



CONNECTIVITY SOLUTIONS

Campus Building Complexes
Remote Branch Locations
Data Centres



**NETWORK ADAPTERS - SNMP, WEB, MODBUS/J-BUS
SOFTWARE FOR AUTOMATED SERVER SHUTDOWN
SOFTWARE FOR MONITORING AND MANAGEMENT**

Data Centres

PROFILE

Large data centres are typically powered by redundant power feeds covered by redundant UPS, backed by generators.

In smaller data centres, a single UPS may be the only defence against downtime from utility failures.

Server Consolidation and Mainframe Migration promise lower costs, greater flexibility - and new problems.

Unified Infrastructure Monitoring

Heat from high density server racks and blade frames can result in hotspots that reduce server life and reliability.

Safe Server Shutdown & Load Shedding

Today's data centre staff are outnumbered by server computers. Instead of one or two servers powered by a small rack UPS, multiple server racks share a central or zone UPS.



NEEDS ASSESSMENT

- Would unified monitoring of power, environment and related physical infrastructure give you the insight you need without the complexity of multiple monitoring systems?
- Do you have multiple servers running different operating systems sharing one UPS system?
- Do you need to shut down servers automatically before UPS batteries are depleted during a prolonged outage or when room or enclosure temperatures exceed a threshold?
- Would it be helpful to shutdown less essential servers sooner during an extended power fail, to reserve battery capacity for business-critical servers?
- You have a parallel/redundant UPS system. Who should be notified by e-mail when situations develop that threaten redundancy in the power delivery system?



Solutions for Data Centres

Masterguard offers several families of mid and high power UPS and static switches for large and small configured as a data centre projects.



MopUPS® PROFESSIONAL P/R EDITION is software that installs on a server computer to monitor multiple UPS modules configured as a *parallel or redundant system*. P/R watches for system events and module events including lost redundancy due to load changes or module faults. MopUPS® PROFESSIONAL P/R EDITION will shutdown the host server safely, as well as other servers on the network, when events threaten power availability.



MopUPS® NSA (Network Shutdown Agent) is software that installs on server computers to listen on the network for a shutdown signal from MopUPS® PROFESSIONAL P/R EDITION or ManageUPS NET ADAPTER. Sequenced automated shutdown of less critical server groups reduces the load on the UPS and extends battery time to the most critical servers and network infrastructure.



ManageUPS NET ADAPTERS

For smaller, stand-alone facilities with a small number of UPS, ManageUPS adapters are a complete UPS monitoring and management tool with embedded e-mail alert sender, WEB server, network server shutdown controller and on-board event/data logging.

Optional Environment Sensor monitors ambient temperature and humidity plus three inputs for monitoring status of generators, air conditioning units, enclosure doors or other devices that communicate status via standard volt-free relay contact points.

For large facilities with enterprise monitoring systems for ICT Network or Building Infrastructure, ManageUPS adapters host UPS management agents that support SNMP or MODBUS-TCP over ethernet, or Modbus-RTU/JBUS over RS232/422/485 networks. ManageUPS adapters also host optimized management agents for central monitoring of distributed UPS via Masterguard's ManageUPS CIO.



ManageUPS CIO software for central management of multiple UPS and Environment Sensors in larger or multiple data centre facilities. A multi-level pin map helps visualize problem spots by country, city, building or room floor plan.

Total Solutions Approach

SECURE POWER CONSULTANCY

Masterguard works closely with facilities managers, consultants, contractors and power specialists to ensure that secure power is designed in from the start.

Our project management teams work alongside customers to manage your complete project rollout and ensure a successful implementation.



You can rely on our comprehensive power consultancy team to audit requirements and propose solutions.

Each Data Centre, Server Room, Facility Complex or Remote Location is different - different systems from different vendors, supporting different business processes.

Each Facilities Management and ICT team have different priorities, policies and methods.

Monitoring Systems Integration

Facilities and ICT teams may each want to monitor UPS status through separate building and network monitoring systems.



Automated Incident Response

The ICT team may want automatic safe shutdown of server computers during extended mains failures, environment over-temperature situations or other faults.

Facilities team may want UPS powered off after servers have been secured to reduce heat generation when air conditioning systems are without power.

