

APC UPS Monitoring Software

User's Manual

Management Software for Uninterruptible Power Supply Systems

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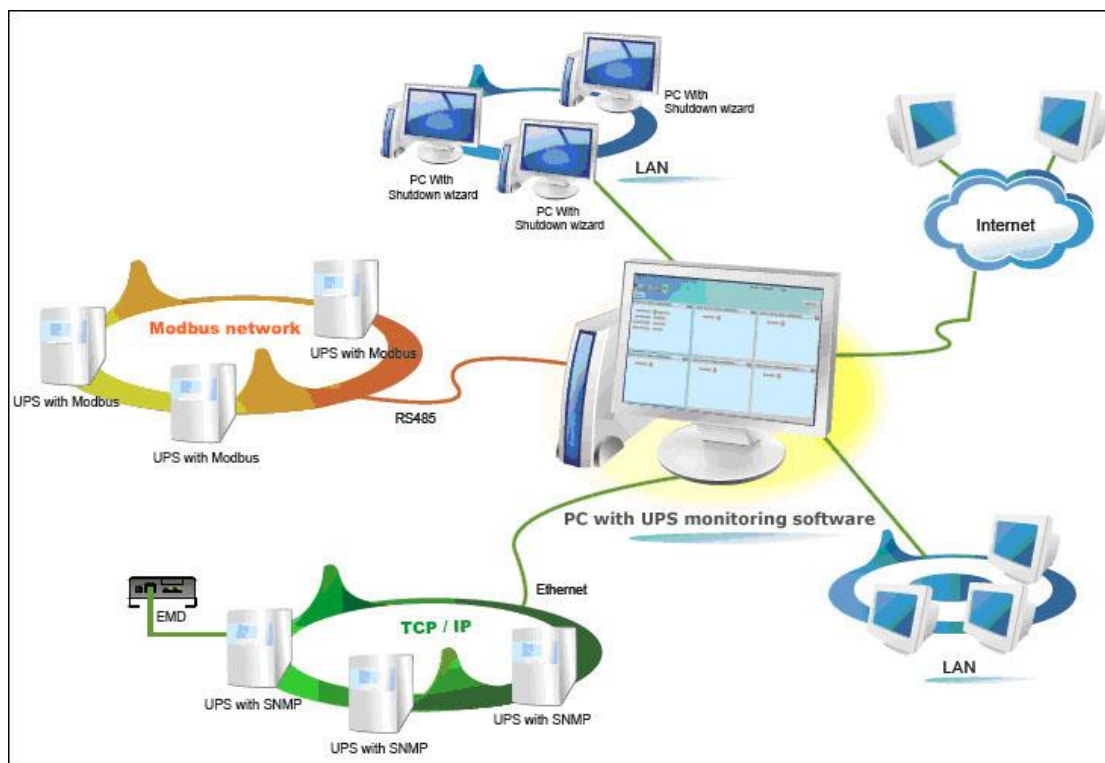
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1. APC UPS Overview

1.1.Introduction

APC UPS is an advanced UPS management software which is perfect for home users and enterprises. It can monitor and manage from one to multiple UPSs in a networked environment including LAN, INTERNET and RS485-based networks. Integrated with Shutdown Wizard, it can not only prevent data loss from power outage and safely shutdown systems, but also store programming data and scheduled shut down UPSs. All UPS working data and event records can be kept in local database systems.



1.2.Structure

APC UPS includes monitor service, WEB service and tray service.

- **Monitor service:** It is the core of APC UPS software. Monitor service automatically finds UPSs in the networks, stores UPS working data and event information. It will communicate with the UPS, record events, notify users with events, and execute commands according to the users' requests.

- WEB service: It offers Http or Https service for local or remote users. Users can manage and monitor UPSs for real-time status, information and modify UPS setting parameters via browser such as IE and Firefox.
- Tray service: It is a management tool for APC UPS software. It includes start monitor, stop monitor, SNMP manager and so on.

1.3.Features

- Centralized control and monitor up to 1000 UPSs via SNMP or Modbus networks.
- Offers WEB service to allow remote monitoring service via Intranet or Internet.
- Offers quick overview for UPS monitoring in Text and Graphic view.
- Offers user-customized background picture for graphic view with simple drag and drop.
- Scheduled UPS on/off, battery test, and scheduled wake on LAN programs.

2. APC UPS Install and Uninstall

2.1. System requirement

- 1 GB physical memory at least (2 GB is recommended)
- 2 GB hard disk space at least
- Administrator authority is required
- More than 16-bit colors and 800 x 600 or above resolution display is recommended
- TCP/IP protocol must be installed for network management
- Platforms supported by software are listed below:
 - Windows 2000
 - Windows XP/2003/Vista/2008/2012 (32-bit & x64-bit)
 - Windows 7 / 8 (32-bit & x64-bit)/10

2.2. Software Install

Step 1 Insert the software CD into CD ROM. Installation menu will be automatically displayed, or you can run autorun.exe to start the installation in CD directory. Refer to the diagram 2-1.

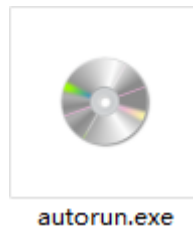


Diagram 2-1

Step 2 It will show the following screen as Diagram 2-2. Then click "APC UPS" button to start the installation.



Diagram 2-2

Step 3 After clicking install, it will display the installation in process. Refer to the diagram 2-3.

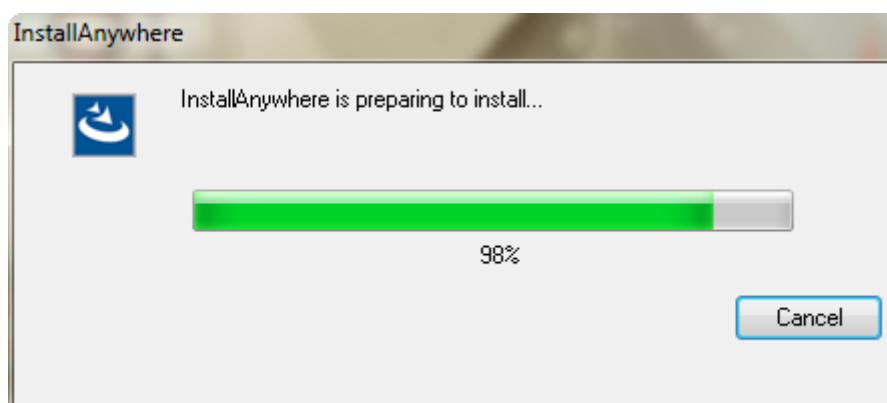


Diagram 2-3

Step 4 Click "Next" to proceed to the next screen as Diagram 2-4.

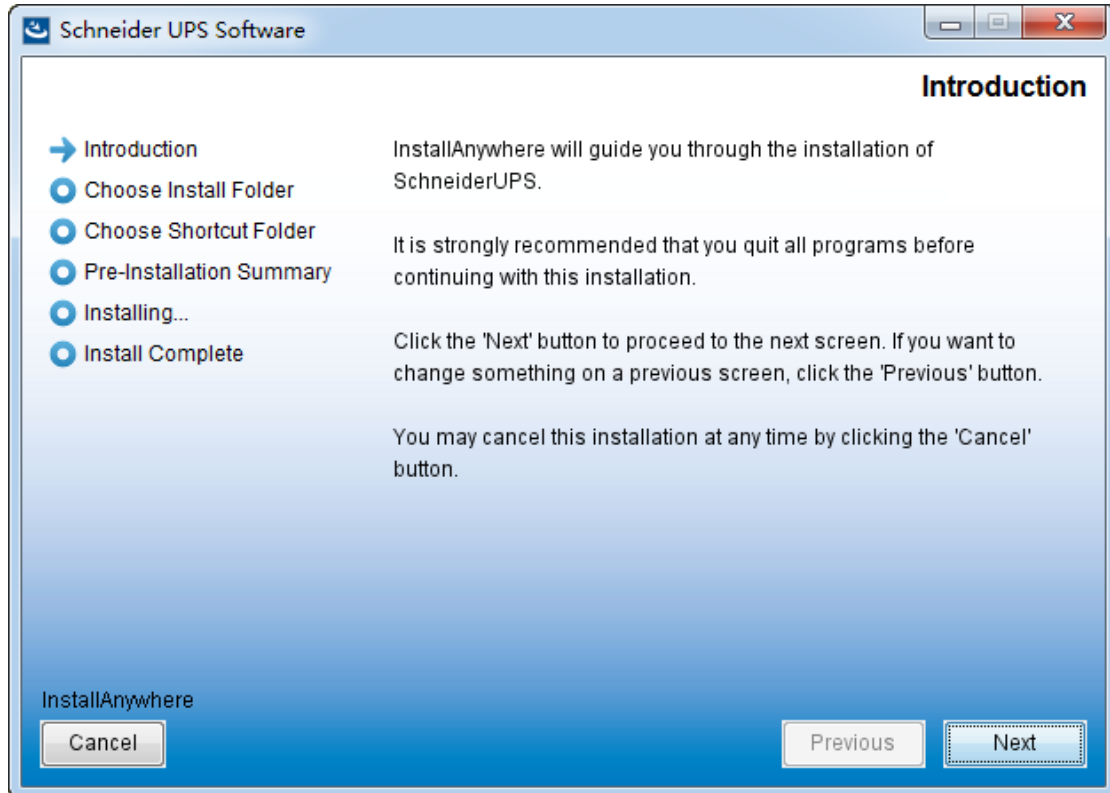


Diagram 2-4

Step 5 Click "Choose" button to change the default folder. After choosing the installed folder, click "Next" button. Refer to the following diagram 2-5.

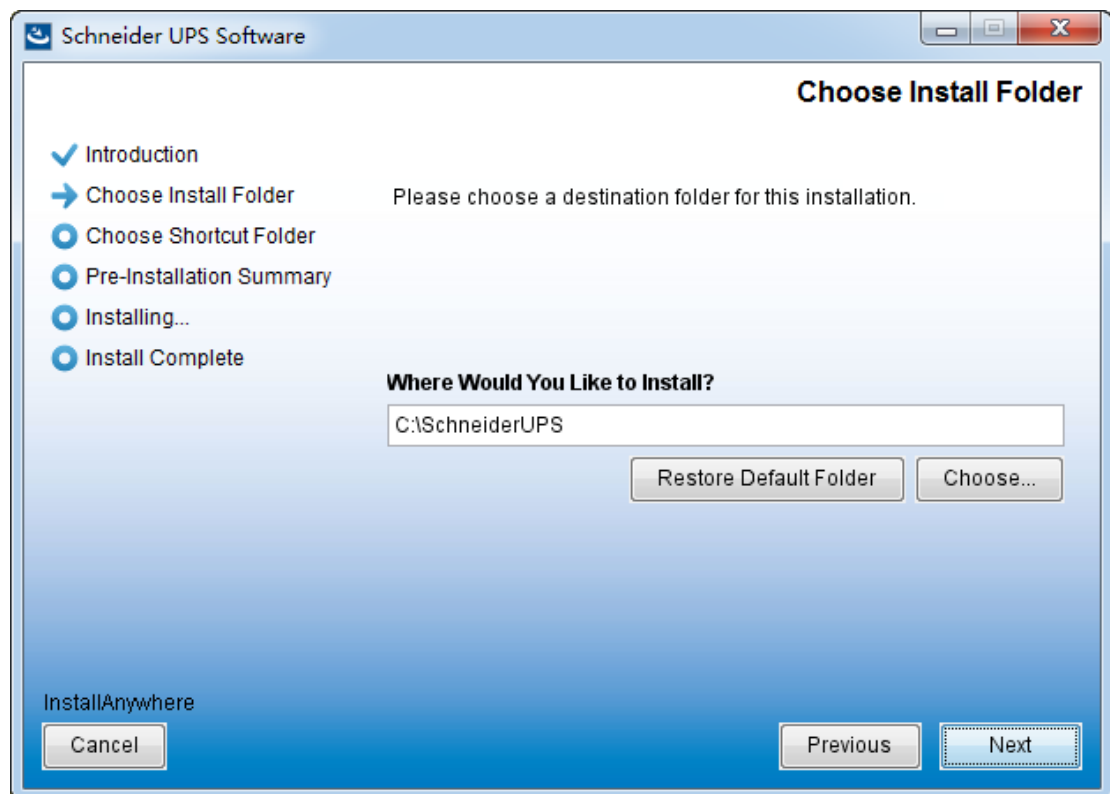


Diagram 2-5

NOTE: For installing on non-default directories, please ensure you do not have blank characters or non-English characters in the installation directory. And the directory path cannot be more than 20 characters.

Step 6 Choose the shortcut folder and click “Next” button. Refer to the following diagram 2-6.

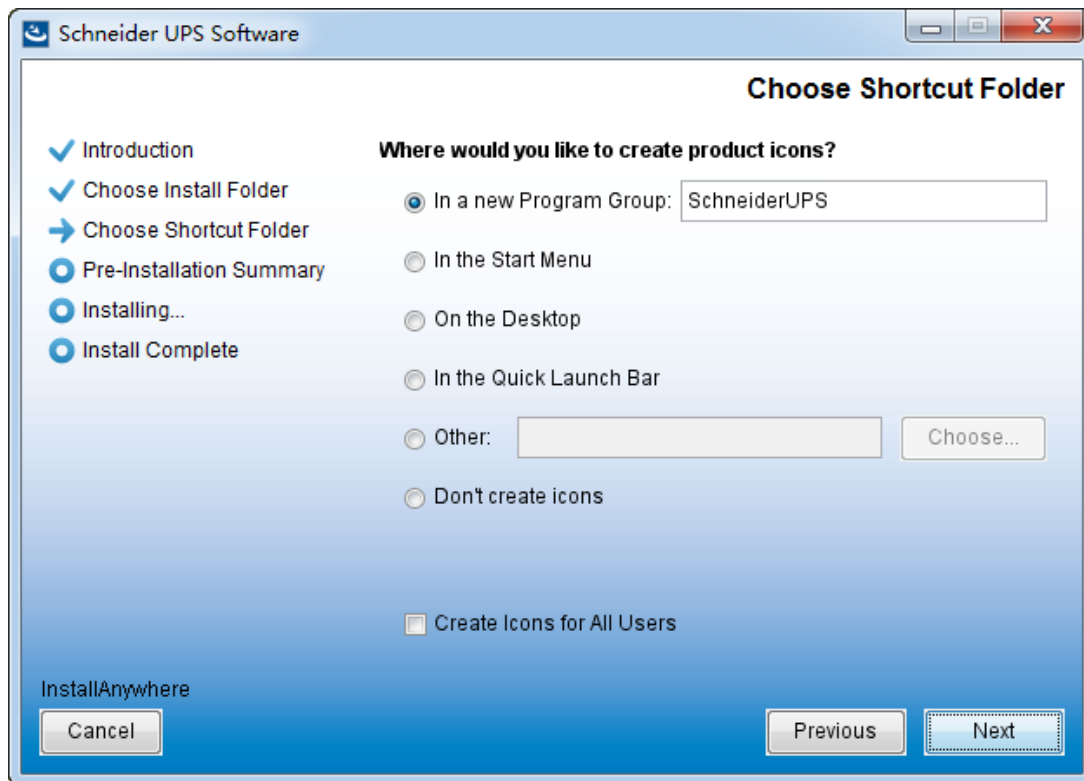


Diagram 2-6

Step 7 It will display the software summary before installation. Click “Install” button to start the installation and refer to Diagram 2-7.

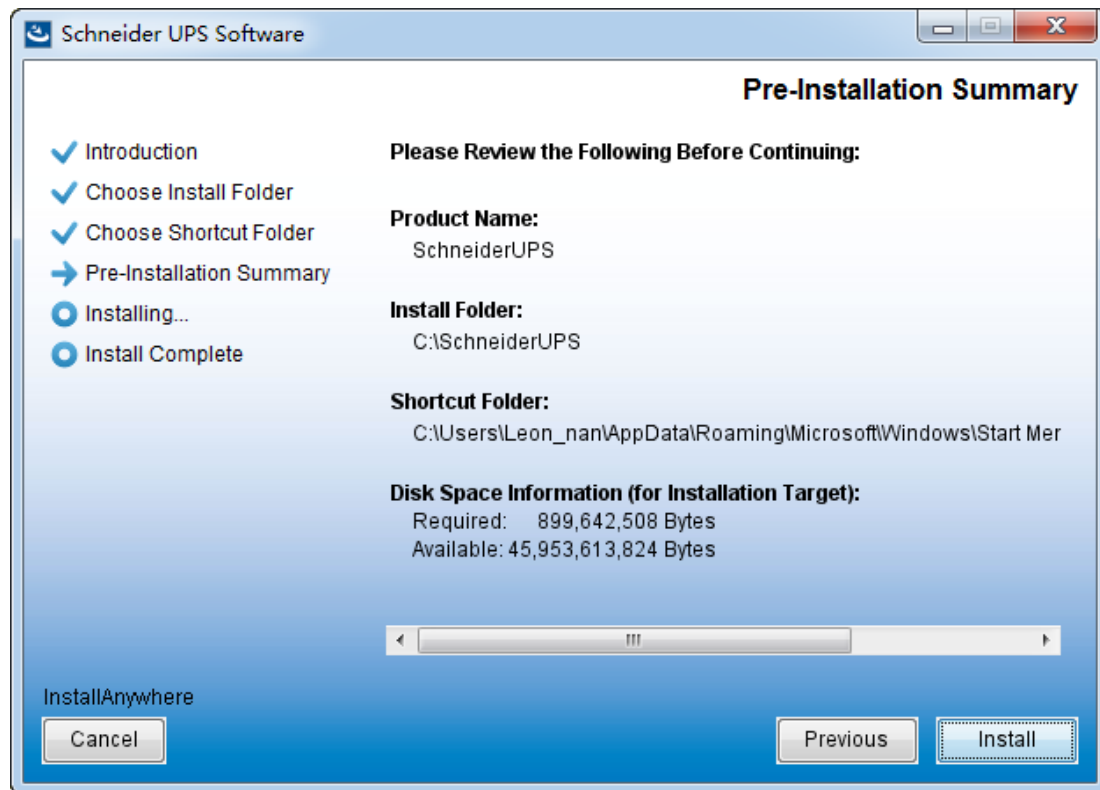


Diagram 2-7

Step 8 Click "Done" button to confirm the installation completely. Refer to Diagram 2-8.

