

EAT•N

Powerware

PowerVision® Power Management Software

Technical Focus

Network Edition
Facility Edition

Add an umbrella of protection over your entire power structure

Monitor and manage the essential power protection
infrastructure across the entire enterprise.



PowerVision Power Management Software

Proactively monitor the health and performance of multiple UPSs and other components of the critical power protection infrastructure across the enterprise, from anywhere.

- Unify and centralize supervision of multiple UPSs and other power protection equipment
- Sustain premium power performance through enterprise-wide monitoring and real-time alarm management
- Streamline asset management tasks for all UPSs throughout the network
- Receive automatic reminders of dates for scheduled maintenance and battery replacement
- Stay continuously informed of equipment status with online and wireless alarm notification
- Enhance the reliability of the entire power protection infrastructure through advanced trend analysis tools
- Troubleshoot and predict issues quickly, before they affect performance
- Protect critical data and applications through graceful shutdown of protected servers
- Avoid unnecessary shutdowns of servers protected by multiple UPSs
- Save valuable time and training costs through open communication standards and integration with your existing network and/or building management systems

Your data center and other electronic systems depend on power, but utility power is anything but dependable. So you have uninterruptible power systems (UPSs) on the job to protect critical applications, hardware, and data from all the irregularities lurking in public utility power—to deliver the clean power required for non-stop operations and equipment longevity.

These power protection systems

safeguard segments of your network, but today's realities require even more. You need an umbrella of protection over the entire business, moving ever closer to zero downtime.

That's why Eaton delivers not only UPSs, but also systems that monitor the power protection infrastructure around the clock. In addition to the LanSafe™ software that is included with the

purchase of a Powerware UPS—for monitoring and managing a single UPS—Eaton delivers management systems that continually monitor entire networks of UPSs and other data center elements.

PowerVision power management software is the solution for the progressive system administrator or facility engineer who needs local or enterprise-wide monitoring of multiple UPSs and/or other power components supporting mission-critical applications.

PowerVision is available in two different packages, each tailored to meet the requirements of its unique application:

- **PowerVision Network Edition** provides remote monitoring and computer operating system shutdown for multiple single-phase UPSs and small-to-midrange three-phase UPSs, including Powerware and other products—using industry-standard SNMP communications and integration with popular network management systems.
- **PowerVision Facility Edition** provides one-line detailed UPS information, monitors system status of other elements in the critical power distribution system—such as generators, static switches, power distribution units (PDUs), and air conditioners through alarm contacts—and supports in-depth reporting, analysis, and graphics.

PowerVision Enterprise Manager serves a unique role as an optional enhancement to either edition—providing an enterprise-wide view that spans multiple PowerVision programs across your organization.

As you drive to eliminate every possible point of failure in the IT environment, Eaton is right beside you, with PowerVision systems that enhance the overall reliability of power distribution systems.

An envelope of protection for your entire power management infrastructure— from a standalone UPS to complete data center facilities.

PowerVision
Power Management Software

PowerVision Network Edition

Monitor multiple UPSs in a distributed power environment over your existing local area network.

