System Management Module
User's Guide

Note

Before using this information and the product it supports, be sure to read and understand the safety information and the safety instructions, which are available at:
http://thinksystem.lenovofiles.com/help/topic/safety_documentation/pdf_files.html

In addition, be sure that you are familiar with the terms and conditions of the Lenovo warranty for your solution, which can be found at:
http://datacentersupport.lenovo.com/warrantylookup

Contents

Chapter 1. Introduction

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

The SMM performs the following tasks:

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

Note:

The SMM web interface supports the following browsers:

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

Scope of this document

This documentation provides the process of operating SMM and detailed WebGUI. The descriptions include how to check the status, component information and show you how to modify the configuration. It offers the detailed explanation and definition for each function tabs of the SMM web pages.

Chapter 2. Web interface access

SMM web interface can be accessed through Ethernet connection (10/100/1000 Mbit) by establishing a session with SMM.

Connecting to the SMM for the first time might require a change of the Internet protocol properties on the client computer. See "Network Configuration" on page 26 section for more information. To log in to the SMM web interface, complete the following steps :

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

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

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

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

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 request only)	This setting is used to set SMM network status which value is disabled as default. The XClarity Controller command supports ThinkSystem D2 Enclosure and ThinkSystem SD530 Compute Node.ThinkSystem D2 Enclosure and ThinkSystem SD530 Compute Node only.

2. Point your browser to the SMM web interface URL that your system administrator defined during initial configuration.

   Following out-of-factory default network settings is applied at first use of SMM:

   a. SMM use DHCP first. If SMM cannot acquire IP from DHCP server in 2 minutes. It will use static IP.

   b. The default static IP is 192.168.70.100

   c. Using Hyper Text Transfer Protocol Secure (HTTPS). (For example, http**s**://192.168.70.100)

   d. IPv4 enabled with static IP = 192.168.70.100

   e. IPv6 enabled with local link address (LLA) IP

   Notes: To calculate LLA IP, follow procedures below:

   1) Split the MAC address of SMM (39-A7-94-07-CB-D0) into two parts and insert FF-FE in the middle. For example, 39-A7-94-FF-FE-07-CB-D0

   2) Convert the two hexadecimal digits at the left end of the string to binary. For example, 00111001-A7-94-FF-FE-07-CB-D0

   3) Invert the value for bit 1 of the first byte. For example, 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. For example, 3BA7-94FF-FE07-CBD0

6) Replace dash (-) separators with colon (:) separators. For example, 3BA7:94FF:FE07:CBD0

7) Add FE80:: to the left of the string. For example, FE80::3BA7:94FF:FE07:CBD0

3. Type your user ID and password assigned by a system administrator.

- Default ID: USERID
- Password: PASSW0RD

   Note: The sixth character of PASSW0RD is number zero.

4. Click **Log in**.

5. Change password for the first login

   Default password complexity rules:

- 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 as !@#$%^*-_+=().:`|?"\

6. Use the new password to log in

Chapter 3. Overview

The section introduces detailed functions for SMM web interface.

There are overall six function tabs:

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

Mouse cursor over the function tab buttons reveals the subcategories of the function. Click on the tab or subcategories taking user directly to the function.

Summary

Power and
Cooling

System
Information

Event Log

Configuration

Figure 1. Overview

Notes:

- Please use **Refresh** button on SMM web pages to refresh. If users press F5 on a keyboard or click refresh on a browser, the web page will redirect to login page for security considerations.

- Pages with **Refresh** button does not refresh periodically, except voltage overview and cooling overview. Auto-refresh interval is every 30 seconds on these two pages. For the other pages, click **Refresh** button to get the latest readings and status.

- The session will expire when users do not perform any action on web pages for an interval (default value is 20 minutes), except users stay on an auto-refresh page.

Summary

Summary page displays overall enclosure status and information.

Figure 2. Enclosure

Enclosure Front Overview

Under **Enclosure Front Overview** section, the following illustration indicates the node status:
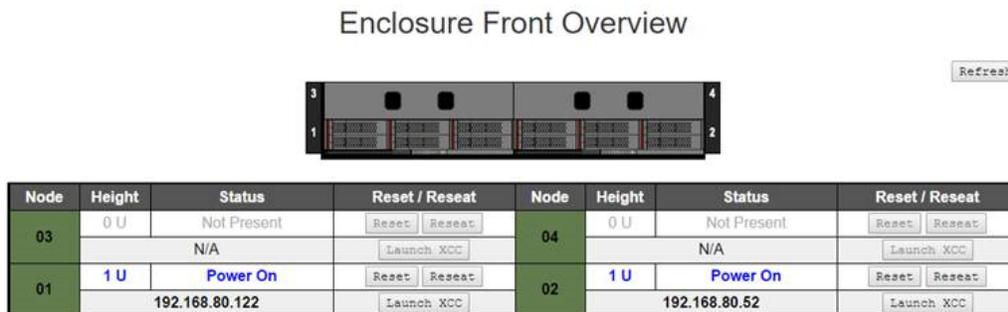

Figure 3. Enclosure Front Overview

- **Node**: Indicates node numbering.
- **Height**: Node height can be 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 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 XClarity Controller (XClarity Controller) through SMM.
  - **Reseat**: Remotely power cycle the entire node.
  - After virtual **Reset/Reseat**, the node XClarity Controller takes at least two minutes to be ready.
- Launch XClarity Controller: Using the specified IP address to access XClarity Controller from Web.

