



PowerDirect Power Management Controller (PMC)

User Manual

Specification Number: 1PMC1S2

Model Number: PMC1S2

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Admonishments Used in this Document



DANGER! Warns of a hazard the reader ***will*** be exposed to that will ***likely*** result in death or serious injury if not avoided. (ANSI, OSHA)



WARNING! Warns of a potential hazard the reader ***may*** be exposed to that ***could*** result in death or serious injury if not avoided. This admonition is not used for situations that pose a risk only to equipment, software, data, or service. (ANSI)



CAUTION! Warns of a potential hazard the reader ***may*** be exposed to that ***could*** result in minor or moderate injury if not avoided. (ANSI, OSHA) This admonition is not used for situations that pose a risk only to equipment, data, or service, even if such use appears to be permitted in some of the applicable standards. (OSHA)



ALERT! Alerts the reader to an action that ***must be avoided*** in order to protect equipment, software, data, or service. (ISO)



ALERT! Alerts the reader to an action that ***must be performed*** in order to prevent equipment damage, software corruption, data loss, or service interruption. (ISO)



FIRE SAFETY! Informs the reader of fire safety information, reminders, precautions, or policies, or of the locations of fire-fighting and fire-safety equipment. (ISO)



SAFETY! Informs the reader of general safety information, reminders, precautions, or policies not related to a particular source of hazard or to fire safety. (ISO, ANSI, OSHA)

Important Safety Instructions

Safety Admonishments Definitions

Definitions of the safety admonishments used in this document are listed under “Admonishments Used in this Document” on page iii.

General Safety



DANGER! YOU MUST FOLLOW APPROVED SAFETY PROCEDURES.

Performing the following procedures may expose you to hazards. These procedures should be performed by qualified technicians familiar with the hazards associated with this type of equipment. These hazards may include shock, energy, and/or burns. To avoid these hazards:

- a) The tasks should be performed in the order indicated.
- b) Remove watches, rings, and other metal objects.
- c) Prior to contacting any uninsulated surface or termination, use a voltmeter to verify that no voltage or the expected voltage is present. Check the voltage with both DC voltmeters before making contact.
- d) Wear eye protection.
- e) Use certified and well maintained insulated tools. Use double insulated tools appropriately rated for the work to be performed.

Personal Protective Equipment (PPE)



DANGER! ARC FLASH AND SHOCK HAZARD.

Appropriate PPE and tools required when working on this equipment. An appropriate flash protection boundary analysis should be done to determine the “hazard/risk” category, and to select proper PPE.



Only authorized and properly trained personnel should be allowed to install, inspect, operate, or maintain the equipment.

Do not work on LIVE parts. If required to work or operate live parts, obtain appropriate Energized Work Permits as required by the local authority, per NFPA 70E “Standard for Electrical Safety in the Workplace”.

Handling Equipment Containing Static Sensitive Components



ALERT! Installation or removal of equipment containing static sensitive components requires careful handling. Before handling any equipment containing static sensitive components, read and follow the instructions contained on the Static Warning Page.

Static Warning



This equipment contains static sensitive components. The warnings listed below must be observed to prevent damage to these components. Disregarding any of these warnings may result in personal injury or damage to the equipment.

1. Strictly adhere to the procedures provided in this document.
2. Before touching any equipment containing static sensitive components, discharge all static electricity from yourself by wearing a wrist strap grounded through a one megohm resistor. Some wrist straps have a built-in one megohm resistor; no external resistor is necessary. Read and follow wrist strap manufacturer's instructions outlining use of a specific wrist strap.
3. Do not touch traces or components on equipment containing static sensitive components. Handle equipment containing static sensitive components only by the edges that do not have connector pads.
4. After removing equipment containing static sensitive components, place the equipment only on static dissipative surfaces such as conductive foam or ESD bag. Do not use ordinary Styrofoam or ordinary plastic.
5. Store and ship equipment containing static sensitive components only in static shielding containers.
6. If necessary to repair equipment containing static sensitive components, wear an appropriately grounded wrist strap, work on a conductive surface, use a grounded soldering iron, and use grounded test equipment.

1 Introduction

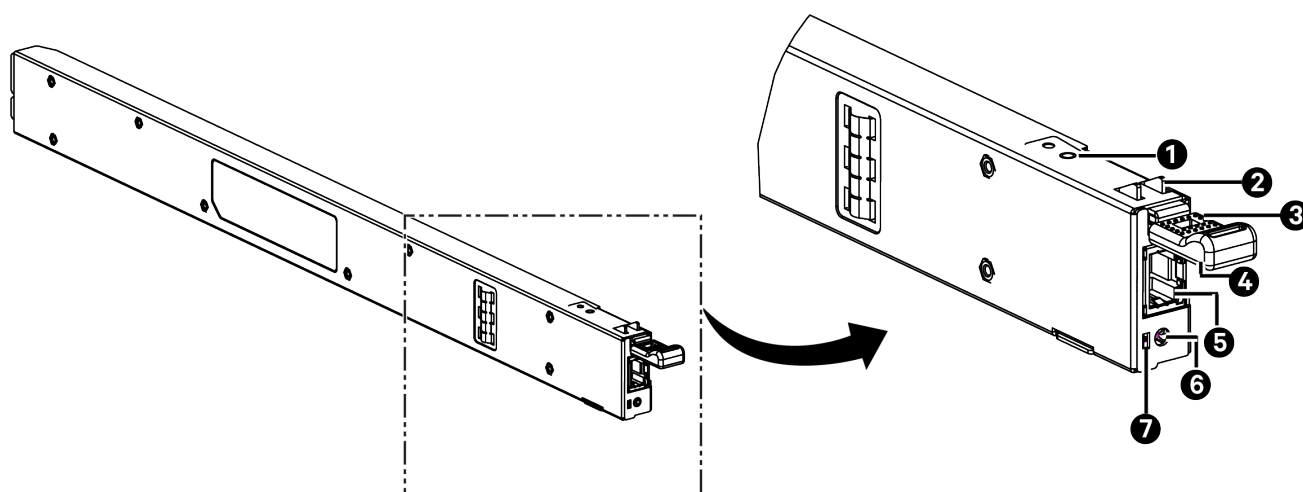
1.1 Overview

These instructions describe the complete functionality of the PMC.

PMC is a management module designed to communicate with the PSU for monitoring and control. It enables downstream communication via the gold finger connector and upstream communication with a centralized system through an RJ45 connector.

The key features are as follows:

- Support up to 6 PSUs/1U in the Shelf
- 1x 1Gb Ethernet port (RJ45)
- MPU: ASPEED AST2620A3
- 1GB DDR4 RAM
- Dual 128MB SPI Boot flash
- 8GB EMMC
- External hardware watchdog
- Security eROT IC - CEC1736
- Internal Debug port
- Reset Button
- EEPROM for non-volatile data storage such as FRU date
- Power by shelf DC output ,12V standby output or POE (via front RJ45 port), low consumption
- Hot-plug capable
- Onboard temperature sensor
- Real Time Clock + coincell
- Open BMC
- Support IPV4 and IPV6
- PMBus
- Status LEDs
- Support Redfish, IPMI, WebUI, RESTful, DHCP, NTP, ...
- PMC/PSU/MCU FW update via signed FW image
- Remote Debug
- Status/health monitoring telemetry
- Inventory check for Data Center automation

Figure 1.1 PMC Module Structure

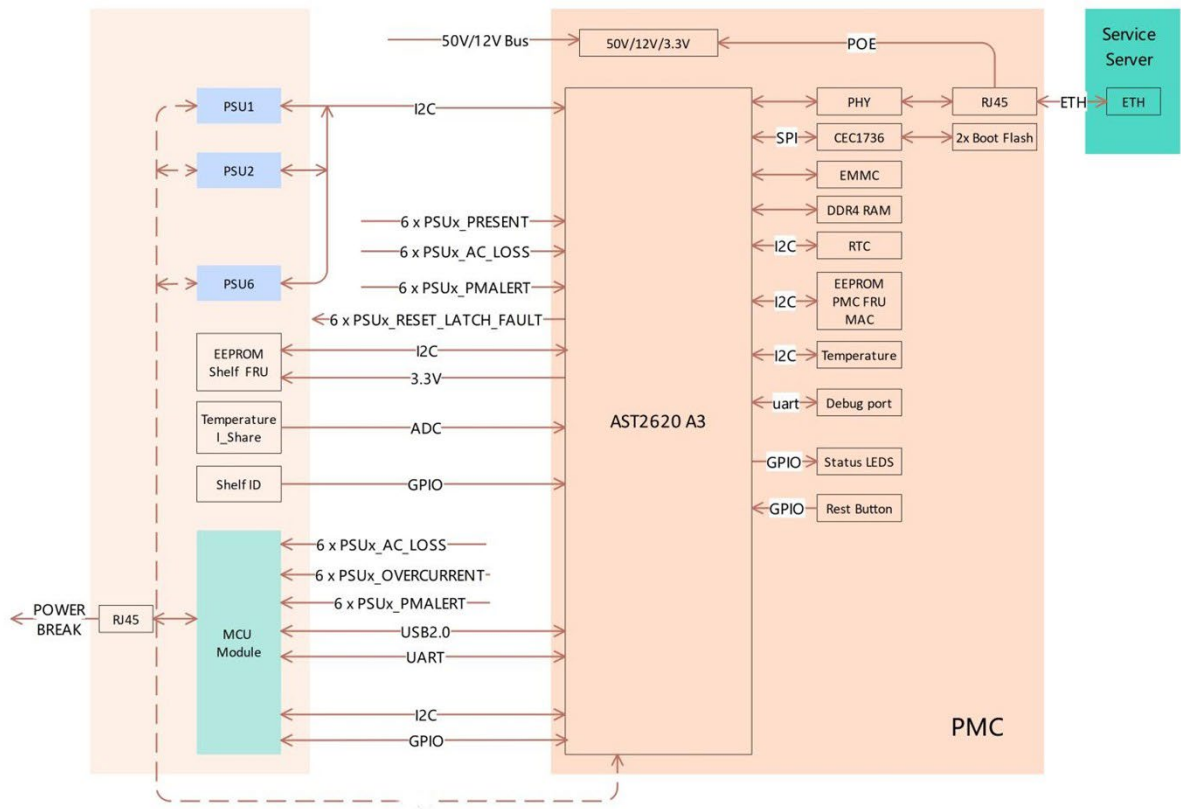
Item	Description
1	Shell
2	Securing Latch
3	Spring Latch Handle
4	Latch
5	RJ45 Connector
6	Reset Button
7	LED

1.2 PMC Functional Structure and Application

The Power Management Controller (PMC) enables Ethernet connectivity, facilitating communication between the power rack and the Power System Controller (PSC). Internal communication between the PMC and the Power Supply Unit (PSU) utilizes the I2C bus and the PMBus protocol.

The PMC comprises the following blocks:

Figure 1.2 Product Block Diagram

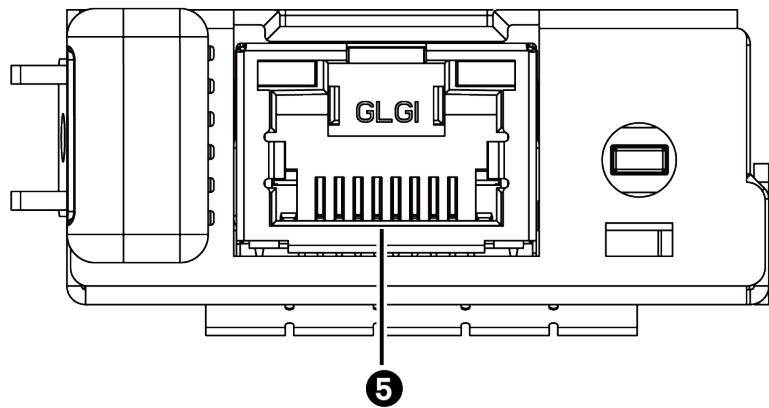


1.3 Electric Specifications

1.3.1 RJ45 Connector

At the front of the PMC, there is one 1Gb Ethernet RJ45 connector designated for Redfish monitoring. Please also refer to **Figure 1.1**.

