

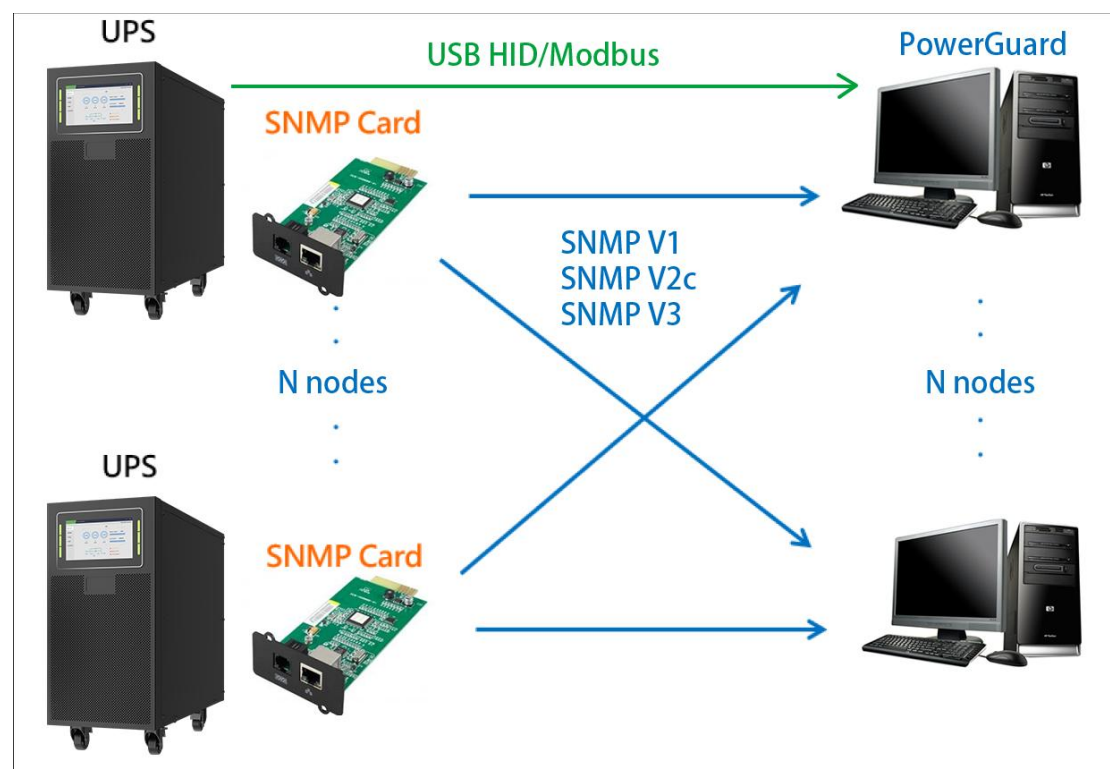
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1. Introduction

PowerGuard is a UPS monitoring and automatic shutdown management tool. The software continuously collects real-time operational data from UPS units; when the power supply fails, the UPS relies solely on its battery to sustain load operation for a limited period, during which PowerGuard automatically initiates a secure shutdown of the operating system to safeguard both equipment and data.

The figure below shows the connection topology, PowerGuard supports communication with UPS units via USB HID, Modbus, or SNMP.



1.1 Functions and Features

1. Supports SNMP V1, V2c, and V3
2. Supports real-time monitoring of the UPS and records historical alarms
3. Provide installation packages for mainstream operating systems including Windows, Linux, and macOS
4. Supports USB HID, Modbus RTU/ASCII/TCP access methods
5. Supports saving other program files on Windows and macOS
6. Supports email notifications with different alert levels

1.2 Recommended Operating System

Windows 10,11

Linux Ubuntu 18+

Linux Ubuntu Server 18+

Linux CentOS 7+

VMWare ESXi 7+

macOS 12+

To support additional operating systems, please contact our technical support.

2. install

2.1 Linux

2.1.1 Installation Procedure

Run the terminal in the folder

executive command “sudo bash install.sh”

computational results

```
=====
                        PowerGuard Installation
=====
[1/4] Installing files
[2/4] Creating global commands
[3/4] Creating menu entry
[4/4] Creating autostart

=====
Installation completed successfully!
Commands:
    powerguard
    pgc
=====
```

```
damir@ubuntu:~/Desktop/powerguard$ sudo bash install.sh
[sudo] password for damir:
=====
PowerGuard Installation
=====
[1/4] Installing files
[2/4] Creating global commands
[3/4] Creating menu entry
[4/4] Creating autostart
=====
Installation completed successfully!
Commands:
  powerguard
  pgc
=====
```

2.1.2 Unloading Procedure

Run the terminal in the folder
executive command `sudo bash uninstall.sh`
computational results
Removing PowerGuard...
Uninstall completed.

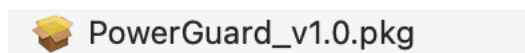
The `pgc` command is only available when no gui is present. It can replace gui's functionality. For usage details, refer to `pgc-h`.

```
damir@ubuntu:~/Desktop/powerguard$ sudo bash uninstall.sh
Removing PowerGuard...
Uninstall completed.
```

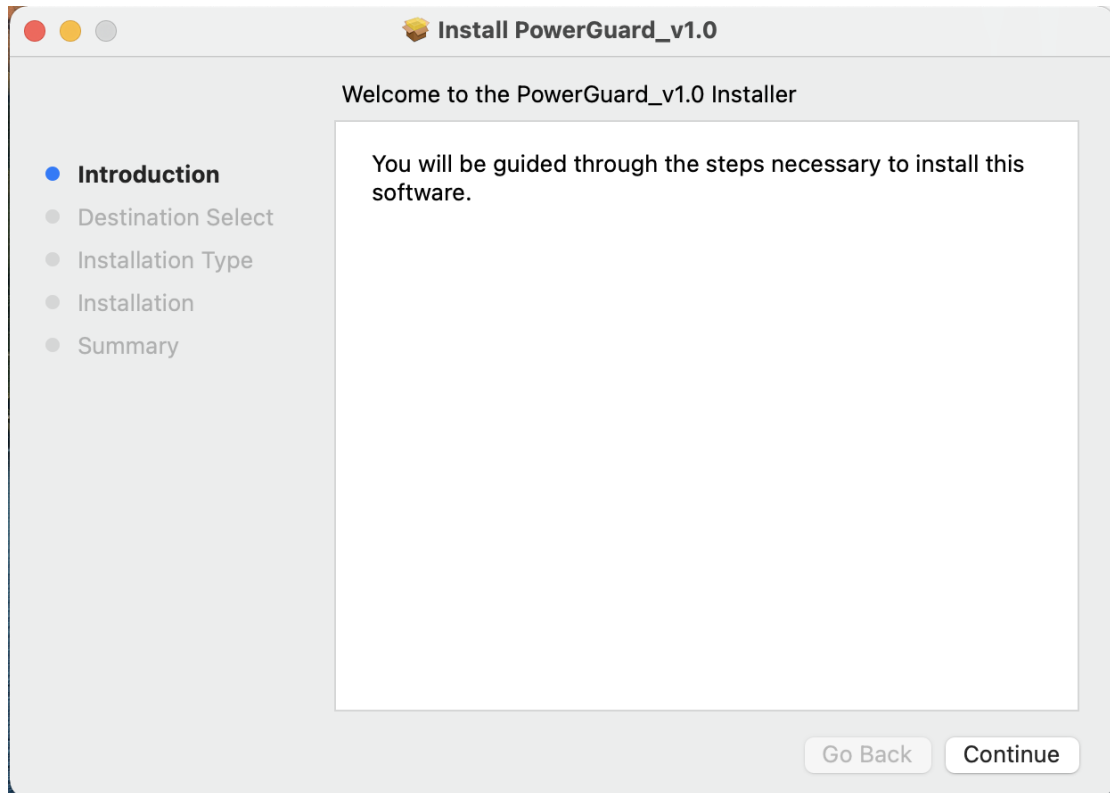
2.2 macOS

2.2.1 Installation Procedure

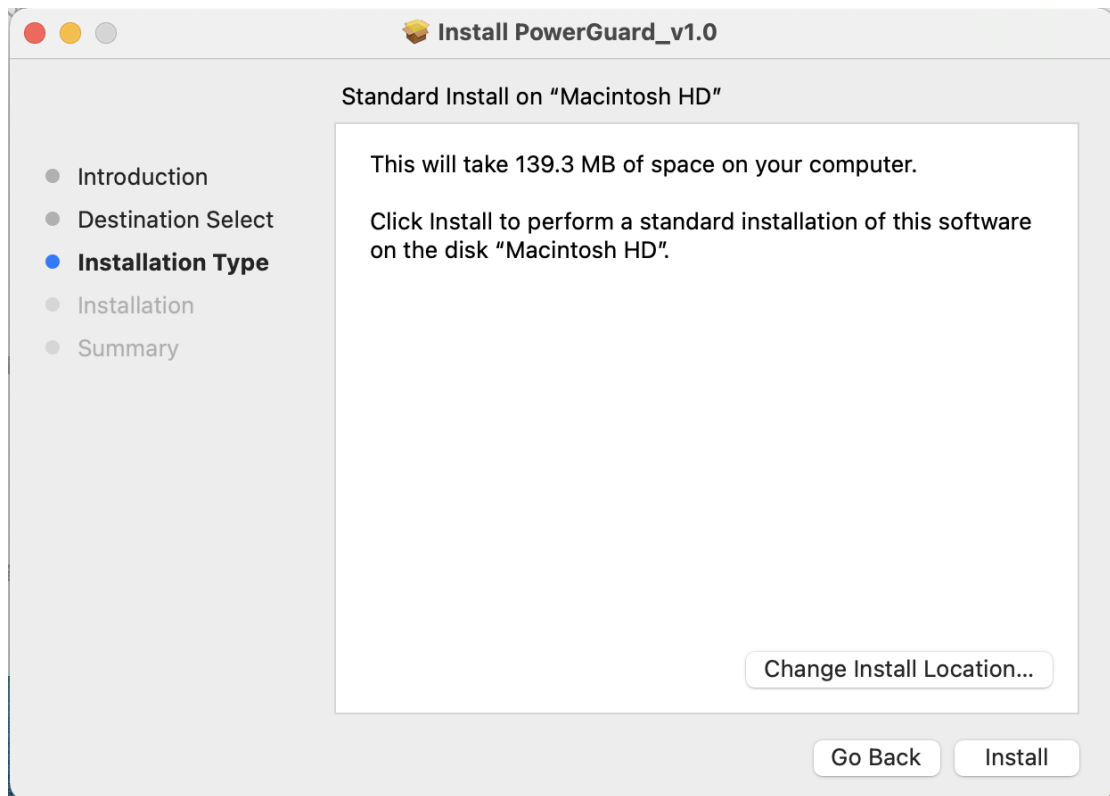
1. Double-click the installation package to proceed.



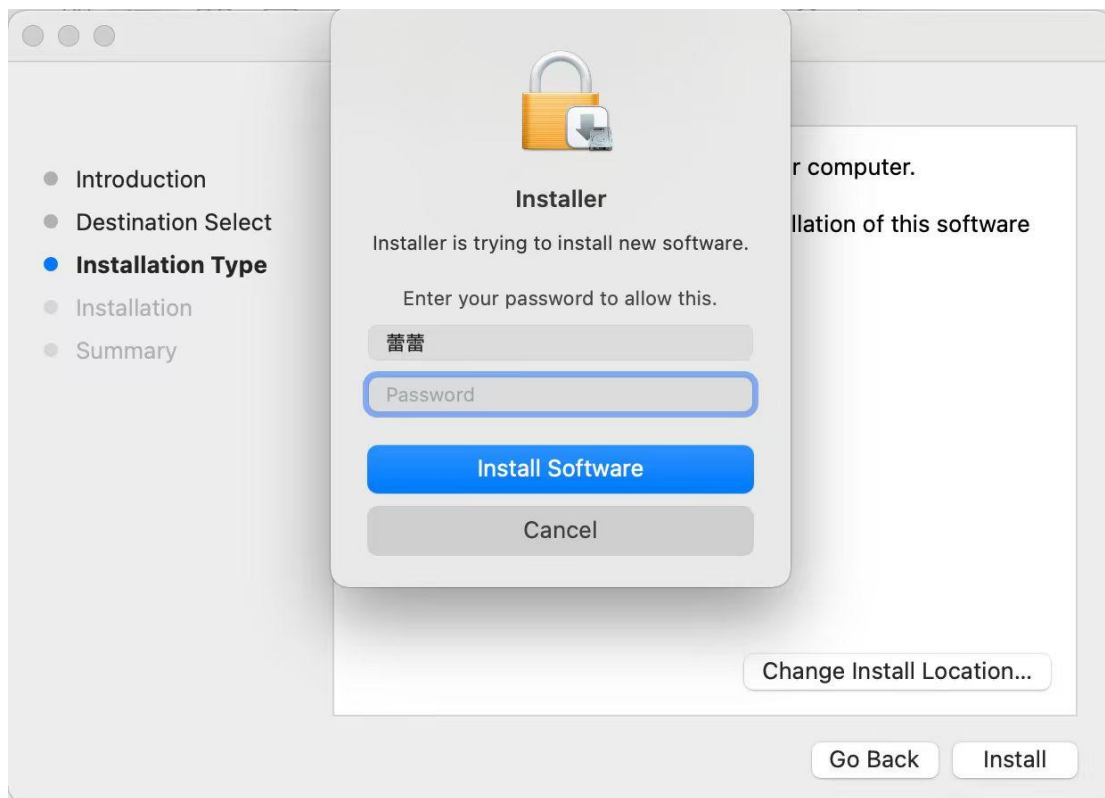
2. Click the Continue button in the pop-up interface.



