

Power Management Solutions

Improve equipment reliability and guarantee data integrity

Uninterruptible power supplies (UPSs) are used as backup systems in case of a power failure to prevent downtime. This type of protection is essential, but is only fully effective if the user is in control of the situation. With Eaton's Power Management Solutions, the user is notified immediately of the status of the power quality and distribution system and can initiate automatic actions depending on the events, control the system remotely and manage it more effectively.



Benefits of using Eaton's Power Management Solutions

- Real-time notification makes it easy to prevent or analyse possible failures immediately
- Helps to prevent data losses by enabling controlled shutdown of servers and PC operating systems
- View and analyse power events and measured values from recorded logs
- Save time and money with remote equipment control, which removes the need for additional site visits to restart equipment. It also enables prolonged runtime of essential equipment during power outages by allowing orderly remote shutdown of non-critical systems and processes.

Connection to IP networks

There are two ways of connecting a UPS to an IP network:

- adding a Web/SNMP card to the UPS, which becomes the interface to the network;
- using a nearby PC or server connected to the network as a proxy.



Network Management Card

Web/SNMP cards are recommended for central UPS systems that protect a complete network or for UPS systems providing back-up for critical equipment. When the card is fitted, the UPS has its own IP address with local intelligence to:

- serve web pages with reports, settings and alarms;
- plug in to SNMP-based network management systems such as Openview, IBM, Tivoli Netview and Computer Associates Unicenter;
- communicate with shutdown software installed on the servers to be protected.

Network Management Proxy

The Web/SNMP Proxy is a more economical solution for small UPS systems. It allows a UPS to be controlled over the network without adding to the basic cost of the UPS. The proxy software agent is installed on the system to which the UPS is connected via a USB or RS232 port. The Web/SNMP Proxy agent is used to manage a UPS remotely using a standard browser or network management system.

UPS system supervision

Supervision using a web browser

A Network Management Card enables UPS management using a standard web browser. The web interface provides details of all UPS parameters, measurements and settings, from any point in the network, by using the IP address of each UPS.

Supervision using a Network Management System (NMS)

SNMP protocol is the standard way of monitoring networked devices such as servers, switches, routers, disks and also UPSs, among other devices. Eaton Network Management Cards communicate with leading NMSs, for example HP OpenView, IBM Tivoli and CA Unicenter, using SNMP. Network administrators can use the same familiar tools and alarm management methods for UPS monitoring as for any other piece of IT equipment. Eaton provides SNMP MIBs (Management Information Base) which cover all the Eaton product-specific functions and data. They can be easily incorporated into NMSs or server management software.

Supervision using Intelligent Power Manager

Easy supervision of power protection and distribution

Intelligent Power® Manager is a software tool for managing networked UPS and PDU systems more easily and at lower cost than the major NMS platforms, and is a dedicated tool for power management functions. Administrators have an overall, consolidated view of the main operating parameters of all UPS systems. The web-based interface is intuitive and easy to use while also having high configurability and powerful features. Devices can be grouped by function or location and sorted according to parameters like status description, type and location. Device icons can be freely placed on background images such as maps or floor plans to aid identification.

Powerful alarm management

Intelligent Power Manager centralises alarm management. It can collate several events into a single message and deliver the message via email or SMS. Events and actions are stored in a log to help in analysing and mitigating power problems. The calendar view provides quick way to get an overview of event history.

Simple start up

Intelligent Power Manager is very easy to install – only a few clicks of the mouse are needed. Once running, the software discovers manageable power devices automatically and is operational in just a few seconds.

Informative views

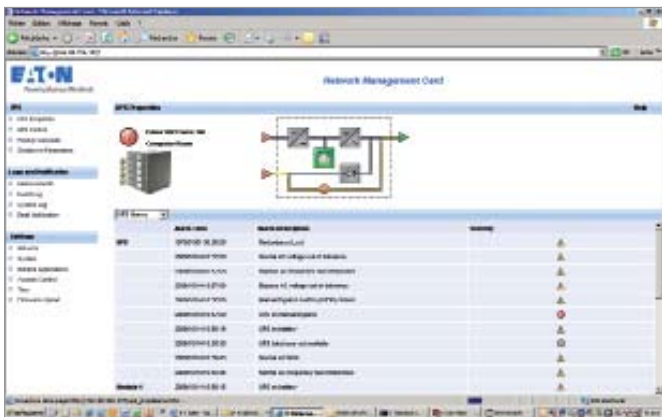
Intelligent Power Manager features several view panels which summarise the operational status of a UPS. Users can choose the most relevant views for their needs. Complete information and control is only a click away, since there is a link to the web interface of each individual device.

