

Intel[®] Server System R2600SR

System Management Module (SMM) User Guide

An overview of system configuration procedures and settings.

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1. Introduction

1.1 The Intel[®] Server System R2600SR Product Family

The Intel[®] Server System R2600SR product family features density-optimized, rack-mount, 2U, 4-node server systems designed to support a variety of workloads, from high-performance computing (HPC) environments to hyper-converged infrastructure to software-defined infrastructure. Each system within the Intel[®] Server System R2600SR product family includes four independent and preconfigured compute nodes, allowing for a power-on ready installation for any supported operating environment.

1.2 About This Document

This Intel[®] Server System R2600SR Product Family System Management Module (SMM) User Guide is written for system integrators and service technicians responsible for system setup, server and system upgrades, and repair.

This document provides the process of operating the SMM and detailed SMM Web GUI. The descriptions include how to check the status and component information and show how to modify the configuration. It offers a detailed explanation and definition for each function tab of the SMM web pages.

For the latest revision of this document, go to http://www.intel.com/support.

1.3 About the System Management Module (SMM)

The SMM performs the following tasks:

- 1. Node status reporting
- 2. Enclosure power and fan status reporting
- 3. Enclosure power and fan configuration management
- 4. Enclosure Vital Product Data (VPD) information reporting
- 5. Enclosure event log display, save, and clear
- 6. SMM management and settings backup/restore

The System Management Module (SMM) firmware utilizes built-in web pages for system management. It supports Transport Layer Security 1.2 for data encryption over the network and certificate management.

1.3.1 Supported Web Browsers

Browsers supported by the SMM web interface include:

- Internet Explorer 11
- Microsoft Edge 25.10586 or later
- Mozilla Firefox 48.0 or later
- Google Chrome 52.0 or later

1.4 Document Organization

Chapter 1. Introduction

This chapter provides a high-level overview of the Intel[®] Server System R2600SR Product Family and the System Management Module (SMM) User Guide structure, contents, and organization.

Chapter 2. System Management Module (SMM) Web Interface Access

This chapter gives information on how to access the System Management Module (SMM) Web GUI.

Chapter 3. System Management Module (SMM) Web Interface Function Tabs

The chapter describes the detailed functions of the System Management Module (SMM) web interface and the six function tabs.

Chapter 4. IPMI Command and SMTP and LAN Configuration Parameter Tables

The chapter focuses on tables of the IPMI Commands, SMTP Configuration Parameters, and LAN Configuration Parameters.

Appendix A – Glossary

1.5 Resource Information and Software

For additional information about this family of products or any of their supported accessories, refer to the following resources available at: <u>http://www.intel.com/support</u>

For this Information or Software	Use this Document or Software				
In-depth technical information about this product family	 Intel[®] Server System R2600SR Product Family Technical Product Specification Product Safety and Regulatory Compliance - Intel[®] Xeon[®] processor Scalable Family 				
System integration instructions and service guidance	 Intel[®] Server System R2600SR Product Family System Setup and Service Guide Intel[®] Server System R2600SR Product Family Message and Code Reference Guide Intel[®] Server System R2600SR Product Family System Management Module User Guide 				
Server configuration guidance and compatibility	Intel [®] S2600SR Product Family Configuration Guide				
System firmware updates, onboard device drivers, and software to manage the Intel [®] Server System	http://downloadcenter.intel.com/				

Table 1. Server system references

2. System Management Module (SMM) Web Interface Access

The SMM web interface is accessed via Ethernet connection (10/100/1000 Mbit) through an established SMM session. Connecting to the SMM for the first time may require a change of the Internet protocol properties on the client computer. See the Network Configuration (Section 3.6.3) for more information.

To log into the SMM web interface, complete the following steps:

1. By default, the SMM network is disabled. Enable the SMM network. To enable the SMM network, issue the enable IPMI command below to the BMC Controller. The <XCC IP> is the XCC IP address:

Enable:

ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x01

2. The following two commands can also be used to either query or disable the SMM network.

```
Query:
```

ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x00

Disable:

```
ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x02
```

The table below shows details of the individual codes within the IPMI commands listed above.

Net Function = 0x3A							
Code	Command	Request, Response Data	Description				
0xF1	SMM network control	Request: • Byte 1: Request type - 0x00 = Query SMM network status - 0x01 = Enable - 0x02 = Disable Response: • Byte 1 – Completion Code • Byte 2 – SMM network status (for Query requestonly)	This setting is used to set SMM network status which value is disabled as default. The BMC Controller command supports the system chassis and compute node only.				

Table 2. Individual IPMI command code details

- 3. Point the browser to the SMM web interface URL defined during initial system configuration.
- 4. Apply the out-of-factory default network settings at the first use of the SMM (in this order):
 - a. The SMM should use DHCP first. If the SMM cannot acquire an IP address from a DHCP server in 2 minutes, it uses a static IP address. The default static IP address is: 192.168.70.100.
 - b. Using Hyper Text Transfer Protocol Secure (HTTPS). (For example, https://192.168.70.100)
 - c. IPv4 enabled with static IP = 192.168.70.100
 - d. IPv6 enabled with local link address (LLA) IP. To calculate LLA IP, do the following:
 - 1) Split the MAC address of the SMM (39-A7-94-07-CB-D0) into two parts. Insert FF-FE in the middle (i.e., 39-A7-94-FF-FE-07-CB-D0).
 - 2) Convert the two hexadecimal digits at the left end of the string to binary (i.e., 00111001-A7-94-FF-FE-07-CB-D0).
 - 3) Invert the value for bit 1 of the first byte (i.e., 00111011-A7-94-FF-FE-07-CB-D0).
 - 4) Convert the binary digits at the left end of the string back to hexadecimal.
 - 5) Combine the hexadecimal digit pairs into 4-digit groups (i.e., 3BA7-94FF-FE07-CBD0).
 - 6) Replace dash (-) separators with colon (:) separators (i. e., 3BA7:94FF:FE07:CBD0).
 - 7) Add FE80:: to the left of the string (i.e., FE80::3BA7:94FF:FE07:CBD0).

- Type user ID and password assigned by a system administrator. Default ID: USERID Password: PASSWORD (Note: The sixth character of PASSWORD is the number zero).
- 6. Click Log in.
- 7. Change the password for the first login default
 - a. The password complexity rules are:
 - Must be at least 10 characters in length
 - Must contain at least one number (0 through 9)
 - Must contain at least two of the following three categories:
 - An uppercase letter (A through Z)
 - A lowercase letter (a through z)
 - A non-alphabetic characters such a !@#\$%^*-_+=().:`|?"\

3. System Management Module (SMM) Web Interface Function Tabs

The section describes the detailed functions of the System Management Module (SMM) web interface. Within this interface are six function tabs:

- Summary
- Power
- Cooling
- System Information
- Event Log
- Configuration

Move the cursor over a function tab button in the web interface to view the subcategories of that function. Click on the tab or subcategory to go directly to the function.

Notes:

Each SMM web page has a **Refresh** button. Use this button to refresh the page as needed and get the latest readings and status.

The voltage and cooling overview pages refresh periodically (the auto-refresh interval is every 30 seconds).

When an SMM web page is inactive beyond a preset timeframe (the default is 20 minutes), the session times out and expires. Sessions on the voltage and cooling overview pages do not expire as these pages auto-refresh.

Whether F5 from the keyboard or **Refresh** on a browser is used, the web page will redirect to the login page for security reasons.

3.1 Summary

The Summary tab displays overall chassis (enclosure) status and information, which can be shown within two different views: Enclosure Front and Enclosure Rear.

Click on the icon in Figure 1 to access each of these.



Figure 1. Web enclosure views

3.1.1 Enclosure Front

The **Enclosure Front** section shows the status of the compute node as indicated. The following figure shows how compute node status is displayed.

Enclosure Front Overview

		3				2		Refres
Node	Height	Status	Reset / Reseat	Node	Height	Status	Reset	Reseat
	0.0	Not Present	Reset Reseat		0.0	Not Present	Reset	Reseat
03		N/A	Launch XCC	04		N/A	Laun	th XCC
	10	Power On	Reset Reseat		10	Power On	Reset	Reseat
01	192.168.80.122		Launch XCC	02	1	92.168.80.52	Laun	oh XCC

Figure 2. Enclosure Front overview

The following are definitions for the title and status indicators of the Enclosure Front web interface:

- **Node:** The node number.
- Height: The node height. (This can range from 1 to 2U).
- Status:
 - Not Present: No node is installed.
 - **No Permission**: The node has not granted power permission and cannot be powered on.
 - **Fault**: The node has a power fault and cannot be powered on.
 - **Power On**: The node is powered on.
 - **Power Off**: The node is powered off.
 - **Reset/Reseat**: Used to perform virtual reset/virtual reseat.
 - **Reset**: Remotely reset node BMC Controller through the SMM.
 - **Reseat**: Remotely power cycle the entire node.
 - After virtual **Reset/Reseat**, the node takes at least two minutes to be fully functional.
 - Launch BMC Controller: Use the specified IP address to access the BMC Controller from the web.

Note: Five minutes after the SMM has been updated, the **Enclosure Front Overview** must be manually updated to update all node status. If the Enclosure Front Overview is not manually updated the BMC Controller will reset to update to the latest node status.

3.1.2 Enclosure Rear

The Enclosure Rear section shows the status for three separate system components:

- (System) Management Module (SMM)
- Current PSU
- Fan

3.1.2.1 (System) Management Module (SMM)

The Management Module section indicates the status of the SMM. The following figure is an example of how SMM status is displayed.

Management Module							
Name	System Management Module (SMM)						
Status	Normal SMM Reset						
Firmware Version	1.0 (TESM04A)						
Boot-up Flash	First						
ID LED	Off	● Turn ● Turn ● Blinl	i Off i On (Apply			
Error LED	Off						
FFDC				Capture			

Management Module

Figure 3. System Management Module (SMM) status

The following definitions are for title and status indicators in the Management Module (SMM) web interface:

- Status: SMM operating status.
 - SMM Reset: Warm reboot the SMM.
 - Reset to Default: Restore the SMM settings to factory default.
- Firmware Version: The current firmware revision.
- **Boot-up Flash**: SMM current boot up bank. In normal operation, **Boot-up Flash** should always be first. Only when the first flash has a hardware or firmware failure will the SMM switch to second flash.
- **ID LED**: The Identification LED (ID LED). This blue light LED assists a user in locating an enclosure in a rack. Options are to turn the blue LED on as solid or make the LED blink once every second. Click **Apply** to activate the option.
- Error LED: The Error LED is on after a critical event occurs and turns off after it is de-asserted.
- **FFDC**: The Fast Failure Data Collection (FFDC). Instantly collects information about events and conditions that might lead up to a failure. Click **Capture** to download the file used to analyze the problem from the web.

3.1.2.2 Current PSU

The Current PSU section indicates the status of system power supplies. The following figure shows how Current PSU status is displayed.



Current PSU - ZeroOutput Enabled, Total power bank = 2000W

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW Throttle PG
PSU1	Present	2000 W	212 V	2000 W	Wake Up	Normal Normal Yes
PSU2	Present	2000 W	0 V	0 W	Disabled	Assert Normal No

Figure 4. Current PSU status

The following definitions are for title and status indicators in the Current PSU web interface:

- Status
 - **Present**: The power supply is installed.
 - Not Present: No power supply is installed.
 - **Fault**: The power supply is in a fault condition.
- **Ratings**: Displays the power rating. The Ratings column should always show a 2000W PSU.
- **AC-IN**: Displays the AC input power presented to the PSU.
- Capability: The maximum DC output power that the power supply can provide to the entire system.
 - If DC-PG of the PSU is **No**, capability will be 0 W (Zero Watts).
 - If DC-PG of the PSU is **Yes**, capability is usually equal to its rating.
- **Zero-output**: Redundancy mode.
 - **Disabled**: Zero-output is disabled.
 - Wake-Up: Zero-output is enabled. The power supply is in working state.
 - **Sleep**: Zero-output is enabled. The power supply is in hibernate state and no DC output.
- EPOW (Early Power-Off Warning)
 - **Assert**: The power supply is in an "AC lost" condition.
 - **Normal**: The power supply AC is in normal operating condition.
 - DC-PG (Direct Current Power Good): The DC power status of the power supply.
 - **No**: The power supply is not providing the required DC power.
 - **Yes**: The power supply is providing required DC power.

3.1.2.3 Fan

The Fan section indicates the status of system cooling fans. This figure shows how Fan status is displayed.



	Fan								
Bay	Status	Type	Bay	Status	Type				
2	Present	60mm	1	Present	80mm				
3	Present	60mm	5	Present	80mm				
4	Present	60mm							

Figure 5. System Fan status

The following are definitions for title and status indicators for the Fan web interface:

- Status
 - **Present**: The fan is in normal operating condition.
 - Not present: No fan is installed.
 - **Fault**: The fan is in a fault condition.
- **Type:** There are two fan sizes, 60mm and 80mm. This column indicates which size of fan is installed.

3.2 Power

The **Power** section provides status for five power-related conditions/functions:

- Power Overview
- Power Supply Unit (PSU) Configuration
- Power Cap
- Voltage Overview
- Power Restore Policy

This figure shows how the Power tab is displayed.

Power Overview	PSU Configuration	Power Cap	Voltage Overview	Power Restore Policy

Figure 6. Power tab

To access information on the power section desired, click on the function tab associated with that section.

3.2.1 Power Overview

The **Power Overview** displays information relative to enclosure/chassis level power consumption, nodelevel power consumption, and subsystem power consumption, which includes the power supply units (PSUs) and thermal subsystem (system fans).

The following figure shows how the Power tab is displayed.

