Installation and user manual

POWERSHIELD^3

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Limited Warranty

This software and the enclosed materials are provided without warranty of any kind. The entire risk of the software quality, performance of the program, media free of defects, faulty workmanship, incorrect use of the software or UPS, error free documentation and enclosed material is assumed by the user. We do not take any responsibility for the correct function of the software and the security of your system or files, which might be damaged due to possible incorrect function of our software. There is no warranty to the correct functions of the software with the operating systems, loss of data or interruption of work processes, other UPS problems or to other errors that may occur from this combination

Contents

I. What is PowerShield³?

The PowerShield³ software package is a client/server-application for networks and local workstations used for monitoring UPS systems and other devices such as ATS, STS, MDU and MPW systems. The server-module of the PowerShield³ Software is the *Upsagent*, this communicates via an RS-232 or USB or TCP/IP network cable with the devices. When the *Upsagent* is operating, it collects (as a background program) the messages sent from the devices. The *Upsagent* interprets the received messages and makes them available to the client-module, which is known as *Upsview*. The communication of the data between the *Upsagent* and the *Upsview* either can be done via TCP/IP or shared memory on a local computer .

If the *Upsagent* detects mains supply voltage variations or even a total power loss, it can execute various command scripts, which for example may either perform a shutdown of the server or send warnings to the connected users. These scripts that are a part of the PowerShield³ package can be adapted to suit your specific requirements. When is detected a change in the device alarm-status, a corresponding file (i.e. shell script/command file) will be executed either when the alarm is activated or deactivated. If an alarm condition remains for a long duration, the user can customise the system to shut down.

The user may also prompt the UPS to shutdown to save autonomy time, which allows the system adequate time to enable further shutdowns in the unfortunate event of a repetitive alarm condition.

The configuration of the PowerShield³ package (primarily used for the *Upsagent*), is performed using the *Upsetup* module.

The *Upsview* module is used for operating and monitoring the active *Upsagent* module that is connected to the devices. It is possible to check the status of the devices using various views, for example block diagram or alarm tables. The *Upsview* can be used to constantly monitor and evaluate the event file (log file) which is permanently updated with the changing status of the devices by the *Upsagent*.

II. Quick Start Guide

1. Quick start guide to installing the software

1. Make a note of the device PRTK code, this code is located on a label that will be positioned on either the front or the rear of the UPS (e.g. SENTR…).
2. If the connection to the device(s) is to be made via a network using a NetMan adaptor, first setup the NetMan following the NetMan user manual, the most important information required for the NetMan is the IP address, netmask and the router address, all of which are entered in the specific NetMan configuration menu.
3. Enter the PRTK code (from note 1) into the NetMan configuration menu.
4. Once the software is installed, select the section “Devices configuration” in *UpsSetup* by pressing the relative icon, then add your device: enter the PRTK code and the method of communication (ensure to use the correct IP address as set in the NetMan).
5. For further information refer to this User Manual.

III. Installation of PowerShield³

1. Before the installation

Before start the software installation, please read this manual carefully.

1.1 Hardware requirements

Device: Connect the device to the chosen serial port of your computer, various device provide several methods of communication interfacing; please ensure that the interface for RS-232 or USB communication is used.

Cable: To ensure correct operation of this software ensure that the correct communications cable is used; the correct cable should be supplied with the device. Do not connect any other cable between device and computer.

1.2 Software requirements

TCP/IP: PowerShield³ is based on TCP/IP; therefore, for this function to operate, TCP/IP must be installed. If TCP/IP is not installed, communication with the device is only possible via a local serial connection, and thus the *Upsview* can only connect to the *Upsagent* via shared memory on the local computer.

A dedicated system port for the device: To ensure the correct communication with a local device via a serial port, please ensure that the selected port is free (not required by any other device or program).

This is very important for Linux environments, when the system is often running some demon how getty for connection terminal through the serial port.

No other process must be operational using the selected serial port used by PowerShield³. To uninstall any processes (e.g. getty demon) please refer to the operating system user manual.

1.3 User requirements

NOTE: to ensure correct installation of this software, many systems require the user to have super user rights, therefore when installing this software ensure that you are logged on as an administrator, super user or root, prior to the installation procedure.

2. Installation

2.1 Windows

1. To install PowerShield³, run the program ***Powershield3-<Version>-windows-intel-<architecture>.msi*** . For Windows you need administrator rights.
2. When prompted, select the destination folder for the program files.
3. The Installation program will automatically copy all of the necessary files, create a program group and install the startup shortcut for the *Upsagent*.
4. After successfully installing the software, the *UpsSetup* (or *UpsWizard*, the wizard of PowerShield³) program will start automatically.
5. The configuration of PowerShield³ is performed using the *UpsSetup* program; this will enable correct communication with the device and complete setup of the software operational parameters. It is possible otherwise to use the wizard (*UpsWizard*) that allow a basic software configuration.

NOTE: to confirm the correct installation on Windows, it is possible to view a list of all installed services in the Control Panel / Services.

NOTE: the destination PC must have Windows Installer in order to run the installation package.

2.2 Linux

1. To install PowerShield³ run the specific command for the operating system where the software is to be installed:

Operating System	Command
Linux Debian	dpkg -i directory/upsmon-xxx.deb
Linux rpm	rpm -i directory/upsmon-xxx.rpm

2. The install command will expand automatically all the files and will create the startup shortcut for *Upsagent* in the correct directory for the specific Linux/UNIX operating system.
3. After successfully installing the software, launch the *Upsetup* program. When prompted enter the correct PRTK code for the device to be monitored, this code is located on a label which can be found on either the front or the rear of the device; failure to input this code will prevent the operation of PowerShield³.
4. The configuration of PowerShield³ is performed using the *Upsetup* program; this will enable correct communication with the device and setup of the software operational parameters.

ATTENTION: when configuring PowerShield³ on a Linux platform, it is possible to use the graphical version of *UpsSetup*. It is possible to use also the wizard *UpsWizard* that perform a basic configuration to ensure a correct communication with the device.

2.3 macOS

1. The installation must be performed by a user with root rights.
2. To install PowerShield³ start the file ***Powershield3-<Version>-macOS.dmg***, that will unpack the installation package Powershield3<Version>macOS.pkg.
3. Select and execute the package.
4. The installation program will automatically copy all the necessary files and create on the Applications directory 3 new icons for the viewer, configuration program and wizard. The *Upsagent* module will startup automatically at the next reboot.
5. After successfully installing the software, the *UpsWizard* program will start automatically.
6. The basic configuration of PowerShield³ is performed using the *UpsWizard* program; this will enable correct communication with the device. The full configuration of PowerShield³ is performed using the *Upsetup* program; this will enable correct communication with the device and complete setup of the software operational parameters.

IV. Simple PowerShield³ Configuration (Wizard)

The basic configuration of PowerShield³ (Windows, MacOs or Linux graphical version) is performed using the *UpsWizard* program; this will enable correct communication with the device and setup of the main software operational parameters.

ATTENTION: bad parameters or undesirable manual changes of the upsmon.ini file may cause incorrect operation of the PowerShield³ software, primarily the *Upsagent* module.

1. UpsWizard

ATTENTION: administrative rights are required when saving the configuration.

The basic configuration of PowerShield³ performed using the *UpsWizard* program is done in four step.

In *UpsWizard* you can find the follows buttons:

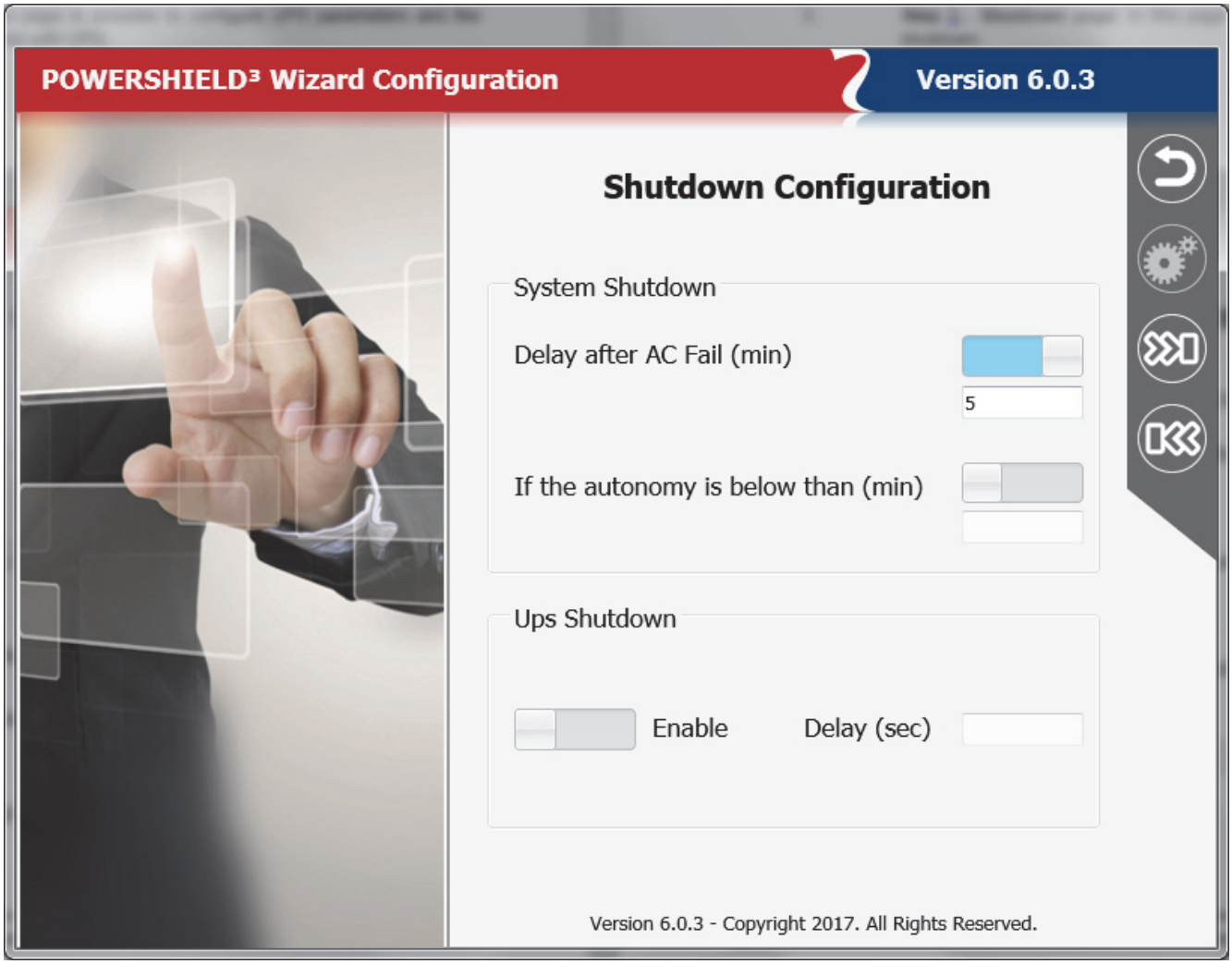
	Exit the program without save. The upsmon.ini file will not be modified and any changes will be lost.
	Launch of the complete setup program *UpsSetup*.
	Navigate to the next page of the *UpsWizard*.
	Navigate to the previous page of the *UpsWizard*.
	Exit the program by saving all the changes made. The upsmon.ini file will be saved with the new settings.

ATTENTION: button with white icon is enabled; button with grey icon is disabled.

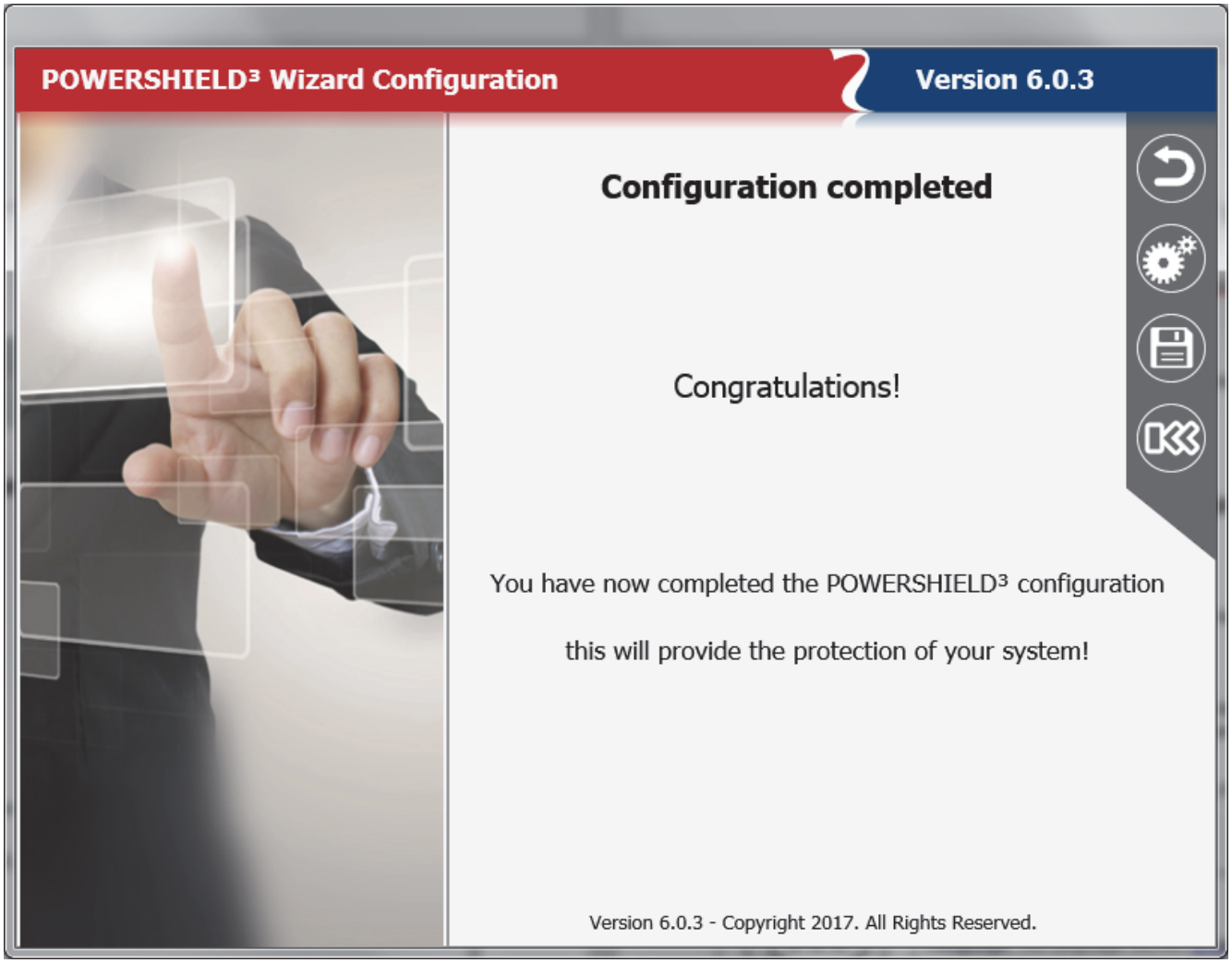
1. **Step 1 - Welcome page**: in this page is possible to select the language of PowerShield³. All messages and text in PowerShield³ (except some system messages) is described in lang_xx.ini files. The default is lang_00.ini used for the standard English language interface. To change the language, click on the corresponding flag. Language change is instantaneous. To save the language correctly you need to save upsmon.ini from the *UpsWizard* final page.

2. **Step 2 - UPS Configuration page:** in this page is possible to configure UPS parameters and the connection parameters to use to communicate with UPS.

3. **Step 3 - Shutdown page**: in this page is possible to configure the system shutdown and the UPS shutdown.



4. **Step 4 - Save page:** in this page is possible to save the configuration.



V. Advanced PowerShield³ Configuration

The configuration of PowerShield³ is performed using the *UpsSetup* program; this will enable correct communication with the devices and setup of the software operational parameters.

ATTENTION: bad parameters or undesirable manual changes of the upsmon.ini file may cause incorrect operation of the PowerShield³ software, primarily the *Upsagent* module.

1. UpsSetup (available on Windows, macOS and Linux)

ATTENTION: administrative rights are required when saving the configuration.

ATTENTION: in *UpsSetup* you can find many buttons in the grey menu situated in the top right of the window: for these buttons a white colour icon means that the button is enabled; a grey colour icon means that the button is disabled.

The *UpsSetup* program consists into 7 main sections, each of which is accessible by clicking on a specific icon in the main window:

	**Language**: the language section is used to configure the language of PowerShield³.
	**Device connections**: the device connections section is used to configure the list of the device to be monitored by the *Upsagent* and the communication parameters for each device.
	**Jobs parameters**: the jobs parameters section is used to configure the jobs to be carried out by the PowerShield³ when an alarm condition occurs, for example it is possible to customise each alarm to carry out a specific set of tasks such as run a shutdown user defined script, send email, SMS or network messages etc.
	**Schedule parameters**: the schedule parameters section is used to configure any scheduled actions. It is possible to specify scheduled actions such as UPS shutdown, reboot, test, etc.; these actions will be executed at a specified time.
	**Configurations**: the configurations section is used to specify the method used to send a message to personnel who will be required to be notified with regards to an alarm condition occurring with the device.

	**Network services**: the network services section is used to configure the network services such as TCP/IP, SNMP, etc.
	**About and logs**: the about and logs section show the software version and permit to pass to the FULL version of the program (in which it could be possible to monitoring up to 32 device). Furthermore, permit to set up parameters for log files.

In the menu present on this page you can find the following buttons:

	Exit from *UpsSetup* without save. The upsmon.ini file will not be modified and any changes will be lost.
	Exit the program by saving all the changes made. The upsmon.ini file will be saved with the new settings.

1.1 Language section

In this page is possible to select the language of PowerShield³.

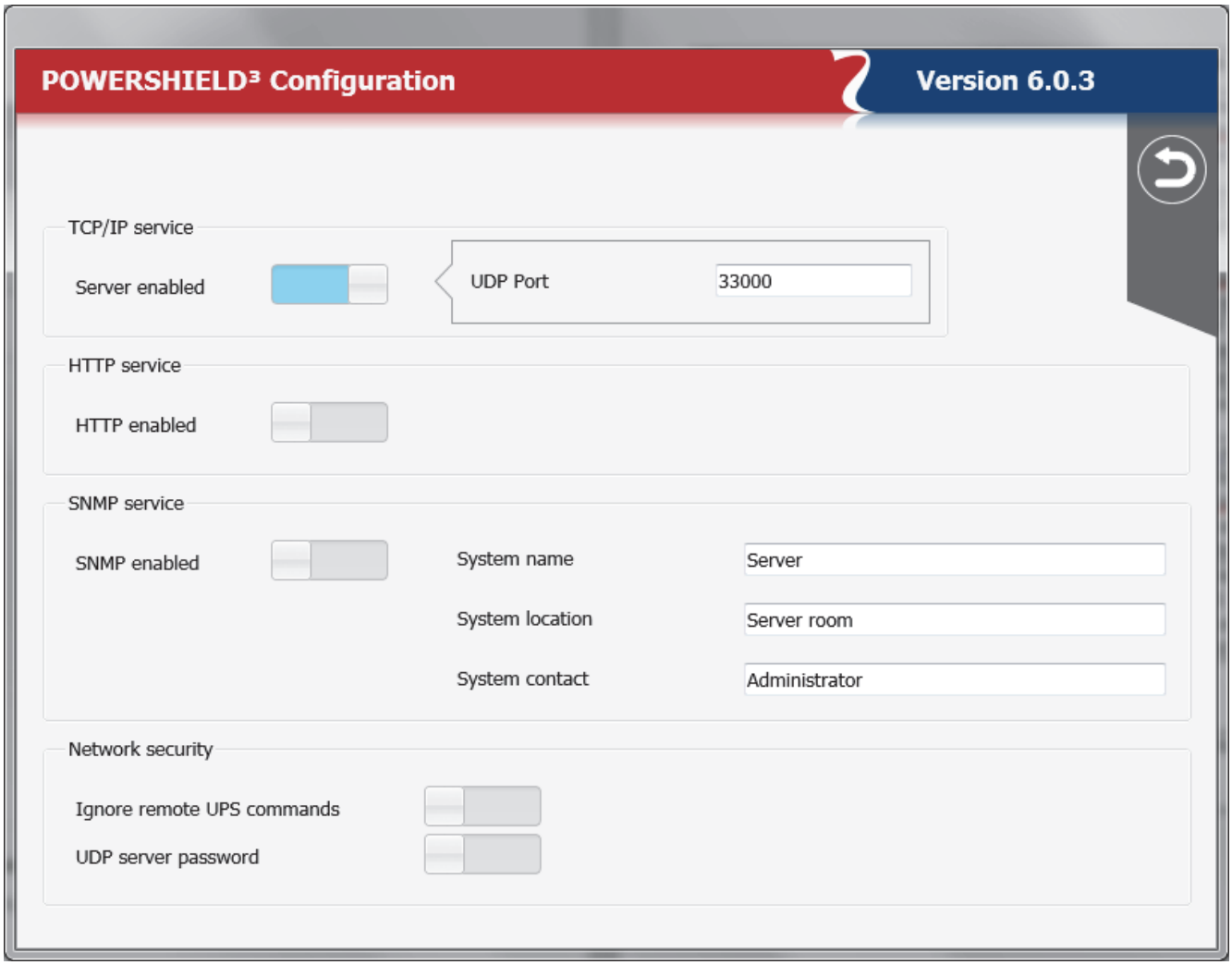
All messages and text in PowerShield³ (except some system messages) is described in lang_xx.ini files. The default is lang_00.ini used for the standard English language interface.

To change the language, click on the corresponding flag. Language change is instantaneous. To save the language correctly you need to save upsmon.ini from the main page.

On this page you can find the following buttons:

	Exit from the language section and return to the main page.

1.2 Network services section



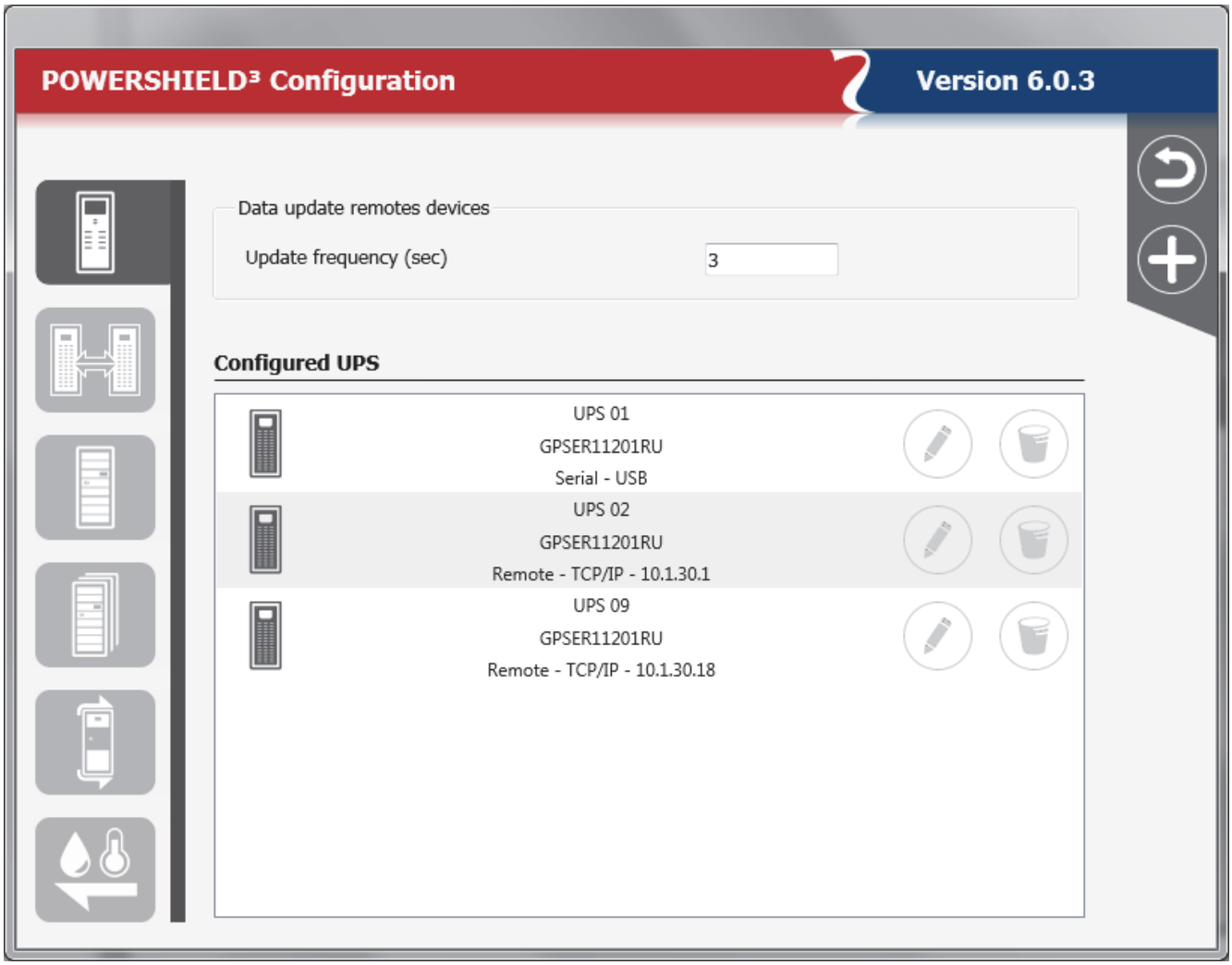
In this page is possible to configure the network services such as TCP/IP, SNMP, etc.

Parameter name	Parameter description	Default
TCP/IP Service: Server enabled	Enables or disables the connection access of other computers running the *Upsagent* or *Upsview* programs.	Enabled
TCP/IP Service: UDP Port	The UDP communication port. This must be same on all system using PowerShield³	33000
HTTP Service: HTTP enabled	Allows the support for HTTP. The data and the status of the UPS can be monitored via HTTP through the html static page created by *Upsagent*.	Disabled
HTTP Service: HTTP path	Used to specify where the *Upsagent* creates the html static page with the UPS data and status for HTTP monitoring.	Empty
SNMP Service: SNMP enabled	Allows the support for SNMP. The data and the status of the UPS can be monitored via SNMP.	Disabled
SNMP Service: System name	Defines the name of the local system.	Server
SNMP Service: System location	Defines the location of the local system.	Server room
SNMP Service: System contact	Defines the contact person's name for the local system.	Administrator
Network security: Ignore remote UPS commands	Enables or disables access from remote computers to make commands to the UPS (by *Upsagent* or *Upsview*). This feature is used to prevent a remote user from forcing a command to the UPS, such as UPS shutdown or test etc.	Disabled
Network security: UDP server password	If selected the software will require a password for communication with the UPS. This password is to protect the *Upsagent* connection. If the user doesn't know the password, it will not be possible to connect the agent.	Disabled

On this page, you can find the following buttons:

	Exit the network services section and return to the main page.

1.3 Devices connections section



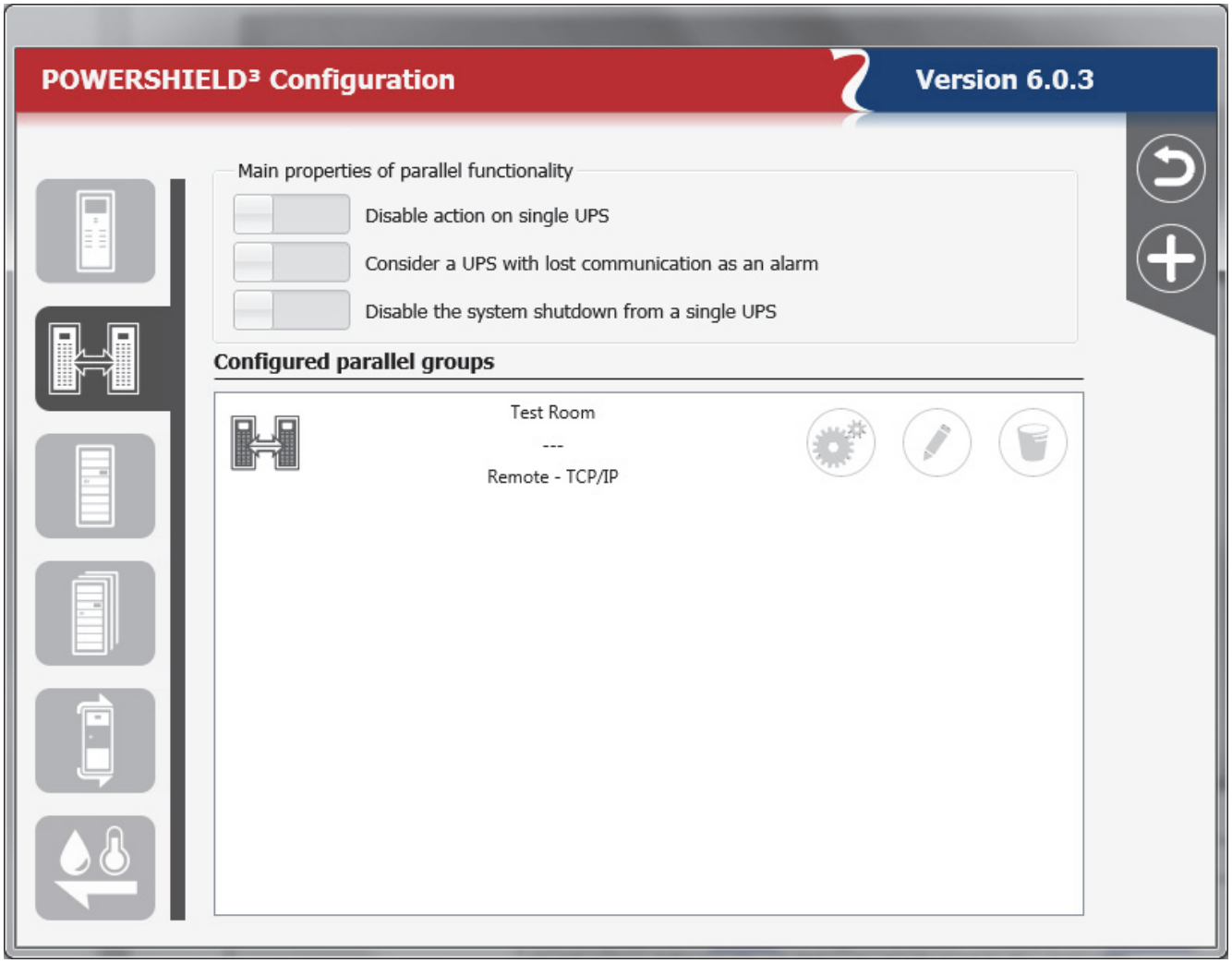
The devices connection section contains the list of the devices that will be monitored by the *Upsagent.*

It is possible to add, delete or edit the devices listed.

The STANDARD version of PowerShield³ will only allow one device to be monitored either locally or via a network by the *Upsagent*. The FULL version will allow one device to be monitored locally and up to 31 devices to be monitored via a network by the *Upsagent*. To change the STANDARD version to the FULL version you must enter the serial number and relevant License number using the “About and logs” section. The License number is available from the UPS manufacturer or local supplier.

The FULL version of PowerShield³ also enables the operation of Parallel functionality. This function enables the setup of groups of UPS, which are working in redundant operation. It is possible to create up to 10 groups, with each group containing up to 8 UPS (2 UPS minimum) with up to 64 event actions.