Figure 1.3 RJ45 Connectors



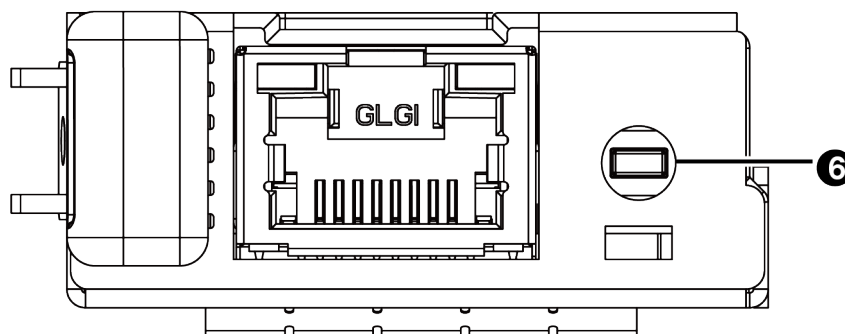
Item	Description
5	RJ45 Connector

Table 1.1 RJ45 Pin Definition

RJ45			
Pin#	Wire Color	Signal	Function
1	White/Orange	ETH0_TRXP0_C	100/1000M Ethernet data differential pair 1
2	Orange	ETH0_TRXN0_C	100/1000M Ethernet data differential pair 1
3	White/Green	ETH0_TRXP1_C	100/1000M Ethernet data differential pair 2
4	Blue	ETH0_TRXP2_C	100/1000M Ethernet data differential pair 2
5	White/Blue	ETH0_TRXN2_C	100/1000M Ethernet data differential pair 3
6	Green	ETH0_TRXN1_C	100/1000M Ethernet data differential pair 3
7	White/Brown	ETH0_TRXP3_C	100/1000M Ethernet data differential pair 4
8	Brown	ETH0_TRXN3_C	100/1000M Ethernet data differential pair 4
9	/	GND	100/1000M Ethernet connection and data indicator (Amber)
10	/	ETH0_PHY_LED2_C	100/1000M Ethernet connection and data indicator (Amber)
11	/	GND	100/1000M Ethernet speed indicator (Green)
12	/	ETH0_PHY_LED1_C	100/1000M Ethernet speed indicator (Green)

1.3.2 Reset Button

At the front of the PMC, there is a Reset Button. The reset button can be pressed to restore default network parameter settings of the PMC. Please also refer to **Figure 1.1**.

Figure 1.4 Reset Button

Item	Description
6	Reset Button

1.3.3 Edge Connector

There are many signals on the edge connector; all signals are routed in the power shelf backplane.

Figure 1.5 Edge Connector

Table 1.2 Edge Connector Pin Definition

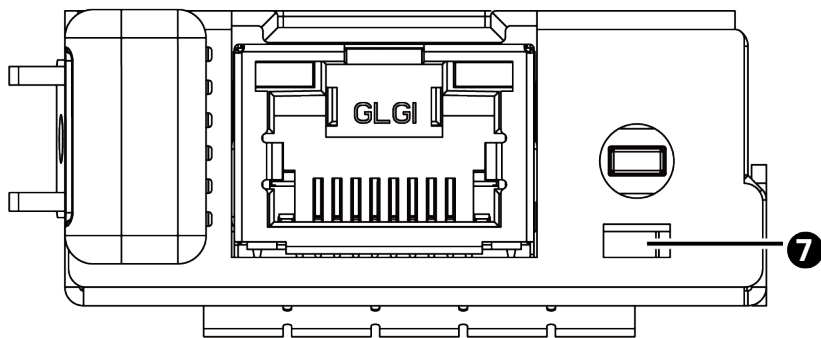
Pin#	Signal Name	I/O	Description
A1	PSU0_PMBALERT_N	I	PSU0-5 PMB alarm detection
B1	PSU1_PMBALERT_N	I	
A2	PSU2_PMBALERT_N	I	
B2	PSU3_PMBALERT_N	I	
A3	PSU4_PMBALERT_N	I	
B3	PSU5_PMBALERT_N	I	Power Shelf address detection
A4	SHELF_ADDR_ID0	I	
B4	SHELF_ADDR_ID1	I	
A5	SHELF_ADDR_ID2	I	
B5	SHELF_ADDR_ID3	I	
A6	REAR_DIFF_A_P	I/O	RS485 communication to rear controller
B6	Signal_SGND	GND	Ground
A7	REAR_DIFF_A_N	I/O	RS485 communication to rear controller
B7	USB_P	I/O	USB communication to rear controller
A8	Signal_SGND	GND	Ground
B8	USB_N	I/O	USB communication to rear controller
A9	UARAT_MCU_BMC	I/O	RS232 communication to rear controller
B9	Signal_SGND	GND	Ground
A10	UART_BMC_MCU	I/O	RS232 communication to rear controller
B10	N.C.	/	REAR controller address 1_A0
A11	_LATCH_FAULT_PSU1	O	PSU0-5 latch fault reset control
B11	RESET_LATCH_FAULT_PSU0	O	
A12	RESET_LATCH_FAULT_PSU3	O	
B12	RESET_LATCH_FAULT_PSU2	O	
A13	RESET_LATCH_FAULT_PSU5	O	
B13	RESET_LATCH_FAULT_PSU4	O	
A14	12V_STANDBY	Power In	12V standby power
B14	12V_STANDBY	Power In	12V standby power
A15	12V_RTN	GND	Ground
B15	12V_RTN	GND	Ground
A16	PSU0_PRESENT_N	I	PSU0-5 in-place detection
B16	PSU1_PRESENT_N	I	
A17	PSU2_PRESENT_N	I	
B17	PSU3_PRESENT_N	I	
A18	PSU4_PRESENT_N	I	
B18	PSU5_PRESENT_N	I	
A19	RESERVED_DIFF_A_P (RS485/CAN)	I/O	CAN communication to PSU
B19	ALERT_MCU_BMC_N	I/O	Alert from rear controller
A20	RESERVED_DIFF_A_N (RS485/CAN)	I/O	CAN communication to PSU
B20	ISHARE_N	I	Alert to rear controller
A21	Signal_SGND	GND	Ground
B21	ISHARE_P	I	PSU current sharing detection
A22	PMBUS_I2C_SDA	I/O	PMBus /I2C communication to PSU
B22	Signal_SGND	GND	Ground
A23	PMBUS_I2C_SCL	I/O	PMBus /I2C communication to PSU
B23	ALERT_BMC_MCU_N	I/O	Alert to rear controller

Pin#	Signal Name	I/O	Description
A24	SYNC_STOP_N	I	PSU synchronous stop detection
B24	REAR_GPIO0_RESET_B	I/O	Reset to rear controller
A25	REAR_GPIO1_RECOVERY_N	I/O	Recovery to rear controller
B25	N.C.	/	REAR controller address 2_A1
A26	Signal_SGND	GND	Ground
B26	REAR_I2C_SDA	I/O	I2C communication to rear controller
A27	PSU0_AC_LOSS_N	I	PSU0 AC loss detection
B27	REAR_I2C_SCL	I/O	I2C communication to rear controller
A28	PSU1_AC_LOSS_N	I	PSU0 AC loss detection
B28	Signal_SGND	GND	Ground
A29	PSU2_AC_LOSS_N	I	PSU0 AC loss detection
B29	I2C_SDA_SHELF	I/O	I2C communication to shelf eeprom
A30	PSU3_AC_LOSS_N	I	PSU0 AC loss detection
B30	I2C_SCL_SHELF	I/O	I2C communication to shelf eeprom
A31	PSU4_AC_LOSS_N	I	PSU0 AC loss detection
B31	N.C.	/	REAR controller address 1_A01
A32	PSU5_AC_LOSS_N	I	PSU0 AC loss detection
B32	SYNC_START_N	I	PSU synchronous start detection
A33	RESERVED_D (VOUT_SEL)	O	PSU output voltage set
B33	SHELF_EEPROM_WP	O	Shelf eeprom write protection set
A34	VBAT	O	3.3V power for shelf eeprom
B34	Signal_SGND	GND	Ground
A35	Signal_SGND	GND	Ground
B35	BACKUP_TRIGGER	O	Backup trigger
A36	BUSBAR_CLIP_TEMP_P	I	Temperature of the busbar clamp positive electrode
B36	REAR_GPIO2	I	GPIO2 to rear controller
A37	BUSBAR_CLIP_TEMP_N	I	Temperature of the busbar clamp positive electrode
B37	REAR_GPIO3	I	GPIO3 to rear controller
A38	Signal_SGND	GND	Ground
B38	PSKILL_PMC	I	PMC power on control, a short pin on PMC, and connect to GND through a 10ohm resistance on power shelf
A39	N.C.	/	
B39	N.C.	/	
A40	50V_RTN	I	PSU 50V ground
B40	50V_RTN	I	PSU 50V ground
A41	N.C.	/	
B41	N.C.	/	
A42	50V_Vout	Power In	PSU 50V power
B42	50V_Vout	Power In	PSU 50V power

1.3.4 Indicator Light

There is an LED indicator light in front of the PMC. Refer to **Figure 1.6** for details.

Figure 1.6 Indicator Light



Item	Description
7	LED

Table 1.3 Indicator Light Definition

Type	Status	Meaning
Indicator LED	Red	PMC Over Temperature (Temperature > 70°C or Temperature < -25 °C)
	Yellow	PMC Over Temperature (45°C < Temperature < 70°C or -25°C < Temperature < -5°C)
	Green	Power supply OK/BMC startup

NOTE! When two or more failures occur simultaneously, use the LED to indicate the highest-priority failure. Priority 0 represents the highest priority.

1.3.5 Power Function

The PMC shall be able to be powered from the following sources:

- PMC Front RJ45 connector over POE: IEEE 802.3at (PoE+) standard and supports Mode A and Mode B;
- Shelf Output - 50V.
- 12V STANDBY.

Table 1.4 Power List

Items	Type	Range	Standard
50V	Voltage	47.5-52.5V	50V
12V STANDBY	Voltage	11.4-12.6V	12V
PoE	Voltage	42.5-57V	50V

1.3.6 PSUs Digital Input/Output signals

PSUs (Power Supply Units) use digital input/output signals to communicate status and control information between the power supply and other system components. Digital input signals can trigger certain actions in the PSU, such as turning on or off, while digital output signals typically indicate the PSU's operational status, such as power good, fault, or standby modes. These signals help ensure reliable system operation and facilitate monitoring and remote management of the power supply.

Table 1.5 PSUs Digital Input/Output List

No	Usage
1	Digital input for each PSU to detect slot of PSU present
2	Digital input for each PSU to monitor the SMB Alert signal of each PSU
3	Digital input for each PSU to monitor the AC input fail signal
4	Digital Output for each PSU to Reset latch fault

1.3.7 Ethernet-Port Pinning

Ethernet-Port Pinning is the process of assigning specific Ethernet ports on a device to particular functions or network paths. This ensures that network traffic, such as management data or power supply monitoring signals, consistently flows through designated ports. Pinning can improve network performance, enhance security, and simplify troubleshooting by preventing traffic from being dynamically reassigned to different ports. Ethernet-Port Pinning helps maintain reliable communication channels between the hardware and monitoring or control systems.

Table 1.6 Ethernet-Port Pinning

Pin	Wire Color	Function
1	White/Orange	MDIO+
2	Orange	MDIO-
3	White/Green	MDI1+
4	Blue	MDI2+
5	White/Blue	MDI2-
6	Green	MDI1-
7	White/Brown	MDI3+
8	Brown	MDI3-

1.3.8 I2C Master Interface

The PMC supports 3 I2C ports from I2C0-I2C2.

