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Power management in virtual server environment

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Summary

- Eaton Corporation
- Power Management Software suite
- Power management integration in Virtualization
Powering businesses worldwide for 100 years

- Founded in 1911 by J.O. Eaton
- World Headquarters in Cleveland, Ohio USA
- Regional Headquarters in Shanghai, China; Morges, Switzerland; Sao Paulo, Brazil
- Innovation Centers in the USA, China and India
- Customers in more than 150 countries
- 2010 sales of $13.7 billion, 55% of sales outside the U.S.
- Approx. 70,000 employees
- Chairman & CEO – Alexander M. Cutler
Eaton is a leader across the power management spectrum

We provide reliable, efficient and safe power management for...

Cities & Buildings  Industrial & Machinery  Information Technology  Transportation  Infrastructure  Energy & Utilities
Power Distribution, Power Quality and Industrial Automation from a Single Source
Eaton’s electrical power solutions can help reduce energy usage by up to 30% in buildings.
Power Management Software Suite
Products managed in Montbonnot HQ

Single Phase UPS

Pulsar Series - Powerware Series - E Series

Rack mounted 3 Phase UPS

BladeUPS

Software & Connectivity

ePDU

Critical Sales-enabler for IT Channels

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IT Network UPS management

Connectivity

Network Proxy (IPP) OR Monitored/Managed ePDU

Connectivity card installed on UPSs

Supervision / Administration software

Intelligent Power Manager – standalone or plugged into virtual environment

Protection software

Intelligent Power Protector – installed on protected equipment
Intelligent Power Software Suite

• Two software products
  • Intelligent Power Manager: software for extensive remote monitoring and management
    • Compatible with Windows PCs and servers; VMware’s vCenter™; Citrix XenCenter and Microsoft’s SCVMM
  • Intelligent Power Protector: shutdown software for extended power outages
    • Compatible with Windows, several versions of Linux; VMware’s ESX™ and ESXi™; XenServer, RedHat KVM and Microsoft’s Hyper-V™
Intelligent Power Manager since 2009
(Supervision and management)

- **Multiple OS** (from Windows 2000 to Seven)
- **Interface**
  - Web 2.0 Interface (Selective refresh, Drag and drop, ...) for Power source supervision, Graphs, Events, Calendar, Statistics, Customized Maps ...
  - Multiple languages (11 including Asian languages) & Multiple Browser (IE, Firefox, Chrome ...)
- **Installation**
  - Light weight package (easy installation without dependencies)
- **Nodes acquisition** (Network, USB, RS232)
  - Multi devices supervision (UPS & ePDU)
  - Multi-applications (IPP)
  - Automatic discovery
  - Redundancy supervision
- **Management**
  - ePDU Power measurement
  - Mass Configuration & Mass update & Automatic update
  - Flexible events and actions
  - Server and UPS Dependency
  - Simple asset management
- **Security**
  - Multi level password & https access
Intelligent Power Protector since 2010
Server Graceful Shutdown

- **Multiple OS** (from Windows 2000 to Seven on x86 & x64 / Linux (native packages))
  - Virtual environment (VMWare, Hyper-V, Xen, KVM)
- **Interface**
  - Web 2.0 Interface (selective refresh, Drag and drop, ...) for power source supervision, Graphs, Calendar, Statistics, ...
  - Multiple languages (11 including Asian languages) & Multiple Browser (IE, Firefox, Chrome, ...)
- **Installation**
  - Light weight package with easy installation (without dependencies)
  - Deployment facility (silent install)
- **UPS acquisition** (USB + RS232 + Network)
  - Automatic discovery
  - Redundancy
- **Manageability**
  - Mass Configuration & Update
  - Automatic update
  - Shutdown controller
  - Flexible events and actions
- **Security**
  - Shutdown alarm protection & https access & Multi level password
Power management integration in Virtualization
Virtualization

• What is virtualization?
  - Consolidation of IT applications on virtual machines instead of having dedicated servers per application
  - Virtual machines are independent from physical servers
Virtualization Increases business continuity

- The capability to move and balance the load (VMs)
  - vMotion on VMware
  - Live Migration on Microsoft
  - Xen Motion on Citrix XenServer
  - Live Migration on Redhat Entreprise Virtualization
Power integration in IT Software (VMware)

- Register IPM as a Plug-In in vCenter
- Register new type of event (Power Event)
- Create new alarms triggered from events
# Power Event trig Alarms

![Image of Power Event trig Alarms](image-url)

- **Object:** Eaton Support
- **Status:** Alert
- **Name:** Host UPS Power Failure (OnBattery)
- **Time:** 07/11/2012 16:30:00

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Power integration in IT Software (Citrix)

What is Eaton Intelligent Power Manager?

- Ideal for monitoring and managing multiple power and environmental devices, Intelligent Power Manager software from Eaton delivers a global view across the network from any PC with an Internet browser.

- Exceptionally versatile, the software is compatible with any device supporting a network interface, including other manufacturers' UPSes, environmental sensors, ePOUs, shutdown applications and more.

- Intelligent Power Manager also offers the ability to organize a management table by groups, centralize alarms, and maintain event logs for preventive maintenance of the entire installed equipment base.
The Power Protection

- **Local** Protection Agent (IPP)
  - Closer to the server
  - Need to be installed on each server
  - Installation not always possible (VMware ESXi)
- **Remote** Protection and Management (IPM)
  - Network is critical for the protection
  - Single point of failure
Before the Shutdown

- Move load (VMs) on safe place
Demo: Citrix – Xen Server

- Citrix_IPM demo 4 dec 2011.mp4
For more information

• Learn more about the new Intelligent Power Software Suite and view the product demo at www.eaton.com/intelligentpower