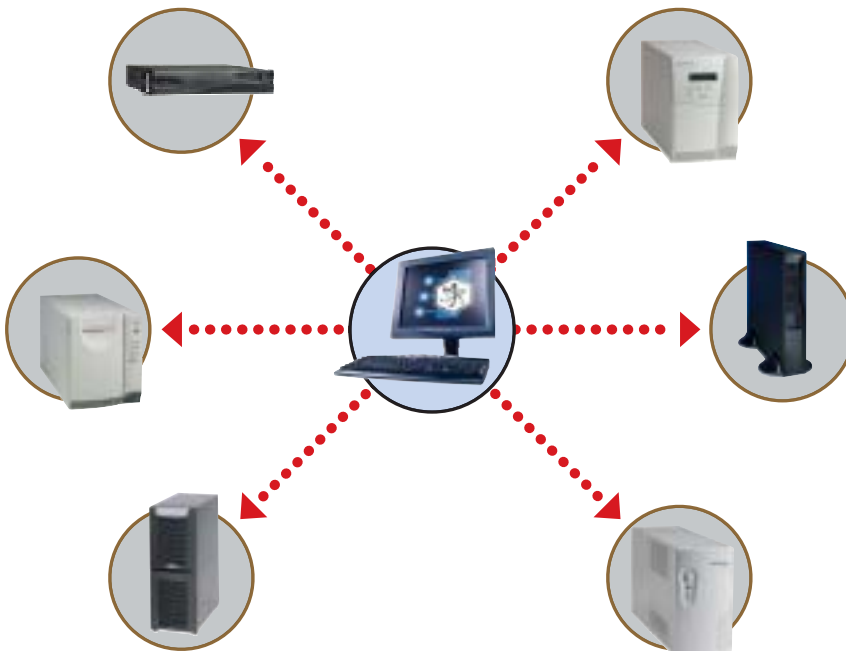
Features

- Ease UPS management with the ability to automatically discover UPSs connected to the LAN
- Empower IT personnel with high-level power status information
- Automate the tagging and inventory of all UPSs installed on the enterprise network
- Manage battery replacement dates with programmable calendar reminders
- Gracefully and automatically shut down protected servers to preserve critical data during a prolonged power outage
- Save time and training costs using standard SNMP integration with popular network management systems
- Gain enterprise-wide perspective on UPS performance by adding PowerVision Enterprise Manager

Monitor all networked UPSs from a central location.

With a standard connection to your company network, every connected UPS can share status and performance data with the PowerVision software system—whether it's a Powerware UPS or not. Getting started is easy. PowerVision automatically locates all UPSs on the network and presents a list. Just pick which UPSs to bring into PowerVision, and go. You don't need to know the IP addresses.

For remote UPSs equipped with Environmental Monitoring Probes (EMPs), PowerVision can monitor temperature and humidity, along with two additional sensor inputs, such as from smoke, intrusion, and motion detectors. Eaton can customize your PowerVision Network Edition to support other SNMP-enabled devices, such as small PDUs, spot air conditioners, or sensors in intelligent racks. With standard and custom capabilities, you can continually keep tabs on sites that may be hundreds or thousands of miles away.



PowerVision Network Edition monitors multiple UPSs in a distributed environment over your existing local area network.

Monitor and manage power protection systems—from a single UPS to a complete facility infrastructure—from anywhere.

Streamline asset management tasks for all connected UPSs on the network.

Network administrators can now easily manage a vast array of UPSs distributed throughout a large campus network. Even though network configurations and job responsibilities may be constantly changing, you'll always be able to easily manage UPS installation dates, preventive maintenance dates, and battery replacement dates.

PowerVision Network Edition

(continued)

Receive immediate notification of alarm conditions.

Administrators can monitor the working status, performance, and environmental conditions of multiple UPSs from a single workstation—communicating over your enterprise LAN, wireless LAN, or the Web.

At their workstations, administrators receive immediate notification of alarm conditions through pop-up dialog boxes, audible alarms or blinking, and color-coded icons. When away from their desks, they stay continually informed through alarms automatically delivered to their pagers, email, or via SNMP traps sent to a network management system.

Who receives alarms and alerts, on which devices, under what conditions, with what automatic action taken... these considerations and more can be completely customized to address your unique requirements.

Whether at home, or simply off-site, administrators have at their fingertips the early warnings and tools they need to keep operations running smoothly.

Automatically shut down remote servers during outages.

The real test of a power protection strategy is what happens when the power goes out, and that's where PowerVision really shines. Since you know UPSs are operating at peak performance, you know there will be a smooth transfer to backup power, and back again. If it looks like an outage will last longer than available backup power, PowerVision gracefully shuts down servers, so you won't lose data or lock up systems.

