FailSafe III — LanSafe III

Version 4.0

Power Management Software

User Manual

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SECTION 1

LANSAFE III AND FAILSAFE III FOR DATA PROTECTION

FailSafe III for standalone computer systems and LanSafe III for network systems are power management software programs. While you create a protected power environment when you add an uninterruptible power system (UPS) to your system, power management software gives you powerful monitoring and control capabilities.

The primary goal of power management software is the protection of your computer data. If a power event occurs that requires a system shutdown, the UPS provides power, in place of utility power. If no one intervenes, this continues either until the UPS is exhausted or the power management software conducts an orderly system shutdown as it was programmed to do.

You can use your power management software to monitor your power situation including the amount of available battery power, and you can use it to control the length of shutdown time so the system stays up until data can be saved. Other monitoring features include a Power Log, a Battery Management Log, and a Periodic Log.

Alert response features program your software system to perform such tasks as executing a specific command and sending a string to a modem if a given alert is received. You can also change message text, for example, to another language if necessary.

If your UPS supports load shedding, you can divide your load into segments with different shutdown and restart sequences to extend battery runtime for your most critical devices.

System administrators dealing with large computer networks can perform LanSafe III control functions over all systems in their networks or domains without leaving their desks.

New Features for Version 4

FailSafe III and LanSafe III version 4 expand the functionality of your power management software. A Periodic Log for both FailSafe III and LanSafe III brings new logging and graphing capabilities to the system. LanSafe III now becomes usable in heterogeneous networking environments with the addition of a high level of support for TCP/IP, SNMP, and NetFinity.

Version 4 is Year 2000 Compliant.

FailSafe III for Windows 3.x and LanSafe III for Windows 3.x do not support these features.

Periodic Log for FailSafe III and LanSafe III

The Periodic Log provides users and customer support personnel with a new diagnostic tool which will help analyze power problems. The log provides information concerning input and output voltage, output frequency, load in watts, and battery volts for specific dates and times.

TCP/IP Support for LanSafe III

TCP/IP is actually a suite of programs and functionality originally implemented on the UNIX operation system. Its versatility and expansion of the Internet have led to its implementation on every popular computing platform. Over the past several years, it has become the de facto standard for network communication, often replacing a platform's native networking protocol in popularity and preference.

As a LanSafe III user, you are able to monitor the UPS functions via the LanSafe III Console on a variety of different computers running vastly different operating systems simultaneously. For example, you can view UPS operations from a UNIX LanSafe III Console on computers running the LanSafe III Power Monitor on Windows NT, OS/2, and Netware, and for the many UNIX operating systems LanSafe III supports.

The implementation of the TCP/IP protocol into LanSafe III makes this possible. Similarly, the implementation of TCP/IP in all LanSafe III Power Monitors enables you to install UPS Groups consisting of multiple disparate operating systems. Thus, you could have a NetWare server, a UNIX workstations, and a Windows 95 desktop system all as part of the same UPS Group on a single UPS.

SNMP Support for LanSafe III

LanSafe III v.4.0 includes a simple network management protocol (SNMP) agent for use with SNMP network management software programs.

The LanSafe III SNMP Agent acts as a server providing requested information, obtained from the LanSafe III Power Monitor, about the computing product and sending unsolicited alerts or traps about network conditions of interest.

NetFinity Support for LanSafe III

NetFinity is a non-SNMP based network management product from IBM. Its primary function is to gather and process alert information from around the network. LanSafe III adds the ability for LanSafe III Power Monitors to generate UPS-related alerts to a NetFinity system running on the network. The generation of NetFinity alerts is enabled and disabled for each LanSafe III alert by means of the Customizable Alerts dialog box in the LanSafe III Console.

SECTION 2

INSTALLATION

Before you install your power management software, be sure your system meets the appropriate requirements. Then follow the general installation procedure.

System Requirements

All systems require the following:

- A UPS ready for RS-232 serial communication
- A dedicated RS-232 serial port for the UPS
- A second RS-232 serial port if the modem feature is used
- The correct cable for communication between your UPS and your computer

If you install an HP-UX Model 800, you need a gender bender, a null modem adapter, the supplied cable, and a 9-25 adapter.

All UNIX systems must have 3 to 5 MB of available disk space. Requirements for other systems are as noted below.

See the tables of supported operating systems and protocols. If installing LanSafe III, see the Installation Guidelines for LanSafe III.

Installation Guidelines for LanSafe III

- In a network system, you must install at least one network protocol
- SNMP protocol is optional, but must be installed if the LanSafe III SNMP Agent is used
- LanSafe III SNMP agent support is included for Windows NT (3.51+), Windows 95, OS/2 (2.1+), NetWare (3.12+), IBM AIX (4.1+), HP-UX (9.x and 10.x), Sun Solaris (2.x+), SCO Open Server 5, and SCO UnixWare (2.x)

Supported Operating Systems and Protocols
Novell-DOS-Windows-OS/2-Macintosh

Product	Operating System (Platform)	Protocol(s) Supported
FailSafe III	OS/2 2.0 and above (Intel 386/486/Pentium)	N/A
FailSafe III	Windows 3.1 (Intel 386/486/Pentium)	N/A
FailSafe III	Windows NT 3.5x or 4.0 (Intel and Alpha)	N/A
FailSafe III	Windows 95 (Intel 386/486/Pentium)	N/A
LanSafe III	OS/2 2.0, 2.1, 3.0 (WARP) and above (Intel 386/486/Pentium)	TCP/IP 2.0 and above, and/or LanServer 3.0 (server or requester) and above (NetBIOS)
LanSafe III	Windows NT 3.5x or 4.0 with network services installed; administrator privileges (Intel and Alpha)	NetBEUI and/or TCP/IP
LanSafe III	Windows 4.0 (Intel 386/486/Pentium)	NetBEUI, IPX/SPX, and/or TCP/IP
LanSafe III	Windows 3.1x (IBM PC/AT/386/486)	IPX via IPXODI.COM
LanSafe III	DOS v.3.3 to 6.2x (IBM PC/AT/386/486)	IPX via IPXODI.COM
LanSafe III	Novell NetWare 386 3.10 or above; write access to sys:\system directory (Intel 386/486/Pentium)	IPX and/or TCP/IP (on Netware 3.12+)
LanSafe III	Macintosh System 7.x (Mac 680xx or PowerPC)	Novell Client and/or AppleShare

NOTE 1: In a network system, you must install at least one network protocol.
NOTE 2: SNMP protocol is optional, but must be installed if LanSafe III SNMP Agent is used.
NOTE 3: LanSafe III SNMP agent support included for Windows NT (3.51+), Windows 95, OS/2 (2.1+), NetWare (3.12+), IBM AIX (4.1+), HP-UX (9.x and 10.x), Sun Solaris (2.x+), SCO Open Server 5, and SCO UnixWare (2.x)

