

SECTION I:

ABOUT MANAGEUPS NET ADAPTER

ManageUPS II

ManageUPS NET ADAPTER provides a variety of monitoring and management-related services for uninterruptible power systems and associated auxiliary devices.

UPS models with compatible communications expansion slots will use the *internal* adapter card.



Other UPS models will use the adapter card with *external* chassis, power supply and communications cables.




ManageUPS II adapter cards with *Legacy Adapter* are compatible with ManageUPS I external chassis and can be used to update services and features in existing installations.

Simplified Description of Services

- ❑ **Message:** Send a message when events occur that may risk uptime of the protected systems. Messages can be sent via SNMP trap, e-mail, network message or numeric pager.
- ❑ **Manage:** Integrate with *IT-Network* and *Building* management systems. Update ManageUPS firmware files. Configure Network, Server, Agent and Device settings. View system status in real-time. View or export data and event logs.
- ❑ **Shutdown:** Initiate controlled shutdown of computer systems on extended AC mains power failures, to safeguard file integrity and speed system recovery time when AC power returns.

ManageUPS II
Hardware Options

The services available on your ManageUPSNET adapter depend upon hardware options.

	Connectivity	Device Coverage
Base System _{LP} <i>Low Power model</i>	 10BaseT Ethernet	UPS
Base system	 10/100BaseT Ethernet	UPS
+E option	 10/100BaseT Ethernet	UPS & Environment Sensor Accessory

Legacy Chassis A *legacy conversion card* and *external chassis* enables *ManageUPS II* hardware options to be compatible with legacy UPS.



Service Mechanisms	<ul style="list-style-type: none"> ❑ Client: A software element or program that requests information or actions from other software elements known as <i>servers</i>. ❑ Server: A program that provides some service to other (client) programs. The connection between client and server is normally by means of message passing, often over a network, and uses some protocol to encode the client's requests and the server's responses. ❑ Agent: An <i>Agent</i> is a server that "thinks". Agents are software modules that first retrieve information about the managed devices they represent, then store this information in a management database, and finally provide it (proactively or reactively) to management entities within network management systems (NMSs) via a network management protocol. 					
	MECHANISMS			SERVICES ¹		
	Agents, Servers, & Clients			Message	Manage	Shutdown
	BASE HARDWARE	C	DNS	Hostname resolution for NTP, SMTP, MopNSA and RCCMD		
		C/A	SMTP	e-mail		
		A	SNMP	trap	Integration: SNMP NMS	
		C/S/A	MOPNET		Integration: MopUPS ^{P/R}	MopUPS, MopNSA
		C/A	RCCMD			RCCMD
		C	NTP		Clock Synchronization	
		S	FTP/TFTP		Network Update	
		C	DHCP		Auto Net-Configuration	
		S	CONSOLE		Dial-in and Local RS232 Terminal access to Configuration and Status menus.	
		S	TELNET		Network access to Console	
		S	HTTP		Network Browser access	
		S	ModBus-IP		Integration: Bldg Monitoring	
		A	BACnet IP		Integration: Bldg Monitoring	
		+M	C/A	PAGER	Dial-Out	

¹ The specific services available on your ManageUPS adapter may depend on model and firmware release. See the *Help* link on the *About ManageUPS* WEB page for information specific to your model and firmware build or license.

Installation Overview

There are two parts to the installation of ManageUPS^{NET} adapters:

1. **Hardware Installation** — Physical connection of ManageUPS to your UPS and attachment to the network.

Physical connection of Environment Sensor or other “Blue Bus” accessories.

2. **Configuration** — Confirm/Adjust network settings and set message triggers and destinations, shutdown targets, network security and other parameters.

Hardware Installation

Before installing ManageUPS^{NET} ADAPTER you should be familiar with the hardware installation details outlined in the specific *Supplemental Installation Note* for your UPS.

Installation notes are included on the ManageUPS documentation CD and are also available from <http://connectivity.chloridepower.com>

Some UPS models do not report all information needed by ManageUPS to represent the UPS accurately. ManageUPS will request missing information when the UPS Status WEB page is first accessed. Review *Section V: Device Settings*, in the User Guide for more information.