Note: Enclosure Front Overview needs to be manually updated 5 minutes after SMM or the node XClarity Controller is reset to maintain latest node status.

Enclosure Rear Overview

Under **Enclosure Rear Overview** section, there are three major sections to show the rear enclosure status:

- **Management Module**
- **Current PSU**
- **Fan**

Management Module

Management Module: Indicates the status of SMM

Management Module	
Name	System Management Module (SMM)
Status	☑ Normal [SMM Reset] [Reset to Default]
Firmware Version	1.0 (TESM04A)
Boot-up Flash	First
ID LED	Off ⦿ Turn Off ○ Turn On ○ Blink [Apply]
Error LED	Off
FFDC	[Capture]

Figure 4. Management Module

- **Status**: Indicates the SMM operating status.
  - **SMM Reboot**: Warm reboot the SMM
  - **Reset to Default**: Restored the SMM settings to out-of-factory default
- **Firmware version**: The current firmware version
- **Boot-up Flash**: Indicates 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, SMM will switch to 2nd flash.
- **ID LED**: Identification LED (ID LED) is a blue LED to assist user in locating enclosure in rack. User can choose to turn the blue LED solid on or make the LED blink once every second. Click **Apply** to activate the option.
- **Error LED**: Error LED is on when critical event occurs. It will be turned off after the critical event is deasserted.
- **FFDC**: The Fast Failure Data Collection (FFDC) instantly collects information about events and conditions that might lead up to a failure. Click **Capture**, the file used to analyze the problem can be downloaded from the web.

Current PSU

Current PSU: Indicates the status of power supplies

Rear View

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

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttle	DC-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 5. Current PSU

- **Status**
  - **Present**: The power supply is installed.
  - **Not Present**: No power supply is installed.
  - **Fault**: The power supply is in faulty condition.
- **Ratings**: Displays the power rating such as 1100 W, 1600 W and 2000 W power supplies.
- **AC-IN**: AC input power
- **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.
  - If DC-PG of the PSU is **Yes**, capability is usually equal to its rating.

    Notes: The following status are exceptions.
    - Rating 1100W PSU supports low line, capability will be 900W (AC-IN < 100V), 1050W (100 V <= AC-IN < 170V) or 1100W (170V <= AC-IN)
    - If two PSUs are mismatched, capability will be lower one.
- **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 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.

Fan

Fan: Indicates the status of fans.

Mid View from Rear
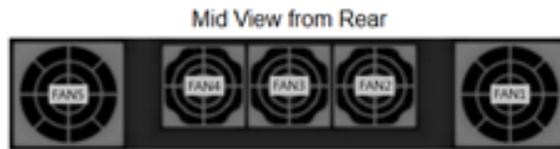
Fan

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

Figure 6. Fan

- **Status**
  - **Present**: The fan is in normal operating condition.
  - **Not present**: No fan installed.
  - **Fault**: The fan is in faulty condition.
- **Type**: There are two types of fans, 60mm and 80mm.

Power

There are five major sections under **Power** tab.

Figure 7. Power tab

- **Power Overview**: Displays the enclosure level power consumption, the node level power consumption, and power consumption of subsystems, which includes power subsystem (PSUs), and thermal subsystem (System fans).
- **PSU Configuration**: Allows users to set the redundancy mode for power supplies.
- **Power Cap**: Allows users to set power capping/saving.
- **Voltage Overview**: Monitors the voltage rail on SMM.
- **Power Restore Policy**: Allows user to enable power restore policy.

Power Overview

Power Overview displays the enclosure level power consumption, the node level power consumption, and power consumption of subsystems, which includes power subsystem (PSUs), and thermal subsystem (System fans).

Power Overview

Total Enclosure Power Consumption (W$_{ac}$) 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 (W$_{dc}$)

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 8. Power Overview

The enclosure and PSU power consumption sampled every 1 second over 30 seconds period.

PSU Configuration

PSU Configuration allows users to set the redundancy mode for power supplies.

PSU Configuration

Redundancy Mode

Redundancy Mode	N + 1 ▼
Oversubscription Mode	OVS On ▼

Apply | PSU Status

Zero Output

Zero Output	30 minutes (default) ▼

Apply

Figure 9. PSU Configuration

1. **Redundancy Mode**: Offer two modes for user to choose.

   - **Redundancy Mode**
     - **No Redundancy**: System could be throttled or shut down if one or more power supplies are in faulty condition.
     - **N+1**: There is one properly installed PSU as redundant power supply, so there is no impact to system operation or performance if any one of the PSUs is in faulty condition, given that Oversubscription mode is not enabled.
   - **Over-subscription Mode**: **Oversubscription Mode** allows user to take advantage of the extra power from the redundant power supply when the power supplies are in healthy condition. When the redundancy fails, PSU will shut down within 1 second if system power loading is not corrected after the time limit. SMM takes the action of node throttling at such power emergency. 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.
   - Click on **Apply** after choosing the redundancy and oversubscription mode from drop-downmenu to activate.