Supported Operating Systems and Protocols UNIX Systems

Product	Operating System (Platform)	Protocol(s) Supported
LanSafe III	AT&T SVR4 UNIX 3.0+ (Intel 386/486/Pentium)	TCP/IP
LanSafe III	DEC UNIX 4.0+ (Alpha)	TCP/IP
LanSafe III	HP-UX 9.0.7+ (Alpha) NOTE: For the LanSafe III SNMP Agent, the following is required: For HP-UX 9.x, HP Extensible SNMP Agent v.3 or above; for HP-UX 10.x, HP Extensible SNMP Agent v.4	TCP/IP
LanSafe III	IBM AIX 3.2.0+ (RS/6000)	TCP/IP
LanSafe III	Interactive 3.0.1+ (Intel 386/486/Pentium)	TCP/IP
LanSafe III	Linux with kernel 2.x.x (Intel 386/486/Pentium)	TCP/IP
LanSafe III	SCO OpenServer 3.x and 5.x (Intel 386/486/Pentium)	TCP/IP
LanSafe III	Solaris 1.1+ (SPARC) NOTE: For the LanSafe III SNMP Agent, the following is required: For Solaris 2.x and 3+, HP Extensible SNMP Agent for Solaris v.4	TCP/IP
LanSafe III	SunOS 4.1.1+ (SPARC)	TCP/IP
LanSafe III	UnixWare 2.0, Enhanced Communication (UPS Code II) UPSs only (Intel 386/486/Pentium)	TCP/IP

NOTE 1: In a network system, you must install at least one network protocol.
NOTE 2: SNMP protocol is optional, but must be installed if LanSafe III SNMP Agent is used.
NOTE 3: LanSafe III SNMP agent support included for Windows NT (3.51+), Windows 95, OS/2 (2.1+), NetWare (3.12+), IBM AIX (4.1+), HP-UX (9.x and 10.x), Sun Solaris (2.x+), SCO Open Server 5, and SCO UnixWare (2.x)

General Installation Procedures

Before installation: UNIX users: Log in as root user. Novell Management System users: Log on as supervisor. Windows NT network users: Log on as administrator. Be sure a UPS has been installed and is running.

If installing LanSafe III in a SCO UNIX or UnixWare system with a UPS with dry-contact interfaces, see the section below.

1. All users: Insert the compact disk into your computer's CD-ROM drive.

2. UNIX users, skip to "Step 2 if Installing for LanSafe III for UNIX." All others: Navigate to the folder for the type of computer you wish to install and run the install program, using the following table as a guide:

Type of computer to install	Use CD install program
DOS workstation (network)	Lansafe\Dos&Win\Install.exe
NetWare server	Lansafe\Netware\Ls3setup.nlm
Win 3.1x workstation (network)	Lansafe\Dos&Win\Setup.exe
Win 3.1x workstation (standalone)	Failsafe\Win3x\Setup.exe
Win 95, NetWare network workstation	Lansafe\Ntand95\Setup.exe
Win 95 workstation (standalone)	Failsafe\Ntand95\Setup.exe
Win 95, NT network workstation	LanSafe\Ntand95\Setup.exe
Win NT workstation (standalone)	Failsafe\Ntand95\Setup.exe
Win NT workstation/server (network)	Lansafe\Ntand95\Setup.exe
Win NT workstation/server (standalone)	Failsafe\Ntand95\Setup.exe
Win NT DEC Alpha workstation/server (network)	Lansafe\Ntalpha\setup.exe
Win NT DEC Alpha workstation/server (standalone)	Failsafe\Ntalpha\setup.exe
OS/2 requester/server (network)	Lansafe\os2\install.exe
OS/2 workstation (standalone)	Failsafe\os2\install.exe

Step 2 if Installing LanSafe III for UNIX

As root, mount the CD-ROM at the mount point /cdrom, setting the options for read only, file names are not converted, and default file permission 0500 (execute permission to owner). Use the following table as a guide, or see man page of mount.

System	LanSafe III for UNIX CD-ROM Mount Commands
AIX3	mount -v cdrfs -r /dev/cd0 /cdrom
AIX4	mount -v cdrfs -r /dev/cd0 /cdrom
DEC	mount -r /dev/rz4c /cdrom
HP-UX 9	mount -r -t cdfs /dev/dsk/c201d2s0 /cdrom
HP-UX 10	/etc/mount -F cdfs -o ro /dev/dsk/c0t2d0 /cdrom
Interactive	mount -r -f cdfs /dav/cd0/cdrom
Linux	mount -r -o check=r /dev/cdrom /cdrom
SCO3	mount -r -f HS /dev/cd0/cdrom
SCO5	mount -r -f HS /dev/cd0/cdrom
Solaris	mount -F hsfs /dev/dsk/c0t6d0s0 /cdrom (*)
SunOS	mount -rt hsfs /dev/sr0 /cdrom
SVR4	mount -F cdfs -o ro,nmconv=c,fperm=0500 /dev/cd0 /cdrom
UnixWare2	mount -F cdfs -r -o nmconv=r /dev/cdrom/c0b0t2l0 /cdrom

(*)In a Solaris system, the Volume Manager daemon vold (e.g. /cdrom/lansafe400) mounts the CD-ROM automatically if it is running.

a) Change to the directory where the CD-ROM is mounted.

b) Type ./install.sh to run the installation software (case depends on your UNIX system).

To Install LanSafe III for SCO, Interactive, or UnixWare with Dry-Contact UPSs

1. Back up your files before you install.

2. Be sure that other users are not logged on to the system through remote terminals.

3. Never interrupt an installation.

4. Do not run background processes during installation if a system reboot could adversely affect these processes, or if the processes would use free disk space during a reconfiguration.

5. Follow the General Installation procedure above.

Install the Device Driver Prompt

If you install LanSafe III in a SCO, Interactive, or UnixWare system using a UPS with a dry contact interface, an “Install the device driver” prompt appears after the end of regular installation. Choose y to rebuild the kernel or n to exit.

If you choose y, the kernel is rebuilt, completing installation and configuration of LanSafe III. If you choose n, the system reminds you that you must install the device driver later.

The Relay Contact UPS driver shares I/O addresses with the system serial device driver (asy, sio, or asyc). The device install fails if the system serial device is not configured to share its I/O address. If this happens, either modify the system file for the serial device so that the port the UPS uses is disabled, or modify the master file so the default serial device can share I/O devices. Check your system documentation for information about disabling the pre-installed serial device.

When the kernel is rebuilt, the /dev/ups0 and /dev/ups1 device drivers become available. Use these device drivers and not the standard UNIX device drivers (/dev/tty1 and /dev/tty2) to communicate with the UPS.

Post Installation

After installation, you should start the Power Monitor and the Console and run tests of the hardware and the software. The procedures are given below.

Starting the Power Monitor

If you chose the autoload on startup option when you installed your power management software, restart your computer to start the software.

