



System Management Module User's Guide



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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
- Safari 9.0 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 36](#) section for more information. To log in to the SMM web interface, complete the following steps :

1. Enable SMM network, as SMM network is disabled by default. To enable SMM network, download and install IPMItool (for Linux), IPMIUtil (for Windows), or OneCli (for Windows or Linux) to your computer, and issue one of the following commands to the Lenovo XClarity Controller. The <XCC's IP> is the XCC's IP address.

- Query:

```
OneCli.exe misc smmlan query --bmc USERID:PASSWORD@192.168.70.x
ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x00
ipmiutil cmd -N <XCC's IP> -U USERID -P PASSWORD -F lan2 0 20 e8 f1 0
```

- Enable:

```
OneCli.exe misc smmlan enable --bmc USERID:PASSWORD@192.168.70.x
ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x01
ipmiutil cmd -N <XCC's IP> -U USERID -P PASSWORD -F lan2 0 20 e8 f1 1
```

- Disable:

```
OneCli.exe misc smmlan disable --bmc USERID:PASSWORD@192.168.70.x
ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x02
ipmiutil cmd -N <XCC's IP> -U USERID -P PASSWORD -F lan2 0 20 e8 f1 2
```

Note: The default XCC's IP address is 192.168.70.125.

Net Function = 0x3A			
Code	Command	Request, Response Data	Description
0xF1	SMM network control	<p>Request:</p> <ul style="list-style-type: none"> • Byte 1: Request type <ul style="list-style-type: none"> – 0x00 = Query SMM network status – 0x01 = Enable – 0x02 = Disable <p>Response:</p> <ul style="list-style-type: none"> • Byte 1 - Completion Code • Byte 2 - SMM network status (for Query request only) 	<p>This setting is used to set SMM network status which value is disabled as default.</p> <p>The Lenovo XClarity Controller command supports ThinkSystem D2 Enclosure and ThinkSystem SD530 Compute Node.Product_name only.</p>

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

The following out-of-factory default network settings are applied when you first access the SMM:

- a. SMM attempts to use DHCP to acquire an IP address. If SMM cannot acquire IP address from the DHCP server in 2 minutes, it will use the static IP address.
- b. The default static IP is 192.168.70.100
- c. Using Hyper Text Transfer Protocol Secure (HTTPS). (For example, <https://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 the following procedures:

- 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: PASSWORD

Note: The sixth character of PASSWORD is number zero.

4. Click **Log in**.
5. Change password for the first login

Default password complexity rules:

- At least ten 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

Notes: To calculate LLA IP, follow the following steps:

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.

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:

- Click on the **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

An overview of the front side of the enclosure along with status related information.

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

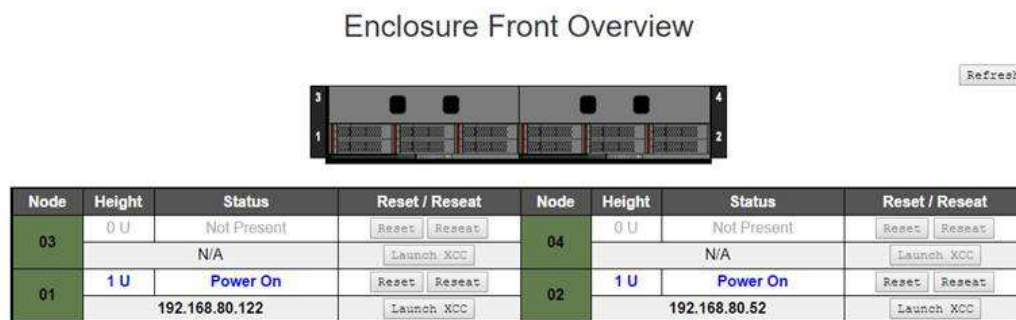



Figure 3. Enclosure front overview

Enclosure Front Overview



Node	Height	Status	Reset / Reseat	Node	Height	Status	Reset / Reseat
03	0 U	Not Present	<input type="button" value="Reset"/> <input type="button" value="Reseat"/>	04	0 U	Not Present	<input type="button" value="Reset"/> <input type="button" value="Reseat"/>
		N/A	<input type="button" value="Launch XCC"/>			N/A	<input type="button" value="Launch XCC"/>
01	0 U	Not Present	<input type="button" value="Reset"/> <input type="button" value="Reseat"/>	02	0 U	Not Present	<input type="button" value="Reset"/> <input type="button" value="Reseat"/>
		N/A	<input type="button" value="Launch XCC"/>			N/A	<input type="button" value="Launch XCC"/>

Note:

Please manually refresh 'Enclosure Front Overview' page 5 minutes after SMM or node XCC is reset to get updated node status.
Please use the refresh button on the web, refresh via browser or F5 will cause logout.
The 'Launch XCC' buttons still are able to launch XCC websites when the SMM session expires.

Enclosure Mode:

This enclosure is running under **Shared I/O mode**, the nodes are categorized into 2 groups, each group has one primary node and one auxiliary node.
The auxiliary node will NOT be granted with power permission until the primary node is ready.

Group I		Group II	
Node 3: Auxiliary		Node 4: Primary	
Node 1: Primary		Node 2: Auxiliary	

Figure 4. Enclosure front overview with shared PCIe dual adapters

- **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.
 - **Add-on:** This is an add-on node, like PCIe expansion node.
- **Reset/Reseat:** Used to perform virtual reset/virtual reseat.
 - **Reset:** Remotely reset node Lenovo XClarity Controller (Lenovo XClarity Controller) through SMM.
 - **Reseat:** Remotely power cycle the entire node.

Note: After virtual **Reset/Reseat**, the node Lenovo XClarity Controller takes at least two minutes to be ready.
- Launch Lenovo XClarity Controller: Using the specified IP address to access Lenovo XClarity Controller from Web.

Notes:

1. **Enclosure Front Overview** needs to be manually updated five minutes after SMM or the node Lenovo XClarity Controller is reset to maintain latest node status.
2. The enclosure mode description only appears when shared PCIe dual adapters are installed.

Enclosure rear overview

SMM information is displayed in this view.

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

- **Management Module**

- Current power supply unit
- Fan


Management Module

Management Module: Indicates the status of SMM

Management Module	
Name	System Management Module (SMM)
Power Status	<input checked="" type="checkbox"/> Normal <input type="button" value="SMM Reset"/> <input type="button" value="Reset to Default"/>
Firmware Version	1.0 (TESM04A)
Boot-up Flash	First
ID LED	Accept: <input checked="" type="radio"/> Off => Accept <input type="radio"/> On <input type="radio"/> Blink <input type="button" value="Apply"/>
Error LED	Off
FFDC	<input type="button" value="Capture"/>
Open Source Licenses	<input type="button" value="Download"/>

Figure 5. Management Module

- **Status:** Indicates the SMM operating status.
 - **SMM Reset:** After this button is clicked, SMM will start counting down 90 seconds, then show the following information.



Management Module	
Name	System Management Module (SMM)
Power Status	<input checked="" type="checkbox"/> Normal <input type="button" value="SMM Reset"/> <input type="button" value="Reset to Default"/>
Firmware Version	1.0 (TESM04A)
Boot-up Flash	First
ID LED	Accept: <input checked="" type="radio"/> Off => Accept <input type="radio"/> On <input type="radio"/> Blink <input type="button" value="Apply"/>
Error LED	Off
FFDC	<input type="button" value="Capture"/>
Open Source Licenses	<input type="button" value="Download"/>

SMM has been reset successfully.
 Therefore, your session is being terminated.
[Click here to start a new session to access SMM](#)

Figure 6. Notification of successful reset

- **Reset to Default:** Restored the SMM settings to out-of-factory default

Following are the reset settings corresponding default values:

- SMTP: All email alert disabled; Email Server address = 0.0.0.0; Authentication disabled; as shown in the following figure. See “SMTP/SNMP/PEF” on page 33 for details.
- SNMP: All traps disabled; Community Name = “public”; as shown in the following figure. See “SMTP/SNMP/PEF” on page 33 for details.
- PEF: None of the filter selected; Global Alerting unchecked.

- Network Configuration (see “[Network Configuration](#)” on page 36 for details):
 - General Settings: Host Name = “SMM-\$MAC_ADDR”; DNS Domain Name = “lenovo.com”.
 - Network Interface Configuration:
 - Auto Negotiation = on, Dynamic DNS = unchecked, Use DHCP for DNS Domain Name = unchecked, Respond to ARP = checked; IPv4 = Enabled, Use DHCP first, then static= checked, (Default static IP: IP Address = 192.168.70.100, Subnet Mask = 255.255.255.0, Gateway = 192.168.70.1), Preferred/Alternate DNS Server = blank; IPv6 = Enabled, Use DHCP to obtain DNS server addresses = unchecked, Preferred/Alternate DNS Server = blank; VLAN = disabled.

- Time Settings: The time setting will not be reset.
- User Account: Password Policy Check Enabled by default; User name= USERID, Password = PASSWORD (The 6th character of PASSWORD is number zero); User Privileges = admin; see “[User Account](#)” on page 39 for details.
- Account Security (see “[Account Security](#)” on page 41 for details):
 - 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, IP address block for 300 seconds after 10 login failures = disabled.
- Web Service: HTTPS Port Number = 443. (Notice: No default HTTP port 80)
- Web Certification:
 - 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) = ww.lenovo.com
- NTP: Operation Mode = Disable, Server Time Zone = UTC

- **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.
- **Identification LED (ID LED):** This blue LED serves to visually locate an enclosure in the rack with the following three options available. To activate an option, choose it from the list and click on **Apply** or use the corresponding commands.

