UPSMON

User Manual

0MNU106NPB-GB

This release supersedes all previous releases. Specifications are subject to change without any prior notice.

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The *UPSVIEW* software includes the license for using the UPS service at one server with one UPS. For operation at several servers a license for every new server is required. It doesn't matter if the UPS service runs at that location or if the server is halted by an UPS service via remote command. The service programs are generally delivered as a single-license. If there is more than one disk in one package all of them have the same serial number and must not be used for future installations. To use a single CD ROM for several multi-server shutdown installations you have to purchase additional CD license keys.

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Contents

I.   What is UPSMON?

The UPSMON software package is a client/server-application for networks and local workstations used for monitoring UPS systems. The server-module of the UPSMON Software is the *Upsagent*, this communicates via an RS-232 or TCP/IP network cable with the UPS. When the *Upsagent* is operating it collects (as a background program) the messages sent from the UPS. 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* can be done either 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 which are a part of the UPSMON package can be adapted to suit your specific requirements. When a change in the UPS alarm-status is detected, there is a corresponding file (i.e. shell script/command file) that 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 shutdown.

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 UPSMON 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 UPS. It is possible to check the status of the UPS 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 UPS by the *Upsagent*.

II.   Quick Start Guide

1.   Quick start guide to installing the software

1.   Make a note of the UPS 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 UPS is to be made via a serial or USB port install the software and when prompted enter the PRTK code.

3.   If the connection to the UPS(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 via option 1 of the Netman main menu screen.

4.   Enter the PRTK code (from note 1) into the Netman via option 5 of the Netman main menu.

5.   Once the software is installed, select *Upsetup* followed by the UPS configuration tab, then enter the PRTK code and the method of communication (ensure to use the correct IP address as set in the Netman).

6.   For further information refer to this User Manual.

III. Installation of UPSMON

1. Before the installation

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

1.1 Hardware requirements

UPS: Connect the UPS to the chosen serial port of your computer, various UPS provide several methods of communication interfacing; please ensure that the interface for RS-232 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 either with this software or the UPS. Do not connect any other cable between UPS and computer.

1.2 Software requirements

TCP/IP: UPSMON 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 UPS 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 UPS: To ensure the correct communication with a local UPS 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 UNIX 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 UPSMON. To uninstall any processes (e.g. getty demon) please refer to the operating system user manual.

1.3 User requirements

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 UPSMON, use the installation CD and run the program ***Upsmon-<Version>-windows-intel.msi*** . For Windows NT, 2000, Xp and 2003 server 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 *Upsetup* (or *Wizsetup*, the wizard of UPSMON) program will start automatically, when prompted enter the correct PRTK code for the UPS to be monitored, this code is located on a label which can be found on either the front or the rear of the UPS, and failure to input this code will prevent the operation of UPSMON.

5.   The configuration of UPSMON is performed using the *Upsetup* program; this will enable correct communication with the UPS and complete setup of the software operational parameters. Otherwise it is possible to use the wizard (*Wizsetup*) that allow a basic software configuration.

> NOTE: To confirm the correct installation on Windows NT, 2000, Xp and 2003 Server, 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   UNIX

1.   To install UPSMON, insert the UPSMON CDROM and execute the MOUNT command to access the included file. There are several specific options for this command, these option are dependent on the different versions of UNIX, for example the configuration for the file authorisation, the filename written in upper or lower case etc.
     The following table describes specific options for the specific UNIX operating systems:

UNIX System	Options	Device name
Linux	-o mode=777 -t iso9660	/dev/cdrom
HP UX	-o case	/dev/dsk/c0t(id)d0
SCO Unix	-oro	/dev/cd0
Unixware	-F cdfs -o -o fperm=777	/dev/cdrom/c0b0t(id)l0
Tru64	-f cdfs –o noversion	/dev/rz(id)a
Solaris	-F hsfs –r	/dev/dsk/c0t(id)d0s2
IRIX	-t iso9660	/dev/scsi/sc0d7l0

Where (id) is the SCSI-Id. There are two possible case modes for filenames on the CD-ROM: all filenames are either upper or lower case. This must be noted when you name the installation program or when you change the subdirectory at the CD-ROM. The ISO9660 specification supports also version numbers of filename, therefore on some systems you will find suffixes ";" (semicolon) or "." (dot) with filenames. As you can abbreviate filenames with wildcards "*" you shouldn't have any problems with this feature.

> ATTENTION: Sometimes it is necessary to change, using the *CHMOD* command, the execution-rights of the install script or other scripts. ("chmod 777 setup.scr", ...). Use a case sensitive mount command for your CD ROM if an execution error occurs.

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

Operating System	Command
AIX	installp -d directory upsmon
Digital UNIX OSF/1	setld -a directory
Compaq Tru64 UNIX	/usr/sbin/setld -l
FreeBSD NetBSD OpenBSD BSD	cd directory pkg_add upsmon
HP-UX	swinstall -s directory upsmon
IRIX	swmgr -f directory
Linux Debian	dpkg -i directory/upsmon-xxx.deb
Linux rpm	rpm -i directory/upsmon-xxx.rpm
Solaris	pkgadd -d directory upsmon

3. The install command will expand automatically all the files and will create the startup shortcut for *Upsagent* in the correct directory for the specific UNIX operating system.

4. After successfully installing the software, launch the *Upsetup* program. When prompted enter the correct PRTK code for the UPS to be monitored, this code is located on a label which can be found on either the front or the rear of the UPS, and failure to input this code will prevent the operation of UPSMON.

5. When installing UPSMON on UNIX, the software requires the CDROM serial and license number. The serial and license number can be obtained from the UPS manufacturer or supplier.

6. The configuration of UPSMON is performed using the *Upsetup* program; this will enable correct communication with the UPS and setup of the software operational parameters.

⚠ ATTENTION: To copy the UPSMON into the Unix-system from the CD medium, a CD-ROM drive and a CDFS-filesystem-driver (ISO 9660) is required. Otherwise use a DOS- or Windows-workstation on your network, insert the CD into this machine, Now copy the software (e.g. via FTP) to the hard disk of the Unix-system. Make a copy of the complete Unix-directory.

⚠ ATTENTION: When configuring Upsmon on a platform which can support JAVA environment v1.4 or higher, it is possible to use the JAVA version of Upsetup. For these platform it is possible to use also the wizard JAVA Wizsetup that perform a basic configuration to ensure a correct communication with the UPS.

2.3   Novell Netware

1. The Installation must be started from an MS Windows workstation that is connected to the server by a user with administrator rights.

2. To install UPSMON start the SETUP.EXE program located on the installation CD.

3. When prompted, select the destination folder for the program files.

4. The Installation program will automatically copy all of the necessary files and create a program group, however a shortcut to start the *Upsagent* module must be created in Autoexec.ncf (by system utility Install or NwConfig).

5.	After successfully installing the software, the *Upsetup* program will start automatically, when prompted enter the correct PRTK code for the UPS to be monitored, this code is located on a label which can be found on either the front or the rear of the UPS, and failure to input this code will prevent the operation of UPSMON.

6.	The configuration of UPSMON is performed using the *Upsetup* program; this will enable correct communication with the UPS and setup of the software operational parameters.

⚠️ **ATTENTION**: After the installation it is possible to configure the UPSMON using the Windows programs Upsetup.exe and Upsview.exe, or it is possible to use NLM module Upsetup.nlm and Upsview.nlm directly on the server console.

⚠️ **ATTENTION**: To successfully start the Upsagent on some systems a successful start of UPSMON is required. This system NLM modules must be started before you start the Upsagent or Upsview module: AIOCOMX.NLM (for specified serial port) and TCPIP.NLM. For more details consult the system user manual.

⚠️ **ATTENTION**: The standard version of UPSMON for Novell Netware only supports Novell Netware 4.x and 5.x. For Novell Netware 3.12 you must use the special version of UPSMON located in directory 312.

## 2.4	Mac OS X

1.	The installation must be performed by a user with root rights.

2.	To install UPSMON start the file Setup.dmg.sit on the installation CD, the program will unpack the installation package Upsmon.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 *Wizsetup* program will start automatically, when prompted enter the correct PRTK code for the UPS to be monitored, this code is located on a label which can be found on either the front or the rear of the UPS, and failure to input this code will prevent the operation of UPSMON.
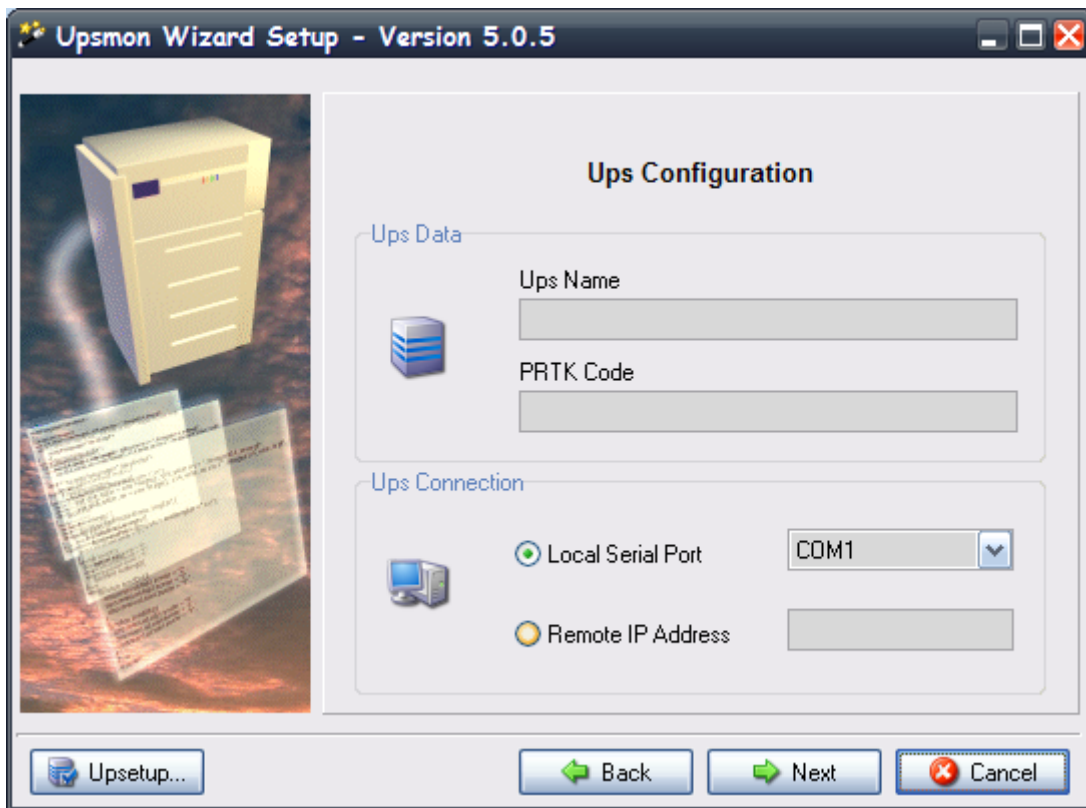
6.	The basic configuration of UPSMON is performed using the *Wizsetup* program; this will enable correct communication with the UPS. The full configuration of UPSMON is performed using the *Upsetup* program; this will enable correct communication with the UPS and complete setup of the software operational parameters.

IV. Simple UPSMON Configuration (Wizard)

The basic configuration of UPSMON (WINDOWS or JAVA version) is performed using the *Wizsetup* program; this will enable correct communication with the UPS 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 UPSMON software, primarily the Upsagent module.

1. Wizsetup for Windows

⚠️ ATTENTION: If the *Wizsetup* program is started for first time, the software will require a PRTK code, therefore when prompted enter the correct PRTK code for the UPS to be monitored, this code is located on a label which can be found on either the front or the rear of the UPS, and failure to input this code will prevent the operation of UPSMON.

⚠️ ATTENTION: Administrative rights are required when saving the configuration using Windows NT, 2000 Xp, 2003.

The basic configuration of UPSMON performed using the *Wizsetup* program is due in three step. Is possible to open the configuration complete program Upsetup by clicking the button with the caption Upsetup.
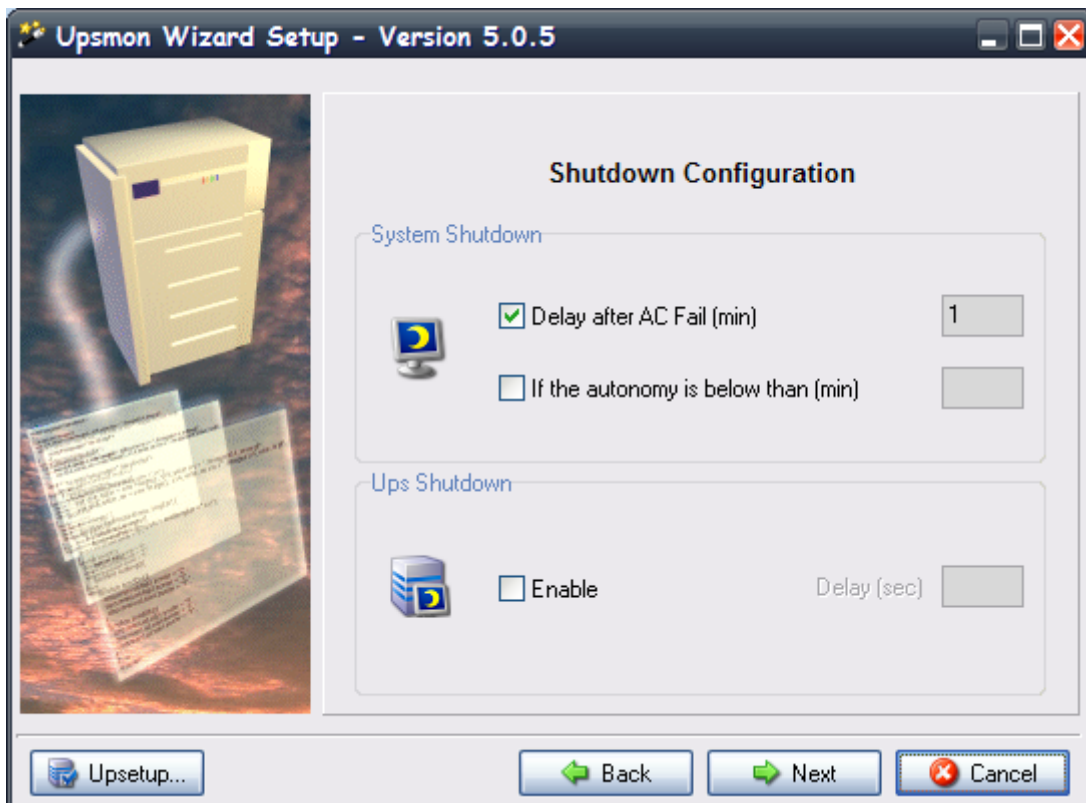
1. **Welcome page**: in this page is possible to select the language of UPSMON.

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

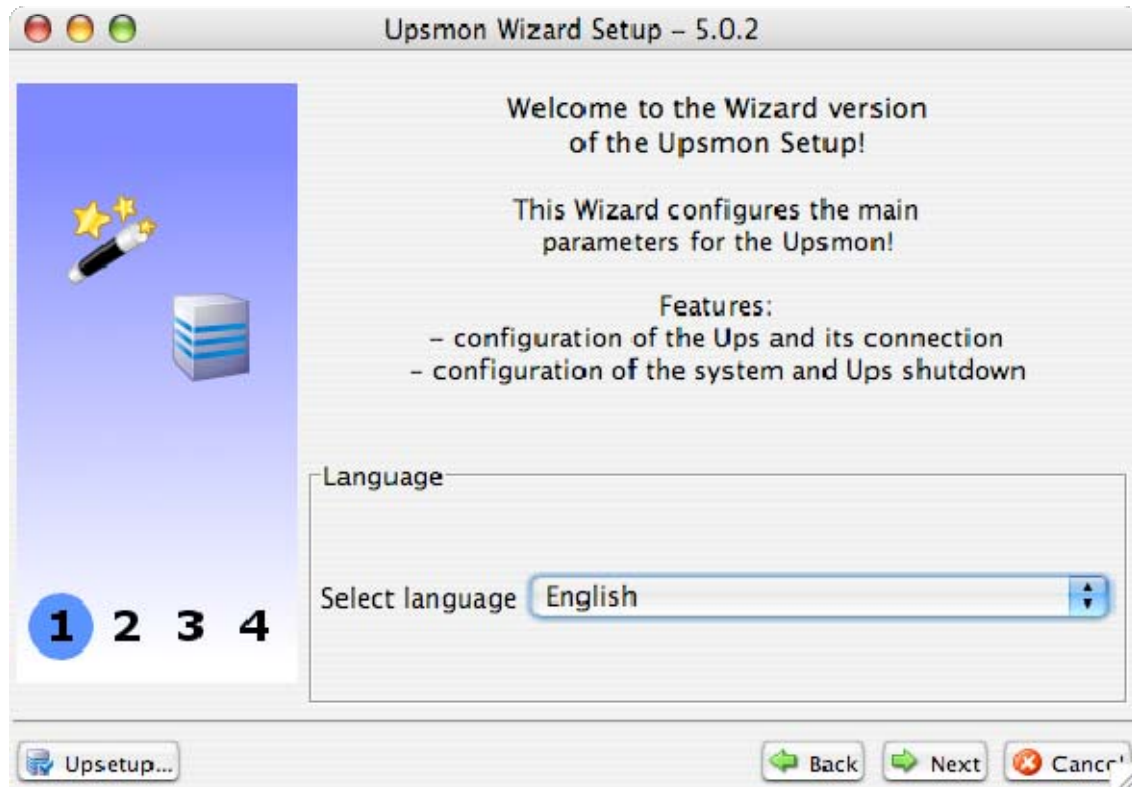3. **Shutdown page**: in this page is possible to configure the system shutdown and the UPS shutdown.
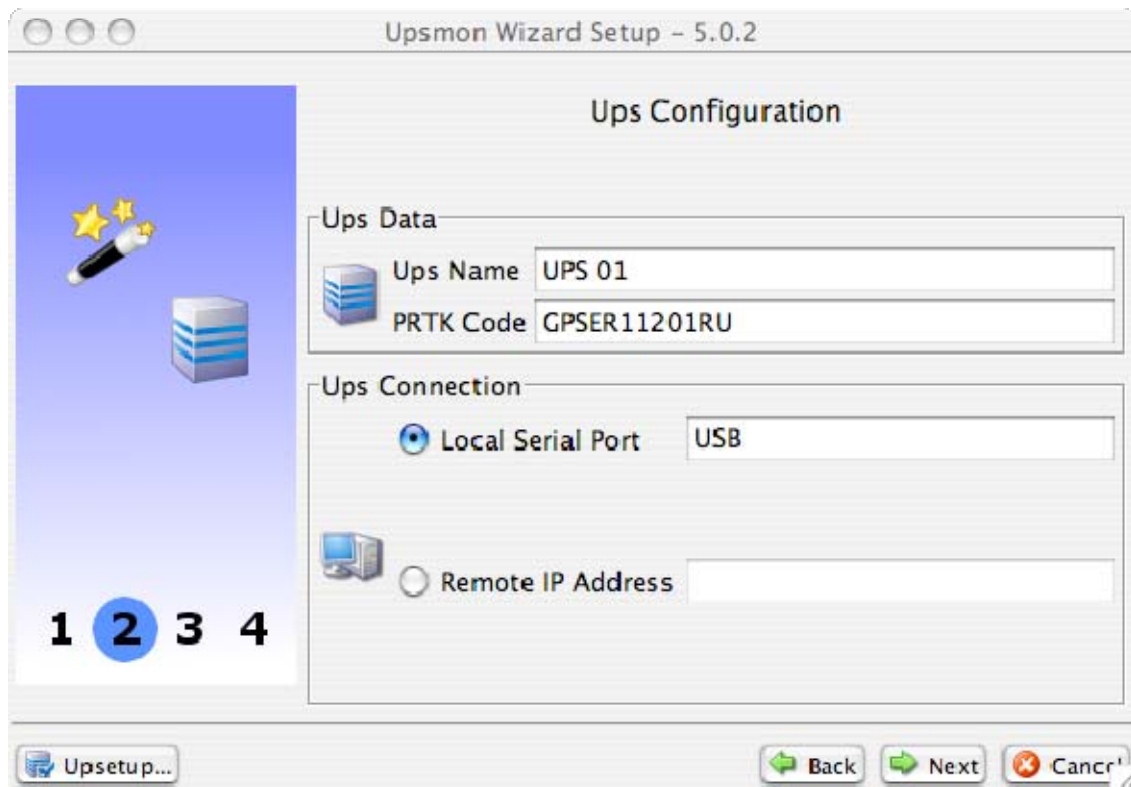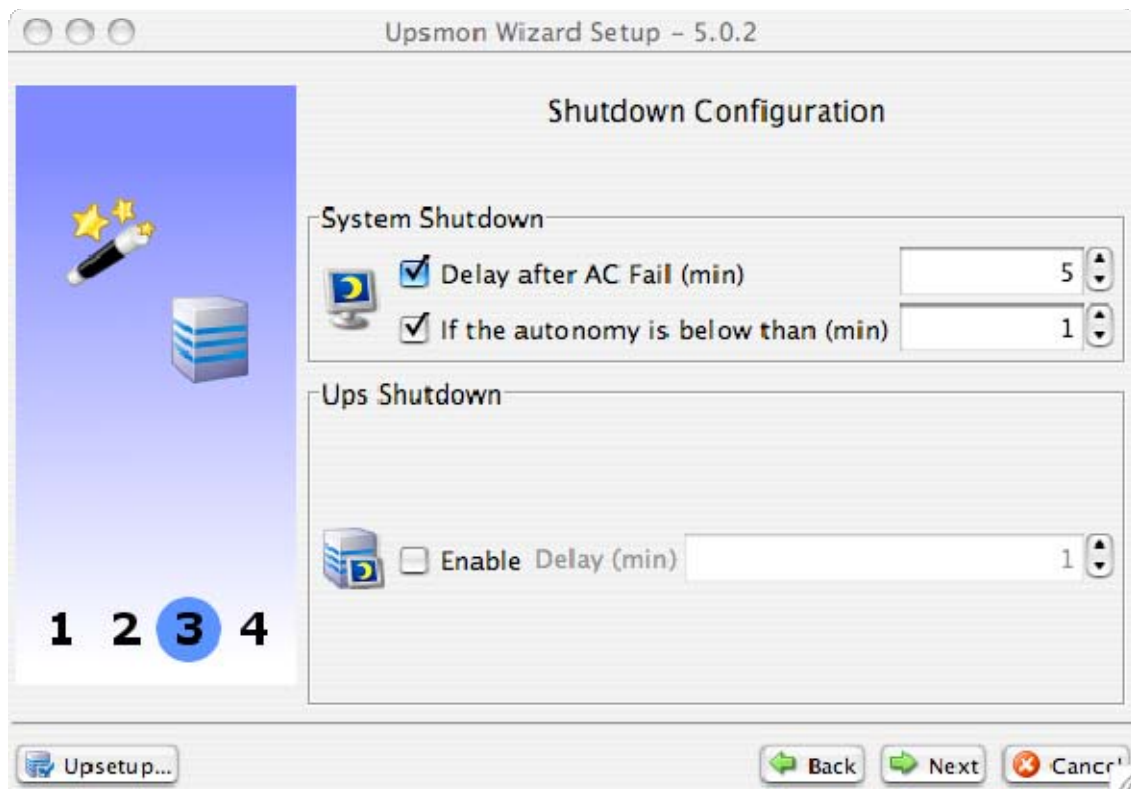
2. Wizsetup for JAVA and MAC OS X