Power Overview

Total Enclosure Power Consumption (Wac) in 30 seconds

Min. (W)	Avg. (W)	Max. (W)
188	188	190

Total PSUs Power Consumption in 30 seconds

Min. (W)	Avg. (W)	Max. (W)
33	37	42

Total Fans Power Consumption

5.11 W

Node Power Consumption (Wdc)

Node	Min. (W)	Avg. (W)	Max. (W)	Node	Min. (W)	Avg. (W)	Max. (W)
03	Not Present	Not Present	Not Present	04	Not Present	Not Present	Not Present
01	45	45	49	02	91	91	92

Figure 7. Power overview

Note: Enclosure/chassis and PSU power consumption is sampled at one-second intervals.

3.2.2 Power Supply Unit (PSU) Configuration

With the **Power Supply Unit (PSU) Configuration** tab a user can set the redundancy mode for PSUs. The following figure shows how the **Power Supply Unit (PSU) Configuration** tab is displayed.

PSU Configuration

Redundancy Mode N + 1 Redundancy Mode N + 1 Oversubscription Mode OVS On Apply PSU Status Zero Output 30 minutes (default) * Apply Status

Figure 8. PSU configuration

The following are title and status indicator definitions for the PSU Configuration interface:

- Redundancy Mode: Two configurable modes.
 - **No Redundancy**: System can be throttled or shut down if one or more power supplies is in a fault condition.
 - N+1: There is one properly installed PSU as a redundant power supply, so, if any one of the PSUs is in a fault condition, there is no impact to system operation or performance, given that Oversubscription mode is not enabled.
- **Oversubscription Mode**: This mode allows the system to take advantage of extra power from the redundant power supply when power supplies are in a healthy condition. When the redundancy fails, the PSU shuts down within 1 second if system power loading is not corrected after the time limit. The SMM takes the action of node throttling in a power emergency situation. Enclosure performance could be impacted even in redundancy mode if oversubscription is also enabled.
 - Oversubscription is applied only with N+1 redundancy modes.
 - When enabled with N+1, the total power available is equivalent to 1.2 single PSU capability.
 - After selecting the PSU Redundancy Mode from the drop-down menus, click **Apply** to activate.
- Zero Output: Three scanning periods are available: 10/30/60 minutes. The shorter the scanning period, the faster the SMM adjusts the number of hibernating PSUs to optimize PSU efficiency when the system load changes. With shorter scanning periods, PSUs are also turned on and off more frequently as system loading fluctuates, which can reduce PSU life. Disable zero output to keep all PSUs always active. After selecting Zero Output Mode from the drop-down menus, click **Apply** to activate.

3.2.3 Power Cap

The **Power Cap** enables a wattage limit to be placed on power consumption at the enclosure/chassis or compute node level. Within the **Power Cap** tab the following two options are presented:

- Enclosure Power Cap
- Node Power Cap

Enclosure Power Cap

When applied to the enclosure/chassis, power consumption for the entire enclosure is capped.

Node Power Cap

When applied on an individual compute node, node power consumption is capped at an assigned level.

Power Saving

Power Saving is a third option which can run with the first two options. When enabled by an individual or all compute nodes on the enclosure level, the system runs in throttling mode.

The following figures show how the Enclosure Power Cap and the Node Power Cap/Power Save tabs are displayed.

Power Cap Policy	
Choose a power cap type : Enclosure Power Cap 🔻	

Enclosure Power Cap / Power Save

Enclosure	Power Cap
	✓ Enable 480 W (Range: 422 W ~ 496 W)
All	Power Save
	 ● Disable ● Enable

Apply

Figure 9. Enclosure Power Cap

Power Cap Policy

٠

Choose a power cap type : Node Fower Cap

Node Power Cap / Power Save

Node	Power Cap				
	Protective Power Cap	DISABLE			
		DISABLE			
_	User Power Cap	User Define	■ Enable		
3 🔻		Thermal	DISABLE		
		Power Save			
		 Disable Enable 			

Figure 10. Node Power Cap/Power Save

Follow the instructions below to set and enable Enclosure and Node power caps.

- 1. Select Enclosure Power Cap or Node Power Cap from the drop-down menu.
- 2. Power cap value is limited within the range from minimum to maximum possible power consumption of the specific node/enclosure. To enable the power cap, enter a power cap value for the option selected, check the box, and click **Apply**.
- 3. Although a power cap enabled (checked) or disabled (unchecked) can be applied independently of a power cap value, a power cap value must be enabled and **Enable** selected.
 - a. If a power cap is enabled without an input value, the text box is left empty to represent that no user power cap value is specified and no power cap is enforced.
 - b. If an input value is entered and applied for the power cap without checking **Enable**, the input value is saved but not enforced.
- 4. There are three types of power cap for Node domain. User can set **User Power Capping** value for each node.
- 5. Select **Enable** in the **Power Save** section and click on **Apply** to activate Power Save. Power Save can be applied simultaneously with both Power Cap options.

The following table provides details about power saving modes.

Table 3. Power saving modes

Mode	Title	Description
Disable	Static maximum performance	The system runs at full speed (no throttling) regardless of the workload.
Enable	Static minimum power	The system runs in a throttled state (defined by the implementation) regardless of the workload.

3.2.4 Voltage Overview

The **Voltage Overview** table provides the status of the SMM module board (12V, 5V, 3.3V, 2.5V, 1.2V, 1.15V) and battery voltage. The error log is asserted if a critical threshold is reached.

Note: The table auto refreshes every 30 seconds.

Table 4. Voltage overview table of the SMM

Probe List

Status	Probe Name	Reading	Lower Non- Critical	Upper Non- Critical	Lower Critical	Upper Critical	Lower Non- Recoverable	Upper Non- Recoverable
0	12V_SENSE	12.155 V	11.700 V	12.675 V	10.595 V	13.195 V	N/A	N/A
0	5V_SENSE	4.9256 V	4.5028 V	5.4088 V	4.0196 V	5.4994 V	N/A	N/A
0	3V3_SENSE	3.3582 V	2.9754 V	3.5670 V	2.6448 V	3.6366 V	N/A	N/A
0	2V5_SENSE	2.5155 V	2.2446 V	2.6961 V	1.9995 V	2.7477 V	N/A	N/A
0	1V2_SENSE	1.2040 V	1.0850 V	1.2950 V	0.9590 V	1.3230 V	N/A	N/A
0	1V15_SENSE	1.1550 V	1.0360 V	1.2390 V	0.9170 V	1.2740 V	N/A	N/A
0	VBAT_SENSE	3.1376 V	N/A	N/A	2.2472 V	N/A	N/A	N/A

3.2.5 Power Restore Policy

The **Power Restore Policy** determines the mode of compute node operation after a loss of power. Two policy options are available:

- Always OFF: Node remains off upon restoration of power.
- **Restore**: Node restores to the power state enabled before the power failure.

The following figure shows how the Power Restore Policy tab is displayed.

Power Restore Policy

•	Node	Status	•	Node	Status
	03	Restore		04	Always OFF
	01	Restore		02	Always OFF

Apply

Power Restore Policy: Determines the mode of operation after loss of power Always off: Node remains off upon power restore Restore: Node restores to the state it was before power failed

Figure 11. Power Restore policy

Follow the instructions below to enable and set a power restore policy.

- 1. Check the boxes of the nodes to enable a power restore policy.
- 2. Click **Apply** to activate the setting.

Note: The change of setting and node status for a power restore policy takes effect 1 minute after selecting and clicking **Apply**. During this application time, the node state may not be recovered upon AC loss.

3.3 Cooling

The Cooling tab contains three sections for the monitoring and management of system cooling:

- Cooling Overview
- PSU Fan Speed
- Acoustic Mode

3.3.1 Cooling Overview

The Cooling Overview section monitors system fan speed and displays it in RPM. An error is asserted in the error log when fan speed is below lower critical threshold.

The following figure shows how the Cooling Overview tab is displayed.

Probe List

Status	Probe Name	Reading	Lower Non- Critical	Upper Non- Critical	Lower Critical	Upper Critical	Lower Non- Recoverable	Upper Non- Recoverable
0	FAN_TACH_1A	2304 RPM	1024 RPM	N/A	768 RPM	N/A	N/A	N/A
0	FAN_TACH_1B	2304 RPM	1024 RPM	N/A	758 RPM	N/A	N/A	N/A
0	FAN_TACH_2A	2816 RPM	1024 RPM	N/A	758 RPM	N/A	N/A	N/A
0	FAN_TACH_2B	2944 RPM	1024 RPM	N/A	758 RPM	N/A	N/A	N/A
0	FAN_TACH_3A	2816 RPM	1024 RPM	N/A	758 RPM	N/A	N/A	N/A
0	FAN_TACH_3B	2944 RPM	1024 RPM	N/A	768 RPM	N/A	N/A	N/A
0	FAN_TACH_4A	2816 RPM	1024 RPM	N/A	768 RPM	N/A	N/A	N/A
9	FAN_TACH_4B	2944 RPM	1024 RPM	N/A	768 RPM	N/A	N/A	N/A
	FAN_TACH_5A	2304 RPM	1024 RPM	N/A	768 RPM	N/A	N/A	N/A
0	FAN_TACH_5B	2304 RPM	1024 RPM	N/A	768 RPM	N/A	N/A	N/A

Figure 12. Cooling overview

Note: This page refreshes automatically every 30 seconds.

The following title and status indicator definitions for the Cooling Overview web interface:

- Status (two status types):
- 쭏 : Indicates **Healthy** (no fault) status
- 🥗: Indicates **Fault** status.
- Fan_Tach_#A (#B):
 - When the fan number (#) equals to 2, 3 or 4, system fan speed normally operates at 2000 18500rpm.
 - When the fan number (#) equals to 1 or 5, system fan speed normally operates at 2000 -13000rpm.

System fans are equipped with dual motors. Tach A displays the primary fan motor speed and Tach B displays the secondary/redundant fan motor speed.

• Lower Critical: 768 rpm is set to be the lower critical fan speed threshold.

3.3.2 PSU Fan Speed

The PSU Fan Speed function monitors power supply fan speed and displays it in RPM. The following figure shows how the PSU Fan Speed tab is displayed.

PSU Fan Speed

PSU	Speed (RPM)	Duty (% of Max.)	Status
PSU1	5000	19%	Normal
PSU2	5000	19%	Normal

Figure 13. PSU fan speed

The following are title and status indicator definitions for the PSU Fan Speed web interface:

- Speed: PSU fan speed normally operates at 4000~23000 rpm. PSU fan speed is displayed in RPM.
- Duty (% of Max.): Out of 25300 rpm. (23000*(1+10%))
- Status:
 - **Normal**: PSU fan is running in healthy condition.
 - Not Present: No power supply is installed.
 - Fault: Fan speed is lower than the threshold (3000rpm).

3.3.3 Acoustic Mode

During normal system run time, the acoustic attenuation can be adjusted to one of five different acoustic modes. If selected, an acoustic mode can apply only to the entire enclosure. The following figure shows how the Acoustic Mode tab is displayed.

Acoustic Mode Selection

Select an Acoustic Mode :



	э.	-	-		
	н	LD.		-	. V .
-		×	*		

Figure 14. Acoustic mode selection

Adjust the acoustic attenuation through the steps that follow.

- 1. Select the desired mode from the drop-down menu.
 - None: Fan speeds change as required for optimal cooling
 - Mode 1: Highest acoustics attenuation (lowest cooling)
 - Mode 2: Higher acoustics attenuation
 - Mode 3: Intermediate acoustics attenuation
 - Mode 4: Low acoustics attenuation (higher cooling)
 - Mode 5: Aggressive cooling mode
- 2. Click on **Apply** to activate the setting.

Notes:

When acoustic modes are applied, nodes workload is also capped to avoid over-heating.

If a PCI card is installed in the enclosure that requires more power or cooling, the acoustic mode is automatically disabled.

3.4 System Information

Six categories of fixed Vital Product Data (VPD) are listed under the **System Information** tab. Those categories are:

- Enclosure VPD
- Power Distribution Module (PDM) VPD
- SMM VPD
- PSU VPD
- EIOM VPD
- PIOR Right/Left VPD

Note: Information displayed with IPMI standard FRU command is limited to SMM Board VPD data only.

3.4.1 Enclosure VPD

The **Enclosure VPD** tab displays system/chassis level information. The following figure shows how the **Enclosure VPD** tab is displayed.

Enclosure VPD

		Backup	Restore
Name	Value		
Enclosure Name	Intel Server System R2600SR		
Machine Type/Model	7X20CTO1WW		
UUID	87F7D55EB5ED4B33AC0B87D14C89A268		
Enclosure Hardware Version	Pass4		

Edit

Figure 15. Enclosure VPD

Note: The storage device can be a USB device or microSD card depending on machine type.

The following are title definitions or functions for the **Enclosure VPD** web interface:

- Backup: Save current enclosure name onto USB storage device for future migration
- **Restore**: Load the enclosure name from previously saved data on the USB storage device
- Edit: Modify the enclosure name based on the following rule
 - Enclosure Name can be up to 64 characters using alphanumeric characters a-z, A-Z and 0-9,-(hyphen), _ (underscore), and space
- Enclosure Name: For example, "Intel Server System R2600SR"
- Machine Type: For example, "7X125AJCCN"
- UUID: Randomly generated ID number of the enclosure
- Enclosure Hardware Version: Hardware version

3.4.2 Power Distribution Module (PDM) VPD

The **Power Distribution Module (PDM) VPD** provides data for the Power Distribution Module installed in the system shuttle. This figure shows how the **Power Distribution Module (PDM) VPD** tab is displayed.