Table 1.7 I2C Ports List

Port	Usage
I2C0	PMBus communication of 6 PSUs in Shelf
I2C1	Communicate with EEPROM for Shelf FRU Data
I2C2	Communicate with the MCU module

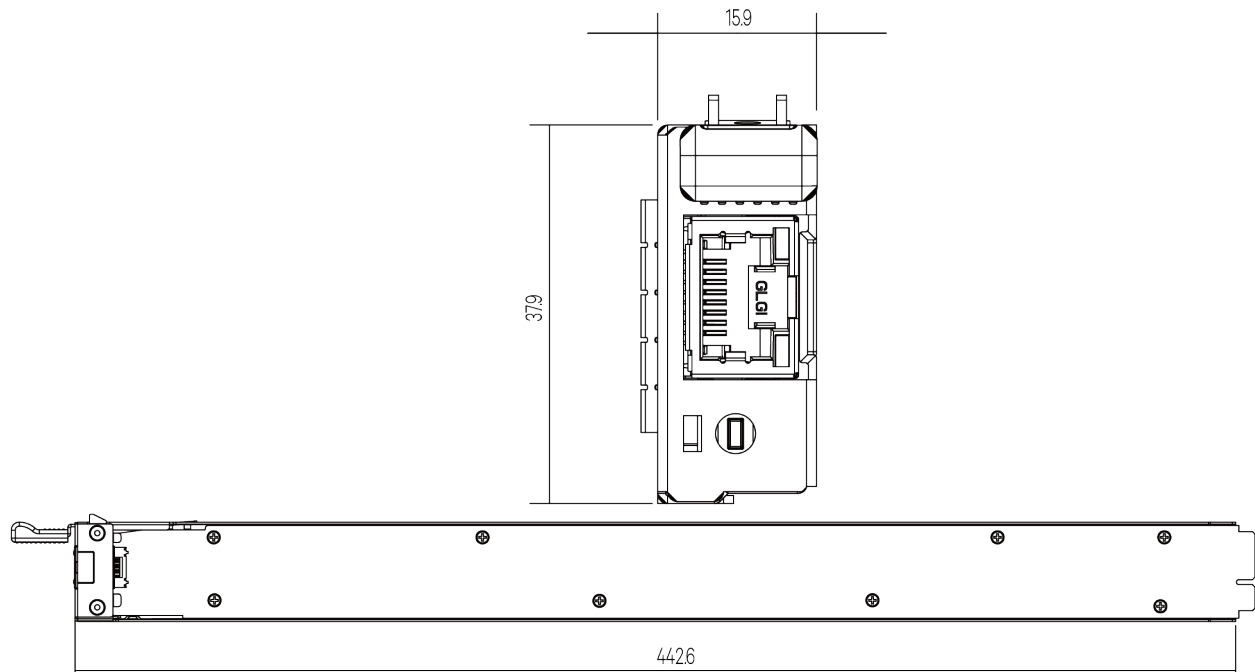
2 Mechanical Specifications

2.1 Dimensions

Dimensions:

- a) Millimeters: 15.9 (Height) X 37.9 (Width) X 450 (Depth)
- b) Inches: 0.63 (Height) X 1.49 (Width) X 17.72 (Depth)

Figure 2.1 PMC Dimensions(mm)



2.2 Construction

The PMC base can be welded, riveted, or screwed together, consistent with meeting shock and vibration requirements. There are no sharp corners or edges.

The sheet metal material is pre-plated hot-dip zinc coated, with 0.8 mm to 1.0 mm of thickness.

2.3 Latch

A latch is required for PMC removal and installation. The latch is attached in the location shown on the mechanical drawing, to interface with the cutout in the chassis. The latch design may vary, but the finger interface of the latch is Pantone 375C (Green).

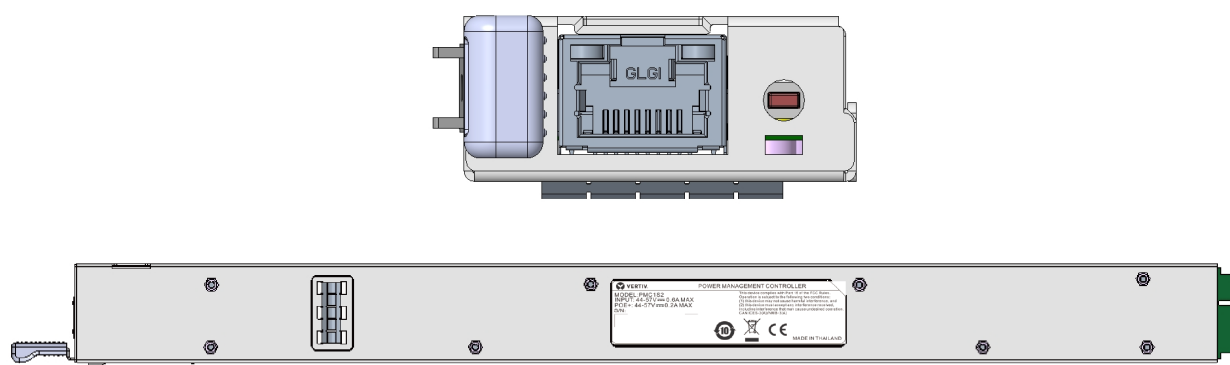
2.4 EMI Gaskets

EMI gaskets are placed on the bottom side of the PMC, primarily for grounding the PMC module to the shelf and secondarily for EMI containment. They are positioned at the front to ensure full contact with the shelf walls.

2.5 Labeling

The product label is printed on an orange background at the bottom of the casing.

Figure 2.2 PMC Labeling



3 Specifications

3.1 Compliance Specifications

3.1.1 Altitude

Altitude: 3050 m (10000 ft) at full power (power limited for heights above 3050 m).

3.1.2 Pollution

Pollution Level II: Only non-conductive contaminants.

3.1.3 High Voltage Category

High Voltage Category: II.

3.2 Thermal Specifications

3.2.1 Power Input/Output

Power Input:

1. Voltage: 47.5 VDC to 52.5 VDC from DC 50V Power supply
Current: < 0.5 A
2. Voltage: 42.5 VDC to 57 VDC from PoE Power supply
Current: < 0.3 A
3. Voltage: 11.4 VDC to 12.6 VDC from PSU 12V_STANDBY
Current: < 1 A

Power Output:

1. Voltage: 3.15 VDC to 3.45 VDC (only for EEPROM power supply)
Current: < 0.25 A

3.2.2 Temperature and Humidity

Operating Temperature and Humidity Range: -5 °C to +45 °C (+23 °F to +113 °F); 10% to 95% RH, (non-condensing)

Storage Temperature and Humidity Range: -40 °C to +70 °C (-40 °F to +158 °F); 10% to 95% RH, (non-condensing)

Transporting Temperature and Humidity Range: -40 °C to +70 °C (-40 °F to +158 °F); 10% to 95% RH, (non-condensing)

4 Introduction and Basic Demonstration

4.1 Graphical user interface

The web UI supports only HTTPS. To use the WebUI, you will need to log on the PMC first:

- (1) Start the web browser, enter the IP address of PMC you want to manage.

`https://{IP}/`

The IP acquisition mode for PMC defaults to DHCP, with the IP address being subject to actual conditions.

For example, <https://192.168.1.70/> is the default IP address. If the user forgets the IP address, you can change this IP address.

- (2) For the login window, you need to select the language, enter the Username and Password

4.2 Command line interface

PMC users can access the system via GNU/Linux commands.

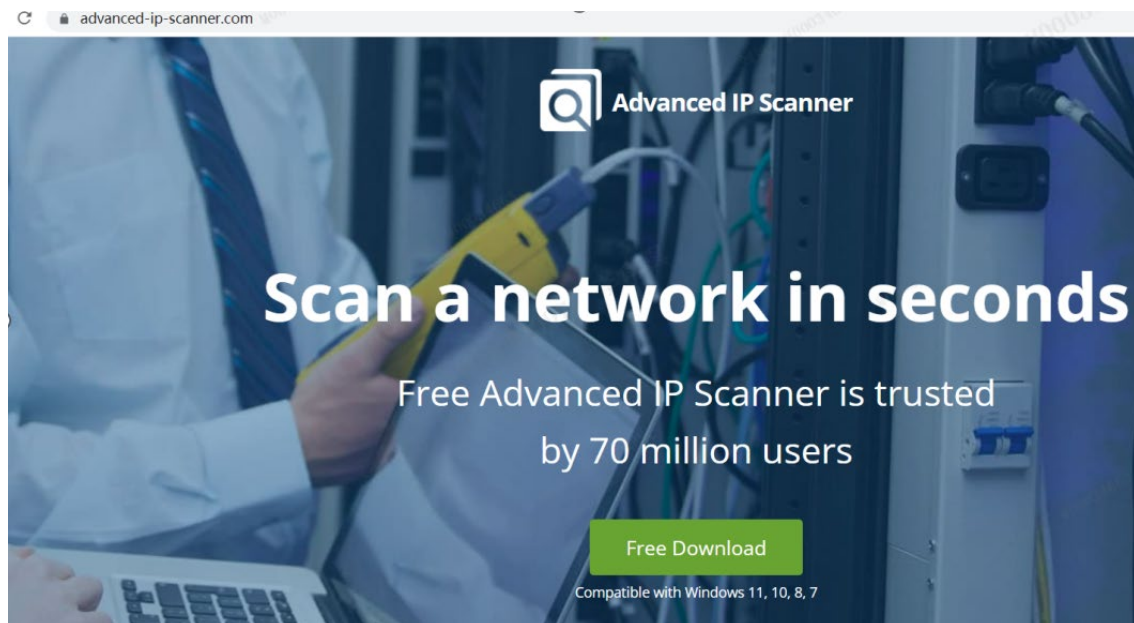
4.3 Redfish

The Redfish standard is a set of specifications that define an industry-standard protocol providing a RESTful interface for the management of servers, storage, and networking. With Redfish support, users can manage data center components centrally from a remote location via the internet. The user could send Redfish API commands via curl, a command-line tool for transferring data via URLs.

4.4 Find PMC IP address

Download the IP address scanning tool, Advanced IP Scanner on the website <https://www.advanced-ip-scanner.com/>.

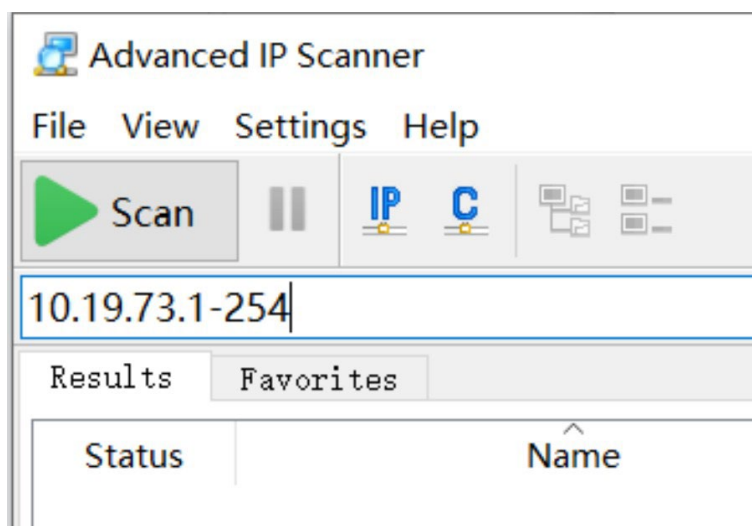
Figure 4.1 Download from the official website



4.4.1 Configure Advanced IP Scanner

Allocate IP address ranges and configure scanning IP ranges based on the DHCP server where PMC is located.

The IP address range assigned to the DHCP server where PMC is located is 10.19.181.xx. Fill in 10.19.181.1-254 in the advanced IP scheduler.