For a manual start of the software, run fs3.exe or ls3.exe for all systems except UNIX. Procedures for starting LanSafe III for UNIX are as follows:

To start the	For X Windows, type	If you do not have X Windows, type
Daemon	/usr/ls3/ls3&	/usr/ls3/ls3&
Power Monitor Window	/usr/ls3/ls3X&	not applicable
Console	/usr/ls3/ls3conX&	/usr/ls3/ls3con
SNMP Agent	n/a	/usr/ls3/ls3agent&

For a manual start and shutdown of systems other than UNIX, the procedures are below:

Node Type	To Start	To Shut Down
IBM OS/2	Run FS3.exe or LS3.exe	Select File/Exit
NetWare 386 or 4.x File Server	At file server, type Load LS3	At file server, type Unload LS3
Windows 3.1x Workstation	Open Power Monitor icon, or run FSLS3W	Choose File/Exit
Windows 95 Workstation	Open Program folder on Start menu and choose Power Monitor from the program folder— If you accepted the Autoload on Startup default at installation, restart your computer	Choose File/Exit
Windows NT Workstation	1. Start the system service Open Services dialog box in Program Manager Control Panel and start LanSafe III or FailSafe III System Service	1. Stop system service
	2. Open the Window Double-click Power Monitor icon on Toolbar.	2. Shut down program Choose File/Exit
DOS workstation	In LanSafe III directory, type LS3	LS3OFF

Test the Software

1. Turn off the power to the power supply. If the hardware is connected to a power strip, turn off the power at this source.

2. Verify that a power loss message displays on the message device you specified during configuration.

3. Turn on the power supply source. When “Power is restored” displays, test is complete.

Miscellaneous Procedures

This section includes procedures for creating floppy disks from a compact disk, reinstalling, and removing the software.

Creating Floppy Disks from a Compact Disk

If the LanSafe III for UNIX Installation program was not supplied on floppy disks and you require them for a particular system, the procedure for creating floppy disks from a compact disk is as follows:

1. Log on as root.
2. Mount the CD ROM.
3. Change to the directory were the compact disk is mounted.
4. Type cd images
5. Run ./CD2DISKS.SH <TARGET SYSTEM> or ./cd2disks.sh <target system>

   ... where the <target system> is the system in which the disks will be used. Target system names the program recognizes are: aix3, aix4, dec, hpux, interactive, linux, sco, solaris, sunos, svr4, and unixware2.

To Reinstall LanSafe III or FailSafe III

1. Be sure your files are not write-protected.

2. If you have a copy of LanSafe III or FailSafe III in the Startup folder, delete it before reinstalling.

Removing LanSafe III for UNIX

Log in as root and type the following (assuming default installation directory)

rm -rf /usr/ls3

... where /usr/ls3 is the default directory.

SECTION 3

OPERATION

For your uninterruptible power system (UPS) hardware and power management software to work together, they must communicate. When you start your power management software, or when it starts automatically when your system is booted, you start the Power Monitor (also known as the Power Monitor daemon in LanSafe III for UNIX and the LanSafe III or FailSafe III system service in Windows NT).

Running in the background, the Power Monitor (or daemon or system service) communicates with the UPS and provides information and services to the Console. The Power Monitor also provides alert processing, orderly shutdown, and log functions. The Console program is the primary user interface for system control, diagnostics, managing alert response, and shutting down the system.

Communications require the use of the correct communications cable (the cable furnished with the LanSafe III or FailSafe III software). The software must be configured to reflect the computer communications port used for the cable. If your UPS supports load segments, you can configure the load segments in the software, too.

Normal Operations (Green Icon)

When LanSafe III or FailSafe III receives a command to start, the Power Monitor attempts to establish communications with the UPS. If successful, the Power Log records the date, time and a “Communications established with UPS” message. The Power Monitor status window, if opened, displays the most recent events from the Power Log.

If the Power Monitor cannot establish UPS communications, the result is a “Communications failure with UPS” log entry. Until the communications setup is corrected, the Power Monitor icon and Power Monitor status window display of the message are yellow; the Console displays a yellow Input/Output Failure message. See the Troubleshooting Guide, Appendix A.

If the operations situation is normal, the Power Monitor icon is green. Power Log messages displayed on the Power Monitor status window are green.

Battery Operations (Yellow Icon)

If a power problem occurs, the UPS batteries provide system power until exhausted or until expiration of the shutdown time you enter. The Power Monitor icon turns yellow. The system shuts down either when battery power is gone, or in accordance with your shutdown configuration.

Save your work and close your files immediately, then try to analyze and resolve the problem. If the situation persists, contact your utility.

Power Monitor Messages from Other Network Nodes

Whenever a change in power status occurs, LanSafe III can generate Power Monitor messages to network users with Windows, OS/2, and UNIX systems. To modify the list of users to receive broadcast messages from your system, choose Customize Alerts from the Setup menu.

Receipt of broadcast messages varies with your system, as follows:

- In OS/2 and UNIX, receipt of messages is automatic.
- In Windows 95, you must start WinPopup.
- In Windows NT, v. 4, you must either start WinPopup (NT 4.0 or higher only) or run the Alerter and the Messenger services.
- In Windows 3.1x, you must start NetWare Popup (nwpopup.exe).

Emergency Operations (Red Icon)

When a shutdown is about to occur, the Power Monitor icon and Power Monitor Status messages related to the shutdown turn red. When power is restored, the icon and messages return to green.

Things to Remember About Running the Software

- For full functioning of FailSafe III or LanSafe III software, a UPS must support the node.
- Power monitoring occurs only after you start the Power Monitor within the appropriate operating system or environment.
- If a system shutdown is necessary, the software saves only named files. To avoid loss if a power failure occurs, name any new files as soon as you open them.
- For applications with automatic saving capability, set the autosave time to a value less than the power failure countdown time.
- To reconfigure the software, it is not necessary to reinstall or reload. New configuration settings become active when you close the dialog box.
- Control is limited to the computer on which you run the Console and LanSafe III remote nodes for which you enter the access code.
- Never try to run more than one copy of the software at once.

Things to Remember About UPSs with Dry-Contact Interfaces

- UPSs with dry-contact interfaces support only limited Console information.
- UPSs with dry-contact interfaces do not support hardware tests and preventive maintenance.
- UPSs with dry-contact interfaces do not support the Battery Management Log.

Understanding UPS Groups

There are differences, albeit small ones, in the installation and operation of Power management software when your UPS supports one computer and when it supports two or more computers. If the computers in your system each have their own UPSs, you need not be concerned with this section.

UPS Group Terminology

When one UPS supports more than one computer, the supported computers are called a UPS group.

Only one computer in a UPS group can be attached to the UPS by means of a serial communications cable. This computer is known as the UPS group controller. Any computer in the UPS group that is not the UPS group controller is known as a UPS group member.

UPS Group Communications Requirement

LanSafe III communications require that the UPS group controller be running whenever any group member is running. Otherwise, the LanSafe III UPS monitoring module, which runs on each group member, cannot obtain UPS status and alert information from the group controller. This means that UPS group members are not notified of power failures and do not perform an orderly shutdown.

Things to Remember About LanSafe III in a UPS Group

- LanSafe III communications require that the UPS group controller run whenever any group member runs.
- The shutdown time for the UPS group controller must be longer than the shutdown time for any group member.
- Any group member can run a LanSafe III Console to control and configure LanSafe III for all units within the UPS group.

Communications Setup

When you install the software, you designate the computer communications port you use to join the communications cable to the UPS. If you change communications ports on the computer, you must reconfigure the software.

To Change Communications Ports

1. Choose Communications Port from the Setup menu to open the Communications Port Setup dialog box. All users but Novell file servers Go to step 2. Novell file servers : Go to step 5.