- **Turn Off**

When this option is activated, SMM ID LED would first turn off the identification LED on all the nodes in the enclosure, and enter accept mode, in which the LED behavior is determined by the node ID LEDs.

Command to turn SMM ID LED off:

```
ipmitool -H %smmip% -U USERID -P PASSWORD -I lanplus raw 0x32 0x97 0x01 0x00
```

Table 1. SMM ID LED accept mode behavior

Node identification LEDs	SMM identification LED
All the node ID LEDs are off.	Off

Table 1. SMM ID LED accept mode behavior (continued)

No node ID LED is blinking, but one or more node ID LEDs are on.	On
One or more node ID LEDs are blinking.	Blink

Notes:

1. SMM ID LED is set in accept mode by default.
2. See “Node operator panel” in *ThinkSystem D2 Enclosure, Modular Enclosure, Modular Enclosure for 6U Configuration and ThinkSystem SD530 Compute Node Maintenance Manual or Setup Guide* for more information about node ID LEDs.

– **Turn On**

When this option is activated, all the node ID LEDs will be on except the blinking ones, which will remain blinking.

Command to turn SMM ID LED on:

```
ipmitool -H %smmip% -U USERID -P PASSWORD -I lanplus raw 0x32 0x97 0x01 0x01
```

– **Blink**

When this option is activated, all the node ID LEDs will be blinking regardless of previous status.

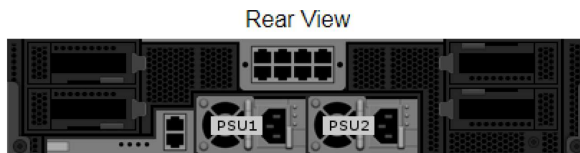
Command to turn SMM ID LED blink:

```
ipmitool -H %smmip% -U USERID -P PASSWORD -I lanplus raw 0x32 0x97 0x01 0x02
```

- **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.
- **Open Source Licenses:** Click on Download button to download the Open Source Licenses file of Open Source packages that used in SMM

Current power supply unit

Current power supply unit: Indicates the status of power supplies



Current PSU - Redundancy Enabled, OVS Enabled, Total power bank = 1260W

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttle	DC-PG
PSU1	Present	1100 W	124 V	1050 W	Disabled	Normal	Normal	Yes
PSU2	Present	1100 W	122 V	1050 W	Disabled	Normal	Normal	Yes

Figure 7. Current power supply unit

• **Status**

- **Present:** The power supply is installed.

- **Not Present:** No power supply is installed.
- **Fault:** The power supply is in faulty condition.
- **Ratings:** Power rating, such as 1100 W, 1600 W and 2000 W, is displayed here.
- **AC-IN:** AC input power is displayed here.
- **Capability:** The maximum DC output power that the power supply can provide to the entire system is displayed here.
 - If DC-PG of the power supply unit is **No**, capability will be 0 W.
 - If DC-PG of the power supply unit is **Yes**, capability usually equals the rating.

Notes: The following status are exceptions.

- Rating 1100 W power supply unit supports low line, capability will be 900 W (AC-IN < 100 V), 1050 W (100 V <= AC-IN < 170 V) or 1100 W (170 V <= AC-IN)
- If the two power supply units of different capacities, the capability will be of the 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 unit is in hibernation with no DC output.
- **EPOW (Early power off warning)**
 - **Assert:** The power supply is in AC lost condition.
 - **Normal:** The power supply AC is working.
- **Throttle**
 - **Assert:** The power supply unit is in over-current condition.
 - **Normal:** The power supply unit is working.
- **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.



Figure 8. 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.

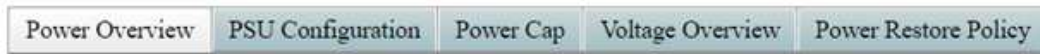


Figure 9. Power tab

- **Power Overview:** Displays the enclosure level power consumption, the node level power consumption, and power consumption of subsystems, which includes power subsystem (power supply units), and thermal subsystem (System fans).
- **Power supply unit 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

This tab displays enclosure power consumption, node power consumption, and power consumption of sub-systems, including power (PSUs) and thermal (system fans) sub-systems.

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 10. Power Overview

Notes:

- The enclosure and power supply unit power consumption sampled 1 second out of every 30 seconds.
- The node power consumption includes the power consumption of corresponding add-on tray (e.g. a PCIe expansion node).

Power supply unit configuration

Power supply unit configuration allows users to set the redundancy mode for power supplies.

PSU Configuration

Redundancy Mode

Redundancy Mode	N + 1 ▼
Oversubscription Mode	OVS On ▼

Zero Output

Zero Output	30 minutes (default) ▼
-------------	------------------------

Figure 11. Power supply unit 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 power supply unit as redundant power supply, so there is no impact to system operation or performance if any one of the power supply units is in faulty condition, given that Oversubscription mode is not enabled.
 - **Oversubscription mode:** **Oversubscription mode** grants users access to extra power from the redundant power supply. When the redundancy fails, however, the power supply unit will shut down within one second if system power loading is not corrected. SMM will take the action for node throttling at such power emergency, while enclosure performance could be impacted.
 - Oversubscription mode is only applied with N+1 redundancy mode enabled.
 - When enabled with N+1, the total available power is equivalent to 1.2 times of the capacity of one single unit of power supply.
 - Click on **Apply** after choosing the redundancy and oversubscription mode from drop-down menu 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 power supply units to optimize power supply unit efficiency when system load changes. With shorter scanning period, power supply unit are also turned on and off more frequently when system loading fluctuates, which could reduce power supply unit life. Disable zero output will keep all power supply unit 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	<input checked="" type="checkbox"/> Enable <input style="width: 50px;" type="text" value="490"/> W (Range: 422 W ~ 496 W)
	Power Save
	<input type="radio"/> Disable <input type="radio"/> Enable

Apply

Figure 12. Enclosure Power Cap

Power Cap Policy

Choose a power cap type : Node Power Cap ▼

Node Power Cap / Power Save

Node	Power Cap		
<div style="border: 1px solid gray; padding: 2px; display: inline-block;">3 ▼</div>	Protective Power Cap	DISABLE	
	User Power Cap	DISABLE	
		User Define	<input type="checkbox"/> Enable <input style="width: 50px;" type="text" value="0"/> W (Range: 83 W ~ 168 W)
		Thermal	DISABLE
	Power Save		
		<input type="radio"/> Disable <input type="radio"/> Enable	

Figure 13. 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 2. 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	3.5366 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 14. Voltage Overview

Power Restore Policy

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

Power Restore Policy

<input checked="" type="checkbox"/>	Node	Status	<input type="checkbox"/>	Node	Status
<input checked="" type="checkbox"/>	03	Restore	<input type="checkbox"/>	04	Always OFF
<input checked="" type="checkbox"/>	01	Restore	<input type="checkbox"/>	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 15. 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
- **Power supply unit 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 16. 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.

Power supply unit Fan Speed

PSU Fan Speed

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

Figure 17. Power supply unit Fan Speed

- **Speed**: power supply unit fan speed normally operates at 4000~23000 rpm. power supply unit fan speed is displayed in RPM.

- **Duty (% of Max.)** : Out of 25300 rpm. (23000*(1+10%))

- **Status**:

- **Normal**: power supply unit 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



Figure 18. 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 adapter that is installed in the enclosure, acoustic mode is automatically disabled except when set in Mode 5 (Aggressive cooling mode).

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**
- **Power supply unit 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
Enclosure Machine Type/Model	7X20CT01WW
Enclosure Serial Number	719001K
Enclosure UUID	8230F6F39B504491A4B423D96CD0C1DC
Enclosure Hardware Version	N/A

Backup Restore

Edit

Figure 19. Enclosure VPD

Note: The storage device can be a USB device or microSD card, depending on the 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 Serial Number can be up to 10 characters using alphanumeric characters a-z, A-Z and 0-9.
- **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

Backup Restore

Edit

Figure 20. 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 21. SMM VPD

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

Power supply unit 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
Secondary FW Revision	84.51
MFR Model	FSF056
MFR Location	DB
Barcode	8SSP50L09207A1DB7111004

Figure 22. Power supply unit VPD

- **MFR Revision:** Assembly revision
- **Type:** CFFv3 power supply unit type
- **Part Number:** Lenovo part number
- **FRU Number:** Lenovo FRU number

- **Serial Number:** The last 11 digits of a 8S bar code label on power supply unit. 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
- **Power supply unit 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 23. EIOM VPD

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

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 24. PIOR Right/Left VPD

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

Event Log

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

SEL (System event log) records enclosure level info/warning/critical events so that user can learn what happened 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** to reorder the sorting from latest to earliest event.

Note: Currently, new event cannot be written into the log when it is full. Manually clear log to allow the latest event to be recorded.

