

User Guide

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Chapter 1 Software introduction

1.1 Brief introduction

Software is a UPS monitoring software, that can support to monitor the status of local UPS and remote UPS in the LAN or WAN. User can monitor and configure the UPS on any computer in the LAN or WAN.

The software monitors the real-time status of UPS at all times, when status of UPS is abnormal, software will give warning information to user, protect the key equipment and shut down the system of the computer when needed.

The software can protect computer systems from being shut down abnormally when power fails. With the software, a UPS can provide security protection for more than one computer at the same time, including shutting down system in security, saving application data and shut down the output of the UPS when power fails.

1.2 Software structure

There are three components of the software: Agent, Monitor and Tray Icon.

Please refer to the following figure 1.2.1 to comprehend the relationship of the three components.

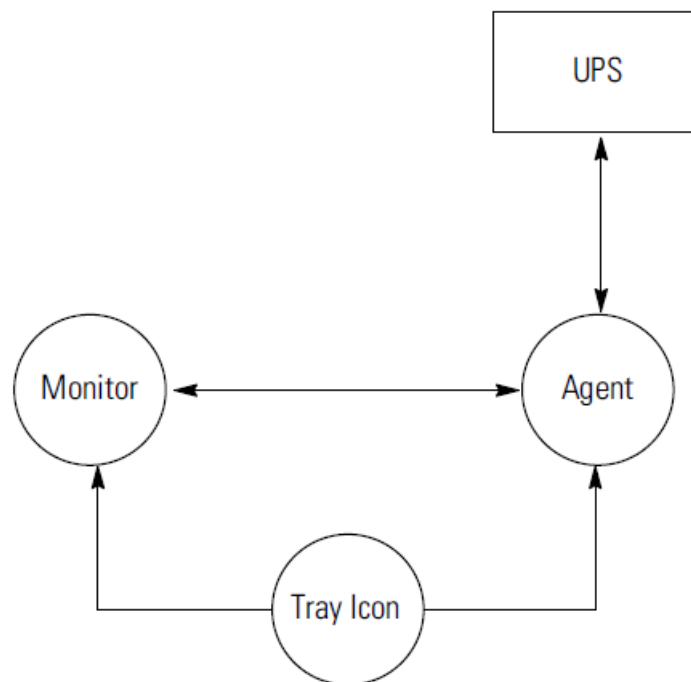


Figure 1.2.1

Agent is the key component of the software, running as a system service on background. Agent communicates with UPS, logs the event of UPS, notifies user when the UPS is abnormal, takes some actions according to the user configuration and shuts down the system of computer when necessary. User can configure Agent by Monitor.

Monitor is the user interface of the software. User can get real-time status of UPS, configure the parameters of UPS and set shutdown parameters by monitor.

Tray Icon, shown on the taskbar of Windows system, is the management tool of the software. Start software from “start” menu of system or login in system when restart system after installing software, if the software runs normally, a green icon will be shown on the taskbar of Windows system.

▲ The Tray Icon exists on Windows only.

There are two different statuses of Tray Icon to display the current status of Agent. Refer to the following figure 1.2.2.

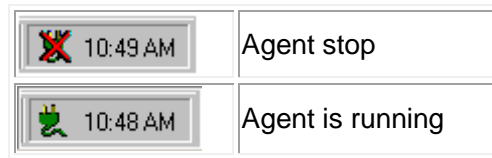


Figure 1.2.2

1.3 Application

1.3.1 Application on individual computer

Refer to figure 1.3.1



Figure 1.3.1

1.3.2 Application in the LAN/WAN/Internet

Refer to figure 1.3.2

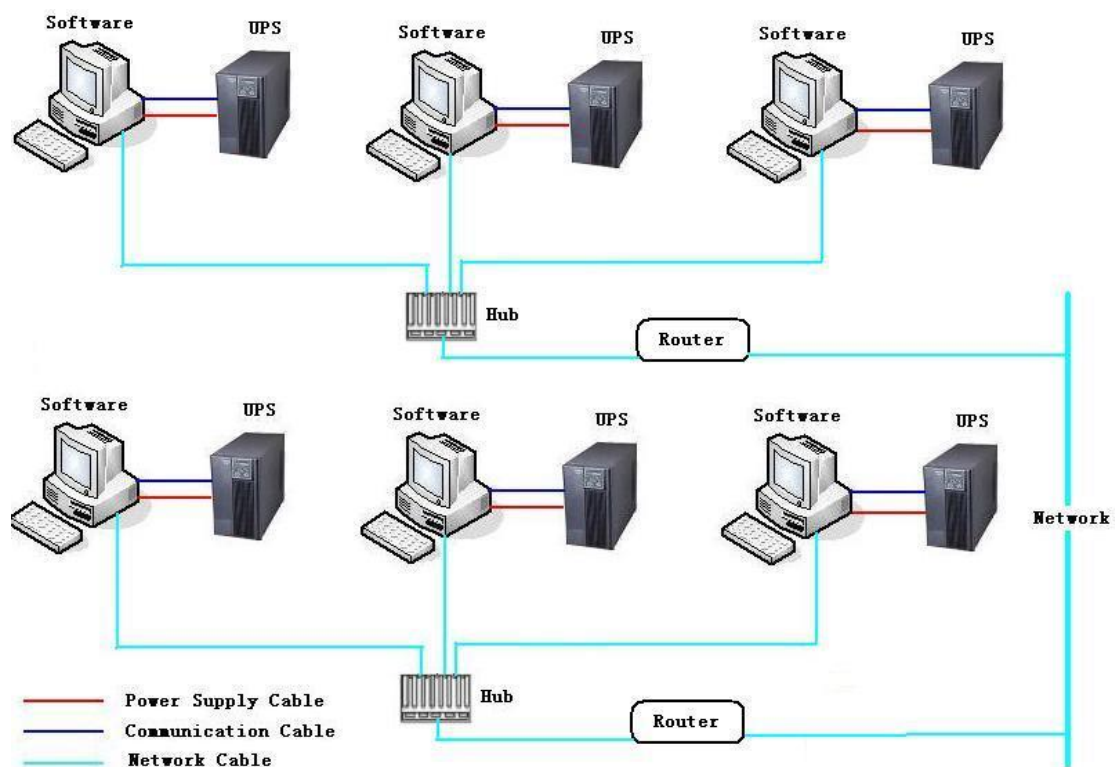


Figure 1.3.2

1.4 The functions and advantages

1. Once the software starts, it will never stop running to protect the key equipment in 24 hours every day.
2. You can have a detailed view about the parameters and status of UPS, such as utility power, UPS type, the load, and battery information.
3. Software can automatically search and monitor the UPSs in LAN when start the software at the first time.
4. Software can monitor the UPSs in the internet.
5. With security protect function. The software administrator password can be set to prevent others from sabotaging. Only the software administrator has the right of full access, other users only have the right of view.
6. With the function of data auto protection, it can close most of the running applications and save the related files.
7. With the function of turning on and off the UPS on scheduled time, software also can shut down computer safely before turning off the output of UPS.
8. With the function of battery self-test on scheduled time, it can check the health of UPS system
9. With the function of shutting down computer in LAN or WAN, it can shut down computer safely before turning off the output of UPS.
10. Software can log data and event. It is very convenient for user to learn detail information about UPS.
11. There are two kinds of notification method to let user learn the status of UPS as soon as possible.
 - 11.1 SMS
 - 11.2 E-mail
12. The SNMP centralized monitoring function of software can monitor the status of UPS with SNMP card located in different regions.

Chapter 2 Software installation & uninstall

2.1 Software running environment

2.1.1 System requirement

1. 256MB hard disk space at least.
2. TCP/IP protocol must be installed to support network management.
3. For local connection, an available communication port (RS-232 Serial Port or USB port) is needed to connect UPS with a communication cable.

Note: the OS should support JDK 1.6 at least, or the software won't work normally.

2.1.2 Operating system supported

Windows server 2000
Windows server 2003
Windows server 2008
Windows 2008 server core
Hyper-V server 2008
Windows XP
Windows vista
Windows 7
Windows 8
Windows SBS 2011
Windows server 2012
Hyper-V server 2012
Linux
Unix
Mac OS X
VMware ESX 3.5, 4.0, 4.1 (paid version)
VMware ESXi 4.0, 4.1, 5.0, 5.1, 5.5 (paid version)
XenServer 5.5, 6.2

2.2 Software installation

▲ **Software installation must be run with administrator of system.**

▲ **When installing software on Windows 2008/Windows Vista/Windows 7/Windows 8/Windows 2012, user should right click the “setup” icon, and select the menu “Run as administrator”, there will be a dialog “user account control” pop-up, user should select “allow” button to continue installation.**

2.2.1 Windows

On Windows, Enter WWindows, double click setup.exe to start the installation, there will be installation interface shown. Please refer to figure 2.2.1.1.

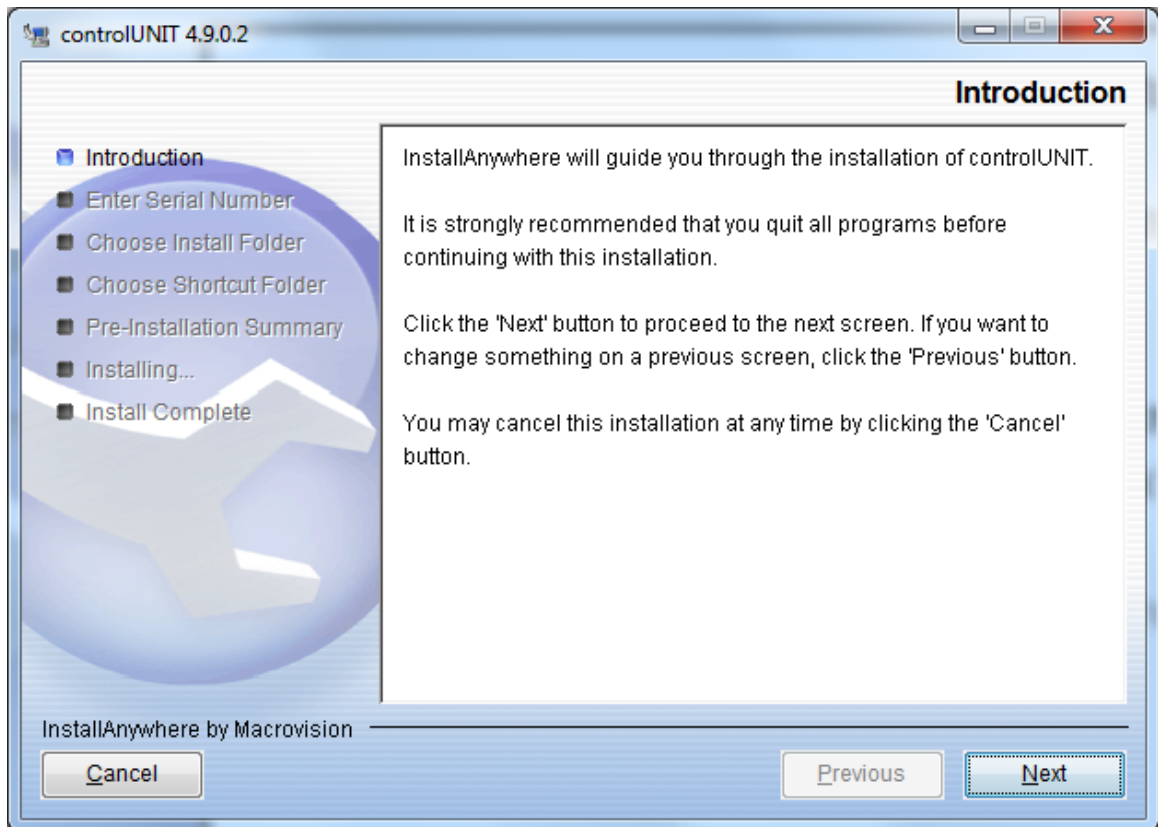


Figure 2.2.1.1

Click “Next” and input the Serial Number, Refer to the following figure 2.2.1.2

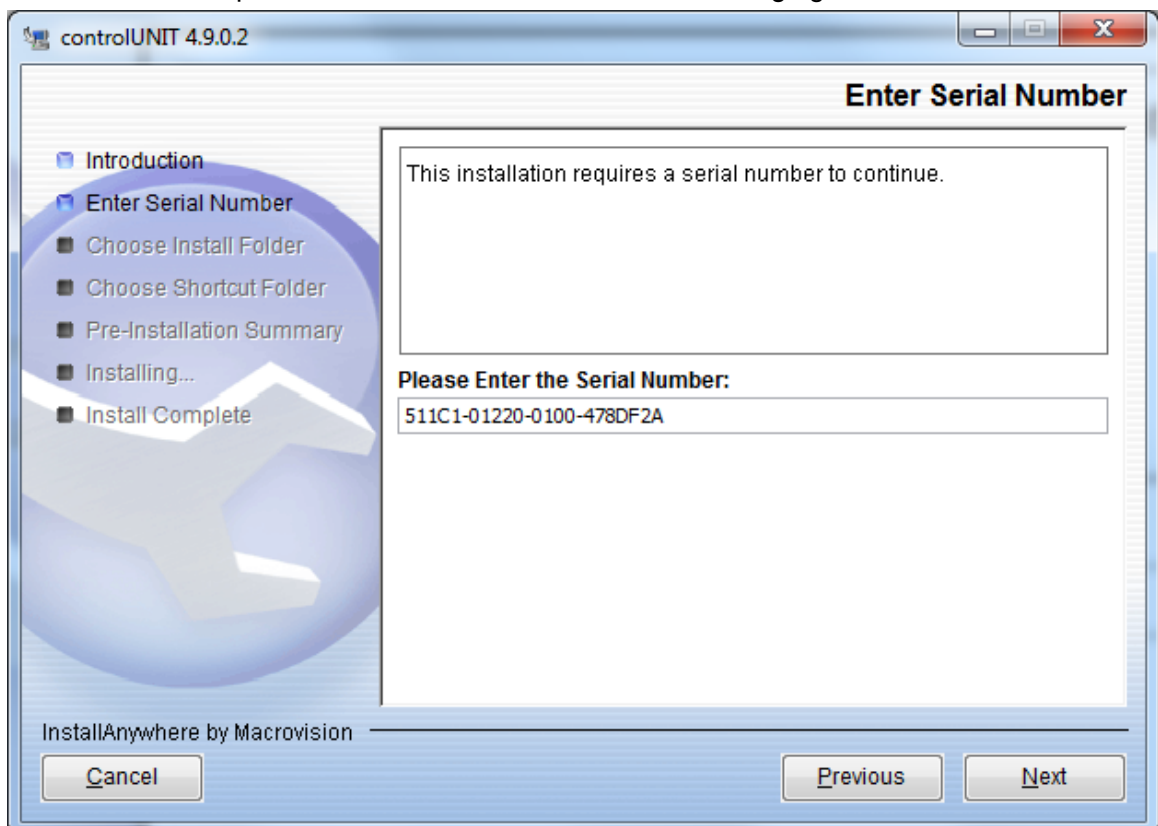


Figure 2.2.1.2

When the installation program is completed, click “Done”. Refer to the following figure

2.2.1.3

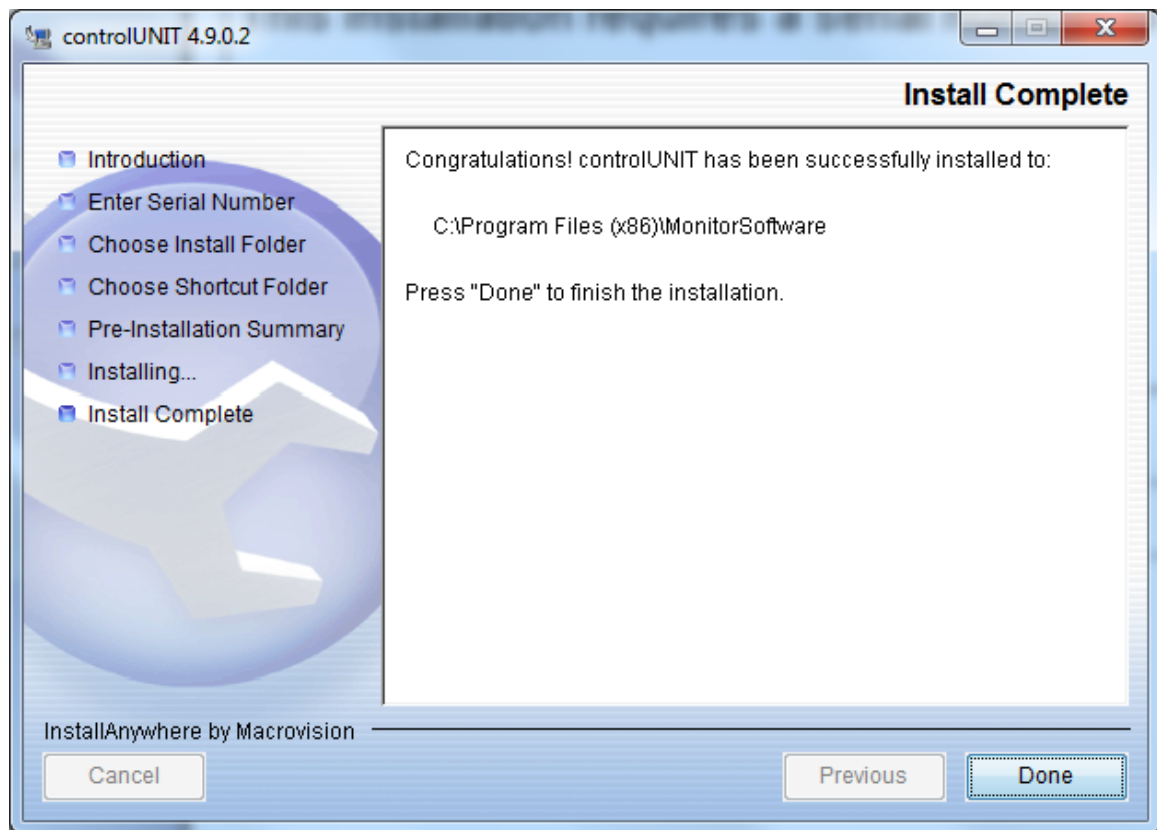


Figure 2.2.1.3

2.2.2 Linux

On Linux, copy Linux and InstallerData file, or copy LinuxAMD64 and InstallerData file, enter Linux or LinuxAMD64 file to start installation, the installation interfaces are same as section 2.2.1.

The command `./setup.bin` is for GUI mode, the command `./setup_console.bin` is for CUI mode.

Please note: Linux is for i386/i586/i686 Linux system, LinuxAMD64 is for x86_x64 Linux system.

2.2.3 Mac

On Mac OS, for Mac 10.6 or earlier OS, please enter MacOSX file, double click the setup.zip to start the installation. For Mac 10.7 and later OS, please enter MacOSX10.7andLater file, double click .mpkg file to start the installation.

2.2.4 Other OS

Copy other OS installation file and InstallerData file, enter OS file, and execute `./setup.bin` for GUI mode or `setup_console.bin` for console mode.

For example, on AIX OS, copy AIX file and InstallerData file, Enter AIX file, execute `./setup.bin` for GUI mode or `setup_console.bin` for CUI mode to start the installation.

2.3 Start software

2.3.1 Windows

Run software from Start\All Program\controlUNIT will start the Tray and Agent. Please refer to figure 2.3.1.1.

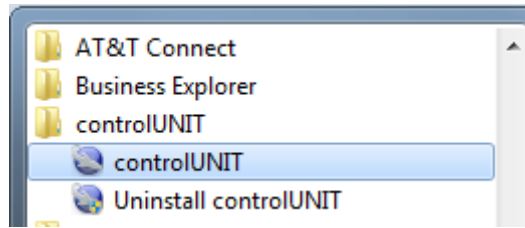


Figure 2.3.1.1

There will be a green icon shown on the task bar after software starts. That means the agent is running normally. Please refer to figure 2.3.1.2.

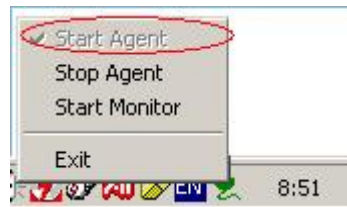


Figure 2.3.1.2

“Start Agent” is to start agent; “Stop Agent” is to stop agent; “Start Monitor” is to start management interface; “Exit” is to exit agent service.