2. All users but Novell file servers: Choose either Standard or Custom.

3. If you choose Standard, a list of communications ports becomes active. If you choose Custom, an edit field becomes active.

4. If you selected Standard, highlight the port your computer uses for serial communications with the UPS. If you selected Custom, enter the device name. See your communications port manufacturer's hardware manual for information.

5. Novell file servers : Choose either COM1 IRQ4 Addr=03F8, COM2 IRQ3 Addr=02F8, or Custom.

6. If you selected COM1 IRQ4 Addr=03F8 or COM2 IRQ3 Addr=02F8, choose OK to close the dialog box.

7. If you selected Custom, the IRQ field and Addr edit field become active and require you to make entries. See your communications port manufacturer's hardware manual for information.

To Run the Console

Do one of the following:

- Choose Run Console from the Power Monitor menu bar.
- In OS/2, double-click the Console icon in the program folder.
- In the directory where your power management files are stored, start LS3CON.exe (LS3CONW.exe for Windows, Ls3con95.exe for Windows 95).

Monitoring a Power Environment

Using the PowerScope or Data view of your Console, you can monitor the power environment of your local node. In LanSafe III, you can monitor any node in your network. If your utility power is 3-phase, you can view by input and output phase. Monitoring includes the ability to review logs.

Data view and PowerScope share the same sections for node information and communications status.

NOTE

PowerScope view and Data view are limited on UPSs with dry contact interfaces

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Node/System Information section. Node information (System Information in FailSafe III) includes the software type and version, and the UPS model name, numbers and revision. In LanSafe III it includes the node type and address.

Communications status section. Communications status is a text message describing the state of current communications.

The PowerScope diagram reads from left to right. It includes values for input voltage, output voltage, available run time, the current battery or ABM status, and the current load %.

Volts In. The Volts In section on the left side of the screen shows the voltage of utility power and a colored bar. The color describes the power situation, either as acceptable (green), near range limits (yellow), or out-of-range (red). For the UPS to operate on utility power, the voltage must be in the green range.

Volts Out. The Volts Out section on the right side of the screen shows the output voltage of on the UPS with a colored bar. Colors have the same meaning as in the Volts In section.

Use the Volts Out information and the % Load value to evaluate the utilization of your UPS. If the % Load value is in the yellow or red range, your power requirements demand a UPS with a higher load capacity. If the load value is in the red range, the UPS is overloaded, and a computer shutdown will occur in one minute or less. If the load value is in the green range, you are operating safely within the load range of the UPS.

To Select Input and Output Phases for Viewing

1. Choose Input Phase 1, Input Phase 2, or Input Phase 3 from the View menu.

2. Choose Output Phase 1, Output Phase 2, or Output Phase 3 from the View menu. Input and output phase numbers need not be the same.

3. Choose either Data view or PowerScope from the View menu.

To Change Console Views

From the View menu, choose either Data or PowerScope.

To Select Another Node to Monitor (LanSafe III)

1. From the File menu, choose Select Node.
2. Select the node.
3. Choose Select Node.

Viewing the Logs

Your power management software provides a Power Log, a Battery Management Log, and a Periodic Log for each node. On the Power Log and Battery Management Log, significant events are arranged by date and time. On the Periodic Log, the flow of power is displayed as a graph. You can export the Power Log and Battery Management Logs as text to an ASCII file which you can print. Data from the periodic log is saved to an ASCII file which a spreadsheet program can interpret. In LanSafe III, to clear logs other than your own, you must have the UPS access code.

NOTE

FailSafe III and LanSafe III for Windows 3.1x do not support the Periodic Log.

To Access a Log

From the Logs menu, choose View / Clear Power Event Log, View / Clear Battery Management Log, or View / Clear Periodic Log.

To Enable the Periodic Log

1. From the Setup menu, choose Periodic Log Setup.
2. From the Periodic Log Setup dialog box, choose Enabled.

To Establish Periodic Log Settings

1. In the Periodic Log Setup dialog box, set a Sample Rate (in minutes), using the Sample Rate (Minutes) spin field.

2. Set the number of days the file should be kept, using the Keep logs for (Days) spin field.

3. Note in the “Logs will occupy” message that the required disk space varies with the sample rate and with the number of days the log is to be kept.

System Control Features

Control features include setup, shutdown, and deleting the logs. Control is limited to your local node. To control another network node running LanSafe III, you must enter the proper access code at your computer.

To Select a LanSafe III Node to Control

1. Choose Select Node from the File menu to open the Select Node dialog box.

2. In the node lists, highlight the node you wish to control. If you highlight a node in a UPS group, you must highlight the entire group. Use the Domains/Networks list to change the lists of File Servers or Domain Controllers, Other Servers or Hosts, and Workstations or Requesters. Choose Rebuild List to refresh the list.

3. Click the Enter Access Code button and enter the LanSafe III access code for the node you wish to control.

4. Choose Select Node.

5. The Console Node Information section shows the name and address of the node you selected to control.

To Control a Node with Another LanSafe III Access Code

1. Choose Enter Access Code from the File menu to open the Enter Access Code dialog box.

2. Enter the access code.

3. Select the node at the Select Node dialog box.

To Change the LanSafe III Access Code for a Node

1. Choose Access Code from the Setup menu to open the Configure UPS Access Code dialog box.

2. Enter the new access code.

3. Verify the new access code.

This code change applies to the node whose name and address appear in the Node Information section of your Console display.

To Change the LanSafe III Access Code for a Network

1. Choose Access Code for Network from the Setup menu to open the Configure UPS Access Code for Network dialog box.

2. Use the Networks list to select the network or network segment to which the new access code is to apply.

3. Enter the new access code.

4. Verify the new access code.

To Configure the Network UPS Access Code for a UPS Group

In LanSafe III, when you open the Configure Network UPS Access Code dialog box, the list box shows UPS group members. The new access code applies to the group controller and its members.

Diagnostics Tasks

Diagnostics consist of running a hardware test and preventive maintenance either for the local node or the network. The procedures are the same. In addition, you can program your power management software to put a maintenance reminder on your Power Monitor window.

NOTE

UPSs with dry-contact interfaces do not support hardware tests or preventive maintenance.

To Set Up a Maintenance Reminder

1. From the Setup menu, choose Maintenance Schedule to open the Maintenance Schedule Setup dialog box.

2. Choose Enabled to set a schedule or Disabled if you do not want a reminder to appear in the Power Log at set intervals.

3. If you choose Enabled, the Days Between Runs field become active. Use the arrow keys to specify the interval (in days) between maintenance reminders. This may be any number between 30 and 999 (the default is 90).

Reminders appear in the Power Monitor window.

To Test Hardware for the Selected Node

1. From the Maintenance menu, choose Test Hardware to open the Test Hardware dialog box.

2. Choose Start.

The test places the UPS on battery for several seconds. During this time, the UPS verifies the battery and internal circuit operation. It displays the current testing status.

To close the dialog box without starting a test, choose Exit. To close the Test Hardware dialog box during a test, start the test and choose Exit. The test continues.

