Lenovo

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

Fourth Edition (April 2024)

Contents

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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  https://pubs.lenovo.com/safety_documentation/pdf_files
- 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

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**.

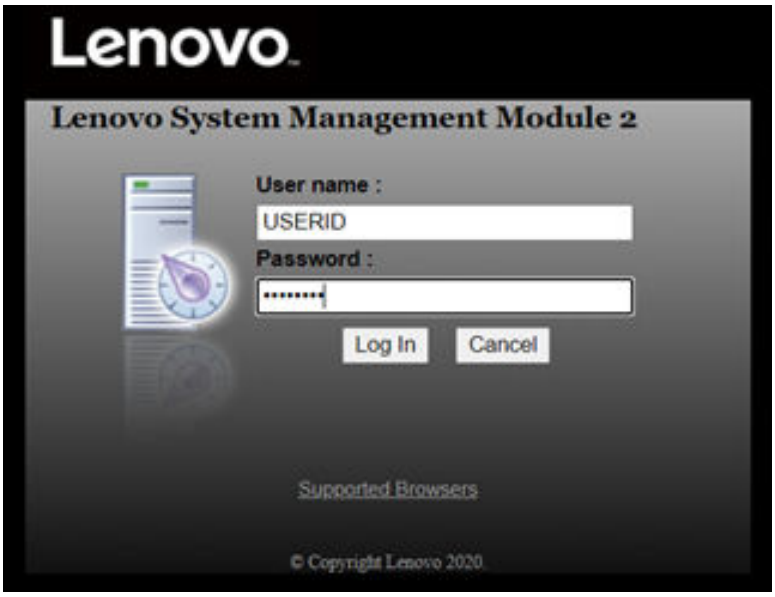


Figure 1. SMM2 — Login

4. Change password for the first login.

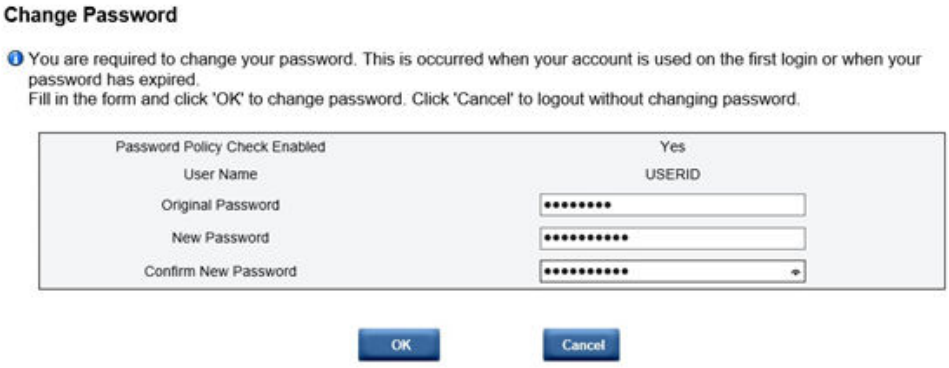


Figure 2. Changing password for the first login

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.

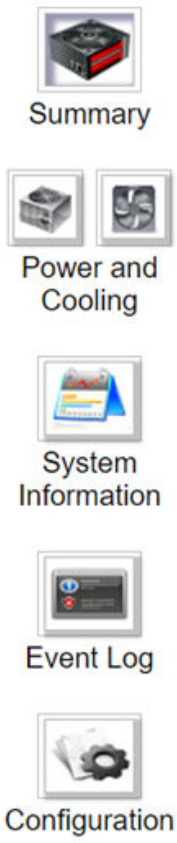


Figure 3. Overview

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.

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.

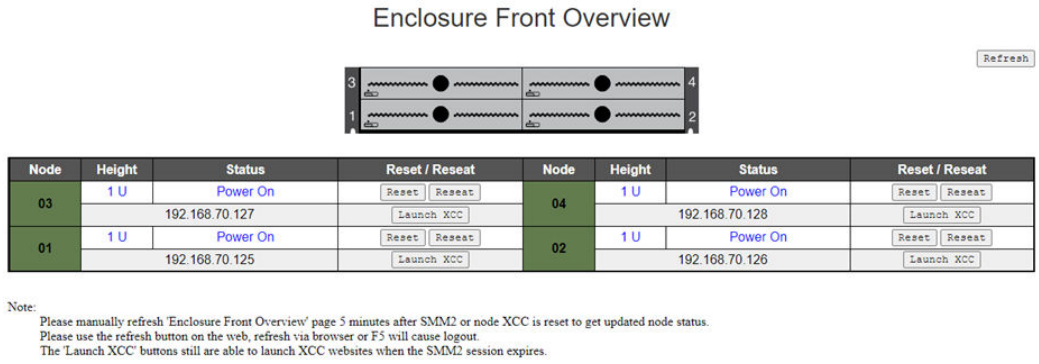


Figure 6. Enclosure Front Overview — DA240 Enclosure

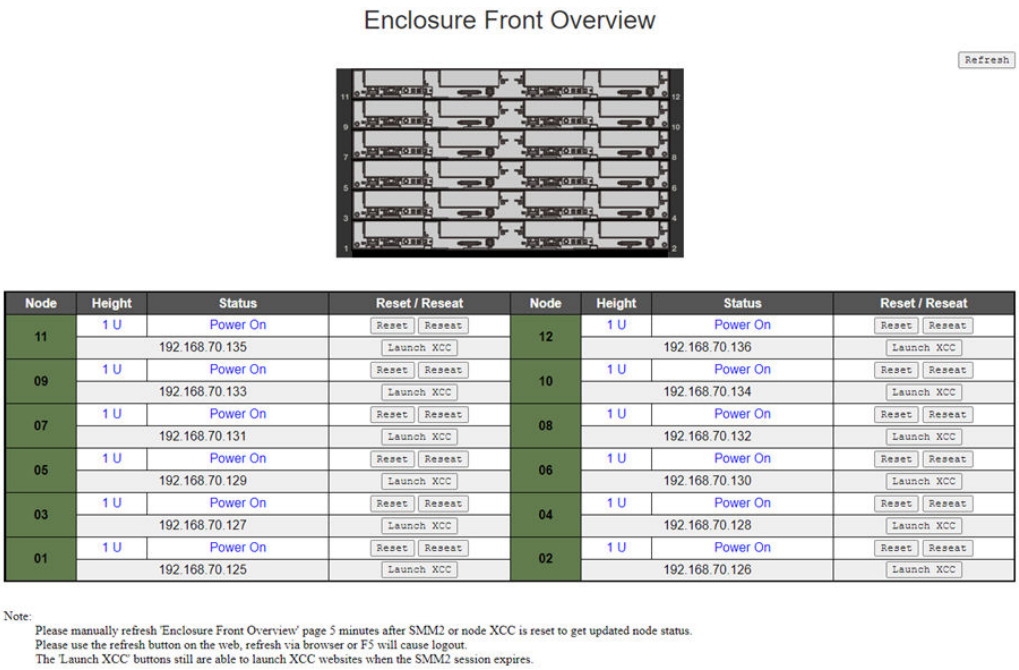


Figure 7. Enclosure Front Overview — DW612 and DW612S Enclosure

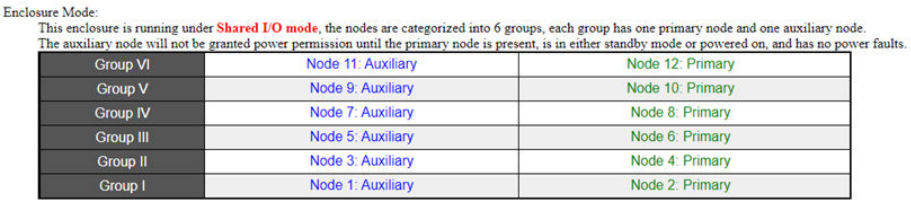


Figure 8. Share I/O mode — DW612 Enclosure and SD650 V2 Tray / DW612S Enclosure and SD650 V3 Tray

- **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

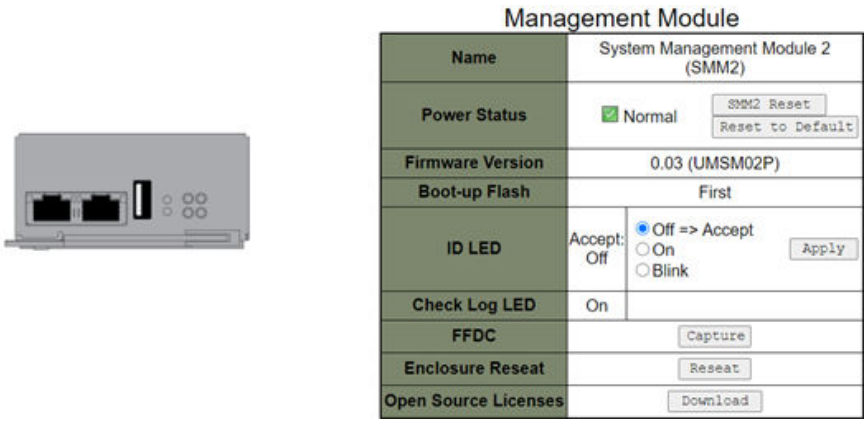


Figure 9. Management Module — DA240 Enclosure

Management Module

Name	System Management Module 2 (SMM2)	
Power Status	Normal	SMM2 Reset / Reset to Default
Firmware Version	0.03 (UMSM02P)	
Boot-up Flash	First	
ID LED	Accept: Off	Off => Accept / On / Blink — Apply
Check Log LED	On	
FFDC	Capture	
Enclosure Reseat	Reseat	
Open Source Licenses	Download	

Figure 10. Management Module — DW612 Enclosure

Management Module

Name	System Management Module 2 (SMM2)	
Power Status	Normal	SMM2 Reset / Reset to Default
Firmware Version	1.03 (UMSM09E)	
Boot-up Flash	First	
ID LED	Accept: Off	Off => Accept / On / Blink — Apply
Check Log LED	On	
FFDC	Capture	
Enclosure Reseat	Reseat	
Open Source Licenses	Download	

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 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**

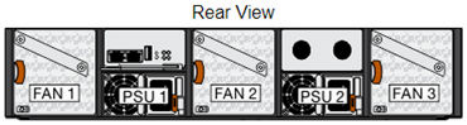
    When this option is activated, all the node ID LEDs will be on except the blinking ones, which will remain blinking.
  - **Blink**

    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.