▲ On Windows 2008, Windows Vista, Windows 7, Windows 8 and Windows 2012, once you click “Exit”, the agent will exit, if you want to start software again, you should restart computer, or act as an administrator to start the service “UPSmonitor” in the task manager and then start software from “start” menu, the green icon will be shown on the task bar.

2.3.2 Mac OS

The default installation path is /opt/MonitorSoftware, enter the installation path and then input the command: **sudo ./agent start** to start agent, input the command: **sudo ./monitor** to start software management interface.

2.3.3 Other OS

The default installation path is /opt/MonitorSoftware, enter the installation path and then input the command: **./agent start** to start agent, input the command: **./monitor** to start software management interface.

2.4 Software uninstallation

▲ Software management interface should be closed and the agent should be exited, or else software can't be uninstalled totally.

2.4.1 Windows

Close software management interface, exit software agent from “Exit” menu referring to in figure 2.3.1.2, and then uninstall software from “start” menu, please refer to figure 2.4.1.1.

Please note: user also can uninstall software from “add or remove programs” component.

▲ On Windows 2008, Windows Vista, Windows 7, Windows 8 and Windows 2012, user should act as administrator when uninstalling software, select “Run as administrator” from the pop-up menu. If there is “user account control” dialog shown, please select “allow”.

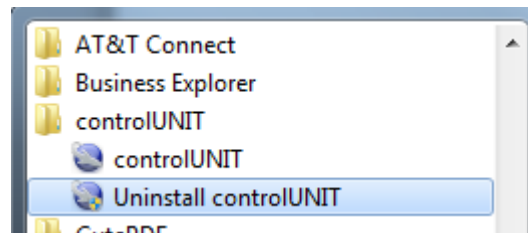


Figure 2.4.1.1

Uninstallation interface, please refer to figure 2.4.1.2.

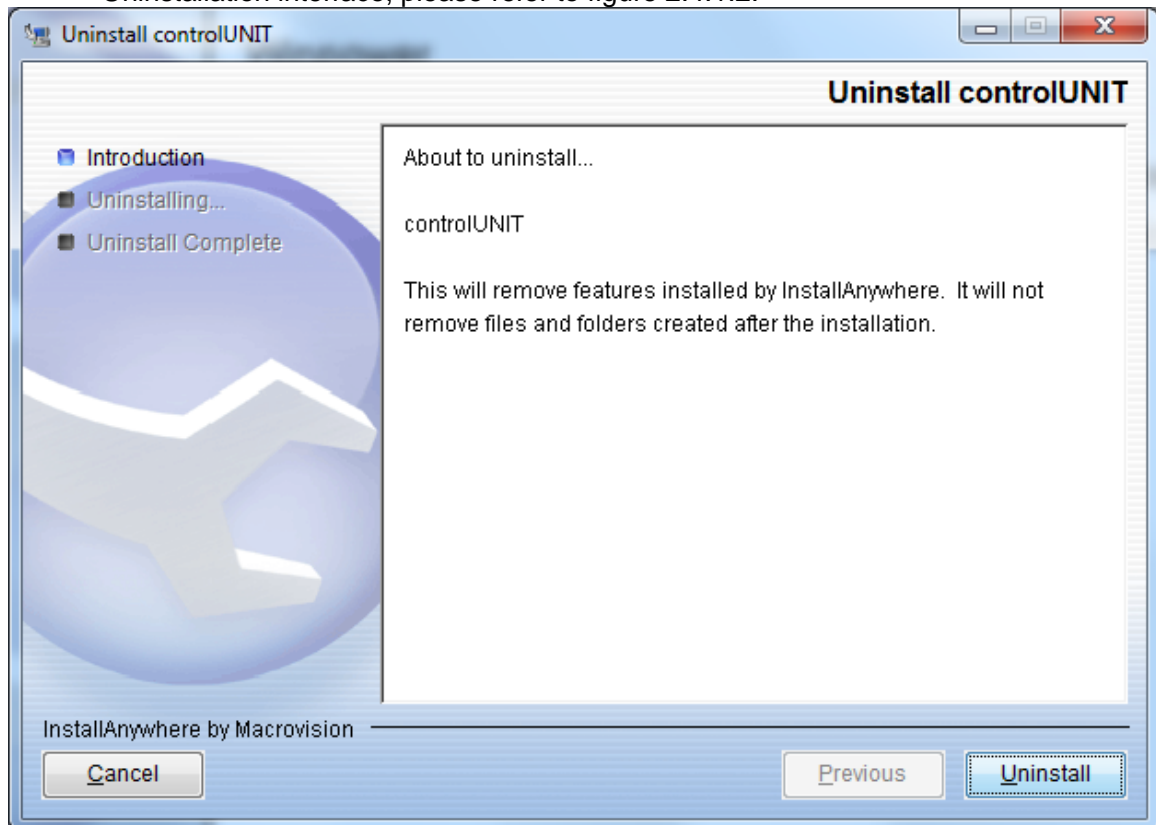


Figure 2.4.1.2

When uninstallation is finished, there will be an interface shown as figure 2.4.1.3. Please click "Done" to finish software uninstallation.

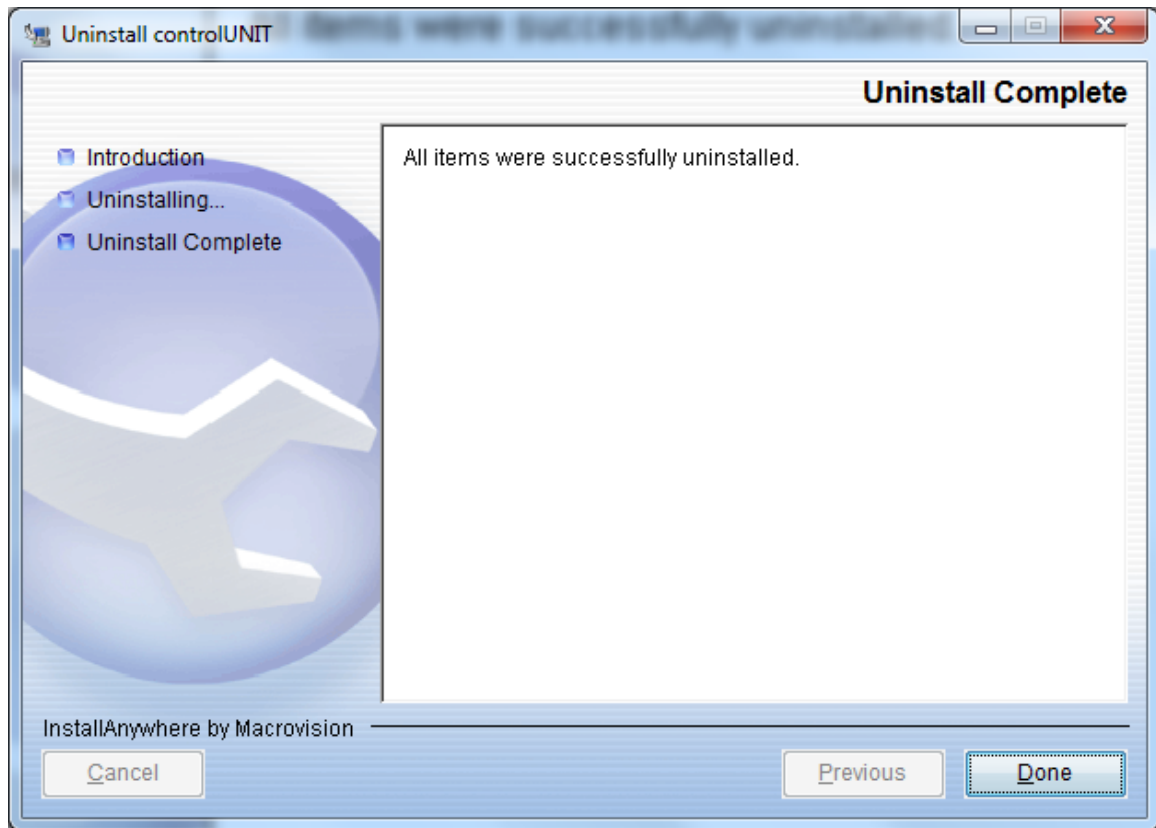


Figure 2.4.1.3

2.4.2 Mac OS

Close software management interface, enter software installation file, input command: **sudo ./agent stop** to stop software agent, and then input command: **sudo ./Uninstall** to uninstall software.

2.4.3 Other OS

Close software management interface, enter software installation file, input command: **./agent stop** to stop software agent, and then input command: **./Uninstall** to uninstall software.

Chapter 3 Main functions introduction

3.1 Software management

3.1.1 Be software administrator and modify password

▲ If the user wants to configure software setting, user should be administrator of the software first. The default right is read-only, can't configure settings.

Be software administrator: select the agent name (computer name) in the tree view of software interface, and click the "Act as Administrator" item of "System" menu, there will be a dialog shown, please refer to figure 3.1.1.1. Input password and click "OK" button. If the password is not correct, there will be message to inform user; if the password is correct, user can act as administrator of software, and can configure software settings.

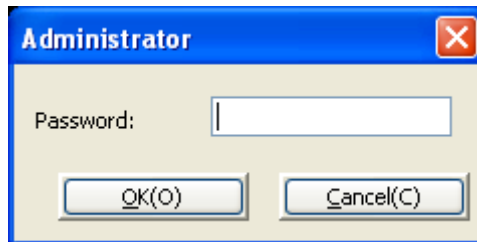


Figure 3.1.1.1

The default password is "Administrator", when user acts as administrator of software, user can change password, click "Modify Administrator Password" item of "System" menu, there will be a dialog shown, please refer to figure 3.1.1.2. Input new password and double check, and click "OK" button. User should input new password to act as administrator next time.



Figure 3.1.1.2

3.1.2 The communication port setting

Click "COM Port Setting" item of "System" menu to open the setting dialog, please refer to 3.1.2.

▲ the setting is only active on other operating system, not on Windows. Software can search communication port automatically on Windows.

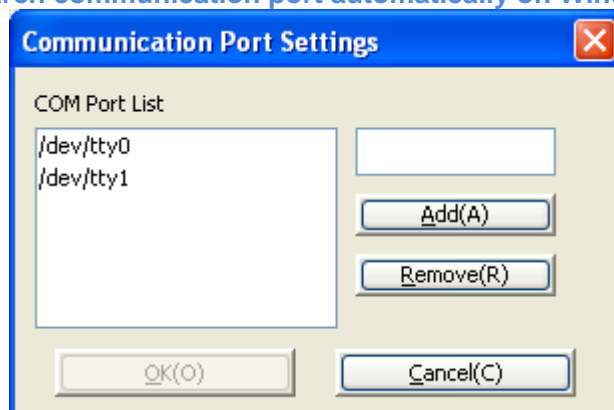


Figure 3.1.2

3.2 Searching Device automatically

User should click “Auto Search Device” item of “System” menu to search for new UPS, and set up communication between software and UPS. Software can search for all the UPS connecting to the communication ports.

3.3 The monitoring with local agent

3.3.1 Communication mode

3.3.1.1 COM port communication

Software communicates with UPS via COM port.

The requirement: there should be RS232 hardware port or RS232 virtual port in computer, RS232 communication cable, UPS with RS232 port.

▲ Software can communicate with 4 UPS via RS232 port at most at the same time.

3.3.1.2 USB communication

Software communicates with UPS via USB port.

The requirement: there should be USB hardware port in computer, USB communication cable, UPS with USB port.

▲ Software can communicate with 32 UPS via USB port at most at the same time.

3.3.2 Device status view

Select UPS node, then the UPS flow chart and UPS parameters will be shown, please refer to figure 3.3.2

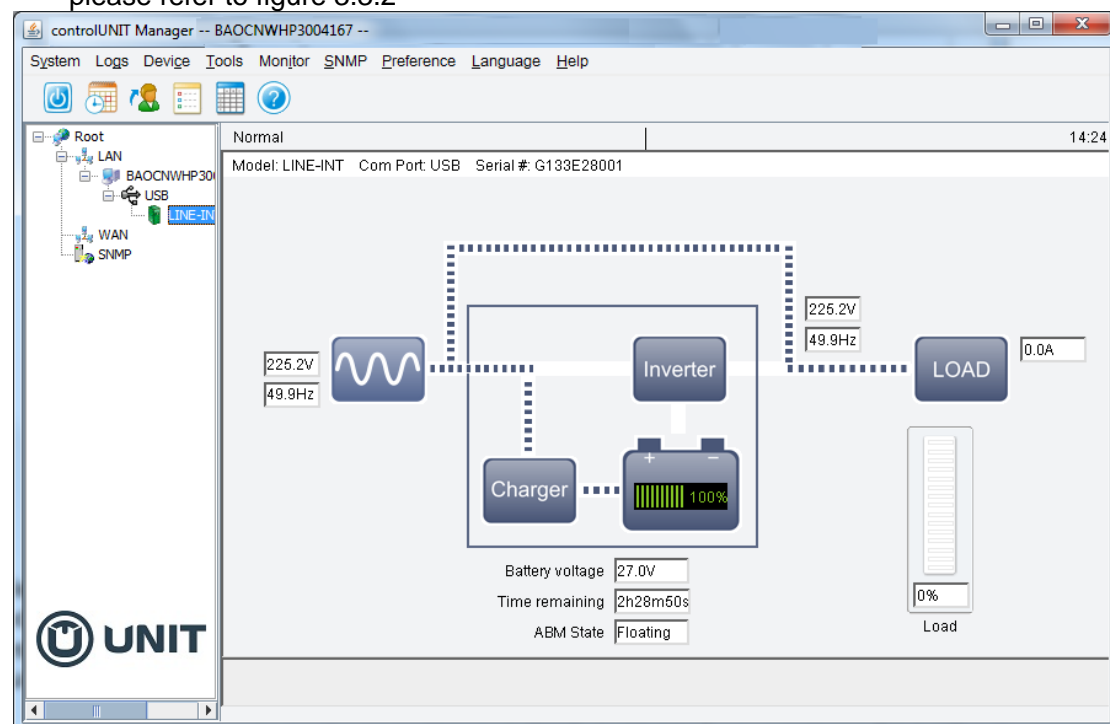


Figure 3.3.2

3.3.3 Device control parameters setting

Select UPS node, click “Device control parameters” item of “Device” menu to configure UPS control parameters. The content of “Device control parameters” depends on UPS type. Different UPS type has different UPS control parameters. Most UPS support parameter setting, but some UPS can’t support parameter setting. When you select UPS node, and then find “UPS control parameters” item is grey, that means the UPS don’t support parameter setting.

▲ Please refer to UPS user manual to learn how to configure UPS control parameters

The control parameters dialog of some UPS, such as figure 3.3.3.

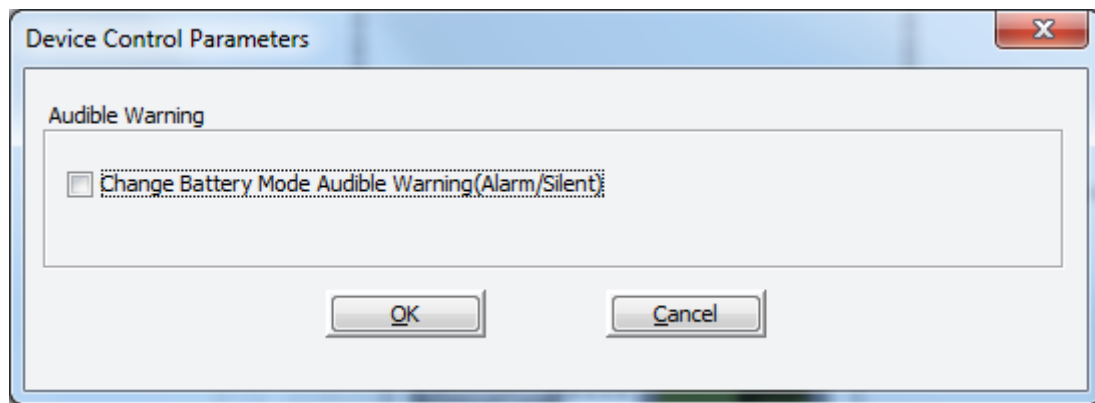


Figure 3.3.3

3.3.4 UPS shutdown control

When UPS is abnormal, software will shut down UPS output. There are five conditions, no matter which one condition met, software will send shutdown command to UPS.

Condition 1: When the battery backup time is exhausted after AC fail, software will send shutdown command to UPS.

Condition 2: When UPS battery low, software will send shutdown command to UPS.

Condition 3: When UPS battery capacity is at the setting value or lower, software will send shutdown command to UPS.

Condition 4: When UPS battery remaining time is below the setting value, software will send shutdown command to UPS.

Condition 5: Schedule shutdown UPS output on specific time or weekly.

Condition 1, 2, 3 and 4 should be set on "Shutdown Setting" dialog, please refer to 3.3.4.1. Open "Shutdown Setting" dialog by clicking "Shutdown Parameter" item of "Device" menu.

Shutdown Settings

Shutdown Options

USB LINE-INT_164651600132

☒ Allow battery to discharge for 10 min

☒ Begin Shutdown Immediately when Battery is Low

☒ Begin Shutdown when UPS Battery is at 40 % Capacity or lower

☒ Shut down when remaining battery time is below 2 min

☒ System ☒ Shut down ☐ Hibernate ☒ Multi-UPS input

☒ Shut down UPS

Time needed for system shutdown 2 min

Powered by Load Segment1

☐ Accept Remote Shutdown signal from other Agent

0 min shutdown system

☐ Run Command File before Shutdown

Shutdown File Max Execution Time 1 min

Run Mode ☒ Service ☐ Non-Service

Shutdown Remote Agents

Shutdown Conditions	Agent is shutdown
LINE-INT in USB is shutdown, LINE-INT_164651600132...	172.18.139.124

Shutdown Alarm Parameters

Shutdown Alarm Interval 1 min

Scheduled Shutdown Countdown warning 10 min

OK Cancel

Figure 3.3.4.1

When the battery back-up time is exhausted after AC fail, software will send shutdown command to UPS.

Select the checkbox of “Allow battery to discharge for” and set the backup time according to UPS load. The default value of battery backup time is 10 minutes.

When AC fails, software will inform user the input of UPS is abnormal and how long time UPS output will be shut down. When the backup time is exhausted, software will send shutdown command to UPS. When the system shutdown need time is exhausted, UPS output will shut down. The default value of system shutdown need time is 2 minutes. So UPS battery should have the ability to supply power to key device for the time, the value of the time should be longer than the value of battery backup time added the value of system shutdown need time.

When UPS battery low, software will send shutdown command to UPS.

Select the checkbox of “Begin shutdown immediately when battery is low”, when AC fails, software will inform user the input of UPS is abnormal and send shutdown command to UPS.

When UPS battery capacity is at the setting value or lower, software will

send shutdown command to UPS.

Select the checkbox of “Begin shutdown when UPS battery is at 40% capacity or lower”, when AC fails, software will inform user the input of UPS is abnormal, when UPS battery is 40% or lower, software will send shutdown command to UPS.

When UPS battery remaining time is below the setting value, software will send shutdown command to UPS.

Select the checkbox of “Shut down when remaining battery time is below 2 min”, when AC fails, software will inform user the input of UPS is abnormal, when UPS battery remaining time is below the setting value, software will send shutdown command to UPS.

Condition 5 should be set on “UPS on/off Manager” dialog, please refer to figure 3.3.4.2. “UPS on/off Manager” dialog can be opened by clicking “UPS on/off Schedule” item of “Device” menu.