To Test Hardware for Network (LanSafe III)

1. Choose Test Hardware for Network from the Maintenance menu to open the Test Hardware for Network dialog box.

2. Use the Domains/Networks list and the Domain Controllers/File Servers, Other Servers/Hosts, and Workstations/Requesters check boxes to create a List of Power Monitor Nodes to Test.

3. Choose Start.

A message lets you know how much time has passed and when testing finishes.

To close the dialog box without testing, choose Exit. To close the Test Hardware dialog box during a test, start the test and choose Exit. The test continues.

To Run Preventive Maintenance

Follow the procedure for a hardware test, choosing either Preventive Maintenance or Preventive Maintenance for Network from the Maintenance menu.

Alert Response

The role of the UPS is to put your system on UPS battery power in the event of a power emergency and to complete an orderly shutdown without loss of data. Depending on your needs, you can configure the length of time the system remains on battery before shutting down, with either maximum or minimum battery use. Using the Customize Alerts feature, you can program the system to send alert messages to key personnel, even at remote addresses.

To Reconfigure Shutdown Timing

1. Choose Shutdown Timing from the Setup menu. If your selected node is a standalone, the Shutdown Timing Setup dialog box opens. If your selected node is a UPS group, the UPS Group Shutdown Timing Setup dialog box opens.

2. Enter values for wink time, power failure countdown time, and time needed to down system.

Wink time eliminates nuisance messages from brief power interruptions. Choose any integer between 1 and 999 (the default value is 5 seconds).

Power failure countdown time gives you time to finish your work and save your files. Each minute, you are informed of the time remaining until shutdown. Choose any integer from 1 to 999 (the default value is 5 minutes).

Time needed to down system allows the Power Monitor to log off users, terminate any applications that are still running, and close all files in the computer's file system. The time may be any integer from 1 to 999 .

If you configure a UPS group shutdown time you cannot set the shutdown time for the UPS group controller at a value less than the shutdown time for any group member. To reduce the shutdown time for the UPS group controller to a value less than the current shutdown time for a group member, you must first reduce the shutdown time for the member.

Things to Remember About Shutdown Timing

- The length of battery protection increases as the load on the UPS decreases.
- After a power outage, another outage could occur before the UPS batteries fully charge. For complete system fault tolerance, set the countdown time at a value small enough to allow battery reserve for at least two shutdowns.
- It is extremely important that the UPS not shut off until all applications are terminated and all files in the file system are closed. Set the time needed to down the system at a value large enough to assure that the Power Monitor software has time to shut down a worst-case computer environment.

Customizing Alerts

The Customize Alerts feature enables you to change the text for alert messages, and to cause a particular alert to execute a command, send an e-mail message, send a string to a modem, or to send a broadcast message to selected users. If supported, you can also activate NetFinity alerts from the Customize Alerts dialog box.

In all cases, the basic procedure is as follows:

1. Choose Customize Alerts from the Setup menu to open the Customize Alerts dialog box.

2. Select one or more messages from the scroll list at the left side of the box, or choose Select All. If you select only one message, or if all selected messages have the same text, a customizable message for a selected alert appears in the Message Text list.

3. Follow the procedure for the customization you wish to make (see below).

To Change the Text for a Message

Enter a new message in the Message Text list, or translate the message to another language.

To Execute a Command when an Alert Occurs

1. Put a check in the Execute Command box.

2. Click the Execute Command edit field.

3. Enter a fully qualified path name for the command and any parameters, using the variables that appear in the Substitution Variables box.

If you selected multiple alerts and the alerts do not all execute the same command, the check box and field are gray. To set multiple alerts to execute the same command, select the alerts and complete this field. To change the action the system takes in an alert situation, choose a message and type a new command in the Execute Command edit field. If the command is a DOS executable or batch file, you must include the extension, for example, EXECUTE.EXE for a DOS executable or FILE.BAT for a batch file. For help in writing a DOS command or a batch file, see your DOS documentation or on-line help. To test operation of this command in real time, choose the Test button.

To Send E-Mail

NOTE

To receive e-mail, a Windows 3.1x node or a Windows 95 node in a Novell network must run a messaging application program interface (MAPI)-capable messaging software program such as MS Exchange (indigenous to Windows 95) or MS Mail. An OS/2 node must install vendor independent messaging (VIM) software such as Lotus CC:Mail. The CC:Mail Post Office must be level 6 or above, and you must add a mailbox named lansafe with the password lansafe.

1. Select a message in the message list.

2. Check the E-mail box.

3. In the text edit field, type the e-mail addresses of the persons to whom you want this message sent should it be necessary to send it. Separate multiple addresses by commas.

If multiple alerts are selected, the check box is gray unless all the alerts send e-mail to the same destinations.

To set multiple alerts to send e-mail to the same users, select the alerts and enter their names in this field.

CAUTION

Choose Defaults only to return all messages and strings (including saved messages and strings) to their factory settings.

The e-mail recipient receives the message via the recipient's mail system. The sender may send e-mail by a different mail system. Recipients should be sure their systems are set up to receive e-mail from all potential senders. See documentation for the specific systems for details.

To test operation of this command in real time, choose the Test button for E-Mail.

To Send a String to a Modem

1. Put a check in the Send String to Modem check box.

2. Specify the modem port by choosing Comm Port to open the Communications Port dialog box.

3. Click the text field.

4. Using the variables that appear in the Substitution Variables box, enter a string to be sent. See Creating a Modem String.

If you select multiple alerts, the check box and text field are blank unless all the alerts send the same string to the modem.

To set multiple alerts to send the same string to the modem, select the alerts and enter the string.

To test operation of this command in real time, choose the Test button.

Creating a modem string

Exact instructions for creating a modem string vary from carrier to carrier. However, the following example, which assumes SkyPage and the Windows Terminal program, should provide the essential details for you to create a modem string in a system other than SkyPage and Windows, if necessary. After creating your modem string, be sure to test it.

NOTE

If your service does not handle alphanumeric messages, check with your service.

```
ATZ (Return & Wait)
OK
ATDT918007599673 (Return & Wait)
CARRIER 2400
PROTOCOL: LAP-M
COMPRESSION: NONE
CONNECT 2400/ARQ (Return & Wait)
SKYTEL REMOTE TERMINAL
PAGER ID: 3024258 (Return)
FUNCTION:     (Return)
ENTER ALPHA MESSAGE: TEXT HERE (Return)
SEND ?: (Return)
FUNCTION: 99 (Return)
In this case the dialing string would be as follows:
ATZ$RET$WAIT$ATDT18007599673$RET$WAIT$RET$WAIT12345678$RET$TEXT HERE$RET$RET99$RET
```

The following table shows definitions of the string and variables:

ATZ	Soft reset modem and restore active profile 0*.
$ RET	Carriage Return (Enter).
$WAIT	Wait for any string to return from other modem.
ATDT	Dial in touch tone mode (Always followed by the phone number with any necessary prefixes or suffixes). i.e. 918005551212. 9, to get an outside line, 1 for long distance and 8005551212 is the area code and phone number of the modem/service you wish to call.
TEXT HERE	Pertinent text should be inputted exactly as you would like it to display on the pager. You can use one of the wild cards listed below to substitute from data collected from the connected CPU.
$MSGNUM	The actual number of the alarm from list or manual.
$MACHINE	The name given to the CPU (Not by LanSafe III or FailSafe III software).
$MESSAGE	Repeat the message string set up in the “Message Text” window. Can change language and include variables also.
$MINUTES	Minutes remaining until shutdown.

