



**Minuteman UPS
Power Monitoring
and Control Software**

User Manual

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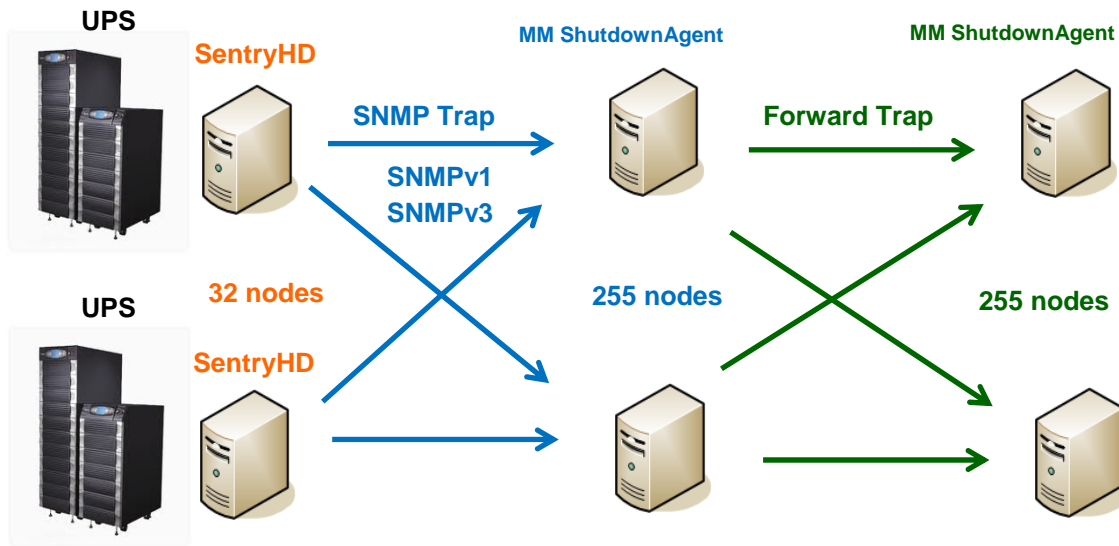
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1. Overview

SentryHD is a power monitoring and control software that communicates with a UPS to retrieve the UPS's information and protects the operating system. Using a Web Browser, you can easily obtain the current UPS status, configure your shutdown strategy and view the countdown to shutdown information. SentryHD also has the ability to notify the device managers through email and SMS.

SentryHD works with multiple MM ShutdownAgents to protect a large number of hosts which are powered by the UPS.



1.1 Features

1. Works with MM ShutdownAgent to protect a large number of hosts:
Each SentryHD can connect up to 255 MM ShutdownAgent. Each MM ShutdownAgent can forward the received SNMP trap to 255 MM ShutdownAgent.
2. Supports RS232 to monitor and control the connected UPS.
3. Supports USB to monitor and control the connected UPS.
4. Supports SNMPv1, v2c and v3 traps.
5. Supports SMS for mobile notification.
6. Supports SNMPv1, v3 server access for monitoring SentryHD status and configure shutdown parameters.
7. Supports web interface through HTTP and HTTPS.
8. Has the ability to send email and SMS to notify the user and device manager.
9. Supports scheduling shutdown, restart and battery test.
10. Supports batch configuration.
11. Supports console configuration for basic system parameters setup.
12. Supports 32/64 bit software programs.

1.2 OS Support

Windows: XP-sp2, Vista, 7, 8
Windows 2003, 2008
Windows 2008 Server Core, Hyper-V 2008 R2
Linux OpenSUSE 11.4
Linux ubuntu 10.04
Linux Fedora 3.1.9
CentOS 5.8
Citrix XenServer 6.0.0
Linux KVM

NOTE: When using the UPS's USB port with the Windows Operating Systems the "Power Options" in the Control Panel may need to be configured.

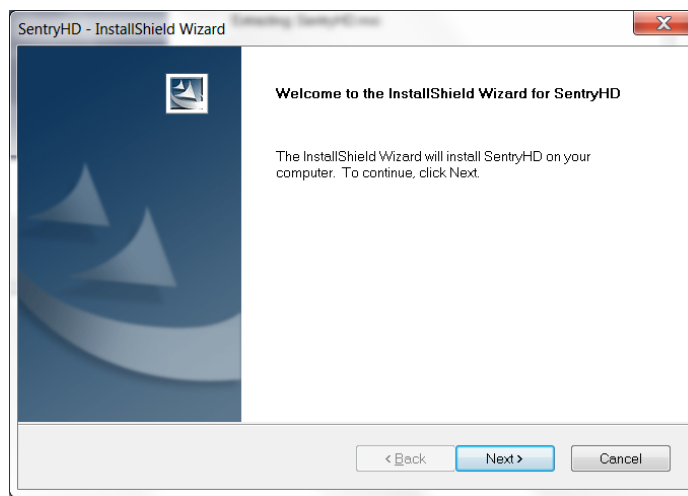
2. Installation/Uninstallation

2.1 For Windows OS

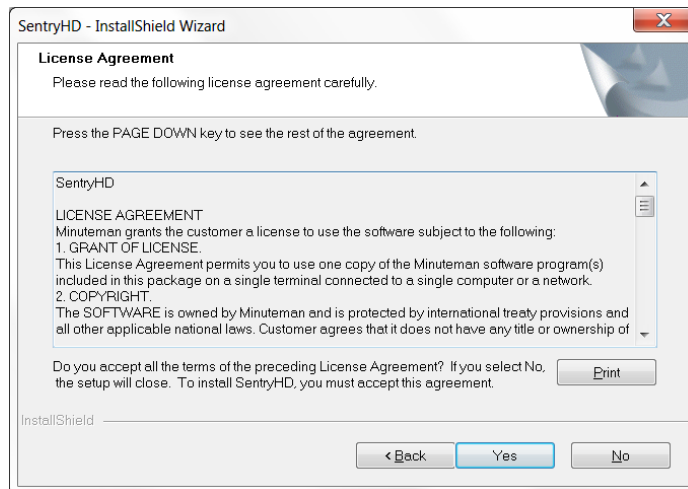
There are two setup programs: SentryHD-MM-Setup (win32).exe and SentryHD-MM-Setup(x64).exe. One is for the 32bit Windows operating system and the other is for the 64bit Windows operating system.

2.1.1 Installation Process

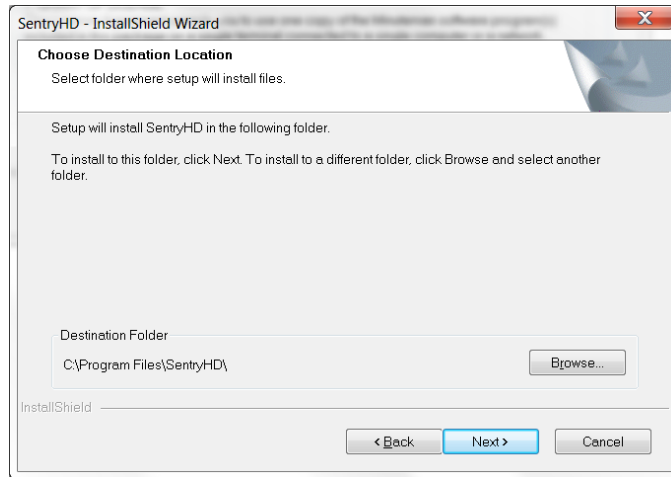
1. Execute the SentryHD-MM-Setup (xxx).exe to run the setup program.
2. Press the “Next” button to continue with the installation or press the “Cancel” button to stop the installation.



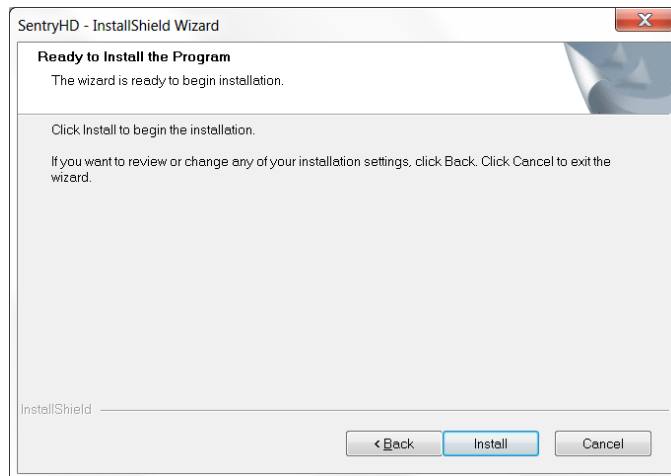
3. Read the License Agreement and then press the “Yes” button to accept the License Agreement and continue with the installation or press the “No” button to cancel the installation.



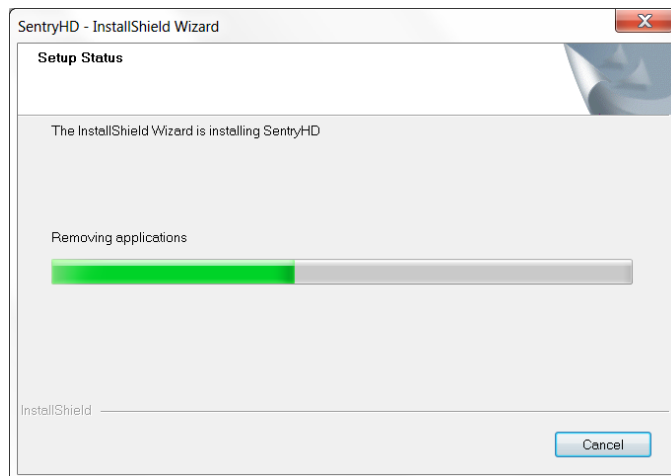
4. The destination location can be changed by pressing the “Browse” button or just press the “Next” to install the software in the default location.



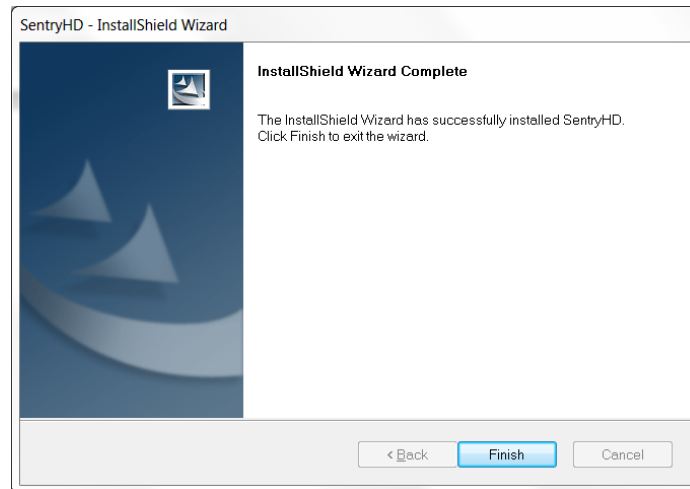
5. Press the “Install” button to install the program to the selected location.



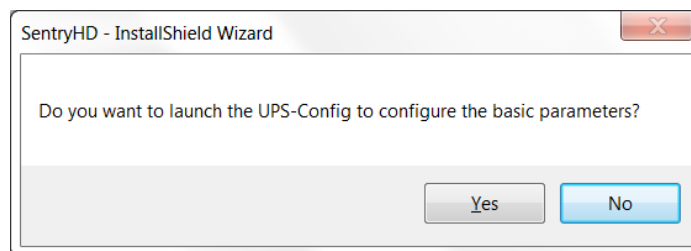
6. The installation is in progress.



7. After the installation is complete, press the “Finish” button to exit the installation process.



8. Once the installation is complete, SentryHD will automatically start the service program and add an icon to the task bar. A dialog box will pop up to ask if you want to configure the basic parameters via a console. Press “No” to finish the installation and then configure the basic parameters once the software is opened or press “Yes” to launch the console configuration in the shell mode. See Chapter 3 for more details.



