Onlinet Software - Evolution of Networks

Computer networks began as a simple idea to link a few computers together in order to exchange messages and to share files and peripheral equipment, such as printers and modems. These Local Area Networks (LANs) frequently consisted of one server and groups of independent workstations with similar operating systems and software, capable of operating with or without the network.
Life is not so simple anymore. Today's networks have evolved into something much more complex and diverse. For many companies, networks have become an essential component of day-to-day business. Most LANs now commonly support many different types of operating systems and hardware platforms and are often linked together to form Wide Area Networks (WANs).

Power Protection
Network managers know that power protection is essential to keep a network running smoothly and efficiently. Critical devices, such as servers, routers and bridges and the network management station must be protected against power surges, brownouts and outages. Power protection is provided by powering devices with an uninterruptible power system (UPS).

By supplying clean, reliable power, an on-line UPS can:

- eliminate network down-time due to brownouts
- prevent equipment damage from power surges
- prevent file corruption and data loss during short power outages
- allow orderly shutdown in case of a prolonged outage
- provide input power factor correction, resulting in more output power for more efficient use of current supplies by the utility

As companies move towards distributed computing and rightsizing of computer systems, more and more networked devices are running revenue-critical and mission-critical applications. This has led to an increased emphasis on network management. Network managers want to be able to remotely monitor and manage the system power in the same way they manage any other device on their network.
What is Network Power Management?
The concept of Network Power Management was introduced by Exide Electronics (now Powerware Corporation) in 1993. It combines the features of network management with the benefits of power protection. There are three basic capabilities that network power management delivers to the network manager:

- Monitoring of network power quality and UPS performance
- Shutdown of operating systems during extended power outages
- Remote control of UPS power

Powerware Corporation offers a complete line of Powerware network power management tools, including UPSs, network power management software, and network connectivity adapters, as well as worldwide service and support. The wide range of Powerware products makes it easy and economical for network managers to choose the ideal network power management system for their specific needs.

Why Consider Network Power Management?

Network managers are responsible for maintaining complex networks supporting many types of operating systems and hardware platforms. Networks are often spread over multiple buildings and geographic locations. This kind of distributed computing environment can increase the change of electrical power problems damaging critical data and valuable equipment. With the increased popularity of networked computing, many managers are taking advantage of SNMP-based network management tools. Advanced UPS and software solutions are now available to allow integration of comprehensive power management into standard SNMP-based commercial network management software. Network Power Management allows network managers to efficiently control critical power resources while adding functionality and protection to the network. Designed to be modular and easy to install, Powerware products operate seamlessly within each operating system and increase total systems availability while decreasing maintenance costs for protected equipment. This is essential for business (such as telephone services, traffic control operations, bank processing centers, etc.) that must remain operational 24 hours a day, 7 days a week, 52 weeks a year. In these applications, on-line UPSs must be installed on all primary network file servers, gateways and vital communications equipment.

Network power management software is used to monitor network operations to prevent system failures. If an extended power outage occurs, the network power management software gracefully shut down the file servers before UPS battery reserves are depleted. Network Power Management protects critical loads by providing constant regulation of UPS output voltage and frequency. This is especially important for networks located in areas frequently subjected to thunderstorms, such as the Central and Eastern regions of the US, or regions that have poorly regulated electrical utilities. During long power outages, network power management can be relied on to perform unattended operating system shutdown and restarts. Shutdown procedures can be customized to permit file servers sufficient time to shutdown without losing or corrupting data.

Network Power Management software, such as OnliNet Network, monitors and records power and UPS data for diagnosis and analysis. It allows the network manager to quickly assess the current status of all UPSs on the network directly from the network management station, identify the exact location of any powr problems and get more information about the problem. This is useful for pinpointing recurring problems. (wiring

faults, overloads, malfunctioning batteries, etc.), so they can be corrected before a crisis arises.

Intended to simplify network management tasks, OnliNet Network power management software is easy to install and operate. Its intuitive user interface is designed to have a familiar look and feel, customized for each operating system. Pull-down menus, on-line help, multiple windows and graphic displays are just a few of its convenient features. Built-in remote control functions allow the network manager to reboot network devices by cycling power and to schedule network power-downs to conserve energy during idle hours. OnliNet network power management software extends this capability across multiple network operating systems, allowing the network manager access to Novell and UNIX-based UPS systems. For added security, a password is required for timed shutdown configuration. Shutdown can be scheduled on a daily, weekly, monthly, or one-time-only basis. The network manager can selectively choose which systems should be powered down and for how long. Energy conservation provides significant financial benefits when cost savings are multiplied over the entire network.