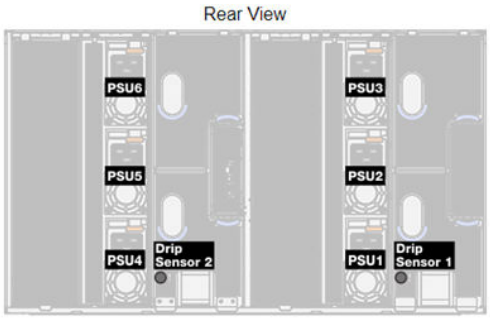
Current PSU - Redundancy Enabled, OVS Enabled, Total power bank = 2880W

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

Figure 12. Enclosure Rear View — DA240 Enclosure

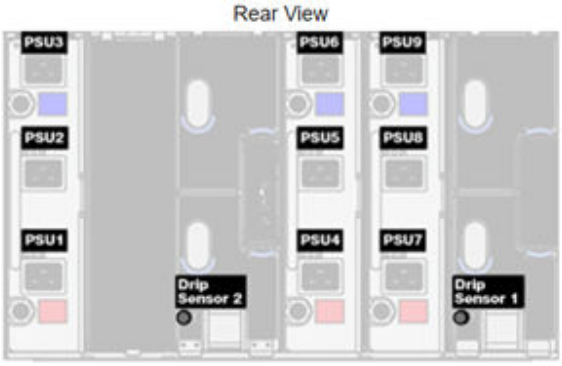


Current PSU - Redundancy Enabled, OVS Enabled, Total power bank = 14400W

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

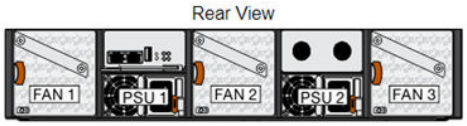
Figure 14. Enclosure Rear View — DW612S Enclosure

- **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

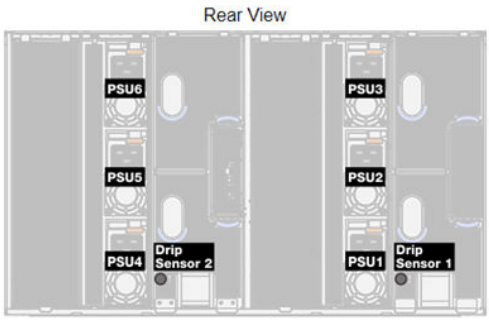
Bay	Status	Type	Bay	Status	Type
1	Present	80mm	2	Present	80mm
3	Present	80mm			

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.

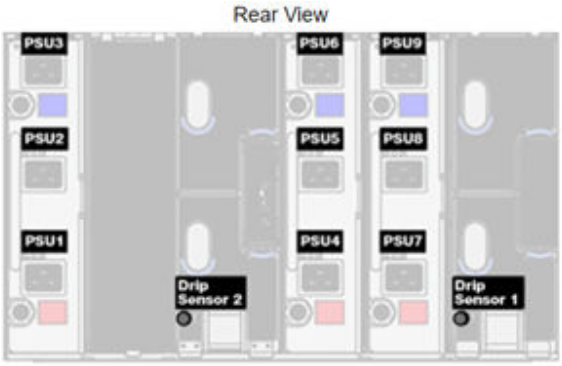


Current PSU - Redundancy Enabled, OVS Enabled, Total power bank = 14400W

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 16. 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 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.

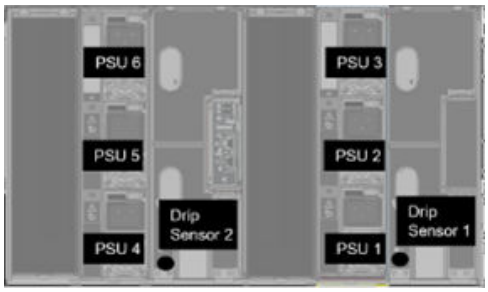


Figure 18. Enclosure Type 1 — DW612 Enclosure

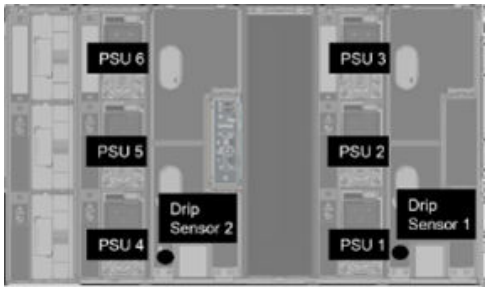


Figure 19. Enclosure Type 2 — DW612 Enclosure

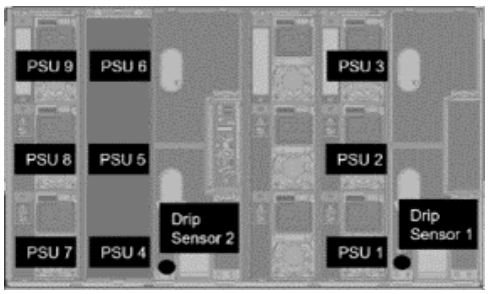


Figure 20. Enclosure Type 3 — DW612 Enclosure

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

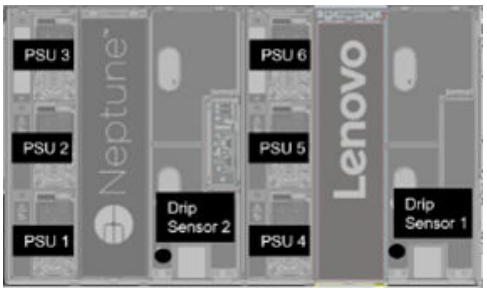


Figure 21. Enclosure Type 1 — DW612S Enclosure

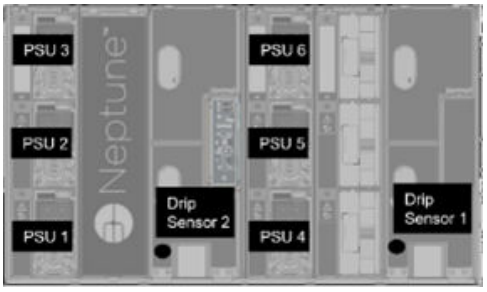


Figure 22. Enclosure Type 2 — DW612S Enclosure

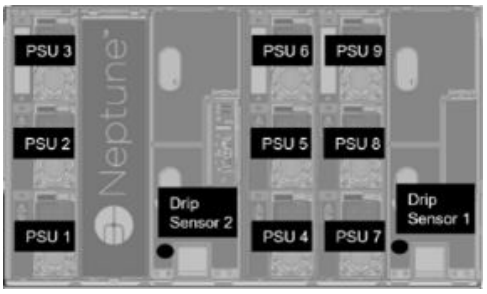


Figure 23. Enclosure Type 3 — DW612S Enclosure

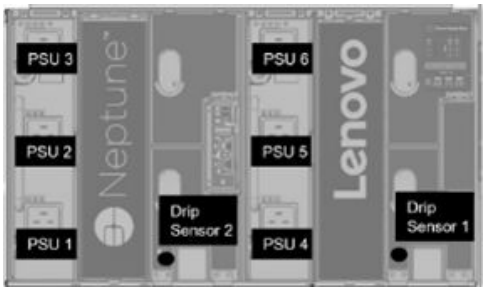


Figure 24. Enclosure Type 5 — DW612S Enclosure

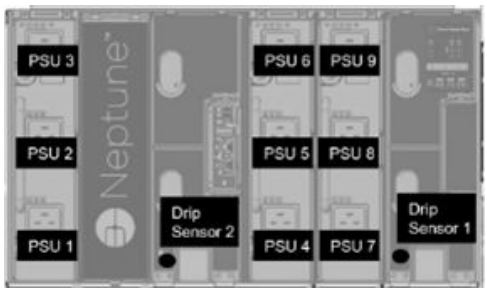


Figure 25. Enclosure Type 6 — DW612S Enclosure

- 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 (W_{dc})

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, W_{dc})

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.

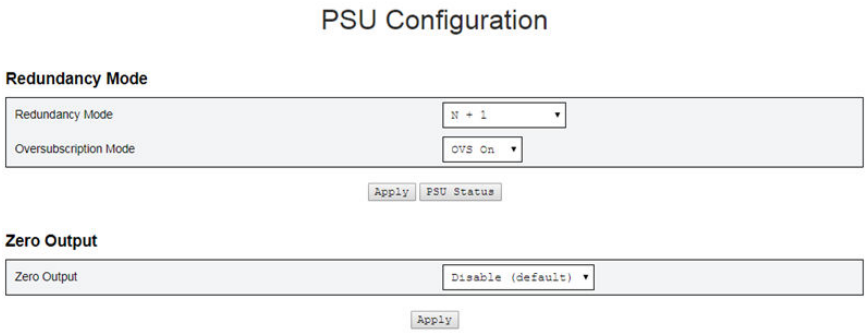


Figure 29. PSU Configuration

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 drop-down 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**

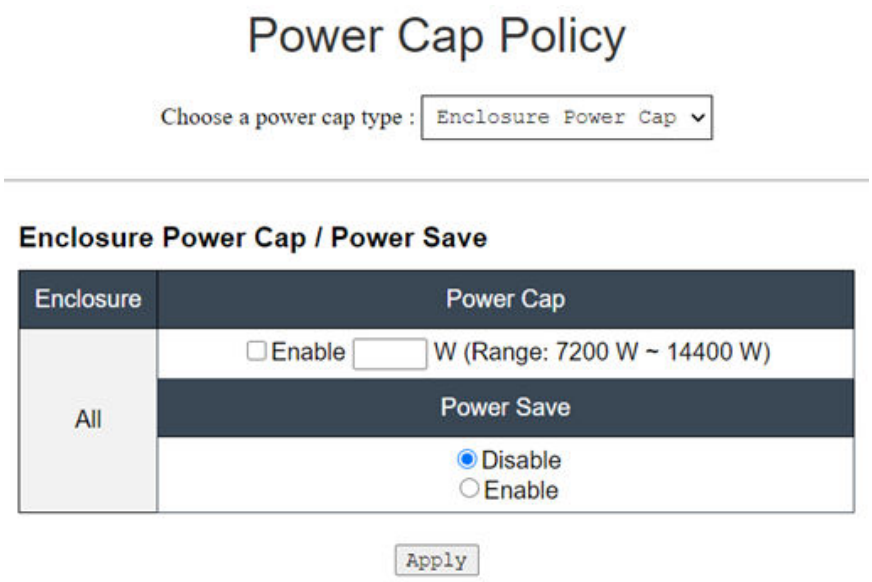


Figure 30. Enclosure Power Cap Policy

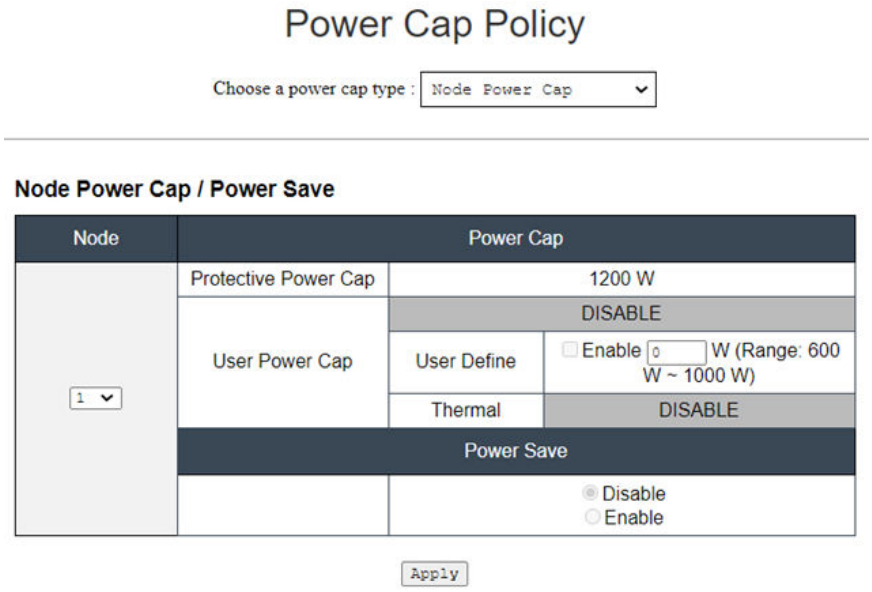


Figure 31. Node Power Cap Policy

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.