The SentryHD software is comprised of two modules:

A **Service** module (UPS Service: UPS-Service.exe), which runs in the background as a Service and communicates with the UPS through the assigned port.

A **Status** module (UPS-Status.exe), which enables you to configure, control and monitor the software via a web browser.

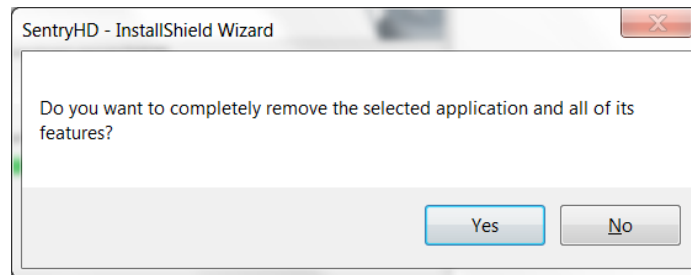
After completing the installation, the setup program will create a SentryHD association with the following shortcuts:

- **Console Configure:** To launch the UPS-Config.exe for you to quickly configure the basic communication parameters.
- **Uninstall:** To remove the SentryHD program, the configuration data will still be kept in the installed directory.

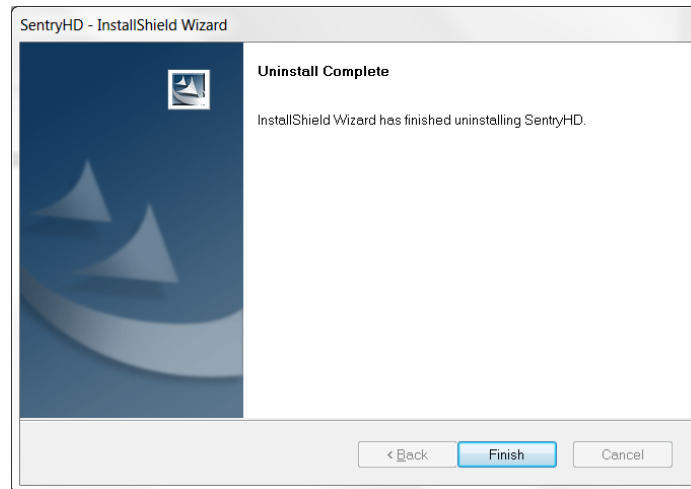
- **User Manual:** The user manual in PDF format.
- **Web Monitor:** The major user interface of SentryHD, used to monitor and configure the software.

2.1.2 Uninstall Process

1. Select Uninstall from the SentryHD program folder to start the uninstall process. Or use the Add/Remove Program in the Control Panel.
2. Press the “OK” button to confirm removing all of the application or the “Cancel” button to cancel the uninstall process.



3. Press the “Finish” button to complete the uninstall process.



2.2 For Linux System

2.2.1 Installation Process

1. Please login to the Linux system and change to the root account:
su root
2. Copy the sentryhd-mm-linux-x86.tar.gz or sentryhd-mm-linux-x64.tar.gz to the /tmp directory:
sentryhd-mm-linux-xxx.tar.gz /tmp
3. Change your working directory to /tmp:
cd /tmp
4. Uncompress the sentryhd-mm-linux-xxx.tar.gz:
gunzip sentryhd-mm-linux-xxx.tar.gz
5. Extract the sentryhd-mm-linux-xxx.tar:
tar xvf sentryhd-mm-linux-xxx.tar
6. Run the install script:
./install

```
+-----+
| SentryHD for Linux           |
| Copyright (c) 2013 Para Systems, Inc. |
| All Rights Reserved.         |
+-----+

Do you want to install the SentryHD? [y|n]
```

7. Press 'y' to start the installation process:

```
+-----+
| SentryHD for Linux           |
| Copyright (c) 2013 Para Systems, Inc. |
| All Rights Reserved.         |
+-----+

The destination directory is /usr/local/sentryhd.

Copying files .....
Install service link.

SentryHD          0:off 1:off 2:off 3:on  4:off 5:on  6:off

Starting SentryHD ... done

Do you want to configure the SentryHD right now? [y|n]
```

SentryHD Software

8. Now SentryHD has been installed in the following directory `/usr/local/sentryhd/` and the service program will automatically start up.
9. Press 'y' to launch the `/usr/local/sentryhd/configure` program to configure the basic networking parameters for SentryHD or press 'n' to finish the installation process.

See Chapter 3 for more information about configuring the basic networking parameters.

2.2.2 Uninstall Process

1. Login to the Linux system and change to the root account:
`su root`
2. Change your working directory to `/usr/local/sentryhd`:
`cd /usr/local/sentryhd`
3. Run the uninstall script to remove SentryHD:
`./uninstall`
4. Press 'y' to start the uninstall process.

3. Console Configuration

The configuration program is design to do the basic configuration for SentryHD in the shell mode. The software can be launched at the end of the installation process or you can go to the installed directory to launch it manually.

For Windows it is located in “C:\Program Files\SentryHD\UPS-Config.exe”

For Linux it is installed in “/usr/local/sentryhd/configure”









3.1 Console Menu

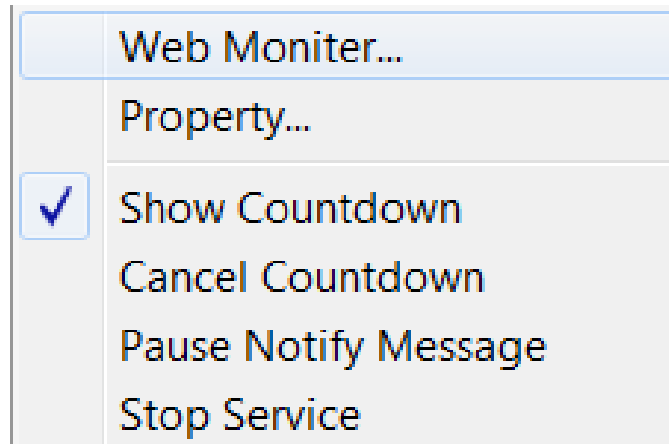
No.	Function	Description	Default
1.	SNMP Server Port	The UDP port for replying to the SNMP get/set commands	161
2.	HTTP	Enable or disable the HTTP protocol	Enable
3.	HTTPS	Enable or disable the HTTPS protocol	Enable
4.	HTTP Port	The TCP port for HTTP	80
5.	HTTPS Port	The TCP port for HTTPS	443
6.	Manageable	Allow the management software to manage SentryHD	Enable
7.	Save	Save the configured parameters to config.ini file	
8.	Set Firewall	Insert or remove the firewall rule for the SentryHD. This option is provided for quickly testing the network communication. The firewall settings may be recovered after the OS reboots.	
9.	Restart SentryHD Service	Restart service program to apply the changes	
0.	Exit	Exit the configuration program	

4. Operation in Windows

After the installation, SentryHD places an icon in the task bar to indicate the status of the monitored UPS.

Icon	Description
	Normal
	Service stopped
	UPS on battery mode
	UPS battery low
	UPS on bypass mode
	UPS disconnected

To show the pop-up menu, move the cursor over the SentryHD icon and then click the mouse button:



4.1 Web Monitor

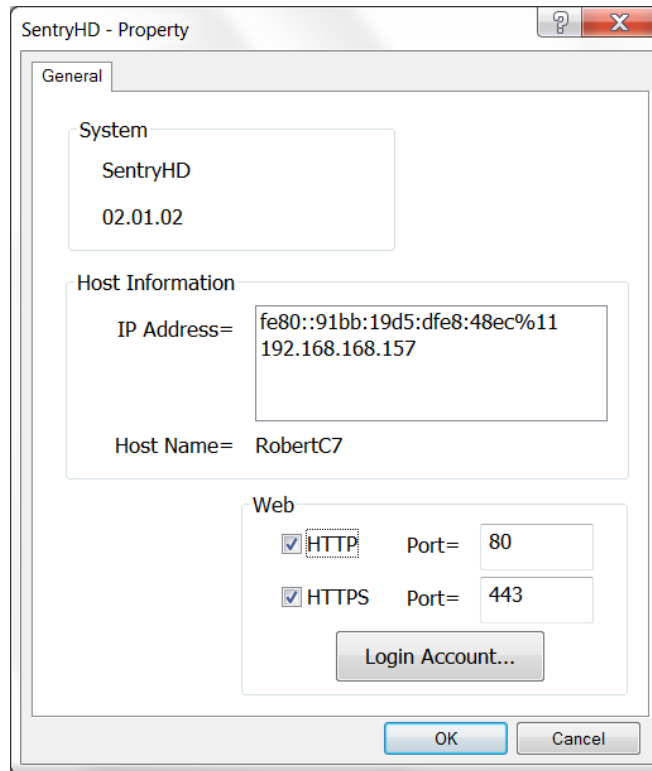
SentryHD allows you to monitor and configure the software through the web interface.

Select the Web Monitor to launch the default web browser. If you are the Administrator then SentryHD will login to its web engine automatically. If you connect via a remote PC then you have to login with the proper account and password.

For more detailed information about the web operation, refer to the Chapter 5.

4.2 Property

Selecting the Property menu provides another way to configure the basic parameters of SentryHD. From the General page you can observe the software version number, IP address, host name and the default web ports.



4.2.1 HTTP:

The HTTP port can be enable / disabled and assigned a different number. The default value is enabled and port 80. If you have changed the HTTP port number from 80 then you have to key in the URL as follows: `http://192.168.1.100:8001`. Where 192.168.1.100 is the IP address of the PC where SentryHD is installed and the 8001 is the port number which you assigned.

NOTE: Check the Windows firewall setting if the HTTP connection is refused.

4.2.2 HTTPS:

The HTTPS port can be enable / disabled and assigned a different number. The default value is enabled and port 443. If you have changed the HTTPS port number from 443 then you have to key in the URL as follows: `http://192.168.1.100:4430`. Where 192.168.1.100 is the IP address of the PC where SentryHD is installed and the 4430 is the port number which you assigned.

NOTE: Check the Windows firewall setting if the HTTP connection is refused.

4.2.3 Login Account:

SentryHD implements 3 levels of authentication for the web login as follows:

Administrator: Has sole right to modify the SentryHD system settings.

Device Manager: Does not have the rights to change the system settings, but is permitted to modify device-related settings.

Read Only User: Does not have the rights to change any of the system or device-related settings. The Read-Only User is only permitted to observe the SentryHD status.

The following is the default account and password list.

NOTE: They are case-sensitive.

Authentication	Account	Password
Administrator	admin	password
Device Manager	device	password
Read Only User	user	password

The screenshot shows a window titled "Web Login Account" with a close button in the top right corner. The window contains three distinct sections for configuring user accounts:

- Administrator:** The "Account" field contains "admin" and the "Password" field contains ten dots.
- Device Manager:** The "Account" field contains "device" and the "Password" field contains ten dots.
- Read Only User:** The "Account" field contains "user" and the "Password" field contains ten dots.

At the bottom right of the window, there is a blue "Save" button.

4.3 Show Countdown

Select the Show Countdown menu to display the countdown window when SentryHD starts counting down for the OS shutdown delay.



4.4 Cancel Countdown

Select the Cancel Countdown menu during the counting down to stop the shutdown process. To resume the shutdown process, uncheck the Cancel Countdown menu item.

NOTE: When the shutdown event changes the software will start a new countdown process.

4.5 Pause Notify Message

Selecting the Pause Notify Message will stop the next pop-up notification message. The notification will resume the next time the status changes.

4.6 Stop Service

Selecting the Stop Service menu item will stop the SentryHD service module. To restart the service, uncheck the Stop Service menu item.

5. Web Interface

5.1 Run a Web Browser

To connect to SentryHD from the same PC where SentryHD is installed, select the Web Monitor from the task bar menu. SentryHD will open your default web browser and if you are the Administrator you will be automatically logged in.

NOTE: SentryHD allows a maximum of 16 users to be logged in at the same time.

