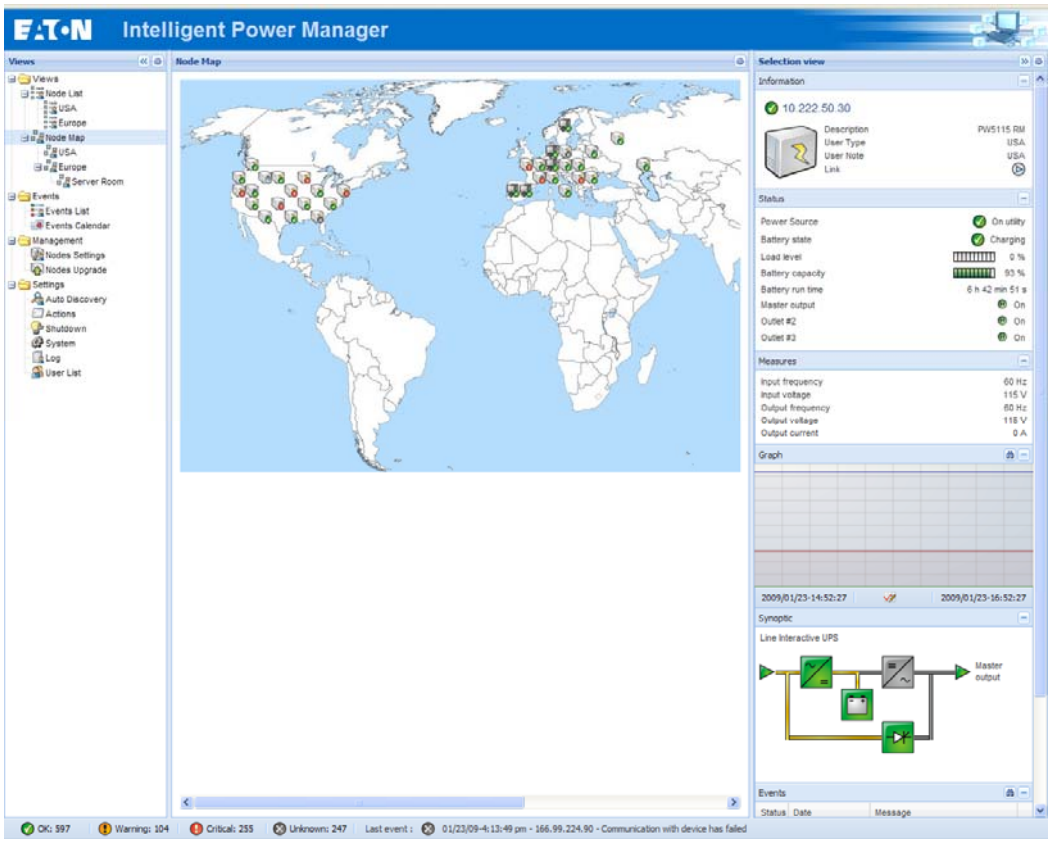
Powering Business Worldwide

Eaton Intelligent Power® Manager

User's Guide



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1 Introduction

The Eaton IT supervision tool is called "Intelligent Power® Manager"

Intelligent Power® Manager:

- Discovers and **supervises Eaton UPSs and ePDUs** connected to the network (either by means of a card or a proxy). For the detailed list of compatible solutions, please refer to the paragraph (Equipment Compatibility List) hereafter.
- **Supervises** the **remote servers** hosting the Network Shutdown Module V3 application.
- Provides **advanced management feature** (mass configuration / mass upload/ …) with Network Management cards (66102, 66103, 103006826)
- Provides **local computer graceful shutdown** (acquisition through 66102, 66103, 103006826 Network Management Cards.

2 Installation

2.1 Installation Prerequisites

2.1.1 On the System Hosting « Intelligent Power® Manager »

Intelligent Power® Manager can be installed on **Windows 2000/XP (Home or Pro) / 2003 / Vista / 2008**

Intelligent Power® Manager has been tested successfully on a **Windows 7 Beta**

Notes:

To avoid network access conflicts, we advise you against installing the Power Manager on a machine that also hosts:

- a Network Management System (e.g. HP-Openview, CA Unicenter, …)
- the Eaton Enterprise Power Manager
- the Eaton Network Shutdown Module
- the Network Management Proxy

2.1.2 On the System that Displays Web-based Graphical User Interface

The Eaton Intelligent Power® Manager graphical interface can be accessed remotely using a simple Web browser. Access to this interface is secured through SSL connection (default configuration) and is also secured through Login & password.

The Intelligent Power® Manager graphical interface has been tested with:

- Google Chrome
- Mozilla Firefox 2.0, 3.0, 3.5
- Microsoft Internet Explorer V6 & 7, 8.

  For optimal performance, Google Chrome or Firefox 3.5 is recommended.
  For good performance, Firefox 3.0 or Internet Explorer 7, 8 are recommended.

2.2 Quick Start & Installation

To start in 5 minutes, please perform the following steps:

Step 1 (Installation)

On a Windows 2000/XP/2003/Vista/2008 machine, run the “Intelligent Power® Manager” package under an administrator account.

a Web browser is automatically displayed (enter **admin** as Login **/ admin** as Password and click on the **Login** button)

Step 2 (Configuration)

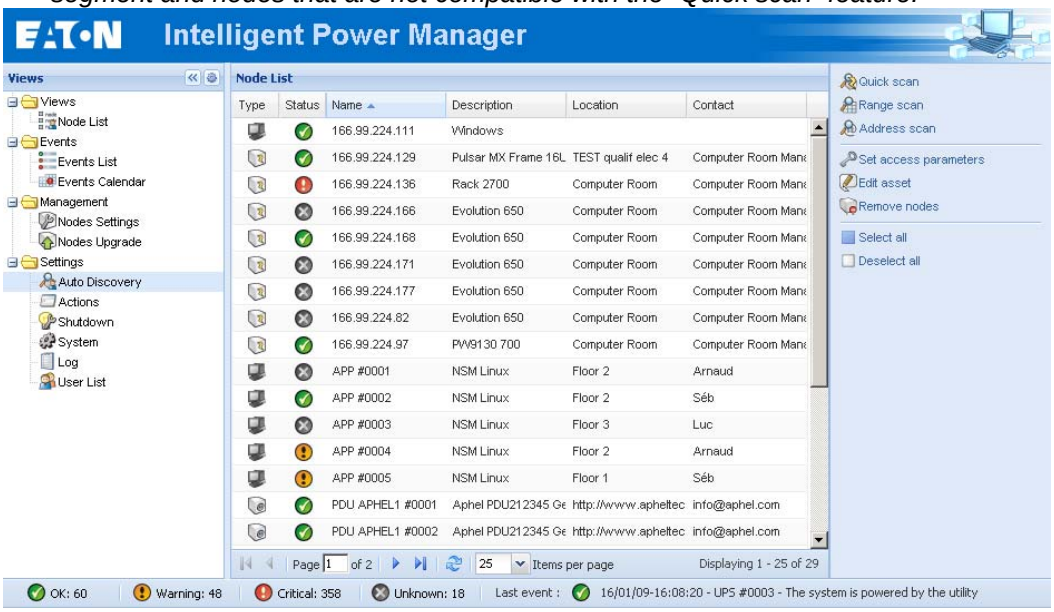
When started, the application automatically performs a **Quick scan**.

- *Using the Quick scan operation, you will discover through broadcast within a few seconds: Network Management Cards 66102, 66103, PXGX2000, ConnectUPS BD, ConnectUPS X, ConnectUPS MS and Network Shutdown Module V3.*

The discovered nodes are displayed in **Settings → Auto Discovery**

For the other nodes, please perform the discovery based on IP address ranges (**Range scan**)

- *Using the Range Scan operation you will discover the nodes that are outside of the Network segment and nodes that are not compatible with the "Quick scan" feature.*



(optional) In the **Settings → Shutdown** page, assign the IP address of the UPS that powers the local Computer.

In the **Settings → User List** page, assign the access rights through "login and password"

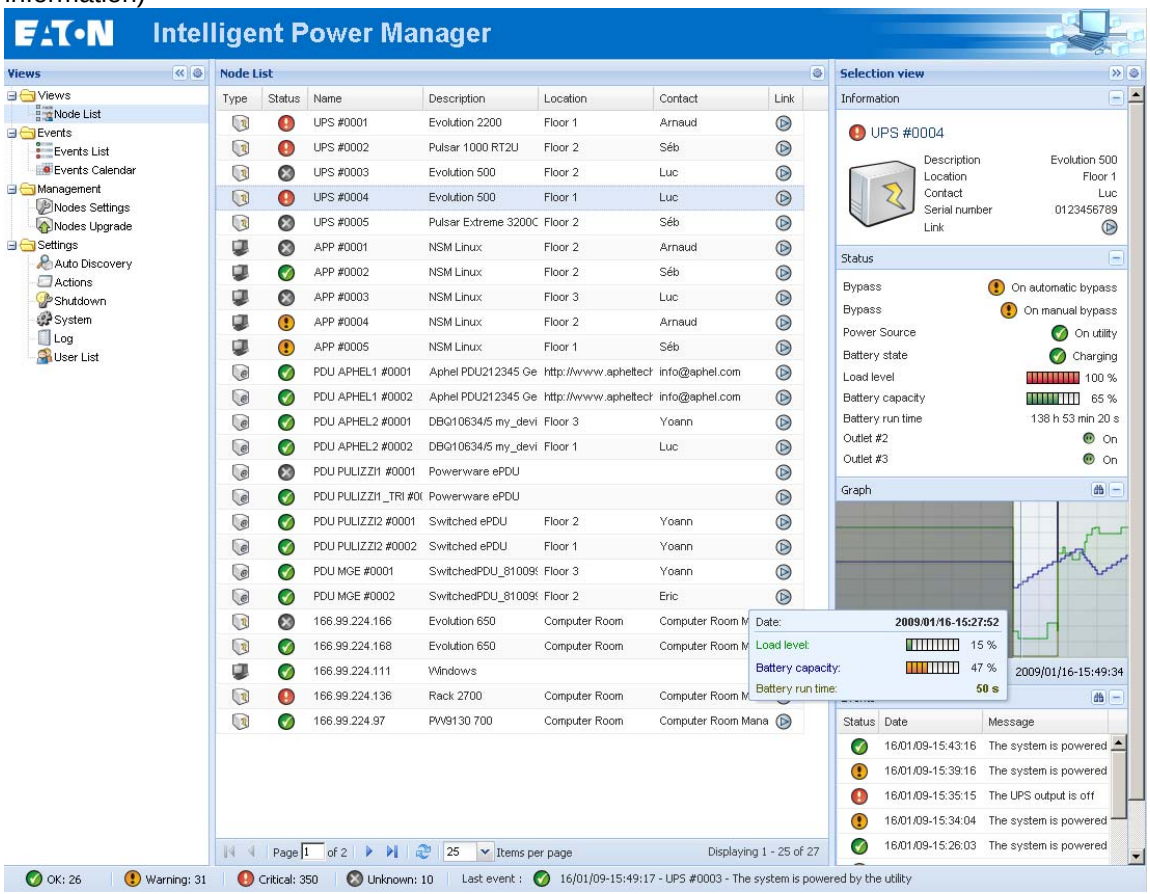
Step 3 (Enter the License code)

(optional for the free version) In the **Settings → System → Edit system Information**, enter the license product key that is printed on the commercial CDs booklet:
=> ref 66925 Intelligent Power® Manager Silver License (11 to 100 device nodes)
=> ref 66926 Intelligent Power® Manager Gold License (101 to Unlimited devices nodes)

The nodes that are not managed due to license limitation will appear with this icon ⊗.

Step 4 (Operation)

The **Views → Node List** menu item allows you to supervise the current state of the compatible power devices & applications (select a line in the list and the panels are updated with selected device information)



The **Views → Power Source** menu item (optional) allows you to supervise the current state of the UPS that powers the server running Intelligent Power® Manager

The **Events → Event List** view allows you to view the device events.

2.3 Installation Result

- If you install a new Intelligent Power® Manager version without uninstalling the old one you will keep your database and your product information.

- At the end of the installation, the following shortcuts are created in the group:
  Start → Programs → Eaton → Intelligent Power Manager

Name	Description
Open Eaton Intelligent Power Manager	Starts the main "Intelligent Power® Manager" graphical interface
Start Eaton Intelligent Power Manager	Starts the service
Stop Eaton Intelligent Power Manager	Stops the service
Uninstall Eaton Intelligent Power Manager	Uninstalls the Program

- A service called « Eaton intelligent Power Manager » is also created for the Database Acquisition Engine.
  This program continuously polls the status of Eaton devices and Applications connected on the network.
  This service automatically starts on machine boot-up.
  This service provides the Web Interface.

- A systray displays the alarms on the local computer.

2.4 Uninstalling the Product

- From the **Add/Remove** programs item of the control panel, execute the "Eaton Intelligent Power Manager Vx.xx" package.
- You can also uninstall from the shortcuts:
  Start → Programs → Eaton → Intelligent Power Manager → Uninstall Eaton Intelligent Power Manager
  This will remove the database and the custom files if you confirm it.

2.5 Upgrading the Product

Please refer to the Checking for Upgrades Paragraph.

3 Configuration

3.1 Configure the Nodes

Each node (Network Management Card / Proxy / Application must have a valid IP address (or a DNS name) in the range that you have entered for auto-discovery. Refer to the compatibility list.

"Intelligent Power® Manager" automatically receives the alarms (through notification or polling) without specific configuration on the card, proxies, Applications.

For SNMP acquisition, check the community name.
Default community name is configured in Settings → System → Default Community Name
A specific community name can be defined for each IP range in Settings → Auto Discovery → Range Scan → Password

3.2 Intelligent Power® Manager Settings

Start the "**Intelligent Power® Manager**" main graphical interface from the previously created shortcut, and then click on the **Settings** menu item.