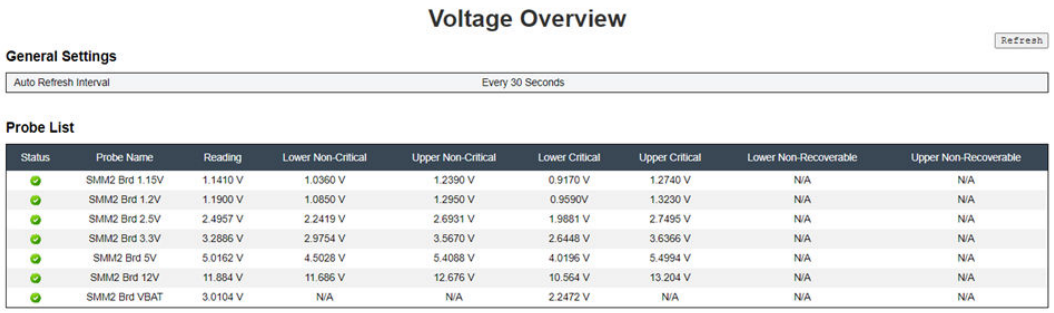


Figure 32. Voltage Overview

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.

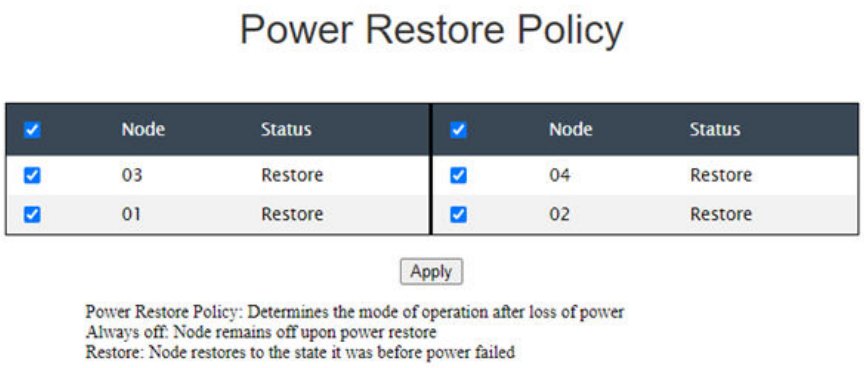


Figure 33. Power Restore Policy — DA240 Enclosure

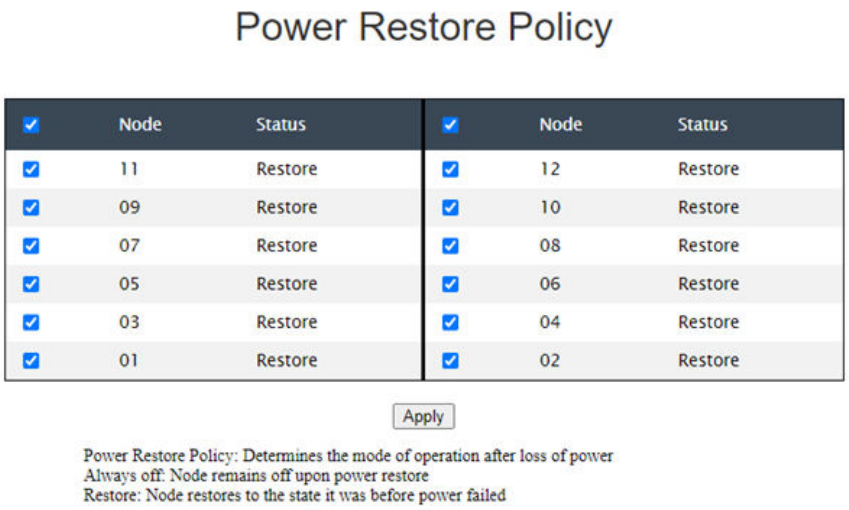


Figure 34. Power Restore Policy — DW612 and DW612S Enclosure

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.

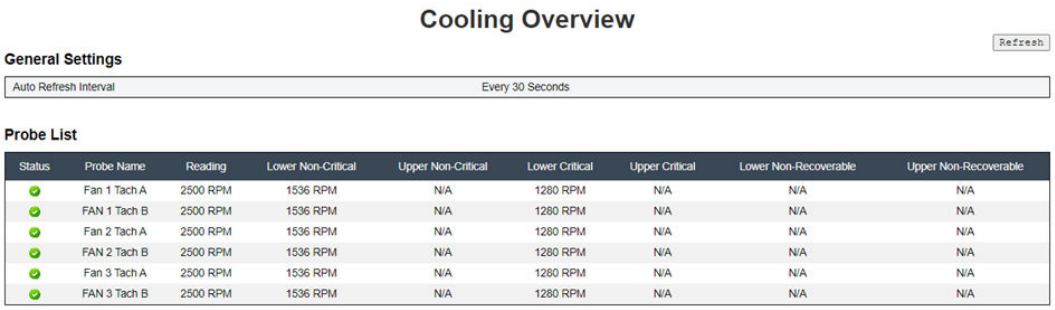


Figure 35. Cooling Overview

- **Status** (two status):
  - Healthy condition:
  - Faulty condition:
- **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

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.

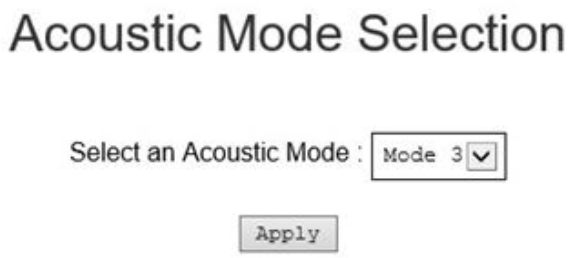


Figure 38. Acoustic Mode Selection

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 over-heating.
   - 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.

Enclosure VPD

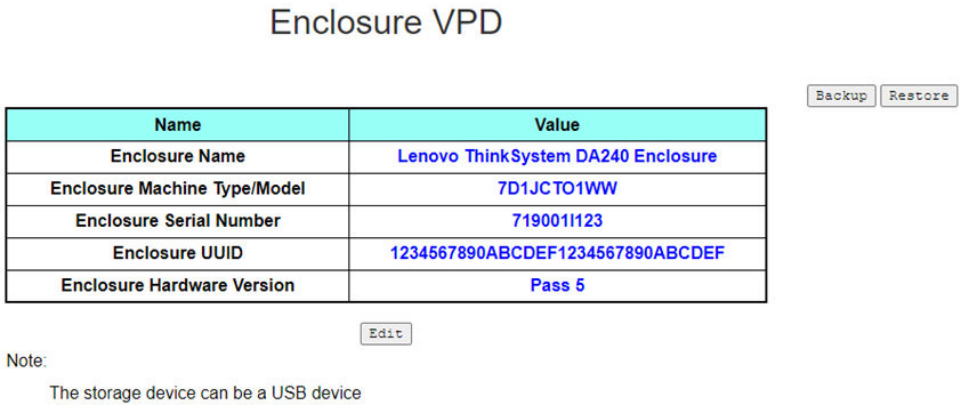


Figure 39. Enclosure VPD — DA240 Enclosure

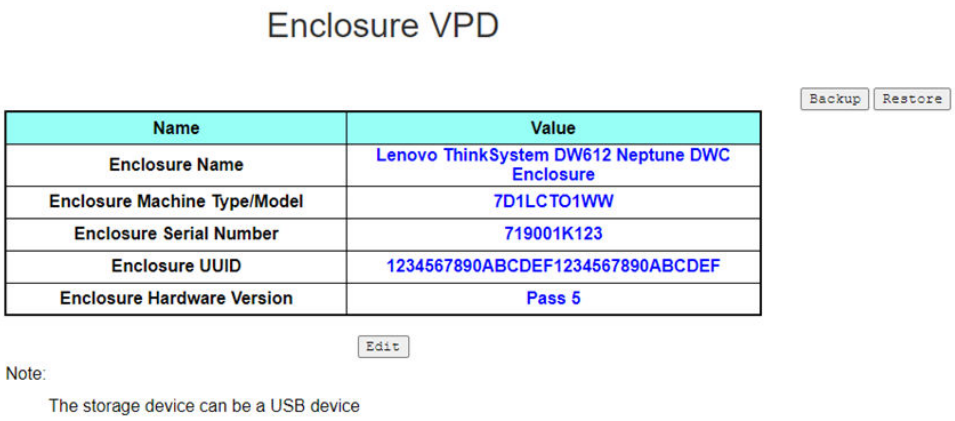


Figure 40. Enclosure VPD — DW612 Enclosure

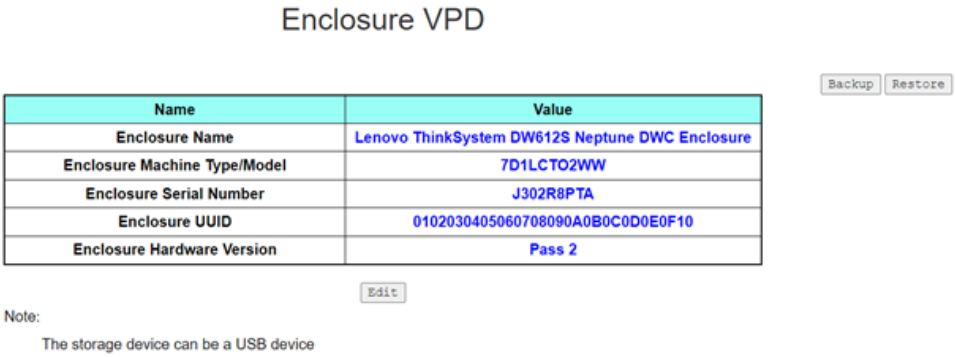


Figure 41. Enclosure VPD — DW612S Enclosure

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.
- **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.