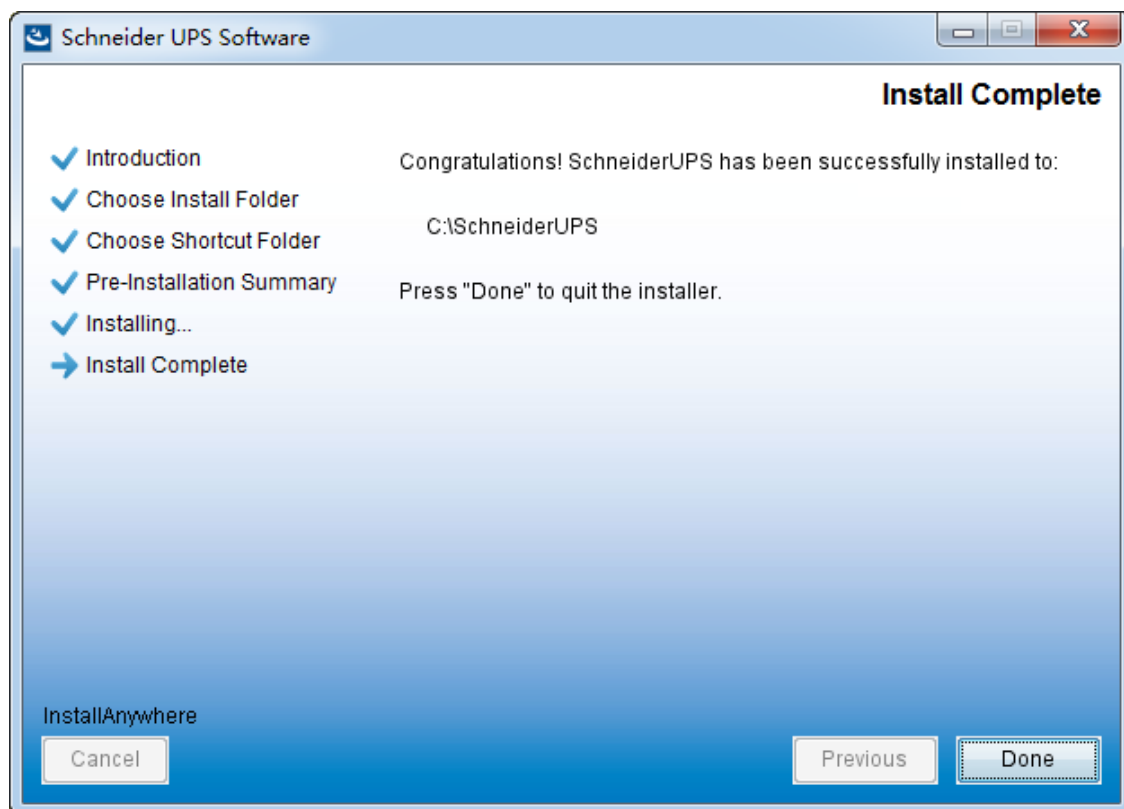


Diagram 2-8

Note:

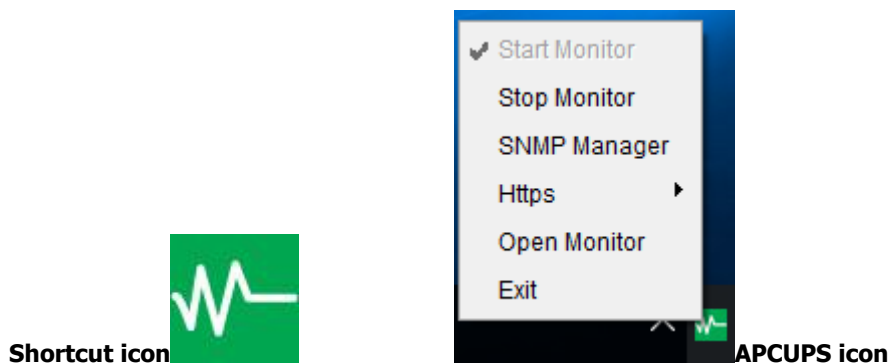
1. Please uninstall the previous version before installing the new version of the software.
2. Modify the SNMP operating protocol from V2 to V3 and change the default password to enable the SNMP security features.

2.3. Software Uninstall

Please choose Start>>All Programs>>APC UPS>>Uninstall. Then follow the on-screen instruction to uninstall the software. Before uninstalling software, you must stop all software programs first and then log in as "Administrator"! Otherwise, it can't be uninstalled completely.

3. Service Tray Application

The Installer will leave a shortcut icon on your desktop. Simply click the shortcut. Then it will start the software and display an orange plug icon located in the taskbar. To launch the GUI, double click the plug icon or choose "Open Monitor" by clicking right button of the mouse. Refer to below diagram. Or, use the Start Menu method; Start >> All Programs >> APC UPS>> APC UPS.



3.1. Start Monitor

This software will be automatically activated when installing it as a service application. At this time, users can remotely monitor UPSs through the web browser even though users do not login into the operation system.

If the service application can not be registered successfully, when starting

up the tray service, it will automatically activate the monitoring application. If it's failed or stopped manually, simply click "Start Monitor" to activate it. "Start Monitor" will check if monitoring application is registered as a service application. If it's successful, this software will be activated from the service mode. If not, this software will be activated as monitoring mode. Users can identify the application mode from tray icon as below:

- Monitoring application is not activated successfully: 
- Monitoring application is activated as service mode: 
- Monitoring application is activated as monitoring mode: 

3.2. Stop Monitor

Click "Stop Monitor" to stop monitoring application.

3.3. SNMP Manager

SNMP Manager is a plug-in utility for APC UPS to search and operate all SNMP devices in the LAN.

Click the "SNMP Manager" to access SNMP management tool.

It has four sections as marked in the illustration below:

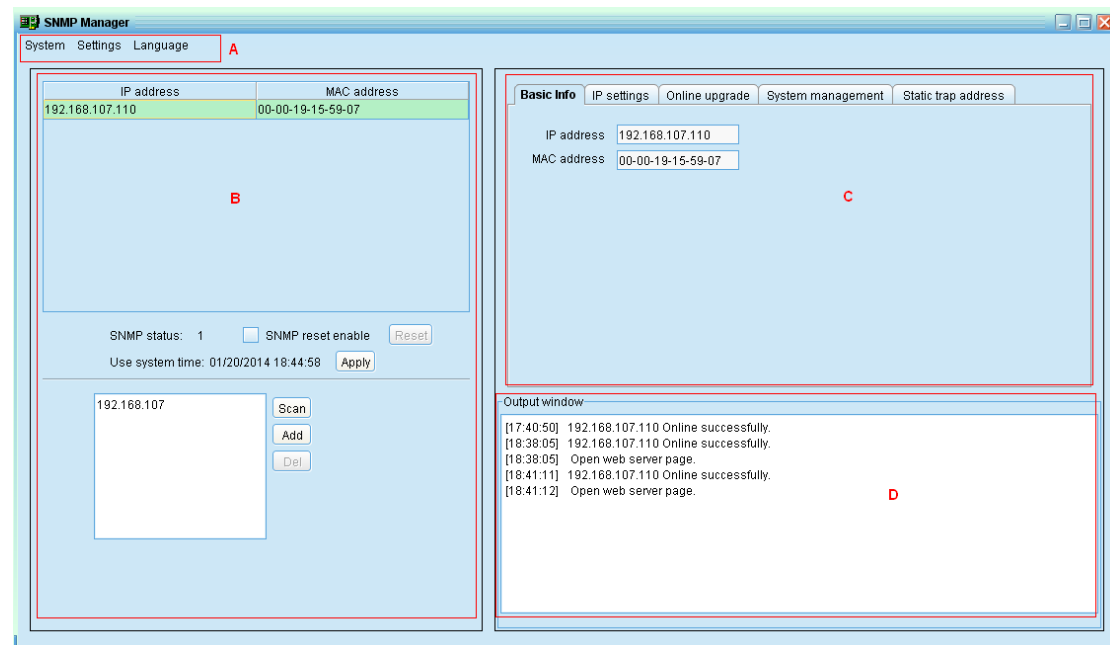


Diagram 3-1

A. Function menu offers tool-set for setting SNMP devices.

B. SNMP device list can list down all SNMP devices with IP address.

C. Configuration area includes IP settings, online upgrade, password management, and static trap address.

D. Output window displays all messages for operations

3.3.1. SNMP Device List

The default value in the window list would be current PC IP address. For example, if IP address of current PC is "192.168.102.10", it will display "192.168.102" in list when first enabling SNMP Manager.

Scan

You may enter a specific IP address and then click "Scan" button to search.

Add

Click "Add" button and it will pop up a window to ask for entering a specific IP address. Then, click "Apply" button to add IP address (Subnet). Refer to Diagram 3-2.

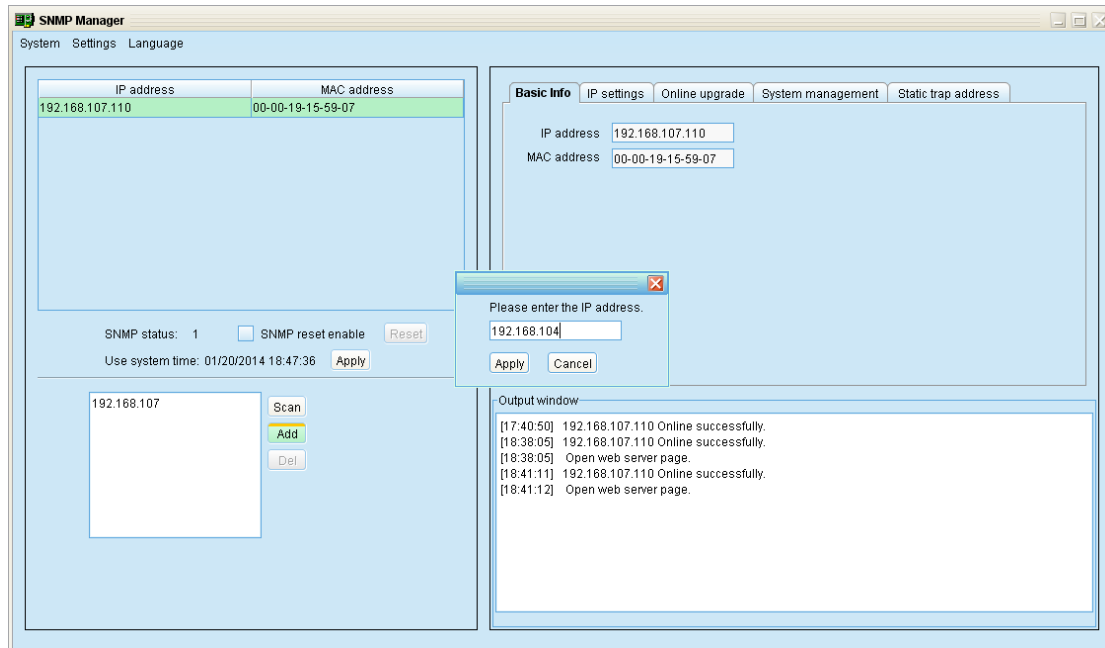


Diagram 3-2

Delete

You may select an IP address from the list and remove it by clicking "Del" button.

SNMP Status

It will display SNMP status, 0 or 1, after selecting IP from the IP list. If there is a program inside of the selected SNMP card, the status becomes 1. If not, it will display 0. If no IP address is selected, it will display "---" as default. Refer to Diagram 3-3.

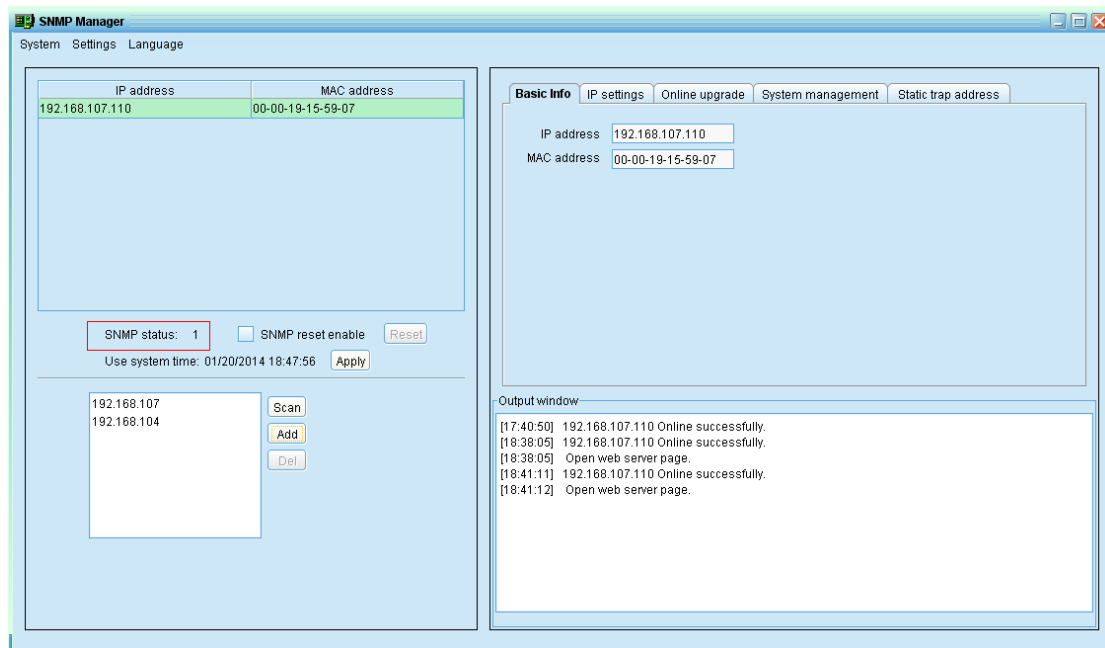


Diagram 3-3

Reset

If it is required to restart the IP addresses of devices, please select the checkbox of "SNMP reset enable" and click "Reset" button. Then, if login is confirmed, you can restart the device. Steps are as follows:

Step1: Select IP address needed to restart IP from the list. Then, "SNMP reset enable" will become available to select. Refer to Diagram 3-4.

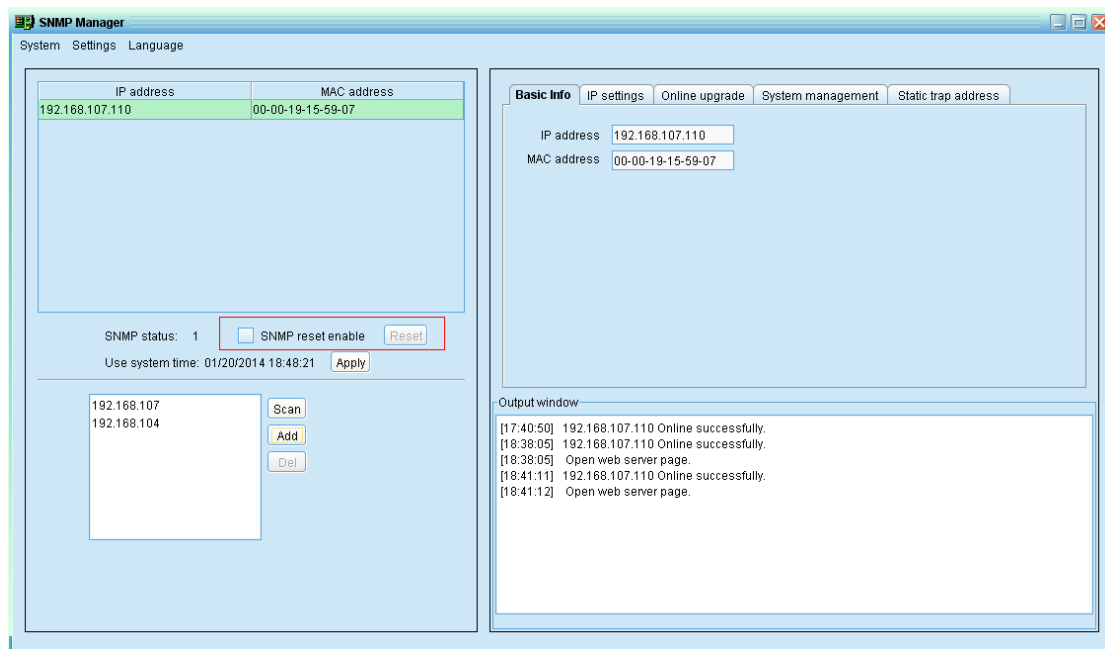


Diagram 3-4

Step2: Click checkbox of "SNMP reset enable". Then, "Reset" button will become available to click. Refer to Diagram 3-5.

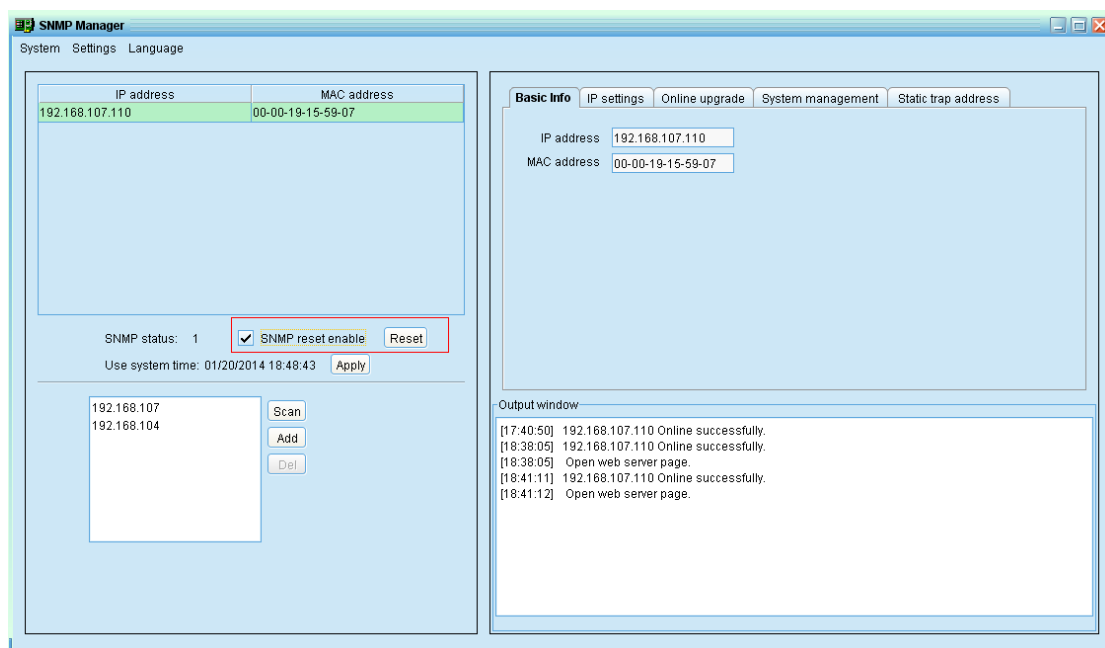


Diagram 3-5

Step3: Click "Reset" button and it will pop up a message to confirm this operation. Refer to Diagram 3-6.