Parameter name	Parameter description	Default
Update frequency	Defines the time-interval (in seconds) in which the *Upsagent* polls for data from the device (if the *Upsagent* is connected to remote device via network). This parameter is enabled only if there is at least one device connected via TCP/IP in the list of connected device. The system speed may be reduced due to permanent communication with the device if this value is too small. If the value is too high the system will react slower in the case of an alarm from the device. The recommended values are from 1 second (for smaller networks) or 5-10 seconds (on larger networks).	3 seconds



Parameter name	Parameter description
Disable actions on single Ups	If selected, the standard configuration for the single UPS event will be ignored. The *Upsagent* controls only the group status. If it is not selected, the *Upsagent* controls both the group events and also the single UPS events. If this parameter is selected, the job actions defined in the job dialog box are disabled for the single UPS.
Consider a Ups with lost communication as an alarm	If selected, the active alarm level is raised, specified on the parallel event list, for each UPS in communication lost condition.
Disable the System shutdown from a single UPS	If selected, this disables the system and UPS shutdown time defined on the single UPS configuration. This function shutdown time is the same time for the UPS parallel group.

The devices you can configure are as follows:

	**Single UPS.**
	**Parallel group.**
	**MPW cabinet**.
	**MPW system**.
	**STS/ATS/MDU.**
	**Netman Sensors.**

On this page you can find the following buttons:

	Exit the device connections section and return to the main page.
	Add a device of the type indicated by the tab highlighted to the left

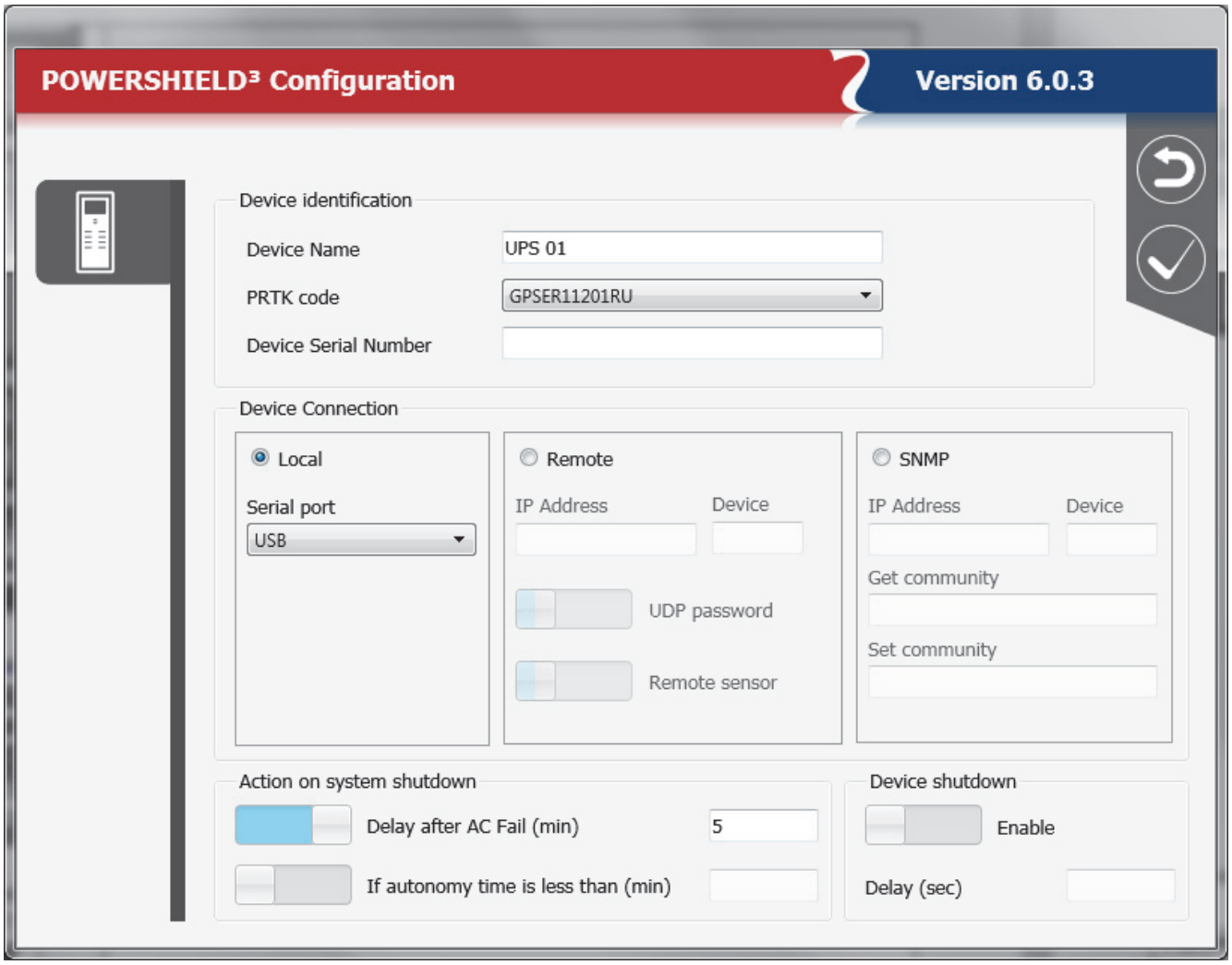
You can find the following buttons for each device present in the lists:

	Edit the highlighted device in this item in the list.
	Delete the highlighted device in this item in the list.

And, just for the parallel groups, you can find this button:

	Modify the actions set on the parallel group highlighted in this item in the list.

1.3.1 Device configuration – for single UPS, STS, ATS, MDU and MPW cabinet

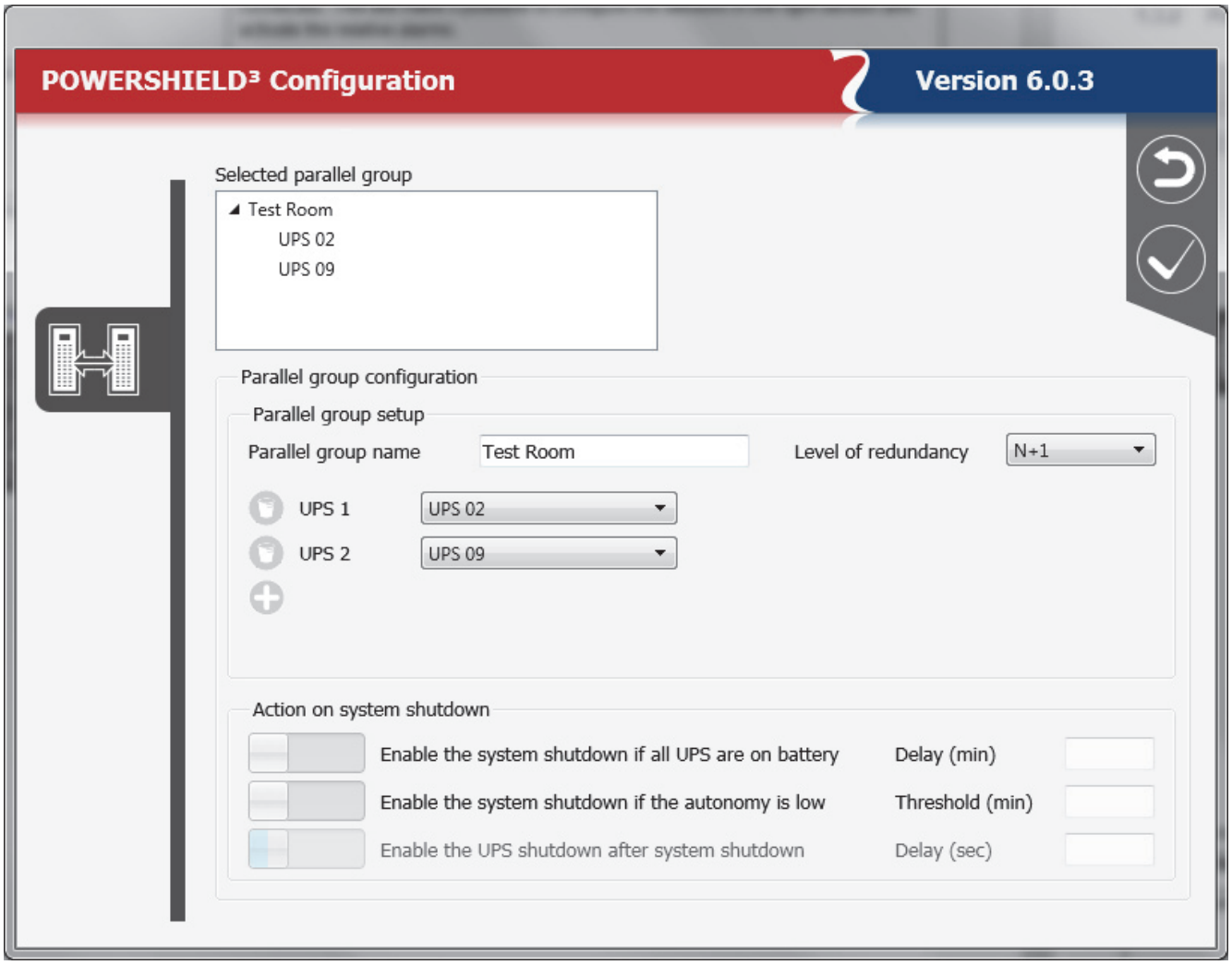


Parameter name	Parameter description
Device Name	Device identification name.
PRTK Code	The PRTK is used to determine the type of device to be monitored, the code to be entered can be located on the device.
Device Serial number	The device have unique serial numbers, this number used to identify the device. Enter the serial number as printed on the device identification label.
Device connection	The device connection must be set to the chosen method to be used for the communication between the computer and device(s). The first method of connection is local, this connection method is used when the connection to the device is to be made via a serial port, if this method is to be used ensure that the correct serial port and is selected. All the other settings for the serial connection (baud speed etc) are automatically set for the selected device type. The second method of connection is remote via a network, for this connection an IP address for the computer or Network adapter must be specified and the device number (usually 1). Note: The software supports USB communication via USB-COM adapter. The USB communication is also supported. Note: The TCP/IP communication allows the user to specify a remote *Upsagent* or Network adapter location by host name (or DNS name). Some devices can only enable some of these options.
UDP password	It is possible to specify a connection password for each device connected. This password must always be specified to connect the specific device.
Remote sensors	It is possible to specify whether temperature, humidity and/or digital I/O sensors are associated with the Network adapter to which the remotely connected device is connected. This will make it possible to configure the sensors in the right section and activate the relative alarms.
System shutdown (only UPS)	This field is used to specify the parameters for the system shutdown, the system Shutdown can be triggered by either a specified time after AC Fail or if the UPS autonomy time is below a specified time. If the UPS sends a low battery signal to the computer (i.e. the UPS backup time is low), the *Upsagent* will ignore the specified times and start the system shutdown procedure immediately.
UPS shutdown (only UPS)	This field can be used to send a shutdown signal to the UPS once all remote computers have shutdown, at this point the UPS will then shutdown

On this page you can find the following buttons:

	Exit the device configuration page and return to the previous page without applying the changes.
	Exit the device configuration page and return to the previous page with modifications applied. To save the applied changes, you must exit from the main page.

1.3.2 Parallel group configuration



Parameter name	Parameter description
Selected parallel group	In the three “Selected parallel group” it will be shown the defined parallel group. By expanding the group, it is possible to see the UPS that belong to the group. It is possible to add or remove an UPS to a parallel group clicking on the relative icon (see below). Note: Each parallel group must contain at least two UPS.
Redundancy level	Defines the redundancy level of the parallel group: possible choices are N (default), N+1 (for groups with a minimum of 2 UPS), N+2 (for groups with a minimum of 3 UPS) and N+3 (for groups with a minimum of 4 UPS). N.B. A parallel group with redundancy N+i will stay active and operational even if “i” UPS within the group fail. The load will be shared between the remaining UPS.
Enable system shutdown if all of the UPS are supplied from the batteries	System shutdown parameters for the parallel group can be defined. The shutdown may depend on the fact that all the UPS comprising the parallel group are operating in battery mode.
Enables system shutdown in the event of low back up time	The shutdown may depend on the fact that the “i-th” backup time of the parallel group selected is lower than the preset time. N.B. If the redundancy level is N, the lowest backup time is considered; if it is N+1, the second lowest time is considered; if it is N+2, the third lowest time is considered, while if it is N+3, the fourth lowest time is considered.
Enable the Ups shutdown after system shutdown	It is possible to shut down the groups’ UPS together with the system after the specified delay.

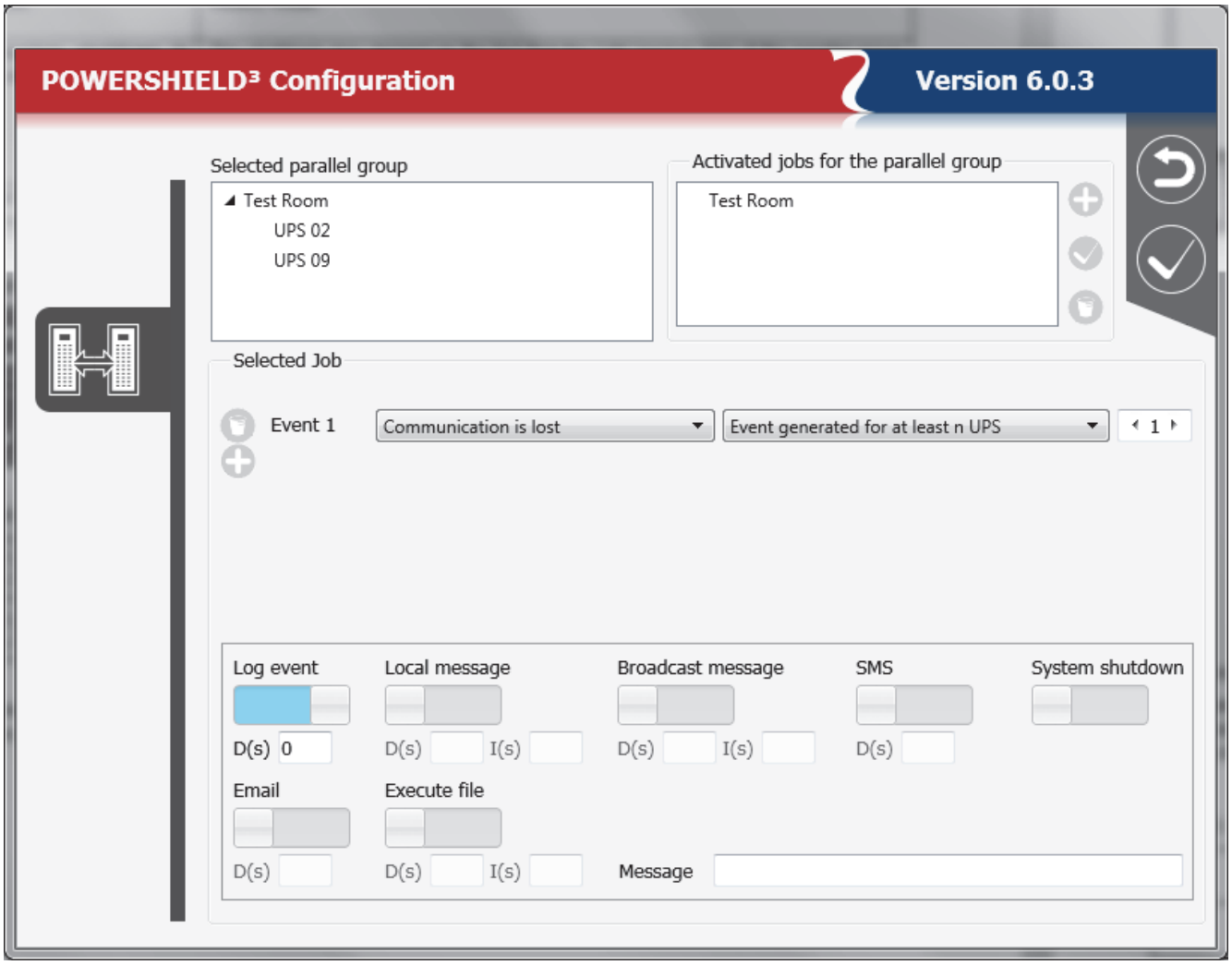
On this page, you can find the following buttons:

	Exit the Parallel Groups Configuration Page and return to the previous page without applying the changes.
	Exits the Parallel Group Configuration Page and Returns to the Previous Page with Application Changes. To save the applied changes, you must exit from the main page.

To add and remove an UPS from the Parallel Group:

	Adding an UPS to the Parallel Group. You will see a list from which to choose the UPS to add to the group. You cannot add one UPS twice.
	Removing an UPS from the Parallel Group. To define a parallel group you must add at least 2 UPSs.

It is possible to define a set of actions related to states or events for each parallel group. In order to configure these actions it is necessary to press the Edit button on the row in the list.



The selected parallel group is shown on the “Selected parallel group” tree. The user can add, modify, or remove the composite events related to the selected parallel group. The composite events defined on the parallel group are shown on the “Activated jobs for parallel group” tree.

To add, remove, or modify a composite event, you must act on the buttons in the "Activated jobs for the parallel group" box:

	Adding a composite event to the parallel group.
	Apply the changes made to the selected composite event.
	Removing the composite event selected by the parallel group.

Every composite event related to the group is made up of one or more simple events that may occur on the groups’ UPS. These simple events are visible on the “selected job” part. The composite event occurs, and the defined actions are performed, only when all the simple events on the list are verified on the same time. A composite event is made up to 6 simple event.

It is possible to add or remove a simple event to the composite event selected clicking on the relative button (see below).

	Add a single event to the composite event. Two lists will appear in which to choose the event to occur and the UPS number on which the event should occur to trigger the action (priority). Priority can be set in the appropriate box (if necessary).
	Removing a single event from the composite event.

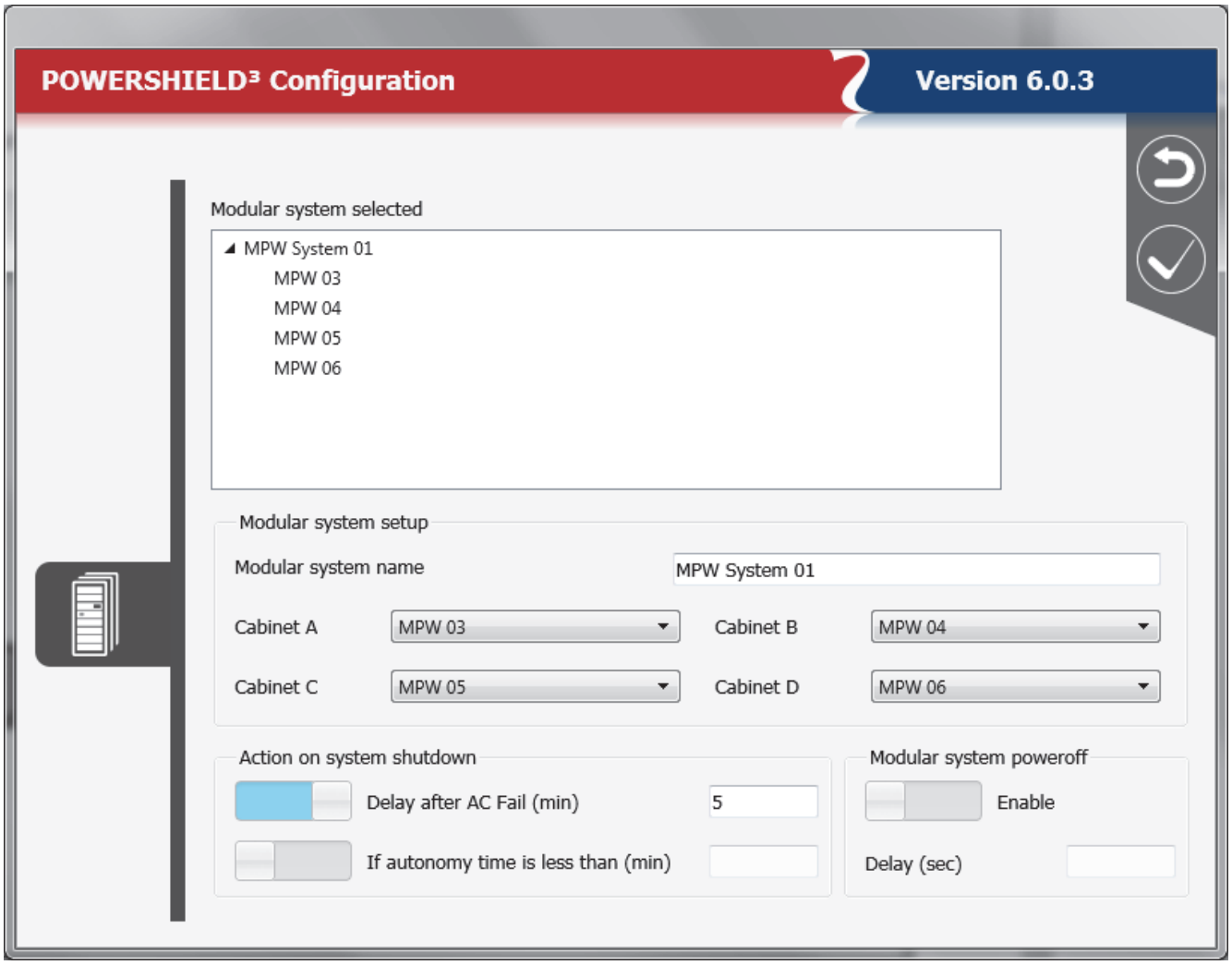
For each composite event related to the parallel group it is possible to set the actions that *Upsagent* will perform when the composite event will occur. It is possible to define the message that will be sent.

Action name	Action description
Message	In the message text it is possible to add actual values or information which will be displayed along with the original information, these are as follows: $NAME — The UPS or Group name will be added to the message (See main parameters dialog box). $SYSNAME — The System name will be added to the message (See main parameters dialog box). $SYSLOC — The System location will be added to the message (See main parameters dialog box). $SHUTTIME — The time before shutdown of the local system in seconds. $SHUTTIME1 — The time before shutdown of the local system in the format: hh:mm:ss $STH, $STM e $STS — The three values: the time before the shutdown of the local system in hours, minutes and seconds. $REMTIME — The remaining UPS battery autonomy. $REMCAP — The remaining UPS battery capacity.
Log event	If selected the event will to be logged into event log file.  **ATTENTION: On Windows the events are also logged in the system Application event log. On UNIX platforms the events are also logged into the system log (this depends on system configuration: see syslog manual).**
Execute file	If selected the *Upsagent* will execute a specified command file when a selected condition occurs. Recommendation: Always use the full path name for the file.
Local message	If selected this enables message to be displayed on the local computer, the messages can be delayed to stop short event changes being displayed unnecessarily (e.g. short power problems) or repeated to ensure acknowledgment. For Windows the message is displayed on the desktop, Novell Netware sends the message to the server console and Unix executes the ups_loc.scr script.
Broadcast message	If selected this enables a message to be sent to remote users via the network. For Windows the message is broadcast to all connected users or only to some users depend on the configuration inserted in the page Configurations, for other systems the ups_mess.scr (or ncf for Novell Netware) script is executed. Recommendation: Use the wall command to send message to all connected users on Unix systems.
Shutdown system	If selected this option enables the shutdown of the system, for Windows the ups_shut.cmd file is searched for possible user specified commands before shutdown (e.g. quit databases, …) then the standard system shutdown is executed using the WIN API functions. For other systems, the ups_shut.scr (or .cmd or ncf) script is started with the appropriate commands to provide the correct shutdown of the computer.
Email	It is possible to specify a name and email address for email recipients in the Configuration icon. If the Email checkbox is selected, then the message is sent to the specified users, by standard SMTP interface or via script (Linux, UNIX and MacOs). Before using this option the email service must be configured on the computer.
SMS	Enables the option to send the message as SMS to a specified GSM phone number.

On this page you can find the following buttons:

	Exit the Parallel Group Action Configuration Page and return to the previous page without applying the changes.
	Exit from the Parallel Group Actions Configuration Page and return to the previous page with application modifications. To save the applied changes, you must exit from the main page.

1.3.3 MPW System configuration



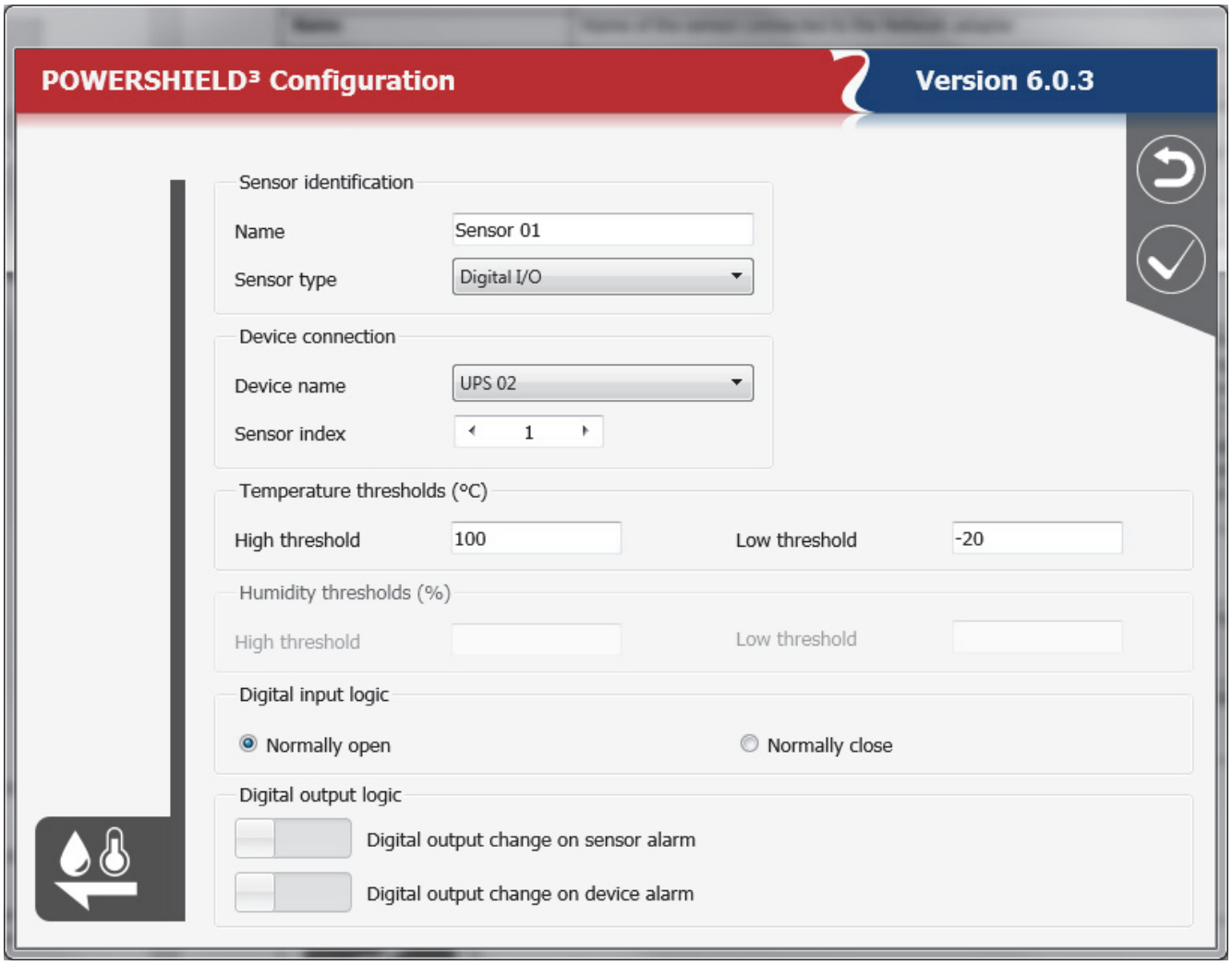
The selected MPW System is shown on the “Modular system selected” tree. You can configure in the MPW System up to 4 MPW cabinets previously configured in the "MPW cabinet" section. All the MPW cabinets in the system will be shown on the lists, allowing the physical cabinets to be coupled to the logic cabinets A, B, C, D.

Parameter name	Parameter description
Modular system name	MPW System identification name.
Cabinet A, B, C, D	The MPW cabinet paired with logic MPW cabinet A, B, C, D.
System shutdown	This field is used to specify the parameters for the system shutdown, the system Shutdown can be triggered by either a specified time after AC Fail or if the MPW System autonomy time is below a specified time. If the MPW System sends a low battery signal to the computer (i.e. the MPW System backup time is low), the *Upsagent* will ignore the specified times and start the system shutdown procedure immediately.
MPW system power off	This field can be used to send a shutdown signal to the MPW System once all remote computers have shutdown, at this point the MPW System will then shutdown

On this page you can find the following buttons:

	Exit the MPW setup page and return to the previous page without applying the changes.
	Exit the MPW configuration page and return to the previous page with applying modifications. To save the applied changes, you must exit from the main page.

1.3.4 Remote sensors configuration



Up to 6 different types of remote sensor can be associated with an Network adapter using the serial port (see sensor cable wiring specifications). The remote sensors are divided into three categories:

a. Temperature sensors that measure the environmental temperature around the sensor. Alarms can be set to indicate when high or low temperature thresholds are exceeded so that certain actions can be taken (sending an SMS or an e-mail or system shutdown).

b. Temperature and humidity sensors that measure the environmental temperature and humidity around the sensor. Alarms can be set to indicate when high or low temperature thresholds are exceeded so that certain actions can be taken (sending an SMS or e-mail or system shutdown).

c. Temperature and digital I/O sensors that measure the environmental temperature around the sensor and have two contacts – an Input and an Output. Alarms can be set to indicate when high or low temperature thresholds are exceeded so that certain actions can be taken (sending an SMS or e-mail or system shutdown). It is also possible to set parameters for the Input contact so that certain actions are taken (sending an SMS or e-mail or system shutdown) whenever the contact opens (or closes),

One of the actions that can be taken is the closing of the Output contact of the digital I/O sensors. This can be set to signal a general alarm condition on the UPS (e.g. AC Failure), or a general alarm condition on a sensor (e.g. high temperature).

Up to 32 remote sensors can be configured. Given that a maximum of 32 UPS systems can be controlled, it is evident that if each UPS has 6 sensors, it will not be possible to monitor all the sensors. It is up to the user to choose which of the 32 sensors he intends to monitor.

Name of parameter	Description of parameter
Name	Name of the sensor connected to the Network adapter
Type of sensor	Type of sensor: temperature, humidity or digital I/O.
Name of UPS	Name of the device connected to the Network adapter with which the sensors have been associated. Note: this combo box shows only the device for which the item “Remote Sensors” has been selected in the device configuration.
Sensor Index	Index of the sensors (from 1 to 6) connected to the Network adapter.
Temperature and humidity thresholds	Maximum and minimum temperature and humidity threshold settings on the sensor. When these values are exceeded, the actions specified for the respective alarm in the section “Status and actions” (see paragraph 1.7) will be carried out. Note: humidity thresholds are active only for humidity type sensors.
Digital input parameter	Determines whether the digital I/O sensor has the input contact normally open (the alarm is triggered when the contact is closed) or normally closed (the alarm is triggered when the contact is opened). This section is active only for digital I/O type sensors.
Digital output parameter	Determines whether the digital I/O sensor must close the output contact when a general alarm occurs on any of the sensors associated with the same Network adapter (switching for sensor alarm), and/or when an alarm occurs on the UPS connected to the same adapter (switching for UPS alarm). This section is active only for digital I/O type sensors.