Here's a special PowerVision feature... if a server has two

power supplies, protected by separate UPSs, PowerVision knows it shouldn't shut down the server unless both UPSs say so. Other UPS monitoring software in the market today will shut down the server if either UPS deems it necessary, even though the second power source may be performing quite normally—which causes unnecessary downtime and administrative burden.

Save time and training costs by integrating with your existing network management system.

Simplify your management activities by enabling PowerVision Network Edition to share its information with your familiar network management system (NMS). If PowerVision detects a change in status on either a standard event or a complex event programmed by you, the system sends an SNMP trap to your NMS. The familiar software that delivers alerts from other network equipment is now empowered to deliver messages

from PowerVision as well. PowerVision intelligently correlates many conditions within the system, so you won't receive nuisance alerts, just notification of meaningful events of concern.

Gain an enterprise-wide perspective on UPS performance—from anywhere.

Transform PowerVision Network Edition into an enterprise-wide UPS management system by adding optional PowerVision Enterprise Manager software. Your domain of control can now span multiple local area networks, reaching out to a virtually unlimited number of UPSs (including optional Environmental Monitoring Probes) in many locations.

PowerVision Enterprise Manager

Centralize monitoring and reporting of power conditions, system health, and performance across the enterprise, from one location.

PowerVision Enterprise Manager provides an enterprise-wide view of distributed power protection strategies, overseeing multiple PowerVision Network Edition systems across the organization. Administrators can supervise all UPSs installed in large and dynamic organizations, run centralized inventory and health reports, and always maintain up-to-date records on preventive maintenance and battery replacement dates.

With a big-picture perspective—clarified through on-demand, system-level reports—more educated

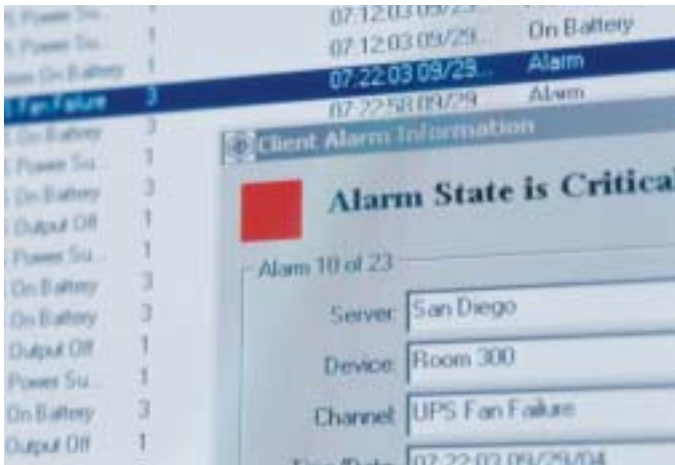
decisions can be made at the corporate level to optimize future expansion and maintenance. That's business intelligence with bottom-line benefits.

With PowerVision Enterprise Manager, you can drill down to diagnose power sources, UPS electronics, power performance... even operating conditions. You can display real-time information in multiple views... organize equipment into logical groups... and show different views for multiple UPSs on screen at the same time. You'll have a clear

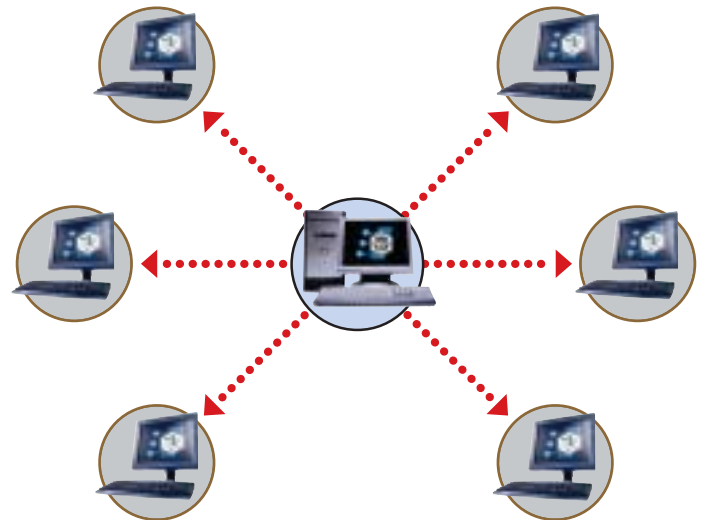
picture of when preventive maintenance is due, or when batteries are reaching the end of service life... or a current inventory of all your power protection assets.