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 DK 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)	SNM_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

Figure 25. Event Log

- **Refresh:** SEL is never automatically refreshed. Click on **Refresh** to acquire the latest entries when the log is full.
- **Save Log:** SEL data will be saved as .csv file and exported.
- **Clear Log:** SEL data will be cleared.
- **Severity:** SEL data entries will be listed in the order based on severity.
 - : Indicates **Information** type of events
 - : Indicates **Warning** type of event
 - : Indicates **Critical** type of events. Critical event lites 'Error' LED.

Following is a list of all the possible events:

Table 3. List of possible events

Message String	Message Description	Severity	Assert	Deassert
PS% 12V OC Fault	PSU Over-Current	Critical	PSU Fault Indicator: On	NA
PS% 12V OV Fault	PSU 12V Over-Voltage	Critical	PSU Fault Indicator: On	NA
PS% 12V UV Fault	PSU 12V Under-Voltage	Critical	PSU Fault Indicator: On	NA
PS% 12V AUX OC Fault	PSU 12V AUX Over-Current	Critical	PSU AC Good Indicator: Off	NA

Table 3. List of possible events (continued)

PS% 12V AUX OV Fault	PSU 12V AUX Over-Voltage	Critical	PSU AC Good Indicator: Off	NA
PS% 12V AUX UV Fault	PSU 12V AUX Under-Voltage	Critical	PSU AC Good Indicator: Off	NA
PS% IIN OC Fault	PSU IIN Over-Current	Critical	PSU DC Good Indicator: Off	NA
PS% VIN OV Fault	PSU VIN Over-Voltage	Critical	PSU Fault Indicator: On	NA
PS% VIN UV Fault	PSU VIN Under-Voltage	Critical	PSU Fault Indicator: On	NA
PS% 12V OC Warning	PSU 12V Over-Current	Warning	NA	NA
PS% IIN OC Warning	PSU IIN Over-Current	Warning	NA	NA
PS% VIN OV Warning	PSU VIN Over-Voltage	Warning	NA	NA
PS% VIN UV Warning	PSU VIN Under-Voltage	Warning	NA	NA
PS% Thermal Fault	PSU Thermal Fail	Critical	PSU Fault Indicator: On	NA
PS% FAN Fault	PSU FAN Fail	Critical	PSU Fault Indicator: On	NA
PS% Thermal Warning	PSU Thermal Warning	Warning	NA	NA
PS% OVERSUBSCRIPTION FAULT	Power supply shutdown due to THROTTLE assertion over 3 seconds	Critical	PSU Fault Indicator: On	NA
PS% iShare Warning	PSU Current Share Warning	Warning	NA	NA

Table 3. List of possible events (continued)

PS% EPOW Assert	PSU AC Lost	Critical	PSU AC Good Indicator: Off	PSU AC Good Indicator: On
PS% VIN UV Insufficient Power Fault	PSU VIN Under-Voltage Insufficient Power	Critical	PSU Fault Indicator: On	NA
PS% AC Low Line	This PSU is plugged in lower than 170V AC	Info	No LED	No LED
PS% Internal OC Fault	Any of PSU internal fault-caused over current condition	Critical	PSU Fault Indicator: On	NA
PS% Intermittent Fault	Any of undefined PSU internal faults take place and PSU may either shutdown or still attempt to operate	Critical	PSU Fault Indicator: On	NA
PS% Not Support	Asserted when non-support PSU is installed	Critical	Error LED: On	Error LED: Off
PS Type mismatch	Asserted when PSU type mismatch	Warning	No LED	No LED
FAN% Not Present	Fan module is not present	Critical	Error LED: On Fan Fault LED: On	Error LED: Off Fan Fault LED: Off
FAN Tach %: Fan sensor, failure event was asserted, reading value : %RPM (Threshold : 1472RPM)	when Fan Tach sensor reading is less than threshold RPM	Critical	Error LED: On Fan Fault LED: On	Error LED: Off Fan Fault LED: Off
FAN FFS	System fan in full speed	Warning	No LED	No LED
PSU FFS	PSU fan in full speed	Warning	No LED	No LED
NODE%_PRESENT	Node is installed in the indicated slot	Info	No LED	No LED
NODE%_DC_OFF	Node is turned off (DC-Off)	Info	No LED	No LED

Table 3. List of possible events (continued)

NODE%_RESEAT	User perform virtual reseal, whole node has been AC cycle * Trying to reseal a powered on node is not allowed, SMM will block the request	Info	No LED	No LED
NODE%_RESET	User perform reset, the BMC on node has been reset	Info	No LED	No LED
NODE%_1ST_NOPERM	BMC fail to get the power permission to power on the node	Warning	No LED	No LED
NODE%_2ND_NOPERM	Client OS fail to get the power permission to power on	Warning	No LED	No LED
NODE%_CAP_LOW	The restored capping value is lower than current capping boundary	Critical	Error LED: On	No LED
NODE%_CAP_FAIL	Fail to set capping value to XCC	Critical	Error LED: On	No LED
NODE%_XCC_FAULT	The BMC of indicated node has no response after power on	Critical	Error LED: On	No LED
NODE%_NO_COMM	The BMC of indicated node has no response over 1 minutes, system fans are ramped up to prevent node from potential thermal condition	Warning	No LED	No LED
NODE%_FS_NORESP	The BMC of indicated node has no response over 5 minutes and no further action owing to OS run-time	Critical	Error LED: On	No LED
NODE%_RESEAT_SMM	The BMC of indicated node has no response over 7 minutes and enter 2nd stage of failsafe action * The node which is already powered on does not be reseated by Fail-Safe task.	Warning	No LED	No LED
NODE%_FS_NOPERM	The BMC of indicated node has no response over 14 minutes and into final stage of failsafe, the power budget will be recycled and the power permission will be rejected	Critical	Error LED: On	No LED
NODE%_PMIN_2_BIG	For the power cap boundary PMax and PMin XCC send to SMM, PMin is greater than PMax	Critical	Error LED: On	No LED
Enclosure No Perm	Power permission is denied for the whole Enclosure if FAN not present happened.	Warning	No LED	No LED
ENCL_CAP_LOW	The restored enclosure capping value is lower than current capping boundary	Critical	Error LED: On	No LED

Table 3. List of possible events (continued)

ENCL_CAP_FAIL	Fail to set enclosure capping value	Critical	Error LED: On	No LED
ENCL_PMAX_2_BIG	The summary of PMax of all nodes has exceed the total power bank	Critical	Error LED: On	No LED
ENCL_PMIN_2_BIG	The summary of PMin of all nodes has exceed the total power bank	Critical	Error LED: On	No LED
HI_PCI_NOACSTIC	Acoustic mode 1 - 4 is disabled due to GPU node installed or, high power or thermal demanding PCIe card is installed on node.	Info	No LED	No LED
NODE%_HI_PCI	High power or thermal demanding PCIe card is installed in this node. Enclosure acoustic mode cannot be applied so that enough air flow is maintained for this node	Info	No LED	No LED
Enclosure Right PIOR 3.3V Sense	SMM sense Shuttle power fault if 3.3V Aux PWRGD low	Critical	Error LED: On	Error LED: Off
Enclosure Left PIOR 3.3V Sense	SMM sense Shuttle power fault if 3.3V Aux PWRGD low	Critical	Error LED: On	Error LED: Off
Enclosure Right PIOR fault	The Shuttle right PIOR not exist or fail	Critical	Error LED: On	Error LED: Off
Enclosure Left PIOR fault	The Shuttle left PIOR not exist or fail	Critical	Error LED: On	Error LED: Off
Enclosure Event Log Disable: Event Logging Disabled sensor, Log Area Reset/Cleared was asserted	SMM SEL is cleared	Info	No LED	No LED
Enclosure Event Log Disable: Event Logging Disabled sensor SEL 75% was asserted	SMM assert Warning when SEL is at least 75% capacity	Warning (75%)	No LED	No LED
Enclosure Event Log Disable: Event Logging Disabled sensor SEL Full was asserted	SMM assert Error when SEL is 100% full.	Critical (Full)	No LED	No LED
SMM 12V Sense	When voltage sensed on 12V power rail is lower than lower critical threshold (10.816V) or higher than upper critical threshold (13.248 V)	Critical	Error LED: On	Error LED: Off

Table 3. List of possible events (continued)

SMM 5V Sense	When voltage sensed on 5V power rail is lower than lower critical threshold (4.563 V) or higher than upper critical threshold (5.589 V)	Critical	Error LED: On	Error LED: Off
SMM 3.3V Sense	When voltage sensed on 3.3V power rail is lower than lower critical threshold (2.975 V) or higher than upper critical threshold (3.623 V)	Critical	Error LED: On	Error LED: Off
SMM 2.5V Sense	When voltage sensed on 2.5V power rail is lower than lower critical threshold (2.36 V) or higher than upper critical threshold (2.62 V)	Critical	Error LED: On	Error LED: Off
SMM 1.2V Sense	When voltage sensed on 1.2V power rail is lower than lower critical threshold (1.12 V) or higher than upper critical threshold (1.28 V)	Critical	Error LED: On	Error LED: Off
SMM 1.15V Sense	When voltage sensed on 1.2V power rail is lower than lower critical threshold (1.078 V) or higher than upper critical threshold (1.21 V)	Critical	Error LED: On	Error LED: Off
VBAT Sense	When voltage sensed on coin battery output voltage is lower than lower critical threshold (1.795V)	Critical	Error LED: On	Error LED: Off
PIOR R Fault	Right PIOR card not exist or fail	Critical	Error LED: On	NA
PIOR L Fault	Left PIOR card not exist or fail	Critical	Error LED: On	NA
EIOM not present	EIOM card not present	Info	No LED	No LED
P BOOT Fault	Primary bank boot fail	Warning	Error LED: Off	Error LED: Off

Configuration

Configuration tabs settings are used to manage SMM module.