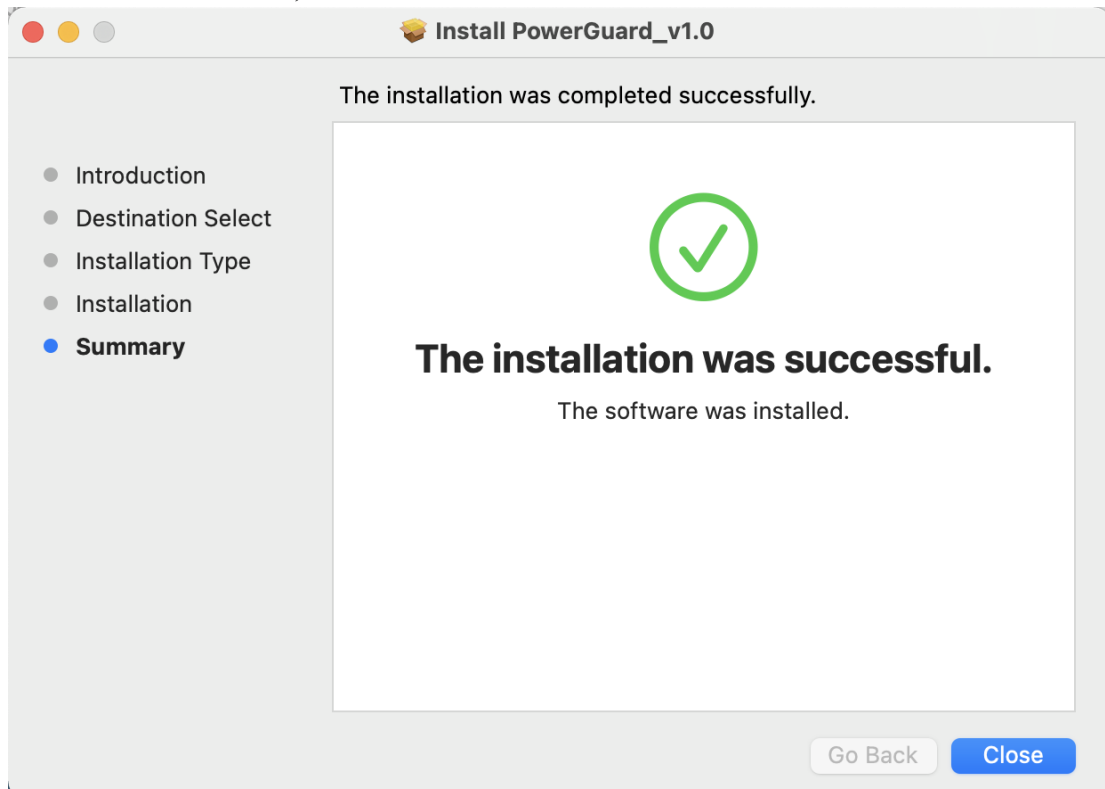
3. To change the installation location, click the "Change Installation Location..." button. By default, click the "Install" button.



4. After entering the password, click the Install Software button.

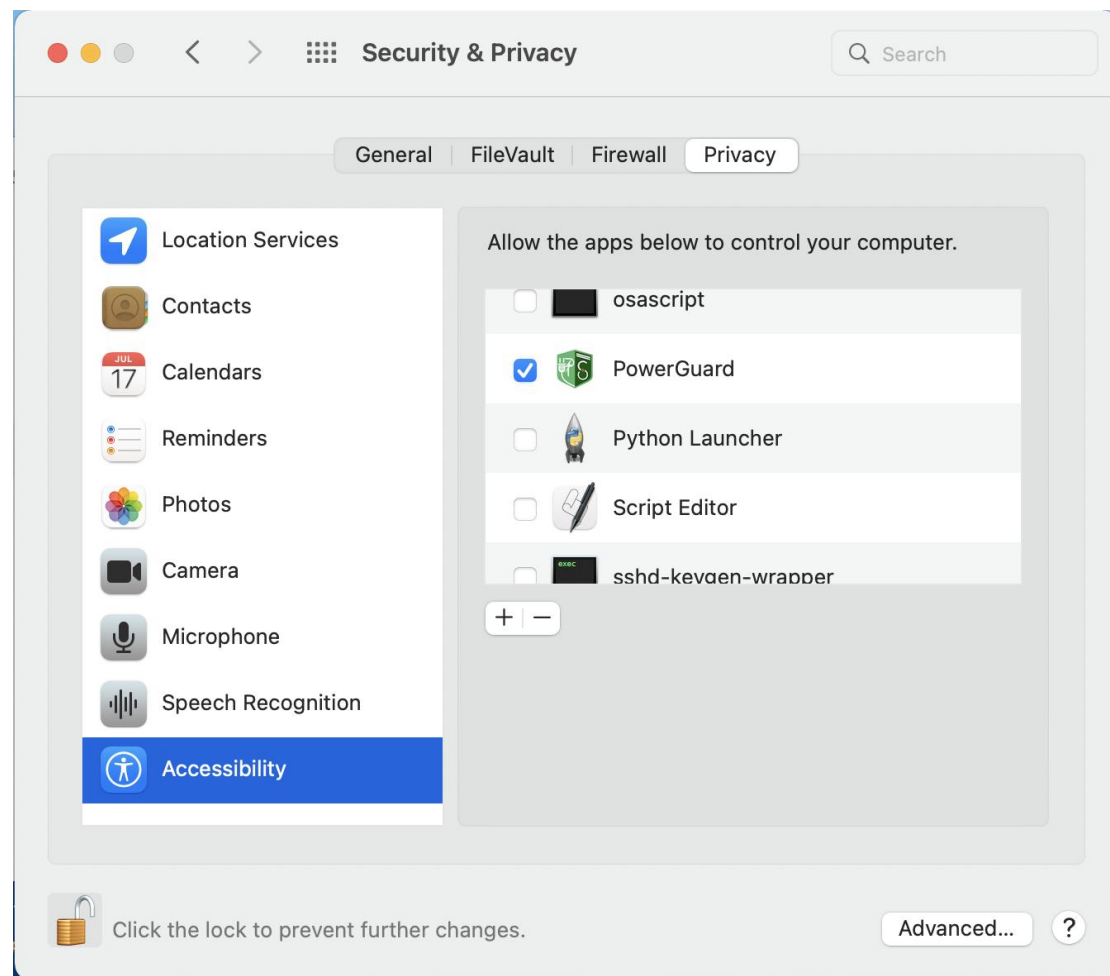


5. After installation, click the Close button



6. In your computer settings, go to Security and Privacy, click Accessibility, then select

PowerGuard from the Apps Control section under Allow on the right side.



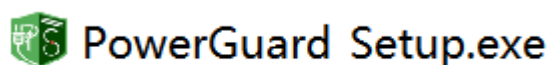
2.2.2 Unloading Procedure

As with common application uninstallation methods, simply turn off PowerGuard completely, then find PowerGuard in "Finder" and move it to the trash can.

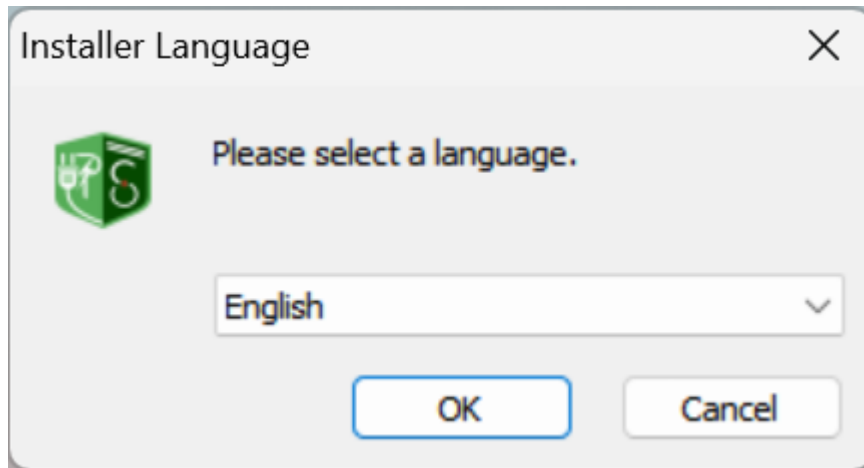
2.3 Windows

2.3.1 Installation Procedure

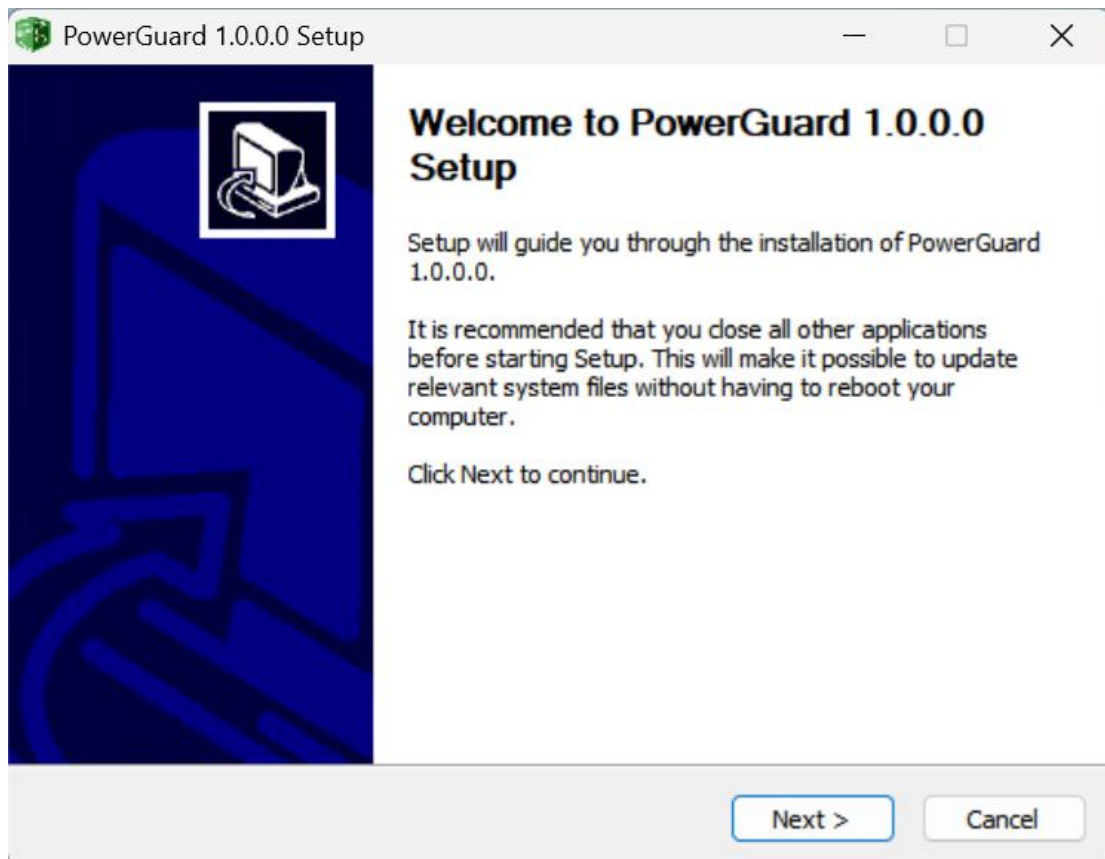
1. Right-click and select Run as Admin. If you are logged in as an administrator, double-click to run it directly.