3.2.1 Discover the nodes Connected on the Network

From the **Settings → Auto Discovery** item; the following discovery methods are available:

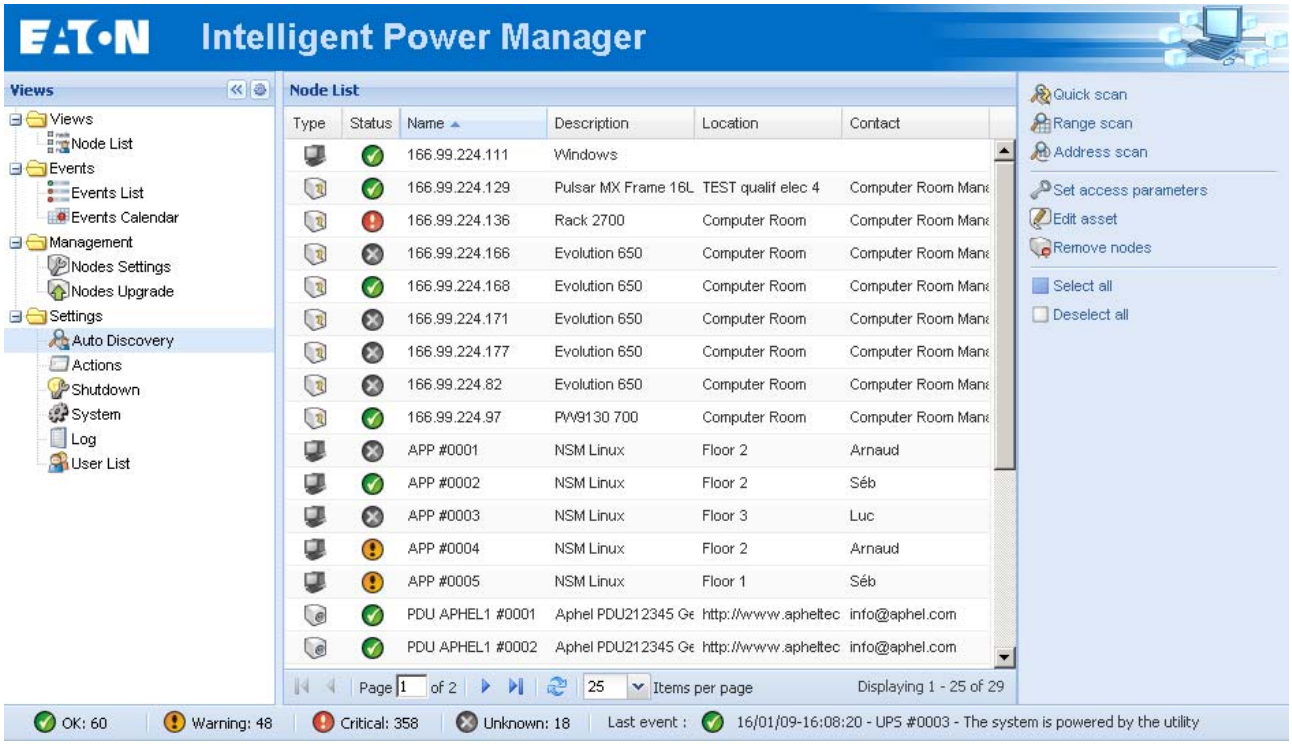
- Quick Scan (automatically performed when application starts)
- Range Scan
- Address Scan

Notes:

- The Quick scan request is a Broadcast frame on 4679 IANA reserved port and 69 standard TFTP port.
  Using the Quick scan operation, you will discover through broadcast within a few seconds: Network Management Cards 66102, 66103, PXGX2000, ConnectUPS BD, ConnectUPS X, ConnectUPS MS and Network Shutdown Module V3.

- For the other nodes, please perform the discovery based on IP address ranges (**Range scan**)
  Using the Range Scan operation you will discover the nodes that are outside of the Network segment and nodes that are not compatible with the "Quick scan" feature.

- Address Scan performs a single address scan

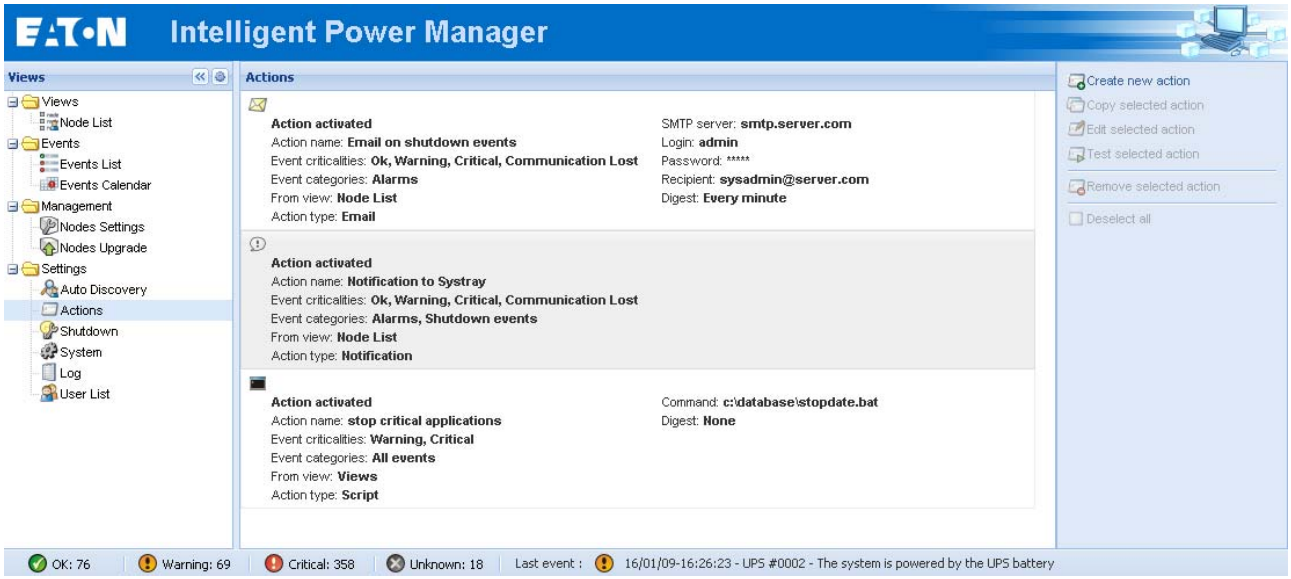

Intelligent Power Manager
Views
Views
Node List
Events
Events List
Events Calendar
Management
Nodes Settings
Nodes Upgrade
Settings
Auto Discovery
Actions
Shutdown
System
Log
User List
Node List
Type
Status
Name
Description
Location
Contact
166.99.224.111 Windows
166.99.224.129 Pulsar MX Frame 16L TEST qualif elec 4 Computer Room Mana
166.99.224.136 Rack 2700 Computer Room Computer Room Mana
166.99.224.166 Evolution 650 Computer Room Computer Room Mana
166.99.224.168 Evolution 650 Computer Room Computer Room Mana
166.99.224.171 Evolution 650 Computer Room Computer Room Mana
166.99.224.177 Evolution 650 Computer Room Computer Room Mana
166.99.224.82 Evolution 650 Computer Room Computer Room Mana
166.99.224.97 PW9130 700 Computer Room Computer Room Mana
APP #0001 NSM Linux Floor 2 Arnaud
APP #0002 NSM Linux Floor 2 Séb
APP #0003 NSM Linux Floor 3 Luc
APP #0004 NSM Linux Floor 2 Arnaud
APP #0005 NSM Linux Floor 1 Séb
PDU APHEL1 #0001 Aphel PDU212345 Ge http://www.apheltec info@aphel.com
PDU APHEL1 #0002 Aphel PDU212345 Ge http://www.apheltec info@aphel.com
Page 1 of 2
25 Items per page
Displaying 1 - 25 of 29
Quick scan
Range scan
Address scan
Set access parameters
Edit asset
Remove nodes
Select all
Deselect all
OK: 60
Warning: 48
Critical: 358
Unknown: 18
Last event :
16/01/09-16:08:20 - UPS #0003 - The system is powered by the utility

3.2.2 Configure Actions

You can define the way users will be notified when node events happen.

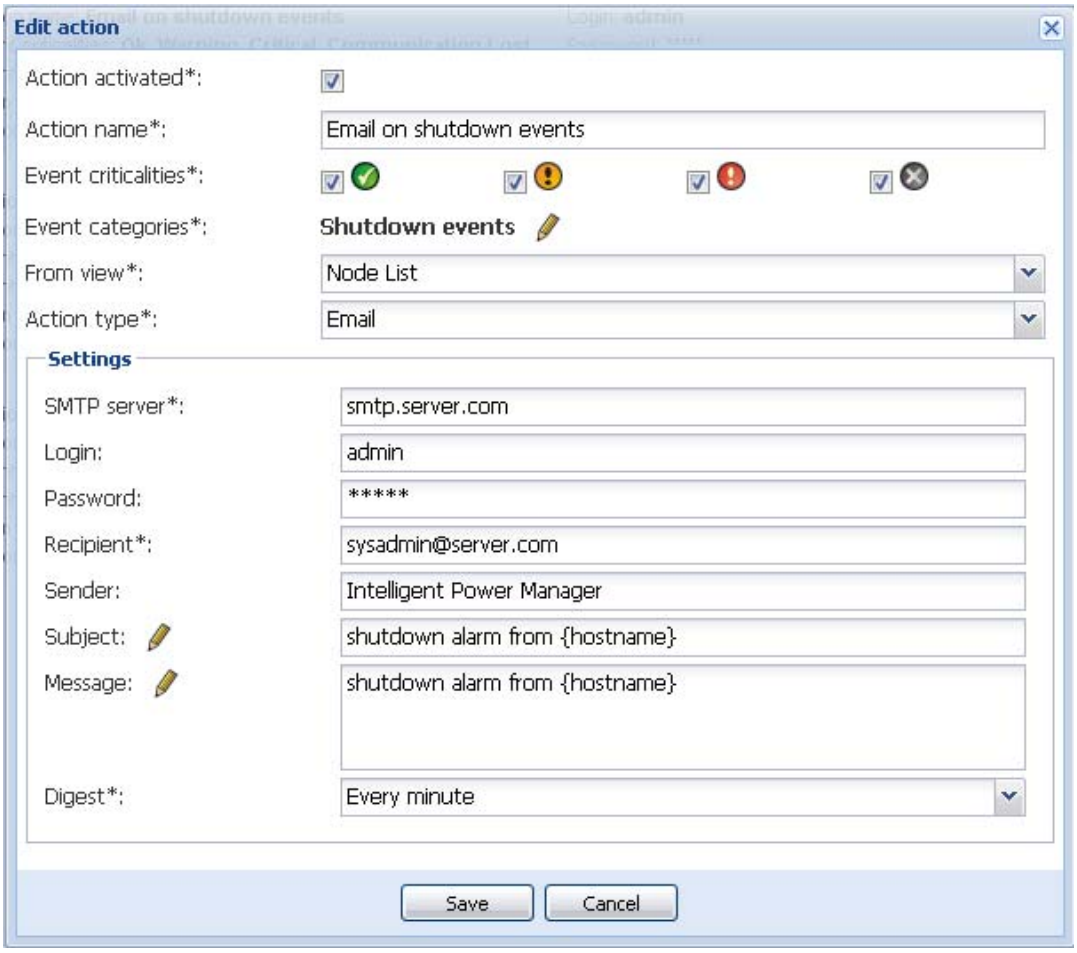
From the **Settings → Actions** item; the following channels are available:

- E-mail
- Execute script/program
- Notification to Systray



Notifications summary window

The **Create new action button** will display following interface



Note: The " * " fields are required.

Events filter:

You can filter the e-mail notification according to:

- the event criticality. (Critical, Warning, Normal, Communication Lost)
- the event category (All Events, Alarms, Shutdown events, Power events, Measures)
- the view that triggers the event;

Note on Event Criticality parameter:
With this parameter, you can filter the notification according to the event level. Refer to the event list provided later in this document. If you select "Critical" as filter you will not receive the associated "Normal" event informing that the device status changes from "Critical" to "Normal".

E-mail:

To receive emails on UPS events:

- you have to indicate the **SMTP server address** and **recipient e-mail address;**

For advanced use:

- you can **Customize the subject** e.g. if you have to translate an e-mail into an SMS .
- you can specify that you want to receive a consolidation of the alarms that occurred during a delay that you can choose (if you specify **no delay**, each alarm will generate an e-mail. With this settings you will receive more emails for the same number of events)

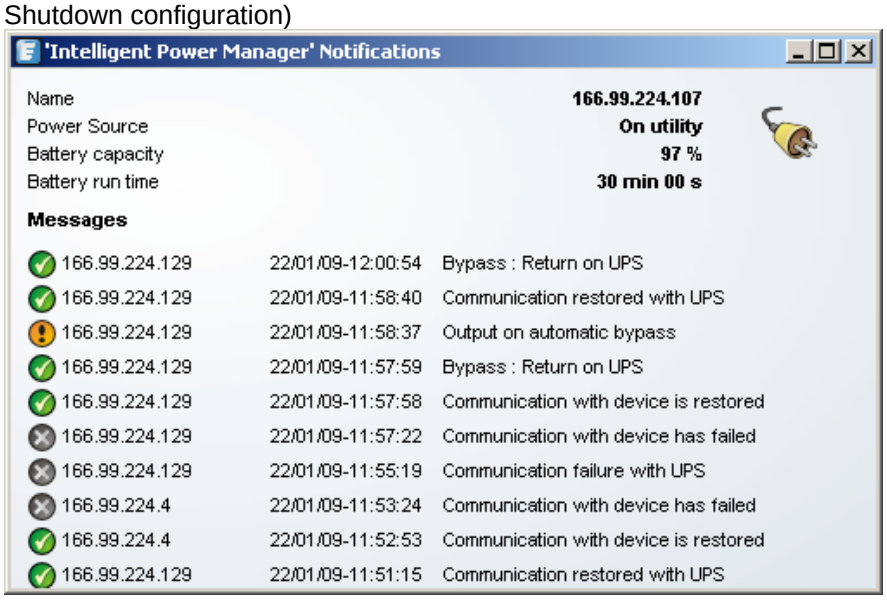
Execute script/program:

In order to execute a program on UPS events the program path will be required.
Note: The program is executed under the SYSTEM account.