You can also connect to SentryHD from a remote PC. Start your Web Browser. Enter `http://host_name` or `http://ip_address` in the address bar for the plain text web transmission or `https://host_name` or `https://ip_address` for the encrypted web transmission. If you have changed the port number for HTTP or HTTPS then enter `http://host_name:port_number` or `http://ip_address:port_number` in the address bar for the plain text web transmission or `https://host_name:port_number` or `https://ip_address:port_number` for the encrypted web transmission.

NOTE: Connecting to SentryHD from a remote PC will require you to login.



SentryHD

User Name :

Password :

Site IP: 192.168.168.157

5.2 Monitor >> Information >> Summary

Go to **Monitor >> Information >> Summary** to view the information about the identification, the shutdown status, the UPS status and the last 5 event logs.

NOTE: SentryHD will automatically logout the user if there is no data transmission for more than 30 minutes.

The screenshot shows the SentryHD web interface. At the top, there are logos for 'MINUTE MAN POWER TECHNOLOGIES' and 'SentryHD POWER MANAGER'. The system time is 'Wed 12/19/2012 PM 03:21:48'. The navigation menu includes 'Monitor', 'Device', and 'System'. The current page is 'Monitor >> Information >> Summary'. The left sidebar has a 'Summary' section with sub-items: Battery, In/Out/Bypass, Identification, Status Indication, and ShutdownAgent. The main content area is divided into several sections:

- Summary:**
 - Identification:** Model: E750RTL2U, Type: Line interactive, Rating VA: 750 VA. A 'Detail...' link is present.
 - UPS Properties:**
 - UPS Communication: Normal
 - UPS Health: Normal
 - Output Source: Normal
 - Output Load: 33% (represented by a progress bar)
 - Battery Status: Normal
 - Battery Capacity: 100% (represented by a progress bar)
- Shutdown:**
 - Shutdown Type: Shutdown
 - OS Countdown: (represented by a green box with a minus sign)
 - Schedule:**
 - Next Shutdown Time:
 - Next Restart Time:
 - Next Test Time:
 - Next Deep Batt. Test Time:
 - Weekly Schedule ..
 - Specific Schedule ..
- Last 5 Event Log:**

	Date/Time	Event Level	Event Description
1	12/19/2012 15:21:43	System	Account admin login from 127.0.0.1:29874
2	12/19/2012 15:17:32	System	IPv4-HTTP: OK IPv6-HTTP: OK IPv4-HTTPS: OK IPv6-HTTPS: OK
3	12/19/2012 15:17:32	System	IPv4-SNMP Server: OK IPv6-SNMP Server: OK
4	12/19/2012 15:17:27	System	Service program startup
5	12/18/2012 16:05:33	System	Service program is terminated

Identification: Displays the information about the UPS's Model, Type and VA Rating.

UPS Properties: List the major UPS properties for monitoring the UPS health, output and battery status.

Shutdown: Displays the shutdown type (Shutdown, Power Off, Hibernate) and the countdown time to shutdown the OS (in second).

Schedule: Perform a shutdown and restart, a 10-second test or a deep battery test.

Last 5 Event Log: Shows the last 5 event logs if you want to see more event logs see the Event Log page.

5.3 Monitor >> Information >> Battery

Go to **Monitor >> Information >> Battery** to view the information of the Battery Status, the Battery Measurement, and the Battery Replacement Date.

The screenshot shows the SentryHD software interface. At the top, there are logos for MINUTE MAN POWER TECHNOLOGIES and SentryHD POWER MANAGER. The system time is Wed 02/06/2013 AM 08:10:08. The main navigation bar includes Monitor, Device, and System. The left sidebar has a menu with options like Summary, Battery, In/Out/Bypass, Identification, Status Indication, and ShutdownAgent. The main content area is titled 'Monitor » Information » Battery' and contains a 'Battery' tab. The data is organized into sections: Status (Normal, Charging, Passed, 0 seconds), Measurement (100% capacity, 41.4 V, 23 °C, 34 minutes), and Replacement Date (Last: 10/30/2011, Next: 10/29/2016).

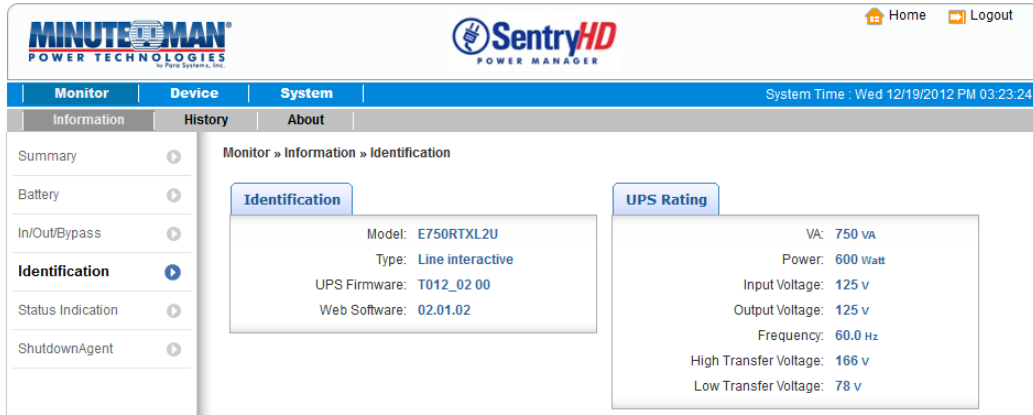
5.4 Monitor >> Information >> In/Out/Bypass

Go to **Monitor >> Information >> In/Out/Bypass** to view the information of the Input, the Bypass (not applicable to all models) and the Output measurements.

The screenshot shows the SentryHD software interface. At the top, there are logos for MINUTE MAN POWER TECHNOLOGIES and SentryHD POWER MANAGER. The system time is Wed 12/19/2012 PM 03:23:03. The main navigation bar includes Monitor, Device, and System. The left sidebar has a menu with options like Summary, Battery, In/Out/Bypass, Identification, Status Indication, and ShutdownAgent. The main content area is titled 'Monitor » Information » In/Out/Bypass' and contains 'Input', 'Output', and 'Bypass' tabs. The 'Input' tab shows Frequency: 60.0 Hz and Voltage: 122.7 V. The 'Output' tab shows Output Source: Normal, Frequency: 60.0 Hz, Voltage: 122.7 V, Current: 1.6 A, Power: 204 Watt, and Loading: 33%. The 'Outlet Bank' section shows two outlets, 1 and 2, both with green status indicators.

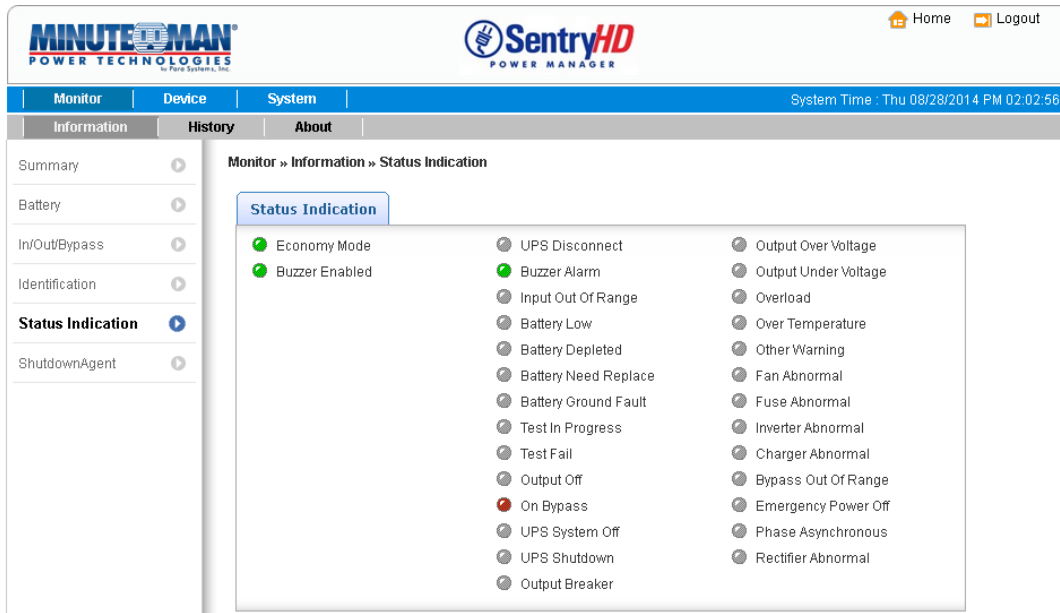
5.5 Monitor >> Information >> Identification

Go to **Monitor >> Information >> Identification** to view the Identification and the UPS Rating information.



5.6 Monitor >> Information >> Status Indication

Go to **Monitor >> Information >> Status Indication** to view the status of the UPS.



5.7 Monitor >> Information >> ShutdownAgent

Go to **Monitor >> Information >> ShutdownAgent** to view the information about the MM ShutdownAgents which you assigned to work with SentryHD to protect a group of servers.

The screenshot shows the SentryHD web interface. At the top, there are logos for MinuteMan Power Technologies and SentryHD Power Manager. The system time is Tue 02/05/2013 PM 02:18:42. The main navigation bar includes Monitor, Device, and System. The left sidebar has tabs for Information, History, and About. The main content area is titled 'Monitor » Information » ShutdownAgent'. It features a table with columns: IP Address, OS, Countdown (sec), Reason, and Last Touch (sec). One entry is visible with IP 192.168.168.175, OS Microsoft Windows XP Professional Service Pack 3 (build 2600), and a last touch of 2 seconds.

IP Address	OS	Countdown (sec)	Reason	Last Touch (sec)
192.168.168.175 RobertXP	Microsoft Windows XP Professional Service Pack 3 (build 2600)		None	2

5.8 Monitor >> History >> Event Log

Go to **Monitor >> History >> Event Log** to view the events that occurred. The existing events are overwritten when the maximum number of entries (10,000) is reached. You can also download the entire event log file (event_log.csv).

The screenshot shows the SentryHD web interface with the Event Log view selected. The system time is Thu 12/20/2012 AM 08:48:48. The left sidebar has tabs for Event Log, Data Log, and Configure. The main content area is titled 'Monitor » History » Event Log » Page1'. It includes a table with columns: Date, Time, Level, and Event Log. The table lists various system events such as account admin logins, power restores, battery mode changes, and shutdown countdowns.

Date	Time	Level	Event Log
12/20/2012	08:48:05	System	Account admin login from 127.0.0.1:23989
12/20/2012	00:27:33	Warning	Power restore
12/20/2012	00:27:27	Warning	No longer on battery mode
12/20/2012	00:27:26	Information	No longer discharging from battery
12/20/2012	00:27:23	Warning	On battery mode
12/20/2012	00:27:23	Warning	Power fail
12/20/2012	00:27:17	Information	Battery is discharging
12/19/2012	15:59:36	System	Account admin login from 127.0.0.1:36786
12/19/2012	15:30:59	Warning	Power restore
12/19/2012	15:30:53	Warning	No longer on battery mode
12/19/2012	15:30:52	Information	Stop countdown shutdown
12/19/2012	15:30:52	Information	No longer discharging from battery
12/19/2012	15:30:45	Warning	Countdown to shutdown OS in 04:59 second(s)
12/19/2012	15:30:45	Warning	On battery mode
12/19/2012	15:30:45	Warning	Power fail
12/19/2012	15:30:41	Information	Battery is discharging
12/19/2012	15:30:37	Warning	Power restore
12/19/2012	15:30:33	Information	Stop countdown shutdown
12/19/2012	15:30:33	Information	No longer discharging from battery
12/19/2012	15:30:31	Warning	No longer on battery mode
12/19/2012	15:30:26	Warning	Countdown to shutdown OS in 04:59 second(s)
12/19/2012	15:30:26	Warning	On battery mode
12/19/2012	15:30:26	Warning	Power fail
12/19/2012	15:30:23	Information	Battery is discharging
12/19/2012	15:21:43	System	Account admin login from 127.0.0.1:29874
12/19/2012	15:17:32	System	IPv4-HTTP: OK IPv6-HTTP: OK IPv4-HTTPS: OK IPv6-HTTPS: OK
12/19/2012	15:17:32	System	IPv4-SNMP Server: OK IPv6-SNMP Server: OK
12/19/2012	15:17:27	System	Service program startup
12/18/2012	16:05:33	System	Service program is terminated
12/18/2012	14:00:15	System	Account admin login from 127.0.0.1:15022

Date: The date when the event occurred.