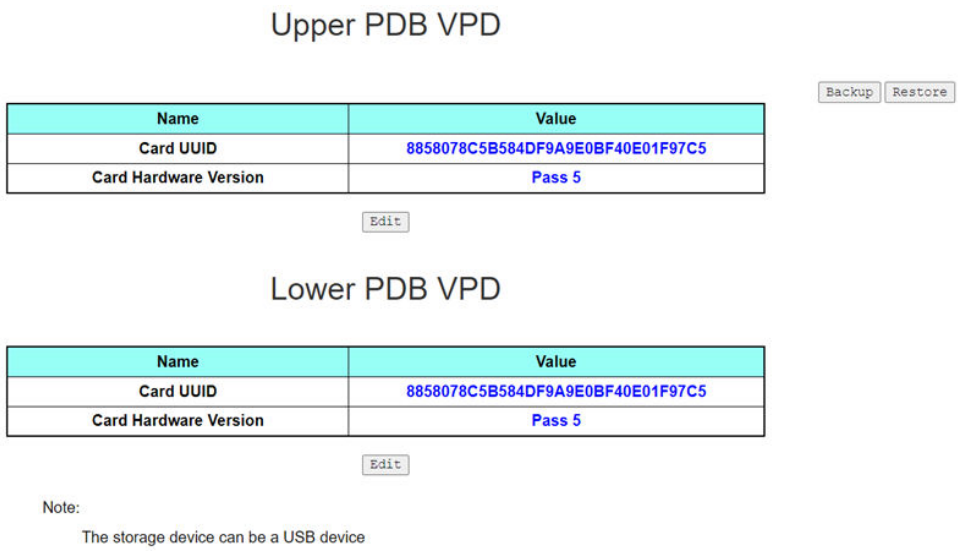


Figure 42. PDB VPD — DA240 Enclosure

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

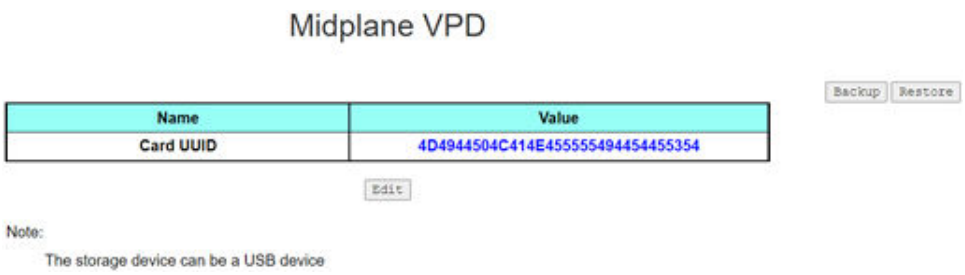


Figure 43. Midplane VPD — DW612 and DW612S Enclosure

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, “8SXXXXXXXXXX**AAAABBBCCCC**”
- **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
Type	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, “8SXXXXXXXXX**AAAABBBCCCC**”
- **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.

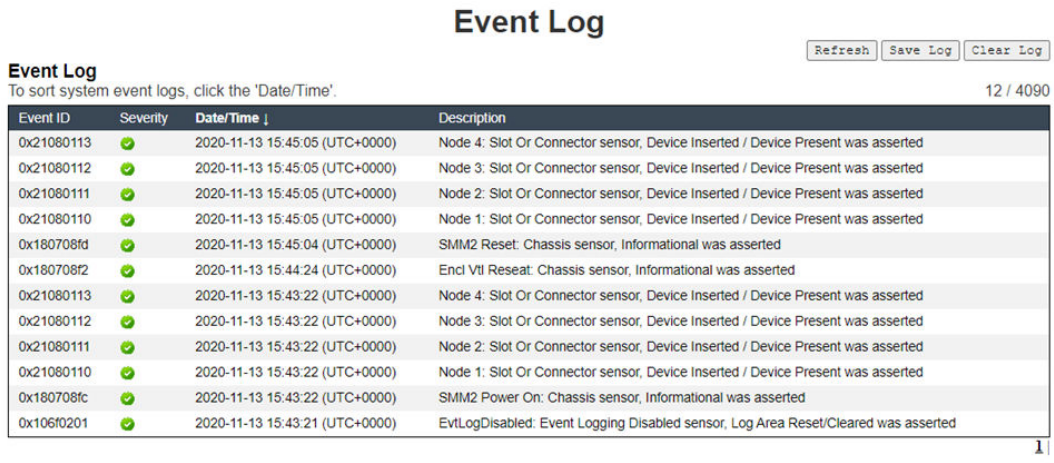


Figure 46. Event Log

- **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.

– : 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.

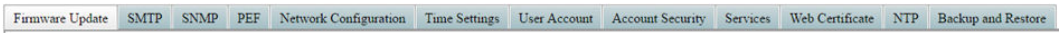


Figure 47. Configuration

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.

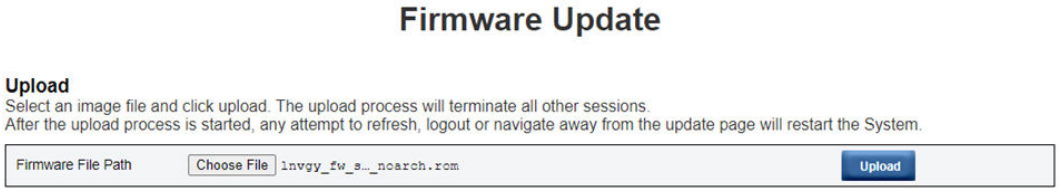


Figure 48. Firmware Update

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

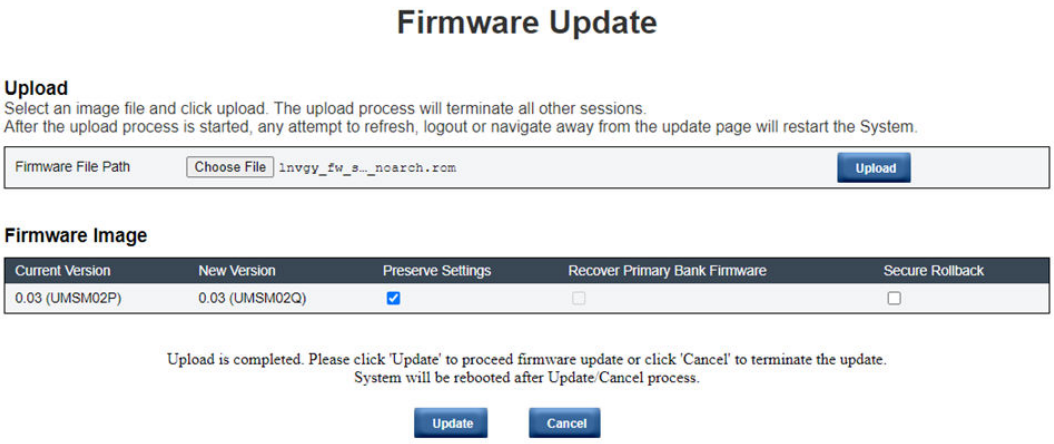


Figure 49. SMM2 Firmware Update

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 non-functional 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.

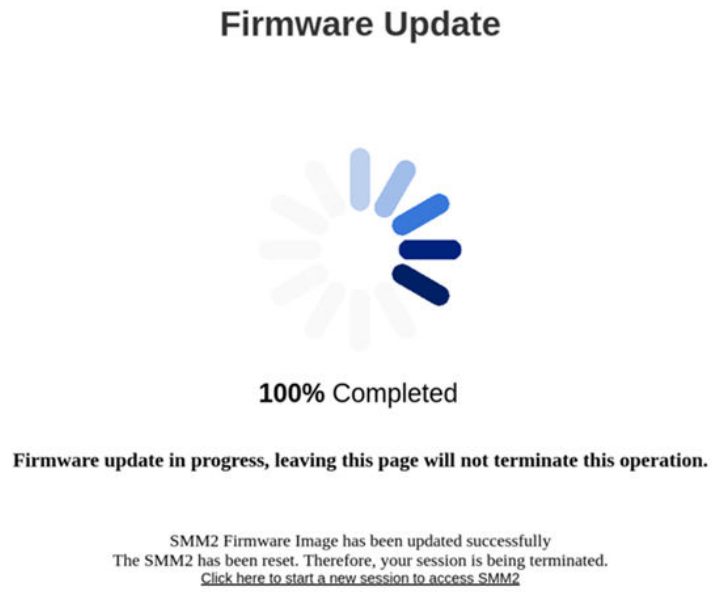


Figure 50. SMM2 Firmware Update completed

PSU Firmware

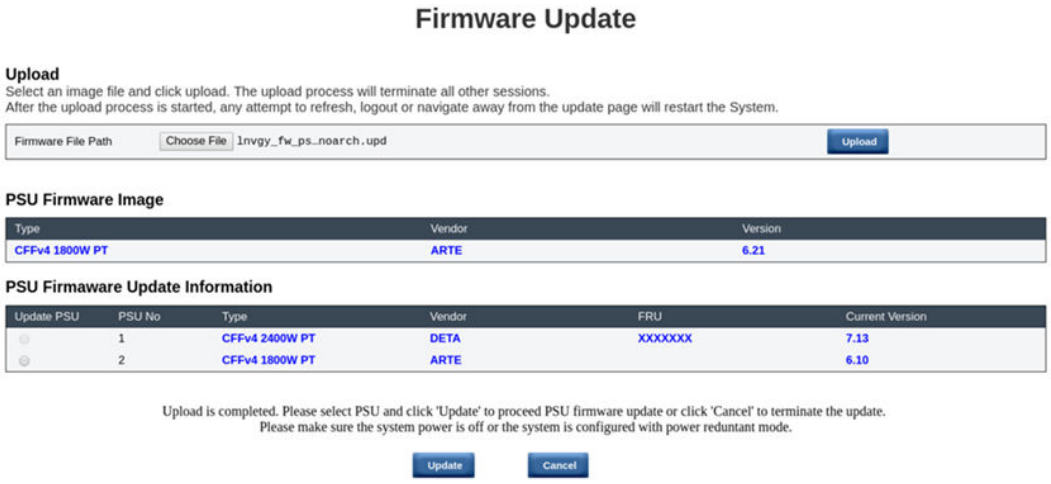


Figure 51. PSU Firmware Update — DA240 Enclosure

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

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.