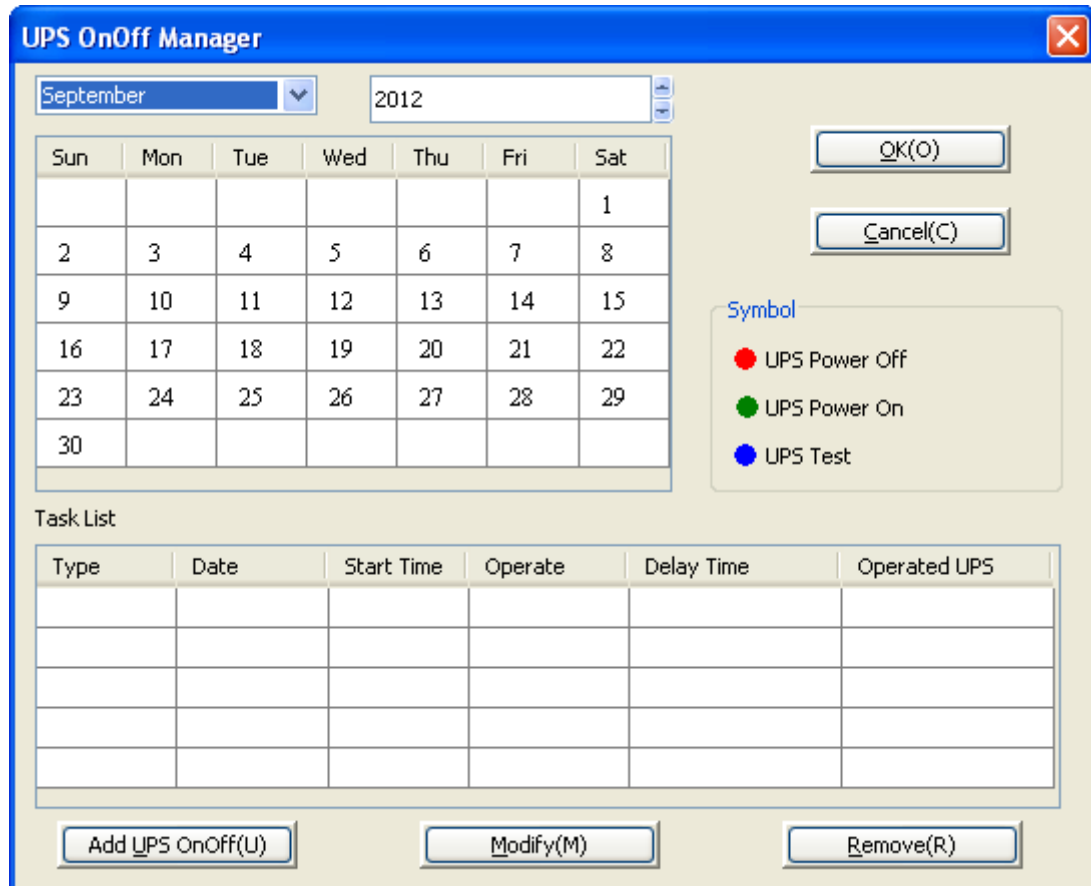


Figure 3.3.4.2

Schedule shutdown and restart UPS output on specific time or weekly

User can set schedule shutdown task on “UPS OnOff Manger” dialog: UPS shutdown on the specific time and UPS shutdown weekly. The time UPS shutdown can last for time range from 1 to 9999 seconds. That means the time from UPS output shutdown to output restart can be set from 1 to 9999 seconds.

The shutdown task list and the calendar are shown on the dialog. On the calendar, the red point is schedule shutdown task; the green is schedule restart task; the blue point is schedule battery self-test task. User can add schedule shutdown task by “Add UPS OnOff” button, and modify or remove schedule shutdown task by “Modify” or “Remove” button.

▲ The time of new task can't be same as the task that has been added.

When schedule task has been added, software will pop up warning dialog to remind user that UPS will be shut down. The shutdown warning dialog will pop up at the time interval, the warning time interval and the time begin to count down can be set in the “Shutdown Setting” dialog. Please refer to figure 3.3.4.1.

The schedule shutdown task can be shown on “View Schedule” dialog. The dialog can be opened by “View Schedule” item of “Device” menu. Please refer to figure 3.3.4.3.

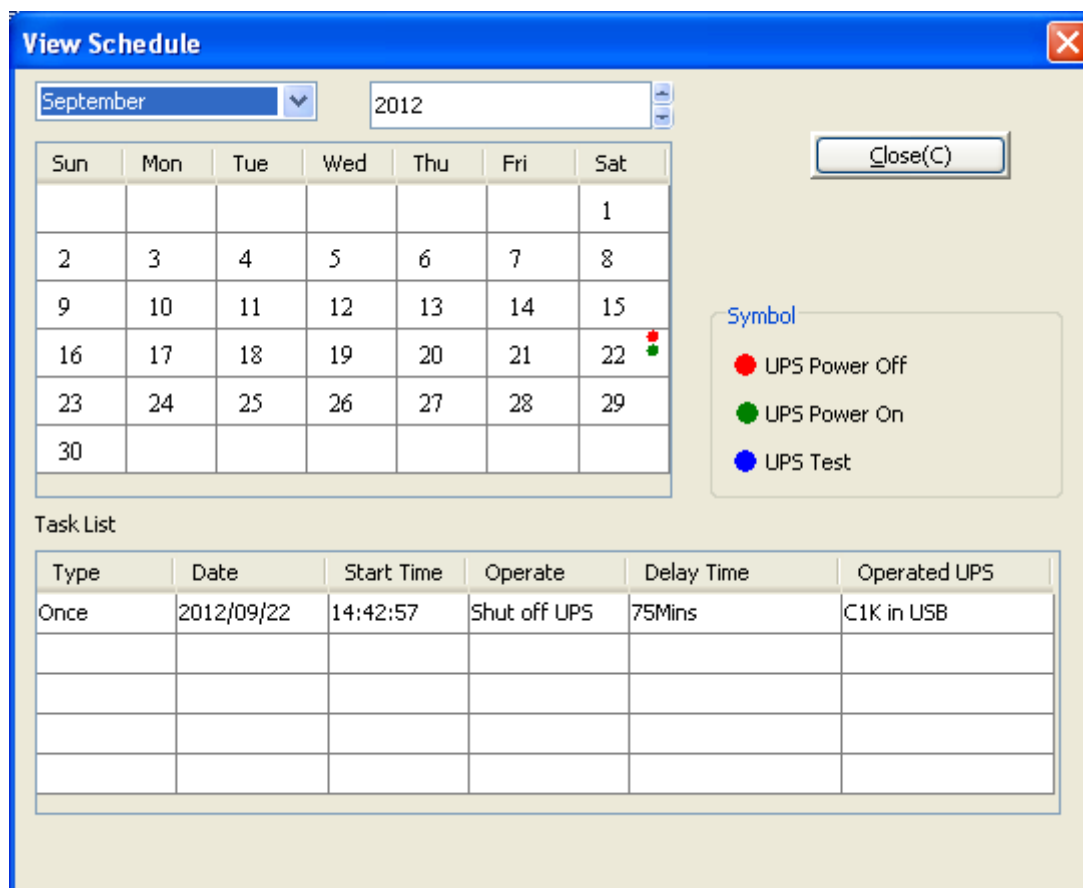


Figure 3.3.4.3

3.3.5 Battery control parameter setting

Select UPS node, click “UPS Battery Parameters” item of “Device” menu to configure battery control parameters. The content of “UPS battery parameters” depends on UPS type. Different UPS type has different battery control parameters. Most UPS support parameter setting, but some UPS can’t support parameter setting. When you select UPS node, and then find “UPS Battery Parameters” item is grey, that means the UPS don’t support parameter setting.

▲ Please refer to UPS user manual to learn how to configure battery control parameters

The battery control parameters dialog of some UPS, such as figure 3.3.5.

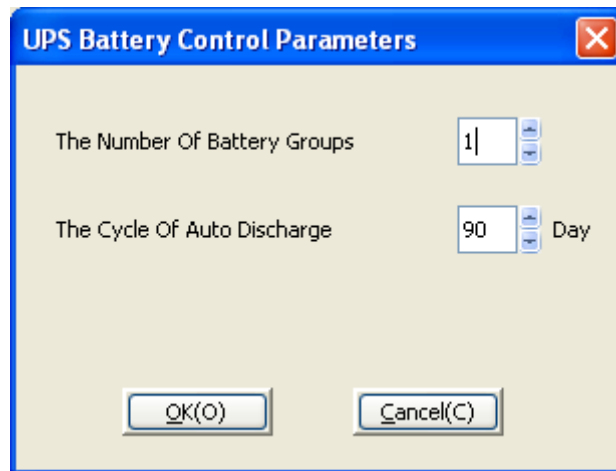


Figure 3.3.5

3.3.6 Battery self-test

UPS battery should be in good status to supply power to key device when AC fails. So battery self-test function is very important to check battery status.

Battery self-test includes battery self-test immediately and schedule battery self-test.

Battery self-test type:

- Battery self-test for 10 seconds
- Battery self-test until battery low
- Battery self-test for N minutes, the range of N is from 1 to 99, default value of N is 10 minutes.

Battery self-test immediately

Open “Battery Self-Test Now” dialog by the “Battery Self-Test Now” item of “Device” menu, select self-test type and battery test will begin. Please refer to figure 3.3.6.1.

If UPS doesn’t support the battery self-test type, the battery self-test type will be grey. User only can select other self-test type that UPS support.

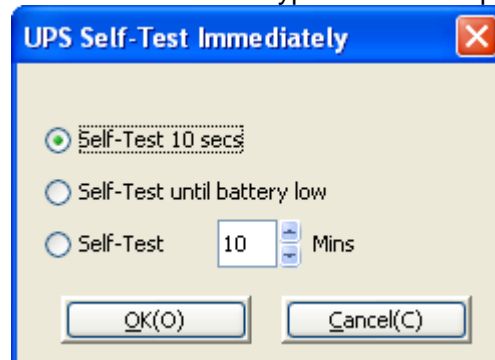


Figure 3.3.6.1

Schedule battery self-test

Open “UPS Test Manger” dialog by the “Battery Self-Test Schedule” item of “Device” menu. Please refer to figure 3.3.6.2.

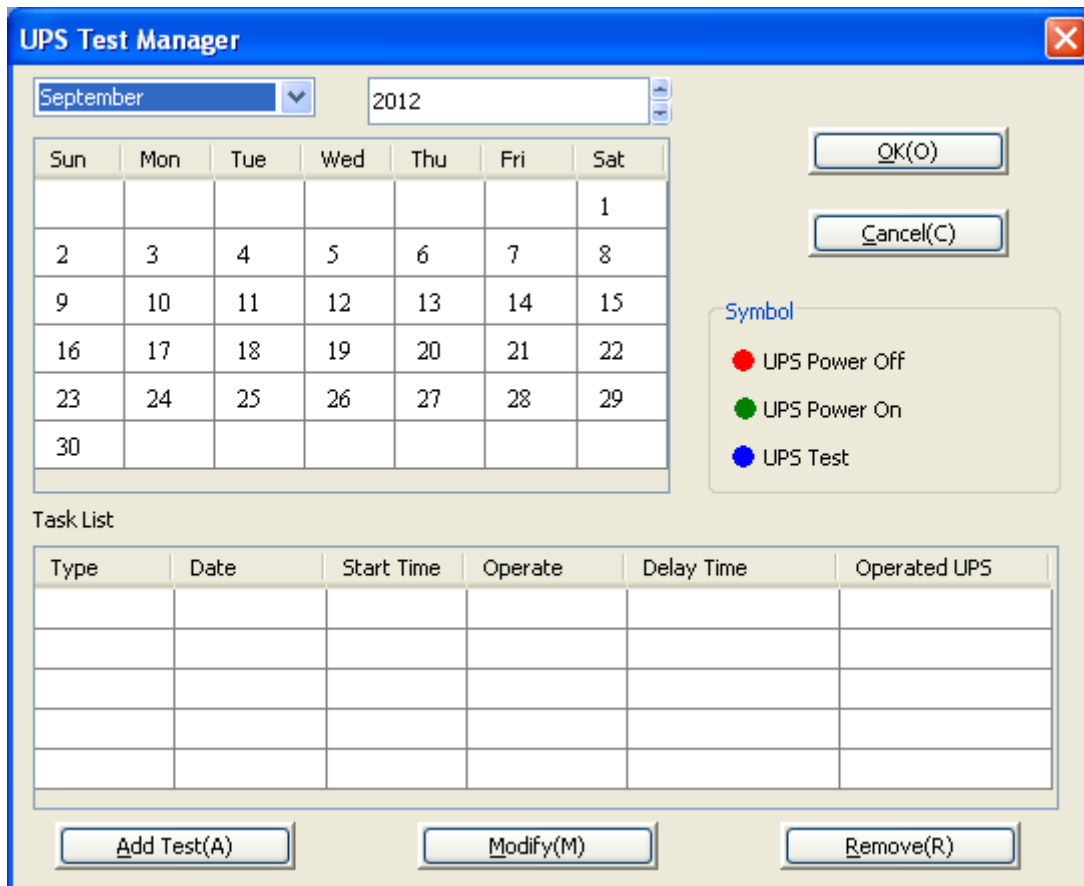


Figure 3.3.6.2

User can set battery self-test task on “UPS Test Manger” dialog: UPS battery self-test on the specific time and UPS battery self-test monthly. There are three battery self-test types selected: self-test for 10 seconds, self-test until battery low, self-test for N minutes.

The battery self-test task list and the calendar are shown on the dialog. On the calendar, the blue point is schedule battery self-test task. User can add schedule battery self-test task by “Add Test” button, and modify or remove battery self-test task by “Modify” or “Remove” button.

The schedule battery self-test task can be shown on “View Schedule” dialog. The dialog can be opened by “View Schedule” item of “Device” menu. Please refer to figure 3.3.4.3.

User can cancel the current UPS battery test by “Cancel Current Battery Self-test” item of “Device” menu.

3.3.7 UPS log

Software monitors UPS, and will log UPS data and the abnormal event at the same time. Data and event log can help service engineer check problem.

3.3.7.1 Record setting

Open “Record setting” dialog by clicking “Record setting” item of “Logs” menu to configure log parameter. Such as how many event logs can be recorded, how many data log can be recorded, data log interval. Please refer to figure 3.3.7.1.

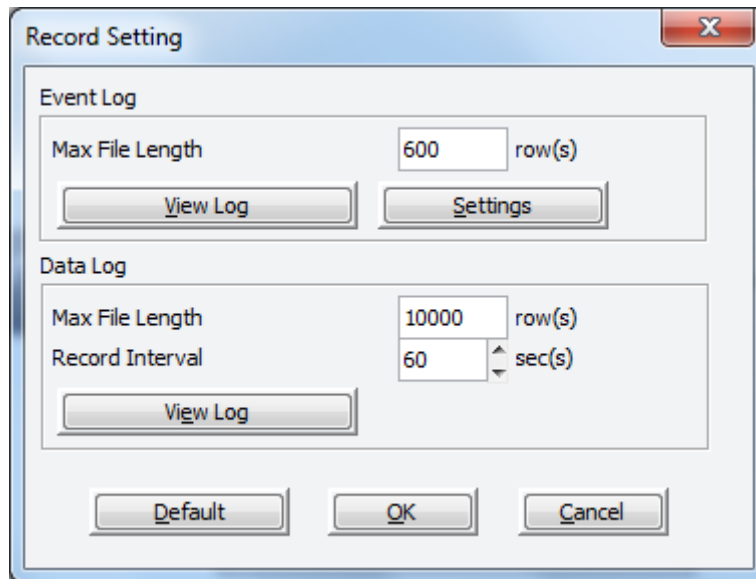


Figure 3.3.7.1

The default value of event log file is 600 rows. The max value of event log file can be set 10000 rows.

The default value of data log file is 10000 rows. The max value of data log file can be set 10000 rows.

The default data log interval is 60 seconds. The interval range can be set from 1 to 3600 seconds.

3.3.7.2 Data log

Click “Data Log” item of “Logs” menu to open “Data Log Viewer” dialog to view data log, please refer to figure 3.3.7.2. Select each communication port to refer to specific UPS data logs, select all to refer to all UPS data logs.

Select the check box of each data log, and click “Delete” button to delete data log.

User can export data log file by “Export” button.

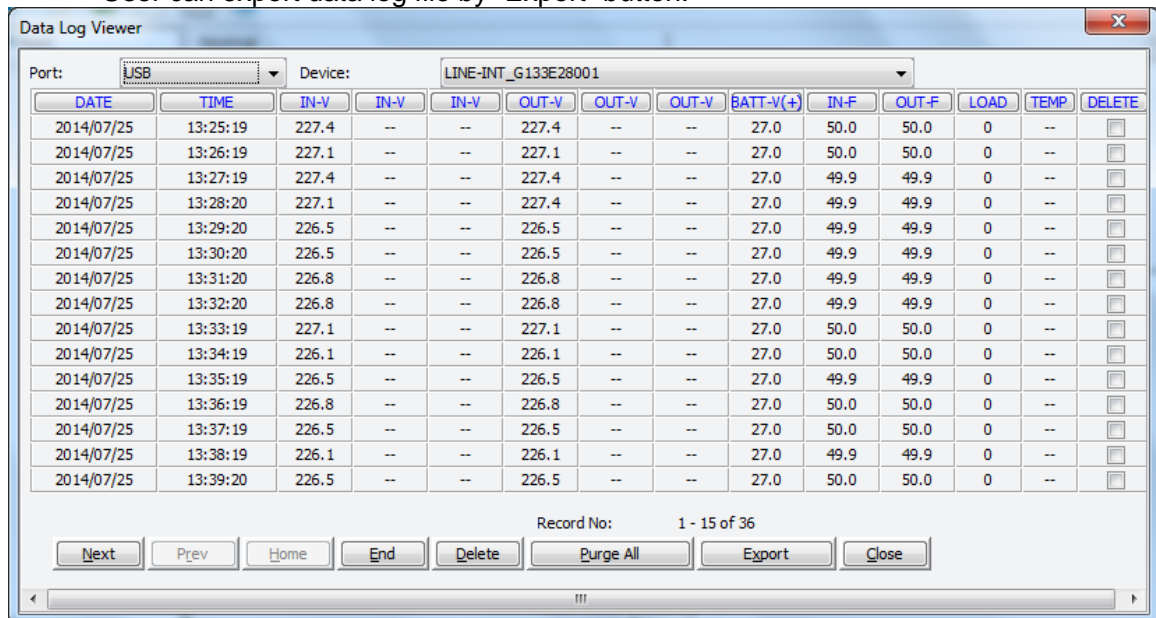


Figure 3.3.7.2

3.3.7.3 Event log

Click “Event Log” item of “Logs” menu to open “Event Log Viewer” dialog to view event log, please refer to figure 3.3.7.3. Select the check box of each event log, and click “Delete” button to delete event log. User can export event log file by “Export” button.

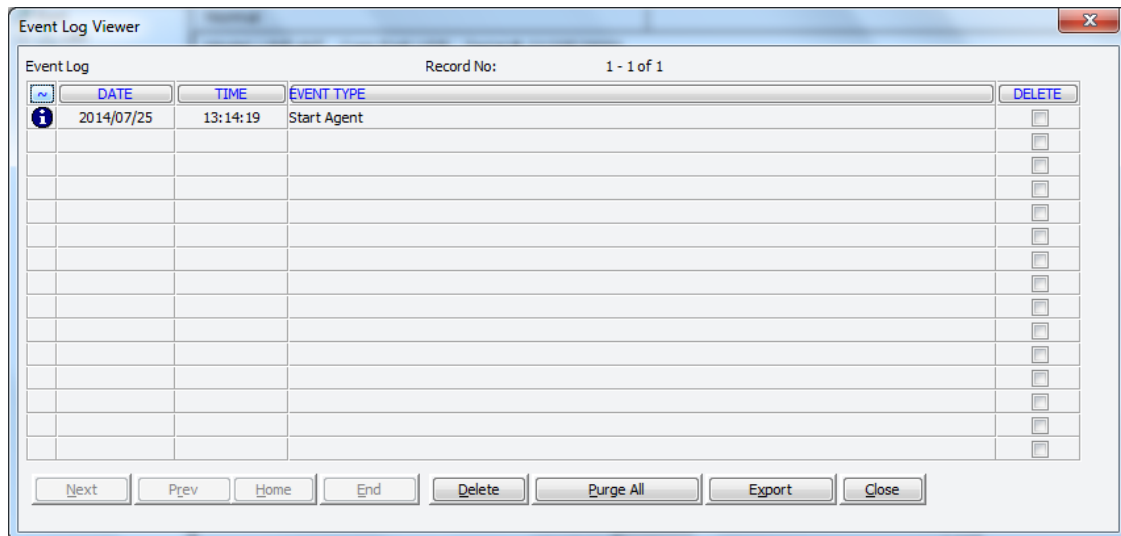


Figure 3.3.7.3

3.3.8 Load Segment Control setting

Select UPS node, click “Load Segment Control” item of “Device” menu to configure load segment parameters. If you select UPS node, and then find “Load Segment Control” item is disabled, that means the UPS don’t support load segment function. If you select UPS node, and then find “Load Segment Control” item is enabled, that means the UPS support load segment function.