Time: The time when the event occurred.

Level: The Event Level of the event occurred.

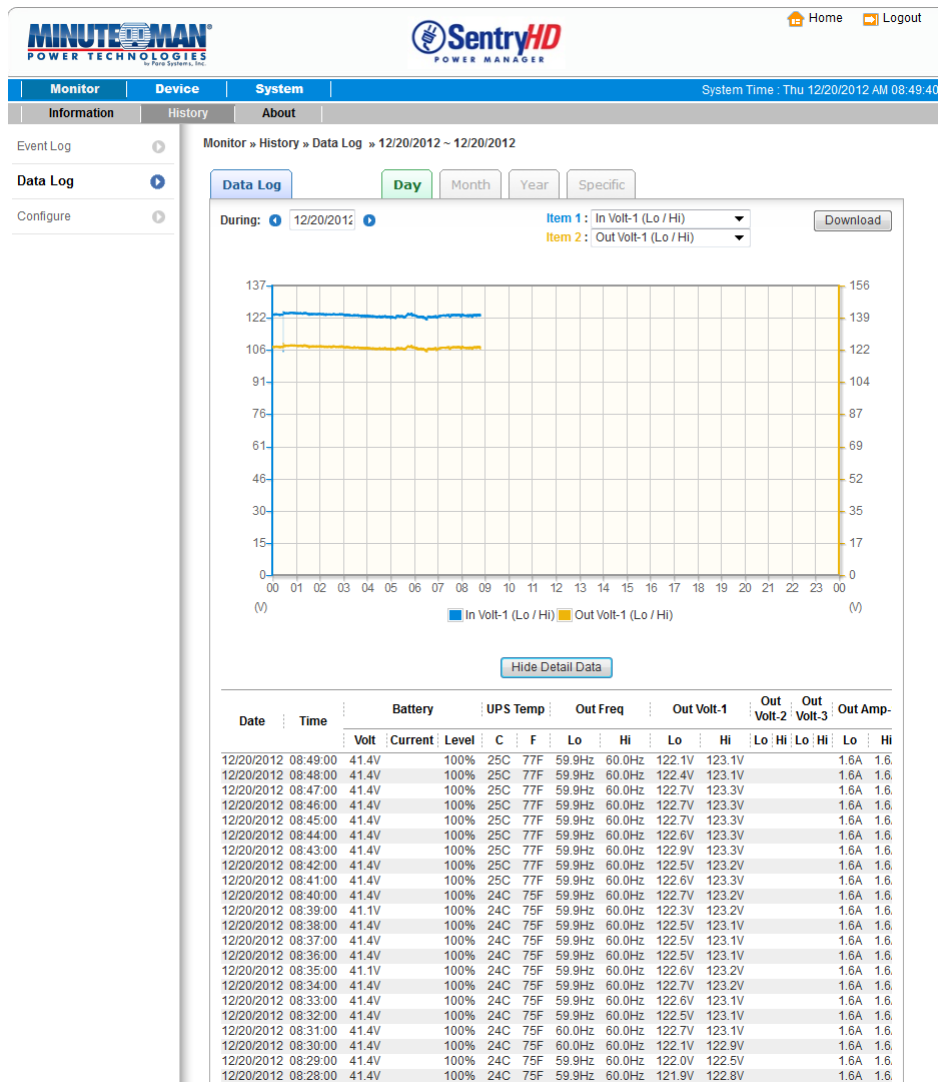
Event Log: The description of the event that occurred.

Download All: Download the entire event log file in csv format.

SentryHD sends a request to the UPS, collects the event logs saved in the UPS, and displays them in the event log. Please note that this option only appears when the UPS supports this function, and the event logs saved in the UPS may be different from the event logs saved in the SentryHD.

5.9 Monitor >> History >>Data Log

Go to **Monitor >> History >> Data Log** to view the history values for a single day, a month, a year and a user defined period of time. You can also download the history data by clicking the “Download” button.



5.9.1 Observe by Day

Click on the **Day** tab to view the history values for a specific day.

Date Text Box: Click on the Date text box to pop-up a calendar to pick a date to view the history values for the connected UPS.

Line Chart: Each line color indicates a different item's value. Move your cursor over the line to display the time and associated value.

Color Boxes: Click on the color boxes to disable the line, click them again to enable the line.

Download: Exports the data log to a csv file.

5.9.2 Observe by Month

Click on the **Month** tab to view the history values for a specific month.

Date Text Box: Click on the Month text box to pop-up a calendar to pick a month to view the history values for the connected UPS.

Line Chart: Each line color indicates a different item's value. Move your cursor over the line to display the time and associated value.

Color Boxes: Click on the color boxes to disable the line, click them again to enable the line.

Download: Exports the data log to a csv file.

5.9.3 Observe by Year

Click on the **Year** tab to view the history values for a specific year.

Year Text Box: Click on the Year text box to pop-up a calendar to pick a year to view the history values for the connected UPS.

Line Chart: Each line color indicates a different item's value. Move your cursor over the line to display the time and associated value.

Color Boxes: Click on the color boxes to disable the line, click them again to enable the line.

Download: Exports the data log to a csv file.

5.9.4 Observe by User Defined

Click on the **Specific** tab to view the history values for a specific period of time.

Date Text Box: Click on the Date text box to pop-up a calendar to pick a range of days then press the Apply button to view the items for the connected UPS.

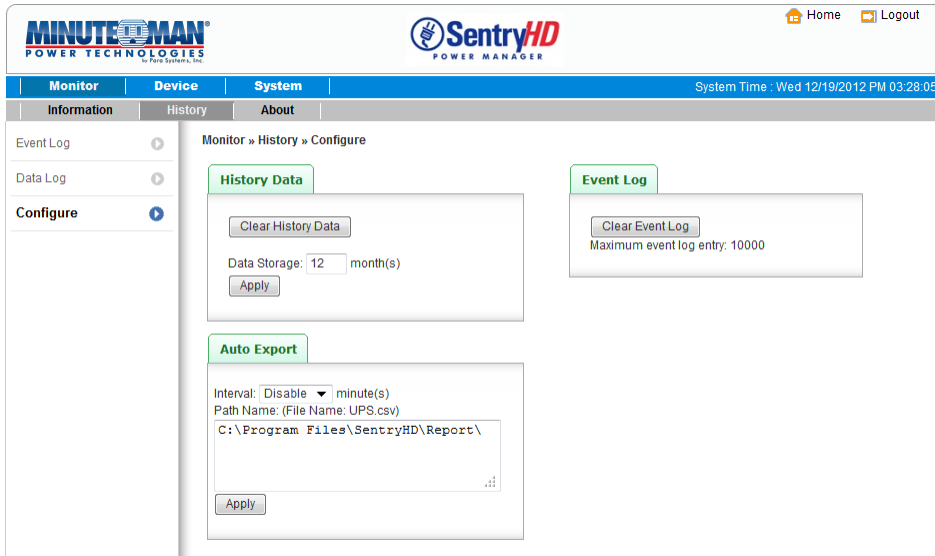
Line Chart: Each line color indicates a different item's value. Move your cursor over the line to display the time and associated value.

Color Boxes: Click on the color boxes to disable the line, click them again to enable the line.

Download: Exports the data log to a csv file.

5.10 Monitor >> History >> Configure

Go to **Monitor >> History >> Configure** to clear the history data logs and event logs. You can also assign the Save Data Interval.



Clear Event Log: Clears all of the data logs.

Data Storage: Assign the number of months you want to save the data log.

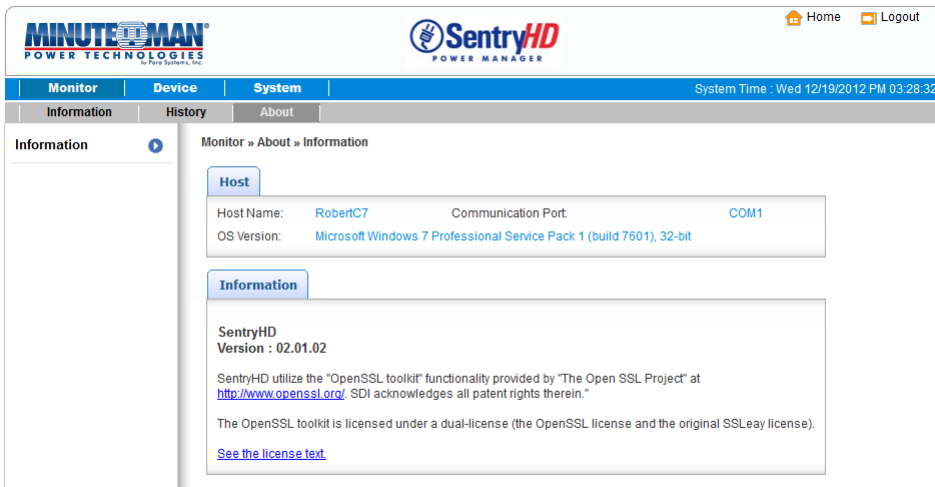
Auto Export: Saves the data log in the specified directory at the assigned interval. The software creates the “UPS.csv” file to export the data.

Interval: The interval to append the UPS data to the file.

Path Name: The directory where data file will be exported to.

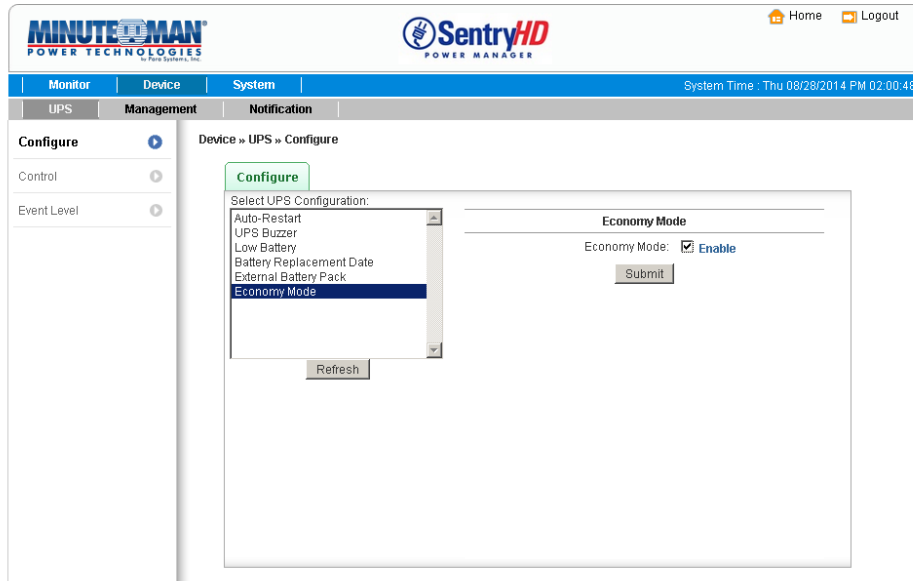
5.11 Monitor >> About Information

Go to **Monitor >> About >> Information** to view the information about the Host computer and SentryHD.



5.12 Device >> UPS >> Configure

Go to **Device >> UPS >> Configure** to configure the UPS. The configuration values are saved in the UPS or in SentryHD and these values change the operation of the UPS. The configuration items include the following.



NOTE: Different UPSs support different configuration options.

Auto Restart: After you click Submit to confirm your auto restart setup, the SentryHD will send the command to the UPS to enable auto restart. The default value is enable.

UPS Buzzer: After you click Submit to confirm your buzzer setup, the SentryHD will send the command to the UPS to enable buzzer. The default value is enable.