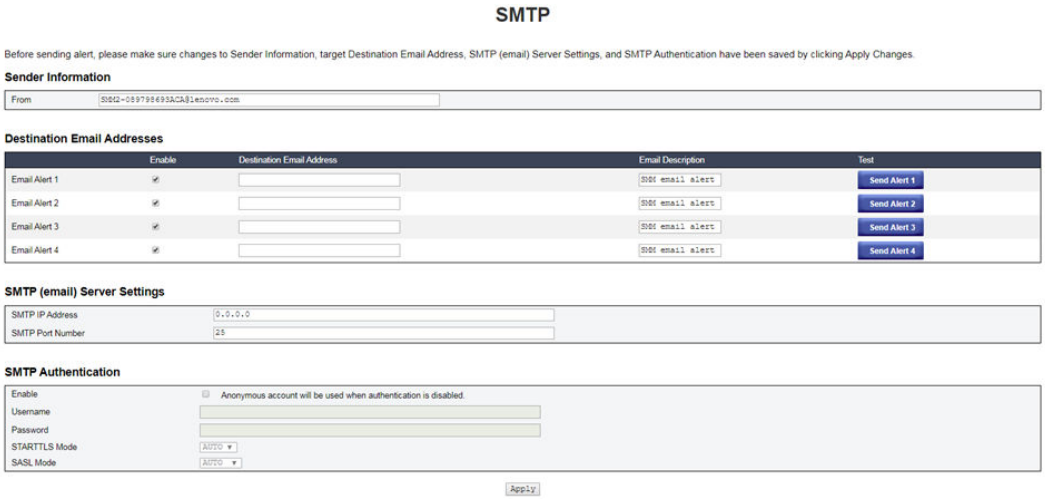


Figure 54. SMTP

- **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.

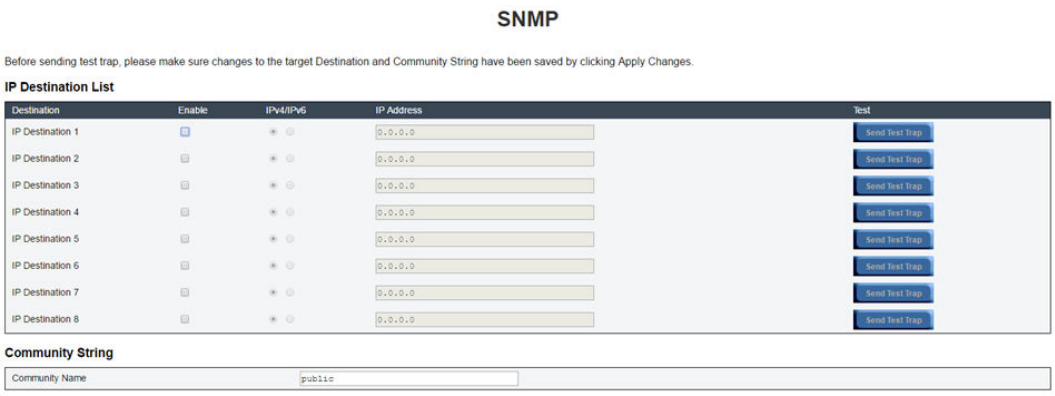


Figure 55. SNMP

- **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

Figure 56. PEF — DA240 Enclosure

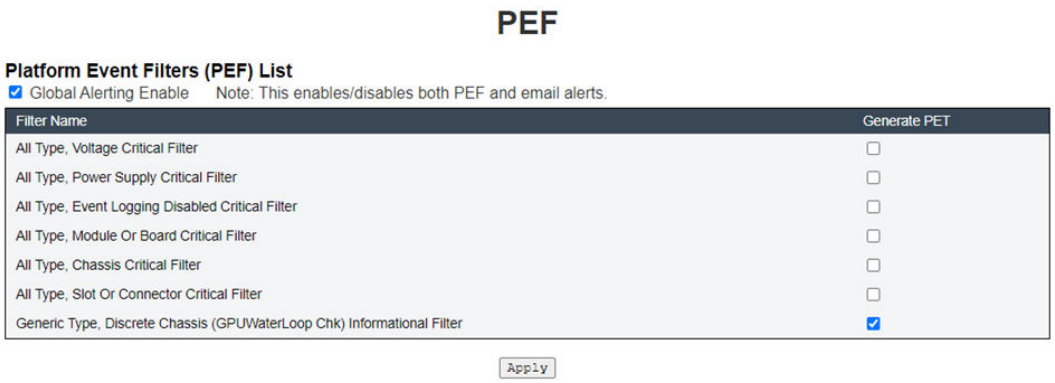


Figure 57. PEF — DW612 and DW612S Enclosure

- **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

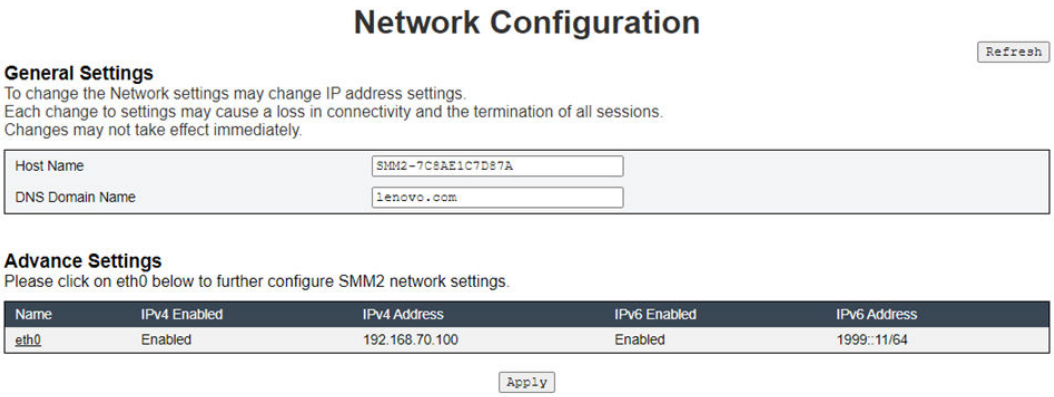


Figure 58. Network Configuration

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
- IPv6 Enabled = Enabled
- IPv6 Address = 1999::11/64

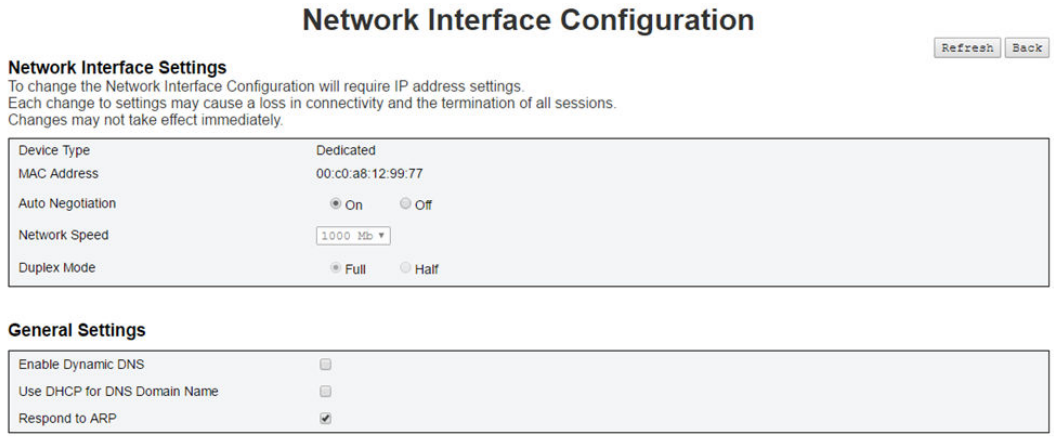


Figure 59. Network Interface Configuration

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

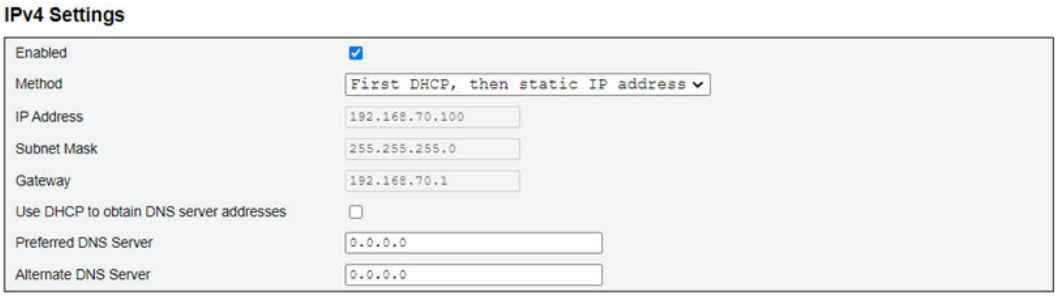


Figure 60. IPv4 Settings

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

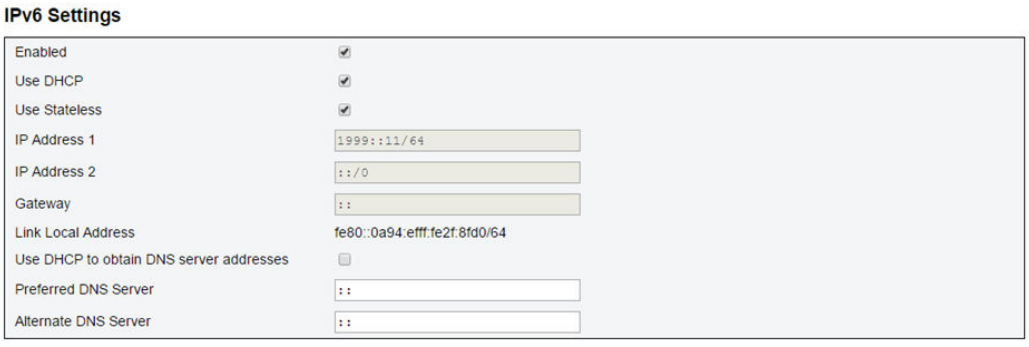


Figure 61. IPv6 Settings

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)

Figure 62. VLAN Settings

Default settings for **VLAN Settings**:

- Enable VLAN ID = Unchecked

Time Setting

This page is used to configure system time.

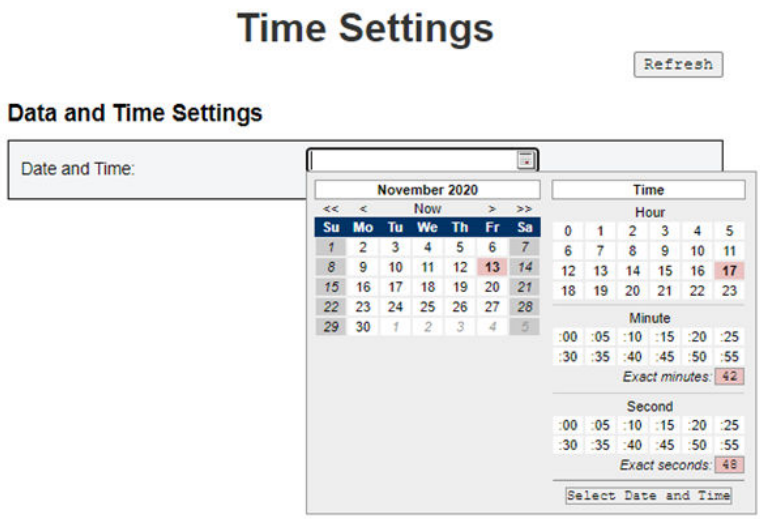


Figure 63. Time Settings

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.