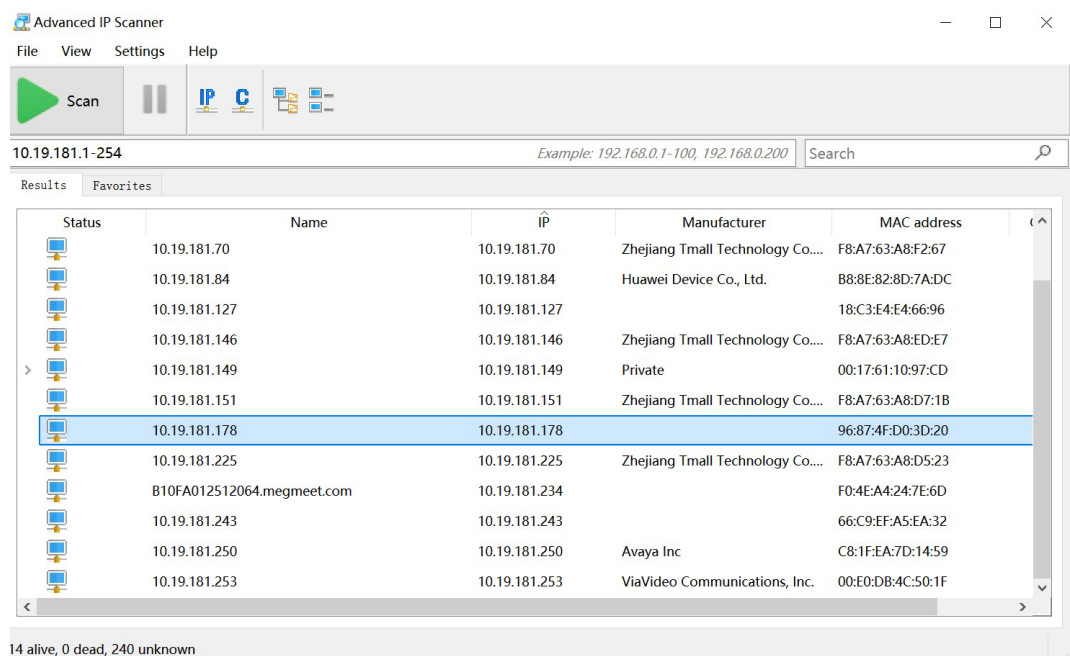
Figure 4.2 Configure Advanced IP Scanner

Search for the corresponding IP address based on the MAC address label attached to PMC. As shown in the figure below, the PMC MAC address is 96:87:4f:d0:3d:20.

Figure 4.3 Search for the corresponding IP address based on the MAC address label

Find the corresponding IP address based on the MAC address scanned by the Advanced IP Scanner.

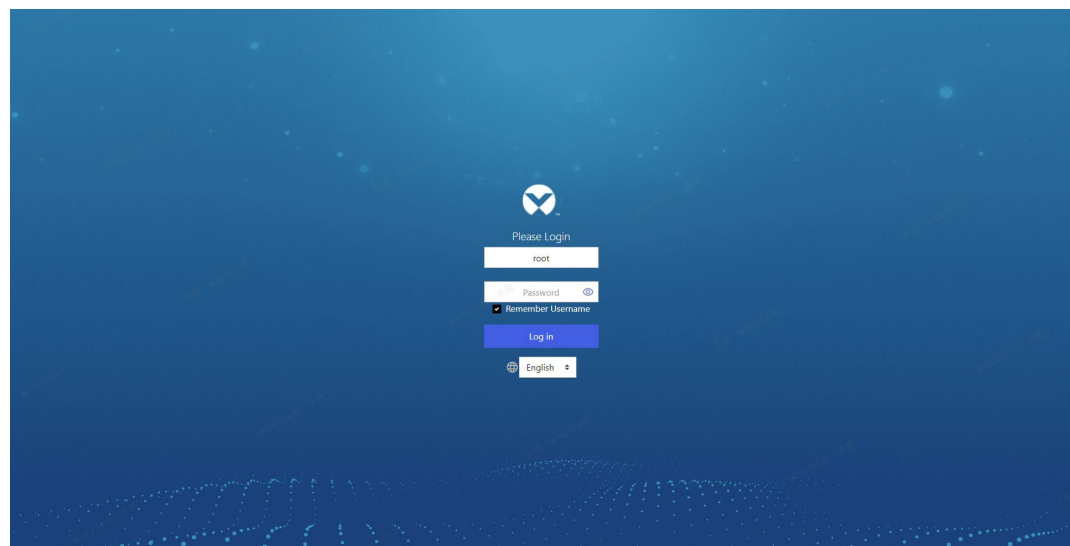
Figure 4.4 Scanner and corresponding IP



4.5 Login

The default login account is “root” with password “OpenBmc”. You should change the default password for security reasons. Select the Language you prefer, then enter your username and Password.

Figure 4.5 WebUI Login



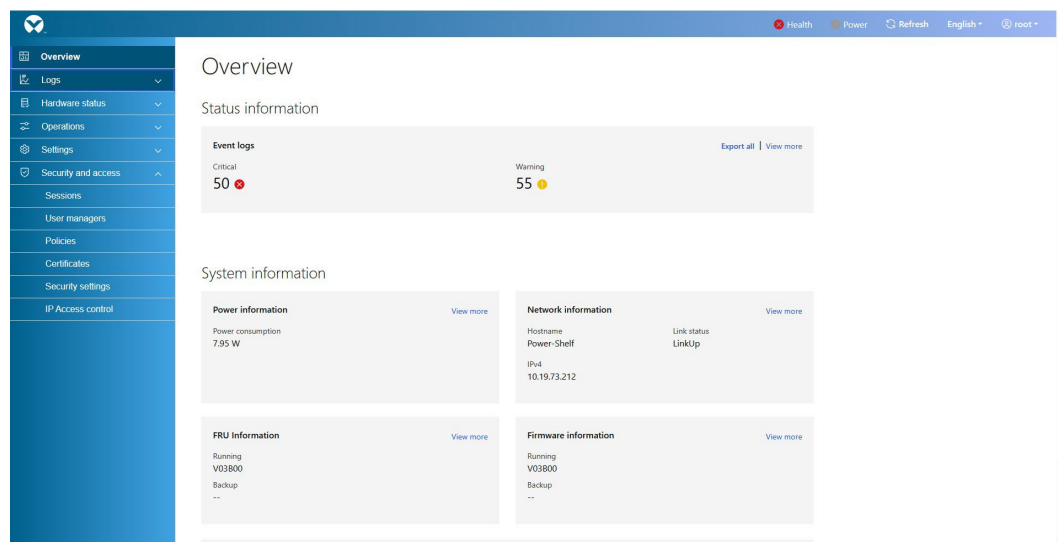
4.6 Web Page

In the Web Interface, after entering a valid Username and Password and clicking "Login", the "Homepage" window opens. The Home Page includes Overview, Logs, Hardware status, Operations, Settings, Security and Access.

4.6.1 Overview

The Overview page allows you to view Status Information and System Information.

Figure 4.6 Overview



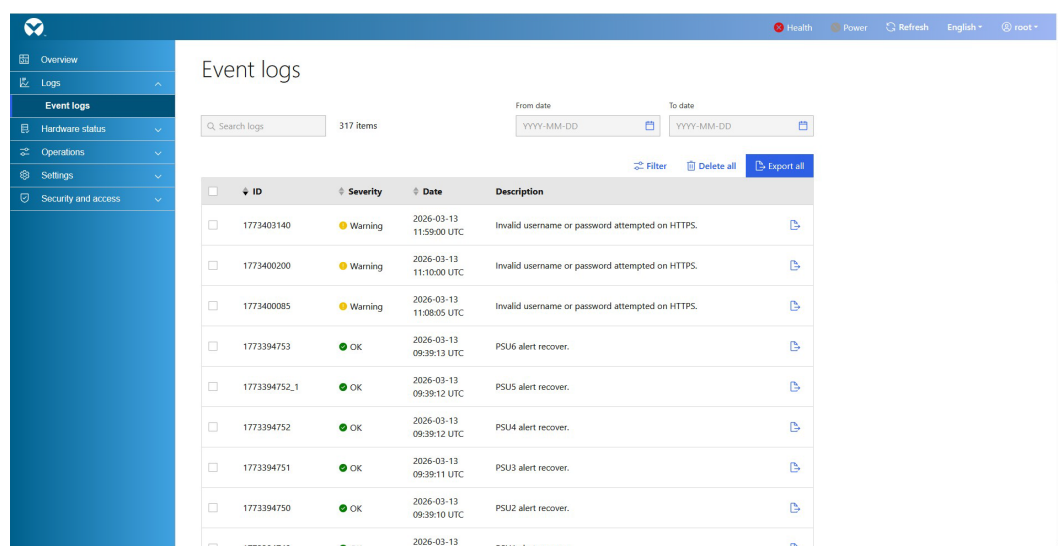
4.6.2 Logs

The PMC monitors the system and checks the status of each power unit. After a notification, warning, or fault event occurs, PMC will create a record for it.

The limit to the number of events created is 1000. PMC will move the older events to the database for historical records when the number of events hits the limit. Historical records are stored on internal eMMC storage.

Both the GUI and the Web API are available to manage historical events.

Figure 4.7 Event logs



4.6.3 Hardware Status

In the Hardware Status submenu, you can view the following: System information, FRU Information, PSU information, Sensors and Sensor readings.

System information

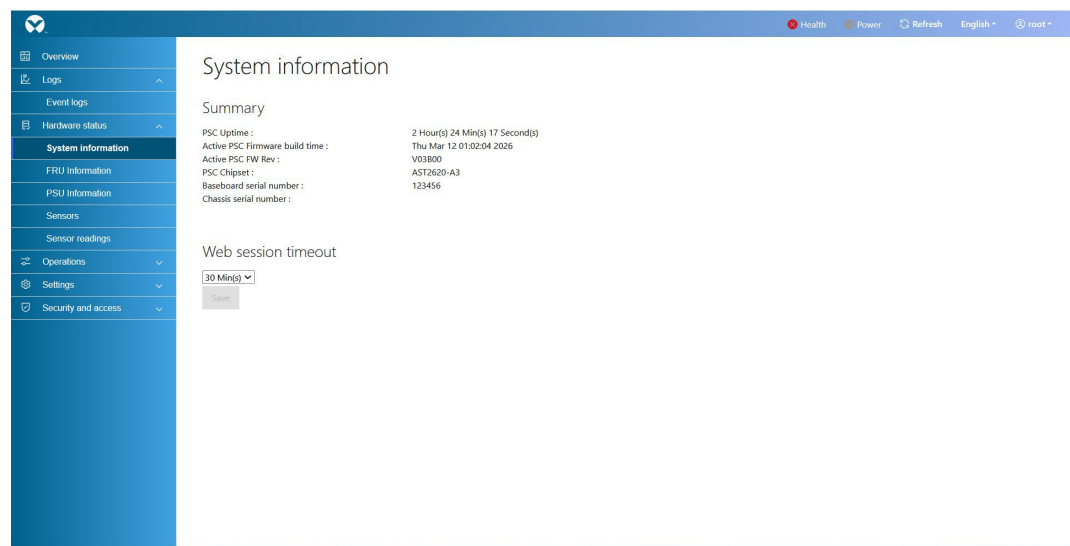
System information describes how to view core system details and adjust web session security settings.

The System information provides a quick overview of system runtime, firmware versions, and hardware serial numbers, and lets you set the automatic logout time for the web interface.

It also displays critical hardware identifiers, including the baseboard and chassis serial numbers, which are essential for system maintenance and support.

The web session timeout feature helps protect against unauthorized access by automatically logging out idle users, with configurable intervals and an option to save changes immediately.