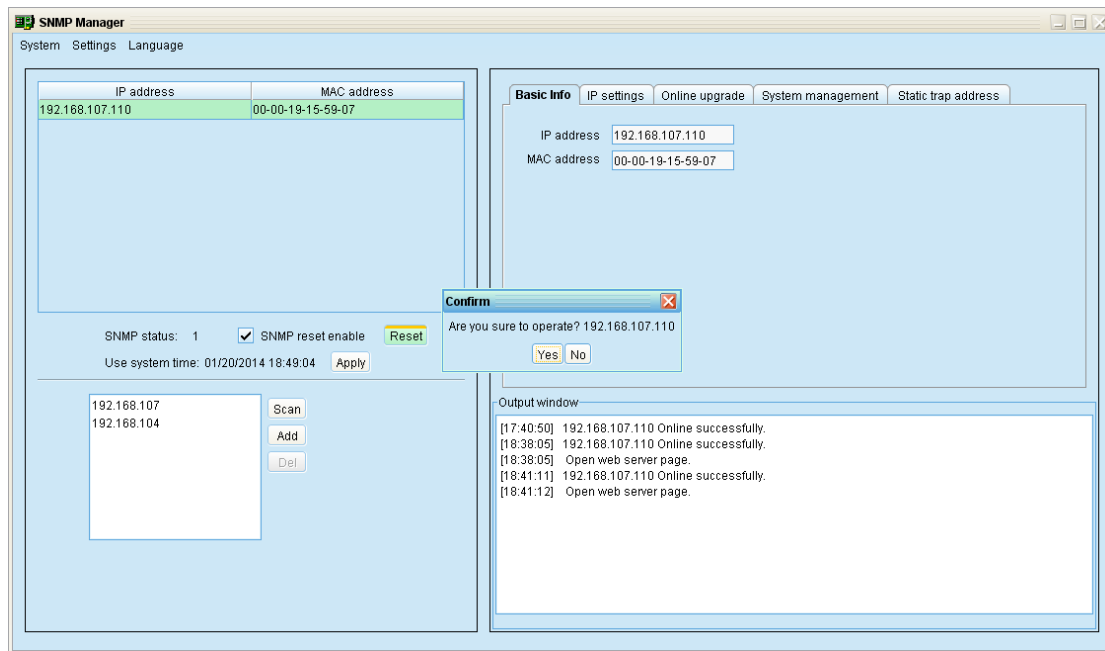


Diagram 3-6

Step4: If "Yes" is selected, it's requested to log in first. If "No" is selected, it will stop this operation. Refer to Diagram 3-7.

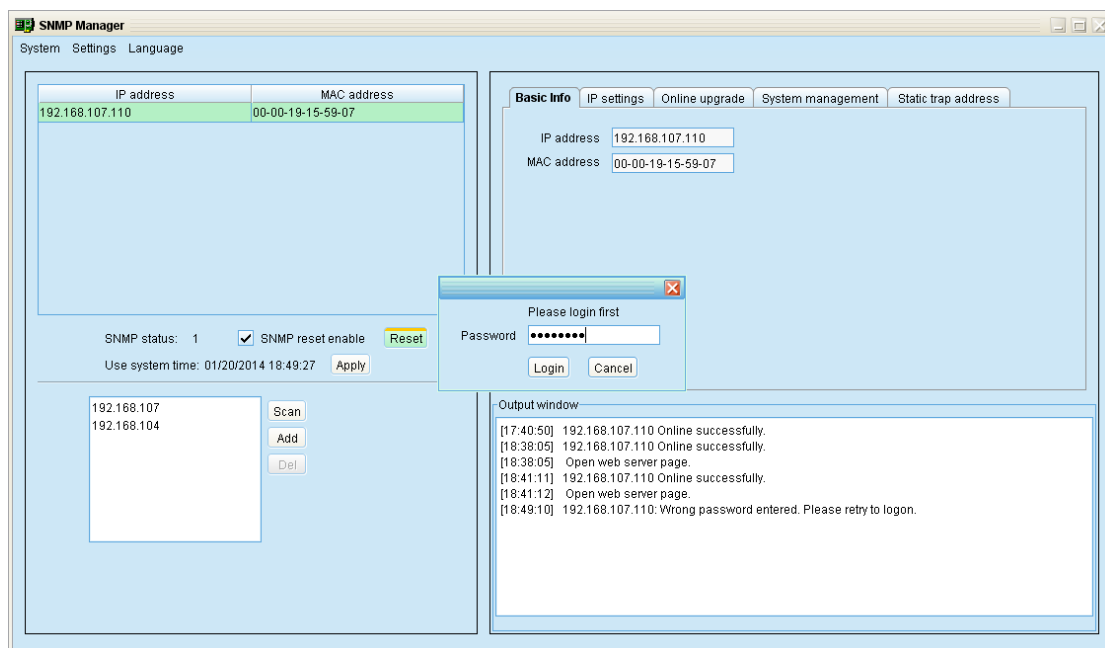


Diagram 3-7

Step5: Enter the correct password and click "Login" button. The target device will be restarted.

NOTE: If changing the MAC address of current device before reboot and the current device is applying DHCP (Automatically obtain IP address) method, you

need to manually click "Scan" button to scan.

Use system time

If "Use system time" is selected, the SNMP card will apply PC system time. Refer to Diagram 3-8.

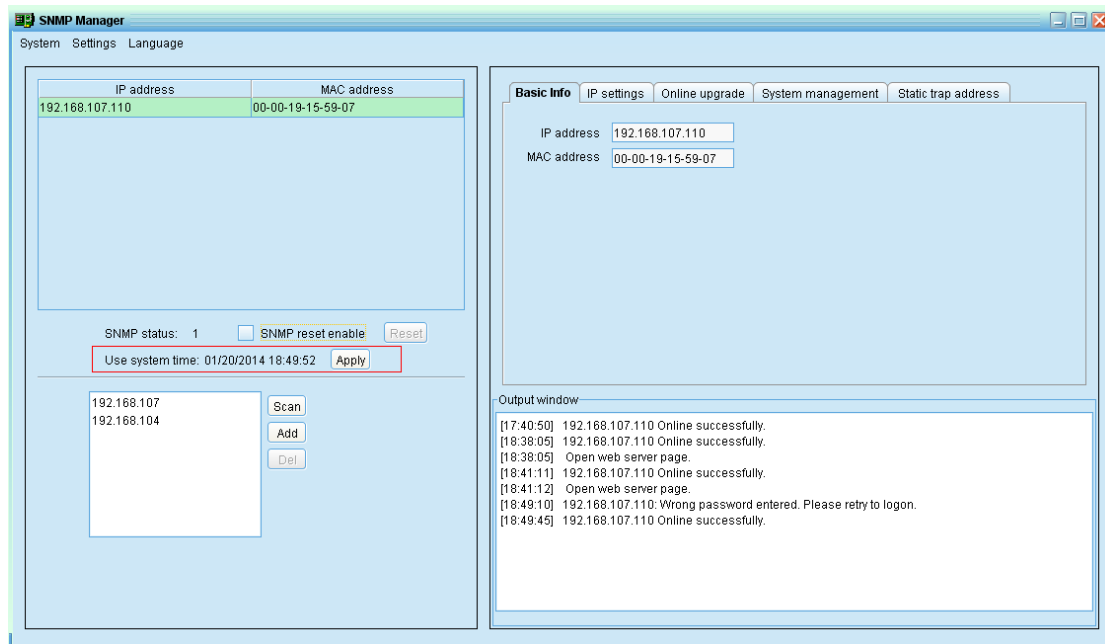


Diagram 3-8

3.3.2. Function Menu

3.3.2.1. System

Login

It's necessary to verify ID to remote access SNMP devices. The default password is "12345678".

Step 1: Select System >> Login

Step 2: Enter default password and then click "Login" button. Or click "Cancel" to cancel login. Refer to Diagram 3-9.

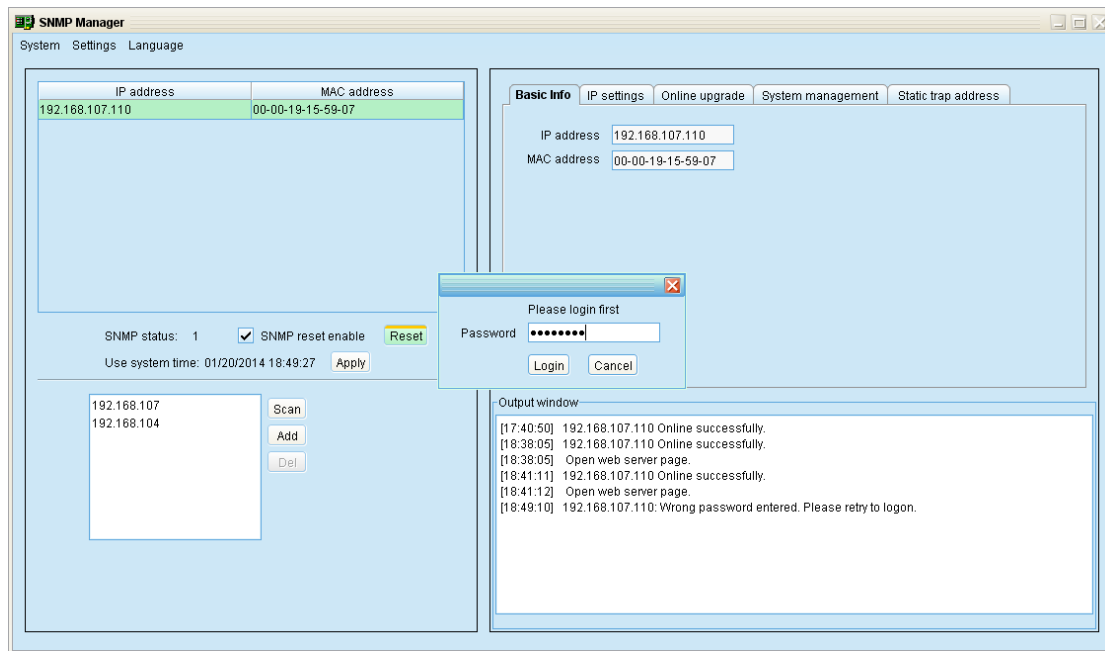


Diagram 3-9

Logout

Clear all currently saved passwords.

Quit

Select "Quit" to exit SNMP Manager.

3.3.2.2. Settings

Basic Info

User can manually enter basic information of SNMP cards such as UPS name, Address, and Note for verification. Refer to Diagram 3-10.

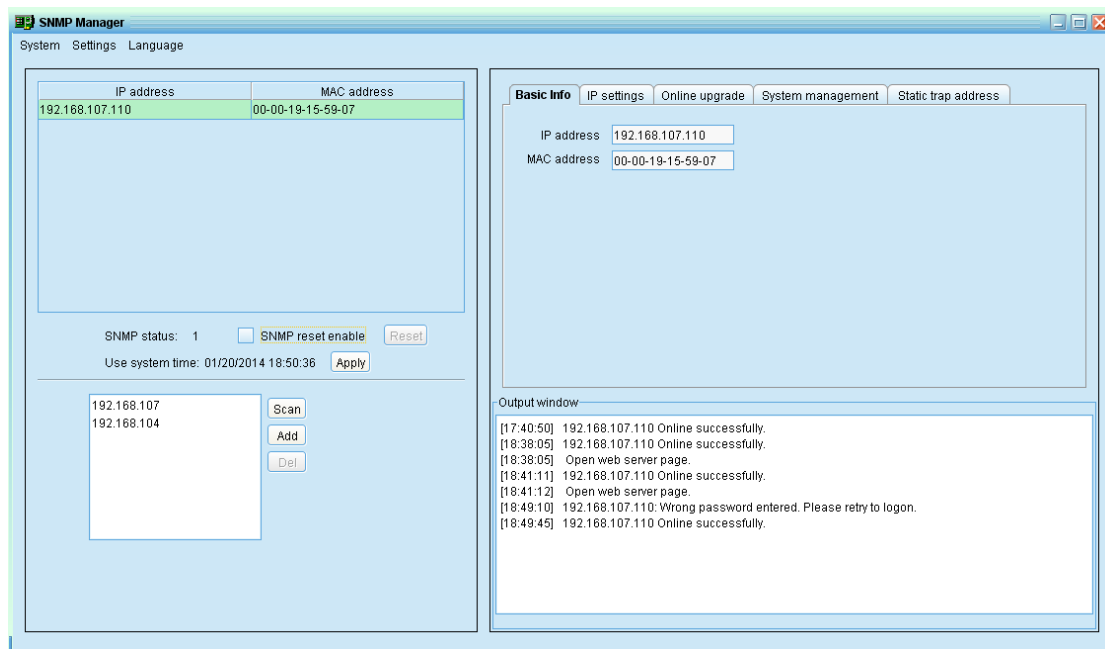


Diagram 3-10

IP Setting

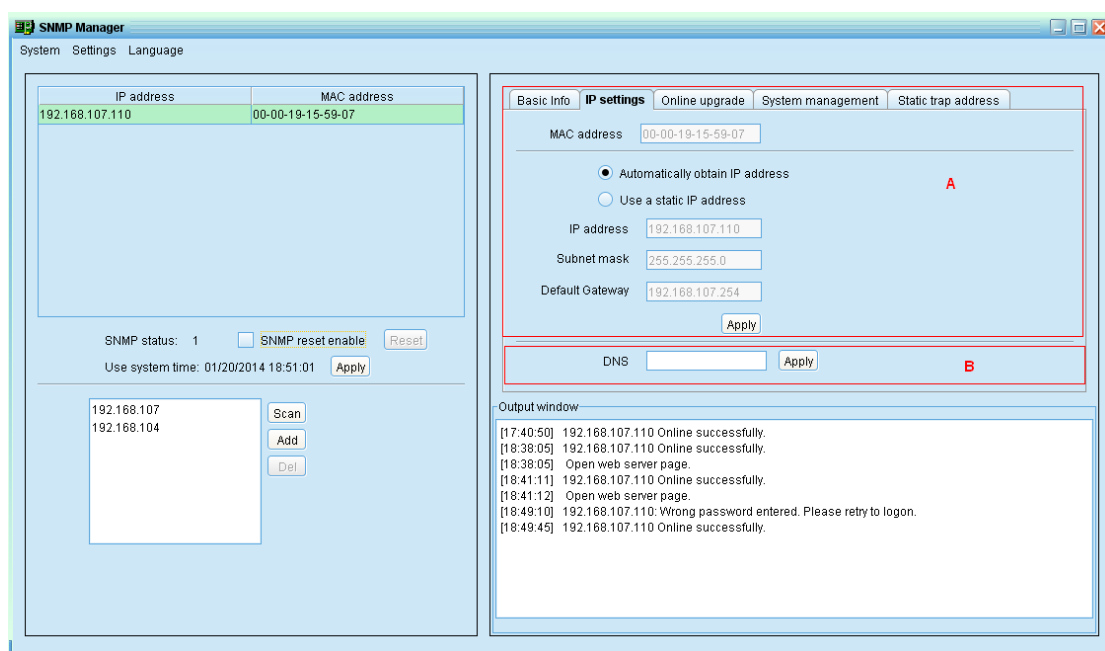


Diagram 3-11

Part A: There are two methods to obtain IP address. Refer to section A in Diagram 3-11.

- Automatically obtain IP address (DHCP)

It will allow system to automatically obtain IP addresses. If there is not this kind of service provided in LAN, the default IP will display as

"192.168.102.230", Subnet mask as "255.255.255.0" and default gateway as "0.0.0.0". Simply click "Apply" button to apply this change.

- Use a static IP address

It will allow users to enter a static IP address for SNMP devices. When entering the IP address, Subnet mask, and gateway address, simply click "Apply" button to apply this change.

Part B: Enter the DNS and click "Apply" button. Refer to section B in Diagram 3-11.

Online upgrade

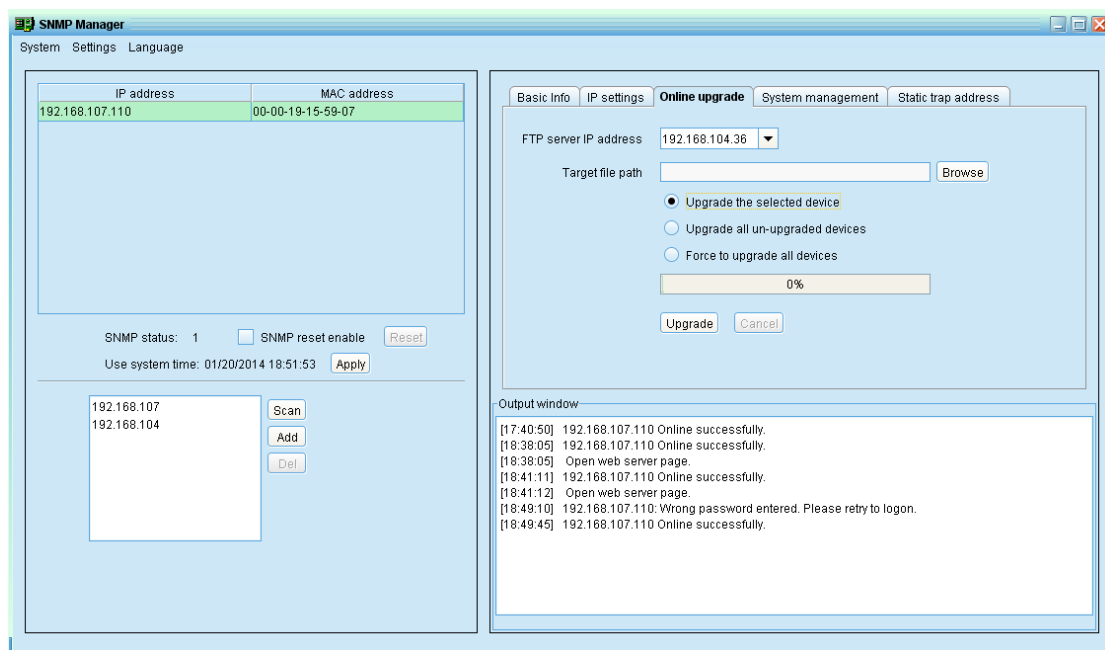


Diagram 3-12

There are three methods for online upgrade:

- FTP server IP address: If applying upgrade for Modbus Web Server in LAN, FTP server IP address will be IP address of current PC in LAN. If applying upgrade for Modbus Web Server in specific networking, FTP server IP address will be IP address of current PC in Internet.
- Upgrade the selected devices: It will upgrade all SNMP devices listed in the IP list.
- Upgrade all devices not already upgraded: It will only upgrade SNMP devices which are not using the latest version.

- Force to upgrade all devices: No matter what kind of version is being used for SNMP devices listed in the IP list, it will upgrade to the latest version for all SNMP devices. Refer to Diagram 3-12.

Step 1: Click “Browse” button to choose program file. Refer to Diagram 3-13.

