

System Management Module 2 User Guide



Machine Types: 7D1J / 7D1L

Note

Before using this information and the product it supports, be sure to read and understand the safety information and the safety instructions, which are available at: https://pubs.lenovo.com/safety_documentation/pdf_files

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

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Chapter 1. Introduction

This section summarizes the functions of the System Management Module 2 (SMM2) firmware built-in web pages. It supports the Transport Layer Security 1.2 for data encryption over the network and certificate management.

The SMM2 performs the following tasks:

Note: Fan status report and fan configuration management are only applicable to Thinksystem DA240 Enclosure, and are not applied to DW612 and DW612S Enclosure as fan is supported only in Thinksystem DA240 Enclosure.

- 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. SMM2 configuration and settings backup/restore

Notes: The SMM2 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 user guide provides the process of operating SMM2 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 SMM2 web pages.

The user guide supports the following enclosures and trays:

- ThinkSystem DA240 Enclosure Type 7D1J (DA240 Enclosure), compatible with the following tray
 - ThinkSystem SD630 V2 Compute Node Type 7D1K (SD630 V2 Tray)
- ThinkSystem DW612 Neptune DWC Enclosure Type 7D1L (DW612 Enclosure), compatible with the following trays:
 - ThinkSystem SD650 V2 Neptune DWC Tray Type 7D1M (SD650 V2 Tray)
 - ThinkSystem SD650-N V2 Neptune DWC Tray Type 7D1N (SD650-N V2 Tray)
- ThinkSystem DW612S Neptune DWC Enclosure Type 7D1L (DW612S Enclosure), compatible with the following trays:
 - ThinkSystem SD650 V3 Neptune DWC Tray Type 7D7M (SD650 V3 Tray)
 - ThinkSystem SD650-I V3 Neptune DWC Tray Type 7D7L (SD650-I V3 Tray)
 - ThinkSystem SD650-N V3 Neptune DWC Tray Type 7D7N (SD650-N V3 Tray)
 - ThinkSystem SD665 V3 Neptune DWC Tray Type 7D9P (SD665 V3 Tray)

- ThinkSystem SD665-N V3 Neptune DWC Tray Type 7DAZ (SD665-N V3 Tray)

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Chapter 2. Web Interface Access

SMM2 web interface can be accessed through Ethernet connection (10/100/1000 Mbit) by establishing a session with SMM2.

Connecting to the SMM2 for the first time might require a change of the Internet protocol properties on the client computer. See "Network Configuration" on page 37 section for more information. To log in to the SMM2 web interface, complete the following steps :

1. Point your browser to the SMM2 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 SMM2:

- a. SMM2 attempts to use DHCP to acquire an IP address. If SMM2 cannot acquire IP address from the DHCP server in two minutes, it will use the static IP address.
- b. The default static IP is 192.168.70.100 (IPv4 enabled).
- c. Using Hyper Text Transfer Protocol Secure (HTTPS). (For example, https://192.168.70.100)
- d. IPv6 enabled with local link address (LLA) IP

Notes: To calculate LLA IP, follow the procedures below:

- 1) Split the MAC address of SMM2 (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. For example, 3B-A7-94-FF-FE-07-CB-D0
- 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
- 2. Type your user ID and password assigned by a system administrator.
 - Default ID: USERID
 - Password: PASSW0RD

Note: The sixth character of PASSW0RD is number zero.

3. Click Log in.



Figure 1. SMM2 – Login

4. Change password for the first login.

Change Password

Yo pa	u are required to change your password. This is occur ssword has expired.	rred when your account is used on the first login or when your
Fil	I in the form and click 'OK' to change password. Click '	Cancel' to logout without changing password.
Γ	Password Policy Check Enabled	Yes
	User Name	USERID

New Descured	
New Password	
Confirm New Password	********

Figure 2. Changing 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 !@#\$%^*-_+=().:`|?"\
- 5. Use the new password to log in.

Chapter 3. Overview

The section introduces detailed functions for SMM2 web interface.

There are overall six function tabs:

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

Moving a mouse cursor over the function tab buttons will reveal the subcategories of the function. Clicking on the tab or subcategories will take users directly to the function.



Summary



Power and Cooling



System Information



Event Log



Configuration

Figure 3. Overview

Notes:

• Click on the **Refresh** button on SMM2 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 when users stay on an auto-refresh page.

General Settings		Refresh
Auto Refresh Interval	Every 30 Seconds	

Figure 4. General Settings - Refresh

Summary

Summary page should display enclosure overall status and informationmary page displays overall enclosure status and information.



Figure 5. Enclosure

Enclosure Front Overview

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

Individual tab is used to introduce status of enclosure front overview and rear overview components. In enclosure front overview, a table of Figure 2 format is used to depicted nodes status. In Figure 3, it demonstrates the new enclosure mode supported as Shared IO mode.

			Enclosure Fr	ont Ov	erview		
					-		Refre
					•	2	
				èp .		JN	
Made	Height		Description of the second				
Node	neigni	Status	Reset / Reseat	Node	Height	Status	Reset / Reseat
Node	1 U	Power On	Reset Reseat	Node	Height 1 U	Status Power On	Reset / Reseat
03	1 U	Power On 192.168.70.127	Reset Reseat Launch XCC	Node 04	Height 1 U	Status Power On 192.168.70.128	Reset / Reseat Reset Launch XCC
03	1 U 1 U	Power On 192.168.70.127 Power On	Reset/Reseat Reset Launch XCC Reset Reseat	04	Height 1U 1U	Status Power On 192.168.70.128 Power On	Reset / Reseat Reseat Launch XCC Reseat Reseat Reseat

Please manually refresh 'Enclosure Front Overview' page 5 minutes after SMM2 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 SMM2 session expires.



Enclosure Front Overview

Refresh

-			
7 0-10110200			
S OF PERSON			
3 OF THE REAL OF		-Regulations	
1 0-101-1010		-	

Node	Height	Status	Reset / Reseat	Node	Height	Status	Reset / Reseat
	1 U	Power On	Reset Reseat	10	1 U	Power On	Reset Reseat
11		192.168.70.135	Launch XCC	12		192.168.70.136	Launch XCC
	10	Power On	Reset Reseat	20445	1 U	Power On	Reset Reseat
09		192.168.70.133	Launch XCC	10		192.168.70.134	Launch XCC
	1 U	Power On	Reset Reseat	0.000	1 U	Power On	Reset Reseat
07	07 192.168.70.131		Launch XCC	Launch XCC 08		192.168.70.132	Launch XCC
	10	Power On	Reset Reseat	10000	1 U	Power On	Reset Reseat
05		192.168.70.129	Launch XCC	06		192.168.70.130	Launch XCC
	1 U	Power On	Reset Reseat	1440	1 U	Power On	Reset Reseat
03		192.168.70.127	Launch XCC	04		192.168.70.128	Launch XCC
	10	Power On	Reset Reseat	-	10	Power On	Reset Reseat
01		192.168.70.125	Launch XCC	02		192.168.70.126	Launch XCC

Please manually refresh Enclosure Front Overview' page 5 minutes after SMM2 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 SMM2 session expires.

Figure 7. Enclosure Front Overview – DW612 and DW612S Enclosure

Enclosure Mode:

This enclosure is running under Shared I/O mode, the nodes are categorized into 6 groups, each group has one primary node and one auxiliary node. The auxiliary node will not be granted power permission until the primary node is present, is in either standby mode or powered on, and has no power faults

Group VI	Node 11: Auxiliary	Node 12: Primary
Group V	Node 9: Auxiliary	Node 10: Primary
Group IV	Node 7: Auxiliary	Node 8: Primary
Group III	Node 5: Auxiliary	Node 6: Primary
Group II	Node 3: Auxiliary	Node 4: Primary
Group I	Node 1: Auxiliary	Node 2: Primary

Figure 8. Share I/O mode — DW612 Enclosure and SD650 V2 Tray / DW612S Enclosure and SD650 V3 Tray

- Node: Indicates slot numbering.
- Height: Node height 1U.
- Status: Node power-on status
 - Not Present: indicated node is not installed.
 - No Permission: indicated node has not granted power permission and cannot power on.
 - Fault: indicated node has power fault and cannot be powered on.
 - Power On: indicated node is power on.
 - Power Off: indicated node is power off.
 - Add-on: indicates this is an addon tray.
- Reset / Reseat: Perform virtual reset / reseat.
 - Virtual Reset allows user to reset node XCC through SMM2.
 - Reset allows user to power cycle entire node remotely through SMM2.
 - After virtual reset / reseat, node XCC takes at least two minutes to be ready. For more details about virtual reset / reseat, please refer to SMM2 FUNCTIONAL SPECIFICATION.
- Launch XCC: Redirect to the specified IP address of XCC web GUI.
 - The Launch XCC buttons still can be able to launch XCC websites when the SMM2 session expires.

Notes:

- 1. Please refresh the **Enclosure Front Overview** manually five minutes later after reset SMM2 or node XCC to maintain latest node status.
- 2. The **Enclosure Mode** description only appears while the Shared IO mode is enabled. Only the following enclosure(s) and tray(s) support the Share I/O mode.
 - DW612 Enclosure and SD650 V2 Trays
 - DW612S Enclosure and SD650 V3 Trays
- 3. Follow the power sequence of Shared IO mode, the **Virtual Reseat** button of primary node will be disabled while the auxiliary node is in **Power on** status. Only the following enclosure(s) and tray(s) support the Share I/O mode.
 - DW612 Enclosure and SD650 V2 Trays
 - DW612S Enclosure and SD650 V3 Trays
- 4. For the node which reports a power fault event, i.e., DIMM PMIC Power Fault, the "Virtual Reseat" feature will be temporarily disabled and need to check the events, actions from XCC. Only the following enclosure(s) and tray(s) support:
 - DW612S Enclosure and SD650 V3 Trays
 - DW612S Enclosure and SD650-I V3 Trays
 - DW612S Enclosure and SD650-N V3 Trays
 - DW612S Enclosure and SD665 V3 Trays
 - DW612S Enclosure and SD665-N V3 Trays

Enclosure Rear Overview

SMM2 information is displayed in this view.

Under Enclosure Rear Overview, the major rear enclosure statuses are shown in the following sections:

- "Management Module" on page 8
- "Current PSU" on page 10
- "Fan (ThinkSystem DA240 Enclosure only)" on page 13
- "Drip Sensor (ThinkSystem DW612 and DW612S Neptune DWC Enclosure only)" on page 13

Management Module



Name	System Management Module 2 (SMM2)			2		
Power Status	Normal		us 🛛 Normal		SMM2 Reset Reset to Def	fault
Firmware Version	0.03 (UMSM02P) First					
Boot-up Flash						
ID LED	Accept: Off => Accept Off On Blink		Accept	ply		
Check Log LED	On					
FFDC	Capture					
Enclosure Reseat	Reseat					
Open Source Licenses		Do	wnload			

Manager and Manager and

Figure 9. Management Module – DA240 Enclosure



Mana	geme	nt Mo	dule			
Name	System Management Module 2 (SMM2)					
Power Status	Normal Reset		Normal Rese		SMM2 R Reset t	eset o Default
Firmware Version	0.03 (UMSM02P)					
Boot-up Flash	First					
ID LED	Accept: Off	● Off => ○ On ○ Blink	> Accept Apply			
Check Log LED	On					
FFDC	Capture					
Enclosure Reseat	Reseat					
Open Source Licenses	Download					

Figure 10. Management Module - DW612 Enclosure



Ividite	genie		uule		
Name	System Management Module 2 (SMM2				
Power Status		Vormal	SMM12 Reset		
			Reset to Default		
Firmware Version	1.03 (UMSM09E)				
Boot-up Flash	First				
ID LED	Accept: Off	● Off => ○ On ○ Blink	Accept		
Check Log LED	On				
FFDC		C	apture		
Enclosure Reseat		1	Reseat		
Open Source Licenses		Do	ownload		

Figure 11. Management Module – DW612S Enclosure

- Name: System Management Module 2 (SMM2).
- Power Status: Indicates the status of SMM2.
 - SMM2 Reset: After this button is clicked, SMM2 will be reset immediately and ready to operate in 90 seconds.
 - Reset to Default: Restore the SMM2 settings to out-of-factory default, including:
 - SMTP
 - SNMP
 - PEF
 - Network Configuration
 - User Account
 - Account Security
 - Services
 - Web Certificate
 - NTP

It takes two minutes to complete the **Reset to Default** process and then SMM2 will be ready to operate.

- Firmware version: The current firmware version.
- **Boot-up Flash**: Indicates SMM2 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, SMM2 will switch to **Second** 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, SMM2 ID LED would first turn off the ID LED on all the compute nodes in the enclosure and enter the accept mode, in which the LED behavior is determined by the node ID LEDs.

Table 1.	SMM2 ID LED a	accept mode behavior
----------	---------------	----------------------

Node identification LEDs	SMM2 identification LED
All the node ID LEDs are off.	Off
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. SMM2 ID LED is set in the accept mode by default.
- 2. See the "Front LEDs and buttons / Node operator panel" section in *Maintenance Manual/Setup Guide/User Guide* of your solution 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.