As your organization adds more PowerVision Network Edition systems, it's easy to bring those systems and their UPSs into the enterprise-wide perspective. This phased approach makes PowerVision Enterprise Manager a valuable option for meeting immediate needs and expanding for the future.

Select the right level of monitoring and management for your organization—the optimal balance between risk-reduction and cost, with the core software and options that suit your unique requirements



With PowerVision Power Management Software, you can receive immediate notification of alarm conditions.



PowerVision Enterprise Manager oversees multiple PowerVision Network Edition systems across the organization.

PowerVision Facility Edition

Introducing the industrial-strength monitoring solution for a wide-range of UPSs, including multi-module, synchronized parallel UPS configurations and other components of a centralized critical power protection infrastructure.

Features

- Monitor a diverse range of UPS sizes across the enterprise from a central location, or via the Internet and mobile devices
- Provide detailed UPS information to facility personnel
- Monitor multi-module, synchronized parallel UPSs featuring Powerware Hot Sync™ technology
- Supervise other elements of the power protection infrastructure, in addition to UPSs
- Gauge UPS health and performance and plan proactive action with analytic reporting tools
- Integrate with standard building management systems
- Gain enterprise-wide perspective on the performance of UPSs and power protection devices by adding PowerVision Enterprise Manager

PowerVision Facility Edition network management software is the solution for system engineers who need facility monitoring of UPSs and other infrastructure components, detailed one-line UPS diagrams, real-time data plotting, asset tagging, preventive maintenance scheduling, and the ability to not only track the past but also predict the future.

Monitor diverse and large UPS systems across the enterprise.

Administrators can monitor all Powerware UPSs from 1 to 750 kVA—including UPSs that are configured to parallel with Powerware Hot Sync technology, whereby multiple modules perform as a single UPS entity. You can also monitor the status

of standards-compliant UPSs from other vendors. There's no need to support multiple workstations and systems just because you have a multi-vendor environment.

Monitor other elements of the power distribution and environmental subsystems.

Working with a PowerVision Data Acquisition Terminal, PowerVision Facility Edition can gather alarm/status information from up to 16 different third-party devices using relay contacts. From a single management system, you can monitor many different elements of the electrical distribution and environmental subsystems, such as standby generators, automatic transfer switches, power distribution units (PDUs), DC flywheels,

DC rectifiers, battery monitoring systems, and transient voltage surge suppressors (TVSSs).

Never again wonder if environmental conditions, intrusion threats, or equipment malfunctions might be causing harm at remote locations.

Analyze historical trends and generate predictive insights.

Using PowerVision Facility Edition (or Network Edition enhanced with Enterprise Manager), you can investigate past trends to better predict—and prepare for—the future. Integrated data analysis tools identify trends and reveal cause-and-effect relationships that accelerate troubleshooting and resolution. Data files are created in ODBC-compliant format for sharing with other database programs.

Standard and custom reports. Receive a broad selection of pre-defined reports, such as: Alarm History (1, 7, or 30 days), Notes History (1, 7, or 30 days), and a log file of administrative functions, such as logon/off, alarm acknowledgement, etc. A robust, built-in reporting-writing tool makes it

easy for users to develop custom reports in ASCII format, which can be viewed with any standard text viewer.

