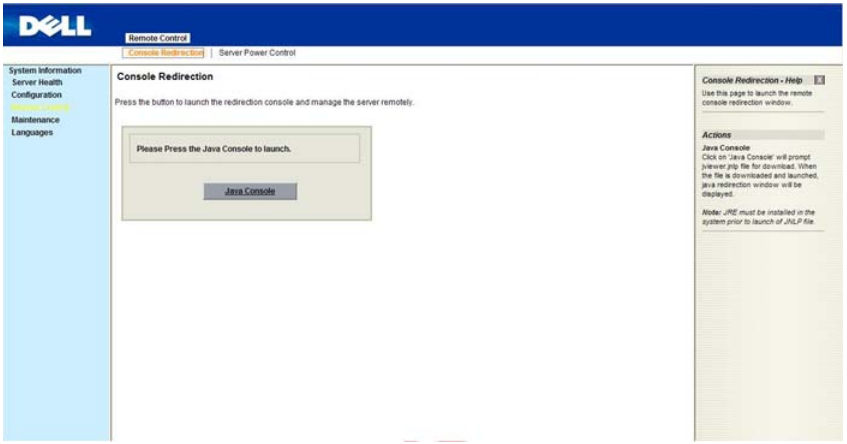


Table 1-30. Console Redirection, Java Console Launch

Item	Description
Java Console	Use this button to launch the redirection console using Java viewer.

Table 1-31. Remote Console Shortcut Key Combinations

Keystroke	Description
<ALT+S>	Start Console Redirection
<ALT+T>	Stop Console Redirection
<ALT+R>	Restart Console Redirection
<ALT+F>	Toggle Full Screen Mode
<ALT+M>	Synchronize Mouse
<ALT+A>	Hold/Unhold Right <ALT> Key
<ALT+B>	Hold/Unhold Left <ALT> Key
<ALT+L>	Hold/Unhold Right <CTRL> Key
<ALT+N>	Hold/Unhold Left <CTRL> Key
<ALT+D>	Generate <CTRL>, <ALT>, + <DEL>
<ALT+E>	Start CD-ROM Drive Redirection

Table 1-32. Console Redirection Window: Keyboard

Menu Item	Description
Hold Right Ctrl Key	This menu item can be used to act as the right-side <CTRL> key when in Console Redirection.
Hold Right Alt Key	This menu item can be used to act as the right-side <ALT> key when in Console Redirection.
Hold Left Ctrl Key	This menu item can be used to act as the left-side <CTRL> key when in Console Redirection.
Hold Left Alt Key	This menu item can be used to act as the left-side <ALT> key when in Console Redirection.

Table 1-32. Console Redirection Window: Keyboard

Menu Item	Description
Left Windows Key	This menu item can be used to act as the left-side <WIN> key when in Console Redirection. You can also decide how the key should be pressed: • Hold Down • Press and Release
Right Windows Key	This menu item can be used to act as the right-side <WIN> key when in Console Redirection. You can also decide how the key should be pressed: • Hold Down • Press and Release
<Alt+Ctrl+Del>	This menu item can be used to act as if you pressed the <CTRL>, <ALT> and <DEL> keys down simultaneously on the server that you are redirecting.

Table 1-33. Console Redirection Window: Mouse

Menu Item	Description
Sync Cursor	This menu item can be used to synchronize or un-synchronize the mouse cursor.
Show Cursor	This menu item can be used to show or hide the local mouse cursor on the remote client system.

Table 1-34. Console Redirection Window: Options

Item	Description
Bandwidth	The bandwidth usage option allows you to adjust the bandwidth. You can select one of the following: • Auto Detect • 256 Kbps • 512 Kbps • 1 Mbps • 10 Mbps • 100 Mbps (Default Setting)
KB/Mouse Encryption	This option allows you to encrypt keyboard inputs and mouse movements sent between the connections.

Table 1-35. Console Redirection Window: Options

Item	Description
Video Settings	Hide the hardware cursor, and transmit video deltas only.
Video Engine Configuration Settings	• Compression Mode: YUV compression, where Y is luminance and UV is chrominance. • DCT Quantization Table: number to control DCT quality.

Table 1-36. Console Redirection Window: Device

Menu Item	Description
Redirect CDROM	This menu item can be used to start or stop the redirection of a physical DVD/CD-ROM drive.
Redirect ISO	This menu item can be used to start or stop the redirection of a DVD/CD ISO image.
Redirect Floppy/USB Key	This menu item can be used to start or stop the redirection of a physical floppy/USB key drive.