– Blink

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

- Check Log LED: Check Log LED will be on when an error event occurs. It will be turned off after the error event is de-asserted.
- **FFDC**: The Fast Failure Data Collection (FFDC) instantly collects information about events and conditions that might lead up to a failure. Click on **Capture**, and the file used to analyze the problem can be downloaded from the web.
- Enclosure Reseat: Click on Reseat, the enclosure will be powered off immediately and be powered on after 10 seconds.

Note: After you click on the button, **Enclosure Reseat** will go into effect immediately even when the nodes are still powered on.

• **Open Source License**: You can download the Open Source Licenses file that is used in Open Source packages in SMM2 by clicking on **Download**.

Current PSU

Current PSU (Power Supply Unit): Indicates the status of power supplies.



Current PSU - Redundancy Enabled, OVS Enabled, Total power bank = 2880W

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttle	DC-PG
PSU1	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU2	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes

Fan							
Bay	Status	Туре	Bay	Status	Туре		
1	Present	80mm	2	Present	80mm		
3	Present	80mm					

Figure 12. Enclosure Rear View - DA240 Enclosure



Current PSU - Redundancy Enabled, OVS Enabled, Total power bank = 14400W

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttle	DC-PG
PSU1	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU2	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU3	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU4	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU5	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU6	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes

Drip Sensor	Status	Drip Sensor	Status
Drip Sensor 2	Present	Drip Sensor 1	Present

Figure 13. Enclosure Rear View - DW612 Enclosure



Current PSU - Redundancy Enabled, Total power bank = 19200W

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttle	DC-PG
PSU1	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU2	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU3	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU4	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU5	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU6	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU7	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU8	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU9	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes

Drip Sensor	Status	Drip Sensor	Status
Drip Sensor 2	Present	Drip Sensor 1	Present

Figure 14. Enclosure Rear View – DW612S Enclosure

- 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 1800 W, 2400 W, 2600 W, and 7200 W, is displayed here. Power rating varies by models, see solution system specifications for details.
- 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 is **No**, capability will be 0 W.
 - If DC-PG of the power supply is **Yes**, the capability will be equal to the lower output when power supplies with different wattages are installed in the enclosure at the same time.
- Zero-output:
 - **Disabled**: Zero-output is disabled.
 - Wake-Up: Zero-output is enabled. The power supply is in working state.
 - **Sleep**: Zero-output is enabled. The power supply is in hibernation with no DC output.
- EPOW (Early Power Off Warning)
 - **Assert**: The power supply is in input lost condition.

- Normal: The power supply AC is working.
- Throttle
 - **Assert**: The power supply is in over-current condition.
 - Normal: The power supply 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 (ThinkSystem DA240 Enclosure only)

Fan: Indicates the status of system fans. This section only applies to DA240 Enclosure.



Current PSU - Redundancy Enabled, OVS Enabled, Total power bank = 2880W

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttle	DC-PG
PSU1	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU2	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes

Fan

Bay	Status	Туре	Bay	Status	Туре
1	Present	80mm	2	Present	80mm
3	Present	80mm			

Figure 15. Enclosure Rear View – DA240 Enclosure

- Status
 - **Present**: The fan is installed and in normal operating condition.
 - Not present: No fan is installed.
 - Fault: The fan is in faulty condition.
- **Type**: The system supports 80mm fans.

Drip Sensor (ThinkSystem DW612 and DW612S Neptune DWC Enclosure only)

Drip Sensor: Indicates the status of the drip sensors. This section only applies to DW612 and DW612S Enclosure.



Current PSU - Redu	indancy Enabled	OVS Enabled	Total power	bank = 14400W
	Fiddine, Endored			

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttle	DC-PG
PSU1	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU2	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU3	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU4	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU5	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU6	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes

Drip Sensor	Status	Drip Sensor	Status
Drip Sensor 2	Present	Drip Sensor 1	Present

Figure 16. Enclosure Rear View – DW612 Enclosure



Current PSU - Redundancy Enabled, Total power bank = 19200W

PSU	Status	Ratings	AC-IN	Capability	Zero-Out	EPOW	Throttie	DC-PG
PSU1	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU2	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU3	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU4	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU5	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU6	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU7	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU8	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes
PSU9	Present	2400 W	220 V	2400 W	Disabled	Normal	Normal	Yes

Drip Sensor	Status	Drip Sensor	Status
Drip Sensor 2	Present	Drip Sensor 1	Present

Figure 17. Enclosure Rear View – DW612S Enclosure

- Status
 - **Present**: The drip sensor is installed and in normal operating condition.
 - Not present: No drip sensor is installed.
 - Fault: The drip sensor is in faulty condition.

Notes:

- The **Enclosure Rear View** graph is used to illustrate only the locations of the power supply, system fans and drip sensors.
- DW612 Enclosure supports three enclosure types. Refer to "System Specifications" in DW612 Enclosure publications for more details.



Figure 18. Enclosure Type 1 - DW612 Enclosure



Figure 19. Enclosure Type 2 – DW612 Enclosure



Figure 20. Enclosure Type 3 - DW612 Enclosure

 DW612S Enclosure supports five enclosure types. Refer to "System Specifications" in DW612S Enclosure publications for more details.



Figure 21. Enclosure Type 1 - DW612S Enclosure



Figure 22. Enclosure Type 2 – DW612S Enclosure



Figure 23. Enclosure Type 3 — DW612S Enclosure



Figure 24. Enclosure Type 5 — DW612S Enclosure



Figure 25. Enclosure Type 6 – DW612S Enclosure

 2600W PSUs will be derated to 2400W under AC high low line; 7200W PSUs will be derated to 6900W under AC high low line.

Power

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

Figure 26. 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 supplies) and thermal sub-system (fan/drip sensor).
- **PSU Configuration**: Allows users to set the redundancy mode and zero output for power supplies.
- **Power Cap**: Allows users to set power capping and saving.
- Voltage Overview: Monitors the voltage rail on SMM2.
- 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 power supply subsystems.

Power Overview

Enclosure Power (30 seconds average)

Min. (W)	Avg. (W)	Max. (W)
1840	2260	2680

Total PSU Power (30 seconds average)

Min. (W)	Avg. (W)	Max. (W)
40	60	80

Node Power Consumption (Wdc)

Node	Min. (W)	Avg. (W)	Max. (W)	Node	Min. (W)	Avg. (W)	Max. (W)
03	400	500	600	04	400	500	600
01	400	500	600	02	400	500	600

Figure 27. Power Overview — DA240 Enclosure

Power Overview

Enclosure Power (30 seconds average)

Min. (W)	Avg. (W)	Max. (W)
8000	12000	14000

Total PSU Power (30 seconds average)

Min. (W)	Avg. (W)	Max. (W)
200	400	600

Node Power Consumption (GPU / Node, Wdc)

Node	Min. (W)	Avg. (W)	Max. (W)	Node	Min. (W)	Avg. (W)	Max. (W)
11	600	800	1000	12	600	800	1000
09	600	800	1000	10	600	800	1000
07	600	800	1000	08	600	800	1000
05	600	800	1000	06	600	800	1000
03	600	800	1000	04	600	800	1000
01	600	800	1000	02	600	800	1000

Figure 28. Power Overview – DW612 and DW612S Enclosure

Notes:

- SMM2 calculates the power consumption of the enclosure and power supplies every second and records the latest 30 readings of the power consumption. Out of these 30 readings, the maximum, minimum and average power consumption will be displayed on the WebGUI.
- Only compute nodes will report the power consumption data to SMM2, which include the power consumption of compute nodes and of corresponding GPU nodes in the tray (if applicable).

When a compute node and a GPU node have been installed in the tray, the compute node will report the power consumption of itself and of the GPU node respectively. Their maximum, minimum and average power consumption will be displayed respectively on the WebGUI as shown in the figures above.

Only the following tray(s) include the GPU node:

- SD650-N V2
- SD650-I V3
- SD650-N V3
- SD665-N V3

On the WebGUI, GPU nodes are odd-numbered and marked in green displayed on the left side while the compute nodes are even-numbered and marked in blue on the right.

PSU Configuration

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

Redundancy Mode	N + 1 •	
Oversubscription Mode	OVS On V	
	Apply FSU Status	
Zero Output		
Zero Output	Disable (default) •	

PSU Configuration

Figure 29. PSU Configuration

1. Redundancy Mode

- 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 as the redundant power supply, so there is no impact on the system operation or performance if any one of the power supplies 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 will shut down within one second if system power loading is not corrected. SMM2 will take the action for node throttling at such power emergency, while enclosure performance could be impacted.

- Oversubscription mode is only applied with the N+1 redundancy mode enabled.
- When enabled with the N+1 redundancy mode, the total available power will be equivalent to 1.2 times of the total power capacity of the N+1 redundancy mode.
- Apply

Click on the **Apply** tab after choosing the redundancy and oversubscription mode from the dropdown menu to activate selections.

PSU Status

Click on the **PSU Status** tab to redirect to the **Enclosure Rear Overview** page to view the status of power supplies. Following are the supported policies:

- DA240 Enclosure
 - Two power supplies:
 - No-redundancy
 - N+1 redundancy with oversubscription (OVS) mode
- DW612 Enclosure
 - Six power supplies
 - No-redundancy
 - N+1 redundancy with oversubscription (OVS) mode
 - Nine power supplies
 - N+1 redundancy without oversubscription (OVS) mode

- DW612S Enclosure

- Six power supplies
 - No-redundancy
 - N+1 redundancy with oversubscription (OVS) mode
- Nine power supplies
 - N+1 redundancy without oversubscription (OVS) mode

2. Zero Output

- Zero Output
 - The Zero Output mode is disabled by default and only available when the Redundancy Mode is enabled (N+1).
 - When the Zero Output mode is disabled, all of the power supplies will always be kept active.
 - Three scanning period are offered: 10/30/60 minutes. The shorter the scanning period, the faster SMM2 adjusts the number of hibernate power supplies to optimize power supply efficiency when system load changes. With shorter scanning period, power supplies are also turned on and off more frequently when system loading fluctuates, which could reduce the life of power supplies.
- Apply

Click on the **Apply** tab after choosing the scanning period from the drop-down menu to activate selections.

Power Cap

Power Cap Policy: You can choose the following two cap types through power cap configurations.

- Enclosure Power Cap
- Node Power Cap

Power Cap Policy

Choose a power cap type : Enclosure Power Cap

v

Enclosure Power Cap / Power Save

Enclosure	Power Cap	
	Enable W (Range: 7200 W ~ 14400	W)
All	Power Save	
	Oisable	
	CEnable	

Apply

Figure 30. Enclosure Power Cap Policy

Power Cap Policy

Choose a power cap type : Node Fower Cap ~

Node Power Cap / Power Save

Node		Power C	Cap
-	Protective Power Cap		1200 W
			DISABLE
	User Power Cap	User Define	Enable W (Range: 600 W ~ 1000 W)
1 🗸		Thermal	DISABLE
		Power S	ave
			 Disable Enable
		Vlock	



- 1. Power Cap: Allows users 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 the lowest performance mode.
 - Select Enclosure Power Cap or Node Power Cap from the drop-down menu.
 - Enter a power cap value, check the box, and click on **Apply** to enable power cap.
 - 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 checked, the value will be saved but not enforced.

- Power cap value is limited in the range from minimum to maximum inventory power of the node / enclosure.
- There are three types of power cap for Node domain. You can set **User Power Cap** value for each node.
- Select enable in the **Power Save** section and click on **Apply** to activate the power save.
- 2. Power Save: Can be applied with power cap simultaneously.
 - Select enable in the **Power Save** section and click on **Apply** to activate power save.
 - The following table provides details about power save modes.

Table 2. Power save modes

Mode	Title	Description
Disable	Static maximum performance	The system runs at full speed regardless of the workload.
Enable	Static minimum power	The system runs in the lowest performance mode regardless of the workload.

Notes: The following tray(s) does not support user capping and thermal capping which will be marked as "UNSUPPORTED":

- SD665 V3
- SD665-N V3

Voltage Overview

The **Voltage Overview** table provides the status of SMM2 board (12V, 5V, 3.3V, 2.5V, 1.2V, 1.15V) and battery voltage. Error log is asserted if the critical threshold is reached.

Note: The auto refresh interval is 30 seconds.

				Voltage	Overviev	v		· · · · · · · · · · · · · · · · · · ·
General S	Settings							Refre
Auto Refres	h Interval			Every 3	0 Seconds			
robe Lis	t							
Status	Probe Name	Reading	Lower Non-Critical	Upper Non-Critical	Lower Critical	Upper Critical	Lower Non-Recoverable	Upper Non-Recoverable
•	SMM2 Brd 1.15V	1.1410 V	1.0360 V	1.2390 V	0.9170 V	1.2740 V	N/A	N/A
0	SMM2 Brd 1.2V	1.1900 V	1.0850 V	1.2950 V	0.9590V	1.3230 V	N/A	N/A
0	SMM2 Brd 2.5V	2.4957 V	2.2419 V	2.6931 V	1.9881 V	2.7495 V	N/A	N/A
0	SMM2 Brd 3.3V	3.2886 V	2.9754 V	3.5670 V	2.6448 V	3.6366 V	N/A	N/A
•	SMM2 Brd 5V	5.0162 V	4.5028 V	5.4088 V	4.0196 V	5.4994 V	N/A	N/A
•	SMM2 Brd 12V	11.884 V	11.686 V	12.676 V	10.564 V	13.204 V	N/A	N/A
0	SMM2 Brd VBAT	3.0104 V	N/A	N/A	2.2472 V	N/A	N/A	N/A

Figure 32. Voltage Overview

Power Restore Policy

When **Power Restore Policy** is enabled as **Restore**, SMM2 remembers the latest compute node power status and restores the power status to where it was before AC is abruptly lost.