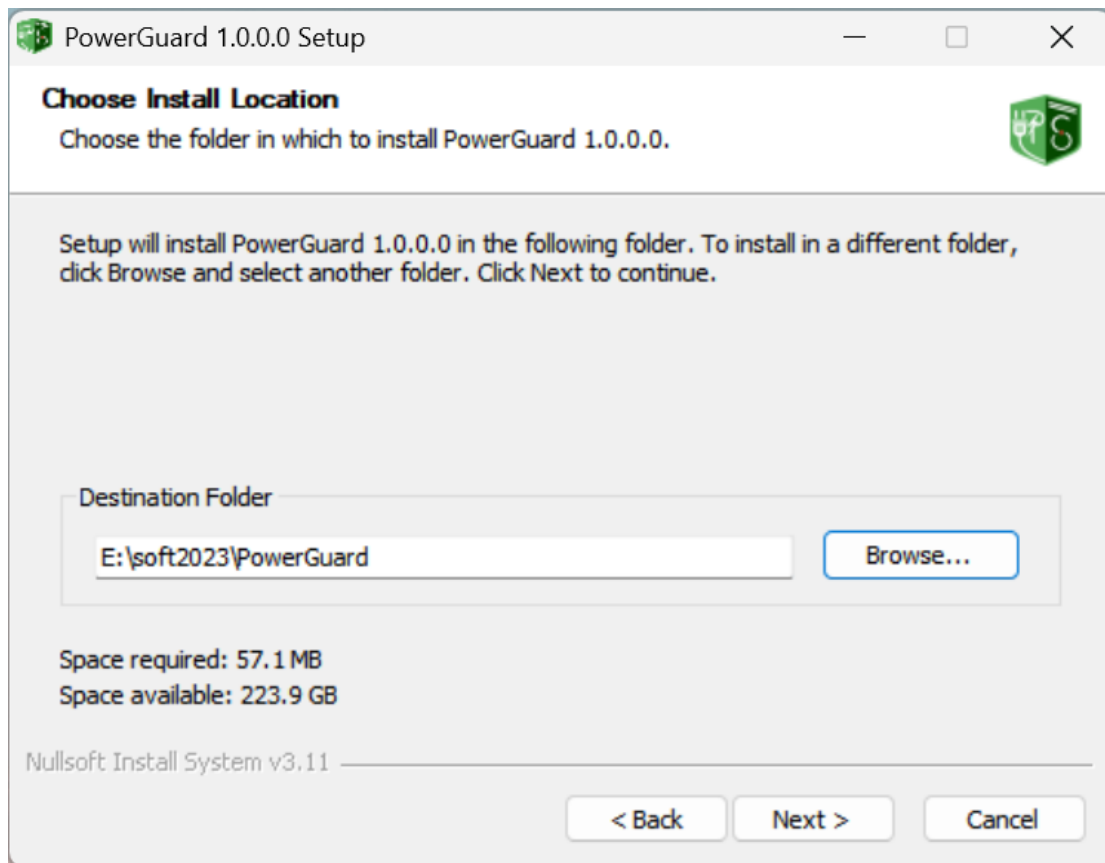
2. Select your preferred language and click "OK" .



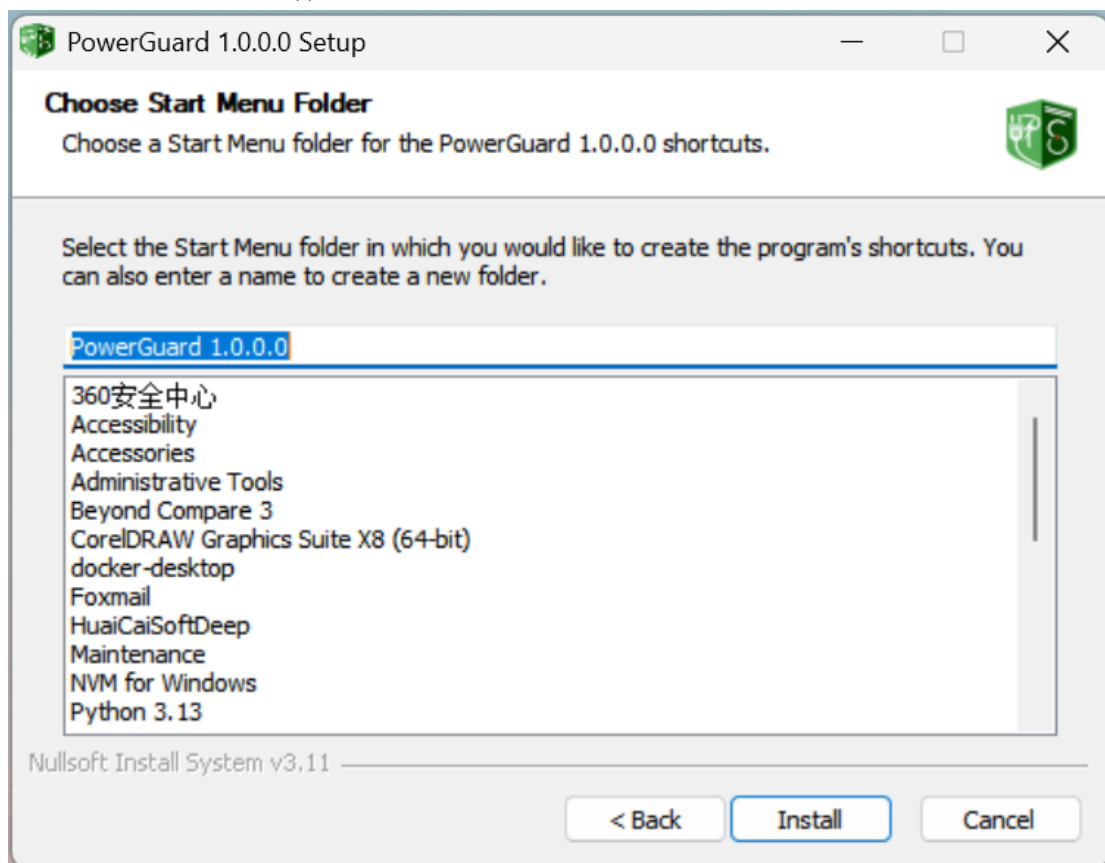
3. Click the Next (N) button.



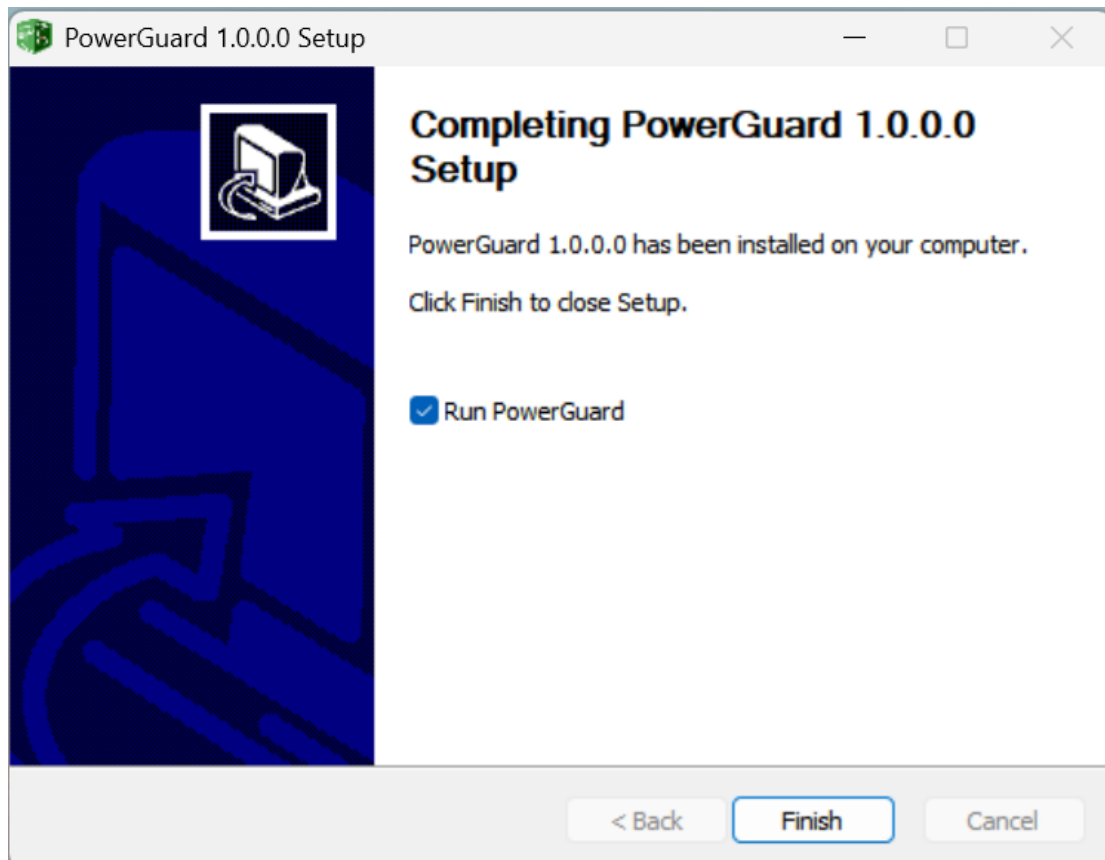
4. Click Browse (B)... to select the installation location, then click "Next (N)>" .



5. Click the Install (I) button to install.

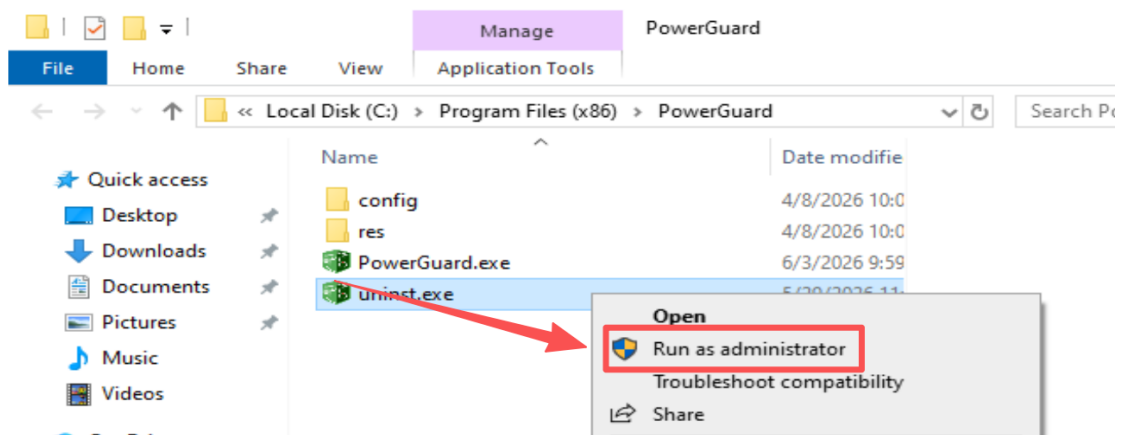


6. Click the Complete (F) button to finish software installation.

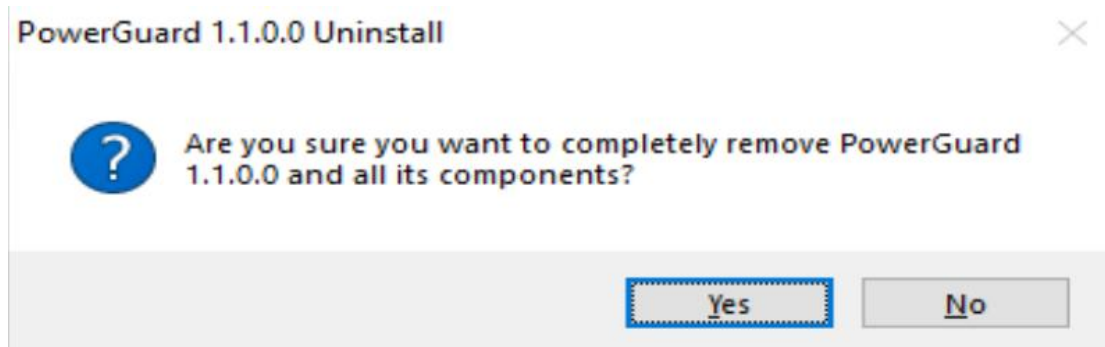


2.3.2 Unloading Procedure

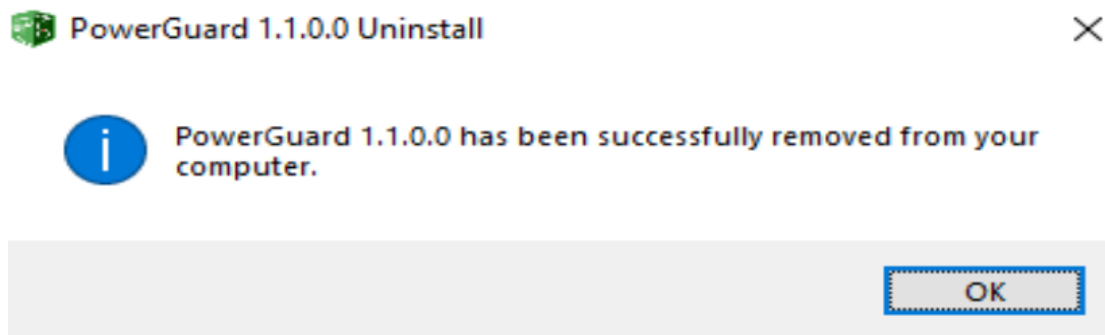
1. Follow the standard Windows uninstallation procedure. Open the PowerGuard installation directory (default path: C:\Program Files (x86)\PowerGuard), locate the uninstall.exe file, right-click it, and run it as administrator; if you are already an administrator, simply double-click to launch the uninstaller.