Low Battery: This configuration saves the setup values in the SentryHD and compares with the values received from the UPS. If the received battery level is lower than the assigned one, the SentryHD will trigger a low-battery alarm. The default value is disabled.

Battery Replacement Date: After you set up the battery replacement dates, the SentryHD will send the command to the UPS and save the information in the UPS. The user can define how many days in advance that they want to be notified of the Next Battery Replacement Date. The default values are enable and 60-days.

External Battery Pack: After you click Submit to confirm the number of External Battery Packs that are connected to the UPS, SentryHD will send the command to the UPS and save the information in the UPS. The default value is 0 (except for the ED5-20KVA UPS series, which the default value is 1).

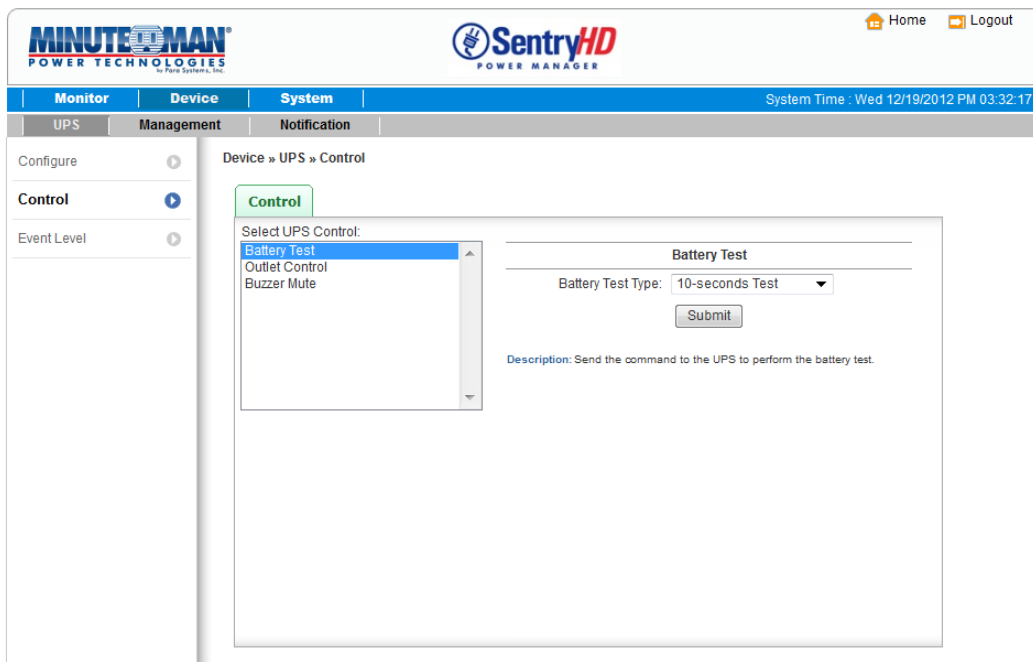
NOTE: The correct number of External Battery Packs must be selected so that the UPS and SentryHD will report the proper Estimated Runtime.

Outlet Banks: This option is for the “Load Shedding” function. The user can turn off Bank 1 or Bank 2 whichever has the non-mission critical equipment connected to it. Turning off this outlet bank can extend the battery backup time for the mission critical equipment.

Economy Mode: Configure the UPS to operate in the Economy mode. See the UPS user’s manual for the Economy mode operation.

5.13 Device >> UPS >>Control

Go to **Device >> Management >> Control** to configure the control commands. After you click Submit, SentryHD will send the commands to the UPS to enable the functions. The control items include the following:



Battery Test: After you select the battery test type and click Submit SentryHD will send the command to the UPS to perform the selected battery test.

Outlet Control: Press the Switch Bank button to control the UPS outlet banks to turn them off or turn them on.

Buzzer Mute: The UPS’s buzzer/alarm can be silenced while the UPS is operating in the Battery Mode. Once the UPS reaches a Low Battery Warning the buzzer/alarm will be turned back on and cannot be silenced during this period. If the UPS switches back to the AC Normal Mode the buzzer/alarm will be reset. Once another power failure occurs the buzzer/alarm will sound. The buzzer/alarm cannot be silenced during fault conditions.

5.14 Device >> UPS >>Event Level

Go to **Device >> UPS >> Event Level** to set up different event levels. If you want to receive an event notification, refer to **Notification - SNMP Trap** and **Notification - Mail Server**.

The screenshot shows the 'Event Level' configuration page in the SentryHD web interface. The page title is 'Device » UPS » Event Level'. On the left, there is a navigation menu with options: 'Configure', 'Control', and 'Event Level' (selected). The main content area shows a table of event levels. At the top, there is a dropdown menu for 'Level' set to 'Alarm' and an 'Update' button. The table has two columns: 'Event Description' and 'Level'.

	Event Description	Level
1	Over temperature	Alarm
2	Recover from over temperature	Alarm
3	Power fail	Warning
4	Power restore	Warning
5	Output abnormal	Alarm
6	Recover from output abnormal	Alarm
7	Overload	Warning
8	Recover from overload	Warning
9	Bypass abnormal	Alarm
10	Recover from bypass abnormal	Alarm
11	Turn UPS output off	Alarm
12	Turn UPS output on	Alarm
13	UPS shutdown	Warning
14	Recover from UPS shutdown	Warning
15	Charger abnormal	Alarm
16	Charger back to normal	Alarm
17	UPS system off	Alarm
18	UPS system on	Alarm
19	Fan fail	Alarm
20	Recover from fan fail	Alarm
21	Fuse fail	Alarm
22	Recover from fuse fail	Alarm
23	UPS general fail	Alarm
24	UPS recover from general fail	Alarm
25	Waiting for the input power return	Alarm
26	Input power returned	Alarm
27	UPS count down to shutdown	Alarm
28	UPS no longer count down to shutdown	Alarm
29	UPS is shutting down	Warning
30	UPS is not in the shutdown process	Warning
31	UPS buzzer is alarming	None
32	UPS buzzer is no longer alarming	None
33	UPS is in the economic mode	Information
34	No longer in the economic mode	Information
35	Inverter abnormal	Warning
36	Inverter back to normal	Warning
37	Emergency power off	Warning
38	Recover from emergency power off	Warning
39	UPS buzzer is disabled	Information
40	UPS buzzer is enabled	Information

5.15 Device >> Management >> Communication

Go to **Device >> Management >> Communication** to select the appropriate communications port to communicate with the UPS. The default value is Auto. SentryHD will detect the connected UPS automatically and keep this information in the configuration file.

The screenshot shows the 'Communication' configuration page in the SentryHD web interface. The page title is 'Device » Management » Communication'. On the left, there is a navigation menu with options: 'Communication' (selected), 'Configure', 'Control', 'Weekly Schedule', and 'Specific Schedule'. The main content area shows a 'Communication' section with a 'COM Port' dropdown menu set to 'Auto' and a 'Submit' button.

5.16 Device >> Management >> Configure

Go to **Device >> Management >> Configure** to configure the major functions, they are: Shutdown, Reaction, Execute an External Command and Manageable.

The screenshot shows the SentryHD web interface. At the top, there are logos for MINUTE MAN POWER TECHNOLOGIES and SentryHD POWER MANAGER. The navigation bar includes Monitor, Device, and System. The main content area is titled 'Device » Management » Configure' and is divided into three sections: Shutdown, Reaction, and Manageable.

Shutdown Section:

- OS Shutdown Type: Shutdown
- UPS Shutdown Delay: 120 second(s)
- Table of events:

Enable	Event	OS Shutdown Delay (in seconds)
<input checked="" type="checkbox"/>	Power Fail	300 second(s)
<input checked="" type="checkbox"/>	Battery Low	30 second(s)
<input checked="" type="checkbox"/>	Schedule Shutdown	300 second(s)
- Schedule Shutdown:
 - Send the Smart Shutdown SNMP Trap before Shutdown: 120 second(s)

Reaction Section:

- Notify Message
 - Period: 0 second(s)
- Execute Command File
 - File: [input field]
 - Run before Shutdown: 120 second(s)

Manageable Section:

- Allow the SentryHD to be managed by an authenticated manager.

Note: The authenticated manager can be a centralized management software. Enable this option to integrate the SentryHD in the power management environment.

Shutdown: Select the Shutdown Type to determine the best way to shutdown the operating system. The options are Shutdown, Power Off and Hibernate. The default value is Shutdown. Select the event that will trigger the Shutdown action and enter the amount of time it will take the OS to shutdown. If the event recovers during the countdown then the shutdown process will be cancelled, the host will not be shutdown.

Reaction: Enable the Notify Message to pop-up a message box once an event occurs. Assign the period value to report the message periodically, setting a 0 as the value will pop-up the message only once.

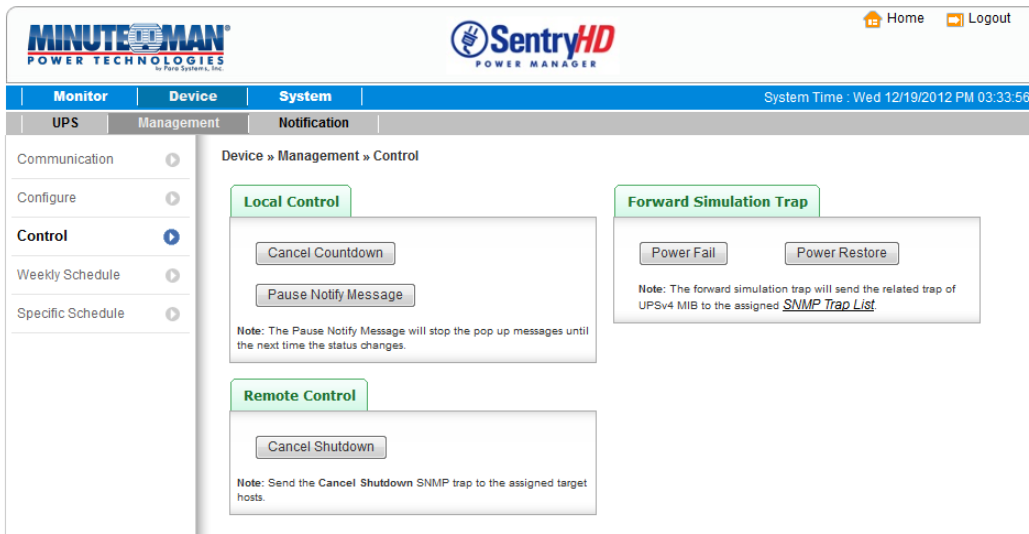
Enable the Execute Command File to run an assigned external file before shutting down. Set a time value to the Run Before Shutdown to inform SentryHD when to launch the assigned executable file.

Manageable: Select Allow the SentryHD to be managed by an authenticated manager option to let SentryHD reply to queries from any authenticated manager. The authenticated manager can be a centralized management software. The authenticated manager can provide a comprehensive list of all of the SentryHDs and ShutdownAgents.

The authenticated manager communicates with SentryHD through SNMPv3 with the first default account in the SNMPv3 USM list. If the Allow the SentryHD to be managed by an authenticated manager option is enabled, then the permission of manager account changes to “Read/Write”, otherwise the permission is Disable. The default setting of Allow the SentryHD to be managed by an Authenticated Manager option is enabled.

5.17 Device >> Management >> Control

Go to **Device >> Management >> Control** to configure the major functions, they are: Local Control, Remote Control, and Forward Simulation Trap.



Local Control: Press the “Cancel Countdown” button during the countdown shutdown process to stop the countdown. Press the button again to resume the shutdown process. In addition to selecting the Resume Countdown menu item to continue the countdown process, it will also start a new countdown process.

Press the “Pause Notify Message” to pause the notification message. The message will resume when the UPS status changes.

Remote Control: Press the “Cancel Shutdown” button to send the Cancel Shutdown trap to all of the target SNMP hosts to stop the shutdown process.