Incident Notification

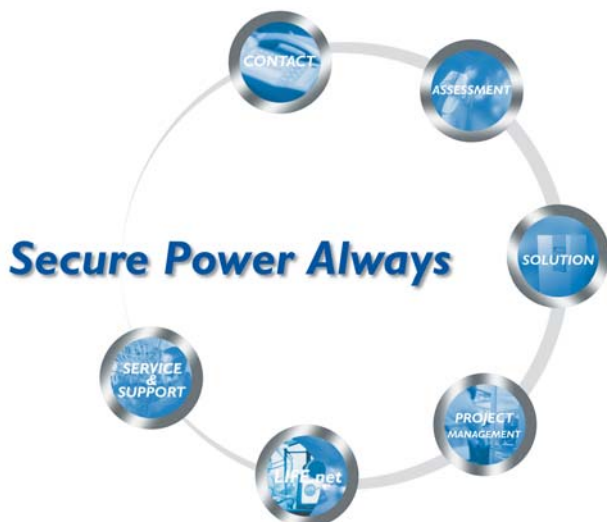
Network operations managers, server administrators, help desk personnel or facilities managers - each want to be notified of incidents that threaten uptime in their area of responsibility.



NEEDS ASSESSMENT

- Who needs to know about incidents that put power availability at risk?
- Should we integrate UPS status into systems for building monitoring, network monitoring or both?
- Are there other parts of the critical infrastructure that should be monitored along with the UPS?
- Have we provided for automated safe shutdown of server computers during extended mains fail?

Whatever the situation or requirement Masterguard Connectivity specialists are ready to help with planning and installation of best practice solutions for both ICT and Facilities Management communities.



Distributed UPS in Campus or Building Complexes

PROFILE

Education, Healthcare, Manufacturing, Research and Office facilities are complex networks with distributed UPS modules in many locations.



Transportation networks present a similar challenge - a significant amount of real property with distributed power systems, managed by a small team of Facilities Managers.

Simplified Monitoring Optimized for UPS Management

Full scale Building Monitoring and Control Systems can be expensive and complex. Masterguard has elegantly simple yet effective solutions that allow central monitoring of alarm conditions, provide automated incident notification via email, and allow remote visibility of key performance measures.



NEEDS ASSESSMENT

- Do your facilities power systems specialists need a central monitoring system that is simple to install and still lets them monitor power loadings, line voltage variations, battery usage history and current alarms in distributed UPS?
- Do you prefer to use the existing IT communications network to reduce cabling expenses and allow incident messages to be sent simultaneously to multiple communities who need to know?
- Would you like to consolidate messaging from simultaneous events to avoid alarm storms?
- Do you have existing 3rd-party UPS as well as a Masterguard UPS that you would like to monitor under one unified system?



Solutions for Distributed UPS in Campus Building Complex



ManageUPS NET ADAPTER is a *self contained remote monitoring system* for Facilities or ICT Managers responsible for a small number of UPS systems. Adapters provide for simple e-mail incident notification and remote access for follow-up via internet-enabled PDA.



ManageUPS CIO software for central management of multiple UPS and Environment Sensors .

The optional BACnet service module simplifies integration with higher level building monitoring systems.

UPS in Remote Branch Locations

PROFILE

Government Service Offices, Restaurants, Convenience Stores, Hotels, Retail Banking and other remote site operations face a combined challenge:

- Facilities and ICT teams need to manage a significant and variably ageing asset base, comprised of hundreds of low power UPS systems, located in geographies far from central expertise.
- Hundreds of low-power UPS provide secure power to hundreds of customer-facing ICT systems that record financial transactions, report inventory flow and manage labour time tracking.



NEEDS ASSESSMENT

- You plan to install software for UPS monitoring and safe server shutdown. How do you configure systems for remote locations - load a master system image at a staging lab, or use automated "bare metal" provisioning?
- Would it be useful if the UPS monitoring software works together with the UPS and server system to enable scheduled server shutdown and restart for periodic system grooming, energy saving or security?
- Would you like to receive an e-mail notification whenever incidents occur that may require investigation and corrective action to ensure UPS assets deliver expected ROI?.
- How will you keep track of the status of remote UPS? Would you be interested in evaluating a central monitoring system to help simplify this task?



Solutions for remote branch locations

Masterguard offers several families of low power UPS at different price points and feature sets to allow cost/benefit matching that best suits specific project requirements.



MopUPS
PROFESSIONAL

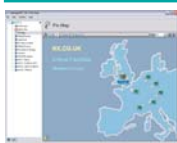
MopUPS® PROFESSIONAL is network enabled, server shutdown and UPS monitoring software that supports scheduled system shutdown and restart and includes proxy agent functionality for integration with ManageUPS CIO or SNMP-based network monitoring systems.



Options for enhanced manageability and flexibility include;

Full Featured **ManageUPS NET ADAPTER** with embedded SNMP/WEB agent, Network Shutdown Controller, Event/Data Logging and optional Environment Sensor for unified infrastructure monitoring.