2. **Zero Output**: Three scanning period are offered: 10/30/60 minutes. The shorter the scanning period, the faster SMM adjusts number of hibernate PSUs to optimize PSU efficiency when system load changes. With shorter scanning period, PSU are also turned on and off more frequently when system loading fluctuates, which could reduce PSU life. Disable zero output will keep all PSU always active. Click on **Apply** after choosing the scanning period from drop-down menu to apply selections.

Power Cap

You can choose the following two cap types through power cap configuration.

1. **Enclosure Power Cap**
2. **Node Power Cap**

Power cap allows user to set a wattage limit on power consumption. When applied on individual node, the node power consumption is capped at assigned level and when applied on enclosure, the whole enclosure

power consumption is capped. When power saving is enabled, individual node or all nodes (enclosure level) runs in throttling mode.

Power Cap Policy

Choose a power cap type : Enclosure Power Cap ▼

Enclosure Power Cap / Power Save

Enclosure	Power Cap
All	☑ Enable 480 W (Range: 422 W ~ 496 W)
	Power Save
	⦿ Disable ○ Enable

Apply

Figure 10. Enclosure Power Cap

Power Cap Policy

Choose a power cap type : Node Power Cap ▼

Node Power Cap / Power Save

Node	Power Cap		
	Protective Power Cap		DISABLE
	User Power Cap		DISABLE
3 ▼		User Define	☐ Enable 0 W (Range: 83 W ~ 168 W)
		Thermal	DISABLE
	Power Save		
			⦿ Disable ○ Enable

Figure 11. Node Power Cap

1. Select **Enclosure Power Cap** or **Node Power Cap** from the drop-down menu.
2. Enter a power cap value, check the box, and click on **Apply** to enable power cap.
3. Power cap enabled (checked) or disabled (unchecked) can be applied independent of power cap value. However, if power cap is enabled without any input value, the text box will be empty to represents that no user power cap value is specified and no power cap is enforced. If a value is entered and applied without enable ticked, the value will be saved but not enforced.

4. Power cap value is limited in the range from minimum to maximum possible power consumption of the node / enclosure.

5. There are three types of power cap for Node domain. User can set **User Power Capping** value for each node.

6. Select enable in the **Power Save** section and click on **Apply** to activate power save.

7. Power save can be applied with power cap simultaneously.

8. The following table provides details about saving modes.

Table 1. Saving Mode

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

Voltage Overview

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

Note: The auto refresh is 30 seconds.

Probe List

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

Figure 12. Voltage Overview

Power Restore Policy

When **Power Restore Policy** is enabled as **Restore**, SMM remembers the latest node power status and recovery the node to the power status it was before AC is abruptly lost.

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 13. Power Restore Policy

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 previous state that was before power failed.

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

   Note: The change of the setting and node status in power restore policy will take effect in 1 minute later; therefore, the node state might not be recovered on AC loss before it takes effect.

Cooling

There are three major sections under **Cooling** tab.

- **Cooling Overview**: System fan speed
- **PSU Fan Speed**: Power supply fan speed
- **Acoustic Mode**: Allow users to choose acoustic mode

Cooling Overview

Fan speed is displayed in RPM. Error log is asserted when fan speed is below lower critical threshold.

Note: This page will automatically refresh every 30 seconds.

Probe List

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

Figure 14. Cooling Overview

- **Status** (two status):

  - Healthy condition:

  - Fault condition:

- **Fan_Tach_#A(B)**:

  - When the number(#) equals to 2, 3 or 4, system fan speed normally operates at 2000 - 18500rpm.

  - When the number(#) equals to 1 or 5, system fan speed normally operates at 2000 - 13000rpm.

  D2 Enclosure system fan is equipped with dual motor. Tach A displays the primary fan motor speed and tach B displays the redundant fan motor speed.

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

PSU Fan Speed

PSU Fan Speed

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

Figure 15. PSU Fan Speed

- **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)

Acoustic Mode

To reduce the noise level of the enclosure during run-time, you can configure the enclosure to five different acoustic modes.

Acoustic Mode Selection

Select an Acoustic Mode : Mode 3 ▼

Apply

Figure 16. Acoustic Mode Selection

1. Select the mode from the drop-down menu according to your preference.
   - **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** after choosing the acoustic mode from the drop-down menu to activate the setting.

   Notes:
   - Acoustic modes can only apply to the entire enclosure as a whole
   - When acoustic modes are applied, nodes workload is also capped to avoid over-heating
   - If there is power or thermal demanding PCI card installed in the enclosure, acoustic mode is automatically disabled

System Information

There are six sections under **System information** tab and provide the fixed VPD data.

- **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.