On this page you can find the following buttons:

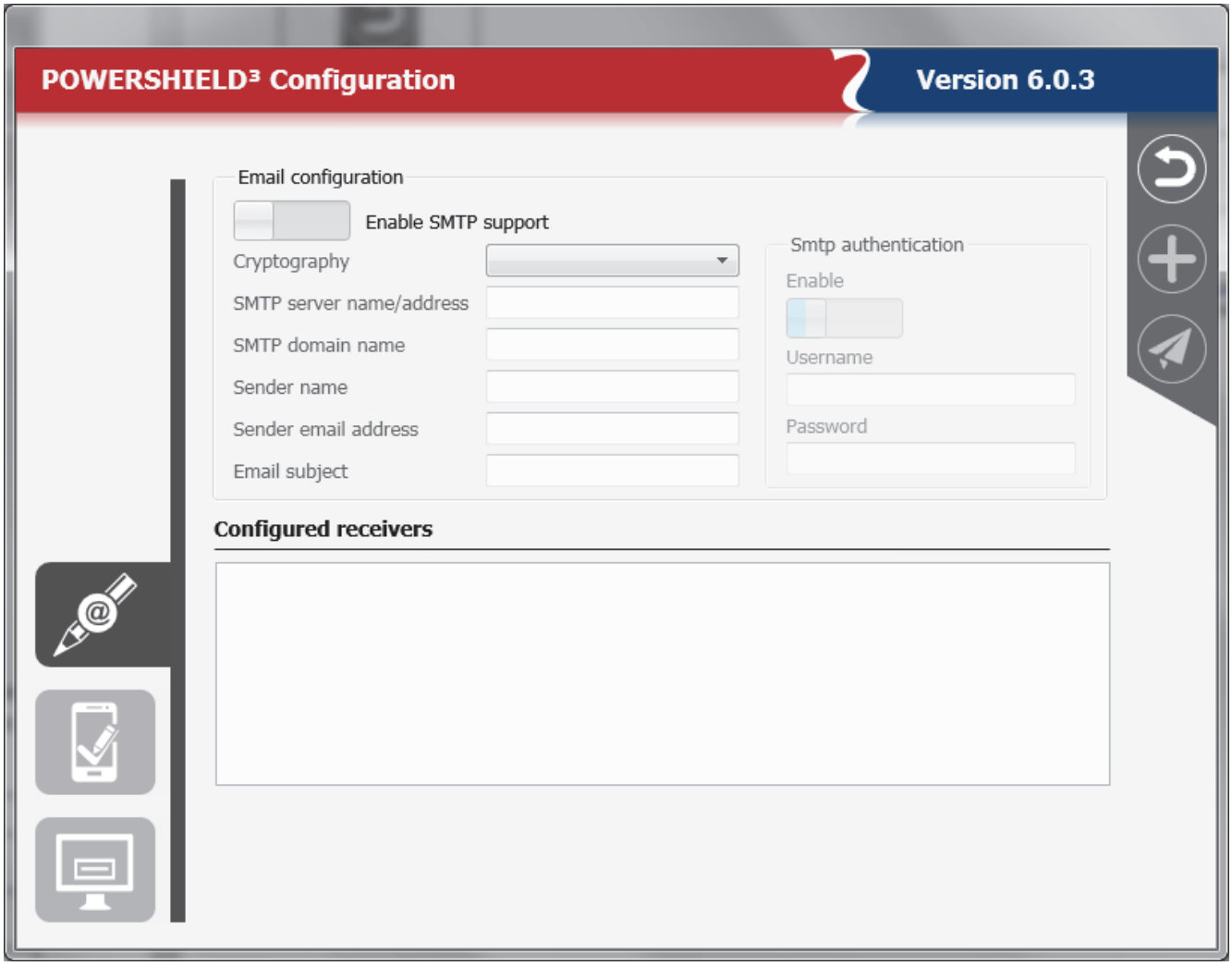
	Exit the sensor configuration page and return to the previous page without applying the changes.
	Exits the sensor configuration page and returns to the previous page applying the changes. To save the applied changes, you must exit from the main page.

1.4 Configurations section

Possible configurations are the follows:

	**Email configuration.**
	**SMS configuration.**
	**Broadcast message configuration (only Windows).**

1.4.1 Email support configuration



This feature enables the configuration to send email by SMTP interface. To use this support, the email service must be correct configured on the computer.

Parameter name	Parameter description
Enable SMTP support	Enable or disable SMTP support. When disabled the PowerShield³ cannot send emails through SMTP support.
Cryptography	Encryption supported by the SMTP server.
SMTP server name/address	The IP address or host name of your SMTP server. The SMTP server is a specific computer in the local network or Internet service provider which is used to collect and distribute email to the users. For detailed information contact the administrator of the network.
SMTP domain name	The domain name is used to correctly log into the SMTP server. Some SMTP servers control it for authorised access. For detailed information contact the administrator of the network.
Sender name	The name of the sender which is included in the email. Informational only.
Sender email address	The sender email address is also included in email header and will allow possible replies to be received on the email message for PowerShield³.
Email subject	The subject of the email.
SMTP authentication	Enable SMTP authentication. By enabling authentication, you must enter Username and Password for the correct functioning of the email.

On this page you can find the following buttons:

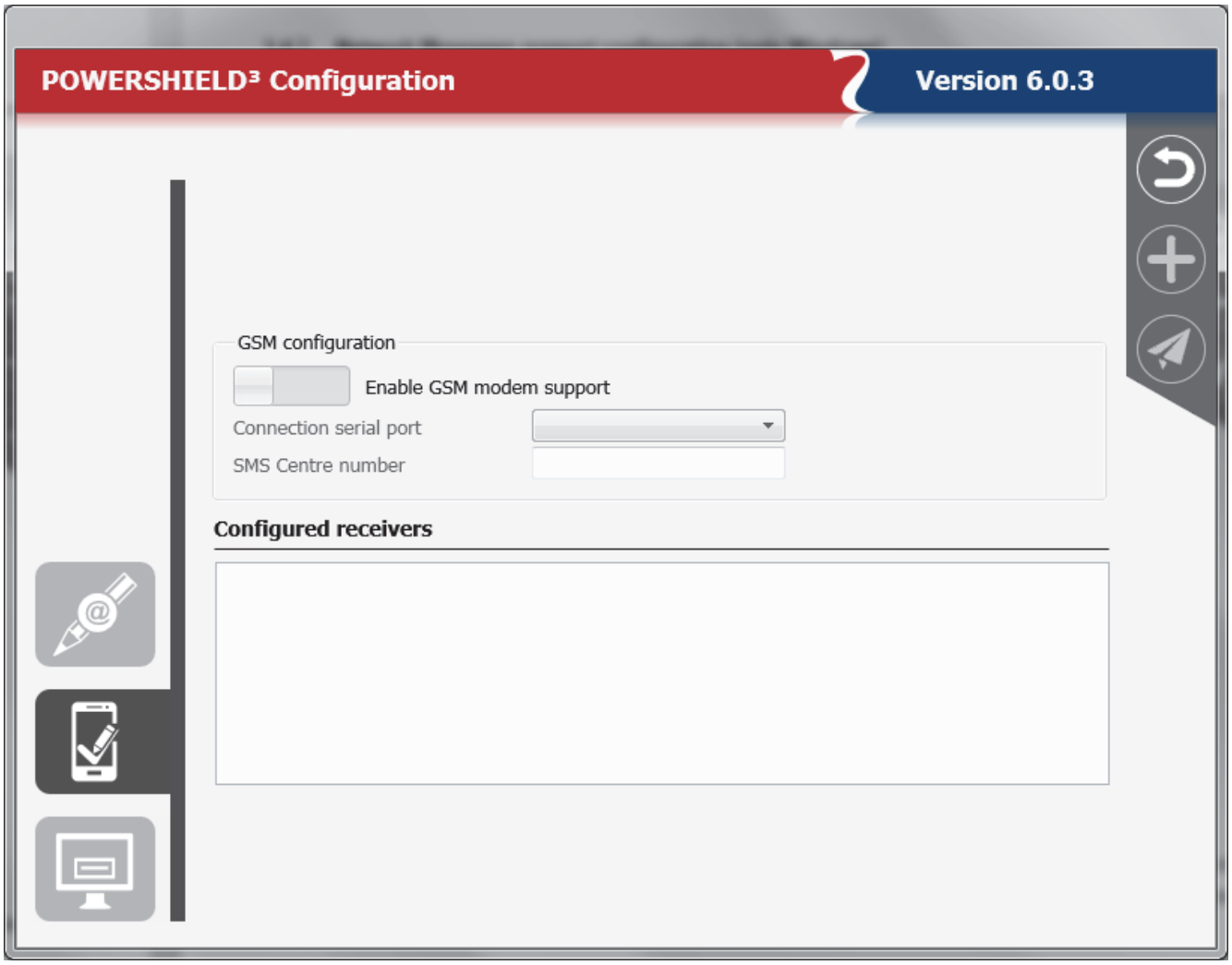
	Exit the configuration section and return to the main page.
	Add an email receiver. Pressing this button will display a box where you can enter the name and email of the receiver to be added.
	Make a sending test.

It is possible to specify the name and email address (or GSM number) for the recipients. This will only operate if the Email messages checkbox (or SMS checkbox) in jobs parameters section has been selected. In the event of an alarm condition occurring a message about the UPS status will be sent to the specified users, this message will be sent by the standard SMTP interface.

The maximum number of email recipients is 10.

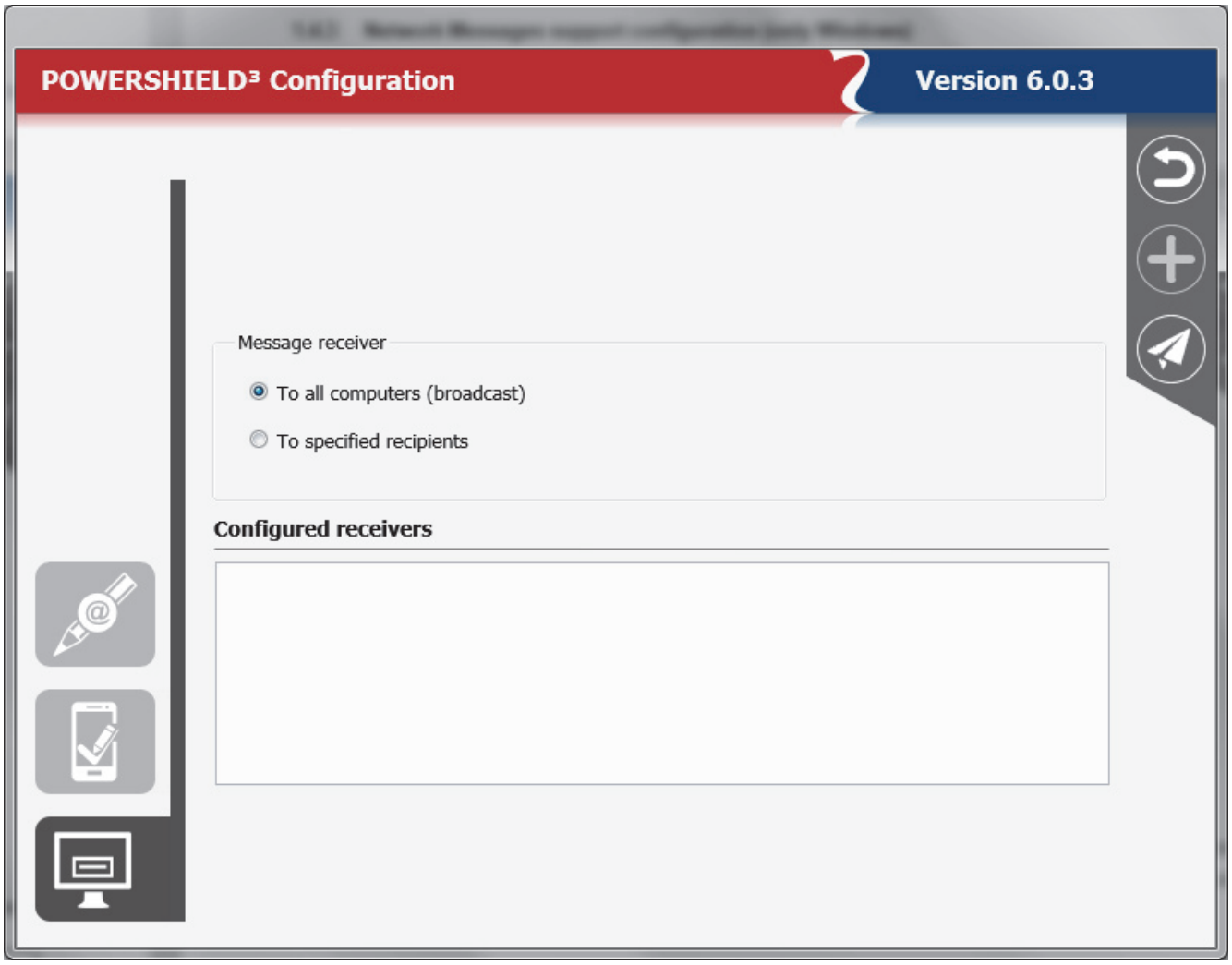
1.4.2 GSM support configuration

This window is used to configure the GSM modem connection. The GSM modem may be used to send SMS to normal GSM phones.



Parameter name	Parameter description
Enable GSM modem support	Enable or disable GSM modem support. When disabled, the PowerShield³ cannot send SMS.
Connection serial port	The serial port name where the modem is connected.
SMS Centre number	Contact your SIM card provider to obtain this number.

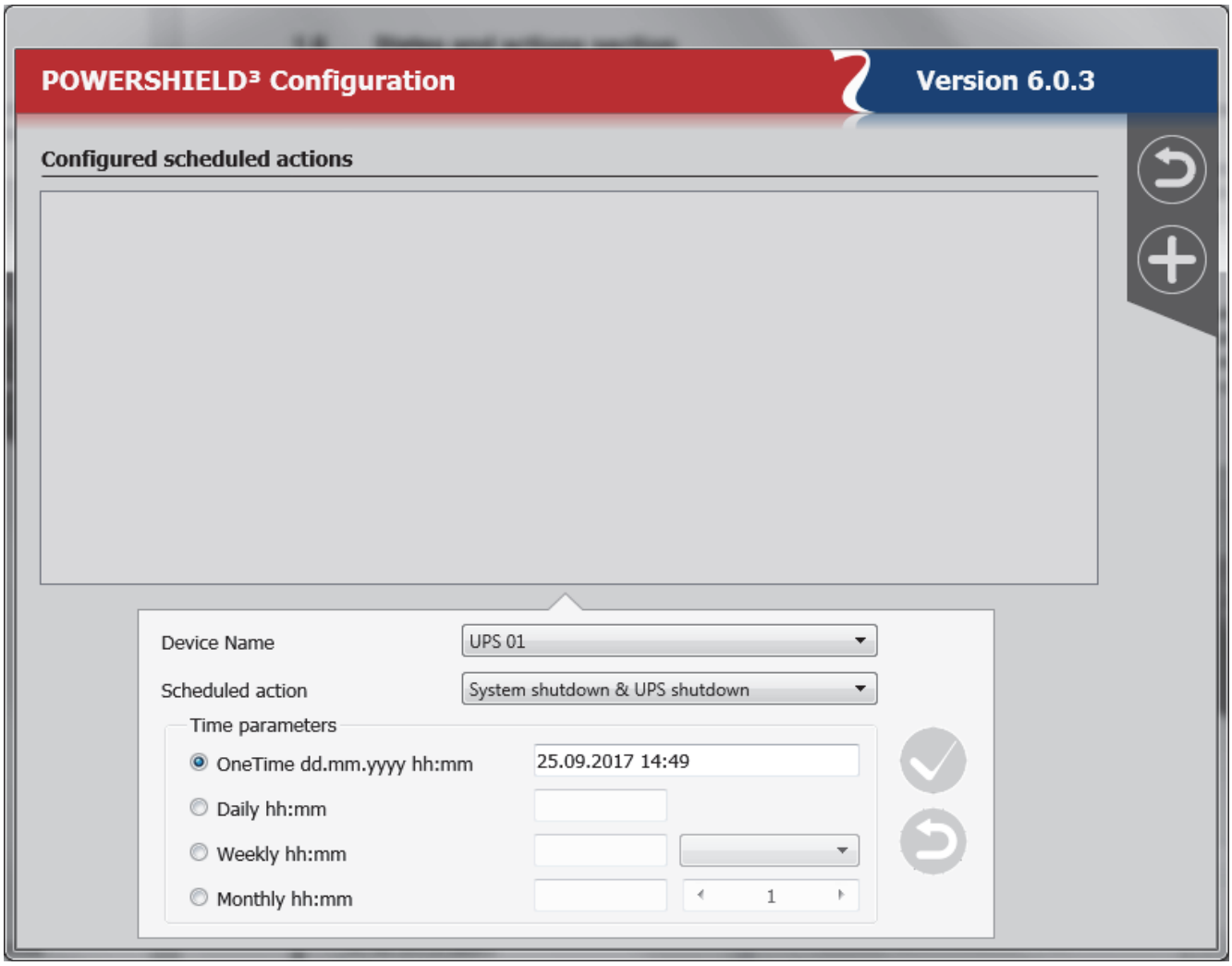
1.4.3 Network Messages support configuration (only Windows)



This window is used to configure network messages. It is possible to send the message in broadcast (to all computer present in the network) or select some user, that will be shown in the recipients list.

1.5 Action scheduler section

This window is used to specify various actions such as UPS shutdown, reboot, test, etc. that will be executed at a specified time. The maximum number of scheduled actions is 16. The configured actions will be shown in the “Configured scheduled actions” list.



The action can be executed once, daily, weekly or monthly. In the window “Scheduled actions settings” the user can choose these time parameters, and also the type of actions and the Ups on which the action is executed. It is recommended to set only one action in same time, if multiple action have been specified at the same time, some of these actions may be ignored. Any actions which are not supported by the UPS will to be ignored.

On this page you can find the following buttons:

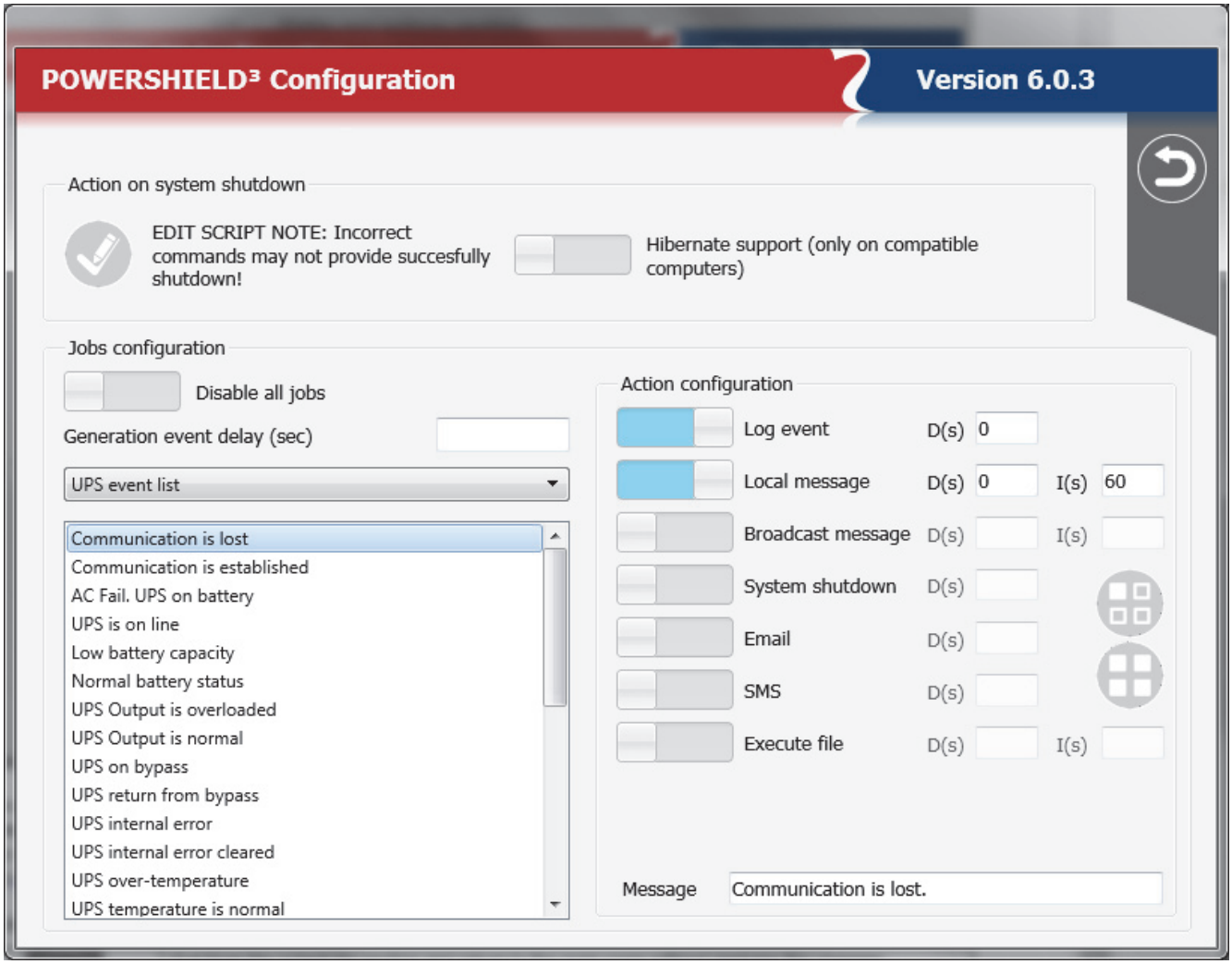
	Exit from the scheduler section and return to the main page.
	Add a scheduled event.

1.6 States and actions section

In the section “Action on System shutdown” the user can configure some actions to execute before system shutdown. It is possible to launch an external editing program to write a user defined shutdown script (“Edit script” button).

The user defined shutdown script is executed before the normal system shutdown. This can be used for specific commands, which will be executed before the shutdown, for example, stop the web server, close some special application or shutdown database server. The name of this script is ups_shut, however the extension will depend on the operating system (ups_shut.bat for Windows, ups_shut.ncf for Novell Netware and ups_shut.scr for UNIX).

ATTENTION: If you specify an incorrect command in the user shutdown script or this command stops (not correctly ended) then the *Upsagent* will not provide a correct system shutdown and thus possibly lose some data or a failure on the file system will occur. The last command in the user shutdown script must be the command to shutdown of system (except Windows versions – the shutdown is executed by using the system routines directly from the *Upsagent*). In some operating system it is possible change the script ups_mess.scr , which is used to send messages to users about the UPS status.



Parameter name	Parameter description
Hibernate support	When selected it enables the possibility to suspend the system instead of a normal shutdown.

In the “Jobs configuration” section, the user may define the actions to be taken when a given event is detected on the device or on the sensors connected. A number of actions can be associated with a particular event on the device or on the sensors connected, such as for example the possibility of executing a series of external commands defined by the user. A runtime delay can be programmed for the actions associated with a particular event (to filter events that only last for a short time). Similarly, an interval can be programmed for the repetition of the action, should the associated event still be active. Both values are expressed in seconds.

<table>
<tr><th>Action name</th><th>Action description</th></tr>
<tr><td>Disable all jobs</td><td>Enables or disable all of the jobs, if selected no jobs can be executed.</td></tr>
<tr><td>Generation event delay</td><td>The event that occurs is recognized by PowerShield³ only after the specified delay in seconds.</td></tr>
<tr><td>Message</td><td>It is possible to alter the default message for a particular event. It is not recommended to change the basic message text, as this may cause an incorrect message to be sent, which does not correspond to the actual event.
Note: in the message text it is possible to add actual values or information which will be displayed along with the original information, these are as follows:

$NAME — The UPS or Group name will be added to the message (See main parameters dialog box).
$SYSNAME — The System name will be added to the message (See main parameters dialog box).
$SYSLOC — The System location will be added to the message (See main parameters dialog box).
$SHUTTIME — The time before shutdown of the local system in seconds.
$SHUTTIME1 — The time before shutdown of the local system in the format: hh:mm:ss
$STH, $STM e $STS — The three values: the time before the shutdown of the local system in hours, minutes and seconds.
$REMTIME — The remaining UPS battery autonomy.
$REMCAP — The remaining UPS battery capacity.
$SENSORNAME — Name of the sensor on which the event occurred. Valid only if events have been associated with the sensors.</td></tr>
<tr><td>D(s)</td><td>Delay in seconds</td></tr>
<tr><td>I(s)</td><td>Interval in seconds</td></tr>
<tr><td>Log event</td><td>If selected the event will to be logged into event log file.

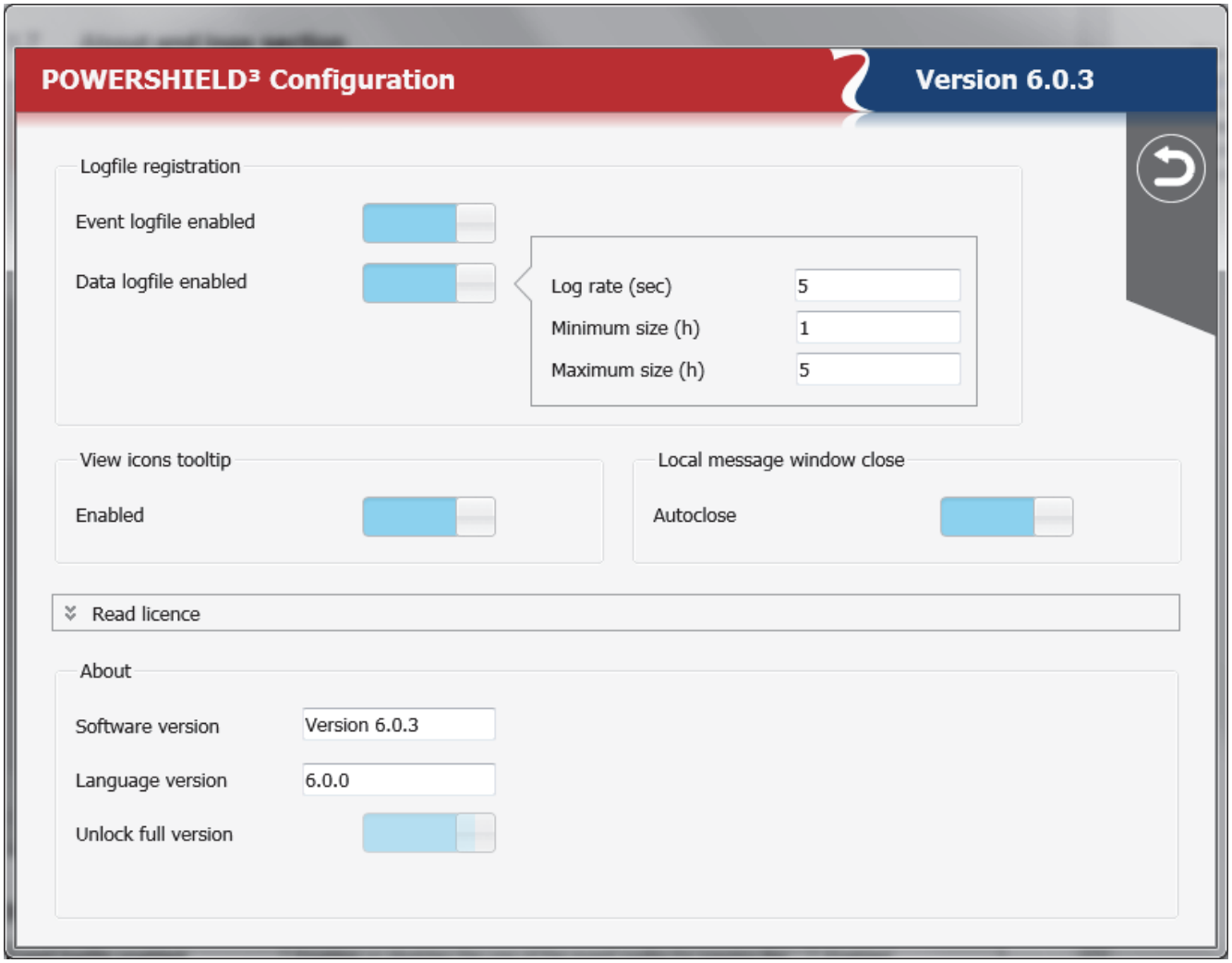
 
<u>ATTENTION</u>: On Windows platforms the events are also logged in the system Application event log. On UNIX platforms the events are also logged into the system log (this depends on system configuration: see syslog manual).</td></tr>
<tr><td>Execute file</td><td>If selected the Upsagent will execute a specified command file when a selected condition occurs.
Recommendation: Always use the full path name for the file.</td></tr>
<tr><td>Local message</td><td>If selected this enables message to be displayed on the local computer, the messages can be delayed to stop short event changes being displayed unnecessarily (e.g. short power problems) or repeated to ensure acknowledgment.
For Windows the message is displayed on the desktop, Novell Netware sends the message to the server console and Unix executes the ups_loc.scr script.</td></tr>
</table>

Broadcast message	If selected this enables a message to be sent to remote users via the network. For Windows the message is broadcast to all connected users or only to some users depend on the configuration inserted in the page Configurations, for other systems the ups_mess.scr (or .ncf for Novell Netware) script is executed. Recommendation: Use the wall command to send message to all connected users on Unix systems.
Shutdown system	If selected this option enables the shutdown of the system, for Windows the ups_shut.cmd file is searched for possible user specified commands before shutdown (e.g. quit databases, …) then the standard system shutdown is executed using the WIN32 API functions. For other systems the ups_shut.scr (or .cmd or .ncf) script is started with the appropriate commands to provide the correct shutdown of the computer.  **ATTENTION: System shutdown conditions defined in the UPS connection dialog box is not dependent on this checkbox.**  **ATTENTION: You cannot specify a Shutdown system action for AC Fail or Battery low; these are dependent on the UPS connection configuration. The system shutdown time after AC Fail may be defined by two independent values (fixed time from AC Fail and/or specific remaining backup time). The Battery Low event causes an immediate system shutdown.**
Email	Direct email support is for Windows only, when using other system a script must be used to suit the individual system. It is possible to specify a name and email address for email recipients in the Configurations page. If the Email checkbox is selected, then the message is sent to the specified users, by standard SMTP interface.
SMS	Enables the option to send the message as SMS to a specified GSM phone number. It is possible to specify a name and telephone number in the Configurations page.
Default	Used to reset the event action parameters to the default state.
Default All	Used to reset all of the parameter to the default state.

On this page, you can find the following buttons:

	Button to edit the shutdown script.
	Button default.
	Button default all.

1.7 About and logs section



Parameter name	Parameter description	Default
Event logfile enabled	Enables or disables the use of the event logfile for logging the events by the *Upsagent* module.	Enabled
Data logfile enabled	Enables or disables the use of the data logfile for logging measured values by the *Upsagent* module.	Disabled
Log rate	Defines the interval (in seconds) in which the *Upsagent* writes the measured values into the data log file.	5 seconds
Minimum size	Defines the minimum time (in hours) of the data logfile for the measured values.	1 hour
Maximum size	Defines the maximum time (in hours) of the data logfile for the measured values. The data logfile will be reset back to the minimum size (value of Minimum size) if the logfile contains more data than the configured values.	5 hours
Local message window close (only for Windows)	When selected the window that appears with the message with regards to the UPS status displayed on desktop will automatically be closed after 10 seconds, if this is not selected the message must be cleared manually by the OK button.	Enabled
View icon tooltip	Enable icon tooltip display.	Enabled

The About group contains the information with regards to the PowerShield³, including the version and copyright. In addition to this the switch “Unlock full version” is used to enter the serial and license number, to convert the STANDARD version to the FULL version of PowerShield³. **The STANDARD version is used for Windows, Linux and macOs version, when one UPS is to be monitored**. The FULL version will allow one UPS to be monitored locally and up to 31 UPS to be monitored via a network by the *Upsagent*. To change the STANDARD version to the FULL version you must enter the provided Serial number and relevant License number.

2. Upsetup (textual) for Linux

To configure the parameters for PowerShield³ on Linux and use the text version of *Upsetup*. The style and parameters to be set is of course dependent on the text interface used.