“Blue Bus” Accessories – make sure you do not connect Blue Bus accessories to the Ethernet port.

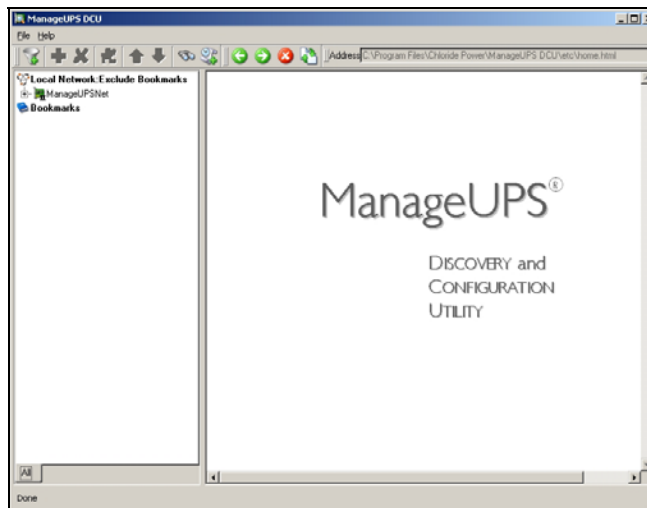
NOTE: *Blue Bus* accessories require various amounts of power that is delivered over the *Blue Bus* through the ManageUPS adapter from the UPS accessory slot. If you are using an internal ManageUPS adapter – review the accessory power availability table in Appendix C to make sure your UPS supports the accessories.

Configuration

ManageUPS II is designed to be easily configured over the network.

A windows-based utility is offered to *discover* adapters on your network and simplify *configuration* of network settings and service options.

Refer to the *Quick Start Guide* for a simplified overview of adapter configuration using the *ManageUPS DCU* application.



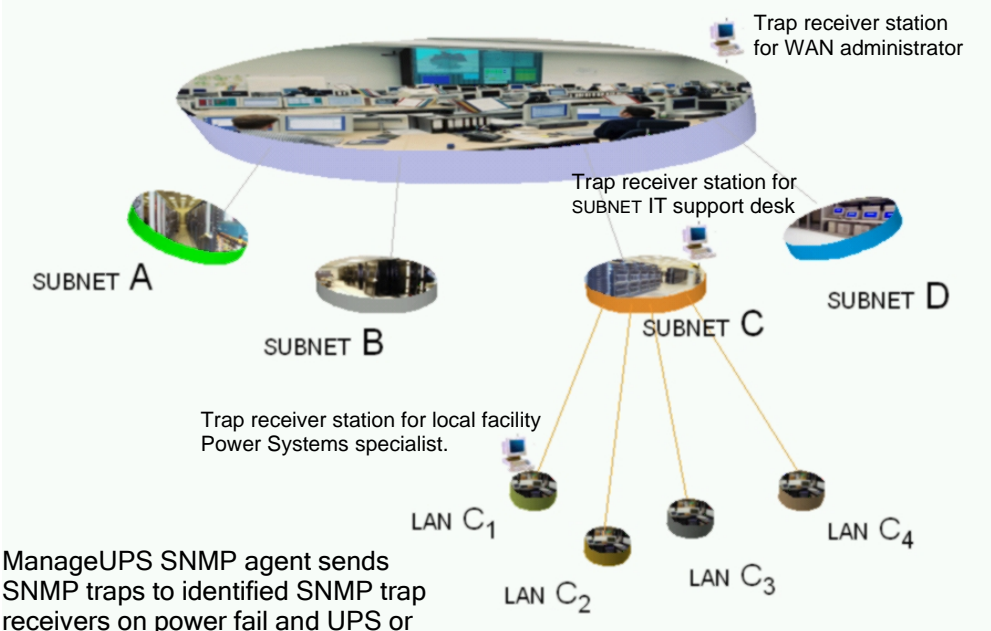
Application Profiles:

"The UPS is the critical foundation to my network. If something isn't right — the NOC (Network Operations Center) needs to know about it."

SNMP Agent

SCENARIO:

Network administrators at a central operations center use an SNMP management system to monitor and manage IT network infrastructure, and associated power/environmental infrastructure.