Figure 64. User Account page access — User and Operator

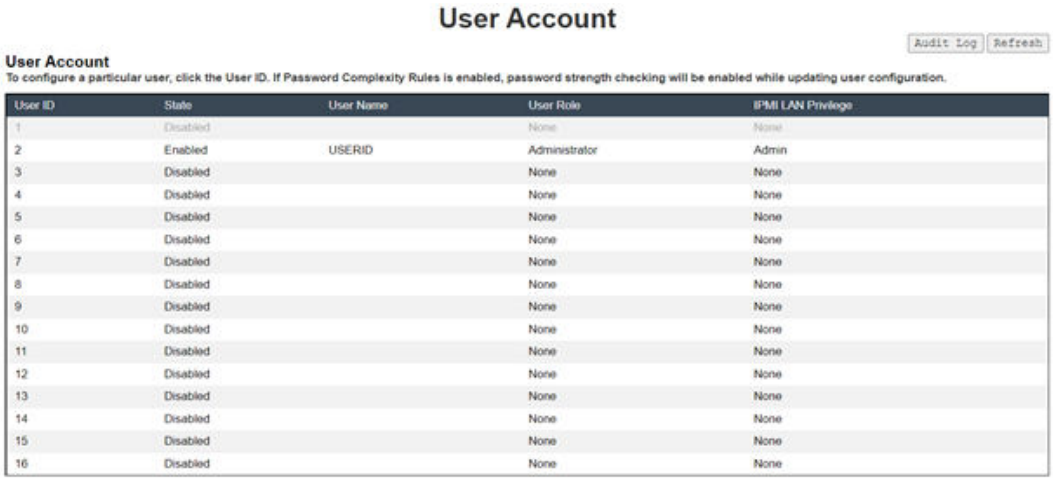


Figure 65. User Account page access — Administrator

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.

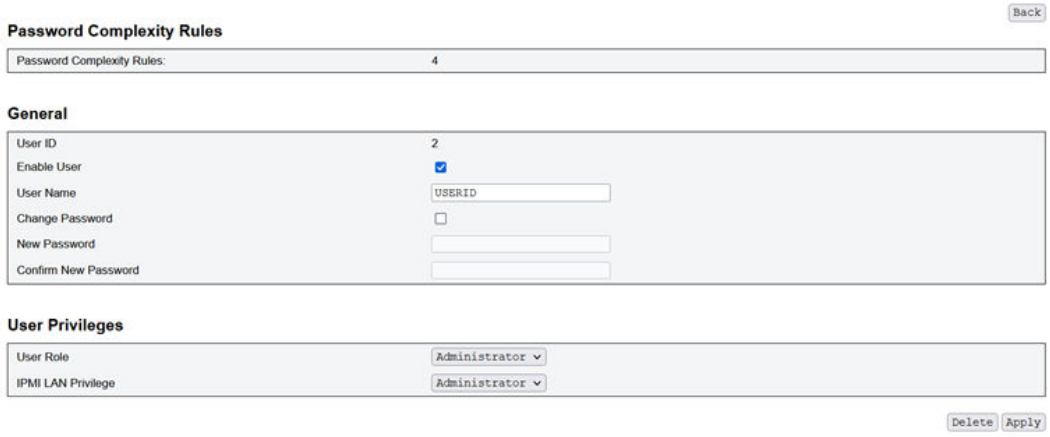


Figure 66. Password Policy

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.

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**.

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

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.

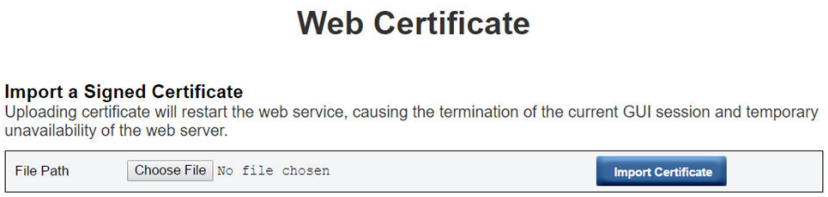


Figure 70. Import a Signed Certificate

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.

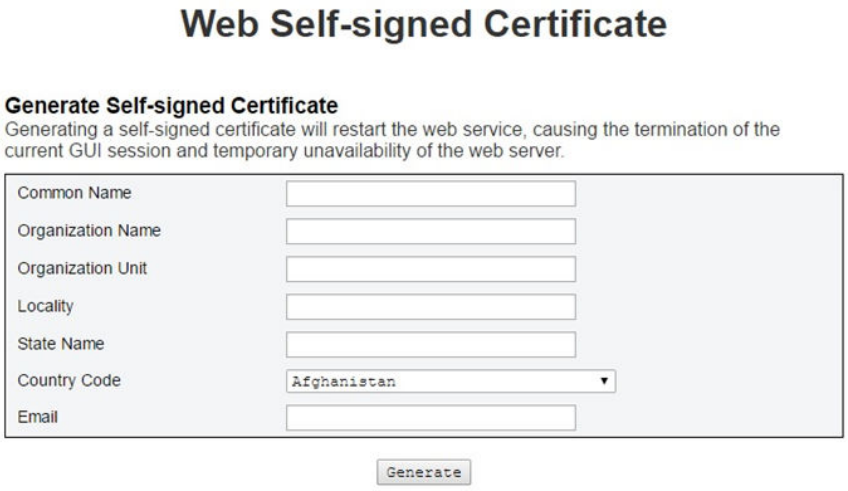


Figure 71. Web Self-signed Certificate

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.

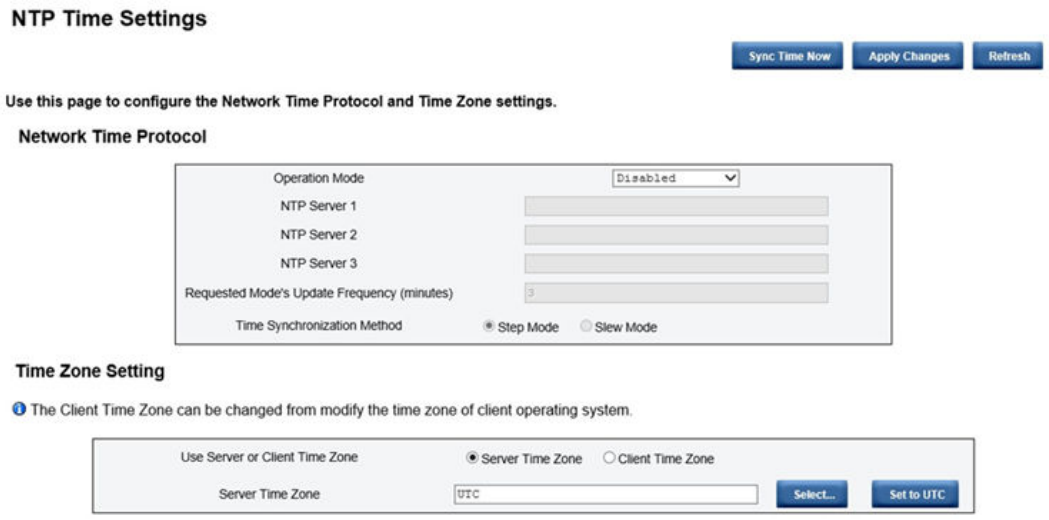


Figure 72. NTP Time Settings

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.

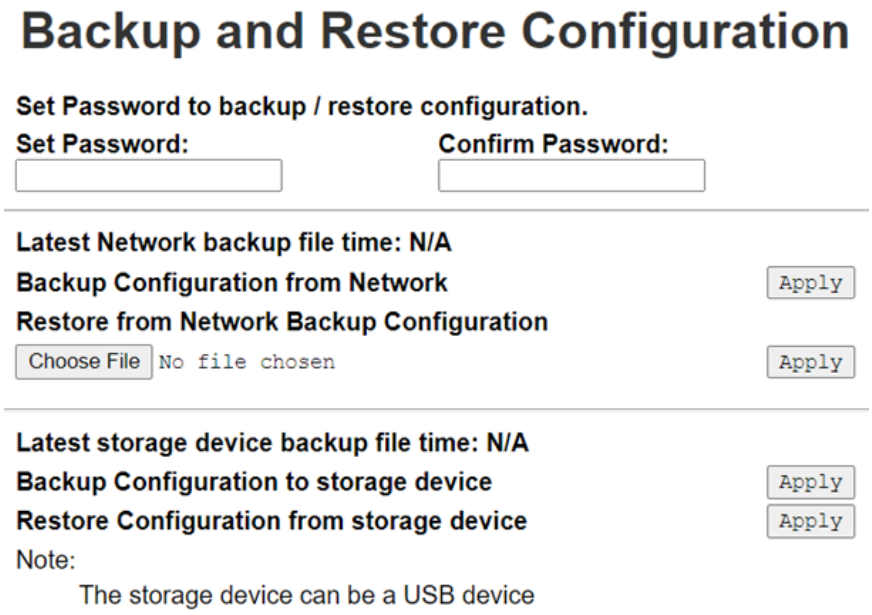


Figure 73. SMM2 Backup and Restore Configuration

- **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.

Table 4. IPMI command list

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 (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.