Enclosure VPD

Enclosure VPD

Name	Value
Enclosure Name	Lenovo ThinkSystem SD530 Server
Machine Type/Model	7X20CTO1WW
UUID	8230F6F39B504491A4B423D96CD0C1DC
Enclosure Hardware Version	N/A

Figure 17. Enclosure VPD

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

- **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 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, "Lenovo ThinkSystem SR550 Server"
- **Machine Type**: For example, "7X125AJCCN"
- **UUID**: Randomly generated ID number of the enclosure
- **Enclosure Hardware Version**: Hardware version

PDM VPD

PDM VPD

Name	Value
Card UUID	4316EA6EE6B948B7AAF036A735EC8473
Card Hardware Version	Pass3

Figure 18. PDM VPD

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

- **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 following rule:
  - UUID: Card UUID must be filled in with all 32 alphanumeric characters (A-Z, 0-9). No space and no other characters allowed.

- **Card UUID**: Randomly generated ID number of the enclosure.
- **Card Hardware Version**: Hardware version.

SMM VPD

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

- **Card Serial Number**: The last 11 digits of a 8S bar code label on SMM. For example, 8SXXXXXXXXXX**AAAABBBCCCC**
- **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 SMM. For example, 8S**XXXXXXXXXX**AAAABBBCCCC

PSU VPD

PSU1 VPD

Name	Value
MFR Revision	0B
Type	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

- **MFR Revision:** Assembly revision
- **Type:** CFFv3 PSU type
- **Part Number:** Lenovo part number
- **FRU Number:** Lenovo FRU number
- **Serial Number:** The last 11 digits of a 8S bar code label on PSU. For example, 8SXXXXXXXXXXAAAABBBCCCC".

- **Header Code:** Lenovo header code
- **Vendor Name:** Vendor name
- **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:** Lenovo barcode

EIOM VPD

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

- **Card Serial Number**: The last 11 digits of a 8S bar code label on EIOM. For example, 8SXXXXXXXXXX**AAAABBBCCCC**
- **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, 8S**XXXXXXXXXX**AAAABBBCCCC

PIOR Right/Left VPD

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

Figure 22. PIOR Right/Left VPD

- **Card Serial Number**: The last 11 digits of a 8S bar code label on PIOR. For example, 8SXXXXXXXXXX**AAAABBBCCCC**
- **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 PIOR. For example, 8S**XXXXXXXXXX**AAAABBBCCCC

Event Log

Event log tab allow users to view SEL (System Event Log).

SEL logs enclosure level info/warning/critical events so that user can get some clues of what is going on in the enclosure. A maximum number of 4090 event entries can be logged.

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

Note: Currently, new event cannot be written into the log when it is full. User needs to manually clear log before latest event can be logged.

Event Log

To sort system event logs, click the 'Date/Time'.   System Event Count (Current / Maximum) 8 / 4090

Event ID	Severity	Date/Time ↓	Description
0x21070841	✅	2017-04-18 13:30:42 (UTC+0000)	NODE2_PRESENT: Slot Or Connector sensor, Informational was asserted
0x080707a5	✅	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	✅	2017-04-18 13:30:42 (UTC+0000)	PS2: Power Supply sensor, Power Supply input lost (AC/DC) was asserted
0x086f00e1	✅	2017-04-18 13:30:42 (UTC+0000)	PS2: Power Supply sensor, Presence detected was asserted
0x086f00e0	✅	2017-04-18 13:30:42 (UTC+0000)	PS1: Power Supply sensor, Presence detected was asserted
0x1d6f0030	✅	2017-04-18 13:30:42 (UTC+0000)	SMM_POWER_ON: System Boot Initiated sensor, Initiated by power up was asserted
0x106f0202	✅	2017-04-18 13:29:41 (UTC+0000)	EvtLogDisabled: Event Logging Disabled sensor, Log Area Reset/Cleared was asserted

1

Figure 23. Event Log

- **Refresh**: SEL does not automatic refresh. User needs to manually click **Refresh** to get the latest entries.
- **Save Log**: Exports SEL data and save as .csv file
- **Clear Log**: Clears SEL data
- **Severity**: From low severity to high severity

  – ✅ : Indicates **Information** type of events

  – ⚠️ : Indicates **Warning** type of event

  – ❌ : Indicates **Critical** type of events. Critical event lits 'Error' LED.

For detailed event log messages, please see *Messages and Codes Reference* at http://thinksystem. lenovofiles.com/help/index.jsp.

Configuration

Configuration tabs settings are used to manage SMM module.

Firmware Update	SMTP	SNMP	PEF	Network Configuration	Time Settings	User Account	Account Security	Services	Web Certificate	NTP	Backup and Restore
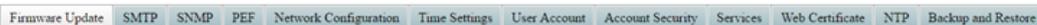
Figure 24. Configuration

There are twelve sections:

- **Firmware Update**
- **SMTP**
- **SNMP**
- **PEF**
- **Network Configuration**
- **Time Setting**
- **User Account**
- **Account Security**
- **Service**
- **Web Certificate**
- **NTP**

- **Backup and Restore**

Note: By pressing hardware reset button for more than 4 seconds, all settings (except **Time Setting**) can be restored to out-of-factory default settings.

Firmware Update

There are two phases to the firmware update process. During firmware upload stage, you can choose path to fetch the firmware image. SMM checks the image header information for validation.

Firmware Update

Upload
Select an image file and click upload. The upload process will terminate all other sessions.
After the upload process is started, any attempt to refresh, logout or navigate away from the update page will restart the System.