Power Restore Policy



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 33. Power Restore Policy – DA240 Enclosure

Node	Status	Z	Node	Status	
11	Restore		12	Restore	
09	Restore		10	Restore	
07	Restore		08	Restore	
05	Restore		06	Restore	
03	Restore		04	Restore	
01	Restore		02	Restore	

Apply

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 state it was before power failed

Figure 34. Power Restore Policy – DW612 and DW612S Enclosure

Power Restore Policy: Determines the mode of operation after loss of power.

- Always off: Node remains off upon power restore.
- **Restore**: Node is restored to the previous state before power failure.
- 1. Check the boxes of the nodes that need to enable power restore policy.
- 2. Click Apply to activate the setting.

Note: SMM2 backs up the configuration settings every 60 seconds. Complete any change to configuration settings within this 60-second period; if not, it will not be saved or go into effect.

Cooling

Cooling displays not only the cooling status of the system fans and power supply fans but also acoustic mode settings.

For DA240 Enclosure, you can monitor the system fan speed, power supply fan speed and acoustic mode under this tab.

However, as DW612 and DW612S Enclosure supports direct water cooled solutions and therefore is not equipped with any system fan, only the status of power supply fans will be displayed.

There are three major sections under the **Cooling** tab:

- PSU Fan Speed (applies to DA240, DW612 and DW612S Enclosure):
 - Displays the power supply fan speed.
- Cooling Overview (applies to DA240 Enclosure only):
 - Displays the system fan speed.
- Acoustic Mode (applies to DA240 Enclosure only):
 - Allows users to choose an acoustic mode.

Cooling Overview (System Fan Speed) — ThinkSystem DA240 Enclosure only

The system fan speed is monitored in **Cooling Overview**. This section is only applicable to DA240 Enclosure, and is not applied to DW612 and DW612S Enclosure due to direct water-cooling system.

The system fan speed is displayed in RPM. Error log is asserted when the fan speed is below the lower critical threshold.

Note: This page will automatically refresh every 30 seconds.

Cooling Overview

Refresh General Settings Auto Refresh Interval Every 30 Seconds Probe List Probe Name Lower Non-Critica Upper Critica Reading 1280 RPM Fan 1 Tach A 2500 RPM 1536 RPM N/A N/A N/A N/A N/A 1280 RPM N/A FAN 1 Tach B 2500 RPM 1536 RPM N/A N/A 0 1280 RPM Fan 2 Tach A 2500 RPM 1536 RPM N/A N/A N/A N/A 0 FAN 2 Tach B 2500 RPM 1536 RPM N/A 1280 RPM N/A N/A N/A 0 Fan 3 Tach A 2500 RPM 1536 RPM N/A 1280 RPM N/A N/A N/A 0 0 FAN 3 Tach B 2500 RPM 1536 RPM N/A 1280 RPM N/A N/A N/A

- Status (two status):
 - Healthy condition:
 - Faulty condition: ⁶⁶
- Fan # Tach A(B):
 - The DA240 Enclosure system is equipped with dual-motor fans. **Tach A** displays the primary fan motor speed while **Tach B** displays the redundant fan motor speed.
 - System fan speed normally operates at higher than 1500 RPM for Tach A and Tach B.
- Lower Critical: 768 RPM is set to be the lower critical fan speed threshold.

PSU Fan Speed

This section displays the PSU (power supply unit) fan speed and applies to the following solutions:

- DA240 Enclosure
- DW612 and DW612S Enclosure

Figure 35. Cooling Overview

PSU	Fan 1 Speed (RPM)	Fan 1 Duty (% of Max.)	Fan 2 Speed (RPM)	Fan 2 Duty (% of Max.)	Status
PSU1	3840	15%	3840	15%	Normal
PSU2	3840	15%	3840	15%	Normal

Figure 36. PSU Fan Speed - DA240 Enclosure

PSU	Fan 1 Speed (RPM)	Fan 1 Duty (% of Max.)	Fan 2 Speed (RPM)	Fan 2 Duty (% of Max.)	Status
PSU1	2672	10%	2672	10%	Normal
PSU2	2672	10%	2672	10%	Normal
PSU3	2672	10%	2672	10%	Normal
PSU4	2672	10%	2672	10%	Normal
PSU5	2672	10%	2672	10%	Normal
PSU6	2672	10%	2672	10%	Normal

Figure 37. PSU Fan Speed - DW612 and DW612S Enclosure

- **Speed**: Power supply fan speed is displayed in RPM and normally operates at between 4000 and 23000 RPM.
- Duty (% of Max.): Out of 25300 RPM. (23000 * 110%).
- Status:
 - **Normal**: PSU fan is running in a healthy condition.
 - Not Present: No power supply is installed.
 - Fault: Fan speed is lower than the threshold (3000 RPM).

Acoustic Mode — ThinkSystem DA240 Enclosure only

Users are allowed to choose an acoustic mode in this section. The **Acoustic Mode** tab is only applicable to DA240 Enclosure.

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

Acoustic Mode Selection

Select an Acoustic Mode :	Mode 3
Apply	

Figure 38. Acoustic Mode Selection

- 1. Select a 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 be applied to the entire enclosure as a whole.
- When acoustic modes are applied, the workload of compute nodes is also capped to avoid overheating.
- If there is power- or thermal-demanding PCI adapter that is installed in the compute node, the acoustic mode is automatically disabled except when set in Mode 5 (aggressive cooling mode).

System Information

The following sections under the System information tab provide the fixed VPD (Vital Product Data).

- Enclosure VPD
- PDB (Power Distribution Boards) VPD (DA240 Enclosure only)
- Midplane VPD (DW612 and DW612S Enclosure only)
- SMM2 VPD
- PSU (Power Supply Unit) VPD

Note: Information displayed with IPMI standard FRU command is limited to SMM2 board VPD only.

Backup Restore

Enclosure VPD

Enclosure VPD

Name	Value
Enclosure Name	Lenovo ThinkSystem DA240 Enclosure
Enclosure Machine Type/Model	7D1JCTO1WW
Enclosure Serial Number	719001 123
Enclosure UUID	1234567890ABCDEF1234567890ABCDEF
Enclosure Hardware Version	Pass 5

Edit

Note:

The storage device can be a USB device

Figure 39. Enclosure VPD — DA240 Enclosure

Enclosure VPD

		Dackup	REDUCT
Name	Value		
Enclosure Name	Lenovo ThinkSystem DW612 Neptune DWC Enclosure		
Enclosure Machine Type/Model	7D1LCTO1WW		
Enclosure Serial Number	719001K123		
Enclosure UUID	1234567890ABCDEF1234567890ABCDEF		
Enclosure Hardware Version	Pass 5		

Note

The storage device can be a USB device

Figure 40. Enclosure VPD – DW612 Enclosure

Enclosure VPD

Name	Value
Enclosure Name	Lenovo ThinkSystem DW612S Neptune DWC Enclosure
Enclosure Machine Type/Model	7D1LCTO2WW
Enclosure Serial Number	J302R8PTA
Enclosure UUID	0102030405060708090A0B0C0D0E0F10
Enclosure Hardware Version	Pass 2

Edit

Note:

The storage device can be a USB device

Figure 41. Enclosure VPD – DW612S Enclosure

Note: The storage device can be a USB device.

- Backup: Save the current enclosure name on a USB storage device for future migration.
- Restore: Load the enclosure name from previously saved data on a USB storage device.
- Edit: Modify the enclosure name based on the following rules:
 - **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.

Backup Restore

- Enclosure Name: "Lenovo ThinkSystem DA240 Enclosure" / "Lenovo ThinkSystem DW612 Neptune DWC Enclosure" / "Lenovo ThinkSystem DW612S Neptune DWC Enclosure"
- Enclosure Machine Type/Model: "7D1JCTO1WW" for ThinkSystem DA240 Enclosure / "7D1LCTO1WW" for ThinkSystem DW612 Neptune DWC Enclosure / "7D1LCTO2WW" for ThinkSystem DW612S Neptune DWC Enclosure
- Enclosure Serial Number: For example, "719001I123" for ThinkSystem DA240 Enclosure / "719001K123" for ThinkSystem DW612 Neptune DWC Enclosure / "J302R8PTA" for ThinkSystem DW612S Neptune DWC Enclosure
- Enclosure UUID: Randomly generated ID number of the enclosure.
- Enclosure Hardware Version: Hardware version.

Power Distribution Board/Midplane VPD

- For DA240 Enclosure, see Power Distribution Board VPD
- For DW612 and DW612S Enclosure, see Midplane VPD.



Name	Value
Card UUID	8858078C5B584DF9A9E0BF40E01F97C5
Card Hardware Version	Pass 5

Note:

The storage device can be a USB device

Figure 42. PDB VPD — DA240 Enclosure

Note: The term "upper power distribution board" is displayed as "**Upper PDB**" and "lower power distribution board" as "**Lower PDB**" in the WebGUI.



The storage device can be a USB device

Figure 43. Midplane VPD - DW612 and DW612S Enclosure

Note: The storage device can be a USB device.

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

SMM2 VPD

SMM2 VPD

Name	Value
Card Serial Number	XXXX9CW300N
Card UUID	8858078C5B584DF9A9E0BF40E01F97C5
Card Hardware Version	Pass 5
Card FRU Serial Number	02JK469

Figure 44. SMM2 VPD

- Card Serial Number: The last 11 digits of an 8S barcode label on the SMM2. For example, "8SXXXXXXXXXAAAABBBCCCCC"
- Card UUID: Randomly generated ID number of the SMM2.
- Card Hardware Version: Hardware version.
- Card FRU Serial Number: Lenovo FRU Number. For example, "02JK469".

PSU VPD

PSU1 VPD

Name	Value
MFR Revision	04
Туре	CFF v4 2400W PT
Part Number	SP57A14715
FRU Number	01PF081
Serial Number	D1DG03P003B
Header Code	D1DG
Vendor Name	DETA
MFR Date	13(week) / 20(year)
Primary FW Revision	7.13
Secondary FW Revision	7.14
MFR Model	IPS2400DB A
MFR Location	DG
Barcode	8SSP57A14715D1DG03P003B

Figure 45. PSU VPD

- MFR Revision: Assembly revision
- **Type**: CFF Power Supplies v4 PSU Type
- Part Number: Lenovo part number
- FRU Number: Lenovo FRU number

- Serial Number: The last 11 digits of an 8S barcode label on the PSU. For example, "8SXXXXXXXXXXXAAAABBBCCCCC"
- Header Code: Lenovo header code
- Vendor Name: Vendor name
- MFR Date: Manufacturing date code (week/year)
- Primary FW Revision: Primary firmware revision
- Secondary FW Revision: Secondary firmware revision
- MFR Model: Vendor part number
- MFR Location: Manufacturer location
- PSU FRU Number: For example, "01GV270"
- Barcode: Lenovo barcode

Event Log

The Event Log tab allows users to view the SEL (System Event Log).

The SEL (System Event Log) records enclosure-level information, warnings, and errors so that users can learn what has happened in the enclosure. A maximum number of 4090 event entries can be logged.

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

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

	0		
EventID	Seventy	Date/Time L	Description
0x21080113	0	2020-11-13 15:45:05 (UTC+0000)	Node 4: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x21080112	0	2020-11-13 15:45:05 (UTC+0000)	Node 3: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x21080111	0	2020-11-13 15:45:05 (UTC+0000)	Node 2: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x21080110	0	2020-11-13 15:45:05 (UTC+0000)	Node 1: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x180708fd	0	2020-11-13 15:45:04 (UTC+0000)	SMM2 Reset: Chassis sensor, Informational was asserted
0x180708f2	0	2020-11-13 15:44:24 (UTC+0000)	Encl Vtl Reseat: Chassis sensor, Informational was asserted
0x21080113	0	2020-11-13 15:43:22 (UTC+0000)	Node 4: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x21080112	0	2020-11-13 15:43:22 (UTC+0000)	Node 3: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x21080111	0	2020-11-13 15:43:22 (UTC+0000)	Node 2: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x21080110	0	2020-11-13 15:43:22 (UTC+0000)	Node 1: Slot Or Connector sensor, Device Inserted / Device Present was asserted
0x180708fc	0	2020-11-13 15:43:22 (UTC+0000)	SMM2 Power On: Chassis sensor, Informational was asserted
0x106f0201	0	2020-11-13 15:43:21 (UTC+0000)	EvtLogDisabled: Event Logging Disabled sensor, Log Area Reset/Cleared was asserted

Event Log

Figure 46. Event Log

- Refresh: SEL is never automatically refreshed. Click on Refresh to acquire the latest entries.
- Save Log: SEL data will be exported and saved as .csv file.
- Clear Log: SEL data will be cleared.
- Severity: SEL data entries will be listed in the order of events severity.
 - 🥙 : Indicates Informational type of events.
 - : Indicates **Warning** type of events.