2. Click Yes after the confirmation window appears



3. After successful uninstallation, the following pop-up window will appear

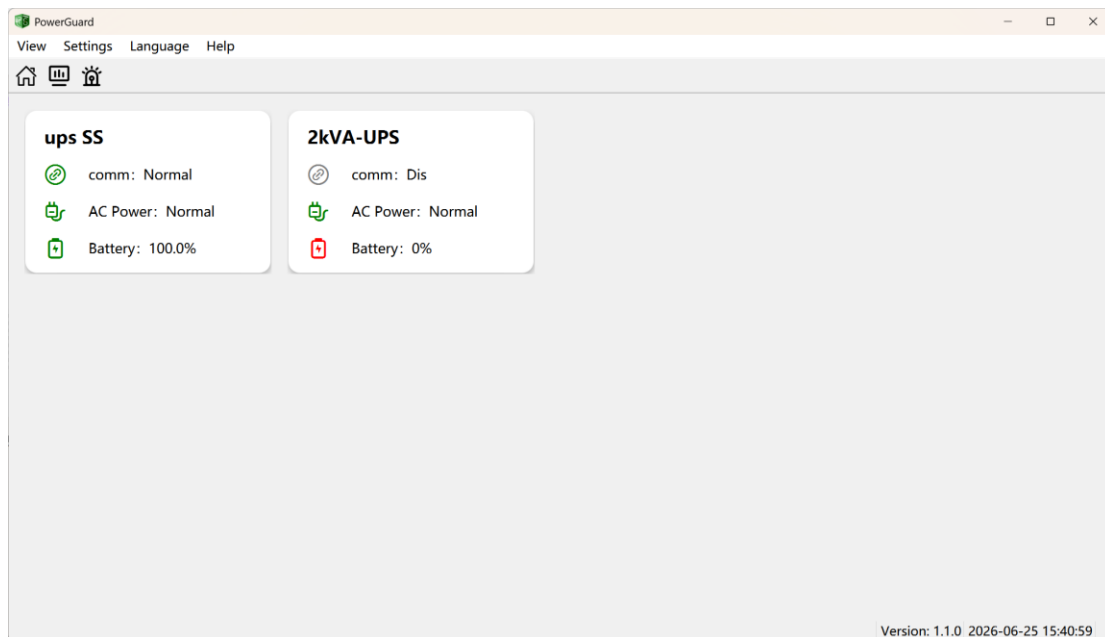


3. Interface Introduction

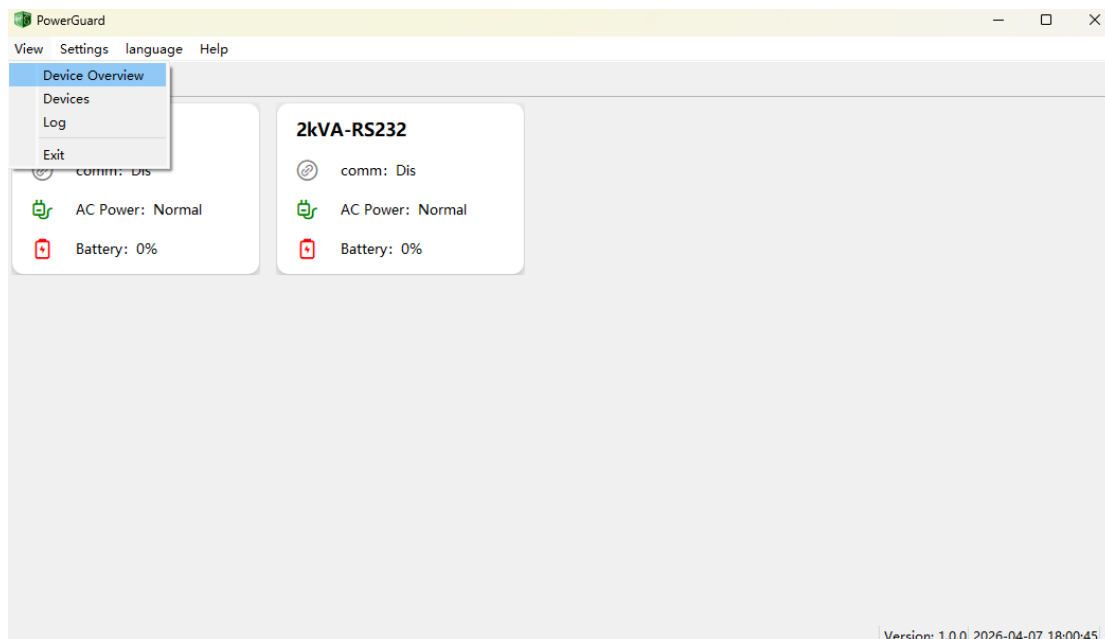
PowerGuard features three main interfaces. Tap the    icon in the upper-left corner to switch between Device Overview, Device Details, and Current/Historical Alarms from left to right. You can also use the View menu to change interfaces or exit.

Note: Using the View> Exit menu and the close button in the upper-right corner of the window will only hide the main window; the program will automatically minimize to the system tray. To exit the program completely, click the tray icon.

3.1 Device Overview

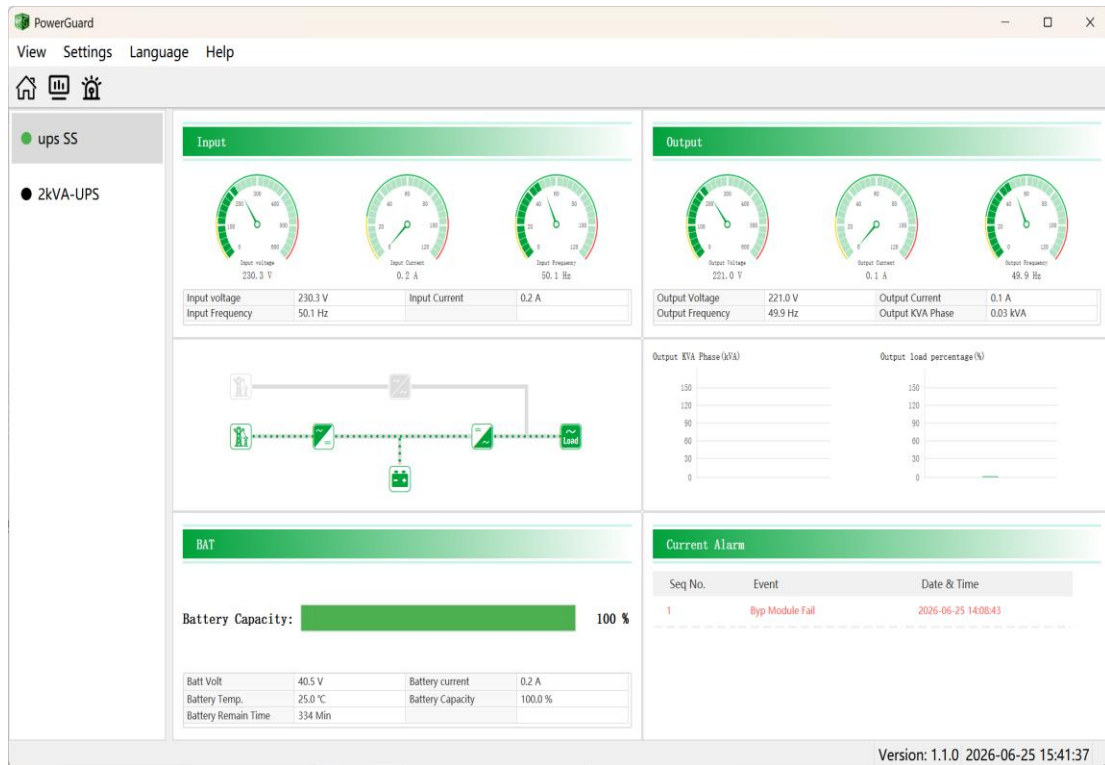


Click View> Device Overview to enter the Device Overview interface. All current devices are displayed here.



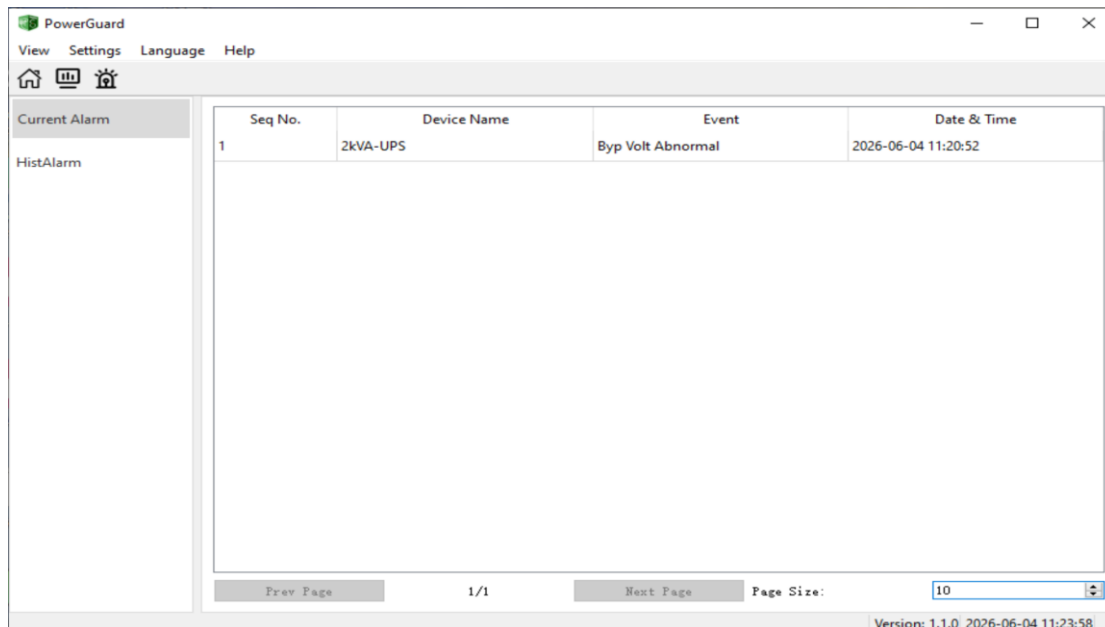
3.2 Equipment Details

Click View> Devices to enter the device details page, which displays the first device's details by default. You can also click a device in the Device Overview to access the device details page.



3.3 Current Alerts and Historical Alerts

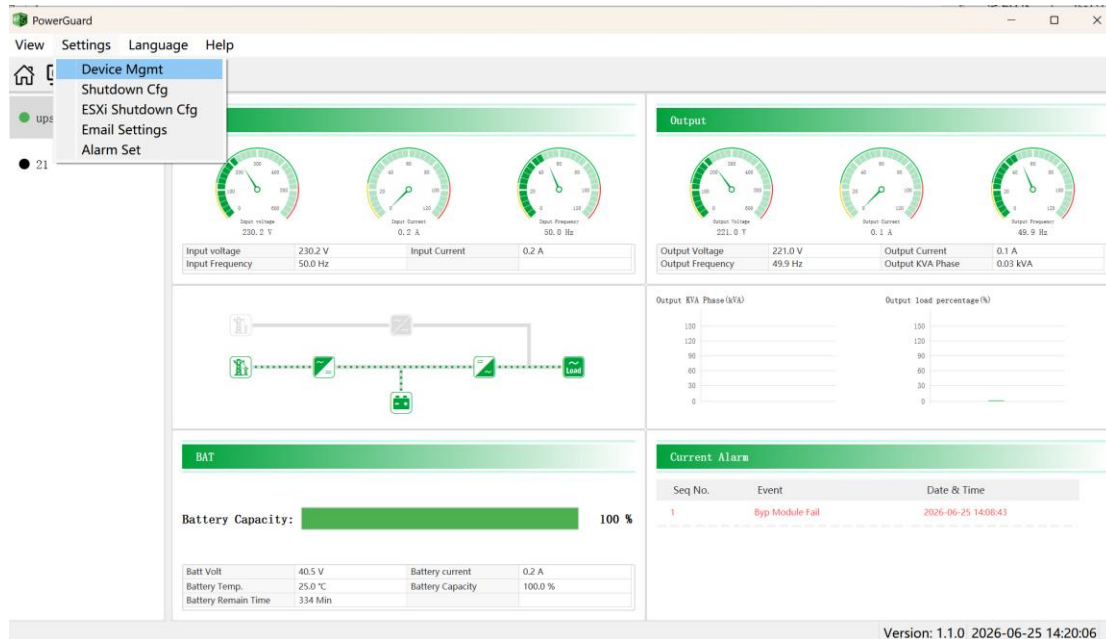
1. Click View>Log to access the current and historical alarm interface.



4. set up

4.1 Equipment Management

1. Click Settings> Device Mgmt to access the device management interface.



The system currently supports three communication driver types: USB HID, Modbus, and SNMP. In device management, Device Information serves as the common configuration setting, while Configuration Summary varies dynamically depending on the Driver Type. The Configuration Summary is detailed in the subsequent [Add Device] section; this section focuses solely on Device Information.

Name: The device name, which is the key identifier for users to distinguish devices. Supports any characters

Driver Type: A communication driver that supports USB HID, Modbus, and SNMP, depending on how you communicate with the UPS.