Firmware File Path	Choose File `firmimg.ast2520`	Upload

Figure 25. Firmware Update

Upload
Select an image file and click upload. The upload process will terminate all other sessions. After the upload process is started, any attempt to refresh, logout or navigate away from the update page will restart the system.

Once a valid firmware image is uploaded, a firmware image confirmation table appears with **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 **Preserve Settings** is checked or not)
- User Account
- Account Security
- Services
- Web Certificate
- NTP

Notes:

1. A **Recover Primary Bank Firmware** check box is present in the firmware update page, but non-functional when SMM is boot up from the primary bank. If SMM starts on secondary bank, which indicates that the primary bank image might be corrupted and need recovery, this check box is open for selection. Check it to perform the recovery measure and update image onto the primary bank, and uncheck to upgrade firmware onto the secondary bank.
2. SMM will automatically restart if you choose to cancel firmware update process after uploading the firmware image.

Firmware Update

Upload

Select an image file and click upload. The upload process will terminate all other sessions.
After the upload process is started, any attempt to refresh, logout or navigate away from the update page will restart the System.

Firmware File Path	Choose File	firmimg.ast2520		Upload

Firmware Image

Current Version	New Version	Preserve Settings	Recover Primary Bank Firmware
1.0 (TESM538)	1.0 (TESM538)	☑	☐

> When primary bank firmware is broken, SMM automatically boot up from backup bank image. To update and recover primary bank image with a new image, check "Recover Primary Bank Firmware" during firmware update process when SMM is booted up from backup bank.

Upload is completed. Please click 'Update' to proceed firmware update or click 'Cancel' to terminate the update.
System will be rebooted after Update/Cancel process.

[Update]   [Cancel]

Figure 26. Firmware Update

During updating, the system will direct you to a loading page where all SMM functions are locked.

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

SMTP/SNMP/PEF

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

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-SMM@lenovo.com

Destination Email Addresses

	Enable	Destination Email Address	Email Description	Test
Email Alert 1	☐		SMM email alert	Send Alert 1
Email Alert 2	☐		SMM email alert	Send Alert 2
Email Alert 3	☐		SMM email alert	Send Alert 3
Email Alert 4	☐		SMM 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	AUTO ▾
SASL Mode	AUTO ▾

[Apply]

Figure 27. SMTP

- **SMTP**: You can enable, configure and test SMTP email alert at this page.

- Click **Send Alert #** to test the email alert
- Please check **Global Alerting Enable** in PEF page to enable email alerts
- The following information provides the default values:
  - All email alert disabled
  - Email server address = 0.0.0.0
  - Authentication disabled

Notes:

1. Before sending alert, make sure changes to **Sender Information**, **Destination Email Address**, **SMTP (email) Server Setting**, and **SMTP Authentication** have been saved by clicking **Apply**.
2. When SMM SEL is full, no new event entry can be added to SEL. SMTP event email will not be generated until the log is cleared.

Figure 28. SNMP

- **SNMP**: You can enable, configure and test SNMP trap at this 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 would be sent to destination IP address when **Global Alerting Enable** in PEF page is checked.
  - For SNMP trap type, check the **Generate PEF** box for targeted type of events.

    Notes:

    1. Before sending test trap, make sure changes to the target **Destination** and **Community String** have been saved by clicking **Apply**.
    2. When SMM SEL is full, some PEF alerts might be missing or be sent repeatedly.
  - The following information provides the default values:
    - All traps disabled
    - Community Name = public

PEF

Platform Event Filters (PEF) List
☐ Global Alerting Enable   Note: This enables/disables both PEF and email alerts.

Filter Name	Generate PET
All Type, Voltage Critical Filter	☐
All Type, Fan Critical Filter	☐
All Type, Power Supply Critical Filter	☐
All Type, Event Logging Disabled Critical Filter	☐
All Type, Module Or Board Critical Filter	☐
All Type, Chassis Critical Filter	☐
All Type, Slot Or Connector Critical Filter	☐
Threshold Type, Fan Informational Filter	☐

Apply

Figure 29. PEF

- **PEF**: You can set SMTP/SNMP trap event types at this page.
  - The following information provides the default values:
    - None of the filter selected
    - Global Alerting unchecked

Network Configuration

You can modify networking parameters in **Network configuration**.

You can modify following networking parameters in **Network configuration** section:

- 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

Network Configuration

Refresh

General Settings
To change the Network settings may change 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.

Host Name	SMM-00C0A8129977
DNS Domain Name	lenovo.com

Advance Settings
Please click on eth0 below to further configure SMM network settings.

Name	IPv4 Enabled	IPv4 Address	IPv6 Enabled	IPv6 Address
eth0	Enabled	10.241.66.187	Disabled	::/0

Apply

Figure 30. Network Configuration

General Settings

To change the Network settings may change 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**:

- Host Name: SMM-$MAC_ADDR
- DNS Domain Name: lenovo.com

Figure 31. Network Interface Configuration

Click on the item of **Network Interface Configuration** leads to the detail network settings.

