

WattBox UPS Management Software User Manual

Compatible WattBox Models: WB-OVRC-UPS-625-8, WB-OVRC-UPS-850-8,
WB-OVRC-UPS-1100-1, WB-OVRC-UPS-1500-1, WB-OVRC-UPS-2000-1,
WB-UPS-1100-8, WB-UPS-1500-8, WB-UPS-2000-1

Version 1.04

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1. Overview

1.1. Introduction

The WattBox UPS Management Software system can monitor and manage from one to multiple UPSs in a networked environment, either LAN or Internet. It can not only prevent data loss from power outage and safely shutdown systems, but also store programming data and schedule safe shutdowns.

1.2. Structure

The software management tool includes 1.) A back-end service application, 2). GUI (user interface) and 3.) WattBox icon.

1.) The back-end service application is core to the WattBox UPS Management Software. It communicates with the UPS, records events, notifies users of events, and executes the commands set-up by the user.

2.) The GUI is operated in the web browser and communicates with the back-end service application. Users can monitor UPSs for real-time status and make modifications to UPS settings via the GUI.

3.) When the WattBox UPS Management Software is activated, there is an orange plug icon located on the taskbar. It will also display pop-up dialog for current UPS status.

NOTE1: Tray icon only exists under Windows OS.

NOTE2: Supported browser: Internet Explorer, Mozilla, Firefox, Google chrome, Safari, and Opera.

1.3. Applications

- Monitor and manage the local UPS connected to local computer
- Monitor and manage other UPSs (with software installed) in LAN
- Remote monitor and manage other UPSs via Internet from remote PC (with software installed)

1.4. Features

- Allows control and monitoring of multiple UPSs via LAN and Internet
- Real-time dynamic graphs of UPS data (voltage, frequency, load level, battery capacity)

- Safely OS shutdown and protection from data loss during power failure
- Warning notifications via audible alarm, pop-up screen, broadcast, mobile messenger, and e-mail
- Scheduled UPS on/off, battery test, programmable outlet control, and audible alarm control
- Password security protection and remote access management

2. Install and Uninstall

2.1. System Requirement

- 512 MB physical memory at least (1 GB is recommended)
- 1 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
- An available communication port (RS232 serial port or USB port) is needed
- Platforms supported by software are listed below:
 - Windows Server 2012 / 2016 / 2019 (32 bit & 64 bit)
 - Windows 7 / 8 / 10 (32 bit & 64 bit)
 - Windows SBS 2011 (32 bit & 64 bit)
 - Linux RedHat Enterprise AS3 / AS5 / 5 / 8 /9 (32 bit)
 - Linux RedHat Enterprise AS6 (32 bit & 64 bit)
 - Linux Cent OS 5 / 6 / 7 (32 bit & 64 bit)
 - Linux Cent OS 8 (64 bit)
 - Linux Ubuntu 8 / 9 (32 bit)
 - Linux Ubuntu 11 /18 / 19 / 20 (64 bit)
 - Linux Ubuntu 10 / 12 / 14 / 15 / 16 (32 bit & 64 bit)
 - Linux Mint 14.x /19.x (32 bit)
 - Linux Mint 19 / 20 (64 bit)
 - Linux Fedora 5 / 17 (32 bit & 64 bit)
 - Linux Fedora 33 (64 bit)
 - Linux OpenSUSE 10 / 11 / 12 / 13 (32 bit & 64 bit)

- Linux Debian 6.x / 8.x /10.x (32 bit)
 - Linux Debian 6 / 7 / 8 / 10 (64 bit)
 - Mac OS 10.6 / 10.7/ 10.8/ 10.9/ 10.10/ 10.11/ 10.12/ 10.13/ 10.14/ 10.15/ 11.0 (64 bit)
 - ESXI 4.X/5.X/6.X
- Supported browser versions including IE browser (the version older than IE10 is not supported), Google Chrome and Firefox. All browsers should support html5.

2.2. Install Software

Step 1 Run the installer downloaded from ctrl4.co/ups-utility

Diagram 2-1

Step 2 PC will show the following screen as Diagram 2-2. Then Click "install" button to start the installation.



Diagram 2-2

Step 1 After clicking install, it will display the installation in process. Refer to the diagram 2-3.

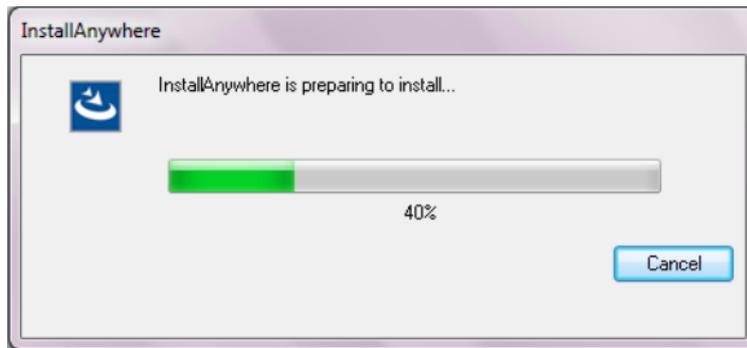


Diagram 2-3

Step 2 Click "Choose" button to change the default folder. After choosing the installed folder, click "Next" button. Refer to the following diagram 2-4.

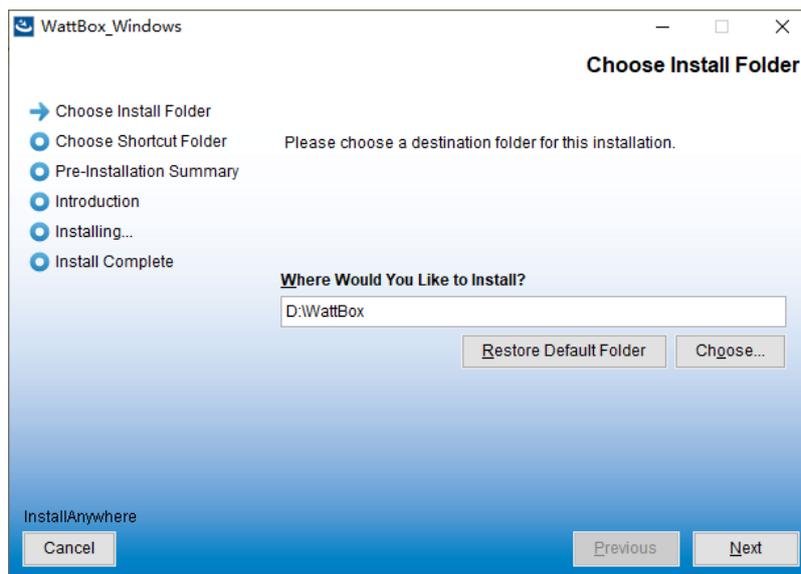


Diagram 2-4

Step 3 Choose the shortcut folder and click "Next" button. Refer to the following diagram 2-5.

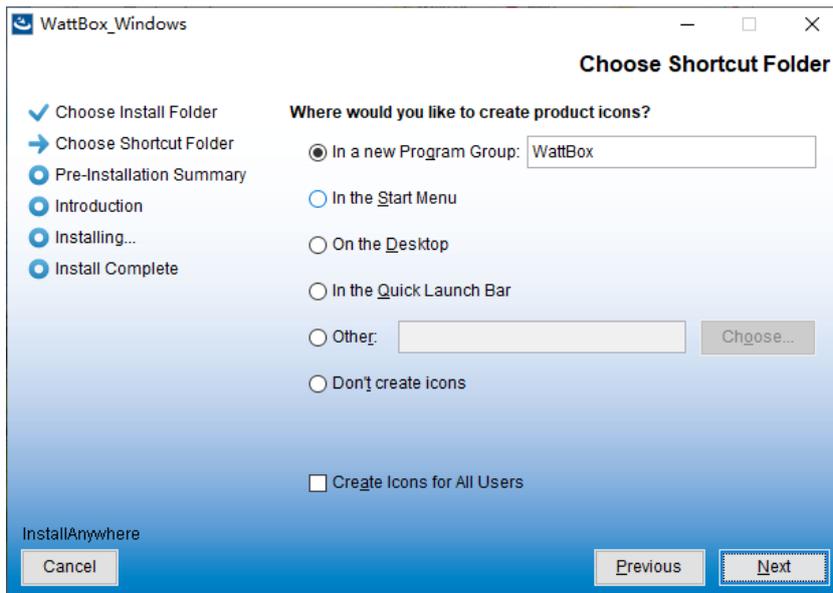


Diagram 2-5

Step 4 It will display the software summary before installation. Click “Next” button to start the installation and refer to Diagram 2-6.

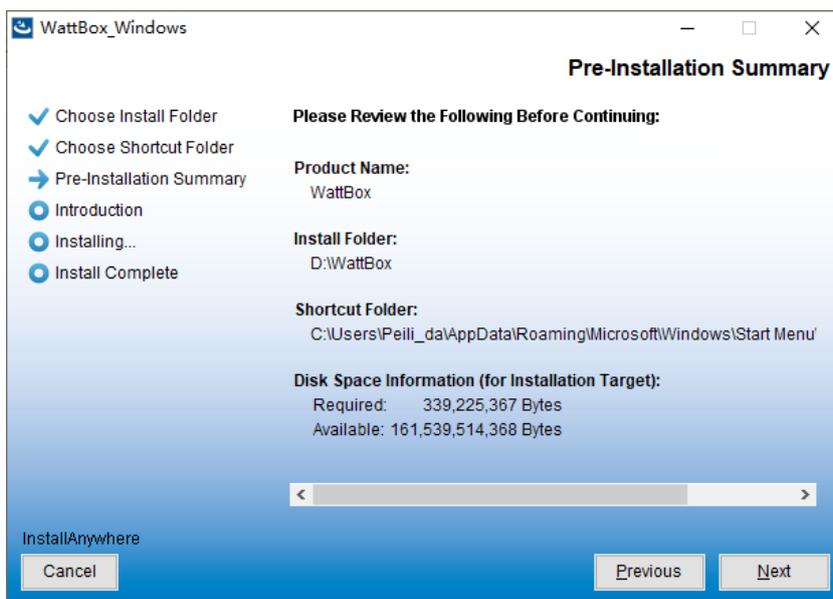


Diagram 2-6

Step 5 Click “Install” to proceed to the next screen as Diagram 2-7.

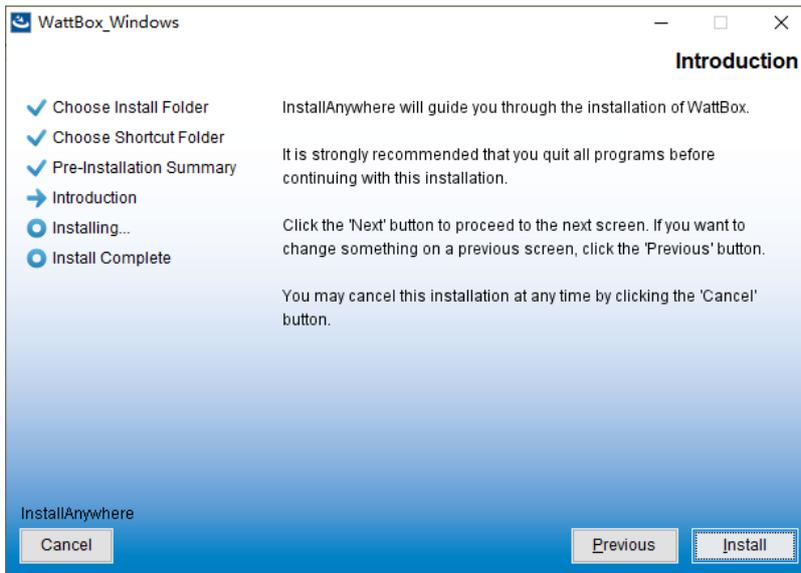


Diagram 2-7

Step 6 Click “Done” button to confirm the installation completely.

Refer to Diagram 2-8.

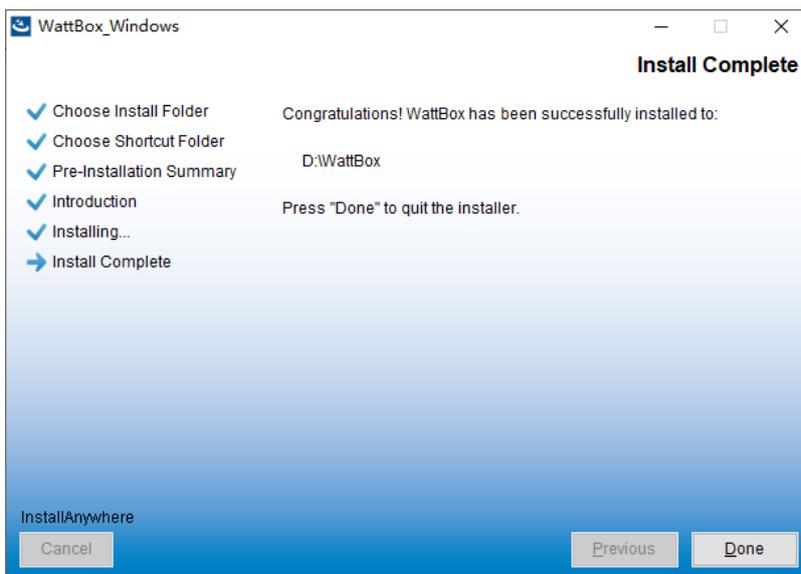


Diagram 2-8

2.3. Auto Turn-on Setting

2.3.1 Windows OS

This function is already built in the Windows OS. It’s not necessary to do any setting.

2.3.2. MAC OS

During installation process of WattBox software in MAC OS, it will pop up a screen as shown below in the last step.

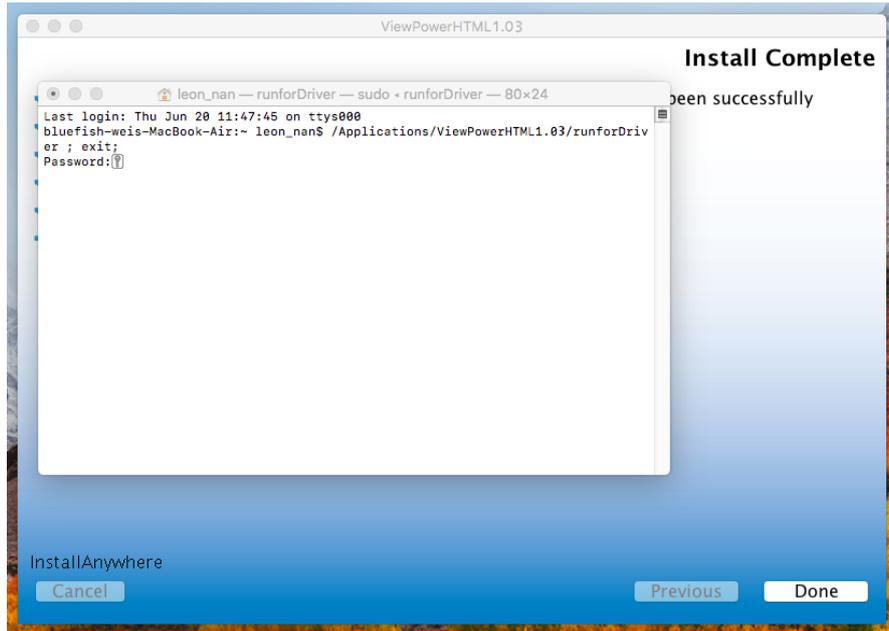


Diagram 2-9

At this time, please enter current system password and press “Enter” key.

The default password is “administrator” at first log in. (NOTE: The entered password will be hidden.) After it shows “[Process completed]” as shown in digram 2-10, click red button (marked in red square) to close the window and then, the installation is complete.