A good power protection strategy requires that each network device receive appropriate protection based on its criticality, network application and degree of control the network manager requires. Simply applying power protection on every AC path into a network and between non-isolated devices can, in many cases, be overkill and a wasted expense. One of the keys to successful network management is to identify and protect all primary data gathering and transmission points and provide clean, continuous power at these sites. A break in power at these sites could impact hundreds or even thousands of customers. Powerware Corporation's broad line of UPSs allows you to choose a UPS that matches the load requirements for each site. Extended battery packs are available for applications requiring several hours of backup power. General recommendations for UPS selection are shown in the table below.

Powerware Network Management Tools

The Powerware family consists of on-line UPSs, software and network adapters that use advanced communications, SNMP connectivity and reliable on-line technology to provide quality power in a wide variety of network environments.

The Powerware UPS Family

Powerware Corporation offers a complete line of UPSs, designed for superior performance and reliability. Capable of operating in a wide variety of environments, Powerware UPSs allow the network manager to improve network dependability and control. By backing up critical network nodes with on-line Ups, the total network system availability will increase and maintenance required for protected equipment will decrease. In the past, these system enhancements were primarily used to avoid disasters. Now it is possible to provide distributed power protection and proactively control UPSs in the same way as any other network device.

OnliNet and OnliSafe Power Management Software

OnliNet software supports high performance workstations and network power management applications, providing complete monitoring, control and shutdown of a single stand-alone UPS or networked UPS system. It allows Powerware UPSs to communicate critical utility conditions and send UPS performance data to any copy of OnliNet Network running on the network. If a utility failure occurs, OnliNet sends an alarm to the network management station and automatically initiates graceful shutdown procedures.

For devices that do not require power management from the network, OnliSafe software is an economical way of providing basic power shutdown and monitoring for a ONE-UPS and other selected UPSs. OnliSafe operates on a wide range of platforms and is used where only utility/UPS monitoring and protected device shutdown is required.

Network Connectivity Adapters

Network Connectivity Adapters allow a UPS to be placed on the network, providing remote access to the UPS. By transporting status, monitoring and alarm information from the UPS to different network locations, such as network management workstations, Network Connectivity Adapters free the network manager to perform other tasks. Network Connectivity Adapters along with Powerware Prestige and Plus UPSs, also allow the network manager to implement advanced network functions such as:

- real-time power quality monitoring
- perform diagnostics and power analysis
- remote output control
- retrieve UPS statistics
- battery test statistics and diagnostics

Network Connectivity Adapters provide communication of power events to SNMP network management applications. These power events are from UPSs, connected to the network via the adapters. By protecting network devices such as bridges, routers and hubs with a UPS and connecting the UPS to the network via an adapter, the network manager can use the network management software to monitor the power supplied to these critical devices.

How it Fits Together

Given the flexibility and modularity of Powerware Network Power Management products, it is easy to select the proper UPS, power management software and networks adapters for your network.

Full Interoperability and Interworking

For networks that contain both UNIX workstations and Novell servers, OnliNet products for UNIX and OnliNet NVX for Novell provide the ability to monitor and control the power from any designated network management station, UNIX workstation or Novell server. This unique internetworking capability combined with OnliNet's interoperability provides

network managers with an effective power management solution for complex, heterogeneous networks. All you have to do is install Novell's optional TCP/IP product on your Novell NetWare network.

Advantages of Network Power Management

Powerware Corporation offers network power management solutions which combine hardware, software, network connectivity adapters and worldwide service and support, giving network managers flexibility in assigning power protection resources to meet evolving network requirements. You can rely on Powerware's ISO 9001 certified manufacturing, design and service, as well as our technical expertise, such as preventive maintenance, corrective maintenance, excellent service response time, training, Help Desk and Hotline support.

Some of the many advantages of managing your network with Powerware Corporation's products:

- broad line of quality, reliable products at competitive prices
- enhanced control features, such as graceful unattended server shutdown
- full UPS hot-swap via PowerPass maintenance bypass module
- OnliNet network power management software provides seamless operation across many platforms and operating systems
- hardware is easy to install and software won't bog down the network
- real-time graphic meters for monitoring power and battery conditions
- guaranteed continuous protection against spikes, surges and brownouts
- reduce network service calls by providing continuous, clean power
- centralized control for added security and reduced hardware and software costs