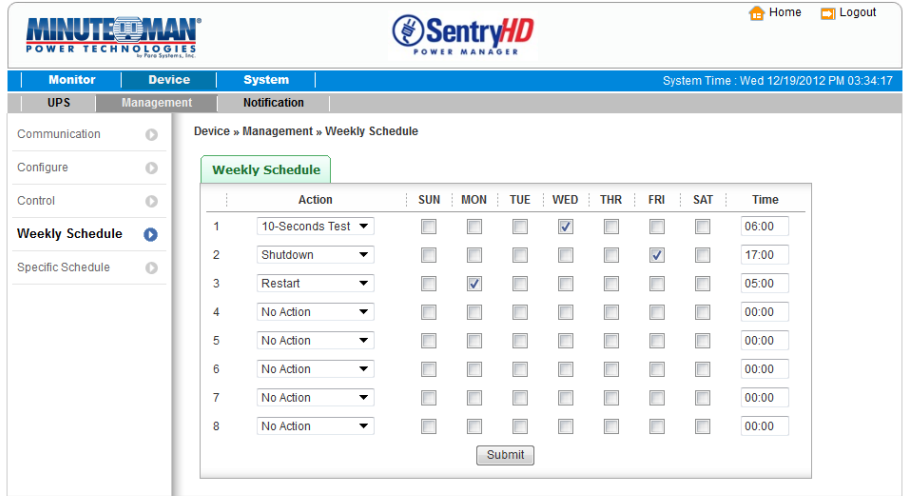
Forward Simulation Trap: Press the “Power Fail” button to send the simulated power fail SNMP trap to the assigned targeted IP addresses.

Press the “Power Restore” button to send the simulated power restore SNMP trap to the assigned targeted IP addresses.

5.18 Device >> Management >> Weekly Schedule

Go to **Device >> Management >> Weekly Schedule** to arrange a weekly schedule for the UPS. You can select No Action, Shutdown, Restart, 10-Second Test, and set up the day and the time you want the action to be executed.

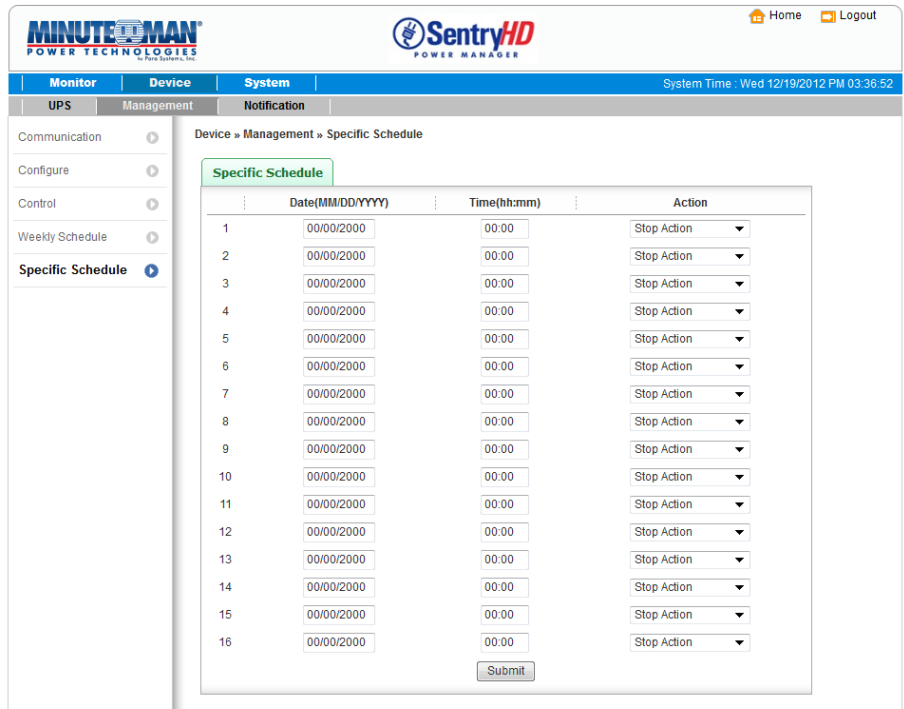
NOTE: The priority of a specific schedule is higher than the weekly schedule.



5.19 Device >> Management >> Specific Schedule

Go to **Device >> Management >> Specific Schedule** to arrange a specific schedule for the UPS. You can set up a specific date (MM/DD/YYYY) and time (hh:mm) for a specific action (Stop Action, Shutdown, Restart, 10-Second Test, Deep Battery Test) to be performed.

NOTE: The priority of a specific schedule is higher than the weekly schedule.



5.20 Device >> Notification >> SNMPv1 Access

Go to **Device >> Notification >> SNMPv1 Access** to configure the SNMPv1 access. SentryHD supports SNMP protocol and SNMP NMS (Network Management System), which are commonly used to monitor network devices. To prevent unauthorized access you can specify the NMS IP addresses, their community strings and access levels. The maximum number of IP entries is 255.

Device » Notification » SNMPv1 Access

SNMPv1 Access Table

SNMP Port: 161 Download MIB: [SentryHD](#)

Access IP: 192.168.168.175 Access IP address 0.0.0.0 will allow the SNMP packets to be received from any host.

Community: public

Permission: Read Only

	IP Address	Community	Permission
1	192.168.168.175	public	Read Only

5.21 Device >> Notification >> SNMPv3 USM

Go to **Device >> Notification >> SNMPv3 USM** to configure the SNMPv3 access. SNMPv3 offers features such as the encryption of packets and authentication to improve security. The SNMPv3 USM (User Session Management) allows you to assign 32 User Names whose access is granted via SNMPv3 protocol. You can also define their respective Security Levels, Auth Passwords, Priv Passwords and Permission. The first account cannot be deleted, to disable it go to the **Device >> Management >> Configure** page and then uncheck the manageable option.

Device » Notification » SNMPv3 USM

SNMPv3 USM

Context Name: cn1027

Auth Protocol: MD5 Priv Protocol: CBC-DES

User Name: manager Security Level: Auth, Priv

Auth Password: ***** Priv Password: *****

Permission: Read/Write

	User Name	Security Level	Auth Password	Priv Password	Permission
1	manager	Auth, Priv	*****	*****	Read/Write

5.22 Device >> Notification >> SNMP Trap

Go to **Device >> Notification >> SNMP Trap** to configure the SNMP Traps. To enable the SNMP Traps, you must add the Target IP addresses to the Target IP list. Specify the Community String, Trap Type, MIB, SNMPv3 User Name (If the Trap Type is SNMPv3), UDP port, and Event Level. To update or delete a Target IP address, select the IP address in the Target IP list, and click Update or Delete. You can add up to 255 Target IP addresses in the list.

The screenshot shows the SentryHD web interface. The top navigation bar includes 'Monitor', 'Device', and 'System' tabs. The 'Device' tab is active, and the 'Notification' sub-tab is selected. The main content area is titled 'Device » Notification » SNMP Trap' and contains a form for configuring an SNMP Trap. The form includes the following fields:

- Target IP: 192.168.168.175
- Community String: public
- Trap Type: SNMPv1
- MIB: UPSv4
- Send Trap: Once
- Trap Port: 162
- SNMPv3 User Name: (empty)
- Event Level: MM ShutdownAgent

Below the form, there is a note: "The SNMPv3 User Name must be the same as the User Name in the SNMPv3 USM table." and three buttons: Add, Update, and Delete. At the bottom, there is a table with the following data:

	Target IP	Community	Port	MIB	Type	Event Level	SNMPv3 User
1	192.168.168.175	public	162	UPSv4	v1	MM ShutdownAgent	

You can select which event notifications should be sent to the Target IP addresses.

Event Level: Three Event Levels are listed as follows:

Information: All event notifications are sent to the target IP address.

Warning: Both Warning and Alarm event notifications are sent to the target IP address.

Alarm: Only Alarm event notifications are sent to the target IP address.

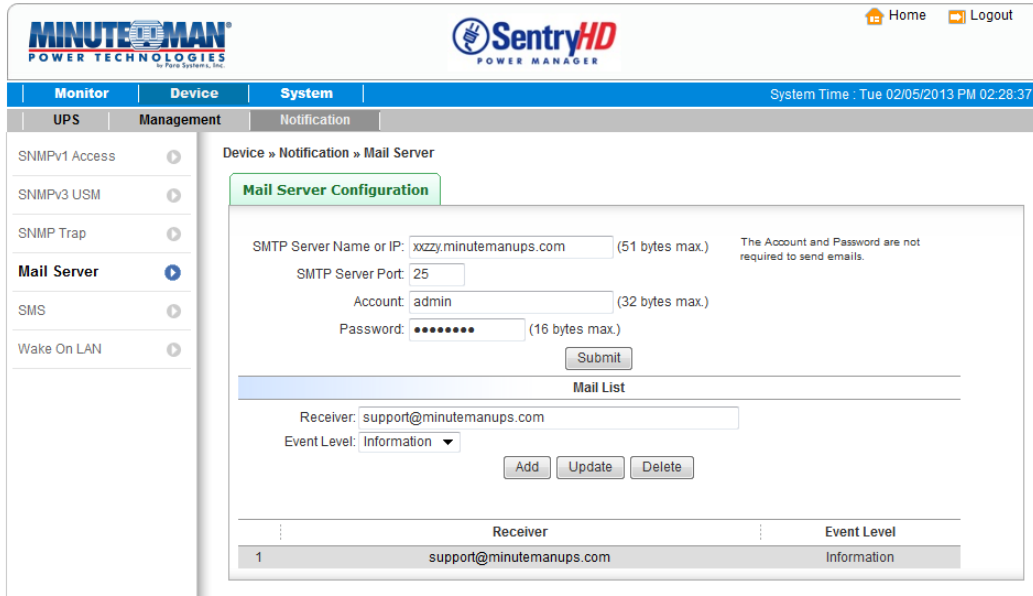
Go to **Device >> Management >> Event Level** to change the event level.

MM ShutdownAgent: All of the power events will be sent to the assigned MM ShutdownAgent. SentryHD will collect all of the MM ShutdownAgent information via the SNMPv3 “manager” account and then display them in the **Monitor >> Information >> ShutdownAgent** page.

NOTE: SentryHD provides SNMPv1, SNMPv2c and SNMPv3 traps. If you use the SNMPv3 trap, the SNMPv3 USM table must be configured.

5.23 Device >> Notification >> Mail Server

Go to **Device >> Notification >> Mail Server** to configure the email notifications. The user can set up the SMTP Server and the email receiver so the designated recipient can receive the email notification from SentryHD whenever an event occurs.



SMTP Server: This is the hostname of the SMTP Mail Server used to send the email message from SentryHD.

Account: The SMTP server login account (Not required).

Password: The SMTP Server login password (Not required).

Add, Update, and Delete: Add, update or delete a receiver.