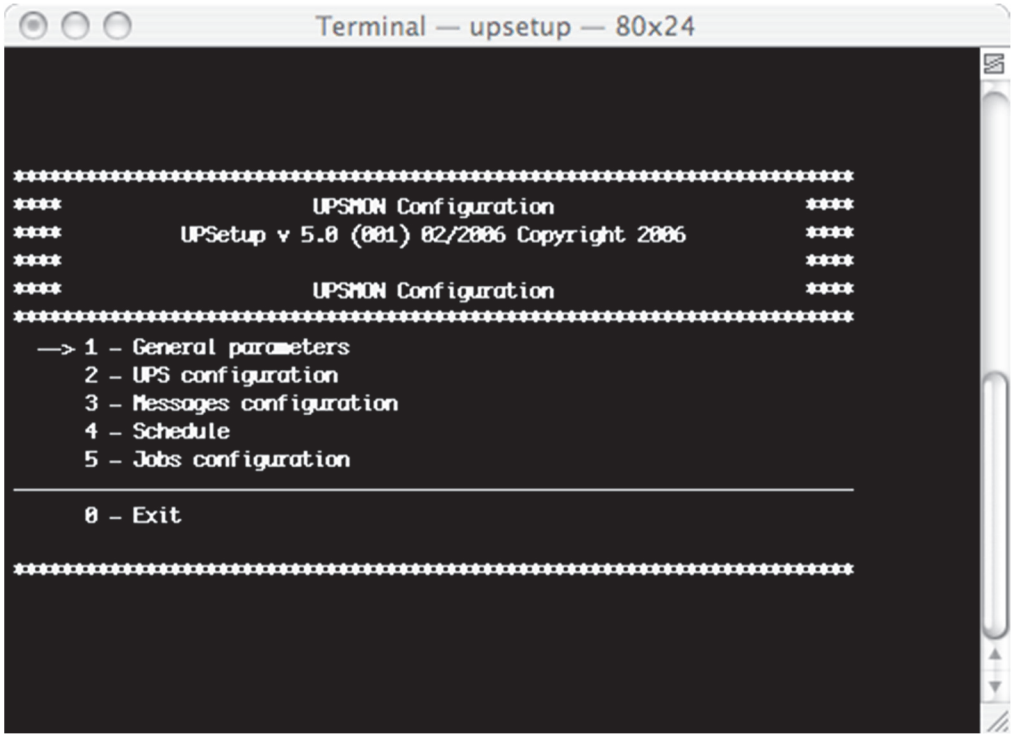
A common problem is finding the correct serial device name for the Linux system. The following table gives the usual device names for different Linux systems.

UNIX System	Device name
Linux (serial RS232)	/dev/ttyS0
Linux (USB)	USB

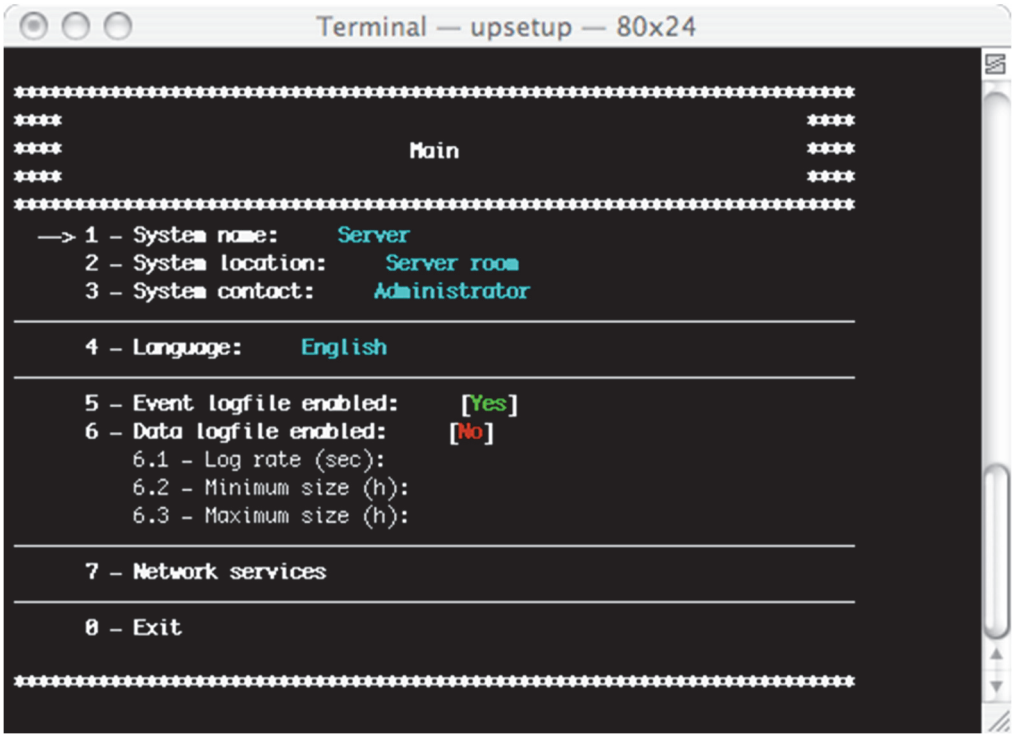
ATTENTION: When the *Upsetup* program is started for first time, the correct PRTK code for the UPS to be monitored must be input, this code is located on a label which can be found on either the front or the rear of the UPS.

The *Upsetup* program has 5 main sections:

1. **General parameters**: this section is used to set up all of the common parameters, such as the system name, location, personnel contact name, parameters for log files and for network communication.
2. **UPS configuration**: this section is used to configure a list of the UPS to be monitored by the *Upsagent* and the communication parameters for each UPS.
3. **Message configuration** : this section is used configure the GSM phone list to send SMS and also to configure the modem for a teleservice connection.
4. **Schedule**: this section is used to configure any scheduled actions. It is possible to specify scheduled actions such as UPS shutdown, reboot, test, etc.; these actions will be executed at a specified time.
5. **Jobs configuration**: this section is used to configure the jobs to be carried out by the PowerShield³ when an alarm condition occurs, for example it is possible to customize each alarm to carry out a specific set of tasks such as run a shutdown user defined script, send email, SMS or network messages etc.

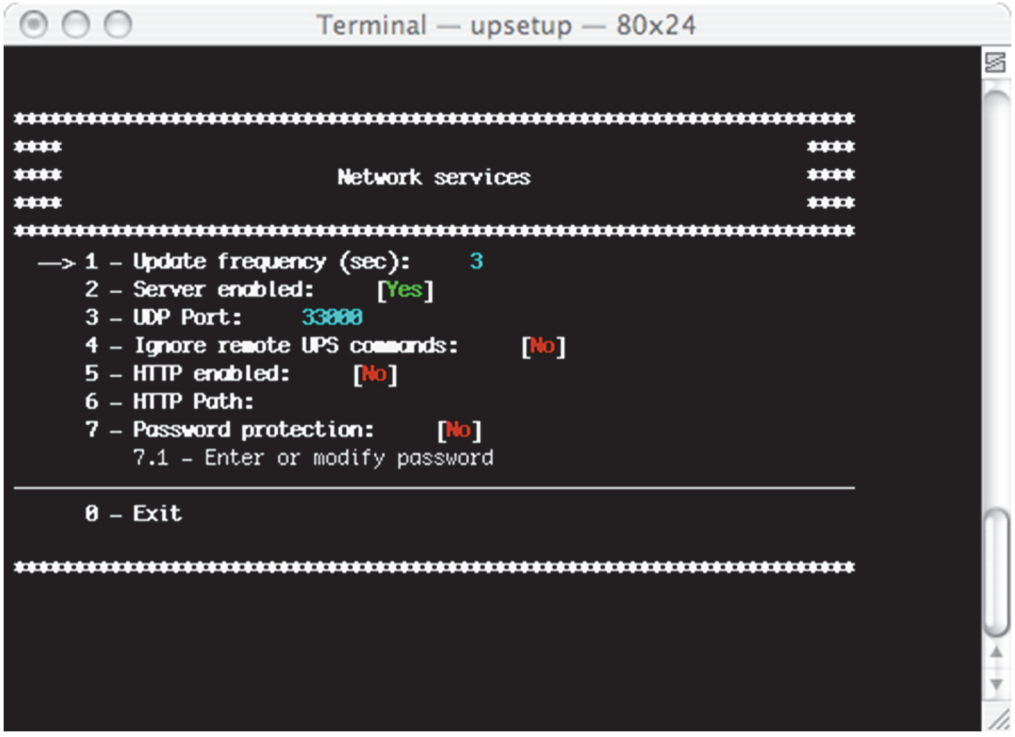


2.1 General parameters



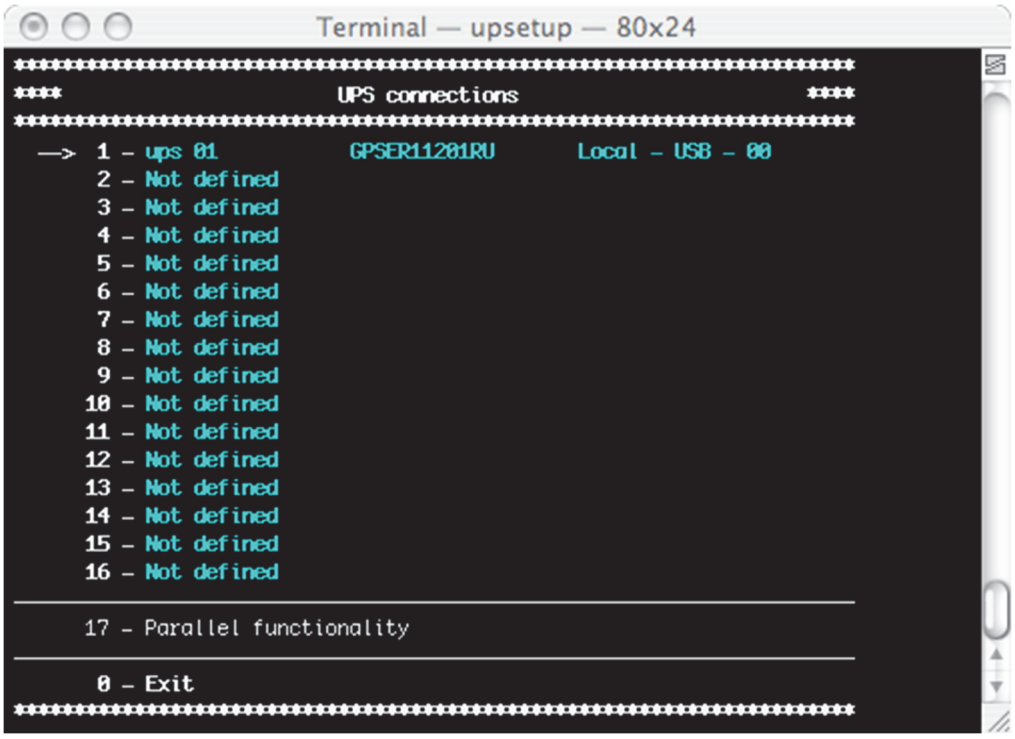
Parameter name	Parameter description	Default
System name	Defines the name of the local system.	Server
System location	Defines the location of the local system.	Server room
System contact	Defines the contact person's name for the local system.	Administrator
Language	Language selection. All messages and text in PowerShield³ (except some system messages) is described in lang_xx.ini files. The default is lang_00.ini used for the standard English language interface.	Lang_00 (english language)
Event logfile enabled	Enables or disables the use of the event logfile for logging the events by the *Upsagent* module.	Enabled
Data logfile enabled	Enables or disables the use of the data logfile for measured values by the *Upsagent* module.	Disabled
Log rate	Defines the interval (in seconds) in which the *Upsagent* writes the measured values into the data log file.	5 seconds
Minimum size	Defines the minimum time (in hours) of the data logfile for the measured values.	1 hour
Maximum size	Defines the maximum time (in hours) of the data logfile for the measured values. The data logfile will be set back to the minimum size (value of Minimum size) if the logfile contains more data than the configured values.	5 hours

2.1.1 Network services



Parameter name	Parameter description	Default
Update frequency	Defines the time-interval (in seconds) in which the *Upsagent* polls for data from the UPS (if the *Upsagent* is connected to remote UPS via network). The system speed may be reduced due to permanent communication with the UPS if this value is too small. If the value is too high the system will react slower in the case of an alarm from the UPS. The recommended values are from 1 second (for smaller networks) or 5-10 seconds (on larger networks).	3 seconds
Server enabled	Enables or disables the connection access of other computers running the *Upsagent* or *Upsview* programs.	Enabled
UDP Port	The UDP communication port. This must be same on all system using PowerShield³.	33000
Ignore remote UPS commands	Enables or disables access from remote computers to make commands to the UPS (by *Upsagent* or *Upsview*). This feature is used to prevent a remote user from forcing a command to the UPS, such as UPS shutdown or test etc.	Disabled
HTTP enabled	Allow the support for HTTP.	Disabled
HTTP path	Used to specify where the *Upsagent* creates the files with the UPS status for HTTP monitoring.	Empty
Password protection	If selected the software will require a password for communication with the UPS. This password is to protect the *Upsagent* connection. If the user doesn't know the password, it will not be possible to connect the agent.	Disabled

2.2 UPS Configuration



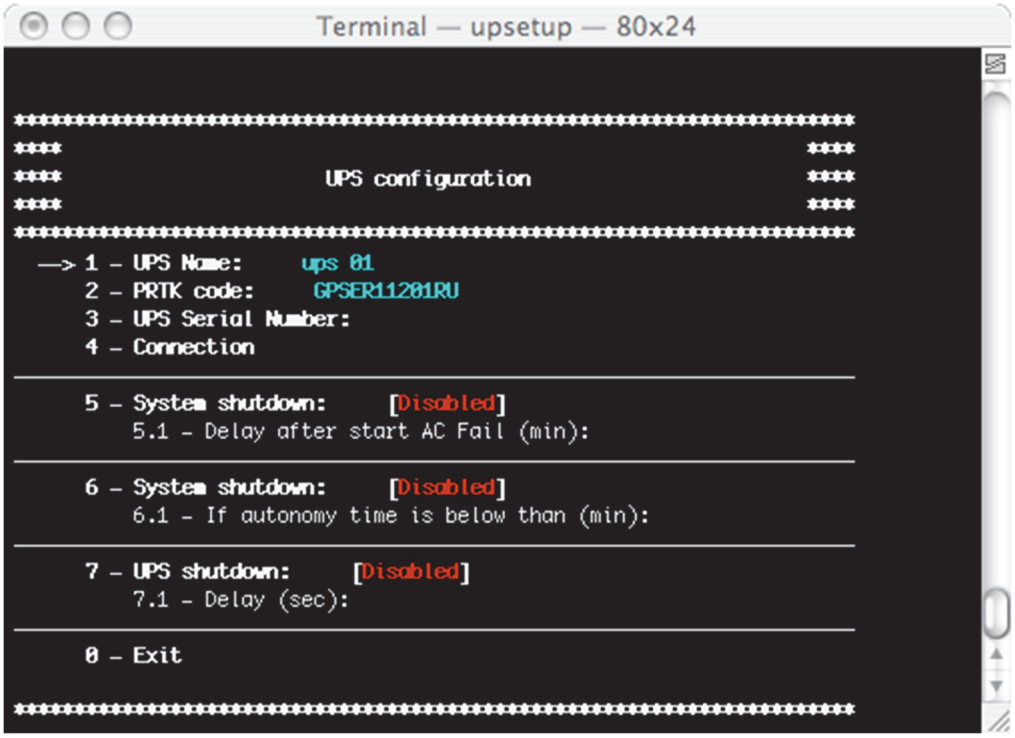
The UPS connection window contains the list of the UPS that will be monitored by the *Upsagent.*

It is possible to add, delete or edit the UPS list.

The STANDARD version of PowerShield³ will only allow one UPS to be monitored either locally or via a network by the *Upsagent*. The FULL version will allow one UPS to be monitored locally and up to 15 UPS to be monitored via a network by the *Upsagent*. To change the STANDARD version to the FULL version you must enter the relevant License number. The License number is available from the UPS manufacturer or local supplier.

The FULL version of PowerShield³ also enables the operation of Parallel functionality. This function enables the setup of groups of UPS, which are working in redundant operation. It is possible to create up to 10 groups, with each group containing up to 8 UPS (2 UPS minimum) with up to 64 event actions. To enable this function the user must define at least 2 Ups.

2.2.1 UPS definition



Parameter name	Parameter description
UPS Name	UPS identification name.
PRTK Code	The PRTK is used to determine the type of UPS to be monitored, the code to be entered can be located on the UPS.
UPS Serial number	The UPS have unique serial numbers, this number used to identify the UPS. Enter the serial number as printed on the UPS identification label. This field is important for the correct operation with Teleservice program.
System shutdown	This field is used to specify the parameters for the system shutdown, the system Shutdown can be triggered by either a specified time after AC Fail or if the UPS autonomy time is below a specified time. If the UPS sends a low battery signal to the computer (i.e. the UPS backup time is low), the *Upsagent* will ignore the specified times and start the system shutdown procedure immediately.
UPS shutdown	This field can be used to send a shutdown signal to the UPS once all remote computers have shutdown, at this point the UPS will then shutdown.

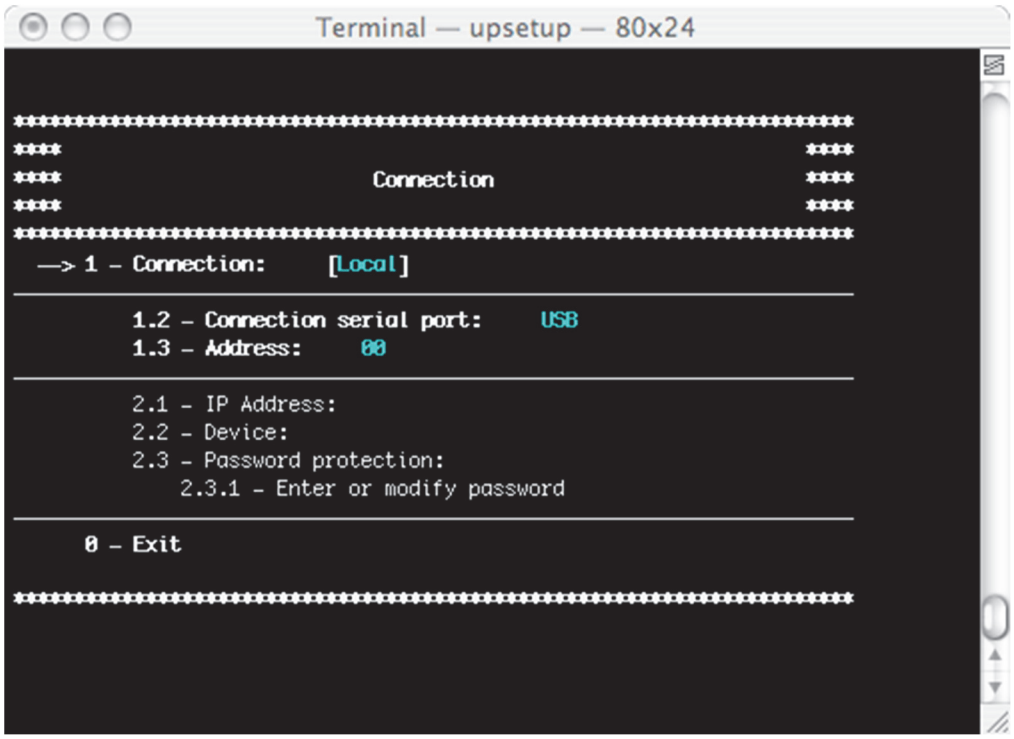
2.2.2 Ups Connection

The UPS connection must be set to the chosen method to be used for the communication between the computer and UPS(s). The first method of connection is local, this connection method is used when the connection to the UPS is to be made via a serial port, if this method is to be used ensure that the correct serial port and UPS address is selected. All the other settings for the serial connection (baud speed etc.) are automatically set for the selected UPS type. The second method of connection is remote via a network, for this connection an IP address for the computer or Network adapter must be specified for the device where the UPS is connected and the device number (usually 1).

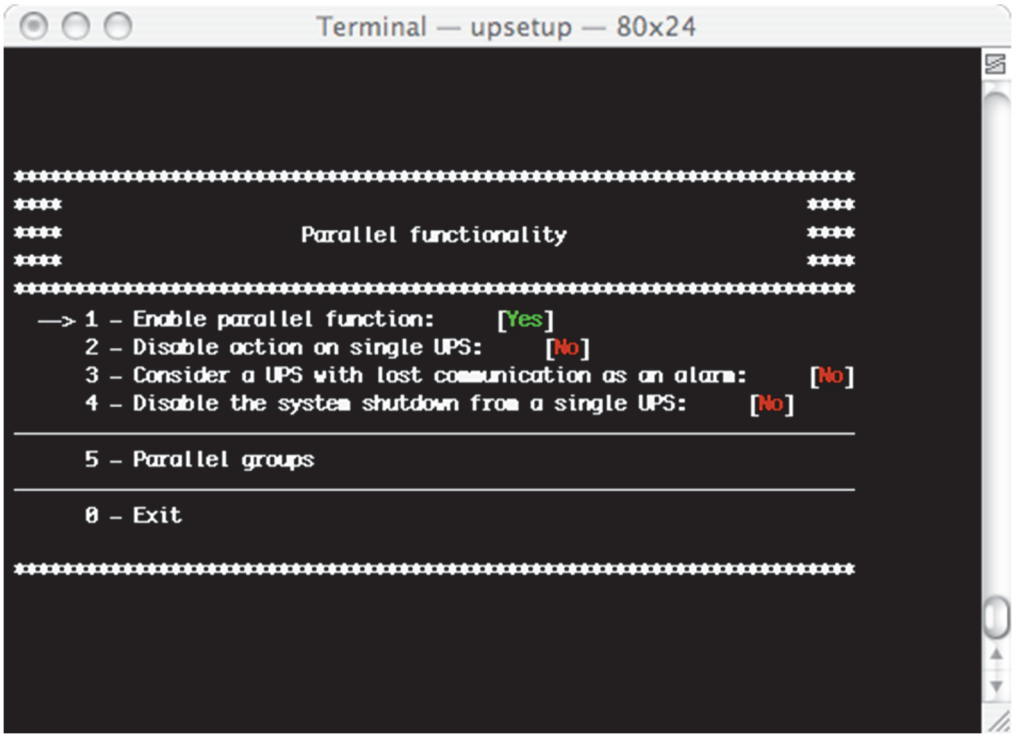
Note: The Windows version, the Linux version and the macOS version supports USB communication via USB port of UPS. For Linux and macOS specify USB as Connection serial port.

Note: The TCP/IP communication allows the user to specify a remote *Upsagent* or Network adapter location by host name (or DNS name).

Note: It is possible to specify a connection password for each UPS connected via TCP/IP. This password must always be specified to connect the specific UPS.



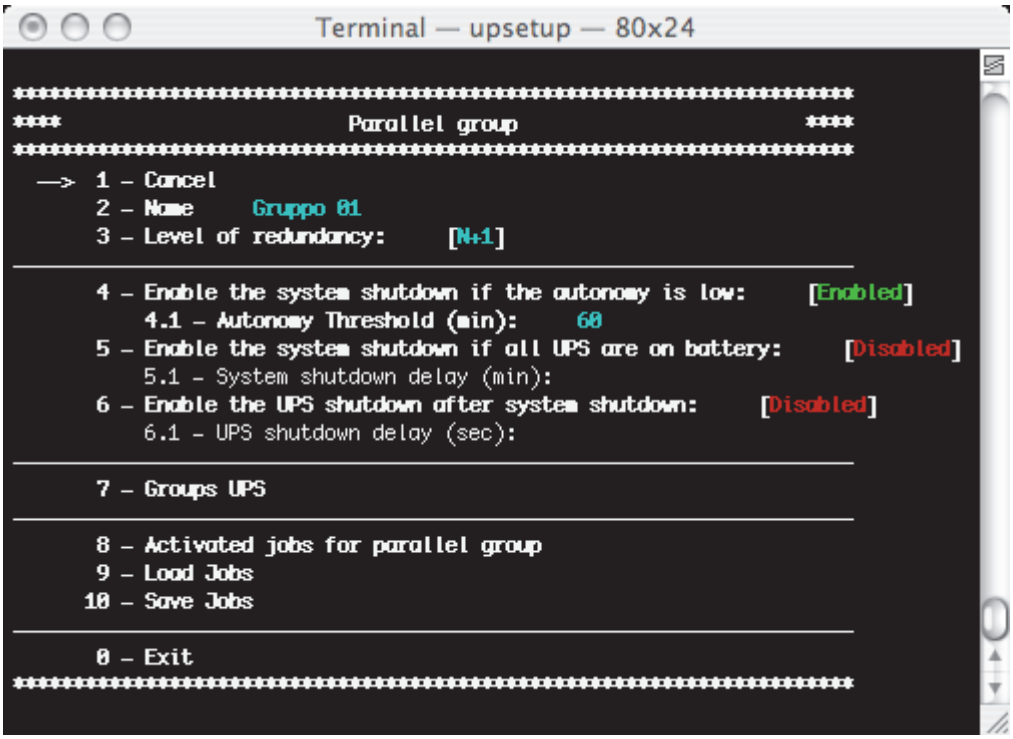
2.2.3 Parallel functionality



Parameter name	Parameter description
Enable parallel function	Enable or disable the parallel functionality.
Disable action on single Ups	If selected, the standard configuration for the single UPS event will be ignored. The *Upsagent* controls only the group status. If it is not selected, the *Upsagent* controls, both the group events and also the single UPS events. If this parameter is selected, the job actions defined in the job dialog box are disabled for the single UPS.
Consider a Ups with lost communication as an alarm	If selected, the active alarm level is raised, specified on the parallel event list, for each UPS in communication lost condition.
Disable the System shutdown from a single UPS	If selected, this disables the system and UPS shutdown time defined on the single UPS configuration. This function shutdown time is the same time for the UPS parallel group.
Parallel Groups	Used to add, modify or delete groups.

2.2.4 Parallel Groups

The name and UPS number of each parallel group, and the events associated to the parallel group are described or configured using the next menu:

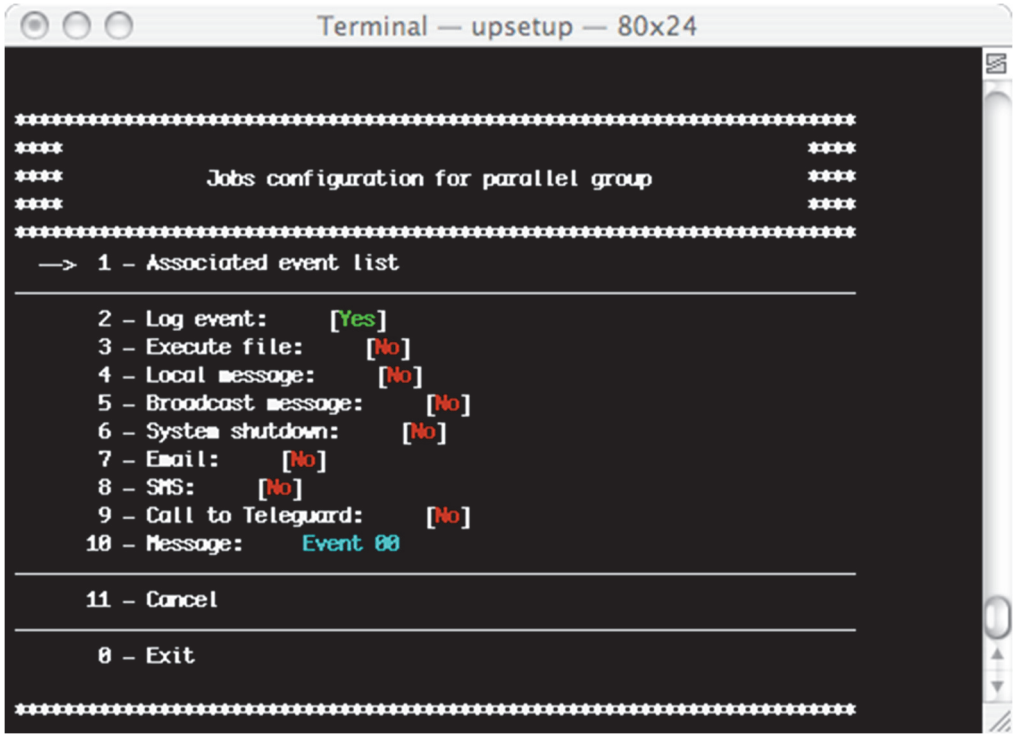


A group name must be specified, a minimum of two UPS added (from the list of UPS monitored by *Upsagent,* shown by selecting "Groups UPS") and configured the selected actions for the group events.

Parameter name	Parameter description
Redundancy level	Defines the redundancy level of the parallel group: possible choices are N (default), N+1 (for groups with a minimum of 2 UPS), N+2 (for groups with a minimum of 3 UPS) and N+3 (for groups with a minimum of 4 UPS). N.B. A parallel group with redundancy N+i will stay active and operational even if "i" UPS within the group fail. The load will be shared between the remaining UPS.
Enables system shutdown in the event of low back up time	The shutdown may depend on the fact that the "i-th" backup time of the parallel group selected is lower than the preset time. N.B. If the redundancy level is N, the lowest backup time is considered; if it is N+1, the second lowest time is considered; if it is N+2, the third lowest time is considered, while if it is N+3, the fourth lowest time is considered, on so on.
Enable system shutdown if all of the UPS are supplied from the batteries	System shutdown parameters for the parallel group can be defined. The shutdown may depend on the fact that all the UPS within the parallel group are operating in battery mode.
Enable the Ups shutdown after system shutdown	It is possible to shut down the groups' UPS together with the system after the specified delay.

It is possible to save the UPS parallel event configuration, and also possible to load it on another computer without re-inserting the same configuration, this can be done using the "Load jobs" and "Save jobs".