Real-time and historical graphing. Powerful built-in graphics can quickly reveal trends that might be hidden in text reports.

- Burst graphs plot real-time data for up to 20 channel traces, such as input voltage and battery voltage
- Historical graphs extrapolate past data to reveal trends that can help predict future alarm conditions
- Projection graphs analyze current power trends to accurately predict battery runtime and/or proactively size future UPS capacity requirements

Predictive reporting capabilities enable you to prepare for future events and prevent issues before they occur. For example, with graphs of battery, load, and temperature data, you'll always know whether batteries are healthy, how much capacity to plan for, and how to prevent overloads or overheating.

Integrate with Building Management Systems.

Add the Modbus Gateway option to PowerVision Facility Edition to integrate with your standards-compliant building management system (BMS), distributed control system (DCS), or SCADA system —

Add value and confidence to any power protection environment

The culmination of 40 years of R&D excellence, PowerVision delivers confidence.

With PowerVision, you have the tools and insights to keep your critical power infrastructure running at optimum performance and availability—the essential foundation for the "five-nines" and higher availability that data center managers are being pressed to deliver.

Even if administrators are at home, off-site, or attending to other tasks, they have at their fingertips the early indicators and tools they need to prevent power-related system crashes, avoid data loss and corruption, protect hardware or firmware from damage, and ensure trouble-free operations.

Consider what PowerVision can do for your organization:

- Enterprises of all sizes use proactive monitoring and automated shutdown to ensure peak performance from UPSs and in turn, peak availability of essential IT systems
- Healthcare institutions rely on UPS monitoring and notification to keep diagnostic and treatment systems up and running
- Industrial managers count on PowerVision to alert them to dust, vibration, or moisture that would damage their electronics
- Government and financial institutions satisfy federal privacy and transparency regulations with PowerVision's secure communications and audit trails
- Telecommunications companies count on remote monitoring

and notification to meet service level agreements and prevent theft of service

- IT organizations receive "first responder" knowledge of underlying power conditions to keep their critical servers running

Anywhere you rely on electronic systems, PowerVision delivers confidence—confidence that power protection systems are doing what they should... that personnel will receive immediate alerts, in time to resolve, not just react... that you can foresee and plan for the future.

Confidence... from Eaton, a global leader in power protection systems with the Powerware line of UPSs and power management systems.

To find out more about how PowerVision UPS management software can enhance the reliability and value of your power distribution

system, visit our Web site at www.powerware.com or call us at 1-800-356-5794.

With PowerVision, you can always be assured that:

- **Power protection systems are doing what they should**
- **Personnel will be immediately notified of alert conditions**
- **Potential trouble can be foreseen and averted**

Features	PowerVision Network Edition	PowerVision Enterprise Manager	PowerVision Facility Edition
Monitoring of multiple UPSs via SNMP with auto-discovery	•		•
Monitoring of other equipment relay contacts over network			•
Alarm notification via email, alphanumeric pagers, and SNMP traps	•	•	•
Integration with building management systems via optional modbus gateway			•
Built-in intelligent shutdown of computer operating systems powered by multiple UPSs	•		•
Standard and customizable equipment graphics and system one-line diagrams		•	•
Standard and customizable event logs and data reports	•	•	
Historical database of all monitored data for 3 years	•		•
Advanced statistical analysis and graphing of multiple parameters simultaneously		•	•
Centralized monitoring of multiple PowerVision installations from a single desktop		•	

POWERSHIELD EDITIONS - Supported Operating Systems

Operating systems are running on 32-bit processors unless otherwise specified.

Windows

Windows 2000 Server
 Windows 2000 Advanced Server
 Windows 2000 Server Professional
 Windows XP Home Edition
 Windows XP Professional
 Windows Server 2003 Standard
 Windows Server 2003 Web
 Windows Server 2003 Enterprise *

* Includes support for 32- and 64-bit processors

Note: It is recommended that you install the latest service packs and patches for the operating systems listed above.