Table 5. 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 reading Byte [7:6] - Summary of maximum reading	[Request data] Byte 1 - Type 0x01 - AC-In 0x02 - PSU power consumption **Note:** The unit is 1 watt.	
GET PSU STATUS		NetFn	CMD
		0x32	**0x91**
Request data	Response data	Comments	

Table 5. IPMI command contents (continued)

N/A	Byte [2:1] - PSU EPOW Byte [4:3] - PSU Throttle Byte [6:5] - PSU Present Byte [8:7] - PSU Power Good Byte 9 - EPOW Out Byte 10 - Throttle Out Byte [12:11] - PSU Type Byte [14:13] - Total Power Bank	[Response data] Bit [0:8] - For PSU 1 to 9 0b - Not trigger 1b - Trigger	
GET FAN GPIO		NetFn	CMD
		0x32	**0x94**
Request data	Response data	Comments	
N/A	Byte 1 - Cooling mode Byte 2 - Present Byte 3 - Error LED	[Response data] Byte 1 - Cooling mode 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 DW612S Enclosure Bit [0:1] - Drip sensor 1 to 2 • DA240 Enclosure Bit [0:2] - System fan 1 to 3 • 0b - Not present • 1b - Present Byte 3 - Error LED • DW612 and DW612S Enclosure Bit [0:1] - Drip sensor 1 to 2 • DA240 Enclosure Bit [0:2] - System fan 1 to 3 • 0b - Off • 1b - On Byte 4 - Leakage (only applicable to DW612 and DW612S Enclosure) Bit [0:1] - Drip sensor 1 to 2 0b: No leakage 1b: Leakage detected	
SET FAN GPIO		NetFn	CMD

Table 5. IPMI command contents (continued)

		0x32	**0x95**
Request data	Response data	Comments	
Byte 1 - Fan number Byte 2 - Enable	Byte 1 - Fan number Byte 2 - Enable	[Response data] Byte 1 - Fan number • DA240 Enclosure 0x01 - Fan 1 0x02 - Fan 2 0x03 - Fan 3 • DW612 and DW612S Enclosure 0x01 - Drip sensor 1 0x02 - Drip sensor 2 Byte 2 - Enable 0x00 - Off 0x01 - On	
GET SYS LED		NetFn	CMD
		0x32	**0x96**
Request data	Response data	Comments	
N/A	Byte 1 - ID LED for enclosure Byte 2 - Check Log LED	[Response data] Byte 1 - ID LED for enclosure 0x00 - Off 0x01 - On 0x02 - Blink 0x03 - Accept mode - Off 0x04 - Accept mode - On 0x05 - Accept mode - Blink Byte 2 - Check Log LED 0x00 - Off 0x01 - On	
SET SYS LED		NetFn	CMD
		0x32	**0x97**
Request data	Response data	Comments	

Table 5. IPMI command contents (continued)

<table>
<tr><td>Byte 1 - LED type

Byte 2 - Function</td><td>Byte 1 - LED type

Byte 2 - Function</td><td colspan="2">[Request data]

Byte 1 - LED type
0x01 - ID LED for the 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).</td></tr>
<tr><td colspan="2" rowspan="2">GET NODE POWER READING</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0x98</td></tr>
<tr><td>Request data</td><td>Response data</td><td colspan="2">Comments</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><td>Byte 1 - Node number</td><td>Byte 1 - Node number

Byte [3:2] - Compute node minimum power reading

Byte [5:4] - Compute node average power reading

Byte [7:6] - Compute node maximum power reading

DW612 and DW612S Enclosure only:

Byte [9:8] - GPU node minimum power reading

Byte [11:10] - GPU node average power reading

Byte [13:12] - GPU node maximum power reading

Notes:
Only the following node(s) return to these Bytes:
• SD650-N V2
• SD650-I V3

The following node(s) respond with 0x00:
• SD650 V2
• SD650 V3
• SD665 V3

DA240 Enclosure only:

Byte [13:8] - 0x00</td><td>[Request data]

Byte 1 - Node number
• DA240 Enclosure
0x01 - Node 1
0x02 - Node 2
0x03 - Node 3
0x04 - Node 4
0x05 - Enclosure
• DW612 and DW612S 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
0x0D - Enclosure

[Response data]

For DA240 Enclosure:

Byte [13:8] - 0x00

Notes:
• The unit is 1 watt.
• The enclosure power reading is the sum of populated compute nodes.</td></tr>
<tr><td rowspan="2">GET NODE SIZE</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0x99</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><td>Request data</td><td>Response data</td><td colspan="2">Comments</td></tr>
<tr><td>Byte 1 - Node number</td><td>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</td><td colspan="2">This command displays the dimensions of 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 DW612S 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</td></tr>
<tr><td colspan="2" rowspan="2">SET ACOUSTIC MODE (only applicable to DA240 Enclosure)</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0x9B</td></tr>
<tr><td>Request data</td><td>Response data</td><td colspan="2">Comments</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><td>N/A</td><td>Byte 1 - Acoustic mode</td><td colspan="2" rowspan="2">This section is only applicable to DA240 Enclosure.

[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</td></tr>
<tr><td>Byte 1 - Acoustic mode</td><td>Byte 1 - Acoustic mode

Byte 2 - PCIe priority</td></tr>
<tr><td colspan="2" rowspan="2">GET CAP BOUNDARY</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0x9D</td></tr>
</table>

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Node number	Byte 1 - Node number Byte [3:2] - Minimum capping Byte [5:4] - Maximum capping Byte [7:6] - Protective capping Byte [9:8] - User capping Byte [11:10] - Thermal capping	[Request data] Byte 1 - Node number • DA240 Enclosure 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 0x05 - Enclosure • DW612 and DW612S 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 0x0D - Enclosure **Notes:** • Capping will only be applied in OS-runtime. • The unit is 1 watt. • The following tray(s) does not support user capping and thermal capping: – SD665 V3	
SET CAP VALUE		NetFn	CMD
		0x32	**0x9E**

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>Byte 1 - Node number

Byte [3:2] - Capping value</td><td>Byte 1 - Node number

Byte [3:2] - Capping value</td><td colspan="2">[Request data]

Byte 1 - Node number
• DA240 Enclosure
0x01 - Node 1
0x02 - Node 2
0x03 - Node 3
0x04 - Node 4
0x05 - Enclosure
• DW612 and DW612S 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
0x0D - Enclosure

Notes:
• The unit is 1 watt.
• The following tray(s) does not support user capping and thermal capping:
– SD665 V3</td></tr>
<tr><td colspan="2" rowspan="2">SET CAP STATE</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0x9F</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>Byte 1 - Node number

Byte 2 - Capping mode

Byte 3 - Saving mode</td><td>Byte 1 - Node number

Byte 2 - Capping mode

Byte 3 - Saving mode</td><td colspan="2">[Request data]

Byte 1 - Node number
• DA240 Enclosure
0x01 - Node 1
0x02 - Node 2
0x03 - Node 3
0x04 - Node 4
0x05 - Enclosure
• DW612 and DW612S 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
0x0D - Enclosure

Byte 2 - Capping mode
0x00 - Disable
0x01 - Enable

Byte 3 - Saving mode
0x00 - Disable
0x01 - Enable

Notes: The following tray(s) does not support user capping and thermal capping:
• SD665 V3</td></tr>
<tr><td colspan="2" rowspan="2">GET CAP STATE</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xA0</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>Byte 1 - Node number</td><td>Byte 1 - Node number
Byte 2 - Capping mode
Byte [4:3] - Capping value
Byte 5 - Saving mode</td><td colspan="2">[Request data]
Byte 1 - Node number
• DA240 Enclosure
0x01 - Node 1
0x02 - Node 2
0x03 - Node 3
0x04 - Node 4
0x05 - Enclosure
• DW612 and DW612S 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
0x0D - Enclosure
[Response data]
Byte 2 - Capping mode
0x00 - Disable
0x01 - Enable
Byte 5 - Saving mode
0x00 - Disable
0x01 - Enable</td></tr>
<tr><td colspan="2" rowspan="2">SET DATE TIME</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xA1</td></tr>
</table>

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte [1:2] - Year Byte 3 - Month Byte 4 - Date Byte 5 - Hour Byte 6 - Minute Byte 7 - Second	Byte [1:2] - Year Byte 3 - Month Byte 4 - Date Byte 5 - Hour Byte 6 - Minute Byte 7 - Second	[Request data] Example: 2037/12/31 23:59:59 Byte 1 - 0x20 Byte 2 - 0x37 Byte 3 - 0x12 Byte 4 - 0x31 Byte 5 - 0x23 Byte 6 - 0x59 Byte 7 - 0x59	
GET PSU POLICY OVS		NetFn	CMD
		0x32	**0xA2**
Request data	Response data	Comments	
N/A	Byte 1 - PSU policy Byte 2 - OVS mode	[Response data] 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 Bank Byte 4 - User PSU Policy 0x00 - No redundant 0x01 - N+1 policy Byte 5 - User OVS mode 0x00 - Disable 0x01 - Enable	
SET PSU POLICY OVS		NetFn	CMD
		0x32	**0xA3**

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>Byte 1 - PSU policy

Byte 2 - OVS mode</td><td>Byte 1 - System PSU policy

Byte 2 - System OVS mode

Byte 3 - Status

Byte 4 - User PSU policy

Byte 5 - User OVS mode</td><td colspan="2">[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
0x01 - N+1 policy

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</td></tr>
<tr><td colspan="2" rowspan="2">SET NODE RESET / RESEAT</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xA4</td></tr>
</table>

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Node number Byte 2 - Reset mode	Byte 1 - Node number Byte 2 - Reset mode	[Request data] Byte 1 - Node number • DA240 Enclosure 0x01 - Node 1 0x02 - Node 2 0x03 - Node 3 0x04 - Node 4 • DW612 and DW612S 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 reset) 2 - Reseat (AC cycle) **Note:** The response **D5h** indicates the compute node is not present.	
GET PSU FAN STATUS		NetFn	CMD
		0x32	**0xA5**

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>Byte 1 - PSU number</td><td>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</td><td colspan="2">[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 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 between 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 [7:5] will be 0x00.</td></tr>
<tr><td colspan="2" rowspan="2">BACKUP / RESTORE</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xA6</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>Byte 1 - Action

Byte 2 - Password length

Byte [3:N] - Password string</td><td>Byte 1 - Status</td><td colspan="2">[Request data]

Byte 1 - Action
0x00 - Get backup or restore status
0x01 - Backup to storage device
0x02 - Restore from storage device

Byte 2 - Password length
(supported when Action is 0x01 or 0x02)

Byte [3:N] - Password string
(supported when Action is 0x01 or 0x02)

[Response data]

Byte 1 - Status
0x00 - COMMAND OK
0x01 - BACKUP RESTORE 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 categories:
– English uppercase characters (A through Z)
– English lowercase characters (a through z)
– Base 10 digits (0 through 9)
– Non-alphabetic characters (for example, !, $, #, %)

Note: If the password validation fails, the command will return 0xCC status code.</td></tr>
<tr><td rowspan="2">GET NODE STATUS</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xA7</td></tr>
</table>

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
Byte 1 - Node number	Byte 1 - Node number Byte 2 - Power state Byte 3 - Width Byte 4 - Height Byte 5 - Permission state	This command is used to report the current status of 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 DW612S 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 [Response data] Byte 2 - Power state 0x00 - Power off 0x20 - No permission 0x40 - System board power fault 0x80 - Power on Byte 5 - Permission state 0x00 - Permission to standby 0x01 - First permission failed 0x02 - Second permission failed 0x03 - Permission pass 0xFF - Initial not done	
GET SMM2 STATUS		NetFn	CMD
		0x32	**0xA8**