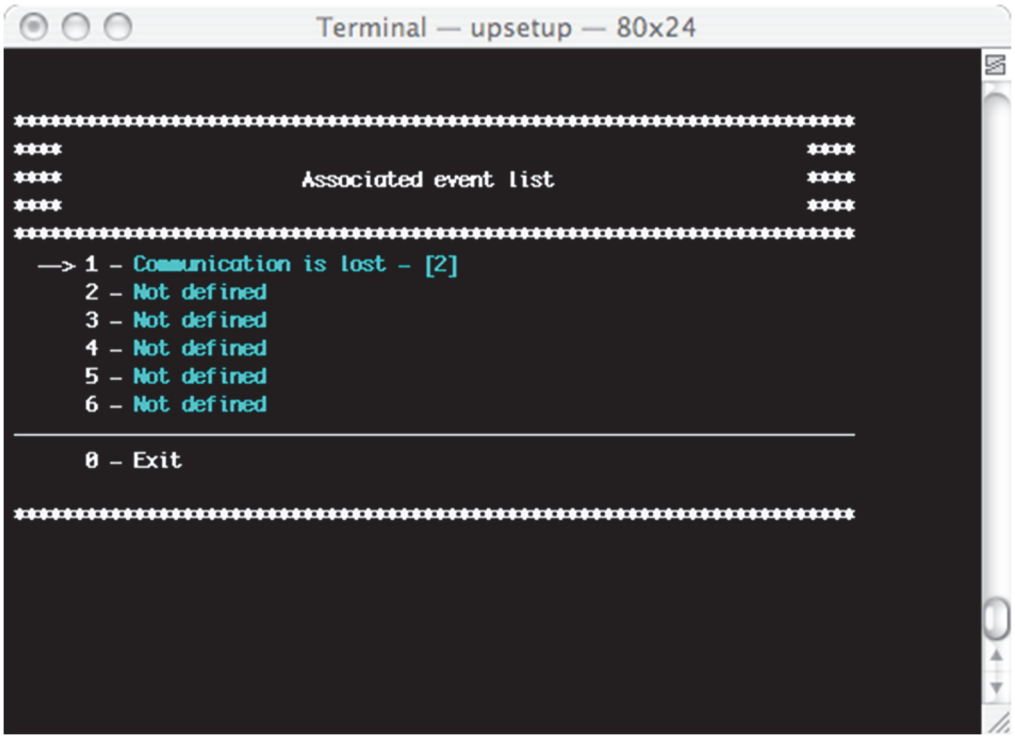
To configure the selected actions for the group events there are the next menu:



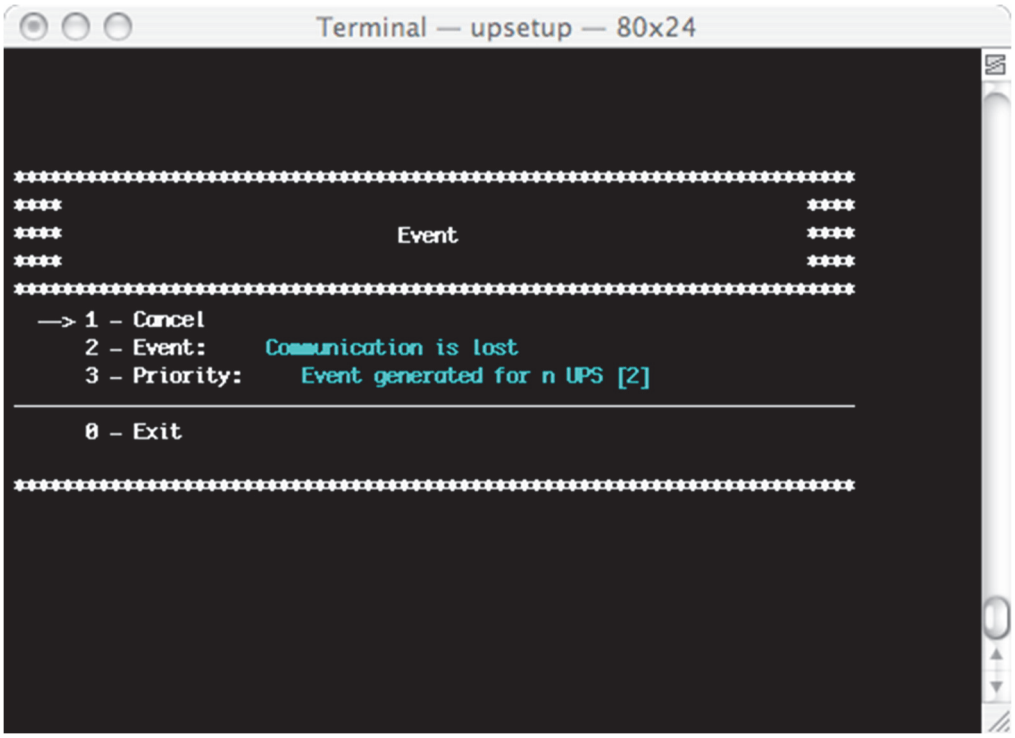
Action name	Action description
Message	In the message text it is possible to add actual values or information which will be displayed along with the original information, these are as follows: $NAME — The UPS or Group name will be added to the message (See main parameters dialog box). $SYSNAME — The System name will be added to the message (See main parameters dialog box). $SYSLOC — The System location will be added to the message (See main parameters dialog box). $SHUTTIME — The time before shutdown of the local system in seconds. $SHUTTIME1 — The time before shutdown of the local system in the format: hh:mm:ss $STH, $STM e $STS — The three values: the time before the shutdown of the local system in hours, minutes and seconds. $REMTIME — The remaining UPS battery autonomy. $REMCAP — The remaining UPS battery capacity.
Log event	If selected the event will to be logged into event log file. **ATTENTION: On Windows NT,2000 or XP platforms the events are also logged in the system Application event log. On UNIX platforms the events are also logged into the system log (this depends on system configuration: see syslog manual).**
Execute file	If selected the *Upsagent* will execute a specified command file when a selected condition occurs. Recommendation: Always use the full path name for the file.
Local message	If selected this enables message to be displayed on the local computer, the messages can be delayed to stop short event changes being displayed unnecessarily (e.g. short power problems) or repeated to ensure acknowledgment. For Windows the message is displayed on the desktop, Novell Netware sends the message to the server console and Unix executes the ups_loc.scr script.

Broadcast message	If selected this enables a message to be sent to remote users via the network. For Windows the message is broadcast to all connected users or only to some users depend on the configuration inserted in the page Configurations, for other systems the ups_mess.scr (or .ncf for Novell Netware) script is executed. Recommendation: Use the wall command to send message to all connected users on Unix systems.
Shutdown system	If selected this option enables the shutdown of the system, for Windows the ups_shut.cmd file is searched for possible user specified commands before shutdown (e.g. quit databases, …) then the standard system shutdown is executed using the WIN32 API functions. For other systems the ups_shut.scr (or .cmd or .ncf) script is started with the appropriate commands to provide the correct shutdown of the computer.
Email	Direct email support is for Windows only, when using other system a script etc must be used to suit the individual system. It is possible to specify a name and email address for email recipients in the Configuration tab. If the Email checkbox is selected, then the message is sent to the specified users. Before using this option the email service must be configured on the computer.
SMS	Enables the option to send the message as SMS to a specified GSM phone number.

The “associated event list” is the list of simple event that compose the composite event. Composite event related to the group is made up of one or more simple events that may occur on the groups’ UPS. The composite event occurs, and the defined actions are performed, only when all the simple events on the list are verified on the same time. A composite event is made up to 6 simple event.

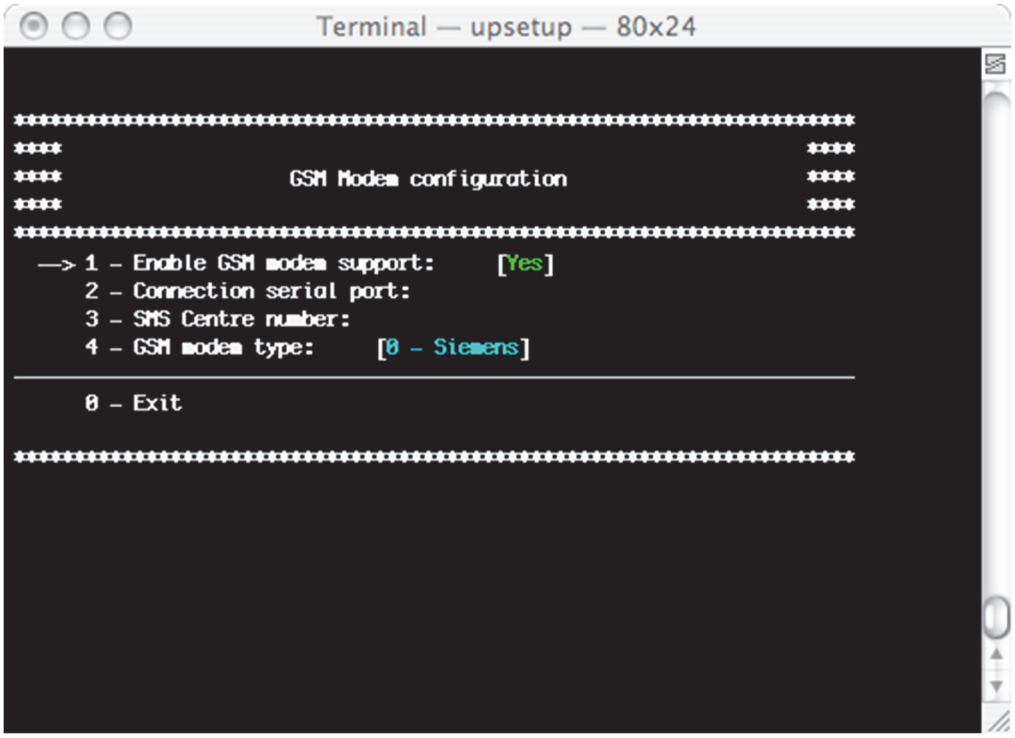


To add a simple event to the list of the composite events there is next menu. On this window it is possible to set also the event priority: i.e. the number of the groups’ UPS on which the simple event must occur for making it acknowledgeable.



2.3 Message configuration

From this menu is possible to configure the modem for the teleservice call, the GSM Modem support. It is also possible to add telephone numbers used by GSM modem for the SMS send.

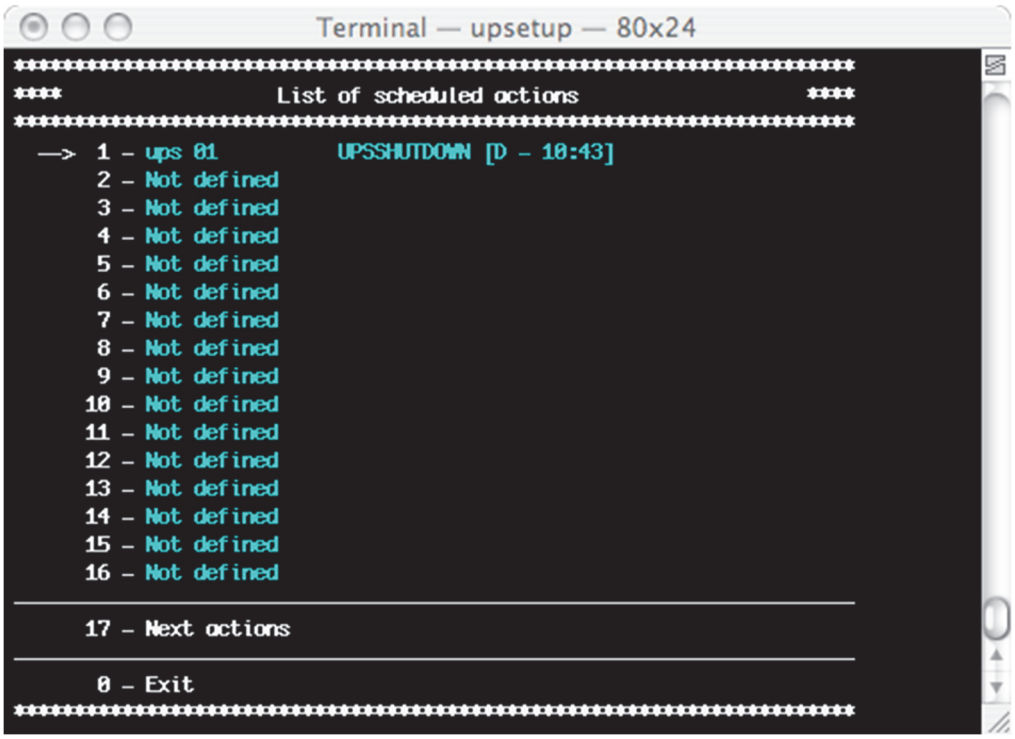


Parameter name	Parameter description
Enable GSM modem support	Enable or disable GSM modem support. When disabled, the PowerShield³ cannot send SMS.
Connection serial port	The serial port name where the modem is connected.
SMS Centre number	Contact your SIM card provider to obtain this number.
GSM modem type	Are supported AT modems.

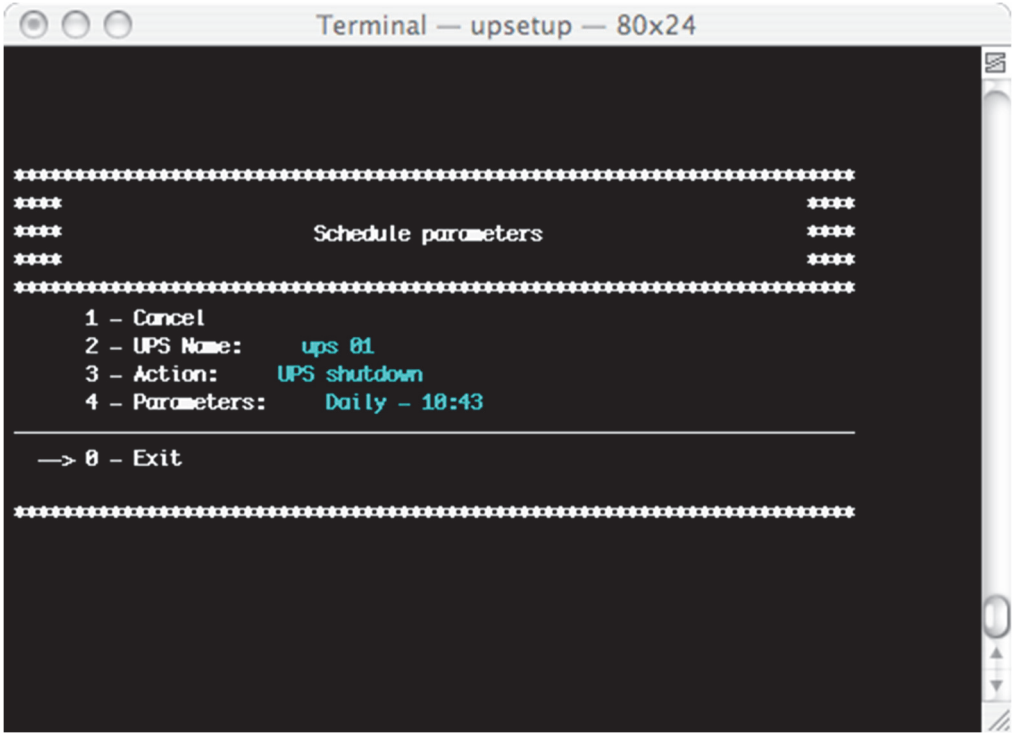
2.4 Scheduler

Configuration of the scheduled actions. Using this function it is possible to specify various actions such as UPS shutdown, reboot, test, etc., these actions will then be executed at a specified time.

It is recommended to set only one action in same time, if multiple action have been specified at the same time, some of these actions may be ignored. Note - The maximum number of scheduled actions is 16. The “Next actions” function can be used for showing the actions that will be executed ordered by time.



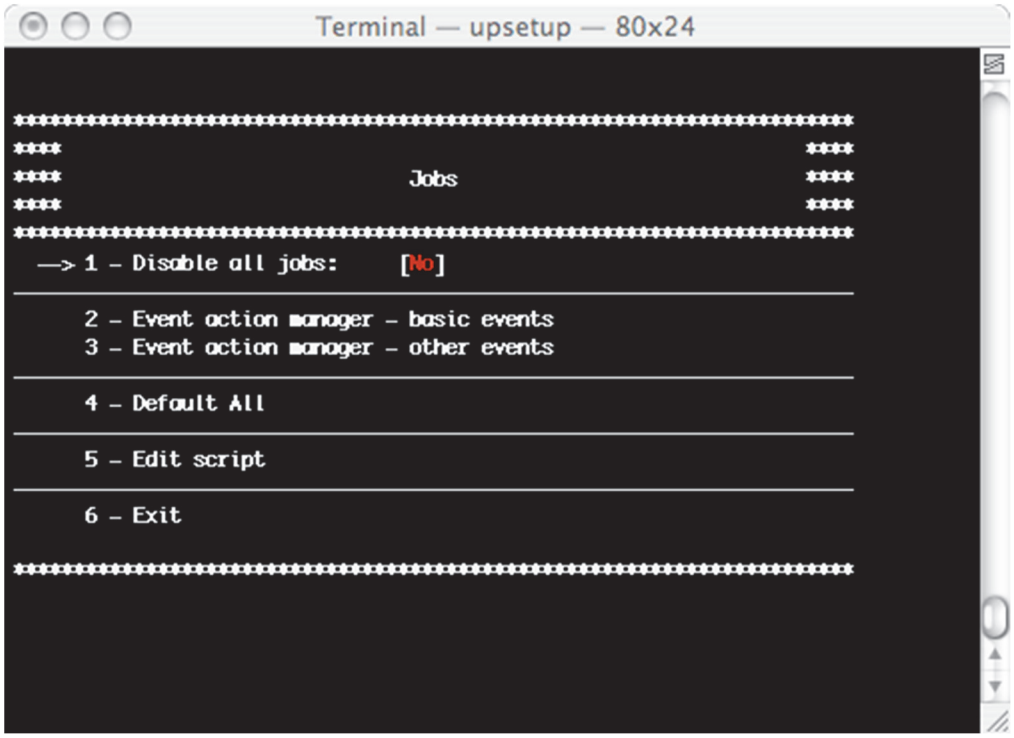
The action can be executed once, daily, weekly or monthly. In the menu “Schedule parameters” the user can choose these time parameters, and also the type of actions and the Ups on which the action is executed. Any actions which are not supported by the UPS will to be ignored.



2.5 Job configuration

The jobs configuration menu is used to define the jobs that will be executed when an event of the UPS occurs. It is possible to configure multiple jobs for a particular event. It is possible to execute an external command defined by the user. Using the jobs configuration menu it is possible to launch an external editing program to write a user defined shutdown script. The user defined shutdown script is executed before the normal system shutdown. This can be used for specific commands, which will be executed before the shutdown, for example, stop the web server, close some special application or shutdown database server. The name of this script is ups_shut.scr for the Linux system.

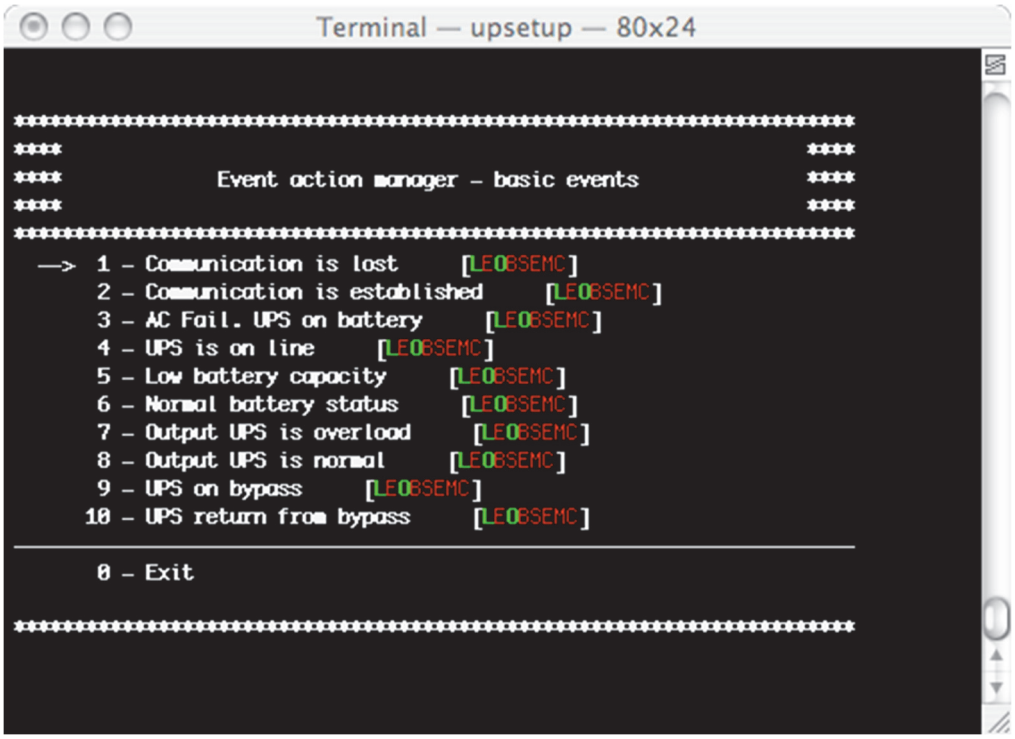
ATTENTION: If you specify an incorrect command in the user shutdown script or this command stops (not correctly ended) then the *Upsagent* will not provide a correct system shutdown and thus possibly lose some data or a failure on the file system will occur. The last command in the user shutdown script must be the command to shutdown of system (except Windows versions – the shutdown is executed by using the system routines directly from the *Upsagent*). In some operating system it is possible change the script ups_mess , which is used to send messages to users about the UPS status.

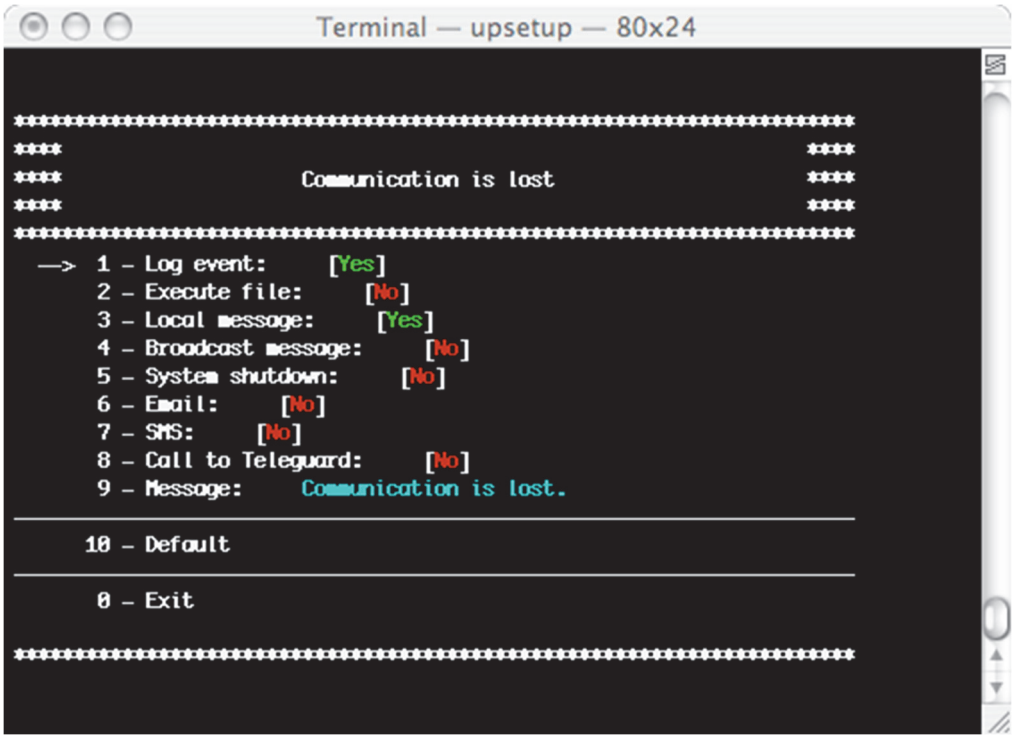


Action name	Action description
Disable all jobs	Enables or disable all of the jobs, if selected no jobs can be executed.
Default All	Used to reset all of the parameter to the default state.

For each event, it is possible to set an action from the list below:

1. Log event (L)
2. Execute file (E)
3. Local message (O)
4. Broadcast message (B)
5. System shutdown (S)
6. Email (E)
7. SMS (M)





Action name	Action description
Log event	If selected the event will to be logged into event log file.
Execute file	If selected the *Upsagent* will execute a specified command file when a selected condition occurs. Recommendation: Always use the full path name for the file.
Local message	If selected this enables message to be displayed on the local computer, the messages can be delayed to stop short event changes being displayed unnecessarily (e.g. short power problems) or repeated to ensure acknowledgment. For Windows the message is displayed on the desktop, Novell Netware sends the message to the server console and Unix executes the ups_loc.scr script.

Broadcast message	If selected this enables a message to be sent to remote users via the network. For Windows the message is broadcast to all connected users or only to some users depend on the configuration inserted in the page Configurations, for other systems the ups_mess.scr (or .ncf for Novell Netware) script is executed. Recommendation: Use the wall command to send message to all connected users on Unix systems.
Shutdown system	If selected this option enables the shutdown of the system, for Windows the ups_shut.cmd file is searched for possible user specified commands before shutdown (e.g. quit databases, …) then the standard system shutdown is executed using the WIN32 API functions. For other systems the ups_shut.scr (or .cmd or .ncf) script is started with the appropriate commands to provide the correct shutdown of the computer.  **ATTENTION: System shutdown conditions defined in the UPS connection menu is not dependent on this job.**  **ATTENTION: You cannot specify a Shutdown system action for AC Fail or Battery low; these are dependent on the UPS connection configuration. The system shutdown time after AC Fail may be defined by two independent values (fixed time from AC Fail and/or specific remaining backup time). The Battery Low event causes an immediate system shutdown.**
Email	Direct email support is for Windows only, when using other system a script etc must be used to suit the individual system. Note: for Linux operating system it is possible to send email message adding the command in the script ups_eml.scr.
SMS	Enables the option to send the message as SMS to a specified GSM phone number. It is possible to specify a name and telephone number in the Configurations Message menu.
Message	It is possible to alter the default message for a particular event. It is not recommended to change the basic message text, as this may cause an incorrect message to be sent, which does not correspond to the actual event. Note: in the message text it is possible to add actual values or information which will be displayed along with the original information, these are as follows: $NAME — The UPS or Group name will be added to the message (See main parameters dialog box). $SYSNAME — The System name will be added to the message (See main parameters dialog box). $SYSLOC — The System location will be added to the message (See main parameters dialog box). $SHUTTIME — The time before shutdown of the local system in seconds. $SHUTTIME1 — The time before shutdown of the local system in the format: hh:mm:ss $STH, $STM e $STS — The three values: the time before the shutdown of the local system in hours, minutes and seconds. $REMTIME — The remaining UPS battery autonomy. $REMCAP — The remaining UPS battery capacity.
Default	Used to reset the event action parameters to the default state.

For the actions associated to a particular event it is possible to specify a delay in the execution (in order to filter events that last for a brief time) and an interval for the repeat of the actions if the associated event is still active. Both values are expressed in seconds.

3. UPSConfigHyperV

3.1 What is UPSConfigHyperV?

UPSConfigHyperV is an application used to configure the shutdown script ups_shut.bat which is used by the UPS monitoring software PowerShield³ for shutting down servers equipped with the Windows Hyper-V operating system which are present within the monitored network.

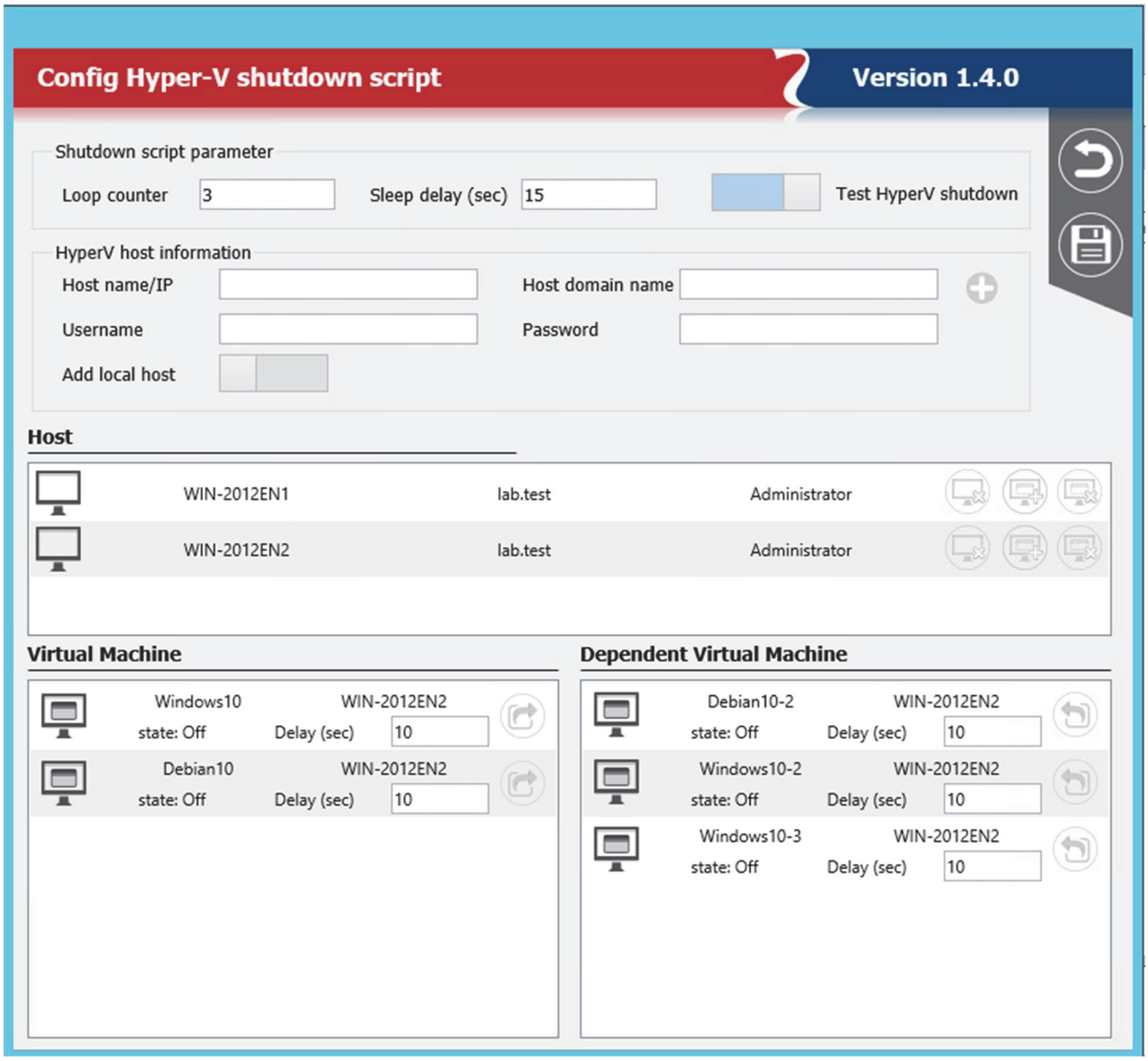
The ups_shut.bat script invokes a further script HVshutdownRPS.ps1 by transferring to the latter the configuration parameters set through the UPSConfigHyperV software.

By setting the correct parameters, it is possible to shut down all virtual machines present in the Hyper-V server and, ultimately, the servers themselves. These operations are invoked by the PowerShield³ monitoring software following events occurring on the monitored UPS. To configure the PowerShield³ software, refer to this user manual.

UPSConfigHyperV is installed together with the PowerShield³ software and belongs to the same package. To install this package, refer to Chapter 3 Installing PowerShield³ in this user manual.

3.2 Configuring the UPSConfigHyperV

The software appears as shown in the screen below.

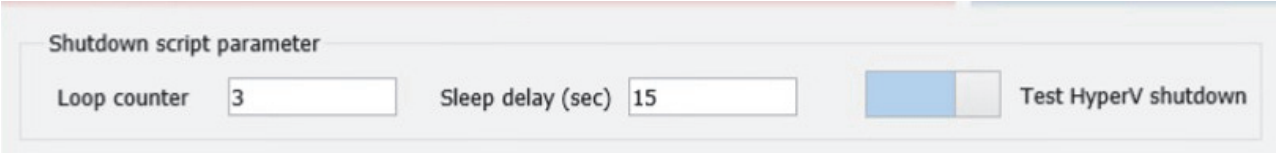


WARNING: to save the configuration, the user must be logged in as the system administrator!

The following buttons appear in the menu:

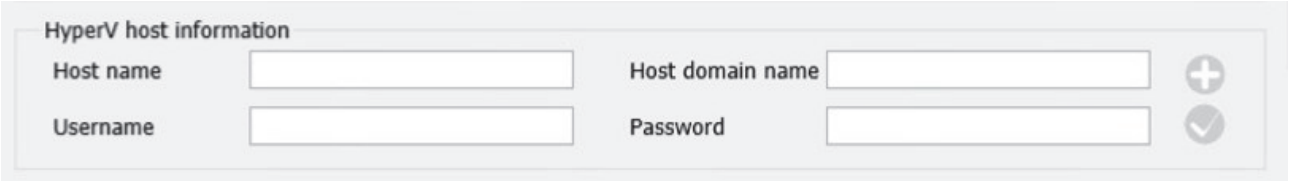
	Exit the programme without saving. The ups_shut.bat file will not be modified, and any changes made will be lost.
	Exit the programme and save all of the changes made. The ups_shut.bat file will be saved with the new parameters.

WARNING: the buttons with the white icon are enabled; the buttons with the grey icon are disabled.



In the ***Shutdown script parameter*** section, it is possible to set the configuration parameters for HVshutdownRPS.ps1.