PDM VPD

	Beckup Restore
Name	Value
Card UUID	4316EA6EE6B948B7AAF036A735EC8473
Card Hardware Version	Pass3

Edit

Figure 16. PDM VPD

Note: The storage device can be a USB device or microSD card depending on machine type.

The following are title definitions or functions for the **Power Distribution Module (PDM) VPD** web interface:

- **Backup**: Save the current card serial number, card UUID, hardware version, and FRU part number onto the USB storage device for future migration.
- **Restore**: Load the previously saved card serial number, card UUID, hardware version, and FRU part number data from the USB storage device.
- **Edit**: Modify the card UUID as user preference based on this rule:
 - UUID: Card UUID must be filled in with all 32 alphanumeric characters (A-Z, 0-9). No space and no other characters are allowed.
- Card UUID: Randomly generated ID number of the enclosure.
- Card Hardware Version: Hardware version.

3.4.3 SMM VPD

The **SMM VPD** tab displays System Management Module (SMM)-related information. The following figure shows how the **SMM VPD** tab is displayed.

SMM VPD

Name	Value	
Card Serial Number	00006360036	
Card UUID	2C3D74E7E945493AAD7BA8B7B0017EBA	
Card Hardware Version	Pass3	
Card FRU Serial Number	N/A	

Figure 19. SMM VPD

The following are title definitions for the **SMM VPD** web interface:

- **Card Serial Number**: The last 11 digits of an 8S bar code label on SMM (For example, 8SXXXXXXXXAAAABBBCCCC).
- **Card UUID**: Randomly generated ID number of the enclosure
- Card Hardware Version: Hardware version
- Card FRU Serial Number: The first 10 digits after "8S" of an 8S bar code label on SMM. (For example, 8SXXXXXXXXAAAABBBCCCC).

3.4.4 PSU VPD

The **PSU VPD** tab displays power supply related information. The following figure shows how the **PSU VPD** tab is displayed.

PSU1 VPD

Name	Value	
MFR Revision	0B	
Туре	CFFv3 1100W PT	
Part Number	SP50L09207	
FRU Number	01GV270	
Serial Number	A1DB7111004	
Header Code	A1DB	
Vendor Name	ACBE	
MFR Date	01(week)/17(year)	
Primary FW Revision	4.51	
Seconday FW Revision	84.51	
MFR Model	FSF056	
MFR Location	DB	
Barcode	8SSP50L09207A1DB7111004	

Figure 20. PSU VPD

The following are title definitions for the **PSU VPD** web interface:

- MFR Revision: Assembly revision
- **Type:** CFFv3 PSU type
- Part Number: Intel part number
- FRU Number: Intel FRU number for a field-replaceable unit
- Serial Number: The last 11 digits of an 8S bar code label on PSU. (For example, 8SXXXXXXXAAAABBBCCCC").
- Header Code: Intel header code
- Vendor Name: Vendorname
- MFR Date: Manufacturing date code (week/year)
- Primary FW Revision: Primary firmware revision
- Secondary FW Revision: Secondary firmware revision
- MFR Model: Vendor part number
- MFR Location: Manufacturer location
- PSU FRU Number: For example, "01GV270"
- Barcode: Intel barcode

3.4.5 EIOM VPD

The **EIOM VPD** tab displays Ethernet I/O Module-related information. The following figure shows how the **EIOM VPD** tab is displayed.

EIOM VPD

Name	Value	
Card Serial Number	00006360036	
Card UUID	688471A276B311E68186AD3D4359E997	
Card Hardware Version	Pass3	
Card FRU Serial Number	N/A	

Figure 21. EIOM VPD

The following are title definitions for the EIOM VPD web interface:

- **Card Serial Number**: The last 11 digits of an 8S bar code label on EIOM. (For example, 8SXXXXXXXXAAAABBBCCCC).
- Card UUID: Randomly generated ID number of the enclosure
- Card Hardware Version: Hardware version
- **Card FRU Serial Number**: The first 10 digits after "8S" of a 8S bar code label on EIOM. (For example, 8SXXXXXXXAAAABBBCCCC).

3.4.6 PIOR Right/Left VPD

The **PIOR Right/Left VPD** tab displays PCIe I/O Riser-related information for either the left or right side riser card. The following figure shows how the **PIOR Right/Left VPD** tab is displayed.

PIOR Right VPD

Name	Value	
Card Serial Number	00006360040	
Card UUID	44FF6A1378EB11E687B4D1612BBB26D6	
Card Hardware Version	Pass3	
Card FRU Serial Number	N/A	

PIOR Left VPD

Name	Value
Card Serial Number	00006360041
Card UUID	F31E17B57A6A11E6B3FF9E2FA5353282
Card Hardware Version	Pass3
Card FRU Serial Number	N/A

The following are title definitions for the **PIOR Right/Left VPD** web interface:

- **Card Serial Number**: The last 11 digits of an 8S bar code label on PIOR. For example, 8SXXXXXXXXAAAABBBCCCC
- **Card UUID**: Randomly generated ID number of the enclosure
- Card Hardware Version: Hardware version
- **Card FRU Serial Number**: The first 10 digits after "8S" of an 8S bar code label on PIOR. For example, 8SXXXXXXXXXAAAABBBCCCC

3.5 Event Log

The **Event Log** tab displays System Event Log (SEL) information. This information results as the SEL records enclosure/chassis level information, warning, and critical events. The SEL information can assist in resolving system issues. The SEL logs a maximum of 4090 event entries.

Note: At this time, the SEL cannot log more than 4090 event entries. The user must manually clear the log before the SEL can log more events.

By default, events are sorted by occurring order from earliest in time to the latest; therefore, the latest entry is on the last page. Click on **Date/Time** to reorder the sorting in the opposite order, from the latest event to the earliest.

The following figure shows how the **Event Log** tab is displayed.

Event Log

To sort system event logs, click the 'Date/Time'.

System Event Count (Current / Maximum) 8 / 4090

Event ID	Sevenity	Date/Time	Description
0x21070841	0	2017-04-18 13:30:42 (UTC+0000)	NODE2_PRESENT Slot Or Connector sensor, Informational was asserted
0x080707a5	0	2017-04-18 13:30:42 (UTC+0000)	PS2_EPOW: Power Supply sensor, Monitor was asserted
0x080701aa		2017-04-18 13:30:42 (UTC+0000)	PSU_Policy_Lost: Power Supply sensor, transition to Non-Critical from OK was asserted
0x086f03e1	0	2017-04-18 13:30:42 (UTC+0000)	PS2: Power Supply sensor, Power Supply input lost (AC/DC) was asserted
0x086f00e1	0	2017-04-18 13:30:42 (UTC+0000)	PS2: Power Supply sensor, Presence detected was asserted
0x086f00e0	0	2017-04-18 13:30:42 (UTC+0000)	PS1: Power Supply sensor, Presence detected was asserted
0x1d6f0030	0	2017-04-18 13:30:42 (UTC+0000)	SMM_POWER_ON: System Boot Initiated sensor, initiated by power up was asserted
0x106f0202	0	2017-04-18 13:29:41 (UTC+0000)	EvtLogDisabled: Event Logging Disabled sensor, Log Area Reset/Cleared was asserted

Figure 17. Event Log

The following are title and status indicator definitions for the **Event Log** web interface:

- **Refresh**: SEL does not automatic refresh. Click **Refresh** to get the latest entries.
- **Save Log**: Exports SEL data and saves it as a .csv file.
- Clear Log: Clears SEL data.
- Severity: From low severity to high severity.

. 🥯 : Indicates Information events

- 🕂 😬 : Indicates **Warning** events
- : Indicates **Critical** events. Critical event lights the Error LED.

For detailed SEL messages, refer to the Intel[®] Server System R2600SR Product Family Message and Code Reference Guide.

3.6 Configuration

Twelve **Configuration** tabs are used to configure and manage the system and SMM module. The following figure is an example of how the **Configuration** tabs are displayed.

Firmware Update SMTP SNMP PEF Network Configuration Time Settings User Account Account Security Services Web Certificate NTP Backup and Restore

Figure 18. Configuration tabs

Twelve categories are listed under the **Configuration** tabs:

- Firmware Update
- SMTP
- SNMP
- PEF
- Network Configuration
- Time Settings
- User Account
- Account Security
- Services
- Web Certificate
- NTP (Network Time Protocol)
- Backup and Restore

Note: Press the Hardware Reset button for more than 4 seconds to restore all settings (except Time Setting) to factory default settings.

3.6.1 Firmware Update

There are two phases to the **Firmware Update** process. During the Firmware Upload stage, a path to fetch the firmware image can be selected. The SMM checks the image header information for validation.

The following figure is an example of how the **Firmware Update** tab is displayed.

Firmware Update



Figure 19. Firmware Update page

Follow this procedure to complete a firmware update.

Upload

Select an image file and click **Upload**. The Upload process terminates all other sessions. After the Upload process begins, any attempt to refresh, log out, or navigate away from the Update page restarts the system.

Once a valid firmware image is uploaded, a Firmware Image Confirmation Table appears with the **Preserve Settings** check box. If **Preserve Settings** is checked, SMM configurations are kept and applied after the firmware update. The preserved settings include:

- SMTP
- SNMP
- PEF
- Network Configuration
- Time Setting (Time is always kept no matter whether Preserve Settings is checked or not)
- User Account
- Account Security
- Services
- Web Certificate
- NTP

Notes: A **Recover Primary Bank Firmware** check box present in the Firmware Update page functions only when the SMM starts on the secondary bank, indicating the primary bank image might be corrupted and need recovery. In this case, the check box is open for selection. The check box does not function when the SMM is booted up from the primary bank.

Check **Recover Primary Bank Firmware** check box to perform the recovery measure and update the image onto the primary bank. Uncheck it to upgrade firmware onto the secondary bank.

If the Firmware Update process is cancelled after the firmware image is uploaded, the SMM automatically restarts.

The following figure shows how the Firmware Update with Firmware Image web image is displayed.

Firmware File Path	Choose File firming.a	st2520	Upload
irmware Image			
Current Version	New Version	Preserve Settings	Recover Primary Bank Firmware
Current Version 1.0 (TESM538)	New Version 1.0 (TESM538)	Preserve Settings	Recover Primary Bank Firmware
Current Version 1.0 (TESM538)	New Version 1.0 (TESM538) When primary bank firmwa "Recover Primary Bank Firr	Preserve Settings	Recover Primary Bank Firmware

Firmware Update

Figure 20. Firmware Update/Firmware Image

During updating, the system displays a loading page where all SMM functions are locked.

Once the progress reaches 100%, the SMM automatically restarts and log in is required again to access the SMM Web interface.

3.6.2 SMTP/SNMP/PEF

Configured SMTP and SNMP traps allow the enclosure/chassis to be monitored for selected events. SMTP/SNMP trap event types are set in the Platform Event Filter (PEF) page.

3.6.2.1 Simple Mail Transfer Protocol (SMTP)

The following figure shows how the SMTP tab is displayed.

SMTP

Before sending alert, please make sure changes to Sender Information, target Destination Email Address, SMTP (email) Server Settings, and SMTP Authentication have been saved by clicking Apply Changes.

Sender Information

From Lenovo-S0009Lenovo.com

Destination Email Addresses

	Enable	Destination Email Address	Email Description	Test
Email Alert 1	0		SMM email alert	Send Alert 1
Email Alert 2	0		5006 email alert	Send Akrt 2
Email Alert 3	0		3300 email alert	Send Alert 3
Email Alert 4	0		500 email alert	: Send Alert 4

SMTP (email) Server Settings

SMTP IP Address	0.0.0.0
SMTP Port Number	25

SMTP Authentication

Enable	Anonymous account will be used when authentication is disabled.
Username	
Password	
STARTTLS Mode	1010 *
SASL Mode	- 010X

Apply

Figure 21. SMTP interface

The following procedure tests the SMTP email alert:

- **SMTP**: Enable, configure and test SMTP email alert at this page.
 - Click Send Alert # to test the emailalert
 - Check Global Alerting Enable in PEF page to enable email alerts

The following information provides the default values:

- All email alerts disabled
- Email server address = 0.0.0.0
- Authentication disabled

Notes:

Before sending an alert, make sure changes to **Sender Information**, **Destination Email Address**, **SMTP (email) Server Setting**, and **SMTP Authentication** are saved by clicking **Apply**.

When the SMM SEL is full, no new event entry can be added. However, further SMTP event emails are generated until the log is cleared.

3.6.2.2 Simple Network Management Protocol (SNMP)

The following figure shows how the SNMP tab is displayed.

SNMP

Before sending test trap, please make sure changes to the target Destination and Community String have been saved by clicking Apply Changes.

Destination	Enable	IPw4/IPv6	P Address	lest
IP Destination 1		# 0	0.0.0.0	-Sami Teint Teny
IP Destination 2	6	4.1	0.0.0.0	Sund tonic Way
IP Destination 3	0	+ 1	0.0.0.0	Send Test line
IP Destination 4		* 0	0.0.0.0	, Seend Total Total
IP Destination 5		* 0	0.0.0.0	forest Boat Supp
IP Destination 6		+ 0	0.010.0	Second Denix Dirac
IP Destination 7	0	+ 0	5.5.0.0	Second Terms Trian
IP Destination 8		* *	0,0.0.0	Securit Terrar Terrar

Community Name

Figure 22. SNMP interface

The following procedure should be used to test the SNMP email alert.

public

- **SNMP**: Enable, configure and test the SNMP trap at on the SNMP Interface page.
- Click Send Test Trap to test the event trap.
- **Community Name** displays/configures the SNMP community name using only alphabet and numerical values. The value must not be empty.
- All the events are sent to the destination IP address when **Global Alerting Enable** in the PEF page is checked.
- For SNMP trap type, check the **Generate PEF** box for targeted type of events.