Protocol: This requirement must strictly match the UPS model. The selected protocol directly determines whether device data can be read properly. If you cannot determine the appropriate protocol, contact our after-sales support team.

Device Management

Add Modify Delete Refresh

	Name	Driver Type	Protocol	figuration Sumn
1	ups SS	snmp	SS	Host Address: ...
2	21	snmp	SS	Host Address: ...

Device Information

Name: ups SS

Driver Type: snmp

Protocol: SS

Configuration Summary

Host Address: 192.168.60.26

Port: 161

Version: V3

Username: admin

Auth Protocol: SHA-224

Auth Password: ●●●●●●●●

Priv Protocol: AES-128

Priv Password: ●●●●●●●●

Confirm Cancel

4.1.1 Add Device

Add the desired product to the page, click the OK button in the device added box, and complete the device addition.

1. HID

Currently, HID only supports a single camera (the SS protocol) and requires all default parameters.

Device Management

Add

Modify

Delete

Refresh

	Name	Driver Type	Protocol	Configuration Summary
1	ups SS	snmp	SS	Host Address: ...
2	2kVA-UPS	snmp	SS	Host Address: ...

Device Information

Name: Test UPS

Driver Type: hid

Protocol: SS

Configuration Summary

Manufacturer ID: 1892

Product ID: 1537

Confirm

Cancel

2. Modbus

If you haven't modified the UPS's Modbus parameters, keep all default settings.

Mode: Select the Modbus mode you use; the default is RTU.

Serial Port: When using hardware interfaces such as RS232, RS485, or USB CDC serial ports, they are all recognized as standard serial devices at the operating system level—making no difference for PowerGuard.

Baud Rate: The baud rate corresponding to the hardware interface.

Device Address: The Modbus address of the device, ranging from 1 to 247, with default value 1

Device Management

Add

Modify

Delete

Refresh

	Name	Driver Type	Protocol	Configuration Summary
1	2kVA-SNMP	snmp	SS	Host Address: ...

Device Information

Name: 2kVA-RS232

Driver Type: modbus

Protocol: snmp

Configuration Summary

Mode: RTU

Serial Port: COM15

Baud Rate: 9600

Device Address: 1

confirm

Cancel

Device Management

Add

Modify

Delete

Refresh

	Name	Driver Type	Protocol	Configuration Summary
1	2kVA-SNMP	snmp	SS	Host Address: ...

Device Information

Name: 2kVA-RS232

Driver Type: modbus

Protocol: SS

Configuration Summary

Mode: RTU

Serial Port: COM14

Baud Rate: 9600

Device Address: 1

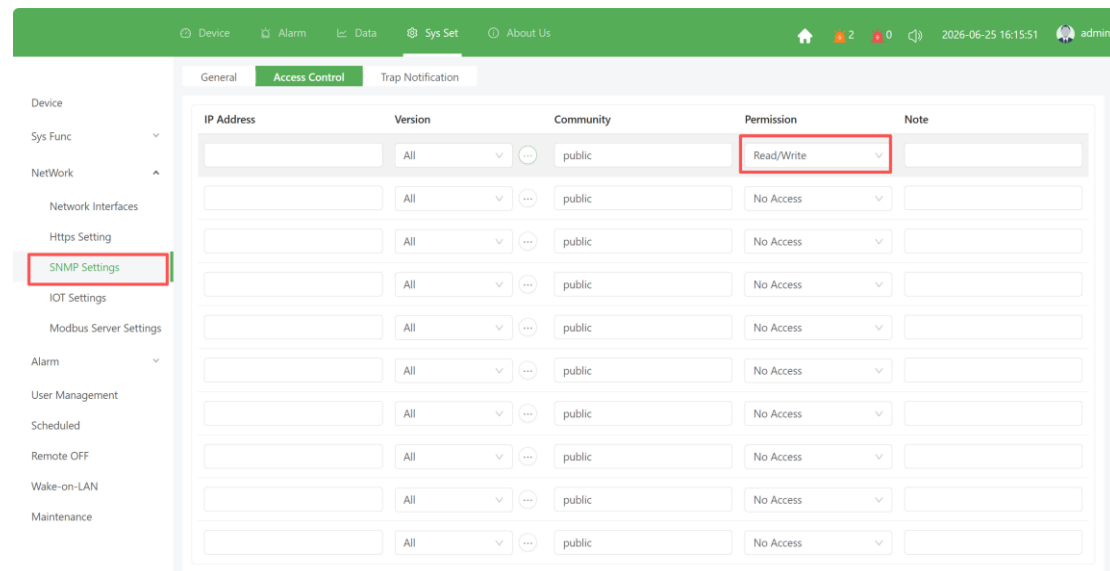
confirm

Cancel

3. SNMP Device

Prerequisite: Ensure that the computer network where PowerGuard is deployed supports the SNMP functionality of the UPS SNMP card.

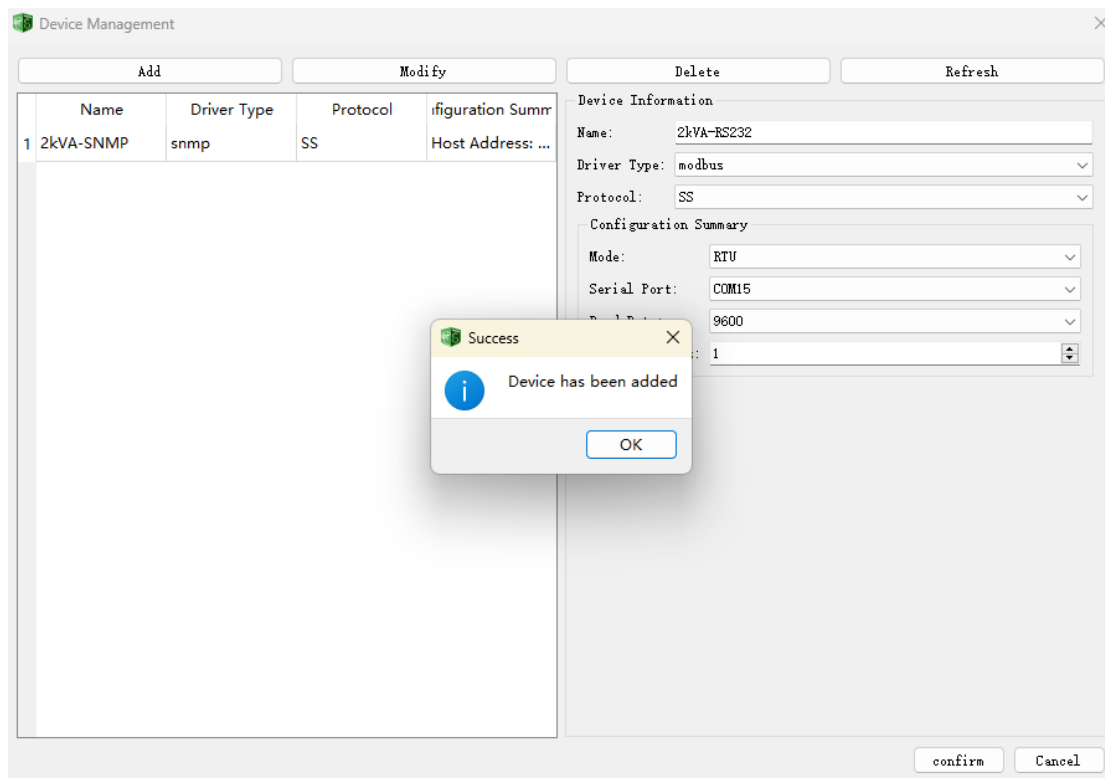
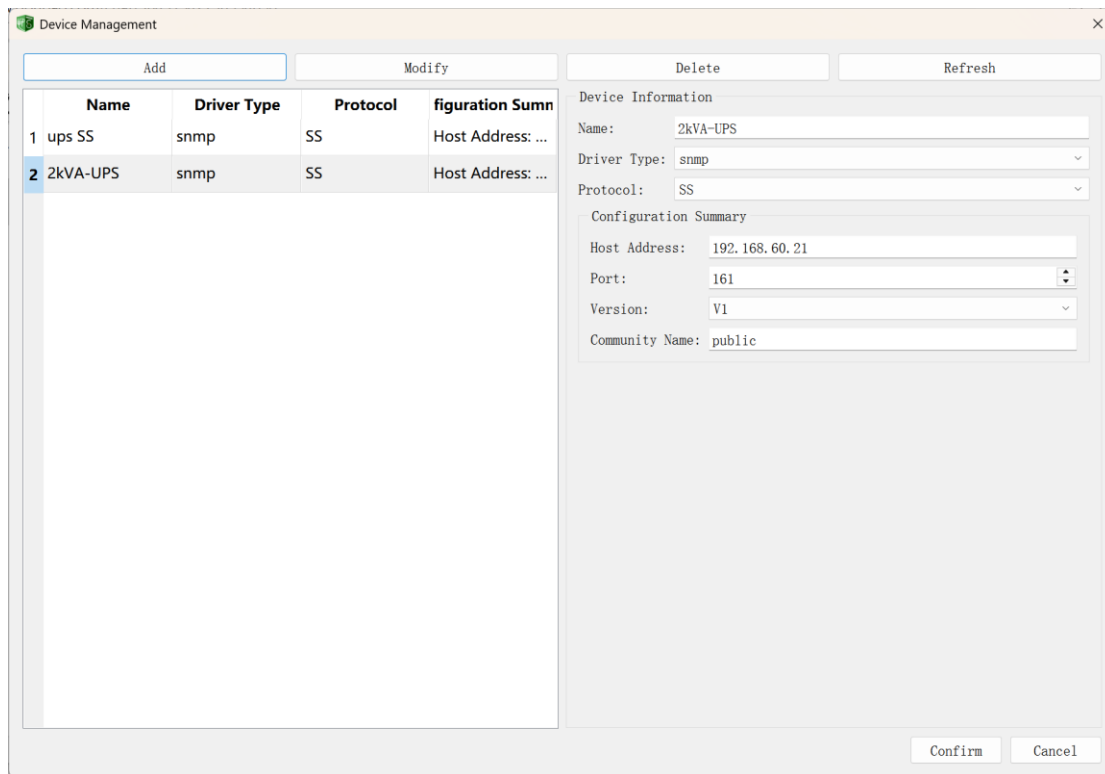
1. Log in to the SNMP Card webpage and navigate to Sys Set> Network> SNMP Settings;
2. Configure the access whitelist in Access Control; an empty IP address allows access across the entire network;
3. Permission selection: Read/Write;
4. For SNMP V3, click the button to the right of the Version field to add account and security configurations.



set up :

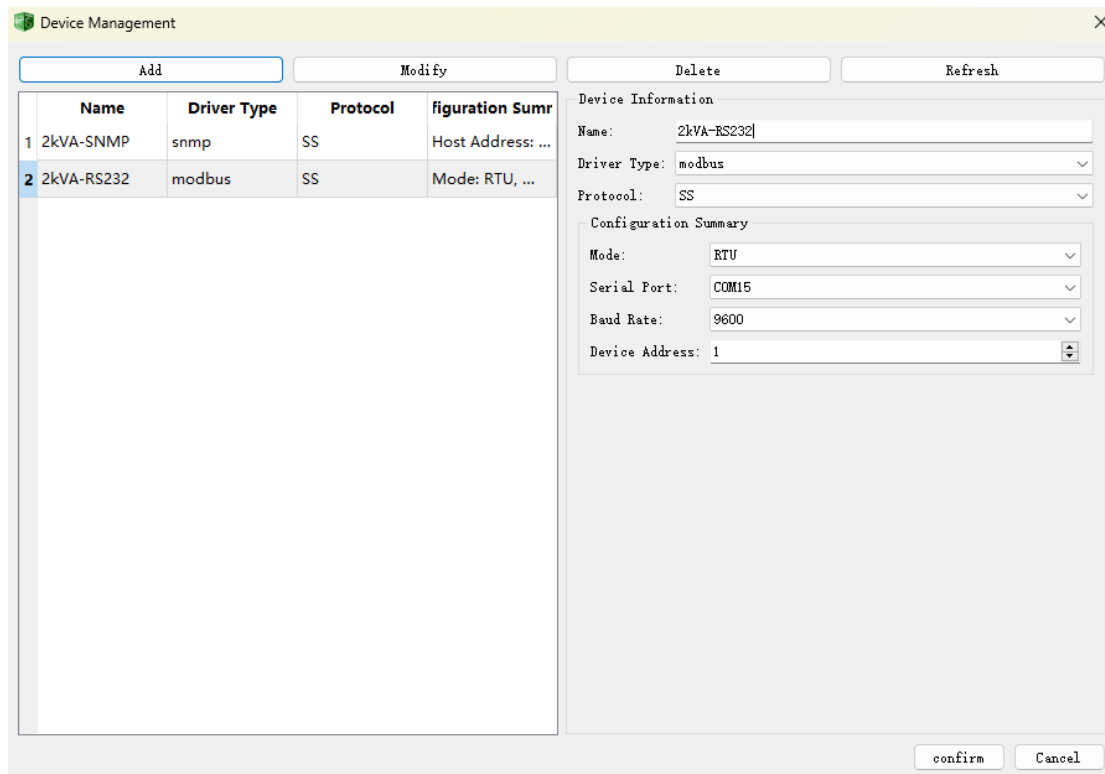
Host: SNMP Card IP Address

All other parameters should match those configured in the Network Card page under Sys Set> Network> SNMP Settings.