Parameter name	Parameter description	Default
Loop counter	Number of tests used to verify whether the VMs are shut down	3
Sleep delay (sec)	Delay in seconds before the next test is run	15
HyperV shutdown test	If enabled, it only performs the shutdown operation test with the relative log. To perform a real test with the shutting down of the systems, this parameter must be disabled.	Enabled



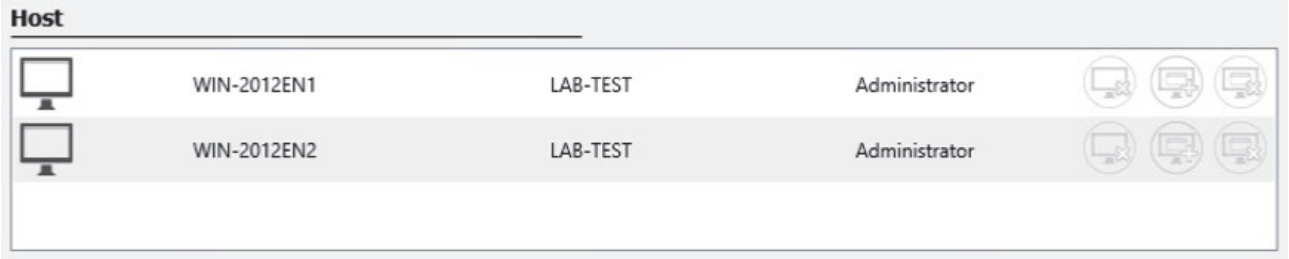
In the ***HyperV host information*** section it is possible to set the parameters for connection to the Hyper-V servers to retrieve information on the virtual machines managed by these servers.

Parameter name	Parameter description	Default
Host name / IP	Name of the Hyper-V server to which the user wishes to connect (or IP address)	
Host domain name	Name of the domain in which the Hyper-V server is present	
Username	Name of the user enabled to connect to the Hyper-V server	
Password	Password of the user enabled to connect to the Hyper-V server	
Add Local Host	Enable only to add the local server, only one local server is allowed. Once the local server has been added, this slider will be disabled.	Disabled

To add the configured server to the list of servers present in the network:

	Adds the local or a remote server, the information of which was entered in the fields of the relevant box, to the configuration of the Hyper-V shutdown. For the local server the Add Local host slider must be enabled.

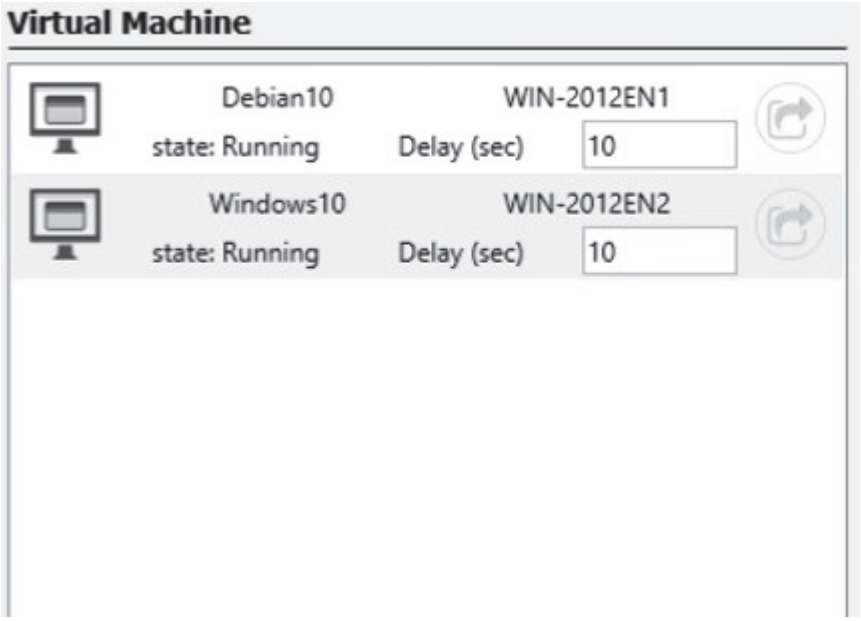
The Hyper-V server added will appear under the list of ***Hosts***, together with the information entered previously.



For each server present in the list of hosts, the following buttons will appear:

	Removes the current Hyper-V server from the list of hosts.
	Makes the connection to the current Hyper-V server and retrieves from it the list of virtual machines managed by this server.
	Removes from the list of virtual machines all the virtual machines managed by the current Hyper-V server.

By connecting to the Hyper-V server, the virtual machines managed by the server will appear in the ***Virtual Machine*** list.



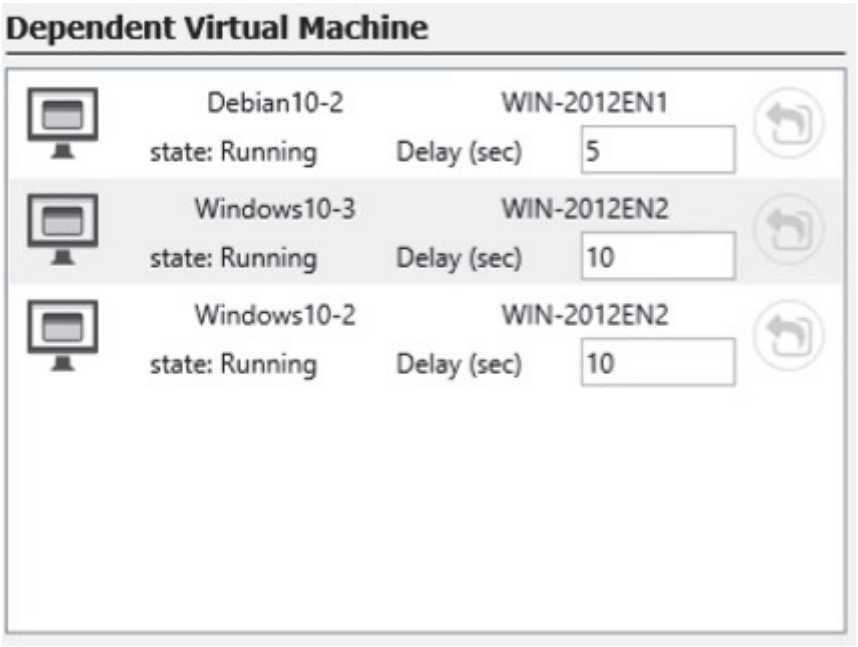
For each virtual machine the following data will appear:

name, identification code/name given to the server, the machine's "on" status, the machine shutdown delay (configurable) and the name of the Hyper-V server where the virtual machine is managed.

For each virtual machine present in the ***Virtual Machine*** and ***Dependent Virtual Machine*** lists:

	Shifts the virtual machine from the ***Virtual Machine*** list to the ***Dependent Virtual Machine*** list
	Shifts the virtual machine from the ***Dependent Virtual Machine*** list to the ***Virtual Machine*** list

When the ups_shut.bat script is executed, each virtual machine present in these two lists will perform a shutdown.
The virtual machines present in the ***Virtual Machine*** list will be shut down according to a sequence decided by the Hyper-V server to which they belong.



The virtual machines present in the ***Dependent Virtual Machine*** list will be shut down according to the exact sequence set from the list and based on the Hyper-V server to which they belong. Example: the Windows 2016 server includes two virtual machines named Windows 10-A and Windows 10-B, which appear in the ***Dependent Virtual Machine*** list in the following order: 1. Windows 10-A (delay 10 seconds) 2. Windows 10-B (delay 5 seconds); at the shutdown executed by ups_shut.bat, the HVshutdownRPS.ps1 script will invoke the shutdown of the two virtual machines in the pre-defined order: first no. 1 (Windows 10-A) and then no. 2 (Windows 10-B), leaving a “delay seconds” time before the start of the machine shutdown procedure (in other words, before launching the execution of the Windows 10-A shutdown, it will wait 10 seconds and then another 5 seconds before launching the execution of the Windows 10-B shutdown).

Only once all the virtual machines have been shut down will the relative host be shut down.

VI. Running the PowerShield³

After the *Upsagent* service is active, the system is protected by the UPS. The *Upsview* is used to connect to the *Upsagent* service to view the UPS data and to inspect the monitoring process. This is also possible via remote access (only if TCP/IP is installed on the system).

ATTENTION: To confirm if the *Upsagent* is running and the system is protected, access the system utility for a list of operating processes. For Linux/UNIX/MacOs use the command "ps" and for Windows confirm that the icon on the toolbar is present (usually bottom right or left of the desktop).

1. Upsview

1.1 Connecting with Upsagent

The *Upsview* enables the monitoring of a local or remote connected devices (devices connected to other computers or Network adapters). Each *Upsview* can monitor one device, but it is possible to start multiple *Upsview*s to monitor different device at the same time.
In the list will be shown all selectable devices. The list is divided in two section: Local, to monitor devices connected to the local *Upsagent*; Remote, to monitor devices connected to other remote *Upsagent* or remote Network Adaptors.

At the top right of the main screen you can find a drop-left menu within which you can find the following buttons:

	Used to find on the local network, all of the agents (remote *Upsagent* or Network adapter) that are activated at any particular moment without remembering the individual name or address. The refresh will take about ten seconds. The IP address of the active agents and the device that they controlled will be put in the list under Remote voice.
	Used to select a device directly by the IP address of the computer or Network adapter where the device is connected.
	The data log list displays logged measured parameters from the UPS such as the input voltage, battery voltage, capacity, runtime and output load. All of the information contains the date, time, device name and measured values. To use data log you must configure it in the *Upsetup* module. The data logged can be used by other programs, for example if you need to generate a graphic view. The data is logged into a standard text file, which may be simply imported into other programs.
	The Event list displays the current *Upsagent* activities. This is the list of events and information about the device and its agent during the *Upsagent* monitoring activity. All events contain the date, time, device name and the name of the event. The event is logged into a standard text file, which may be simply imported into other programs. To use the event log you must configure it in the *Upsetup* module.
	This button will only appear in presence of multiple network interfaces to allow the user to select the correct network interface.

Selecting one of the device from the Local list, it is being monitored by the *Upsagent* module running on the same computer. In this case, the connection between *Upsview* and *Upsagent* is made via the shared memory. In the Local tree will be shown all the devices configured in the *Upsetup* module (eventually with the parallel groups defined).
Selecting one of the UPS from the Remote list, it is being monitored via TCP/IP. The default UDP port for the *Upsagent* is 33000. It is possible to find on the local network, all of the agents that are activated at any particular moment without remembering the individual name or address: to do this, used the Refresh button. It is also possible to select a device directly by the IP address of the computer or Network adapter where the device is connected. To do this use the button in the menu. Host names or DNS names are also supported. The following window will appear where you can enter the IP address you want.

For the devices present in the Local and Remote list there are the following icons:

	Single UPS.
	Parallel UPS (UPS belonging to at least one parallel group).
	MPW System.
	STS/ATS/MDU

For the list of local devices associated with the device icon there is a small symbol indicating the status of that device:

	All is Ok.
	Device from bypass.
	Device from battery.
	Device have warning.
	Device in fault.
	Device in communication lost.

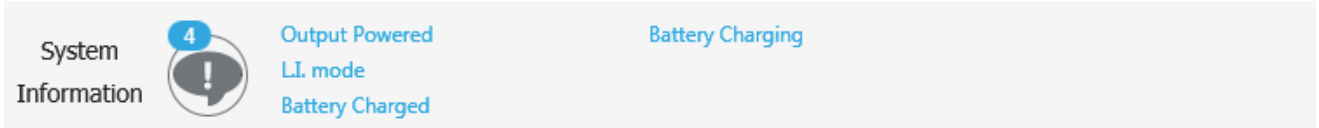
1.2 Standard UPS single view

ATTENTION: The screen shots are only examples and will vary between different UPS system.

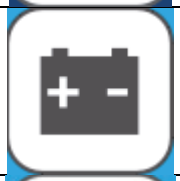
At the top right of the screen you can find the same drop-left menu on the main screen with the option of having two more buttons:

	used to execute some commands on the connected Ups such as shutdown and reboot. Some of these functions depend on the type of monitored Ups; **ATTENTION: this menu is available only for Ups monitored by local *Upsagent*.** **ATTENTION: the list of available commands depends of the Ups type, but the Shutdown/Reboot command is always supported.**
	Used to start *UpsSetup*. **ATTENTION: this menu is available only for Ups monitored by local *Upsagent*.**

At the bottom, any alarms and/or states in the selected device are displayed:



At the top left, you will see the overall status of the device:

	Clicking on this icon the input value is displayed.
	Clicking on this icon the bypass value is displayed.
	Clicking on this icon the output value is displayed.
	Clicking on this icon the battery value is displayed.
	Clicking on this icon the sensor and UPS additional info is displayed.

Icons, state and alarms can be displayed in 4 colors:

	All is Ok: normal working.
	The stage described by the icon has a warning. The relative warning was shown in the alarm list and the device is in warning state.
	The device is on bypass. The device is in bypass state.
	The stage described by the icon has a fault. The relative fault was shown in the alarm list and the device is in fault state.

Under the icon representing the battery it is shown the autonomy (in hours and minutes) and the charge percentage of the battery.

ATTENTION: the value of autonomy depends on the load of the Ups.

If the UPS runs on battery and *UpsSetup* has enabled the operating system shutdown when the UPS is running on battery, the effective working time before system shutdown will be shown at the bottom left.

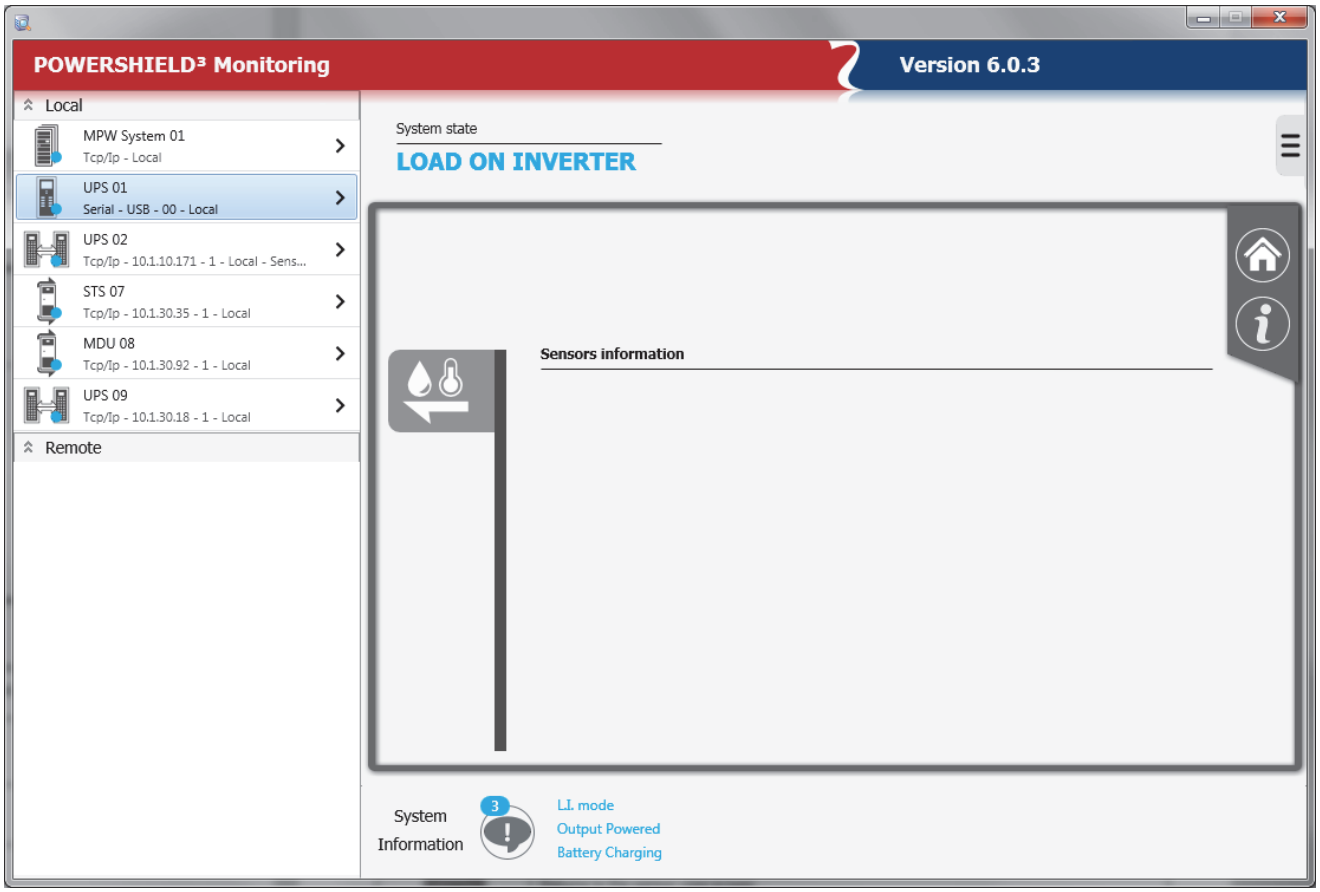
ATTENTION: in normal condition (line present) this information is hidden. In battery on condition and shutdown configuration enabled, will be shown the countdown before the shutdown of the system.

ATTENTION: the UPS battery autonomy, the charge percentage of the battery and the countdown could be unavailable for some Ups type.

1.2.1 Data UPS single view

	Returns to the UPS Single View Standard screen.

1.2.2 Sensor UPS single view



On this screen, you can view any UPS-connected sensors (only for UPS connected via Network adapter).

	Returns to the UPS Single View Standard screen.
	Displays the UPS information screen.

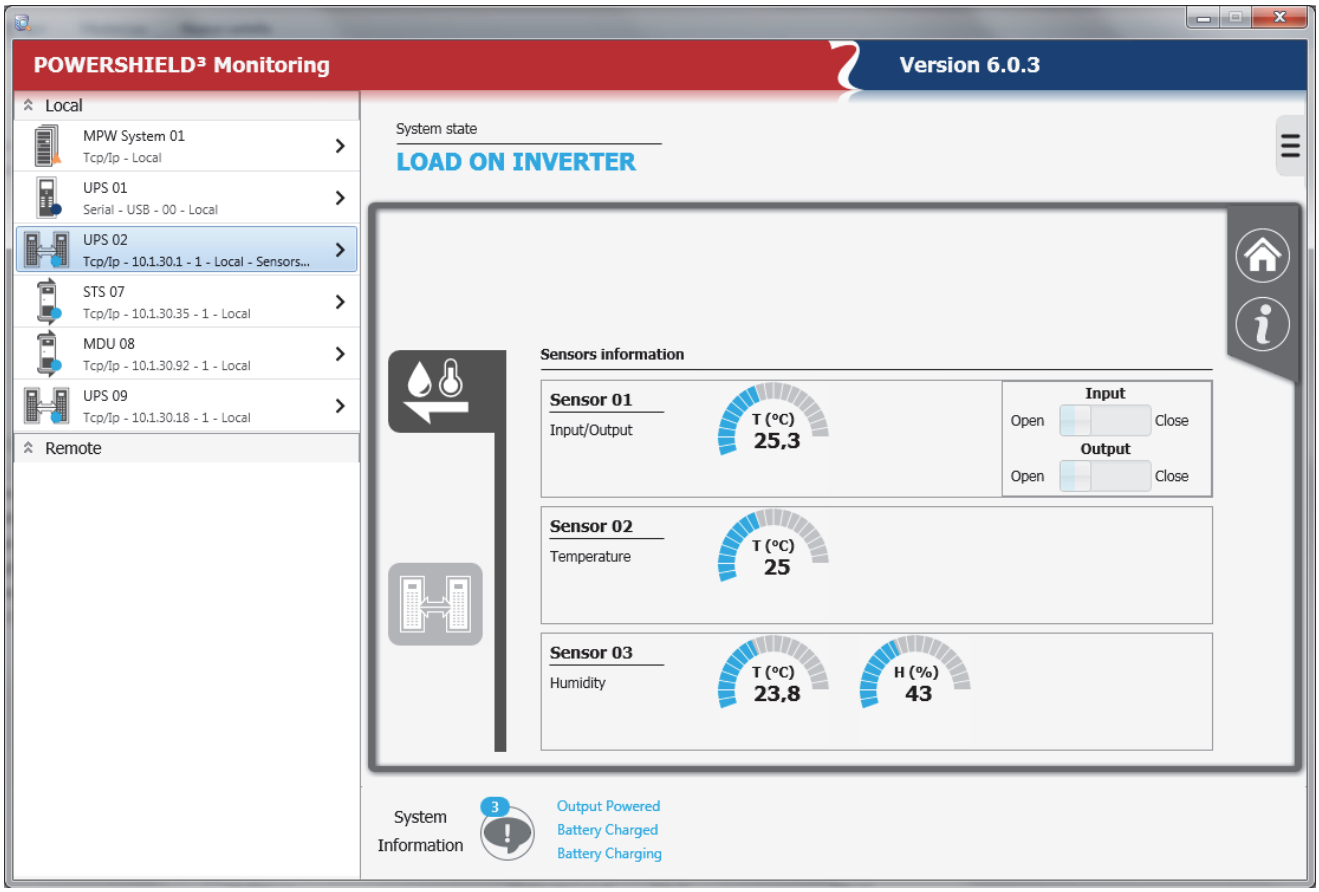
1.2.3 Additional info UPS single view

	Information of the device displayed, software and the connection type.
	Nominal data of the device displayed.

	Returns to the sensor view screen.

1.3 Standard UPS parallel view

The view is basically the same as the single UPS except for the central button that will lead to a different screen than that of a single UPS.



In this example, the selected UPS has also three sensors (I/O sensors, temperature and humidity respectively). A maximum of six temperature, humidity or input/output sensors may be connected to the Network adapter through the serial port (refer to the sensor cable wiring specifications). If these sensors are connected, the *Upsview* module can be used to check that they are operational and view the measurements being recorded.

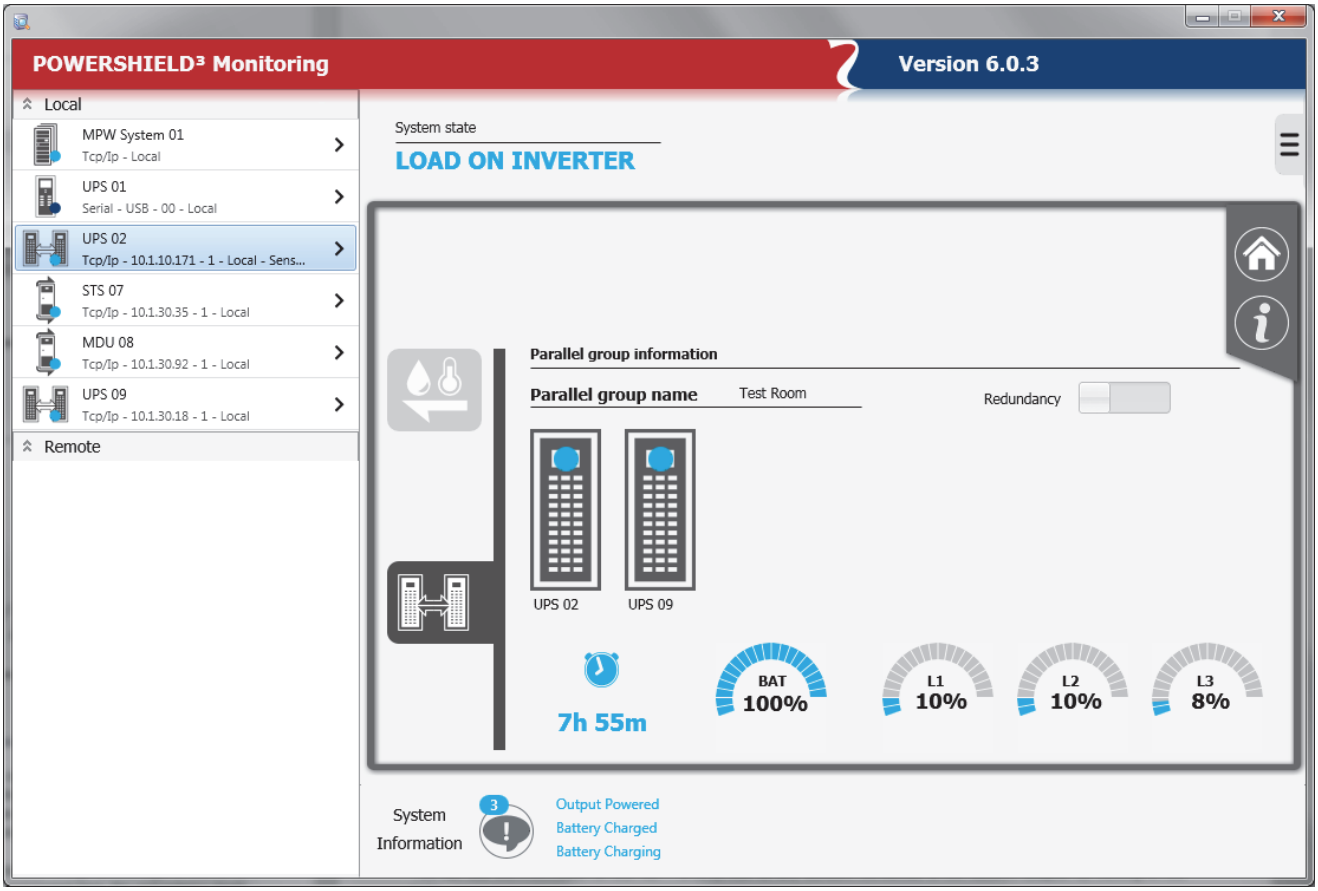
The types of sensors available are:

- Temperature: measures the environmental temperature in °C.
- Humidity and temperature: measures the relative humidity in % and the environmental temperature in °C.
- In/Out and temperature: measures the environmental temperature in °C and provides one digital input and one digital output.

Please refer to the Network adapter manual for further information on the sensors that can be associated with the adapter.

ATTENTION.: this function is active only for remotely connected Network adapters. In order to see the sensors, they must be configured (up to a maximum of 32 sensors) in the *Upsetup* module, or a Refresh operation executed. The threshold settings are active on the sensors configured in the *Upsetup* module.

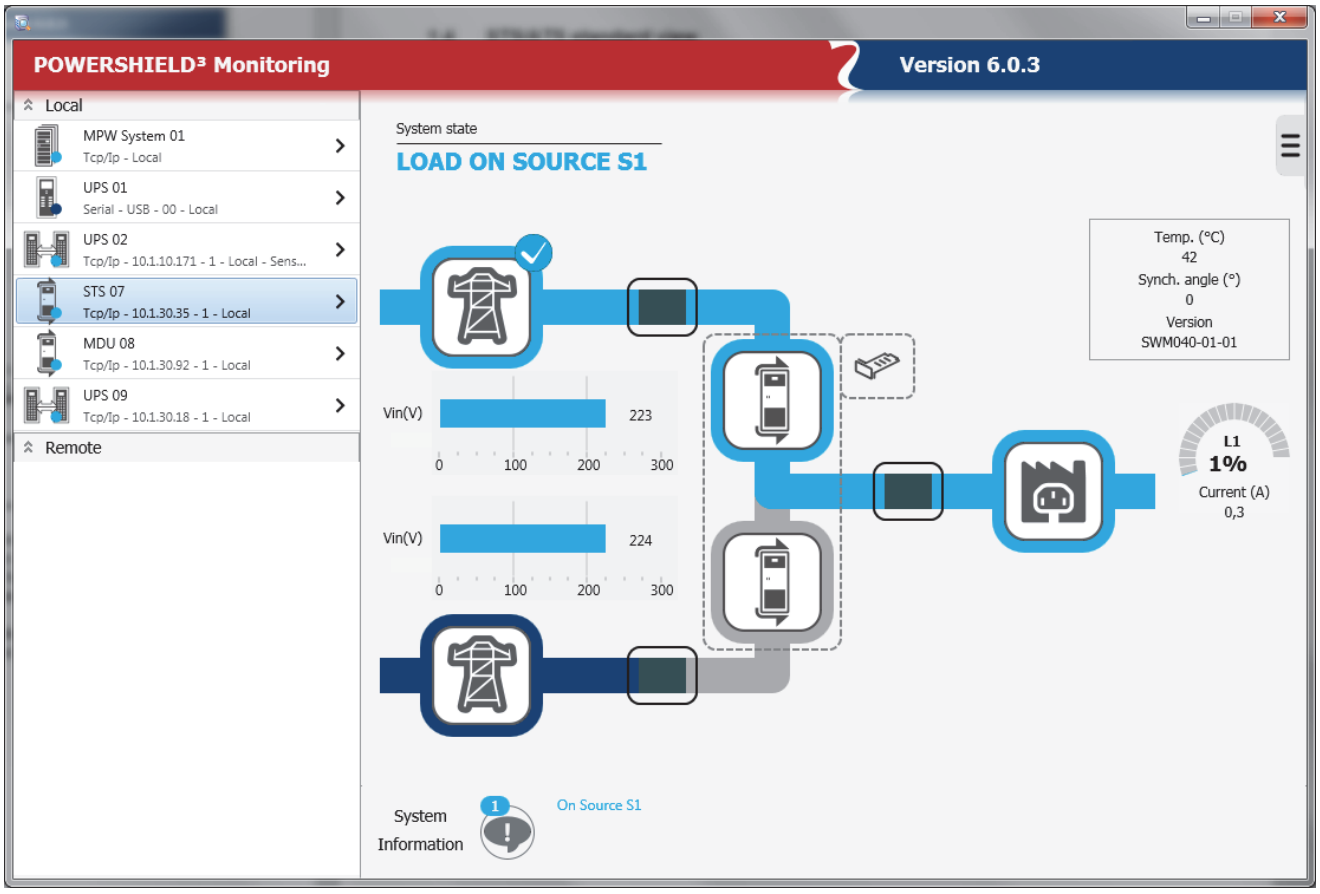
It is possible to see a previously invisible tab that will bring to a specific display page of the parallel group.



You will be able to see, in addition to the name of the parallel group, the status and the name of the individual UPS belonging to the group. By clicking on the Redundancy button, you can see a projection of the load supported in the event of loss of group redundancy (e.g. if a parallel group comprising of three UPS modules has a redundancy level of N+2, the load that the remaining UPS module would have to support should the other two redundant modules fail.)

The autonomy shows the battery backup time in hours and minutes as well as the battery charge percentage of the UPS which has the lowest backup time (for redundancy level N), or the UPS with the second lowest time (for redundancy level N+1, the third lowest time (N+2) or the fourth lowest time (N+3).

1.4 STS/ATS standard view



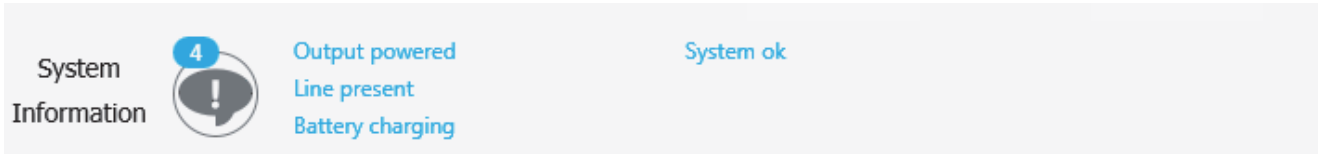
You can see the information on the ATS/STS as well as any sensors connected to the Network adapter by clicking on the icon:

1.5 MDU standard view

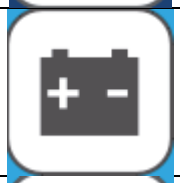
You can see information about the MDU as well as any sensors connected to the Network adapter by clicking on the icon:

1.6 MPW System standard view

At the bottom, any alarms and / or states in the MPW system are displayed:



At the top left, you will see the overall state of the MPW system:

	Clicking on this icon the input value is displayed.
	Clicking on this icon the bypass value is displayed.
	Clicking on this icon the output value is displayed.
	Clicking on this icon the battery value is displayed.
	Clicking on this icon the MPW cabinet are displayed.