⚠️ ATTENTION: If the *Wizsetup* program is started for first time, the software will require a PRTK code, therefore when prompted enter the correct PRTK code for the UPS to be monitored, this code is located on a label which can be found on either the front or the rear of the UPS, and failure to input this code will prevent the operation of UPSMON.

The basic configuration of UPSMON performed using the *Wizsetup* program is due in three step. Is possible to open the configuration complete program Upsetup by clicking the button with the caption Upsetup.

1. **Welcome page**: in this page is possible to select the language of UPSMON.

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

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

V. Advanced UPSMON Configuration

The configuration of UPSMON is performed using the *Upsetup* program; this will enable correct communication with the UPS 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 UPSMON software, primarily the Upsagent module.

1.   Upsetup for Windows

ATTENTION: If the *Upsetup* program is started for first time, the software will require a PRTK code, therefore when prompted enter the correct PRTK code for the UPS to be monitored, this code is located on a label which can be found on either the front or the rear of the UPS, and failure to input this code will prevent the operation of UPSMON.

ATTENTION: Administrative rights are required when saving the configuration using Windows NT, 2000 Xp, 2003.

The *Upsetup* program is divided into 8 main sections:

1.   **Main parameters**: The main parameters section is used to set up all of the common parameters, such as the system name, location, personnel contact name and parameters for log files.

2.   **Network services**: The network services section is used to configure the network services such as tcpip, snmp etc.

3.   **UPS connections**: The UPS connections section is used to configure a list of the UPS to be monitored by the *Upsagent* and the communication parameters for each UPS.

4.   **Remote sensors**: this section lets you set up to 32 sensors (temperature, humidity and digital I/O sensors), associating them with the UPS systems monitored remotely via an on-line connection.

5.   **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 UPS, several message types are possible, such as email, text, voice and fax. Before using any of these options you must configure the desired service on the computer.

6.   **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.

7.   **Jobs parameters**: The jobs parameters section is used to configure the jobs to be carried out by the UPSMON 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.

8.   **About**: The about 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 UPS).

1.1   Main 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 persons name for the local system.	Administrator
Language	Language selection. All messages and text in UPSMON (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 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
Autoclose local message window (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

1.2   Network services
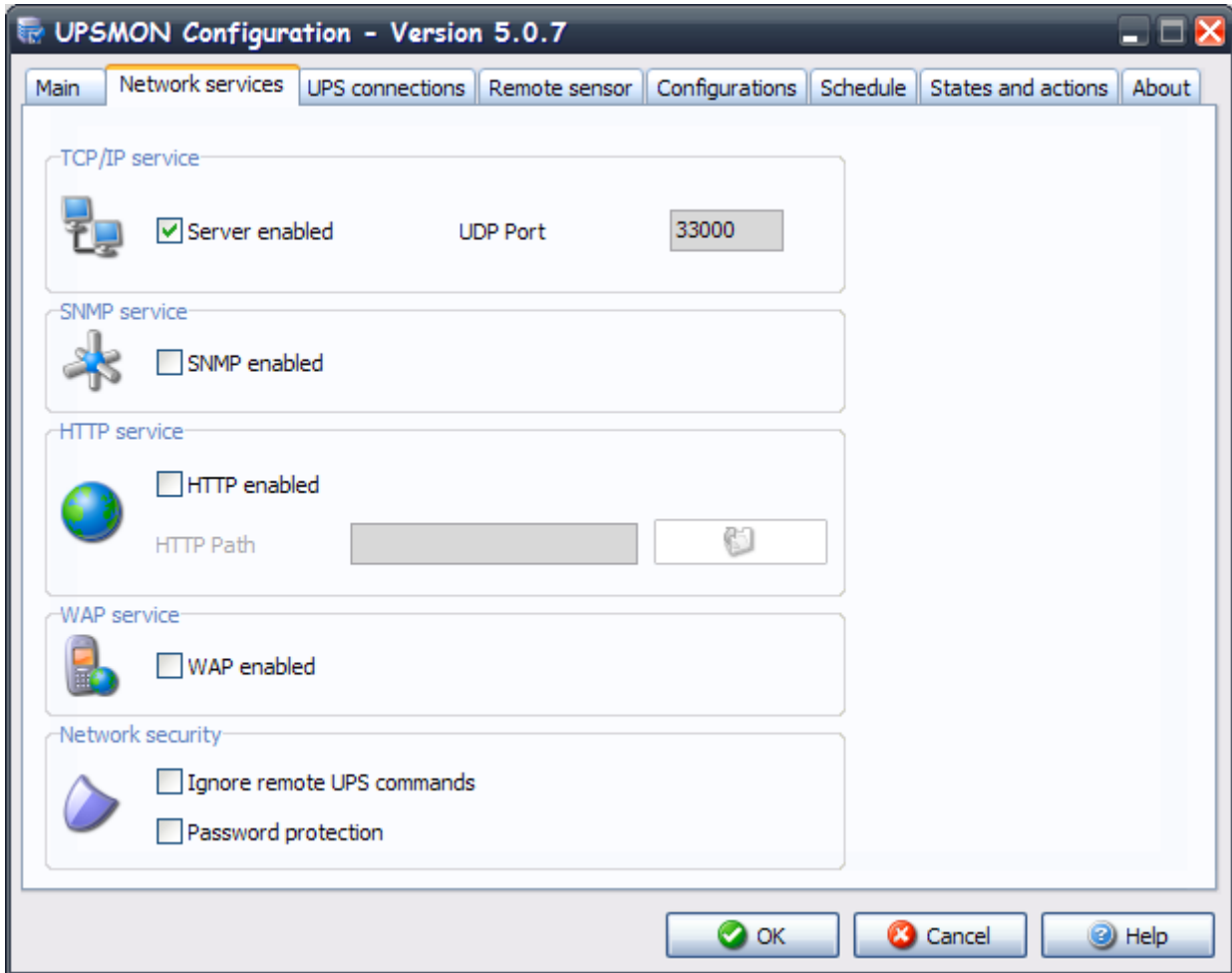
Parameter name	Parameter description	Default
TCP/IP Service: Server enabled	Enables or disables the connection access of other computers running the *Upsagent* or *Upsview* programs.	Enabled
TCP/IP Service: UDP Port	The UDP communication port. This must be same on all system using UPSMON	33000
SNMP Service: SNMP enabled	Allows the support for SNMP. The data and the status of the Ups can be monitored via SNMP.	Disabled
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
WAP Service: WAP enabled	Allows the support for WAP. The data and the status of the Ups can be monitored via WAP.	Disabled
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
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

1.3   UPS connections

The UPS connection window contains the list of the UPS that will be monitored by the *Upsagent.*
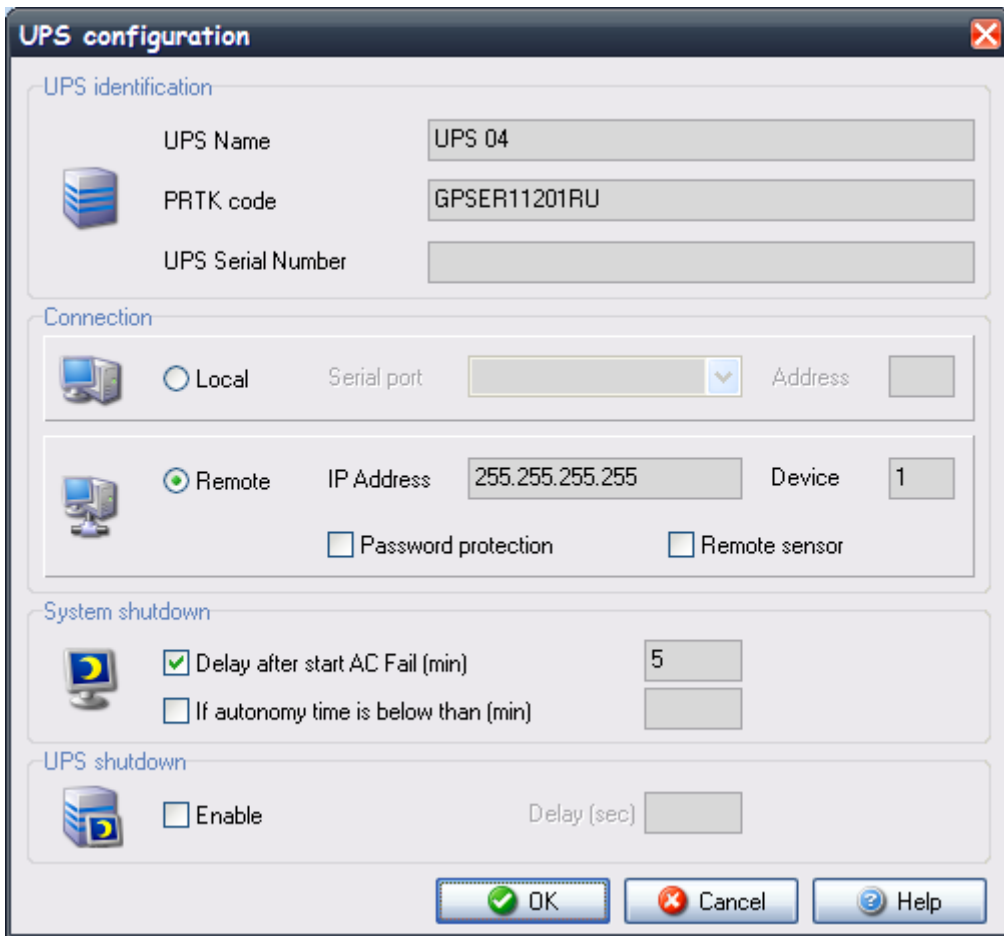
It is possible to add, delete or edit the UPS list.

The STANDARD version of UPSMON 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 31 UPS to be monitored via a network by the *Upsagent*. To change the STANDARD version to the FULL version you must enter the CDROM serial number and relevant License number using the About tab and the enter code dialog box. The License number is available from the UPS manufacturer or supplier.

The FULL version of UPSMON 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.

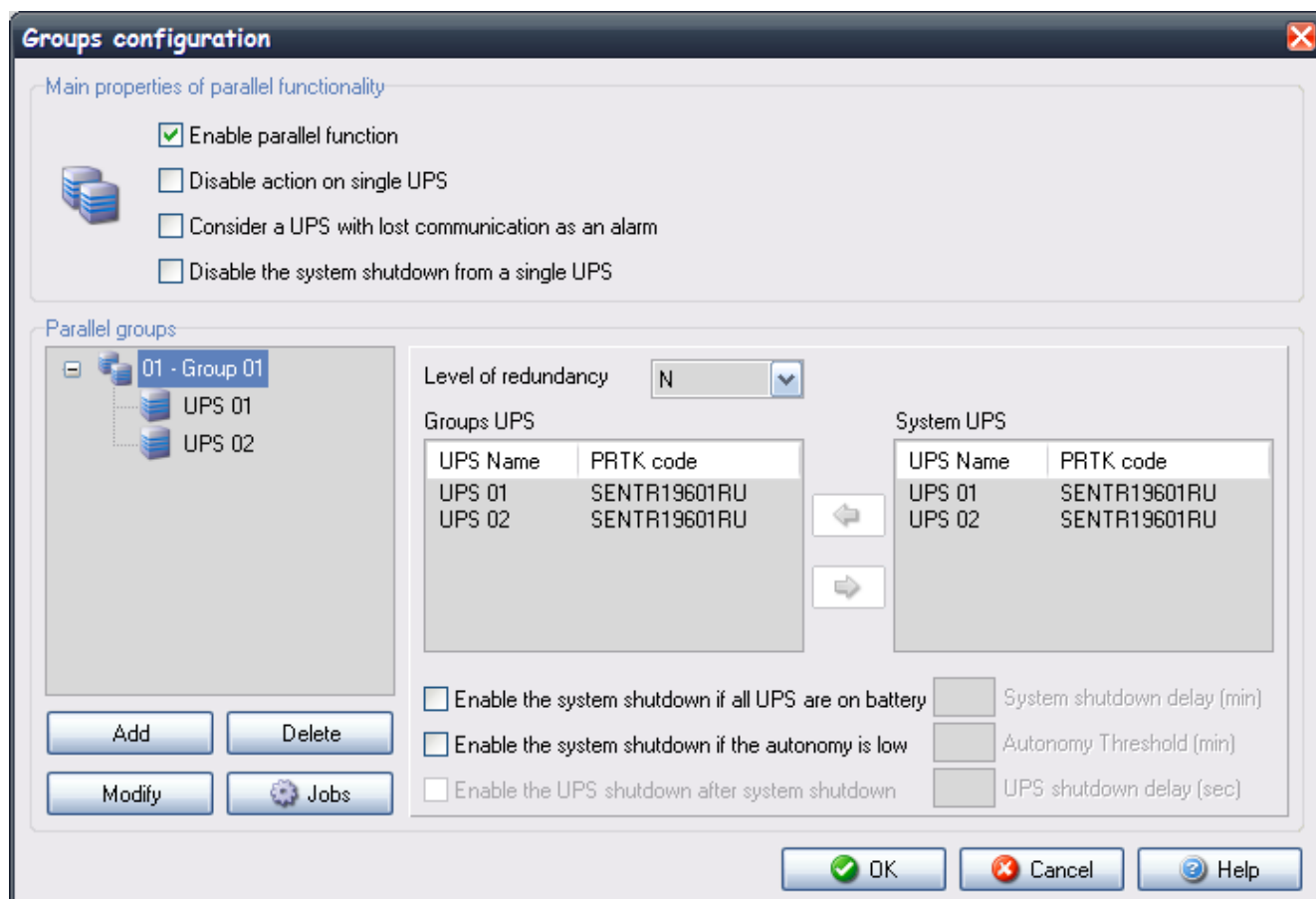| Parameter name	Parameter description	Default
Update frequency	Defines the time-interval (in seconds) in which the *Upsagent* polls for data from the UPS (if the *Upsagent* is connected to remote UPS via network). This parameter is enabled only if there is at least one Ups connected via TCP/IP in the list of connected Ups. 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

1.3.1   UPS configuration (select the Add or Modify button)

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.
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 SNMP adapter must be specified for the device where the UPS is connected and the device number (usually 1). Note: The Windows version supports USB communication via USB-UPS adapter. The USB communication is supported by MS Windows 95 OSR2, 98, 2000 and higher. Note: The TCP/IP communication allows the user to specify a remote *Upsagent* or SNMP adapter location by host name (or DNS name).
Password protection	It is possible to specify a connection password for each UPS connected. This password must always be specified to connect the specific UPS.
Remote sensors	It is possible to specify whether temperature, humidity and/or digital I/O sensors are associated with the SNMP adapter to which the remotely connected UPS is connected. This will make it possible to configure the sensors in the right section and activate the relative alarms.

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

1.3.2 Parallel group configuration (select the Configure button)

Parameter name	Parameter description
Enable parallel function	Enable or disable the parallel functionality.
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.

|	
Parallel groups	User can add, modify or delete parallel groups. In the three "Parallel groups" it will be shown the defined parallel groups. By expanding one group it is possible to see the Ups that belong to the group. By selecting one parallel group, the belonging UPSs will be inserted on the list "Groups UPS". It is possible to add an UPS to a parallel group: first select the UPS on the list "System groups", then press the green left arrow button. The new UPS will appear on the list "Groups UPS". It is possible to remove an UPS from the parallel group: first select the UPS on the list "Groups UPS", then press the green right arrow button. The UPS will disappear from the list "Groups UPS". 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 shutdown the groups' UPS together with the system after the specified delay.