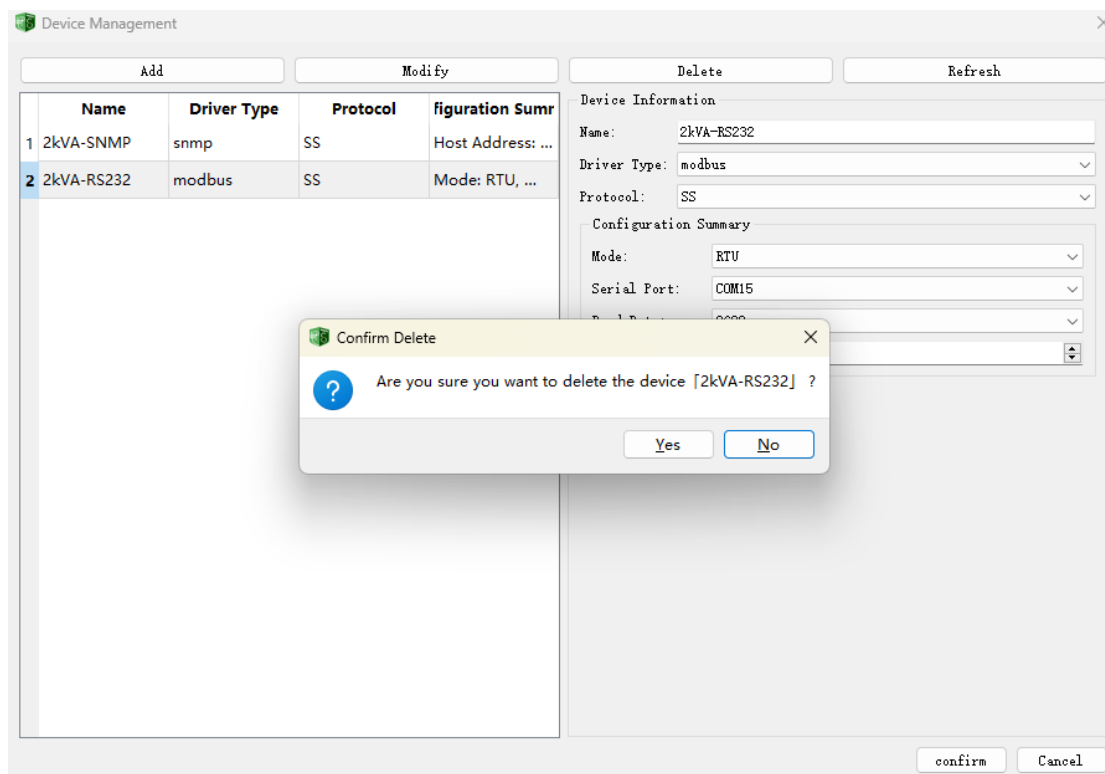
4.1.2 Modify Device Information

Select the product you want to modify , then click Modify to edit the product information.



4.1.3 Delete Device

Select the product you want to delete, click Delete, and click Yes in the pop-up to proceed. Click No to cancel the deletion.



After clicking the Yes button in the previous step, click OK in the pop-up box to complete the

device deletion. The selected devices will disappear from the product bar on the left.

The 'Device Management' window features a top bar with 'Add', 'Modify', 'Delete', and 'Refresh' buttons. Below is a table with columns: Name, Driver Type, Protocol, and Configuration Summary. The table contains one entry: '2kVA-SNMP' with driver type 'snmp' and protocol 'SS'. The 'Configuration Summary' column shows 'Host Address: ...'. To the right of the table is a 'Device Information' panel with fields for Name, Driver Type (hid), Protocol (SS), and a 'Configuration Summary' section with 'Manufacturer ID: 1892' and 'Product ID: 1537'. At the bottom right are 'confirm' and 'Cancel' buttons.

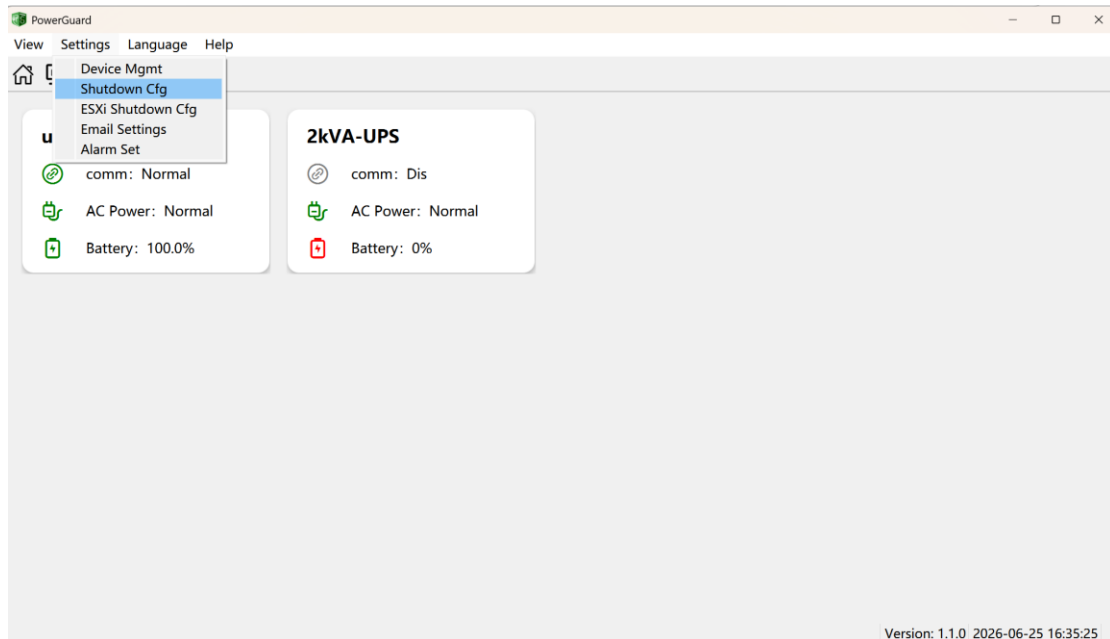
	Name	Driver Type	Protocol	Configuration Summary
1	2kVA-SNMP	snmp	SS	Host Address: ...

The 'Device Management' window now shows two devices in the table. The second device, '2kVA-RS232', is selected (highlighted in blue). Its configuration summary shows 'Mode: RTU, ...'. The 'Device Information' panel on the right is updated to show 'Name: 2kVA-RS232', 'Driver Type: modbus', 'Protocol: SS', and a 'Configuration Summary' section with 'Mode: RTU', 'Serial Port: COM15', 'Baud Rate: 9600', and 'Polling Interval: 1'. A 'Success' dialog box is overlaid in the center, displaying an information icon and the text 'Device has been deleted' with an 'OK' button. The 'confirm' and 'Cancel' buttons remain at the bottom right.

	Name	Driver Type	Protocol	Configuration Summary
1	2kVA-SNMP	snmp	SS	Host Address: ...
2	2kVA-RS232	modbus	SS	Mode: RTU, ...

4.2 Power Off Settings

1. Click Settings> Shutdown Cfg to enter the power off settings interface.



2. Enter your desired content in the shutdown settings interface, then click the OK button.

How to turn off the device

Select shutdown.

Power outage wait time for shutdown (0-2880 minutes)

Select the delay shutdown time you want to set.

Battery low potential shutdown wait time (0-600 minutes)

Set the automatic shutdown wait time when the battery is powered at low potential.

Shut down based on battery level

Select battery level to trigger shutdown.

Enable pop-up message box

Show pop-up notification when shutdown conditions are met.

Time interval for displaying the alarm message window (1-600 minutes)

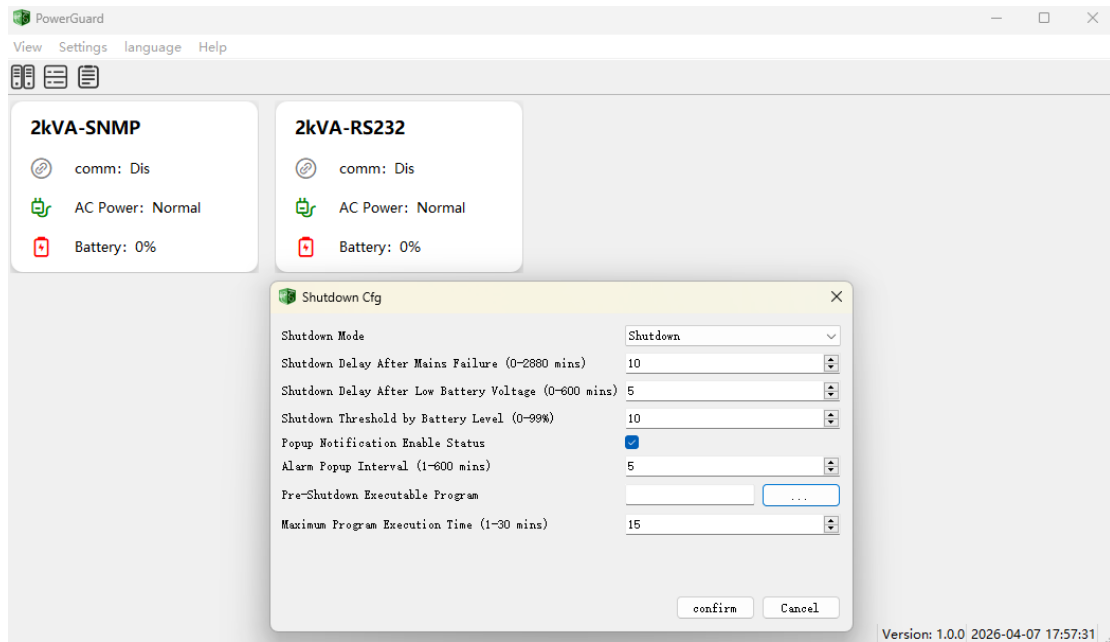
Set the interval for alarm pop-ups to appear.

Procedure to be executed before shutdown

You can customize the execution of specified programs before shutting down.

Maximum program execution time (1-30 minutes)

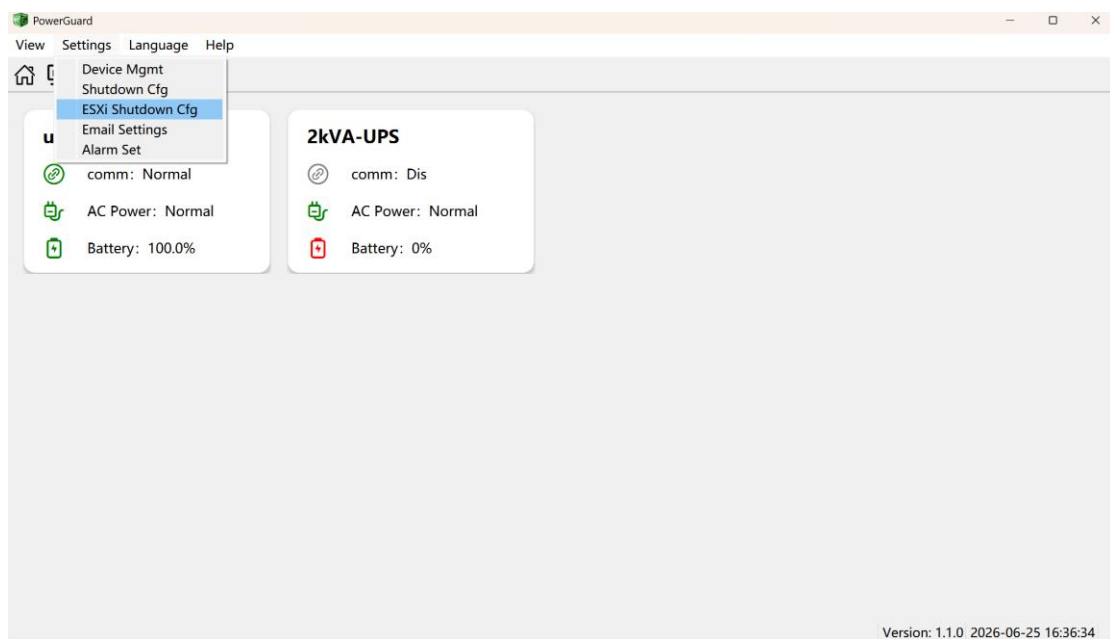
The custom program will be forcibly closed if it exceeds the time limit.



4.3 ESXi Power Off Settings

(Note: PowerGuard does not currently support VMware vCenter. You can install PowerGuard on each virtual machine within an ESXi host to achieve functionality similar to VMware vCenter.)