Icons, states and alarms can be displayed in 4 colours:

	All is Ok: normal working.
	The stage described by the icon has a warning. The relative warning was shown in the alarm list and the device is in warning state.
	The device is on bypass. The device is in bypass state.
	The stage described by the icon has a fault. The relative fault was shown in the alarm list and the device is in fault state.

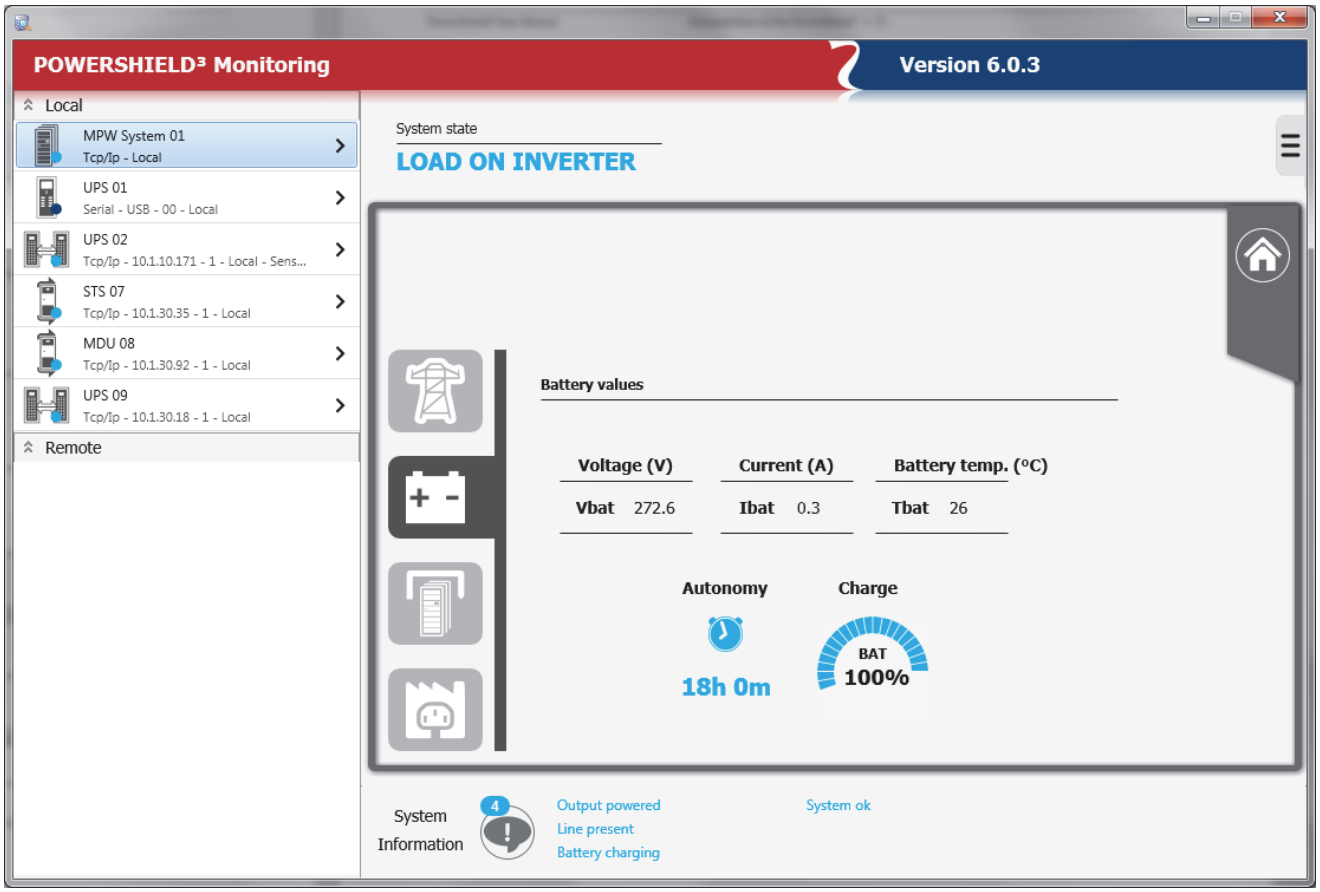
Under the icon representing the battery it is shown the autonomy (in hours and minutes) and the charge percentage of the battery.

ATTENTION: the value of autonomy depends on the load of the MPW system.

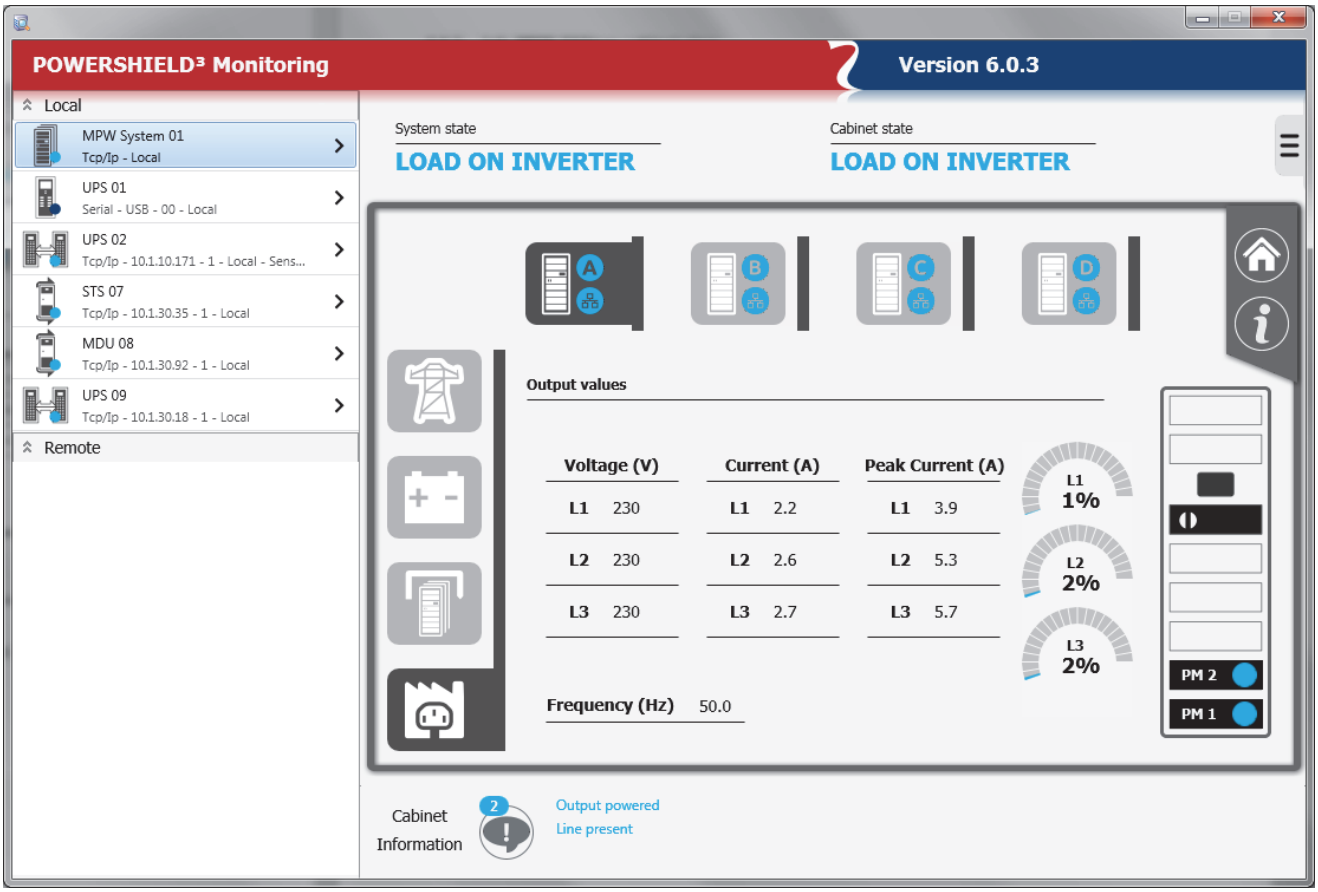
As with the single UPS, if the MPW system works on battery and in the *UpsSetup* was activated the Operating System shut down when the MPW is working on battery, the left-hand side will be shown the effective working time before shutdown system.

ATTENTION: in normal condition (line present) this information is hidden. In battery on condition and shutdown configuration enabled, will be shown the countdown before the shutdown of the system.

1.6.1 MPW System data view

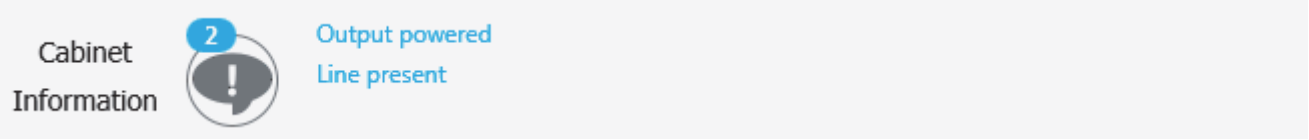


1.6.2 MPW system cabinet view



This page shows the status of the cabinet highlighted (for example, the Cabinet A status)

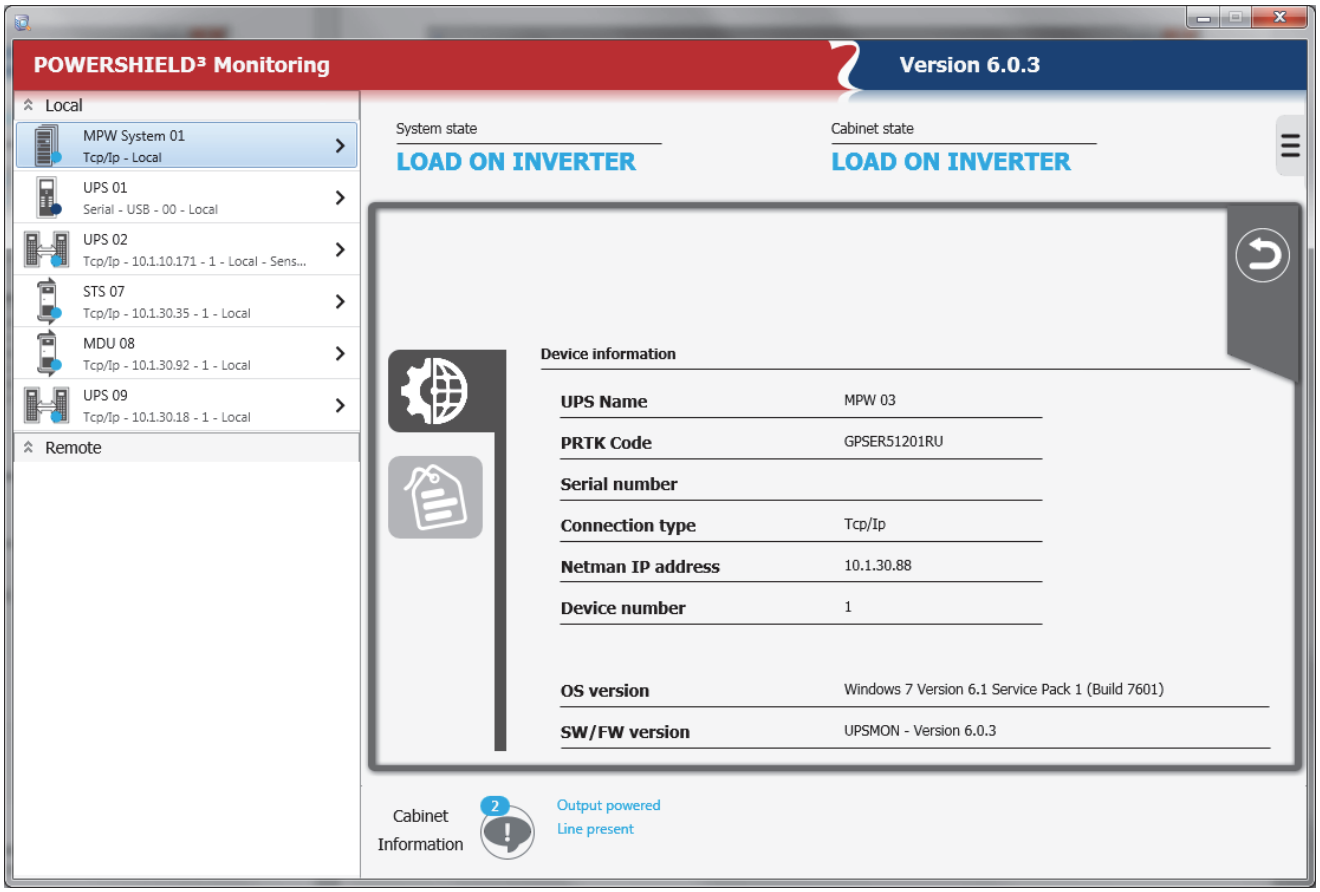
The state and the alarms present on the cabinet highlighted:



The cabinet icon provides information on the overall cabinet status of the cabinet and the state of the network communication (colour of the network icon background): this for the cabinet displayed and for the cabinets present in the MPW system.

On the right you can see the presence and status of the individual modules in the selected cabinet.

1.6.3 Info MPW System cabinet view

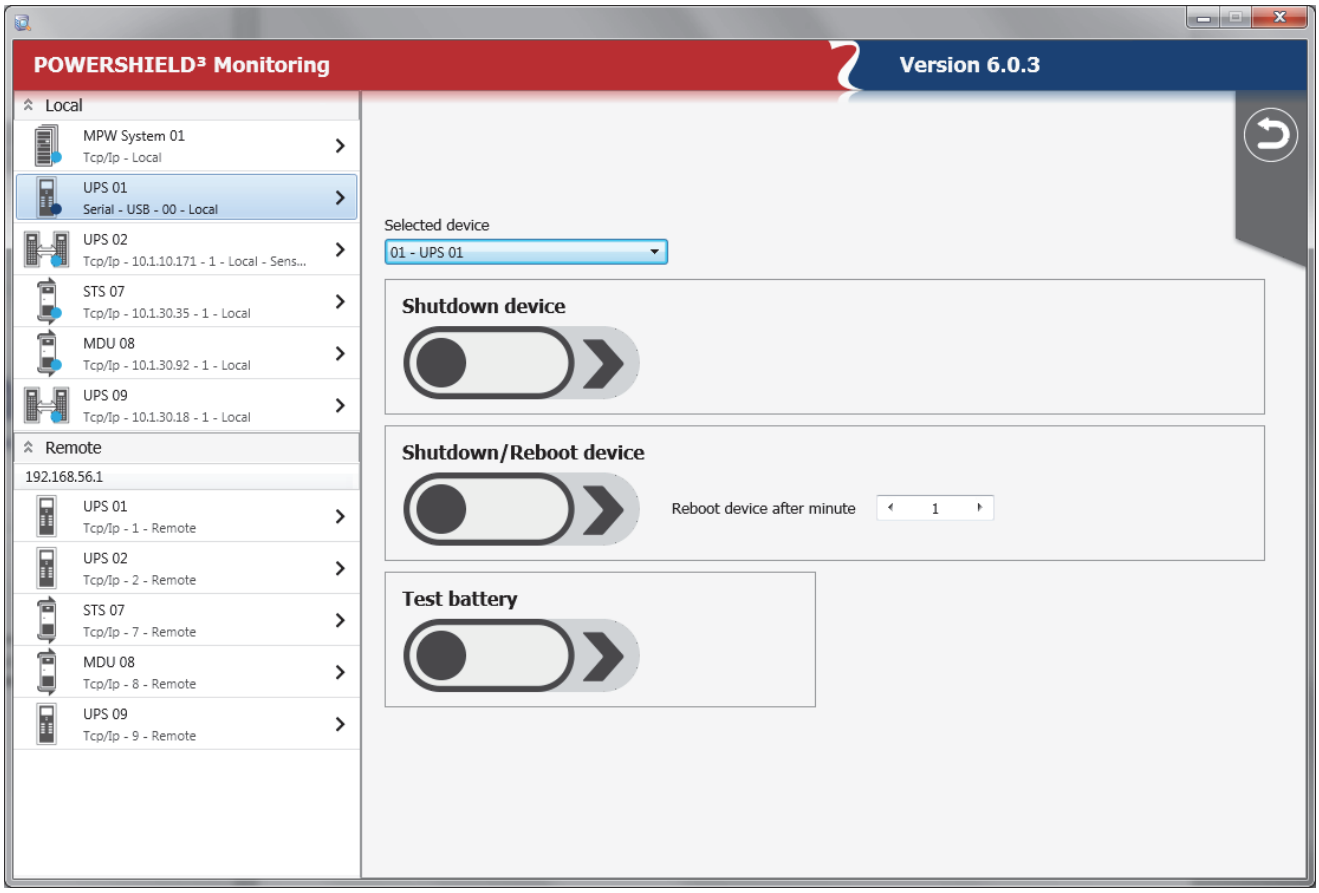


On this page, similar to the one in the single UPS, you can see the displayed cabinet information as well as the nominal data of the same cabinet.

1.7 Remote View

After a refresh has occurred, the remote list will fill up the devices found on the network grouped by IP address. You can also find the different MPW systems that will be displayed under the header - (being the cabinets of MPW systems with each different IP address).

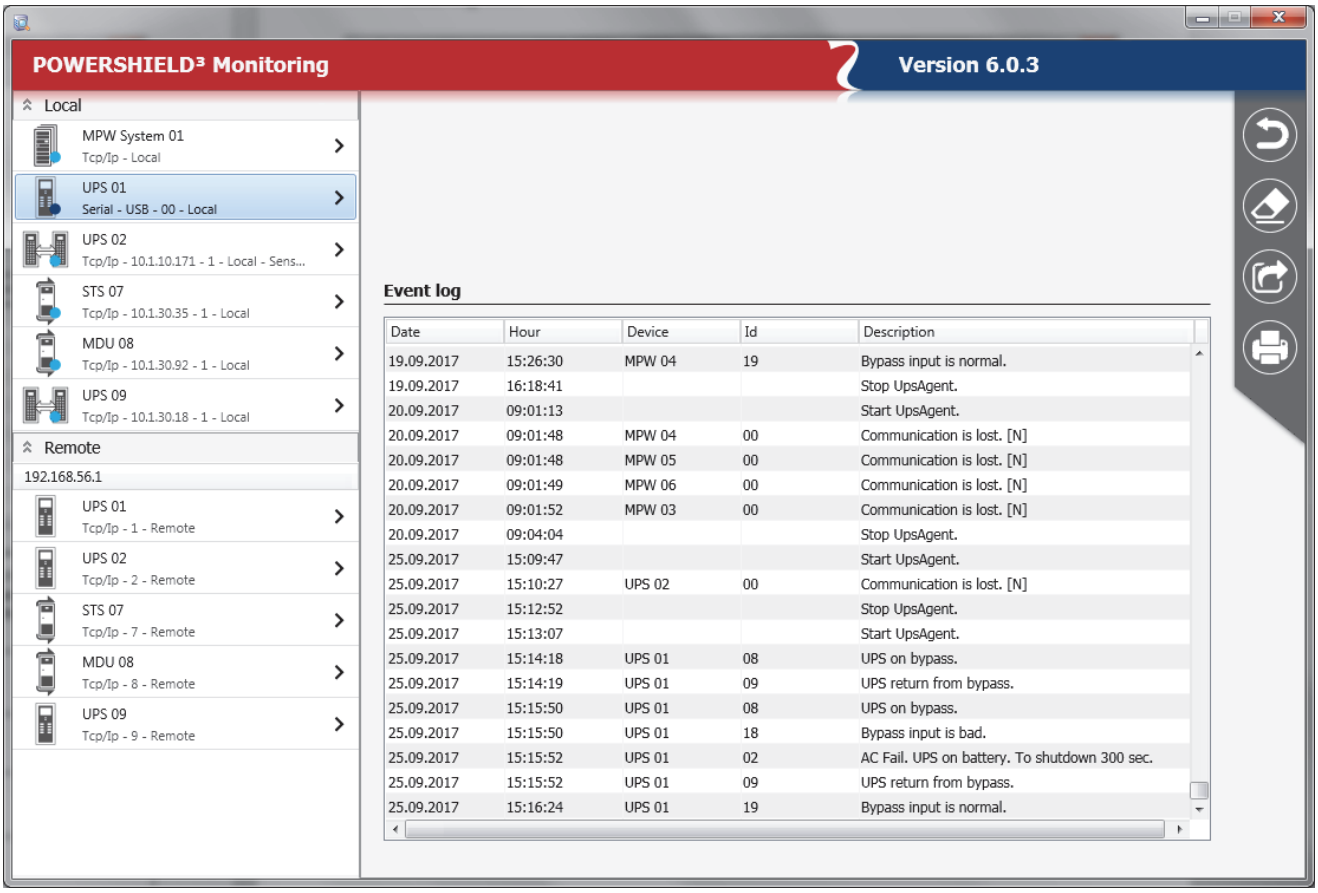
1.8 Functions view



Used to send some command to the monitored device such as the shutdown and reboot of the Ups, the execution of test battery.

ATTENTION: this view is available only for Ups monitored by local *Upsagent*.

1.9 Event log view

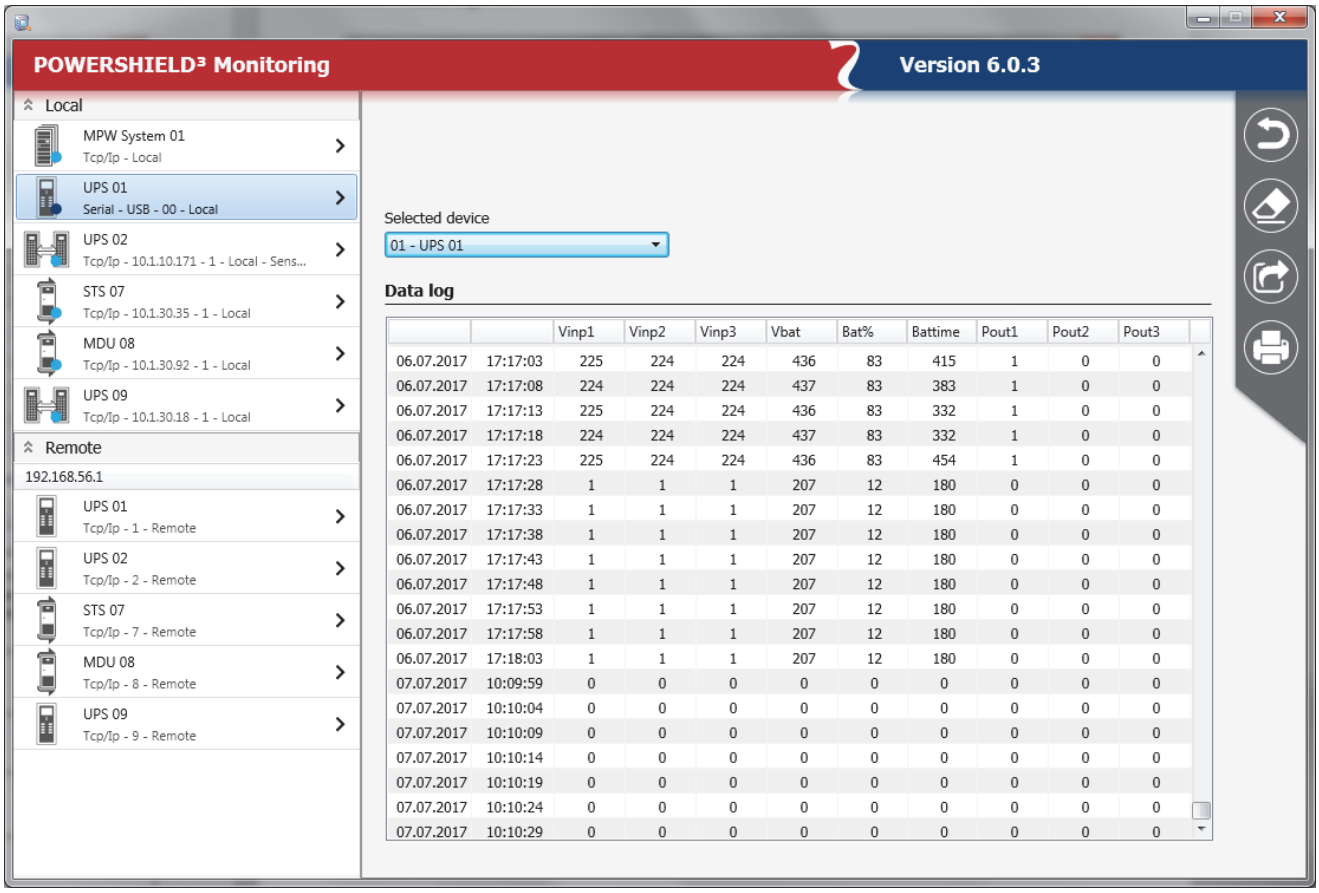


The Event list displays the current *Upsagent* activities. This is the list of events and information about the UPS and its agent during the *Upsagent* monitoring activity. All events contain the date, time, device name and the name of the event. The event is logged into a standard text file, which may be simply imported into other programs. To use the event log you must configure it in the *Upsetup* module.

	Returns to the previous screen.
	Delete the event log.
	Export event log in csv format.
	Print the event log.

<u>ATTENTION</u>: this view is available only for Ups monitored by local *Upsagent*.

1.10 Data log view



		Vinp1	Vinp2	Vinp3	Vbat	Bat%	Battime	Pout1	Pout2	Pout3
06.07.2017	17:17:03	225	224	224	436	83	415	1	0	0
06.07.2017	17:17:08	224	224	224	437	83	383	1	0	0
06.07.2017	17:17:13	225	224	224	436	83	332	1	0	0
06.07.2017	17:17:18	224	224	224	437	83	332	1	0	0
06.07.2017	17:17:23	225	224	224	436	83	454	1	0	0
06.07.2017	17:17:28	1	1	1	207	12	180	0	0	0
06.07.2017	17:17:33	1	1	1	207	12	180	0	0	0
06.07.2017	17:17:38	1	1	1	207	12	180	0	0	0
06.07.2017	17:17:43	1	1	1	207	12	180	0	0	0
06.07.2017	17:17:48	1	1	1	207	12	180	0	0	0
06.07.2017	17:17:53	1	1	1	207	12	180	0	0	0
06.07.2017	17:17:58	1	1	1	207	12	180	0	0	0
06.07.2017	17:18:03	1	1	1	207	12	180	0	0	0
07.07.2017	10:09:59	0	0	0	0	0	0	0	0	0
07.07.2017	10:10:04	0	0	0	0	0	0	0	0	0
07.07.2017	10:10:09	0	0	0	0	0	0	0	0	0
07.07.2017	10:10:14	0	0	0	0	0	0	0	0	0
07.07.2017	10:10:19	0	0	0	0	0	0	0	0	0
07.07.2017	10:10:24	0	0	0	0	0	0	0	0	0
07.07.2017	10:10:29	0	0	0	0	0	0	0	0	0

The data log list displays logged measured parameters from the UPS such as the input voltage, battery voltage, capacity, runtime and output load. All of the information contains the date, time, device name and measured values. To use data log you must configure it in the *Upsetup* module.

The data logged can be used by other programs, for example if you need to generate a graphic view. The data is logged into a standard text file, which may be simply imported into other programs.

ATTENTION: this view is available only for Ups monitored by local *Upsagent*.

2. Upsview (textual) for Linux/UNIX/MacOs

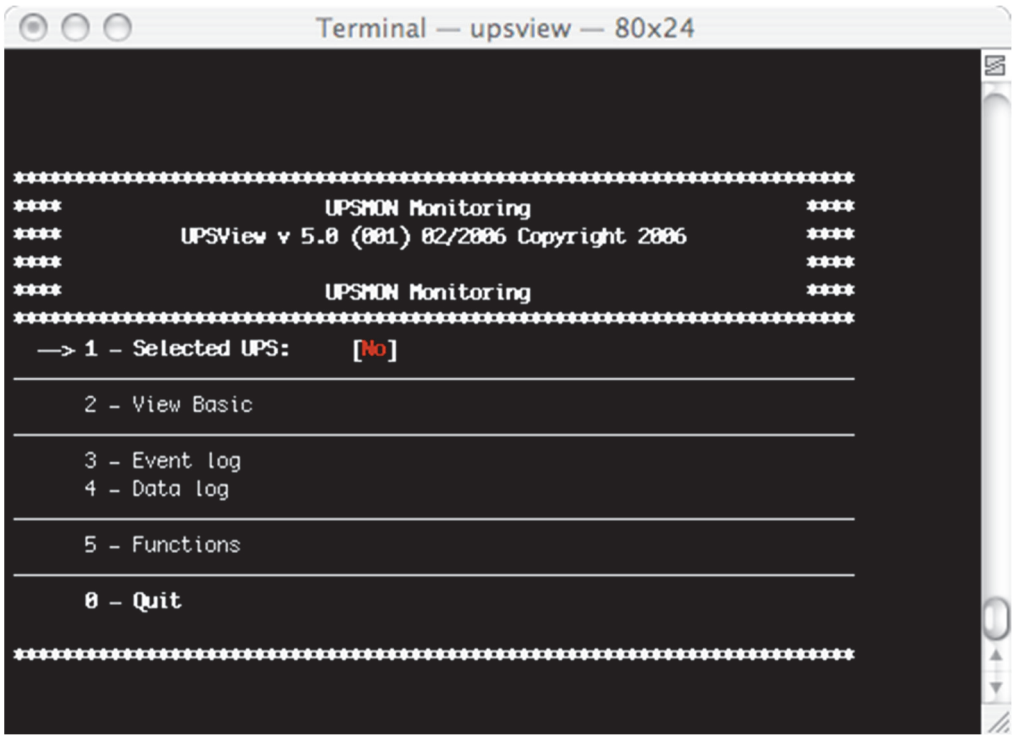
To monitor the UPS using UNIX systems, the text version of the *Upsview* program must be used.

The style of the displayed screens is dependent on the text interface.

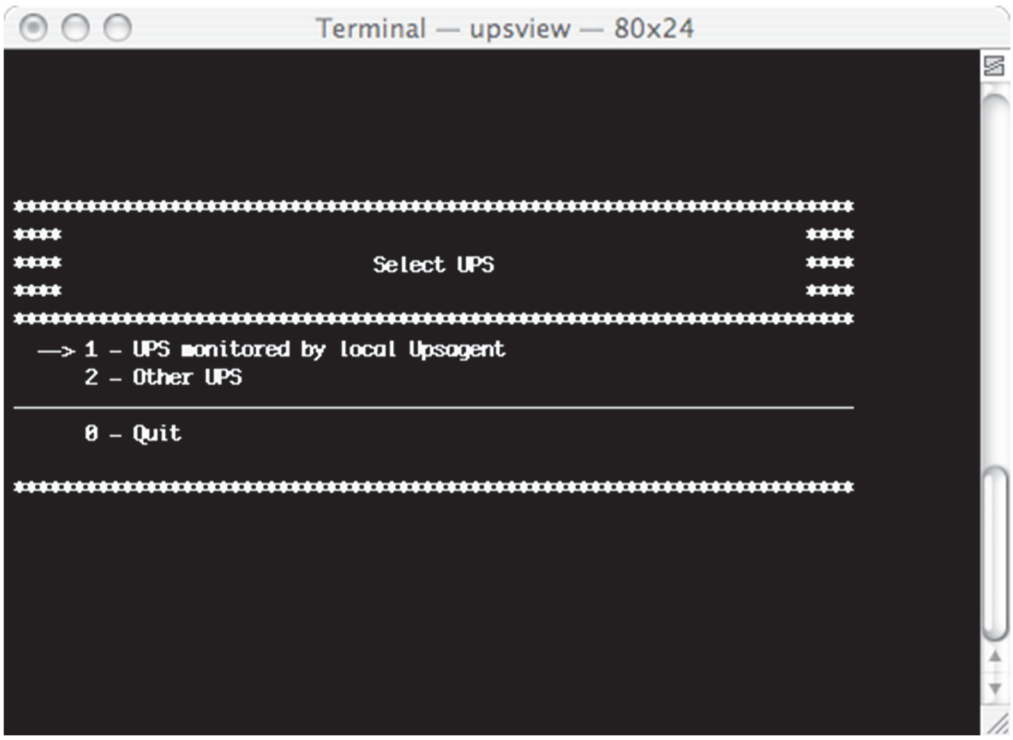
The text version of *Upsview* does not support the automatic refresh of the screens if the UPS status changes.