Figure 4.8 System information

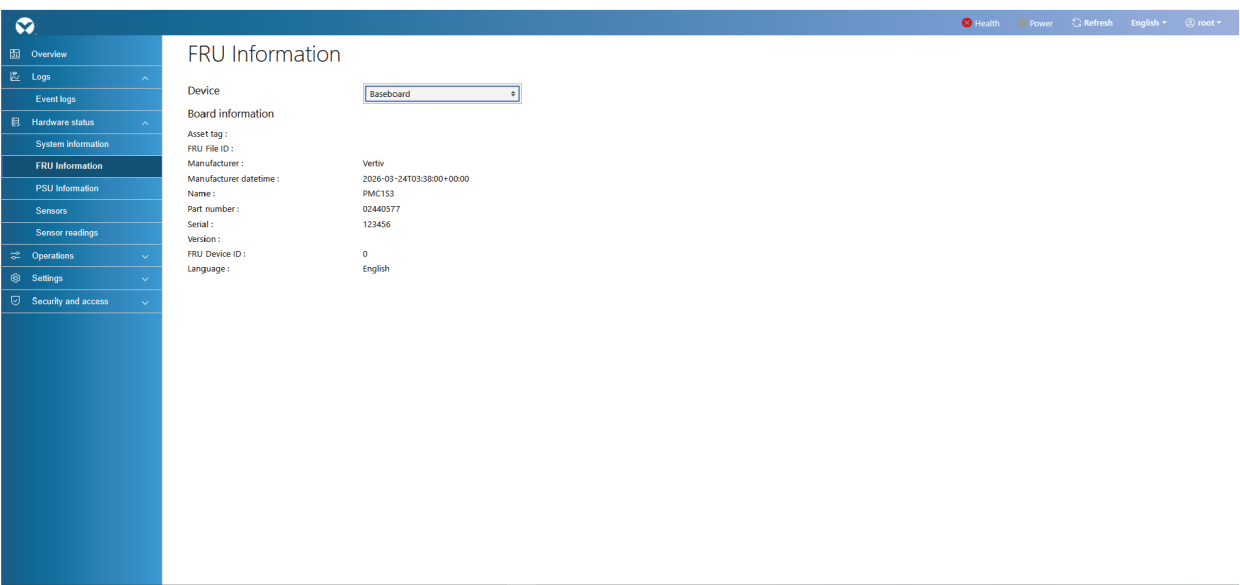


FRU Information

In the FRU (Field Replaceable Unit) Information, you can view system hardware components.

The FRU Information page provides manufacturing information, serial numbers, and part numbers for replaceable components, such as the baseboard, with a dropdown to select different devices.

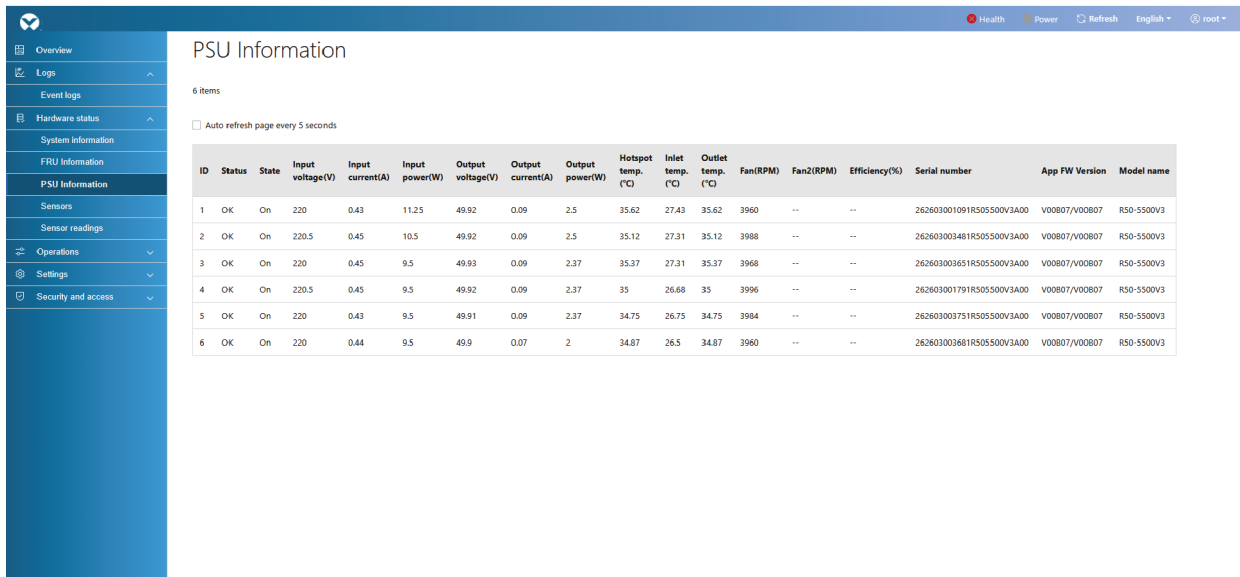
Figure 4.9 FRU Information



PSU information

In the PSU information, you can view the firmware version, model name, serial number, status, state, and sensor values for each power device.

Figure 4.10 PSU information



PSU Information

6 items

☐ Auto refresh page every 5 seconds

ID	Status	State	Input voltage(V)	Input current(A)	Input power(W)	Output voltage(V)	Output current(A)	Output power(W)	Hotspot temp. (°C)	Inlet temp. (°C)	Outlet temp. (°C)	Fan1(RPM)	Fan2(RPM)	Efficiency(%)	Serial number	App FW Version	Model name
1	OK	On	220	0.43	11.25	49.92	0.09	2.5	35.62	27.43	35.62	3960	--	--	262603001091R50S500V3A00	V00807/V00807	R50-5500V3
2	OK	On	220.5	0.45	10.5	49.92	0.09	2.5	35.12	27.31	35.12	3988	--	--	262603003481R50S500V3A00	V00807/V00807	R50-5500V3
3	OK	On	220	0.45	9.5	49.93	0.09	2.37	35.37	27.31	35.37	3968	--	--	262603003651R50S500V3A00	V00807/V00807	R50-5500V3
4	OK	On	220.5	0.45	9.5	49.92	0.09	2.37	35	26.68	35	3996	--	--	262603001791R50S500V3A00	V00807/V00807	R50-5500V3
5	OK	On	220	0.43	9.5	49.91	0.09	2.37	34.75	26.75	34.75	3984	--	--	262603003751R50S500V3A00	V00807/V00807	R50-5500V3
6	OK	On	220	0.44	9.5	49.9	0.07	2	34.87	26.5	34.87	3960	--	--	262603003681R50S500V3A00	V00807/V00807	R50-5500V3

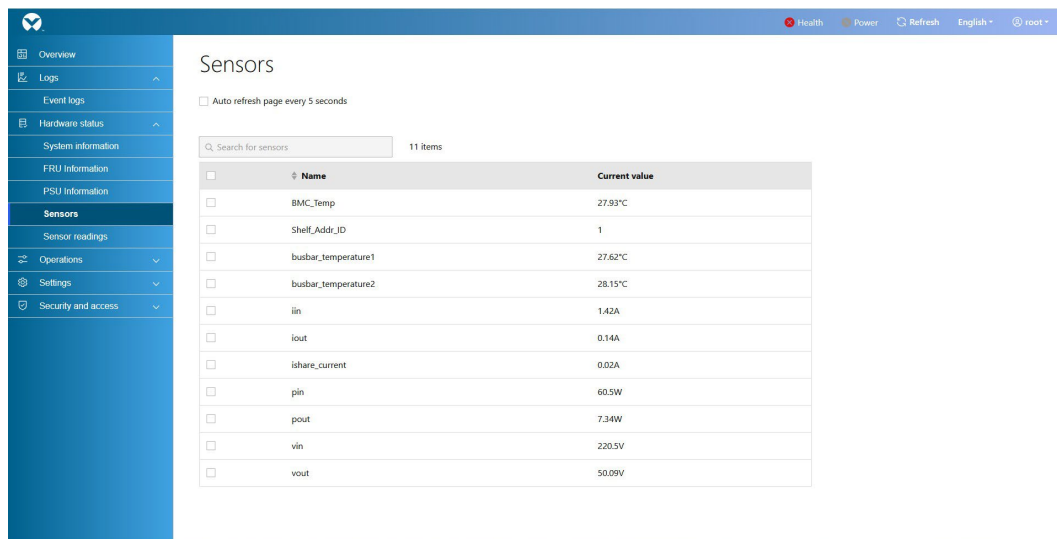
Sensors

In the Sensors, you can view sensor information. The following are supported sensor types:

Table 4.1 Sensor Types

Sensor Type	Unit
Temperature	Degree Celsius (°C)
Voltage	Volts (V)
Current	Amperps (A)
Fan speed	RPM
Power	Watts (W)
Percentage (CPU loading, storage usage, etc.)	Percent (%)
Frequency	Hertz (Hz)

Figure 4.11 Sensors information



Sensors

☐ Auto refresh page every 5 seconds

Search for sensors 11 items

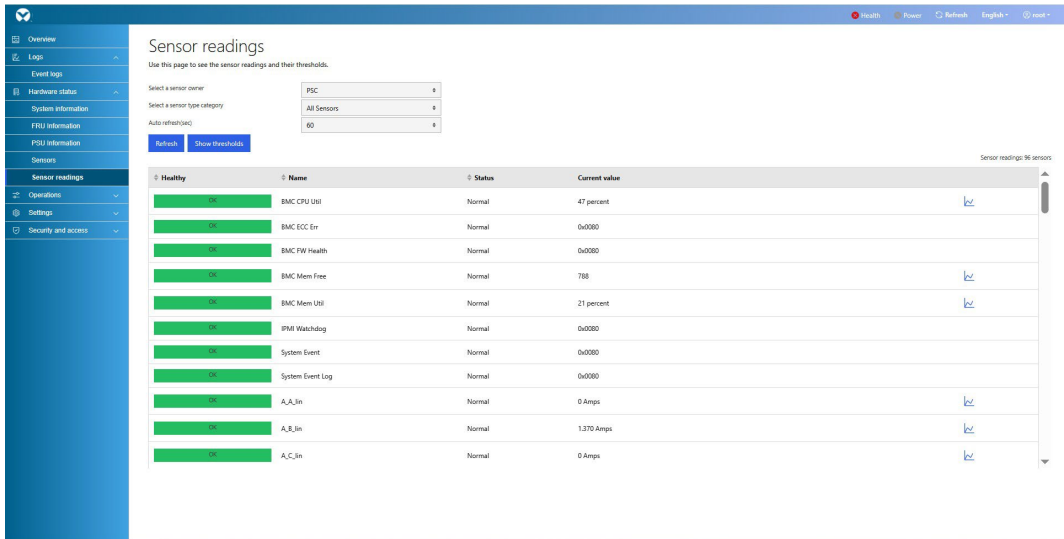
Name	Current value
BMC_Temp	27.93°C
Shell_Addr_ID	1
busbar_temperature1	27.62°C
busbar_temperature2	28.15°C
iin	1.42A
iout	0.14A
ishare_current	0.02A
pin	60.5W
pout	7.34W
vin	220.5V
vout	50.09V

Sensor Readings

In the Sensor Readings, you can review real-time sensor data and their operational thresholds.

The Sensor readings display live readings for system health metrics, allow filtering by sensor owner and type, and support auto-refresh to keep data current.

Figure 4.12 Sensor Readings



4.6.4 Operation

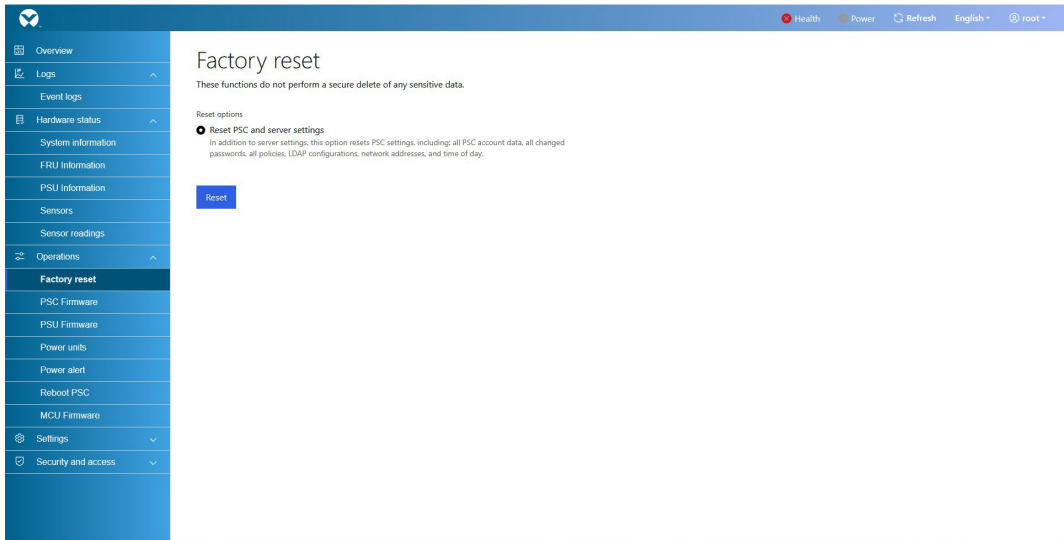
In the Operations submenu, you can view the following: Factory Reset, PMC Firmware, PSU Firmware, Power Units, Power Alert, Reboot PSC and MCU Firmware.