- It may be necessary to modify the context before certain actions can be run.
  To allow a user to run specific tools and programs with permissions that are different from those assigned to the user's account use the Windows "RunAs" Command which allows you to save the password (Windows XP Service Pac 2 and more recent versions).
  Use the following Microsoft command:
  `runas /profile /user:<my login> /savecred <my_program.exe>`
  On first execution a password is required, it is saved for subsequent executions.

Alarm box notification:

The alarms are displayed on the local computer in an alarm box.
The status part of the alarm box is optional (It only appears if a Power Source has been declared in the Shutdown configuration)



The systray provides access to the alarm box

If no Power source has been declared, it can have following states:

(blue)	Systray correctly receives alarms from Intelligent Power® Manager (No Power Source has been declared)
(grey	Communication is lost between Systray and Intelligent Power® Manager

If a Power source has been declared, It can have following states:

	Systray correctly receives alarms from Intelligent Power® Manager (AC is present on the Power source)
	Systray correctly receives alarms from Intelligent Power® Manager (The Power Source runs in battery mode)
	Systray correctly receives alarms from Intelligent Power® Manager (A Warning event occurred on Power Source)
	Systray correctly receives alarms from Intelligent Power® Manager (A critical event occurred on Power Source)
	Communication with Power source has failed

Advanced events and actions customization:

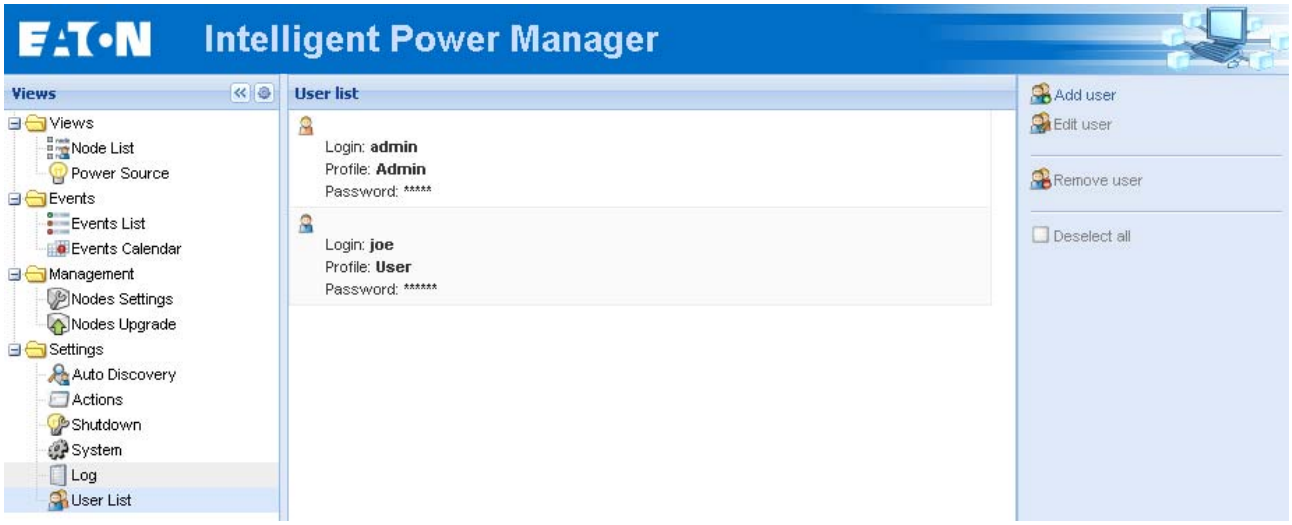
In Intelligent Power® Manager installation folder, you can see a *configs/scripts* folder containing a sample user-defined action script (*sample_user_script.js*).
You have the possibility to modify this script or create new scripts that define very specific events and actions. The sample script provides details about the expected structure and syntax for defining new actions and triggers.

3.2.3 Configure User Accounts

Multiple user accounts can be configured.

From the **Settings** menu Item, select the **User List** item, then perform the following steps:

- Click on Add user
- enter the **User Login** and the **User password**:
- select the **User's Profile** level. The following levels are available:
  > **admin** (the user will be able to access all the features)
  > **user** (the user will only access the visualization and is not able to set changes to the system or nodes)
- click on **Create new user** button



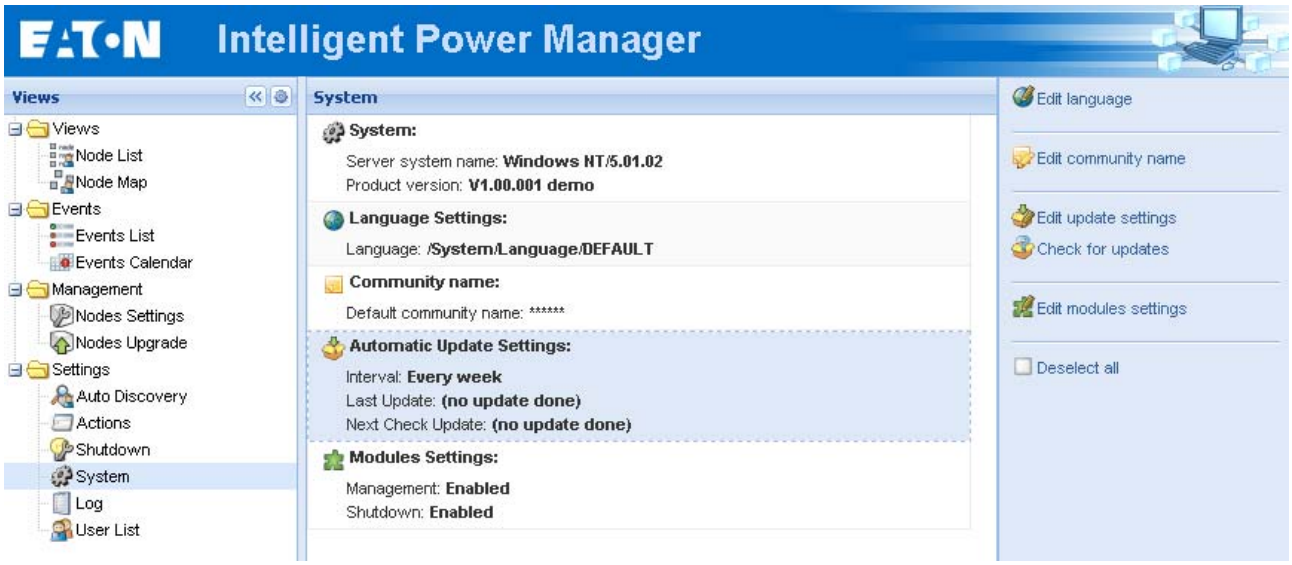
User Accounts window

Intelligent Power® Manager contains a default Administrator profile with

- admin as login
- admin as password

It is strongly recommended to change these settings with your own immediately after installation.

3.2.4 System settings



System settings

Select one of the items then click on the corresponding button on the right

- Edit language allows the user to change the user language.
- Edit community name changes the default SNMP community name for discovery.
- Edit updates & Check updates will provide Automatic Updates Features.
  This feature gives you access to Eaton software updates.
  Intelligent Power® Manager will always be up to date if you select the **Check automatically** option.
  When a new software version is detected on www.eaton.com, just follow the wizard instructions.
  Note: Database information will be retained with this operation.
- Modules settings will activate / deactivate the management or shutdown Modules.

4 Supervision

4.1 Access to the monitoring interface

To monitor Eaton devices already discovered on the network, start the main "Intelligent Power® Manager" interface. You can access the same interface locally or remotely.

4.1.1 Local access

- From the system where the supervisor is installed, you can use the following shortcut:
  Start -> Programs -> Eaton -> Intelligent Power Manager ->Open Eaton Intelligent Power Manager

4.1.2 Remote access

- From a remote machine, you can type the following URL in a Web browser
  https://<name or IP address of computer hosting IPM>:4680/
  or
  http://<name or IP address of computer hosting IPM>:4679/

- In SSL mode, accept the certificate (by clicking on Yes)

Accepting the SSL Certificate

To install the certificate on IE7 for Vista, you need to perform the following steps:

> Run IE as an administrator (Right-click the desktop icon)
> Visit the IPM site.
> Click through the certificate error
> Click the "Certificate Error" button in the address bar.
> Click View Certificate
> Click Install Certificate
> Click the "Place all certificates in the following store" radio button, and choose the "Trusted Root Certification Authorities" store. If you don't do this, the certificate goes in your personal store, and it isn't trusted by IE.

- Enter the Login and Password

4.2 Node List View

Node List.

The following default columns are displayed in this page:

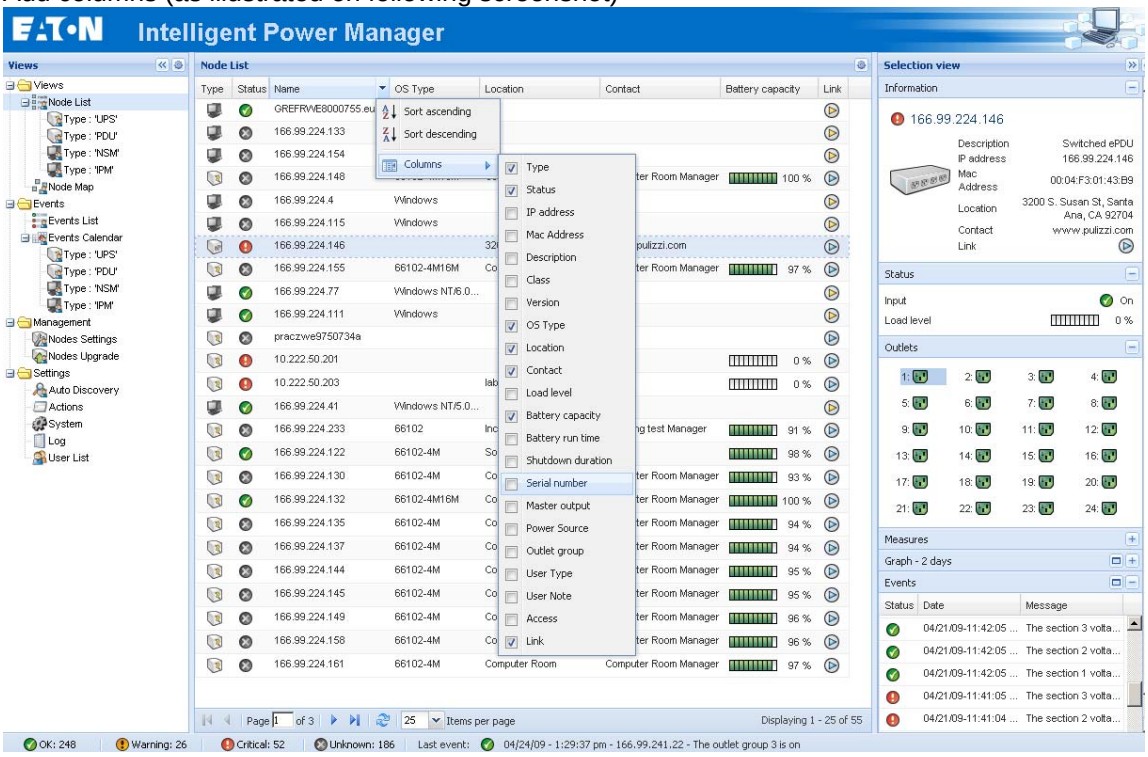
- Type Graphical Icon to differentiate UPS, ePDU, Applications
- Status this icon represents the severity of the most critical event active on the monitored device;
- Name the IP address, the DNS name or user defined name
- Description the product name or description
- Location the node location
- Contact the node contact
- Link link to the device Web site (if available)

Note: You can sort your device list by clicking on the column titles (Status / Name / Description/ Location / Load Level …)
The following possibilities are available:

- Sort ascending

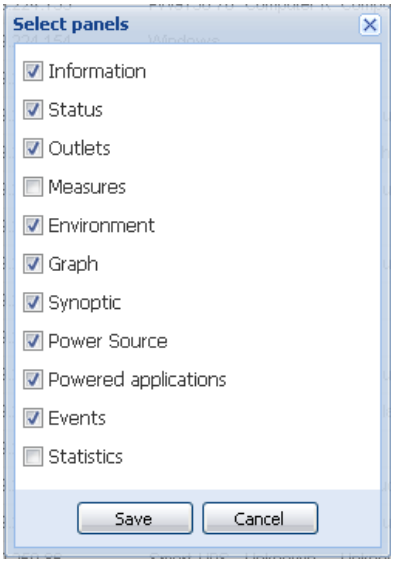
- Sort Descending

- Add columns (as illustrated on following screenshot)



4.3 Flexible Panels view:

- Select one of the device/applications in the list and “detailed Panels” appears
- Clicking on the bar title allows you to collapse/extend the panel
- These buttons allows to hide or show all the panels
- This button allows to select which panel you want to add in the view



Some of these panels are only available for specific node types.