Default values are:

- All traps disabled
- Community Name = public

Notes:

Before sending a test trap, save changes to the target **Destination** and **Community String** by clicking **Apply**.

When the SMM SEL is full, some PEF alerts may be missing or sent repeatedly.

3.6.2.3 Platform Event Filter (PEF) Interface

The following figure is an example of how the PEF tab is displayed.

PEF

Platform Event Filters (PEF) List Global Alerting Enable Note: This enables/disables both PEF and email alerts.	
Filter Name	Generale PET
All Type, Voltage Critical Filter	0
All Type, Fan Critical Filter	0
All Type, Power Supply Critical Filter	0
All Type, Event Logging Disabled Critical Filter	0
All Type, Module Or Board Critical Filter	0
All Type, Chassis Critical Filter	8
All Type, Slot Or Connector Critical Filter	0
Threshold Type, Fan Informational Filter	G

Apply

Figure 23. PEF interface

The following are the PEF filter options for email alerts.

• **PEF**: Set SMTP/SNMP trap event types at this page.

Default values are:

- None of the filters is selected
- Global Alerting is unchecked

3.6.3 Network Configuration

Networking parameters are changed in the **Network Configuration** tab. The following parameters can be modified.

- Host Name
- DNS Domain Name
- Auto Negotiation Mode
- Network Speed
- Duplex Mode
- IP Version (IPv4, IPv6) Enable/Disable
- IP Address
- IP Source (Static, DHCP first then Static)
- Gateway
- Subnet Mask
- DNS Server
- VLAN

The following figure shows how the **Network Configuration** tab is displayed.

Network Configuration

General Se To change th Each change Changes ma	ettings e Network settings may change to settings may cause a loss in y not take effect immediately.	P address settings connectivity and the termination of all	sessions.		Aellesh
Host Name		5006-00C0A8129977			
DNS Domain Name		lenovo.com			
Advance S Please click o	Settings on eth0 below to further configu	re SMM network settings.			
Name	IPv4 Enabled	IPv4 Address	IPv6 Enabled	IPv6 Address	
eth0	Enabled	10.241.66.187	Disabled	::/ 0	
		Apply	1		

Figure 24. Network configuration

The following are general network configuration settings.

General Settings

A change to the network settings may require a change to IP address settings. Each change to settings may cause a loss in connectivity and the termination of all sessions. Changes may not take effect immediately.

Default settings for Network Configuration are:

- Host Name: SMM-\$MAC_ADDR
- DNS Domain Name: Intel.com

The following figure shows how the **Network Interface Configuration tab** is displayed.

Network Interface Configuration

Parallel Incold

Network Interface Settings	Nelless back	
To change the Network Interface Config Each change to settings may cause a k	uration will require IP address settings. iss in connectivity and the termination of all sessions.	
Changes may not take effect immediate	Dedicated	
MAC Address	00:c0:a8:12:99:77	
Auto Negotiation	* On Off	
Network Speed	1000 Mb *	
Duplex Mode	* Full 0 Half	
Ceneral Settings		
Enable Dunamer DNS		
Use DHCP for DNS Domain Name		

Figure 25. Network Interface configuration

Clicking on an item within Network Interface Configuration displays detailed network settings.

i.

Default settings for Network Interface Configuration are:

- Auto Negotiation: On
- Dynamic DNS: Unchecked

Respond to ARP

- Use DHCP for DNS Domain Name: Unchecked
- **Respond to ARP:** Checked

The following figures show how the IP Version tabs are displayed.

IPv4 Settings

Enabled	2	
Use DHCP first, then Static	<u>ه</u>	
IP Address	192.168.70.177	
Subnet Mask	255.255.255.0	
Gateway	192.165.70.1	
Use DHCP to obtain DNS server addresses	0	
Preferred DNS Server	0.0.0.0	
Alternate DNS Server	0.0.0.0	

Figure 26. IPv4 settings

Default values for IPv4 Settings are:

- IPv4: Enabled
 - Use DHCP first, then Static: Checked
- IP Address: 192.168.70.100
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.70.1
- Preferred/Alternate DNS Server: Blank

IPv6 Settings	
Enabled	V
Use DHCP	V
Use Stateless	✓
IP Address 1	1999::11/64
IP Address 2	11/0
Gateway	::
Link Local Address	fe80::0a94:efff:fe2f:8fd0/64
Use DHCP to obtain DNS server addresses	0
Preferred DNS Server	
Alternate DNS Server	::

Figure 27. IPv6 settings

Default values for **IPv6 Settings** are:

- IPv6: Enabled
 - Use DHCP: Checked
 - Use Stateless Address Auto-configuration: Checked
- IP Address 1: Blank (configured by user)
- IP Address 2: Blank (configured by user)
- Gateway: Blank (configured by user)
- Link Local Address: Converted from MAC address automatically – Use DHCP to obtain DNS Server address: Unchecked
- Preferred/Alternate DNS Server: Blank (configured by user)

The following figure shows how the **VLAN Settings** tab is displayed.

VLAN Settings

Enable VLAN ID	0	
VLAN ID	0	
Priority	0	

Figure 28. VLAN settings

Default value for **VLAN Settings** is:

• VLAN: Disabled

3.6.4 Time Settings

The **Time Settings** tab is used to configure system time and date. This figure shows how the **Time Settings** tab is displayed.

Time Settings

Date and Time: • August 2016 Time Now Hour Su Mo Tu We Sa Fr Th 0 2 3 4 5 1 3 4 5 6 2 6 7 9 10 11 8 7 8 9 10 11 13 12 12 13 14 15 16 17 14 15 16 17 18 19 20 18 19 20 21 22 23 22 23 24 25 26 27 21 Minute 28 29 30 31 1 2 :00: :05 :10 :15 :20 :25 :30 :35 :40 :45 :50 :55 Exact minutes: 9 Second :00 :05 :10 :15 :20 :25 :30 :35 :40 :45 :50 :55 Exact seconds: 7 Select Date and Time

Data and Time Settings

Figure 29. Time and Date settings

The procedure to configure system time and date is:

- 1. Select date and time.
- 2. Click Apply.

Once set, time is always maintained even if default settings are restored or **Preserve Setting** is unchecked during a firmware update.

3.6.5 User Account

The User Account tab allows management of user roles. There are three types of user roles:

- Administrator: Has full access to all the web pages and can modify all the settings and configurations.
- **Operator:** Has full access to all the web pages except the User Account page. Can only see own account at the User Account page. No modification allowed at the account page.
- **User:** Has full access and modification rights to all the pages except these pages in the Configuration tab: SMTP/SNMP/PEF/Network Configuration/User Account/Web Service. Only viewing is allowed on these pages. No modification is allowed.

The following figures show how the User Account tabs are displayed.

User Account

pdating

Figure 30. User Account tab--User and Operator

User Account

To configure an account for a particular user, click **User ID**. If the State (Password Policy Check) is enabled, password strength checking is enabled while updating the user configuration.

Note: Password policy check enabled by default. User name= USERID, Password = PASSWORD

Refresh

Jser Account	
To configure a particular user, click the User ID. If Password policy check is enabled, password strength checking will be enabled while updating user configuration.	
Password Policy Check Enable	

User ID	State	User Name	User Role	IPMI LAN Privilège	
1	Disabled		None	None	
2	Enabled	USERID	Administrator	Admin	
3	Disabled		None	None	
4	Disabled		None	None	
5	Disabled		None	None	
6	Disabled		None	None	
7	Disabled		None	None	
8	Disabled		None	None	
9	Disabled		None	None	
10	Disabled		None	None	
11	Disabled		None	None	
12	Disabled		None	None	
13	Disabled		None	None	
14	Disabled		None	None	
15	Disabled		None	None	
16	Disabled		None	None	

Figure 31. User Account - Administrator

Password Policy		Beck
Password Policy Check Enabled	Yes	

General

U	lser ID	2
E	nable User	×
U	Iser Name	USERID
C	hange Password	0
N	lew Password	
C	onfirm New Password	

User Privileges

User Role	Administrator •
IFMI LAN Privilege	Administrator •

Figure 32. Password policy

Clicking on one of the listed account leads to User Configuration. Here, enable/disable/delete account, set user name, set/change password, and select user privileges. When the **Password Policy Check Enable** box is checked, the account password must follow the password policy rule (at least 8 characters with numbers, letters, and a character).

Creating User Account Names and Passwords

- 1. Assign a user account name in the **User Name** field of up to 16 characters using alphanumeric characters a-z, A-Z, and 0-9, (hyphen) and _ (underscore). Click the **Apply Changes** button. If validation fails, the GUI displays an error message.
- 2. Set/change a password in the **New Password** field using up to 20 printable US-ASCII (Code: 33-126) characters. The password must contains characters from three of the following four categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphabetic characters (such as !, \$, #, %)

If validation fails, the GUI displays an error message.

Note: Creating a new user account with an existing user name is not allowed.

3.6.6 Account Security

Advanced account security setting allows different values for the following rules.

Table 5. Account security settings

Items	Default settings
Minimum password length	10
Force user to change password on first access	Yes
Password expiration period (in days)	90
Password expiration warning period (in days)	5
Minimum password change interval (in hours)	24
Minimum password reuse cycle (0-10)	5
Maximum number of login failures	5
Lockout period after maximum login failures (in minutes)	60
Web inactivity session timeout (in minutes)	20

3.6.7 Services

The **Services** tab allows configuration of HTTPS ports for connection and enabling/disabling the IPMI service state. The following figure shows how the Services tab is displayed.

Services Web Server HTTPS Port Number Max Sessions Active Sessions 2 IPMI Enabled

Apply

Figure 33. Services tab

The default value for the **Services** tab is:

• HTTPS Port Number = 443.

Note: No default HTTP port number = 80

3.6.8 Web Certificate

The **Web Certificate** tab displays current certificate information. There are three **Web Certificate** options for selection: Generate Certificate Signing Request (CSR), Import a Signed Certificate, and Generate Self-Signed Certificate. The following figures are examples of how the **Web Certificate** tabs are displayed.

Web Certificate

Generate CSR Import Certificate Generate Self Signed Certificate

Current Certificate

Serial Number	: 8D4686BCD931D225
Subject Information: Country Code (CC) State (S) Locality (L) Organization (O) Common Name (CN)	: US : NC : RTP : Server : management.module
Issuer Information: Country Code (CC) State (S) Locality (L) Organization (O) Common Name (CN)	: US : NC : RTP : Server : management.module
Valid From Valid To	: 22 Nov 2017, 10:55:55 (UTC+0000) : 20 Nov 2027, 10:55:55 (UTC+0000)

Figure 34. Web Certificate tab

The following information is contained in the **Web Certificate** tab.

Subject Information:

- Country Code (CC) = US
- State (S) = NC
- Locality (L) = RTP
- Organization (O) = Server
- Common Name (CN) = management.module

Issuer Information:

- Country Code (CC) = US
- State (S) = NC
- Locality (L) = RTP
- Organization (O) = Server
- Common Name (CN) = management.module

Web Certificate

Generate Certificate Signing Request (CSR)

Common Name			
Organization Name			
Organization Unit			
Locality			
State Name			
Country Code	Afghanistan	•	
Email			

Figure 35. Generate a Certificate Signing Request (CSR)

3.6.8.1 Generate a Certificate Signing Request (CSR)

To generate a Certificate Signing Request (CSR), do the following:

Press the **Generate a Certificate Signing Request (CSR)** button to fill in the certification request information and download the CSR. Once completed, the CSR can be submitted to a third-party certificate authority to apply for a digital identity certificate.

Web Certificate

 Import a Signed Certificate

 Uploading certificate will restart the web service, causing the termination of the current GUI session and temporary unavailability of the web server.

 File Path
 Choose File No file chosen

Figure 36. Import a signed certificate

3.6.8.2 Import a Signed Certificate

Note: Uploading a signed certificate restarts the web service, causing the termination of the current GUI session and temporary unavailability of the web server.

Press the **Import Certificate** button to import the certificate when the CA responds with a signed certificate. This supports a certificate in PEM format.

Convert a DER certificate to PEM format by using the following: "openssl x509 -inform der -in certificate.cer -out certificate.pem."

After importing the certificate, reconnect to the SMM.

Web Self-signed Certificate

Generate Self-signed Certificate

Generating a self-signed certificate will restart the web service, causing the termination of the current GUI session and temporary unavailability of the web server.

Common Name			
Organization Name			
Organization Unit			
Locality			
State Name			
Country Code	Afghanistan	•	
Email			
	Generate		

Figure 37. Generate a Self-signed Certificate

3.6.8.3 Generate a Self-signed Certificate

Press the **Generate** button to generate a self-signed certificate. Generating a self-signed certificate restarts the web service, causing the current GUI session and the web server to become temporarily unavailable.

A self-signed certificate can also be generated by populating the spaces on this page and pressing the **Generate** button.

3.6.9 Network Time Protocol (NTP)

Network time protocol and time zone settings are configured in the **NTP** (Network Time Protocol) tab. The following figure is an example of how the **NTP** tab is displayed.

NTP Time Settings

Oneration Mode	Displad	-	
Operation Mode	[Disabled	*]	
NTP Server 1		1	
NTP Server 2			
NTP Server 3		1	
Requested Mode's Update Frequency (minutes)	3		
Time Synchronization Method	Step Mode Slew Mode		

Use Server or Client Time Zone © Server Time Zone © Client Time Zone
Server Time Zone UTC Select. Set to UTC

Figure 38. NTP Time Settings

In the NTP time settings, the drop-down menu can be used to change the operation mode and enter the NTP server address into the text boxes. In addition, the update frequency and time synchronization method can be selected. After changing the settings, click on **Apply Changes** to save the configuration. Clicking on the **Sync Time Now** button synchronizes with the server. For the time zone setting, select the server or the client time zone. The client time zone can be changed by modifying the time zone of the client operating system.