 1 100 : Indicates **Error** type of events. The Check Log LED will be lit when error events occur.

Note: For a list of possible events, refer to "List of SMM2 event codes" in *Messages and Codes Reference* of your corresponding solution.

Configuration

Configuration settings are used to manage the SMM2 module.

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

Figure 47. Configuration

There are twelve sections:

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

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

Firmware Update

The firmware update process comes in two phases. During the firmware upload stage, users can choose the location where the firmware image is stored. SMM2 would check the image header information for validation.

Firmware Update

Upload

Select an image file and click upload. The upload process will terminate all other sessions.

After the upload process is started, any attempt to refresh, logout or navigate away from the update page will restart the System.

Firmware File Path	Choose File lnvgy_fw_snoarch.rom	Upload
--------------------	----------------------------------	--------

Figure 48. Firmware Update

Upload

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

Once a valid firmware image has been uploaded, one of the following two pages will appear depending on the type of image that has been uploaded:

- "SMM2 Firmware" on page 32
- "PSU Firmware" on page 33

SMM2 Firmware

Firmware Update

Firmware File Path	Choose File lnvgy_fw_snoarch.rom			Upload	
irmware Image	New Version	Preserve Settings	Recover Primary Bank Firmware	Secure Rollback	

Figure 49. SMM2 Firmware Update

A firmware image confirmation table appears with a **Preserve Settings** check box. If **Preserve Settings** is checked, SMM2 configurations will be 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 Flash Bank Firmware** check box is present in the firmware update page, but nonfunctional when SMM2 is boot up from the primary flash bank. If SMM2 starts on the secondary flash bank, which indicates that the primary flash bank image might be corrupted and needs recovery, this check box is open for selection. Check it to perform the recovery measure and update image onto the primary flash bank, and uncheck to upgrade firmware onto the secondary flash 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. SMM2 will automatically restart if users cancel firmware update process after uploading the firmware image.

During Firmware Update
During the firmware update process, the system will direct users to a loading page where all of the SMM2 functions are temporarily locked.

Once the progress reaches 100%, SMM2 will automatically restart and users need to log in again to access the SMM2 web interface.

Firmware Update



100% Completed

Firmware update in progress, leaving this page will not terminate this operation.

SMM2 Firmware Image has been updated successfully The SMM2 has been reset. Therefore, your session is being terminated. <u>Click here to start a new session to access SMM2</u>

Figure 50. SMM2 Firmware Update completed

PSU Firmware

Firmware Update

Firmware File P	ath Cho	ose File lnvgy_fw_ps_noarch.u	ıpd		Upload
PSU Firmwa	are Image				
Туре			Vendor	Vers	ion
CFFv4 1800W	РТ		ARTE	6.21	
PSU Firmaw	vare Update I	nformation	NA102100.	6011	
Update PSU	PSU No	Type CEEve 2400M PT	Vendor	FRU	Current Version
		CFFFFF 240011 FT	DEIN		

Cancel

Update



Firmware Update

Firmware File Pat	h Choose F	lnvgy_fw_ps_noarch.upd			Upload
SU Firmwar	e Image				
Туре			Vendor	1	Aersion
CFFv4 1800W PT	6		ARTE		.21
PSU Firmawa	PSU №	Type	Vendor	FRU	Current Version
0	1	CFFv4 1800W PT	ARTE		6.21
	2	N/A	NA	NIA	N/A
	3	N/A	NA	NIA	NA
	4	NA	NA	NIA	N/A
	5	NA	NIA	NIA	NA
	6	NIA	N/A	NIA	NA

Figure 52. PSU Firmware Update - DW612 and DW612S Enclosure

After PSU firmware image has been uploaded, the information of the firmware image will be displayed with a check box for each compatible power supply.

Notes:

- 1. It is recommended that users perform the PSU firmware update with at least two power supplies installed in the enclosure.
- 2. The PSU firmware update requires all of the power supplies to be in DC-PG.
- 3. The PSU firmware update will disable the power redundancy mode.
- 4. If the operating system is running, there will be a pop-up warning dialog box for confirmation.

During Firmware Update

Firmware Update



PSU firmware update in progress, leaving this page will not terminate this operation.

SMM2 Firmware Image has been updated successfully The SMM2 has been reset. Therefore, your session is being terminated. Click here to start a new session to access SMM2

Figure 53. PSU Firmware Update completed

During the PSU firmware update process, the system will direct users to a loading page where all of the SMM2 functions are temporarily locked.

Once the progress reaches 100%, the power supplies will perform a DC power cycle to ensure that the enclosure can function properly without a power failure.

SMTP/SNMP/PEF

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

			SMT	Þ	
Before sending alert, p	lease make sure chang	ges to Sender Information, target Destin	nation Email Address, SMTP (email) Se	erver Settings, and SMTP Authentication have been saved	by clicking Apply Changes.
Sender Informatio	n				
From	3242-089798693ACA§len	070.005			
Destination Email	Addresses				
	Enable	Destination Email Address		Email Description	Test
Email Alert 1	8			SNOT email alert	Send Alert 1
Email Alert 2				SNM email alert	Send Alert 2
Email Alert 3	×			SMM email alert	Send Alert 3
Email Alert 4				SMM email alert	Send Alert 4
SMTP (email) Serv	er Settings				
SMTP IP Address		0.0.0.0			
SMTP Port Number		25			
SMTP Authenticat	ion				
Enable	1	Anonymous account will be used when a	uthentication is disabled.		
Username					
Password					
STARTTLS Mode		AUTO ¥			
SASL Mode		AUTO ¥			

Apply

Figure 54. SMTP

- SMTP: You can enable, configure and test SMTP email alert on this page.
 - Click Send Alert # to test email alerts.
 - Check **Global Alerting Enable** on the PEF page to enable email alerts.
 - The following information provides the default values:
 - All email alerts disabled
 - Email server address = 0.0.0.0
 - Authentication disabled

Notes:

- 1. Before sending an email alert, make sure that the changes to **Sender Information**, **Destination Email Address**, **SMTP (email) Server Setting**, and **SMTP Authentication** have been saved by clicking **Apply**.
- 2. When the SMM2 SEL is full, no new event entry can be added to the SEL. SMTP event emails 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		* 0	0.0.0.0	Send Test Trap
IP Destination 2		8.0	0.0.0.0	Send Test Trap
IP Destination 3		8.0	0.0.0.0	Send Test Trap
IP Destination 4	0	* 0	0.0.0.0	Send Test Trap
IP Destination 5	8	* 0	0.0.0.0	Send Test Trap
IP Destination 6	8	* 0	0.0.0.0	Send Test Trap
IP Destination 7	0	* 0	0.0.0.0	Send Test Trap
IP Destination 8	0	* 0	0.0.0.0	Send Test Trap
Community String				
Community Name		public		

Figure 55. SNMP

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

Notes:

- 1. Before sending a test trap, make sure that the changes to the target **Destination** and **Community String** have been saved by clicking **Apply**.
- 2. When the SMM2 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

ables/disables both PEE and email alorts

Platform Event Filters (PEF) List

Filter Name	Generate PET
All Type, Voltage Critical Filter	0
All Type, Fan Critical Filter	0
All Type, Power Supply Critical Filter	D
All Type, Event Logging Disabled Critical Filter	
All Type, Module Or Board Critical Filter	0
All Type, Chassis Critical Filter	0
All Type, Slot Or Connector Critical Filter	D

Apply



PEF

Platform Event Filters (PEF) List

Global Alerting Enable Note: This enables/disables both PEF and email alerts.

Filter Name	Generate PET
All Type, Voltage Critical Filter	
All Type, Power Supply Critical Filter	
All Type, Event Logging Disabled Critical Filter	
All Type, Module Or Board Critical Filter	
All Type, Chassis Critical Filter	
All Type, Slot Or Connector Critical Filter	
Generic Type, Discrete Chassis (GPUWaterLoop Chk) Informational Filter	

Apply

Figure 57. PEF - DW612 and DW612S Enclosure

- **PEF**: You can set SMTP/SNMP trap event types on this page.
 - The following information provides the default values:

DA240 Enclosure

- Global Alerting Enable unchecked
- None of the filters selected

DW612 and DW612S Enclosure

- Global Alerting Enable checked
- Generic Type, Discrete Chassis (GPUWaterLoop Chk) Informational Filter checked

Network Configuration

You can modify the network parameters in Network Configuration.

The following network parameters can be modified in the **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 ma Each change to settings may cause Changes may not take effect imme	iy change IP address settings. e a loss in connectivity and the termination of all sessions. diately.	
Host Name	SMM2-7C8AE1C7D87A	
DNS Domain Name	lenovo.com	
DNS Domain Name Advance Settings	lenovo.com	
Please click on etho below to furthe	er configure SMM2 network settings.	

IPv4 Address **IPv6** Enabled **IPv4 Enabled** IPv6 Addre Enabled 192.168.70.100 1999::11/64 eth0 Enabled

Apply

Figure 58. Network Configuration

General Settings

Changing 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 General Settings:

- Host Name = SMM2-\$MAC ADDR
- DNS Domain Name = lenovo.com

Advanced Settings

Click on eth0 below to further configure SMM2 network settings.

Default settings for Advanced Settings:

- Name = eth0
- IPv4 Enabled = Enabled
- IPv4 Address = 192,168,70,100 ٠
- IPv6 Enabled = Enabled
- IPv6 Address = 1999::11/64

Network Interface Configuration

Refresh Back

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:a8:12:99:77
Auto Negotiation	🖲 On 💿 Off
Network Speed	1000 Mb *
Duplex Mode	🖲 Full 🔍 Ha

General Settings

Enable Dynamic DNS	
Use DHCP for DNS Domain Name	
Respond to ARP	

Figure 59. Network Interface Configuration

Click on the items in **Network Interface Configuration** for the detailed network settings.

Default settings for Network Interface Settings:

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

IPv4 Settings

Enabled	
Method	First DHCP, then static IP address -
IP Address	192.168.70.100
Subnet Mask	255.255.255.0
Gateway	192.168.70.1
Use DHCP to obtain DNS server addresses	0
Preferred DNS Server	0.0.0.0
Alternate DNS Server	0.0.0.0

Figure 60. IPv4 Settings

Default settings for **IPv4 Settings**:

- IPv4 Enabled = Checked
- Method:
 - First DHCP, then static IP address (default): Obtains IP from DHCP server first; if failed, it will use the static IP address
 - Use static IP address: Uses the static IP address based on the user configuration
 - Obtain IP from DHCP: Obtains IP address from DHCP server
- IP Address = 192.168.70.100
- Subnet Mask = 255.255.255.0
- Gateway = 192.168.70.1
- Preferred DNS Server = Blank
- Alternate DNS Server = Blank

IPv6 Settings

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

Figure 61. IPv6 Settings

Default settings for IPv6 Settings:

- IPv6 Enabled = Checked
- 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 DNS Server = Blank (configured by user)
- Alternate DNS Server = Blank (configured by user)

VLAN Settings

Enable VLAN ID	
VLAN ID	0
Priority	0

Figure 62. VLAN Settings

Default settings for VLAN Settings:

• Enable VLAN ID = Unchecked

Time Setting

This page is used to configure system time.

Time Settings

Refresh

Data and Time Settings

	1	Nove	mber	2020)				Ti	ne		
<<	<	_	Now		>	>>	100		н	our		
Su	Мо	Tu	We	Th	Fr	Sa	0	1	2	3	4	5
1	2	3	4	5	6	7	6	7	8	9	10	11
8	9	10	11	12	13	14	12	13	14	15	16	17
15	16	17	18	19	20	21	18	19	20	21	22	23
22	23	24	25	26	27	28	- 10					
29	30	1	2	3	4	5			Mir	ute		
						_	:00	:05	:10	:15	:20	:25
							:30	:35	:40	:45	:50	:55
									Exa	ct min	nutes:	42
									Sec	ond		
							:00	:05	:10	:15	:20	:25
							:30	:35	:40	:45	:50	:55
									Exac	t sec	onds:	48

Figure 63. Time Settings

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

User Account

The User Account page allows you to manage three types of user roles:

- Administrator: Full access to all of the web pages and authorized to modify all of the settings and configurations.
- **Operator**: Full access to all of the web pages except for the **User Account** page. Operator can only see his/her own account on the **User Account** page and no modification on the account page is allowed.
- User: Full access to all of the web pages except SMM2 Reset button on the Enclosure Rear Overview page and the following pages in the Configuration tab: SMTP/SNMP/PEF/Network Configuration/User Account/Web Service; viewing right is allowed but any modification is prohibited on these pages.

To configure a particular user, click on the **User ID**. If **Password Complexity Rules** is enabled, password strength checking will be enabled while updating user configuration.