It is possibile 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 select the parallel group and to press the "Jobs" button.
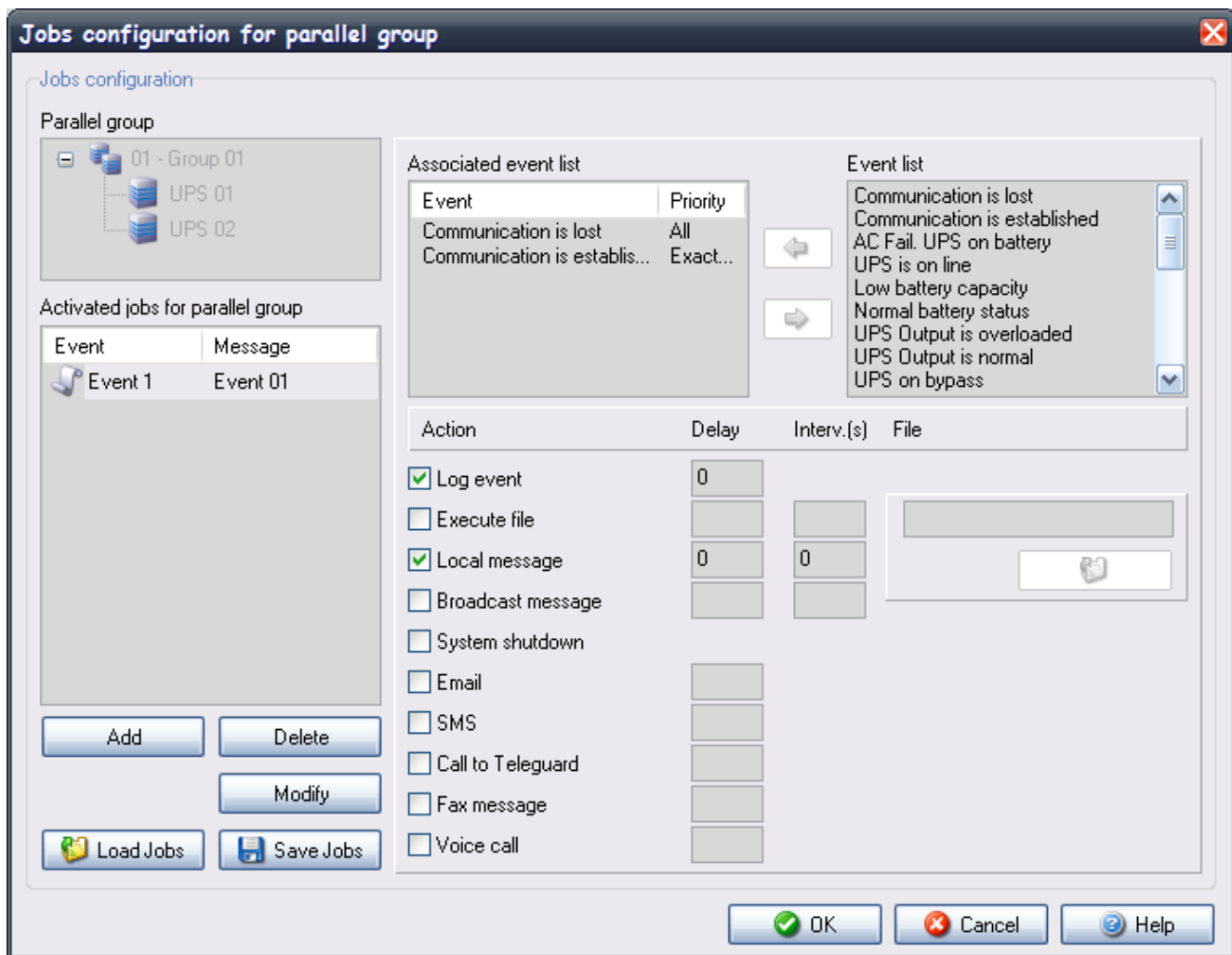
The selected parallel group is shown on the "Parallel group" tree. The user can add, modify, or remove the composite events related to the selected parallel group. The composite events defined on the parallel group are shown on the "Activated jobs for parallel group" list.

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 "Associated event list" list. 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 a simple event to the list of the composite events: first select a new simple event from the "Event list" list, then press the green left arrow button. A dialog window will be shown; on this window it is possible to set the event priority: i.e. the number of the groups' UPS on which the simple event must occur for making it acknowledgeable.
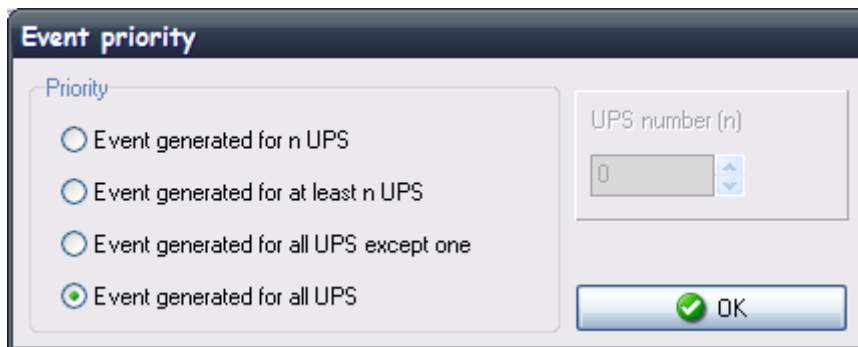
It is possible to remove a simple event from the "Associated event list" list: first select the simple event from the list, then press the green right arrow button. The event shall be removed from the list.

It is possible to modify the priority of a simple event by selecting it on the "Associated event list" list and double-click on it.

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 at the composite event creation. This message will be shown on the "Message" column of the "Activated jobs for parallel group" list.

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, OS/2 executes the ups_loc.cmd script, 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, also by standard Windows MAPI or SMTP interface. 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.
Call to Teleguard	The Upsmon can be used to contact a teleservice monitoring and control system with regards to the event occur on the parallel group.
FAX Message	Enables the option to send the message as FAX. Before using this option the fax service must be configured on the computer.
Voice Call	Selected when making a voice call using a voice modem. For each UPS status it is possible to create a .wav file to describe the event.

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 "Save profile" and "Load profile" buttons.

1.4 Remote sensors
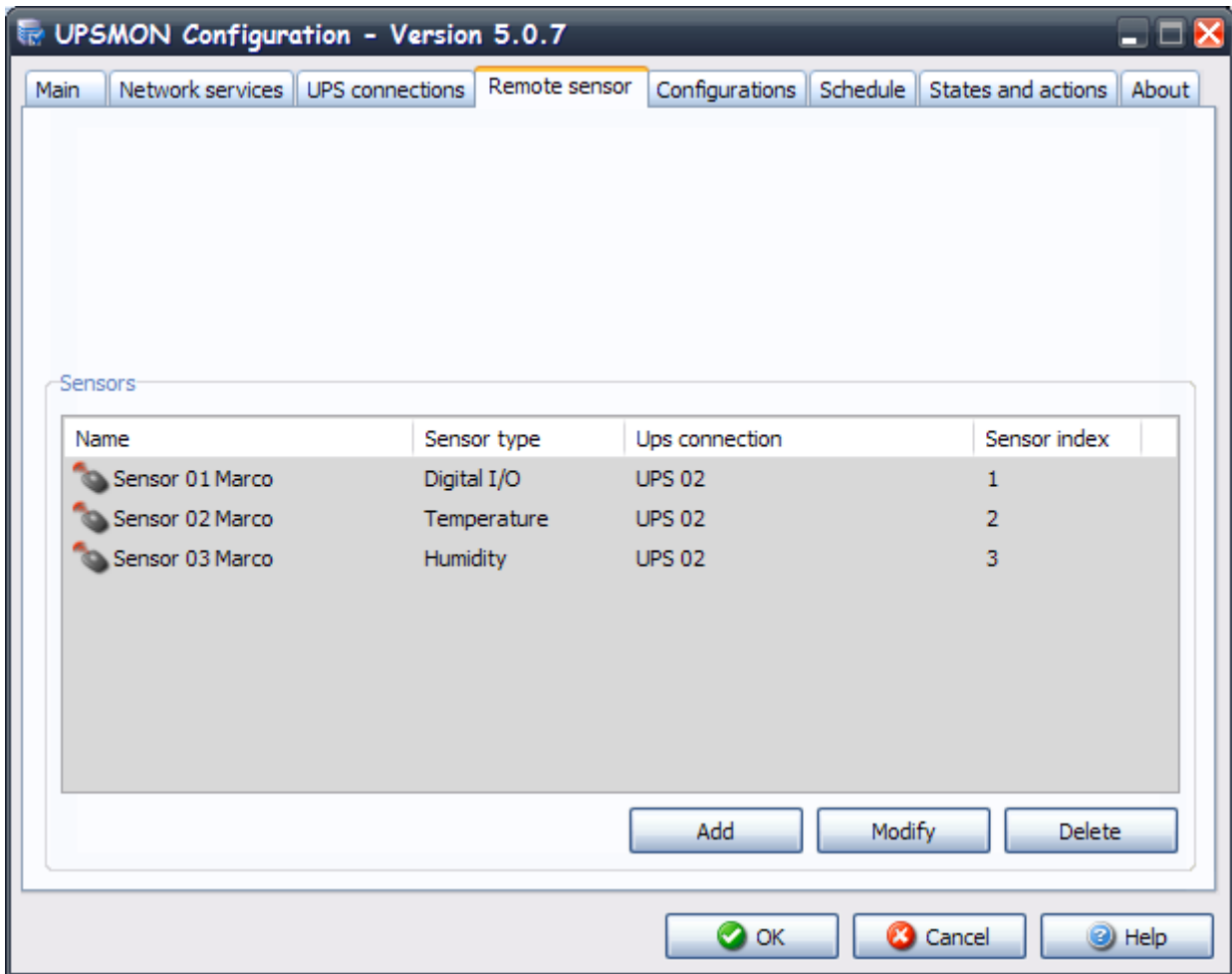
This window shows the list of remote sensors associated with the SNMP adapter connected to the UPS. Up to 6 different types of remote sensor can be associated with an SNMP adapter using the serial port (see sensor cable wiring specifications). The remote sensors are divided into three categories:
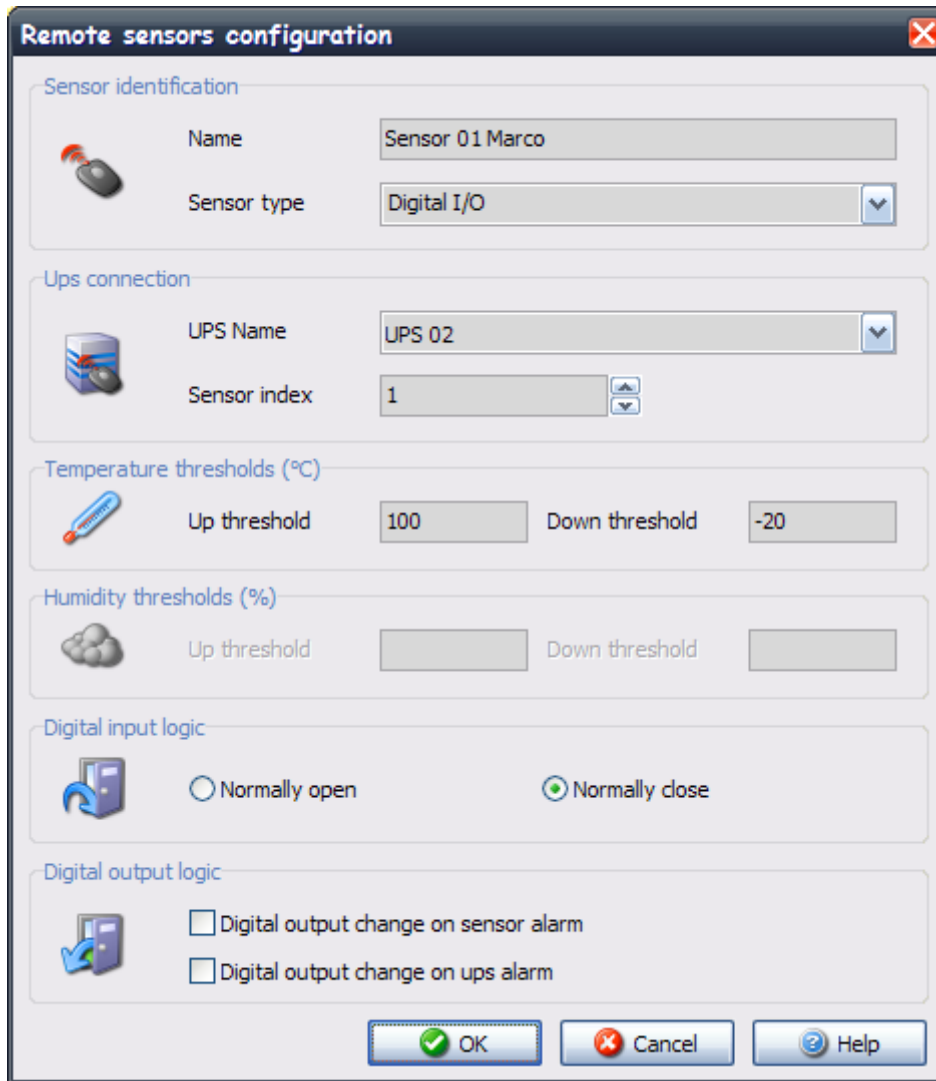
a. Temperature sensors that measure the environmental temperature around the sensor. Alarms can be set to indicate when high or low temperature thresholds are exceeded so that certain actions can be taken (sending an SMS or an e-mail or system shutdown).

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.

It is possible to add, delete or modify the sensors listed.

1.4.1   Remote sensor configuration

Name of parameter	Description of parameter
Name	Name of the sensor connected to the SNMP adapter
Type of sensor	Type of sensor: temperature, humidity or digital I/O.
Name of UPS	Name of the UPS connected to the SNMP adapter with which the sensors have been associated. Note: this combo box shows only the UPS for which the item "Remote Sensors" has been selected in the UPS configuration (see paragraph **Errore. L'origine riferimento non è stata trovata.**)
Sensor Index	Index of the sensors (from 1 to 6) connected to the SNMP 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 SNMP 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.

1.5   Configurations
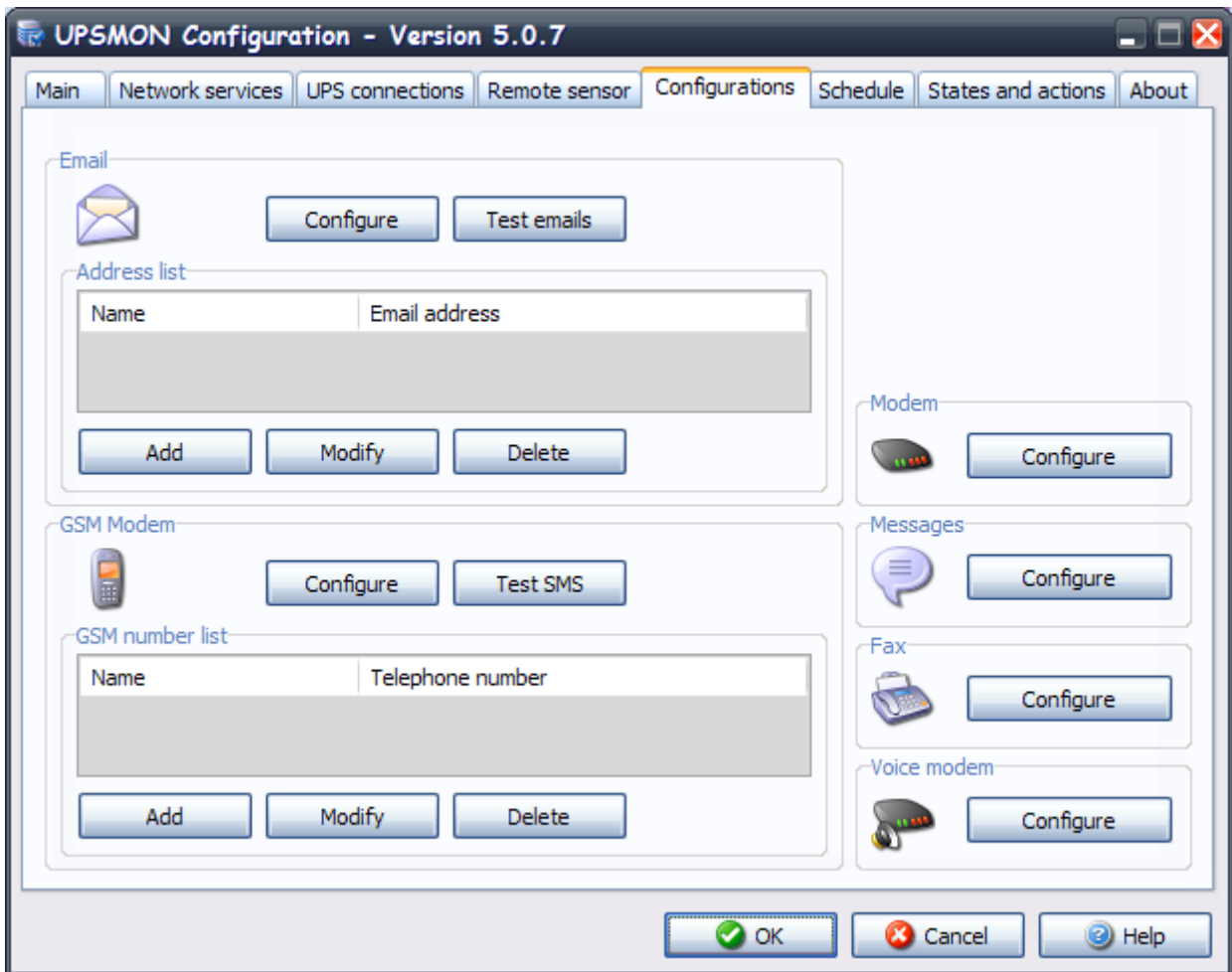
Adding or editing email contact details or GSM number details (select the Add or Edit button from the email list or from the GSM number list):
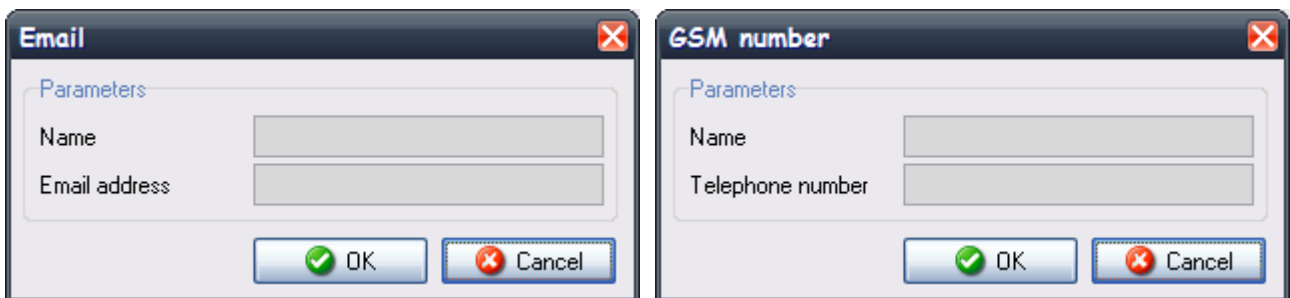

It is possible to specify the name and email address (or GSM number) for the recipients. This will only operate if the Email messages checkbox (or SMS checkbox) in jobs parameters tab has been selected. In the event of an alarm condition occurring a messages about the UPS status will be sent to the specified users, this message will also be sent by the standard Windows MAPI interface on Windows 9x, ME versions. On Windows NT, 2000 and XP a direct SMTP interface is used (if it is enabled). Before using this option the email service on the computer must be configured.

The maximum number of email recipients is 10.

The "Test emails" and the "Test SMS" button can be used to send test email or test SMS messages by the *Upsagent* to confirm correct operation. The *Upsetup* will try to send the test email message through MAPI or through SMTP if it is enabled.

1.5.1   Email support configuration

This feature is used for Windows NT, 2000 or XP systems and enables the configuration to send email by SMTP interface. To use this support, the email service must be correct configured on the computer.
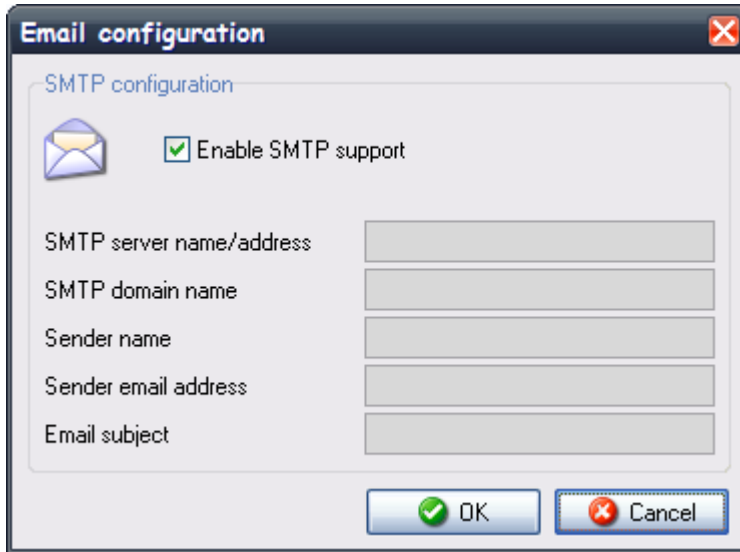
Parameter name	Parameter description
Enable SMTP support	Enable or disable SMTP support. When disabled the UPSMON cannot send emails through SMTP support.
SMTP server name/address	The IP address or host name of your SMTP server. The SMTP server is a specific computer in the local network or Internet 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 Upsmon.
Email subject	The subject of the email.