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
N/A	Byte 1 - Platform ID 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 Byte [7:13] - Firmware build ID Byte 14 - Enclosure type	[Response data] Byte 1 - Platform ID 0xFC - DW612S Enclosure 0xFD - DW612 Enclosure 0xFE - DA240 Enclosure Byte 6 - Boot flash number 0x01 - Flash 1 0x02 - Flash 2 (fail over) 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 DWC PSU 0x06 - 3 DWC PSU • DW612 Enclosure 0x01 - 6 PSU 0x02 - 6 + 3 PSU 0x03 - 9 PSU • DA240 Enclosure 0x00 - N/A		
SET NODE RESTORE POLICY		NetFn	CMD
		0x32	**0xA9**

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>DA240 Enclosure
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</td><td>DA240 Enclosure
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</td><td colspan="2">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.
[Request data]
• DA240 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
• 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 12</td></tr>
<tr><td colspan="2" rowspan="2">GET NODE RESTORE POLICY</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xAA</td></tr>
</table>

Table 5. IPMI command contents (continued)

Request data	Response data	Comments	
N/A	DA240 Enclosure 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	Refer to SET NODE RESTORE POLICY.	
SET PSU ZERO OUTPUT MODE		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.	
GET PSU ZERO OUTPUT MODE		NetFn	CMD
		0x32	**0xAC**
Request data	Response data	Comments	
N/A	Byte 1 - User configuration Byte 2 - System configuration Byte 3 - Status	[Response data] Byte 1 - User configuration 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 supported	
SMM2 RESET TO DEFAULT		NetFn	CMD
		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

Table 5. IPMI command contents (continued)

		0x32	**0xAF**
Request data	Response data	Comments	
Byte 1 - VPD type Byte 2 - Device ID Byte [3:N] - VPD data	Byte 1 - VPD type Byte 2 - Device ID	[Response data] Byte 1 - VPD type 0x00 - SMM2 0x05 - Enclosure 0x06 - Upper PDB 0x07 - Lower PDB 0x08 - Midplane Byte 2 - Device ID 0x00 - Machine type model; for enclosure only; 10 bytes 0x01 - Machine serial number; for enclosure only; 10 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; SMM2; 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 date; for SMM2 and enclosure; Upper/Lower PDB, Midplane; 4 bytes 0x08 - Universal Unique ID (UUID); for SMM2 and enclosure; Upper/Lower PDB, Midplane; 16 bytes 0x09 - IANA enterprise number; for enclosure only; 4 bytes 0x0A - Product ID; for enclosure only; 2 bytes 0x0B - Component name; for SMM2 and enclosure; Upper/Lower PDB, Midplane; 64 bytes 0x0C - Global Identifier (GLID); for enclosure only; 11 bytes 0x0D - EC level; for SMM2 and enclosure; Upper/Lower PDB, Midplane; 10 bytes **Notes:**	

Table 5. IPMI command contents (continued)

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

Table 5. IPMI command contents (continued)

Request data	Response data	Comments
Byte 1 - Function Byte [2:N] - Data (option)	Byte 1 - Status	[Request data] 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: 1. 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

Table 5. IPMI command contents (continued)

		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
SET SMTP CONFIG PARAMETERS		NetFn: **0x32** CMD: **0xB2**
Request data	Response data	Comments
Byte 1 - Parameter selector Byte [2:N] - Data	Byte 1 - Parameter selector Byte [2:N] - Data	**Note:** Refer to the table in "SMTP Configuration Parameters" on page 79 for parameter selector and data.
GET SMTP CONFIG PARAMETERS		NetFn: **0x32** CMD: **0xB3**
Request data	Response data	Comments
Byte 1 - Parameter selector Byte 2 - Set selector Byte 3 - Block selector	Byte 1 - Parameter selector Byte [2:N] - Data	[Request data] Byte 2 - Set 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.
SET NTP CONFIG PARAMETERS		NetFn: **0x32** CMD: **0xB4**
Request data	Response data	Comments
Byte 1 - Parameter selector Byte [2:N] - Data	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.
GET NTP CONFIG PARAMETERS		NetFn: **0x32** CMD: **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.
GET PSU DATA		NetFn: **0x32** CMD: **0xC3**

Table 5. IPMI command contents (continued)

<table>
<tr><th>Request data</th><th>Response data</th><th colspan="2">Comments</th></tr>
<tr><td>Byte 1 - PSU number</td><td>Byte 1 - PSU number
Byte [3:2] - Fan A speed
Byte [5:4] - Fan B speed
Byte [7:6] - VIN
Byte [9:8] - PSU type</td><td colspan="2">[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 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 [5:4] - Fan B speed
The unit is 1 RPM.
Byte [7:6] - VIN
The unit is 1 voltage.
Byte [9:8] - PSU type
The unit is 1 watt.
Note: Fan B speed will be 0x00 for the single-fan PSU.</td></tr>
<tr><td colspan="2" rowspan="2">GET NODE COOLING VALUE</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xC7</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><td>Request data</td><td>Response data</td><td colspan="2">Comments</td></tr>
<tr><td>Byte 1 - Node number</td><td>Byte 1 - Node number

Byte 2 - Cooling value</td><td colspan="2">[Request data]

Byte 1 - Node number
• DA240 Enclosure
0x01 - Node 1
0x02 - Node 2
0x03 - Node 3
0x04 - Node 4
0x05 - Enclosure
• DW612 and DW612S 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
0x0D - Enclosure

Note: The cooling value ranges from 1 to 100.</td></tr>
<tr><td colspan="2" rowspan="2">GET WEB STATE</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xF0</td></tr>
<tr><td>Request data</td><td>Response data</td><td colspan="2">Comments</td></tr>
<tr><td>N/A</td><td>Byte 1 - State</td><td colspan="2">[Response data]

Byte 1 - State
0x00 - Disabled
0x01 - Enabled</td></tr>
<tr><td colspan="2" rowspan="2">SET WEB STATE</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xF1</td></tr>
<tr><td>Request data</td><td>Response data</td><td colspan="2">Comments</td></tr>
<tr><td>Byte 1 - State</td><td>Byte 1 - State</td><td colspan="2">[Request data]

Byte 1 - State
0x00 - Disabled
0x01 - Enabled</td></tr>
</table>

Table 5. IPMI command contents (continued)

<table>
<tr><td colspan="2" rowspan="2">PSU ISP PSU SELECT</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xF4</td></tr>
<tr><td>Request data</td><td>Response data</td><td colspan="2">Comments</td></tr>
<tr><td>Byte 1 - Function

Byte 2 - PSU number</td><td>Byte 1 - PSU number

Byte 2 - Data

Byte 3 - Data (option)</td><td colspan="2">This command is used to set or get ISP status.

[Request data]

Byte 1 - Function
0x00 - PSU selection
0x01 - Secondary firmware revision
0x02 - ISP status

Byte 2 - PSU number
• DA240 Enclosure
0x01 - PSU 1
0x02 - PSU 2
• DW612 and DW612S Enclosure
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 revision

Byte [2:3] - Firmware version

ISP status

Byte 2 - Status
0x00 - Successful
0x01 - Fail
0x02 - Initializing
0x03 - Updating
0x04 - PSU under reset</td></tr>
<tr><td colspan="2" rowspan="2">ENCLOSURE VIRTUAL RESEAT</td><td>NetFn</td><td>CMD</td></tr>
<tr><td>0x32</td><td>0xF5</td></tr>
</table>

Table 5. IPMI command contents (continued)

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

Table 5. IPMI command contents (continued)

Request data	Response data	Comments
Byte 1 - Type	Byte 1 - Type Byte 2 - Setting Byte 3 - Setting (option)	[Request data] Byte 1 - Type 0x00 - Minimum password length 0x01 - Force user to change password on first access 0x02 - Password expiration period (in days) 0x03 - Password expiration warning period (in days) 0x04 - Minimum password change interval (in hours) 0x05 - Minimum password reuse cycle 0x06 - Maximum number of login failures 0x07 - Lockout period after maximum login failures (in minutes) 0x08 - Web inactivity session timeout (in minutes) 0x09 - Enable IP address block for 300 seconds after 10 login failures 0x0A - Enable Secure Rollback 0x0B - Enable Strong IPMI Cipher Suites 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)

Table 5. IPMI command contents (continued)

		– A non-alphabetic characters such as **! @#$%^*-_+=().:`|?"** 0x04: cannot be a repeat or reverse of the corresponding user name 0x05: may contain at most two consecutive occurrences of the same character • White-space and the non-alphabetic characters such as **~'&<>/[]{};,**are not allowed.
SET SECURITY OPTION		NetFn: **0x32** / CMD: **0xFB**
Request data	Response data	Comments
Byte 1 - Type Byte 2 - Setting Byte 3 - Setting (option)	Byte 1 - Type Byte 2 - Setting Byte 3 - Setting (option)	Refer to GET SECURITY OPTION for more details.

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: 1. It must not consist of space characters only. 2. It must be the combination of alphanumeric characters a-z, A-Z and 0-9, space characters, 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>`

Table 6. SMTP configuration parameters (continued)

Destination e-mail addresses	1	**Byte 1 - Set selector = Field selector, 0 based.** • [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 settings	2	**Byte 1 - Set selector = Field selector, 0 based.** • [7:1] - Reserved • [0] - Field selector – 0b - Field 1 - SMTP IP address – 1b - Field 2 - SMTP port number **For set selector = 0** • 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.

Table 8. List of parameters in IPMI commands

NetFn	CMD	Name	Parameter	Parameter name
0x0C	0x01	SET LAN CONFIG PARAM	0xC3	Host name
			0xC4	Domain name
			0xC5	DHCP option 12
			0xC6	DHCP option 60
	0x02	GET LAN CONFIG PARAM	0xC3	Host name
			0xC4	Domain name
			0xC5	DHCP option 12
			0xC6	DHCP option 60

Parameter in IPMI Command Contents

The section provides detailed parameters in IPMI command contents.

Table 9. Parameters in IPMI command contents

SET LAN CONFIG PARAM		NetFn	CMD
		0x0C	**0x01**
Request data	Response data	Comments	
Byte 1 - Channel number Byte 2 - Parameter selector Byte [3:N] - Configuration parameter	Byte 1 - Completion code	[Request data] Byte 2 - Parameter selector Byte [3:N] - Configuration parameter Refer to the table in “IPMI Parameter - LAN Configuration Parameters” on page 84 for more details. [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 2 - Parameter selector Byte 3 - Set selector Byte 4 - Block selector	Byte 1 - Completion code Byte 2 - Parameter revision Byte [3:N] - Configuration parameter	[Request data] Byte 2 - Parameter selector Refer to the table in “IPMI Parameter - LAN Configuration Parameters” on page 84 for 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.

Table 10. IPMI parameters - LAN configuration parameters

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 class information option	0xC6	Byte 1 - 0x00 - Disabled 0x01 - Enabled

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