When the shutdown timer is -1, the setting means the load segment won't shut down automatically when AC fails.

When the shutdown timer is 0, the setting means the load segment will shut down immediately when AC fails.

When the shutdown timer is the value between 1 and 32767, the setting means the load segment will shut down after the setting value time when AC fails.

When the startup timer is -1, the setting means the load segment won't restart automatically when AC restores.

When the startup timer is 0, the setting means the load segment will restart immediately when AC restores.

When the startup timer is the value between 1 and 32767, the setting means the load segment will restart after the setting value time when AC restores.

The “Load Segment control” dialog of some UPS, such as figure 3.3.8.

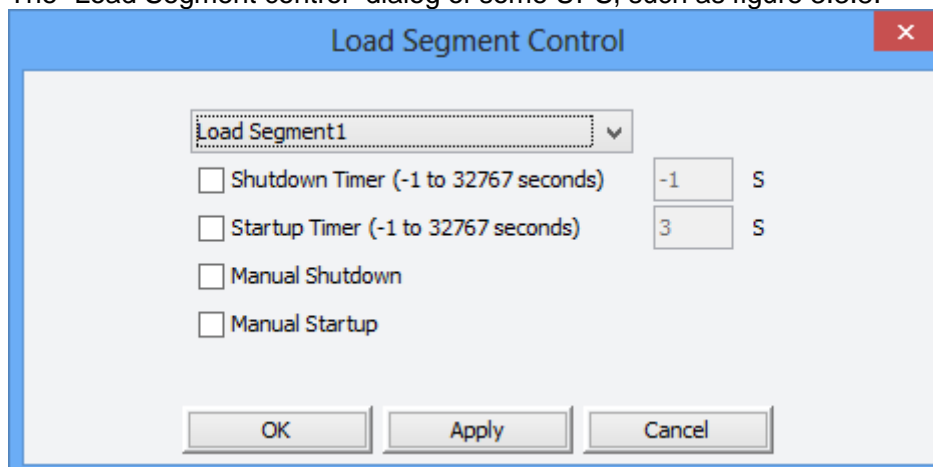


Figure 3.3.8

3.4 Warning event notification method

When UPS status is abnormal, software will notify user to let user learn UPS status as soon as possible, and then user can take action according to warning event

notification.

1. Pop-up real time warning dialog
2. E-mail message alarm
3. SMS alarm

3.4.1 Real time warning dialog

When UPS status is abnormal, software will pop up warning dialog to notify user.

Warning dialog on local computer means that the warning dialog will pop up on local computer communicating with UPS when UPS status is abnormal.

Open “Event Action” dialog by clicking “Event Action” item of “Device” menu to set warning dialog pop-up or not. Please refer to figure 3.4.1.

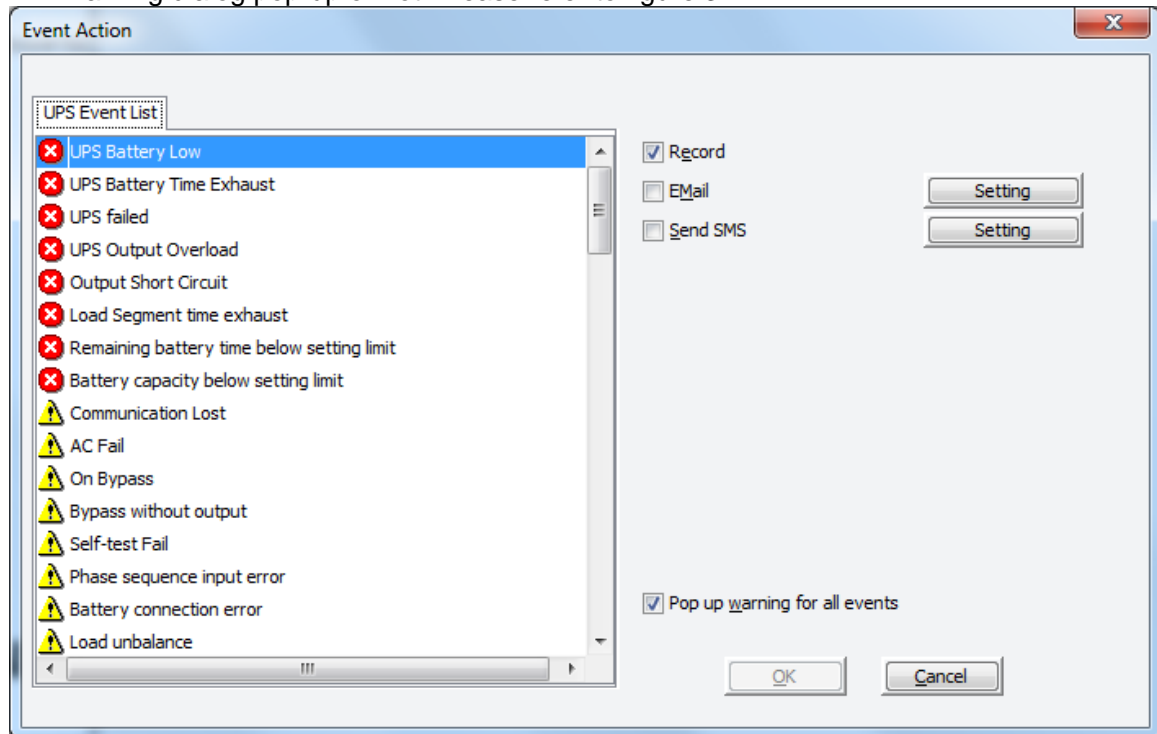


Figure 3.4.1

3.4.2 E-mail notification

When UPS status is abnormal, software will send E-mail notification about abnormal event. Open “E-mail Settings” dialog by clicking “E-mail Setting” item of “Tools” menu. Please refer to figure 3.4.2.

User also can open “Event Action” dialog by clicking “Event Action” item of “Device” menu to set E-mail function.

E-mail Settings

SMTP Server Setting

SMTP Server: smtp.gmail.com

Port: 465

SMTP User: testname@gmail.com

☒ Password Authentication needed

Password: ••••••

Encryption: SSL

Receiver E-mail Address

☐ test1@gmail.com

☐ test2@gmail.com

Test

Add

Remove

UPS message | Telecom Power System message | ATS Message List

☒ UPS Battery Low

☐ UPS Battery Time Exhaust

☐ UPS failed

☐ UPS Output Overload

☐ Output Short Circuit

☐ Communication Lost

☐ AC Fail

☐ On Bypass

OK Cancel

Figure 3.4.2

SMTP server name is the SMTP server to send e-mail to user. User can input SMTP server name or server IP address according to SMTP server.

The name and phone number of sender information can be set by user, the setting information will be shown in e-mail content.

After you add user e-mail address and select the abnormal event in the event list and select e-mail address, when the abnormal event happens, software will send e-mail to the e-mail address.

▲ There are 20 e-mail addresses in the list at most.

3.4.3 SMS notification

When UPS status is abnormal, software will send SMS notification about abnormal event. Open "SMS Setting" dialog by clicking "SMS Setting" item of "Tools" menu. Please refer to figure 3.4.3.

User also can open "Event Action" dialog by clicking "Event Action" item of "Device" menu to set SMS function.

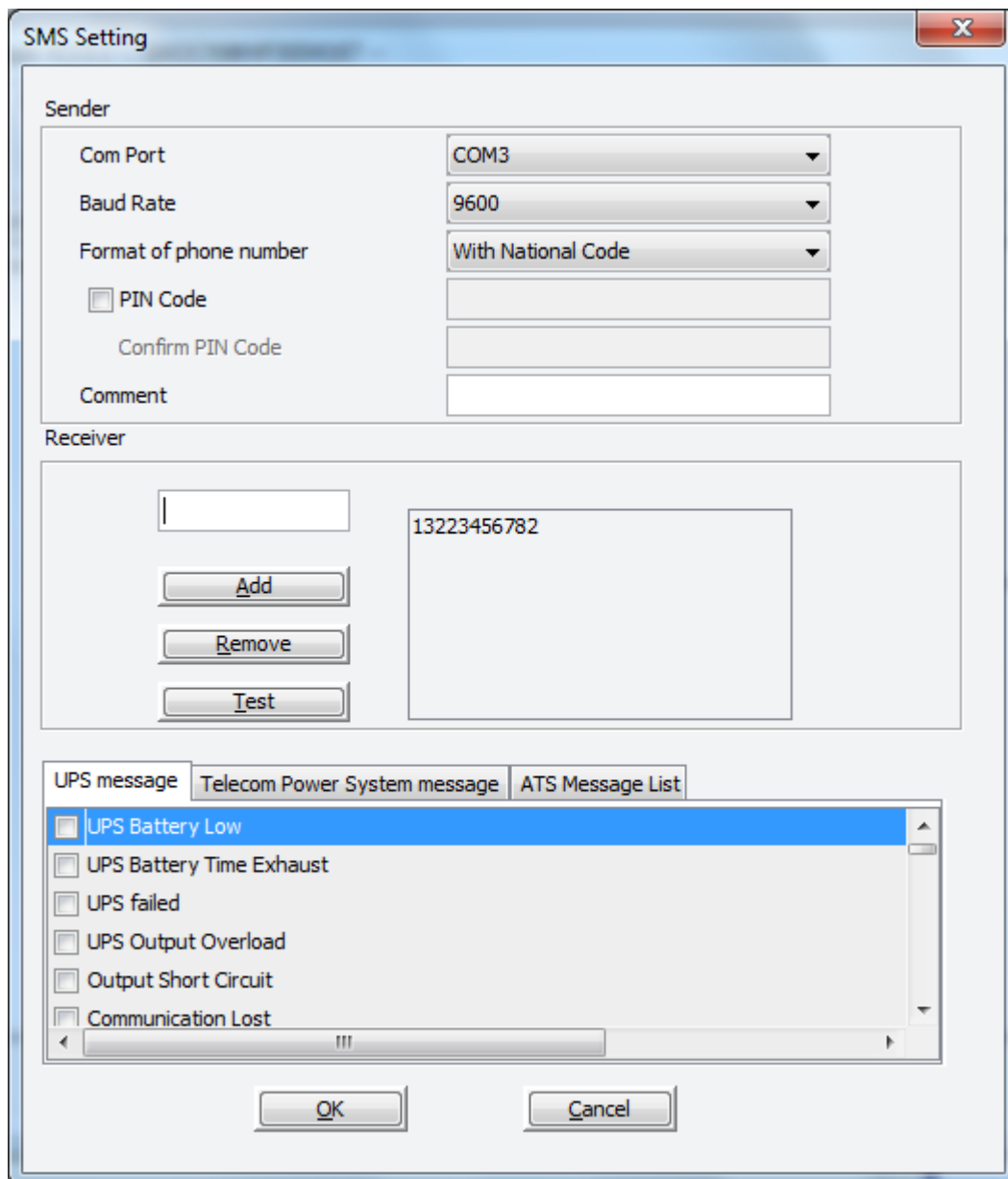


Figure 3.4.3

Select port that connects with modem. The modem should support GSM function. Select the baud rate, such as 9600. The value is different depending on different modem model. Here, attention should be paid: if users have previously used to send short messages with other software, the software will be the default baud rate into previous baud rates, so you should test one by one to find proper SMS baud rate.

Select the abnormal event in the event list and select phone number, when the abnormal event happens, software will send SMS to the phone number. Click “Test” button to test SMS sent successfully or not.

▲ There are 5 phone numbers in the list at most.

3.5 System shutdown protection

System shutdown protection: protect system shutdown safely before UPS output shutdown when AC fails. Safely shut down server and the applications running on server to avoid damage.

Software can shut down the local computer communicating with UPS, and also can shut down the remote computer whose input is from UPS output.

3.5.1 Local computer shutdown protection

Local computer shutdown protection: Safely shut down the computer communicating with UPS before UPS output is shut down. Click “shutdown parameter” item of “Device” menu to open “shutdown settings” dialog, please refer to figure 3.5.1.

Select the checkbox of “System”, and then select system hibernation or shutdown.

If user selects “Shutdown” to protect computer, software will shut down computer once condition is met. If select “Hibernation” to protect computer, software will hibernate computer once condition is met.

Run command file before shutdown, the function means that software will run the command file before system shutdown. Select the checkbox of “Run command file before shutdown” and add the correct path of the command file by “Browse” button. Please make sure the command file can be executed normally on the system before setting the file path to software.

▲ In earlier versions of Windows all services run in Session 0 along with applications. This situation poses a security risk. In Windows Vista, and later versions of Windows, the operating system isolates services in Session 0 and runs applications in other sessions. Our software Agent is run in Session 0 so if a command file launches a .exe that .exe will be launched in Session 0 and not visible to the logged in users. In this situation, user must select the non-service option of the run mode in “shutdown settings” dialog to run command file normally.

▲ About UPS output shutdown setting and shutdown condition please refer to section 3.3.4 and section 3.3.8

▲ If the UPS has load segment function, user can set system powered by which one load segment in “Shutdown Settings” dialog, software will shut down system before load segment shutdown.

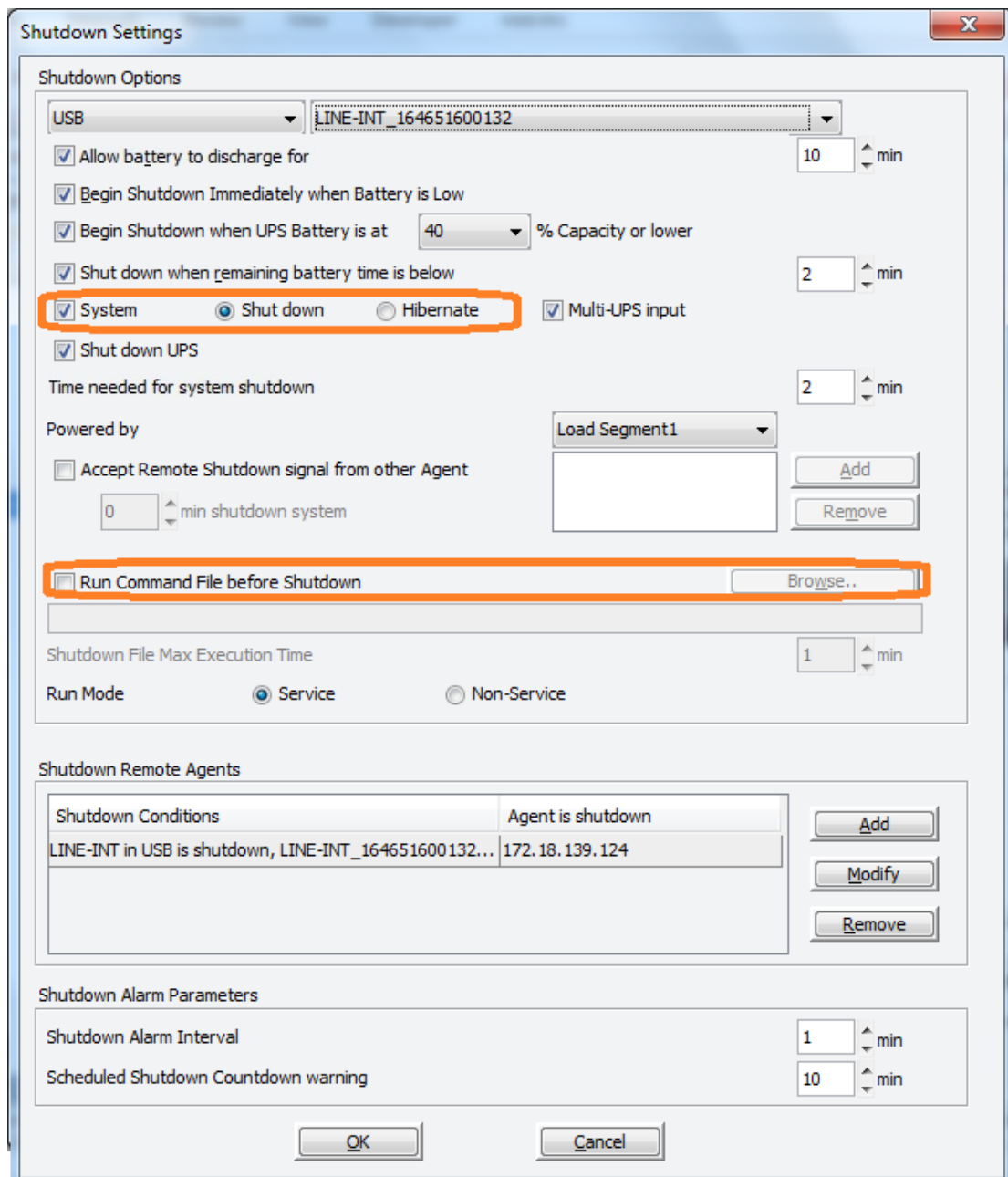


Figure 3.5.1

3.5.2 Remote computer shutdown protection

Remote computer shutdown protection: software installed on local computer will send shutdown command to safely shut down the remote computers before UPS output is shut down.

Settings of local computer communicating with UPS:

When software wants to shut down the remote computer, software communicating with UPS should set the condition and the IP address of remote to shut down remote computer, when the condition is met, software will send shutdown command to remote computer. For example: if the remote computers IP are 172.18.139.124. User can set the remote computers shutdown condition by "Add" button. Please refer to figure 3.5.2.1. User can select the shutdown condition and then modify or delete the condition by "Modify" button and "Delete" button.

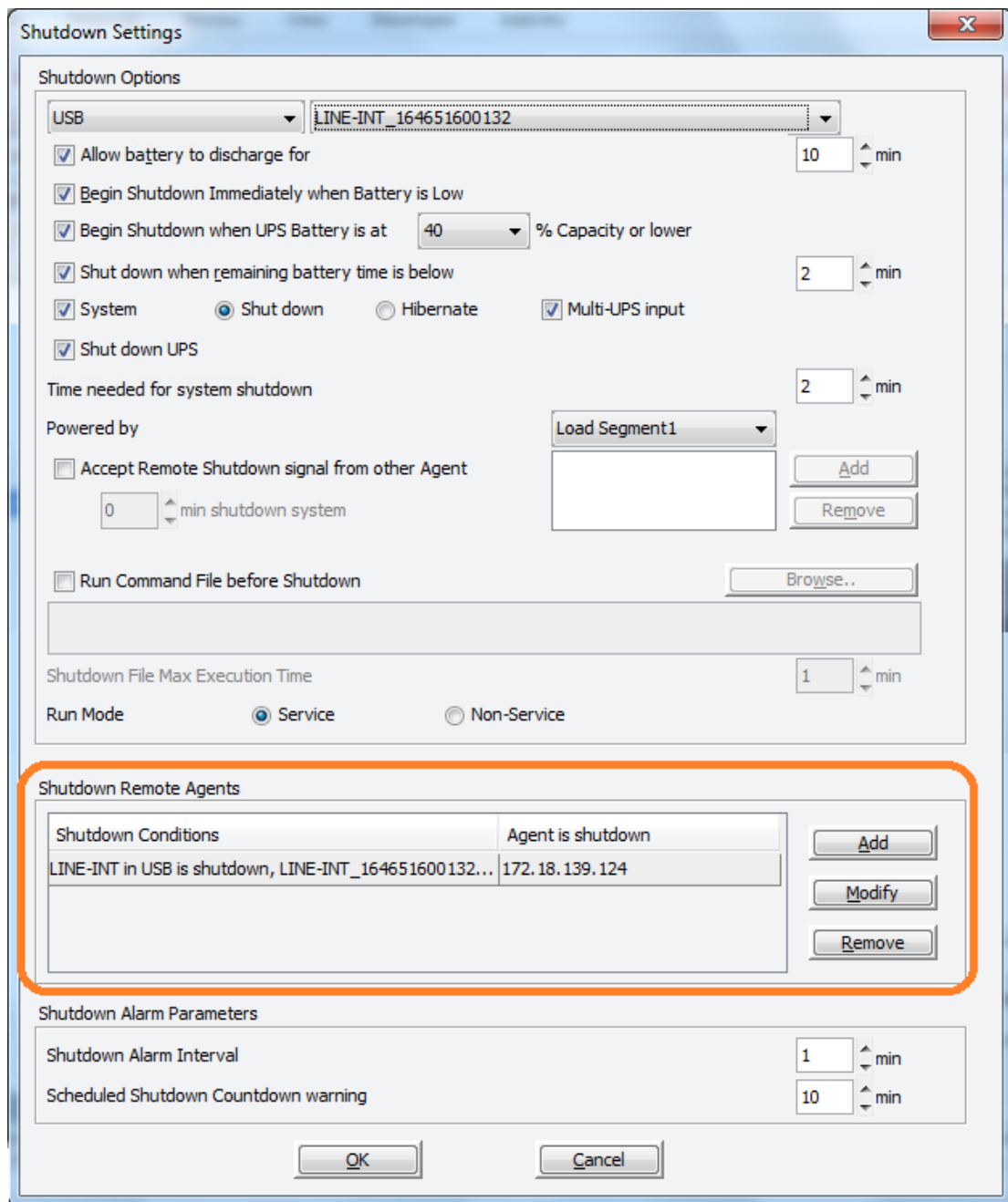


Figure 3.5.2.1

Settings of remote computer:

The same software should be installed on remote computer to accept shutdown command. Click "shutdown parameter" item of "Device" menu to open "shutdown settings" dialog, and then set "remote shut down by agent" and add remote computer IP communicating with UPS to accept remote shutdown command. For example: if computer accepts the remote shutdown command from remote computer (IP address is 172.18.139.33). The setting is as figure 3.5.2.2. User can set the delay time to shut down computer after receiving shutdown command from remote computer according to actual condition. The default value of delay time is 0. That means computer will shut down immediately when receiving shutdown command from remote computer.