4.4 Panels list:

4.4.1 Information

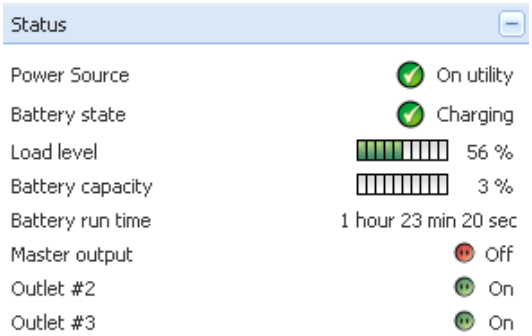
Information Panel.

The following node information is displayed in this panel:

- UPS #0005 the DNS name (or IP address) is displayed near the “status icon”
- Description the commercial product name
- Location the device location (value of syslocation object or can also be configured in the Device page)
- Contact the device contact (value of syscontact object or can also be configured in the Device page)
- Serial Number The device Serial Number (if available)
- Link link to the device Web site (if available)

Note: The information displayed in this panel depends on the node capabilities.

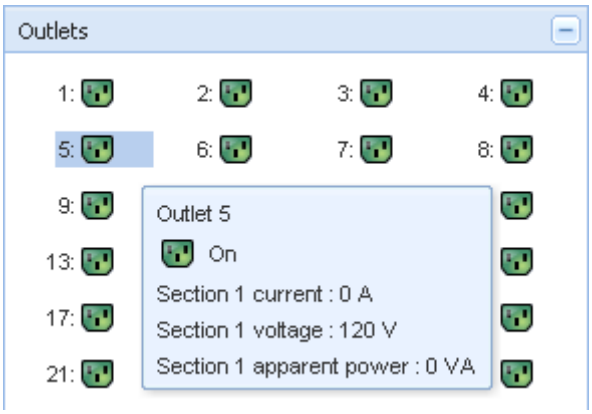
4.4.2 Status



- Power source AC Power / Battery
- Battery state Charging / Discharging / Needs Replacement
- Load Level the output load level of the device
- Battery capacity Battery capacity of the device
- Battery run time the device remaining backup time
- Master Output Main output status (ON/OFF/Internal Failure/On Automatic Bypass/Manual By Pass/Overload)
- Outlet #x output outlet status (ON/OFF)

Note: The information displayed in this panel depends on the node capabilities.

4.4.3 Outlets

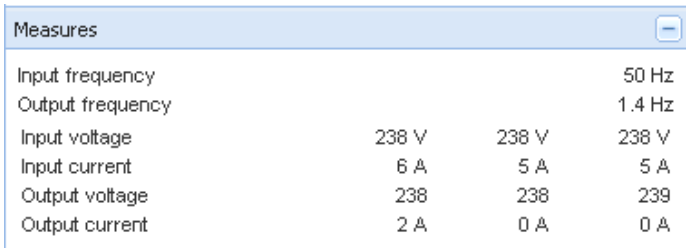


This panel displays outlet status of the selected ePDU.
Note: When you select an outlet in this panel, the Graph panel displays the information for this outlet.

Outlets color codes:

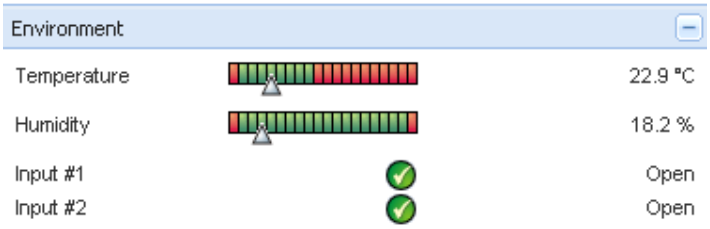
Symbol	Colour	Description
	Green	Powered (On)
	Red	Not powered (Off)

4.4.4 Measures



This panel displays the selected device electrical parameters (single phase or 3 phases) depending on the node capabilities.

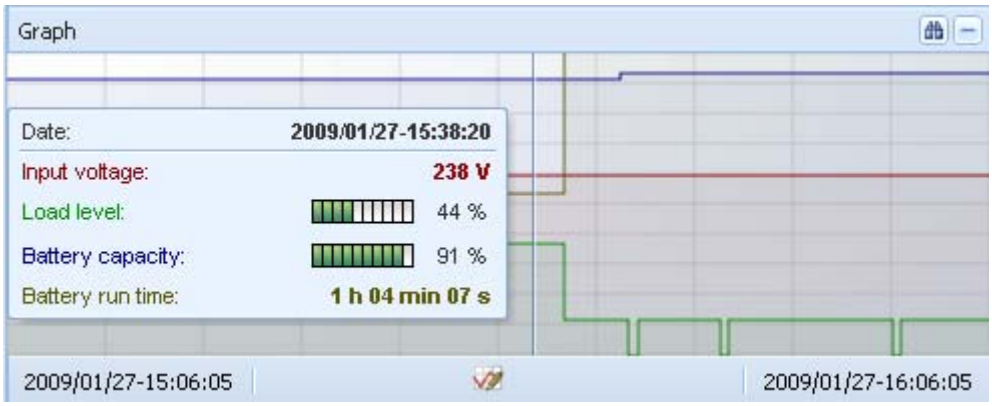
4.4.5 Environment



This panel displays the selected device sensor information: Temperature, Humidity level, Dry contact status (Open/Closed)

- Temperature — Sensor temperature (in °C)
- Humidity — Humidity level
- Input #1 — Status of first contact (open / closed)
- Input #2 — Status of second contact (open / closed)

4.4.6 Graph

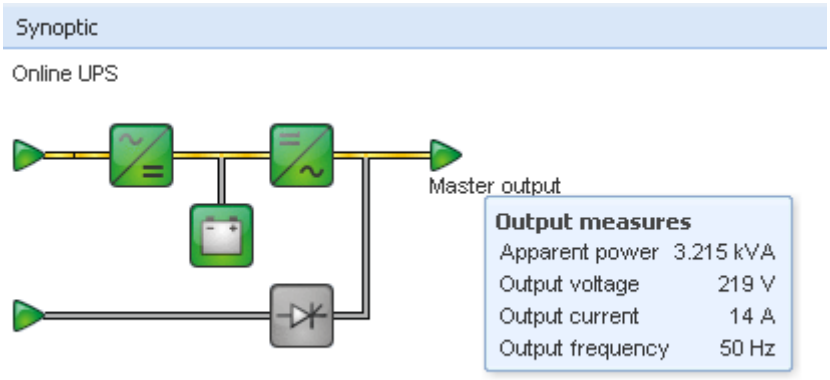


This panel displays the graph of the main measures of the selected device.

The button allows you to zoom the graph

The button allows you to select the data you want to graph

4.4.7 Synoptic



This panel displays the selected device synoptic. A tooltip is displayed when the mouse is over one of the functional block.

Synoptic Color codes:

- UPS modules:

AC/DC	DC/AC	By-Pass	Colour	Description
			Green	Status OK & Active
			Red	Internal fault & Inactive

			Grey	Status OK & Inactive or Unknown

- Battery module:

Symbol	Colour	Description
	Green	Status OK
	Orange	Battery charge is less than 50%
	Red	Battery fault or End-of-backup or End-of-battery-service-life pre-alarm
	Grey	Battery status unknown

- Electrical flows:

Symbol	Colour	Description
	Yellow	Current flow through the cable Note: the object animation gives the direction of current flow
	Grey	No current flow through the cable (voltage may be present)

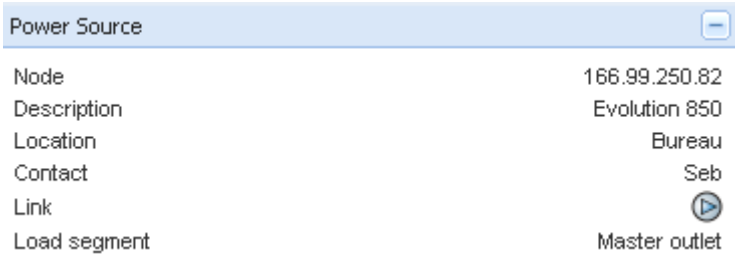
- Electrical power source at UPS input:

Symbol	Colour	Description
	Green	Source powered. Status OK
	Grey	Source not powered or status unknown
	Examples of combinations between flow status and power source status:	
	Green/ Yellow	The electrical power source is powered and provides electrical flow
	Green/ Grey	The electrical power source is powered and does not provide electrical flow

- Load at UPS output: (its status is linked to that of the UPS output status)

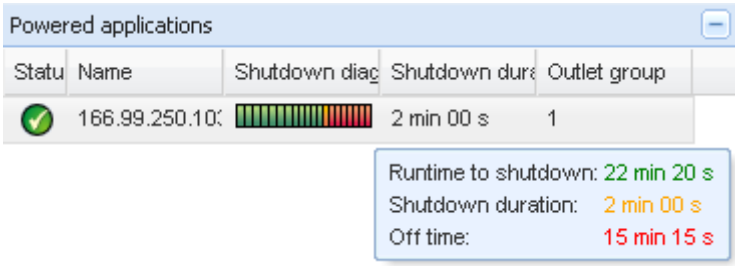
Symbol	Colour	Description
	Green	Load powered and protected. Status OK
	Red	Load not powered
	Grey	Load status unknown
	Examples of combinations between flow status and load status:	
	Yellow/ Green	Load powered and protected
	Grey/ Red	Load not powered

4.4.8 Power Source



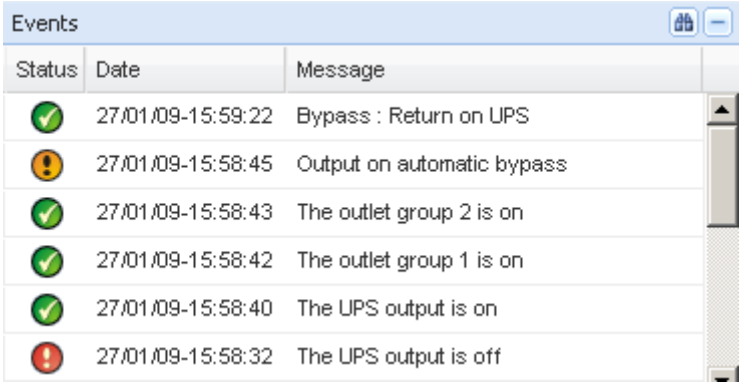
This panel displays information on the device that powers the selected application running on the server.

4.4.9 Powered applications



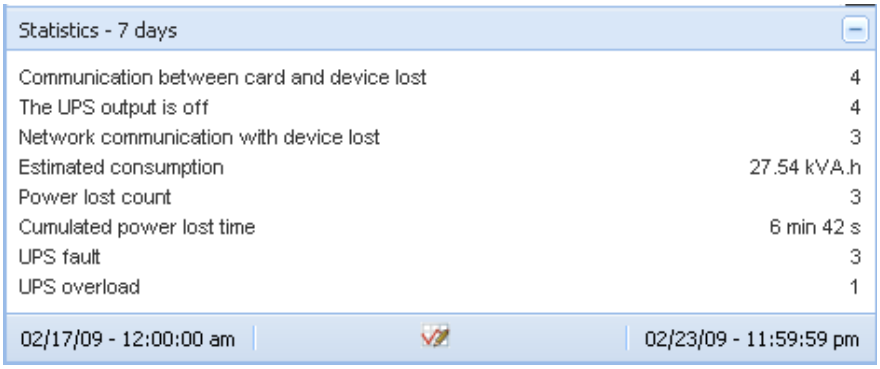
This panel displays information on the applications that are powered by the selected device.

4.4.10 Events



This panel displays the events list of the selected node.

4.4.11 Statistics



This panel displays the statistics of the selected node.

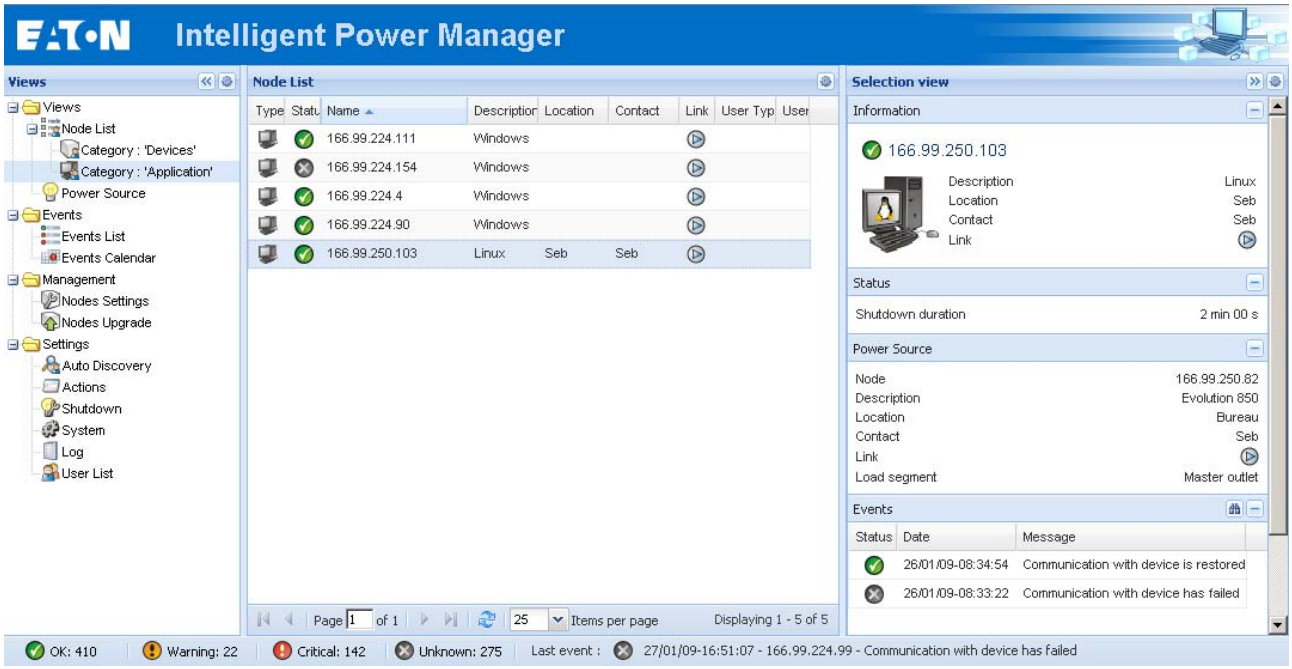
The button allows you to select the time interval for the statistics.