Figure 26. 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

The firmware update process comes in two phases. During firmware upload stage, you can choose the location where the firmware image is stored. SMM would check the image header information as 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.

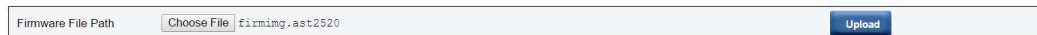


Figure 27. Firmware Update

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, one the following two pages will appear depending on the type of image that is uploaded:

- [“SMM firmware” on page 32](#)
- [“PSU firmware” on page 33](#)

SMM firmware

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	<input type="text" value="firmimg.ast2520"/>	<input type="button" value="Upload"/>
--------------------	--	---------------------------------------

Firmware Image

Current Version	New Version	Preserve Settings	Recover Primary Bank Firmware
1.0 (TESM538)	1.0 (TESM538)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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.

<input type="button" value="Update"/>	<input type="button" value="Cancel"/>
---------------------------------------	---------------------------------------

Figure 28. SMM firmware Update

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. The **Secure Rollback** option in the firmware image confirmation table determines if rolling back to a previous firmware level is allowed. It is set as disabled (unchecked) by default.
3. SMM will automatically restart if you cancel firmware update process after uploading the firmware image.

PSU firmware

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 CFF_V3_Seco_EST_FW.upd

PSU Firmware Image

Type	Vendor	Version
CFFV3 1100W PT	ARTE	4.53

PSU Firmware Update Information

Update PSU	PSU No	Type	Vendor	FRU	Current Version
<input type="checkbox"/>	1	CFFV3 1100W PT	ACBE	01GV270	94.51
<input type="checkbox"/>	2	CFFV3 1100W PT	ARTE	01PE162	4.53

Upload is completed. Please select PSU and click 'Update' to proceed PSU firmware update or click 'Cancel' to terminate the update. Please make sure the system power is off or the system is configured with power redundant mode.

Figure 29. PSU firmware update

After PSU firmware image is uploaded, the information of the firmware image will be displayed with the checkbox(s) for compatible PSU(s).

Notes:

1. If the operating system is running, there will be a pop-up warning dialog box for confirmation.
2. PSU firmware update will disable power redundancy mode.
3. PSU firmware update requires both of the two PSUs to be in DC-PG.

During firmware update

Firmware Update



10% Completed

Updating, please wait. It won't stop processing due to leave this page.

Figure 30. Firmware update processing

During firmware update, the system will direct you to a loading page while all SMM functions are temporarily 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:	<input type="text" value="lebova-200@lebova.com"/>
-------	--

Destination Email Addresses

	Enable	Destination Email Address	Email Description	Test
Email Alert 1	<input type="checkbox"/>	<input type="text"/>	SMTP email alert	<input type="button" value="Send Alert 1"/>
Email Alert 2	<input type="checkbox"/>	<input type="text"/>	SMTP email alert	<input type="button" value="Send Alert 2"/>
Email Alert 3	<input type="checkbox"/>	<input type="text"/>	SMTP email alert	<input type="button" value="Send Alert 3"/>
Email Alert 4	<input type="checkbox"/>	<input type="text"/>	SMTP email alert	<input type="button" value="Send Alert 4"/>

SMTP (email) Server Settings

SMTP IP Address	<input type="text" value="0.0.0.0"/>
SMTP Port Number	<input type="text" value="25"/>

SMTP Authentication

Enable	<input type="checkbox"/> Anonymous account will be used when authentication is disabled.
Username	<input type="text"/>
Password	<input type="password"/>
STARTTLS Mode	<input type="button" value="AUTO"/>
SASL Mode	<input type="button" value="AUTO"/>

Figure 31. SMTP

- **SMTP:** You can enable, configure and test SMTP email alert at this page.
 - Click **Send Alert #** to test the email alert.
 - 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.

SNMP

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

IP Destination List

Destination	Enable	IPv4/IPv6	IP Address	Test
IP Destination 1	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap
IP Destination 2	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap
IP Destination 3	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap
IP Destination 4	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap
IP Destination 5	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap
IP Destination 6	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap
IP Destination 7	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap
IP Destination 8	<input type="checkbox"/>	* @	0.0.0.0	Send Test Trap

Community String

Community Name: public

Figure 32. 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 PEF
All Type, Voltage Critical Filter	<input type="checkbox"/>
All Type, Fan Critical Filter	<input type="checkbox"/>
All Type, Power Supply Critical Filter	<input type="checkbox"/>
All Type, Event Logging Disabled Critical Filter	<input type="checkbox"/>
All Type, Module Or Board Critical Filter	<input type="checkbox"/>
All Type, Chassis Critical Filter	<input type="checkbox"/>
All Type, Slot Or Connector Critical Filter	<input type="checkbox"/>
Threshold Type, Fan Informational Filter	<input type="checkbox"/>

Apply

Figure 33. 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	E06-0000A8129911
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	10.241.66.167	Disabled	::0

Apply

Figure 34. 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

Network Interface Configuration

Network Interface Settings
 To change the Network Interface Configuration will require 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.

Device Type	Dedicated
MAC Address	00:c0:a8:12:59:77
Auto Negotiation	<input checked="" type="radio"/> On <input type="radio"/> Off
Network Speed	1000 Mb/s
Duplex Mode	<input checked="" type="radio"/> Full <input type="radio"/> Half

General Settings

Enable Dynamic DNS	<input type="checkbox"/>
Use DHCP for DNS Domain Name	<input type="checkbox"/>
Respond to ARP	<input checked="" type="checkbox"/>

Figure 35. 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

IPv4 Settings

Enabled	<input checked="" type="checkbox"/>
Use DHCP first, then Static	<input checked="" type="checkbox"/>
IP Address	192.168.70.100
Subnet Mask	255.255.255.0
Gateway	192.168.70.1
Use DHCP to obtain DNS server addresses	<input type="checkbox"/>
Preferred DNS Server	0.0.0.0
Alternate DNS Server	0.0.0.0

Figure 36. 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	<input checked="" type="checkbox"/>
Use DHCP	<input checked="" type="checkbox"/>
Use Stateless	<input checked="" type="checkbox"/>
IP Address 1	<input type="text" value=":::111/64"/>
IP Address 2	<input type="text" value=":::0"/>
Gateway	<input type="text" value=":::1"/>
Link Local Address	<input type="text" value="fe80::0a94:eff:fe2f:8fd0/64"/>
Use DHCP to obtain DNS server addresses	<input type="checkbox"/>
Preferred DNS Server	<input type="text" value=":::1"/>
Alternate DNS Server	<input type="text" value=":::1"/>

Figure 37. 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	<input type="checkbox"/>
VLAN ID	<input type="text" value="0"/>
Priority	<input type="text" value="0"/>

Figure 38. 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

Date and Time:

August 2016						
Now						
Su	Mo	Tu	We	Th	Fr	Sa
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3

Time						
Hour						
0	1	2	3	4	5	
6	7	8	9	10	11	
12	13	14	15	16	17	
18	19	20	21	22	23	

Minute

:00	:05	:10	:15	:20	:25
:30	:35	:40	:45	:50	:55

Exact minutes:

Second

:00	:05	:10	:15	:20	:25
:30	:35	:40	:45	:50	:55

Exact seconds:

Select Date and Time

Figure 39. 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 40. User Account page for users and operators

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 = PASSWORD

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 41. User Account page for administrator

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

Back

Password Policy

Password Policy Check Enabled Yes

General

User ID	2
Enable User	<input checked="" type="checkbox"/>
User Name	<input type="text" value="USERID"/>
Change Password	<input type="checkbox"/>
New Password	<input type="text"/>
Confirm New Password	<input type="text"/>

User Privileges

User Role	Administrator
IPMI LAN Privilege	Administrator

Figure 42. 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.