Default values for the NTP Time Settings are:

- Operation Mode: Disable
- Server Time Zone: UTC

3.6.10 Backup and Restore

The **Backup and Restore** tab allows for the backup and restoration of configuration data. The following figure is an example of how the **Backup and Restore** tab is displayed.

SMM Backup and Restore Configuration

Latest Netv Backup Co	2017 Apply	
Choose File	No file chosen	Apply
Latest stor	age device backup file time: Fri Jun 2 17	7:25:27 2017
Backup Co	nfiguration to storage device	Apply
Restore Co	nfiguration from storage device	Apply

Note: The storage device can be a USB device or microSD card depend on machine type.

Figure 39. SMM Backup and Restore

User configurations are automatically saved when they are set or modified. Users can back up the configuration from a remote to a local device or restore the configuration to a remote from a local device over the network. If a storage device is inserted and detected, it can be used by the SMM to preserve and migrate SEL and user configurations. The SMM only keeps the latest configuration file in a storage device for backup and restore.

Note: The storage device can be a USB device or microSD card depending on machine type. The size of the USB/microSD storage device should be larger than 1GB. The support file system is FAT32.

The following are details on configurations that can be backed up and restored.

- **Backup**: Backup SEL and below enclosure configurations to local device or USB/microSD storage.
 - Power Supply Redundancy Policy
 - Oversubscription Mode
 - Zero Output
 - Enclosure capping/saving or node capping/saving
 - Acoustic Mode setting
 - Power Restore Policy
 - The settings in the configuration tabs
- **Restore**: Restore and apply the configurations stored in local device or USB/microSD to SMM.

4. IPMI Command and SMTP and LAN Configuration Parameter Tables

4.1 IPMI Detailed Commands

Name	NetFn	CMD	Request Data/Response Data	Comments
OEMCMD_GET_PSU_COLLECTED _DATA	NetFn 0x32	CMD 0x90	Request Data/Response Data Request: Byte 1: Input type 1: AC-IN 2: PSU consumption 3: System fan power Response: • When AC-IN, PSU consumption - Byte 1: Completion code 0x00: successful - Byte 2: Sum of MIN AC- IN / (PSU consumption) LSB - Byte 3: Sum of MIN AC- IN / (PSU consumption) MSB	Comments This command is used to show regularly collected Data from all PSU and system FANs. 1 Unit = 1 W Note: Only FAN power unit using 10 mW = 0.01 W FAN total power = ((MSB * 256* 256) + (Byte2 *256) + LSB) * (10 mW) AVG: average
			 (PSU consumption) MSB Byte 4: Sum of AVGAC- IN / (PSU consumption) LSB Byte 5: Sum of AVGAC- IN / (PSU consumption) MSB Byte 6: Sum of MAX AC- IN / (PSU consumption) LSB Byte 7: Sum of MAX AC- IN / (PSU consumption) MSB When FAN power Byte 1: Completion code 0x00: successful Byte 2: Sum of FAN Power (LSB) Byte 4: Sum of FAN Power (MSB) 	

Table 6. Detailed IPMI commands

OEMCMD_GET_PSU_STATUS	0x32	0x91	 Request: None Response: Byte 1: Completion code 0x00: Successful Byte 2: PSU EPOW Bit: 0-1 = PSU1-2 0: Not trigger Byte 3: PSU THROTTLE Bit: 0-1 = PSU1-2 0: Not trigger Byte 3: PSU THROTTLE Bit: 0-1 = PSU1-2 0: Not trigger Byte 4: PSU PRESENT Bit: 0-1 = PSU1-2 0: Not present 1: Present Byte 5: PSU PWR GOOD 	This command is used to show the PSU related register or Status (From PSOC) ZERO_ WAKE_UP#
			 Bit: 0-1 = PSU1-2 0: Not power good 1: Power good Byte 6: EPOW OUT Byte 7: THROTTLE OUT 	
OEMCMD_GET_FAN_ GPIO	0x32	0x94	 Request: None Response: Byte 1: completion code 0x00: Successful 0xC9: Parameter out of range Byte 2: FAN Present One bit per FAN LSB: FAN1 Byte 3: FAN Error LED One bit per FAN LSB: FAN1 	
OEMCMD_SET_FAN_GPIO	0x32	0x95	 Request: Byte 1: FAN Error LED number (1-5) Byte 2: Fan ErrorLed Function 0: Led off 1: Led on Response: Byte 1: Completion code 0x00: Successful 0xC9: Parameter out of range 	

OEMCMD_GET_SYS_LED	0x32	0x96	Request: None Response: • Byte 1: Completion code – 0x00: Successful • Byte 2: System Locater LED – 0: Off – 1: On – 2: Blink • Byte 3: Check Log LED – 0: Off – 1: On	This command is used to get the SMM LED status. 0: Off 1: On 2: Blink (Locater only)
OEMCMD_SET_SYS_LED	0x32	0x97	 Request: Byte 1: LED type 1: System Locater LED 2: Check Log LED Byte 2: Function 0: Disable 1: Enable 2: Blink (System Locater only) Response: Byte 1: Completion code 0x00: Successful 0xC9: Parameter out of range 	This command is used to get the SMM LED status. 0: Off 1: On 2: Blink (Locater only)

OEMCMD_GET_NODE_POWER_ READING	0x32	0x98	Request:	Display the node power
			Byte 1: Node number	consumptions update by XCC.(Unit: Watt)
			– 1: Node 1	
			– 2: Node 2	
			– 3: Node 3	
			– 4: Node 4	
			 5: Enclosure 	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 0xC9: Parameter out of range 	
			 0xD5: Current not support (Node absent) 	
			Byte 2: Power minimum (LSB)	
			Byte 3: Power minimum (MSB)	
			Byte 4: Power average (LSB)	
			 Byte 5: Power average (MSB) 	
			 Byte 6: Power maximum (LSB) 	
			 Byte 7: Power maximum (MSB) 	
OEMCMD_GET_NODE_SIZE	0x32	0x99	Request:	Displays dimensions of
			• Byte 1: Node 1 - 4	node
			– 1: Node 1	
			– 2: Node 2	
			– 3: Node 3	
			– 4: Node 4	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 0xC9: Parameter out of range 	
			 0xD5: Current not support (Node absent) 	
			Byte 2: Node Physical Width	
			Byte 3: Node Physical Height	
			Byte 4: Add-on Valid	
			Byte 5: Add-on Width	
	1		Byte 6: Add-on Height	

OEMCMD_SET_ACOUSTIC_MODE	0x32	0x9B	Request:	• 0x0 - Disable
			Byte 1: Acoustic mode	• 0x1 = Mode 1
			– 0: Disable	Enable
			 1: Mode 1 Enable 	 System FAN duty
			 2: Mode 2 Enable 	range 5% - 20%
			 - 3: Mode 3 Enable 	 0x2 = Mode 2
			 4: Mode 4 Enable 	Enable
			 5: Mode 5 Enable 	 System FAN duty
			Response:	range 5% - 25%.
			Byte 1: Completion code	• 0x3 = Mode 3
			 0x00: Successful 	Enable
			 0x01: PCIe priority high 	 System FAN duty range 5%
			 0xC9: Out of range 	- 30%.
				 0x4 = Mode 4 Enable
				 System FAN duty range 5% 45%.
				• 0x5 = Mode 5 Enable
				 System FAN duty range 30% 100%. Add 20% more duty to normal duty.

OEMCMD_GET_CAP_BOUNDARY	0x32	0x9D	Request:	Node Capping Range:
OEMCMD_GET_CAP_BOUNDARY	0x32	0x9D	 Request: Byte 1: Node number 1: Node 1 2: Node 2 3: Node 3 4: Node 4 5: Enclosure Response: Byte 1: Completion code 0x00: Successful 0xC9: Parameter out of range 0xD5: Current not support (Node absent) Byte 2: Capping Min LSB Byte 3: Capping Min MSB Byte 4: Capping Max LSB Byte 5: Capping Max MSB 	Node Capping Range: (Node minimum power capacity) < Cap < (Node max power capacity) Enclosure Capping Range: (Sum of Node minimum power capacity) < Cap) The minimum power should consider the permission pass nodes. Note: Capping will only be applied in OS- runtime. The configuration of enclosure level current capping is not the same behavior with sum of node level
			 Byte 6: Protective Capping LSB Byte 7: Protective Capping MSB Byte 8: User Capping LSB Byte 9: User Capping MSB Byte 10: Thermal Capping LSB Byte 11: Thermal Capping MSB 	
OEMCMD_SET_CAP_VALUE	0x32	0x9E	Request: • Byte 1: Node number - 1: Node 1 - 2: Node 2 - 3: Node 3 - 4: Node 4 - 5: Enclosure • Byte 2: Capping Value (LSB) • Byte 3: Capping Value (MSB) Response: • Byte 1: Completion code - 0x00: Successful - 0xC9: Parameter out of range	Note: Capping / Saving not support when node with no permission Capping value range: 1 - 32767
			 – 0xD5: Current not support (Node absent) 	

OEMCMD_SET_CAP_STATE	0x32	0x9F	Request: • Byte 1: Node number - 1: Node 1 - 2: Node 2 - 3: Node 3 - 4: Node 4 - 5: Enclosure • Byte 2: Capping mode - 0: Disable - 1: Enable • Byte 3: Saving mode - 0: Disable - 1: Saving mode 1 Response: • Byte 1: Completion code - 0x00: Successful - 0xC9: Parameter out of range - 0xD5: Current not support (Node absent)	Note: Capping / Saving not supported when node with no permission.
OEMCMD_GET_CAP_STATE	0x32	0xA0	 Request: Byte 1: Node number 1: Node 1 2: Node 2 3: Node 3 4: Node 4 5: Enclosure Response: Byte 1: Completion code 0x00: Successful 0xC9: Parameter out of range 0xD5: Current not support (Node absent) Byte 2: Capping mode 0: Disable 1: Enable Byte 3: Capping Value LSB Byte 4: Capping Value MSB Byte 5: Saving mode 0: Disable 0: Disable 0: Disable 1: Saving mode 1 	Saving mode does not support 2, 3
OEMCMD_SET_DATE_TIME	0x32	0xA1	Request: • Byte 1: YearMSB(2000 ~2037) • Byte 2: Year LSB (2000 ~2037)	Note: Year is from 2000~20xx for user input convenient, the input data is decimal format. Example: Year 2010

			• Byte 3: Month (0x01~0x12)	Byte 1 : 0x20
			• Byte 4: Date (0x01~0x31)	Byte 2: 0x10
			• Byte 5: Hour (0x00~0x23)	
			 Byte 6: Minute (0x00~0x59) 	
			 Byte 7: Second (0x00~0x59) 	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 0xC9: Out of range 	
OEMCMD_GET_PSU_POLICY_OVS	0x32	0xA2	Request: None	This command is
			Response:	used to get PSU policy and total
			Byte 1: Completion code	power bank. (Unit
			- 0x00: Successful	:1W)
			Byte 2: PSU Policy	AC high line or
			 – 0: No Redundant 	240VDC:
			 1: N+1 Policy 	 1320W for 1100W PSU
			Byte 3: Oversubscription Mode	• 1920W for 1600W PSU
			0: Disable1: Enable	• 2400W for 2000W PSU
				AC low line:
				• 1080W for 1100W PSU (<100VDC)
				• 1260W for 1100W PSU (<170VDC)
				 NA for 1600W PSU
				 NA for 2000W PSU
OEMCMD_SET_PSU_POLICY_OVS	0x32	0xA3	Request:	This command is
			Byte 1: PSU Policy	used for set PSU
			 0: No Redundant 	ponoy.
			 1: N+1 Policy 	We may not set the
			Byte 2: OVS	successful due to

				configuration invalid
			– 0: Disable	conniguration invalid.
			– 1: Enable	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 0xD5: PSU configure not allow 	
			 0xC9: Out of range 	
			Byte 2: Completion code	
			– 0x00: REDUNDANT OK	
			– 0x01:REDUNDANT	
			PRESENT_ERR	
			 0x02:REDUNDANT_ BANK_LACK 	
OEMCMD_SET_NODE_RESET	0x32	0xA4	Request:	This command is
			Byte 1: Node number	used for Reset/ Reseat node by user
			– 0x1: Node 1	If node not present, it
			– 0x2: Node 2	would response
			– 0x3: Node 3	UXUS
			– 0x4: Node 4	
			Byte 2: Reset mode	
			 1: reset (XCC reset) 	
			 2: reseat (AC cycling) 	
			Bernande	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 0xC9: Parameter out of range 	
			 0xD5: Current not support 	
			(Node absent)	
OEMCMD_GET_PSU_FAN_STATUS	0x32	0xA5	Request:	This command is used
			Byte 1: PSU FANnumber	to get PSU FAN
			– 1: PSU1 FAN	
			– 2: PSU2FAN	Note: Ab-Normal
			Response:	lower than 3000
			Byte 1: Completion code	ipilio.
			 0x00: Successful 	
			 0xC9: Out of range 	
			Byte 2: FAN SpeedLSB	
			(rpm)	
			 Byte 3: FAN Speed MSB (rpm) 	
			 Byte 4: FAN duty (0~100%) 	
			Byte 5: FAN status	
			 0 : Not Present 	
			 1 : Abnormal 	
			– 2 : Normal	