Table 1-36. Console Redirection Window: Device

Menu Item	Description
Redirect Floppy/USB Key Image	This menu item can be used to start or stop the redirection of a floppy/USB key image, instead of a physical driver.

Table 1-37. Console Redirection Window: Help

Menu Item	Description
About JViewer	Shows the copyright and version information.

Power Control

The Power Control page allows you to view and control the power of your server. Select one of the options listed in the following table to execute on your server. You are asked to confirm your choice. Upon confirmation, the command is executed and you are informed of the status.

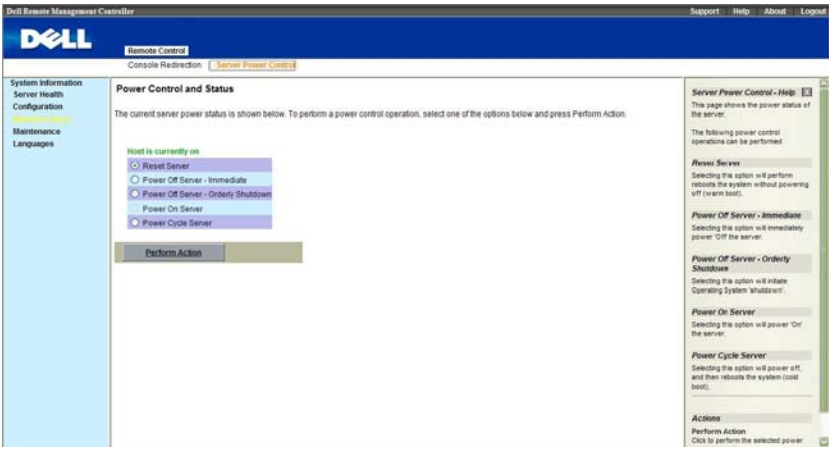


Table 1-38. Power Control and Status

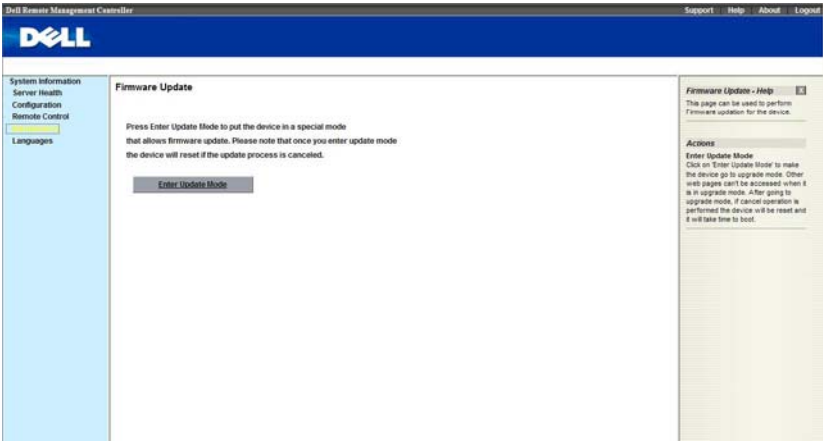
Menu Item	Description
Reset Server Option	Select this option to reset the server.

Table 1-38. Power Control and Status

Menu Item	Description
Power Off Server - Immediate Option	Select this option to power down the server immediately.
Power Off Server - Orderly Shutdown Option	Select this option to power down the server gracefully.
Power On Server Option	Select this option to power up the server.
Power Cycle Server Option	Select this option to power cycle the server.
Perform Action Button	Select this button to execute the option selected.

Maintenance

The **Maintenance** menu allows you to perform maintenance tasks on the device including the Firmware Update. Refer to "Firmware Update" on page 11.



Languages

The **Languages** menu allows you to select the language for the web application. Select the language from the drop down list and click **Apply**.

NOTE: The web interface needs to reload for the change to take effect.