⚠ ATTENTION: For Windows 9x and ME: these operating systems use the MAPI interface and sending email is dependent on the correct configuration and functionality of MAPI based email program (e.g. MS Outlook). In NT,2000 and XP platform the MAPI interface may caused problems due to Windows system security reason.

1.5.2   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.
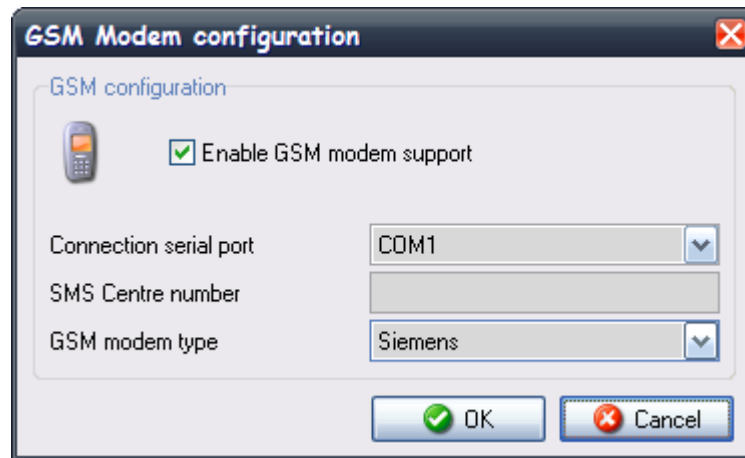
Parameter name	Parameter description
Enable GSM modem support	Enable or disable GSM modem support. When disabled, the UPSMON cannot send SMS.
Connection serial port	The serial port name where the modem is connected.
SMS Centre number	Contact your SIM card provider to obtain this number.
GSM modem type	The supported modems are Siemens and Falcon.

1.5.3   Network Messages support configuration

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. In this case it is possible to execute a send test.
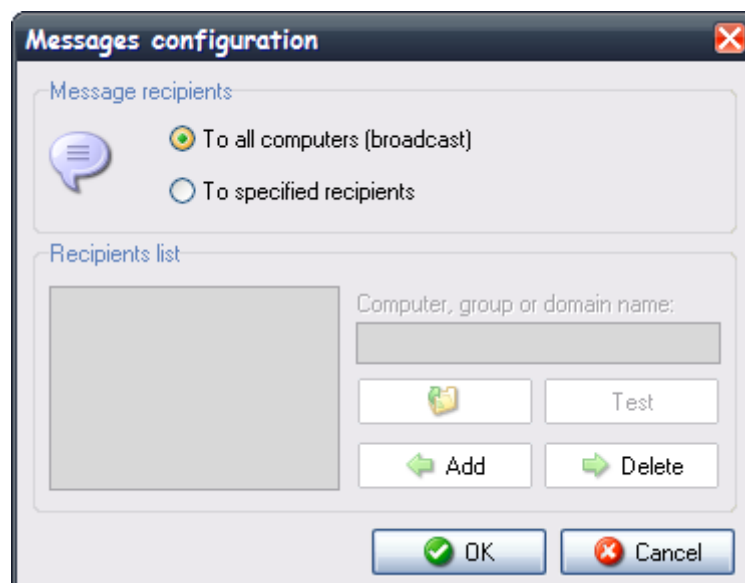
1.5.4 Modem support configuration

This window is used to configure the modem connection. The modem may be used for communication with teleservice.

Parameter name	Parameter description
Enable modem support	Enable or disable modem support. When disabled, the UPSMON cannot call teleservice control service.
Connection serial port	The serial port where the modem is connected.
Primary/Secondary telephone number	The telephone numbers of the teleservice control centre, these are the number where the modem will call in case of an emergency.
Number of repeat calls	The number of times the system will attempt to call in the event of a busy line or no answer.
Delay between calls	The minutes of delay between each call attempt.
Accept incoming calls	Accepts incoming calls from a teleservice control centre. This can be turned off for security reasons.

1.5.5 Fax support configuration

This window is used to configure fax support. To use this support, the fax service must be correct configured on the computer.
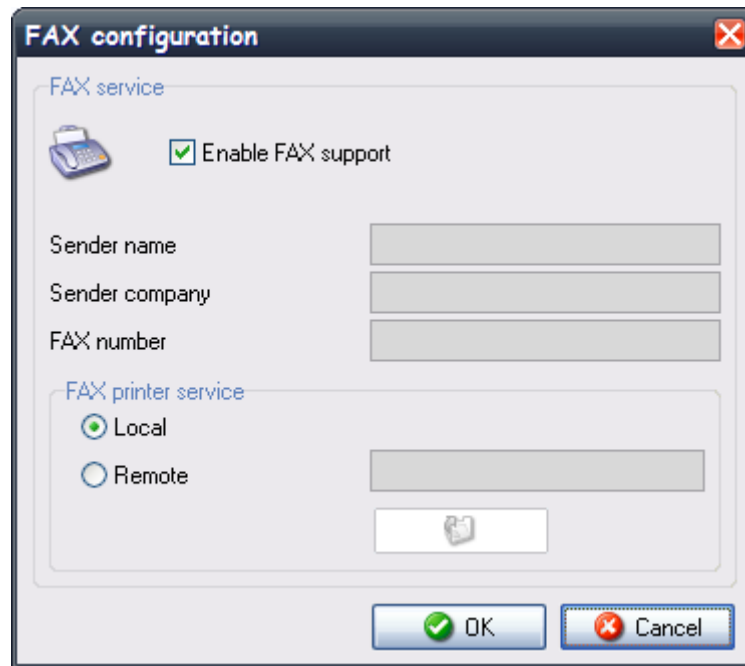
Parameter name	Parameter description
Enable fax support	Enable or disable fax support. When disable, Upsmon cannot send fax.
Sender name	Name of the fax sender.
Sender company	Name of the fax sender company.
Fax number	Fax number.
Fax printer service	Printer type associated to the fax service. For the remote printer the user must select the location of the printer.

1.5.6 Voice modem support configuration

This window is used to configure voice modem support. The windows shows only if there is a voice modem recognized by the system. With the button "Voice modem settings" it is possible to configure the voice modem (see relative software).

Parameter name	Parameter description
Allowed voice call support	Enable or disable voice modem support. When disable, Upsmon cannot perform voice call.
Voice modem	Select one voice modem from the list of voice modem recognized by the system.
Telephone number	Telephone number for the modem call.
Delay before play voice	Delay before modem play voice.
Number of retries	The number of times the system will attempt to call in the event of a busy line or no answer.

1.6   Action scheduler

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 "List of schedule actions" list. The "Next" button can be used for showing the actions that will be executed ordered by time.
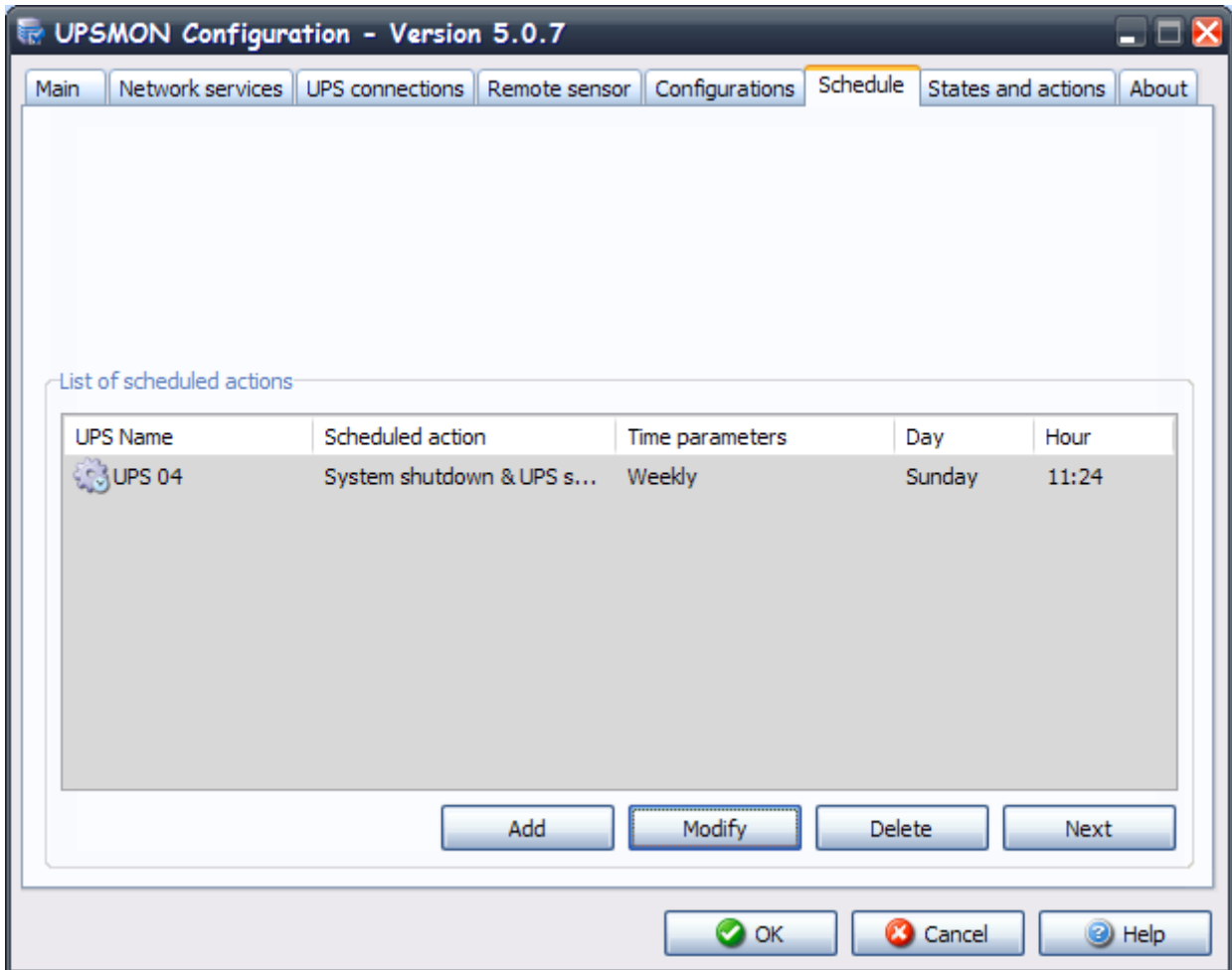
The action can be executed once, daily, weekly or monthly. In the window "Scheduled actions settings" the user can choose these time parameters, and also the type of actions and the Ups on which the action is executed. It is recommended to set only one action in same time, if multiple action have been 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.
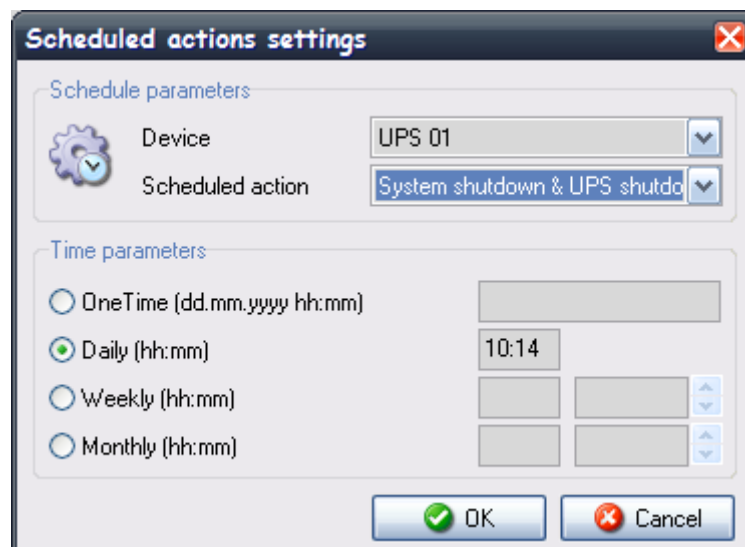
1.7   States and actions

In the section "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 , which is used to send messages to users about the UPS status.

Parameter name	Parameter description
Save files before shutdown	When selected, the *Upsagent* will try to save any open files before the system shutdown is started. This function is not be supported by all programs or some international variant of standard programs. Only standard Windows applications are supported (e.g MS Write, MS Office and more…). ⚠️ <u>ATTENTION</u>: If the Upsagent system shutdown does not work correctly, it may be due to an incompatibility application or conflict with possibly the "Save files before shutdown". To ensure correct shutdown this may have to be disabled if problems persist.
Hibernate support	When selected it enables the possibility to suspend the system instead of a normal shutdown. This function is supported by Windows 2000 and higher on supported hardware.

In the "List of events" section, the user may define the actions to be taken when a given event is detected on the UPS or on the sensors connected. A number of actions can be associated with a particular event on the UPS 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 (so as 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.

Action name	Action description
Disable all jobs	Enables or disable all of the jobs, if selected no jobs can be executed.
Generation event delay	The event that occurs is recognized by Upsmon only after the specified delay.
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. $SENSORNAME — Name of the sensor on which the event occurred. Valid only if events have been associated with the sensors.
Log event	If selected the event will to be logged into event log file. ⚠️ <u>ATTENTION</u>: 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, OS/2 executes the ups_loc.cmd script, 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 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 etc 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, also by standard Windows MAPI or SMTP interface. 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. It is possible to specify a name and telephone number in the Configurations page.
Call to Teleguard	The Upsmon can be used to contact a teleservice monitoring and control system with regards to the event of the UPS.
FAX Message	Selected when sending a UPS status message via FAX. Before using this option the email service must be configured on the computer.
Voice Call	Selected when making a voice call using a voice modem. For each UPS event it is possible to create a .wav file to describe the event.
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.

1.8   About

The About tab contains the information with regards to the UPSMON, including the version and copyright. In addition to this is the "Enter code" button, this button is used to enter the CDROM serial and license number, to convert the STANDARD version to the FULL version of UPSMON. **The STANDARD version is used for MS Windows, Novell Netware, Linux and Mac OS X 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 CDROM serial number and relevant License number.
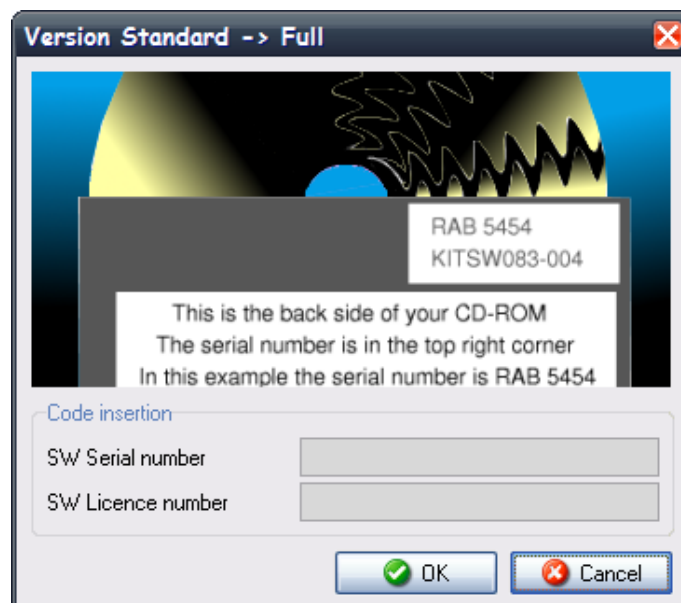
2.   Upsetup for UNIX

To configure the parameters for UPSMON on UNIX, 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 UNIX system. The following table gives the usual device names for different UNIX systems.

UNIX System	Device name
Linux	/dev/ttyS0
HP UX	/dev/tty0p0
Solaris	/dev/ttya
Unixware	/dev/tty00
SCO Unix	/dev/tty1a
IRIX	/dev/ttyd0
IBM AIX	/dev/tty0
Tru64	/dev/tty00

> ⚠ 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 UPSMON 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 persons name for the local system.	Administrator
Language	Language selection. All messages and text in UPSMON (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 UPSMON.	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 UPSMON 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 CDROM serial number and relevant License number using the About tab and the enter code dialog box. The License number is available from the UPS manufacturer or supplier.

The FULL version of UPSMON 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 SNMP 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, the Solaris version and the Mac OS X version supports USB communication via USB-UPS adapter.

Note: The TCP/IP communication allows the user to specify a remote *Upsagent* or SNMP 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.
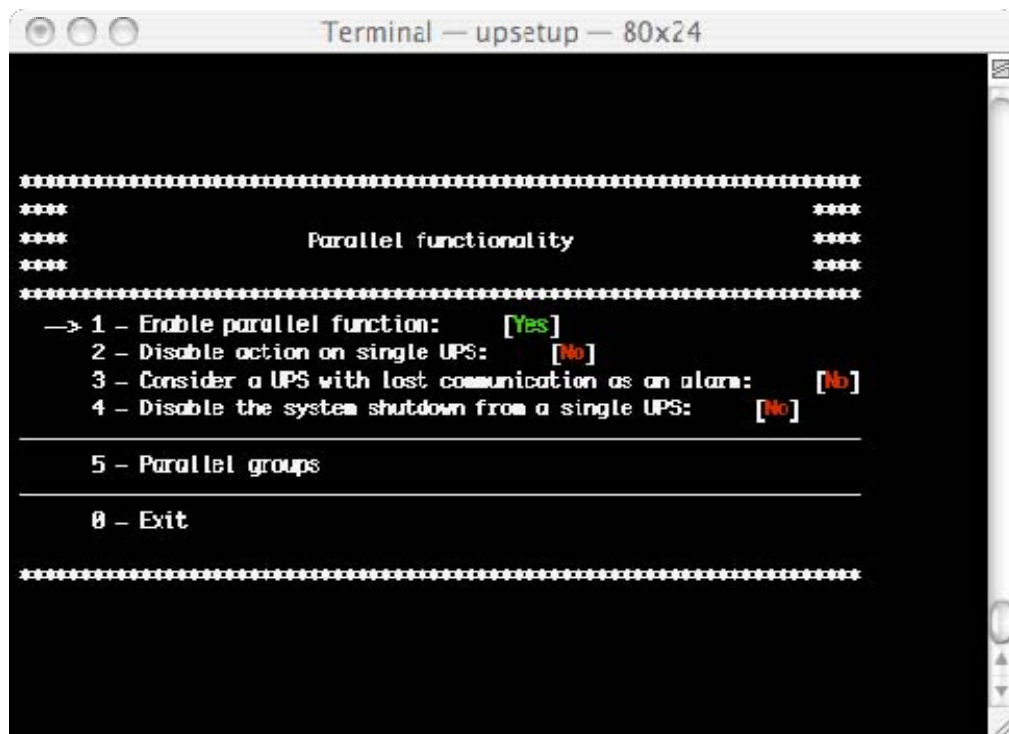
2.2.3   Parallel functionality

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 shutdown 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, OS/2 executes the ups_loc.cmd script, 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, also by standard Windows MAPI or SMTP interface. 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.
Call to Teleguard	The Upsmon can be used to contact a teleservice monitoring and control system with regards to the event occur on the parallel group.