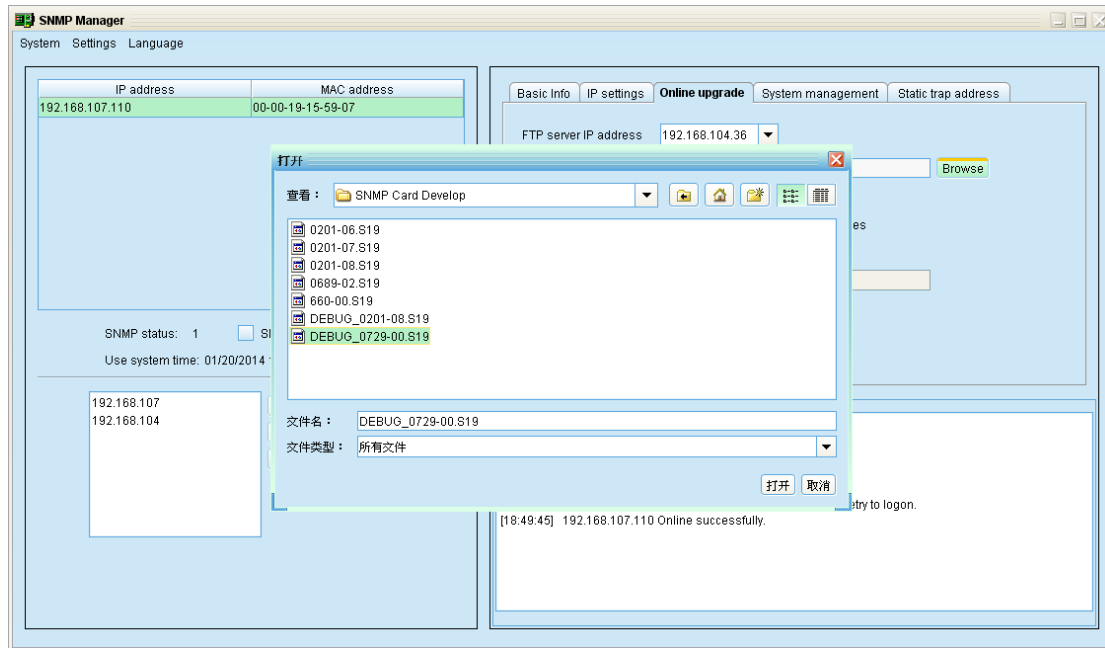


Diagram 3-13

Step2: Click “Upgrade” button to execute upgrade action. Refer to Diagram 3-14.

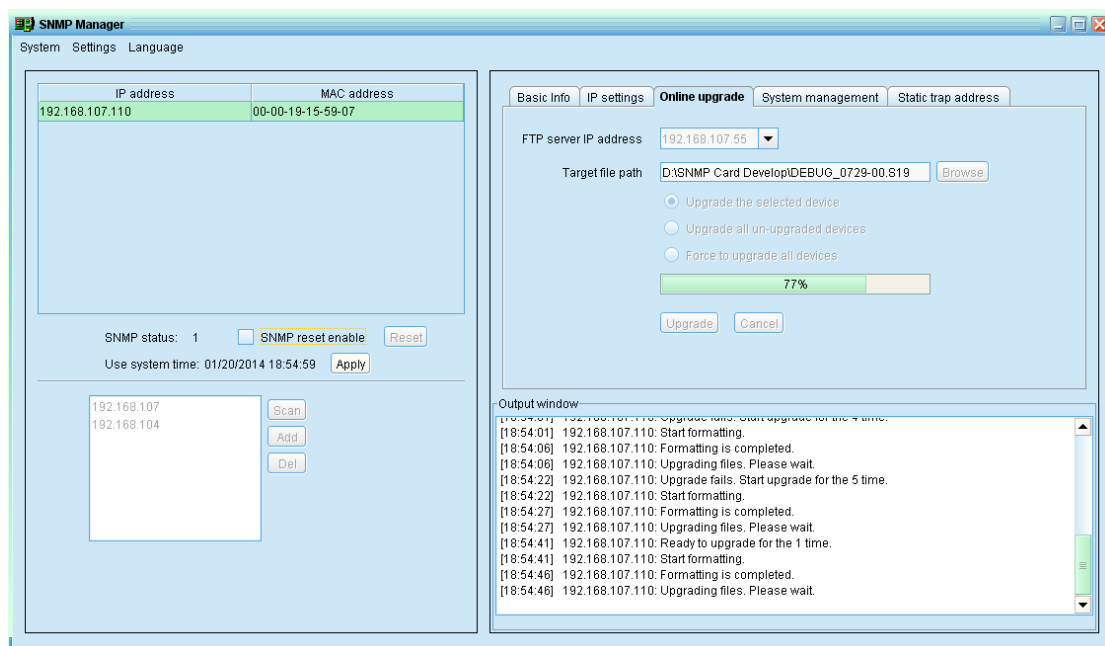


Diagram 3-14

Step3: When upgrade is complete, you may check the message in output window. Refer to Diagram 3-15.

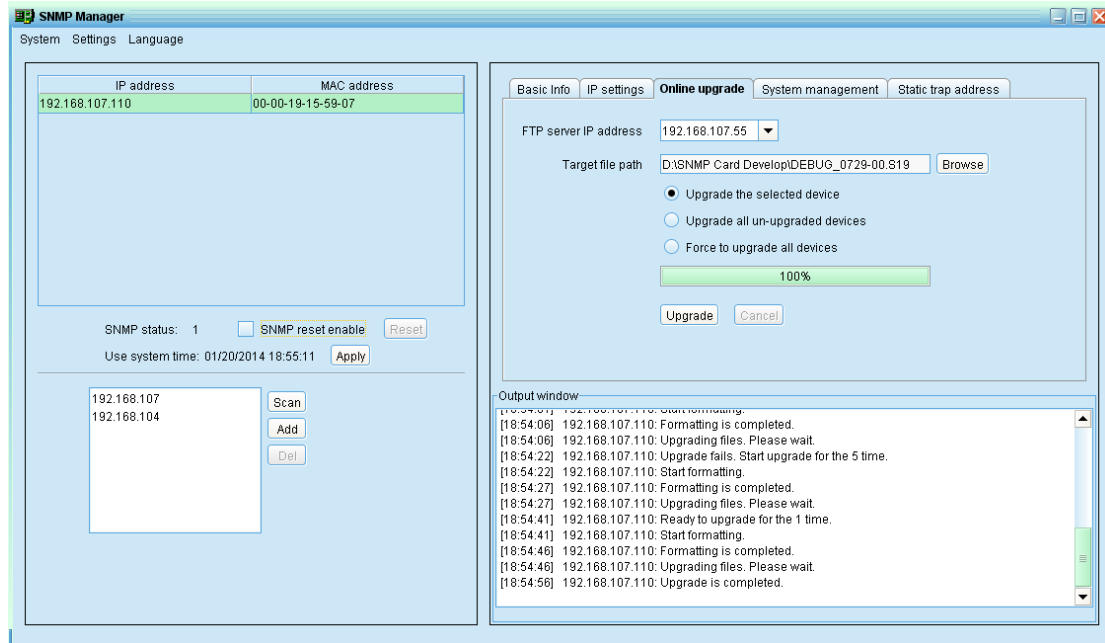


Diagram 3-15

NOTE: If an abnormal situation occurs during upgrade process, the system will automatically re-start the upgrade operation. If this interruption occurs five times, then the system will automatically stop this operation. At this time, please check if LAN is working well.

System management

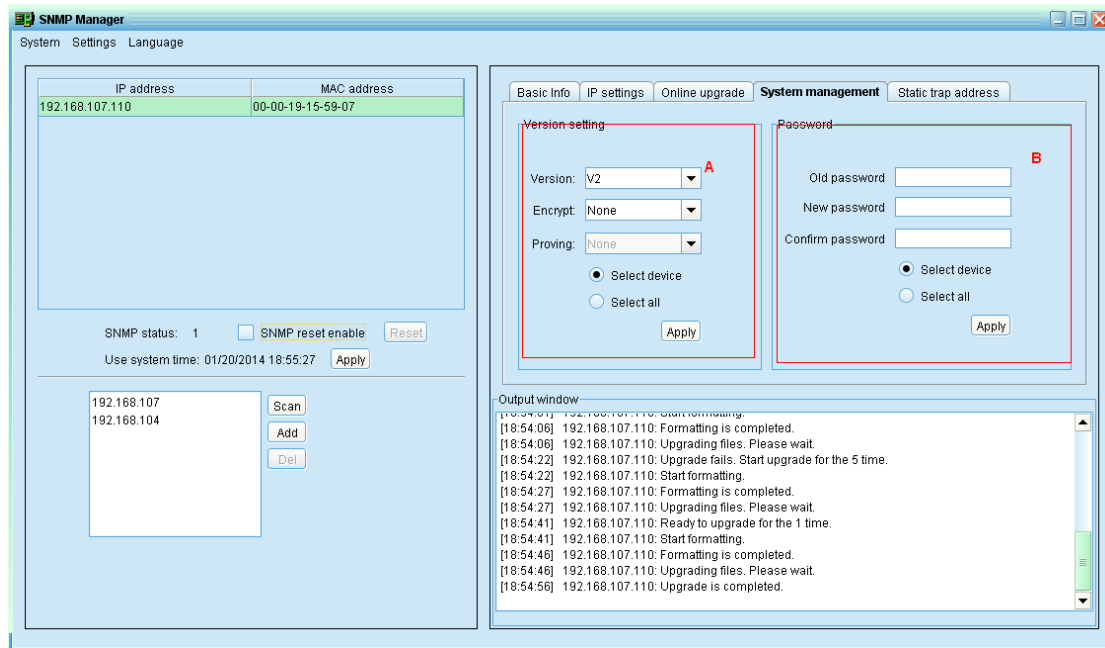


Diagram 3-16

Part A: You can set SNMP protocol version for selected or all devices. Simply choose SNMP protocol version first. The default setting is V2. If choosing V3, it's also necessary to set encrypt. Select devices to apply this setting.

- Select device: Set SNMP protocol version for selected SNMP devices from device list.
- Select all: Set SNMP protocol version for all SNMP devices from device list.

Then, click "Apply" button to complete version setting.

Part B: You may modify a single password for one SNMP device or all passwords for all SNMP devices. Please enter original password, new password and re-enter new password. Select devices to apply this setting.

- Select device: Choose to change password for selected SNMP device from device list.
- Select all: Choose to change passwords for all SNMP devices on the window list

Then, click "Apply" button to change password.

NOTE: The length of password is 8~15 digits. If this change is applied for all SNMP devices, the password will be consistent for all SNMP devices.

Static trap address

You may configure two static trap addresses and change trap port in SNMP Manager. The default trap port is 162. Refer to Diagram 3-17.

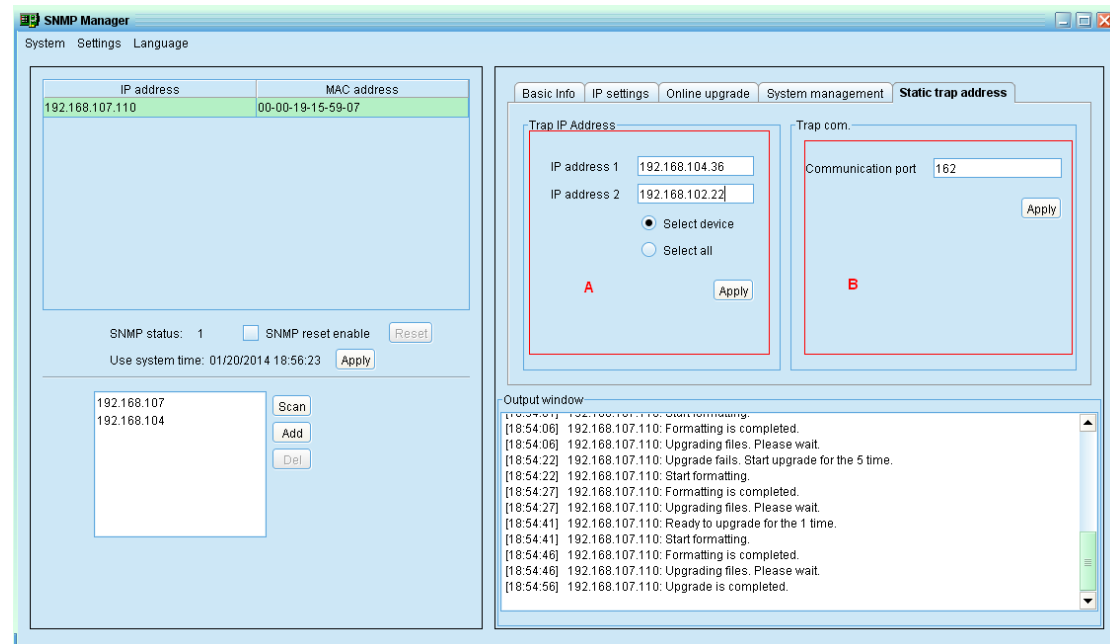


Diagram 3-17

NOTE: This software allows SNMP device to send trap messages to 2 static trap addresses and 8 dynamic trap addresses. It will default define host computer with software installed as a dynamic trap address. If communication failure occurs between the SNMP card and host computer for over 10 minutes, it will stop sending trap message.

3.3.2.3. Language

SNMP Manager offers 12 languages:

- ✓ Chinese(Simplified)
- ✓ Chinese(Traditional)
- ✓ English
- ✓ German
- ✓ Italian
- ✓ Polish
- ✓ Portuguese
- ✓ Russian

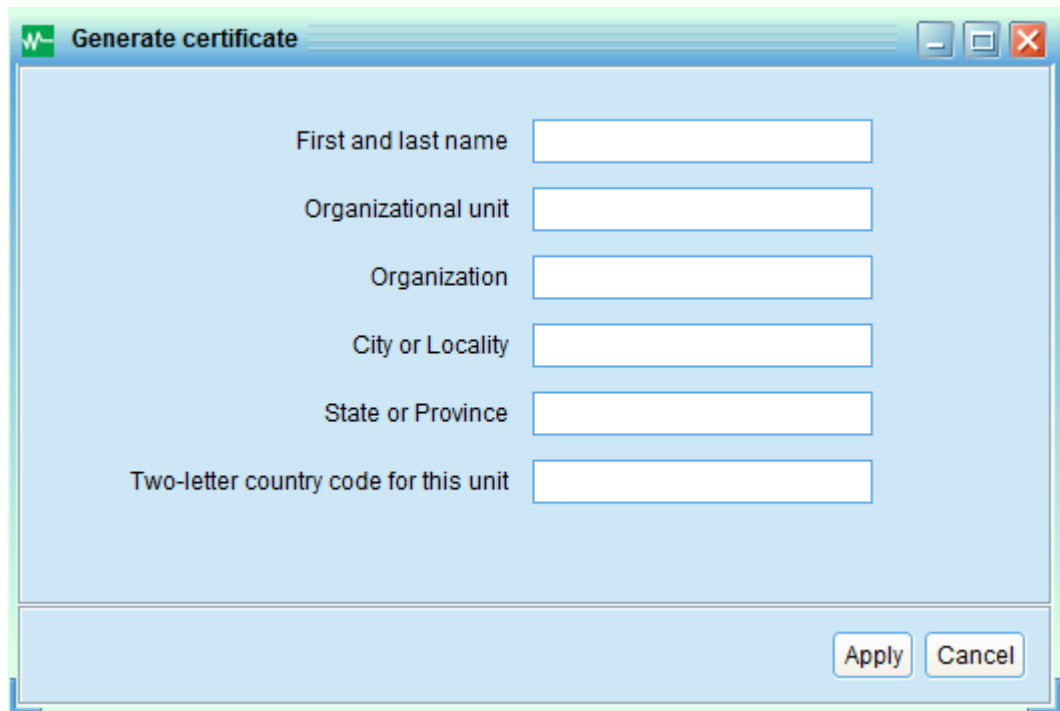
- ✓ Spanish
- ✓ Turkish
- ✓ Ukrainian
- ✓ French

The default language setting is "English".

3.4. Https

Https section includes "Certificate Generation" and "Import Certificate".

- Certificate Generation: it will automatically generate a numeral certificate according to the information users enter. Refer to Diagram 3-18:



The image shows a Windows-style dialog box titled "Generate certificate". It has a light blue background and a title bar with a green icon and the text "Generate certificate". The dialog contains six text input fields arranged vertically, each with a label to its left: "First and last name", "Organizational unit", "Organization", "City or Locality", "State or Province", and "Two-letter country code for this unit". At the bottom right of the dialog are two buttons: "Apply" and "Cancel".

Diagram 3-18

Note 1: Please enter internet domain name and IP address in "First and last name" column.

- Import Certificate: It will import a https certificate from a third party. It supports JKS and PKCS12 types of certificate. Refer to Diagram 3-19.

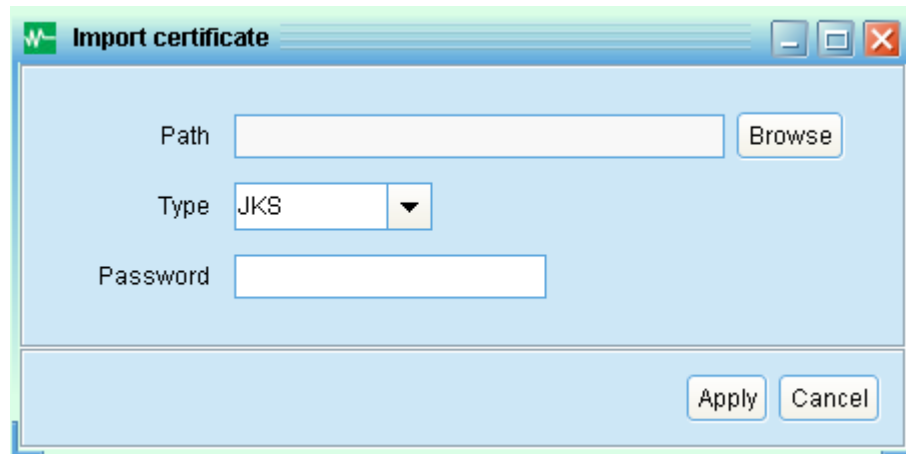


Diagram 3-19

3.5. Open Monitor

Click "Open Monitor" to open monitoring webpage.

3.6. Exit

Click "Exit" to exit service application.