IPMI 1.5 / 2.0 Command Support List

Table 1-39. IPMI Device Global Commands

Command	NetFn	CMD	O/M	Supported
Get Device ID	App	01h	M	Yes
Cold Reset	App	02h	O	Yes
Warm Reset	App	03h	O	No
Get Self Test Results	App	04h	M	Yes
Manufacture Test On	App	05h	O	Yes
Set ACPI Power State	App	06h	O	Yes
Get ACPI Power State	App	07h	O	Yes
Get Device GUID	App	08h	O	Yes
Broadcast Command:				
Broadcast 'Get Device ID'	App	01h	M	No

Table 1-40. BMC Device and Messaging Commands

Command	NetFn	CMD	O/M	Supported
Set BMC Global Enables	App	2Eh	M	Yes
Get BMC Global Enables	App	2Fh	M	Yes
Clear Message Buffer Flags	App	30h	M	Yes
Get Message Buffer Flags	App	31h	M	Yes
Enable Message Channel Receive	App	32h	O	Yes
Get Message	App	33h	M	Yes
Send Message	App	34h	M	Yes
Read Event Message Buffer	App	35h	O	Yes
Get BT Interface Capabilities	App	36h	M	No
Get System GUID	App	37h	O	Yes

Table 1-40. BMC Device and Messaging Commands

Command	NetFn	CMD	O/M	Supported
Get Channel Authentication Capabilities	App	38h	O	Yes
Get Session Challenge	App	39h	O	Yes
Activate Session Command	App	3Ah	O	Yes
Set Session Privilege Level Command	App	3Bh	O	Yes
Close Session	App	3Ch	O	Yes
Get Session Information	App	3Dh	O	Yes
Get Authentication Code Command	App	3Fh	O	Yes
Set Channel Access Commands	App	40h	O	Yes
Get Channel Access Commands	App	41h	O	Yes
Get Channel Info Command	App	42h	O	Yes
Set User Access Commands	App	43h	O	Yes
Get User Access Commands	App	44h	O	Yes
Set User Name Commands	App	45h	O	Yes
Get User Name Commands	App	46h	O	Yes
Set User Password Commands	App	47h	O	Yes
Active Payload Command	App	48h	O	Yes
Deactivate Payload Command	App	49h	O	Yes
Get Payload Activation Status	App	4Ah	O	Yes
Get Payload Instance Info Command	App	4Bh	O	Yes
Set User Payload Access	App	4Ch	O	Yes
Get User Payload Access	App	4Dh	O	Yes
Get Channel Payload Support	App	4Eh	O	Yes
Get Channel Payload Version	App	4Fh	O	Yes
Get Channel OEM Payload Info	App	50h	O	Yes

Table 1-40. BMC Device and Messaging Commands

Command	NetFn	CMD	O/M	Supported
Master Write-Read I2C	App	52h	M	Yes
Get Channel Cipher Suites	App	54h	O	Yes
Suspend/Resume Payload Encryption	App	55h	O	Yes
Set Channel Security Keys	App	56h	O	Yes
Get System Interface Capabilities	App	57h	O	Yes

Table 1-41. BMC Watchdog Timer Commands

Command	NetFn	CMD	O/M	Supported
Reset Watchdog Timer	App	22h	M	Yes
Set Watchdog Timer	App	24h	M	Yes
Get Watchdog Timer	App	25h	M	Yes

Table 1-42. Chassis Commands

Command	NetFn	CMD	O/M	Supported
Get Chassis Capabilities	Chassis	00h	M	Yes
Get Chassis Status	Chassis	01h	M	Yes
Chassis Control	Chassis	02h	M	Yes
Chassis Reset	Chassis	03h	O	No
Chassis Identify	Chassis	04h	O	Yes
Set Chassis Capabilities	Chassis	05h	O	Yes
Set Power Restore Policy	Chassis	06h	O	Yes
Get System Reset Cause	Chassis	07h	O[1]	Yes
Set System Boot Options	Chassis	08h	O	Yes
Get System Boot Options	Chassis	09h	O	Yes
Set Front Panel Button Enable	Chassis	0Ah	O	Yes
Set Power Cycle Interval	Chassis	0Bh	O	Yes

Table 1-42. Chassis Commands

Command	NetFn	CMD	O/M	Supported
Get POH Counter	Chassis	0Fh	O	Yes
[1] Optional portion of Get System Reset Cause is not support.				