You can adjust the time interval by clicking on the 2 buttons with the “From” and “To” dates.

4.5 Applications List View

To create a sub-view that filters applications, right click on **Node List**, then **create a Sub View** from and select **Category** as criteria to filter the nodes.

Network Shutdown Module V3 can be monitored in this View



The following information appears in this page:

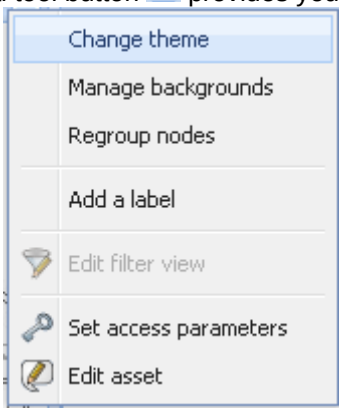
- Type — Application
- Status — This icon represents the status criticality of the server.
- Name — Value configured in the Applications screen (by default this is an IP address or a DNS name).
- Description — Machine operating system.
- Power source — the UPS that power the application
- Run time — Operating time in the event of a utility supply loss.
- Shutdown duration — Duration, in seconds, needed by the system to carry out its shutdown procedure.
- Link — Link to the Web supervision interface of the Network Shutdown Module V3 module.

4.6 Map View

This graphical representation allows you to organise the supervision Map using the Drag & Drop feature
Select a node icon and the information will be updated on the right hand panel

4.6.1 Create a customized Map View

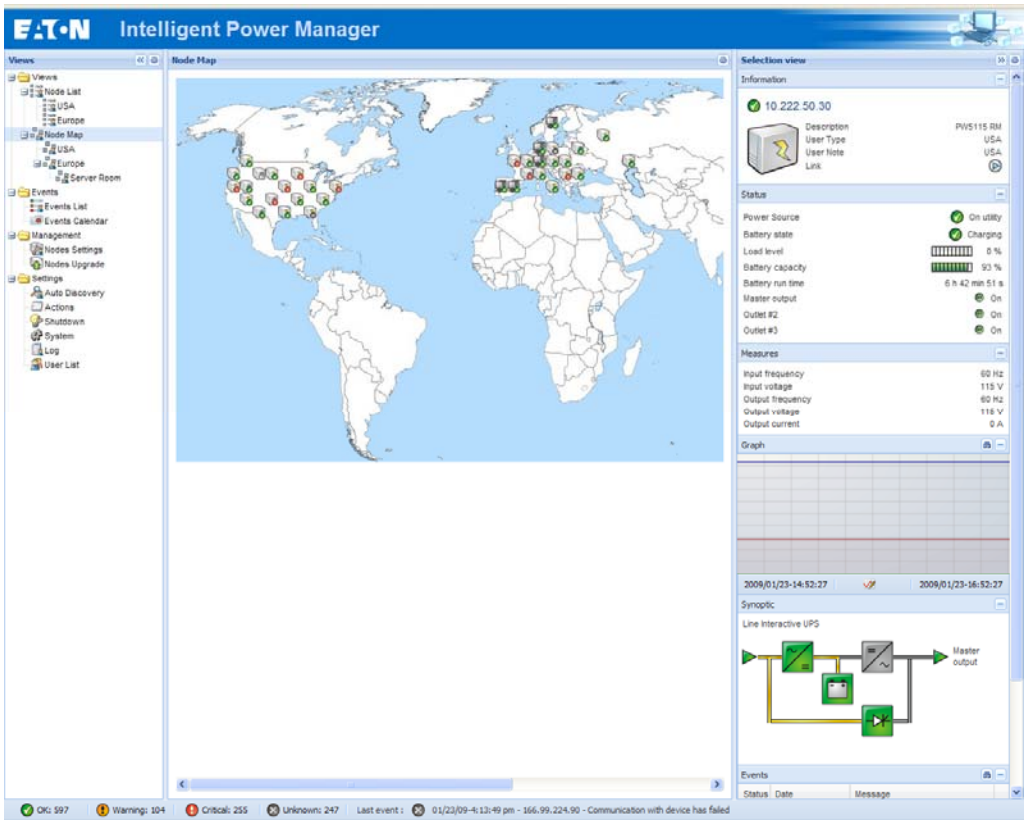
On the Left hand menu, Select **Views -> Node Map**
The Map is automatically generated (icons are automatically placed on the Map and IP address assigned)
On the Node Map bar title the contextual tool button provides you the tools to modify the Map



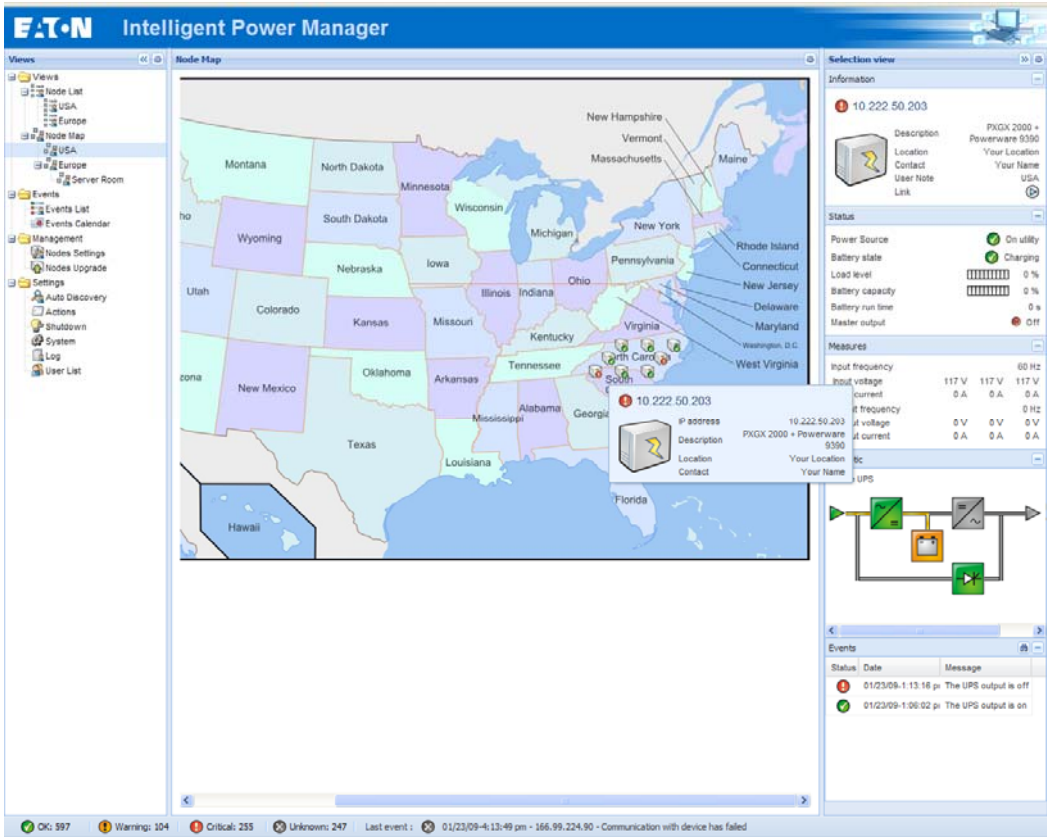
Change theme offers three kinds of icons representations for the user (small icons, large icons, rack icons)
Manage backgrounds will offer you the possibility to:
import a new background image in the supervision tool
select a background already in the supervision tool for the Map
remove the background images
Regroup nodes will rearrange the icons position on the Map
Add a label allows to create a user defined text and to place it on the Map through drag and drop

Note: to delete a label, right click on it then **Delete.**

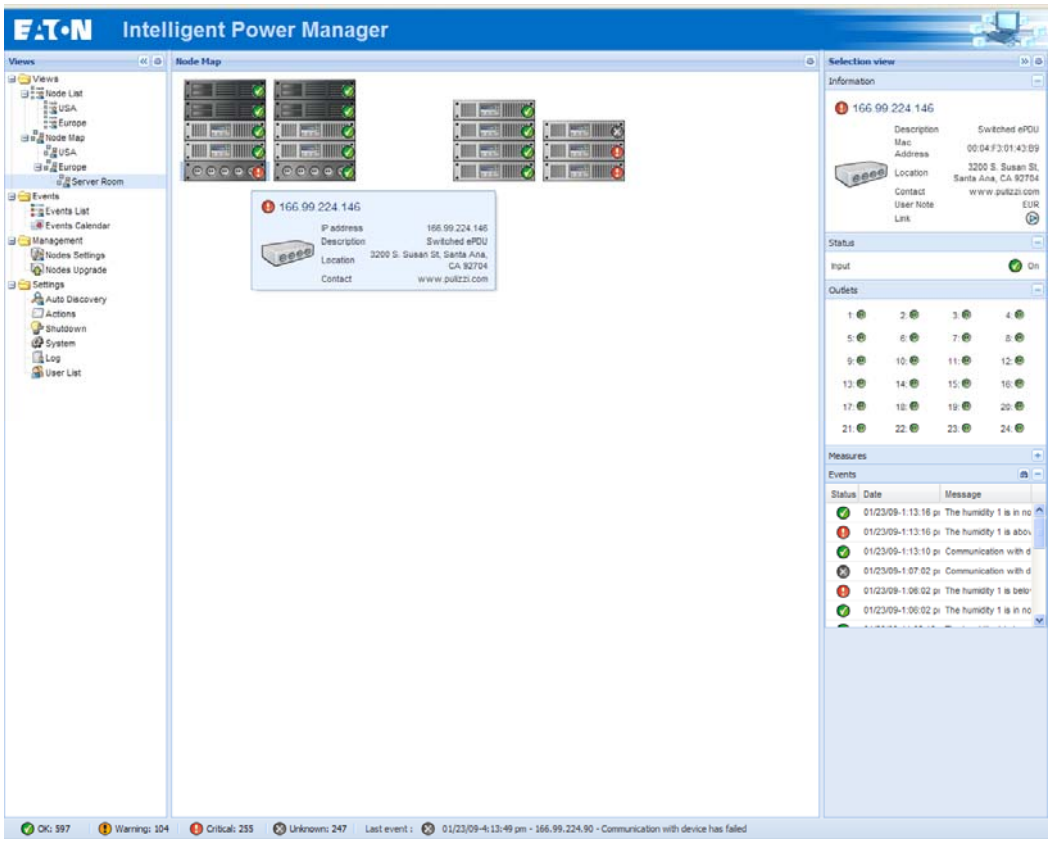
4.6.2 Maps examples



World Map view



Country Map view

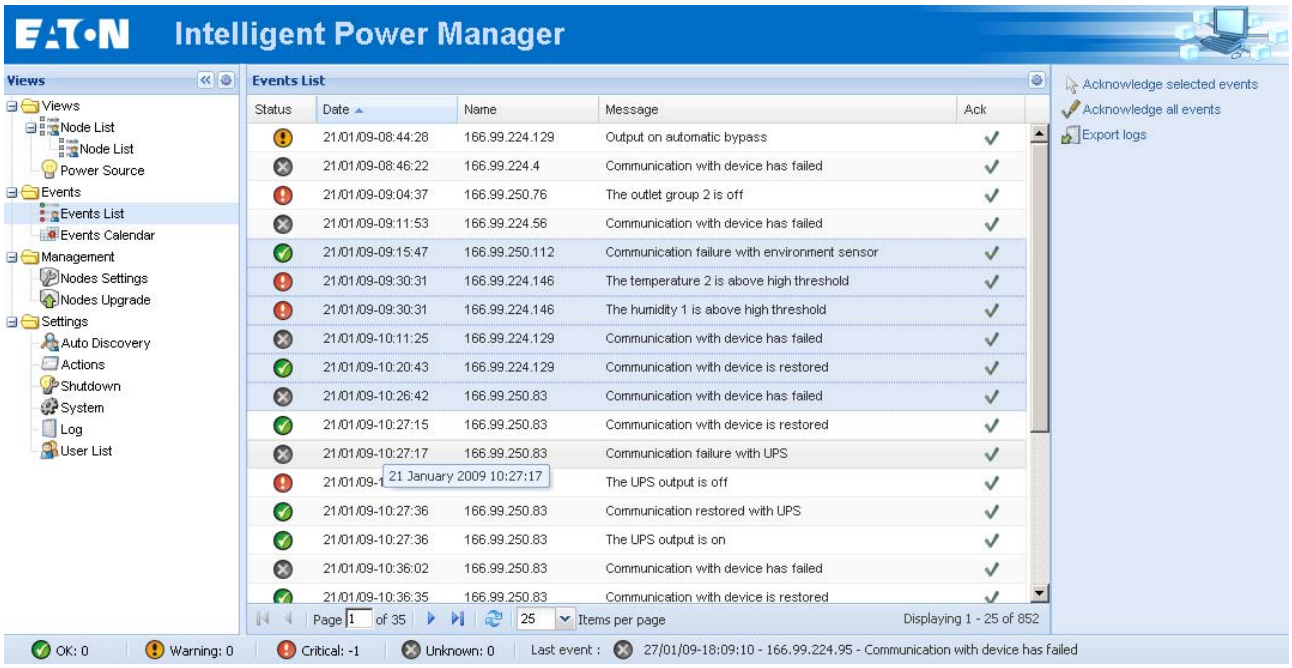


Server Room Map view

4.7 Events

4.7.1 List representation

Select the **Events -> Events List** and the following page appears:



Alarms list.