4. APC UPS GUI

APC UPS GUI includes function menu, shortcut button, login section and main screen. Refer to diagram 4-1:

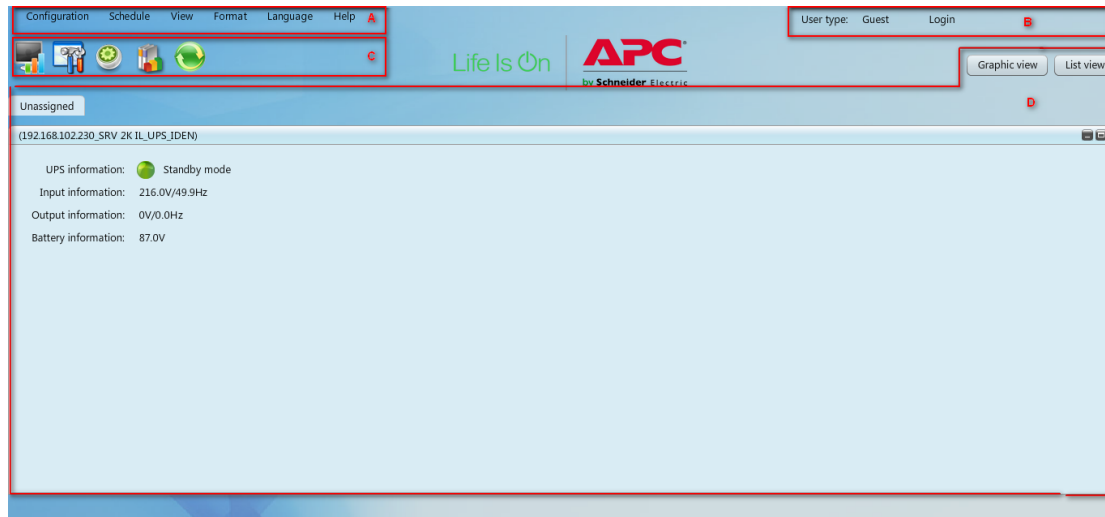


Diagram 4-1

A .Function Menu

It offers complete tool-set for navigation and setting the GUI.

B .Login section

It shows user type for current login user.

C .Shortcut button

-  Centralized monitoring.
-  Password, group area, UPS setting, SMS, E-mail, load configuration, event action, log setting, EMD manager, modbus communication setting.
-  Scheduled on/off, scheduled battery self-test, and scheduled wake-on-LAN setting.
-  Event log, event statistics, data, diagram, and EMD log.
-  Refresh.

D. Main Screen

It will display information and/or control alternatives according to function

menu or shortcut menu selected.

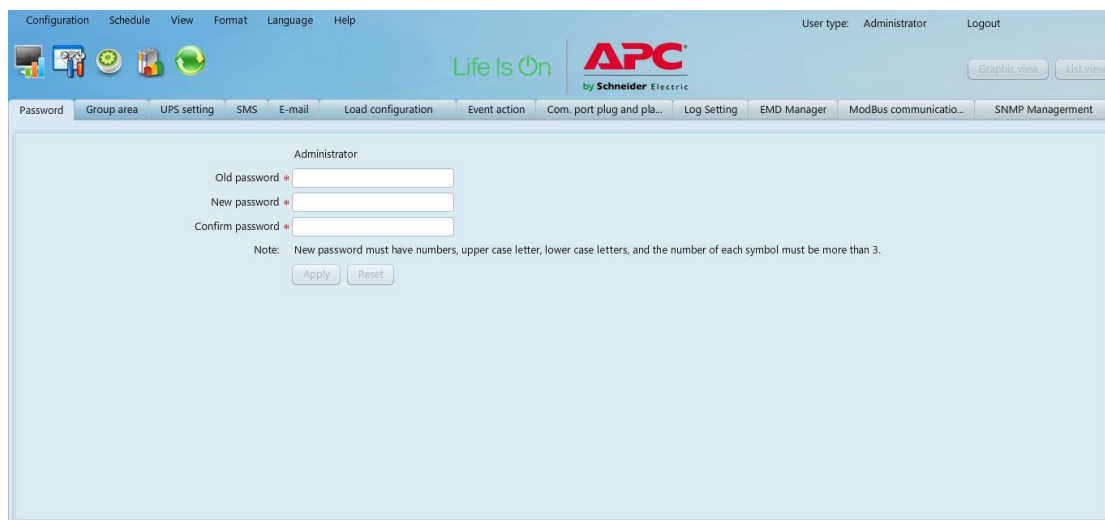
5. APC UPS Menu

5.1. Configuration

5.1.1. Password Setting

It's password configuration for administrator only. The default user name and password is "**administrator**". Before operating and configuring the software, please login and modify the default password first for security. Users can only browse the UPS status and information as Guest status without login as an Administrator. Guest can NOT control or execute any setting.

Step 1 Select Configuration>>Password. Refer to Diagram 5-1.



The screenshot displays the APC UPS web interface. At the top, there is a navigation bar with tabs: Configuration, Schedule, View, Format, Language, and Help. Below this is a secondary navigation bar with various icons and links. The main content area is titled "Administrator" and contains three input fields for "Old password", "New password", and "Confirm password". A note below the fields states: "Note: New password must have numbers, upper case letter, lower case letters, and the number of each symbol must be more than 3." At the bottom of the form are "Apply" and "Reset" buttons. The top right corner shows "User type: Administrator" and a "Logout" button.

Diagram 5-1

Step 2 Enter old password and type twice new password to modify password for administrator. (The password should be at least 6 digits) Then click "Apply" button to successfully modify password for administrator.

NOTE1: Simply click "Login" button on the top right corner to login to the software.

NOTE2: If password is forgotten, it's necessary to re-install the software.

5.1.2. Group area

Select Configuration>>group area, user can assign monitored UPSs into different groups for best management. APC UPS has a default group called “Unassigned”. When a UPS is detected, it will automatically put in the “Unassigned” group. Users are able to not only create and customize groups here, but also assign groups in “UPS setting”. Refer to diagram 5-2.

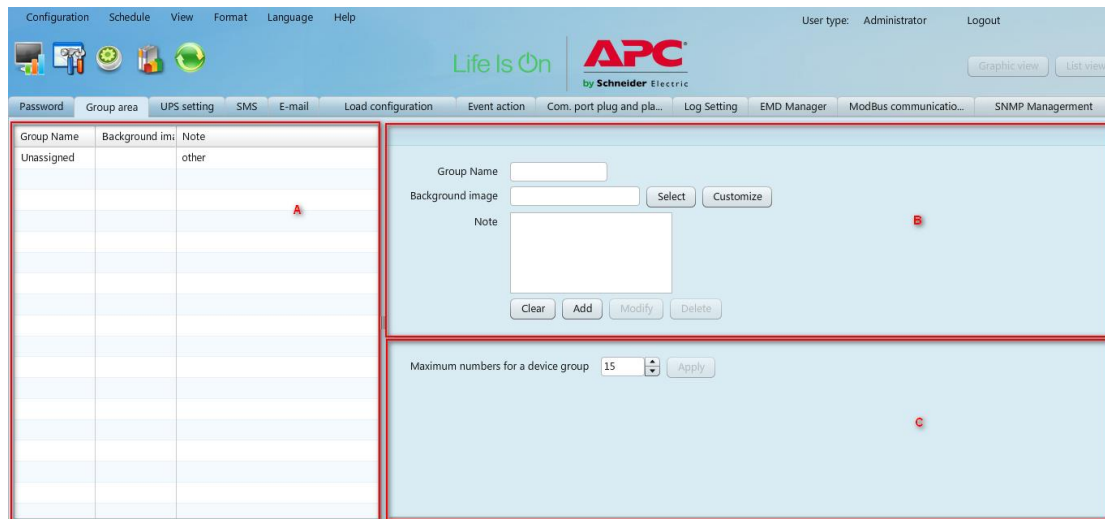


Diagram 5-2

Section A Group list: Shows group information;

Section B Group editor: add/delete, set up and modify group;

- Background image: Click "Customize" button to import preferred image into software as background for graphic view. Or users can simply select preferred photos from default image database by clicking "Select" button.
- Add group: Add group into group list in section B. Then click "Add" button to add.
- Modify group: Select a group from the list in section A to modify the current setting and it will show the current setting in section B directly. After entering new data, simply click "Modify" button to update setting.
- Delete group: Select the group which needs to be deleted from the list on section A. Then click "delete" button to delete.

Note1: Default group can only be modified, it cannot be deleted.

Note2: When “Add” button is disabled, first execute “Clear” operation.

Section C Maximum numbers for a device group: It means maximum numbers will be shown in each group.

5.1.3. UPS setting

Select Configuration >> UPS setting. It helps users to assign or re-assign groups for monitored UPSs. When a new UPS is detected, it will automatically put in default group - “Unassigned”. Refer to diagram 5-3:

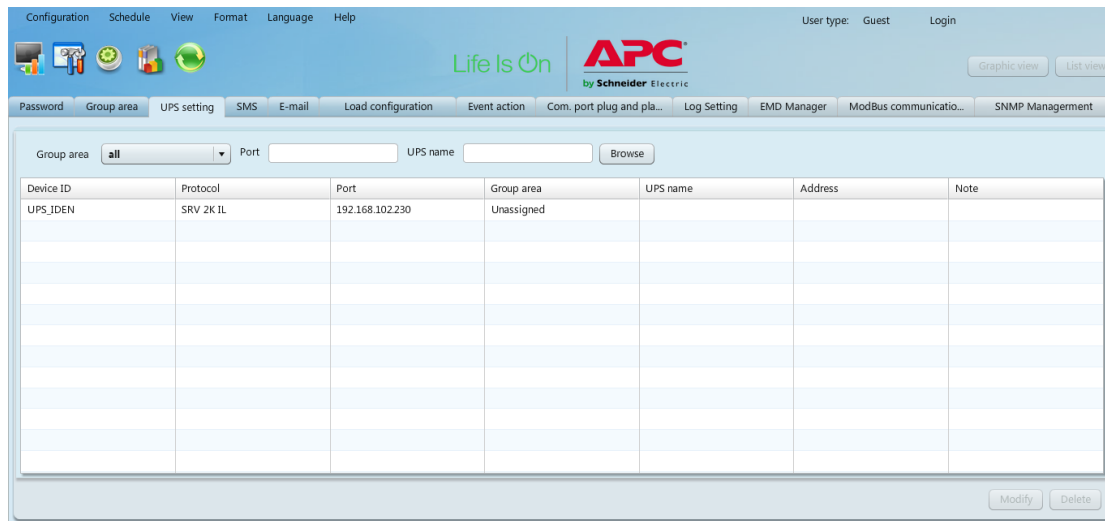


Diagram 5-3

➤ Query

User can query information according to the Group area, Port, UPS name by clicking each column tab.

➤ Modify

Select UPS that needs to be modified from the list and click “Modify” button for modification. It will pop up information board of each monitored UPS and users can assign or re-assign UPSs to group area. It also can enter the UPS location and name here for internal reference. Click “Apply” button to save all changes. Refer to diagram 5-4:

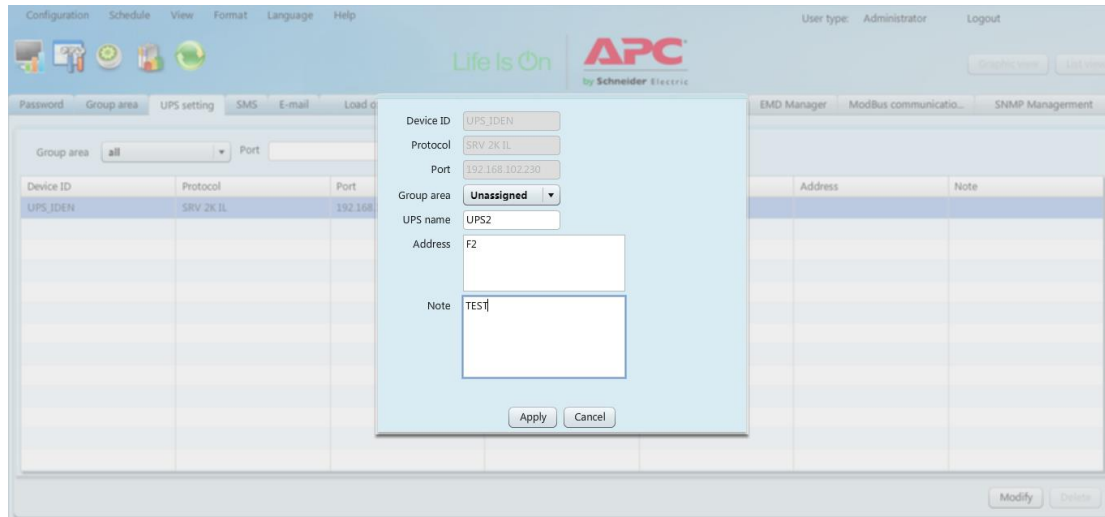


Diagram 5-4

➤ Delete

Select UPS and click "Delete" button to remove it from the list.

5.1.4. SMS

It's for entering SMS receiver list. In the event of an alarm condition occurring, a message about UPS status will be sent to the specified users via mobile phone. For the event receiving list, please configure in "Event Action" page (refer to section 5-8-7).

1. Choose Configuration >> SMS. Refer to Diagram 5-5:

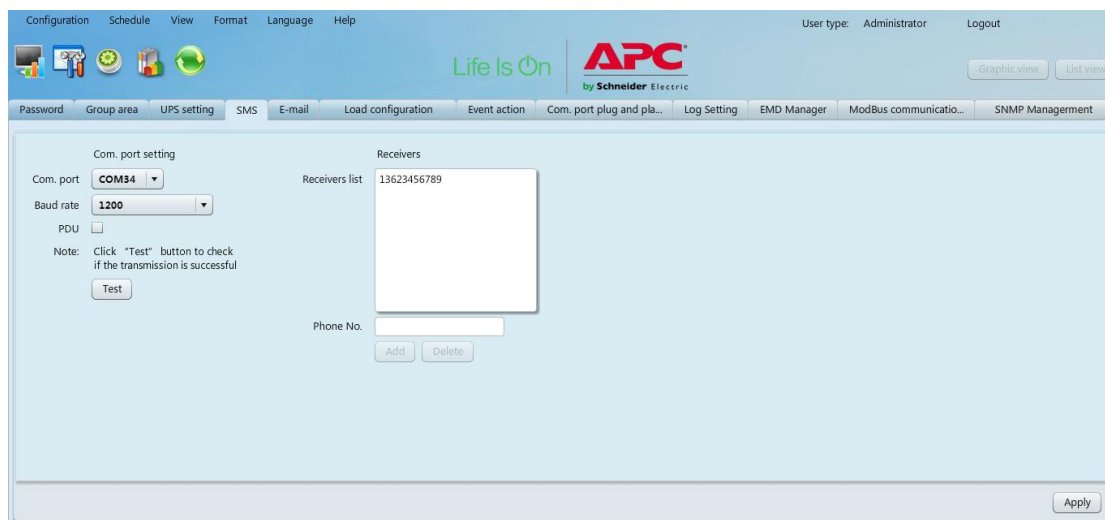


Diagram 5-5

2. Select communication port and baud rate.
3. Enter mobile phone numbers in "Phone no." column and click "Add"

button to add phone no. in Receivers List. To delete numbers, simply select phone no. from "Receivers list" and click "Delete".

4. Click "Apply" button to save all changes. The "Test" button can be used to send tests SMS to confirm the correct operation. If all parameters are set up correctly, system will send a test message to all receivers and pop up a successful message. Otherwise, it will pop up a failure dialog to indicate there is an error for parameter setting.

NOTE: It's required to plug-in a GSM Modem if sending SMS to mobile phones.

5.1.5. E-mail

This feature enables the configuration to send alarm mail by SMTP server. For the event receiving list, please configure in "Event Action" page. Refer to 5-8-7. To use this function, the e-mail service must be correctly configured in the computer. All values in this function page are default empty. This action can't be executed without the SMTP information, e-mail account and password. Besides, the sender account should be allowed for SMTP/POP3 forwarding.

Select Configuration >> E-mail. Refer to Diagram 5-6

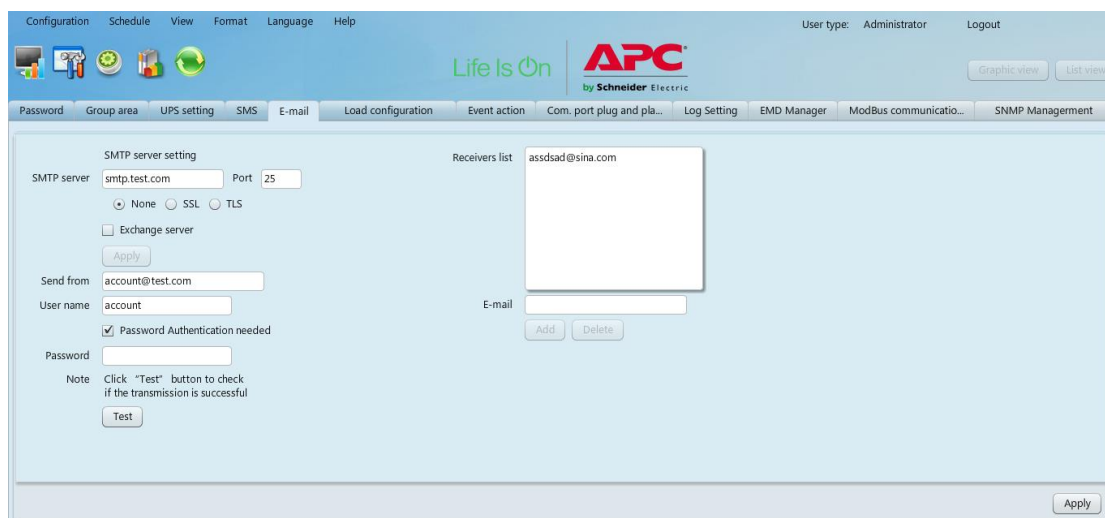


Diagram 5-6

1. Enter SMTP server, SMTP port, Send from E-mail address, User name and password. Click the checkbox of password authentication needed for

password verification. If using Exchange Server for mailbox system, it's required to configure Exchange server domain name in SMTP sever and select "Exchange server". Then, click "Apply" button.

2. Enter correct e-mail accounts in E-mail column. Then click "Add" to add into receivers list. To delete e-mail account, simply select accounts from Receivers list and click "Delete" button.

3. Click "Apply" to save all changes. The "Test" button can be used to send a test e-mail to all receivers to confirm correct operation. When the test e-mails are successfully sent to specific recipients, it will pop up a successful message on operated PC. Otherwise, it will pop up a failure dialog to indicate there is an error for parameter setting.

5.1.6. Load configuration

Load configuration can remotely manage other computers via intranet or internet. It can set up remote computers in power-off options, MAC address, execute file action, whether accept scheduled UPS shutdown or not, waiting time for load shutdown and so on. In addition, it also allows one computer to communicate with multiple UPSs. When any event occurs on the UPS, the software can configure reactions of the monitored UPS via communicated computer.