Factory Reset Operation

The factory Reset operation shows you how to conduct a factory reset on PMC.

The factory reset operation removes all logs and historical records, restores all manual settings (the IP address switches to DHCP mode automatically), and uses the default account. PMC will reboot when the factory reset is done. During the factory reset operation, the LEDs of the two RJ45 ports at the bottom of the front connector will stay on until PMC finishes the factory reset.

Figure 4.13 Factory Reset



Firmware Operation

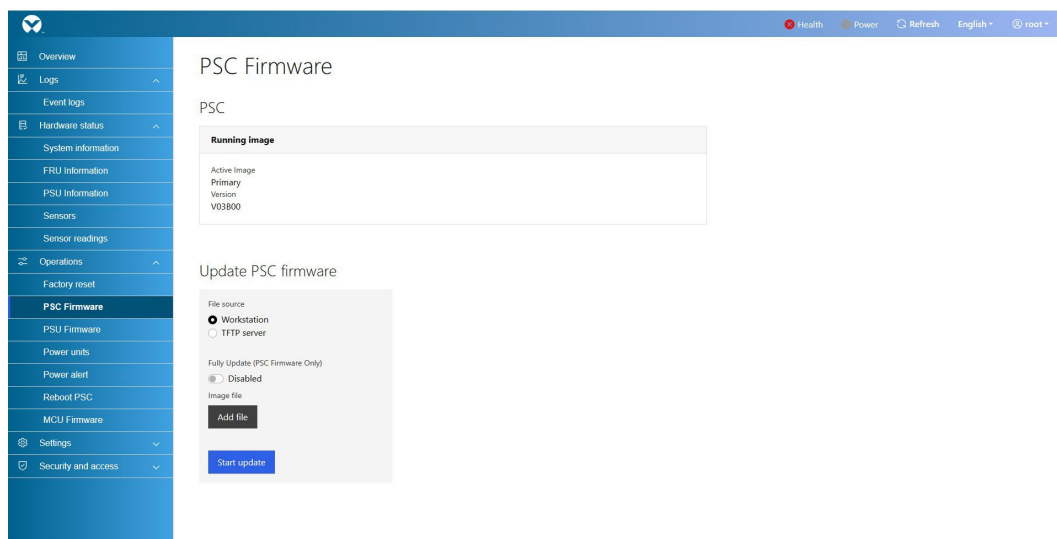
The Firmware shows you update the PMC firmware.

There are two SPI NOR flash memory devices. The primary one is for main usage, and the second one is for backup. When PMC could not successfully boot from the primary NOR flash, it would automatically boot from the backup NOR flash.

During the updating process, the LEDs of the RJ45 port at the bottom of the front connector will keep flashing. The firmware image is a tar file, which is an archive created by the tar utility. Only the non-running flash will be updated during a single upgrade. PMC will reboot after the firmware upgrade is successful.

It would take 10 to 15 minutes to complete the update.

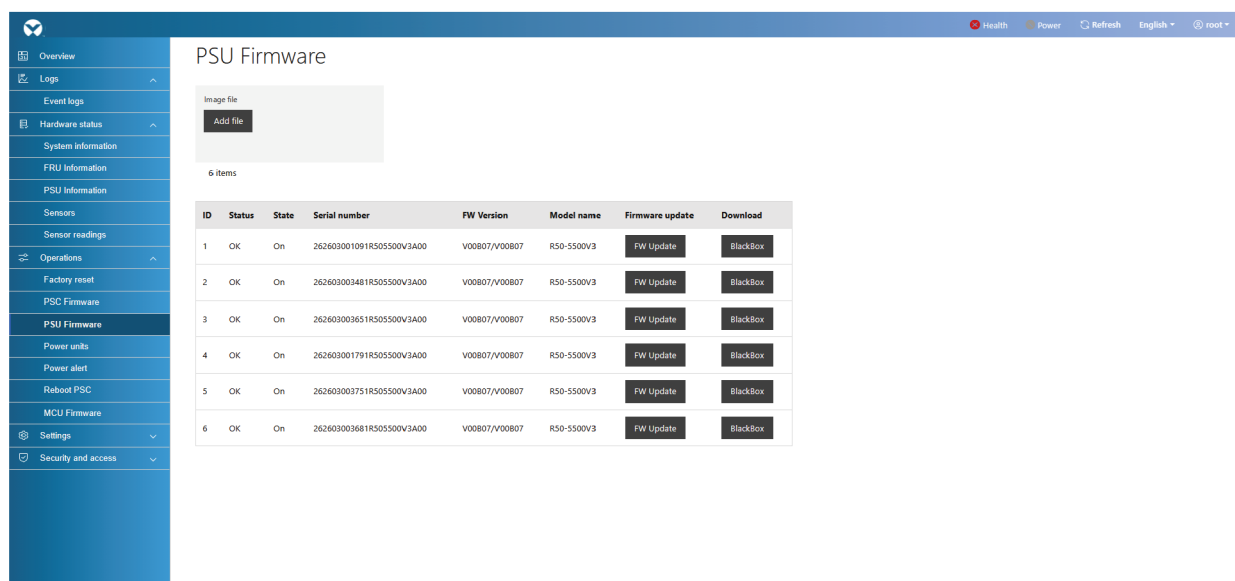
Figure 4.14 Firmware operation



PSU Firmware

The PSU Firmware shows you how to manage and update the PSU firmware. The PSU Firmware page lets you upload firmware images, view current PSU firmware versions, and initiate firmware updates or download diagnostic data.

Figure 4.15 PSU Firmware

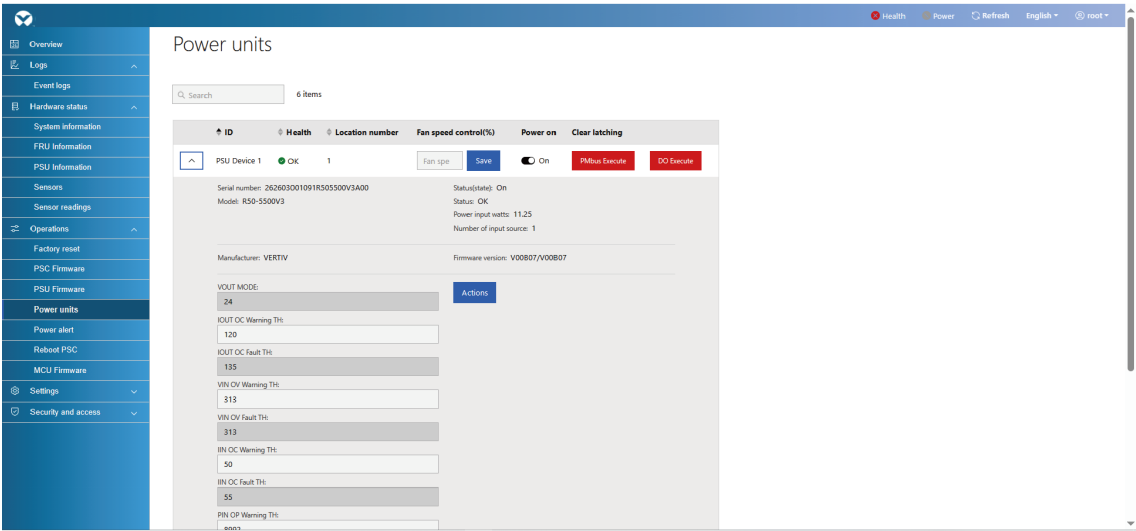


Power Units

The Power Units show you how to monitor, configure, and control the system's Power Supply Units (PSUs).

The Power Units page displays real-time health and operational data for each PSU and allows you to adjust fan speed, power-on/off states, and alert thresholds, with buttons to execute control commands and clear faults.

Figure 4.16 Power Units

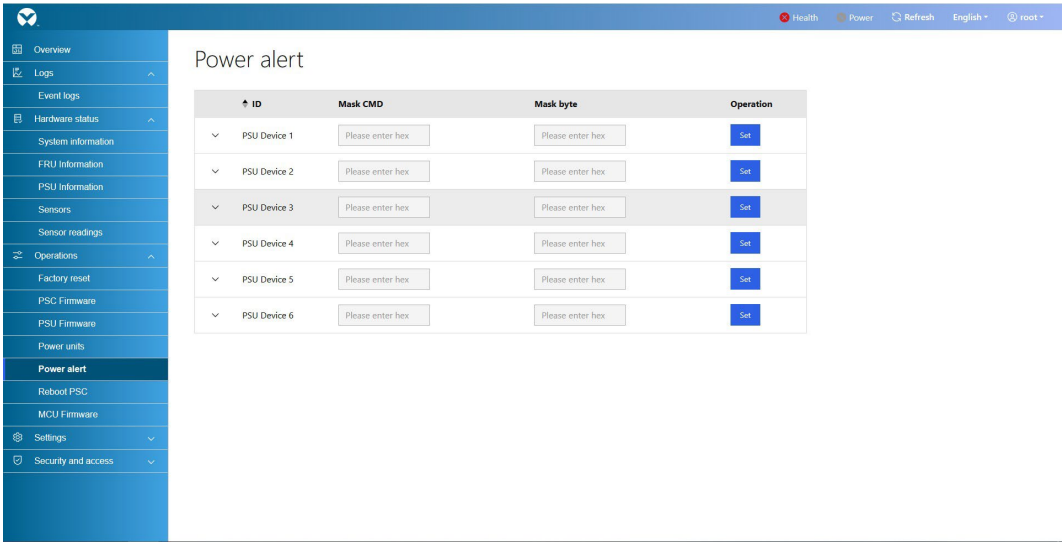


Power Alert

The Power Alert shows you how to manage and clear power-related system alerts.

The Power Alert page allows configuring alert masks and provides options to execute commands to clear active alerts from power devices.

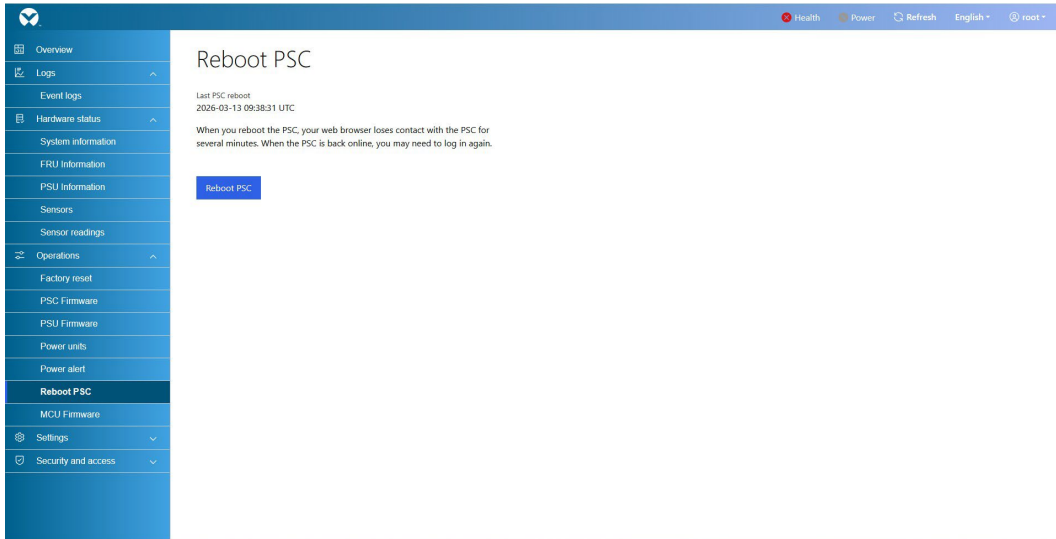
Figure 4.17 Power Alert



Reboot PSC Operation

The Reboot Operation shows you how to reboot the PMC.