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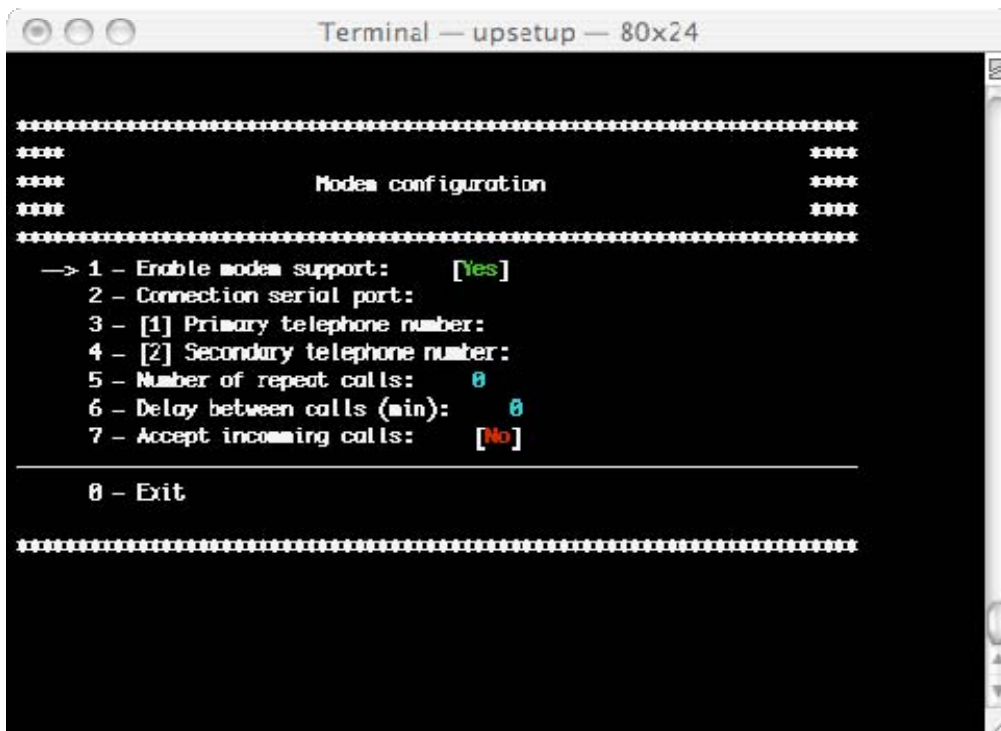
To add a simple event to the list of the composite events there is next menu. On this window it is possible to set also the event priority: i.e. the number of the groups' UPS on which the simple event must occur for making it acknowledgeable.
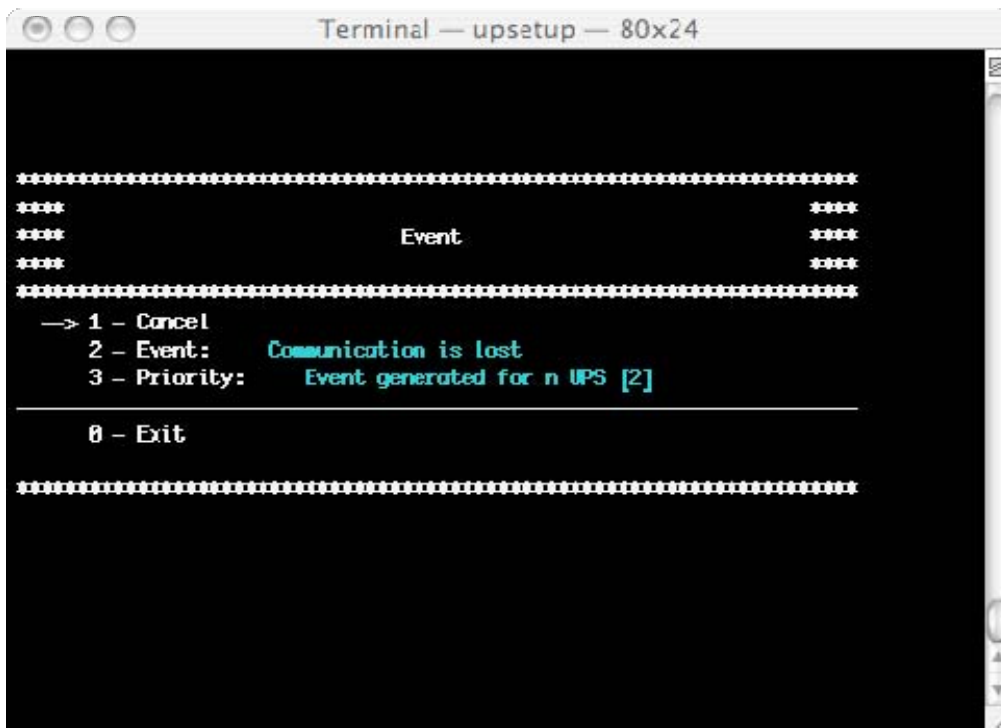
2.3   Message configuration

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

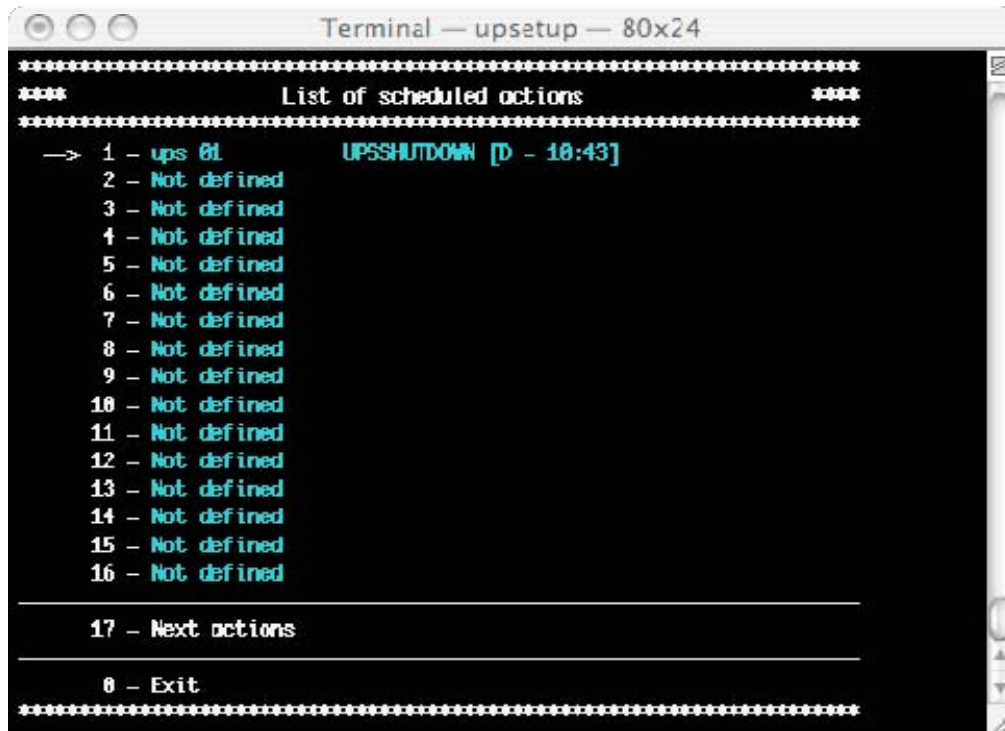| Parameter name	Parameter description
Enable modem support	Enable or disable modem support. When disabled, the UPSMON cannot call teleservice control service.
Connection serial port	The serial port where the modem is connected.
Primary/Secondary telephone number	The telephone numbers of the teleservice control centre, these are the number where the modem will call in case of an emergency.
Number of repeat calls	The number of times the system will attempt to call in the event of a busy line or no answer.
Delay between calls	The minutes of delay between each call attempt.
Accept incoming calls	Accepts incoming calls from a teleservice control centre. This can be turned off for security reasons.

Parameter name	Parameter description
Enable GSM modem support	Enable or disable GSM modem support. When disabled, the UPSMON 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	The supported modems are Siemens and Falcon.

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.
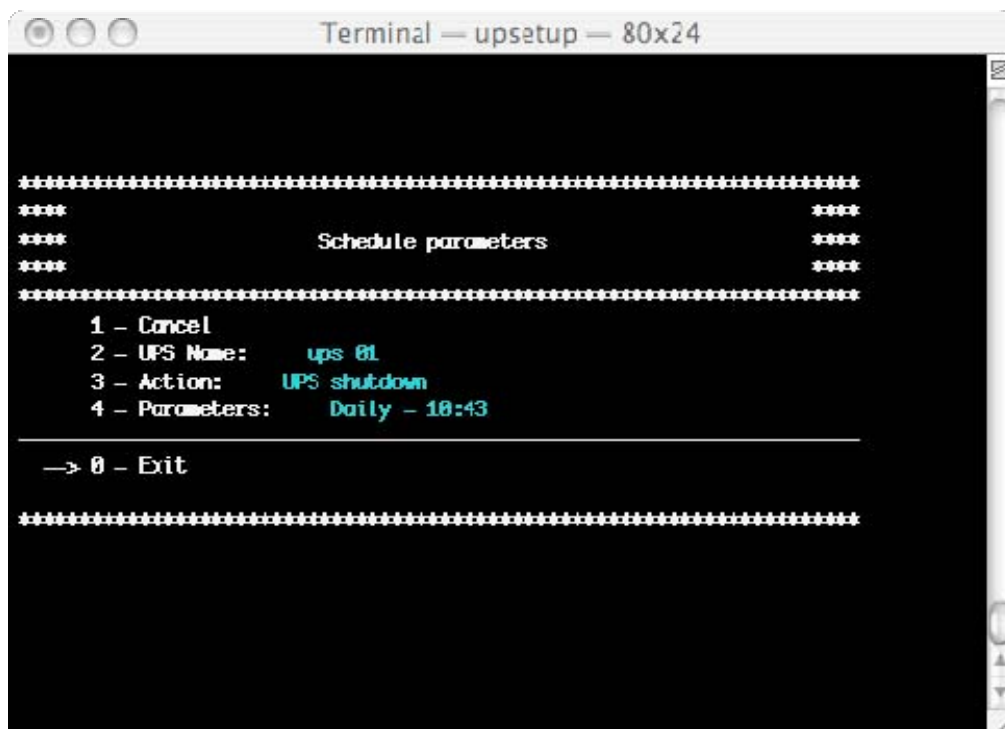

The action can be executed once, daily, weekly or monthly. In the menu "Schedule parameters" the user can choose these time parameters, and also the type of actions and the Ups on which the action is executed. Any actions which are not supported by the UPS will to be ignored.
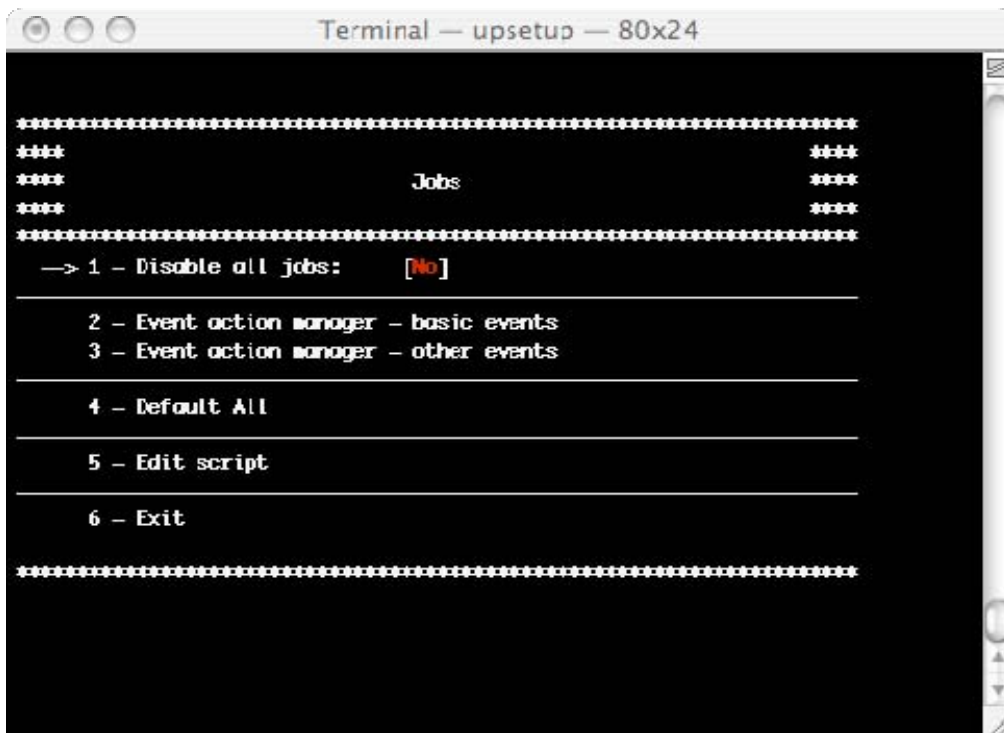

2.5   Job configuration

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 UNIX 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)

8. Call to teleguard ©

```
************************************************************
****                                                    ****
****           Event action manager – basic events      ****
****                                                    ****
************************************************************
  —> 1 – Communication is lost      [LEOBSEMC]
     2 – Communication is established    [LEOBSEMC]
     3 – AC Fail. UPS on battery    [LEOBSEMC]
     4 – UPS is on line      [LEOBSEMC]
     5 – Low battery capacity     [LEOBSEMC]
     6 – Normal battery status     [LEOBSEMC]
     7 – Output UPS is overload     [LEOBSEMC]
     8 – Output UPS is normal     [LEOBSEMC]
     9 – UPS on bypass     [LEOBSEMC]
    10 – UPS return from bypass      [LEOBSEMC]
    _____
     0 – Exit

************************************************************
```



```
************************************************************
****                                                    ****
****              Communication is lost                 ****
****                                                    ****
************************************************************
  —> 1 – Log event:     [Yes]
     2 – Execute file:    [No]
     3 – Local message:    [Yes]
     4 – Broadcast message:    [No]
     5 – System shutdown:    [No]
     6 – Email:    [No]
     7 – SMS:    [No]
     8 – Call to Teleguard:    [No]
     9 – Message:    Communication is lost.
    _____
    10 – Default
    _____
     0 – Exit

************************************************************
```

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. ⚠️ <u>ATTENTION</u>: System shutdown conditions defined in the UPS connection menu is not dependent on this job. ⚠️ <u>ATTENTION</u>: 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 UNIX 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.
Call to Teleguard	The Upsmon can be used to contact a teleservice monitoring and control system with regards to the event of the UPS. The number of the teleservice company can be inserted in the Modem Configuration 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 a interval for the repeat of the actions if the associated event is still active. Both value are expressed in seconds.

3.   Upsetup for Novell Netware

To configure the Novell Netware version of UPSMON it is possible use the alpha-numeric interface program Upsetup.nlm directly on the server Novell or the graphical *Upsetup* program for Microsoft Windows.
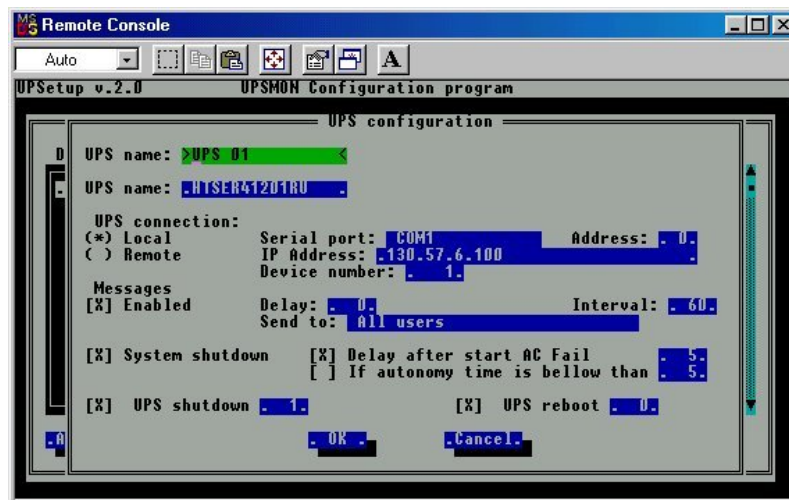
Novell Netware 3.12 only uses a black-white interface (due to system limitations), but for Novell Netware 4.x and 5.x the interface of the NLM module is in colour.

4. Upsetup for JAVA and Mac OS X

The *Upsetup* user interface is nearly identical to the Windows version. All parameters are the same as described in the Windows *Upsetup* section (refer to the Windows section). In the Java version misses some particular configuration such as email, fax and voice modem.

VI. Running the UPSMON

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 UNIX 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 for Windows

1.1 Connecting with Upsagent

The *Upsview* enables the monitoring of a local or remote connected UPS (UPS connected to other computers or SNMP adapters). Each *Upsview* can monitor one UPS, but it is possible to start multiple *Upsview*s to monitor different UPS at the same time.
In the tree will be shown all selectable Ups. The tree is divided in two section: Local, to monitored Ups connected to the local Upsagent; Remote, to monitored Ups connected to other remote Upsagent or remote SNMP adaptors.
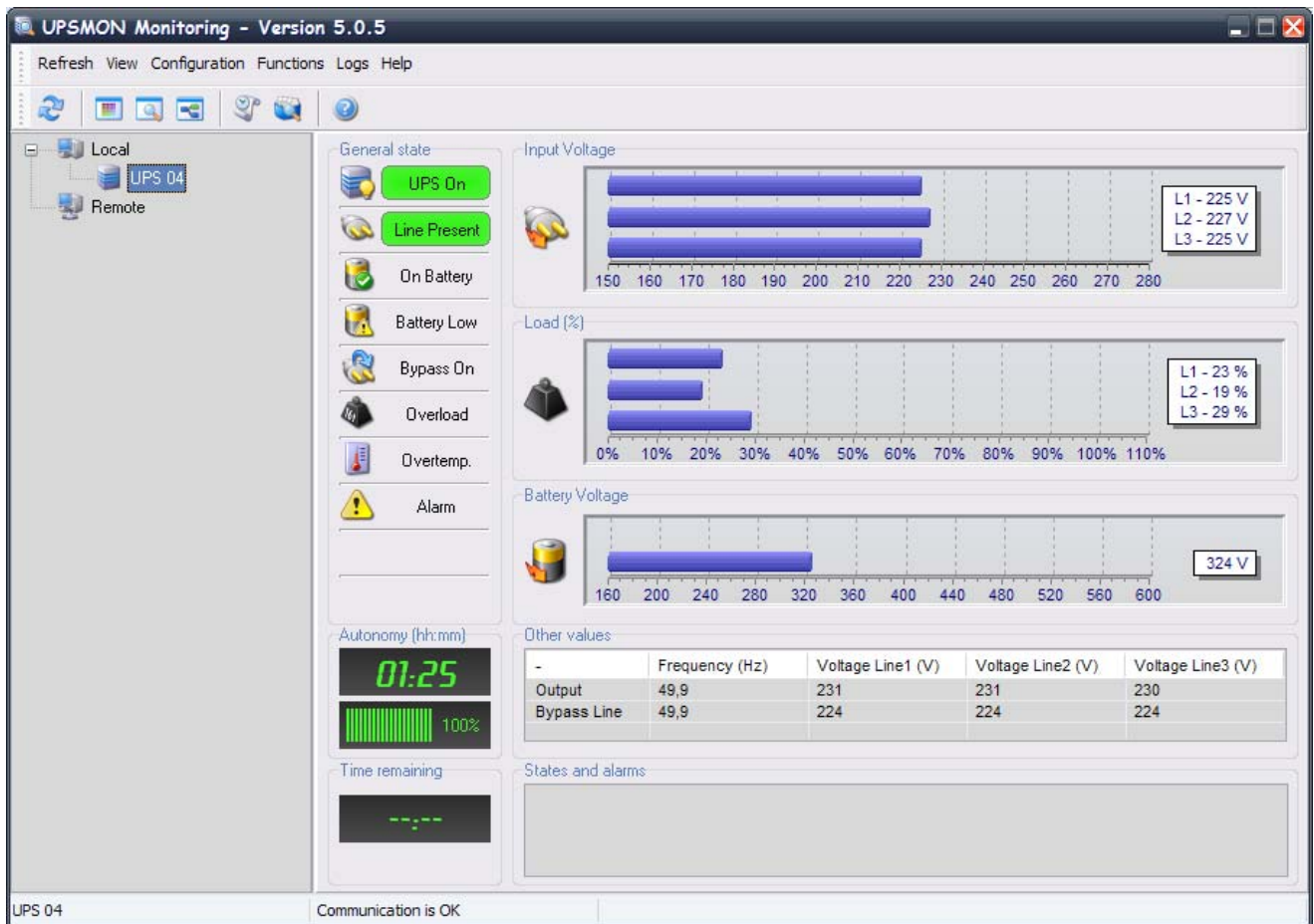
Selecting one of the UPS from the Local tree, it is being monitored by the *Upsagent* module running on the same computer. In this case, the connection between *Upsview* and *Upsagent* is made via the shared memory. In the Local tree will be shown all the Ups configured in the Upsetup module (eventually with the parallel groups defined). For these Ups there are the following menus:

1. **Refresh**: used to find on the local network, all of the agents that are activated at any particular moment without remembering the individual name or address;
2. **View**: used to switch between various Ups status visualizations. There are three visualizations: graphic, detail and block scheme;
3. **Configuration**: used to open the Upsetup module;

---

4.   **Functions**: 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;

5.   **Logs**: used to manage logs file created by Upsmon. The logs file must be enabled from Upsetup module.