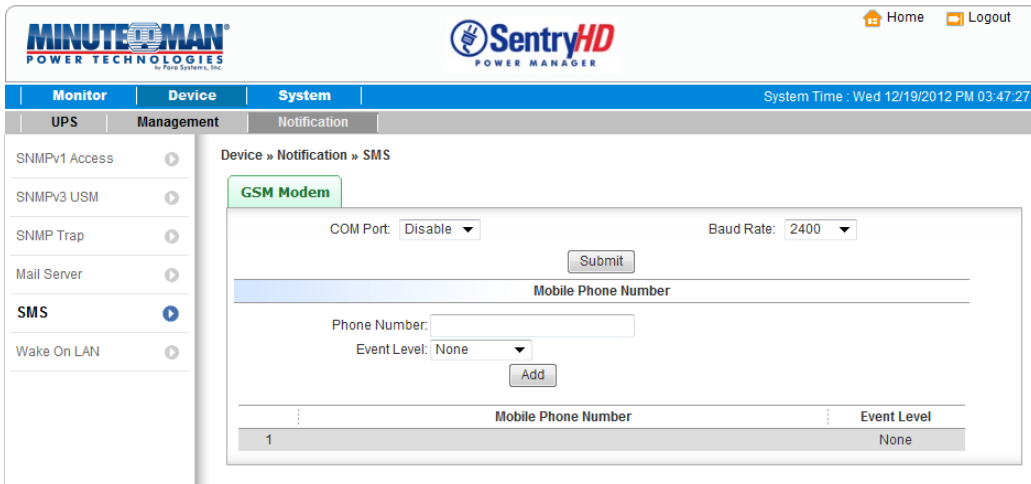
5.24 Device >> Notification >> SMS

Go to **Device >> Notification >> SMS** to configure the SMS parameters. To send the SMS message to your mobile phone, a GSM modem must be connected to your computer through a RS232 COM port. SentryHD will send the SMS through AT command by PDU format. Any GSM modem that supports the following three AT commands will work with SentryHD:

- AT
- AT+CMGF
- AT+CMGS

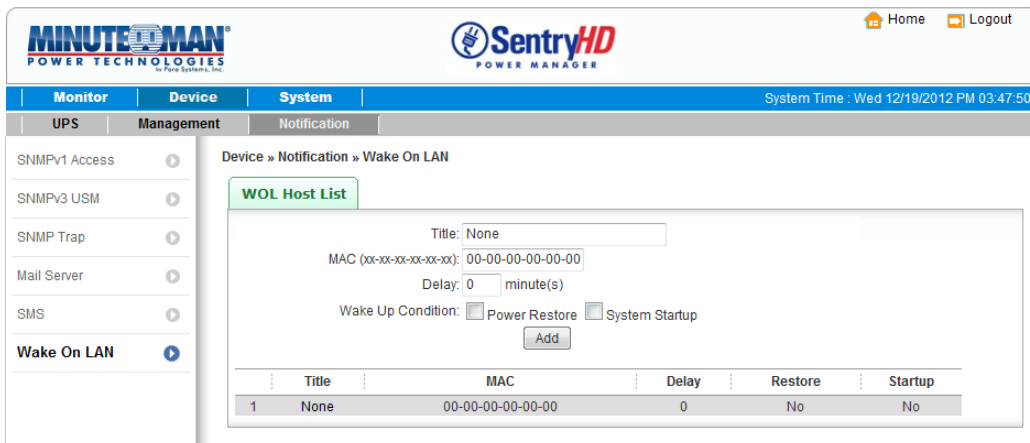
GSM Modem: Assign a COM port and the Baud Rate for the GSM modem.

Mobile Phone Number: Add, edit or delete the mobile phone numbers in the list.



5.25 Device >> Notification >> Wake On LAN

Go to **Device >> Notification >> Wake On LAN** to configure the parameters to start up client PCs through the network using their MAC address. The maximum is 256 MAC addresses. This configuration can wake up client PCs after the power is restored or SentryHD starts up



5.26 System >> Administration >> Information

Go to **System >> Administration >> Information** to assign the system information for SentryHD, including the Installation Date, the Location and a Description.

The screenshot shows the SentryHD web interface. At the top, there are logos for 'MINUTE MAN POWER TECHNOLOGIES' and 'SentryHD POWER MANAGER'. A navigation bar contains 'Monitor', 'Device', and 'System' tabs. The 'System' tab is active, and the breadcrumb trail is 'System >> Administration >> Information'. On the left, a sidebar menu has 'Information' selected. The main content area is titled 'System >> Administration >> Information' and contains a form with the following fields:

- System Name: SentryHD
- System Contactor: Para
- System Location: RPC
- Installation Date: 12/18/2012 (MM/DD/YYYY)
- Description: Battery Backup

A 'Submit' button is located at the bottom of the form.

5.27 System >> Administration >> Login User

Go to **System >> Administration >> login User** to manage the login authentication for the web interface by assigning 3 different levels of user accounts.

The access permission for the account types are listed as follows:

- Administrator:** Permitted to modify all settings.
- Device Manager:** Permitted to modify device-related settings.
- Read Only User:** Only permitted to view the SentryHD status.

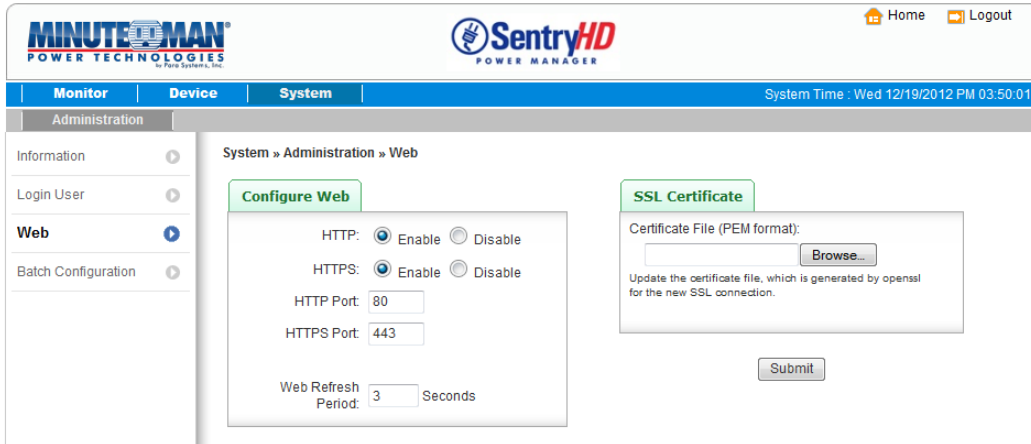
The screenshot shows the SentryHD web interface. At the top, there are logos for 'MINUTE MAN POWER TECHNOLOGIES' and 'SentryHD POWER MANAGER'. A navigation bar contains 'Monitor', 'Device', and 'System' tabs. The 'System' tab is active, and the breadcrumb trail is 'System >> Administration >> Login User'. On the left, a sidebar menu has 'Login User' selected. The main content area is titled 'System >> Administration >> Login User' and contains a table with the following data:

	Privilege	Account Name (16 chars max.)	Password (16 chars max.)
1	Administrator	admin
2	Device Manager	device
3	Read Only User	user

A 'Submit' button is located at the bottom of the table.

5.28 System >> Administration >> Web

Go to **System >> Administration >> Web** to configure the HTTP/HTTPS communication protocols available in SentryHD.



HTTP: Enabling or disabling the HTTP connection with SentryHD.

HTTPS: Enabling or disabling the HTTPS connection with SentryHD.

HTTP Port: The HTTP port can be changed to a different port instead of the standard HTTP port (80).

HTTPS Port: The HTTPS port can be changed to a different port instead of the standard HTTP port (443).

Web Refresh Period: The time period to refresh the web pages. The range is 1~9999 seconds.

SSL Certificate: To ensure a secure connection between SentryHD and the connected workstation, an SSL certificate can be used to encrypt and secure the integrity of transmitting data.

Certificate File: This allows you to replace your own SSL certificate file. SentryHD supports PEM format which is generated by OpenSSL. Click Choose File to upload a certificate file.

5.29 System >> Administration >> Batch Configuration

Go to **System >> Administration >> Batch Configuration** to perform batch configurations. SentryHD provides batch configuration to allow quick and effortless setup on multiple SentryHD hosts. You can duplicate settings by downloading the configuration file from the SentryHD that you have successfully configured, and upload the configuration files on other hosts.

Download: Download the config.ini for you to store or edit the configuration file.

Upload: Upload the configuration file to SentryHD to apply the changes.

The screenshot displays the SentryHD web interface. At the top, there are logos for 'MINUTE MAN POWER TECHNOLOGIES' and 'SentryHD POWER MANAGER'. Navigation links for 'Home' and 'Logout' are visible. A blue navigation bar contains 'Monitor', 'Device', and 'System' tabs. Below this, a sidebar menu lists 'Administration', 'Information', 'Login User', 'Web', and 'Batch Configuration' (which is selected). The main content area is titled 'System » Administration » Batch Configuration' and features a 'System Configuration' section with 'Download' and 'Upload' buttons. A 'Description' section explains the batch configuration process, followed by five numbered steps: Step 1 (Download), Step 2 (File format), Step 3 (Editing), Step 4 (Upload), and Step 5 (Waiting for updates). The system time is shown as 'Wed 12/19/2012 PM 03:50:18'.

6. 2008 Server Core Setup for SentryHD

While installing SentryHD in the 2008 server core, it requires the following commands to transfer the file and add some rules for firewall.

1. Disable firewall:

```
netsh advfirewall set allprofiles state off
```

2. Enable firewall:

```
netsh advfirewall set allprofiles state on
```

3. Add a remotely shared directory:

```
net use e: \\<ip address>\e
```

4. Open the SNMP Trap UDP 162

```
netsh advfirewall firewall add rule name="SNMPTrap" protocol=UDP dir=out localport=162 action = allow
```

5. Open SNMP Server UDP 161

```
netsh advfirewall firewall add rule name="SNMPServer" protocol=UDP dir=in localport=161 action = allow
```

6. Open the HTTP TCP 80

```
netsh advfirewall firewall add rule name="HTTP" protocol=TCP dir=in localport=80 action = allow
```

7. Open HTTPS TCP 443

```
netsh advfirewall firewall add rule name="HTTPS" protocol=TCP dir=in localport=443 action = allow
```

First, put the SentryHD-Setup(x64).exe setup file in the 2008 server directory. If there is no CD-ROM you can set the "Disable firewall" command, "Add a remotely shared directory" command then copy the file from your PC to the 2008 server. Don't forget to set the "Enable firewall" command when finished.

Second, follow Chapter 2 to install SentryHD in the 2008 server.

The last step is to use the open HTTP/HTTPS, SNMP Trap/Server port commands to open the necessary ports.

SentryHD Software

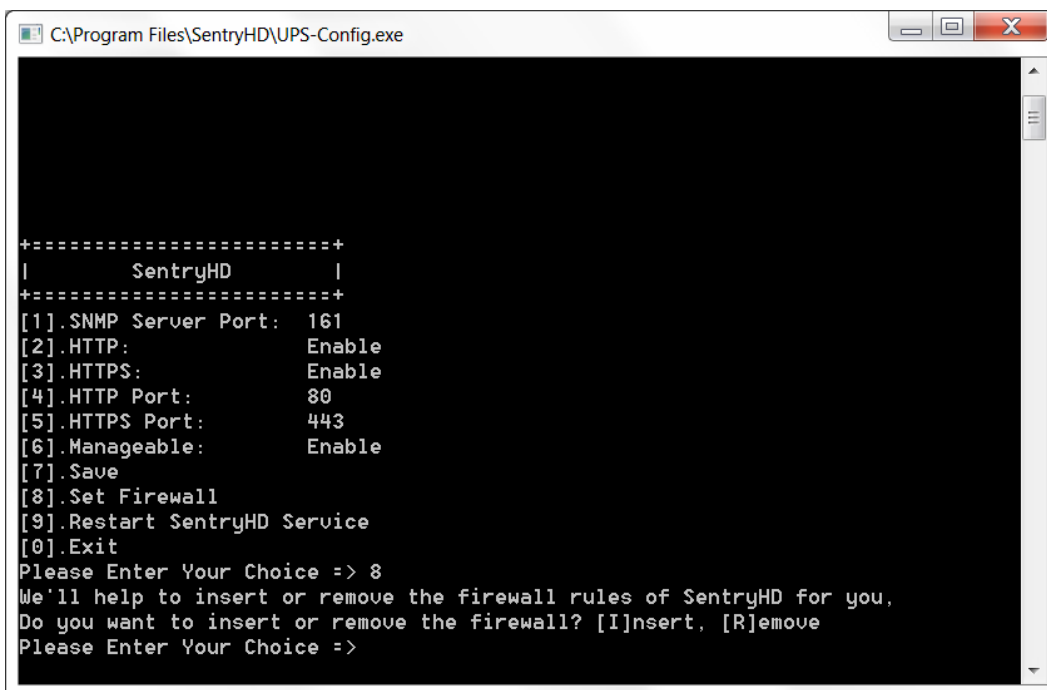
You can run the UPS-Config.exe to configure the basic networking parameters for the web and SNMP network protocols after installation.



```
C:\Program Files\SentryHD\UPS-Config.exe

+-----+
|       SentryHD       |
+-----+
[1].SNMP Server Port: 161
[2].HTTP:             Enable
[3].HTTPS:            Enable
[4].HTTP Port:        80
[5].HTTPS Port:       443
[6].Manageable:       Enable
[7].Save
[8].Set Firewall
[9].Restart SentryHD Service
[0].Exit
Please Enter Your Choice =>
```

Select number [8] to configure the firewall for SentryHD.



```
C:\Program Files\SentryHD\UPS-Config.exe

+-----+
|       SentryHD       |
+-----+
[1].SNMP Server Port: 161
[2].HTTP:             Enable
[3].HTTPS:            Enable
[4].HTTP Port:        80
[5].HTTPS Port:       443
[6].Manageable:       Enable
[7].Save
[8].Set Firewall
[9].Restart SentryHD Service
[0].Exit
Please Enter Your Choice => 8
We'll help to insert or remove the firewall rules of SentryHD for you,
Do you want to insert or remove the firewall? [I]nsert, [R]emove
Please Enter Your Choice =>
```

7. XenServer Setup for SentryHD

To install SentryHD in the Citrix XenServer, see 2.2 For Linux in Chapter 2 Installation/Uninstallation. To configure the basic networking parameters including the firewall, see Chapter 3 Console Configuration.