Table 4. Account security settings

Rule	Value range	Default value
Minimum password length	8-10	10
Force user to change password on first access		Yes
Password expiration period (in days)	0-365	90
Password expiration warning period (in days)	0-90	5
Minimum password change interval (in hours)	0-240	24
Minimum password reuse cycle (0-10)	0-10	5
Maximum number of login failures	0-10	5
Lockout period after maximum login failures (in minutes)	0-2880	60
Web inactivity session timeout (in minutes) ¹	0-1440	20
IP address block for 300 seconds after 10 login failures		No

Services

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

1. This value takes effect after the next log-in.

Services

Web Server

HTTPS Port Number	<input type="text" value="443"/>
Max Sessions	32
Active Sessions	2

IPMI

Enabled	<input checked="" type="checkbox"/>
---------	-------------------------------------

Figure 43. 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 44. 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	<input type="text"/>
Organization Name	<input type="text"/>
Organization Unit	<input type="text"/>
Locality	<input type="text"/>
State Name	<input type="text"/>
Country Code	<input type="text" value="Afghanistan"/>
Email	<input type="text"/>

Figure 45. 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	<input type="button" value="Choose File"/> No file chosen	<input type="button" value="Import Certificate"/>
-----------	---	---

Figure 46. 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

Email

Figure 47. 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

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

Network Time Protocol

Operation Mode

NTP Server 1

NTP Server 2

NTP Server 3

Requested Mode's Update Frequency (minutes)

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

Figure 48. 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

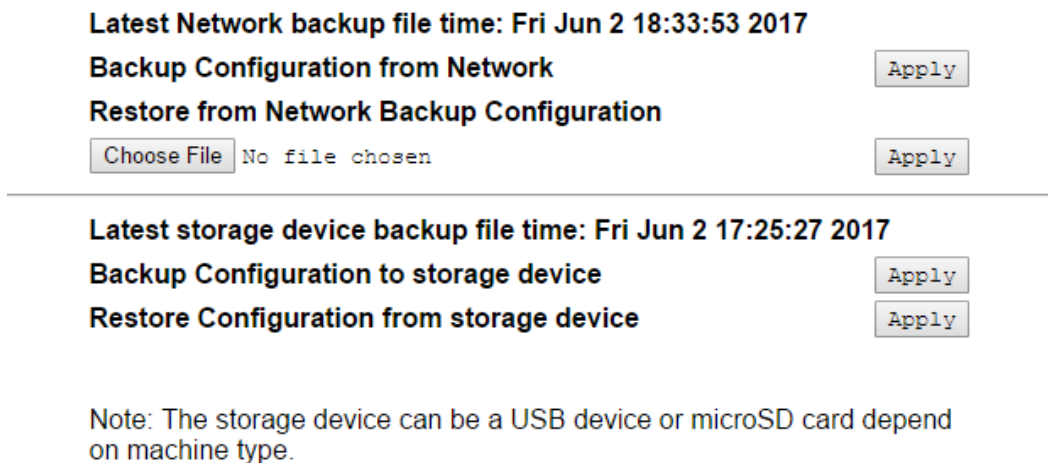
Backup and Restore

Configurations are automatically saved when they are set or modified. Back up or restore the configurations to or from a local device.

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 depending on the machine type. The size of the USB/microSD storage device should be larger than 1GB. The support file system is FAT32. The support file system is FAT32. For more details, refer to “Device installation and removal for SMM data backup and restore” in *ThinkSystem D2 Enclosure, Modular Enclosure, Modular Enclosure for 6U Configuration and ThinkSystem SD530 Compute Node Maintenance Manual*.

SMM Backup and Restore Configuration



Latest Network backup file time: Fri Jun 2 18:33:53 2017

Backup Configuration from Network

Restore from Network Backup Configuration

No file chosen

Latest storage device backup file time: Fri Jun 2 17:25:27 2017

Backup Configuration to storage device

Restore Configuration from storage device

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

Figure 49. SMM Recovery

- **Backup:** Backup SEL and the following 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 includes information about IPMI commands.

Table 5. IPMI command list

NetFn	CMD	Name
0x32	0x90	OEMCMD_GET_PSU_COLLECTED_DATA
0x32	0x91	OEMCMD_GET_PSU_STATUS
0x32	0x94	OEMCMD_GET_FAN_GPIO
0x32	0x95	OEMCMD_SET_FAN_GPIO
0x32	0x96	OEMCMD_GET_SYS_LED
0x32	0x97	OEMCMD_SET_SYS_LED
0x32	0x98	OEMCMD_GET_NODE_POWER_READING
0x32	0x99	OEMCMD_GET_NODE_SIZE
0x32	0x9B	OEMCMD_SET_ACOUSTIC_MODE
0x32	0x9D	OEMCMD_GET_CAP_BOUNDARY
0x32	0x9E	OEMCMD_SET_CAP_VALUE
0x32	0x9F	OEMCMD_SET_CAP_STATE
0x32	0xA0	OEMCMD_GET_CAP_STATE
0x32	0xA1	OEMCMD_SET_DATE_TIME
0x32	0xA2	OEMCMD_GET_PSU_POLICY_OVS
0x32	0xA3	OEMCMD_SET_PSU_POLICY_OVS
0x32	0xA4	OEMCMD_SET_NODE_RESET
0x32	0xA5	OEMCMD_GET_PSU_FAN_STATUS
0x32	0xA6	OEMCMD_BACKUP_RESTORE
0x32	0xA7	OEMCMD_GET_NODE_STATUS
0x32	0xA8	OEMCMD_GET_SMM_STATUS
0x32	0xA9	OEMCMD_SET_NODE_RESTORE_POLICY
0x32	0xAA	OEMCMD_GET_NODE_RESTORE_POLICY
0x32	0xAB	OEMCMD_SET_PSU_SMART_REDUNDANT
0x32	0xAC	OEMCMD_GET_PSU_SMART_REDUNDANT
0x32	0xAD	OEMCMD_SMM_RESET_TO_DEFAULT
0x32	0xAF	OEMCMD_SET_VPD
0x32	0xB0	OEMCMD_GET_VPD
0x32	0xB1	OEMCMD_FFDC_DUMP
0x32	0xB2	OEMCMD_SET_SMTF_CONFIG_PARAMETERS
0x32	0xB3	OEMCMD_GET_SMTF_CONFIG_PARAMETERS

Table 5. IPMI command list (continued)

0x32	0xB4	OEMCMD_SET_NTP_CONFIG_PARAMETERS
0x32	0xB5	OEMCMD_GET_NTP_CONFIG_PARAMETERS
0x32	0xC3	OEMCMD_GET_PSU_DATA
0x32	0xC4	OEMCMD_SET_SYSTEM_FAN_PWM
0x32	0xC5	OEMCMD_SET_SYSTEM_CHASSIS_MODE
0x32	0xC6	OEMCMD_SET_SYSTEM_FAN_CONTROL
0x32	0xC7	OEMCMD_GET_NODE_COOLING_VALUE
0x32	0xD1	OEMCMD_POWER_PERMISSION_OVERRIDE
0x32	0xF0	OEMCMD_GET_WEB_STATE
0x32	0xF1	OEMCMD_SET_WEB_STATE
0x32	0xF2	OEMCMD_SET_FAILSAFE_OPTION
0x32	0xF4	OEMCMD_PSU_ISP_PSU_SELECT
0x32	0xFA	OEMCMD_GET_SECURITY
0x32	0xFB	OEMCMD_SET_SECURITY
0x32	0xF6	OEMCMD_SET_SYSTEM_CHASSIS_LRU

IPMI command contents

The section provides detailed IPMI command contents.

- **Name**

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
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)

Comments

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 =

$((\text{MSB} * 256 * 256) + (\text{Byte2} * 256) + \text{LSB}) * (10 \text{ mW})$

AVG: average

- **Name**

OEMCMD_GET_PSU_STATUS

NetFn

0x32

CMD

0x91

Request data / Response data

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

Comments

This command is used to show the PSU related register or Status (From PSOC)

ZERO_WAKE_UP#

- **Name**

OEMCMD_GET_FAN_GPIO

NetFn

0x32

CMD

0x94

Request data / Response data

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

Comments

NA

- **Name**

OEMCMD_SET_FAN_GPIO

NetFn

0x32

CMD

0x95

Request data / Response data

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

Comments

NA

- **Name**

OEMCMD_GET_SYS_LED

NetFn

0x32

CMD

0x96

Request data / Response data

Request:

None

Response:

Byte 1: completion code

0x00: successful

Byte 2: Identification LED

0: Off

- 1: On
- 2: Blink
- 3: Accept Mode: Off
- 4: Accept Mode: On
- 5: Accept Mode: Blink

Byte 3: Check Log LED

- 0: Off
- 1: On

Comments

This command is used to get the SMM LED status.

Identification LED:

Note: In Accept mode, SMM will control Identification LED from XCCs' Identification LED status. When SMM receiving different settings from XCCs in Accept mode, 'Blink' will takes precedence over 'On' and 'On' will takes precedence over 'Off'.

- **Name**

OEMCMD_SET_SYS_LED

NetFn

0x32

CMD

0x97

Request data / Response data

Request:

Byte 1: LED type

- 1: Identification LED
- 2: Check Log LED

Byte 2: Function

- 0: Off
- 1: On
- 2: Blink (Identification LED only)

Response:

Byte 1: completion code

- 0x00: successful
- 0xC9: parameter out of range

Comments

This command is used to set the SMM LED status.

Check Log LED:

0: Off

1: On

Identification LED:

0: Off

1: On

2: Blink

Note: When changing the status of Identification LED, SMM will also info XCCs to change its status of Identification LED status. After setting SMM's Identification LED to Off mode successfully, it will enter Accept mode automatically.

- **Name**

OEMCMD_GET_NODE_POWER_READING

NetFn

0x32

CMD

0x98

Request data / Response data

Request:

Byte 1: Node number

1: Node 1

2: Node 2

3: Node 3

4: Node 4

5: Chassis

Response:

Byte 1: completion code

0x00: Success

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)

Comments

Display the node power consumptions update by XCC.(Unit:Watt)

- **Name**

OEMCMD_GET_NODE_SIZE

NetFn

0x32

CMD

0x99

Request data / Response data

Request:

Byte 1: Node 1 - 4

1: Node 1

2: Node 2

3: Node 3

4: Node 4

Response:

Byte 1: completion code

0x00: Success

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

Byte 6: Add-on Height

Comments

Displays dimensions of node.