Default settings for **Network Interface Configuration**:

- Auto Negotiation: On
- Dynamic DNS: Unchecked
- Use DHCP for DNS Domain Name: Unchecked
- Respond to ARP: Checked

Figure 32. IPv4 Settings

Default settings for **IPv4 Settings**:

- 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	☑
Use DHCP	☑
Use Stateless	☑
IP Address 1	1999::11/64
IP Address 2	::/0
Gateway	::
Link Local Address	fe80::0a94:efff:fe2f:8fd0/64
Use DHCP to obtain DNS server addresses	☐
Preferred DNS Server	::
Alternate DNS Server	::

Figure 33. IPv6 Settings

Default settings for **IPv6 Settings**:

- 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)

VLAN Settings

Enable VLAN ID	☐
VLAN ID	0
Priority	0

Figure 34. VLAN Settings

Default settings for **VLAN Settings**:

- VLAN: Disabled

Time Setting

This page is used to configure system time.

Time Settings

Data and Time Settings

Figure 35. Time Settings

Select date and time and apply. Once set, time is always kept even if user restores settings to default or uncheck **Preserve Setting** during the firmware update.

User Account

User Account page allows you to manage user roles.

There are three types of user roles:

- Administrator: Full access to all the web pages and can modify all the settings and configurations
- Operator: Full access to all the web pages except **User Account** page. Operator can only see its own account at the **User Account** page and no modification at the account page is allowed
- User: Full access and modification rights to all the pages except the following pages in **Configuration** tab: **SMTP/SNMP/PEF/Network Configuration/User Account/Web Service**. Only viewing right is allowed on these pages. Any modification is not allowed.

User Account

Refresh

User 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 Privilege
3	Enabled	USER	User	None

Apply

Figure 36. User Account page for User and Operator

User 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.

The image shows **User Account** page for User and Operator:

Note: Password Policy Check Enabled by default. User name= USERID, Password = PASSW0RD

Refresh

User 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 Privilege
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 37. User Account - Administrator

The image shows **User Account** page for Administrator

Back

Password Policy

Password Policy Check Enabled	Yes

General

User ID	2
Enable User	☑
User Name	USERID
Change Password	☐
New Password	
Confirm New Password	

User Privileges

User Role	Administrator ▾
IPMI LAN Privilege	Administrator ▾

Figure 38. Password Policy

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

Notes:

1. User assigns account user name in **User Name** field with 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. Creating new user account with existing user name is not allowed.

2. User can set/change password in **New Password** field using up to 20 printable US-ASCII (Code: 33-126) characters. 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 (for example, !, $, #, %)

   If validation fails, the GUI displays an error message.

Account Security

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

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

Services

You can configure different HTTPS ports for connection and enable/disable IPMI service state at **Services** page.

Services

Web Server

HTTPS Port Number	443
Max Sessions	32
Active Sessions	2

IPMI

Enabled	☑

[Apply]

Figure 39. Services

Default settings for **Services**:

- HTTPS Port Number = 443.

    Note: No default HTTP port 80

Web Certificate

The web certificate page displays current certificate information.

There are three buttons for user to **Generate Certificate Signing Request**, **Import a Signed Certificate** and **Generate Self-signed Certificate**.

Web Certificate

| Generate CSR | Import Certificate | Generate Self Signed Certificate |

Current Certificate

```
Serial Number            : E342C4FD23C3F21D

Subject Information:
Country Code (CC)        : US
State (S)                : NC
Locality (L)             : RTP
Organization (O)         : ThinkServer
Common Name (CN)         : www.lenovo.com

Issuer Information:
Country Code (CC)        : US
State (S)                : NC
Locality (L)             : RTP
Organization (O)         : ThinkServer
Common Name (CN)         : www.lenovo.com

Valid From               : 01 Jan 2013, 00:06:39 (UTC+0000)
Valid To                 : 30 Dec 2022, 00:06:39 (UTC+0000)
```

Figure 40. Web Certificate

Subject Information:

- Country Code (CC) = US
- State (S) = NC
- Locality (L) = RTP
- Organization (O) = ThinkServer
- Common Name (CN) = www.lenovo.com

Issuer Information:

- Country Code (CC) = US
- State (S) = NC
- Locality (L) = RTP
- Organization (O) = ThinkServer
- Common Name (CN) = www.lenovo.com

Web Certificate

Generate Certificate Signing Request (CSR)

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

Download CSR

Figure 41. Generate Certificate Signing Request (CSR)

You can press the **Generate CSR** button to fill the certification request information and download the CSR. After that, you can send the CSR 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	Import Certificate

Figure 42. Signed 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.

You can import the certificate when the CA responds with a signed certificate. Support importing certificate in PEM format. You can convert your DER certificate to PEM format by "openssl x509 -inform der -in certificate.cer -out certificate.pem". After importing certificate you have to reconnect to the SMM web.

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 43. 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.

You can also generate a self-signed certificate by filling the information and pressing generate button at this page.

Network Time Protocol (NTP)

You can configure the network time protocol and time zone settings at NTP page.

NTP Time Settings

Sync Time Now   Apply Changes   Refresh

Use this page to configure the Network Time Protocol and Time Zone settings.