OEMCMD BACKUP RESTORE	0x32	0xA6	Request:	This command is used
			Byte 1: Actions	to backup/ restore
			 0 : Get Backup or Restore Status 	external storage device such as USB or SD. If
			 1 : Backup to storage device 	the storage device is not inserted, it will return fail
			 2 : Restore from storage device 	
			Response:	
			• Byte 1:	
			 0x00 : BACKUP RESTORE OK 	
			 0x01: BACKUP RESTORE RUNNING 	
			 0x30: SD DEVICE NOT EXIST 	
			 0x31: SD BACKUP FINISHED 	
			- 0x32: SD BACKUP FAIL	
			 0x41:SDRESTORE FINISHED 	
			 0x42:SDRESTORE FAIL 	
			 0xC9: Out of range 	
			 0xCC: Invalid data field in request 	
OEMCMD_GET_NODE_STATUS	0x32	0xA7	Request:	Report current node
			Byte 1: Node number	status.
			– 0x1: Node 1	
			– 0x2: Node 2	
			– 0x3: Node 3	
			– 0x4: Node 4	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 0xC9: Parameter out of range 	
			 0xD5: Current not support (Node absent) 	
			Byte 2: Node power state	
			– 0x00: Power OFF	
			 0x20: No Permission 	
			 0x40: Power Fault 	
			- 0x80: Power ON	
			Byte 3: Width	

			 Byte 3: Width Byte 5: Permission state 0x00: First permission fail 0x01: Permission to standby 0x02: Second permission fail 0x03: Permission pass (Secondary boot pass) 0xFF: Permission not decide 	
OEMCMD_GET_SMM_STATUS	0x32	0xA8	Request: None Response: • Byte 1: Completion code – 0x00: Successful • Byte 2: SMM version • Byte 3: SMM minor version • Byte 3: SMM minor version • Byte 4: PSOC major version • Byte 5: PSOC minor version • Byte 6: Boot Flash number – 0x1: flash 1 – 0x2: flash 2 (fail over) • Byte 7: 13: SMM build ID	The build ID is using ASCII value. For example, 0x41 = 'A'
OEMCMD_SET_NODE_RESTORE_ POLICY	0x32	0xA9	 Request: Byte 1: Node policy Bit [7:6]: Node 4 (1:Last state, 0: Off) Bit [5:4]: Node 3 Bit [3:2]:: Node 2 Bit [1:0]:: Node 1 Response: Byte 1: Completion code 0x00: Successful 0xC9: Parameter out of range 	

OEMCMD_GET_NODE_RESTORE_	0x32	0xAA	Request: None	
POLICY			Response:	
			Byte 1: Completion code	
			– 0x00: Successful	
			Byte 2: Node policy	
			 Bit [7:6]: node 4 (1:last state, 0:off) 	
			– Bit [5:4]: node 3	
			– Bit [3:2]: node 2	
			 Bit [1:0]: node 1 	
OEMCMD_SET_PSU_SMART_	0x32	0xAB	Request:	If PSU in "not
REDUNDANT			Byte 1: Mode	support" or "mismatch "stage, the
			– 0 : disable	PSU smart redundant
			 – 1: per 10 minutes update 	also not support.
			 2: per 30 minutes update 	
			 - 3: per 60 minutes update 	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 0x01: Not Support 	
			 0xC9: Out of range 	
OEMCMD_GET_PSU_SMART_	0x32	0xAC	Request: None	Status:
REDUNDANI			Response:	0x00: Normal
			Byte 1: Completion code	 0x01: Not support
			 0x00: Successful 	
			Byte 2: status	
			– 0x00: Normal	
			 0x01: Not support 	
			 Byte 3: mode (When status is normal) 	
			– 0 : disable	
			 – 1: per 10 minutes update 	
			 2: per 30 minutes update 	
			- 3: per 60 minutes update	
OEMCMD_SMM_RESET_TO_ DEFAULT	0x32	0xAD	Request: None	This command is used to reset SMM to default
			Response:	value.
			Byte 1: Completion code	
			 0x00: Successful 	