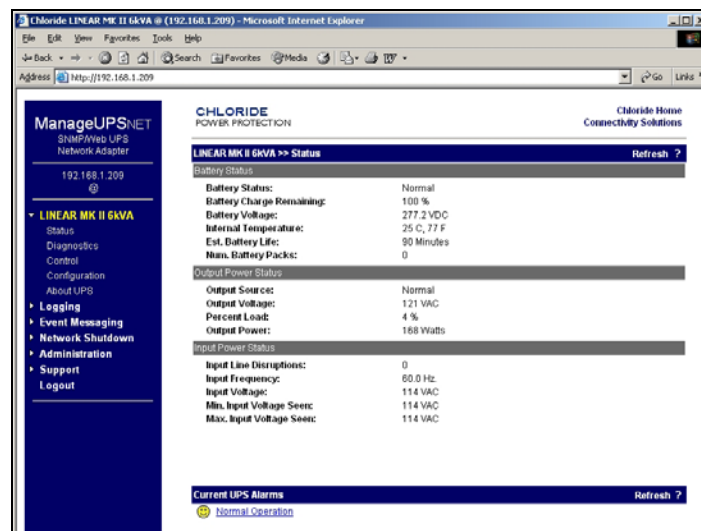
SOLUTION:

ManageUPS SNMP agent sends SNMP traps to identified SNMP trap receivers on power fail and UPS or environment alarm conditions.

Data Collection and Thresholds applications of the SNMP NMS are configured for threshold monitoring and scheduled collection intervals for the specific MIB objects of interest. (*ManageUPS supports MIB II (RFC1213), the standard UPS MIB (RFC1628 -- SNMPv1 translation) and the Chloride Environment Sensor MIB.*)

The ManageUPS IP address is entered in the *Management URL* control in the node description form offered by the NMS. This makes it easy for the administrator to navigate to the ManageUPS WEB page to learn more about the UPS status.

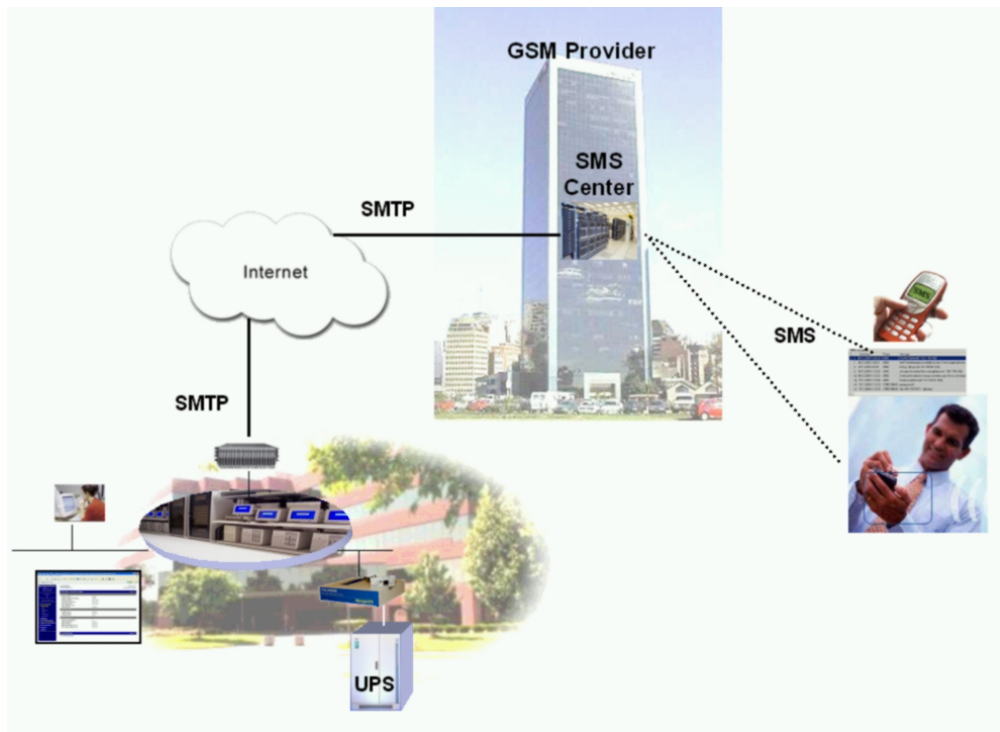
ManageUPS embedded WEB server offers all UPS MIB measures and controls (as well as Environment Sensor status and configuration for +E models).