Table 1-43. Event Commands

Command	NetFn	CMD	O/M		Supported
			Even Receiver	Event Generator	
Set Event Receiver	S/E	00h	M	M	Yes
Get Event Receiver	S/E	01h	M	M	Yes
Platform Event	S/E	02h	M	M	Yes

Table 1-44. SEL Commands

Command	NetFn	CMD	O/M	Supported
Get SEL Info	Storage	40h	M	Yes
Get SEL Allocation Info	Storage	41h	O	Yes
Reserve SEL	Storage	42h	O	Yes
Get SEL Entry	Storage	43h	M	Yes
Add SEL Entry	Storage	44h	M	Yes
Partial Add SEL Entry	Storage	45h	M	Yes
Delete SEL Entry	Storage	46h	O	Yes
Clear SEL	Storage	47h	M	Yes
Get SEL Time	Storage	48h	M	Yes
Set SEL Time	Storage	49h	M	Yes
Get Auxiliary Log Status	Storage	5Ah	O	No
Set Auxiliary Log Status	Storage	5Bh	O	No

NOTE: Support for **Partial Add SEL** is not required when **Add SEL** is supported.

Table 1-45. SDR Repository Commands

Command	NetFn	CMD	O/M	Supported
Get SDR Repository Info	Storage	20h	M	Yes
Get SDR Repository Allocation Info	Storage	21h	O	Yes
Reserve SDR Repository	Storage	22h	M	Yes
Get SDR	Storage	23h	M	Yes
Add SDR	Storage	24h	M	Yes
Partial ADD SDR	Storage	25h	M	Yes
Delete SDR	Storage	26h	O	No
Clear SDR Repository	Storage	27h	M	Yes
Get SDR Repository Time	Storage	28h	O	Yes
Set SDR Repository Time	Storage	29h	O	Yes
Enter SDR Repository Update Mode	Storage	2Ah	O	No
Exit SDR Repository Update Mode	Storage	2Bh	O	No
Run Initialization Agent	Storage	2Ch	O	Yes

Table 1-46. FRU Inventory Device Commands

Command	NetFn	CMD	O/M	Supported
Get FRU Inventory Area Info	Storage	10h	M	Yes
Read FRU Inventory Data	Storage	11h	M	Yes
Write FRU Inventory Data	Storage	12h	M	Yes

Table 1-47. Sensory Device Commands

Command	NetFn	CMD	O/M	Supported
Get Device SDR Info	S/E	20h	O	No
Get Device SDR	S/E	21h	O	No
Reserve Device SDR Repository	S/E	22h	O	No
Get Sensor Reading Factors	S/E	23h	O	Yes
Set Sensor Hysteresis	S/E	24h	O	Yes
Get Sensor Hysteresis	S/E	25h	O	Yes
Set Sensor Threshold	S/E	26h	O	Yes
Get Sensor Threshold	S/E	27h	O	Yes
Set Sensor Event Enable	S/E	28h	O	Yes
Get Sensor Event Enable	S/E	29h	O	Yes
Re-arm Sensor Events	S/E	2Ah	O	Yes
Get Sensor Event Status	S/E	2Bh	O	Yes
Get Sensor Reading	S/E	2Dh	M	Yes
Set Sensor Type	S/E	2Eh	O	No
Get Sensor Type	S/E	2Fh	O	No
Set Sensor Reading and Event Status	S/E	30h	M	Yes

Table 1-48. LAN Commands

Command	NetFn	CMD	O/M	Supported
Set LAN Configuration Parameters	Transport	01h	M	Yes
Get LAN Configuration Parameters	Transport	02h	M	Yes
Suspend BMC ARP	Transport	03h	O	Yes
Get IP/UDP/RMCP Statistics	Transport	04h	O	No

NOTE: LAN parameter from 192 to 255 is reserved for OEM parameters.

Table 1-48. LAN Commands

Command	NetFn	CMD	O/M	Supported
NOTE: Parameter 192 is used for DHCP Retry by DCS requirement.				

Table 1-49. SOL Command

Command	NetFn	CMD	O/M	Supported
SOL Activating	Transport	20h	O	No
Set SOL Configuration Parameters	Transport	21h	O	Yes
Get SOL Configuration Parameters	Transport	22h	O	Yes

Table 1-50. PEF/PET Alerting Commands

Command	NetFn	CMD	O/M	Supported
Get PEF Capabilities	S/E	10h	M	Yes
Arm PEF Postpone Timer	S/E	11h	M	Yes
Set PEF Configuration Parameters	S/E	12h	M	Yes
Get PEF Configuration Parameters	S/E	13h	M	Yes
Set Last Processed Event ID	S/E	14h	M	Yes
Get Last Processed Event ID	S/E	15h	M	Yes
Alert Immediate	S/E	16h	O	Yes
PET Acknowledge	S/E	17h	O	Yes