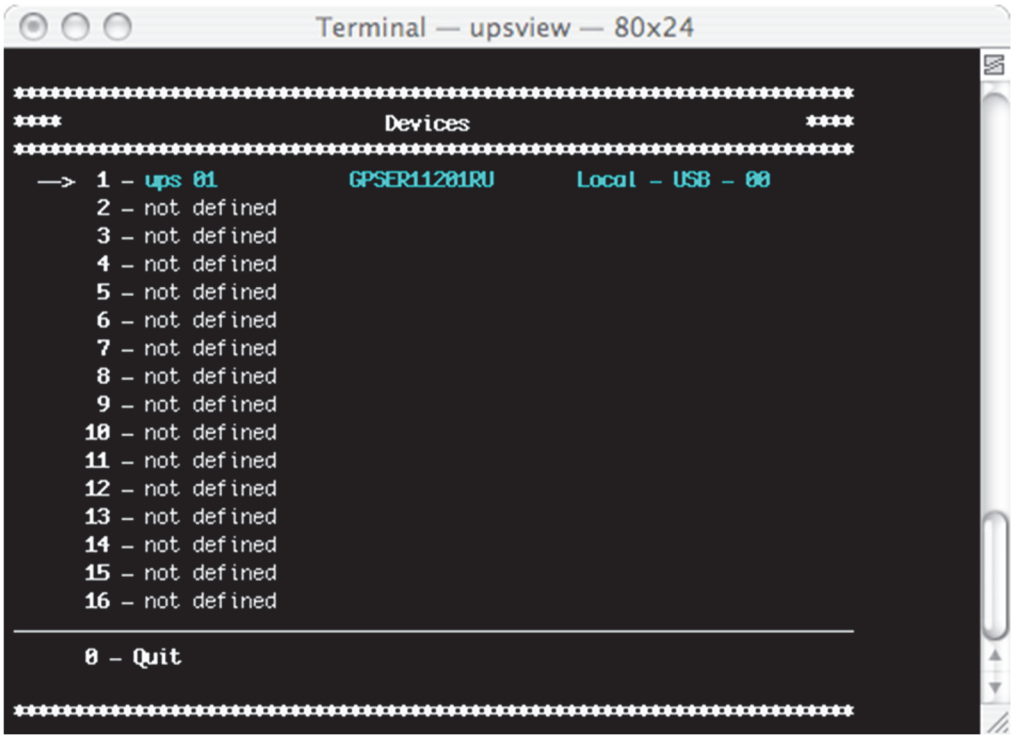
2.1 Connections with Upsagent

The *Upsview* enables the monitoring of a local or remote connected UPS (UPS's connected to other computers or Network adapters). Each *Upsview* can monitor one UPS, but it is possible to start multiple *Upsview*s to monitor different UPS at the same time.



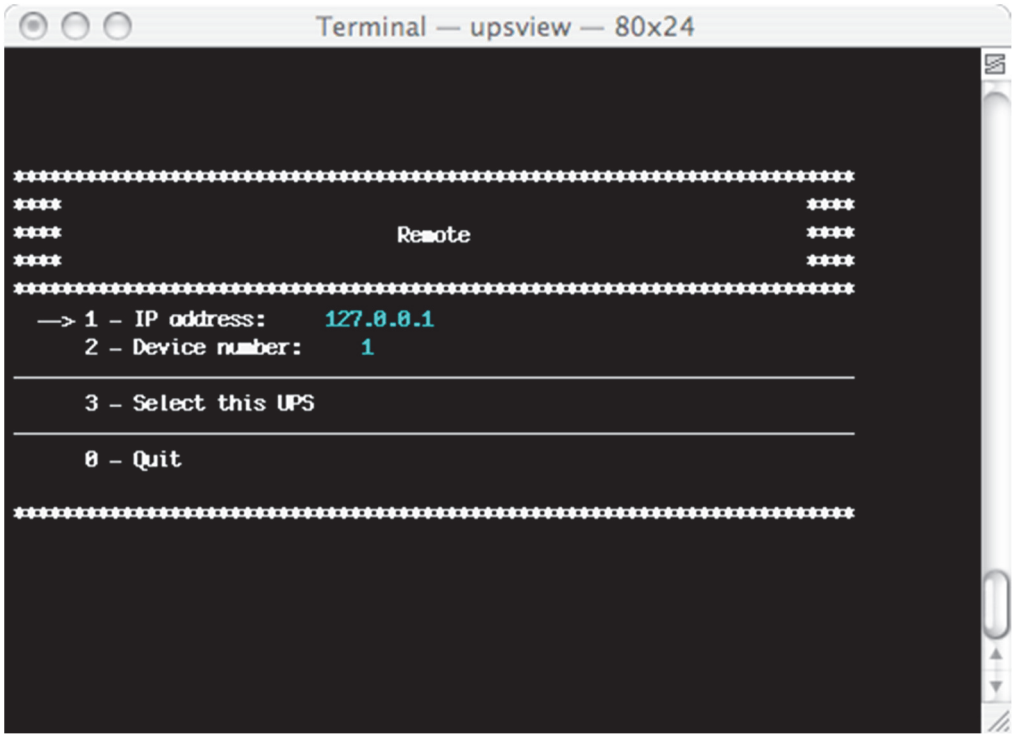
Select one of the UPS from the list, which is being monitored by the *Upsagent* module. In this case, the connection between *Upsview* and *Upsagent* is made via the shared memory.





If the *Upsagent* is not running on the system, it is possible to select a UPS directly by the IP address of the computer or Network adapter where the UPS is connected. To do this set the IP address and device number (usually 1), the *Upsview* will then try to find the specified system by IP address, host names or DNS names are also supported.

Remote connection made via TCP/IP protocol. The default UDP port for the *Upsagent* is 33000.

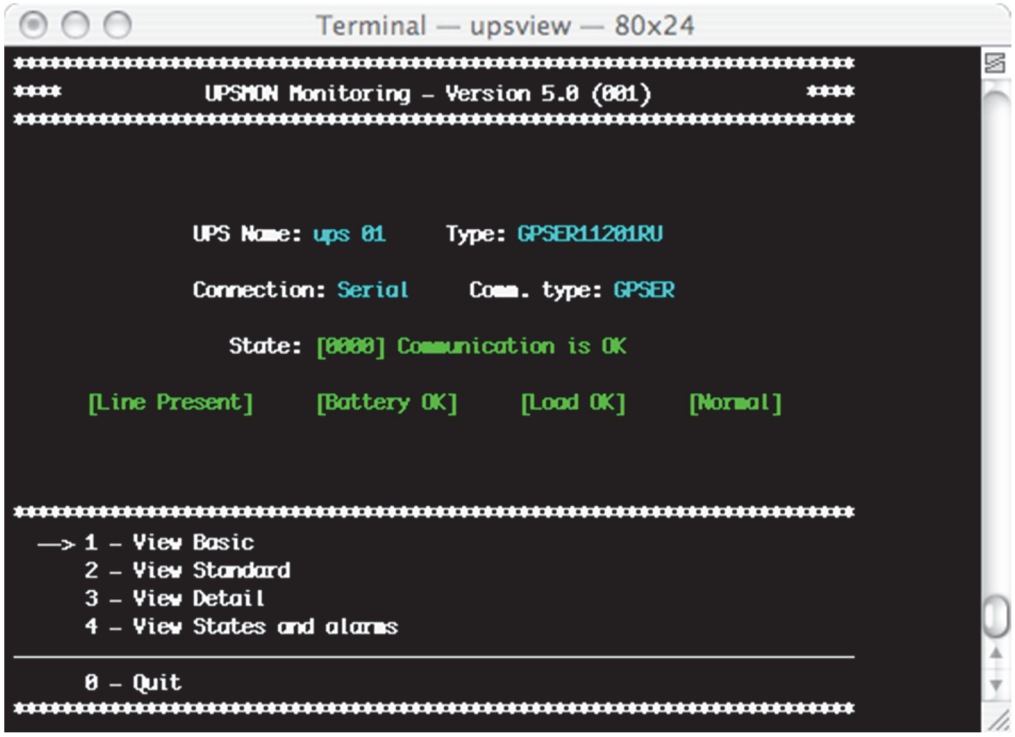


2.2 The displays

ATTENTION: The following screen shots below are only examples and will vary between different UPS system.

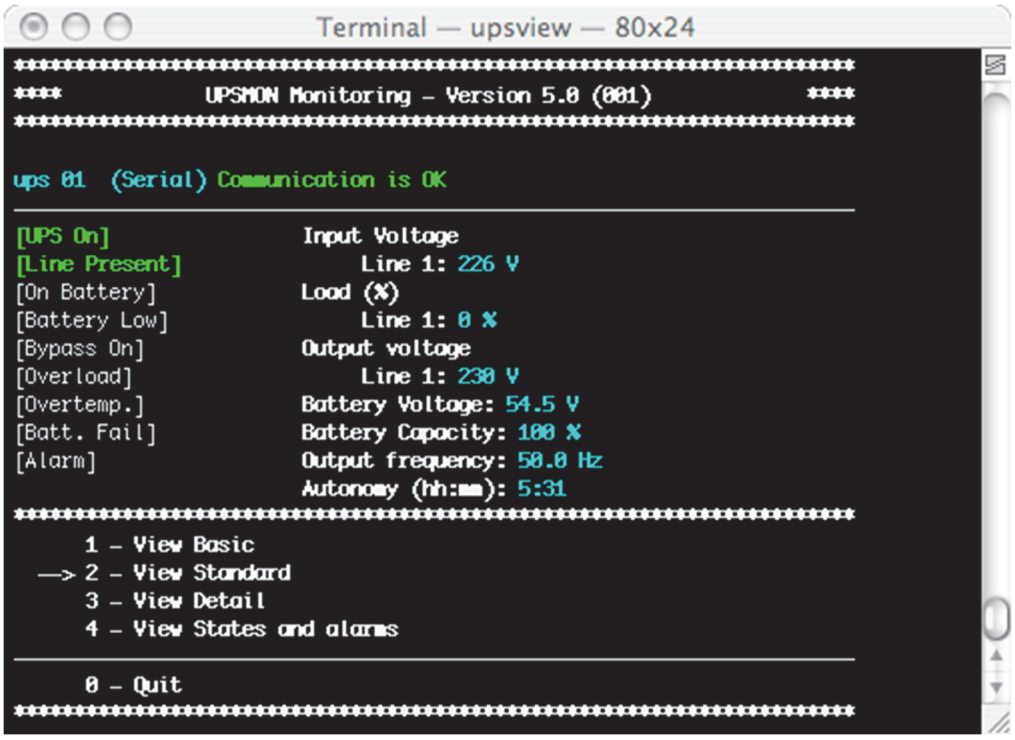
2.2.1 View Basic

The basic information screen shows the UPS name, UPS type, connection type, type of communication protocol, status and four status boxes.



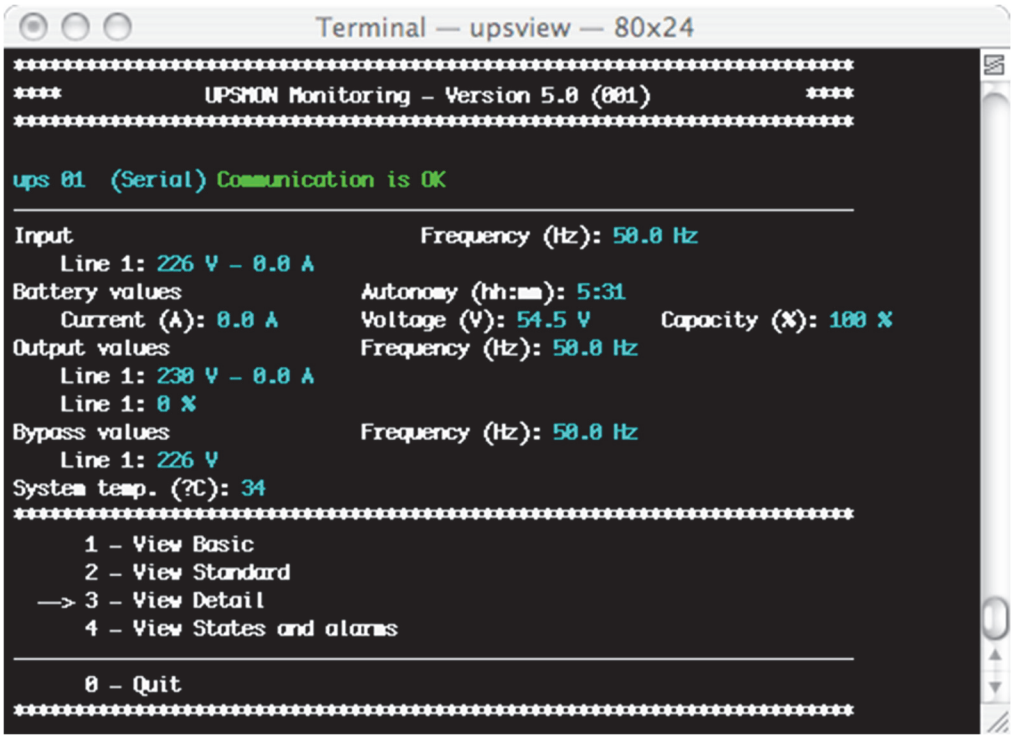
2.2.2 View Standard

The standard screen displays the most important operating data of the UPS-system. For further information with regards to this data, please refer to the UPS-system manual.



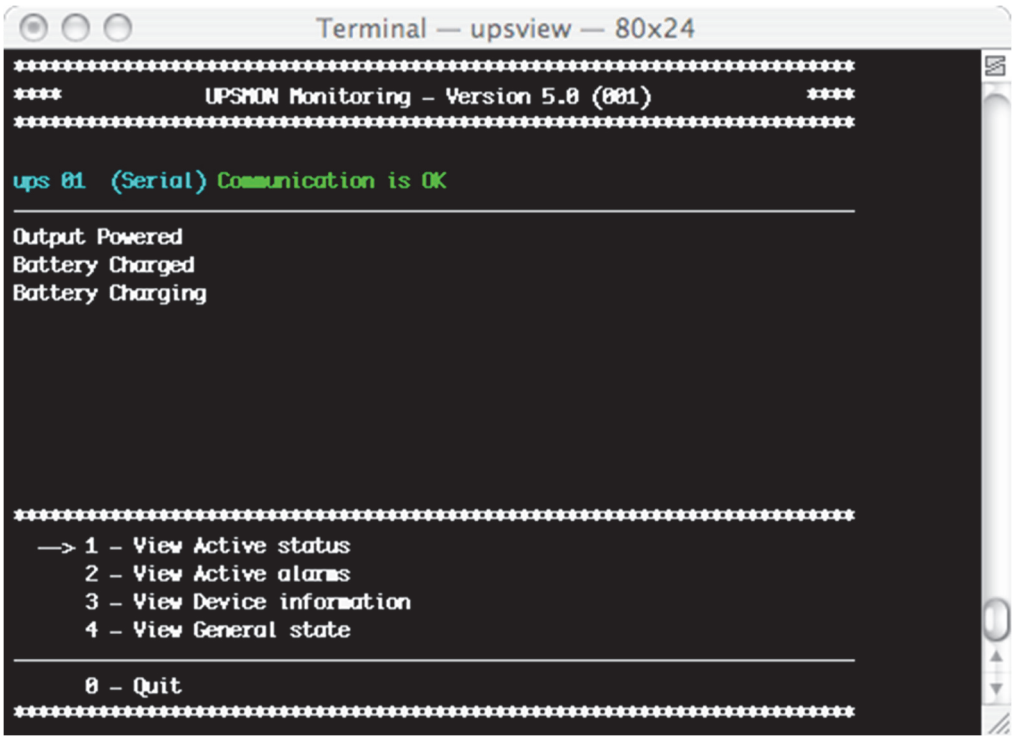
2.2.3 View Detail

The Detail screen shows all of the detailed information with regards to the measured values from UPS.



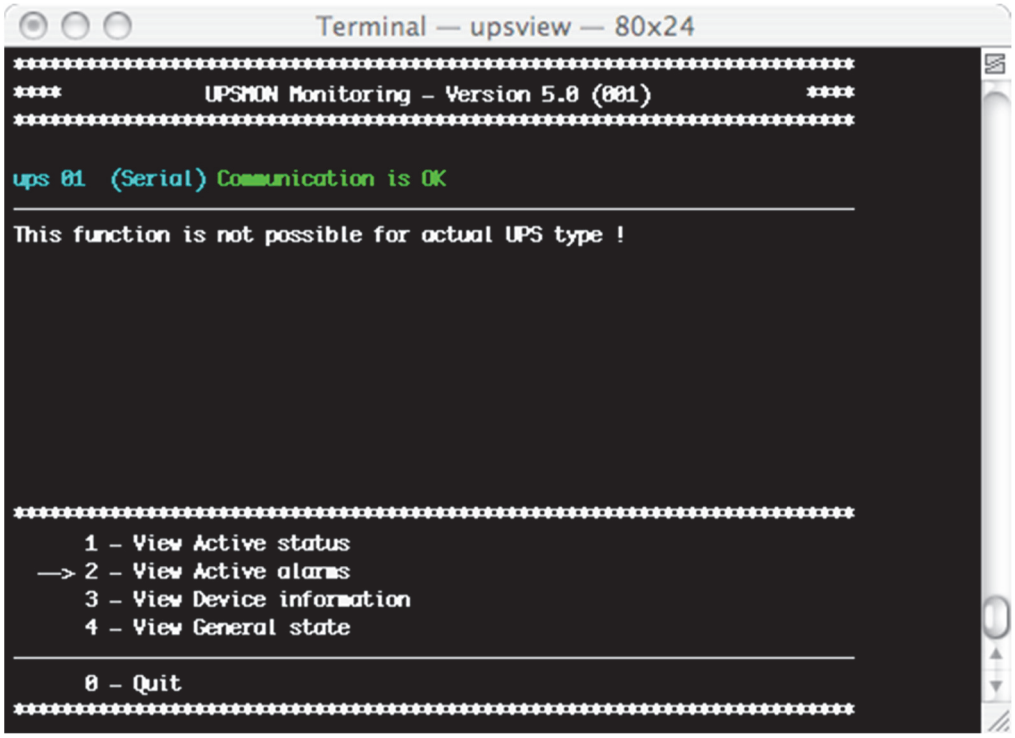
2.2.4 View Active Status

The UPS status table shows the status of the UPS, and if a situation with the UPS or the system is critical.



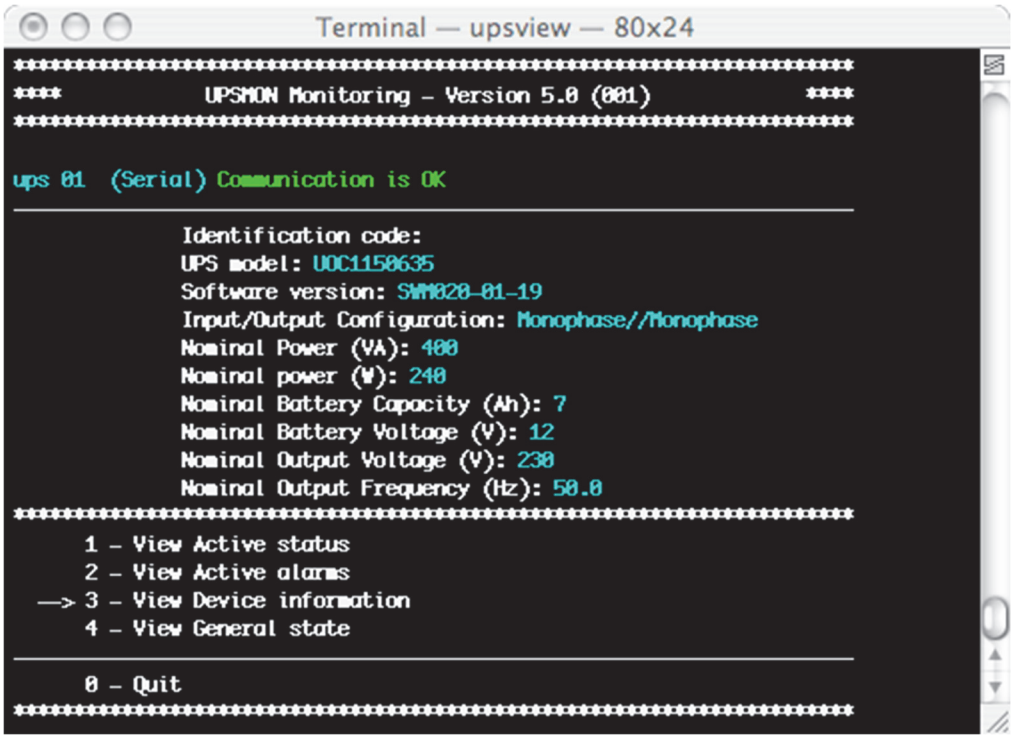
2.2.5 View Active Alarms

Some UPS types have a special table facility showing the alarms status.



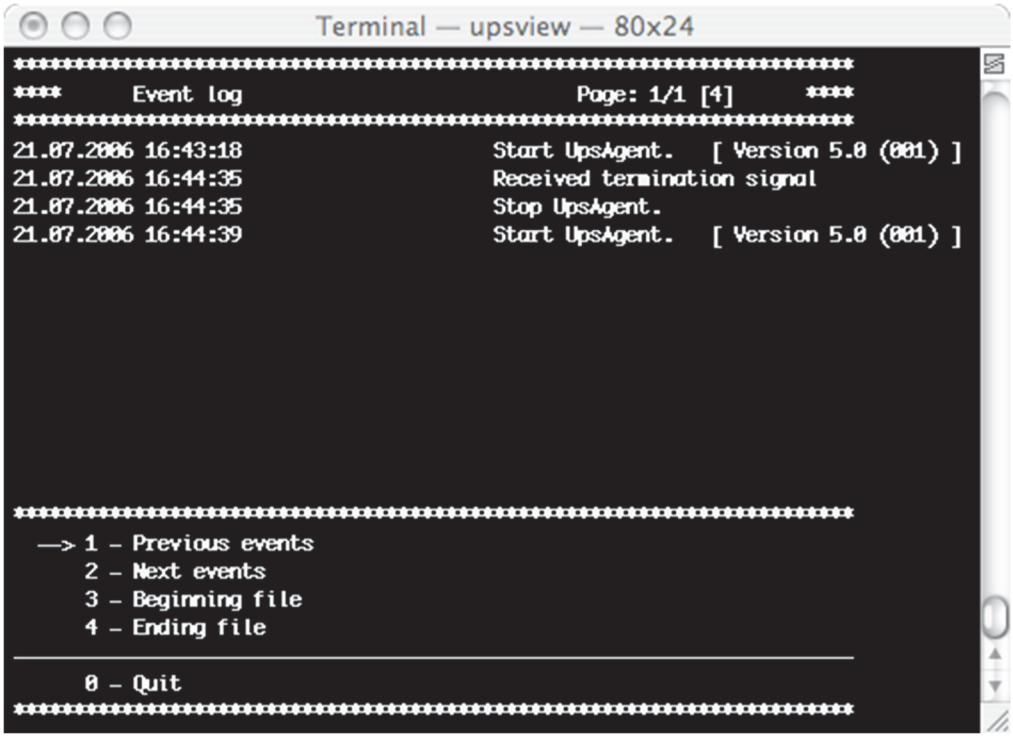
2.2.6 View device information

Show the nominal data of the Ups.



2.2.7 Event log

The Event list displays the current *Upsagent* activities. This is the list of events and information about the UPS and its agent during the *Upsagent* monitoring activity. All events contain the date, time and the name of the event. To use event log you must configure it in the *Upsetup* module.



2.2.8 Data log

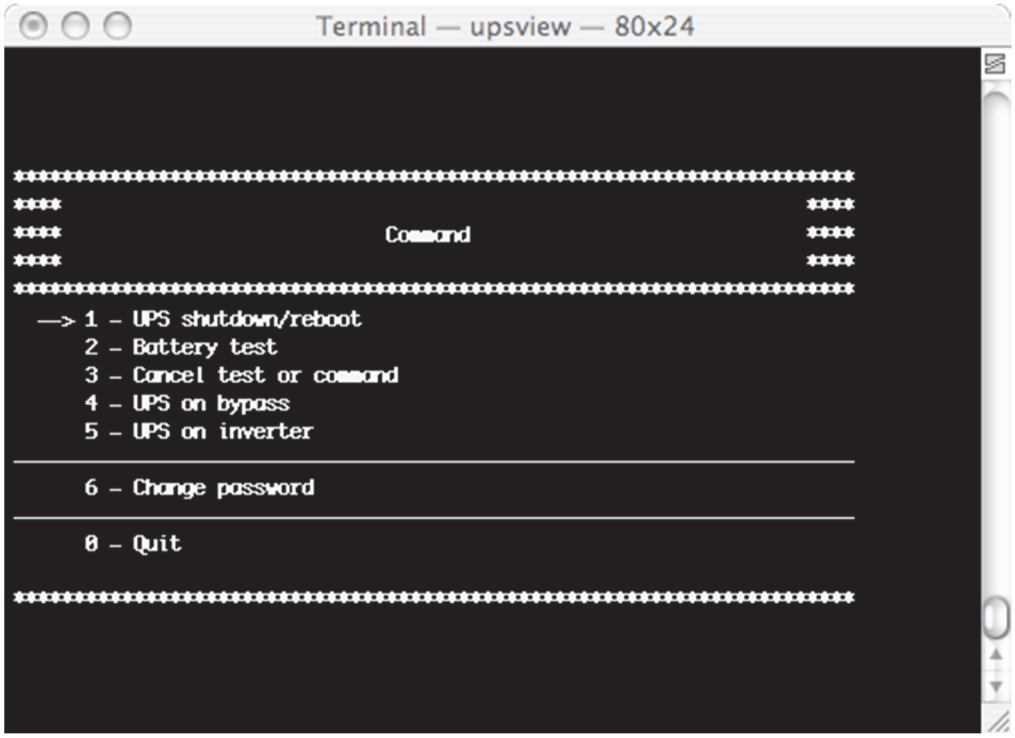
The data log list displays logged measured parameters from the UPS such as the input voltage, battery voltage, capacity, runtime and output load. All of the information contains the date, time, device name and measured values. To use data log you must configure it in the *Upsetup* module.

The data logged can be used by other programs, for example if you need to generate a graphic view. The data is logged into a standard text file, which may be simply imported into other programs.

2.2.9 Functions

It is possible to execute commands on the local UPS. A list of these commands is dependent on the UPS type, but the UPS shutdown and reboot command is supported by all UPS types.

For some UPS types, it is possible to start UPS internal tests or a UPS battery test.



VII. Uninstallation of the PowerShield³

ATTENTION: Before attempting to carry out the uninstall procedure, ensure that the *Upsview* or *Upsetup* program are not running.

1. Uninstall procedure for Windows

To uninstall from Windows, it is possible to use the standard uninstall procedure for Windows designed applications. For example via the Control Panel / Add and remove programs or it is possible to use the uninstall icon in the PowerShield³ program group.

2. Uninstall procedure for Linux

To uninstall from UNIX, the specific uninstall program for the specific UNIX operating system must be used. For further information please refer to the operating system manual.

3. Uninstall procedure for macOS

To uninstall from macOS, use the script uninstall-upsmon.command on the upsmon directory, this can only be executed with root rights.

VIII. Configuration for expert users

1. Manual changes of the UPSMON.INI parameters

The UPSMON.INI configuration file includes some fields that are possible to modify by editing the file.

SYSTEM section:

[System]

OEMMode=0

1 Enables the configuration menu and the functions menu;
4 Disables the display of the *Upsagent* icon on the task bar;
It is possible to use a combination of these i.e. 1+2 =3.

DebugMode=0

1 Enables the view of some extended parameters in the debug mode;
3 Decodes the entire UDP packet in the TCP/IP communication;

ShutdownType=1

0 Executes only the system shutdown (computer with AT power supply);
1 Default executes system shutdown and turns off the computer power supply (ATX power supply);

In the SERIAL_00 section:

[Serial_00]

CheckRate=1

Enables the time between one request and the next for the serial communication to be incremented. This is important if there is communications loss due to a slow computer.

2. Console execution of Upsagent

The *Upsagent* service can be executed using various parameters:

- -debug to view all the data flow between the program and the UPS;
- -log to save the data flow shown in the file debug.log;

The file created can be used to solve any problems with the communication.

In Windows there are others parameters:

- -start to start the service;
- -stop to stop the service;
- -install to write the service in the Windows configuration registry;
- -remove to cancel the service from the Windows configuration registry;

IX. Troubleshooting

1. All operating systems

Problem: Error message: ”Ups communication lost.”

Answer: There is no COM-Port available, check the COM-Port, the settings in CMOS and System-Setup.

Problem: During the system boot, the PowerShield³ software starts and the UPS turns off.

Answer: To guarantee the correct function of PowerShield³ Software use the default settings for the UPS model or the *serial* port-type, this problem can also be caused by a wrong cable-connection.

Problem: In the logfile of PowerShield³ the message "Communication lost, communications restored" occurs.

Answer: Some of the data from the UPS is not correct or the bytes of software received where damaged. This may be the result of external effects on the cables or the UPS. Check the cable, cable length and the communication parameters. Check if any background software that is using the com ports is active. (e.g. Virus checker within NetWare, or others). If this message occurs periodically, it is not a critical event. Only if this message occurs continuously for a longer period should you contact the UPS software/hardware support.

2. Troubleshooting Windows

Problem: *Upsagent* does not start: "UPS Communications lost".

Answer: This error means that you are using a device name which does not exist. Try another device and check the NT serial connection settings.

3. Troubleshooting Linux

Problem: How can I shutdown my database i.e. within the ups_exe shell?

Answer: It is sufficient to edit the ups_shut.scr file and write the command of database shutdown.

Problem: *Upsagent* does not start. "communication lost".

Answer: This error occurs only with cable serial setting. Possible Problems: You are using the wrong device, cable, or adapter between the computer and cable.

Problem: A false alarm by the *Upsagent* happens in constant intervals.

Answer: Is the port ”free” meaning that no ”getty” processes are active? No ”Login” must run on this port. In the file inittab ”respawn” has to be overwritten with ”off”.

Problem: When I start the ups_shut.scr script I get a syntax error.

Answer: Change default shell to sh.

Problem: After changes are made in the *Upsetup* menu the *Upsagent* starts unchanged.

Answer: Changes have been made in the ups_conf menu but a running *Upsagent* has not taken over the changes. Stop the daemon and restart.

Problem: Error message during start of *Upsagent*: ”Communication lost".

Answer:

a. Is the UPS-cable plugged in the correct way (Plug-side of the SUB D9 to the UPS)? Do you use any adapters? If so, check the contact of the cable, the pin layout and their correct correspondence to your UPS user manual interface description.

b. Has the port of the Unix-system been indicated correctly? The correct ”Name” of the serial port has to be indicated in the menu *Upsetup* or with the editor in the configuration file.

Example: The entry in the configuration menu could be: ”Ups Connection: /dev/tty01". If the DEVICE exists it can be entered. Even if you can enter a DEVICE it does not necessarily mean that this is the one where the UPS-cable is plugged in.

c. Is the port directly located at the computer or at a multiplexer or Terminal-server? Some Terminal-server do not give certain interface settings, but change the port address after every boot. On such a distributor a connection is not possible. With Multiplexer 1 only contact information is transmitted.

d. Have you been logged in as ”root” or ”superuser”? Login as ”root” and restart.

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