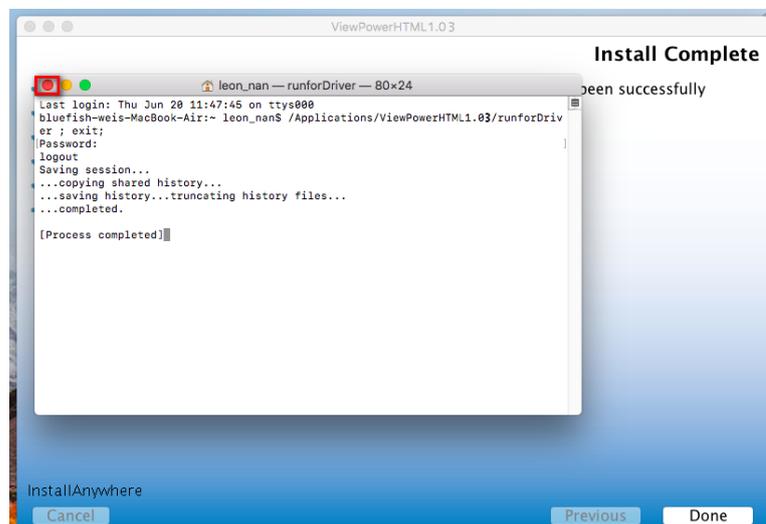


Diagram 2-10

2.3.3 Linux OS

For Linux OS, after installaion is complete, open the installed software directory and find the file named runAutoStart.sh as shown in diagram 2-11.

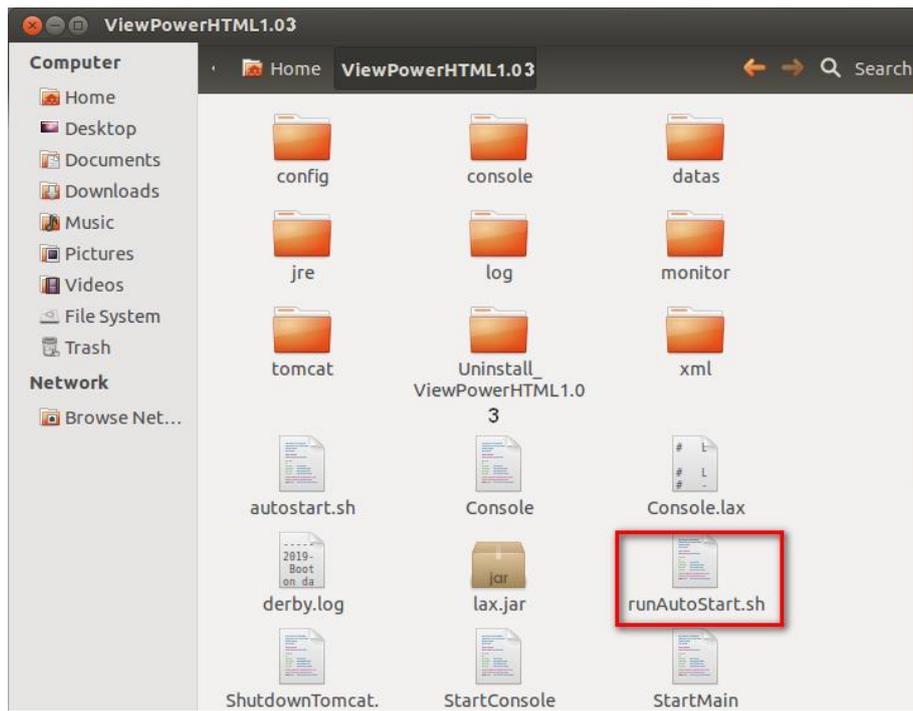
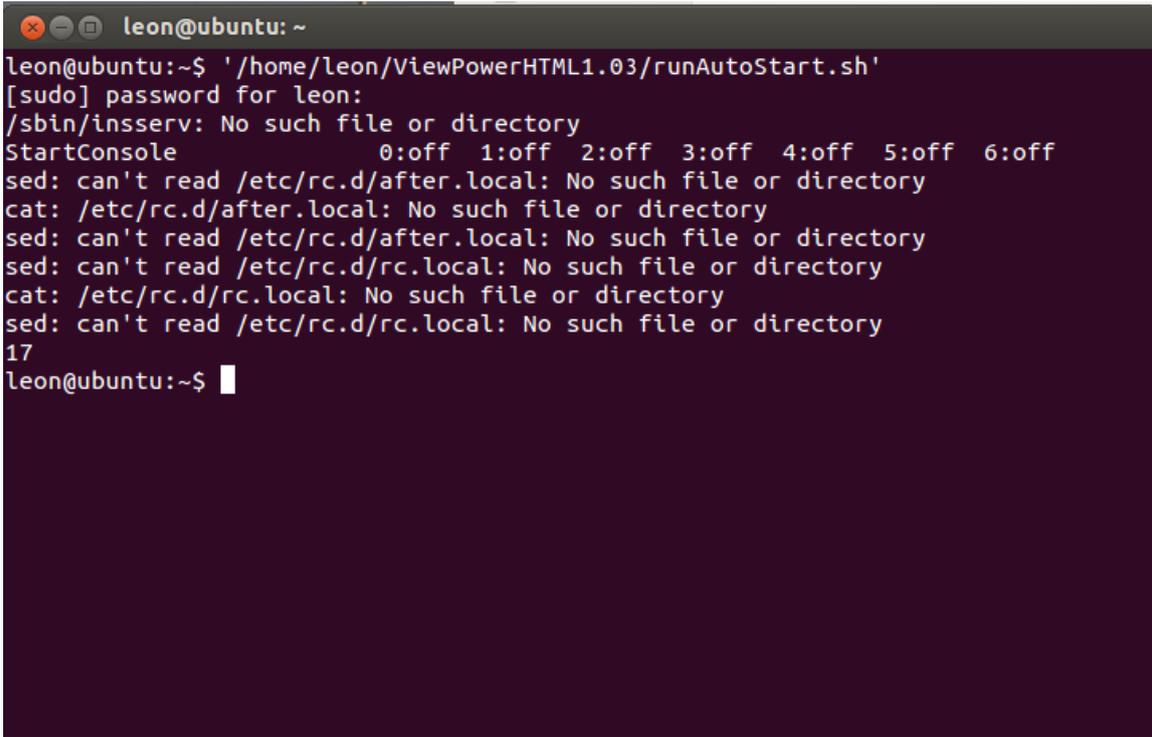


Diagram 2-11

Then, open it and run this document as shown in diagram 2-12.



```
leon@ubuntu: ~  
leon@ubuntu:~$ '/home/leon/ViewPowerHTML1.03/runAutoStart.sh'  
[sudo] password for leon:  
/sbin/insserv: No such file or directory  
StartConsole          0:off 1:off 2:off 3:off 4:off 5:off 6:off  
sed: can't read /etc/rc.d/after.local: No such file or directory  
cat: /etc/rc.d/after.local: No such file or directory  
sed: can't read /etc/rc.d/after.local: No such file or directory  
sed: can't read /etc/rc.d/rc.local: No such file or directory  
cat: /etc/rc.d/rc.local: No such file or directory  
sed: can't read /etc/rc.d/rc.local: No such file or directory  
17  
leon@ubuntu:~$
```

Diagram 2-12

2.4. Uninstall Software

Note: Before uninstalling software, you must stop all software programs first and then log in as “Administrator”! Otherwise it will not be uninstalled completely.

Please choose WattBox >> Uninstaller.exe. Then follow the on-screen instruction to uninstall the software.

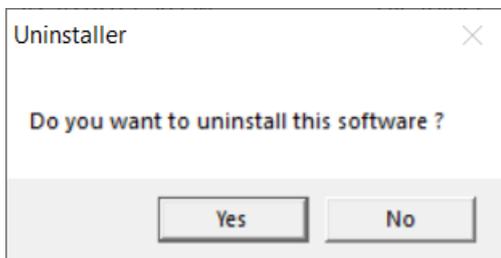


Diagram 2-13

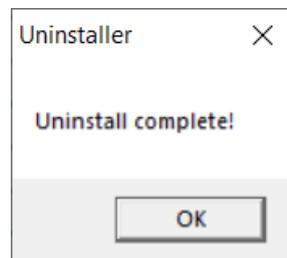


Diagram 2-14

3. Service Tray Application

Once installed there will be a shortcut icon on your desktop. Simply click the shortcut and 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 right clicking on the mouse. Refer to below diagram. The Start Menu method can also be used; Start >> All Programs >> WattBox >> WattBox



3.1. Start Monitoring

The software will automatically activate after installation. There are two ways in which the software can interact with UPS activity, in Service Mode or in Application Mode. In Service Mode, the user can make changes to the UPS preferences, while Application Mode is simply monitoring activity. If the Service Mode does not start up immediately, the software will automatically activate Application Mode. If monitoring is manually canceled, simply click "Start Monitor" to activate it.

"Start Monitor" will check if monitoring application is in Service Mode or Application Mode and will attempt to log the user in as Service Mode. If logging in as Service Mode is not successful, the software will be activated in Application Mode. Users can identify the mode from tray icon as below:

- Monitoring application is not activated successfully: 🚫
- Monitoring application is activated as service mode: 🛠️
- Monitoring application is activated as application mode: 📄

3.2. Stop Monitoring

Click "Stop Monitor" to stop monitoring application.

3.3. Configuration

3.3.1. HTTPS/HTTP

If HTTPS is selected for communication protocol, a HTTPS menu will be displayed in the taskbar tray (Refer to Diagram 3-1). The web service port will be restricted as 18443 and cannot be changed,

then the remote monitoring website will change to :

<https://xxx.xxx.xxx.xxx:18443/WattBox>

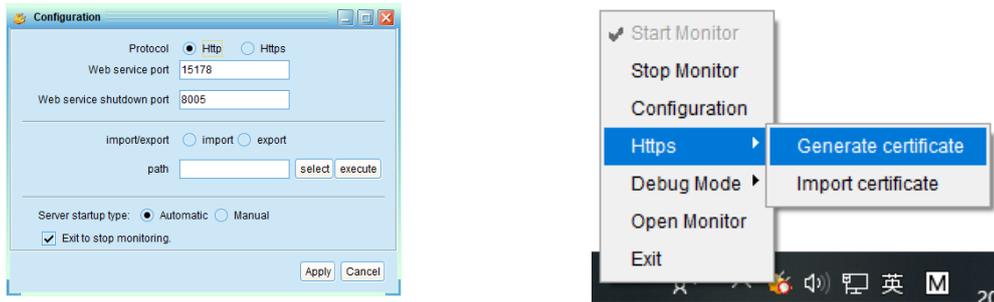


Diagram 3-1

If HTTP is selected, a HTTPS menu will not be displayed in the taskbar tray.

3.3.2. Port Modification

If port conflict occurs, you may modify value of tray port. The default setting for tray port is listed as below (Refer to section A in Diagram 3-2):

- Web Service port: 15178
- Web service shutdown port: 8005

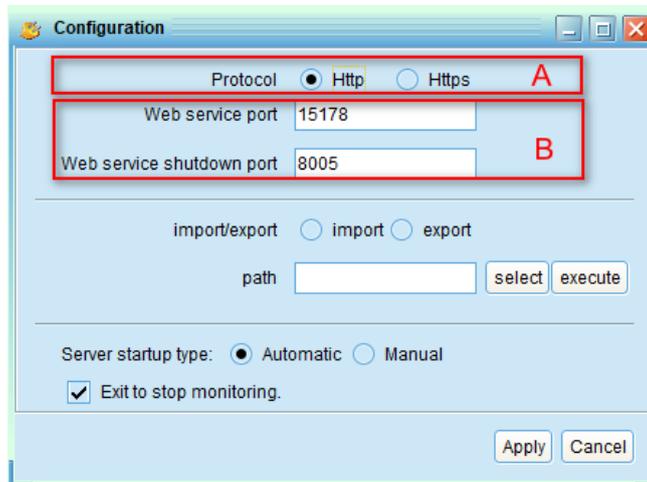


Diagram 3-2

You may modify the value of tray port to any number between 0 to 65536. If value entry is used, the system will remind users to enter another number again.

NOTE1: Please do NOT modify the port value unless port conflict occurs. This modification will affect the remote monitoring website. For example, if changing web service port to 15177, then the remote monitoring website will change to: <http://xxx.xxx.xxx.xxx:15177/WattBox>

NOTE2: To avoid possible conflicts, please do NOT enter a value with less than 4 digits.

3.3.3 Starting And Exiting Settings

Refer to section B in Diagram 3-3 for the detailed configuration of WattBox start and exit setting:

- Server startup type: If "Automatic" is selected, the software will automatically start up when PC is turned on. If "Manual" is selected, users have to manually start the WattBox software.
- Exit to stop monitoring: If selected, it will completely exit software without monitoring service. If unselected, it will continue monitoring service in the back end even after exiting from the software.

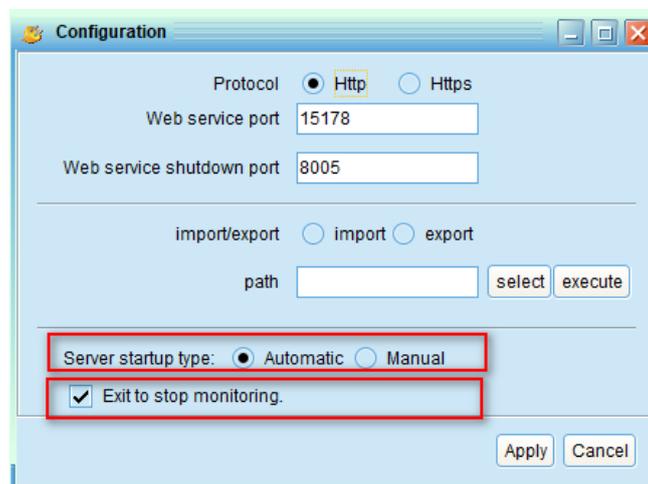


Diagram 3-3

3.3.4. Import and Export

This function is to save some parts of user configuration from an older version, such as scheduled on/off, event action configuration, remote shutdown and local shutdown. Once this configuration is exported as "ViewPower_backup" document from the old version, it can be imported to a new version of WattBox software directly.

- Select "import" or "export" function. Refer to diagram 3-4 A section.
- Click "select" button to import or export through specific directory. Then, click "execute" button to execute this action. Refer to diagram 3-4 B section.

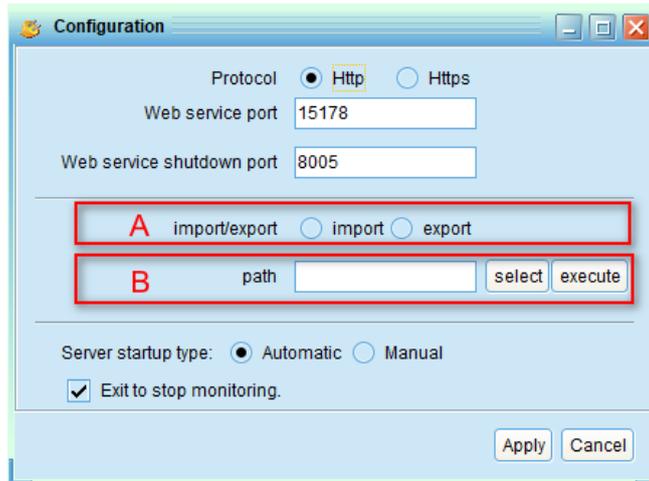


Diagram 3-4

Once this action is complete, it will pop up a message as shown in diagram 3-5.