*Modem Profile should be pre-configured for your service (bits, parity, stop bits, and baud rate (that is, 8, none, 1, 2400).

To Set a Delay Time for an Alert Message

You can set a delay on particular messages in addition to the wink time set under Shutdown Timing. If the situation is resolved before the combined wink time and delay time expire, you are not interrupted.

1. Select a message. If a delay time can be set for the message, the Delay Time (seconds) edit field becomes active.

2. Select a delay time.

To Send Broadcast Messages to Logged-On Users (LanSafe III)

NOTE

This feature is not available in Windows 95.

1. Put a check in the Broadcast Message to Users check box.

2. Choose the users to receive broadcast messages, using the All radio button to send a message to all users or the Some radio button to send a broadcast message to those you specify in the list box. If you select multiple alerts, the check box is gray unless the alerts send broadcast messages to the same users.

3. To set multiple alerts to send broadcast messages to the same users, select those alerts and complete the information in this area. To test operation of this command in real time, choose the Test button. Users who are not logged in at the time of the alert do not receive a message.

To Send NetFinity Alerts

Place a check mark in the Send a NetFinity Alert check box.

Routine Shutdowns

Use FailSafe III or LanSafe III to shut down all or part of your system at any time. If your UPS supports load shedding, you can schedule shutdowns on a regular basis. Use to the Shutdown menu to shut down the selected Power Monitor node, and unload the Power Monitor program at the selected node. Use the Weekly Schedule option under the Shutdown menu to schedule shutdowns and restarts at a set time.

To Unload the Power Monitor (LanSafe III)

Choose Unload Power Monitor from the Shutdown menu.

NOTE

Exercise extreme caution in using the Shutdown menu. If a server is shut down from the Console, all users on the server are forcibly logged out, and work in progress may be lost.

When a UPS group member chooses Unload Power Monitor from the Shutdown menu, the UPS Group Unload dialog box opens. You can unload UPS group members, but if you unload the UPS group controller you automatically unload the entire group.

To Shut Down and Reboot the System

1. Choose Shutdown/Reboot System from the Shutdown menu to open the Shutdown/Reboot dialog box.

2. For an automatic reboot after shutdown, choose Reboot. If your UPS supports it, choose Timed for a shutdown of a specific length, or choose Permanent for a system shutdown until the UPS is restarted.

3. Choose Shutdown.

Choosing Timed activates the Time To Come Up spin field where you set a date and time for the system to reboot.

To Shut Down a Load Segment on a Scheduled Basis

Only UPSs supporting load shedding support this feature.

1. Choose Weekly Schedule from the Shutdown menu.
   The Weekly Schedule dialog box opens.

2. Highlight a load segment.

3. Use the Weekday scroll field to designate the day of the week to which the schedule is to apply.

4. Use the Goes Off At scroll field to designate the time power to the load segment is to turn off.

5. Use the Goes On At scroll field to designate the time power to the load segment is to turn on.

Load Shedding

If your UPS supports load shedding, you can divide your load into segments with various shutdown or restart delays. At the start of an emergency, load shedding is used to shut down non-essential equipment so there is more battery power for the essential equipment. It is used at startup to bring essential servers or other equipment on line before non-essential equipment is started.

To Configure Load Segments

1. Attach your computer and peripherals to the numbered load segment receptacle groups on the rear of your UPS.

2. Choose Load Segment Configuration from the Setup Menu. The Load Segment Configuration dialog box opens.

3. In the Load Segment/Computer List, drag the icon for your computer to the Load Segment to which it is physically attached on the back of your UPS. Your non-essential peripherals should be physically attached to the other Load Segment on back of the UPS.

To Shorten a Shutdown Delay

NOTE

Before setting a shutdown delay, you must configure your load segments. See the Load Segment Configuration procedure.

1. In the Load Segment Configuration dialog box, choose the Load Segment for the devices other than your computer.

2. Set a Power Failure Run Time, using the Power Failure Run Time scroll list.

To Delay Restart of a Load Segment

1. In the Load Segment Configuration dialog box, choose the Load Segment for the devices other than your computer.

2. Set a Restart Delay, using the Restart Delay [seconds] scroll list.

NOTE

You can also set this delay by using the Restart Delay dialog box. Choose Restart Delay from the Setup menu.

To Set a Restart Delay

This feature is supported only by certain UPSs. See your UPS manual for details.

Specify a restart delay for any load segment with equipment you do not need immediately upon reboot. Servers or your computer can be left with a zero restart delay (the default), while workstations or peripherals can be programmed with a later restart delay.

To Delay Restart of Non-Essential Peripherals

1. Choose Restart Delay from the Setup menu. The Restart Delay dialog box opens.

2. Select the Load Segment to which your computer is attached.
   The computer name appears in the Attached Computers box.

3. Set a restart delay, using the Restart Delay [seconds] scroll list.

You can also set this delay by using the Load Segment Configuration dialog box. Choose Load Segment Configuration from the Setup menu.

Accessing the Help System

To access online help from any dialog box, press F1. To access the complete online help program, choose General Usage from the Help menu.

To Check the Software Version

Choose About from the Help menu to open the About dialog box.

Alternate Console Startup Methods

For alternate methods for running the LanSafe III Console, see below.

To Monitor LanSafe III on Another Node

Do one of the following:

- Start the Console, and select the node using the Select Node dialog box.
- In the directory with your LanSafe III files, start LS3CON NodeName (LS3CONW NodeName for Windows 3.1x).

To Control LanSafe III on Another Node

Do one of the following:

- Start the Console, choose Enter Access Code from the File menu, enter the other LanSafe III access code, and select the node using the Select Node dialog box.

- In the directory with your LanSafe III files, start LS3CON /A=AccessCode NodeName (LS3CONW /A=AccessCode NodeName for Windows 3.1x).

To Control a Node in a Group Whose Access Codes Differ from Yours

Do one of the following:

- Start the Console, enter the access code, and select the desired node using the Select Node dialog box.
- In the directory with your LanSafe III files, start LS3CON /A=AccessCode (LS3CONW /A=AccessCode for Windows 3.1x).

To Limit Your Build to Speed Network Polling

1. Create a text file in the directory where your LanSafe III files are stored listing one network segment per line.
   To add a comment to a line, type # and your text. The system will not read it.

2. In the directory where your LanSafe III files are stored, start LS3CON / Networks=MYNETS.TXT (LS3CONW / Networks=MYNETS.TXT for Windows 3.1x).

Rather than poll the entire network, LanSafe III polls only the network segments on your list.

If you do not enter a command line parameter, the Console attempts to read a file named NETWORKS.TXT in the LanSafe III directory. If this file does not exist, the entire network is polled.

SECTION 4

UNIX TEXT-BASED ENVIRONMENT OPERATION

You can run LanSafe III for UNIX without X Windows using a text-based environment. Operation is from a Main Menu. Options appear on the terminal screen as text prompts.