- **Name**

OEMCMD_SET_ACOUSTIC_MODE

NetFn

0x32

CMD

0x9B

Request data / Response data

Request:

Byte 1: Acoustic mode

0: Disable

- 1: Mode1 Enable
- 2: Mode2 Enable
- 3: Mode3 Enable
- 4: Mode4 Enable
- 5: Mode5 Enable

Response:

Byte 1: completion code

- 0x00: successful
- 0x01: PCIe priority high
- 0xC9: out of range

Byte 2: previous setting

Byte 3: current setting

Comments

0x0 = Disable

0x1 = Mode1 Enable

System FAN duty range 10%-20%.

0x2 = Mode2 Enable

System FAN duty range 10%-25%.

0x3 = Mode3 Enable

System FAN duty range 10%-30%.

0x4 = Mode4 Enable

System FAN duty range 10%-45%.

0x5 = Mode5 Enable

System FAN duty range 30%-100%. Add 20% more duty to normal duty.

- **Name**

OEMCMD_GET_CAP_BOUNDARY

NetFn

0x32

CMD

0x9D

Request data / Response data

Request:

Byte 1: Node number

- 1: Node 1
- 2: Node 2

- 3: Node 3
- 4: Node 4
- 5: Chassis

Response:

Byte1: completion code

0x00: Success

0xC9: Parameter out of range

0xD5: Current not support (Node absent)

Byte2: Capping Min LSB

Byte3: Capping Min MSB

Byte4: Capping Max LSB

Byte5: Capping Max MSB

Byte6: 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

Comments

Node Capping Range:

(Node min power capacity) < Cap < (Node max power capacity)

Chassis Capping Range:

(Sum of Node min power capacity) < Cap)

The Min power should consider the permission pass nodes.

Note: Capping will only be applied in **OS-runtime**. The configuration of chassis level current capping is not the same behavior with sum of node level.

- **Name**

OEMCMD_SET_CAP_VALUE

NetFn

0x32

CMD

0x9E

Request data / Response data

Request:

Byte 1: Node number

- 1: Node 1
- 2: Node 2
- 3: Node 3
- 4: Node 4
- 5: Chassis

Byte 2: Capping Value (LSB)

Byte 3: Capping Value (MSB)

Response:

Byte 1: completion code

0x00: Success

0xC9: Parameter out of range

0xD5: Current not support (Node absent)

Comments

Note: Capping / Saving is not supported when node with no permission.

Capping value range (1~32767)

- **Name**

OEMCMD_SET_CAP_STATE

NetFn

0x32

CMD

0x9F

Request data / Response data

Request:

Byte 1: Node number

- 1: Node 1
- 2: Node 2
- 3: Node 3
- 4: Node 4
- 5: Chassis

Byte 2: Capping mode

- 0: Disable
- 1: Enable

Byte 3: Saving mode

- 0: Disable
- 1: Saving mode1

Response:

Byte 1: completion code

0x00: Successful

0xC9: Parameter out of range

0xD5: Current not support (Node absent)

Comments

Note: Capping / Saving is not supported when node with no permission.

- **Name**

OEMCMD_GET_CAP_STATE

NetFn

0x32

CMD

0xA0

Request data / Response data**Request:**

Byte 1: Node number

1: Node 1

2: Node 2

3: Node 3

4: Node 4

5: Chassis

Response:

Byte 1: completion code

0x00: Success

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 mode1

Comments

So far saving mode does not support 2, 3.

- **Name**

OEMCMD_SET_DATE_TIME

NetFn

0x32

CMD

0xA1

Request data / Response data

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

Comments

Note: Year is from 2000~20xx. For user input convenient, the input data is decimal format.

Example: Year 2010

byte1: 0x20

byte2: 0x10

- **Name**

OEMCMD_GET_PSU_POLICY_OVS

NetFn

0x32

CMD

0xA2

Request data / Response data

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

Comments

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

- **Name**

OEMCMD_SET_PSU_POLICY_OVS

NetFn

0x32

CMD

0xA3

Request data / Response data

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

Comments

This command is used for set PSU policy.

We may not set the PSU policy successful because configuration invalid.

- **Name**

OEMCMD_SET_NODE_RESET

NetFn

0x32

CMD

0xA4

Request data / Response data

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: reseal (AC cycling)

Response:

Byte 1: completion code

- 0x00: Success
- 0xC9: Parameter out of range
- 0xD5: Current not support (Node absent)

Comments

This command is used for Reset/Reseat node by user. If node not present, it would response 0xD5.

- **Name**

OEMCMD_GET_PSU_FAN_STATUS

NetFn

0x32

CMD

0xA5

Request data / Response data

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

Comments

This command is used to get PSU FAN status

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

- **Name**

OEMCMD_BACKUP_RESTORE

NetFn

0x32

CMD

0xA6

Request data / Response data

Request:

Byte 1: Actions

0: Get Backup or Restore Status

1: Backup to Storage Device

2: Restore from Storage Device

Response:

Byte 1:

0x00 : COMMAND OK
0x01: BACKUP RESTORE RUNNING
0x31: BACKUP FINISHED
0x32: BACKUP FAIL
0x41: RESTORE FINISHED
0x42: RESTORE FAIL
0xC9: out of range
0xCC: invalid data field in request

Comments

This command is used to backup/restore configuration to/from external storage device (Ex: USB or SD). If the storage device is not inserted, it will return fail.

- **Name**

OEMCMD_GET_NODE_STATUS

NetFn

0x32

CMD

0xA7

Request data / Response data

Request:

Byte 1: Node number

0x1: Node 1
0x2: Node 2
0x3: Node 3
0x4: Node 4

Response:

Byte 1: completion code

0x00: Success
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 4: Height

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

Comments

Report current node status.

- **Name**

OEMCMD_GET_SMM_STATUS

NetFn

0x32

CMD

0xA8

Request data / Response data

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

Comments

The build ID is using ASCII value.

Example: 0x41 = 'A'

- **Name**

OEMCMD_SET_NODE_RESTORE_POLICY

NetFn

0x32

CMD

0xA9

Request data / Response data

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: Success

0xC9: Parameter out of range

Comments

NA

- **Name**

OEMCMD_GET_NODE_RESTORE_POLICY

NetFn

0x32

CMD

0xAA

Request data / Response data

Request:

None

Response:

Byte 1: completion code

0x00: Success

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

Comments

NA

- **Name**

OEMCMD_SET_PSU_SMART_REDUNDANT

NetFn

0x32

CMD

0xAB

Request data / Response data

Request:

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

Comments

Notes:

- Zero-output mode is disabled by default.
- If the PSU is in “not support” or “mismatch “ state, zero-output is also disabled.

- **Name**

OEMCMD_GET_PSU_SMART_REDUNDANT

NetFn

0x32

CMD

0xAC

Request data / Response data

Request:

None

Response:

Byte 1: completion code

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

Comments

Status

0x00: Normal

0x01: Not support

- **Name**

OEMCMD_SMM_RESET_TO_DEFAULT

NetFn

0x32

CMD

0xAD

Request data / Response data

Request:

None

Response:

Byte 1: completion code

0x00: successful

Comments

This command is used to reset SMM to default value by the user.

- **Name**

OEMCMD_SET_VPD

NetFn

0x32

CMD

0xAF

Request data / Response data

Request:

Byte 1: VPD type

- 0: SMM
- 1: PDM
- 2: RH Riser
- 3: LH Riser
- 4: EIOM
- 5: Chassis

Byte 2: Device ID

- 0: MTM
- 1: Machine Serial Number
- 2: Component Part Number
- 3: Component FRU Number
- 4: Component Serial Number
- 5: Manufacture ID
- 6: Hardware Revision Level
- 7: Manufacture Date
- 8: UUID
- 9: IANA Enterprise Number
- A: Product ID
- B: Component Name
- C: GLID
- D: EC Level

Response:

Byte 1: completion code

- 0x00: successful

Byte 2: N VPD Data

Comments

Device ID:

- 0x0: MTM (Chassis), 10 Bytes
- 0x1: Machine Serial Number (Chassis), 10 Bytes
- 0x2: Component Part Number (SMM, PDM, PIOR, EIOM), 12 Bytes
- 0x3: Component FRU Number (SMM, PDM, PIOR, EIOM), 12 Bytes
- 0x4: Component Serial Number (SMM, PDM, PIOR, EIOM), 12 Bytes
- 0x5: Manufacture ID (Chassis, SMM), 4 Bytes
- 0x6: Hardware Revision Level (SMM, PDM, PIOR, EIOM, Chassis), 1 Byte

- 0x7: Manufacture Date (SMM, PDM, PIOR, EIOM, Chassis), 4 Bytes
- 0x8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Chassis), 16 Bytes
- 0x9: IANA Enterprise Number(Chassis), 4 Bytes
- 0xA: Product ID(Chassis), 2 Bytes
- 0xB: Component Name(SMM, PDM, PIOR, EIOM, Chassis), 64 Bytes
- 0xC: Global Identifier (GLID) (Chassis), 8 Bytes
- 0xD: EC Level(SMM, PDM, PIOR, EIOM, Chassis), 10 Bytes