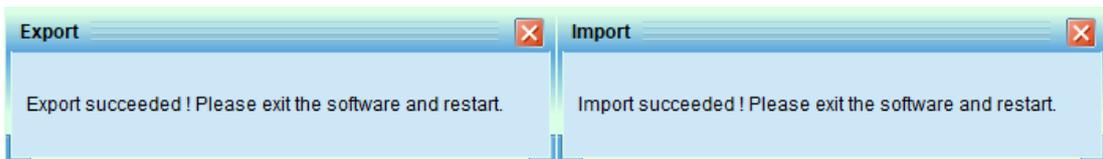


Diagram 3-5

NOTE 1: Best practice is to exit this software first and restart it again to activate all modifications. Otherwise, it's not effective by only clicking "Start monitor".

NOTE 2: The file name should be the same as "ViewPower_backup" when the document is created from "export" or "import" actions.

3.3.5. Configuration Saved

Click "Apply" button to save all changes in Configuration page. Click "Cancel" to stop the change.

3.4. HTTPS

HTTPS menu contains (Generate Certificate) and (Import Certificate).

- Generate Certificate: A digital certificate can be automatically generated based on input information. Refer to Diagram 3-6

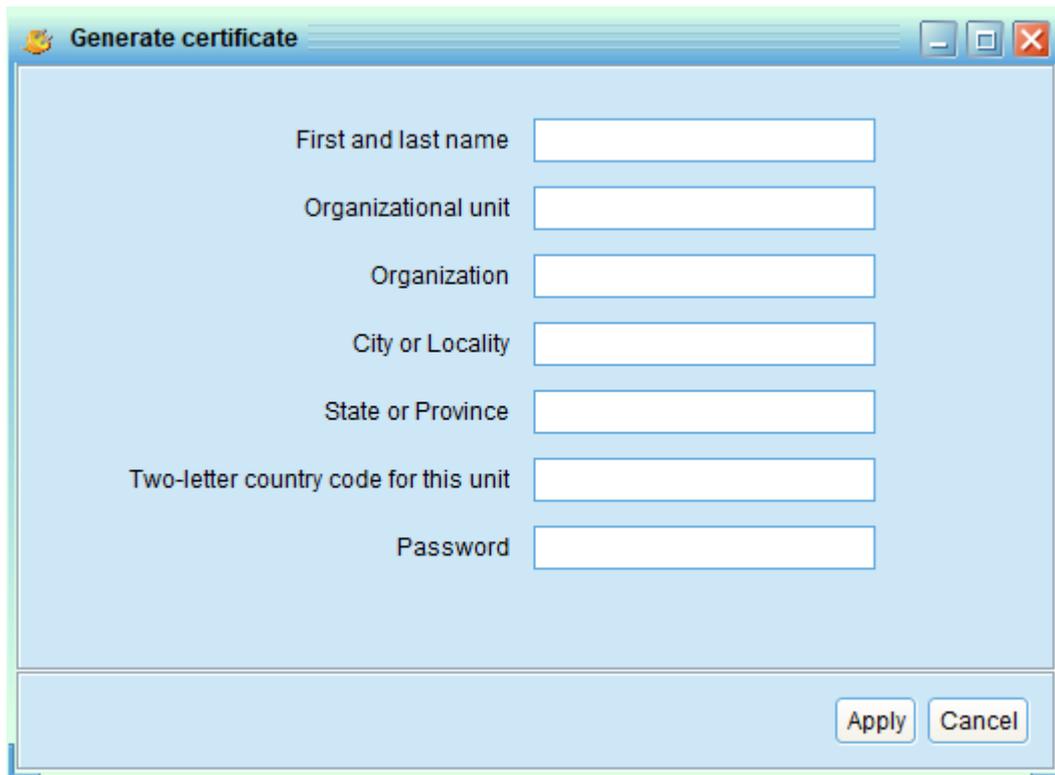


Diagram 3-6

Note 1: In "First and last name", please enter Internet domain name and IP address.

Note 2: Password must have at least six characters

- Import Certificate: You can import the HTTPS certificate provided by the third party, either by JKS or PCKS12. Refer to Diagram 3-7.

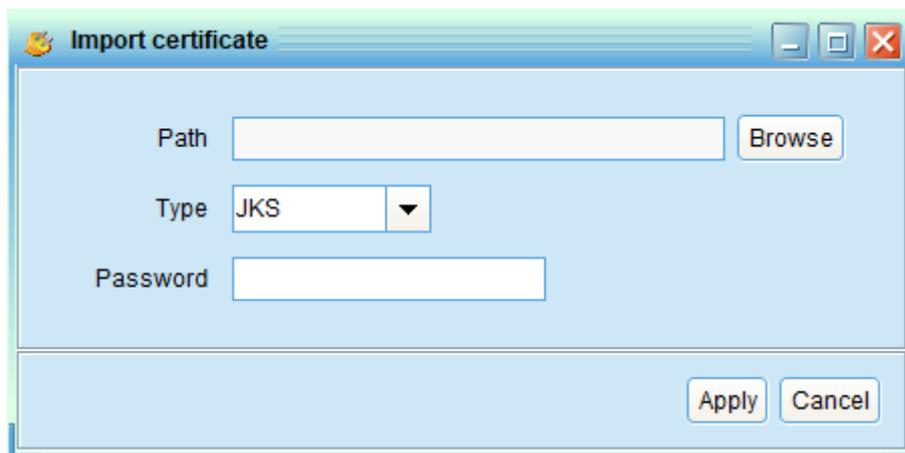


Diagram 3-7

3.5. Debug Mode

If debug mode is activated, the software will record the process of the UPS

searching for bugs and communication the results in to a log so that it can be

analyzed when a communication failure occurs.

- Start: Click "Start" to activate debug mode. Click "Stop" to stop recording. Refer to Diagram 3-8.

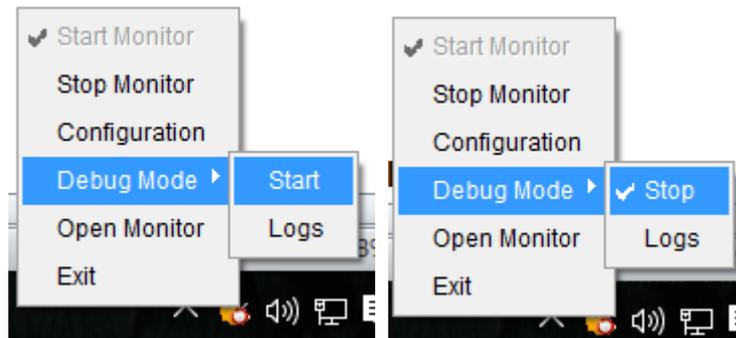


Diagram 3-8

- Logs: Click "Logs" to check the log records. Refer to Diagram 3-9.

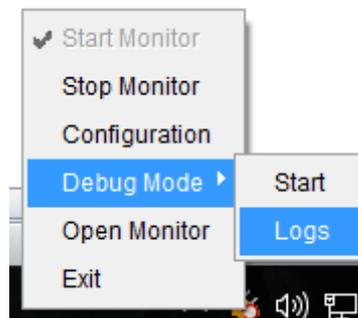


Diagram 3-9

3.6. Open Monitor

Click "Open Monitor" to open monitor page.

3.7. Message Board

Users can check message board for an event list. Refer to Diagram 3-10:

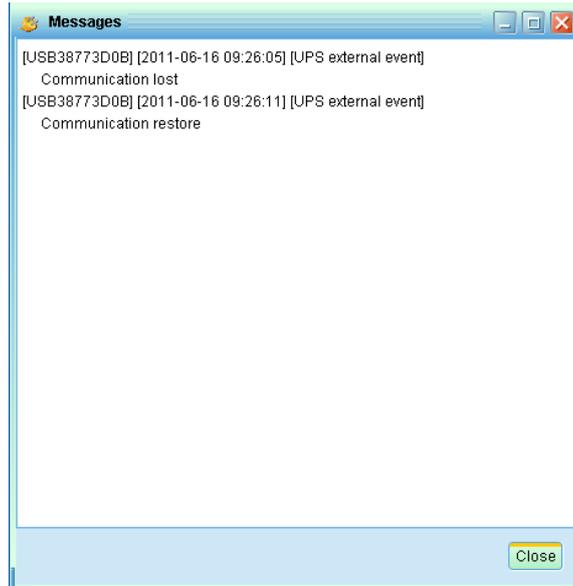


Diagram 3-10

3.8. Exit

Click "Exit" to exit service application

4. WattBox GUI Interface

The GUI has five sections as marked in the illustration below:

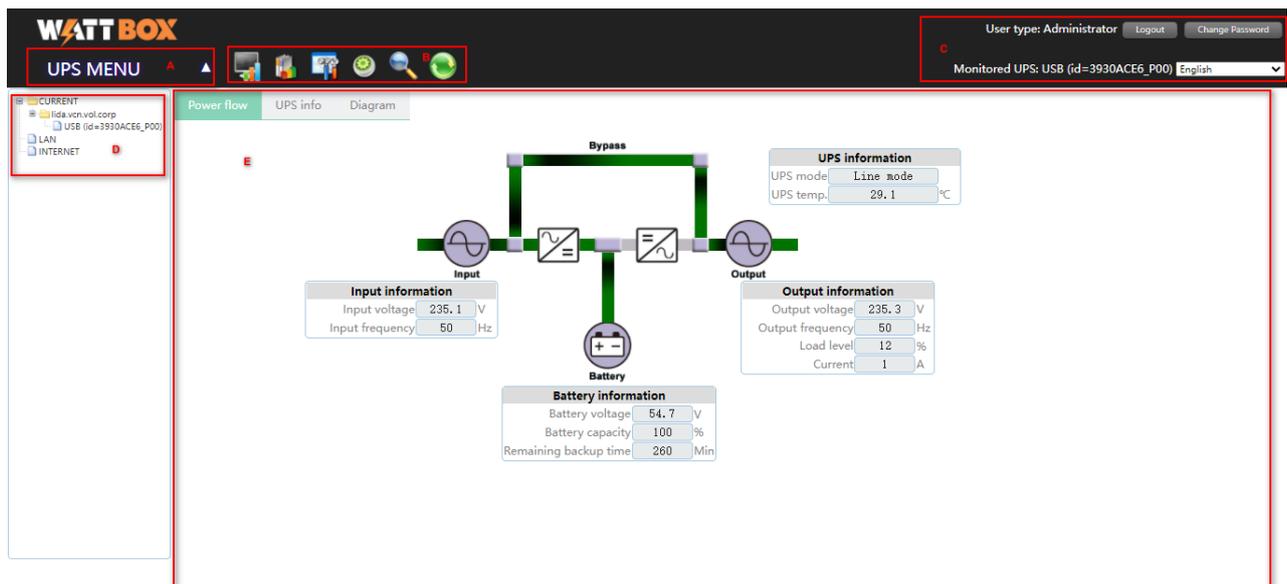


Diagram 4-1

A. Function Menu offers a complete tool-set for navigating and setting the GUI.

B. Shortcut Menu provides short cuts to more commonly used functions.

C. Current Monitoring Information displays user ID and monitored UPS name.

D. UPS Navigation indicates all UPS locations in networked environment.

E. Main Window contains information and/or controls that change with each function menu or shortcut menu selected.

4.1. Refresh

Click the Refresh icon  to refresh screen (Refer to Diagram 4-2).

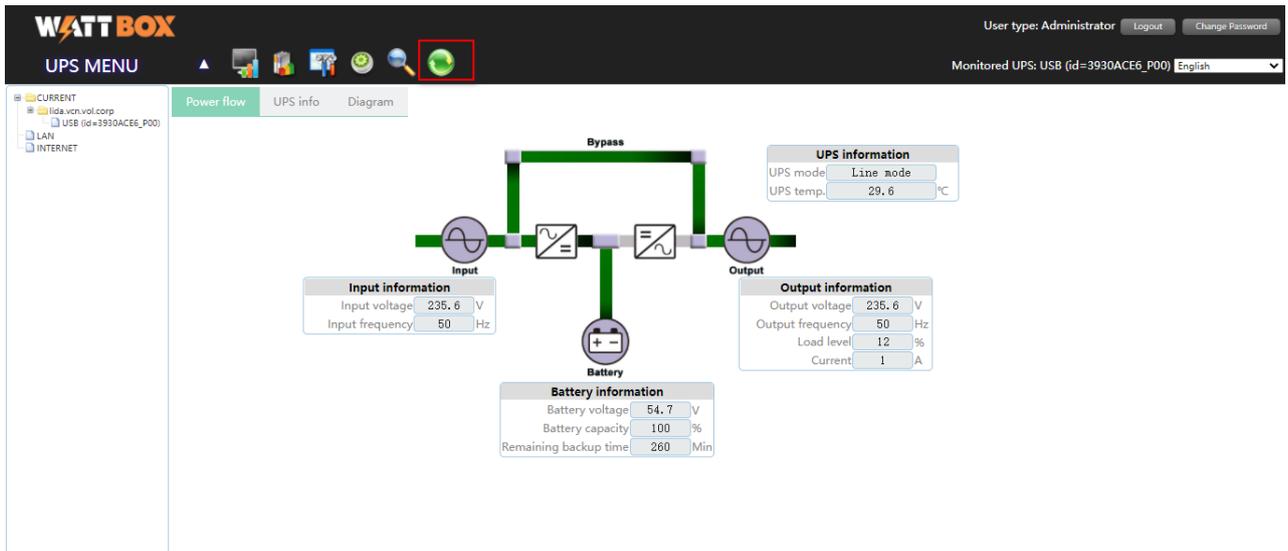


Diagram 4-2

4.2. UPS Searching

Click the UPS Search icon  to search for UPS devices connected to monitoring software of other PC in LAN or INTERNET.

Step 1 Click the UPS search icon  (Refer to Diagram 4-3).

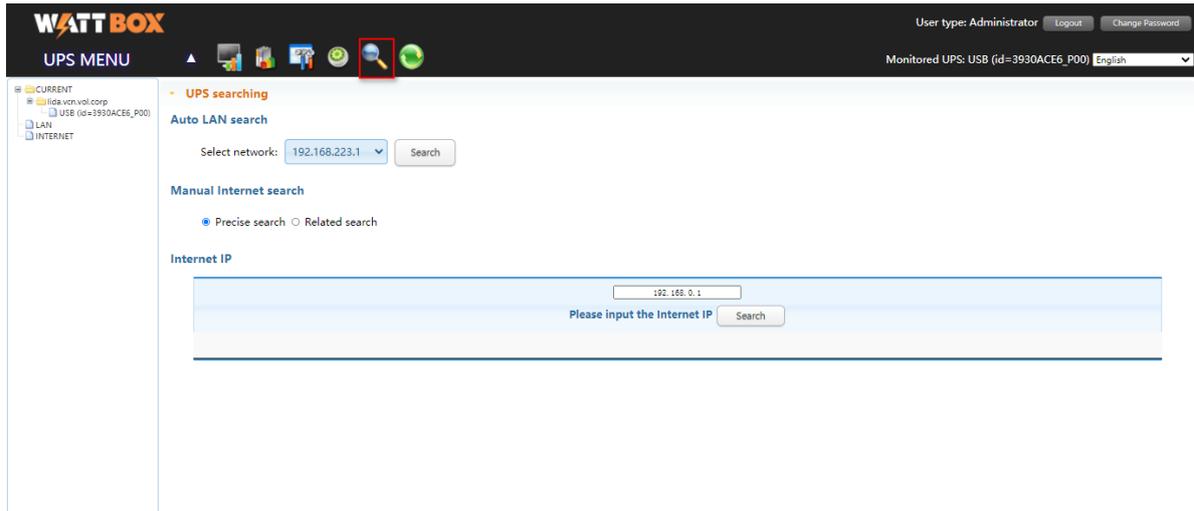


Diagram 4-3

Step 2 Select search type.