Secure operation

Intelligent Power Manager uses Secure Sockets Layer (SSL) and several levels of password (administrator, user, and so on) for comprehensive security.

Scalable and cost efficient

A version of Intelligent Power Manager limited to 10 monitored devices is available free with each networked UPS. This version can also be used to evaluate the software for use with a more extensive network before purchasing the full version, which can be used to manage 100 or more power devices (UPSs and ePDUs).



Protection: shutting down servers

To ensure the integrity of the system and the data, a computer operating system must be shut down in the correct sequence. Dedicated shutdown software must be installed on the servers to execute various functions before the power supply is cut off. These functions include:

- executing a script to close applications running on the server;
- initiating a shutdown sequence or hibernation after a preset timeout or just before total battery discharge;
- rebooting the operating system automatically or manually when the mains power is restored;
- showing UPS alerts to the user.

The Network Shutdown Module can be used to carry out actions selectively for redundant UPS systems (servers with multiple power supplies, paralleled UPSs, etc.) to provide the highest availability and data integrity for the most critical data. Eaton Network Shutdown Modules operate equally well with Web/SNMP card and SNMP proxy systems and can easily be configured remotely via a browser.

Additional functions

Individual outlet socket control

Many systems from Eaton have individual output receptacles for turning groups of devices on and off. This feature is particularly useful for:

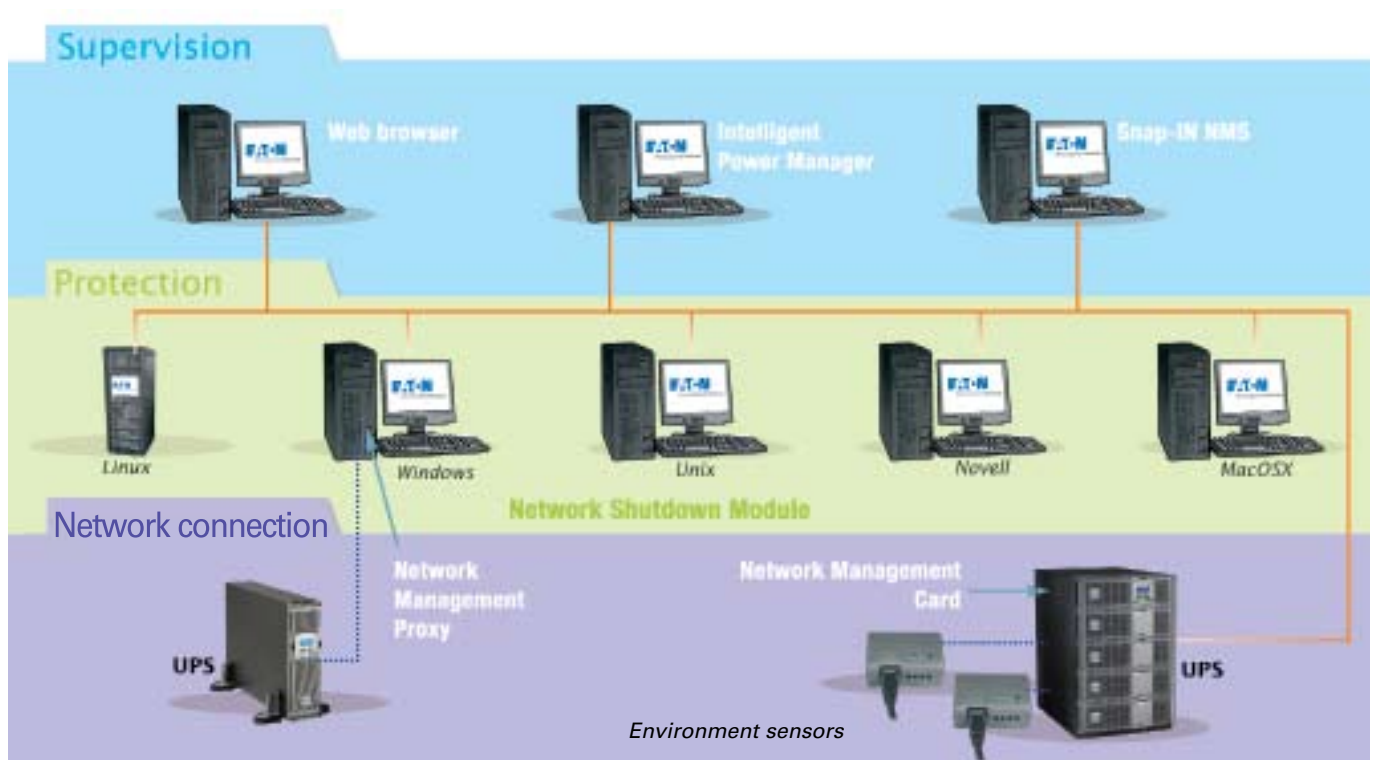
- shedding non-critical systems when there is a power cut;
- defining start-up sequences;
- individual management of several IT systems connected to a central UPS.