All new alarms are stored in this log.

You can sort the alarms according to **Status**, **Date, Name**, **Message and Ack.**

The following functions are available:
Acknowledge selected events will add a check box in the **Ack** column for selected events
Acknowledge all events will add a check box in the **Ack** column for all events
Export Logs will create a logs.csv file with the following syntax:

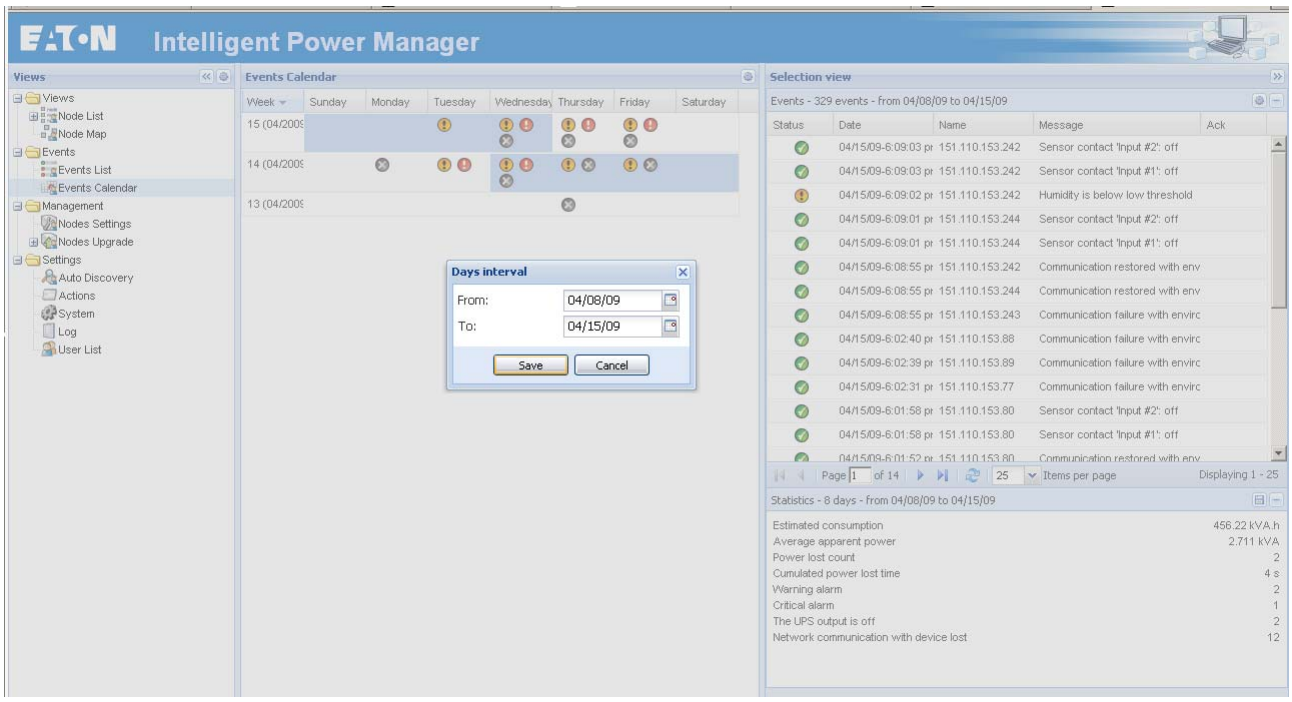
```
"Date";"Node";"Type";"Level";"Object";"Value";"Message";
"2009/01/27-18:35:20.840";"166.99.250.83";"Measure";"0";"UPS.PowerConverter.Input[1].Frequency";"49";"";
```

Note: Export command may take several seconds before allowing download to create logs file

Select all will select all displayed events
Deselect all will deselect all selected events

4.7.2 Calendar representation

Select the **Events -> Events Calendar** and the following page appears:
In this matrix representation, each line is a week and each column is a day in the week.
If you select a day or an interval (with datepicker or shift+click command), events and statistics panels will give you all information for this selection and will automatically refresh when new statistics have been computed.



4.7.3 Nodes Events list

The icons in the different views represent the event severity.

Icon	Event status
	**Normal**. With this event, the device is coming back to a normal status. **Event list list (UPSs, ePDUs, Applications, Generic devices):** ▪ Communication with device is restored ▪ Communication restored with UPS ▪ The system is powered by the utility ▪ The UPS output is on ▪ Communication restored with UPS ▪ Battery OK ▪ UPS returns to normal load ▪ UPS OK ▪ Bypass : Return on UPS ▪ End of low battery alarm ▪ The outlet group 1 is on ▪ The outlet group 2 is on ▪ Communication failure with environment sensor ▪ Communication restored with environment sensor ▪ Humidity is in normal range ▪ Temperature is in normal range ▪ Input #x on ▪ Input #x off ▪ End of warning alarm ▪ End of critical alarm ▪ Redundancy restored

- Protection restored

Event list (ePDUs specific):

- The input frequency is in normal range
- The input temperature is in normal range
- The input voltage is in normal range
- The input {x} is in normal load
- The section {x} current is in normal range
- The section {x} voltage is in normal range
- The outlet group {x} current is in normal range
- The outlet group {x} is in normal load
- The outlet group {x} is on
- The phase {x} output load is in normal range
- The output frequency is in normal range
- The output load is in normal range
- The output voltage is in normal range

Warning. A problem occurred on the device. Your application is still protected.

Event list list (UPSs, ePDUs, Applications, Generic devices):

- The system is powered by the UPS battery
- Output on automatic bypass
- Output on manual bypass
- Humidity is below low threshold
- Humidity is above high threshold
- Temperature is below low threshold
- Temperature is above high threshold
- Warning Alarm *(a generic Warning alarm is active on the device)*
- The device is under its load alarm threshold
- The device is over its load alarm threshold
- Protection lost
- Redundancy lost
- Shutdown in {time}

Critical. A serious problem occurred on the device. This problem requires an urgent action. Your application might NOT BE powered anymore.

Event list list (UPSs, ePDUs, Applications, Generic devices):

- The UPS output is off
- The outlet group 1 is off
- The outlet group 2 is off
- Battery fault
- UPS overload
- UPS fault
- Low battery alarm
- Applications must stop immediately...
- System shutdown in progress...
- Critical alarm *(a generic Critical alarm is active on the device)*

Event list (ePDUs specific)

- The input frequency is out of range
- The input temperature is above high threshold
- The input temperature is below low threshold
- The input voltage is above high threshold
- The input voltage is below low threshold
- The input {x} is overload
- The section {x} current is too high
- The section {x} current is too low
- The section {x} voltage is too high
- The section {x} voltage is too low
- The outlet group {x} current is too high
- The outlet group {x} current is too low
- The outlet group {x} is overload
- The outlet group {x} is off
- The phase {x} output is overload
- The output frequency is out of range
- The output is overload
- The output voltage is above high threshold
- The output voltage is below low threshold

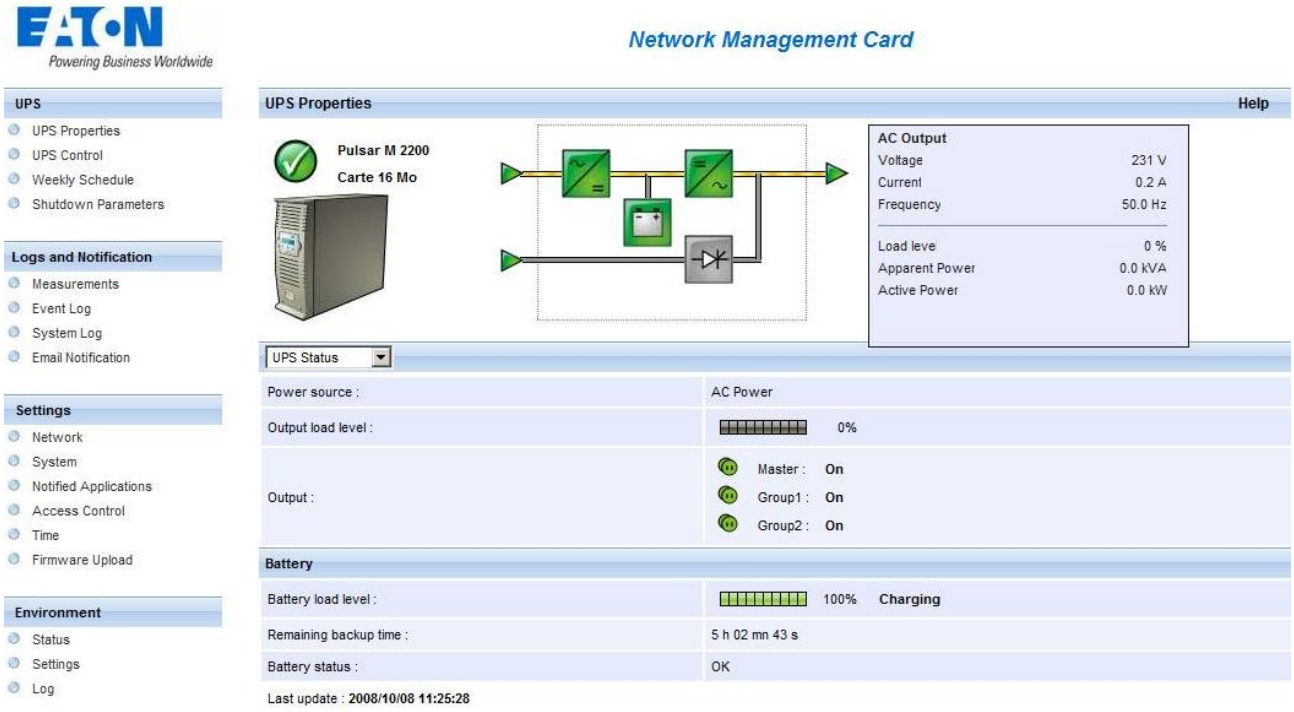
Communication lost

Event list:

- Communication failure with UPS
- The communication with the server has been lost
- Communication with device has failed

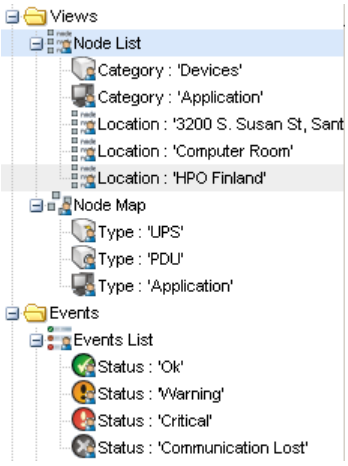
4.8 Launching Device or application Web interface

From the **Status** panel, you can access the Web Page for Eaton cards or applications including an on-board web server. Click on the web **Link** associated to this blue icon (http access) or this yellow one (https access).



Running the node Web interface from Intelligent Power® Manager.

4.9 Defining sub views

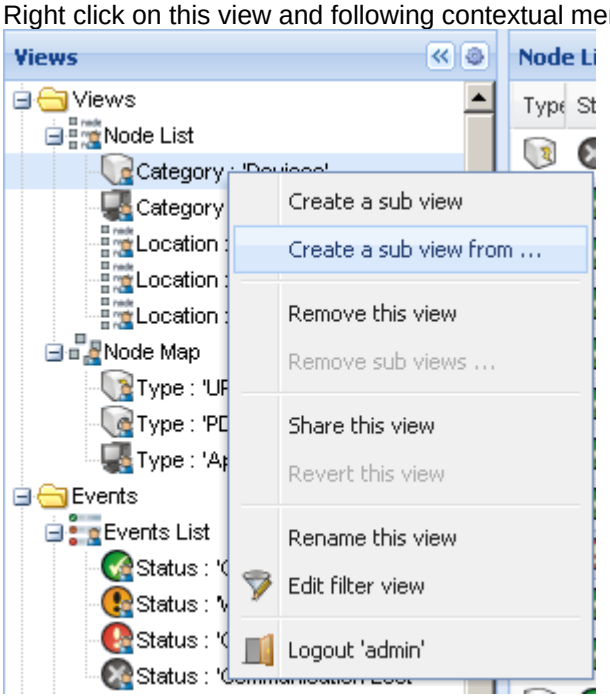


When you have to monitor large configurations, it is helpful to define several sub views and then filter the nodes or events in theses categories.

You can select many criteria in order to organize your tree (i.e. geographical, organizational, by status, ...)