Application Profiles:

"In a batch system, everything is entered during the day, but nothing is posted until the 'batch' runs at night. Often time 'jobs' need to be rerun."

Email-WEB



SCENARIO: The IT administrator for a campus network wants the Help Desk to be aware of any power-fail conditions or UPS service alerts that may impact IT resource availability. The Administrator also wants to know this directly 24 hours a day so he can restart any batch jobs interrupted by power-fail conditions.

SOLUTION:: When UPS alarm conditions occur, ManageUPS will initiate e-mail to identified e-mail recipients. The *long* form email — intended for desktop e-mail clients — includes a URL link back to the ManageUPS WEB server to make it convenient to research the conditions that may be causing the alarm.

Short form e-mail options are offered for routing to pagers or SMS phones via email-forwarding services offered by most wireless service providers.

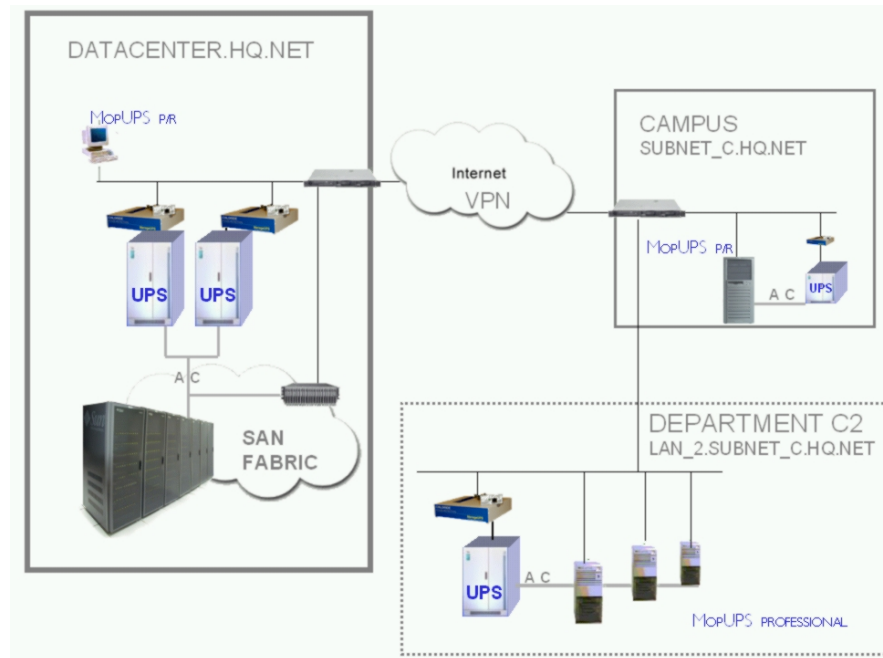
In both cases, ManageUPS routes e-mail messages through the local SMTP (email) server operating on your premise network — or through the remote SMTP server offered by your internet service provider.

Application Profiles:

"If you know about your downtime, then you can control anything."

UPS status server for UPS monitoring software

ManageUPS hosts a UPS status server (mopnet server) that allows copies of *MopUPS* software (mopnet client), installed on network computers to retrieve UPS status information over the network and initiate *server-specific* responses to power systems events.



SCENARIO: In Department C2, three servers are supported by a shared UPS represented on the network by a *ManageUPSNET* adapter. Each server is administered separately and requires individual automatic responses to power-fail conditions.

SOLUTION: A copy of *MopUPS PROFESSIONAL* is installed on each server to monitor UPS status via TCPIP and initiate individual shutdown scripts in the event of a prolonged AC power failure.

SCENARIO: At HQ.net, a facilities power systems manager is tasked with responsibility for power systems in the building. A dedicated pair of UPS modules configured for parallel redundant operation supports the data center.