Remote on/off control

As an entire UPS or some of its outlets can be turned on and off remotely, it becomes a smart IT equipment switch. This function makes it possible, for example, to restart a locked-up hardware device from a remote site. Outlet control can be automatic or manually controlled locally or remotely.

Saving energy function

This function can be used to program shutdown and restart sequences for all UPS-protected devices. For example, workstations, printers, network devices and selected servers can be shut down and powered off outside of business hours.





Other options

Environment Sensor for Web/SNMP card

UPSs are often used in sensitive environments such as computer bays. Environmental conditions (temperature, humidity and opening and closing of doors) can also affect system availability. To address this, Eaton provides an environment sensor which incorporates a temperature sensor, humidity sensor and two switch inputs. It is designed to work with Web/SNMP cards and can be easily installed in various environments.

Individual computer applications

When the UPS is protecting only one device the point-to-point link (RS232 or USB) is used.

The operating system 'plug-and-play' solution

Some operating systems, such as Windows, have built-in power management functions for critical tasks. Eaton's Pulsar series UPS units are plug and play: when the UPS is connected to the system using a USB cable, the operating system detects the UPS automatically and installs the appropriate drivers.

Personal Solution-Pac

Additional control and settings to those built in the operating system can be provided by the Eaton Personal Solution-Pac. This system can be used to fine-tune shutdown parameters and provide additional capabilities such as controlling individual devices, programming responses to events and calculating true backup time in case of mains power loss.

Linux and Eaton uninterruptible power supplies

For several years Eaton has been actively supporting the trend towards open source software by providing the most advanced power management facilities. One example is the new Personal Solution Pac management system for Linux, which is based on the open source code to which Eaton has made a significant contribution.

Ordering information

Connection to IP networks	
Network Management Card (Web/SNMP)	66 102 NMC "Minislot" for Eaton Evolution and Eaton Evolution S, Eaton EX, Eaton MX, Eaton MX Frame, Eaton EX RT
SNMP Proxy	On the Solution-Pac 2 CD-ROM delivered with most UPSs or free from the web: www.eaton.com/powerquality
Protection	
Network Shutdown Module	On the Solution-Pac 2 CD-ROM delivered with most UPSs or free from the web: www.eaton.com/powerquality
Remote management and monitoring	
Snap-in application for HP/Compaq Insight Manager Management-Pac	Available free of charge from the web: www.eaton.com/powerquality 66 923
Intelligent Power Manager	
Base license (up to 10 devices)	Available on the CD bundled with each UPS or free of charge from the web: www.eaton.com/powerquality
Silver license (up to 100 devices)	66 925
Gold license (unlimited number of devices)	66 926
Other options	
Environment sensor for Web/SNMP card	66 846