Shutdown Settings

Shutdown Options

☐ Allow battery to discharge for 999 min

☐ Begin Shutdown Immediately when Battery is Low

☐ Begin Shutdown when UPS Battery is at 90 % Capacity or lower

☐ Shut down when remaining battery time is below 10 min

☐ System ☒ Shut down ☐ Hibernate ☐ Multi-UPS input

☐ Shut down UPS

Time needed for system shutdown 999 min

Powered by Load Segment 1

☒ Accept Remote Shutdown signal from other Agent

0 min shutdown system

172.18.139.33

Add Remove

☐ Run Command File before Shutdown Browse..

Shutdown File Max Execution Time 1 min

Run Mode ☒ Service ☐ Non-Service

Shutdown Remote Agents

Shutdown Conditions	Agent is shutdown

Add Modify Remove

Shutdown Alarm Parameters

Shutdown Alarm Interval 1 min

Scheduled Shutdown Countdown warning 10 min

OK Cancel

Figure 3.5.2.2

3.6 Remote monitoring Device

Install software on different computer to monitor remote UPS.

▲ The network should be OK between remote computer and local computer, user can use "ping" command to check network ok or not.

Note: the software installed on different computer should be the same version.

User can install software on different computer to view remote UPS on the network. For the computer with IPv4, all the computers with software in the same LAN will be shown on the LAN node automatically, and the UPS communicating with computer also will be shown below the computer name node. User can select remote UPS node to view the detail information. Please refer to figure 3.6.1.

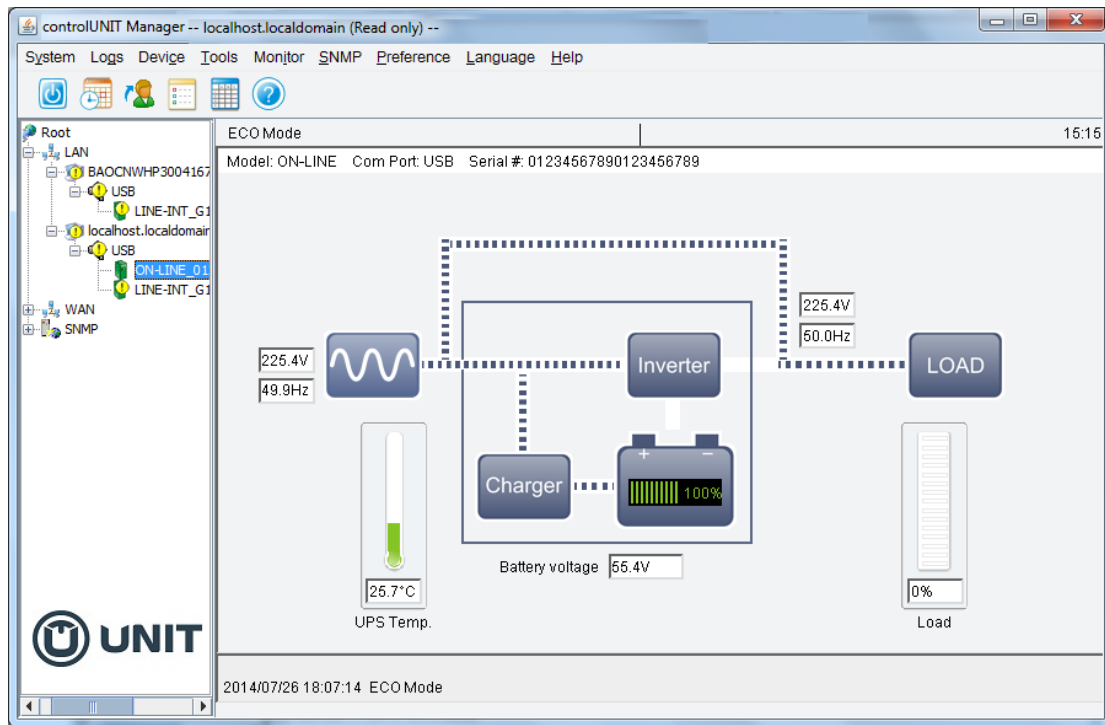


Figure 3.6.1

If the computer with IPv4 is not in the same LAN, the remote computer should be added on the WAN node via the "Monitor Remote Device" item of "Monitor" menu. Input the IP address of remote computer to add. Please refer to figure 3.6.2.

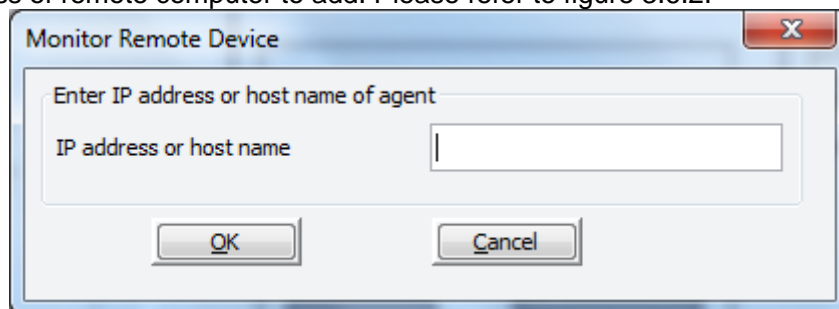


Figure 3.6.2

The remote computer name will be shown below the WAN node if the remote computer is added OK, User can select remote UPS node to view the detail information. Please refer to figure 3.6.3.

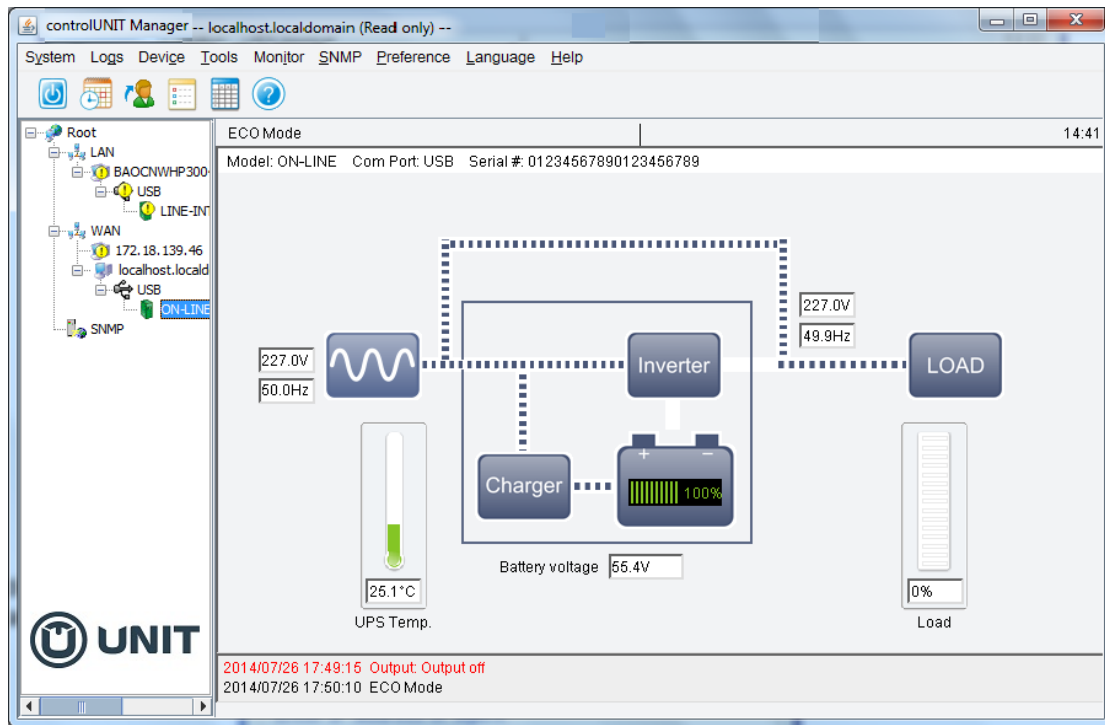


Figure 3.6.3

If software installed on remote computer accepts remote control, the check box of “accept remote control” is selected. Please refer to figure 3.6.4.

If software installed on remote computer doesn't accept remote control, the check box of “accept remote control” is not selected. Please refer to figure 3.6.5.

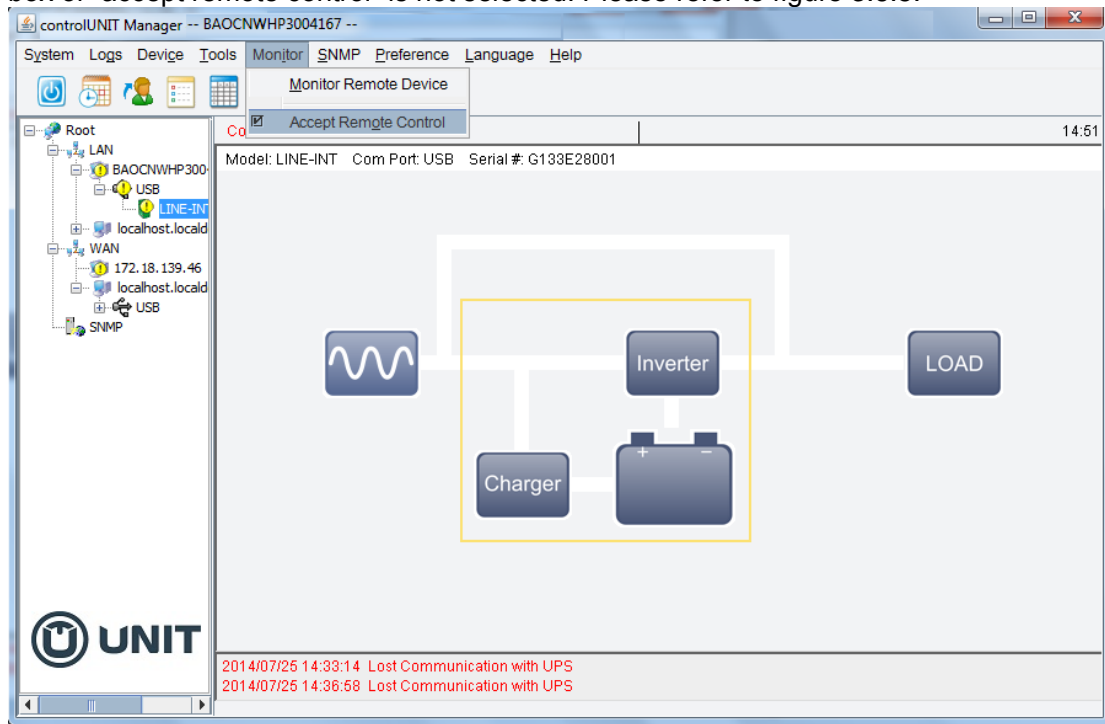


Figure 3.6.4

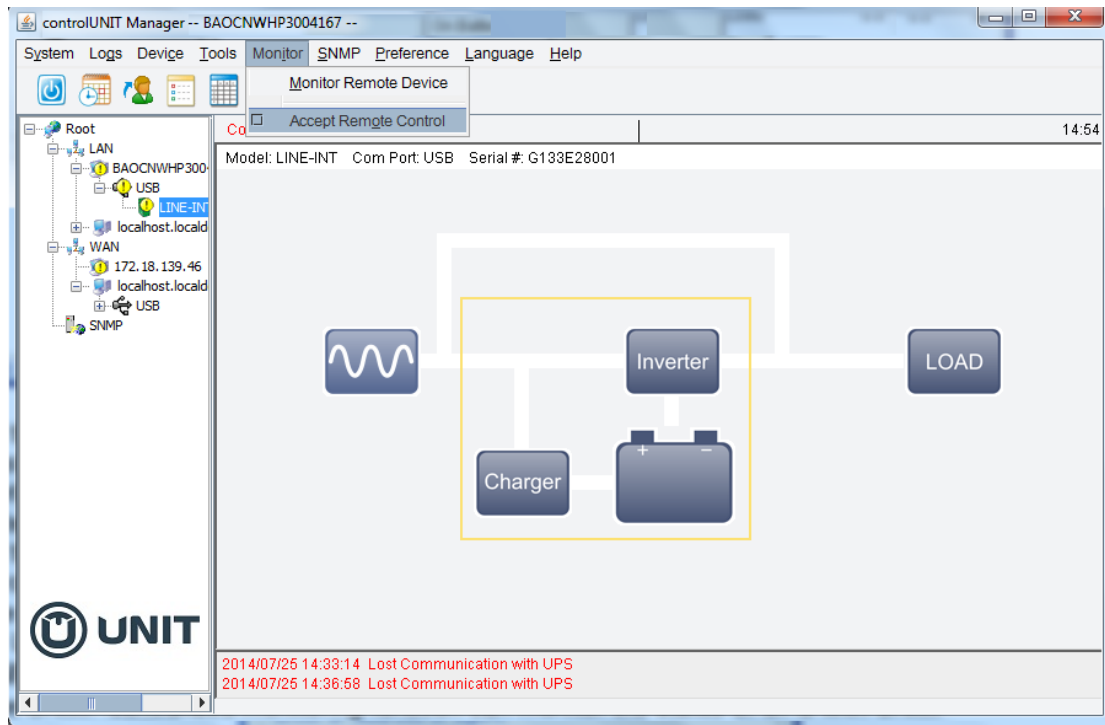


Figure 3.6.5

If the remote computer accepts remote control, select computer node, click “Act as Administrator” item of “System” menu to become software administrator, user can view UPS detail information, and also can configure remote UPS parameter setting, remote computer shutdown, and notification methods.

If the remote computer doesn’t accept remote control, select the remote computer node, you will find “Act as Administrator” item of “System” menu is grey, user can’t become software administrator, only can view UPS detail information, but can’t configure remote UPS parameter setting, remote computer shutdown, and notification methods.

3.7 SNMP centralized monitoring

The SNMP centralized monitoring function can monitor the status of UPS with SNMP card located in different regions. Even if user is thousands of miles away, when the abnormal event of UPS happens, software will inform user of the abnormal event by sending broadcast message, SMS, E-mail, pop-up warning dialog. Thus, user can keep abreast of UPS status and prevent the damage caused by UPS abrupt shutdown.

Notice: software only can monitor the status of UPS with SNMP card, it can’t shut down UPS output and shut down computer. When user wants to control UPS or protect computer, please refer to the user manual of SNMP card to learn the setting.

Application architecture diagram, please refer to figure 3.7.

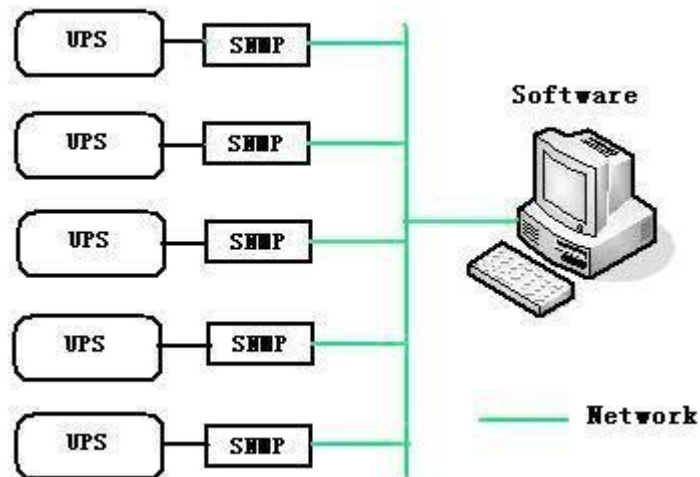


Figure 3.7

3.7.1 Becoming SNMP administrator

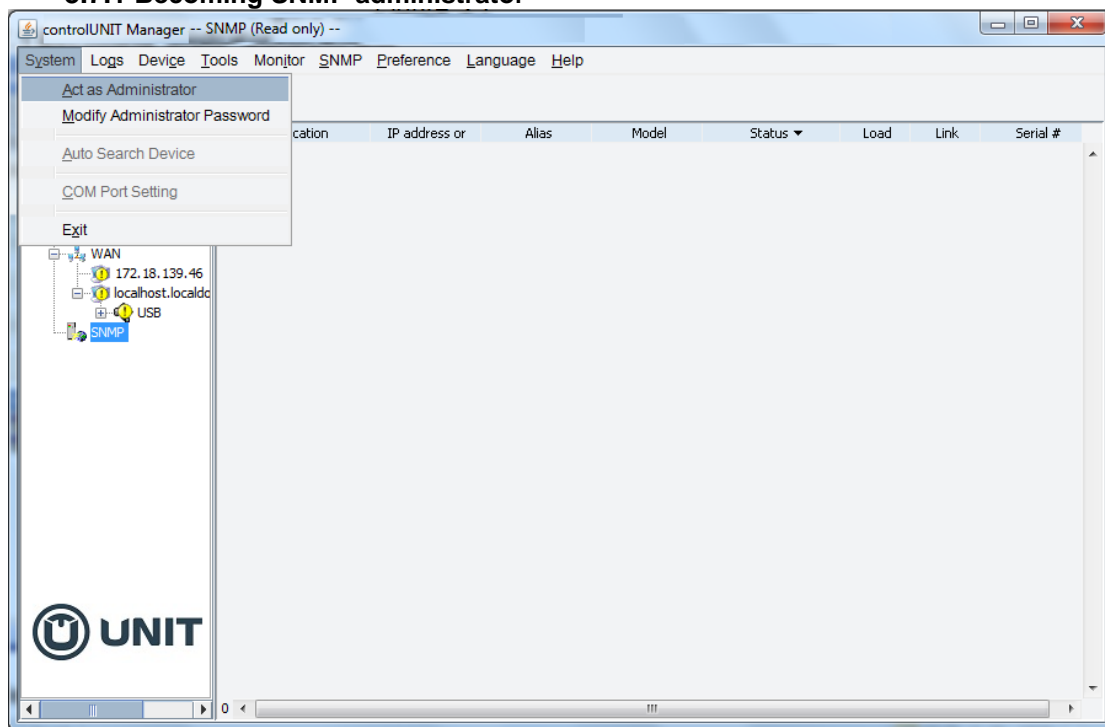


Figure 3.7.1

Select SNMP node, and click “Act as Administrators” item of “System” menu, Figure 3.7.1.

Initial default password is “Administrator”.

User can modify the password by click “Modify Administrator Password” item.

▲ SNMP administrator password and local agent password are the same.

3.7.2 Area management

Act as SNMP Administrator, Click “Add Area” item of “SNMP” menu, there will be a dialog box pop-up for setting the area information. “Add Area” dialog box shown as figure 3.7.2.