Notes:

- **Password Complexity Rules** is enabled with option 4 by default. Use the following information upon your first login:
 - User Name = USERID
 - Password = PASSW0RD (The sixth character of PASSW0RD is number zero)
- After the first login, you are allowed to change the account and password information based on your preferences.

		Us	er Account		Defrach
User Account To configure a part	licular user, click the User ID.	If Password Complexity Rules is en	abled, password strength checking	will be enabled while updating user configure	ation.
User ID	State	User Name	User Role	IPMI LAN Priviloge	
3	Enabled	USER	User	User	

Figure 64. User Account page access – User and Operator

User Account

Audit Log Refresh

User ID	State	User Name	User Role	IPMI LAN Privilege	
1	Osatiled		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 65. User Account page access - Administrator

Administrators can click on one of the listed accounts to access **User Configuration**. They can enable/ disable/delete an account, set a user name, set/change password, and select user privileges here.

Notes:

• Administrators can assign account user names in the **User Name** field with up to 16 characters using alphanumeric characters, including a-z, A-Z and 0-9, . (period), - (hyphen) and _ (underscore). Click on the

Apply Changes button to activate the changes. If the validation fails, the WebGUI will display an error message. Creating a new user account with an existing user name is not allowed.

- Administrators can set/change the password in the New Password field using a minimum of eight (up to 20) printable US-ASCII (Code: 33-126) characters. Password must follow Password Complexity Rules that set on the Account Security page. Rules should be enabled starting with rule 1, and up to the number of rules specified.
 - 0x00: Password Complexity Rules disabled. White-space and the non-alphabetic characters such as ~'&<>/[]{;, are not allowed.
 - 0x01: contains at least one letter (A through Z, a through z).
 - 0x02: contains at least one number (0 through 9).
 - 0x03: contains 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 !@#\$%^*-_+=().:`|?"\
 - 0x04: cannot be a repeat or reverse of the corresponding user name (default)
 - 0x05: may contain at most two consecutive occurrences of the same character
- If the validation fails, the WebGUI will display an error message.

Password Complexity Rules:	4	
General		
User ID	2	
Enable User		
User Name	USERID	
Change Password		
New Password		
Confirm New Password		
Jser Privileges		
User Role	Administrator 🖌	
IPMI LAN Privilege	Administrator ¥	

Delete Apply

Figure 66. Password Policy

Account Security

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

Table 3. Account security settings

Rule	Value range	Default value
Password Complexity Rules (Rules should be enabled starting with rule 1, and up to the number of rules specified)	0-5	4
Minimum password length	8-20	10
Force user to change password on first access	Check the box to enable or uncheck to disable	Enabled
Password expiration period (in days)	0-365	0

Table 3. Account security settings (continued)

Password expiration warning period (in days)	0-Value of Password expiration period	0
Minimum password change interval (in hours)	0-240	24
Minimum password reuse cycle	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) — Will take effect starting the next login	0-1440	20
IP address blocked for 300 seconds after 10 login failures	Check the box to enable or uncheck to disable	Disabled

Services

You can configure different HTTPS ports for connection, enable/disable IPMI service state, or enable/disable SLP service state on the **Services** page.

~

Services

Web Server

HTTPS Port Number	443
Max Sessions	32
Active Sessions	1

IPMI

Enabled	

SLP

Enabled

Apply

Figure 67. 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 users to Generate CSR (Certificate Signing Request), Import Certificate and Generate Self-signed Certificate.

Web Certificate

Generate CSR | Import Certificate | Generate Self Signed Certificate

Current Certificate

Serial Number	: 1A265D4518576914EADBEA0F7AE9FD8F05A5641D
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 (0)	: ThinkServer
Common Name (CN)	: www.lenovo.com
Valid From	: 01 Jan 2017, 00:00:48 (UTC+0000)
Valid To	: 30 Dec 2026, 00:00:48 (UTC+0000)

Figure 68. Web Certificate

Subject Information:

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

Issuer Information:

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

Web Certificate

Generate Certificate Signing Request (CSR)

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

Figure 69. Generate CSR (Certificate Signing Request)

You can click on the **Generate CSR** button to fill in the certification request information and download the CSR. After completing the download, you can send the CSR to a third-party certificate authority to apply for a digital identity certificate.





Figure 70. Import a Signed Certificate

Import a Signed Certificate

Uploading a certificate will restart the web service, leading to the termination of the current WebGUI session and temporary unavailability of the web server.

You can import the certificate when the CA responds with a signed certificate. Importing certificates in PEM format is supported. You can convert your DER certificate to PEM format by "openssl x509 -inform der -in certificate.cer -out certificate.pem". After the certificate has been imported, it is required to reconnect to the SMM2 web.

Web Self-signed Certificate

Generate Self-signed Certificate

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

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

Figure 71. Web Self-signed Certificate

Generate Self-signed Certificate

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

You can also generate a self-signed certificate by filling in the information and clicking on the **Generate** button on this page.

Network Time Protocol (NTP)

You can configure the network time protocol and time zone settings on the **NTP Time Settings** page.

ork Time P	rotocol		
JIK TIME P			
	Operation Mode	Disabled	
	NTP Server 1		
	NTP Server 2		
	NTP Server 3		
	Requested Mode's Update Frequency (minutes)	3	
	Time Synchronization Method	Step Mode Slew Mode	
Zone Settir	ng		
one Settin	ng		

Figure 72. NTP Time Settings

In **NTP Time Settings**, you can use the drop-down menu to change an 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 the settings have been changed, click on **Apply Changes** to save the configuration.

Clicking on the Sync Time Now button will synchronize with the solution immediately.

For the **Time Zone Setting**, you can select the solution or the client time zone. The client time zone can be changed by modifying the time zone of the client's operation system.

Default settings for NTP Time Settings:

- Operation Mode: Disabled
- Server Time Zone: UTC

Backup and Restore Configuration

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

If a storage device is inserted and detected, it can be used for SMM2 to preserve and migrate SEL and user configurations. SMM2 only keeps the latest configuration file in the storage device for backup and restore.

Note: The storage device can be a USB device depending on the machine types. The storage capacity of the USB storage device should be higher than 1 GB. The support file system is FAT32. For more details, refer to "USB flash drive replacement for SMM2 data backup and restore" in *Maintenance Manual/User Guide* of your solution.

Backup and Restore Configuration

Set Password to backup / restore configuration.				
Set Password:	Confirm Password:			
Latest Network backup fil	e time: N/A			
Backup Configuration fro	m Network Appl:			
Restore from Network Ba	ckup Configuration			
Choose File No file chose	Appl:			
Latest storage device bac	kup file time: N/A			
Backup Configuration to	storage device Appl:			
Restore Configuration fro	m storage device Appl:			
Note:				

The storage device can be a USB device

Figure 73. SMM2 Backup and Restore Configuration

- **Backup**: Allows users to back up SEL and the following enclosure configurations via the network or to a USB storage device.
 - Power supply redundancy policy
 - Oversubscription mode
 - Zero output
 - Enclosure capping/saving or compute node capping/saving
 - Acoustic mode setting
 - Power restore policy
 - The settings in the configuration tabs
- **Restore**: Allows users to restore and apply the configurations from the network backup or stored in a USB storage device to SMM2.

Chapter 4. IPMI Command

The section includes information about IPMI commands.

Note: The IPMI via RMCP+ or RMCP is available through OOB communication via the physical interface, the Ethernet port.

NetFn	CMD	Name
0x32	0x90	GET PSU COLLECTED DATA
0x32	0x91	GET PSU STATUS
0x32	0x94	GET FAN GPIO
0x32	0x95	SET FAN GPIO
0x32	0x96	GET SYS LED
0x32	0x97	SET SYS LED
0x32	0x98	GET NODE POWER READING
0x32	0x99	GET NODE SIZE
0x32	0x9B	SET ACOUSTIC MODE (only applicable to DA240 Enclosure)
0x32	0x9D	GET CAP BOUNDARY
0x32	0x9E	SET CAP VALUE
0x32	0x9F	SET CAP STATE
0x32	0xA0	GET CAP STATE
0x32	0xA1	SET DATE TIME
0x32	0xA2	GET PSU POLICY OVS
0x32	0xA3	SET PSU POLICY OVS
0x32	0xA4	SET NODE RESET / RESEAT
0x32	0xA5	GET PSU FAN STATUS
0x32	0xA6	BACKUP / RESTORE
0x32	0xA7	GET NODE STATUS
0x32	0xA8	GET SMM2 STATUS
0x32	0xA9	SET NODE RESTORE POLICY
0x32	0xAA	GET NODE RESTORE POLICY
0x32	0xAB	SET PSU ZERO OUTPUT MODE
0x32	0xAC	GET PSU ZERO OUTPUT MODE
0x32	0xAD	SMM2 RESET TO DEFAULT
0x32	0xAF	SET VPD
0x32	0xB0	GET VPD
0x32	0xB1	FFDC DUMP
0x32	0xB2	SET SMTP CONFIG PARAMETERS
0x32	0xB3	GET SMTP CONFIG PARAMETERS

Table 4. IPMI command list

Table 4. IPMI command list (continued)

0x32	0xB4	SET NTP CONFIG PARAMETERS
0x32	0xB5	GET NTP CONFIG PARAMETERS
0x32	0xC3	GET PSU DATA
0x32	0xC7	GET NODE COOLING VALUE
0x32	0xF0	GET WEB STATE
0x32	0xF1	SET WEB STATE
0x32	0xF4	PSU ISP PSU SELECT
0x32	0xF5	ENCLOSURE VIRTUAL RESEAT
0x32	0xF6	SET SYSTEM ENCLOSURE LRU
0x32	0xFA	GET SECURITY OPTION
0x32	0xFB	SET SECURITY OPTION

IPMI Command Contents

The section provides detailed IPMI command contents.

GET PSU COLLECTED DATA		NetFn	CMD
		0x32	0x90
Request data	Response data	Comments	
Byte 1 - Type	Byte 1 - Type Byte [3:2] - Summary of minimum reading Byte [5:4] - Summary of average	[Request data] Byte 1 - Type 0x01 - AC-In 0x02 - PSU power consumption Note: The unit is 1 watt.	
	reading Byte [7:6] - Summary of maximum reading		
		NetFn	CMD
GET PSU STATUS		0x32	0x91
Request data Response data		Comments	

Table 5. IPMI command contents (continued)

N/A	Byte [2:1] - PSU EPOW	[Response data]	
	Byte [4:3] - PSU Throttle	Bit [0:8] - For PSU 1 to 9	
	Byte [6:5] - PSU Present	0b - Not trigger	
	Byte [8:7] - PSU Power Good	1b - Trigger	
	Byte 9 - EPOW Out		
	Byte 10 - Throttle Out		
	Byte [12:11] - PSU Type		
	Byte [14:13] - Total Power Bank		
		NetFn	CMD
		0x32	0x94
Request data	Response data	Comments	
N/A	Byte 1 - Cooling mode	[Response data]	
	Byte 2 - Present	Byte 1 - Cooling mode	
	Byte 3 - Error LED	0x01: Air-cooled mode (only applicable to DA240 Enclosure)	
		0x02: Water-cooled mode (only applicable to DW612 and DW612S Enclosure)	
		Byte 2 - Present	
		 DW612 and DW612 	S Enclosure
		Bit [0:1] - Drip senso	or 1 to 2
		DA240 Enclosure	
		Bit [0:2] - System fa	n 1 to 3
		Ob - Not present	
		 1b - Present 	
		Byte 3 - Error LED	
		• DW612 and DW612	S Enclosure
		Bit [0:1] - Drip senso	or 1 to 2
		 DA240 Enclosure 	
		Bit [0:2] - System fa	n 1 to 3
		• 0b - Off • 1b - On	
		Byte 4 - Leakage (only and DW612S Enclosur	applicable to DW612 e)
		Bit [0:1] - Drip sens	or 1 to 2
		0b: No leakage	
		NotEn	
SET FAN GPIU		NetFn	CIVID

Table 5. IPMI command contents (continued)

		0x32	0x95
Request data	Response data	Comments	
Byte 1 - Fan number	Byte 1 - Fan number	[Response data]	
Byte 2 - Enable	Byte 2 - Enable	Byte 1 - Fan number	
		DA240 Enclosure	
		0x01 - Fan 1	
		0x02 - Fan 2	
		0x03 - Fan 3	
		• DW612 and DW612	S Enclosure
		0x01 - Drip sens	or 1
		0x02 - Drip sens	or 2
		Byte 2 - Enable	
0x00 - Off			
		0x01 - On	
		NetFn	CMD
GET STS LED		0x32	0x96
Request data	Response data	Comments	
N/A	Byte 1 - ID LED for enclosure	[Response data] Byte 1 - ID LED for enclosure	
	Byte 2 - Check Log LED		
		0x00 - Off	
		0x01 - On	
		0x02 - Blink	
		0x03 - Accept mod	e - Off
		0x04 - Accept mode - On 0x05 - Accept mode - Blink Byte 2 - Check Log LED 0x00 - Off 0x01 - On	
		NetFn	CMD
3E1 313 LED		0x32	0x97
Request data	Response data	Comments	