- **Auto LAN search:** Select the web segment from dropdown menu, and then click the “Search” button as required.
- **Manual Internet search:**
 1. Precise search: Enter designated IP address, and then click the “Search” button to search.
 2. Related search: Enter IP address ranging, and then click “Search” button to start the search.

Note: The duration of searching in related search is different based on the provided range of IP addresses.

4.3. UPS Navigation

It displays all UPSs found through the UPS search function. CURRENT means physically connected local PC and UPS device; LAN means connected PCs and UPS devices in local area network; INTERNET means connected PCs and UPS devices in wide area network.

NOTE: The definition of LAN and INTERNET depends on the local PC location.

4.3.1. Monitored UPS Information

Select one UPS from UPS navigation and it will display complete UPS information in main window.

Refer to Diagram 4-4.

- UPS rated information includes rated VA, rated output voltage, rated output frequency, rated output current and rated battery voltage.
- Battery information includes battery group numbers.
- Purchasing information means UPS purchase date, battery purchase date, warranty for UPS and warranty for battery.

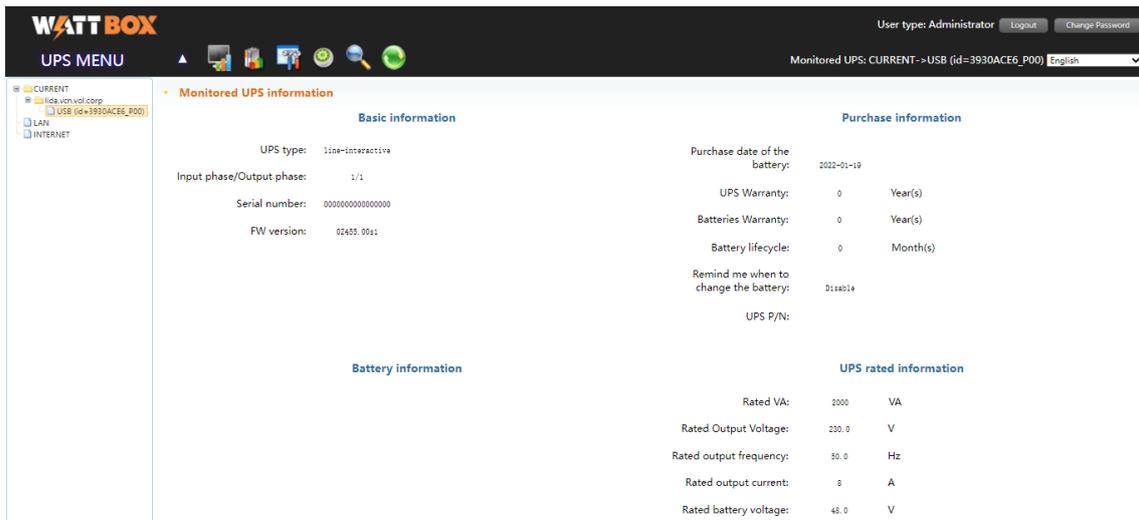


Diagram 4-4

NOTE: This display screen may be different for different types of UPS.

4.3.2. UPS Remote Control & Monitor

If you want to control and set up the remote UPS, you must log in as an administrator. There are two ways to remote monitor UPS:

- Method one: Double click any UPS from LAN or Internet and it will pop up a message window to confirm the monitoring action. Refer to below diagram 4-5.

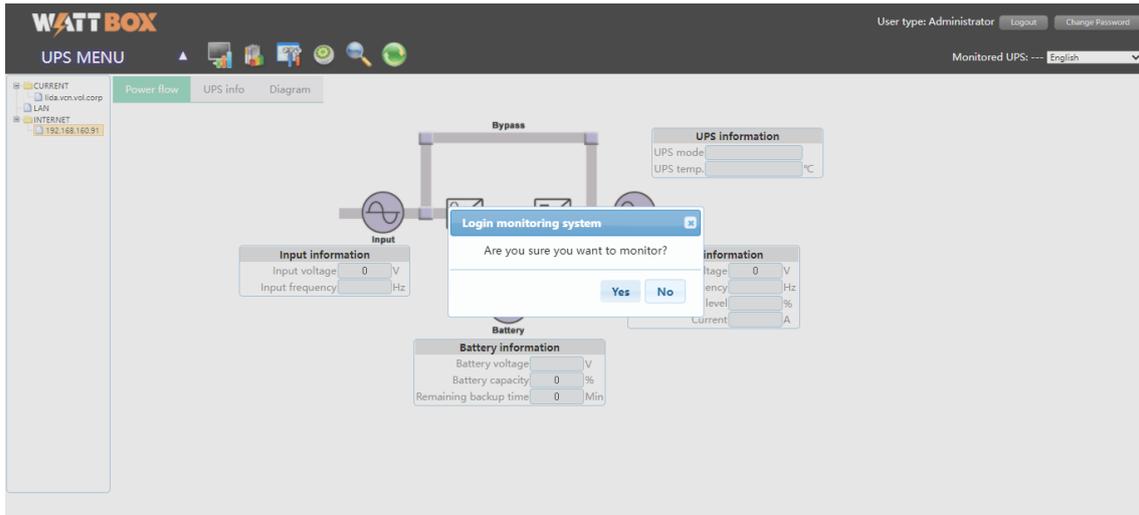


Diagram 4-5

Select "Yes" and it will open another new window to display remote UPS information. Refer to Diagram 4-6.

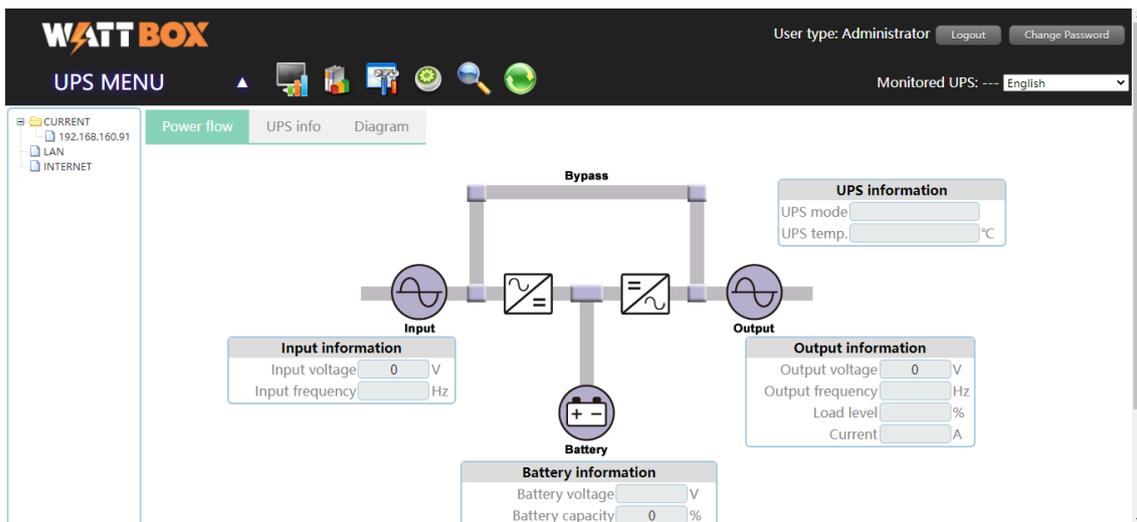


Diagram 4-6

NOTE: This display screen may be different for different types of UPS.

- Method 2: Open browser and enter the remote PC IP address and 15178. For example, remote PC IP address is 192.168.160.91.

Please enter <http://192.168.160.91:15178/WattBox/> in browser. Refer to Diagram 4-7

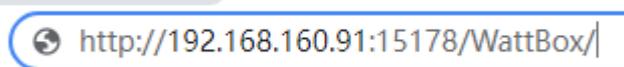


Diagram 4-7

5. WattBox Function Menu

5.1. WattBox Configuration

5.1.1. Password Configuration

Password is configured for the administrator only. Before operating and configuring the software, please login first and modify the password. The default password is “**administrator**” at first log in. Users can only browse UPS status and information as Guest status without login as an Administrator. Guest can NOT control or change any setting.

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

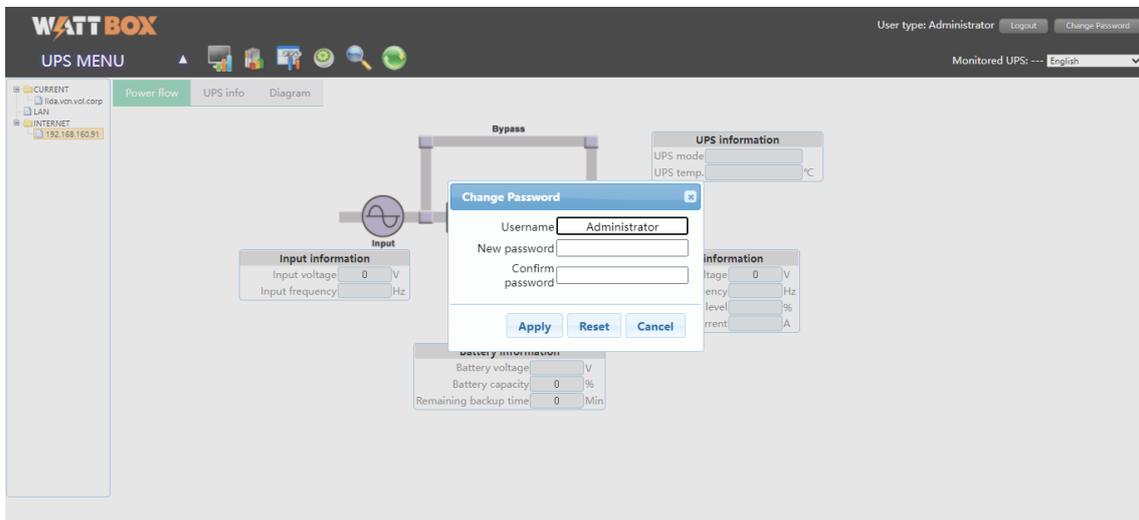


Diagram 5-1

Step 2 Enter old password, new password, and retype new password in confirm password column 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 log in the software.

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

5.1.2. SMS Configuration

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” column (refer to section 5-1-4).

Step 1 Choose WattBox Configuration >> SMS. Refer to Diagram 5-2.

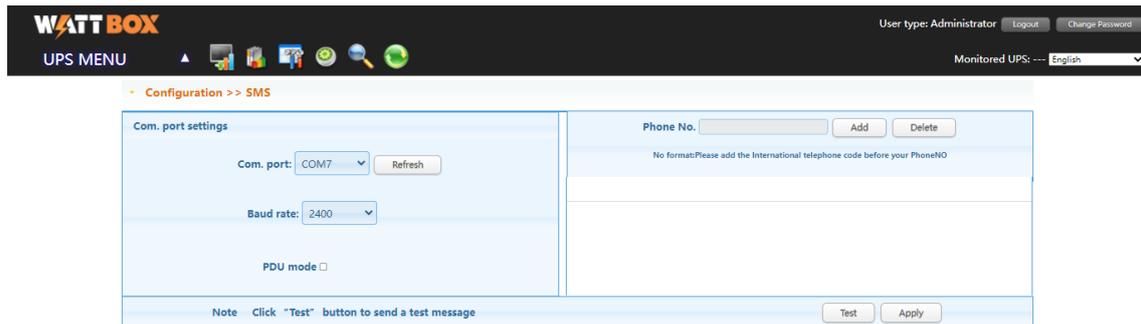


Diagram 5-2

Step 2 Select communication port and baud rate.

Step 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”.

Step 4 Click “Apply” button to save all changes. The “Test” button can be used to send test 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. (Refer to Diagram 5-3)

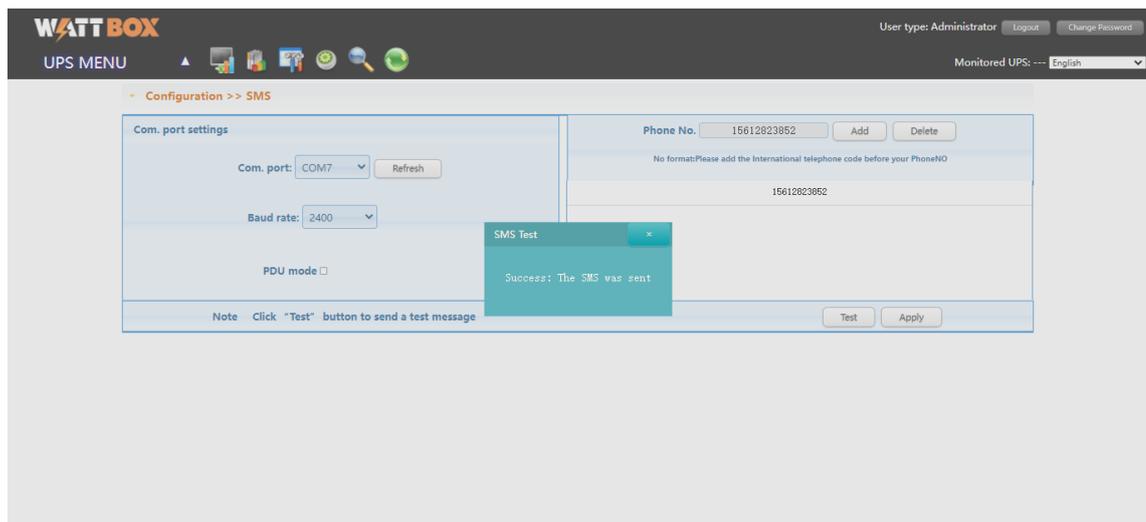


Diagram 5-3

NOTE: It’s required to plug-in GSM Modem if sending SMS to mobile phone.

5.1.3. E-mail Configuration

This feature enables the configuration to send alarm mail by SMTP server. For the event receiving

list, please configure in "Event Action" column (refer to section 5.1.4).

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.

Step 1 Select WattBox Configuration >> E-mail. Refer to Diagram 5-4.

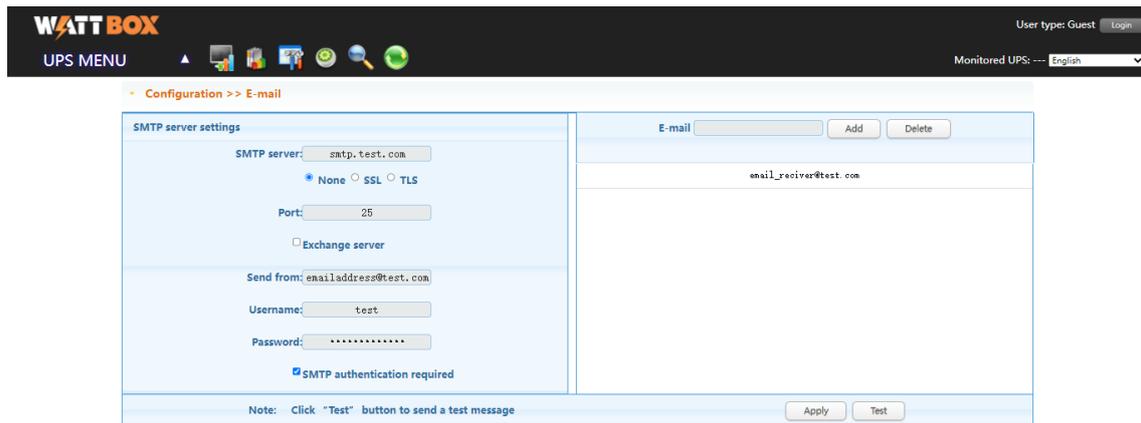


Diagram 5-4

Step 2 Enter SMTP server, SMTP port, Send from E-mail address, User name and password. Click checkbox of password authentication needed for password verify.

NOTE: 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.

Step 3 Enter correct e-mail accounts in E-mail column. Then, click "Add" to add into receivers list. To delete an e-mail account, simply select accounts from Receivers list and click "Delete" button.