Figure 4.18 Reboot PSC

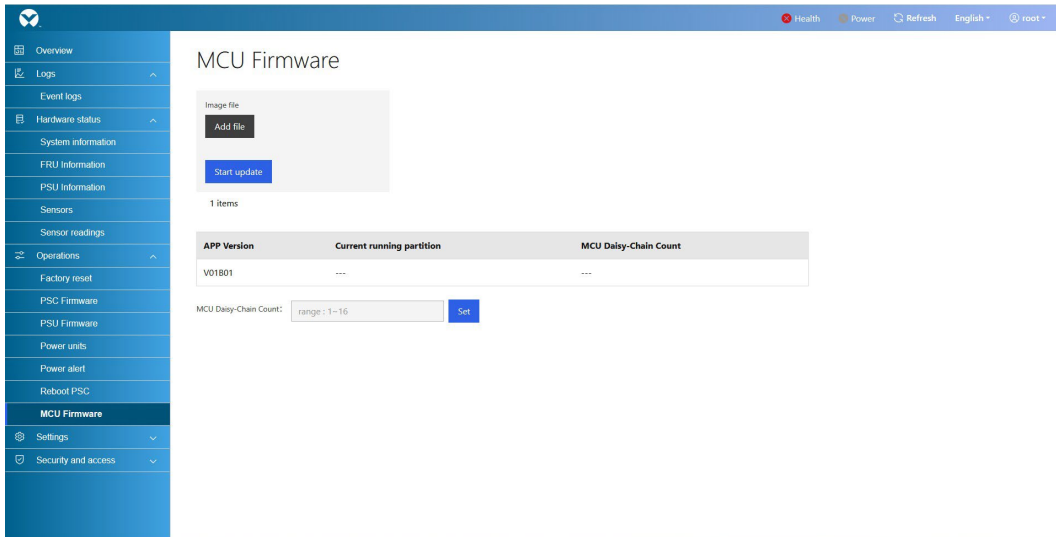


MCU Firmware

MCU Firmware shows you how to update the Microcontroller Unit (MCU) firmware and configure daisy chain settings.

MCU Firmware lets you upload firmware images, start updates, and set the number of devices in the MCU daisy-chain.

Figure 4.19 MCU Firmware



4.6.5 Settings

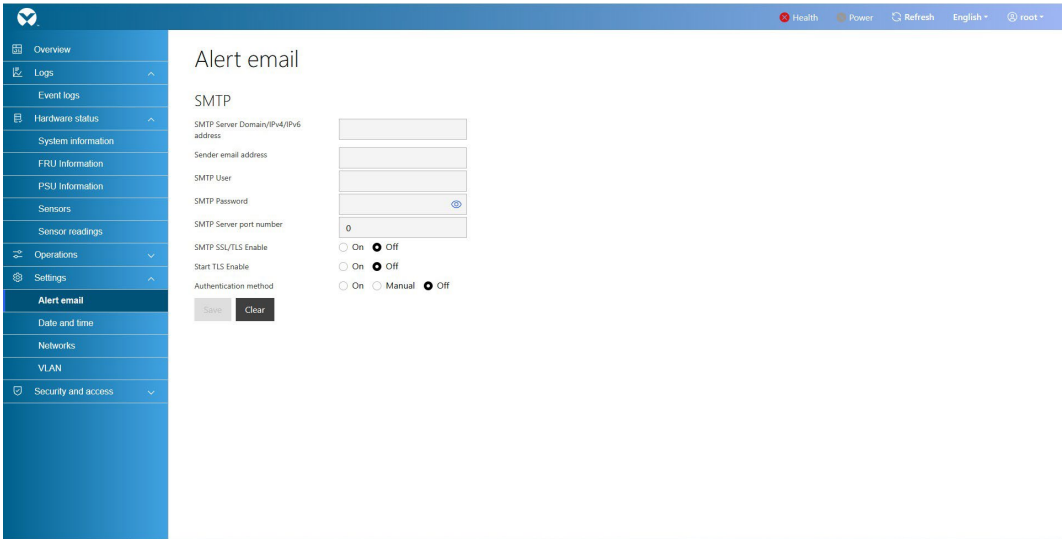
In the Settings submenu, you can view the following: Alert Email, Date and Time, Network configuration and VLAN.

Alert Email

Alert Email shows you how to configure email alerts for system events.

The Alert Email provides fields to set up SMTP server details, sender information, and security options for sending automated alert notifications.

Figure 4.20 Alert Email



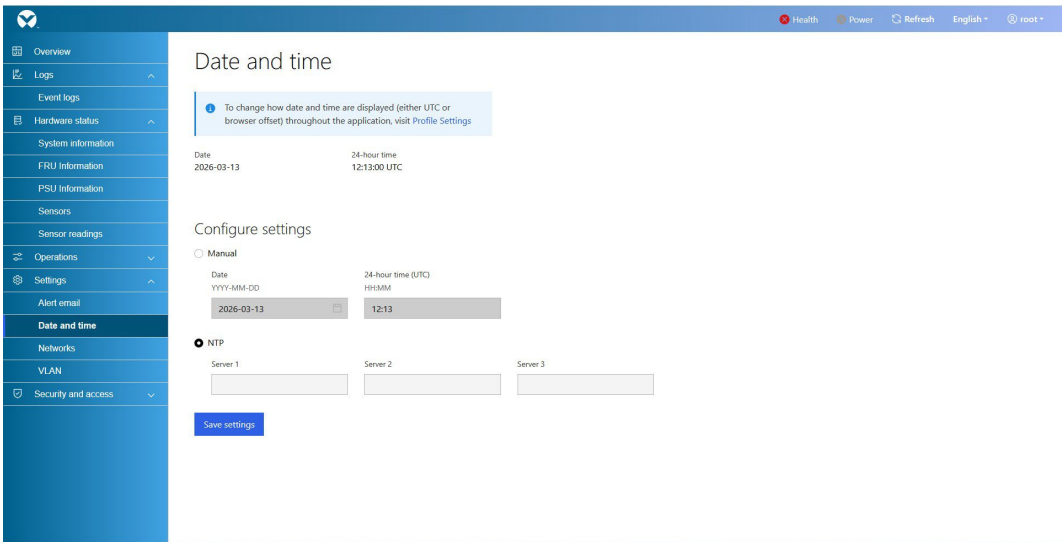
Date and time

Date and Time describe how to configure the date time settings.

Both NTP and manual methods are supported by PSC. You will need to set the date and time if you choose manual methods. With the NTP method, the date and time will be synchronized automatically via the NTP protocol.

The date and time display format can be modified via the "Profile Settings" (the blue text in the interface).

Figure 4.21 Date and time

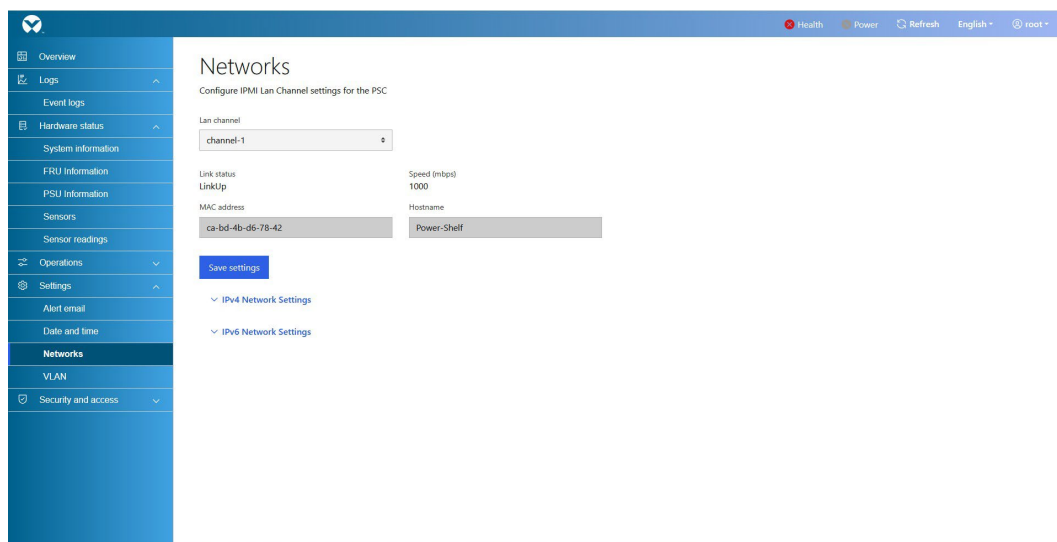


Network configuration

The Network configuration describes how to configure the network settings.

The PSC supports one 1000 Mbps Ethernet port. You could access all the information, including the link status, link speed, MAC address, IP address, and so on.

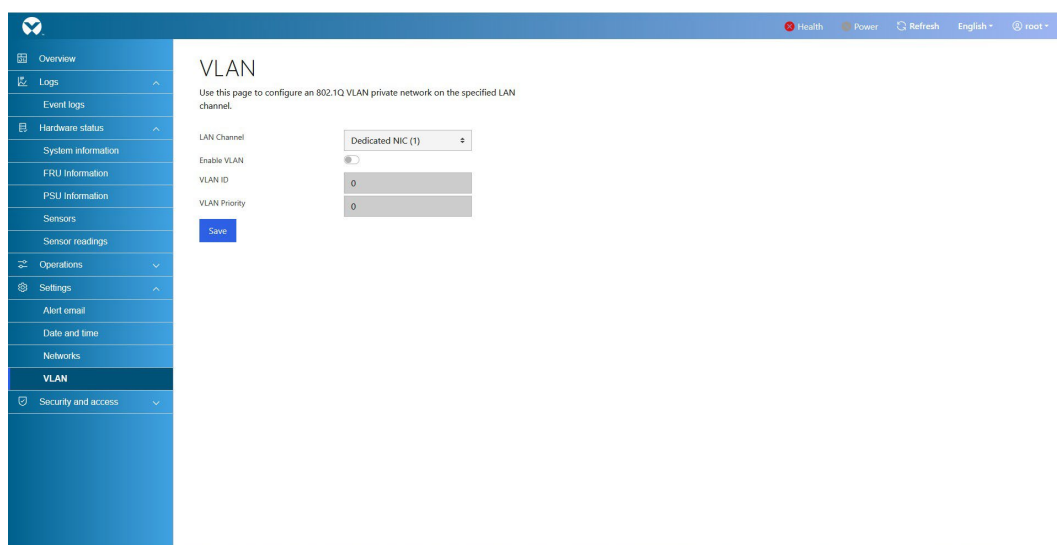
The eth0 interface is compatible with PoE(802.3af).

Figure 4.22 Network configuration

VLAN

The VLAN describes how to configure 802.1Q VLAN settings for network channels.

The VLAN page lets you enable VLAN, set a VLAN ID and priority for a selected LAN channel, and save the network configuration.

Figure 4.23 VLAN Configuration

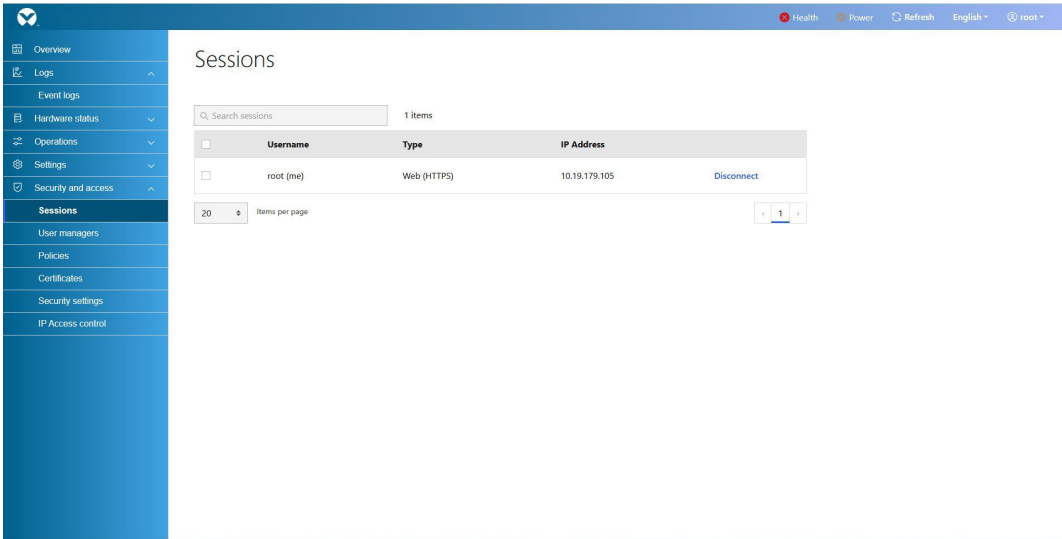
4.6.6 Security and Access

In the Security and Access submenu, you can view the following: Sessions, User Management, Policies, Certificates, Security settings, and IP Access Control.