1. Select Configuration>>load configuration, refer to diagram 5-7:

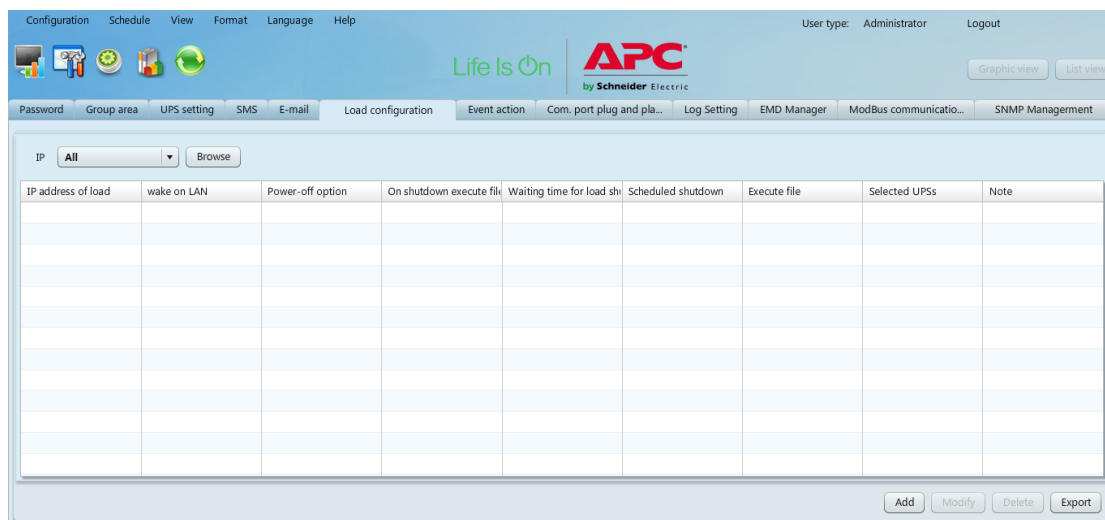


Diagram 5-7

2. Add: Add load information (one computer) by clicking “Add” button.

Refer to diagram 5-8:

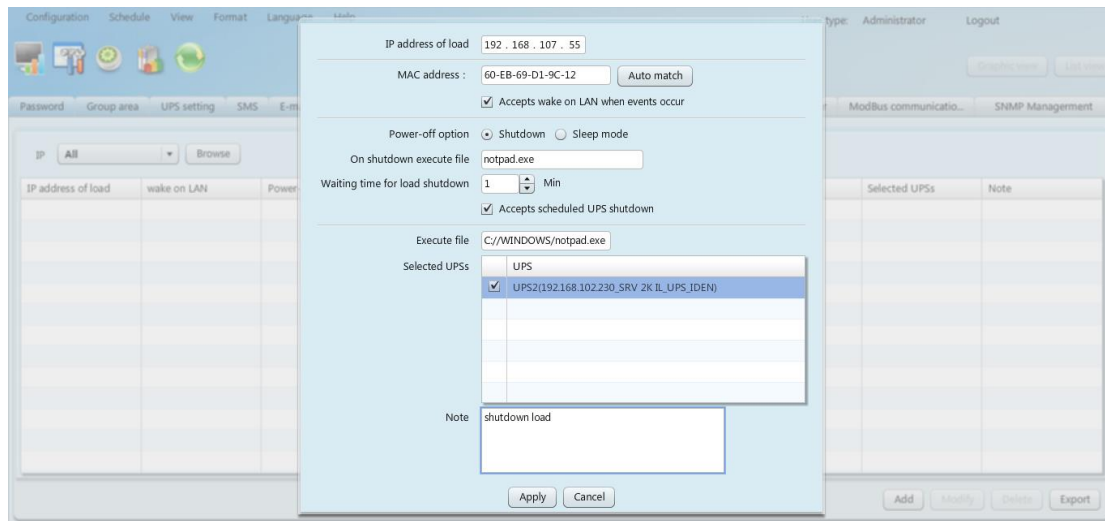


Diagram 5-8

- Enter the IP address of this computer. Then, enter MAC address of this computer. Users also can get MAC address by clicking “Auto match” button when the connection is good.
- **Power-off option:** Selecting power-off method for above shutdown system.
 - ✧ Shutdown: When clicking the checkbox, the selected system will shut down. The default setting is clicked.
 - ✧ Sleep mode: When clicking the checkbox, selected system will suspend the system instead of a normal shutdown. But this function is only supported by Windows 2000 or higher on supported hardware.
- **On shutdown execute file:** Enter the path of execute file.
- **Waiting time for load shutdown:** If selecting “Accepts scheduled UPS shutdown”, enter the waiting time for load shutdown before shutting down UPS.
- **Selected UPS:** Select UPSs to execute shutdown action when entered PC is shut down.

Click “Apply” button to save all changes.

3. Modify: Select one from list to modify configuration by clicking "Modify" button. User can also click "Delete" button to delete this information.
4. Export: Users can export load setting table in CSV format by clicking "Export" button.

5.1.7. Event action

It is to set up reactions after events occur. Select Configuration>>Event action, refer to diagram 5-9:

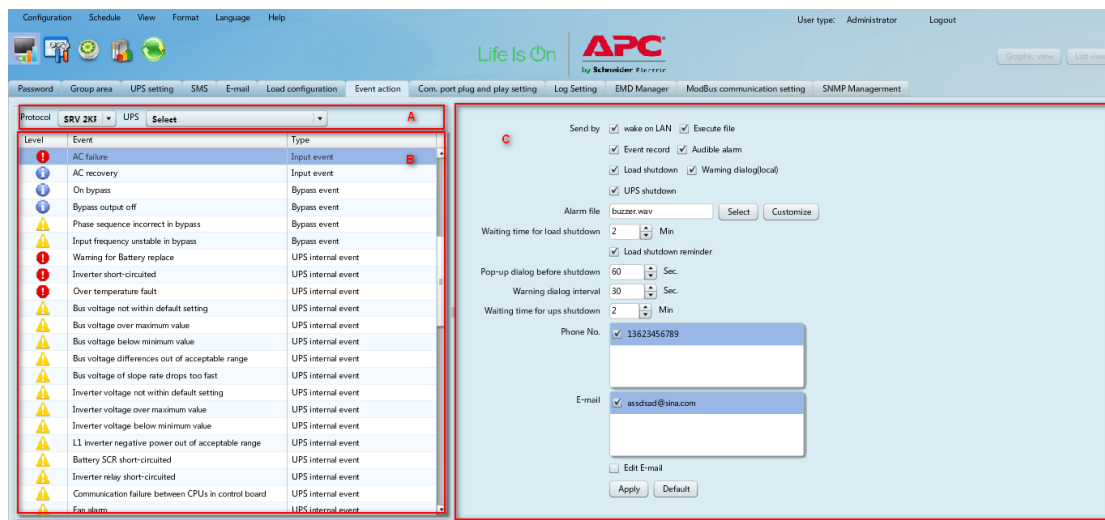


Diagram 5-9

Section A: List all detected UPSs. The system default is all UPSs.

Section B: UPS event list.

Section C: Event action editor

Select UPS from section A and then select event from section B. When selecting event, it's necessary to set up at least one reaction from section C. Click "Apply" button to save setting.

This software provides seven reactions for UPS events.

- Wake on LAN: It is a technology to remotely wake up one computer by a network message. It is also required to have ATX power and hardware support for remote PCs to implement this function. When event occurs, this software will wake up PC by clicking this checkbox.
- Execute file: When event occurs, it will request connected computer to

execute file.

- Event record: When event occurs, it will save the event records to the database.
- Audible alarm: When an event occurs, it will play a selected media file. If the user wants to use customized sound, it's necessary to import the media file into the software by clicking the "Customize" button. Select this imported media file by clicking "Select" button.
- Load shutdown: When an event occurs, it will the Shutdown wizard on remote PCs to shut down computer.
- Warning dialog (local): When an event occurs, it will pop up message box to notify users.
- SMS: When an event occurs, it will send event message to receivers via mobile phone.
- E-mail: When an event occurs, it will send mail to receivers via email. And you can edit E-mail.
- UPS shutdown: When an event occurs, it will shut down the UPS.

Note 1: When editing receiver list in SMS or e-mail columns, it's necessary to refresh the event action page to update receiver list.

Note 2: Event list will be different according to different types of UPS.

Note 3: When one or more of the following three conditions are met, the total of the delays are added together to get the total UPS shutdown delay.

3. The Load Configuration page is configured for 'Waiting time for load Shutdown'.
4. The event is configured for 'load shutdown'.
5. The event is configured for 'UPS shutdown'.

If this total delay is under 600 seconds, the value is set according to the following table.

With the total delay adding to anything from...	...the value is set to...
20 -180	180 seconds
181-300	300 seconds
301-600	600 seconds

5.1.8. Com. Port Plug And Play Setting

To real-time monitor UPS device, it will scan each com. port anytime. In this way, it will occupy communication ports. This function will release some communication ports which are not connected with devices. To avoid any improper operation, unused communication ports will be displayed in disabled grey icons. Users can select "Allow scanned" to re-scan or "No scanning" to release communication ports based on requirements.

Step 1: Select configuration>>Com. port plug and play setting. Refer to Diagram 5-10.

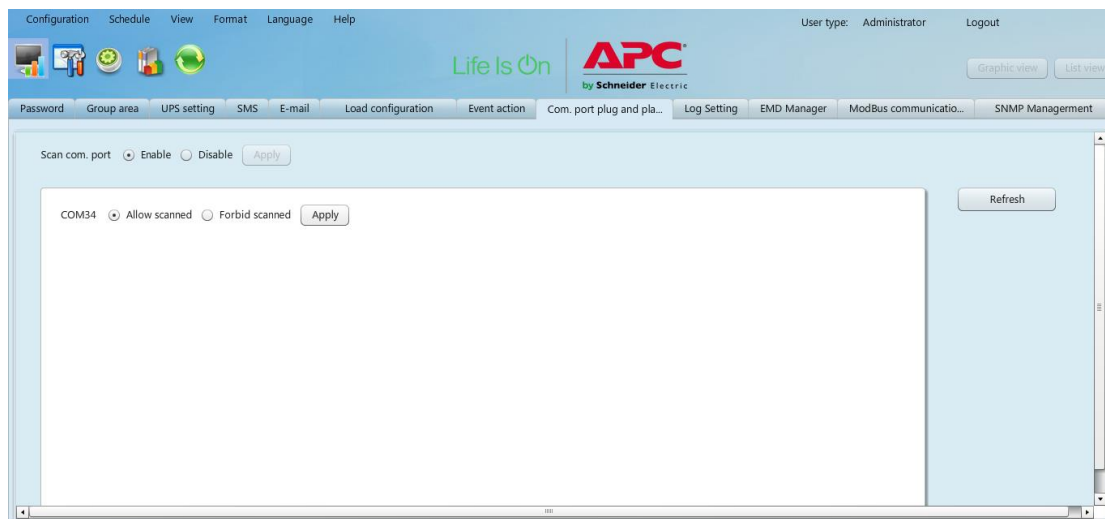


Diagram 5-10

Step 2: Click "Refresh" to reload the status of com. ports.

Step 3: Click "Forbid scanned" to stop scanning on this com. port. Click "Allow scanned" to start scanning on this com. port.

5.1.9. Log setting

- Refresh frequency: The setting range for "Refresh frequency" is 2~600

seconds. It will affect the displayed data refreshed in software screen.

- Record interval: Users can set up "Record Interval", "The max. Numbers of logs for historical data" and "The max. Numbers of logs for historical events" according to a real situation.

The setting range for "Record interval" is 30~600 seconds. It will effect history data displayed under View >> History >>Data.

1. Select configuration>>Log setting. Refer to Diagram 5-11:

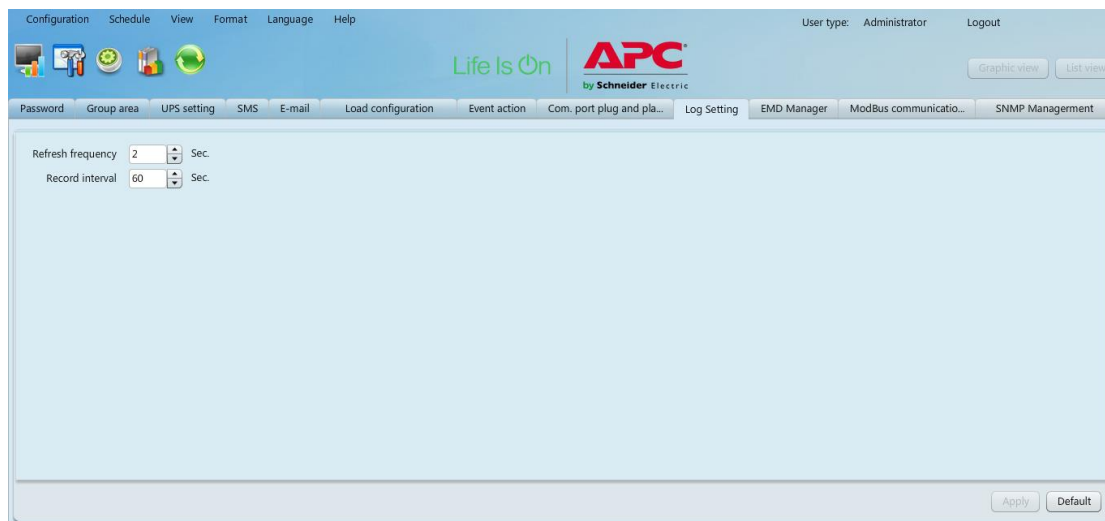


Diagram 5-11

2. Enter time interval and click "Apply" button to save all settings.
3. Click "Default" button to recover the default setting.

5.1.10. EMD Manager

EMD Manager is used to manage Environmental Monitoring Devices. Users can define events and set message texts for each event. It also can set up warning points for temperature, humidity and smoke of devices.

- Dry contact event: Users can define events and set event level. After event is successfully added, users can configure and set alarm. Refer to Diagram 5-12.

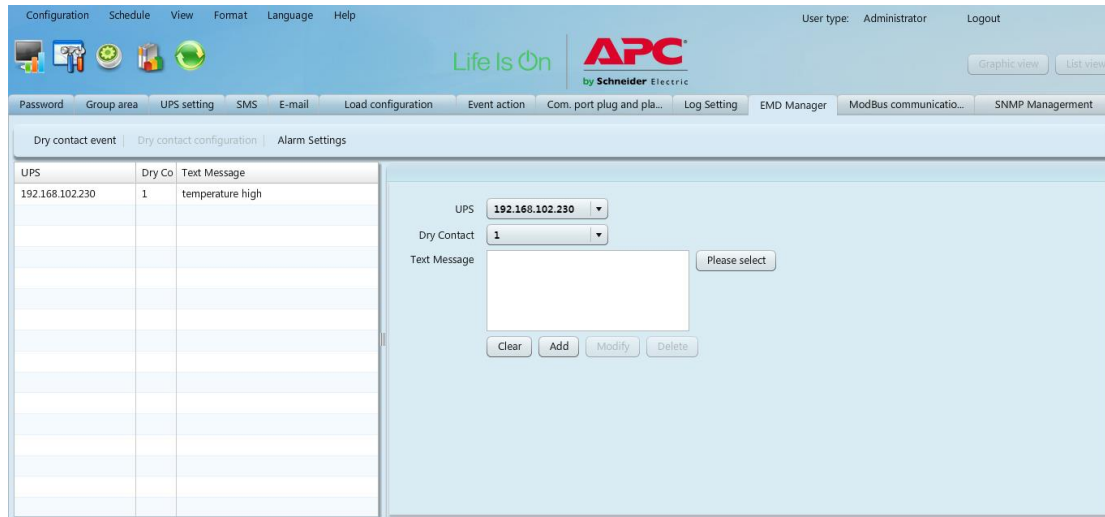


Diagram 5-13

- Alarm Settings: Set up alarm range for temperature and humidity. If detected figures are out of setting range, it will send alarm message. Refer to Diagram 5-14.

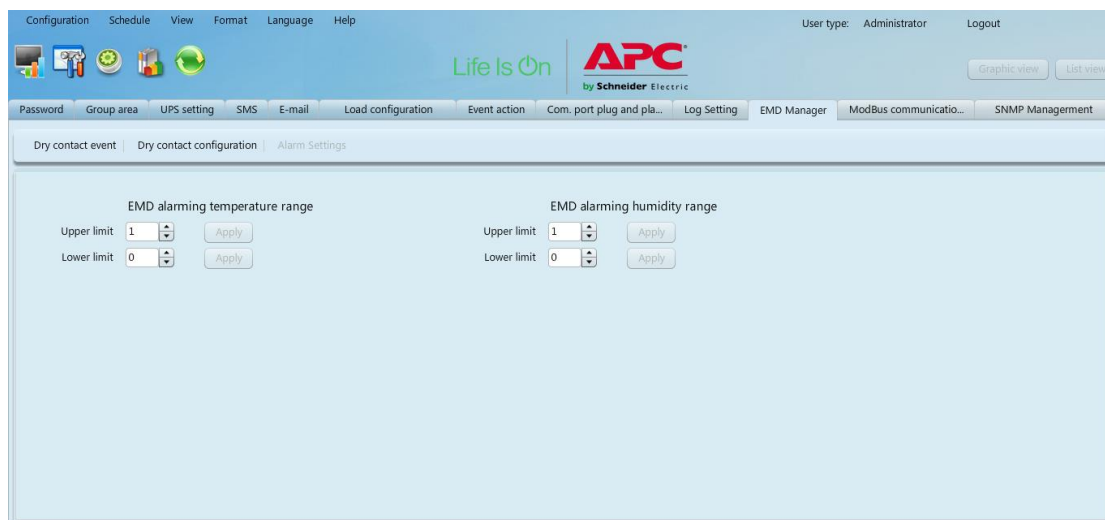


Diagram 5-14

5.1.11. Modbus communication setting

It will display all connected PCs through ModBus.

Step 1 Select configuration>> ModBus Communication Setting. Refer to Diagram 5-15.