Step 4 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.

5.1.4. Event Action Configuration

This is to configure response actions for UPS events. The software provides six response actions after events occur.

- 1. Event record:** It will record the event to the data log in software after events occur. This function is selected by default.
- 2. Computer alarm:** Computer will beep to remind users after events occur. This function is only available for Windows OS.
- 3. Warning dialog (local):** It will pop up a message dialog around the software orange plug icon in taskbar after events occur. This function is selected by default.
- 4. Broadcast:** It will send the event message to all PCs with software installed in LAN network.
- 5. SMS:** This will send the event message to specific mobile phone numbers after events occur.
- 6. E-mail:** This will send the event e-mail to assigned e-mail accounts after events occur. Please refer to Appendix A for more information.

Step 1 Select WattBox Configuration >> Event Action. Refer to Diagram 5-5.

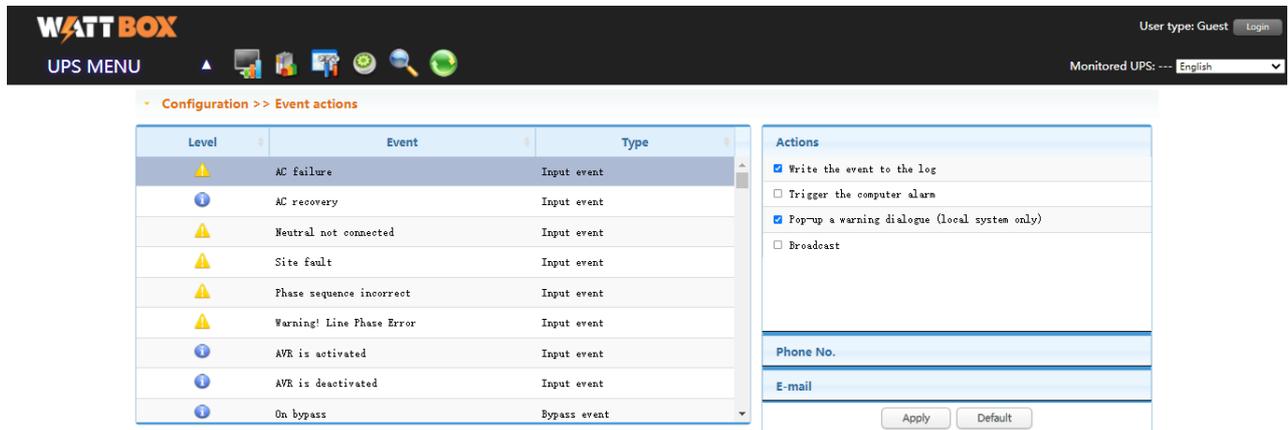


Diagram 5-5

NOTE: The displayed event list may be different for different types of UPSs.

Step 2 Select a specific event from "Event List" and then the action method page will be active on the right-hand column.

Step 3 Select desired action methods by clicking checkbox.

Step 4 Click "Apply" button to save all configurations.

NOTE1: When editing receiver list in SMS or e-mail columns, it's necessary to refresh the event action page to reload the updated receiver list.

NOTE2: You will need to have the following requirements for a successful broadcast.

1. All receiving PCs must have installed software.
2. It's only able to send the message to the PCs in LAN found in UPS Navigation.

5.1.5. Wake-on-LAN

This will manage the list for wake on LAN and test the function.

After adding MAC address of remote PCs into MAC list, it will allow remote control of the PCs.

However, it's also required to have hardware support for remote PCs to implement this function.

Step 1 Select WattBox Configuration >> Wake-on-LAN. Refer to Diagram 5-6.

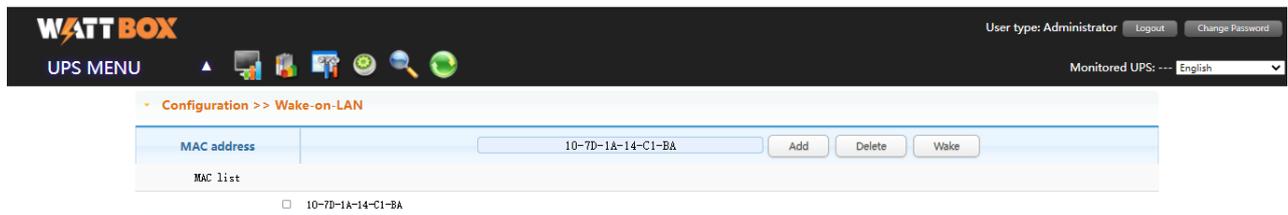


Diagram 5-6

Step 2 Add: Enter MAC address and click "Add" button to add in MAC List.

Delete: Select one from list and click "Delete" button.

Test: Select one from list and click "Test" button. Then, it will execute Wake-on-LAN test.

NOTE: The example of MAC address format: 01-1F-C6-C7-E0-08.

5.1.6. COM Port Plug And Play Setting

To real-time monitor the UPS device, the software will scan each COM Port constantly, occupying the COM Port when it scans. This function will release the COM Ports that are not connected to UPS devices. To avoid any improper operation, in-used COM Ports will display as disabled grey icons. Users can select "Enable" or "Disable" to control whether to scan COM Port or not. If a port is allowed to be scanned, it will be listed in the screen. Then, users can select "Allow scan" or "forbid scan" to re-scan or release COM Ports based on their requirements.

Step 1: Select WattBox configuration>>COM Port plug and play setting. Refer to Diagram 5-7.

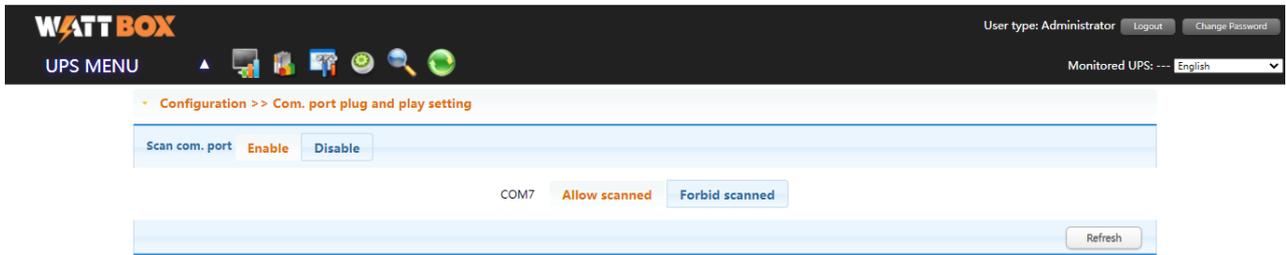


Diagram 5-7

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.

5.1.7. Log Setting

Users can set up record intervals, the max number of logs for historical data, and the max number of logs for historical events.

Record interval indicates how long to record data. The setting range for record intervals is 30~600 seconds and will display historical data under View → History.

The max number of logs for historical data: indicates how many data logs will be saved in total.

The setting range is 100000~100000000 and will display data under View → History.

The max number of logs for history events: indicates how many event logs will be saved in total.

The setting rang is 100000~100000000 and will be displayed under under View -> Event log.

Step 1 Select WattBox configuration>>Log setting. Refer to Diagram 5-8.

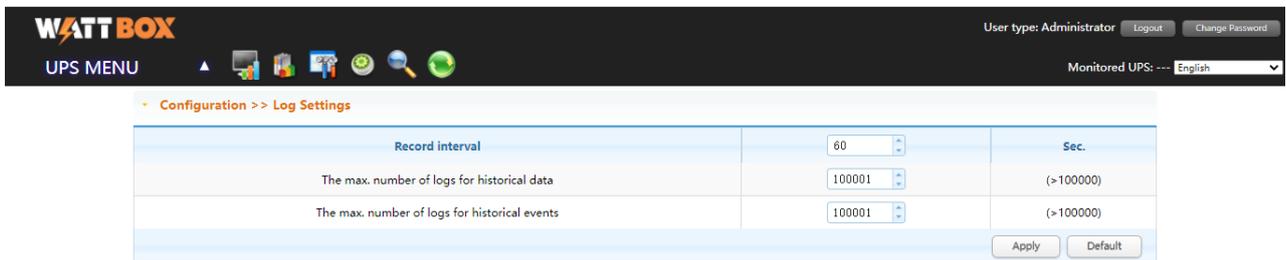


Diagram 5-8

Step 2 Enter value in the column.

Step 3 Click “Apply” button to save all settings.

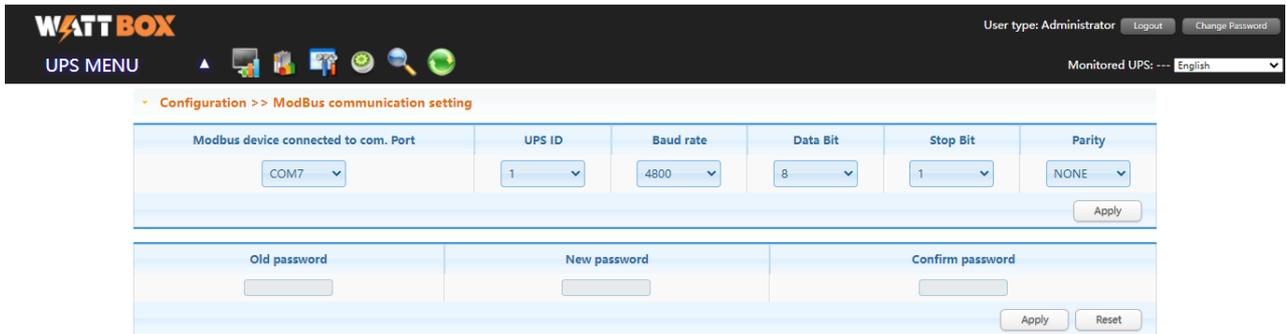
Step 4 Click “Default” button to recover the default setting.

5.1.8. ModBus Communication Setting

It will display all connected PCs through ModBus.

Step 1 Select WattBox configuration>> ModBus Communication Setting

Refer to Diagram 5-9.



The screenshot shows the WattBox web interface. At the top, there is a navigation bar with the 'WATT BOX' logo, 'UPS MENU', and user information: 'User type: Administrator', 'Logout', and 'Change Password'. Below the navigation bar, there is a breadcrumb trail: 'Configuration >> ModBus communication setting'. The main content area is divided into two sections. The first section is for ModBus communication settings, with a table-like structure of dropdown menus: 'Modbus device connected to com. Port' (COM7), 'UPS ID' (1), 'Baud rate' (4800), 'Data Bit' (8), 'Stop Bit' (1), and 'Parity' (NONE). An 'Apply' button is located to the right of these settings. The second section is for password settings, with three input fields: 'Old password', 'New password', and 'Confirm password'. 'Apply' and 'Reset' buttons are located at the bottom right of this section.

Diagram 5-9

Step 2 Password setting/change menu for ModBus.

NOTE: Some UPS models require password control in unit. Therefore, real-time control will be only available when the ModBus password is the same to the UPS password.

Step 3 COM Port setting:

The default ID for nominated COM Port is 1.

Selectable baud rates are 1200, 2400, 4800, 9600 and 19200. The default setting is 4800.

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, even parity and NONE. The default setting is NONE.

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

5.2. UPS Setting

5.2.1. Local Shutdown

This is the shutdown setting for the local PC that is directly connected to the monitored UPS using the communication port. This configuration enables system shutdown of the local PC powered by monitored UPS.

Step 1 Select UPS Setting >> Local Shutdown or click shortcut icon . Refer to Diagram 5-10.

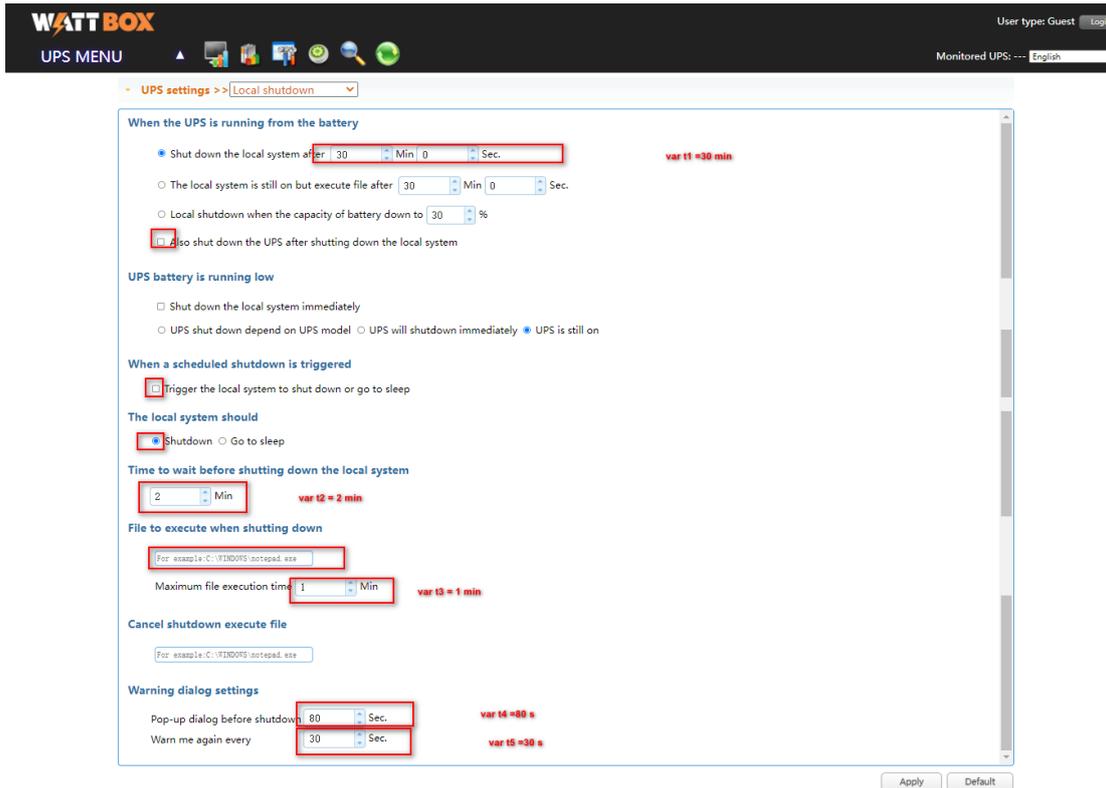


Diagram 5-10

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

Step 2 Select shutdown conditions and power-off options, set delay time to shutdown system.

Step 3 Enter time for pop-up dialog before shutdown and warning interval in Warning Dialog Setting area.

Step 4 Click “Apply” button to save all data.

NOTE: Click “Default” button to recover the default setting.

Conditions:

- When the UPS is running from battery, shut down local system after xx min xx sec: When clicking the checkbox, local PC will start to shut down after monitored UPS works on battery mode for xx min xx sec time. The maximum setting number for minutes is 999 and for seconds is 59. If selected here, it’s not allowed to select “when the capacity of local battery down to x%” in “Conditions” of section **5.2.2 Remote Shutdown**.
- Local shutdown when the capacity of battery down to xx% after xx min xx sec: If selected, local PC will start to shut down system after xx min xx sec when monitored UPS working in

battery mode and battery capacity is lower than setting percentage (xx%). If selected here, it's not allowed to select "When the UPS is running from the battery" in "Conditions" of section **5.2.2 Remote Shutdown**.