You can monitor and control all functions for your own node. You can monitor all nodes in your network. To control them, you must have the access code.

Before you begin, be sure the daemon (ls3) is running.

To Start the LanSafe III Console for Your Own Node

Assuming the default installation path, type /usr/ls3/ls3con

To Start LanSafe III and Select a Node Other than Your Own to View or Control

Type /usr/ls3/ls3con [-a accesscode] [hostname]

> ...where [hostname] and [-a accesscode] apply to the node you wish to view or control.

If you do not know the access code, press <Enter> to bring up a version of the Console in which only options 1 and 5 are active, allowing you to monitor but not control the node.

Options 1 through 4 of the Console Main Menu are disabled if the wrong access code is entered. Individual features are disabled if the UPS does not support them.

Configuring LanSafe III

Choose 1 from the Main Menu to open the Configure LanSafe menu.

To Close the Screen and Return to the Main Menu

1. Type 0.
2. Type y to save or n to discard any configuration changes.

To Enter a New Communications Port

1. Type 1.
2. Type the device name.

For a list of device names, see section 2, Installation.

To Configure Shutdown Timing

1. Type 2.

2. Enter values for wink time, power failure countdown time, and time needed to down system.

See section 3, Operation, for an explanation of these values.

To Schedule Maintenance

Type 3 and enter the number of days between maintenance reminders. The reminders appear in the Power Monitor window and the Power Log each day until you run preventive maintenance.

To Change the Access Code

[This applies to the node whose hostname and address appear on the Main Menu.]

1. Type 4.
2. Enter the new access code.
3. Reenter it.
4. When the “Are You Sure?” prompt appears, type y to confirm or n to abort the code change.

To Save any Setting Changes You Have Made

Type 5.

To Cancel any Changes and Restore the Defaults

Type 6.

Use this option to return the system to the defaults even after you have made changes and saved and entered them.

Running a Hardware Test or Preventive Maintenance

1. From the Main menu, choose 1 to run a hardware test or 3 to run preventive maintenance.

2. Refer to the Console Data View Operational Status display.

3. If a problem is found, a message appears.

Shutting Down or Rebooting the Workstation

1. From the Main menu, choose 4 to open a list of shutdown/reboot options.

2. Type 1 for a long shutdown, 2 for a short shutdown, 3 for a permanent shutdown, 4 to shut down the LanSafe III daemon and terminate LanSafe III power protection, or 0 to close the screen and return to the Main menu.

If you are considering a long or a short shutdown, see your UPS documentation to determine if the unit supports shut downs of varying lengths. If you choose a permanent shutdown, restart your system in accordance with your UPS documentation.

Monitoring a Power Environment

From the Main menu, choose 5 to open a list of UPS values for utility and battery power.

Contents of this list vary according to UPS model.

Backup Time is the number of minutes the UPS is capable of supporting your system as presently configured.

To Update the List, or to Close It

1. Press any key and <Enter>.
2. Type 1 to update the listed values or 0 to close the list.

Exporting Log Files

1. From the Main menu, choose 6 to open a list of log export options.
2. Type 1 to export the Power Log or 2 to export the Battery log.

APPENDIX A

TROUBLESHOOTING

If your power management software fails to perform as it should, here is a list of things to check:

1. Be sure that communication between the UPS and your computer is correctly set up and configured.

   - Be sure you are using the correct communications cable. If a cable was included with the UPS, use that cable only. If a cable was not included with the UPS, use the cable that came with your software.
   - Be sure the computer communications port used is a dedicated port.
   - Be sure the computer communications port is the one chosen in the Communications Setup dialog box.
   - Test your communications port: Remove the communication cable and replace it with your mouse. If you cannot move your cursor, the port is inoperative.

2. For Windows NT and Novell environments, be sure you are running LanSafe III in a computer network, not a standalone computer.

3. If you are running LanSafe III in a network, be sure you have logged on to your network in accordance with the correct procedures.

4. Review the system requirements for file servers and workstations in Section 2, Installation.

5. Review the lists in Things to Remember About Running the Software, and Things To Remember When Running LanSafe III in a UPS Group in Section 3, Operations.

6. See Table A-1.

To reinstall, see Section 2, Installation.

Table A-1. Troubleshooting (Novell, Microsoft, OS/2 Platforms)

Problem	Possible Cause	Solution
Message: Must log on to server with SUPERVISOR rights	You are not logged into a file server	Log on, using account with SUPERVISOR rights
	Account you logged onto lacks SUPERVISOR rights	Log on, using account with SUPERVISOR rights
I do not see file server	You are not logged on to or attached to file server	Log on or attach to server using account with SUPERVISOR rights
I want to install on list displayed by LanSafe III	The account you are logged on or attached to does not have SUPERVISOR rights	Log in or attached to server you want to install, using account with SUPERVISOR rights
Message: Configuration file error	Installation unsuccessful	Reinstall
	User installed for LanSafe III lacks SUPERVISOR rights	Assign SUPERVISOR rights to user
Installation successful, but Console cannot see node	Power Monitor not loaded after installation	Start Power Monitor
Message: Unable to Contact Power Monitor	Software not running	Start Power Monitor
Message: Cannot contact UPS Group Controller	Group Controller not running LanSafe III	Start LanSafe III on Group Controller node
Message: Comm port unavailable	Another hardware device is configured with same IRQ or I/O address as LanSafe III or FailSafe III	Reconfigure LanSafe III or FailSafe III and communication port hardware with different addresses
Communications error message; or power failure or low battery messages despite no apparent failure; or, no messages when power failure is simulated	LanSafe III or FailSafe III and cables configured on different communication ports	Reconfigure communications port
	Interface cable not connected, secure, or properly installed	See UPS Hardware installation manual

If yours is a UNIX system, see the list below.

Problem: **Message when I try to tar off the tape or diskette: Device not found or unable to open device**

Solution: Check system documentation for correct device identification.

Problem: **Message: Cannot find install.ls3**

Solution:
1. Part of installation failed.
2. Check disk space and root permissions.

Problem: **Message during install: Files cannot be found**

Solution: Tar tape or diskette again and rerun install.sh

Problem: **Message when installation is completed: Power Failure**

Solution: Cable connected to wrong serial port.
Cable not connected to UPS.
Wrong cable type entered.

Problem: **Some nodes do not appear in Select Power Monitor Node dialog box.**

Solution: Power Monitors must be running on these nodes. Nodes must be reachable from the local node. To verify, use ping. Mapping for ls3 port must be the same on all machines. If NIS, NIS+, Yellow Pages, or some other network mapping service is running, then the services map must have entries for ls3.

For example:

```
ls3 3069/tcp
ls3 3069/udp
```

Otherwise the file /etc/services must contain the port mapping for ls3.

For example:

```
ls3 3069/tcp
ls3 3069/udp
```

The installation script modifies /etc/services. By default, the installation script tries to use port 3069, but if this port is being used the installation script chooses another. To make the change to /etc/services visible in an NIS environment, log on to the node acting as the NIS master, add the LS3 port mapping to the local /etc/services, and execute:

```
cd/var/yp
make
```

Problem: **The Power Monitor does not start when system is booted but running ls3. works.**

Solution: LanSafe III may be installed on an NFS file system. During system boot the directory containing LanSafe III is not yet mounted. Move S891s3.init from /etc/rc2.d to /etc/rc3.d.