- **Name**

OEMCMD_GET_VPD

NetFn

0x32

CMD

0xB0

Request data / Response data

Request:

Byte 1: VPD type

- 0: SMM
- 1: PDM
- 2: RH Riser
- 3: LH Riser
- 4: EIOM
- 5: Chassis

Byte 2: Device ID

- 0: MTM
- 1: Machine Serial Number
- 2: Component Part Number
- 3: Component FRU Number
- 4: Component Serial Number
- 5: Manufacture ID
- 6: Hardware Revision Level
- 7: Manufacture Date
- 8: UUID
- 9: IANA Enterprise Number
- A: Product ID
- B: Component Name

C: GLID

D: EC Level

Response:

Byte 1: completion code

0x00: successful

Byte 2: N VPD Data

Comments

Read Only

Device ID:

0x0: MTM (Chassis), 10 Bytes

0x1: Machine Serial Number (Chassis), 10 Bytes

0x2: Component Part Number (SMM, PDM, PIOR, EIOM), 12 Bytes

0x3: Component FRU Number (SMM, PDM, PIOR, EIOM), 12 Bytes

0x4: Component Serial Number (SMM, PDM, PIOR, EIOM), 12 Bytes

0x5: Manufacture ID (Chassis, SMM), 4 Bytes

0x6: Hardware Revision Level (SMM, PDM, PIOR, EIOM, Chassis), 1 Byte

0x7: Manufacture Date (SMM, PDM, PIOR, EIOM, Chassis), 4 Bytes

0x8: Universal Unique ID (UUID) (SMM, PDM, PIOR, EIOM, Chassis), 16 Bytes

0x9: IANA Enterprise Number(Chassis), 4 Bytes

0xA: Product ID(Chassis), 2 Bytes

0xB: Component Name(SMM, PDM, PIOR, EIOM, Chassis), 64 Bytes

0xC: Global Identifier (GLID) (Chassis), 8 Bytes

0xD: EC Level(SMM, PDM, PIOR, EIOM, Chassis), 10 Bytes

- **Name**

OEMCMD_FFDC_DUMP

NetFn

0x32

CMD

0xB1

Request data / Response data

Request:

Run FFDC dump over IPMI

Response:

Completion code

0x00: successful

Request:

Query FFDC dump status

Byte 1 0

Response:

Byte 1

0: Finished and return N bytes FFDC file name (SMM-MAC addr-FFDC-YYYY-MM-DD-HH MMSS.tgz)

1: Running

2: No SD

3: No USB

4: Tar Fail

E: Upload fail

F: TFTP server not found

Request:

Setup TFTP Server address (IPV4/6) and Setup Upload Path separate by “/”

Byte 1 1

Byte 2:N String of TFTP server address and path, the path can be empty.

Response:

completion code

0x00: successful

0xCC: Invalid data field in request

Comments

The maximum length of the field is 64 characters.

In order to capture SMM FFDC Service Log, please follow the steps below:

1. Set a path to the TFTP server where the IP is in HEX, the example below is showing target server under 192.168.1.1 =

```
1 0x31 0x39 0x32 0x2E 0x31 0x36 0x38 0x2E 0x31 0x2E 0x31 ipmitool -H SMM_IP -U USERID -P PASSWORD -I lanplus raw 0x32 0xB1 0x1 0x31 0x39 0x32 0x2E 0x31 0x36 0x38 0x2E 0x31 0x2E 0x31
```
2. Start log collection

```
ipmitool -H SMM_IP -U USERID -P PASSWORD -I lanplus raw 0x32 0xB1
```
3. Query FFDC log capture status

```
ipmitool -H SMM_IP -U USERID -P PASSWORD -I lanplus raw 0x32 0xB1 0x0 return 0 : complete 1: running
```

return

0: complete

1: running
4. The FFDC log file format is

SMM-MAC

addr-FFDC-YYYY-MM-DD-HHMMSS.tgz

- **Name**

OEMCMD_SET_SMTP_CONFIG_PARAMETERS

NetFn

0x32

CMD

0xB2

Request data / Response data

Request:

Byte 1 - Parameter selector.

Byte 2:N - Configuration parameter data. Per SMTP Configuration Parameters.

Response:

Byte 1: Generic codes plus

0xC7: Request data length invalid.

0xC9: parameter out of range

0xCC: Invalid data field in request

Comments

Please refer to [“SMTP configuration parameters” on page 84](#) for parameter selector and data.

- **Name**

OEMCMD_GET_SMTP_CONFIG_PARAMETERS

NetFn

0x32

CMD

0xB3

Request data / Response data

Request:

Byte 1 - Parameter selector.

Byte 2 - Set selector.

Selects a given set of parameters under a given Parameter selector value.

0x00: parameter doesn't use a set selector.

Byte 3 - Block selector.

0x00: parameter doesn't 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. Per SMTP Configuration Parameters.

Comments

Please refer to [“SMTP configuration parameters” on page 84](#) for parameter selector and data.

- **Name**

OEMCMD_SET_NTP_CONFIG_PARAMETERS

NetFn

0x32

CMD

0xB4

Request data / Response data

Request:

Byte 1 - Parameter selector

Byte 2:N - Configuration parameter data. See [“NTP configuration parameters” on page 87](#).

Response:

Byte 1: Generic codes plus

 0xC9: parameter out of range

 0xCC: Invalid data field in request

Comments

Please refer to [“NTP configuration parameters” on page 87](#) for parameter selector and data.

- **Name**

OEMCMD_GET_NTP_CONFIG_PARAMETERS

NetFn

0x32

CMD

0xB5

Request data / Response data

Request:

Byte 1 - Parameter selector

Response:

Byte 1: Generic codes plus

 0xCC: Invalid data field in request.

Byte 2:N - Configuration parameter data. See [“NTP configuration parameters” on page 87](#).

Comments

Please refer to [“NTP configuration parameters” on page 87](#) for parameter selector and data.

- **Name**

OEMCMD_GET_PSU_DATA

NetFn

0x32

CMD

0xC3

Request data / Response data

Request:

Byte 1: PSU number

1: PSU1

2: PSU2

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)

Comments

This command is used to get PSU data.

• **Name**

OEMCMD_SET_SYSTEM_FAN_PWM

NetFn

0x32

CMD

0xC4

Request data / Response data**Request:**

Byte 1: Duty %

0 ~ 100

Response:

Byte 1: completion code

0x00: successful

0xC9: Parameter out of range

Comments

Should disable automatic system FAN control first by [OEMCMD_SET_SYSTEM_FAN_CONTROL](#) (0x32, 0xC6).

- **Name**

OEMCMD_SET_SYSTEM_FAN_CONTROL

NetFn

0x32

CMD

0xC6

Request data / Response data

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

Comments

NA

- **Name**

OEMCMD_GET_NODE_COOLING_VALUE

NetFn

0x32

CMD

0xC7

Request data / Response data

Request:

Byte 1: Chassis or Node number

0: Chassis

1: Node 1

2: Node 2

3: Node 3

4: Node 4

Response:

Byte 1: completion code

0x00: Success

0xC9: Parameter out of range

0xD5: Currently not support (Node absent)

Byte 2: Chassis PWM or Node cooling value

0 ~ 100

Comments

Get Node Cooling Value.

- **Name**

OEMCMD_GET_WEB_STATE

NetFn

0x32

CMD

0XF0

Request data / Response data

Request:

None

Response:

Byte 1: completion code

0x00: successful

Byte 2: State

0x00:Disabled

0x01:Enabled

Comments

NA

- **Name**

OEMCMD_SET_WEB_STATE

NetFn

0x32

CMD

0XF1

Request data / Response data

Request:

Byte 1: State

0x00:Disabled

0x01:Enabled

Response:

Byte 1: completion code

0x00: successful

Comments

NA

- **Name**

OEMCMD_PSU_ISP_PSU_SELECT

NetFn

0x32

CMD

0xF4

Request data / Response data**Request:**

PSU selection

Byte1: Function

0x00: PSU selection

Byte2:

0x01: PSU 1

0x02: PSU 2

0x03: PSU 1 and PSU 2

Response:

Byte1: Completion code

0x00: Successful

Request:

Secondary Firmware Revision

Byte1: Function

0x01: Secondary

Firmware Revision

Byte2:

0x01: PSU 1

0x02: PSU 2

Response:

Byte1: Completion code

0x00: Successful

Byte2: MSB of FW version

Byte3: LSB of FW version

Request:

ISP status query

Byte1: Function

0x02: ISP status query

Byte2:

0x01: PSU 1

0x02: PSU 2

Response:

Byte1: Completion code

0x00: Successful

Byte2: Query status

0x00: Successful

0x01: Fail

0x02: Initializing

0x03: Updating

0x04: PSU under reset

Comments

Set or get ISP status.

- **Name**

OEMCMD_GET_SECURITY_OPTION

NetFn

0x32

CMD

0xFA

Request data / Response data

Request:

Byte1: 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 timeout (in minutes)
0x09: Enable IP address block for 300 seconds after 10 login failures
0x0A: Enable Secure Rollback
0x0B: Enable Strong IPMI Cipher Suites

Response:

Byte1: Completion code

0x00: Successful
0xce: Response Unavailable

Byte2: configuration setting (LSB if it is a two byte setting)

Byte3: Only if it is a two byte setting, configuration value(MSB)

Comments

NA

Note: If Strong IPMI Cipher Suites type is enabled (0x01), only Cipher Suites ID 3 and 7 can be supported.