- Also shut down UPS after shutting down the local system: When clicking this checkbox, monitored UPS will shut down after local system shuts down. The UPS shutdown time will be later than system complete shutdown time. This feature is set by default. But users can choose to shut down the system without shutting down the monitored UPS by unclicking this checkbox.
- When the UPS battery is running low, shut down the local system immediately: When clicking this checkbox, local PC will shut down when monitored UPS battery is running low.
 1. UPS shut down based on UPS model: Only $\geq 3\text{KVA}$ standard UPS model will automatically shut down. However, long-run models and UPSs with above 5KVA will remain on.
 2. UPS will shut down immediately: UPS will shut down immediately no matter what kind of UPSs.
 3. UPS is still on: UPS will remain on until battery is running out.
- When a scheduled shutdown is triggered, local system will shut down or go to sleep: When clicking this checkbox, the local system will shut down or go to sleep before monitored UPS is scheduled to power off. This setting is default on. Please also refer to section 5.3.2. Schedule On/Off for UPS scheduled shutdown setting.
 - ✓ Shutdown: When clicking the checkbox, the selected system will shut down. The default setting is clicked.
 - ✓ Go to sleep: 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.

Time to wait before shutting down the local system: Enter the waiting time to shut down the operating system. The value range is from 1 to 99 minutes.

File to execute when shutting down: Enter the path of execute file.

Maximum file execute time: Enter the waiting time to execute file.

Cancel shutdown execute file: After "File to execute when shutting down" is done, execute

file under the command of "Cancel shutdown execute file" on the condition that UPS is returned to be on Line mode or ECO mode.

Warning Dialog Setting:

- Pop-up dialog before shutdown: Timer setting for pop-up warning dialog displayed in local PC. Local PC will pop up a warning dialog before system starts to shut down. The range is from 1 to 999 seconds.
- Warn me again every x sec.: Reminder dialog interval setting. This setting is also applied for UPS shutdown because of power failure. The range is from 1 to 999 seconds.

NOTE: In Diagram 5-10 and 5-11, an example has been done as below. The value in t1 must be greater than in t3 and in t6.

Variable code	Description	Value
t1	Shut down the local system after	30min
t2	Time to wait before shutting down the local system	2min
t3	Maximum file execution time	1min
t4	Pop-up dialog before shutdown	80sec
t5	Warn me again every	30sec
t6	Shut down the remote system after	5min

When UPS is on battery mode, it will operate step by step accordingly:

- a. Remote shutdown is activated after 25 minutes, resulting from the formula $t1-t6=25$ min.
- b. A pop-up dialog will show up at 28min40sec, resulting from the formula $t1-t4=28min40sec$. It will start a countdown message window from 80 seconds and repeatedly show up every 30 secs, same as "warn me again" in t5 value.
- c. After 28 minutes, resulting from the formula $t1-t2=28$ min, at the 29th minute, file will be executed as remark 4 in Diagram 5-10.
- d. At the 30th minute, local shutdown is executed.
- e. If "Also shut down the UPS after shutting down the local system" is selected as remark 1 in Diagram 5-10, the UPS will shutdown after 2 minutes when t2 value is 2 min.

When "Control >> Scheduled on/off" is executed, local PC will follow the above step b, c, and d because "Trigger the local system to shut down or go to sleep" is selected as remark 2 in Diagram 5-10.

5.2.2. Remote Shutdown

This configuration is to remote shut down specific PCs which are powered by monitored UPS. Select UPS Setting >> Remote Shutdown. Refer to Diagram 5-11.

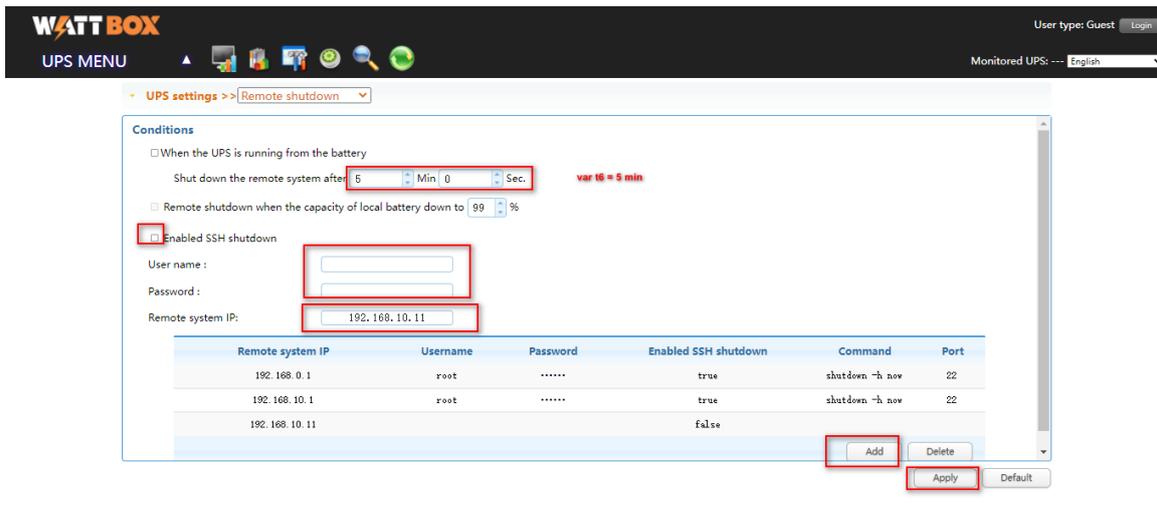


Diagram 5-11

Remote shutdown can be implemented in two ways:

- 1) Through Shutdown Wizard application, it is required to install Shutdown Wizard application on the remote host in advance.
- 2) Through SSH, a safe Internet protocol for Linux, MacOS, ESXI or others that support SSH system with remote log-in and monitoring functions, it is required to activate SSH service on the remote host with SSH port 22.

There are two conditions to trigger remote shutdown:

- When the UPS is running on the battery: If selected, the UPS will remotely shut down the system when entering battery mode. In remark 2, enter the delay time for shutting down the system. The maximum setting number for minutes is 999, and for seconds is 59.
- Remote shutdown when the capacity of local battery down to xx %: If selected, the remote PC will start to shut down when the UPS is working in battery mode and the battery capacity is lower than setting percentage (xx%).

After the shutdown method is selected, be sure to enter IP address of remote PC in remark 4 and click "Add" button to add IP address. Then, click "Apply" button to save all settings. The UPS will execute the shutdown command based on your setting.

NOTE1: If the remote host is enabled with SSH shutdown function and authorization for users to shut down remotely (Select remark 1 in Diagram 5-11) , users can choose SSH to shut down remotely by clicking "Enable SSH shutdown" shown in Diagram 5-11 and by entering required Username and Password for execution.

NOTE2: Users can choose "Shutdown wizard" to shut down remote host only when the "Shutdown wizard" is installed on the remote host. (Please refer to Shutdown wizard-Installation Guide for detail information.)

Please refer to below for an example of three remote hosts settings. 192.168.107.85 is enabled with ShutdownWizard. 192.168.107.125 and 192.168.107.69 are enable with SSH shutdown.

Remote system IP	Username	Password	Enabled SSH shutdown
192.168.107.85			false
192.168.107.125	root	*****	true
192.168.107.69	root	*****	true

(Please make sure that ShutdownWizard is installed and operated properly on the host of 192.168.107.85 and that SSH service is enable on the host of 192.168.107.125 and 192.168.107.69 with port 22. In this way, these three hosts will shutdown after the UPS is on battery mode for five minutes.

5.2.3. Parameter Setting

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

Step 1 Select UPS Setting >> Parameter Setting. Refer to Diagram 5-12.



Diagram 5-12

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

Step 2 Select the functions by clicking “Enable” or “Disable” button. Or change the numbers by clicking up-down arrows or modify the numbers directly in the number column.

Step 3 Click “Apply” button to save the settings. Each function setting is saved by clicking each “Apply” button.

NOTE1: Any functions which are not supported by UPS will not be able to access.

NOTE2: Click “Default” button to recover the default setting.

- 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.
- Alarm at battery mode: If disabled, UPS will not alarm when it’s working at battery mode. Vice versa.
- Auto reboot: If enabled, UPS will auto restart when AC is recovering. Vice versa.
- Bypass when UPS is off: If enabled, AC power 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.
- Advanced ECO mode: If enabled, the UPS will operate in advanced ECO mode when input voltage is within acceptable range. Vice versa.

- Green power function: If enabled, the UPS will cut off if detecting no load connected. 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.
- Battery deep-discharge protection: If enabled, the monitored UPS shutdown in accordance with the condition of battery and load on battery mode to protect battery. Vice versa.
- Site fault detection: If enabled, the monitored UPS will beep when the input neutral and hot wires are reversed. Vice versa.
- P1 Programmable outlet control (battery mode): If enabled, when UPS is running at battery mode, it will cut off P1 outlets after backup setting time arrive. If disabled, UPS will provide continuous power to P1 outlets until the battery is running out.
- Limited runtime on battery mode: If enabled, users can set limited backup time for P1 outlets when UPS is on battery mode.
- 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.

5.2.4. Purchasing Information

Users can enter UPS purchasing date, battery purchasing date, UPS warranty time, battery warranty time, battery lifecycle, battery replacement reminder.

Step 1 Select UPS Setting >> Purchasing Information. Refer to Diagram 5-13.

UPS P/N	983567481356
UPS purchasing date	2022-01-12
UPS Warranty	<input type="text"/> Year(s)
Purchase date of the battery	2022-01-12
Batteries Warranty	<input type="text"/> Year(s)
Battery lifecycle	<input type="text"/> Month(s)
<input type="checkbox"/> Remind me when to change the battery	
<input type="button" value="Apply"/>	

Diagram 5-13

Step 2 Please fill out purchasing information.

Step 3 Click "Apply" button to save all data.

5.3. Control

5.3.1. Real-time Control

Step 1 Select Control >> Real-time Control or click shortcut icon . Refer to Diagram 5-14.

Alarm Control <input type="button" value="ON"/> <input type="button" value="OFF"/>		Turn UPS ON/OFF <input type="button" value="ON"/> <input type="button" value="OFF"/>	
Battery Self-test 10-second Self-test <input type="button" value="Start"/> <input type="button" value="Cancel"/> Minute self-test <input type="text" value="0.2"/> <input type="button" value="Start"/> <input type="button" value="Cancel"/> Deep discharge test <input type="button" value="Start"/> <input type="button" value="Cancel"/>		Outlet control P1 Time for power-on <input type="text" value="0"/> Min <input type="button" value="Start"/> 0 means immediate on Time for power-off <input type="text" value="0"/> Min <input type="button" value="Start"/> 0 means immediate off	

Diagram 5-14

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

Step 2 Choose real-time control function by clicking "Start" button on each function section.

You can real-time control the UPS by executing the following operation:

- Alarm control: Click "On" to turn on the UPS alarm and "Off" to turn off the UPS alarm immediately.
- Turn UPS 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 test. If self-defined test is selected, please also enter the test duration. Simply clicking "Start" button from each type. It will execute the self-test immediately.
- Outlet Control: It will cut off P1 outlets when setting time arrives. When entering 0 in timer column and click "Start" button, it will cut off outlets immediately when UPS works in battery mode.

5.3.2. Scheduled On/Off

Scheduled UPS on/off can be executed once, daily, weekly. In "Scheduled On/Off Setting", users can set up UPS on/off timer. It is recommended to set only one action at the same time. If multiple actions have been set at the same time, some of these actions may be ignored. Any actions not supported by the UPS will be ignored.

NOTE: Be sure to click checkbox of "shutdown trigger" in section 5.2.1 Local shutdown. Otherwise, this schedule on/off can't be executed well.

Step 1 Select "Control" >> Scheduled On/Off. Refer to Diagram 5-15.

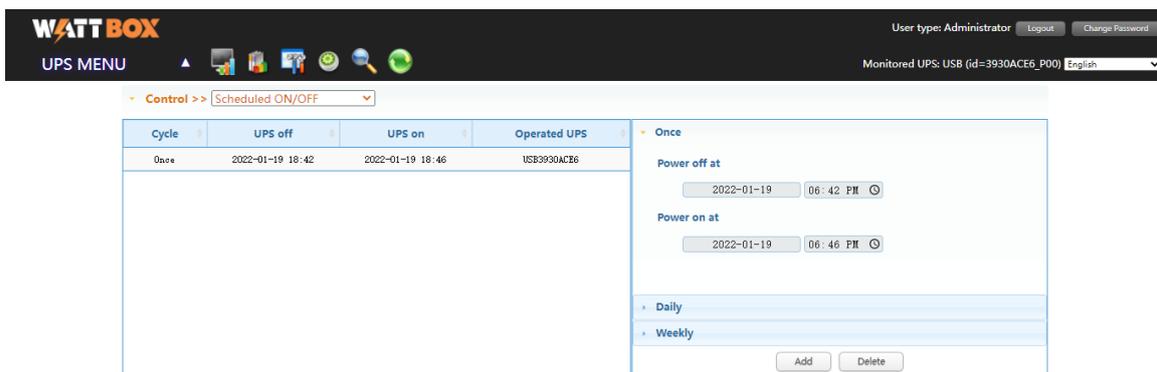


Diagram 5-15

Step 2 Set frequency and on/off timer on the right column.

NOTE: Rules for setting time.

Daily schedule – Power-off time should be earlier than power-on time. It is only capable of setting power-on and power-off timing within the same day.

Weekly schedule –Power-off time should be earlier than power-on time. It is only capable of setting power-on and power-off timing within the same week.

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

5.3.3. Scheduled Battery Self-Test

Scheduled battery self-test can be executed once, daily, weekly, or monthly. In the window of “Scheduled Battery Self-Test Setting”, users can choose time parameters. It is recommended to set only one action at the same time. If multiple actions have been set at the same time, some of these actions may be ignored. Any actions that are not supported by the UPS will be ignored. **Step 1** Select Control >> Battery Self-Test. Refer to Diagram 5-16.

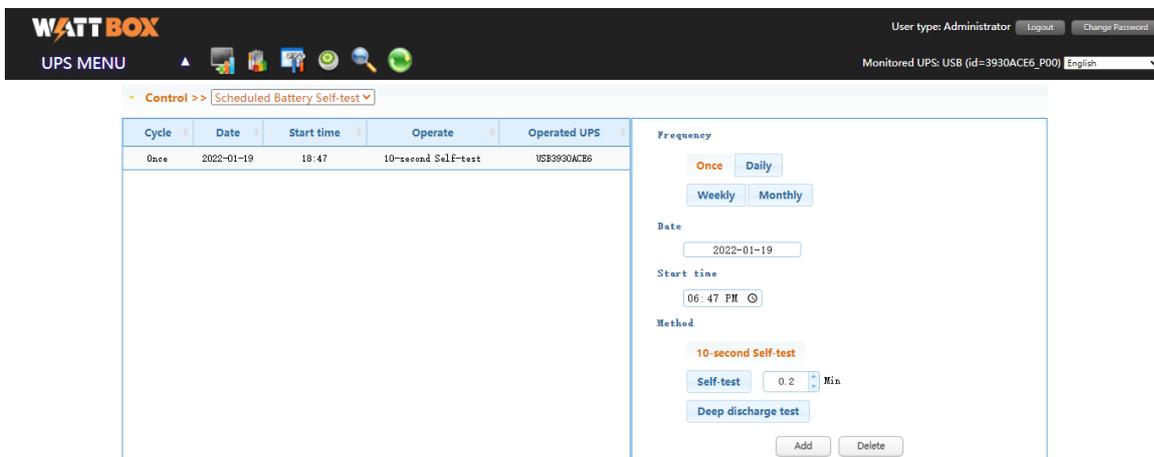


Diagram 5-16

Step 2 Select frequency, method and time parameters.

There are three self-test methods:

- 10-second self-test: Battery will discharge for 10 seconds.
- Self-test: Users can set battery discharge time for self-test.
- Deep test: This test will let battery discharge until it's in low battery level.

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.

5.4. View

5.4.1. Status

(ii) Power Flow

The Power Flow window show the internal dynamic sequences of the UPS. Green/black flow means OK and working. Grey bar means that the object is present but not in use at the moment. There are four information blocks to display details for 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 mode, UPS temperature.
- Battery information includes battery voltage and battery capacity.