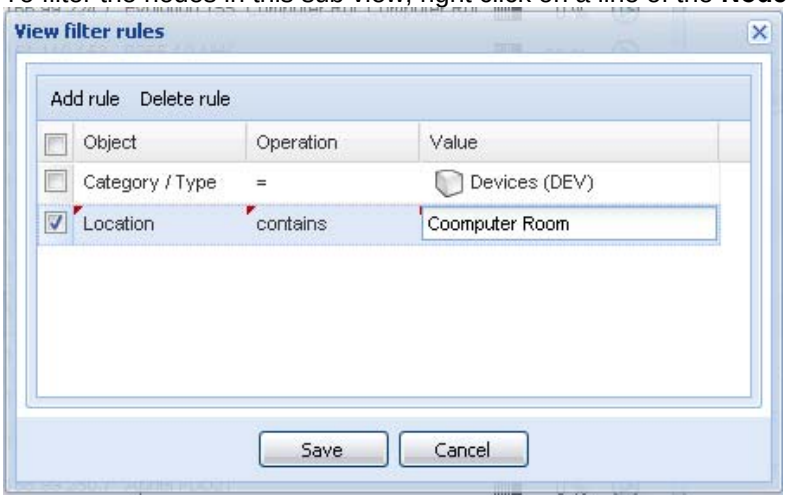
- Select a view in the left menu (e.g. Devices)

- Right click on this view and following contextual menu appears



Click on **Create a sub view from …** and follow the instructions

- To filter the nodes in this sub view, right click on a line of the **Node List** area and edit a **Filter View**



- To add a filtering rule, click on the **Add rule** button then key in the Object, Operation and Values
  With this filter you will view the **Devices** whose **Location** field contains the value "**Computer Room**"

5 Shutdown

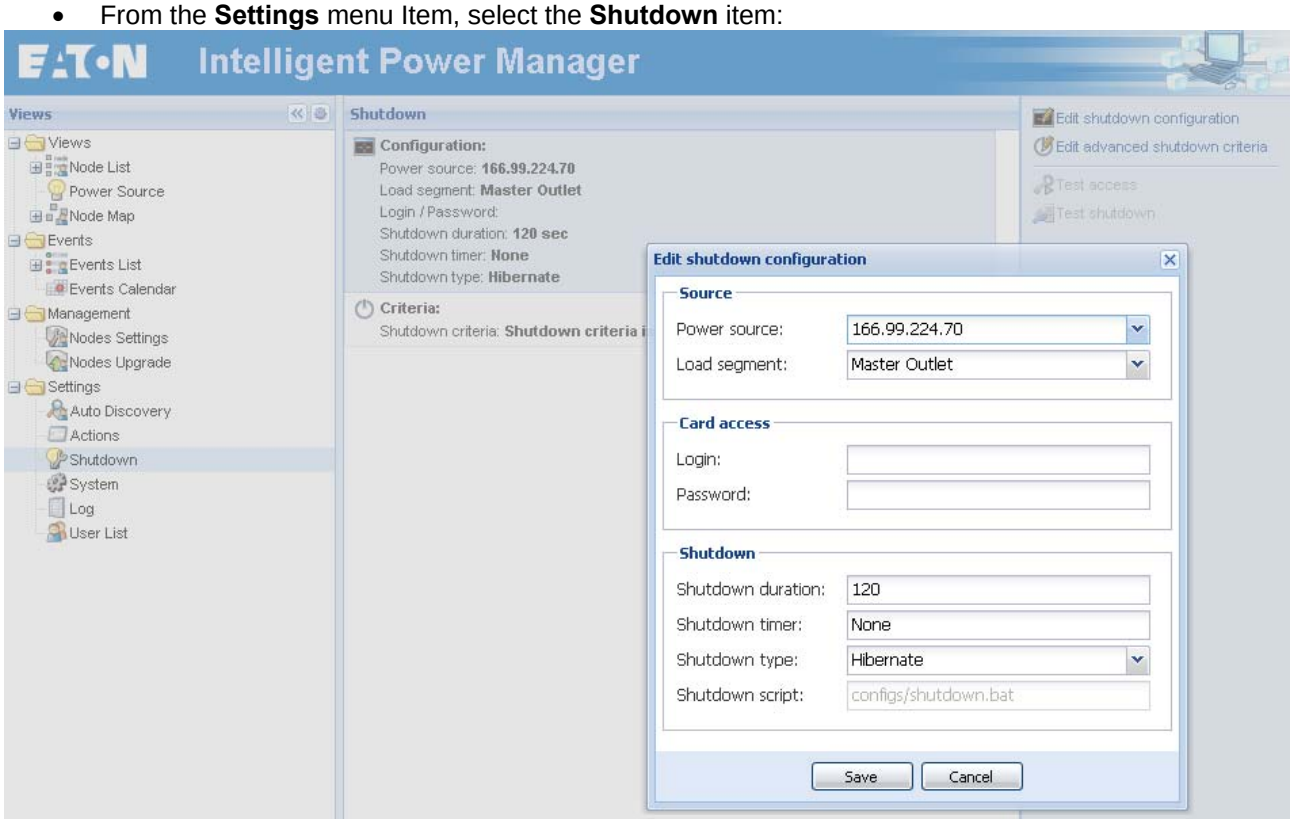
5.1 Introduction

Intelligent Power® Manager provides **local computer graceful shutdown** (acquisition through 66102, 66103 103 006 826 Network Management Cards)

This Shutdown feature can be Enabled / Disabled from the **Settings** -> **System -> Modules Settings**

5.2 Shutdown Configuration

- Login with an administrator user profile
- From the **Settings** menu Item, select the **Shutdown** item:



To configure, perform the following actions:

- Click on **Edit shutdown configuration**
- In the **Power source** field select the UPS that powers the computer hosting Intelligent Power® Manager
- Check other parameters
- Click on Save

Note: Shutdown through Hibernate

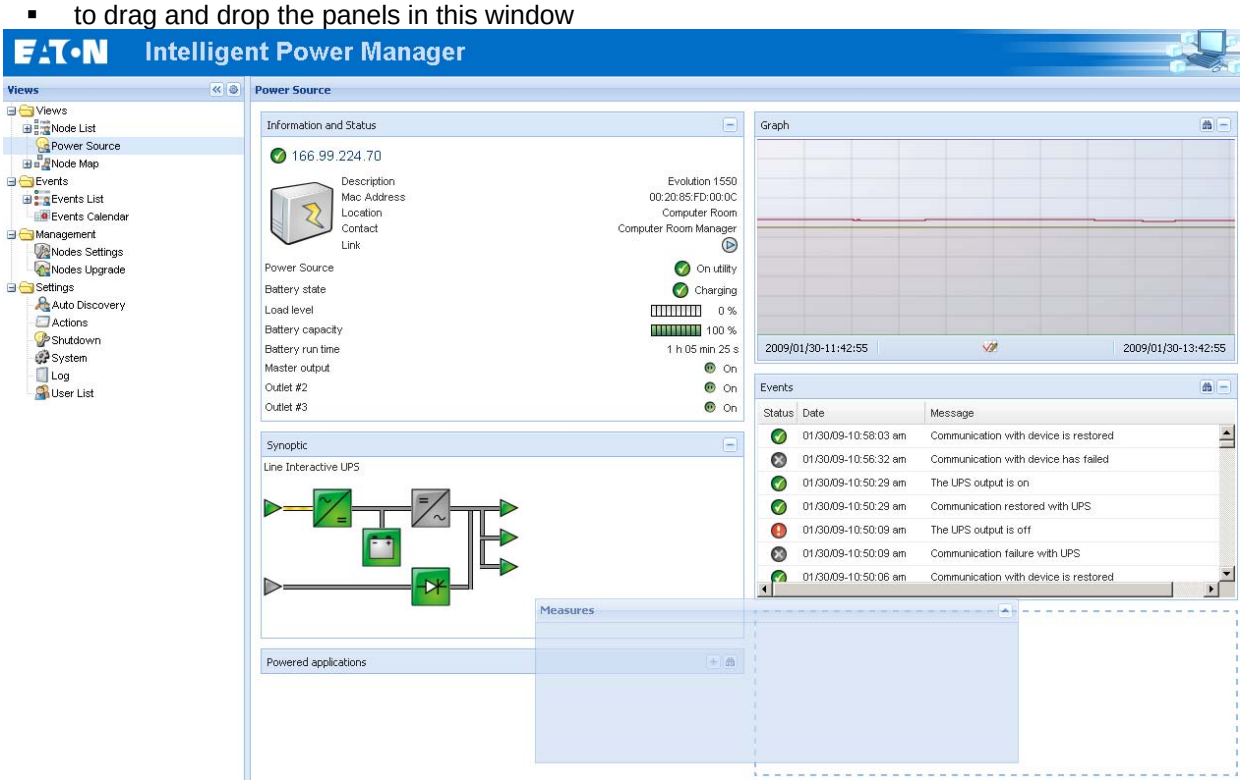
- If available with your operating system, is better to use the hibernation feature (available with Windows 2000) as there are a number of advantages. If the system is shut down, all work in progress and system information are automatically saved to the disk. The computer itself is also de-energized. When mains power returns, all the applications re-open exactly as they were and the user placed back in their work environment.
  The hibernate function must first have been activated in the operating system. In the power options on the Windows control panel, check that the **hibernate** option is activated on the Hibernate tab

sheet.
Note: If you select hibernate, but your computer does not have this function, Intelligent Power® Manager will still protect the installation by carrying out the normal (default) shutdown.

5.3 Power Source View

When **Shutdown** feature is configured, from the **Views** menu Item, select the **Power Source** item:
You will be able

- to supervise the information from the UPS that powers the Intelligent Power® Manager computer
- to drag and drop the panels in this window



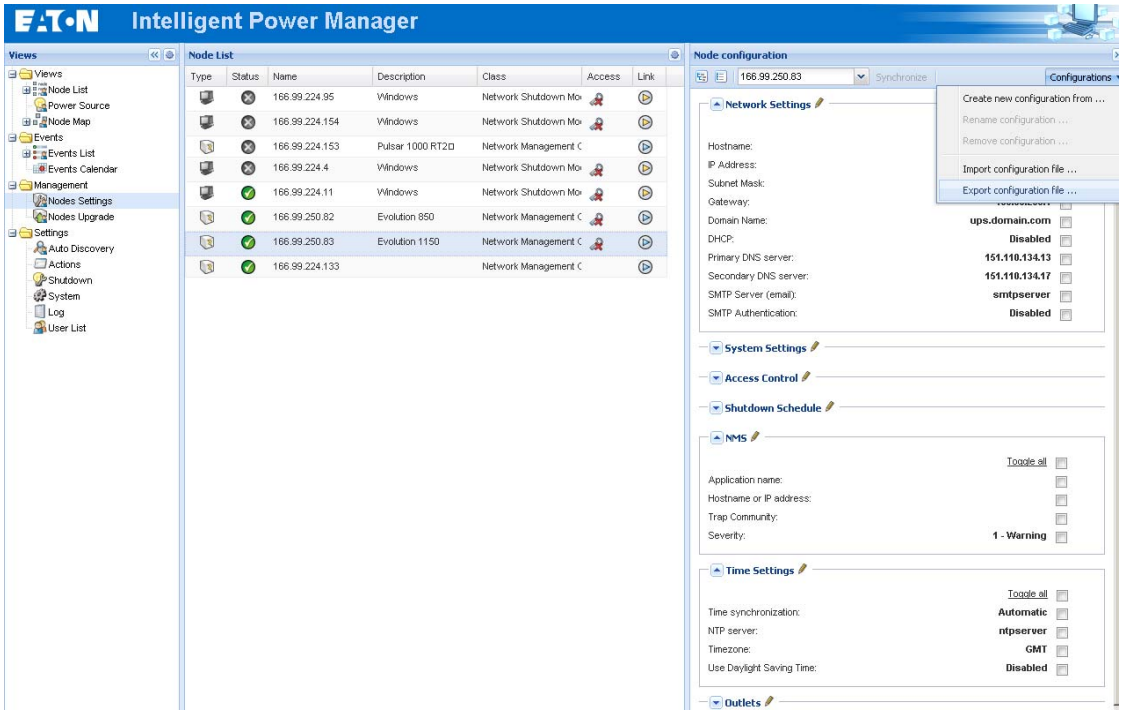
6 Advanced Management

6.1 Nodes Settings

6.1.1 Single node Configuration Display

Intelligent Power® Manager can display the card/application configuration. Proceed as follows:

- select one card from the list.
- after a few seconds, on the right hand, the Node configuration panel is updated.
- Using the Configurations-> Export Configuration file
  you can export this configuration to a file

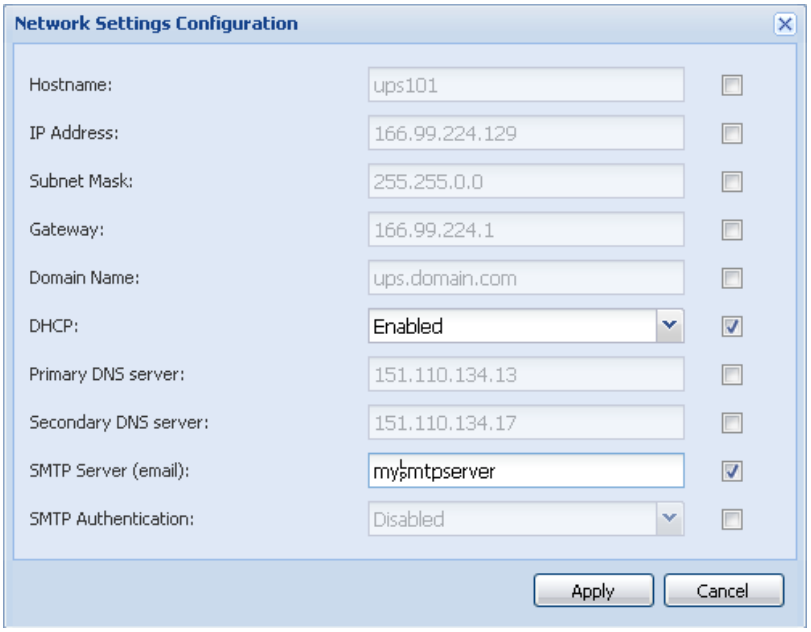


6.1.2 Single Card settings

Intelligent Power® Manager can configure a single card. Proceed as follows:

- login with an **administrator** user profile
- select one card from the list
- from the Node List button -> **Set Login Parameters**, enter the card Login and Password

  The access status changes from: **Access Denied** to **Access OK**
- after a few seconds, the Node configuration panel is updated
- click on the Edit button [or load a previously created configuration]
  In the Configuration Window check the parameters you want to change and fill in the new values