Table 5. IPMI command contents (continued)

Byte 1 - LED type	Byte 1 - LED type	[Request data]	
Byte 2 - Function	Byte 2 - Function	Byte 1 - LED type	
		0x01 - ID LED for th	ne enclosure
		Byte 2 - Function	
		0x00 - Off	
		0x01 - On	
		0x02 - Blink	
		Notes:	
		 While the ID LED has been set to Off, SMM2 will enter the accept mode, in which the LED behavior is determined by the node ID LEDs. 	
		• When SMM2 receives various settings from XCC in the accept mode, the Blink will be given the highest priority over On and Off (Off will be given the lowest priority).	
GET NODE POWER READING		NetFn	CMD
		0x32	0x98
Request data	Response data	Comments	

Table 5. IPMI command contents (continued)

Byte 1 - Node number	Byte 1 - Node number	[Request data]		
	Byte [3:2] - Compute node minimum power reading			
			DA240 Enclosure	
	Byte [5:4] - Compute node average	0x01 - Node 1		
	power reading	0x02 - Node 2		
	Byte [7:6] - Compute node maximum	0x03 - Node 3		
	power reading		0x04 - Node 4	
	DW612 and DW612S Enclosure only:		e	
	Byte [9:8] - GPU node minimum power	 DW612 and DW612 	S Enclosure	
	reading	0x01 - Node 1		
	Byte [11:10] - GPU node average power	0x02 - Node 2		
	reading	0x03 - Node 3		
	Byte [13:12] - GPU node maximum			
	power reading			
	Notes:	0x07 - Node 7		
	Only the following node(s) return to		0x08 - Node 8	
		0x09 - Node 9		
	 SD650-I V3 	0x0A - Node 10		
	• SD665-N V3		0x0B - Node 11 0x0C - Node 12	
	The following node(s) respond with 0x00:	0x0D - Enclosure		
	• SD650 V2	[Response data]		
	• SD650 V3	For DA240 Enclosure:		
	• SD665 V3	Duto [12:0] 0:00		
	DA240 Enclosure only:	Буце [13:0] - UXUU		
	Dite [12:0] 0:00	Notes:		
	Byte [13:8] - UXUU	• The unit is 1 watt.		
		The enclosure power populated compute	er reading is the sum of nodes.	
		NetFn	CMD	
GLI NODE SIZE		0x32	0x99	

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Request data Byte 1 - Node number	Response data Byte 1 - Node number 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 This command display the compute node(s). [Request data] Byte 1 - Node number • DA240 Enclosure 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 • DW612 and DW612 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Node 5 0x06 - Node 6	s the dimensions of S Enclosure
		0x06 - Node 6 0x07 - Node 7 0x08 - Node 8 0x09 - Node 9 0x0A - Node 10 0x0B - Node 11 0x0C - Node 12	
SET ACOUSTIC MODE (only	v applicable to DA240 Enclosure)	NetFn	CMD
		0x32	0x9B
Request data	Response data	Comments	

Table 5. IPMI command contents (continued)

N/A	Byte 1 - Acoustic mode	This section is only applicable to DA240	
Byte 1 - Acoustic mode	Byte 1 - Acoustic mode	Enclosure.	
	Byte 2 - PCIe priority	[Request data]	
		Byte 1 - Acoustic mode	
		0x00 - Disable, 10% to 70% 0x01 - Mode 1, 10% to 20%	
		0x02 - Mode 2, 10% to 28%	
		0x03 - Mode 3, 10% to 35%	
		0x04 - Mode 4, 10% to 45%	
		0x05 - Mode 5, 30% to 70% and extra 10% duty	
		[Response data]	
		Byte 2 - PCIe priority	
		0x00 - None	
		0x01 - High	
		NetFn	CMD
GET CAP DOUNDART		0x32	0x9D

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Node number	Byte 1 - Node number	[Request data]	
	Byte [3:2] - Minimum capping	Byte 1 - Node number	
	Byte [5:4] - Maximum capping	DA240 Enclosure	
		0x01 - Node 1	
	Byte [7:6] - Protective capping	0x02 - Node 2	
	Byte [9:8] - User capping	0x03 - Node 3	
	Byte [11:10] - Thermal capping	0x04 - Node 4	
		0x05 - Enclosure	9
		 DW612 and DW612 	S Enclosure
		0x01 - Node 1	
		0x02 - Node 2	
		0x03 - Node 3	
		0x04 - Node 4	
		0x05 - Node 5	
		0x08 - Node 8	
		0x03 - Node 3	
		0x0B - Node 11 0x0C - Node 12	
		0x0D - Enclosur	e
		• Copping will only be	applied in OS
		 Capping will only be runtime. 	applied in OS-
		• The unit is 1 watt.	
		 The following tray(s) capping and therma 	does not support user Il capping:
	– SD665 V3		
		- SD665-N V3	
		NetFn	CMD
SET CAP VALUE		0x32	0x9E

Table 5. IPMI command contents ((continued)
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Request data	Response data	Comments	
Byte 1 - Node number	Byte 1 - Node number	[Request data]	
Request data Byte 1 - Node number Byte [3:2] - Capping value	Response data Byte 1 - Node number Byte [3:2] - Capping value	Comments [Request data] Byte 1 - Node number • DA240 Enclosure 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Enclosure 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 1 0x02 - Node 2 0x03 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Node 5 0x06 - Node 6 0x07 - Node 7 0x08 - Node 8 0x09 - Node 9 0x0A - Node 10 0x0B - Node 11 0x0C - Node 12 0x0D - Enclosure	e e
		The following tray(s) does not support use capping and thermal capping:	
		– SD665 V3	
		– SD665-N V3	
SET CAD STATE		NetFn	CMD
SEI VAF STATE		0x32	0x9F

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Node number	Byte 1 - Node number	[Request data]	
Request data Byte 1 - Node number Byte 2 - Capping mode Byte 3 - Saving mode	Response data Byte 1 - Node number Byte 2 - Capping mode Byte 3 - Saving mode	Comments [Request data] Byte 1 - Node number • DA240 Enclosure 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Enclosure • DW612 and DW612 0x01 - Node 1 0x02 - Node 2 0x03 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Node 5 0x06 - Node 6 0x07 - Node 7 0x08 - Node 8 0x09 - Node 9 0x0A - Node 10 0x0B - Node 11 0x0C - Node 11 0x0C - Node 12 0x0D - Enclosure Byte 2 - Capping mode 0x00 - Disable 0x01 - Enable Byte 3 - Saving mode 0x01 - Enable	e IS Enclosure e e
GET CAP STATE		Notes: The following tray(s) does not support user capping and thermal capping: • SD665 V3 • SD665-N V3 NetFn CMD • CMD	
		0x32	UXAU

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Node number	Byte 1 - Node number	[Request data]	
Request data Byte 1 - Node number	Response data Byte 1 - Node number Byte 2 - Capping mode Byte [4:3] - Capping value Byte 5 - Saving mode	Comments [Request data] Byte 1 - Node number • DA240 Enclosure 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Enclosure • DW612 and DW612 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Node 3 0x04 - Node 4 0x05 - Node 5 0x06 - Node 6 0x07 - Node 7 0x08 - Node 8 0x09 - Node 9 0x0A - Node 10	e S Enclosure
		0x0A - Node 10 0x0B - Node 11 0x0C - Node 12 0x0D - Enclosure	
		[Response data]	
		Byte 2 - Capping mode 0x00 - Disable 0x01 - Enable Byte 5 - Saving mode	
		0x00 - Disable	
		0x01 - Enable	
SET DATE TIME		NetFn	CMD
		0x32	0xA1

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte [1:2] - Year	Byte [1:2] - Year	[Request data]	
Byte 3 - Month	Byte 3 - Month	Example: 2037/12/31 23:59:59	
Byte 4 - Date	Byte 4 - Date	Byte 1 - 0x20	
Byte 5 - Hour	Byte 5 - Hour	Byte 2 - 0x37	
Byte e Thear		Byte 3 - 0x12	
Byte 6 - Minute	Byte 6 - Minute	Byte $4 - 0x31$	
Byte 7 - Second	Byte 7 - Second	Byte 6 - 0x59	
		Byte 7 - 0x59	
		NetEn	СМД
GET PSU POLICY OVS		0x32	0xA2
Request data	Response data	Comments	I
N/A	Byte 1 - PSU policy	[Response data]	
	Byte 2 - OVS mode	Byte 1 - System PSU policy	
		0x00 - No redundant	
		0x01 - N+1 policy	
		Byte 2 - System OVS mode	
		0x00 - Disable	
		0x01 - Enable	
		Byte 3 - Status	
		0x00 - OK	
		0x01 - Present Err	
		0x02 - Insufficient E	Bank
		Byte 4 - User PSU Poli	су
		0x00 - No redundant	
		0x01 - N+1 policy	
		Byte 5 - User OVS mode	
		0x00 - Disable	
		0x01 - Enable	
		NetFn	CMD
		0x32	0xA3

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - PSU policy	Byte 1 - System PSU policy	[Request data]	
Byte 1 - PSU policy Byte 2 - OVS mode	Byte 1 - System PSU policy Byte 2 - System OVS mode Byte 3 - Status Byte 4 - User PSU policy Byte 5 - User OVS mode	Comments [Request data] Byte 1 - PSU policy 0x00 - No redundant 0x01 - N+1 policy Byte 2 - OVS mode 0x00 - Disable 0x01 - Enable [Response data] Byte 1 - System PSU policy 0x00 - No redundant 0x00 - No redundant 0x01 - N+1 policy Byte 2 - System OVS mode	
		Byte 2 - System OVS mode 0x00 - Disable 0x01 - Enable Byte 3 - Status 0x00 - OK 0x01 - Present error 0x02 - Insufficient Bank Byte 4 - User PSU policy 0x00 - No redundant 0x01 - N+1 policy Byte 5 - User OVS mode 0x00 - Disable 0x01 - Enable	
SET NODE RESET / RESEAT		NetFn 0x32	CMD 0xA4
		0.02	UAA4

Table 5. IPMI command co	ontents (continued)
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Request data	Response data	Comments	
Byte 1 - Node number	Byte 1 - Node number	[Request data]	
Byte 2 - Reset mode	Byte 2 - Reset mode	Byte 1 - Node number	
		DA240 Enclosure	
		0x01 - Node 1	
		0x02 - Node 2	
		0x03 - Node 3	
		0x04 - Node 4	
		• DW612 and DW612	S Enclosure
		0x01 - Node 1	
		0x02 - Node 2	
		0x03 - Node 3	
		0x04 - Node 4	
		0x05 - Node 5	
		0x06 - Node 6	
		0x07 - Node 7	
		0x08 - Node 8	
		0x09 - Node 9	
		0x0A - Node 10	
		0x0B - Node 11	
		0x0C - Node 12	
		Byte 2 - Reset mode	
		1 - Reset (XCC rese	et)
		2 - Reseat (AC cycle)	
		Note: The response D5h indicates the compute node is not present.	
	·	NetFn	CMD
GET PSU FAN STATUS		0x32	0xA5

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - PSU number	Byte 1 - PSU number	[Request data]	
Byte 1 - PSU number	Byte 1 - PSU number Byte [3:2] - Fan A speed Byte 4 - Fan A duty Byte [6:5] - Fan B speed Byte 7 - Fan B duty Byte 8 - PSU status	[Request data] Byte 1 - PSU number • DA240 Enclosure 0x01 - PSU 1 0x02 - PSU 2 • DW612 and DW612S Enclosure 0x01 - PSU 1 0x02 - PSU 2 0x03 - PSU 2 0x03 - PSU 3 0x04 - PSU 4 0x05 - PSU 5 0x06 - PSU 6 0x07 - PSU 7 0x08 - PSU 8	
		0x09 - PSU 9 [Response data]	
		Byte [3:2] - Fan A speed	
		Byte [6:5] - Fan B speed The unit is 1 RPM.	
		Byte 4 - Fan A duty	
		Byte 7 - Fan B duty The duty ratio is be	tween 1 and 100.
		Byte 8 - PSU status 0x00 - Not present 0x01 - Abnormal (below 2000 RPM) 0x02 - Normal 0x03 - Fan fault Note: For the single-fan PSU, the Byte [7:	
BACKUP / RESTORE		0x32	0xA6

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Action	Byte 1 - Status	[Request data]	
Byte 2 - Password length		Byte 1 - Action	
Byte [3:N] - Password		0x00 - Get backup or restore status	
string		0x01 - Backup to storage device	
		0x02 - Restore from	n storage device
		Byte 2 - Password leng	gth
		(supported when A	ction is 0x01 or 0x02)
		Byte [3:N] - Password	string
		(supported when A	ction is 0x01 or 0x02)
		[Response data]	
		Byte 1 - Status	
		0x00 - COMMAND	ОК
		0x01 - BACKUP RE	ESTORE RUNNING
		0x31 - BACKUP FINISHED	
		0x32 - BACKUP FAIL	
		0x41 - RESTORE FINISHED	
		0x42 - RESTORE FAIL	
		Notes:	
		 This command is used to back up and/or restore the configuration to or from an external storage device, such as a USB device; the status will be fault if the storage device is not inserted. 	
		 When Request Action is 0x01 or 0x02, the password string must contain a minimum of eight (up to 20) printable US-ASCII (Code: 33-126) characters and characters from three of the following four categorie: 	
		 English uppercas through Z) 	se characters (A
		 English lowercase characters (a through z) 	
		 Base 10 digits (0 through 9) 	
		 Non-alphabetic characters (for example, !, \$, #, %) 	
		Note: If the passwork command will return	ord validation fails, the n 0xCC status code.
		NetFn	CMD
GEI NODE STATUS		0x32	0xA7