6.   **Help**: used to show the help on line;

Selecting one of the UPS from the Remote tree, 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 menu. It is also possible to select a UPS directly by the IP address of the computer or SNMP adapter where the UPS is connected. To do this use the popupmenu that appeared right clicking the mouse on the tree. Host names or DNS names are also supported. For these Ups there are the following menus:

1.   **Refresh**: used to find on the local network, all of the agents that are activated at any particular moment without remembering the individual name or address;

2.   **View**: used to switch between various Ups status visualizations. There are three visualizations: graphic, detail and block scheme;

3.   **Functions**: 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;

4.   **Help**: used to show the help on line;

1.2 Upsview menus

1.2.1 Refresh Menu
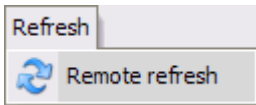
Used to find on the local network, all of the agents (remote Upsagent or SNMP adapter) that are activated at any particular moment without remembering the individual name or address. The refresh will take about ten seconds. The IP address of the active agents and the Ups that they controlled will be put in the tree under Remote voice.
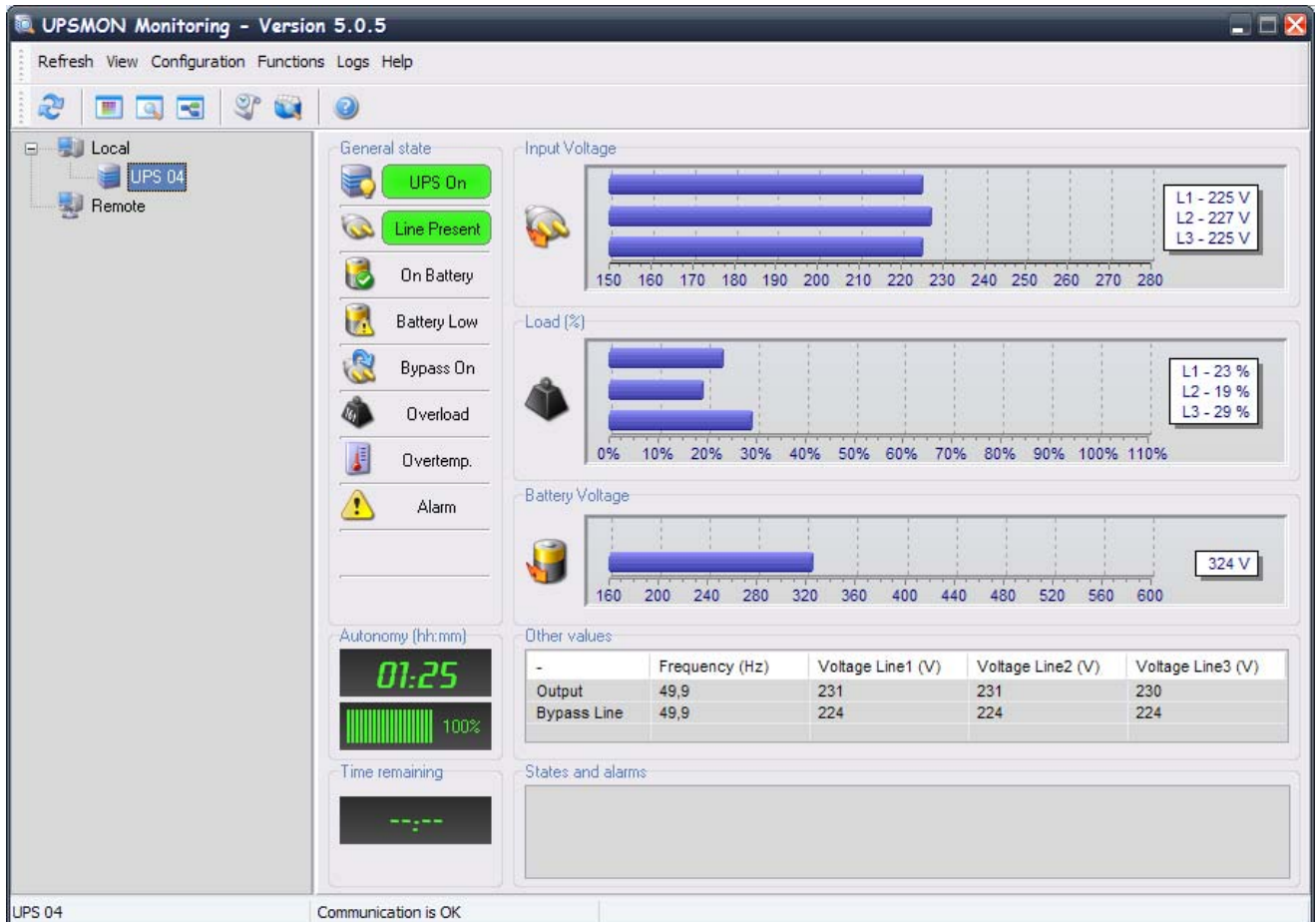
1.2.2 View Menu
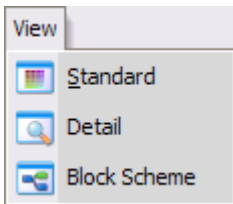
Used to switch between Upsview visualizations. There are three visualizations: graphic (Standard), numeric (detail) and Block Scheme.
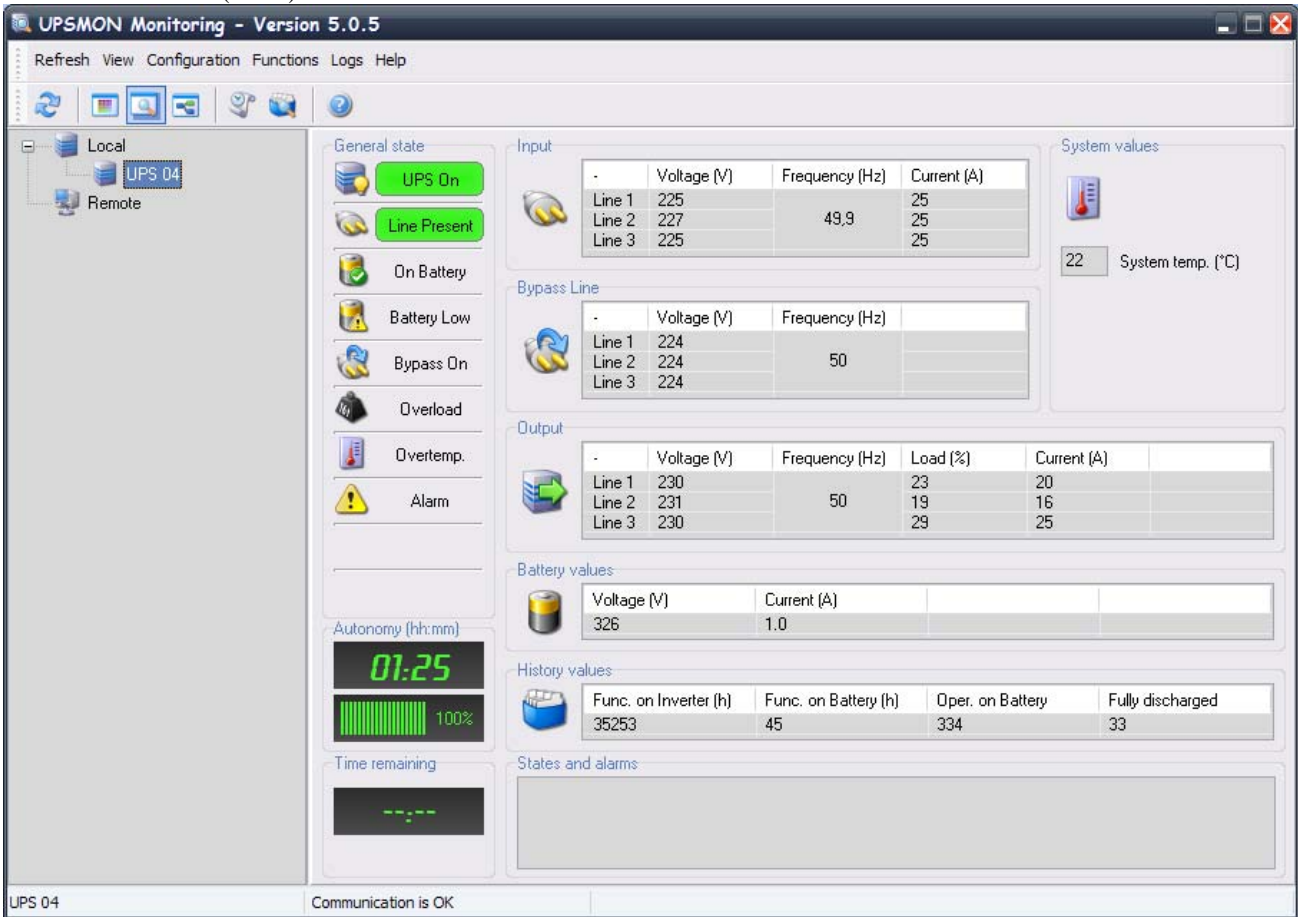
⚠️ ATTENTION: The following screen shots below are only examples and will vary between different UPS system.
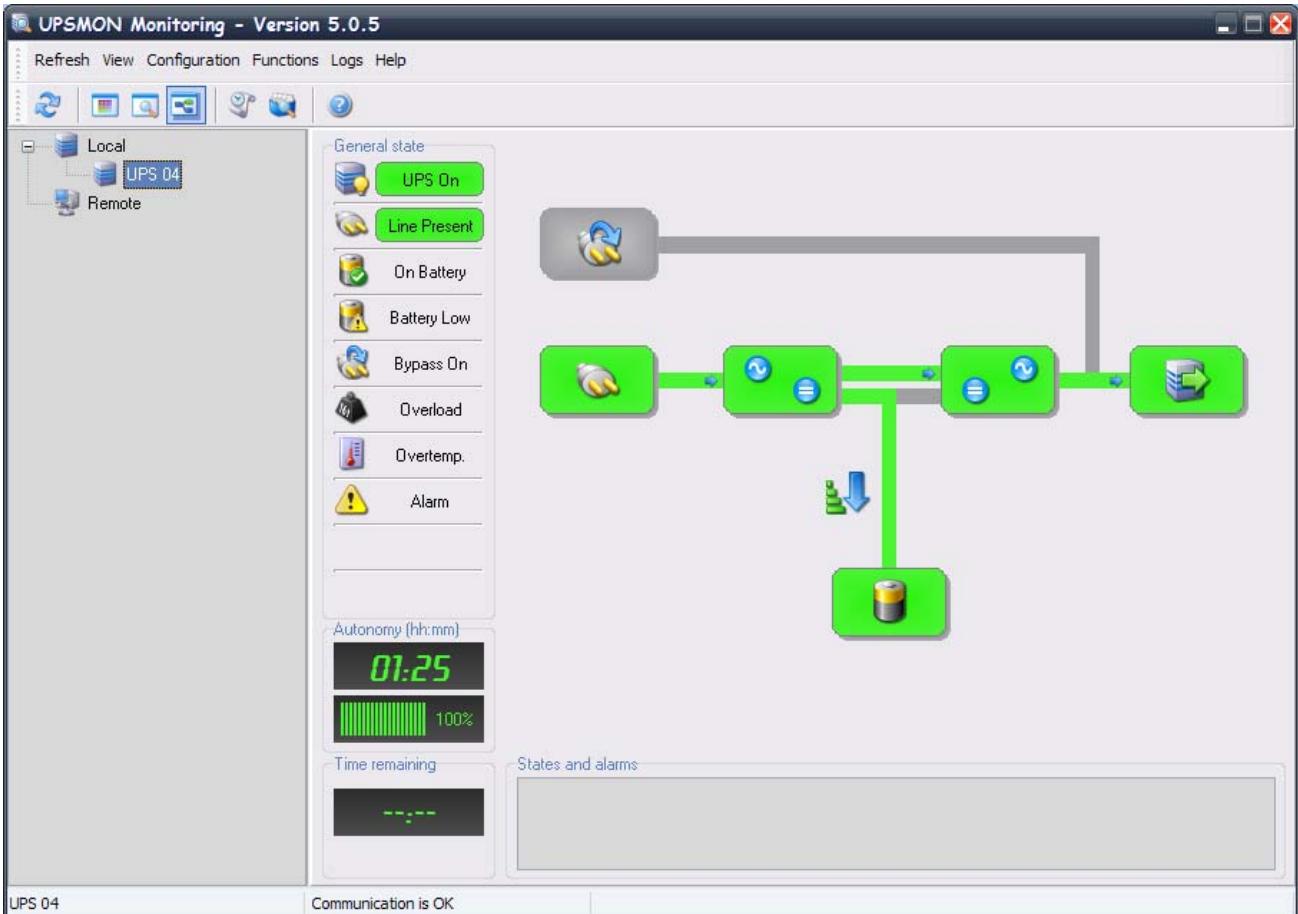
Graphic (Standard) visualization:

Numeric visualization (Detail):

Block Scheme visualization:

In the section "General State" it is shown the Ups complete status. The status information depend on the type of monitored Ups. The colours show the status of the UPS, green status means OK and working (i.e. Ups On); yellow status means not serious anomalous condition (i.e. Battery On or Bypass On); red status means an error or problem (i.e. overload).

In the section "Backup time" it is shown the battery autonomy (in hours and minutes) and the charge percentage of the battery.

⚠️ <u>ATTENTION</u>: **the value of autonomy depend on the load of the Ups.**

In the section "Time remaining" will be shown the effective working time before shutdown system.

⚠️ <u>ATTENTION</u>: in normal condition (line present) will be shown "--:--". In battery on condition and shutdown configuration enabled, will be shown the countdown before the shutdown of the system.

⚠️ <u>ATTENTION</u>: the section "Autonomy" and "Time remaining" could be unavailable for some Ups type.

In the section "States and alarms" will be shown Ups states and alarms. The difference between states and alarms will be made from the icon place side by side with the text.

In the graphic (Standard) visualization will be shown three measures: voltage input (monofase or threefase); load percentage (monofase or threefase); voltage battery (depend on the Ups type).

In the numeric (Detail) visualization will be shown all of the detailed information with regards to the measured values from UPS.

In the block scheme visualization will be shown the internal scheme of the Ups. The colors of every UPS block show the status of the UPS, and if a situation with the UPS or the system is critical. Green means OK and working. Grey means that the object is present but not in use at the moment. Yellow means a not serious anomalous condition. Red means an error or problem has occurred with this object, if any values are critical, a system shutdown and/or technical service may be required.

If the parallel groups have been configured (see Upsetup), a summary list of all the UPS within a group can be displayed by selecting the name of the parallel group from the local tree structure.

The top of the screen shows the status of all the UPS modules belonging to the group, taken from the "General Status" section of each UPS.

The graphic shows the load supported by the UPS within the group and calculated as the average of the loads shared between the group UPS modules. The graphic also shows another transparent bar which shows 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 transparent bar will show the load that the remaining UPS module would have to support should the other two redundant modules fail.)

The "Backup time" section 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).
The "Remaining time" section shows, as when there is no parallel group, the effective operating time remaining before the system shuts down.

The "Other Values" section shows the voltage, current and frequency values of the parallel group. The frequencies and voltages are the same for all the UPS modules within the group, while the current values represent the sum of the currents present on each UPS in the group.
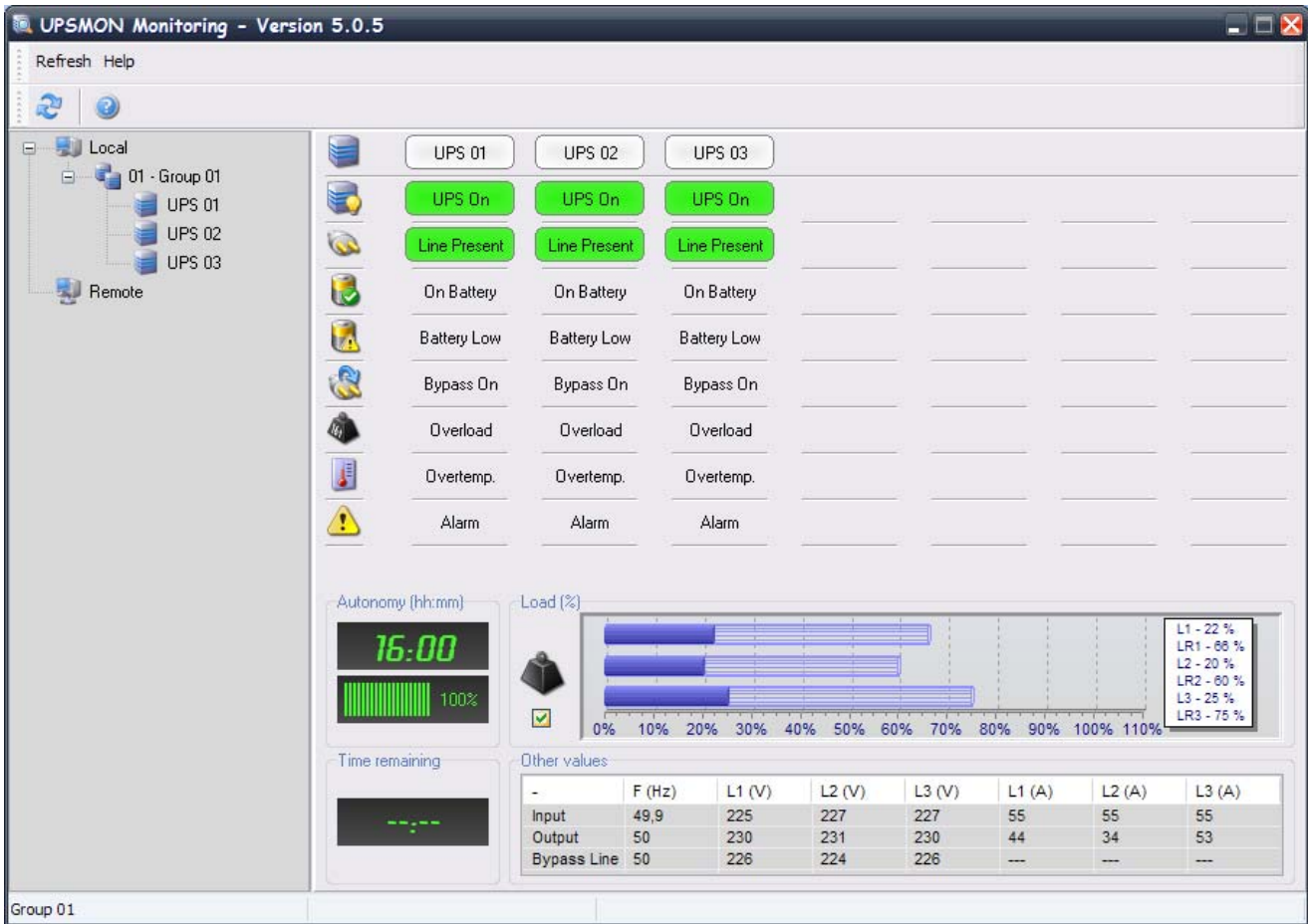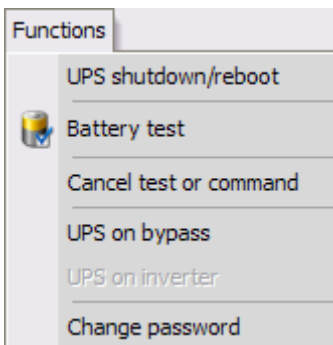
1.2.3 Configuration Menu
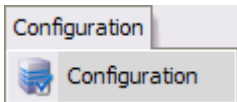
Used to launch the Upsetup module.

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

1.2.4 Functions Menu

Used to send some command to the monitored Ups such as the shutdown and reboot of the Ups, the execution of test battery, force Ups on bypass and force Ups on inverter. It is available also "Cancel test or command" voice that permit to cancel the last sent command (this permit to return to normal condition after the force Ups on bypass command). It is possible protect this command with one password that could be inserted with "Change password" voice. Note: if there aren't password, press enter with password field blank at the password request.

⚠️ ATTENTION: the list of available commands depend of the Ups type, but the Shutdown/Reboot command is always supported.