1. Click Settings> ESXi Shutdown Cfg to access the ESXi Power Off Settings interface.



2. Enter your desired content in the ESXi Power Off Settings interface, then click the OK button.

Enable ESXi shutdown

Click the radio button below to enable or disable this feature. This will shut down the VMware ESXi system host and disable the internal host of VMware ESXi.

Host address

Host IP for installing VMware ESXi system.

user name

Username for logging into the VMware ESXi system host.

password

Password to log in to the VMware ESXi system host.

running mode

External host: This program runs on any device within the same network as the VMware ESXi system host.

VM Mode: This program runs on any device within the system hosted by a VMware ESXi system.

Shut-down mode

Supports operations for system shutdown and hibernation on VMware ESXi system hosts.

Proxy host name

This applies only in Vm mode. The host will not be shut down, preventing the VMware ESXi system host from becoming unmanageable.

Shut-down sequence

Shut down the VMware ESXi system hosts in top-down order. Unadded systems will not be powered down. All internal hosts will be shut down if not added.

Normal shutdown timeout

Try to shut down gently. If the time limit is exceeded, a forced shutdown will occur. Unit: s.

Forced shutdown timeout

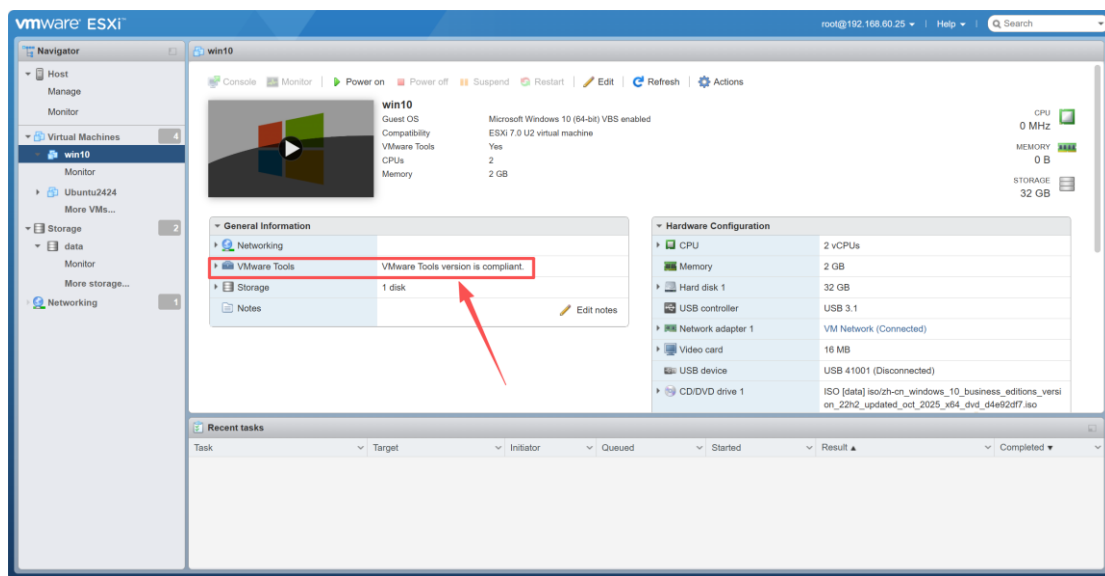
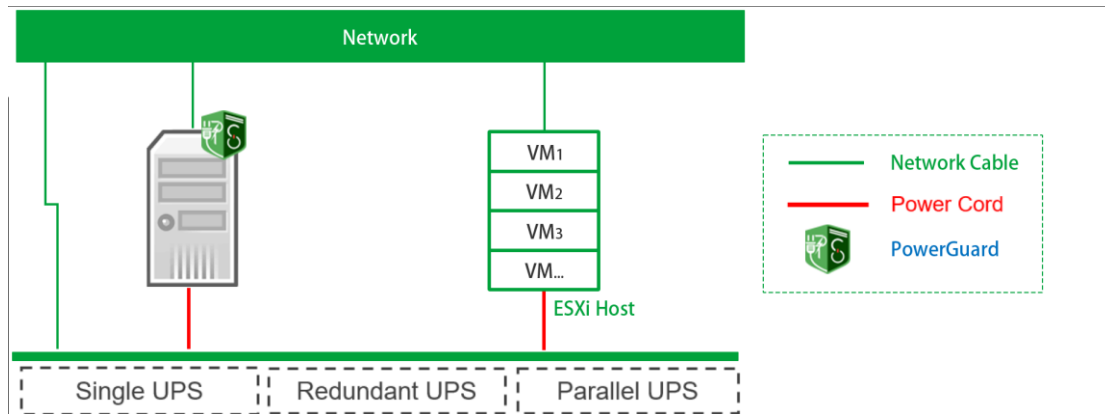
Try forced shutdown repeatedly; this will immediately terminate the VMware ESXi system host upon timeout. This behavior typically occurs when VMware Tools is not installed.

4.3.1 Running externally on an ESXi host

PowerGuard is deployed on a separate host outside the ESXi. When the input source fails, the program can remotely shut down or suspend virtual machines under ESXi and then terminate the ESXi host.

When the ESXi host is shut down, the standalone hosts deployed with PowerGuard will also be powered off or suspended.

Note: VMware Tools must be pre-installed on ESXi virtual machines.



set up :

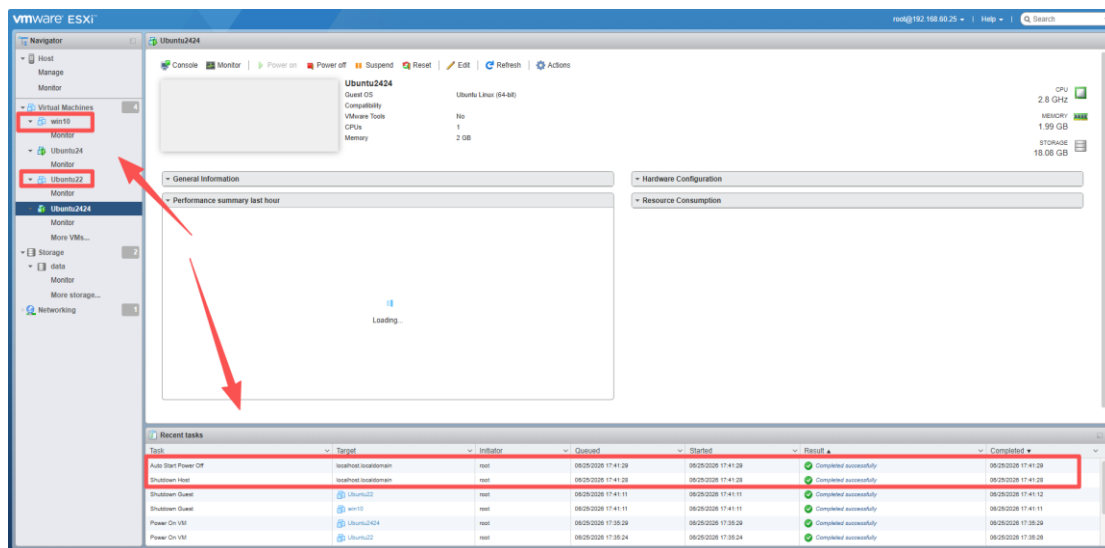
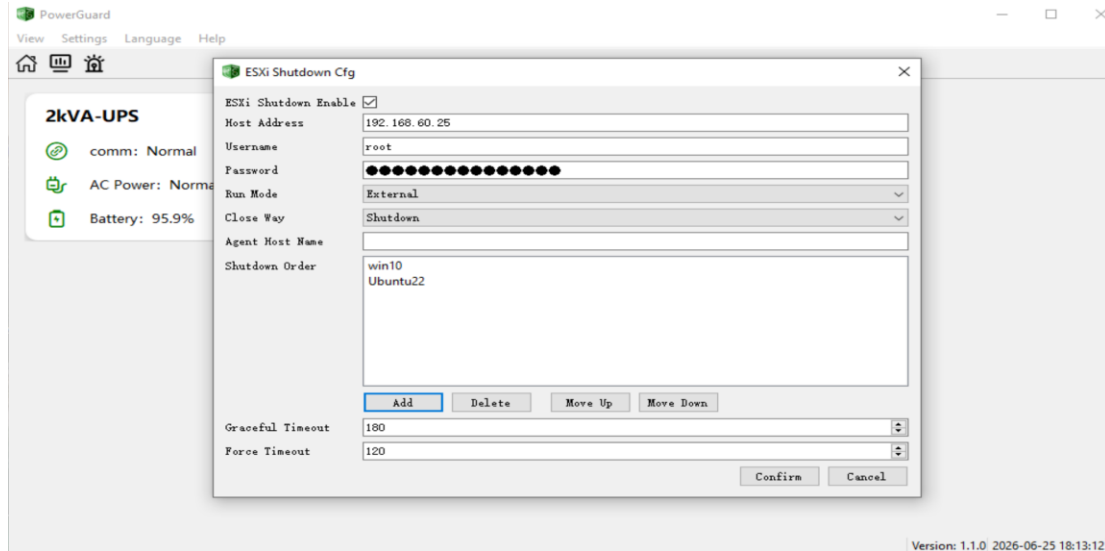
Select External as the Run Mode.

The Agent Host Name can be left blank; this parameter applies only when PowerGuard is deployed on an ESXi virtual machine.

Shutdown Order is used to configure a list of virtual machines that need to be shut down or suspended in sequence.

The program will execute virtual machine shutdown/suspension operations in the order listed from top to bottom, and close the ESXi host only after all operations are completed. Virtual machines not on this list will not be affected.

As shown in the figure below, after configuring to shut down Windows 10 and Ubuntu 22, the virtual machines of both systems will be terminated sequentially before shutting down the ESXi host.

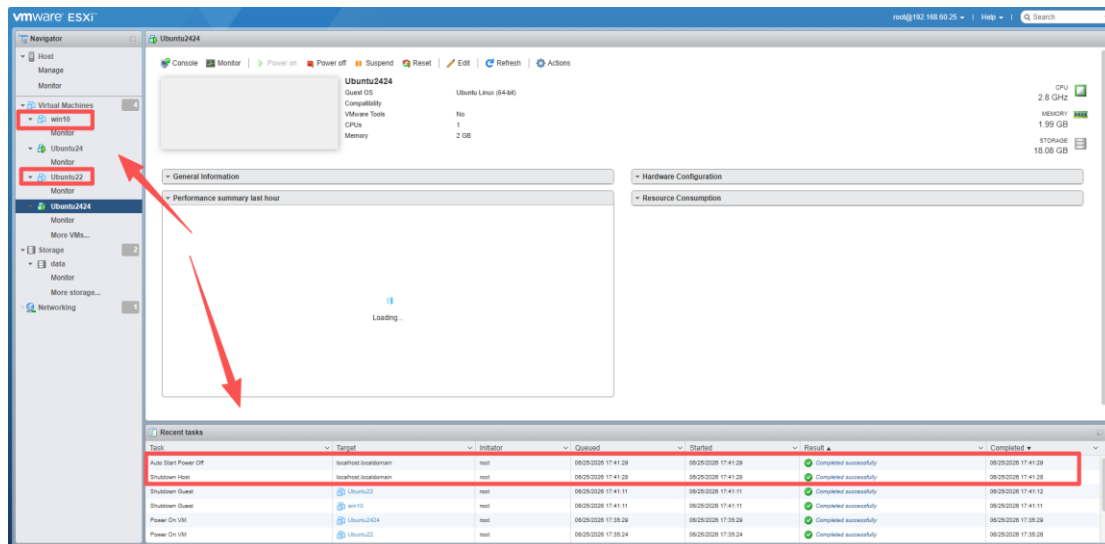
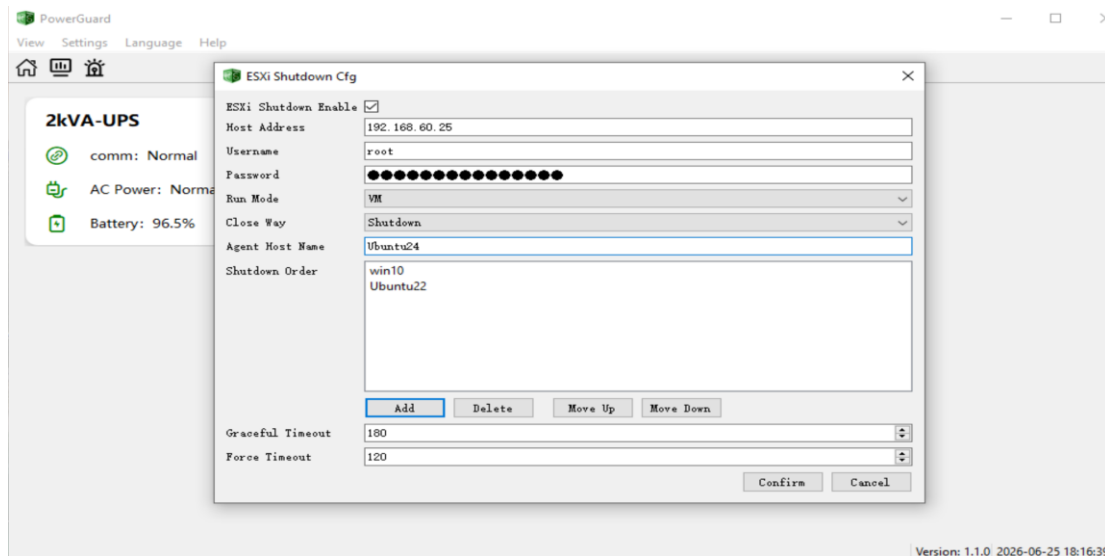
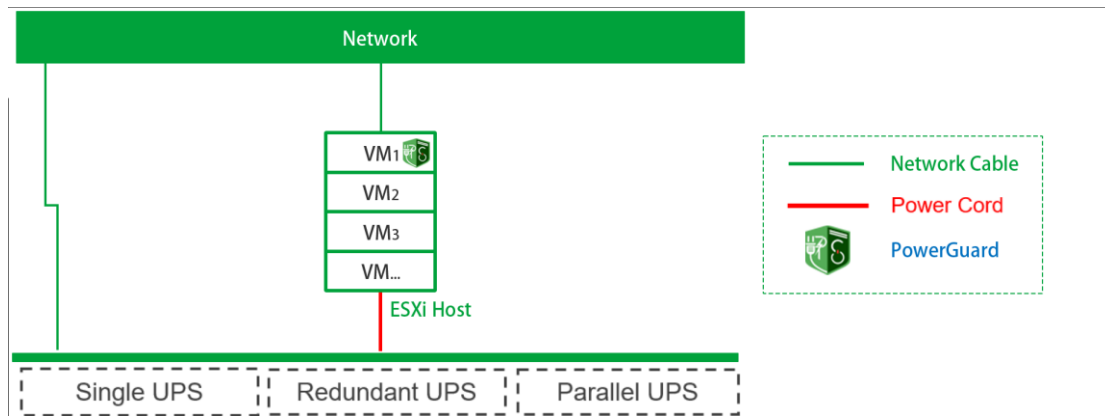