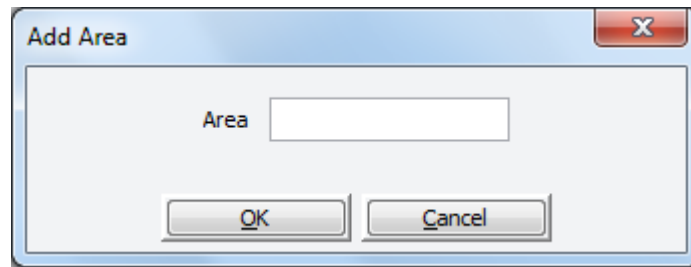


Figure 3.7.2

Input geographic location information in “area” text box, where UPS with SNMP card located at, such as Beijing, Shanghai and other location.

User can select SNMP node, and click right mouse button to select “Add area”. There will be a dialog box pop-up as figure 3.7.2, so you can make the area added.

After adding area successfully, the area name will be shown below the SNMP node in the tree diagram. Select area name and click right mouse button, user can modify or delete area. Of course, user can also select the “Modify area” or “Delete area” item of “SNMP” menu to modify or delete area.

3.7.3 UPS management

Act as SNMP Administrator, Click “Search Device” item of “SNMP” menu, there will be a dialog box pop-up for adding the UPS information. “Search Device” dialog box shown as figure 3.7.3.1. Input the start IP address and end IP address, software will search SNMP UPS and add them under SNMP node.

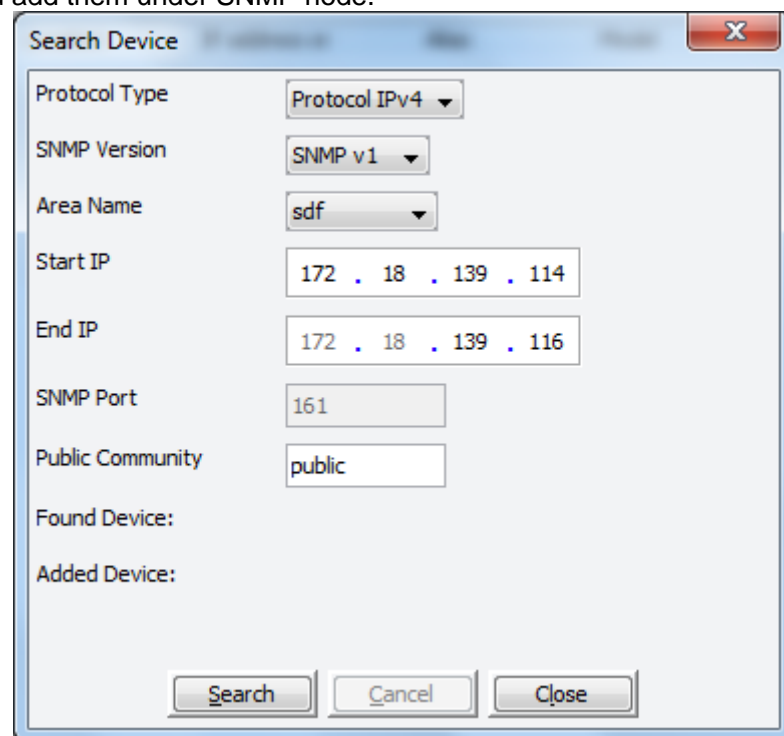


Figure 3.7.3.1

When the UPS is added successfully, the communication with software is OK. Select the UPS name, you can see the UPS flow diagram, and the detailed parameter information of the UPS, please refer to figure 3.7.3.2.

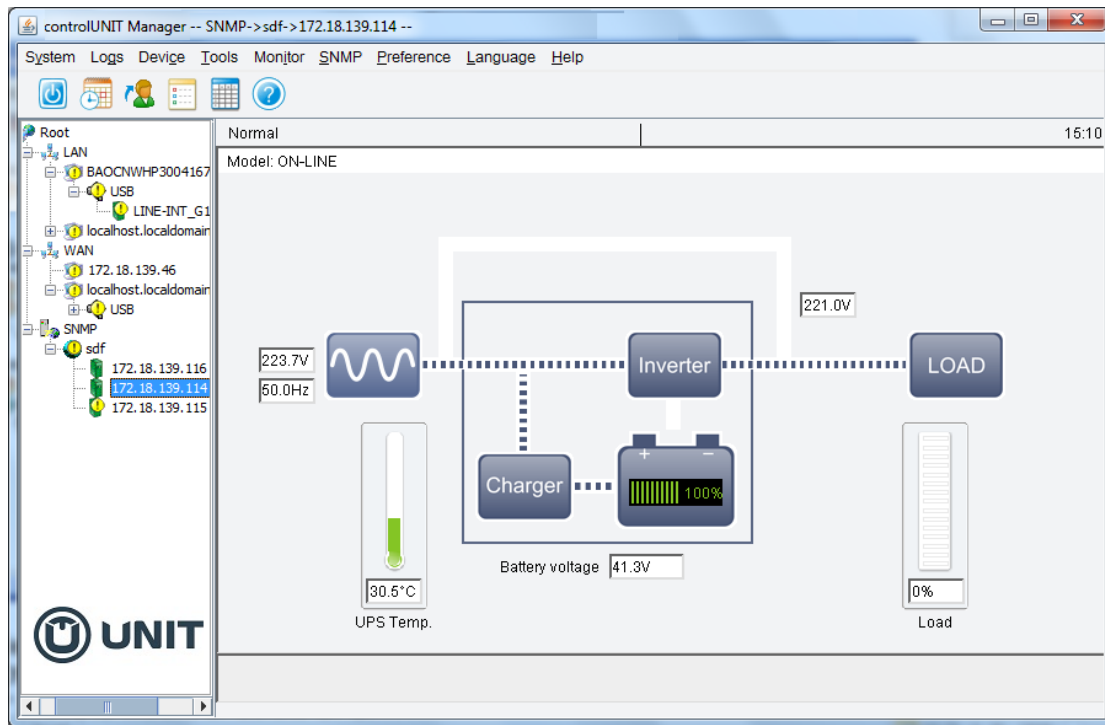


Figure 3.7.3.2

Select the UPS name, and click the right mouse button, user can modify or delete UPS. Of course, user can also select the “Modify device” or “Delete device” item of “SNMP” menu to modify or delete UPS.

Click the link in the UPS list, linked to the monitored SNMP Card Web, please refer to figure 3.7.3.3.

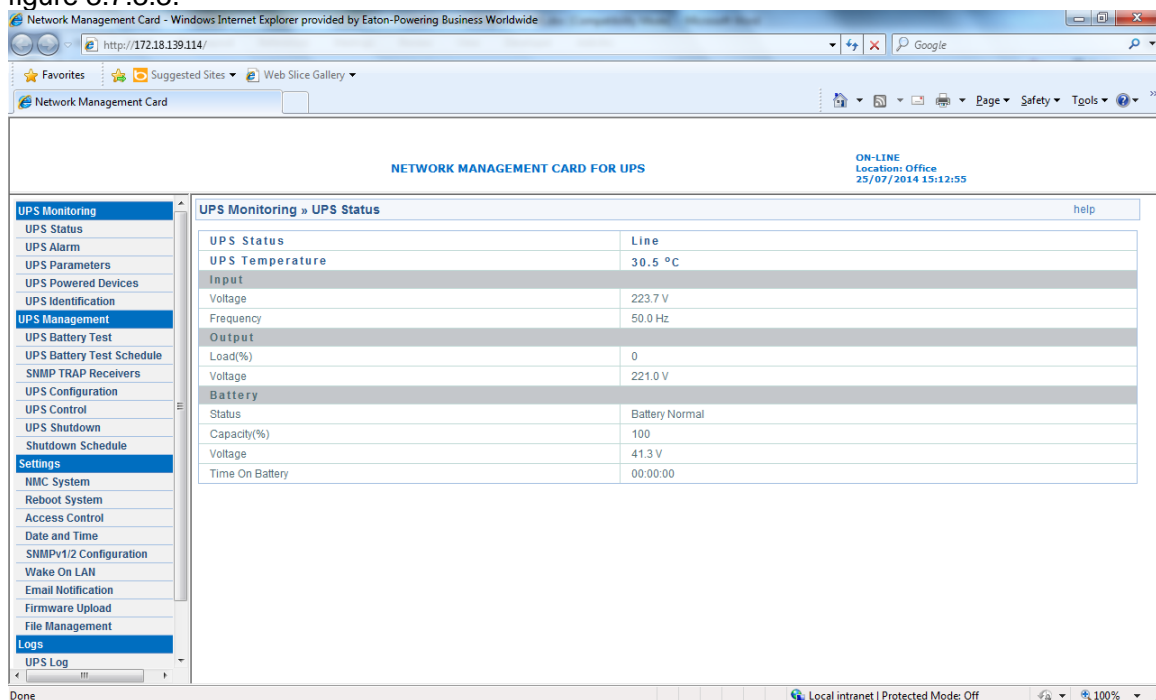


Figure 3.7.3.3

3.7.4 SNMP event log

Act as SNMP Administrator, click “SNMP Event Log” item of “SNMP” Menu, there will be a dialog box pop-up. Please refer to Figure 3.7.4.1.

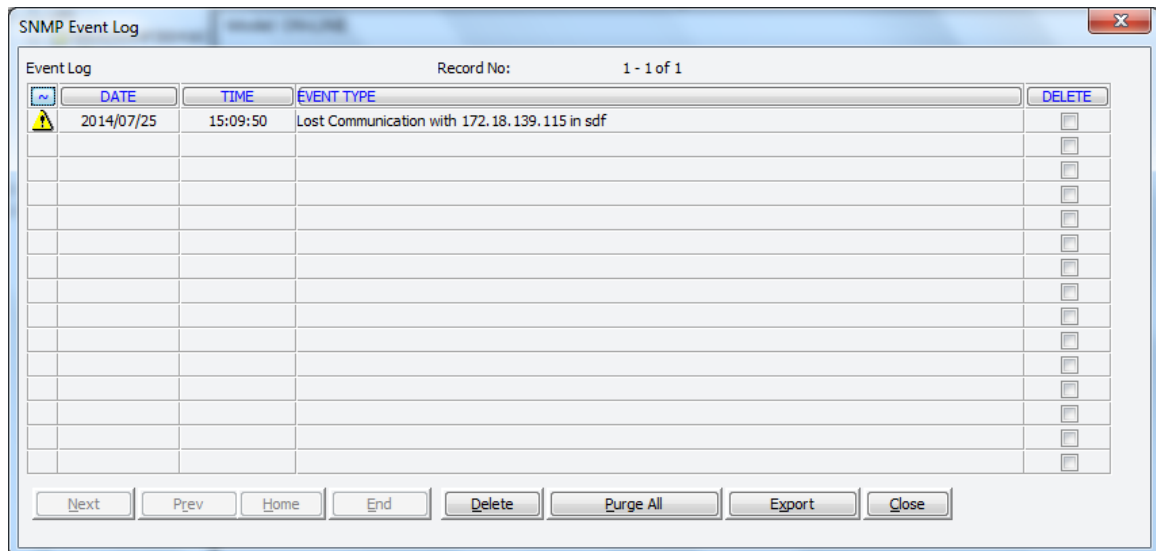


Figure 3.7.4.1

Click “Export” button to export all alarm event.

SNMP event record maximum length can be set. Act as SNMP Administrator, Click “Event Log Setting” item of “SNMP” Menu, there will be a dialog pop-up, as Figure 3.7.4.2. The default value is 5000, Maximum can be set 100000.

When the record exceeds the maximum, Software will delete the oldest event to record a new event automatically.

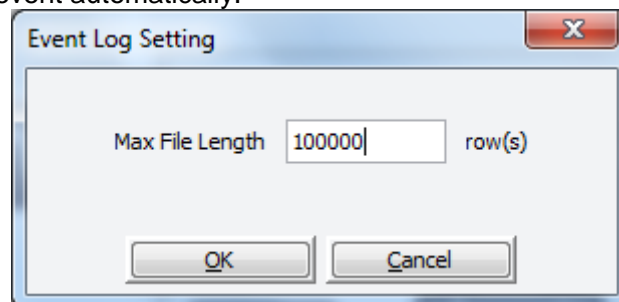


Figure 3.7.4.2

3.7.5 SNMP Trap Receiving Port Setting

Click “SNMP Trap Receiving Port Setting” item of “SNMP” Menu to open “SNMP Trap Receiving Port Setting” dialog. User can set SNMP trap receiving port. The default port is 162.

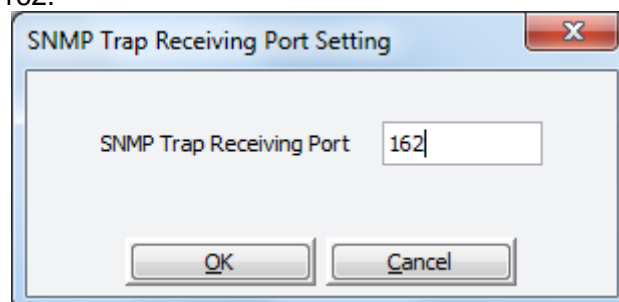


Figure 3.7.5

3.8 Preference

3.8.1 Temperature unit

User can select temperature unit according to personal habit, click “Temp” item of “Preference” menu to select: Centigrade (C) or Fahrenheit (F).

3.8.2 Date format

User can select date format, click “DateFormat” item of “Preference” menu to

select: year/month/day, month/day/year or day/month/year.

3.8.3 Bottom Image

User can set different by clicking “BottomImage” item of “Preference” menu.

3.8.4 Advance Settings

User can set the attribute of software interface and the attribute of bottom image by clicking “Advance Settings” item of “Preference” menu.

3.9 Language

Software supports two kinds of languages: “English” and “German”, user can change language via “Language” menu.

3.10 Webserver Function

Note: the OS should support JDK 1.6 at least, or the software won't work normally.

Software supports webserver function. User can view device status and operate battery test via mobile phone.

Input the web address: http://IP address:8888, such as <http://172.18.139.80:8888>. UPS list will be shown. Please refer to figure 3.10.

The default webserver port is 8888, if the port is in use by other software, user should click “Web Server Control” item of “Monitor” menu to open “Web Server Control” dialog, and change port to make sure webserver function work normally.

Click the “Language” item to change the language.

Click UPS name, the detail information about the UPS will be shown. The detail information includes UPS input, output, battery parameter, the two latest event and UPS status.

Click the “Home” item in UPS detail information page to return the UPS list page.

Click the “Control” item in UPS detail information page to operate battery test. For local UPS, user should input the password of agent and then set battery test task, please refer to section 3.1.1 to get the default password. For SNMP ups, battery test function will be linked to SNMP web, user should input the password of SNMP card to set the battery test task, please refer to the user manual of SNMP card to get the default password.

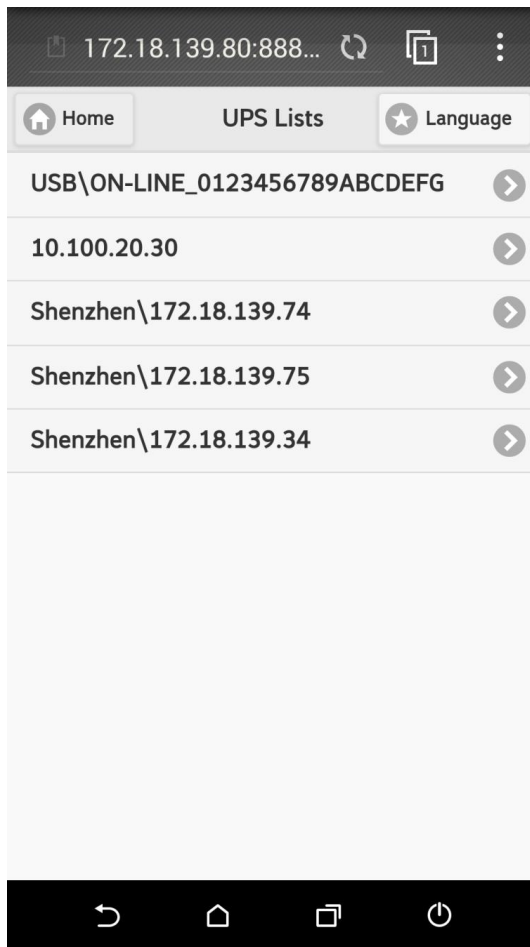


Figure 3.10

Chapter 4 Frequent questions

4.1 How to do if software port is in use by other software

Sometimes the software manager interface stops at 9% fail to be started, that means the RMI port TCP 2099 is in use by other software, so software manager can't be started normally. If software manager fails to be started because of port in use by other software, software will try to use new port to start when port is in use by other software, and write the new port in portConfig.rmi file. At the same time software will inform user that old port is in use by other software, please exit software and restart. User should click "OK" button and wait the software icon disappear, then restart software, software will read new port from portConfig.rmi and start normally. Another way, user also can modify port by editing portConfig.rmi file located in c:\Program File\software install file.

▲ These ports software uses are TCP port 2099, UDP port 2198, 2199, 2200 and 1824. TCP port 2099 can be modified manually. Other UDP port can't be modified. Port 2198, 2199, 2200 is used for remote management, if these ports are invalidation or in use by other software, the remote management function will be invalidation. Port 1824 is for SNMP management function.

4.2 Configure the computer powered by Multi-UPS shut down safely

For local computer: If there are more than one UPS supplying power to the local computer with software as below 4.2.1, you want to safely shut down or suspend the local computer before all UPS can't supply power to the local computer. You should select the "Multi-UPS input" option in the "shutdown settings" dialog of each UPS and set condition, refer to the following figure 4.2.2. The local computer won't be shut down or in suspend mode until all the condition of all UPS is met.