Select View >> Status >> Power Flow or click shortcut icon. Refer to Diagram 5-17.

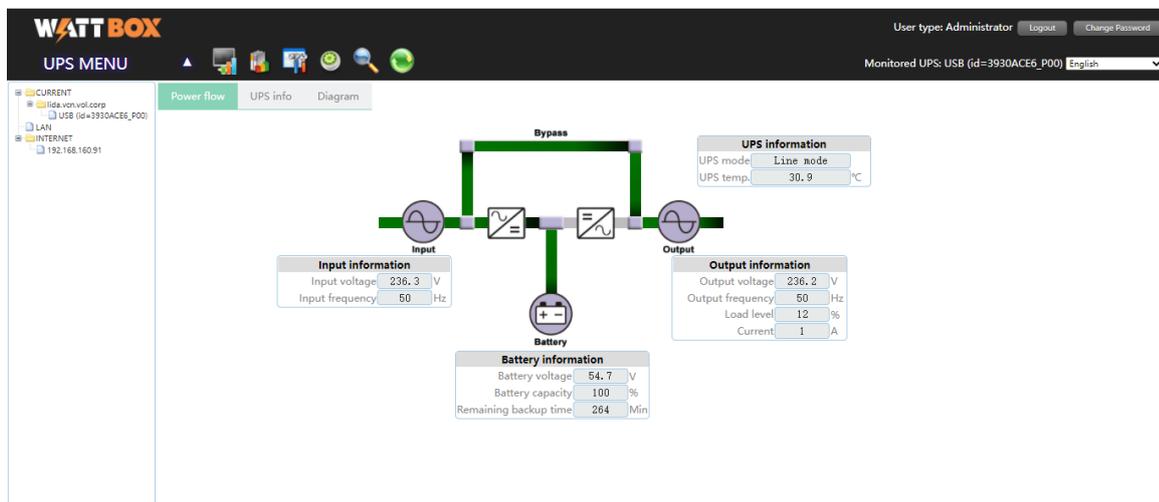


Diagram5-17

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

(iii) UPS Info

Select View >> Status >> UPS Info. Refer to Diagram 5-18.

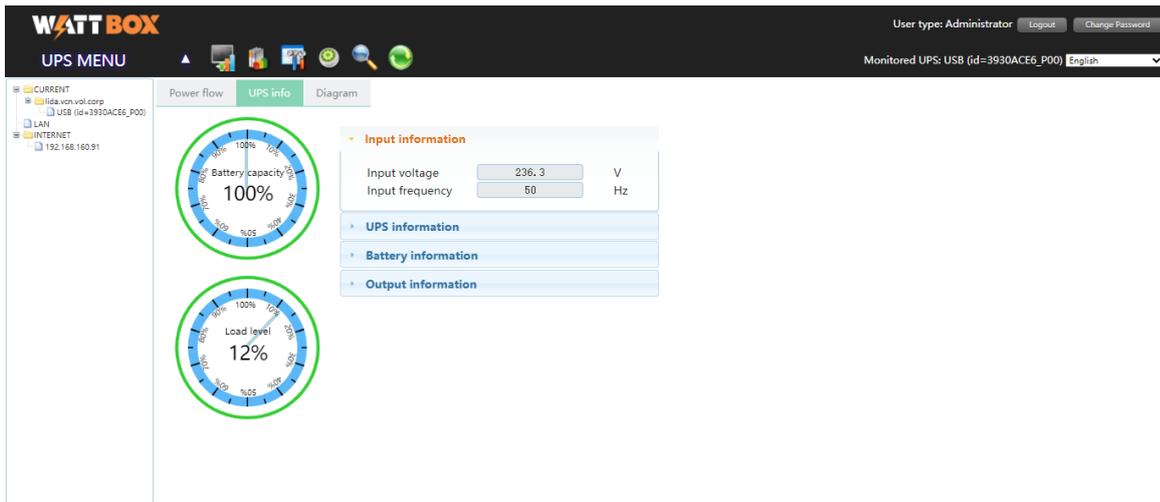


Diagram 5-18

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

In the UPS Info window, it's shown detailed UPS real-time information.

(iv) Diagram

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

Step 1 Select View >> Status >> Diagram. Refer to Diagram 5-19.

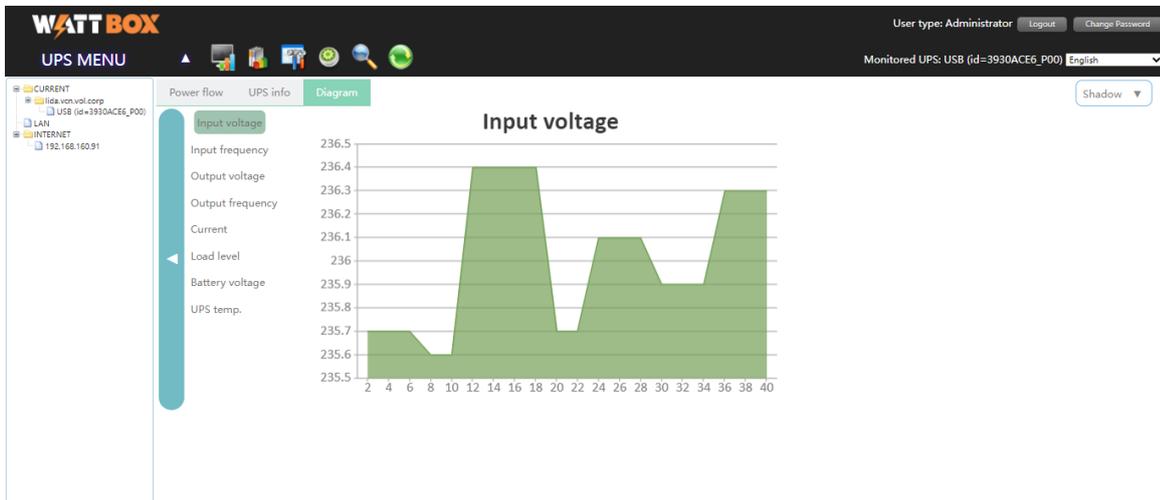


Diagram 5-19

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

Step 2 Select monitoring parameters on left-hand tab to switch diagram display.

- Input voltage monitoring shows any change for input voltage.
- Output voltage monitoring shows any change for output voltage.

- Input frequency monitoring shows any change for input frequency
- Output frequency monitoring shows any change for output frequency.
- Load level monitoring shows any change for connected load level
- Battery capacity monitoring shows any change for connected battery capacity.
- UPS temp. Monitoring shows any temperature change for monitored UPS.

Step 3 Time interval setting, It displays real-time data changes in certain interval. To change time interval in X-axis of diagram, simply click up-down arrows and then click "Refresh" icon to get the updated diagram with new setting interval. Refer to Diagram 5-19

5.4.2. History

(i) Event Log

The Event Log window shows all historical events. Users can analyze the historical data and improve the current electricity environment based on this data.

Step 1 Select View >> History >> Event Log. Refer to Diagram 5-20.

The screenshot shows the WATTBOX UPS MENU interface. At the top, there is a navigation bar with the WATTBOX logo and 'UPS MENU'. On the right, it shows 'User type: Administrator' with 'Logout' and 'Change Password' buttons. Below the navigation bar, there is a breadcrumb trail: 'History >> Event log'. The main content area has a search bar and a table of events. The table has columns for ID, Level, Date, Event, and Type. The events listed are:

ID	Level	Date	Event	Type
3	Information	2022-01-19 14:14:06	Communication established	UPS external event
2	Warning	2022-01-19 14:43:07	Communication lost	UPS external event
1	Information	2022-01-19 18:37:24	Communication established	UPS external event

Diagram 5-20

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 local system.

Step 3 Select time period by clicking calendar icon. Then click "Browse" button to get list of all

historical events during selected period

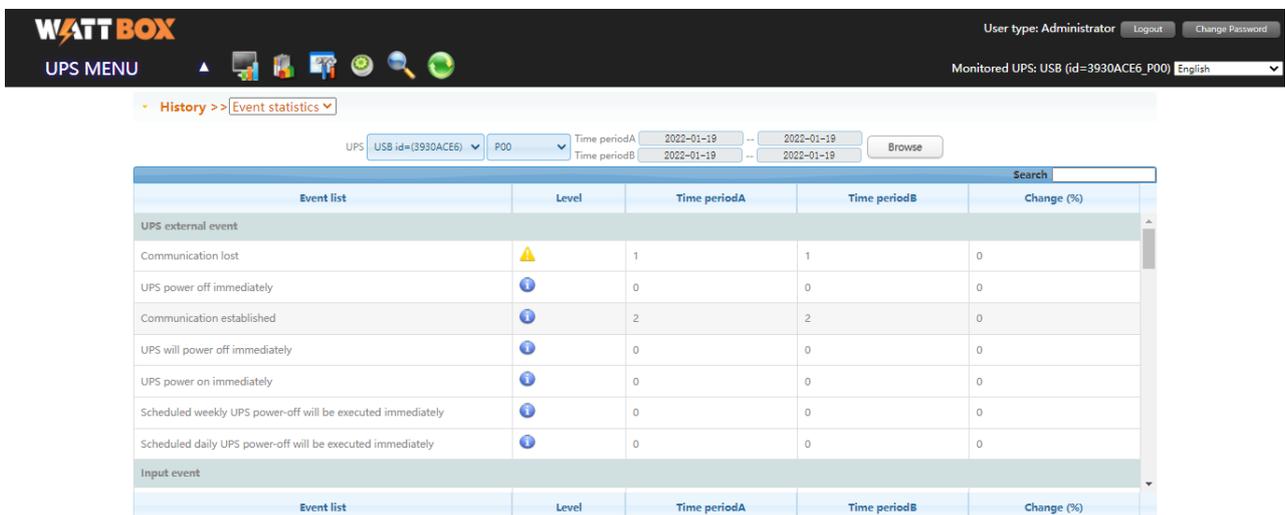
time. **Step 4** Print/Delete/Export function keys

- **"Print"**: Click "Print" button to print the current event log.
 - **"Delete/Delete All"**: To delete a specific event, simply select that event and then click "Delete" button. Or click "Delete All" button to delete all historical events on the listed table.
 - **"Export"**: Click "Export" button to save listed table to local PC in .CSV file.
- (ii) Event Statistics

This will provide all event statistics for UPSs with software installed based on time period A and time period B, and the change percentage [= 100*(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 View >> History >> Event Statistics. Or click shortcut icon . Refer to Diagram 5-21.



Event list	Level	Time periodA	Time periodB	Change (%)
UPS external event				
Communication lost	⚠	1	1	0
UPS power off immediately	ⓘ	0	0	0
Communication established	ⓘ	2	2	0
UPS will power off immediately	ⓘ	0	0	0
UPS power on immediately	ⓘ	0	0	0
Scheduled weekly UPS power-off will be executed immediately	ⓘ	0	0	0
Scheduled daily UPS power-off will be executed immediately	ⓘ	0	0	0
Input event				
Event list	Level	Time periodA	Time periodB	Change (%)

Diagram 5-21

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

Step 3 Select two periods from clicking "calendar" icon. Then click "Browse" button. The result statistics will be listed in below table according to event types. Refer to Diagram 5-22.

Event list	Level	Time periodA	Time periodB	Change (%)
UPS external event				
Communication lost	⚠	1	1	0
UPS power off immediately	ⓘ	0	0	0
Communication established	ⓘ	2	2	0
UPS will power off immediately	ⓘ	0	0	0
UPS power on immediately	ⓘ	0	0	0
Scheduled weekly UPS power-off will be executed immediately	ⓘ	0	0	0
Scheduled daily UPS power-off will be executed immediately	ⓘ	0	0	0
Input event				
Event list	Level	Time periodA	Time periodB	Change (%)

Diagram 5-22

Step 4 Click “Print” button to print event statistics.

(iii) Data

The Data window shows UPS power data in figures based on selected period of time. The software also offers print, save as, and delete functions.

Step 1 Select View >> History >> Data. Refer to Diagram 5-23.

ID	Time	Input voltage	Input frequency	Output voltage	Output frequency	Current	Load level	Battery voltage
1	2022-01-19 18:48:35	236.2	50.0	236.1	50.0	1.0	12	54.7
2	2022-01-19 18:47:36	235.7	50.0	235.8	50.0	1.0	12	54.7
3	2022-01-19 18:46:37	236.2	50.0	236.2	50.0	1.0	12	54.7
4	2022-01-19 18:45:38	236.3	50.0	236.3	50.0	1.0	12	54.7
5	2022-01-19 18:44:38	236.1	50.0	236.1	50.0	1.0	12	54.6
6	2022-01-19 18:43:39	236.2	50.0	236.1	50.0	1.0	12	54.7
7	2022-01-19 18:42:40	234.6	50.0	235.9	50.0	1.0	12	54.6

Diagram 5-23

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 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.

(iv) Diagram

The Diagram window shows the UPS power data in the diagram during a selected period of 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 5-24.

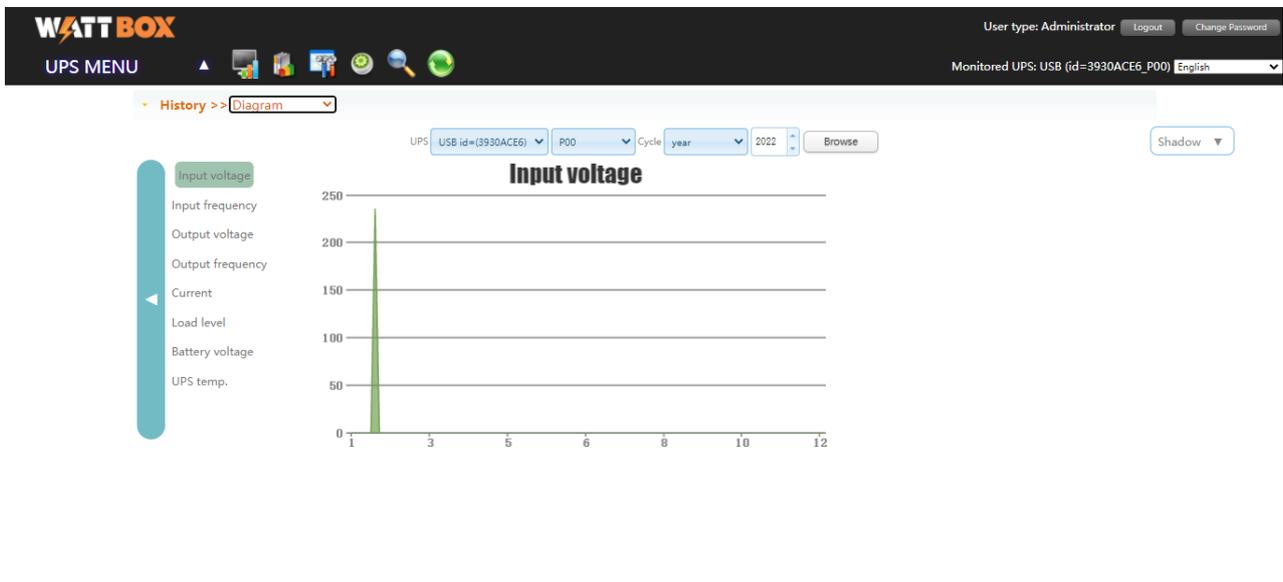


Diagram 5-24

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

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

5.5. Format

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

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.

5.6. Language

Currently, software offers thirteen languages for selection:

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

5.7. Help

- **About:** Click "Help" menu and select "About" item. This represents the copyright information for the software.
- **Help:** Click "Help" menu and select "Online help" item. It will open the help manual. Before operating software, please read manual carefully.