4.3.2 Running Virtual Machines Inside the ESXi Host

PowerGuard runs on virtual machines deployed within ESXi hosts. Upon receiving a power outage signal, the program shuts down or suspends these virtual machines before terminating the ESXi host itself.

The proxy host must remain running, as shutting it down will prevent PowerGuard from operating and thus fail to protect your devices.

Note: VMware Tools must be pre-installed on ESXi virtual machines.



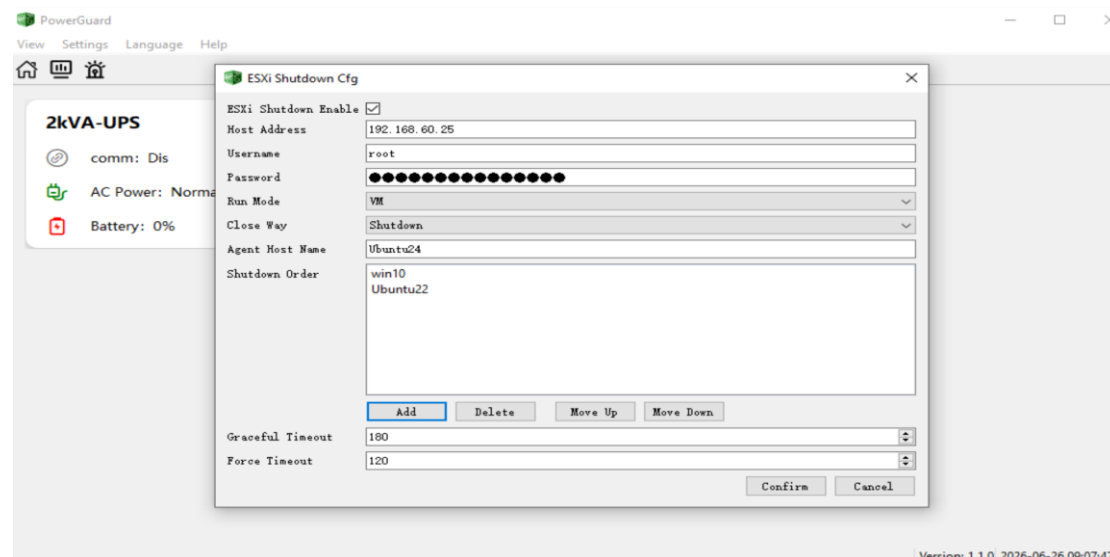
set up :

Select VM as the Run Mode.

Agent Host Name: The virtual machine where PowerGuard is deployed, primarily to prevent the agent host from being shut down by PowerGuard.

Shutdown Order configures a list of virtual machines that need to be shut down or suspended in sequence. Do not add the proxy host to this list in this mode.

The program will execute virtual machine shutdown/suspension operations in the order listed from top to bottom, and then shut down the ESXi host after all operations are completed. Virtual machines not on this list will not be affected.

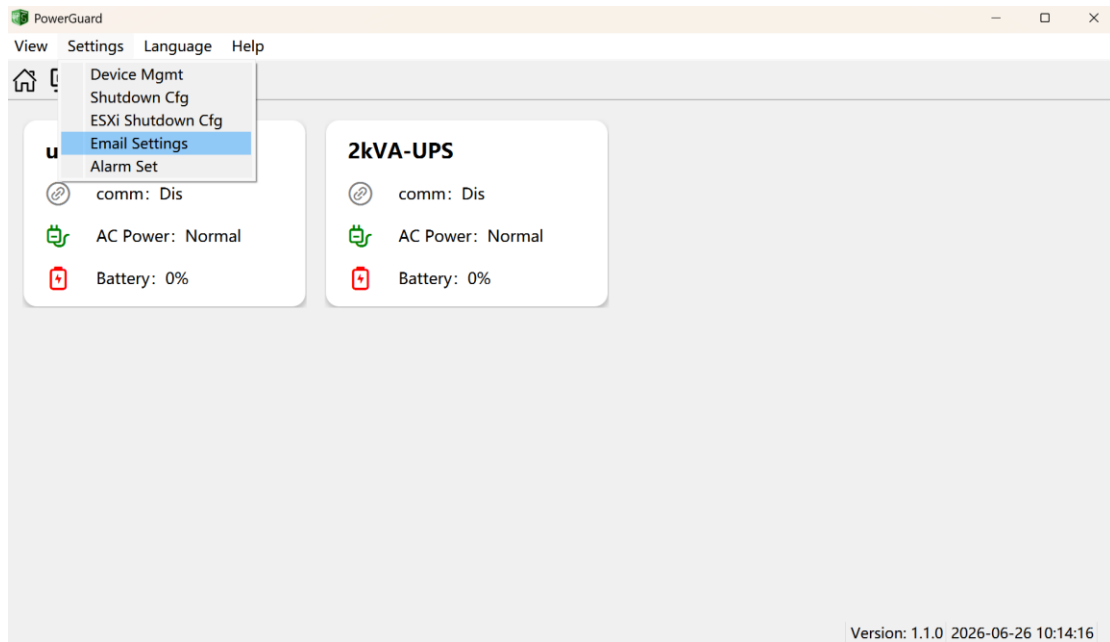


4.4 Email Settings

When this feature is enabled, PowerGuard will send an email to your inbox whenever a UPS alarm occurs or disappears.

Note: Gmail and Outlook are not supported currently. If you need assistance, please contact our technical support team.

Go to Settings> Email Settings to access your email settings.



set up :

Email Notification enabled: Enable this feature

Mail Server: The address of the email server, which can be a domain name or an IP address

Port: Email server port

Connection Type: The method for connecting to the email server (optional: NULL, SSL, TLS; commonly SSL)

Account: The email account used to send emails and connect to the email server

Password: Email password for sending emails

Send Email: Sender's email address

Sender Name: Sender Name

Subject: Sender Subject

Receiving Email: The email address to which PowerGuard sends alerts when an alarm occurs or disappears if its severity level meets or exceeds the threshold set for that account. For example, if the Byp Module Fail alert level is set to 4 and the alert level for the receiver email is 0, the system will send an alert to this email.

Note: An email alert level of 0 means you will receive emails for all alert changes.

Email Settings

Email notification enabled

Mail Server

Port

Connection Type

Account

Password

Send Email

Sender Name

Subject

Receiving Email

465

SSL

ups MTR

Alarm

	Email	Alarm Level
1		0

Send Test Email

Add

Modify

Delete

Confirm

Cancel

Alarm Set

Please select a device first ups SS

	Event	Alarm Level
1	Communication exception	4
2	Integrated Alarm	0
3	EPO	4
4	Byp Module Fail	4
5	Input Fail	4
6	Output Fail	4
7	Fan Fail	4
8	Battery Fail	0
9	Bat Not Connected	4
10	Battery Volt Low	4

Prev Page

1/4

Next Page

Confirm

Cancel

Alarm

ups MTR

To soft-developer

2026-06-25 14:08 Hide Detail

From: ups MTR

To: soft-developer

Time: 25th June, 2026 14:08

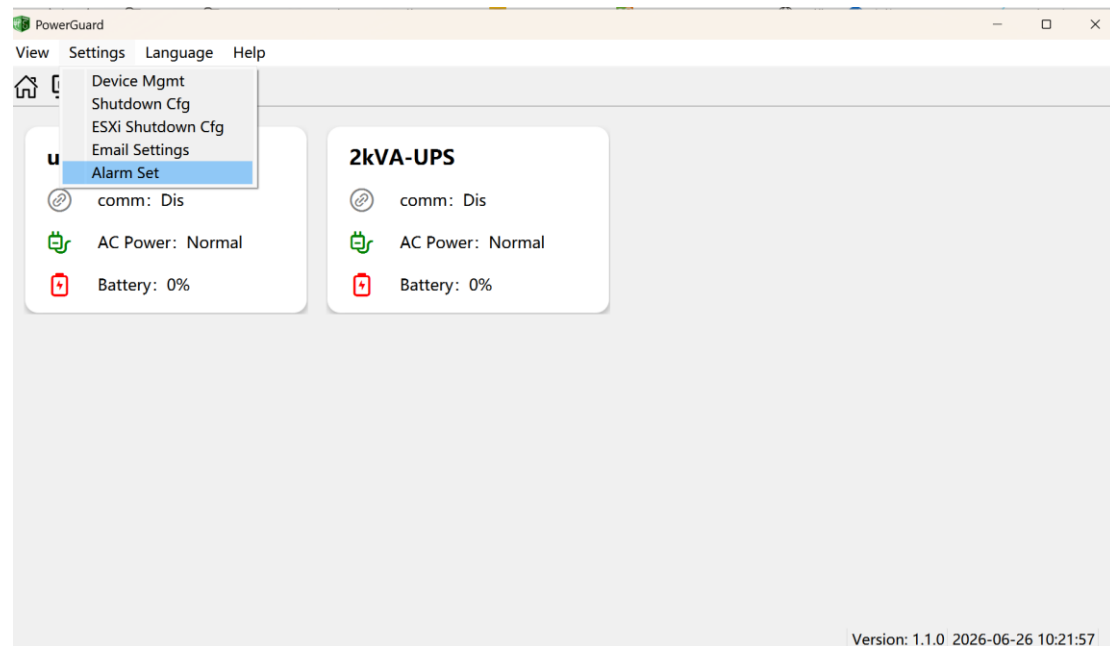
Size: 792 B

[ups SS] Byp Module Fail Appear 2026-06-25 14:08:43

Click Send Test Email in the bottom-left corner to send a test email to all email addresses in the list.

4.5 Alert Settings

Go to Settings-> Alarm Set to access alarm settings



Click the option below to select the alarm level for the UPS you want to configure if you have multiple UPS units.

 Alarm Set

Please select a device first

ups SS

ups SS

2kVA-UPS

		Alarm Level
1	Communication exception	4
2	Integrated Alarm	0
3	EPO	4
4	Byp Module Fail	4
5	Input Fail	4
6	Output Fail	4
7	Fan Fail	4
8	Battery Fail	0
9	Bat Not Connected	4
10	Battery Volt Low	4

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Confirm

Cancel

Each alert can have an alert level, which determines how PowerGuard handles the alerts and which email addresses receive notifications when an alert occurs.

The higher the number, the higher the alert level; see the descriptions below for different alert levels.

0: No record, No alert

1: Record occurrences, No record disappearances, No alerts

2: Record occurrences ,Record disappearance , No alerts

3: Record occurrences ,Record disappearance , General alerts

4 levels and above: Record occurrences ,Record disappearance , Serious alerts

 Alarm Set
 ✕

Please select a device first ups SS ▾

	Event	Alarm Level
1	Communication exception	4 ▾
2	Integrated Alarm	0 ▾
3	EPO	0
4	Byp Module Fail	1
5	Input Fail	2
6	Output Fail	3
7	Fan Fail	4
8	Battery Fail	5
9	Bat Not Connected	6
10	Battery Volt Low	7
		8
		9
		0 ▾
		4 ▾
		4 ▾

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Confirm
Cancel

4.6 Language

Click Language to select a language.