Windows Minimum Requirements

- Installed TCP/IP networking
- 200 MHz processor
- 64 MB RAM (Recommended: 128 MB)
- 250 MB of available hard disk space (Recommended: 1.5 GB; depending on the number of devices being monitored)
- 30MB of available hard disk space
- For optimum viewing, set the monitor resolution to 1024 by 768 pixels and 16-bit color (thousands of colors) with the system task bar hidden.

Optional Items

- Local printer for hard copy outputs
- Sound card for assigning sounds to specific alarm conditions
- Modem for remote alarm notification

POWERSHIELD SHUTDOWN AGENT - Supported Operating Systems

Windows

Windows 2000 Server
 Windows 2000 Advanced Server
 Windows 2000 Server Professional
 Windows XP Home Edition
 Windows XP Professional
 Windows Server 2003 Standard
 Windows Server 2003 Web
 Windows Server 2003 Enterprise

UNIX

HP-UX v. 10.x and higher
 IBM AIX v. 4.x and higher
 Sun Solaris v. 6.x and higher
 SGI Irix v. 6.3 and higher
 Linux (kernel version 2.2 and higher)
 BSD OS v. 4.x and higher

Novell NetWare

Netware v. 4.11 and higher, requires TCP/IP

POWERSHIELD SUPPORTED DEVICES

Uninterruptible Power Systems

Network Edition	Facility Edition
Powerware 5115 RM	Powerware 5115 RM
Powerware 5125	Powerware 5125
Powerware FERRUPS	Powerware FERRUPS
Powerware 9 Prestige	Powerware 9 Prestige
Powerware 9110	Powerware 9110

POWERSHIELD SUPPORTED DEVICES CONTINUED

Uninterruptible Power Systems

Network Edition	Facility Edition
Powerware 9120	Powerware 9120
Powerware 9125	Powerware 9125
Powerware 9150	Powerware 9150
Powerware 9155	Powerware 9155
Powerware 9170+	Powerware 9170+
Powerware 9305	Powerware 9305
Powerware 9320	Powerware 9320
Powerware 9330	Powerware 9330
Powerware 9335	Powerware 9335
Powerware 9340	Powerware 9340
Powerware 9390	Powerware 9390
IPM BP-IV	IPM BP-IV
Generic third party UPS	Generic third party UPS
Generic redundant units (1+1)	Generic redundant units (1+1)

Powerware 9315
Powerware 9315 Reverse Transfer Module
Powerware 9315 Hot Sync Parallel Redundant (2 Module)
Powerware 9315 Hot Sync Parallel Capacity UPM
Powerware Hot Sync Parallel Capacity SBM
Powerware 9330 Hot Sync Parallel (2, 3, or 4 Module)
Powerware 93xx Hot Sync Parallel (2, 3, or 4 Module)
B4000 (Modbus RTU/TCP)
IPM BP-Plus
IPM BP-II
IPM BP-III

Other equipment types supported via the PowerShield DAT

- Air Conditioner
- Auto Transfer Switch
- CellWatch
- Fire Detection
- Flywheel
- Generator
- Intergy SM50
- Leak Detection
- PDU
- Security Alarm
- Smoke Detection
- Static Switch
- Switchgear
- TVSS

Connectivity Devices Supported

- ConnectUPS-X Web/SNMP 10/100 Card (X-Slot) (firmware v3.11 or higher required)
- ConnectUPS-E Web/SNMP 10/100 network adapter (firmware v3.11 or higher required)
- ConnectUPS-BD Web/SNMP 10/100 Card (X-Slot) (firmware v3.00 or higher required)
- ConnectUPS-M (firmware v4.01 or higher required)
- X-Slot Single Serial Port Card
- Multi-Server Card (firmware v2.05 or higher required)
- Expansion Chassis with compatible option card
- PowerShield DAT (PowerShield Facility Edition only)

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