Sessions

Sessions describe how to manage the connection sessions. You can get information about the connection session, including the IP address, user account, and more. With administrator privilege, you could also disconnect the connection session.

Figure 4.24 Sessions Configuration



User Management

The User Management section describes how to perform user management operations.

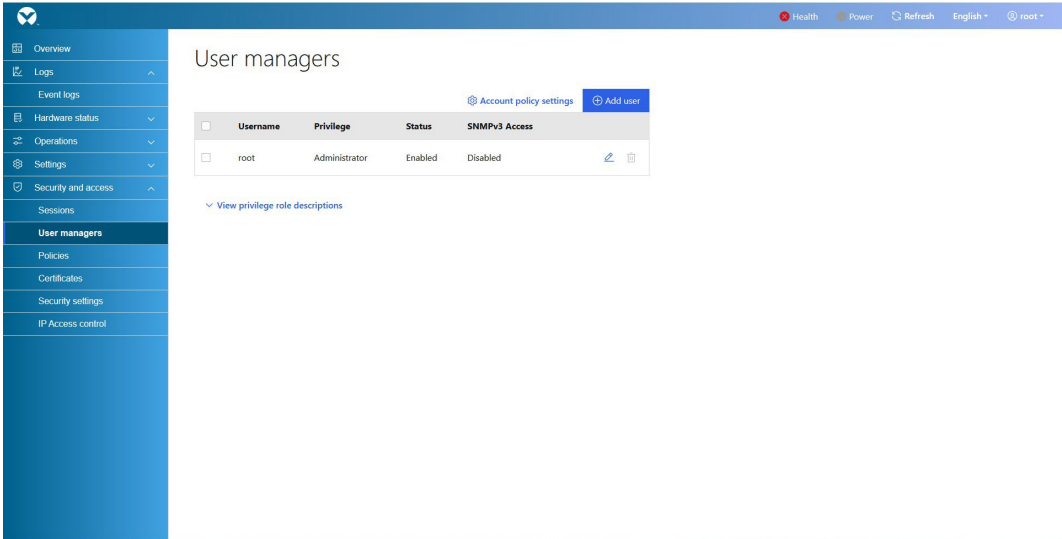
The PMC supports multiple privileged roles with specific purposes. User account could be any one of the privileged roles below:

Table 4.2 Privilege Roles

Privilege roles	Purpose
Admin	Users can configure all settings (including user management, network settings, and all configurations). Users will have full administrative access.
Operator	Users can view and control basic operations. This includes a host reboot, and so on. But users are not allowed to change to another configuration, such as a user or a network.
User	Users have read-only access and can't change the system's behavior.
No access	Users with no or empty privileges will be reported as having no access.

The password must be at least 8 characters long and cannot be a dictionary word.

Figure 4.25 User managers

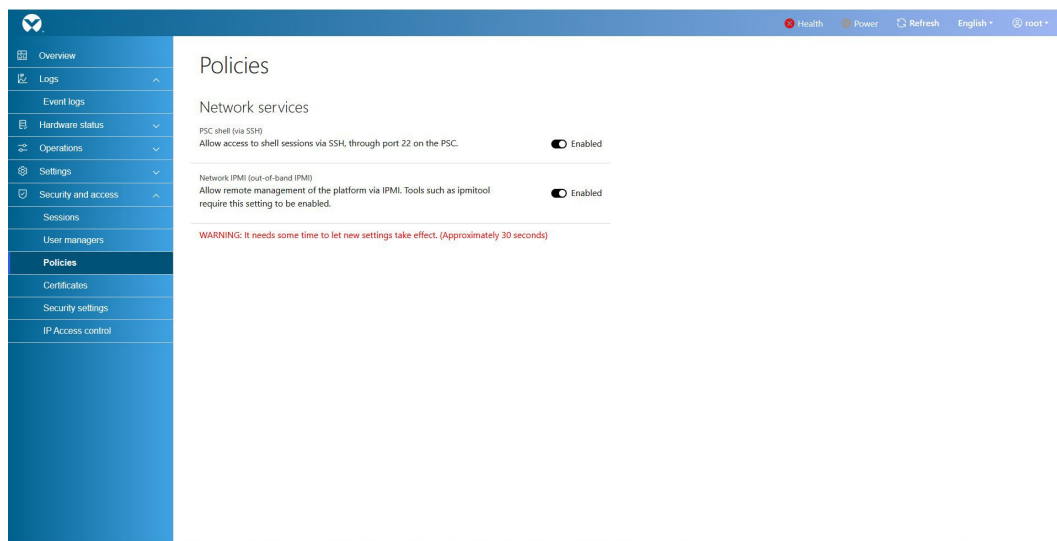


Policies

The Policies describe how to manage network service access policies.

The Policies page allows enabling or disabling remote management services, such as IPMI, with a warning that changes may take up to 30 seconds to apply.

Figure 4.26 Policies

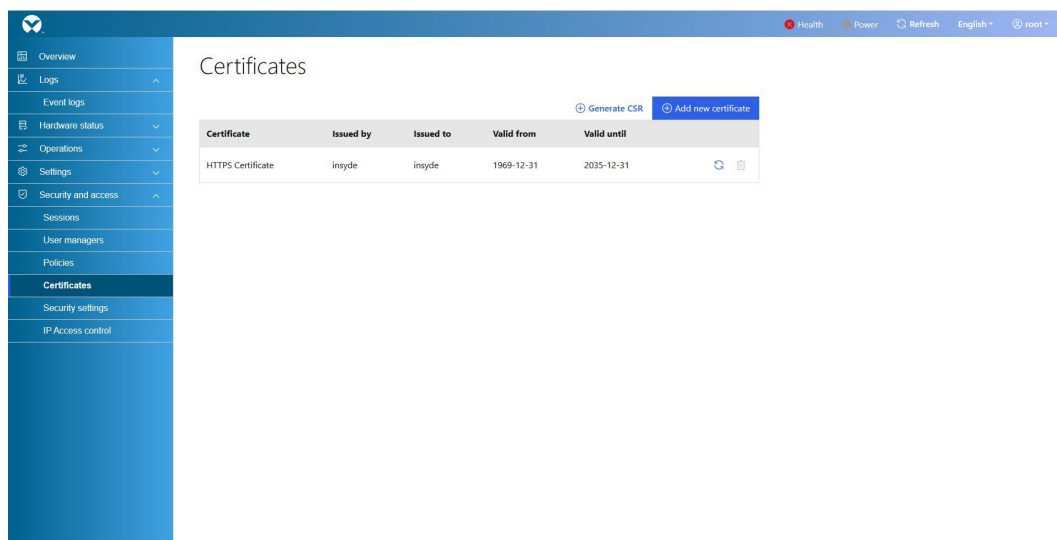


Certificates

The Certificates describe how to manage SSL/TLS certificates for secure communication.

The Certificates page lets you generate Certificate Signing Requests (CSRs) and add new certificates to the system.

Figure 4.27 Certificates

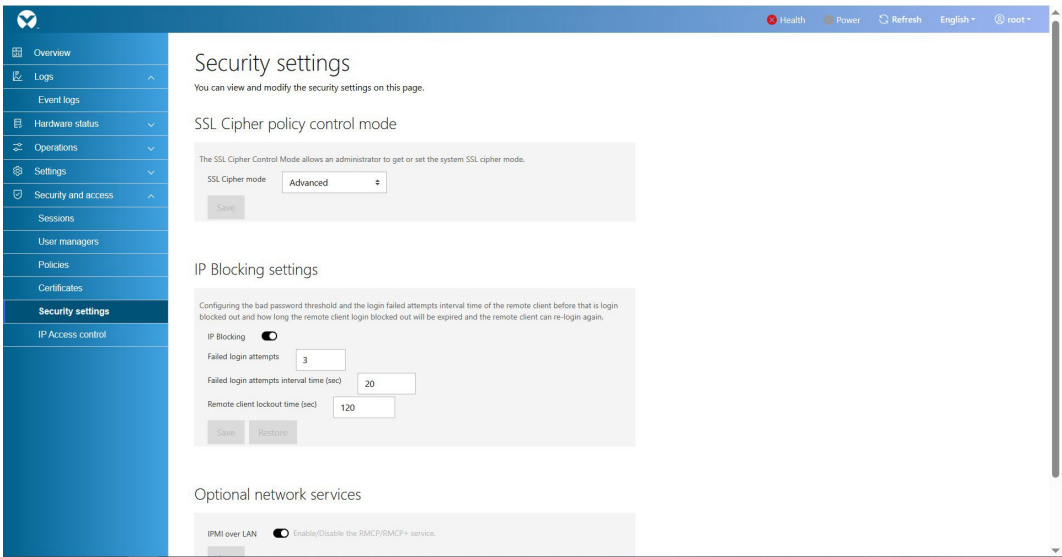


Security settings

The Security settings describe how to configure system security parameters.

The Security settings page allows setting the SSL cipher policy, configuring IP blocking rules for failed login attempts, and managing port security settings.

Figure 4.28 Security Settings

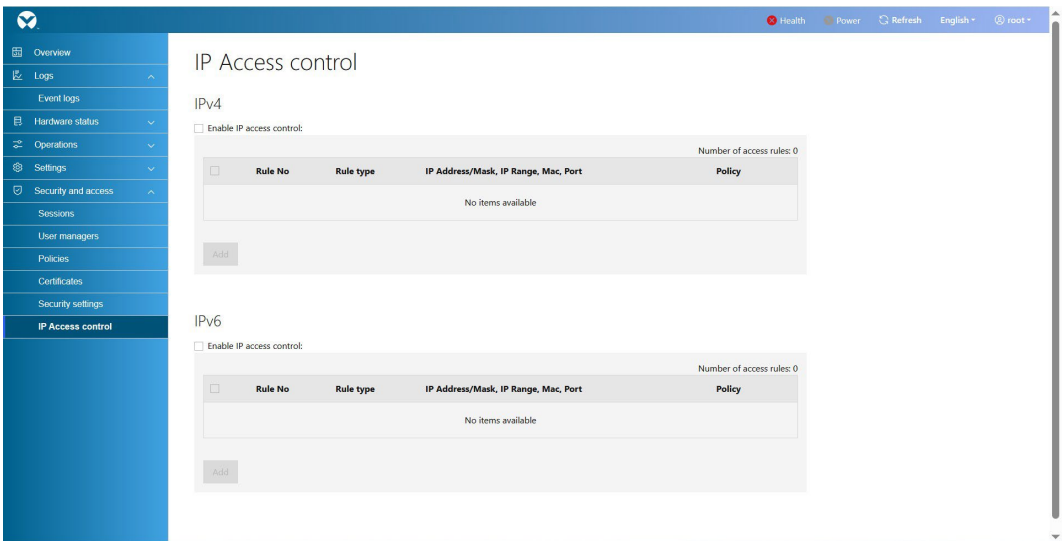


IP Access Control

The **IP Access Control** describes how to configure IP-based access control rules for the system.

The **IP Access Control** allows you to enable or disable IPv4 and IPv6 access control separately, and to create custom rules (by IP address, range, or port) to allow or restrict access to the system, with an Add button to configure new access policies.

Figure 4.29 IP Access Control



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