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Node number	number Byte 1 - Node number This command is used to report the cur status of compute node(s).		to report the current e(s).
	Byte 2 - Power state Byte 3 - Width	[Request data]	
		Byte 1 - Node number	
	Byte 4 - Height	DA240 Enclosure	
	Byte 5 - Permission state	0x01 - Node 1	
		0x02 - Node 2	
		0x03 - Node 3	
		0x04 - Node 4	
		 DW612 and DW612 	S Enclosure
		0x01 - Node 1	
		0x02 - Node 2	
		0x03 - Node 3	
		0x04 - Node 4	
0x05 - Node 5			
		0x06 - Node 6	
0x07 - Node 7 0x08 - Node 8			
		0x08 - Node 8	
		0x09 - Node 9 0x0A - Node 10 0x0B - Node 11	
0x0C - Node 12			
		[Response data]	
		Byte 2 - Power state	
		0x00 - Power off	
		0x20 - No permissi	on
		0x40 - System boa	rd power fault
		0x80 - Power on	
		Byte 5 - Permission sta	ate
		0x00 - Permission to standby	
		0x01 - First permis	sion failed
		0x02 - Second per	mission failed
		0x03 - Permission pass	
		0xFF - Initial not do	one
		NetFn	CMD
		0x32	0xA8

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
N/A	Byte 1 - Platform ID	Byte 1 - Platform ID[Response data]Byte 2 - Firmware major versionByte 1 - Platform IDByte 3 - Firmware minor version0xFC - DW612S EnclosureByte 4 - PSOC major version0xFE - DW612 EnclosureByte 5 - PSOC minor version0xFE - DA240 EnclosureByte 5 - PSOC minor versionByte 6 - Boot flash number	
	Byte 2 - Firmware major version Byte 3 - Firmware minor version Byte 4 - PSOC major version		
	Byte 5 - PSOC minor version		
	Byte 6 - Boot flash number	0x01 - Flash 1	
	Byte [7:13] - Firmware build ID	0x02 - Flash 2 (fail	over)
	Byte 14 - Enclosure type	 Byte [7:13] - Firmware build ID Plain text in ASCII code. Byte 14 - Enclosure type DW612S Enclosure 0x01 - 6 PSU 0x02 - 6 + 3 PSU 	
		0x03 - 9 PSU	
		0x05 - 2 + 1 DW	C PSU
		0x06 - 3 DWC P	SU
		 DW612 Enclosure 	
		0x01 - 6 PSU	
		0x02 - 6 + 3 PSL	J
		0x03 - 9 PSU	
	DA240 Enclosure		
		0x00 - N/A	
		NetFn	CMD
		0x32	0xA9

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
DA240 Enclosure	DA240 Enclosure	This command is used to back up and/or restore the configuration to or from an external storage device, such as a USB device. If the storage device is not inserted, it will return failure.	
Byte 1 - Node 1 to 4 restore policy DW612 and DW612S Enclosure only:	Byte 1 - Node 1 to 4 restore policy		
	DW612 and DW612S Enclosure only:		
	Byte 1 - Node 1 to 4 restore policy		
Byte 1 - Node 1 to 4 restore policy	Byte 2 - Node 5 to 8 restore policy [Request data]		
	Byte 3 - Node 9 to 12 restore policy	DA240 Enclosure	
Byte 2 - Node 5 to 8		Byte 1 - Node 1 to 4 restore policy	
restore policy		– Bit [1:0] - Node 1	
restore policy		01b - Last state	
		00b - Off	
		 Bit [3:2] - Node 2 Bit [5:4] - Node 3 Bit [7:6] - Node 4 DW612 and DW612S Enclosure Byte 1 - Node 1 to 4 restore policy Bit [1:0] - Node 1 01b - Last state 00b - Off Bit [3:2] - Node 2 	
		- Bit [5:4] - Node 3	
		– Bit [7:6] - Node 4	
		Byte 2 - Node 5 to 8 restore policy	
		– Bit [1:0] - Node 5	
		– Bit [3:2] - Node 6	
		– Bit [5:4] - Node 7	
		– Bit [7:6] - Node 8	
		Byte 3 - Node 9 to 12 restore policy	
		– Bit [1:0] - Node 9	
		– Bit [3:2] - Node 10	
		- Bit [5:4] - Node 11	
		– Bit [7:6] - Node 1	2
GET NODE RESTORE POLICY		NetFn	CMD
		0x32	0xAA
Table 5. IPMI command contents (continued)

Request data	Response data	Comments		
N/A	DA240 Enclosure	Refer to SET NODE RESTORE POLICY.		
	Byte 1 - Node 1 to 4 restore policy			
	DW612 and DW612S Enclosure only:			
	Byte 1 - Node 1 to 4 restore policy			
	Byte 2 - Node 5 to 8 restore policy			
	Byte 3 - Node 9 to 12 restore policy			
		NetFn	CMD	
		0x32	0xAB	
Request data	Response data	Comments		
Byte 1 - User configuration	Byte 1 - System configuration	Refer to GET PSU ZERO OUTPUT MODE. Note: If any power supply is not supported or the power supplies are mismatched, the zero output mode will be disabled.		
		NetFn	CMD	
GET PS0 ZERO OUTPOT MODE		0x32	0xAC	
Request data	Response data	Comments		
N/A	Byte 1 - User configuration	[Response data]		
	Byte 2 - System configuration	Byte 1 - User configuration		
	Byte 3 - Status	Byte 2 - System configuration		
		0x00 - Disable		
		0x01 - Update per 10 minutes		
		0x02 - Update per 30 minutes		
		0x03 - Update per	60 minutes	
		Byte 3 - Status		
		0x00 - Normal		
		0x01 - Not support	ed	
		NetFn	CMD	
SMM2 RESET TO DEFAUL	1	0x32	0xAD	
Request data	Response data	Comments		
N/A	Byte 1 - Status code	This command is used to reset SMM2 to the default value by its user.		
		[Response data]		
		Byte 1 - Status code		
		0x00 - Running		
		Note: If the system is undergoing reset, an IPMI command will not be processed upon being issued.		
SET VPD NetFn CMD		CMD		

		0x32	0xAF
Request data	Response data	Comments	
Byte 1 - VPD type	Byte 1 - VPD type	[Response data]	
Byte 2 - Device ID	Byte 2 - Device ID	Byte 1 - VPD type	
Byte [3·N] - VPD data		0x00 - SMM2	
Dyte [0.14] W D data		0x05 - Enclosure	
		0x06 - Upper PDB	
		0x07 - Lower PDB	
		0x08 - Midplane	
		Byte 2 - Device ID	
		0x00 - Machine typ only; 10 bytes	e model; for enclosure
		0x01 - Machine ser enclosure only; 10	ial number; for bytes
		0x02 - Component part number; for SMM2; Upper/Lower PDB, Midplane; 12 bytes	
		0x03 - Component FRU number; for SMM2; Upper/Lower PDB, Midplane; 12 bytes	
		0x04 - Component serial number; SMM Upper/Lower PDB, Midplane; 12 bytes	
		0x05 - Manufacture ID; for SMM2 and enclosure; 4 bytes	
		0x06 - Hardware revision level; for SMM2 and enclosure; Upper/Lower PDB, Midplane; 1 byte	
		0x07 - Manufacture enclosure; Upper/L 4 bytes	e date; for SMM2 and ower PDB, Midplane;
		0x08 - Universal Ur SMM2 and enclosu Midplane; 16 bytes	nique ID (UUID); for ire; Upper/Lower PDB,
		0x09 - IANA enterp enclosure only; 4 b	rise number; for ytes
		0x0A - Product ID; bytes	for enclosure only; 2
		0x0B - Component enclosure; Upper/L 64 bytes	name; for SMM2 and ower PDB, Midplane;
		0x0C - Global Iden enclosure only; 11	tifier (GLID); for bytes
		0x0D - EC level; for enclosure; Upper/L 10 bytes	SMM2 and ower PDB, Midplane;
		Notes:	

		Upper and Lower PDB's are only applicable to DA240 Enclosure.	
		Midplane is only applicable to DW612 as DW612S Enclosure.	
		NetFn	CMD
		0x32	0xB0
Request data	Response data	Comments	
Byte 1 - VPD type	Byte 1 - VPD type	Refer to SET VPD.	
Byte 2 - Device ID	Byte 2 - Device ID		
	Byte [3:N] - VPD data		
		NetFn	CMD
		0x32	0xB1

Request data	Response data	Comments	
Byte 1 - Function	Byte 1 - Status	[Request data]	
Byte [2:N] - Data (option)		Byte 1 - Function	
		NA - Start to dump FFDC	
		0x00 - Query status	
		0x01 - Set TFTP server address and path	
		Byte [2:N] - Data (option)	
		ASCII string of TFTP server address and path, separated by "/". The path can be empty.	
		[Response data]	
		Byte 1 - Status	
		To start to dump FFDC:	
		0x00 - FFDC dump start	
		For query status:	
		0x00 - Finished and return file name	
		0x01 - Running	
		0x02 - Reserved	
		0x03 - No USB	
		0x04 - Tar fail	
		0x0E - Upload fail	
		0x0F - TFTP server not found	
		To set TFTP server address and path:	
		0x00 - Done	
		Note: The maximum length of the field is 64 characters.	
		Follow the steps below to dump FFDC over IPMI:	
		 Set TFTP server address where the IP is in HEX, the example below sets TFTP server address as 192.168.1.1 	
		ipmitool -H SMM2_IP -U USERID -P PASSW0RD -I lanplus raw 0x32 0xB1 0x01 0x31 0x39 0x32 0x2E 0x31 0x36 0x38 0x2E 0x31 0x2E 0x31	
		2. Run FFDC dump	
		ipmitool -H SMM2_IP -U USERID -P PASSW0RD -I lanplus raw 0x32 0xB1	
		3. Query FFDC dump status	

		ipmitool -H SMM2_IP -U USERID -P PASSW0RD -I lanplus raw 0x32 0xB1 0x00		
		Note: The FFDC log file name is SMM2- MAC_addr-FFDC-YYYY-MM-DD-HHMMSS. tgz		
		NetFn	CMD	
		0x32	0xB2	
Request data	Response data	Comments		
Byte 1 - Parameter selector	Byte 1 - Parameter selector	Note: Refer to the table in "SMTP Configuration Parameters" on page 79 for		
		NotEn		
GET SMTP CONFIG PARA	METERS			
Bequest data	Response data	Comments	UXB0	
Byte 1 - Parameter selector	Bute 1 - Parameter selector			
Byte i - i didiffeter selector				
Byte 2 - Set selector	Byte [2:N] - Data	Byte 2 - Set selector		
Byte 3 - Block selector		0x00 - Parameter does not require a set selector.		
		Byte 3 - Block selector		
		0x00 - Parameter does not require a block selector.		
		Note: Refer to the table in "SMTP Configuration Parameters" on page 79 for parameter/set/block selectors and data.		
	TEDO	NetFn	CMD	
		0x32	0xB4	
Request data	Response data	Comments		
Byte 1 - Parameter selector	Byte 1 - Parameter selector	Note: Refer to the table in "NTP Configuration Parameters" on page 82 for		
Byte [2:N] - Data	Byte [2:N] - Data	parameter selector and	d data.	
GET NTP CONFIG PARAMI	ETERS	NetFn	CMD	
		0x32	0xB5	
Request data	Response data	Comments		
Byte 1 - Parameter selector	Byte 1 - Parameter selector Byte [2:N] - Data	Note: Refer to the table in "NTP Configuration Parameters" on page 82 for parameter selector and data.		
		NetFn	CMD	
		0x32	0xC3	

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - PSU number	Byte 1 - PSU number	[Request data]	
	Byte [3:2] - Fan A speed	Byte 1 - PSU number	
	Byte [5:4] - Fan B speed	DA240 Enclosure	
		0x01 - PSU 1	
		0x02 - PSU 2	
	Byte [9:8] - PSU type	DW612 and DW612S Enclosure	
		0x01 - PSU 1	
		0x02 - PSU 2	
		0x03 - PSU 3	
		0x05 - PSU 5	
		0x06 - PSU 6	
		0x07 - PSU 7 0x08 - PSU 8 0x09 - PSU 9 [Response data] Byte [3:2] - Fan A speed	
		Byte [5:4] - Fan B spee	d
		The unit is 1 RPM.	
		Byte [7:6] - VIN	
		The unit is 1 voltage	e.
		Byte [9:8] - PSU type	
		The unit is 1 watt.	
		Note: Fan B speed wi single-fan PSU.	ll be 0x00 for the
		NetFn	CMD
	JE	0x32	0xC7