SOLUTION: The facilities manager runs a copy of the *Special Edition of MopUPS for Parallel Systems* (MOPUPS P/R EDITION) on a personal workstation. MopUPS collects information from both UPS over the IP network, analyses changing load conditions and other UPS module events that may affect redundancy or overall availability and calls the manager's pager.

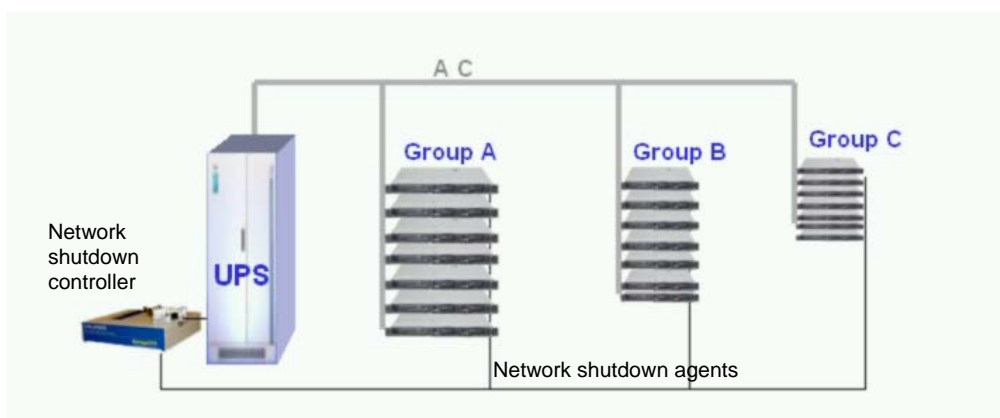
SCENARIO: At Campus C SUBNET, a backup-server is supported by a UPS shared with the campus PABX, router/switch, e-mail server and other infrastructure devices located in the campus communications center. Some of the backup server's clients are in Department 2. The backup repository is the SAN (Storage Area Network) housed remotely in the HQ data-center. The backup administrator wants to make sure all three UPS are reporting normal power status before allowing the backup job to start.

SOLUTION: A copy of *MopUPS P/R* is installed on the backup server to monitor the parallel UPS supporting the SAN, the shared UPS supporting the servers in Department-2, and its own Campus communications UPS. If any UPS system is reporting an AC fail condition, MopUPS runs a command / script that pauses the backup scheduler until all UPSs are reporting normal operating status.

Application Profiles:

"All I need is a simple solution to call graceful shutdown for a few groups of servers."

Network Shutdown
Controller (NSC)
for MopNSA or
RCCMD agents.



SCENARIO: An administrator with three sets of servers needs to trade off capacity for uptime in the event of a prolonged AC failure.

SOLUTION: Server shutdown agents (MopNSA or RCCMD software) are installed on each server. The agent listens on the network for a shutdown command from ManageUPS network shutdown controller (NSC).

ManageUPS NSC is configured to connect to the first group and call OS shutdown five minutes after an AC failure has been reported by the UPS. As this group finishes its shutdown and power off sequence, the UPS load on the battery is reduced by about 1/3 — increasing the autonomy available to the remaining groups.

Shutdown is called on the second group after 15 minutes on battery have elapsed.

The third group is configured to wait until the UPS reports only a few minutes of battery time remaining to allow the maximum system uptime before bringing the servers off line.

Network Shutdown >> Network Shutdown Controller						Refresh ?
Network Shutdown Controller Settings						
<input checked="" type="checkbox"/> Network Shutdown Controller Enabled						
Restart Delay: Wait 3 Minutes after power returns before beginning Restart Sequence						
UPS Off Delay: Wait 2 Minutes after execution of last group before switching UPS off						
<input checked="" type="checkbox"/> Cancel UPS Shutdown if Utility Power returns after execution of last group						
Group 1 Settings						
<input type="checkbox"/> Execute at 3 minutes remaining time.						
<input checked="" type="checkbox"/> Execute after 5 minutes on battery						
Protocol	IP Address From	To	Port for Shutdown Sequence	Port for Restart Sequence (RCCMD Only)	MopNSA Password (MopNSA Only)	
MopNSA	192.168.0.10	16	5055			
MopNSA						
RCCMD						