7.1 Install PV driver for Guest OS

To shutdown the guest OS from XenServer, the PV driver must be installed on all of the guest OSes for them to properly shutdown.

7.2 Configure SentryHD for Xen

Enter the estimated time for all of the guest OSes that operate on the XenServer server to properly shutdown.

1. Login to the web interface of SentryHD. The account level should be equal to or greater than the device manager.
2. Go to the **Device >> Management >> Configure** page and fill in the estimated time in the Run Before Shutdown field of the Reaction group.
3. Enter `/user/local/sentryhd/command/command.Xen` script file to shutdown the guest OSes. Then check the Execute Command File checkbox to enable the shutdown of the guest OSes.
4. Press the Submit button to update your changes.

The screenshot shows the SentryHD web interface. At the top, there are logos for MINUTE MAN POWER TECHNOLOGIES and SentryHD POWER MANAGER. The system time is displayed as Thu 02/07/2013 PM 02:02:56. The navigation menu includes Monitor, Device, and System. The current page is 'Device >> Management >> Configure'. The left sidebar has options for Communication, Configure (selected), Control, Weekly Schedule, and Specific Schedule. The main content area is divided into three sections: Shutdown, Reaction, and Manageable. The Shutdown section has a dropdown for OS Shutdown Type (set to Shutdown) and a field for UPS Shutdown Delay (120 seconds). Below is a table of events with checkboxes for enablement and OS Shutdown Delay fields. The Reaction section has checkboxes for Notify Message and Execute Command File, with a text area for the command file path and a Run before Shutdown field. The Manageable section has a checkbox for allowing SentryHD to be managed by an authenticated manager. Each section has a Submit button.

Enable	Event	OS Shutdown Delay (in seconds)
<input checked="" type="checkbox"/>	Power Fail	300 second(s)
<input checked="" type="checkbox"/>	Battery Low	30 second(s)
<input checked="" type="checkbox"/>	Schedule Shutdown	300 second(s)

8. Linux KVM Setup for SentryHD

To install SentryHD in the Linux server, see 2.2 For Linux in Chapter 2 Installation/Uninstallation. To configure the basic networking parameters including the firewall, see Chapter 3 Console Configuration.

8.1 Install libvirt Tools for KVM

To shutdown the guest OS from Linux server, you have to install the libvirt. SentryHD calls the virsh to shutdown the guest OSes.

8.2 Configure SentryHD for KVM

Enter the estimated time for all of the guest OSes that operate on the KVM server to properly shutdown.

1. Login to the web interface of SentryHD. The account level should be equal to or greater than the device manager.
2. Go to the **Device >> Management >> Configure** page and fill the estimated time in the Run Before Shutdown field of the Reaction group.
3. Enter `/user/local/sentryHD/command/command.KVM` script file to shutdown the guest OSes. Then check the Execute Command File checkbox to enable the shutdown of the guest OSes.
4. Press the Submit button to update your changes.

The screenshot shows the SentryHD web interface. At the top, there are logos for 'MINUTEMAN POWER TECHNOLOGIES' and 'SentryHD POWER MANAGER'. The navigation bar includes 'Monitor', 'Device', and 'System'. The main content area is titled 'Device >> Management >> Configure' and is divided into three sections:

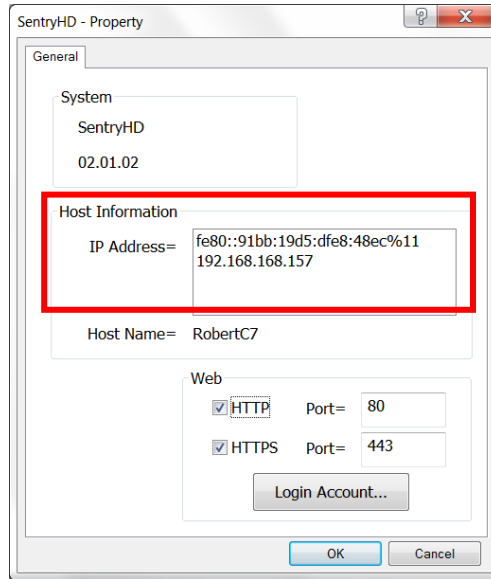
- Shutdown:**
 - OS Shutdown Type: Shutdown
 - UPS Shutdown Delay: 120 second(s)
 - Table of events:

Enable	Event	OS Shutdown Delay (in seconds)
<input checked="" type="checkbox"/>	Power Fail	300 second(s)
<input checked="" type="checkbox"/>	Battery Low	30 second(s)
<input checked="" type="checkbox"/>	Schedule Shutdown	300 second(s)
 - Schedule Shutdown:
 - Send the Smart Shutdown SNMP Trap before Shutdown: 120 second(s)
- Reaction:**
 - Notify Message, Period: 0 second(s)
 - Execute Command File:
 - File: /usr/local/sentryhd/command/command.KVM
 - Run before Shutdown: 120 second(s)
- Manageable:**
 - Allow the SentryHD to be managed by an authenticated manager.

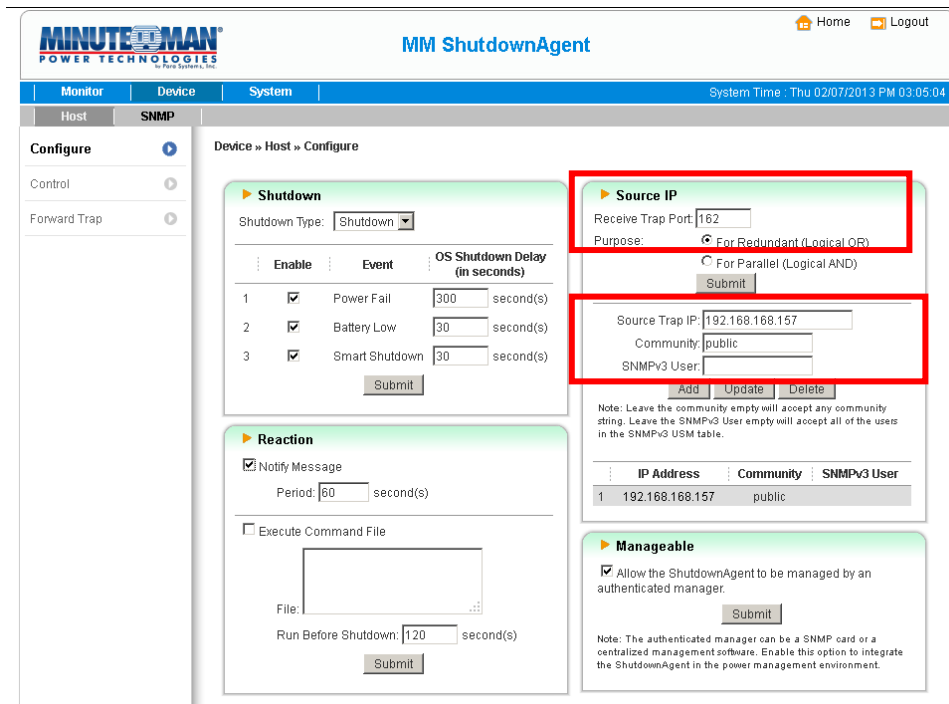
A note at the bottom states: "Note: The authenticated manager can be a centralized management software. Enable this option to integrate the SentryHD in the power management environment."

9. Working with the MM ShutdownAgent

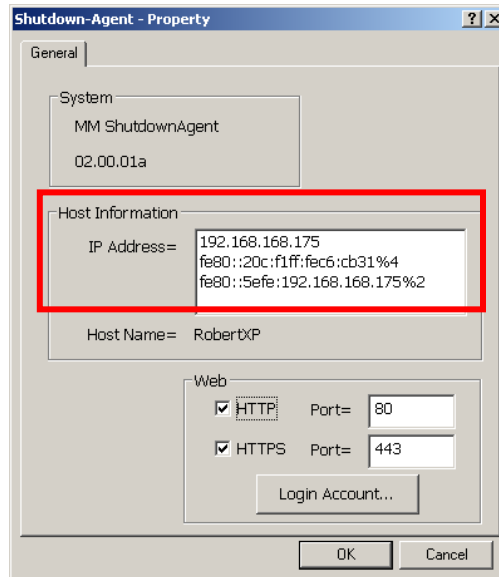
1. Open SentryHD's Property menu from the Windows task bar to get the IP address of the Host Server.



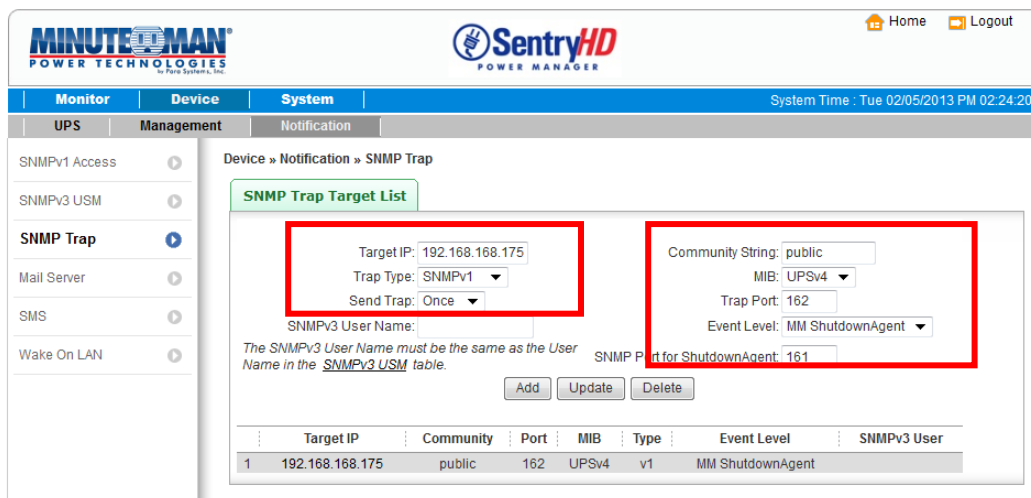
2. Login to the MM ShutdownAgent input the Host Server IP address into the Source Trap IP and the trap port to receive the SNMP trap from SentryHD.



- Open the MM ShutdownAgent property menu from Windows task bar to get the IP address of the Host Server.



- Go to SentryHD's SNMP Trap page and input the IP address of the MM ShutdownAgent's Host Server into the SNMP Trap table as the Target IP. Select the MM ShutdownAgent for the Event Level and UPSv4 as the Trap MIB.



- If you enable the manageable option in the ShutdownAgent then you can view all of the shutdown status, countdown timer and shutdown reason from SentryHD. The web page is on the Monitor >> Information >> ShutdownAgent

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