1.2.5 Logs Menu
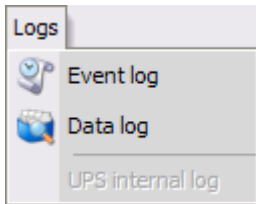
Used to view the log files.

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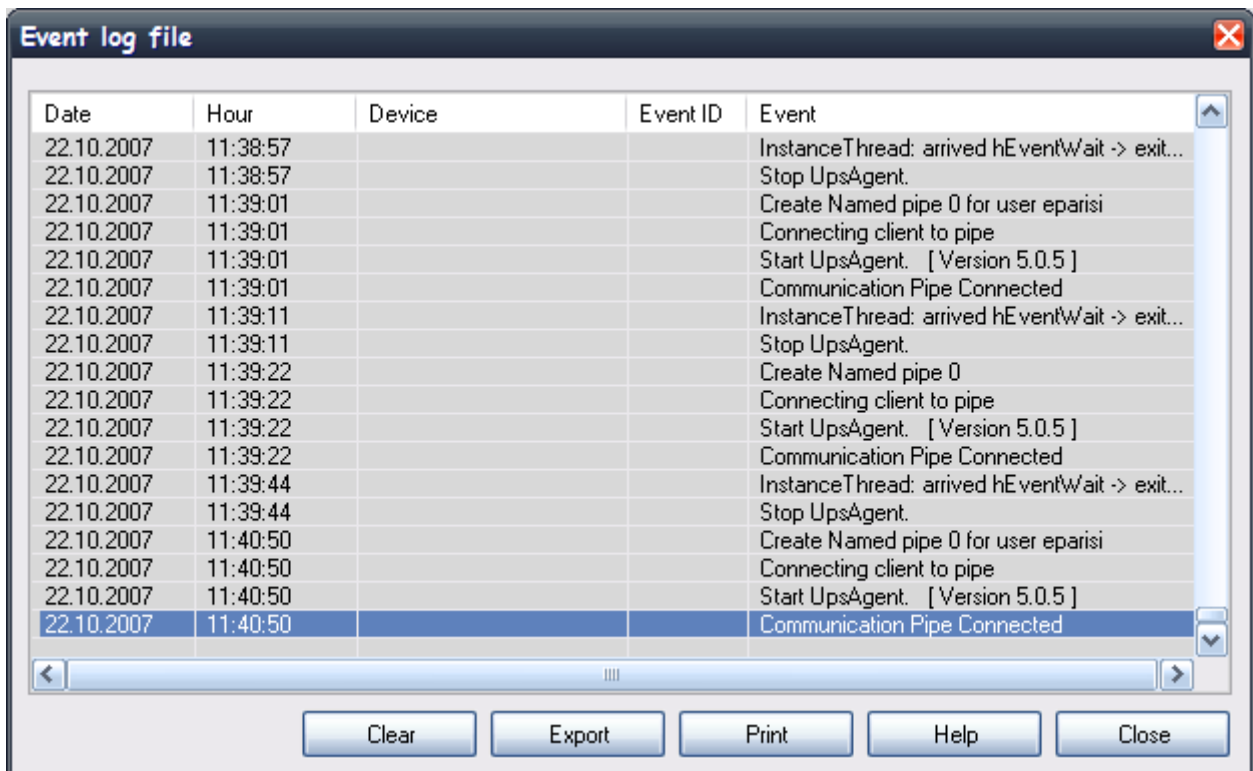
The data log list displays logged measured parameters from the UPS such as the input voltage, battery voltage, capacity, runtime and output load. All of the information contains the date, time, device name and measured values. To use data log you must configure it in the *Upsetup* module.

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.
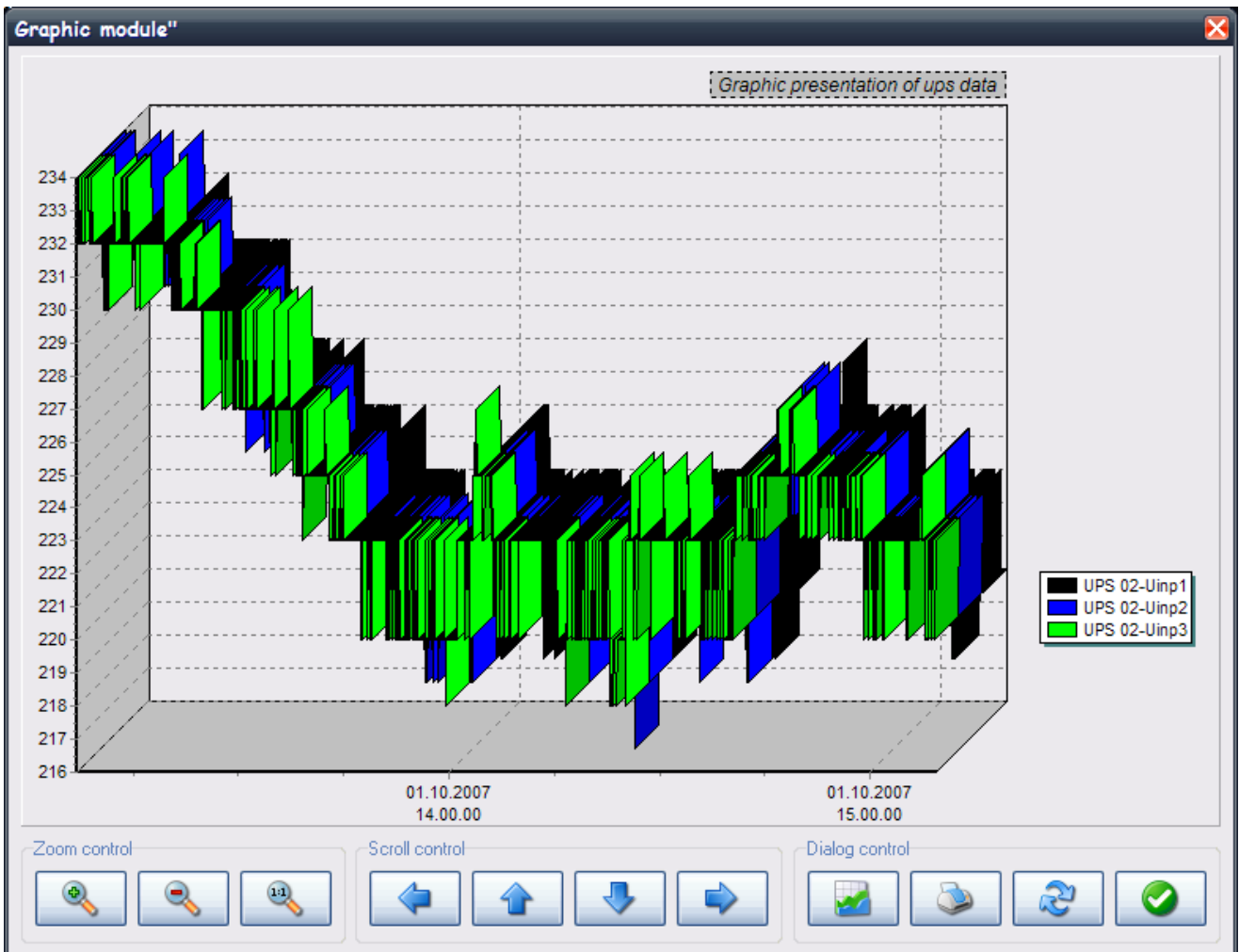
The data log also contains a Graph engine module; this module shows the measured values in a graph format.
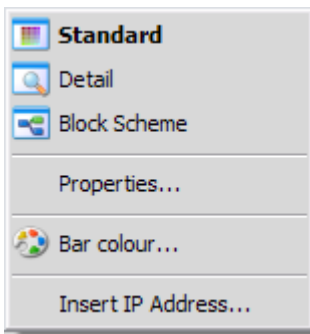

⚠ **ATTENTION**: for some Ups type is available also an internal log downloaded by the Ups through Upsview.

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

1.2.6 Popupmenu

This menu is available right clicking with the mouse on the tree. Used to see the Ups properties such as the UPS name, UPS type, connection type, type of communication protocol, some information on the Upsagent or SNMP adapter that monitoring the Ups and some nominal value of the device.
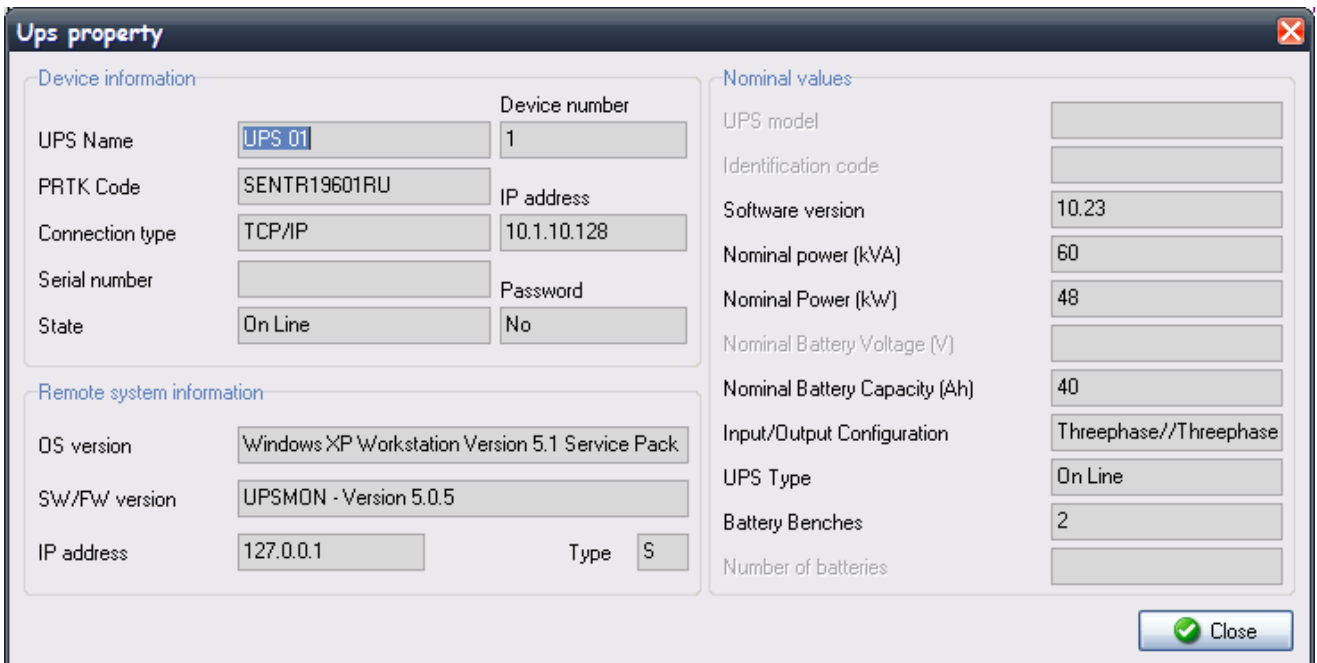
From the popupmenu it is also possible to change the bar color of the graphs in the Standard visualization.

From the popupmenu it is also possible to select a UPS directly by the IP address of the computer or SNMP adapter where the UPS is connected.
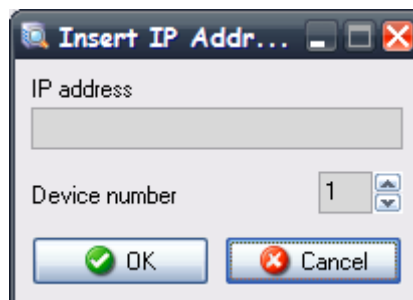
1.3 Display for the sensors associated with an SNMP adapter

A maximum of six temperature, humidity or input/output sensors may be connected to the SNMP 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.

The figure below shows the screen shot illustrating the sensors associated with the SNMP adapter. Following a refresh operation, all the adapters to which sensors have been connected, will be included within the tree structure with an extra indent level and the caption "Netman Sensors". Select the caption to view the measurements recorded by the sensors and their effective operating status. The figure also features an In/Out sensor, a temperature sensor and a humidity sensor. If more than three sensors are connected to the adapter, the next three can be viewed by clicking on the button at the bottom right of the screen.
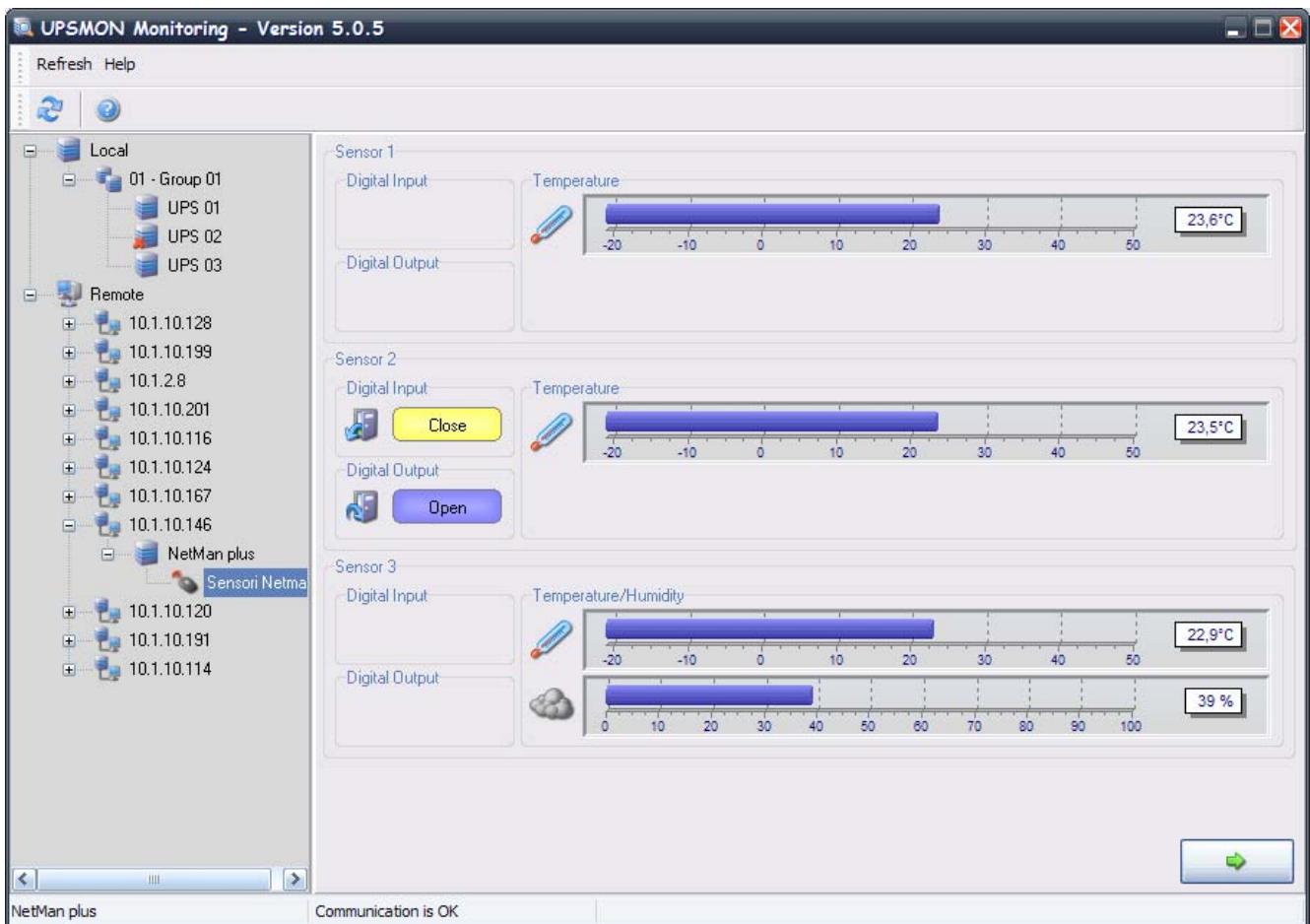
Please refer to the SNMP adapter manual for further information on the sensors that can be associated with the adapter.

⚠ **ATTENTION.:** this function is active only for remotely connected SNMP 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.

2. Upsview for UNIX

When monitoring 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 SNMP adapters). Each *Upsview* can monitor one UPS, but it is possible to start multiple *Upsview*s to monitor different UPS at the same time.
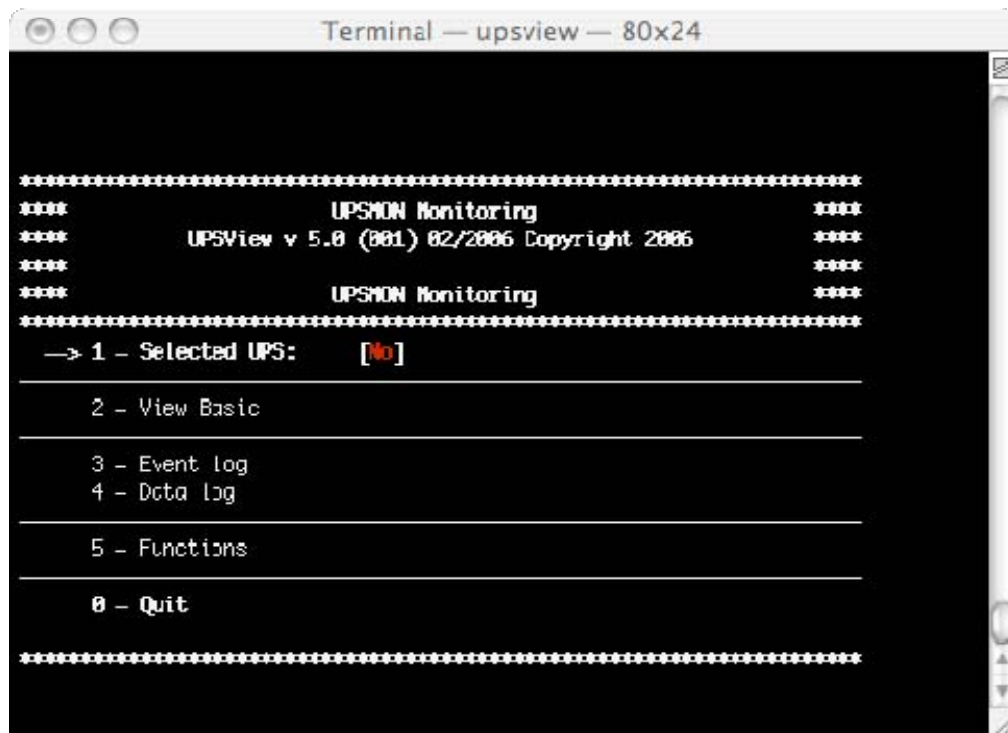
Select one of the UPS from the list, which is being monitored by the *Upsagent* module. In this case, the connection between *Upsview* and *Upsagent* is made via the shared memory.