 Byte 1: VPD type 0: SMM 1: PDM 2: RH Riser 3: LH Riser 3: LH Riser 4: EIOM 5: Enclosure Byte 2: Device ID 6: Mardware revision 7: Manufacture ID 6: Hardware revision 7: Manufacture late 6: Hardware revision 7: Manufacture late 6: Hardware revision 7: Manufacture late 6: Hardware revision 7: Component serial number 8: UUID 8: UUID 8: UUID 8: UUID 9: Component reame 1: Machine serial number 9: Component serial number 9: Component serial number 9: Component serial number 9: Stanufacture late 1: Madvare revision 9: UUID 1: Bytes 9: UUID 1: Elevel 1: Byte 2: N VPD Data 0: St. Ware stappise number (Enclosure), 2 Bytes. 0: St. Ware stappise number 0: St. Manufacture ID 1: Elevel Response: 9: Byte 2: N VPD Data 0: St. Ware stappise number (Enclosure), 2 Bytes. 0: St. Component number (Enclosure), 2 Bytes. 0: St. Component number (Enclosure), 2 Bytes. 0: St. Component number (Enclosure), 2 Bytes. 0: St. Ware stappise number (Enclosure), 2 Bytes. 0: St. Component number (Enclosure), 2 Bytes. 0: St. Component number (Enclosure), 2 Bytes. 0: St. Component number (Enclosure), 2 Bytes. 	OEMCMD_GET_VPD	0x32	0xB0	Request:	Read Only
 - 0: SMM - 1: PDM - 2: RR Riser - 3: LH Riser - 4: EIOM - 6: Standoure - 6: Standoure - 0: MTM - 7: Manufacture ID - 6: Hardware revision - 7: Manufacture ID - 8: Component FRU number - 3: Component FRU number - 6: Hardware revision - 7: Manufacture ID - 8: UUID - 8: Component name - 0: CILD - 1: Cappets - 0: Standacture ID - 1: DANA enterprise number - 0: CILD - 1: Compotent name - 0: CILD - 1: Compotent name - 0: CILD - 1: Di Eclevel Response: - 9yte 1: Completion code - 0x0: Successful - Byte 2: N VPD Data - 0x3: Component - 0x4: Product ID - 1: Bytes. - 0x3: Component name - 0x6: Manufacture ID - 0x6: Manufacture ID - 0x6: Manufacture ID - 0x7: Manufacture ID - 0x8: UWPD Data - 0x8: Component - 0x8:				Byte 1: VPD type	Device ID:
 1: PDM 1: PDM 1: Riser 2: RTRiser 3: LTRiser 4: EIOM 5: Enclosure 5: Enclosure 6: Vot: Machine serial number 1: Machine serial number 0: MTM 0: MTM 1: Machine serial number 2: Component part number (SMM, PDM, PIOR, EIOM), 12 Bytes. 0: Component RPU number 2: Component serial number 3: Component RPU number 4: Component serial number 5: Manufacture iD 6: Hardware revision 7: Manufacture date 6: Hardware revision 7: Manufacture date 6: Hardware revision 7: Manufacture date 6: Ud. mine 6: Ud. mine 7: Manufacture date 6: Ud. mine 9: LANA enterprise number 10: EClevel Response: Byte 1: Completion code 0x0: Successful Byte 2: N VPD Data 0x3: Product ID 16: Byte 3: NAP Data 0x4: Product ID 16: Byte 3: NAP Data 0x4: Product ID 16: Byte 3: NAP Deta 0x3: Interprise number (Enclosure), 4 Bytes. 0x4: Product ID 16: Bytes. 0x4: Product ID 16: Byte 3: NAP Data 0x4: Product ID 16: Bytes. 0x4: Interprise number (Enclosure), 4 Bytes. 0x4: Product ID 16: Bytes. 0x4: Product ID 16: Bytes. 0x4: Interprise number (Enclosure), 2 Bytes. 0x4: Product ID 16: Bytes. 0x4: Component name - and (SMA, PDM, Enclosure), 2 Bytes. 0x4: Component name - and (SMA, PDM, Enclosure), 4 Bytes. 				– 0: SMM	
 2: RH Riser 3: LH Riser 4: EIOM 5: Endosure Byte 2: Device ID 0: MTM 1: Machine serial number 2: Component part number Level 3: Component FRU number 3: Component FRU number 4: Component serial number 5: Manufacture ID 6: Hardware revision 7: Manufacture date 6: Manufacture date 7: Manufacture date 6: Si Component name 7: CigLID 9: LANA enterprise 10: Discusses/ul 9: Byte 2: N VPD Data 6: Bytes. 0x3: Manufacture ID 16: Bytes. 0x6: Marufacture ID 17: Manufacture date 10: Manufacture ID 10: EClevel Response: 10: Byte 2: N VPD Data 16: Bytes. 0x6: Marufacture ID 16: Bytes. 0x6: Marufacture ID 16: Bytes. 10: Byte 2: N VPD Data 16: Bytes. 10: Bytes				– 1: PDM	(Enclosure), 10
 3: LH Riser 4: EIOM 4: EIOM 5: Enclosure 6: Enclosure 6: Enclosure 7: Marchine serial number 1: Machine serial number 1: Machine serial number 2: Component part number (SMM, PDM, PIOR, EIOM), 12 Bytes. 3: Component FRU number 3: Component serial number 3: Component serial number 5: Manufacture date 6: Hardware revision 7: Manufacture date 8: UUID 9: IANA enterprise number 1: GLD 9: Callo 1: Callo 1: Component name 1: GLD 1: Elcevel Response: 9: Byte 1: Completion code 0x0: Successful Byte 2: N VPD Data 0x3: IANA enterprise number 1: Byte 2: N VPD Data 0x3: IANA enterprise number 0x3: IANA enterprise number 0x6: Intervension 0x6: Universal 0x6: Component name 1: GLD 1: Eclevel Response: 0x6: Universal 0x6: Component name 1: GLM, PDM, PIOR, EIOM, Enclosure), 18 bytes. 0x6: Universal 0x6: Universal 0x6: Component name 0x6: Component name 0x7: Manufacture date 0x8: Universal 0x8: Universal 0x8: Universal 0x8: Universal 0x8: Universal 0x8: Universal 0x8: Component name (SMM, PDM, PDR, PIOR, EIOM, Enclosure), 18 bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 4 bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 4 bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 4 bytes. 				– 2: RHRiser	Bytes
 4: EIOM 5: Enclosure Byte 2: Device ID 0: MTM 0: MTM 1: Machine serial number 2: Component part number 3: Component RPU number 4: Component RRU number 3: Component RRU number 4: Component serial number 5: Manufacture ID 6: Hardware revision 7: Manufacture date 8: UUID 6: Hardware revision 7: Manufacture date 6: Startocsure, 1894es. 0x8: Component number (SMM, PDM, POR, EIOM), 12 Bytes. 0x6: Manufacture ID 6: Hardware revision 7: Manufacture date 6: Startocsure, 1894es. 0x6: Manufacture ID 8: UUID 9: EClevel Response: Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data 0x3: INVersal 0x4: Product ID (SMM, PDM, POR, EIOM), 12 Byte 3. 0x6: Manufacture ID 10: EClevel Response: 0x7: Manufacture ID 10: EClevel Response: 0x8: Inversal 10: Byte 3: N VPD Data 10: Bytes. 0x8: INVersal 10: Bytes. 0x8: Component (EIOM), PDM, PIOR, EIOM, Enclosure), 18 bytes. 0x8: Component (Enclosure), 18 bytes. 0x8: INVersal 0x8: INVersal 0x8: Component (EIClosure), 18 bytes. 0x8: Component (EIClosure), 28 bytes. 0x8: Component (INVersal) 10: Bytes. 0x8: Component (INVPM) 10: Bytes. 0x8: Component (INVersa				– 3: LH Riser	Ox1: Machine
 S: Enclosure Byte 2: Device ID 0: MTM 1: Machine serial number 2: Component part number 3: Component part number 3: Component serial number 4: Component serial number 5: Manufacture ID 6: Hardware revision 7: Manufacture date 6: Hardware revision 7: Manufacture date 8: UUID 8: UUID 8: Component name C: GLID B: Det 1: Completion code 0x0: Successful Byte 1: NVPD Data Byte 2: N VPD Data Bytes. 0x3: Component name Grouper to the series 0x4: Component (SMM, PDM, 12 0x5: Marufacture ID 0x6: Hardware revision level (SMM, PDM, PIOR, EIOM, 12 0x6: Hardware revision level (SMM, PDM, PIOR, EIOM, 12 0x6: Hardware revision level (SMM, PDM, PIOR, EIOM, PDM, PIOR, EIOM, 12 0x6: Hardware revision level (SMM, PDM, PIOR, EIOM, PDM, PIOR, EIOM, Enclosure), 1 Byte. 0x8: Component name 0x8: Component				– 4: EIOM	(Enclosure), 10
 Byte 2: Device ID 0: MTM 0: MTM 1: Machine serial number 2: Component part number 3: Component serial number 3: Component serial number 4: Component serial number 5: Manufacture ID 6: Hardware revision 7: Manufacture date number 9: IANA enterprise number Ci GLID Byte 1: Completion code Ox8: Universal Unique (SMM, PDM, PIOR, EIOM), 12 Bytes. Ox5: Manufacture ID Ox5: Manufacture ID PIOR, EIOM, 12 Bytes. Ox6: Mardware revision level (SMM, PDM, PIOR, EIOM), 12 Bytes. Ox6: Mardware revision level (SMM, PDM, PIOR, EIOM), 12 Byte 1: Completion code Ox8: Universal Unique (SMM, PDM, PIOR, EIOM, 12 Byte 2: N VPD Data Bytes. Ox8: Universal Unique (UUUD) Ox8: Universal Unique (UUUD) Bytes. Ox8: Component name Codicoure, 1 Bytes. Ox8: Component name Byte 2: N VPD Data Bytes. Ox8: Component name Ox8: Component name<!--</td--><td></td><td></td><td></td><td>– 5: Enclosure</td><td>Bytes.</td>				– 5: Enclosure	Bytes.
 - 0: MTM - 1: Machine serial number (SMM, PDR, PICR, ElOM), 12 Bytes. - 2: Component FRU number - 3: Component FRU number - 3: Component FRU number - 4: Component serial number - 5: Manufacture ID - 6: Hardware revision - 7: Manufacture date - 8: UUID - 8: CulD - 9: IANA enterprise number - 0: CCUD - 0: Eclevel Response: - Byte 1: Completion code - 0x00: Successful - Byte 1: Completion code - 0x00: Successful - Byte 2: N VPD Data - 0x8: IANA enterprise number (Colosure), 2 Bytes. - 0x8: Hardware number (SMM, PDM, PICR, ElOM), 12 Bytes. - 0x8: Hardware revision level (SMM, PDM, PICR, ElOM, PICR, P				Byte 2: Device ID	0x2: Component
 1: Machine serial number 2: Component part number Level 3: Component FRU number 4: Component serial number 5: Manufacture ID 6: Hardware revision 7: Manufacture date 6: Hardware revision 7: Manufacture date 8: UUID 9: IANA enterprise number C: GLID B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x3: Successful Byte 2: N VPD Data Ox3: Hand enterprise number (Enclosure), 4 Bytes. 0x4: Product ID Byte 2: N VPD Data Ox5: Manufacture ID D: EClevel Response: Byte 1: Completion code 0x5: Manufacture ID Byte 2: N VPD Data Ox5: Manufacture ID D: EClevel Ox6: Hardware revision level (SMM, PDM, PIOR, EIOM, PIOR, PIOR, EIOM, PIOR, PIOR,				– 0: MTM	part number (SMM,
number - 2: Component part number Level - 3: Component part number - 4: Component serial number - 4: Component serial number - 5: Manufacture ID - 6: Hardware revision - 7: Manufacture date - 6: Hardware revision - 8: UUID - 8: UUID - 8: UUID - 8: Component name - C: GLID - D: EClevel Response: - Byte 1: Completion code - 0x00: Successful - Byte 2: N VPD Data - 0x3: NVPD Data - 0x3: Component - 0x3: Component - 0x3: Component - 0x4: Component - 0x4: Product ID - 0x5: Sunufacture - 0x7: Manufacture - 0x7: Manufacture - 0x7: Manufacture - 0x8: Universal - 0x8: Universal - 0x8: Universal - 0x8: Universal - 0x8: Universal - 0x8: An enterprise - 0x8: Manufacture - 0x8: Component - 0x9: MAN enterprise - 0x8: Component - 0x4: Product ID - (Endosure), 2 - Bytes. - 0x8: Component - 0x4: Product ID - (Endosure), 64 Bytes. - 0x8: Component - 0x8: Manufacture - 0x8: Manufactur				 1: Machine serial 	EIOM), 12 Bytes.
 2: Component part number Level 3: Component FRU number 4: Component serial number 5: Manufacture ID 6: Hardware revision 7: Manufacture date 6: Hardware revision 8: UUID 9: IANA enterprise number 0: Sc. Gomponent name C: GLID B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x6: Universal Unique ID(UID) Byte 2: N VPD Data Fox4: Reverse 0x6: Component name 0x6: Universal 0x6: Universal 0x6: Universal 0x6: Universal 0x6: Universal 0x6: Component name 0x6: Universal 0x6: Universal 0x6: Universal 0x6: Component name 0x6: Universal 0x6: Universal 0x6: Universal 0x6: Component name 0x6: Universal 0x8: Universal 0x8: Universal 0x8: Universal 0x8: IANA enterprise number (Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 34 Bytes. 				number	0x3: Component
 - 3: Component FRU number - 4: Component serial number - 5: Manufacture ID - 6: Hardware revision - 7: Manufacture date - 8: UUID - 8: UUID - 9: IANA enterprise number - 0x5: Manufacture ID - 9: IANA enterprise number - 0x6: Hardware revision level (SMM, PDM, FIOR, EIOM, Bytes. - 0x6: Hardware revision level (SMM, PDM, FIOR, EIOM, Bytes. - 0x7: Manufacture date (SMM, PDM, PDR, FIOR, EIOM, PDR, FIOR, EIOSure), 4 Bytes. - 0x3: IANA enterprise number (Enclosure), 4 Bytes. - 0x4: Component name CI, GLID - Byte 2: N VPD Data - 0x3: IANA enterprise number (Enclosure), 4 Bytes. - 0x4: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 54 Bytes. 				 2: Component part number Level 	FRU number (SMM, PDM,
 4: Component serial number 5: Manufacture ID 6: Hardware revision 7: Manufacture date 8: UUID 9: IANA enterprise number 0x6: Hardware mevision 9: IANA enterprise 0x6: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data 0x8: UNIV PIOR, EIOM, PIOR, PIOR, EIOM, PIOR, P				 - 3: Component FRU number 	PIOR, EIOM), 12 Bytes.
 S. Manufacture ID G. Hardware revision T. Manufacture date B. UUID B. UUID P. IANA enterprise number P. Response: Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data Component indication of the system. Ox8: Hardware revision level (SMM, PDM, PIOR, EIOM), 12 Bytes. Ox8: Manufacture ID Byte 2: N VPD Data Ox8: Universal Ox8: Universal Ox8: Universal Ox8: Iniversal Ox8: Iniversal Ox8: Iniversal Ox8: Component indication code Ox00: Successful Byte 2: N VPD Data Ox8: Component indication code Ox8: Component indication code<!--</td--><td></td><td></td><td></td><td> 4: Component serial number </td><td>Ox4: Component serial number (2010)</td>				 4: Component serial number 	Ox4: Component serial number (2010)
 6: Hardware revision 7: Manufacture date 8: UUID 9: IANA enterprise number A: Product ID B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data Ox3: IANA enterprise number (Enclosure), 2 Bytes. Ox3: IANA enterprise Ox4: Product ID (Enclosure), 2 Bytes. Ox4: Product ID IB Syte 3: N VPD Data 				 5: Manufacture ID 	(SMM, PDM, PIOR, FIOM), 12
 7: Manufacture date 8: UUID 9: IANA enterprise number A: Product ID B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data Ox3: IANA enterprise number (Enclosure), 2 Bytes. Ox4: Pointersite Ox5: Manufacture ID (Enclosure, SMM), PDM, PIOR, EIOM, Enclosure), 4 Bytes. Ox8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. Ox9: IANA enterprise number (Enclosure), 2 Bytes. Ox8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 2 Bytes. Ox8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 2 Bytes. Ox8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 2 Bytes. 				 – 6: Hardware revision 	Bytes.
 8: UUID 9: IANA enterprise number A: Product ID B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 0x8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 0x9: IANA enterprise number (Enclosure), 2 Bytes. 0x8: Component name (SMM), 4 Bytes. 0x6: Hardware revision level (SMM, PDM, PDM, PDM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 0x8: Universal 0x9: IANA enterprise number (Enclosure), 4 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 				 7: Manufacture date 	0x5: Manufacture ID
 9: IANA enterprise number A: Product ID B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x0: Successful Byte 2: N VPD Data Ox3: Hardware revision level (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 0x8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 0x9: IANA enterprise 0x9: IANA enterprise 0x9: IANA enterprise 0x9: IANA enterprise 0x9: Component name (Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, EIOM, Enclosure), 4 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, EION, Enclosure), 4 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 2 Bytes. 				– 8: UUID	(Enclosure, SMM), 4 Bytes
number - A: Product ID - B: Component name - C: GLID - D: EClevel Response: • Byte 1: Completion code - 0x00: Successful • Byte 2: N VPD Data • Byte 2: N VPD Data • Ox3: Iniversal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. • 0x3: Iniversal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. • 0x4: Product ID (Enclosure), 2 Bytes. • 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 2 Bytes.				 9: IANA enterprise 	 0x6: Hardware
 A: Product ID B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x0: Successful Byte 2: N VPD Data Ox4: Manufacture date (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 0x8: Universal Unique ID (UUID) (SMM, POM, PIOR, EIOM, Enclosure), 16 Bytes. 0x9: IANA enterprise number (Enclosure), 4 Bytes. 0x4: Product ID (Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 				number	revision level (SMM,
 B: Component name C: GLID D: EClevel Response: Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data 0x3: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes. 0x9: IANA enterprise number (Enclosure), 4 Bytes. 0x9: IANA enterprise number (Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 				 A: Product ID 	PDM, PIOR, EIOM, Enclosure), 1 Byte
 C: GLID D: EClevel Response: Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data Ox9: IANA enterprise number (Enclosure), 4 Bytes. 0x8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 16 Bytes. 0x9: IANA enterprise number (Enclosure), 4 Bytes. 0xA: Product ID (Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 				 B: Component name 	Ox7: Manufacture
 - D: EClevel PIOR, EIOM, Enclosure), 4 Bytes. • Byte 1: Completion code • 0x00: Successful • Byte 2: N VPD Data • Ox9: IANA enterprise number (Enclosure), 4 Bytes. • Ox9: IANA enterprise number (Enclosure), 4 Bytes. • Ox9: IANA enterprise number (Enclosure), 2 Bytes. • Ox8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 				- C: GLID	date (SMM, PDM,
 Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data 0x3: IANA enterprise number (Enclosure), 4 Bytes. 0x4: Product ID (Enclosure), 2 Bytes. 0x8: Component name (SMM, PDM, PDM, PIOR, EIOM, PDM, PIOR, EIOM, PIOR, EIOM, Enclosure), 64 Bytes. 				– D: EClevel	PIOR, EIOM, Enclosure), 4 Bytes.
 Byte 1: Completion code 0x00: Successful Byte 2: N VPD Data Ox9: IANA enterprise number (Enclosure), 4 Bytes. 0xA: Product ID (Enclosure), 2 Bytes. 0xB: Component name (SMM, PDM, PIOR, ElOM, Enclosure), 64 Bytes. 				Response:	0x8: Universal
 Byte 2: N VPD Data Byte 2: N VPD Data Ox3: IANA enterprise number (Enclosure), 4 Bytes. Ox4: Product ID (Enclosure), 2 Bytes. Ox8: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 				Byte 1: Completion code	Unique ID (UUID) (SMM, PDM, PIOR,
 Byte 2: N VPD Data 0x9: IANA enterprise number (Enclosure), 4 Bytes. 0xA: Product ID (Enclosure), 2 Bytes. 0xB: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 				- 0x00: Successful	EIOM, Enclosure),
 Ox9: IANA enterprise number (Enclosure), 4 Bytes. OxA: Product ID (Enclosure), 2 Bytes. OxB: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 				Byte 2: N VPD Data	16 Bytes.
 0xA: Product ID (Enclosure), 2 Bytes. 0xB: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes. 					 0x9: IANA enterprise number (Enclosure), 4 Bytes.
(Enclosure), 2 Bytes. • 0xB: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes.					0xA: Product ID
OxB: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes.					(Enclosure), 2 Bytes.
					 0xB: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes.

				Identifier (GLID) (Enclosure), 8 Bytes.
				OxD: EC level (SMM, PDM, PIOR, EIOM, Enclosure), 10 Bytes.
OEMCMD_GET_PSU_DATA	0x32	0xC3	 Request: Byte 1: PSU number 1: PSU 1 2: PSU 2 Response: Byte 1: Completion code 0x00: Successful 0xC9: Out of range Byte 2: LSB of fan speed (rpm) Byte 3: MSB of fan speed (rpm) Byte 3: MSB of VIN (v) Byte 4: LSB of VIN (v) Byte 5: MSB of VIN (v) Byte 6: LSB of PSU type (w) Byte 7: MSB of PSU type (w) 	This command is used to get PSU data.
	0x32	0xC4	 Request: Byte 1: Duty (%) 0 ~ 100 Response: Byte 1: Completion code 0x00: Successful 0xC9: Parameter out of range 	Should disable automatic system FAN control first by OEMCMD_SET_ SYSTEM_FAN_ CONTROL (0x32, 0xC6)
OEMCMD_SET_SYSTEM_FAN_ CONTRO	0x32	0xC6	 Request: Byte 1: mode 0: Disable automatic FAN control 1: Enable automatic FAN control 2: Put FAN in silent mode and disable automatic FAN control Response: Byte 1: Completion code 0x00: Successful 	

OEMCMD_GET_NODE_COOLING_ VALUE	0x32	0xC7	Request: • Byte 1: Node number – 1: Node 1 – 2: Node 2 – 3: Node 3 – 4: Node 4 Response:	
			 Byte 1: Completion code 0x00: Successful 0xC9: Parameter out of range 0xD5: Current not support (Node absent) 	
			 Byte 2: Cooling value 0 - 100 	
OEMCMD_GET_WEB_STATE	0x32	0XF0	Request: None Response: • Byte 1: Completion code – 0x00: Successful • Byte 2: State – 0x00: Disabled – 0x01: Enabled	
OEMCMD_SET_WEB_STATE	0x32	0XF1	Request: • Byte 1: State – 0x00: Disabled – 0x01: Enabled Response: • Byte 1: Completion code – 0x00: Successful	

OFMOND GET SECURITY OPTION	0v32		Request:	
	07.02		Byte 1: Configuration type	
			password length	
			 0x01: Force user to change password on 	
			first access	
			 0x02: Password expiration period (in days) 	
			 0x03: Password expiration warning period (in days) 	
			 0x04: Minimum password change interval (inhours) 	
			 0x05: Minimum password reuse cycle 	
			 0x06: Maximum number of login failures 	
			 0x07: Lockout period after maximum login failures(in minutes) 	
			 0x08: Web inactivity session time-out (in minutes) 	
			Response:	
			Byte 1: Completion code	
			 0x00: Successful 	
			 Byte 2: Configuration setting (LSB) 	
			 Byte 3: Configuration setting (MSB) 	
OEMCMD_SET_SECURITY_OPTION	0x32	0xFB	Request:	
			Byte 1: Configuration type	
			 0x00: Minimum password length 	
			 0x01: Force user to change password on first access 	
			 0x02: Password expiration period (in days) 	
			 0x03: Password expiration warning period (in days) 	
			 0x04: Minimum password change interval (inhours) 	

			 0x05: Minimum password reuse cycle 0x06: Maximum number of login failures 0x07: Lockout period after maximum login failures(in minutes) 0x08: Web inactivity session time-out (in minutes) Byte 2: Configuration value (LSB) Byte 3: Configuration value (MSB / Optional) Response: Byte 1: Completion code 0x00: Successful 0x02: Parameter out of range 	
OEMCMD_SET_SMTP_CONFIG_ PARAMETERS	0x32	0xB2	 Request: Byte 1: Parameter selector Byte 2: N - Configuration parameter data. Per "SMTP Configuration Parameters " on page 58. Response: Byte 1: Generic codes plus 0xC7: Request data length invalid 0xC9: Parameter out of range 0xCC: Invalid data field in request 	See "SMTP Configuration Parameters " on page 58 for parameter selector and data.