Problem: **System alternates between "On backup power" and "Power Restored".**

Solution: LanSafe shares serial port with another process, most likely a getty process. Connect UPS to another port and reconfigure LanSafe, or terminate the getty.

Problem: **Intermittent serial I/O error.**

Solution: Be sure that only one LanSafe III daemon process is running and that no other process is using the same serial device.

Problem: **Power removed from UPS but no message.**

Solution: Be sure the LanSafe III daemon process is running (ls3).
Be sure the cable is connected to the UPS.
Be sure the cable is connected to the correct serial port.

Problem: **UPS reports serial I/O error.**

Solution: Be sure the interface cable is properly installed and secure. Verify that the Console is set to use the port to which the cable is connected.

Problem: **"Cannot write to port" message.**

Solution: Be sure root has read/write privileges on the port. Be sure that only one LanSafe III daemon process is running and that no other process is using the same serial device.

Problem: **"Cannot connect to daemon" message.**

Solution: Be sure the ls3 daemon is running. If not, start the daemon from the command line via /usr/ls3/ls3 (assuming it is installed in the default directory).

APPENDIX B
GLOSSARY

This glossary defines terms and other technical terms as used in power management. For definitions of more general terms, see a standard computer reference.

ABM™. The abbreviation for Advanced Battery Management, and a trademark of Exide Electronics. ABM is a proprietary, microprocessor-based, state-of-the-art system for monitoring and managing UPS batteries, with such features as quick recharging, doubled battery service life, and up to 60 days of early warning before your batteries need replacement. ABM prevents overcharging and accelerated battery aging by not constantly charging the battery.

Access Code. A means of facilitating the use of LanSafe III software, and of preventing unauthorized shutdowns and disabling.

Battery Management Log. A record of ABM or Battery status whenever the ABM or battery changes state. Records include log started, charging, discharging, floating (meaning battery is receiving only a nominal charge), log stopped, and log cleared. ABM systems include a “resting” message when the battery is receiving no charge. This ABM feature reduces battery wear.

Blackout. A complete loss of utility power to the UPS.

Boost and Buck. A proprietary line regulation process used when an overvoltage or undervoltage situation occurs in the UPS. Undervoltage is boosted to make it greater and overvoltage is bucked to reduce it, thus reducing reliance on the battery.

Brownout. A condition where the utility power voltage drops below the lower limit of the UPS, causing a switch to battery power via the inverter.

Bypass Circuitry. A feature of some UPSs which causes your system load to be powered directly from the UPS input. See your hardware manual for details.

Charger. See Rectifier/Charger.

Console. Your primary interface with the UPS through the software. It allows you to view and control the power environment of every node where the Power Monitor is running.

Data view. A Console display of colored bar graphs and text to give you a concise but comprehensive overview of the UPS hardware and the utility power situation. Values are updated at various intervals of less than 30 seconds to reflect a current picture of the environment. See PowerScope.

Domain. In Windows NT, a group of computers with its own name, database, and security policy. The computers are classified as the domain controller, other servers (when used), and workstations.

Domain Controller. In Windows NT, the server that maintains the domain's security policy and master database, and authenticates domain logons. Domain controllers run Windows NT Advanced Server. A domain may include other servers which receive copies of the domain's security policy and databases.

Emergency Shutdown. An automatic feature in the event of a UPS low battery or overload condition. The Power Monitor begins to shut down applications and files. Shutdown time is UPS-specified and depends on your UPS. Refer to your UPS manual. See also Orderly Shutdown.

Filters. The UPS components that prevent corruption of system data by helping to ensure that transients and high frequency noise are reduced or eliminated.

Hardware Test. Places the UPS on battery power for several seconds to verify proper operation of the hardware.

Inverter. The UPS component that converts DC from your UPS battery to AC for powering your system.

Load Shedding. A UPS feature enabling users to remove connected devices from the load. Load shedding extends the power of your UPS battery.

Other Server. In Windows NT and Lan Server, the computer that receives a copy of the domain's security policy and domain databases, and authenticates network logons. Other servers are distinguished from the domain controller which maintains the domain's security policy and master database. Other servers run Windows NT Advanced Server.

Orderly Shutdown. The power management software process, activated after a utility power failure, which protects users and file systems from lost or corrupted data. Power management software saves work in progress and shuts down your system in accordance with the shutdown timing you set.

% Load. A percentage of the UPS's calculated full load capacity.

Power Failure Countdown Time. The time in minutes after the end of wink time that the software waits before starting a shutdown sequence. Use this time to save your work and log out before your computer goes down.

Power Log (Power Event Log). A record of significant power events, including power outages, low battery and overload indications, hardware self-test results, software loads and unloads, serial communication connections and failures, and preventive maintenance reminders.

Power Monitor. The software component that communicates with your UPS to monitor the status of the input utility power, output load and condition of the UPS hardware. The Power Monitor also watches the power environment and provides alert processing, orderly shutdown, and logging functions.

In Windows NT, the Power Monitor consists of a Windows NT system service and window. The system service communicates with your UPS and provides alert processing, orderly shutdown of your file system, and logging functions. In the event of a utility power failure or other significant power event, the icon for the window appears on top of your currently active window and beeps until you open it. If a shutdown is necessary, the window shuts down your applications.

PowerScope. A system diagram with a full color display of your power. It is a View menu option. Values are updated at various intervals of less than 30 seconds to reflect a current picture of the power environment.

Preventive Maintenance. A procedure by which the UPS is placed on battery power for several seconds to verify proper operation of your hardware. If your UPS does not support preventive maintenance, a hardware test is run.

Rectifier / Charger. In some UPSs, a rectifier converts AC to DC. In others, a charger which includes a rectifier converts AC to DC.

Requester. A computer running OS/2. See Workstation.

Restart Delay. A control of the Load Segment Configuration and Restart Delay dialog boxes used to bring up a server before workstations, or to bring up peripherals after a workstation or workstations have been brought up.

Run time. Maximum battery time available to support your system until inverter shutdown, based on current load and UPS conditions.

Surge Condition. A situation in which utility power voltage exceeds the upper limit of the UPS, causing a switch to battery power.

Time Needed to Down System. The time in seconds from when the software begins to shut down your system until the power from the UPS shuts off.

UPS. Uninterruptible power system.

UPS Group–Group Controller–Group Members. When one UPS supports more than one computer (either servers or workstations), the configuration is called a UPS group. The one computer in the UPS group that is physically attached to the UPS communications cable is called the UPS group controller. All other computers powered by the UPS are called group members.

Wink. A brief interruption of utility power caused either by a blackout, a brownout, or a surge condition.

Wink Time. The number of seconds after a utility power failure that the software waits to inform you that the system will be shutting down. This delay eliminates nuisance messages from brief power interruptions.

Workstation. A computer running DOS, Windows, Windows 95, Windows NT or OS/2. In Windows NT, the domain controller and other servers run Windows NT Advanced Server. See Requester.

Send any comments about this product to
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Send any comments about this manual to
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