6. Service list

Service	Purpose	Default configuration	Port	Port modification	UDP/TCP	Direction
HTTP	Obtain the related information and set the parameters of the monitored device through the HTTP protocol.	Enabled	15178	Enabled	TCP	In
HTTPS	Obtain the related information and set the parameters of the monitored device through the HTTPS protocol.	Disable	18443	Disabled	TCP	In
SSH	Shut down the host of the specified IP (while the host enable the SSH) .	Disabled	22	Enabled	TCP	Out
Easy shutdown	Shut down the host of the specified IP. Use with the ShutdownWizard.	Disabled	31234	Enabled	TCP	Out
Email	Send emails when events occur on the monitored device.	Disabled	465	Enabled	TCP	Out

Appendix A: E-mail for Event Action Configuration

- 1) Please refer to Diagram A-1 for E-mail configuration.

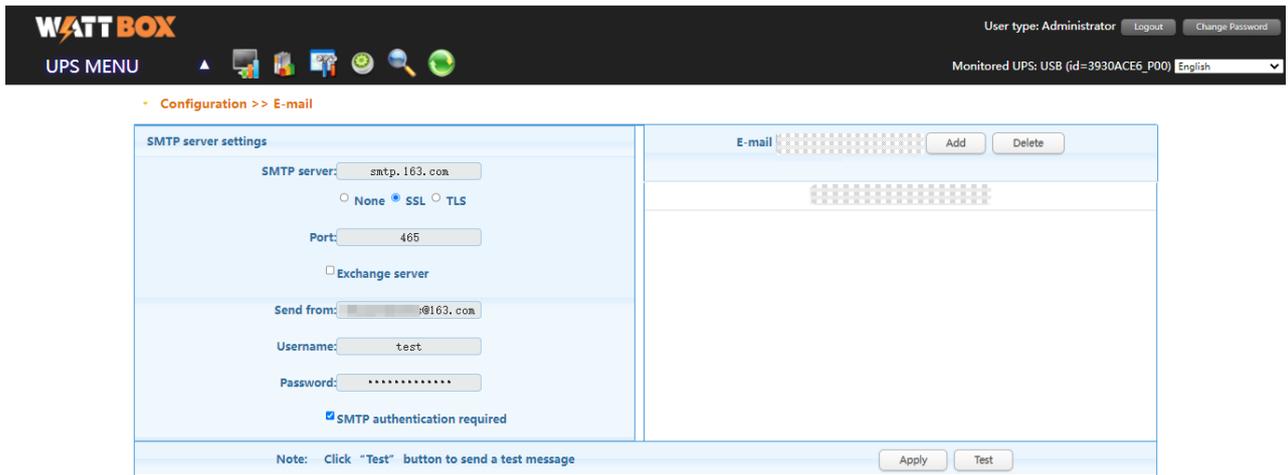


Diagram A-1

- 2) In Event actions configuration, you can configure any UPS events to be sent to an email address that's entered.

For example, AC fail Event in Diagram A-2, enter E-mail in remark 2 and click Apply.

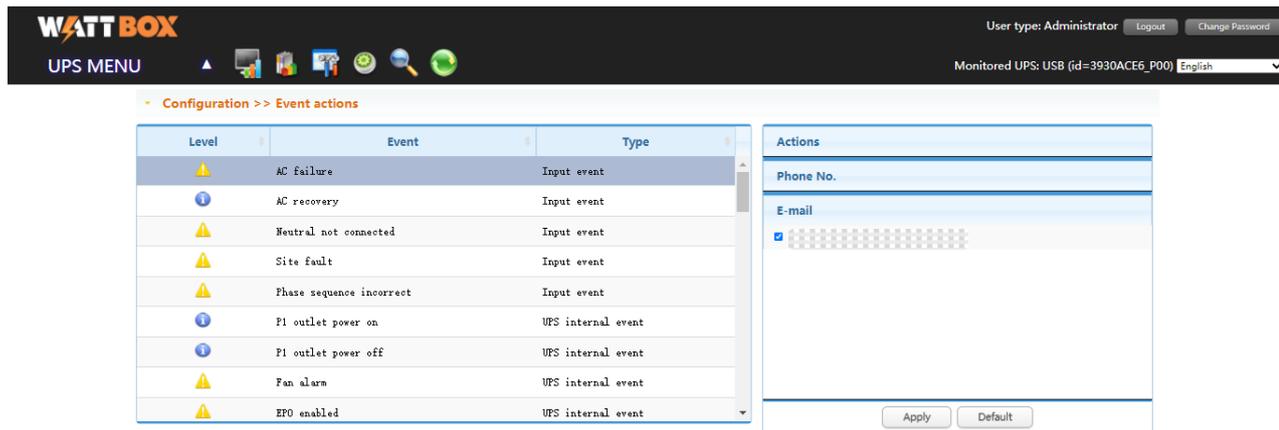


Diagram A-2

- 3) In this example, a message window will pop out as below when UPS is disconnected with AC power.

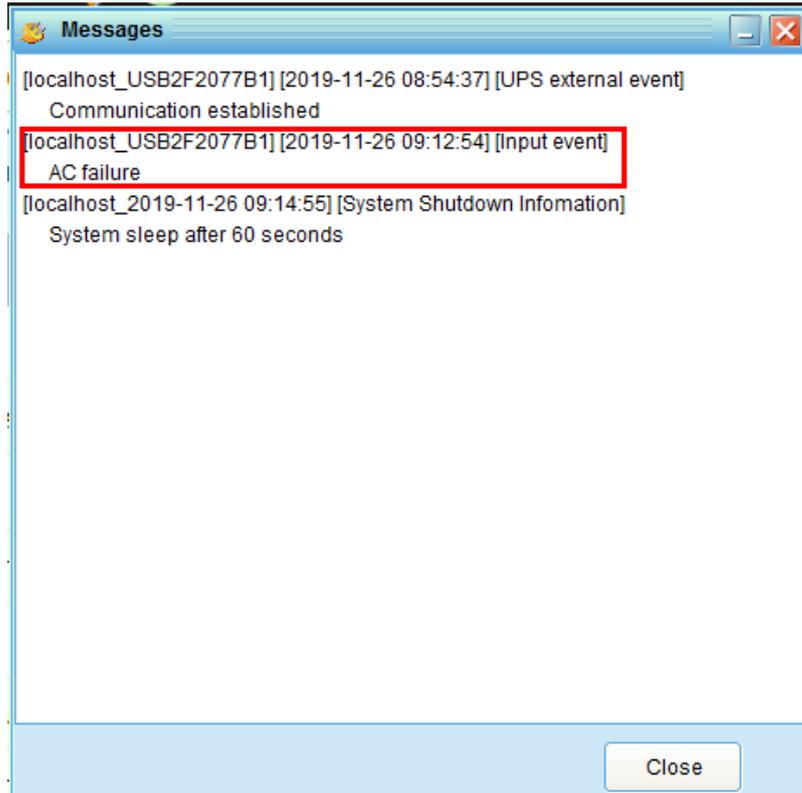


Diagram A-3

- 4) An AC failure notification will be sent to your email.

10:29



< AC failure

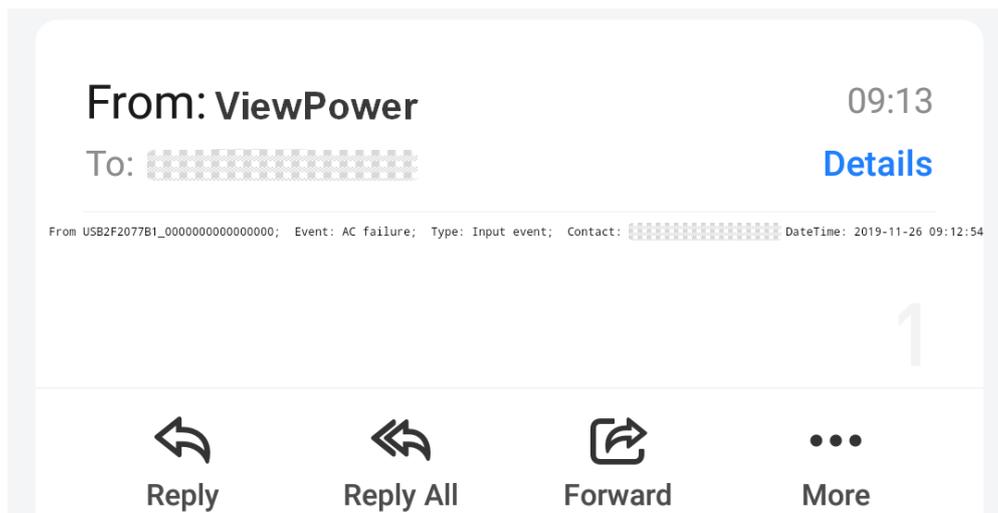


Diagram A-4

Note: If you are using gmail, please be sure that your gmail has been activated with "Allow less secure app access" in <https://myaccount.google.com/lesssecureapps> shown as Diagram A-5)

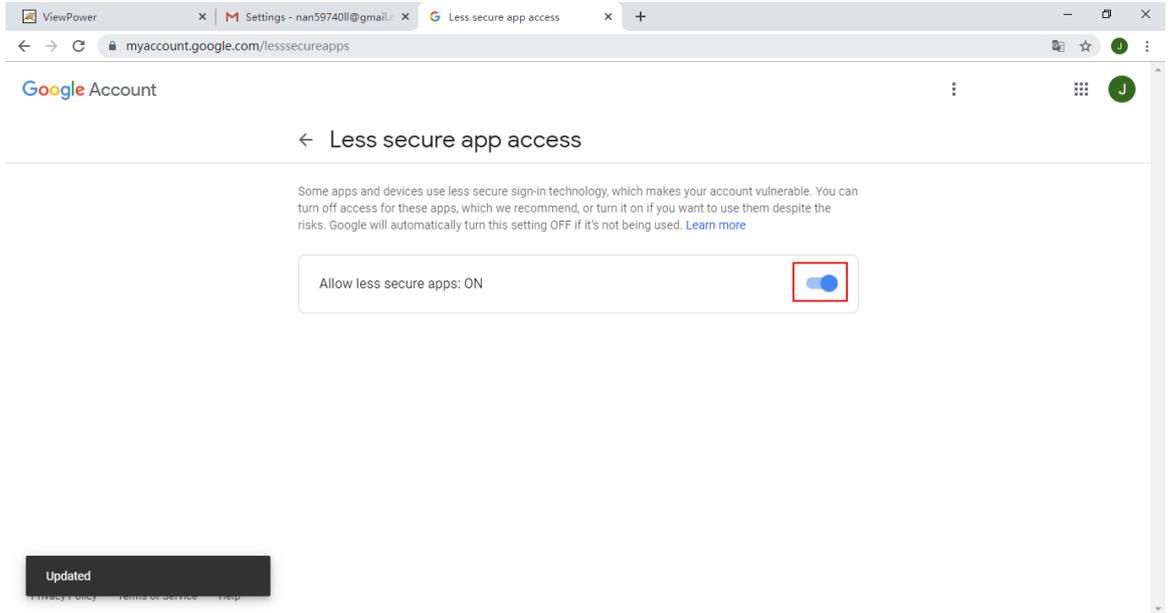


Diagram A-5

Appendix B: ESXI to enable SSH

- 1) Log in ESXI system and enter Troubleshooting Options>>Enable SSH shown as Diagram B-1.

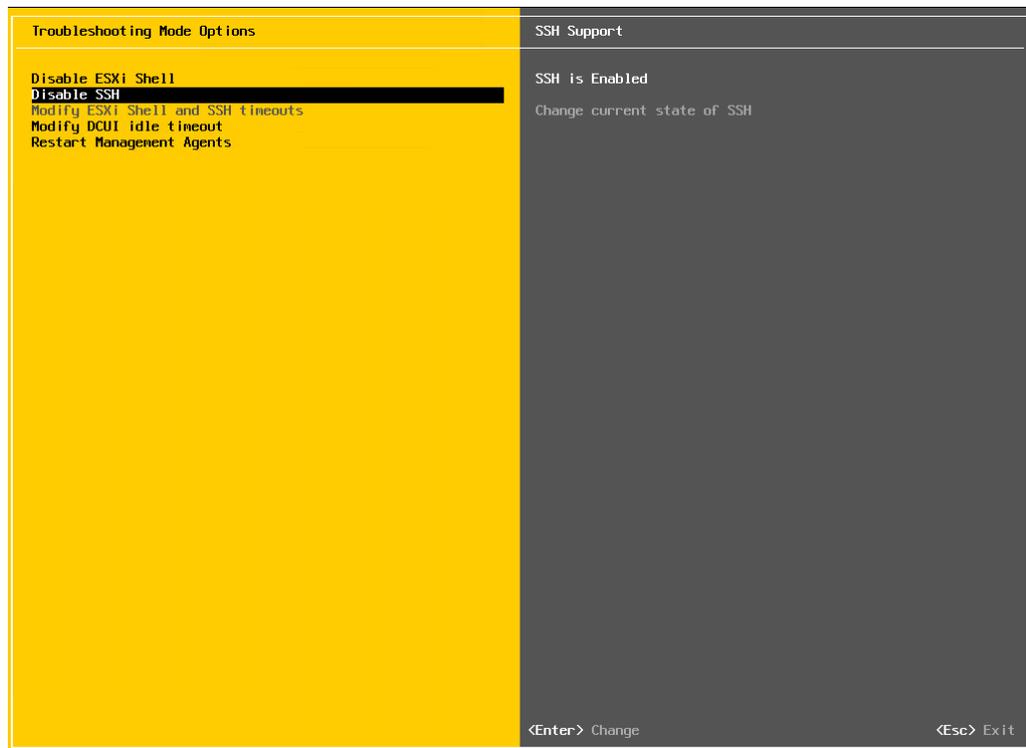


Diagram B-1

- 2) Activate SSH (Password Authentication) in ESXI system. Enter ESXI CLI page or through PuTTY or other SSH tools, please edit the command `vi /etc/ssh/sshd_config` and enable "yes" in PasswordAuthentication". Please find further reference in Diagram B-2.

```
192.168.107.85 - PuTTY
login as: root
Using keyboard-interactive authentication.
Password:
The time and date of this login have been sent to the system logs.

VMware offers supported, powerful system administration tools. Please
see www.vmware.com/go/sysadmintools for details.

The ESXi Shell can be disabled by an administrative user. See the
vSphere Security documentation for more information.
[root@users-fb0bec28a:~] vi /etc/ssh/sshd_config
# running from inetd
# Port 2200
Protocol 2
HostKey /etc/ssh/ssh_host_rsa_key
HostKey /etc/ssh/ssh_host_dsa_key

UsePrivilegeSeparation no

SyslogFacility auth
LogLevel info

PermitRootLogin yes

PrintMotd yes
PrintLastLog no

TCPKeepAlive yes

X11Forwarding no

Ciphers aes128-ctr,aes192-ctr,aes256-ctr,3des-cbc

MACs hmac-sha2-256,hmac-sha2-512,hmac-sha1

UsePAM yes
# only use PAM challenge-response (keyboard-interactive)
PasswordAuthentication no
Banner /etc/issue

Subsystem sftp /usr/lib/vmware/openssh/bin/sftp-server -f LOCAL5 -l INFO

AuthorizedKeysFile /etc/ssh/keys-%u/authorized_keys

# Timeout value of 10 mins. The default value of ClientAliveCountMax is 3.
# Hence, we get a 3 * 200 = 600 seconds timeout if the client has been
# unresponsive.
ClientAliveInterval 200
# sshd(8) will refuse connection attempts with a probability of "rate/100"
- /etc/ssh/sshd_config 1/43 2%
```

① please use the word 'yes' instead of 'no' to enable the password authentication

Diagram B-2