OEMCMD_GET_SMTP_CONFIG_P	0x32	0xB3	Request:	
ARAMETERS			Byte 1: Parameter selector	
			 Byte 2: Set selector. (Selects a given set of parameters under a given Parameter selectorvalue.) 	
			 0x00: Parameter does not use a set selector. 	
			Byte 3: Block selector	
			 0x00: Parameter does not require a block selector. 	
			Response:	
			Byte 1: Generic codes plus	
			 0xC7: Request data length invalid 	
			 0xC9: Parameter out of range 	
			 0xCC: Invalid data field in request 	
			 Byte 2: N - Configuration parameter data. See "SMTP Configuration Parameters" on page 58. 	
IPMICMD_SET_LAN_CONFI G_	0x0C	0x01	Request:	The OEM parameters
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	Byte 1: Channel number	are added into
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	Request:Byte 1: Channel numberByte 2: Parameter selector	are added into parameter selector and data.
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 	are added into parameter selector and data. (Byte 2: N) See "LAN Configuration
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: 	are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details.
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 80h: Parameter not supported 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details.
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 80h: Parameter not supported 81h: Attempt to set the 'set in progress' value when not in the 'set complete' state. 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details.
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 80h: Parameter not supported 81h: Attempt to set the 'set in progress' value when not in the 'set complete' state. 82h: Attempt to write read-only parameter 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details.
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 80h: Parameter not supported 81h: Attempt to set the 'set in progress' value when not in the 'set complete' state. 82h: Attempt to write read-only parameter 83h: Attempt to read write-only parameter 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details.
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C 0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 80h: Parameter not supported 81h: Attempt to set the 'set in progress' value when not in the 'set complete' state. 82h: Attempt to write read-only parameter 83h: Attempt to read write-only parameter Request: 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details.
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C 0x0C	0x01 0x02	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 80h: Parameter not supported 81h: Attempt to set the 'set in progress' value when not in the 'set complete' state. 82h: Attempt to write read-only parameter 83h: Attempt to read write-only parameter Request: Byte 1: Channel number 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details. The OEM parameters are added into parameter selector
IPMICMD_SET_LAN_CONFI G_ PARAM	0x0C 0x0C	0x01	 Request: Byte 1: Channel number Byte 2: Parameter selector Byte 3: Configuration parameter data. See "LAN Configuration Parameters" on page 61 Response: Byte 1: Completion code 80h: Parameter not supported 81h: Attempt to set the 'set in progress' value when not in the 'set complete' state. 82h: Attempt to write read-only parameter 83h: Attempt to read write-only parameter Byte 1: Channel number Byte 2: Parameter selector 	The OEM parameters are added into parameter selector and data. (Byte 2: N) See "LAN Configuration Parameters" on page 61 for more details. The OEM parameters are added into parameter selector and data.

	 - 00h: If parameter does not use a Set Selector Byte 4: Block Selector - 00h: If parameter does not require a block number 	See "LAN Configuration Parameters" on page 61 for more details.
	Response:	
	Byte 1: Completion code	
	 80h: Parameter not supported. 	
	Byte 2: Parameter revision	
	 Byte 3: N Configuration parameter data, see "LAN Configuration Parameters" on page 61 	

4.2 SMTP Configuration Parameters

 $The following table contains detailed parameters for OEMCMD_SET_SMTP_CONFIG_PARAMETERS and OEMCMD_GET_SMTP_CONFIG_PARAMETERS.$

Parameter Selector	Number	Parameter Data (non-volatile)
Sender Information	0	 Assigns the send from. The field is default filled with <host name="">@<domain name=""> automatically. If the field is OEM-set, it must follow these rules: Do not consist of only space characters. It must be the combination of alphanumeric characters a-z, A- Z and 0-9, space characters, non-alphabetic characters. The maximum length of the field is 254 characters. Data 1: String length Data 2: N – the sting of <host name="">@<domain name=""></domain></host> </domain></host>

Table 7. SMT	^o configuration	parameters
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Destination Email Addresses	1	Data 1: Set selector = Field selector, 0 based. • [7:2] - Reserved • [1:0] - Field selector • 00b: Field 1 - Enable/Disable • 01b: Field 2 - Destination EmailAddress • 10b: Field 3 - Email Description • 11b: Field 4 - Send Alert (Set only) Data 2: Block selector = Target of Email Alert selector, 0 based. • [7:2] - Reserved • [1:0] - • 00b: Email Alert 1 • 01b: Email Alert 2 • 10b: Email Alert 3 • 11b: Email Alert 4 For Set selector = 0 Data 3: • [7:1] - reserved • [0] - • 0b: Disable • 1b: Enable For Set selector = 1 Data 3: String length, Max = 64. Data 4: N - the sting of Destination Email Address For Set selector = 2 Data 4: N - the sting of Email Description
SMTP (email) Server Settings	2	 Data 1: Set selector = Field selector, 0 based. [7:1] - reserved [0] - Field selector Ob: Field 1 - SMTP IP Address 1b: Field 2 - SMTP Port Number For Set selector = 0 Data 2: String length, Max = 254. Data 3: N - the sting of IPV4, IPV6 or FQDN For Set selector = 1 Data2:3: Port number. LS-byte first.

		Data 1: Set selector = Field selector, 0 based. • [7:3] - reserved • [2:0] - Field selector - 000b: Field 1 - Enable/Disable - 001b: Field 2 - Username - 010b: Field 3 - Password (Set only) - 011b: Field 4 - STARTTLS Mode - 100b: Field 5 - SASL Mode - 101b: 111b: Reserved For Set selector = 0 Data 2: • [7:1] - Reserved • [0] - 0b: Disable - 1b: Enable For Set selector = 1 Data 2: String length, Max = 254. Data 3: N = the sting of user name For Set
SMTP Authentication	3	selector = 2
		Data 2: String length, Max = 254 Data 3:
		N – the sting of password For Set
		selector = 3
		Data 2: • [7:2] - Reserved • [1:0] - 00b: AUTO - 01b: OFF - 10b: ON - 11b: Reserved For
		Set selector = 4
		Data 2: • 000b: AUTO • 001b: PLAIN • 010b: LOGIN • 011b: NTLM • 100b: MD5 • 101b:111b: Reserved

4.3 LAN Configuration Parameters

The following table contains detailed parameters for LAN configuration.

Table 8. LAN configuration	parameters
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Parameter Selector	Number	Parameter Data (non-volatile)
Host Name	0xC3	BMC Host Name • Data 1: String length, Max = 63 • Data 2: N – the sting of BMChostname
DNS Domain Name	0xC4	 DNS Domain Name Set operation implicates using static for DNS Domain Name. Note: The setting of Use DHCP for DNS Domain Name will be disabled. Data 1: String length, Max = 237 Data 2: N – the sting of DNS Domain name

Appendix A. Glossary

Term	Definition		
AC	Alternating Current (current repeatedly changes direction)		
AC-IN	AC Input Power. See also AC.		
AP	Application Processor		
ARP	Address Resolution Protocol		
ASM	Abstract State Machine		
ASU	Advanced Settings Utility		
ΑΤΑ	Advanced Technology Attachment		
BEL	Named after Alexander Graham Bell, a logarithmic unit expressing magnitude of change in level of power, voltage, current, or sound intensity. A decibel (dB), 1/10 bel (B), measures relative power.		
ВМС	Baseboard Management Controller		
ВІК	Baseboard In Knock-Down-Kit – Integrated System		
BIOS	Basic Input/Output System		
BSP	Boot Strap Processor. (The processor selected at boot time to be the primary processor in a multi-processor system.)		
CA	Certificate Authority		
СІМ	Common Information Model		
CLI	Command Line Interface		
CPU	Central Processing Unit		
CSR	Certificate Signing Request		
DC	Direct Current (current flows in one direction)		
DDR	Double-Data Rate		
DDR4	Double-Data Rate 4. See also DDR.		
DER	Distinguished Encoding Rules (This method for encoding a data object includes public key infrastructure certificates and keys).		
DHCP	Dynamic Host Configuration Protocol		
ЫММ	Dual In-line Memory Module (This plug-in memory module has signal and power pins on both sides of the internal printed circuit board (front and back)).		
DMI	Desktop Management Interface		
DNS	Domain Name Server		
DOM	Disk on Module		
DOS	Disk Operating System		
EAN	European Article Number, also known as International Article Number (Barcode)		
EDS	External Design Specification		
EFI	Extensible Firmware Interface		
EI	Enhanced Intel		
EIOM	Ethernet I/O Module		
EMI	Electromagnetic Interference		
EPOW	Early Power-off Warning		
FFDC	Fast Failure Data Collection		
FP	Front Panel		
FRU	Field-Replaceable Unit		
FW	Firmware		
GB	Gigabyte		
GLID	Global Identification		

GUI	Graphical User Interface
НСІ	Host Controller Interface Specification.
нттрѕ	Hyper Text Transfer Protocol Service
IANA	Internet Assigned Numbers Authority
ID LED	Identification LED
IMM	Integrated Management Module
ЮМ	I/O Module
IP	Internet Protocol
IPL	Initial Program Load
ІРМІ	Intelligent Platform Management Interface. A set of computer interface specifications for an autonomous computer subsystem that provides management and monitoring capabilities independently of the host system's CPU, firmware (BIOS or UEFI) and operating system.
IPIF	Intel [®] Platform Innovation Framework for EFI architecture
ISA	Instruction Set Architecture
LAN	Local Area Network
LCP	Intel® Local Control Panel
LED	Light-Emitting Diode
LER	Live Error Recovery
LLA	Local Link Address (i.e. IPv6 Link)
LSB	Least Significant Bit
MAC	Media Access Control
MB	Megabyte
Mbit	Megabit
MFR	Manufacturer
MM	Millimeter
MSB	Most Significant Bit
МТМ	Mobile Trusted Module
MT/s	Mega Transfers per second
NIC	Network Interface Card
NM	Node Manager
NTLM	NT LAN Manager. A suite of Microsoft security protocols that provides authentication, integrity, and confidentiality to users. Replaces the Microsoft LAN Manager (LANMAN) product. See also LAN.
NTP	Network Time Protocol
OS	Operating System
PCI	Peripheral Component Interconnect (or PCI Local Bus Standard – also called "Conventional PCI").
PDM	Power Distribution Module.
PDU	Protocol Data Unit
PEF	Platform Event Filter
PEI	Pre-EFI Initialization. Component of Intel® Platform Innovation Framework.
PEIM	PEI Module. See also PEI.
PIOR	(card)
PSU	Power Supply Unit
PTU	Power Thermal Utility
PXE	Preboot Execution Environment. Specification which describes a standardized client- server environment that boots a software assembly, retrieved from a network, on PXE- enabled clients.

RAM	Random Access Memory
RAS	Reliability, Availability, and Serviceability
ROM	Read-Only Memory
RPM	Revolutions Per Minute
RT	Runtime. Component of Intel [®] Platform Innovation Framework for EFI architecture. See also IPIF.
RTP	Real-Time Transport Protocol
SAS	Serial Attached SCSI (High-speed serial data version of SCSI). See also SCSI.
SBSP	System Boot-Strap Processor
SCA	Single Connector Attachment
SCSI	Small Computer System Interface (Connection usually used for disks of various types).
SEC	Security (Component of Intel [®] Platform Innovation Framework for EFI architecture).
SEL	System Event Log
SIO	Super I/O
SMM	System Management Module
SMTP	Simple Mail Transfer Protocol
SOL	Serial-over-LAN
SNMP	Simple Network Management Protocol
SUP	System Update Package
TLS	Transport Layer Security
TPS	Technical Product Specification
UEFI	Unified Extensible Firmware Interface
URL	Uniform Resource Locator
USB	Universal Serial Bus (standard serial expansion bus meant for connecting peripherals)
υтс	Coordinated Universal Time and Date (World Time Server). A 24-hour time standard used to synchronize world clocks as well as the base point for all other time zones in the world. Each time zone is determined by its difference to the UTC. UTC is represented as UTC +0.
UUID	Unique Universal Identifier
VID	Voltage Identification
VLAN	Virtual LAN. A physical object recreated and altered by additional logic. See also LAN
VPD	Vital Product Data
хсс	BMC Controller