 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 SNMP 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.

```
○○○              Terminal — upsview — 80x24
****************************************************************
****          UPSMON Monitoring — Version 5.0 (001)        ****
****************************************************************

ups 01  (Serial) Communication is OK
_____
                 Identification code:
                 UPS model: UOC1150635
                 Software version: SWM020-01-19
                 Input/Output Configuration: Monophase//Monophase
                 Nominal Power (VA): 400
                 Nominal power (W): 240
                 Nominal Battery Capacity (Ah): 7
                 Nominal Battery Voltage (V): 12
                 Nominal Output Voltage (V): 230
                 Nominal Output Frequency (Hz): 50.0
****************************************************************
     1 — View Active status
     2 — View Active alarms
  —> 3 — View Device information
     4 — View General state
_____
     0 — Quit
****************************************************************
```
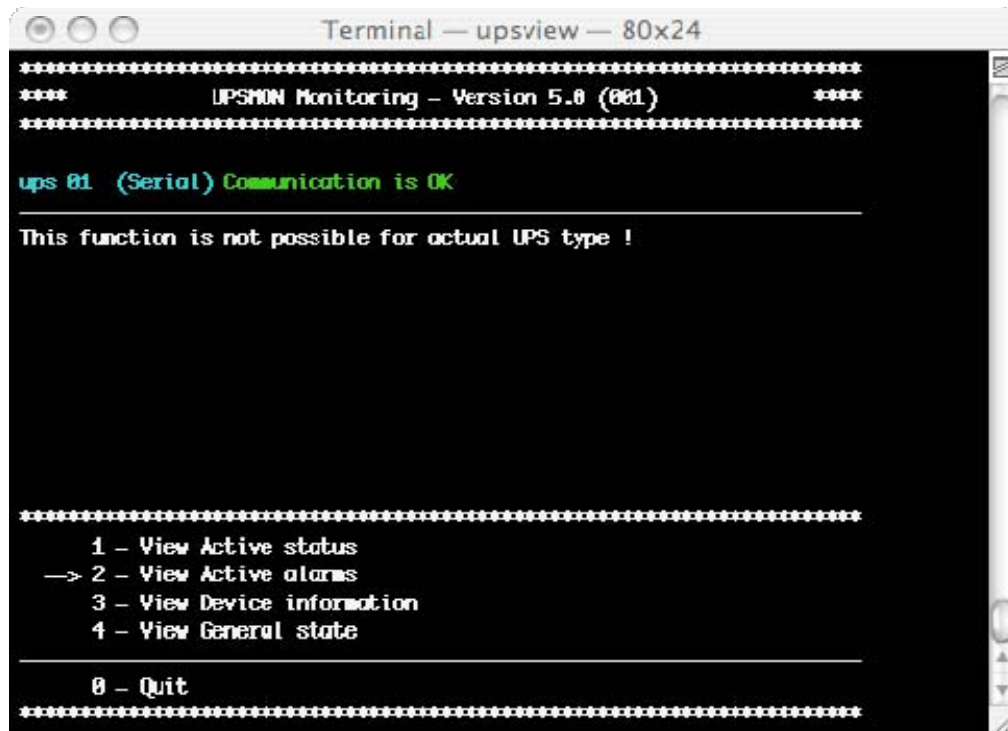
2.2.7   Event log

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.

```
○○○              Terminal — upsview — 80x24
****************************************************************
****      Event log                      Page: 1/1 [4]     ****
****************************************************************
21.07.2006 16:43:18              Start UpsAgent.  [ Version 5.0 (001) ]
21.07.2006 16:44:35              Received termination signal
21.07.2006 16:44:35              Stop UpsAgent.
21.07.2006 16:44:39              Start UpsAgent.  [ Version 5.0 (001) ]




****************************************************************
  —> 1 — Previous events
     2 — Next events
     3 — Beginning file
     4 — Ending file
_____
     0 — Quit
****************************************************************
```

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.
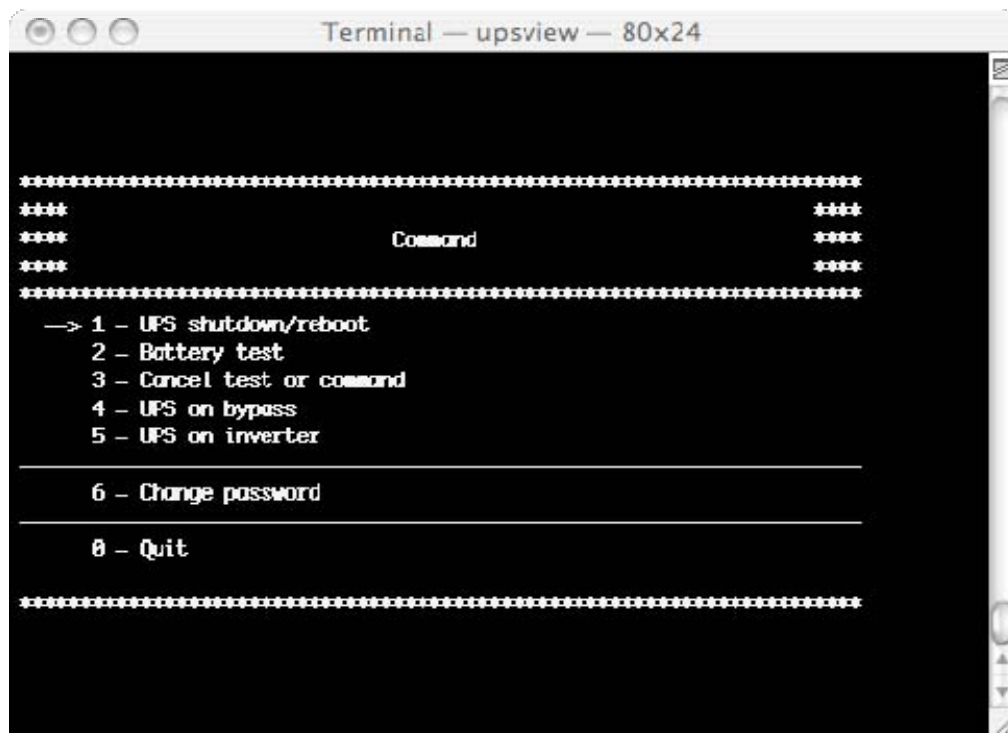
3.   The Upsview for Novell Netware

On Novell Netware systems it is possible to monitor the UPS using one of two methods.

The first method is to use the *Upsview* for Windows. This has the same interface as described in the *Upsview* for Windows section.

The second method is to use the Upsview.nlm module directly on the server console. This is able to monitor the UPS without a connected workstation; however this program is limited by the alpha-numeric interface (black-white for Novell 3.12 and coloured for higher versions).

The styles of the displayed screens are dependent on the type of alpha-numeric interface used.
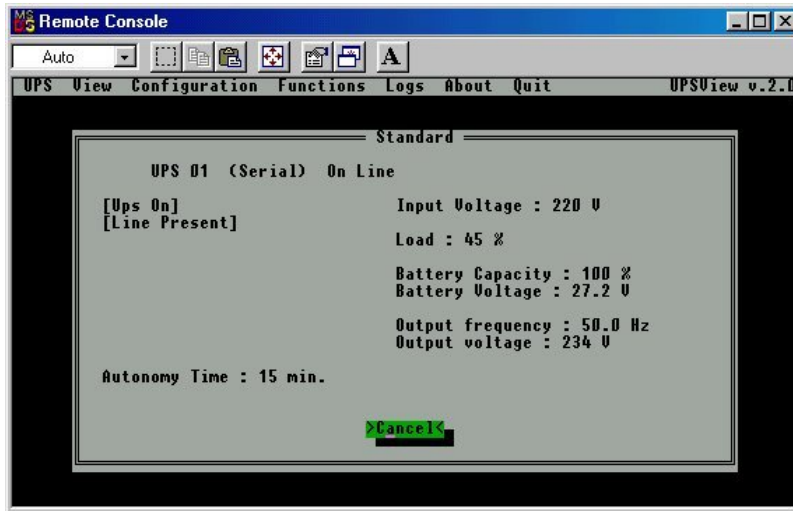
4.   The Upsview for JAVA and Mac OS X

The *Upsview* user interface is nearly identical to the Windows version. All parameters are the same as described in the Windows *Upsview* section (refer to the Windows section).
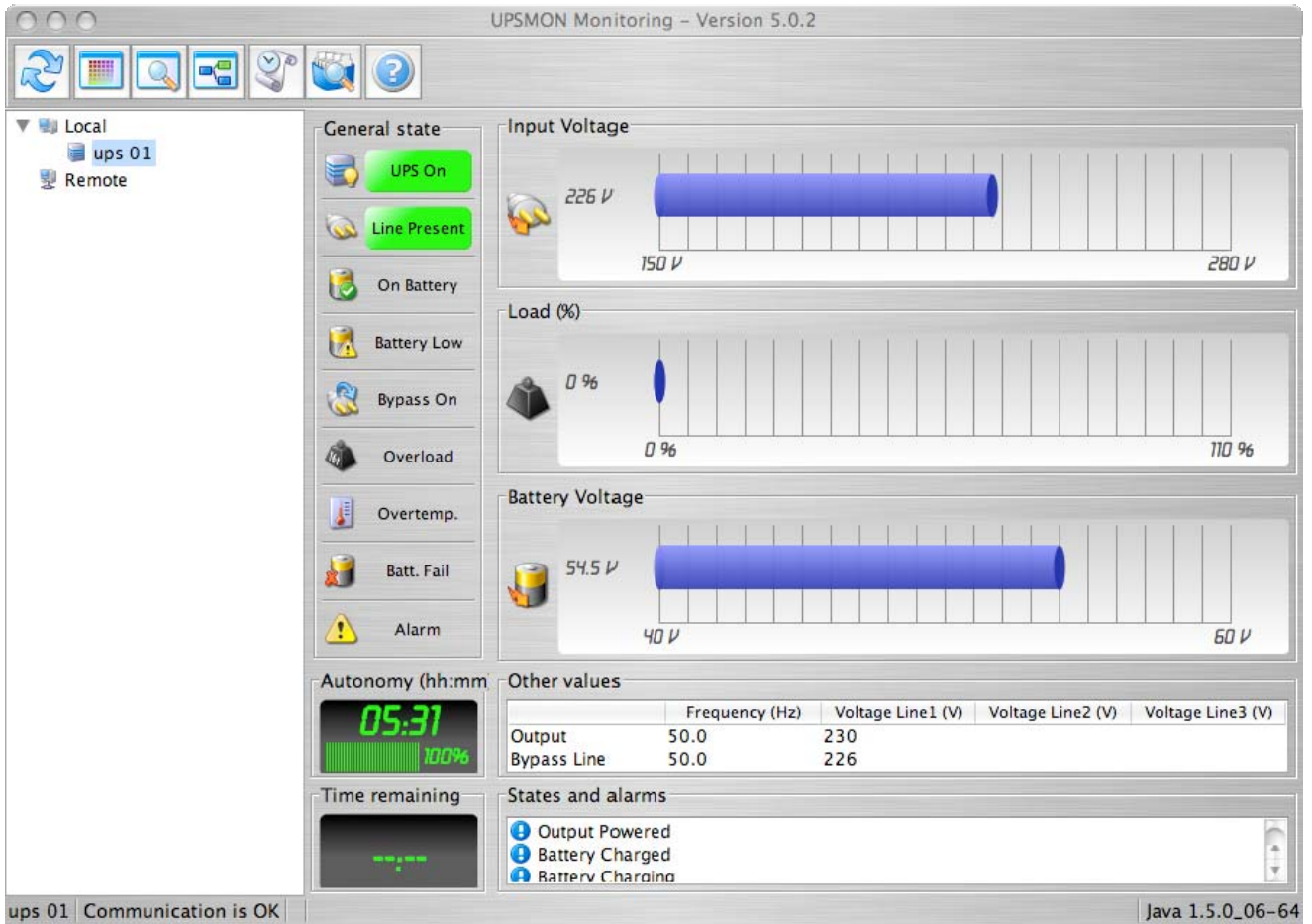
VII. Uninstallation of the UPSMON

> ⚠ **ATTENTION**: Before attempting to carryout 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 UPSMON program group.

2. Uninstall procedure for UNIX

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 Novell Netware

To uninstall from Novell Netware, ensure that you are connected to the server using the Windows workstation which was used for the installation. Otherwise all of the files must be deleted manually.

It is possible to uninstall using 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 UPSMON program group.

Finally ensure that the startup shortcut for the *Upsagent* from Autoexec.ncf is deleted.

4. Uninstall procedure for Mac OS X

To uninstall from Mac OS X, 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. Communication port specifications

1. RS-232 specifications

25 pin contact (male at the computer end):

Pin #	Signal	Name
1	GND	Ground
2	TxT	Transmit Data
3	RxD	Receive Data
4	RTS	Request To Send
5	CTS	Clear To Send
6	DTR	Data Terminal Ready
7	GND	Ground
8	DCD	Data Carrier Detect
20	DTR	Data Terminal Ready
22	RI	Ring

9 pin contact (male at the computer end):

Pin #	Signal	Name
1	DCD	Data Carrier Detect
2	RxD	Receive Data
3	TxD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring

2. IRIX - serial communication ports

All IRIS-4D Series machines have two or more general purpose serial ports. These ports may be used to connect terminals, printers, modems, other machines, or graphical input devices such as a tablet or dial and button box. Each line may be independently set to run at speed, as high as 19,200 or even 38,400 bps. Various character echoing and interpreting parameters can also be set.

Special files for the serial ports exist in the /dev directory. These files, tty[dfm][1-56] are created automatically when the system software is installed. Each port is referred to by three different names, represents the port number.

Some drivers are used for directly connecting simple devices including most terminals; others for the use modem control signals; and more for devices that understand hardware flow control signals.

There are four different types of connectors found on various 4D models. The DB-9 serial port connectors, which are found on the Challenge, Onyx, Personal Iris, and PowerSeries machines, have the following pin assignments.

Pin #	Signal	Name
2	TD	Transmit Data
3	RD	Receive Data
4	RTS	Request to Send
5	CTS	Clear to Send
7	SG	Signal Ground
8	DCD	Data Carrier Detect
9	DTR	Data Terminal Ready

The Challenge and Onyx systems supply an RS-422 port. This RS-422 port uses a DB-9 serial connector that have the following pin assignment:

Pin #	Signal	Name
1	DTR	Data Terminal Ready
2	TXDL	Transmit Data Low
3	RXDL	Receive Data Low
4	DCD	Data Carrier Detect
5	CTS	Clear to Send
6	SG	Signal Ground
7	TXHD	Transmit Data High
8	RXDH	Receive Data High
9	RTS	Request To Send

In order to support peripherals which draw power from the host system, the Challenge and Onyx systems provide two powered-peripheral serial ports. These ports have a DIN-8 connector. The powered ports share the tty2 and tty3 signal lines with the standard DB-9 connectors; if the DB-9 connector for tty2 is already in use, you cannot use the powered peripheral connector for tty2. Similarly, if tty3's DB-9 connector is connected to a peripheral, the powered peripheral port connected to the tty3 signal lines cannot also be used. The powered peripheral ports have the following pin assignments.

Pin #	Segnale	Nome
1	DCD	Data Terminal Ready
2	CTS	Clear To Send
3	STEREO	Stereo Field Sync
4	RD	Receive Data
5	TD	Transmit Data
6	SG	Signal Ground
7	GND	Ground Point
8	V10P	10V Supply

3.   4D Compatible Pin Assignments (RS-232)

The DIN-8 serial port connectors on the Personal Iris 4D/30, 4D/35, 4D/RPC (Indigo), 4D/RPC-50 (R4000 Indigo), Indy and Indigo 82 have the following pin assignments.

Pin #	Segnale	Nome
1	DTR	Data Terminal Ready
2	CTS	Clear To Send
3	TD	Transmit Data
4	SG	Signal Ground
5	RD	Receive Data
6	RTS	Request to Send
7	DCD	Data Carrier Detect
8	SG	Signal Ground

X. Troubleshooting

1. General

Problem: On some Computer Main boards the COM ports are mixed up, therefore it is possible that COM 1 under NOVELL is actually COM 2 under NT etc. So if any communication problems exist, configure the software intentionally on the "wrong" com port and try again. This problem is known from some ASUS, Acer, GigaByte and SIEMENS Main boards out of production 1997.

2. 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 UPS Management software starts and the UPS turns off.

Answer: To guarantee the correct function of UPSMON 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 UPSMOM 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.

3. Troubleshooting Novell NetWare

Problem: ASUS P5HX/B (series 1997) does not accept any NOFIFO Parameters at NOVELL AIOCOMX Commands.

Answer: Node Parameter Problem with Novell NetWare: If AIOCOMX is installed and responds with the message "loaded aiocomx 2F8 on port 36789690 " the node parameter, e.g. NODE=1, has to be specified otherwise the serial port will not work.

Problem: The UPSMON Software could not establish the communication to the UPS.

Answer: You may have configured a port which is not found by aiocomx.nlm. Check the ports offered by aiocomx.nlm. Pay attention to the screen display when starting aiocomx.nlm. If aiocomx.nlm has been started, unload aiocomx.nlm and start it again to check the parameters. Check if other modules are using aiocomx.nlm (like fax software, time synchronising modules, etc…).

Problem: I receive the error message: "Loader cannot find public symbol".

Answer: Has SNMP been loaded before the start of the UPS service? Check the SNMP-Version. From version 2.08 on communications is possible. Please use a CLIB.NLM that is able to work with SNMP.NLM.

Problem: I receive the error message: "Communication lost".

Answer: *Upsagent* can not identify the protocol.

Solutions: a. Has an original Novell NetWare aio- or aiocomx-driver been used? Some fax software products (e.g. Faxware) have their own aio-modules for serial communication which do not correspond with the NetWare-standard and overwrite the original drivers.

b. Is the port of the system ok? In certain cases the port is unable to support the standard for NetWare-aio and -aiocomx (especially with ports on board with a 16550 components). Replace the aio- and aiocomx-modules with up-to-date drivers or try a manual start of the aiocomx-modules with the parameter "nofifo" ("load sys:system\aiocomx nofifo").

c. Is the communication speed for aiocomx too high? Set the UPS on a communication rate of 2400 or 1200 baud, if your UPS supports this, and test it again. If you can't reduce the communication speed of your UPS-model set the parameter for aiocomx to maxrate=baud. You can find further information concerning the parameters in aiocomx help and on the CD in the *Drivers* directory.

4. 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.

Problem: UPS shutdown contact-closure when NT is booting.

Answer: a. This problem occurs, because of a high signal on the com port when Windows NT searches for serial mouse hardware.

b. Change the entry in BOOT.INI: *multi(0)disk(0)rdisk(0)partition(2)\WINNT="Windows NT Workstation, Version 4.0" /noserialmice=comx,* where x represents the COM port where NT should not search for a mouse, because the UPS is connected here.

d. Exception: any none MS mouse drivers have to be disabled via the device manager.

5. Troubleshooting UNIX

Problem: When reading the disk an error message appears"can not open file, can not read disk..."

Answer: a. You have entered the name of your disk drive wrong. Please check which driver is installed for the disk in the directory /dev. The disk should read as "rawdisk" on most systems.

b. Is the disk being read with the correct command? With the UPSMON software the disk is formatted in the TAR-format.

c. Is the disk or the disk drive defective? Please try the disk on another Unix system or maybe ask your dealer for a replacement disk.

d. Is the disk drive mounted?

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: Unix problem with HP Netserver LC2.

Answer: Please switch the remote access in the BIOS to "disabled" otherwise a UPS communication is not possible, because the same IRQ is used as with the TTY port.

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. If you are using an IRIX server you often need a adapter it to connect the computer to UPS (Mini-DIN to D-SUB 9). With the IRIX serial com port description below you can check if you are using the correct one.

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:	The configuration menu can not be read at the terminal type 978x of a Siemens-computer.
Answer:	For a correct screen display the baudrate has to be set to 9600/19200.

Problem:	The message "Write error on /dev/.." or TCSAGET error on..." appears.
Answer:	Especially with IBM AIX a "clocal" has to be entered in the SMIT (configuration menu) in the boot-default settings of the interface that should be used by the UPS. (The interface should be without modem control signals and no hardware handshake).

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:	Some files on the CD-ROM are not displayed in the correct way or the install script ends abnormally.
Answer:	Mount the CD-ROM as "case sensitive". Check the correct mount commands for your system. E.g. HP UNIX may use: "mount -o cdcase <device> <mountpoint>" or DEC ALPHA OSF1 V 3.2 "mount -t cdfs -o noversion /dev/rz6c /cdrom2" (rz=Disktyp, 6= SCSI address, c=partition, c for total). SINIX: "mount -F hs /dev/ios0/sdisk005s0 /cdrom". LINUX: "mount -t iso9660 /dev/scd0 /cdrom". See your specific UNIX mount options.

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.
	e.	Using Siemens RM-models this message appears if the port is unknown or has not been configured at the system-installation. If RM-models have not configured a port you can do this with the termadd command.
		termadd -T serial -n UPS -b motherboard 0,2 -d -l generic
		Where "UPS" is the name of the interface for the UPS service (/dev/UPS) and "motherboard" names the location of the interface. For "motherboard" a different device can be used, such as the ITP-interface distributor or CHASE I/OLAN on large RM models. The UPS service can also be used on all interface distributors, if a clear port is dedicated. At the command entry "motherboard 0,1" 0 stands for the board and 1 for the port address. A newly created device should be moved from the directory /dev/term to /dev.

Please print out the help documents with "man termadd". All options are stored for this command. With "termdel" this port is deleted. With "termshow⏐ grep UPS" the configuration can be displayed.

f. Using SCO-computer systems a terminal translator (mapchan or mapkey) may be mapped on the configured tty port with /etc/default/mapchan (in most cases only on com1/ttya). This causes a malfunction of the RS 232-port. Check if this process is active and delete it if necessary. Check in the file /etc/gettydefs, which baud rate has been assigned to the port and change it to correspond to the UPS-parameter.

g. HP UNIX computers sometimes have the following entry in the inittab: ups0:: respawn:rtprio 0 /usr/ups_mond -f /etc/ups_conf. In the SAM menu Peripheral Devices > Uninterruptible Power Supplies this entry is to be found, but not activated. But this causes the device not to work correctly with UPSMON. Delete this entry and restart.