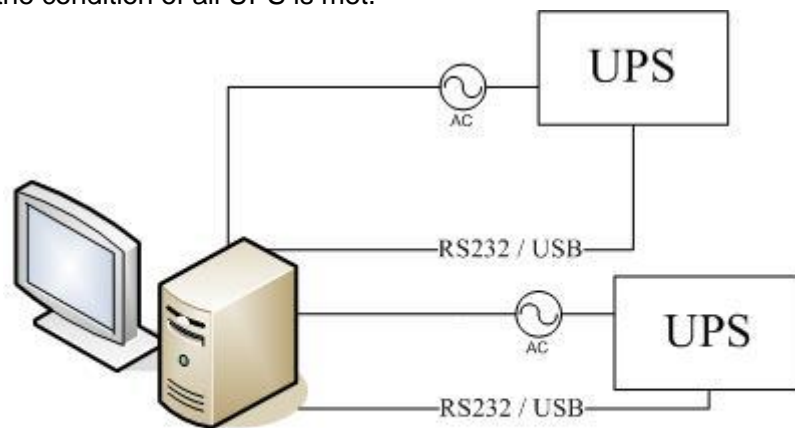


Figure 4.2.1

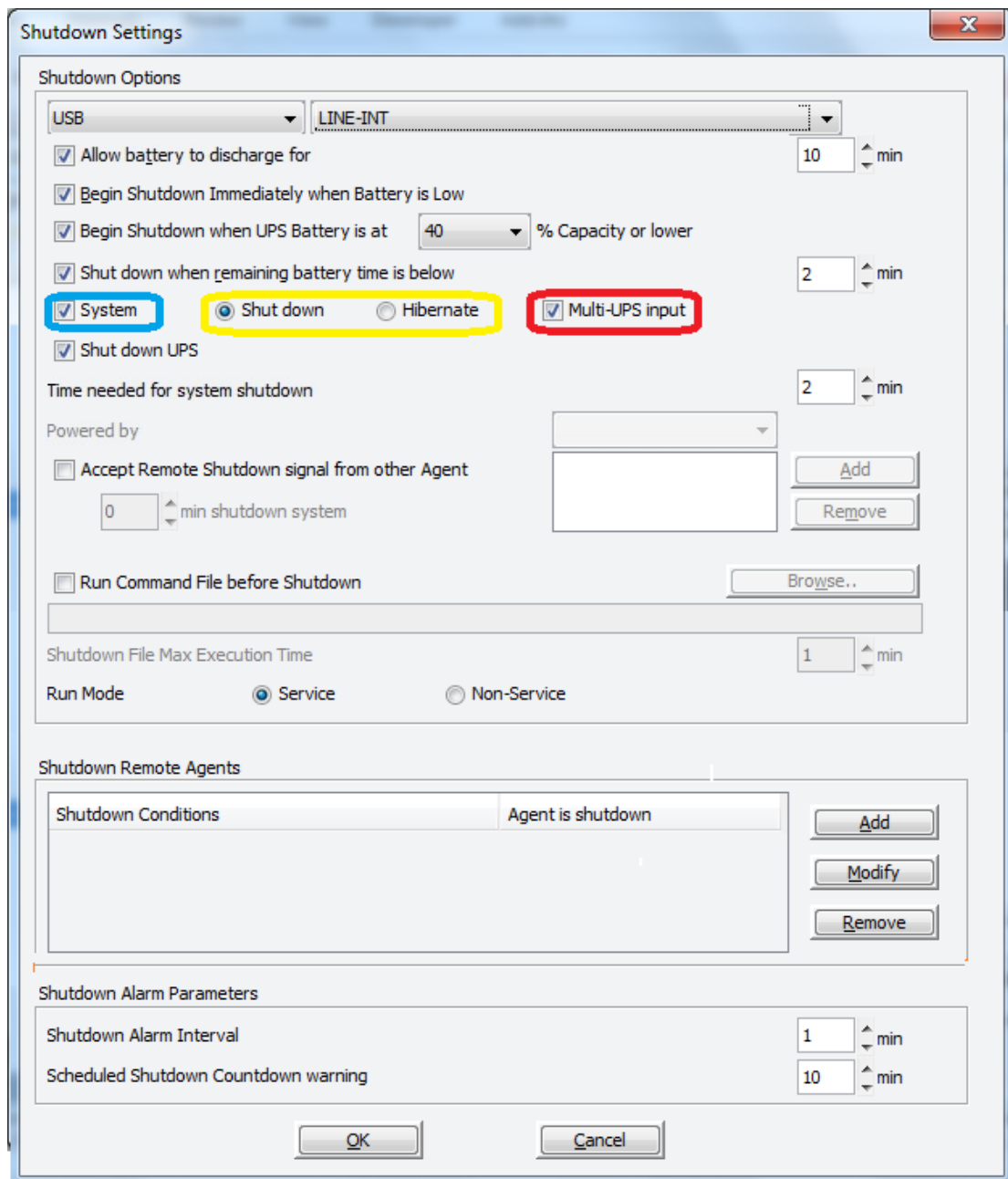


Figure 4.2.2

For remote computer without communication with UPS: If there are more than one UPS supplying power to the remote computer with software, you want to safely shut down or suspend the remote computer before all UPS can't supply power to the remote computer. You should configure the software installed on the remote computer to be shut down by another computer, refer to the following figure 4.2.3, and in the "shutdown settings" dialog of another computer with software communicating with the two UPS to shut down the remote computer, the shutdown condition of each UPS should be set separately, refer to the following figure 4.2.4 and 4.2.5. The remote computer won't be shut down or in suspend mode until all the condition of all UPS is met.

Shutdown Settings

Shutdown Options

☐ Allow battery to discharge for 999 min

☐ Begin Shutdown Immediately when Battery is Low

☐ Begin Shutdown when UPS Battery is at 90 % Capacity or lower

☐ Shut down when remaining battery time is below 10 min

☐ System ☒ Shut down ☐ Hibernate ☐ Multi-UPS input

☐ Shut down UPS

Time needed for system shutdown 999 min

Powered by Load Segment1

☒ Accept Remote Shutdown signal from other Agent

0 min shutdown system

172.18.127.10

Add

Remove

☐ Run Command File before Shutdown

Browse..

Shutdown File Max Execution Time 1 min

Run Mode ☒ Service ☐ Non-Service

Shutdown Remote Agents

Shutdown Conditions	Agent is shutdown

Add

Modify

Remove

Shutdown Alarm Parameters

Shutdown Alarm Interval 1 min

Scheduled Shutdown Countdown warning 10 min

OK Cancel

Figure 4.2.3

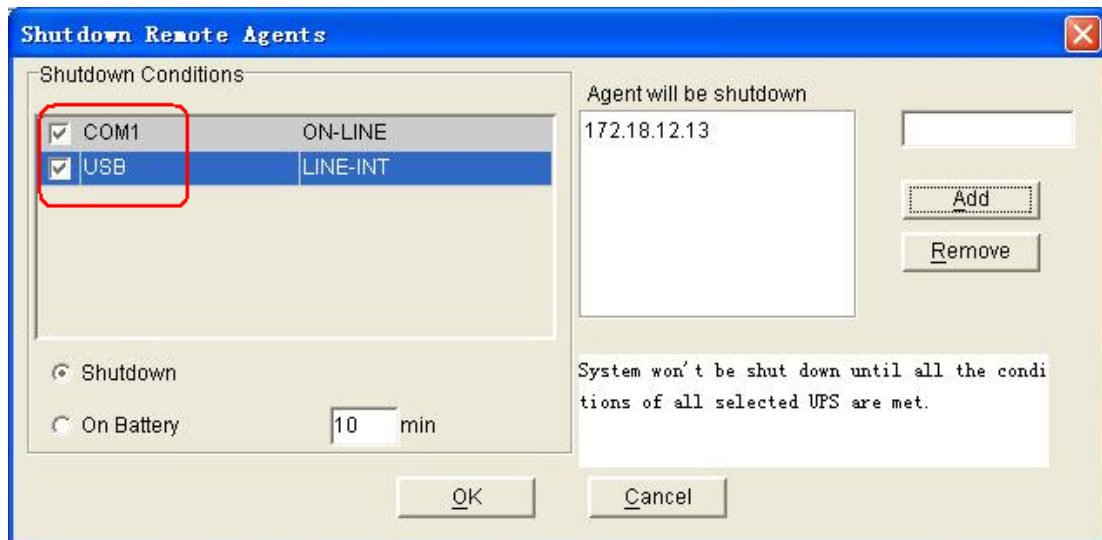


Figure 4.2.4

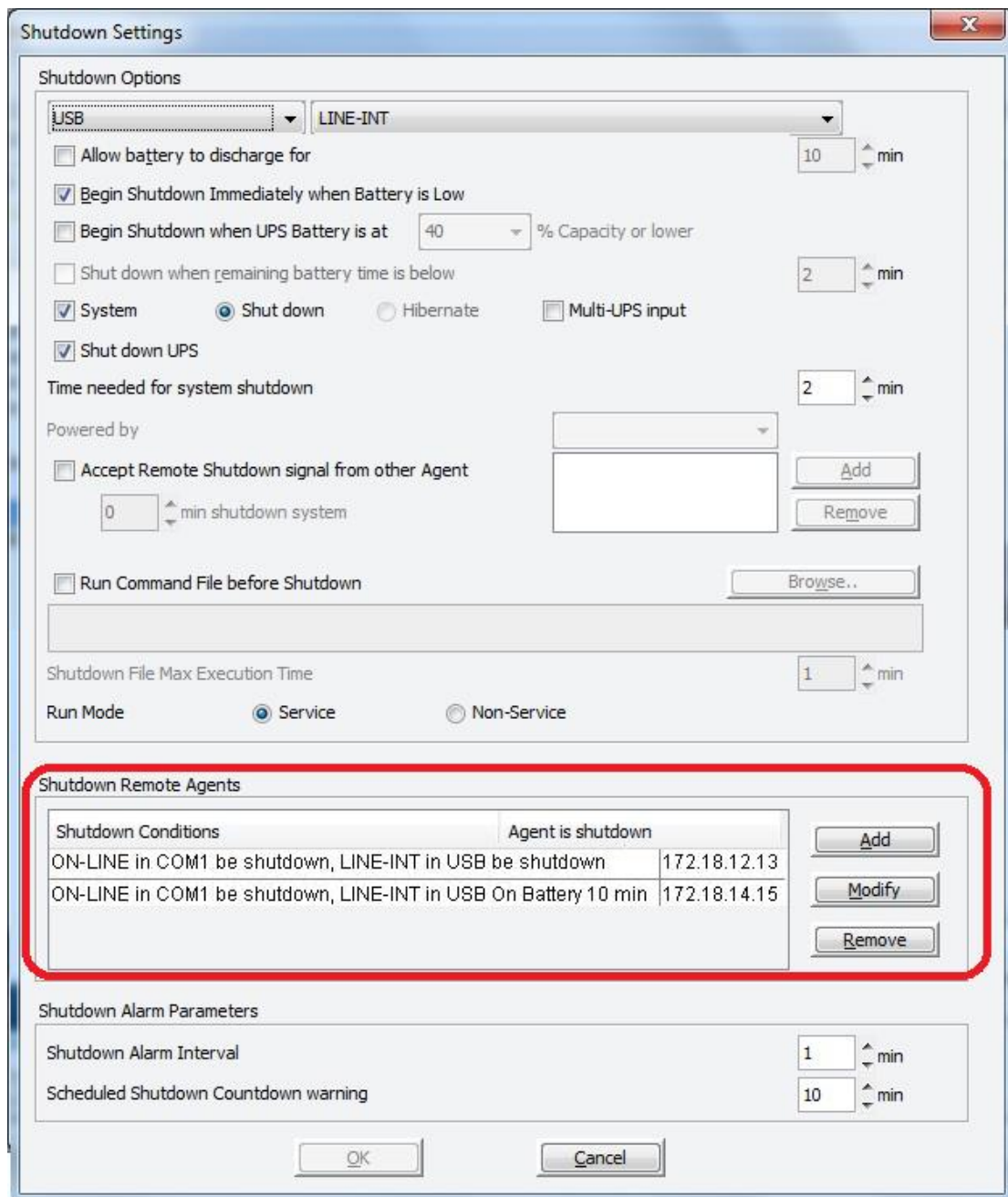


Figure 4.2.5

4.3 The communication between UPS and software on Debian Etch Stable Core 2.6 18-5-486

Question:

UPS can't communicate with software on Debian Etch Stable Core 2.6 18-5-486

Method to fix it:

Here are the procedures to solve this question:

First: Login in Debian as root, the permission of general user is limited to install software. Debian refuse to login as root, some special settings is needed.

Please note:

- In the login interface, there are three icons: "Language", "Session", "Action", choose "Action"
- Choose the last icon of "configure the login manager" in the dialog pop-up
- Choose the icon of "security" in the dialog pop-up
- Choose "allow local system administrator login"

Second: Input the user name of root and the password, and then install monitoring software manually. Use the command `./agent start` to start software service, and then use the command `./monitor` to start the monitor interface.

Finally: Copy the document of s99UPS from Linux (attached CD) to `/etc/rcS.d`,

The file s99UPS is used to start software service automatically. When the computer reboots, software service will be started automatically, user only need to start the monitor interface by the command `./monitor`.

Please note:

a. If the third step is executed, no matter what the user login in as root or a general user, the communication with UPS will be successful.

b. If the third step have not been executed, you should login as root, and use the command `./agent start` to start software service. If login in as a general user, the communication with UPS will be failed

4.4 The communication between UPS and software on RedHat Core 2.6 9

Question:

UPS can't communicate with software on RedHat Core 2.6 9

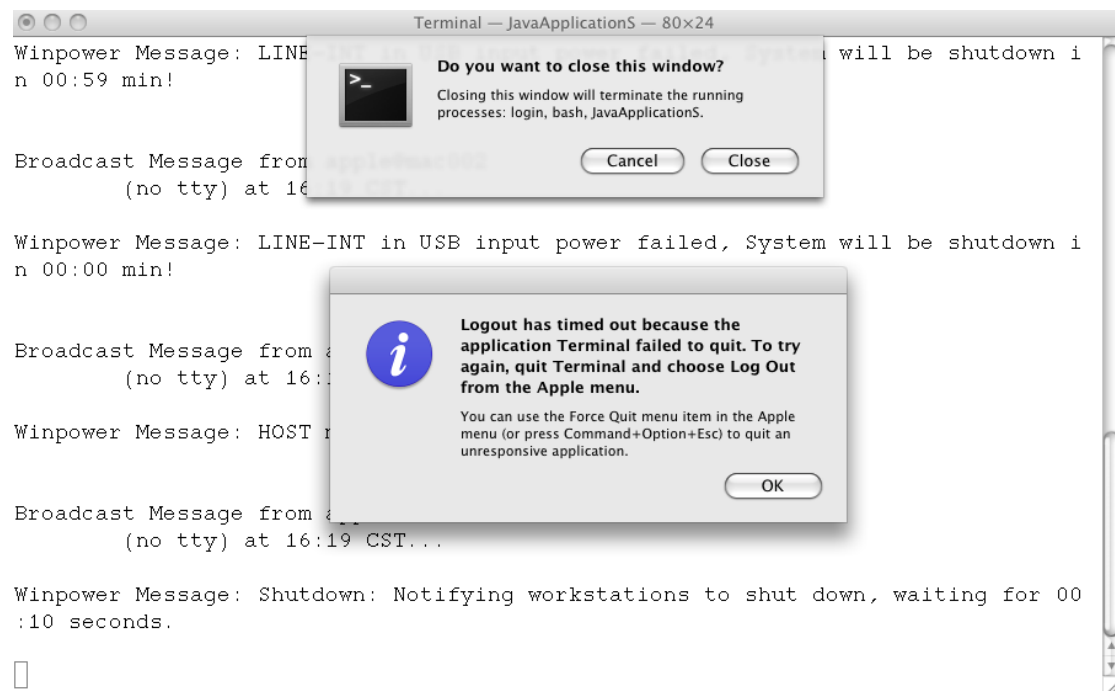
Method to fix it:

Add the word of `"none /proc/bus/usb usbdevfs defaults 0 0"` to the document `"/etc/fstab"`, software will find the UPS when choose the item of "Auto Search Device".

4.5 Mac 10.5 with terminal interface opened can be shut down normally

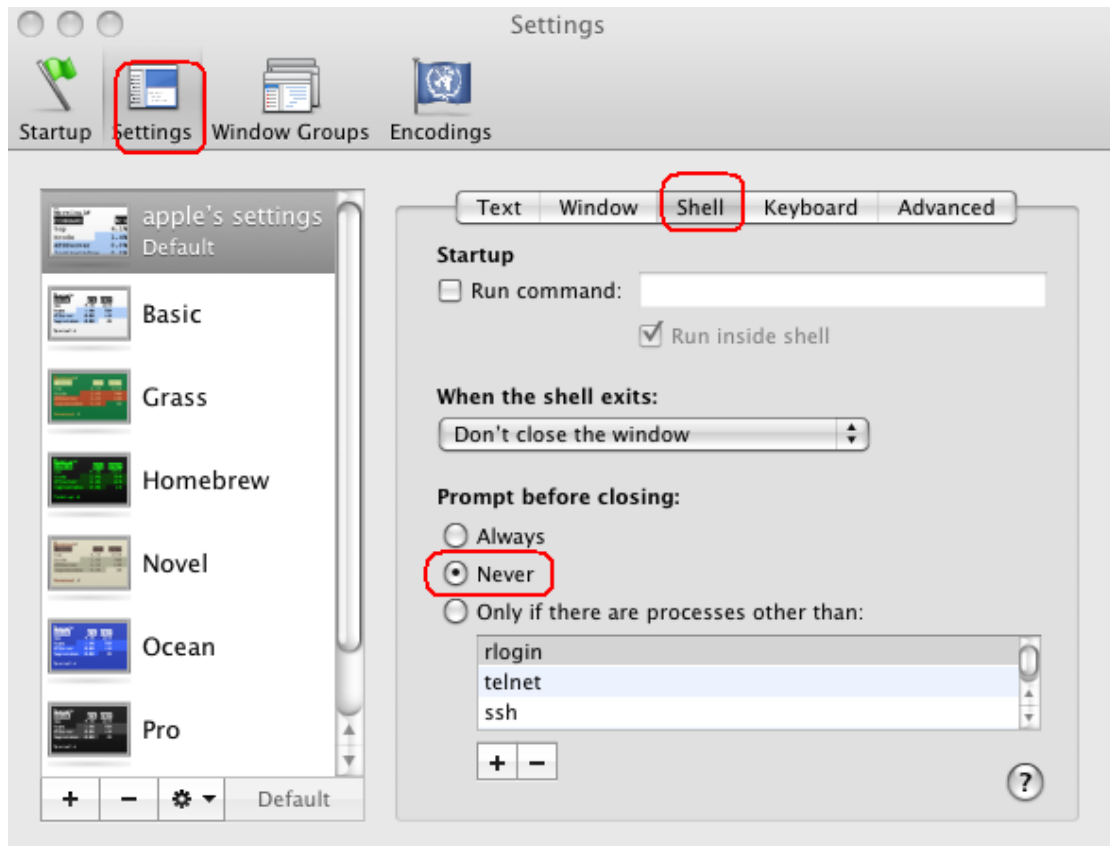
Question:

Mac 10.5 OS with the terminal interface opened can't be shut down normally by software. The information is shown as the following figure.



Method to fix it:

Change the setting of the terminal: Click "Terminal" shown on the left corner of Mac 10.5 OS, and select "Preferences...", there will be a dialog shown as below. Please select "Never" of "Prompt before closing" in the "Shell" interface.



4.6 How to use software on Windows server 2008 core

Windows Server 2008 Core OS prepared

Before installing software, please ensure the configuration of Windows Server 2008 Core is correct, including network settings, port settings.

Note: if you want to set the software by another agent, please shut down the firewall first. If you want to use the remote desktop function of Windows Server 2008 Core, you should enable the remote desktop function.

The following command may be useful for you to reference.

➤ **Command for shutting down the firewall**

Command: netsh firewall set opmode disable

➤ **Enable the remote desktop function**

1. Enter command "regedit", open the REGEDIT UI.
2. Edit
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Terminal Server\DenyTSConnections = 0
3. Open the Port for remote desktop function
Enter command: Netsh firewall set portopening tcp 3389

Software installation

- Copy the installation file "setup.exe" to Windows Server 2008 Core.
- Enter the path where the installation file exists.
- Start to install.

You can install UPS monitoring software in Silent installation method or Interface installation method.

Silent installation method: Enter command: "setup -i silent" or "setup.exe -i silent", then the installation can be started, waiting for a moment to finish the

installation.

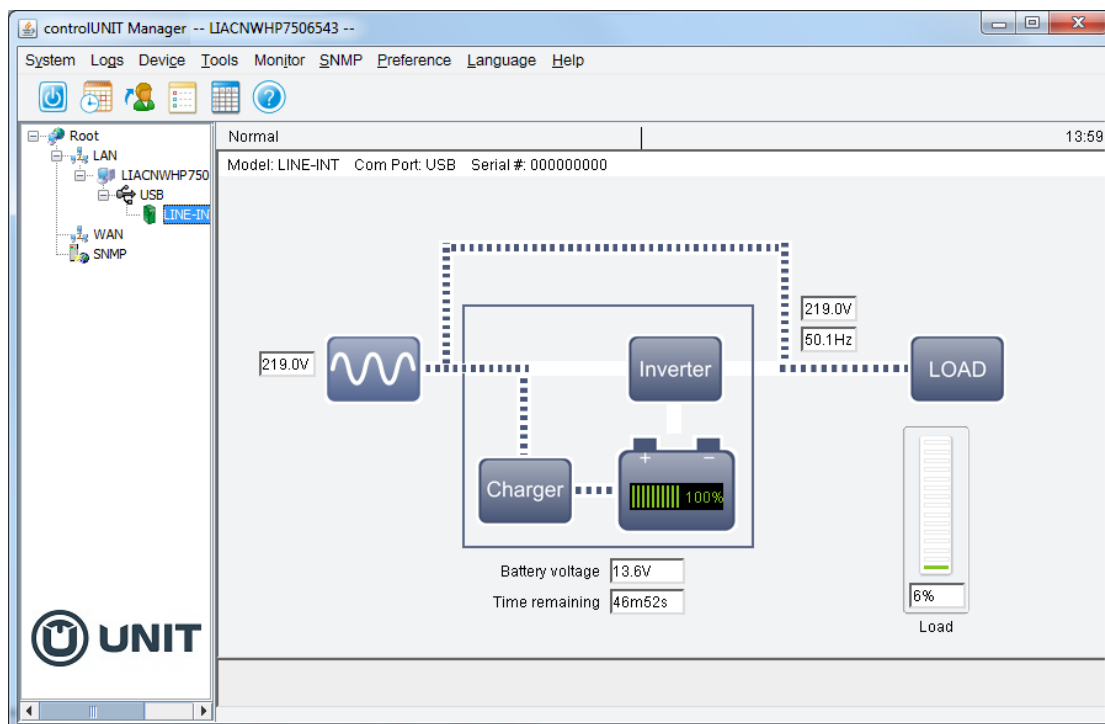
Interface installation method: Enter command: “setup” or “setup.exe”, then the installation can be started, please follow “next” button of interface to finish the installation.