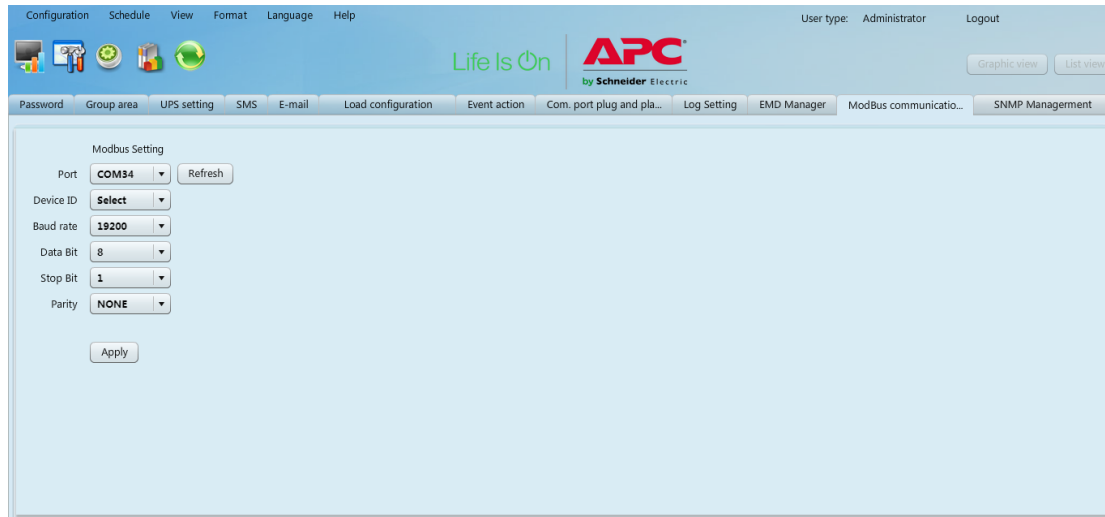


Diagram 5-15

Step 2 Com. port setting:

- The default ID for nominated com. port is 0;
- Selectable baud rates are 1200, 2400, 4800, 9600, and 19200. The default setting is 19200;
- Selectable data bit is 7 and 8. The default setting is 8;
- Selectable stop bit is 1 and 2. The default setting is 1;
- Supported parity is ODD parity, event parity and NONE. The default setting is NONE.

NOTE: This function is only available for the UPS with ModBus communication port.

5.2. Schedule

5.2.1. Scheduled on/off

Scheduled UPS on/off can be executed once, daily, weekly. Users can select UPS and time parameters. It is recommended to set only one action in the same time. If multiple actions have been applied at the same time, some of these actions may be ignored. Any action will be ignored when the action is not supported by the UPS.

Step 1 Select "Schedule" >> Scheduled on/off. Refer to Diagram 5-16.

Schedule

User type: Administrator Logout

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Graphic view List view

Cycle	UPS off	UPS on	Load shutdown	Operated UPS
Once	2018-09-04 13:10	2018-09-04 14:10	No	UPS2(192.168.102.230_SRV_2K_IL_UPS_IDEN)
Daily	13:10	14:10	No	UPS2(192.168.102.230_SRV_2K_IL_UPS_IDEN)
Weekly	Monday 13:10	Tuesday 14:10	No	UPS2(192.168.102.230_SRV_2K_IL_UPS_IDEN)

Scheduled on/off setting

- UPS:
- Frequency: ☒ Once
☐ Daily
☒ Weekly
- Power off at: 13 : 10
- Power on at: Tuesday 14 : 10
- ☐ Load shutdown reminder

Add Delete

Diagram 5-16

Step 2 Set frequency and setting time on the right column.

NOTE: Please be aware following rules while setting time.

Once – Power-off time should be earlier than power-on time.

Daily schedule – Power-off time should be earlier than power-on time.
Power-on time and power-off time should be set on same day.

Weekly schedule –Power-off time should be earlier than power-on time. Power-on time and power-off time should be within the same week.

Power off at - This time is an approximation. It is the starting point for delays before the UPS powers off. This UPS power off time incorporates delays such as "waiting time for load shutdown" if it is configured.

Power on at - This time is an approximation. The UPS will turn on after the delay of "waiting time for load shutdown" (if configured) + the time difference between power on and power off.

The setting for "waiting time for load shutdown" is found in the Load configuration page. The default value for UPS power off delay is 180s (applies if "waiting time for load shutdown" is not configured).

Step 3 Click "Add" to add task. If task is successfully set, it will display on the task table on the left-hand side. Select specific task and click "Delete"

button to delete the task.

Note 1: If there is a plan which shares the same time, it will execute only one of them.

Note 2: If the UPS which accepts scheduled on/off setting is connecting with a load, it can also allow to set load shutdown reminder.

5.2.2. Scheduled battery self-test

Scheduled battery self-test can be executed once, daily, weekly, or monthly. Users can select UPS and time parameters. It is recommended to set only one action for a specific time. If multiple actions have been applied at the same time, some of these actions may be ignored. Any action will be ignored when the action is not supported by the UPS.

Select Control >> Battery Self-Test. Refer to Diagram 5-17.

Cycle	Date	Start time	Operate	Operated UPS
Once	2018-09-04	13:12	Self-test	UPS2(192.168.102.230_SRV 2K IL_UPS_IDEN)
Daily		14:12	Self-test	UPS2(192.168.102.230_SRV 2K IL_UPS_IDEN)
Weekly	Monday	15:12	Self-test	UPS2(192.168.102.230_SRV 2K IL_UPS_IDEN)
Monthly	1	16:12	Deep discharge test	UPS2(192.168.102.230_SRV 2K IL_UPS_IDEN)

Scheduled battery self-test

UPS: Select

Frequency: ☐ Once ☐ Daily ☐ Weekly ☒ Monthly

Per month on the: 1 day

Start time: 16:12

Method: ☐ Self-test 1 Min ☒ Deep discharge test

Add Delete

Diagram 5-17

1. Select method and time parameters. There are three self-test methods:
 - Self-test: Users can set battery discharge time for self-test.
 - Deep test: This test will allow battery to discharge until low battery level.
2. Click "Add" to add task. If task is successfully added, it will display on the task table on the left-hand side. Select task from table list and click "Delete" button to delete the task.



Diagram 5-20-a



Diagram 5-20-b

➤ UPS detail information: On the Text view mode, users can enter individual UPS monitoring interface by double clicking each UPS panel. On the Graphic view mode, users can enter individual UPS monitoring interface by double clicking each UPS icon. Refer to diagram 5-21:

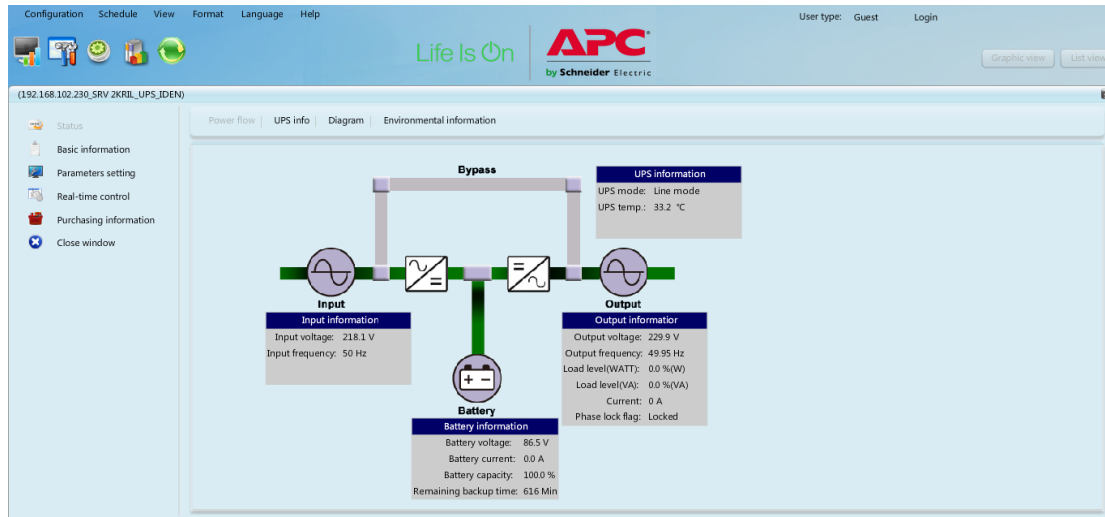


Diagram 5-21

5.3.1.1. Status

5.3.1.1.1. Power Flow

Select Status >> Power Flow. Refer to diagram 5-22. In the Power Flow window, it's shown the internal dynamic working flow of the UPS is shown.

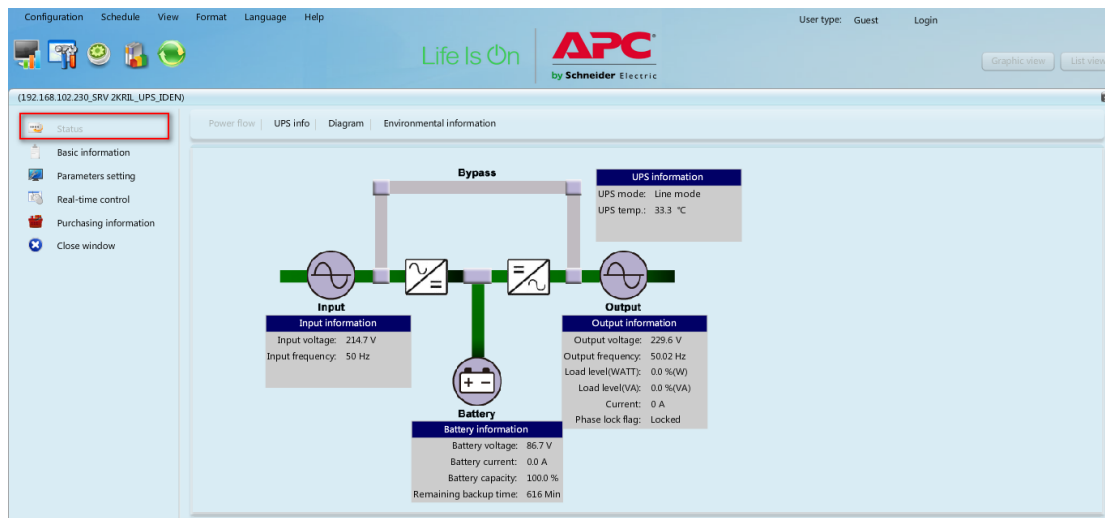


Diagram 5-22

Green/black flow means working well. Grey bar means that the object is present but not in use at the moment. There are four information blocks to display details about input, output, UPS and battery information.

- Input information includes input voltage and input frequency.
- Output information includes output voltage, output frequency, load level, and output current.

- UPS information includes UPS operation mode and UPS temperature.
- Battery information includes battery voltage, battery capacity and remaining backup time.

5.3.1.1.2. UPS Info

Select Status >> UPS Info. Refer to Diagram 5-23.

In the “UPS Info” window, it shows real-time monitored UPS data including input, output, UPS, and battery information in text and bar.

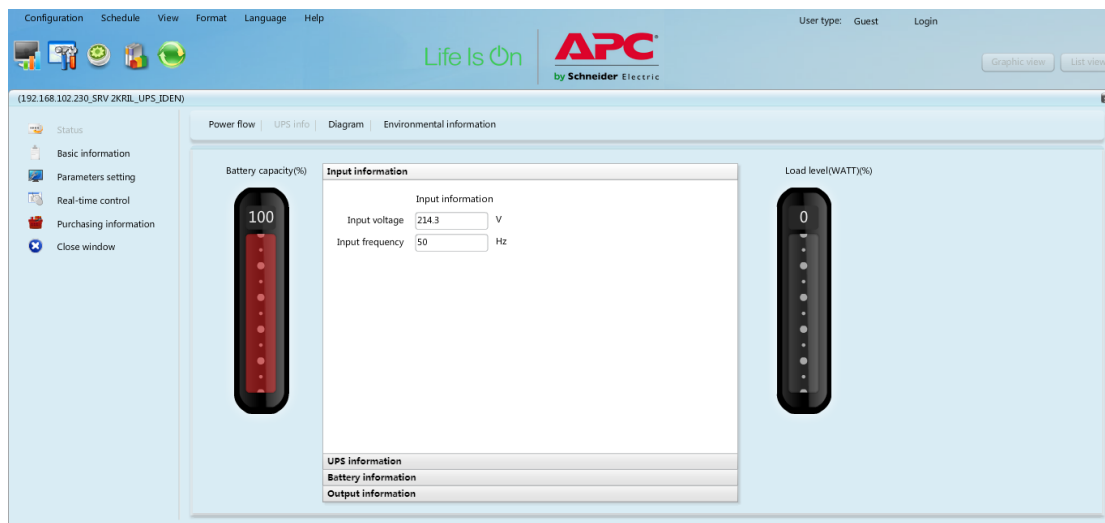


Diagram 5-23

5.3.1.1.3. Diagram

Select View >> Status >> Diagram. Refer to Diagram 5-24.

In the Diagram window, it shows real-time monitored UPS data including voltage, frequency, load, battery, temperature information in diagram.

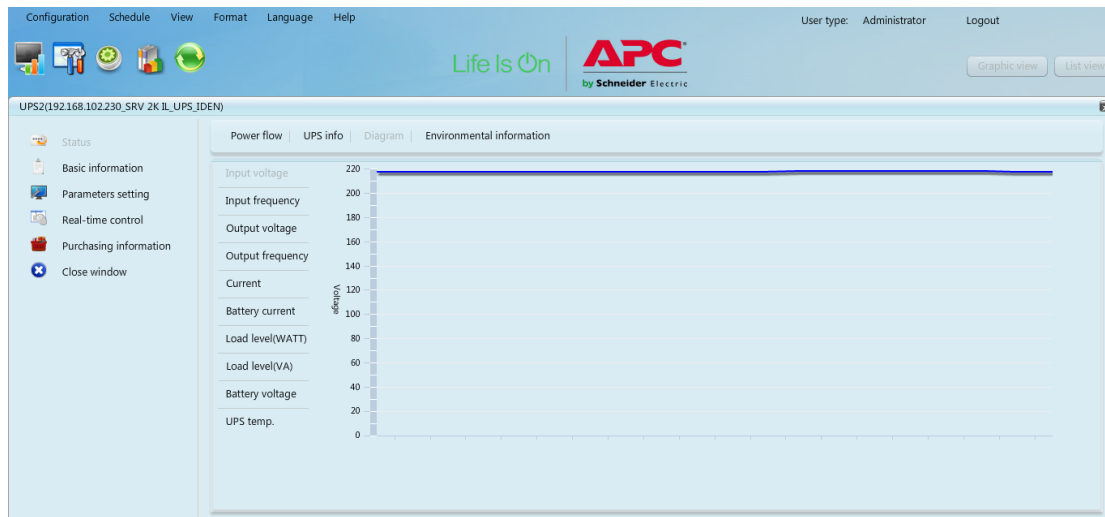


Diagram 5-24

5.3.1.1.4. Environmental information

In the Environmental information window, it shows the current temperature and humidity.

Select Status >> Environmental information. Refer to Diagram 5-25

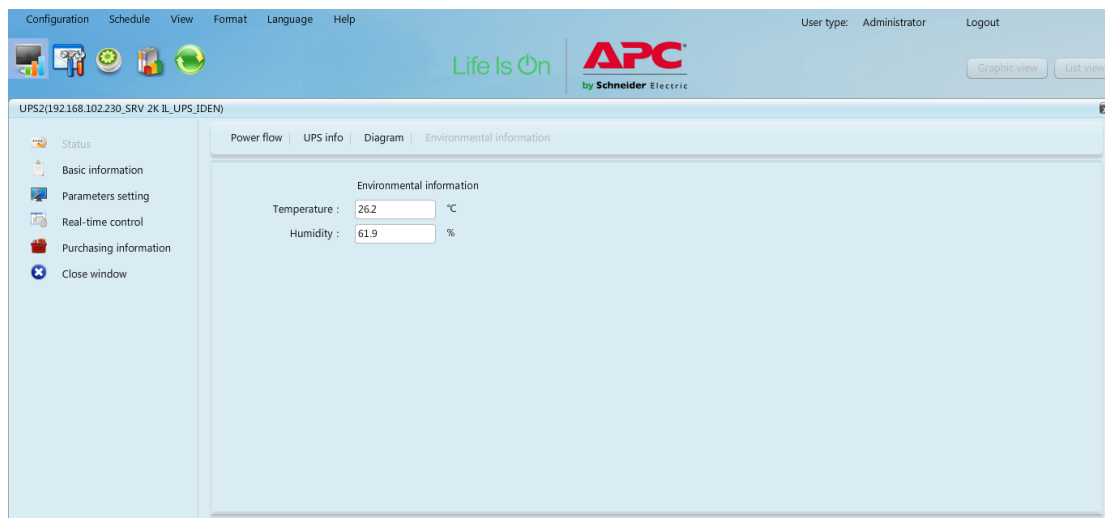


Diagram 5-25

Note: This information is only available when SNMP card is connected with Environmental monitoring device (EMD).

5.3.1.2. Basic information

It includes UPS basic information, battery information, UPS purchasing information, and UPS rated information. Refer to diagram 5-26.



Diagram 5-26

5.3.1.3. Parameters setting

Some UPS functions can be set and changed via software. Parameter setting includes backup time setting for programmable outlet (P1), battery number setting, voltage and frequency range setting for bypass mode, and voltage range setting for ECO mode.

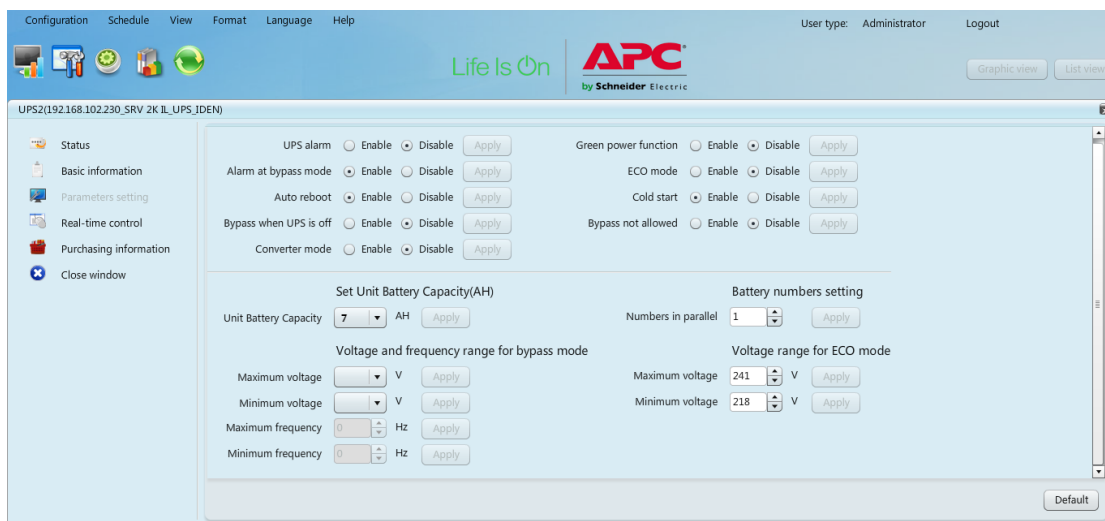


Diagram 5-27

Note: Different UPSs may access different parameter settings.

1. Select the functions by clicking "Enable" or "Disable" button. Change the numbers by clicking up-down arrows or modify the numbers directly in the number column.
2. Click "Apply" button to save the settings. Each function setting is saved

by clicking "Apply" button in each section.

3. Click "Default" button to recover the default setting.

Note: If functions are not supported by the UPS, they will not be accessible.