Table 5. IPMI command conten	nts (continued)
------------------------------	-----------------

Request data	Response data	Comments	Comments		
Byte 1 - Node number	Byte 1 - Node number	[Request data	[Request data]		
	Byte 2 - Cooling value	Byte 1 - Node	Byte 1 - Node number		
		• DA240 Enc	losure		
		0x01 - 1	0x01 - Node 1		
		0x02 - 1	0x02 - Node 2		
		0×03 - 1	Node 3		
		0x04 - 1	0x04 - Node 4		
		0x05 - E	Enclosure		
		 DW612 and 	d DW612S Enclosure		
		0x01 - 1	Node 1		
		0x02 - 1	Node 2		
		1 - E0x0	Node 3		
		0x04 - 1	Node 4		
		0x05 - 1	Node 5		
		0x06 - 1	Node 6		
		0x07 - 1	Node 7		
		1 - 80x0	Node 8		
		0×09 - 1	Node 9		
		0x0A - I	Node 10		
		0x0B -	0x0B - Node 11		
		0x0C -	Node 12		
		UXUD -	Enclosure		
		Note: The co 100.	oling value ranges from 1 to		
GET WEB STATE		NetFn	NetFn CMD		
		0x32	0xF0		
Request data	Response data	Comments			
N/A	Byte 1 - State	[Response da	ta]		
		Byte 1 - State			
		0x00 - Dis	abled		
		0x01 - Ena	abled		
	•	NetFn	CMD		
SET WEB STATE		0x32	0xF1		
Request data	Response data	Comments	Comments		
Byte 1 - State	Byte 1 - State	[Request data]		
		Bvte 1 - State			
		0x00 - Dis	abled		
		0x01 - Ena	abled		

		NetFn	CMD
PSU ISP PSU SELECT		0x32	0xF4
Request data	Response data	Comments	
Byte 1 - Function Byte 2 - PSU number	Byte 1 - PSU number Byte 2 - Data Byte 3 - Data (option)	This command is used status. [Request data] Byte 1 - Function 0x00 - PSU selection 0x01 - Secondary from 0x02 - ISP status Byte 2 - PSU number • DA240 Enclosure 0x01 - PSU 1 0x02 - PSU 2 • DW612 and DW612 0x01 - PSU 1 0x02 - PSU 2 • DW612 and DW612 0x01 - PSU 1 0x02 - PSU 2 0x03 - PSU 3 0x04 - PSU 4 0x05 - PSU 5 0x06 - PSU 6 0x07 - PSU 7 0x08 - PSU 8 0x09 - PSU 9 [Response data] Secondary firmware of Byte [2:3] - Firmware of Byte [2:3] - Firmware of Byte 2 - Status 0x00 - Successful 0x01 - Fail 0x02 - Initializing 0x03 - Updating 0x04 - PSU under of Number 2	to set or get ISP
ENCLOSURE VIRTUAL RES	SEAT	0x32	0xF5

Request data	Response data	Comments		
N/A	Byte 1 - Status	[Response data]		
		Byte 1 - Status		
		0x00 - Processing		
		NetFn	CMD	
		0x32 0xF6		
Request data	Response data	Comments		
Byte 1 - Function	Byte 1 - Function	[Request data]		
Byte 2 - LRU	Byte 2 - Current LRU	Byte 1 - Function		
Byte 3 - Previous LRU (option for read)		0x00 - Write		
			0x01 - Read	
		Byte 2 - LRU		
		Enclosure LRU		
		NetFn	CMD	
		0x32	0xFA	

Request data	Response data	Comments		
Byte 1 - Type	Byte 1 - Type	[Request data]		
	Byte 2 - Setting	Byte 1 - Type		
	Byte 3 - Setting (option)	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		
		0x0C - Password Complexity Rule		
		[Response data]		
		Byte 3 - Configuration setting (option)		
		MSB for two bytes data		
		Notes:		
		 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. 		
		 Password complexity rules: rules should be enabled starting with rule 1, and up to the number of rules specified. 		
		0x00 - Password Complexity Rules disabled.		
		0x01 - contains at least one letter		
		0x02 - contains at least one number		
		0x03 - contains at least two of the following:		
		 An uppercase letter (A through Z) 		
		 A lowercase letter (a through z) 		

		A non-alphabetic characters such as ! @#\$%^*+=().:` ?"\		characters such as ! ?"\
		0x04: cannot be a repeat or reverse of the corresponding user name		a repeat or reverse of ng user name
		 0x05: may contain at most two consecutive occurrences of the such a character White-space and the non-alphabetic characters such as ~'&<>/[]{;,are no allowed. 		in at most two urrences of the same
				e non-alphabetic -' &<>/[]{;, are not
		NetF	'n	CMD
		0x32	2	0xFB
Request data	Response data	Comments		
Byte 1 - Type	Byte 1 - Type	Refer to GET SECURITY OPTION for more		Y OPTION for more
Byte 2 - Setting	Byte 2 - Setting	uetans.		
Byte 3 - Setting (option)	Byte 3 - Setting (option)			

SMTP Configuration Parameters

SMTP configuration parameters for SET_SMTP_CONFIG_PARAMETERS and GET_SMTP_CONFIG_ PARAMETERS.

The following are detailed parameters for SET SMTP CONFIG PARAMETERS and GET SMTP CONFIG PARAMETERS.

Table 6. SMTP configuration parameters

Parameter selector	#	Parameter data (non-volatile)	
Sender information	0	Assigns the send from. The field is default filled with <host name="">@<domain name=""> automatically. If the field is OEM set, it must follow the following rules:</domain></host>	
		1. It must not consist of space characters only.	
		 It must be the combination of alphanumeric characters a-z, A-Z and 0-9, space characters, and non-alphabetic characters. 	
		3. The maximum length of the field is 254 characters.	
		Byte 1 - String length	
		Byte [2:N] - The string of <host name="">@<domain name=""></domain></host>	

Table 6. SMTP configuration parameters (continued)

Destination e-mail	1	Byte 1 - Set selector = Field selector, 0 based.		
addresses		• [7:2] - Reserved		
		• [1:0] - Field selector		
		- 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) 		
		Byte 2 - Block selector = Target of e-mail alert selector, 0 based.		
		• [7:2] - Reserved		
		• [1:0] -		
		– 00b - E-mail alert 1		
		– 01b - E-mail alert 2		
		– 10b - E-mail alert 3		
		– 11b - E-mail alert 4		
		For set selector = 0		
		Byte 3 -		
		• [7:1] - Reserved		
		• [0] -		
		– 0b - Disable		
		– 1b - Enable		
		For set selector = 1		
		 Byte 3 - Maximum string length = 64 		
		Byte [4:N] - The string of destination e-mail address		
	For set selector = 2			
		Byte 3 - Maximum string length = 254		
		Byte [4:N] - The string of e-mail description		
SMTP (e-mail) server	2	Byte 1 - Set selector = Field selector, 0 based.		
settings		• [7:1] - Reserved		
		[0] - Field selector		
		 0b - Field 1 - SMTP IP address 		
		 1b - Field 2 - SMTP port number 		
		For set selector = 0		
		Byte 2 - String length, maximum = 254		
		Byte [3:N] - The string of IPv4, IPv6 or FQDN		
		For set selector = 1		
		• Byte [2:3] - Port number. LS-byte first.		
SMTP authentication	3	Byte 1 - Set selector = Field selector, 0 based.		
		• [7:3] - Reserved		

Table 6. SMTP configuration parameters (continued)

• [2:0] - Field selector
- 000b - Field 1 - Enable/disable
- 001b - Field 2 - User name
 010b - Field 3 - Password (set only)
 011b - Field 4 - STARTTLS mode
– 100b - Field 5 - SASL mode
- 101b-111b - Reserved
For set selector = 0
• Byte 2 -
- [7:1] - Reserved
- [0] -
– 0b - Disable
- 1b - Enable
For set selector = 1
• Byte 2 - Maximum string length = 254
Byte [3:N] - The string of user name
For set selector = 2
Byte 2 - Maximum string length = 254
Byte [3:N] - The string of password
For set selector = 3
• Byte 2 -
- [7:2] - Reserved
- [1:0] -
– 00b - AUTO
– 01b - OFF
– 10b - ON
– 11b - Reserved
For set selector = 4
• Byte 2 -
- [7:3] - Reserved
- [2:0] -
– 000b - AUTO
– 001b - PLAIN
– 010b - LOGIN
– 011b - NTLM
– 100b - MD5
- 101b-111b - Reserved

NTP Configuration Parameters

NTP configuration parameters for SET_NTP_CONFIG_PARAMETERS and GET_NTP_CONFIG_PARAMETERS.

The following are detailed parameters for SET NTP CONFIG PARAMETERS and GET NTP CONFIG PARAMETERS.

Table 7. NTP configuration parameters

Parameter selector	#	Parameter data (non-volatile)	
Operation mode	0	Data 1 - Set mode	
		0x00 - Disabled	
		0x01 - Daemon mode	
		0x02 - Requested mode	
NTP server 1	1	Data 1 - Length	
		Data [2:N] - NTP server IP address in ASCII	
NTP server 2	2	Data 1 - Length	
		Data [2:N] - NTP server IP address in ASCII	
NTP server 3	3	Data 1 - Length	
		Data [2:N] - NTP server IP address in ASCII	
Requested mode's update frequency in minutes	4	Data [1:2] - Update frequency. LS-byte first.	
Time synchronization mode	5	Data 1 - Set mode	
		0x00 - Slew mode	
		0x01 - Step mode	
Use server or client time zone	6	Data 1 - Set mode	
		0x00 - Server mode	
		0x01 - Client mode	
Server time zone	7	Data 1 - Set type	
		0x00 - Time zone string	
		0x02 - Time zone UTC	
		For type = 0	
		Byte [2:N] - The time zone string; i.e., Asia/Taipei	
		Byte [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.	

Parameter in IPMI Command

The section includes information about parameters in IPMI commands.

NetFn	CMD	Name	Parameter	Parameter name
			0xC3	Host name
			0xC4	Domain name
0x0C 0x02	SET LAN CONFIG PARAM	0xC5	DHCP option 12	
		0xC6	DHCP option 60	
		0xC3	Host name	
	000		0xC4	Domain name
	GET LAN CONFIG PARAM	0xC5	DHCP option 12	
			0xC6	DHCP option 60

Table 8. List of parameters in IPMI commands

Parameter in IPMI Command Contents

The section provides detailed parameters in IPMI command contents.

Table 9	Parameters i	n IPMI	command	contents
rubic 5.	i ulumeters n		communa	contonto

SET LAN CONFIG PARAM		NetFn	CMD
		0x0C	0x01
Request data	Response data	Comments	
Byte 1 - Channel number	Byte 1 - Completion code	[Request data]	
Byte 2 - Parameter selector		Byte 2 - Parameter selector	
Byte [3:N] - Configuration parameter		Byte [3:N] - Configuration parameter	
		Refer to the table in "IF Configuration Paramet more details.	PMI Parameter - LAN ers" on page 84 for
		[Response data]	
		Byte 1 - Completion code	
		0x80 - Parameter not supported	
		0x81 - Attempt to set the "set in progress" value when not in the "set complete" state	
		0x82 - Attempt to write read-only parameter	
		0x83 - Attempt to read write-only parameter	
GET LAN CONFIG PARAM		NetFn	CMD
		0x0C	0x02

Table 9. Parameters in IPMI command contents (continued)

Request data	Response data	Comments
Byte 1 - Channel number	Byte 1 - Completion code	[Request data]
Byte 2 - Parameter selector	Byte 2 - Parameter revision	Byte 2 - Parameter selector
Byte 3 - Set selector	Byte [3:N] - Configuration parameter	Refer to the table in "IPMI Parameter - LAN
Byte 4 - Block selector		more details.
		Byte 3 - Set selector
		0x00 - If the parameter does not require a set selector
		Byte 4 - Block selector
		0x00 - If the parameter does not require a block selector

IPMI Parameter - LAN Configuration Parameters

The following table provides detailed IPMI parameters in LAN configuration.

Parameter selector	#	Parameter data (non-volatile)	
Address source 0x04		IP address source	
		Byte 1 - Obtain IP address method	
		0x01 - Static IP address	
		0x02 - DHCP only	
		0x04 - First DHCP, then static IP address	
Host name 0xC3		BMC host name	
		Byte 1 - Maximum string length = 63	
		Byte [2:N] - The string of BMC host name	
DNS domain name 0xC4		DNS domain name. Set operation implies using static for DNS domain name. Note: The setting of "Use DHCP for DNS domain name" will be disabled.	
		Byte 1 - Maximum string length = 237	
		Byte [2:N] - The plain string of DNS domain name	
DHCP send host name option	0xC5	Byte 1 -	
		0x00 - Disabled	
		0x01 - Enabled	
DHCP send vendor	0xC6	Byte 1 -	
class information option		0x00 - Disabled	
		0x01 - Enabled	

Table 10. IPMI parameters - LAN configuration parameters

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