If Strong IPMI Cipher Suites type is disabled (0x0), Cipher Suites ID 1, 2, 3, 6, 7, 8, 11, 12, 15, 16 and 17 can be supported.

- **Name**

OEMCMD_SET_SECURITY_OPTION

NetFn

0x32

CMD

0xFB

Request data / Response data

Request:

Byte1: 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 timeout (in minutes).

0x09: Enable IP address block for 300 seconds after 10 login failures

0x0A: Enable Secure Rollback

0x0B: Enable Strong IPMI Cipher Suites

Byte2: configuration value (LSB if it is a two byte setting)

Byte3: Only if it is a two byte setting, configuration value(MSB)

Response:

Byte1: Completion code

0x00: Successful

0xc9: Parameter out of range

Comments

NA

Note: If Strong IPMI Cipher Suites type is enabled (0x01), only Cipher Suites ID 3 and 7 can be supported.

If Strong IPMI Cipher Suites type is disabled (0x0), Cipher Suites ID 1, 2, 3, 6, 7, 8, 11, 12, 15, 16 and 17 can be supported.

- **Name**

OEMCMD_SET_SYSTEM_CHASSIS_LRU

NetFn

0x32

CMD

0xF6

Request data / Response data

Request:

Byte1: Function

0x00: Read

0x01: Write

Byte2: LRU value (Only needed while at write)

Response (At Read):

Byte1: Previous LRU

Byte2: New LRU

Note: The initial value is 0xFF to present as un-configured.

- **Name**

IPMICMD_SET_LAN_CONFIG_PARAM

NetFn

0x0C

CMD

0x01

Request data / Response data

Request:

Byte 1: Channel number

Byte 2: Parameter selector

Byte 3:N: Configuration parameter data, see [“LAN configuration parameters” on page 86](#).

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

Comments

The OEM parameters are added into parameter selector and data. **(Byte2:N)**

See [“LAN configuration parameters” on page 86](#).

- **Name**

IPMICMD_SET_LAN_CONFIG_PARAM

NetFn

0x0C

CMD

0x02

Request data / Response data

Request:

Byte 1: Channel number

Byte 2: Parameter selector

Byte 3: Set Selector

00h if parameter doesn’t use a Set Selector.

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, per Table - LAN Configuration Parameters

Comments

The OEM parameters are added into parameter selector. **(Byte2)**. See “LAN configuration parameters” on page 86.

SMTP configuration parameters

SMTP configuration parameters for OEMCMD_SET_SMTP_CONFIG_PARAMETERS and OEMCMD_GET_SMTP_CONFIG_PARAMETERS.

The following are detailed parameters for [OEMCMD_SET_SMTP_CONFIG_PARAMETERS](#) and [OEMCMD_GET_SMTP_CONFIG_PARAMETERS](#).

Table 6. SMTP configuration parameters

Parameter selector	#	Parameter data (non-volatile)
Sender information	0	<p>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 following rules:</p> <ol style="list-style-type: none">1. It must not consist of space characters only.2. It must be the combination of alphanumeric characters a-z, A-Z and 0-9, space characters, non-alphabetic characters.3. The maximal length of the field is 254 characters. <p>Data 1: string length</p> <p>Data 2:N: the string of <host name>@<domain name></p>

Table 6. SMTP configuration parameters (continued)

Destination e-mail addresses	1	<ul style="list-style-type: none"> • Data 1: set selector = field selector, 0 based. <ul style="list-style-type: none"> – [7:2]: reserved – [1:0]: field selector <ul style="list-style-type: none"> – 00b: field 1: enable/disable – 01b: field 2: destination e-mail address – 10b: field 3: e-mail description – 11b: field 4: send alert (Set only) • Data 2: block selector = target of e-mail alert selector, 0 based. <ul style="list-style-type: none"> – [7:2]: reserved – [1:0]: <ul style="list-style-type: none"> – 00b: e-mail alert 1 – 01b: e-mail alert 2 – 10b: e-mail alert 3 – 11b: e-mail alert 4 <p>For set selector = 0</p> <ul style="list-style-type: none"> • Data 3: <ul style="list-style-type: none"> – [7:1]: reserved – [0]: <ul style="list-style-type: none"> – 0b: disable – 1b: enable <p>For set selector = 1</p> <ul style="list-style-type: none"> • Data 3: string length, max = 64. • Data 4-N: the string of destination e-mail address <p>For set selector = 2</p> <ul style="list-style-type: none"> • Data 3: string length, max = 254. • Data 4-N: the string of e-mail description
SMTP (e-mail) Server Settings	2	<ul style="list-style-type: none"> • Data 1: set selector = field selector, 0 based. <ul style="list-style-type: none"> – [7:1]: reserved – [0]: field selector <ul style="list-style-type: none"> – 0b: field 1: SMTP IP address – 1b: field 2: SMTP port number <p>For set selector = 0</p> <ul style="list-style-type: none"> • Data 2: string length, max = 254. • Data 3-N: the string of IPV4, IPV6 or FQDN <p>For set selector = 1</p> <ul style="list-style-type: none"> • Data 2-3: port number. LS-byte first.
SMTP authentication	3	<p>Data 1: set selector = field selector, 0 based.</p> <ul style="list-style-type: none"> • [7:3]: reserved • [2:0]: field selector <ul style="list-style-type: none"> – 000b: field 1: enable/disable – 001b: field 2: user name

Table 6. SMTP configuration parameters (continued)

		<ul style="list-style-type: none"> - 010b: field 3: password (Set only) - 011b: field 4: STARTTLS mode - 100b: field 5: SASL mode - 101b:111b: reserved <p>For set selector = 0</p> <ul style="list-style-type: none"> • Data 2: <ul style="list-style-type: none"> - [7:1]: reserved - [0]: <ul style="list-style-type: none"> - 0b: disable - 1b: enable <p>For set selector = 1</p> <ul style="list-style-type: none"> • Data 2: string length, max = 254. • Data 3-N: the string of user name <p>For set selector = 2</p> <ul style="list-style-type: none"> • Data 2: string length, max = 254 • Data 3-N: the string of password <p>For set selector = 3</p> <ul style="list-style-type: none"> • Data 2: <ul style="list-style-type: none"> - [7:2]: reserved - [1:0]: <ul style="list-style-type: none"> - 00b: AUTO - 01b: OFF - 10b: ON - 11b: reserved <p>For set selector = 4</p> <ul style="list-style-type: none"> • Data 2: <ul style="list-style-type: none"> - [7:3]: reserved - [2:0]: <ul style="list-style-type: none"> - 000b: AUTO - 001b: PLAIN - 010b: LOGIN - 011b: NTLM - 100b: MD5 - 101b-111b: reserved
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LAN configuration parameters

The following table is detail parameters for LAN configuration .

Table 7. LAN configuration parameters

Parameter selector	#	Parameter data (non-volatile)
Address source	0x04	IP address source data1 - obtain IP address method: 1h: Static IP address 2h: DHCP only 4h: First DHCP, then static IP address
Host Name	0xC3	BMC hostname data 1: string length, max = 63 Data 2-N: the string 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 string of DNS Domain name
DHCP Send Hostname option	0xC5	data1– 0 = Disabled 1 = Enabled

NTP configuration parameters

NTP configuration parameters for SET_NTP_CONFIG_PARAMETERS and GET_NTP_CONFIG_PARAMETERS.

The following are detailed parameters for [OEMCMD_SET_NTP_CONFIG_PARAMETERS](#) and [OEMCMD_GET_NTP_CONFIG_PARAMETERS](#).

Table 8. NTP configuration parameters

Parameter selector	#	Parameter data (non-volatile)
Operation Mode	0	data1 - Set mode. <ul style="list-style-type: none"> • 0: Disabled • 1: Daemon Mode • 2: Requested Mode
NTP Server 1	1	<ul style="list-style-type: none"> • data1 - string length, Max = 128 • data2N - the string of NTP IP address or hostname
NTP Server 2	2	<ul style="list-style-type: none"> • data1 - string length, Max = 128 • data2:N - the string of NTP IP address or hostname
NTP Server 3	3	<ul style="list-style-type: none"> • data1 - string length, Max = 128 • data2:N - the string of NTP IP address or hostname

Table 8. NTP configuration parameters (continued)

Requested Mode's Update Frequency in Minutes	4	data1:2 - Update Frequency. LS-byte first.
Time Synchronization Mode	5	data1 - Set mode. <ul style="list-style-type: none"> • 0: Slew Mode • 1: Step Mode
Use Server or Client Time Zone	6	data1 - Set mode. <ul style="list-style-type: none"> • 0: Server Mode • 1: Client Mode
Server Time Zone	7	data1 - Set type <ul style="list-style-type: none"> • 0: Time Zone String • 2: Time Zone UTC For type = 0 <ul style="list-style-type: none"> • data2:N - the time zone string, i.e., Asia/Taipei • data N+1 - terminate character (\0)
Immediate Sync	8	No data required. Note: To avoid the expected error message for NTP timeout exceeds ipmitool default timeout, "-N 10" is recommended.

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