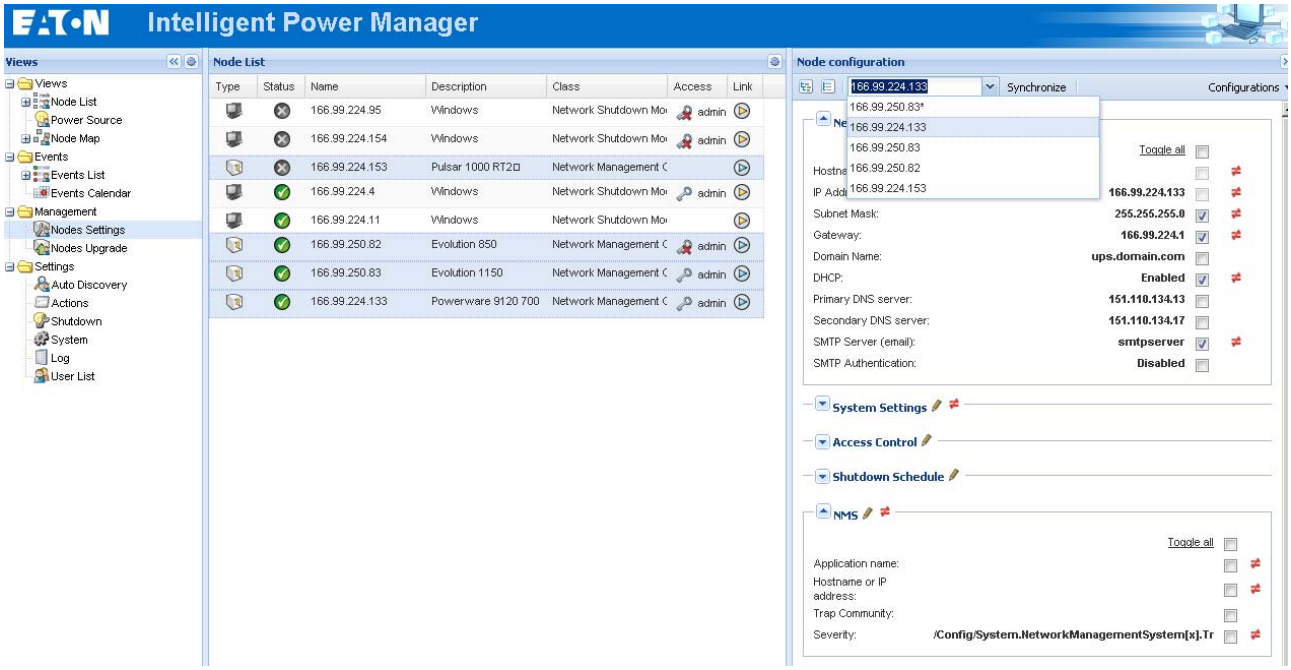
- **Apply**
- the parameters that have different values on the cards and on the configuration to apply have following sign "≠"
- then select the parameters you want to synchronize (with the check box)
- then click on **Synchronize** button

6.1.3 Multiple Cards Configurations Synchronisation

Intelligent Power® Manager can synchronise multiple card configuration. Proceed as follows:

- select several card from the list
- from the Node List button -> **Set Login Parameters**, enter the card Login and Password

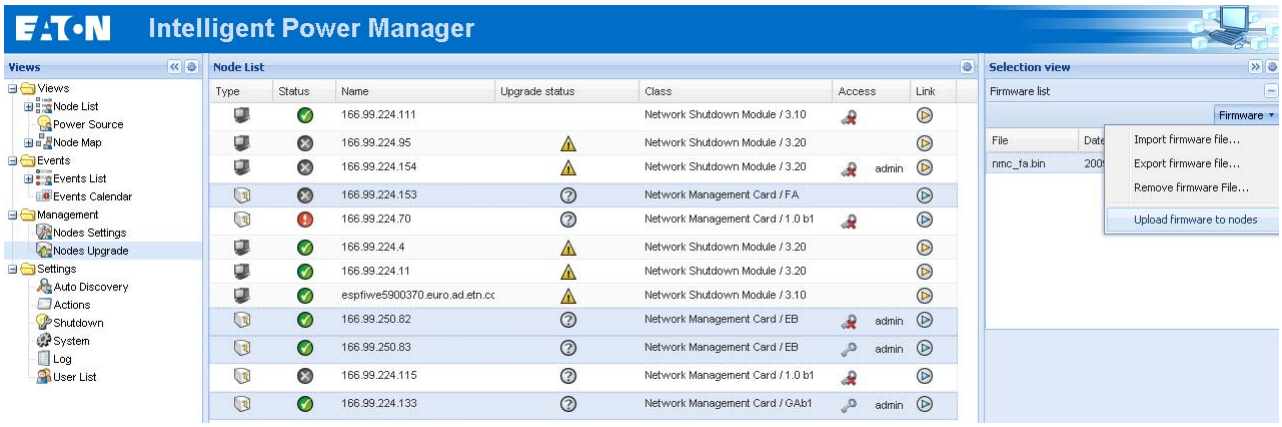
  The access status changes from: **Access Denied** to **Access OK**
- after a few seconds, the **Node configuration** panel is updated
- from the combo box select the configuration that will be the model [or Click on the Edit button]
- the parameters that have different values on the cards have following sign "≠"
- select the parameters you want to synchronize (with the check box)
- click on **Synchronize** button



6.2 Nodes Upgrade

6.2.1 Upload Device Firmware

From the **Management** menu Item, select the **Nodes Upgrade** item:



Perform this procedure to upload a Device firmware:

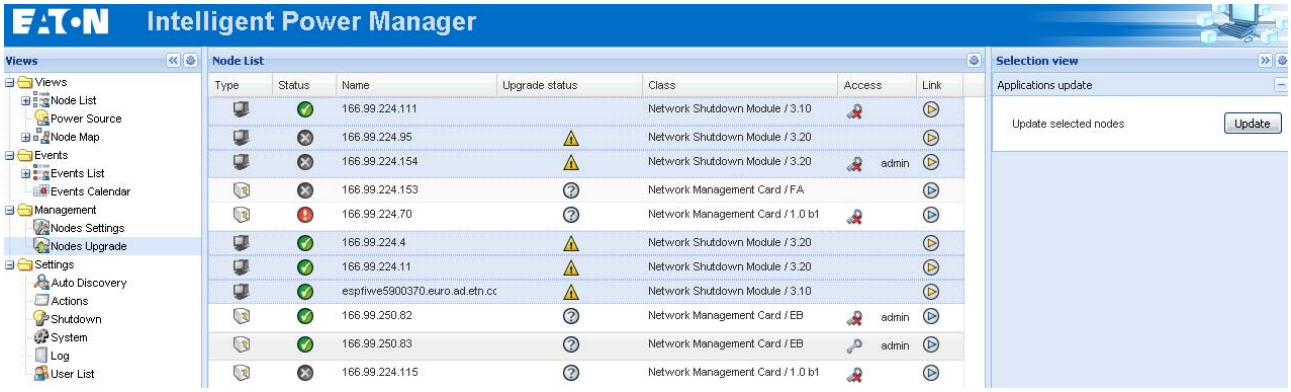
- Select the cards in the List
- From the Node List button -> **Set Login Parameters**, enter the card Login and Password

  The access status changes from: **Access Denied** to **Access OK**
- From the **Firmware -> Import Firmware File…** list box; the uploading window appears.
  > Click **Browse …** to select the firmware from a disk accessible from the computer.
  > Click **Import**.
- Click on **Firmware -> Upload Firmware to nodes**

- The cards will be updated with the firmware selected.

6.2.2 Upgrade applications

From the **Management** menu Item, select the **Nodes Upgrade** item:



Perform this procedure to update the applications:

- Select the applications in the **Node List**
- from the Node List button -> **Set Login Parameters**, enter the access Login and Password

  The access status changes from: **Access Denied** to **Access OK**
- From the **Applications update** panel, click on **Update**
- The status of the Applications with respect to the version is updated.

7 Compatibility List

Eaton has tested the compatibility of Eaton Power Manager with the following devices and applications:

7.1 Eaton Devices

Eaton equipment designation	Type	Features	Illustration
Network Management Card Minislot SNMP/Web – 66102 And associated Environment Sensor	UPS Option Card Eaton Pulsar	Quick Scan Supervision Management Shutdown	
Network Management Card & Modbus/JBus – 66103 (through Ethernet Network) And associated Environment Sensor 66846	UPS Option Card Eaton Pulsar	Quick Scan Supervision Management Shutdown	
ConnectUPS- Minislot Network Management Card / ref 103006826	UPS Option Card Eaton Powerware	Quick Scan Supervision Management Shutdown	
ConnectUPS-BD Web /SNMP	UPS Option Card Eaton Powerware	Quick Scan Supervision	

ConnectUPS-XSlot Web /SNMP/xHubCard (*)	UPS Option Card Eaton Powerware	Quick Scan Supervision	
PXGX2000 (*)	UPS Option Card Eaton Powerware	Quick Scan Supervision	
Eaton ePDU Monitored & Advanced Monitored	PDU Integrated Communication Card	Supervision	
Eaton ePDU Managed	PDU Integrated Communication Card	Supervision	
Eaton ePDU Switched	PDU Integrated Communication Card	Supervision	
MGE Switched PDU NM - 68130 / 68134/56132/56134/56136/56138 MGE AmpMeter PDU NM - 68152/ 56134/56144	PDU Integrated Communication Card	Supervision	
MGE Midspan NM - 66892	Midspan Integrated Communication Card	Supervision	
MGE Network Management Proxy(Windows) XML-Agent	UPS Proxy	Supervision	
Computers (Windows) hosting the application Lansafe Web View	UPS Proxy	Supervision	
MGE Network Management Card Minislot SNMP/Web – 66244 And associated Environment Sensor	UPS Option Card (legacy)	Supervision	
Network Management Card Transverse SNMP/Web – 66074 And associated Environment Sensor	UPS Option Card (Legacy)	Supervision	

*(*)With Intelligent Power Manager 1.00, the Eaton Powerware 3 phase UPSs compatibility is available as a **Beta** release.*

With Intelligent Power Manager 1.10, the Eaton Powerware 3 phase UPSs compatibility is officially available according to the following solution:

- ***Cards:** ConnectUPS-X v4.30 or PXGX2000 v1.20*
- ***UPSs:** Blade UPS, PW9155 Dual Phase, PW9355 10-30 kVA, PW9390 40-160kVA, PW9395 225-1100kVA & SBM*
- ***Known limitation:** PW9315 will not be supported by this 1.10 release.*

***Note:** Intelligent Power Manager 1.10 is available free of charge through Automatic Update Process*

7.2 Applications on Computers

Applications designation	Features	
Computers (Windows/Linux/Mac) hosting the application Network Shutdown Module V3.xx	Quick Scan Supervision Management	

7.3 Other Devices

Equipment designation	Card/ proxy	Features	
APC UPSs	APC Network Management Card	Supervision	
All IETF MIB enabled UPSs (RFC1628) e.g. Liebert, …		Supervision	**STANDARD IETF UPS MIB 1.3.6.1.2.1.33.xx**
PowerDsine series 6000	Card		
Servertech sentry models	PDU Integrated Communication Card		

7.4 Performances

To provide a performance evaluation Eaton has tested the following two configurations:

Test with Machine 1 (server Dell PowerEdge 2900)

- CPU: Intel Xeon 5130 Dual Core @2GHz
- Memory: 2Go DDR2 @666MHz
- HDD: 2 HDDs 67GB 7200 rpm RAID 0 (Mirroring)
- OS: Windows Server 2008 64 bits

Test conditions during 40 hours:

- 1300 nodes (including ~50 real), mainly IPMs, and some NSM and NMC.
- Average CPU load: 20~30%
- Memory load: 200~300MB

Test with Machine 2 (typical PC)

- CPU : Intel Core2 Duo 6600 @2.4GHz
- Memory: 2Go DDR2
- HDD: 1 HDD 220 GB 7200 rpm
- OS : Windows Vista Enterprise 32 bits

Test conditions during 40 hours:

- 1000 nodes (including ~50 real), mainly IPMs, and some NSM and NMC.

- Average CPU load: ~ 60%
- Memory load: 200~300MB

Note that these tests have been performed on Windows server Operating System. The Windows 2003 or 2008 Operating Systems don't have the limitation of 10 simultaneous connections.

8 FAQ and Error messages

In the HTML pages.

Cannot display the UPS properties page. HTTP 404 error with IE.
Solution: Check the URL entered. > https://<name or IP of the computer hosting IPM>:4680/ or > http://<name or IP of the computer hosting IPM>:4679/

9 Glossary

IP address
When TCP/IP is installed on a computer, an address is assigned to the system. Each address is unique and is made up of four numbers, each between 0 and 256 (e.g. 168.8.156.210).

Network Management Proxy
Network Management Proxy is used to control a UPS and connect it to the TCP/IP network.

NMS (Network Management System)
The NMS supervises SNMP devices connected to the TCP-IP Network.

Network Shutdown Module
The Network Shutdown Module is a software module that uses the information transmitted by the Network Management Card/Proxy to inform computer users on the current status of the electrical power supplied to the computer.
If the supply of the electrical power from the UPS is at risk, the Network Shutdown Module initiates an orderly shutdown of the computer under the most secure conditions possible.

SSL (Secure Socket Layer, created by Netscape)
A solution for securing transactions over the internet. SSL is a communication protocol that authenticates the data exchanged, as well as ensuring its confidentiality and integrity. The protocol uses a recognized encryption method, the **RSA algorithm with a public key** (where RSA means Rivest, Shamir and Adleman, the inventors). An RSA key is the result of operations involving prime numbers. SSL is built into the Internet browsers on the market. The padlock in the bottom of your browser screen is automatically displayed if the server sending information uses SSL.

TCP/IP (Transmission Control Protocol / Internet Protocol)
Family of protocols for the transport and network layers.

10 Acknowledgements

Huge thanks from the Eaton software development team to the following projects:

Spider Monkey

Ext JS

SQLite
the SQLite Project http://www.sqlite.org/.
Their generous donation of the source code to the public domain helped us for this project.

Open SSL