- UPS alarm: If enabled, UPS alarm will be activated. Vice versa.
- Alarm at bypass mode: If enabled, UPS alarms when it's working at bypass mode. Vice versa.
- Auto reboot: If enabled, UPS will auto recover when AC is recovering. Vice versa.
- Bypass when UPS is off: If enabled, AC will directly provide power to connected devices when UPS is off. Vice versa.
- Converter mode: If enabled, the UPS will operate in converter mode. Vice versa.
- ECO mode: If enabled, the UPS will operate in ECO mode when input voltage is within acceptable range. Vice versa.
- Cold start: If disabled, the UPS can be turned on only when AC is normally connected to UPS. Vice versa.
- Bypass not allowed: If enabled, the UPS will not transfer to bypass mode under any conditions. If disabled, the UPS will be allowed to transfer to bypass mode according to UPS internal setting.
- Set Unit Battery Capacity(AH):
 - ✧ Unit Battery Capacity: set battery capacities.
- Battery numbers setting:
 - ✧ Numbers in parallel: set battery numbers in parallel
- Voltage and frequency range for bypass mode: Set acceptable voltage and frequency range in bypass mode
 - ✧ Maximum and minimum voltage: When UPS is on bypass mode and input voltage is out of setting range, UPS will enter battery mode.
 - ✧ Maximum and minimum frequency: When UPS is on bypass mode and input frequency is out of setting range, UPS will enter battery mode.

- Voltage range for ECO mode: Set acceptable voltage range for ECO mode.

5.3.1.4. Real-time control

Refer to diagram 5-28:

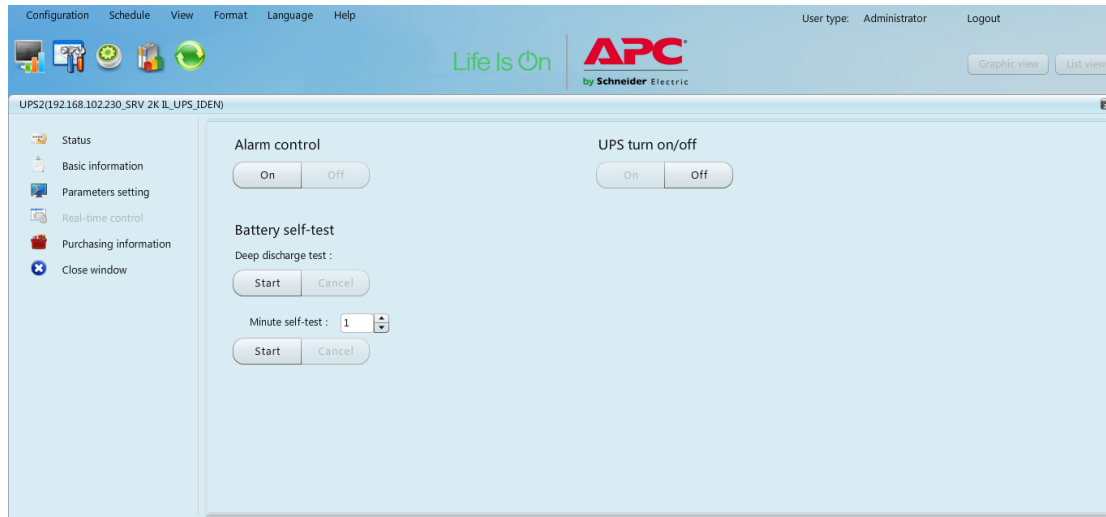


Diagram 5-28

1. Choose real-time control function by clicking "Start" button on each function section. You can real-time control the UPS by executing following operation:
 - UPS turn On/Off: Click "On" to turn on the UPS and "Off" to turn off the UPS immediately.
 - Battery Self-Test: Software offers three types of battery self-test: 10-second self-test, deep discharge test, and self-defined self-test. Simply clicking "Start" button from each type. It will execute the self-test immediately.

Note: Different UPSs may access different parameter setting.

5.3.1.5. Purchasing information

Users can enter UPS purchasing date, battery purchasing date, UPS warranty time, battery warranty time, battery lifecycle, and battery replacement reminder for future reference.

Configuration Schedule View Format Language Help

User type: Administrator Logout

Life Is On APC by Schneider Electric

UPS2(192.168.102.230_SRV 2K IL UPS_IDEN)

Status
Basic information
Parameters setting
Real-time control
Purchasing information
Close window

Purchasing information

UPS S/N: 000000000000

UPS purchasing date: 2018-09-04

UPS Warranty: 0 Year(s)

Battery purchasing date: 2018-09-04

Batteries Warranty: 0 Year(s)

Battery lifecycle: 2018-04-19

Reminder: Replace batteries ☐

Apply

Diagram 5-29

1. Please fill out purchasing information.
2. Click "Apply" button to save all data.

5.3.2. History

5.3.2.1. Event Log

In the Event Log window, it's shown all history events. Users can analyze the history data and improve the current electricity environment according to history data.

1. Select View >> History >> Event Log. Refer to Diagram 5-30

Configuration Schedule View Format Language Help

User type: Administrator Logout

Life Is On APC by Schneider Electric

Event log Event statistics Data Diagram EMD logs

UPS: UPS2(192.168.102.230_SRV 2K IL UPS_IDEN) Time period: 2018-09-04 -- 2018-09-04 Browse

ID	Level	Date	Event	Type
1	Information	2018-09-04 14:01:27	UPS power on immediately	UPS external event
2	Warning	2018-09-04 13:59:07	Battery disconnected	Battery event
3	Information	2018-09-04 13:57:03	Communication established	UPS external event
4	Error	2018-09-04 13:30:21	Network communication interrupted.	Software event
5	Warning	2018-09-04 13:30:21	Communication lost	UPS external event
6	Warning	2018-09-04 13:28:50	Battery disconnected	Battery event
7	Warning	2018-09-04 13:16:42	Battery disconnected	Battery event
8	Information	2018-09-04 13:09:58	Scheduled daily UPS power-off will be executed immediately	UPS external event
9	Information	2018-09-04 13:09:41	UPS will power off immediately	UPS external event
10	Warning	2018-09-04 13:07:36	Battery disconnected	Battery event
11	Warning	2018-09-04 12:55:27	Battery disconnected	Battery event
12	Warning	2018-09-04 12:46:21	Battery disconnected	Battery event
13	Warning	2018-09-04 12:34:13	Battery disconnected	Battery event
14	Warning	2018-09-04 12:35:02	Battery disconnected	Battery event

Print Delete Delete all Export

Diagram 5-30

2. Select UPS from com. port list. Users still can retrieve old data saved in the software even though the UPS is no longer connected to local

system.

3. Select time period by clicking calendar icon. Then click "Browse" button to get list of all history events during selected period time.
4. Print/Delete/Export function keys
 - **"Print"**: Click "Print" button to print the current event log.
 - **"Delete/Delete all"**: To delete specific event, simply select that event and then click "Delete" button. Or click "Delete all" button to delete all history events on the listed table.
 - **"Export"**: Click "Export" button to save listed table to local PC in .CSV file.

5.3.2.2. Event Statistics

It will list down and provide all event statistics for UPSs with software installed based on time period A and time period B, and the change percentage $[= 100 \times (B/A - 1)\%]$.

NOTE: Event types include UPS internal event, bypass event, battery event, software event, load event, input event, parallel system event and communication event.

Step 1 Select History >> Event Statistics. Or click shortcut icon . Refer to Diagram 5-31.

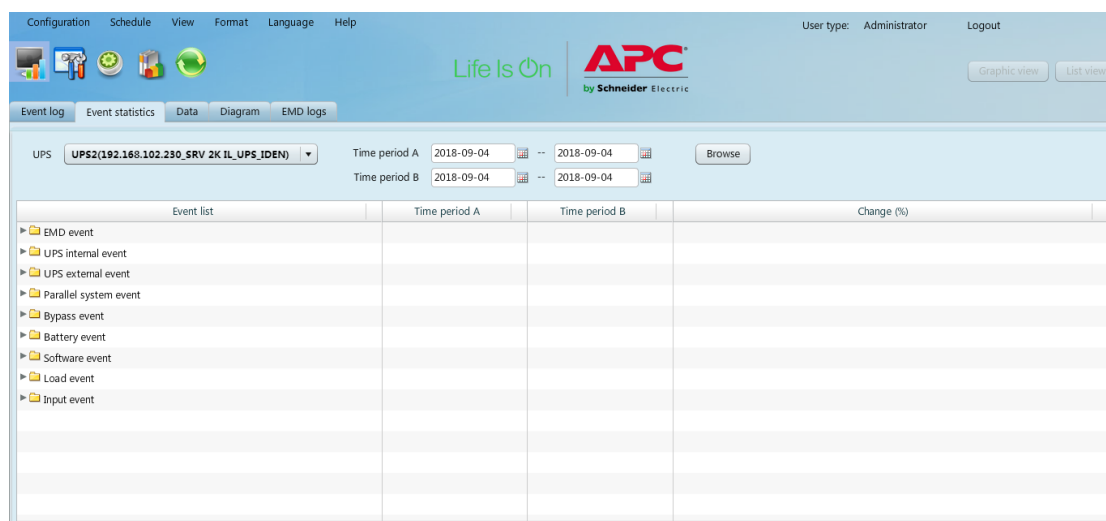
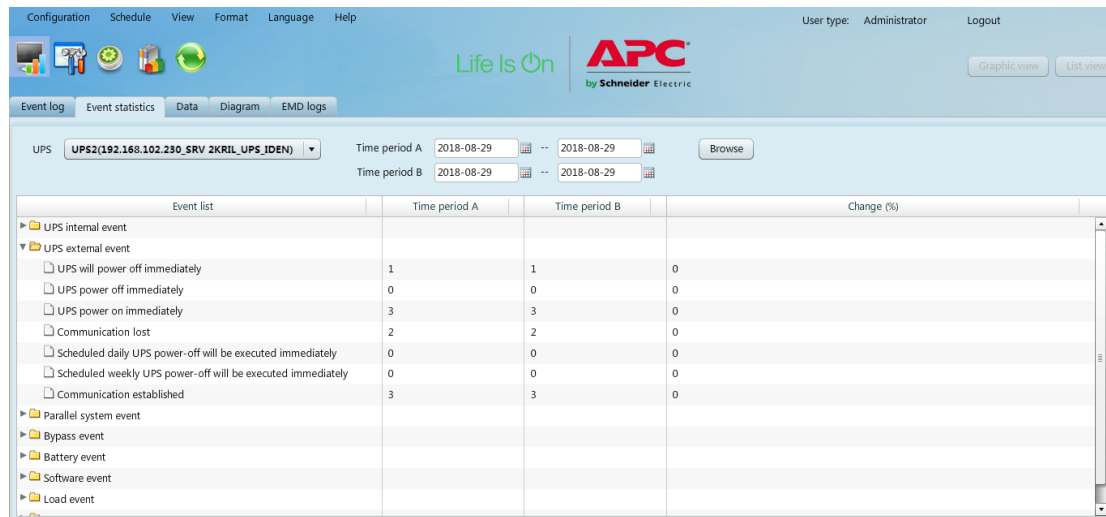


Diagram 5-31

Step 2 Select UPS from com. port list. Users still can retrieve old data saved in the software even though the UPS is no longer connected to the local system.

Step 3 Select two periods from clicking “calendar” icon. Then click “Browse” button. The statistics result will be listed in below table according to event types. Refer to Diagram 5-32.



Event list	Time period A	Time period B	Change (%)
UPS internal event			
UPS external event			
UPS will power off immediately	1	1	0
UPS power off immediately	0	0	0
UPS power on immediately	3	3	0
Communication lost	2	2	0
Scheduled daily UPS power-off will be executed immediately	0	0	0
Scheduled weekly UPS power-off will be executed immediately	0	0	0
Communication established	3	3	0
Parallel system event			
Bypass event			
Battery event			
Software event			
Load event			

Diagram 5-32

Click “Print” button to print event statistics.

5.3.2.3. Data

In the window of Data, it shows UPS power data in figures during selected period time. Software also offers print, save as, and delete functions. User can customize record intervals and default data is recorded in 60 seconds intervals.

Step 1 Select View >> History >> Data. Refer to Diagram 5-33.

Time	Input voltage	Input frequency	Output voltage	Output frequency	Current	Battery current	Load level(WATT)	Load level(VA)	Battery voltage	UPS temp.
2018-09-04 14:04:3	217.1	50	229.9	49.96	0	0	0.0	0.0	0	28.9
2018-09-04 14:03:3	213.6	50	230	49.95	0	0	0.0	0.0	0	28.1
2018-09-04 14:02:3	213.6	50	229.9	49.96	0	0	0.0	0.0	0	27.4
2018-09-04 14:01:3	216.8	49.9	229.8	49.95	0	0	0.0	0.0	0	27
2018-09-04 14:00:3	218.6	50	0	0	0	0	0.0	0.0	0	27
2018-09-04 13:59:3	218.4	50	0	0	0	0	0.0	0.0	0	27
2018-09-04 13:58:3	218.5	50	0	0	0	0.0	0.0	0.0	87	27
2018-09-04 13:57:3	218.2	50	0	0	0	0.0	0.0	0.0	87	27
2018-09-04 13:29:5	0	0	0	0	0	0	0.0	0.0	0	0
2018-09-04 13:28:5	219.7	50	0	0	0	0	0.0	0.0	0	26.6
2018-09-04 13:27:5	219.2	50	0	0	0	0	0.0	0.0	0	26.6
2018-09-04 13:27:0	219.2	50	0	0	0	0	0.0	0.0	0	26.6
2018-09-04 13:26:0	220.7	50	0	0	0	0	0.0	0.0	0	26.7
2018-09-04 13:25:0	223.7	50	0	0	0	0	0.0	0.0	0	26.6

Diagram 5-33

NOTE: This screen may be different for different types of UPSs.

Step 2 Select UPS from com. Port list. Users still can retrieve old data saved in the software even though the UPS is no longer connected to the local system.

Step 3 Select the starting time and ending time by clicking calendar icon. Then click "Browse" button to get the data table.

- **"Print":** Print the listed data table.
- **"Delete":** Select specific data and click "Delete" button to delete the record.
- **"Delete all":** Click "Delete all" button to delete all records on the listed table.
- **"Export":** Click "Export" button to save listed table to local PC in .CSV file.

5.3.2.4. Diagram

In the Diagram window, it shows UPS power data in diagram during selected period time. UPS power data includes input voltage, output voltage, input frequency, output frequency, load level, battery capacity, and UPS temperature.

Step 1 Select View >> History >> Diagram. Refer to Diagram 5-34.

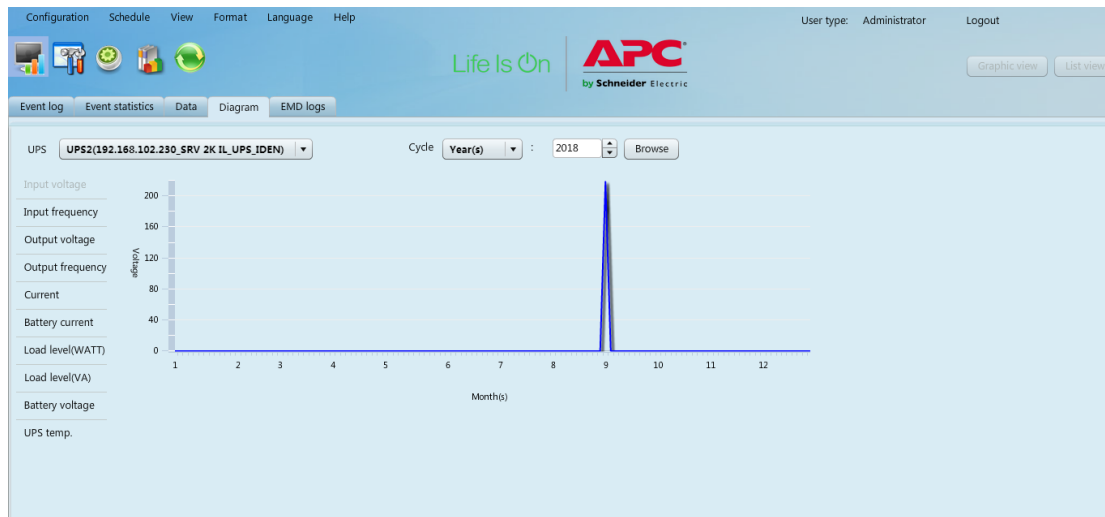


Diagram 5-34

NOTE: This screen may be different for different types of UPSs.

Step 2 Select UPS from com. Port list. Users still can retrieve old data saved in the software even though the UPS is no longer connected to the local system.

Step 3 Select cycle and period time. Then click "Browse" button to get the diagram.

Step 4 Select monitoring parameters on left-hand tab to switch diagram.

5.3.2.5. EMD Logs

In the EMD logs window, it shows the environment data in figures detected by the environmental monitoring device (EMD) during the selected period time.

Step 1 Select View >> History >> EMD logs. Refer to Diagram 5-35.

Time	Temperature	Humidity
2018-09-04 14:26:19	28.1	52.5
2018-09-04 14:25:22	28.1	52.5
2018-09-04 14:24:22	28.2	53.1
2018-09-04 14:23:22	28.1	53.4
2018-09-04 14:22:22	28.1	53.1
2018-09-04 14:21:22	27.9	53.9
2018-09-04 14:20:25	27.8	53.9
2018-09-04 14:19:24	27.9	54.4
2018-09-04 14:18:26	27.9	54.8
2018-09-04 14:17:24	27.6	55.1
2018-09-04 14:16:25	27.6	56.0
2018-09-04 14:15:26	27.5	56.4
2018-09-04 14:14:27	27.4	57.1

Diagram 5-35

Step 2 Select UPS and select the starting time and ending time by clicking calendar icon. Then click "Browse" button to get the data table.

Delete/Delete all

- **"Delete"**: Select specific data and click "Delete" button to delete the record.
- **"Delete all"**: Click "Delete all" button to delete all records on the listed table.

5.4. Format

5.4.1. Temperature Unit

There are two temperature units for selecting: Centigrade and Fahrenheit. Default setting is centigrade.

5.4.2. Date Format

There are nine formats for date display:

- YYYY-MM-DD
- YYYY/MM/DD
- YYYY:MM:DD
- MM-DD-YYYY
- MM/DD/YYYY
- MM:DD:YYYY

- DD-MM-YYYY
- DD/MM/YYYY
- DD:MM:YYYY

Default setting is YYYY-MM-DD.

5.5. Language

APC UPS offers thirteen languages for selection:

- English
- French
- German
- Italian
- Polish
- Portuguese
- Russian
- Spanish
- Ukrainian
- Turkish
- Czech
- Chinese(Simplified)
- Chinese(Traditional)

5.6. Help

5.6.1. About

Click "Help" menu and select "About". It represents the information about software.

5.6.2. Online help

Click "Help" menu and select the "Online help" item. It will open the user manual. Before operating the software, please read the manual carefully.