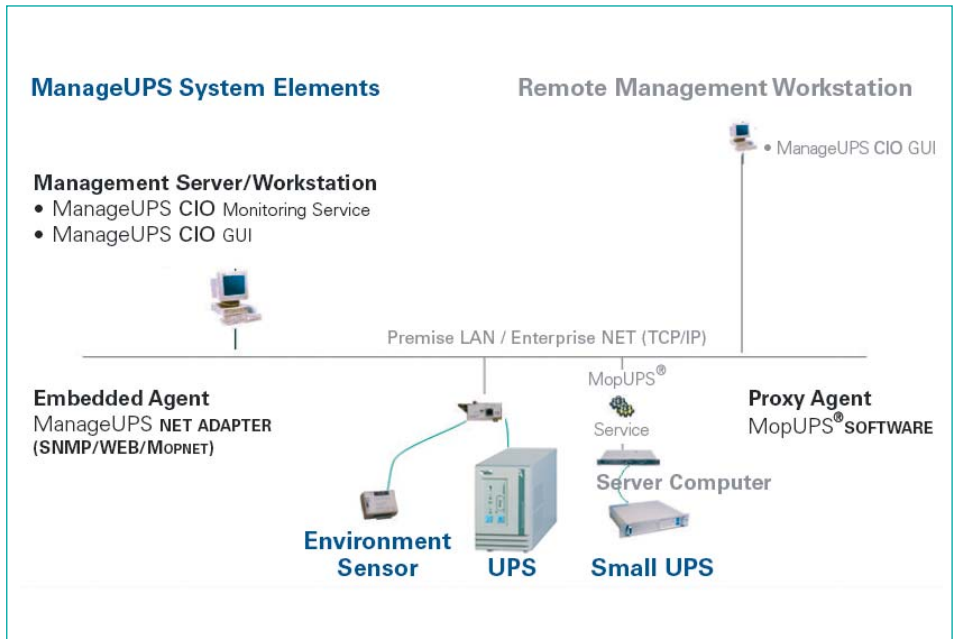
ManageUPS ValuePoint NET ADAPTER with embedded SNMP/WEB agent and essential management features (available from July 2007).



ManageUPS CIO software for central management of remote-site UPS in wide area network environments with "always-on" TCP/IP connections between remote locations and central monitoring location.

Portfolio of Solution Elements

Masterguard's Connectivity portfolio includes network adapters and software that work alone or together to deliver simple solutions to complex requirements.



ManageUPS NET ADAPTER and MopUPS Professional software can each be complete UPS monitoring solutions for people responsible for small numbers of UPS systems.

ManageUPS and MopUPS can also serve as management agents for central monitoring systems that oversee larger populations of distributed UPSs.

ManageUPS NET ADAPTERS



Specialized Micro-Computers with Embedded Software for UPS Monitoring



ManageUPS NET ADAPTER II - SNMP/WEB for UPS

Embedded WEB server and SNMP Agent (RFC1628). DHCP or static network setup. Event and data logging. E-Mail incident messaging. Network Shutdown Controller calls server group shutdown with four delay schedules. Includes ManageUPS DCU Discovery and Configuration Utility software for easy setup and maintenance.

ManageUPS NET ADAPTER II +E - SNMP/WEB for UPS and Environment

All the same features as the standard adapter - with added support of up to 16 environment sensors.

Each sensor measures ambient temperature, relative humidity, three input-volt-free relay points. Includes one output control relay for automated incident response.

ManageUPS NET ADAPTER II +B - MODBUS (Jbus) RS232/485 or MODBUS IP (TCP/IP Ethernet)

Provides UPS Status information via embedded WEB server and MODBUS (JBUS) protocol converter for direct integration with Building Monitoring Systems.

Media supported include RS232, RS422 and RS485 serial protocols and MODBUS IP over Ethernet.