➤ Check if the installation is successful:

1. Enter the installation path, the default path is c:\Program file (X86)\MonitorSoftware, Find file “UPSEVENT.CSV”, Enter command: “type UPSEVENT.CSV”, the log of agent action will be shown. See the below screenshot, that means the agent is running.

```
C:\Program Files (x86)\MonitorSoftware>type UPSEVENT.CSV
15 01/20/2010 04:28:01 [ in Agent Start][,,,-1,]
C:\Program Files (x86)\MonitorSoftware>
```

2. Enter the installation path, start the interface of UPS monitoring software with the command “manager”. Software interface will be shown as following picture.



3. Check the status of the processes of UPS monitoring software. Enter command “tasklist” to open the task manager. See below screenshot, if these processes are all running, that means the UPS monitoring software is running normally.

```

C:\Program Files (x86)\MonitorSoftware>tasklist
=====
Image Name                      PID Session Name      Session#    Mem Usage
-----
System Idle Process             0 Services           0            24 K
System                          4 Services           0           300 K
smss.exe                       220 Services           0          1,012 K
csrss.exe                       300 Services           0          3,608 K
csrss.exe                       352 RDP-Tcp#0          1          4,612 K
wininit.exe                     360 Services           0          4,176 K
winlogon.exe                   388 RDP-Tcp#0          1          5,004 K
services.exe                   448 Services           0          7,172 K
lsass.exe                      456 Services           0          9,760 K
lsm.exe                        464 Services           0          5,712 K
svchost.exe                    556 Services           0          8,288 K
svchost.exe                    628 Services           0          6,424 K
svchost.exe                    720 Services           0         10,956 K
svchost.exe                    760 Services           0         27,284 K
svchost.exe                    808 Services           0          8,872 K
svchost.exe                    872 Services           0         15,452 K
svchost.exe                    988 Services           0         10,836 K
svchost.exe                    540 Services           0          2,576 K
svchost.exe                   1148 Services           0          9,332 K
svchost.exe                   1212 Services           0          5,420 K
svchost.exe                   1336 Services           0          4,612 K
taskhost.exe                   1820 RDP-Tcp#0          1          3,816 K
cmd.exe                        1864 RDP-Tcp#0          1          3,028 K
conhost.exe                    1872 RDP-Tcp#0          1          3,160 K
msdtc.exe                     1460 Services           0          7,124 K
csrss.exe                      436 Console             3          3,504 K
winlogon.exe                   1628 Console             3          3,844 K
LogonUI.exe                    584 Console             3         13,076 K
rdpclip.exe                   1716 RDP-Tcp#0          1          5,720 K
monitor.exe                   1540 Services           0          3,480 K
javaw.exe                     2028 Services           0         20,992 K
appRMI.exe                    1044 Services           0          3,420 K
javaw.exe                     1988 Services           0         21,696 K
manager.exe                   1548 RDP-Tcp#0          1          3,096 K
javaw.exe                     1384 RDP-Tcp#0          1         33,668 K
tasklist.exe                   1980 RDP-Tcp#0          1          5,004 K
WmiPrvSE.exe                  1188 Services           0          5,732 K
=====
C:\Program Files (x86)\MonitorSoftware>

```

Uninstall software

1. Close the interface of the UPS monitoring software and enter the installation path, the default path is c:\Program file (X86)\MonitorSoftware, enter command: "wpExit" to stop software, waiting for a moment.
2. Enter the installation path, the default path is c:\Program file (X86)\MonitorSoftware, find the file "UninstallerData".

You can uninstall software in Silent installation method or with Interface uninstall method.

Silent uninstall method: Enter the file "UninstallerData" and then enter command: "Uninstall -i silent" or "Uninstall.exe -i silent" to uninstall the software, then uninstall can be starting, waiting for a moment to finish uninstall.

With interface uninstall method: Enter the file "UninstallerData" and then enter command: "Uninstall" or "Uninstall.exe" to uninstall the software with interface, please follow "next" button of interface to finish uninstall.

4.7 How to use software on VMware ESX 3.5/4.0/4.1

This section describes the installation and configuration of the Software on a VMware ESX Server. Software allows you to connect VMware ESX 3.5/4.0/4.1 with a UPS through the RS232 or USB port.

Please note: When you want to connect VMware ESX 4.0/4.1 with a UPS through USB port, you should execute the command to activate the usb.o on your System to make

the USB communication normal, and then restart the VMware ESX 4.0/4.1 server. The command: `esxcfg-module -s "libusb_support=1" usb.o`

If you don't want to input the command above, you can start the agent of software after first installation. And then restart the VMware ESX 4.0/4.1 server, the USB communication will be normal.

The software will be monitored and configured by a remote Agent on either a Microsoft Windows or Linux platform.

The software notifies the VMware server of power events or UPS alerts with pop up broadcast information on the console. It also safely shuts down the VMware ESX server and the guest operating system.

Before the VMware ESX system shuts down, use the shutdown.sh script to shut down the guest operating system.

All operations are tested on VMware server with two guest operating systems (Windows 2003 and Windows XP), when the certain conditions exist, such as:

- ◆ UPS Battery is low
- ◆ Battery backup time is reached

Tested operations include:

- ◆ Safely shuts down the VMware server
- ◆ Safely shuts down the guest operating system
- ◆ Software notifies the VMware server of power events or the UPS alerts

Installation

This section provides information about installing and configuring Software on a VMware server and installing VMware Tools on a guest operating system.

Prerequisites

- ◆ VMware ESX Server with 125 MB free space for the software.
- ◆ VMware Infrastructure client must be installed on different machine.

Software Installation

To install the software:

1. Download the software from the Web site or from the CD provided with the UPS.
2. Enter the command to install software:

▲ For the CD installation, enter the command:

```
mount /dev/cdrom /mnt
cd /mnt/Linux
./setup_console.bin
```

▲ For the download installation, enter the command:

```
tar -zxvf controlUNIT_setup_Linux.tar.gz
cd /mnt/Linux
./setup_console.bin
```

- 3 Start the Agent. From the installation path, enter the command:

```
./agent start
```

Installing VMware Tools on a Microsoft Windows Guest

To install the VMware Tools for a Microsoft Windows guest:

1. On the VM Templates page, move the pointer over the virtual machine template name and select View Console from the menu.
2. Insert and start the Microsoft Windows operating system installation CD.
3. Log in to the guest operating system inside the virtual machine console, and then

click Install VMware Tools.

4. From within the guest operating system, click OK to confirm that you want to install VMware Tools and launch the Install Shield wizard.

▲ If auto-run is enabled in the guest operating system (the default setting for Microsoft Windows operating systems), a window opens.

▲ If auto-run is not enabled, run the VMware Tools installer. Click Start > Run and enter D:\setup.exe, where D: is the first virtual CD-ROM drive.

5. Follow the on-screen instructions.

▲ On Microsoft Windows Server 2003, the SVGA driver is installed automatically, and the guest operating system uses it after it reboots.

▲ After you install VMware Tools, Microsoft Windows 2000 and Microsoft Windows XP guest operating systems must be rebooted to use the new driver.

Installing VMware Tools on a Linux Guest

The VMware Tools installation package is on the VMware server installation CD on the path **VMware\RPMS**.

To install the VMware Tools for a Linux guest:

1. On the VM Templates page, move the pointer over the virtual machine template name and select View Console from the menu.

2. Insert and start the VMware server installation CD.

3. Log in to the guest operating system inside the virtual machine console, and then click Install VMware Tools.

4. Mount the CD with the command:

```
mount /dev/cdrom /mnt
```

5. Install the package with the command:

```
cd /mnt/VMware/RPMS
```

```
rpm -Uvh VMware-esx-tools-***.i386.rpm
```

NOTE: The package name is likely to be different.

6. Configure the VMware Tools with the command:

```
Vmware-config-tools.pl
```

7. Enter number: 1

8. Start the VMware Tools with the command:

```
Vmware-toolbox &
```

VMware Tools on the summary row displays OK, if the tools are available (refer to the following figure 4.7.1):

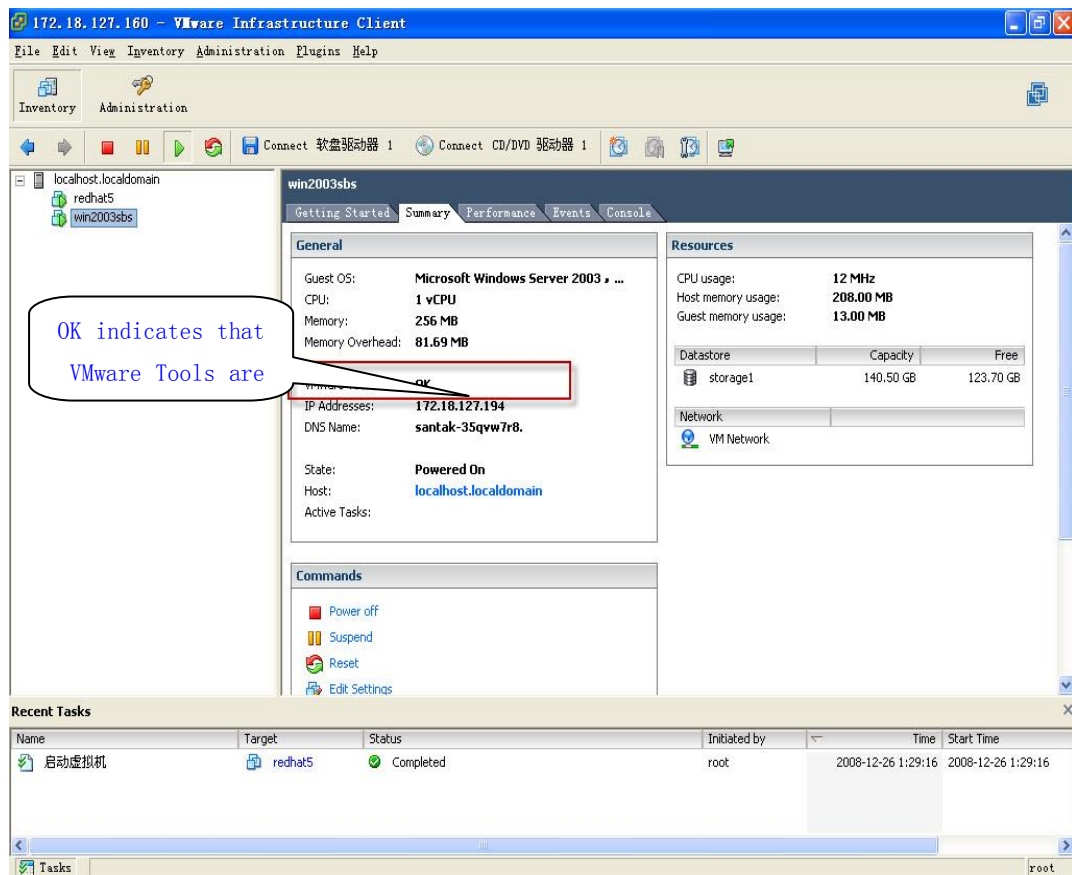


Figure 4.7.1

Configuration

This section explains configuration for the Software and for the VMware server.

Software Configuration

The VMware server works in console mode and can't be used for configuration. Use a remote agent with the same software version to configure the VMware server.

1. Start the manager interface on the remote software Agent in the Microsoft Windows operating system.

2. If the two Agents are in the same LAN, the VMware server client will be added to the topology automatically. Otherwise, add the Agent manually (select Monitor Remote Device from the Monitor menu). The software will auto search the UPS when the Agent starts for the first time after installation.

If the search fails:

▲ Select the VMware Server Agent from the tree view.

▲ Acting as the Administrator, select "Auto Search Device" from "System" menu. The UPS connected with VMware server appears in the LAN tree view.

3. Select Shutdown Settings from the Device menu. Set the battery backup time, and select the Begin Shutdown Immediately if Battery Low check box and the Run Command File before Shutdown check box (refer to figure 4.7.2).

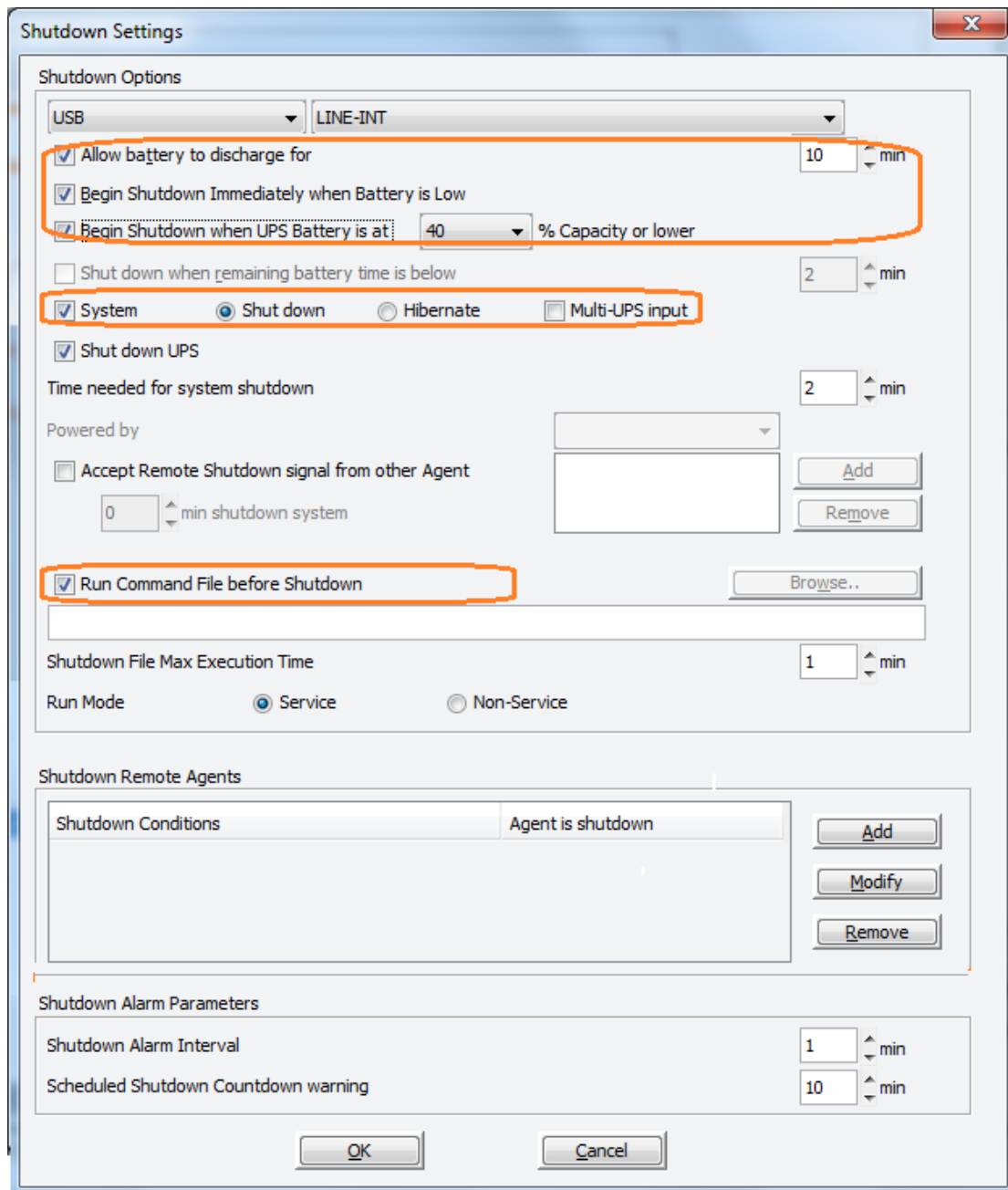


Figure 4.7.2

VMware Server Configuration

All hardware elements must have an operational network configuration that allows them to communicate freely with each other. Software uses TCP and UDP for communication with UPS.

1. Confirm that the following UDP ports are opened on the ESX server Firewall: 2198, 2199, 2200

2. Confirm that the following TCP ports are opened on the ESX server Firewall: 2099

For Example:

```
esxcfg-firewall -o 2198,udp,in,UPSMS
```

```
esxcfg-firewall -o 2099,tcp,in,UPSMS
```

3 . If you want to disable the firewall permanently, enter the command: chkconfig

iptables off

4 . To disable the firewall temporarily, enter the command: `service iptables stop`

4.8 How to use software on VMware ESXi OS

Please refer to the document: [UserManual_for_VMwareESXi.pdf](#)

Appendix A - The detail information about glossary

1. **Agent** --- A service program running on the background.
2. **UPS battery low** --- When AC fails, UPS works on battery, when the battery level is under than some value, UPS will give battery low warning.
3. **UPS battery backup time** --- When AC fails, how much time UPS can work on battery. Battery backup time exhausted means that the time UPS works on battery is longer than the time set in the "UPS shutdown parameter".
4. **UPS overload** --- the load is above 110 %.
5. **UPS works on bypass** --- UPS can't work on inverter because of hardware fault or other reasons, at that time, UPS will work on bypass, when AC fails, there will no output immediately.
6. **UPS battery self-test** --- UPS mode changes from normal mode to battery mode for some time, and then return to normal mode. The purpose of battery self-test is to check the battery OK or not.
7. **UPS battery self-test fail** --- UPS can't work on battery mode normally, user should check battery connect or not, or battery will need to be changed.
8. **Shutdown File Max Execution Time** --- The time for agent starts to execute file before beginning to save applications and shutting down OS.
9. **The time for shutdown OS** --- The UPS output will be shut down when the time exhausted
10. **Accept other agent shutdown signal** --- When the UPS communicating with remote agent is abnormal, the remote agent will send shutdown signal to the agent.
11. **The warning start time for shutdown schedule** --- The start time software will give warning information to user, if user has set shutdown schedule
12. **The warning interval for shutdown** --- The interval of warning after software starts to give shutdown warning

Appendix B - Event List

NO.	Event	Type	descriptions
1	UPS battery low	Severity	One condition configured to shut down system and UPS or not
2	UPS battery back-up time exhausted	Severity	User can configure battery back-up time in "Shutdown Parameter" dialog
3	UPS fail	Severity	-
4	UPS overload	Severity	The load is over 110%
5	Communication with UPS lost	Warning	Communication line is unconnected or communication port is fail
6	AC fail	Warning	-
7	Bypass output	Warning	UPS will work on bypass because of overload or hardware fail. When UPS work on bypass, it can't protect key device if AC fails.
8	Bypass no output	Warning	-
9	Self-test fail	Warning	-
10	Input phase error	Warning	Only three phase UPS support
11	Battery is no connection	Warning	Only three phase UPS support
12	Overload unbalanced	Warning	Only three phase UPS support
13	Overload too high	Warning	The output load is between 100% and 110%
14	Internal warning	Warning	Only three phase UPS support
15	Maintenance board open	Warning	-
16	AC restore	Information	-
17	Communication with UPS restore	Information	-
18	Agent start	Information	-
19	Agent stop	Information	-
20	System is shut down	Information	-
21	System is shut down by other agent	Information	Configure the remote Agent shut down by local Agent in "Shutdown Parameter" dialog
22	The time for specific day shutting down UPS is out	Information	Shutdown warning will be shown on dialog every shutdown interval time
23	The time for weekly shutting down UPS is out	Information	Shutdown warning will be shown on dialog every shutdown interval time
24	Self-test begin	Information	Battery self-test begin immediately
25	Self-test cancel	Information	-
26	Self-test end	Information	-
27	Specific day Self-test begin	Information	-
28	Specific day Self-test cancel	Information	-
29	Specific day Self-test end	Information	-
30	Monthly Self-test begin	Information	-

31	Monthly Self-test cancel	Information	-
32	Monthly Self-test end	Information	-