Network Time Protocol

Operation Mode	Disabled ▼
NTP Server 1	
NTP Server 2	
NTP Server 3	
Requested Mode's Update Frequency (minutes)	3
Time Synchronization Method	● Step Mode ○ Slew Mode

Time Zone Setting

ⓘ The Client Time Zone can be changed from modify the time zone of client operating system.

Use Server or Client Time Zone	● Server Time Zone ○ Client Time Zone
Server Time Zone	UTC Select... Set to UTC

Figure 44. NTP Time Settings

In the NTP time settings, you can use the drop-down menu to change operation mode and enter NTP server address into the text boxes. In addition, you can set the update frequency and select the time

synchronization method. After changing the settings, click on the **Apply Changes** to save the configuration. To click **Sync Time Now** button will synchronize with server right now. For the time zone setting, you can select the server or the client time zone. The client time zone can be changed by modifying the time zone of client operation system.

Default settings for **NTP Time Settings**:

- Operation Mode: Disable
- Server Time Zone: UTC

Backup and Restore

Backup and Restore page allows you to backup and restore your data.

Figure 45. SMM Recovery

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

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

- **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 configuration tabs
- **Restore**: Restore and apply the configurations stored in local device or USB/microSD to SMM.

Chapter 4. IPMI Command

The section provides detailed IPMI commands.

Name	NetFn	CMD	Request data / Response data	Comments
OEMCMD_GET_PSU_COLLECTED _DATA	0x32	0x90	**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 – Byte 4: Sum of AVG AC-IN / (PSU consumption) LSB – Byte 5: Sum of AVG AC-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 3: Sum of FAN Power – Byte 4: Sum of FAN Power (MSB)	This command is used to show regularly collected Data from all PSU and system FAN. 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

| 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
  – 1: Trigger
• Byte 3: PSU THROTTLE
  – Bit: 0-1 = PSU1-2
  – 0: Not trigger
  – 1: Trigger
• Byte 4: PSU PRESENT
  – Bit: 0-1 = PSU1-2
  – 0: Not present
  – 1: Present
• Byte 5: PSU PWR GOOD
  – Bit: 0-1 = PSU1-2
  – 0: Not power good
  – 1: Power good
• Byte 6: EPOW OUT
• Byte 7: THROTTLE OUT | This command is used to show the PSU related register or Status (From PSOC) ZERO_WAKE_UP# |
| 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 Error Led 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:**
• 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: 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) | Display the node power consumptions update by XCC.(Unit: Watt) |
| OEMCMD_GET_NODE_SIZE | 0x32 | 0x99 | **Request:**
• Byte 1: Node 1 - 4
  – 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 | Displays dimensions of node |

			• Byte 6: Add-on Height	

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

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

  – 1: Saving mode 1 | Saving mode does not support 2, 3 |
| OEMCMD_SET_DATE_TIME | 0x32 | 0xA1 | **Request:**

• Byte 1: Year MSB(2000 ~2037)

• Byte 2: Year LSB (2000 ~2037)

• Byte 3: Month (0x01~0x12)

• Byte 4: Date (0x01~0x31)

• 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 | **Note:** Year is from 2000~20xx for user input convenient, the input data is decimal format. Example: Year 2010
Byte 1 : 0x20

Byte 2: 0x10 |

| OEMCMD_GET_PSU_POLICY_OVS | 0x32 | 0xA2 | **Request:** None

Response:
• Byte 1: Completion code
  – 0x00: Successful
• Byte 2: PSU Policy
  – 0: No Redundant
  – 1: N+1 Policy
• Byte 3: Oversubscription Mode
  – 0: Disable
  – 1: Enable | This command is used to get PSU policy and total power bank. (Unit :1W)

AC high line or 240VDC:
• 1320W for 1100W PSU
• 1920W for 1600W PSU
• 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:**
• Byte 1: PSU Policy
  – 0: No Redundant
  – 1: N+1 Policy
• Byte 2: OVS
  – 0: Disable
  – 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 | This command is used for set PSU policy.

We may not set the PSU policy successful due to configuration invalid. |

| OEMCMD_SET_NODE_RESET | 0x32 | 0xA4 | **Request:**

• Byte 1: Node number
  – 0x1: Node 1
  – 0x2: Node 2
  – 0x3: Node 3
  – 0x4: Node 4
• Byte 2: Reset mode
  – 1: reset (XCC reset)
  – 2: reseat (AC cycling)

Response:

• Byte 1: Completion code
  – 0x00: Successful
  – 0xC9: Parameter out of range
  – 0xD5: Current not support (Node absent) | This command is used for Reset/ Reseat node by user. If node not present, it would response 0xD5 |
| OEMCMD_GET_PSU_FAN_STATUS | 0x32 | 0xA5 | **Request:**

• Byte 1: PSU FAN number
  – 1: PSU1 FAN
  – 2: PSU2 FAN

Response:

• Byte 1: Completion code
  – 0x00: Successful
  – 0xC9: Out of range
• Byte 2: FAN Speed LSB (rpm)
• Byte 3: FAN Speed MSB (rpm)
• Byte 4: FAN duty (0~100%)
• Byte 5: FAN status
  – 0 : Not Present
  – 1 : Abnormal
  – 2 : Normal | This command is used to get PSU FAN status