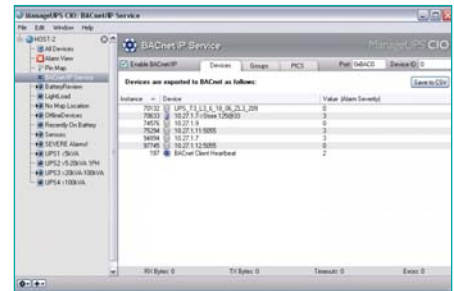
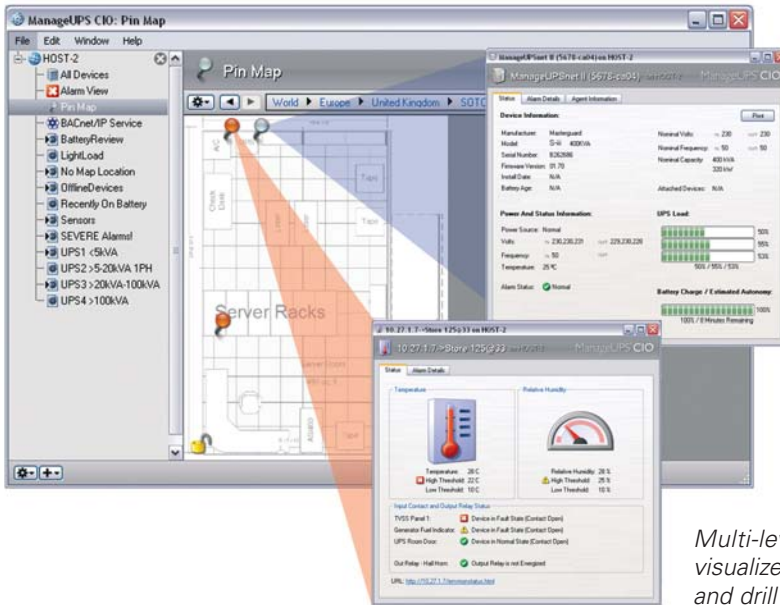
VOLT-FREE RELAY CARD

Provides essential UPS status information via volt-free signal contacts. Indicates On-Battery, Low Battery and Summary alarm conditions. Compatible with Series A, A-19, E, EI and EI-19 UPS model families.

MESSAGE: Automated messages on faults or events.

MANAGE: Incident history logged for event correlation, system improvement and maintenance planning.

SHUTDOWN: Safe server shutdown on power or environment faults to protect data and equipment.



The optional BACnet service allows easy integration with most building monitor systems over TCP/IP.

Multi-level Pin-Map lets you easily visualize where incidents are occurring and drill down to the device detail.

ManageUPS CIO Central Monitoring System for Distributed UPS and Critical Infrastructure SOFTWARE

Drag and drop map background simplifies setup and configuration. SmartGroup mechanism lets you define rules for incidents of interest to you. E-mail notify on SmartGroup incident activity keeps you informed. Print report or export lists of devices and properties of interest. Thin-client GUI installs on multiple workstations for easy access anywhere. ManageUPS CIO is available for Windows® or Linux server platforms.

MopUPS® SOFTWARE

Software for UPS Monitoring and Safe Shutdown of Computers running Microsoft® Windows® or Open Systems.



MopUPS® PROFESSIONAL

Used in applications where one or more servers on a single UPS require graceful shutdown during extended power failures. Professional networking capabilities include e-mail event messaging, remote administration, remote monitoring integration with ManageUPS CIO and shutdown of multiple Windows® servers via remote log-in over TCP/IP. Supports Windows®, Linux, Unix and NetWare® OS.

MopUPS® PROFESSIONAL P/R EDITION - FOR PARALLEL/REDUNDANT UPS SYSTEMS

Serves as a central monitoring station for parallel UPS system. UPS status information is retrieved via tcpip network connection to ManageUPS NET ADAPTERS.

Perfect for server clusters and blade servers powered by redundant UPS. MopUPS® PROFESSIONAL P/R EDITION monitors redundant server UPS and remote UPS powering SANs, switches, routers or other IT infrastructure that servers may depend on. Notifies when load levels or module faults threaten UPS redundancy or availability of remote network resources. Run MopUPS® PROFESSIONAL P/R EDITION on one or two hosts in a server set and control shutdown of remaining servers via integrated Network Shutdown Controller. Supports Windows® on X86/X64 & Itanium (IA64), Linux32 on X86, Linux32/64 on X64 (in 32bit mode), Linux64 native on Itanium (IA64), & RISC UNIX (Solaris on sparc).

MopUPS® NSA (NETWORK SHUTDOWN AGENT)

Use MopUPS® NSA when centralized shutdown of multiple computers simplifies configuration and setup. MopUPS® NSA listens on the network for shutdown notification from the Network Shutdown Controller in MopUPS® PROFESSIONAL P/R EDITION (shared parallel UPS) or ManageUPS NET ADAPTER II (shared single UPS). Supports Windows® on X86/X64 & Itanium (IA64), Linux32 on X86, Linux32/64 on X64 (in 32bit mode), Linux64 native on Itanium (IA64), & RISC UNIX (Solaris on sparc).



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