Note: Ab-Normal means PSU rpm is lower than 3000 rpms. |

| OEMCMD_BACKUP_RESTORE | 0x32 | 0xA6 | **Request:**

• Byte 1: Actions

  – 0 : Get Backup or Restore Status

  – 1 : Backup to storage device

  – 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: SD RESTORE FINISHED

  – 0x42: SD RESTORE FAIL

  – 0xC9: Out of range

  – 0xCC: Invalid data field in request | This command is used to backup/ restore configuration to/from external storage device such as USB or SD. If the storage device is not inserted, it will return fail. |
| OEMCMD_GET_NODE_STATUS | 0x32 | 0xA7 | **Request:**

• Byte 1: Node number

  – 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 | Report current node status. |

			• 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 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_POLICY	0x32	0xAA	**Request:** None	
			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_REDUNDANT	0x32	0xAB	**Request:**	If PSU in "not support" or "mismatch "stage, the PSU smart redundant also not support.
			• Byte 1: Mode	
			– 0 : disable	
			– 1: per 10 minutes update	
			– 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_REDUNDANT	0x32	0xAC	**Request:** None	Status:
			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 value.
			Response:	
			• Byte 1: Completion code	
			– 0x00: Successful	

OEMCMD_GET_VPD	0x32	0xB0	**Request:**	Read Only
			• Byte 1: VPD type	Device ID:
			– 0: SMM	• 0x0: MTM (Enclosure), 10 Bytes
			– 1: PDM	• 0x1: Machine serial number (Enclosure), 10 Bytes.
			– 2: RH Riser	• 0x2: Component part number (SMM, PDM, PIOR, EIOM), 12 Bytes.
			– 3: LH Riser	
			– 4: EIOM	
			– 5: Enclosure	
			• Byte 2: Device ID	• 0x3: Component FRU number (SMM, PDM, PIOR, EIOM), 12 Bytes.
			– 0: MTM	
			– 1: Machine serial number	
			– 2: Component part number Level	• 0x4: Component serial number (SMM, PDM, PIOR, EIOM), 12 Bytes.
			– 3: Component FRU number	
			– 4: Component serial number	• 0x5: Manufacture ID (Enclosure, SMM), 4 Bytes.
			– 5: Manufacture ID	
			– 6: Hardware revision	• 0x6: Hardware revision level (SMM, PDM, PIOR, EIOM, Enclosure), 1 Byte.
			– 7: Manufacture date	
			– 8: UUID	
			– 9: IANA enterprise number	• 0x7: Manufacture date (SMM, PDM, PIOR, EIOM, Enclosure), 4 Bytes.
			– A: Product ID	
			– B: Component name	
			– C: GLID	• 0x8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Enclosure), 16 Bytes.
			– D: EC level	
			Response:	
			• Byte 1: Completion code	• 0x9: IANA enterprise number (Enclosure), 4 Bytes.
			– 0x00: Successful	
			• Byte 2: N VPD Data	• 0xA: Product ID (Enclosure), 2 Bytes.
				• 0xB: Component name (SMM, PDM, PIOR, EIOM, Enclosure), 64 Bytes.

				• 0xC: Global Identifier (GLID) (Enclosure), 8 Bytes. • 0xD: 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 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.

OEMCMD_SET_SYSTEM_FAN_PWM	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	

OEMCMD_GET_SECURITY_OPTION	0x32	0xFA	**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 (in hours)	
			– 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 (in hours)	

			– 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	
			– 0xc9: 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 ARAMETERS	0x32	0xB3	**Request:**
			
			• Byte 1: Parameter selector
			• Byte 2: Set selector. (Selects a given set of parameters under a given Parameter selector value.)
			  – 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_ 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	0x02	**Request:** • Byte 1: Channel number • Byte 2: Parameter selector • Byte 3: Set Selector	The OEM parameters are added into parameter selector and data. **(Byte 2: N)**

			– 00h: If parameter does not use a Set Selector	See "LAN Configuration Parameters" on page 61 for more details.
			• Byte 4: Block Selector	
			– 00h: If parameter does not require a block number	
			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	

SMTP Configuration Parameters

The following table is detail 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 the rules:
		
		 1. Do not consist of only space characters.
		
		 2. It must be the combination of alphanumeric characters a-z, A-Z and 0-9, space characters, non-alphabetic characters.
		
		 3. The maximum length of the field is 254 characters.
		    • Data 1: String length
		    • Data 2: N – the sting of <host name>@<domain name>

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 Email Address
		– 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 3: String length, Max = 254.
		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
		– 0b: 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.

SMTP Authentication	3	Data 1: Set selector = Field selector, 0 based.
		
		• [7:3] - reserved
		• [2:0] - Field selector
		  – 000b: Field 1 - Enable/Disable
		  – 001b: Field 2 - User name
		  – 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 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

LAN Configuration Parameters

The following table is detail parameters for LAN configuration .

Parameter Selector	Number	Parameter Data (non-volatile)
Host Name	0xC3	BMC hostname • Data 1: String length, Max = 63 • Data 2: N – the sting of BMC hostname
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

Index

U

V

W

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