

HP UPS Management Module User Guide



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Audience assumptions

This document is for the person who installs and maintains power products. HP assumes you are qualified in the servicing of high-voltage equipment and trained in recognizing hazards in products with hazardous energy levels.

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Overview

Introduction

The HP UPS Management Module enables you to monitor, manage, and control power environments of up to five devices through the serial connectors located on the front of the management module. Multiple devices can monitor the UPS over the network connection. The management module can be configured to send alert traps to HP Systems Insight Manager and other SNMP management programs or used as a stand-alone management system.

For configuration and status monitoring, the management module includes:

- HP UPS Management Module web interface (on page 41)—A graphical interface that is accessed with a web browser
- HP UPS Management Module Service Menu (on page 78)—A text-based menu that is accessed through telnet or a terminal emulation session

For a detailed list of supported UPSs, see the HP website (<http://www.hp.com/go/rackandpower>).

Features

- Monitors the status of the UPS and performs diagnostics
- Manages a graceful shutdown of attached equipment during a utility power failure
- Manages independent UPS load segments to provide separate power control of connected equipment
- Prioritizes the timing of equipment shutdown and reboots connected equipment by load segment
- Delays restart by load segment after a power outage to sequence the startup of system components
- Shuts down and reboots the UPS and attached equipment, based on a user-specified schedule
- Sends customized email and broadcast notification messages and SNMP traps
- Issues computer commands at power failure
- Displays logs for analysis
- Supports a redundant UPS configuration
- Includes enhanced HP SIM integration
- Includes multi-language support
- Supports serial- and network-attached server communications
- Supports a customizable Events script

HP UPS Power Protection Agent overview

The HP UPS Power Protection Agent runs on a local or network server and allows the management module to gracefully shut down the operating system of that server and optionally run a script during power failure. Install the agent on any machine that is powered by the UPS and any machine that the management module uses to initiate a command.

NOTE: If you are an existing HP Power Manager user, you must uninstall the HPPM Remote Agent before installing the UPS Power Protection Agent.

If the UPS Power Protection Agent is not applicable for your load devices, you can use a third-party SNMP manager to monitor the power protection. For more information, see "SNMP monitoring (on page 111)."

HP UPS Power Protection Agent requirements

NOTE: For the latest supported operating systems, see the HP website (<http://www.hp.com/go/rackandpower>).

Hardware and software	Suggested minimum requirements
Hardware	200-MHz processor
Disk space	10 MB free disk space
System memory	64 MB of RAM
Operating system (32-bit)	Microsoft® Windows® XP Professional with Service Pack 2
	Microsoft® Small Business Server 2000 with Service Pack 4
	Microsoft® Windows® 2000 Server and Advanced Server with Service Pack 4
	Microsoft® Windows® Server 2003 Standard Edition x86 with Service Pack 2
	Microsoft® Windows® Server 2003 Enterprise Edition x86 with Service Pack 2
	Microsoft® Windows® Small Business Server 2003, Standard and Premium Editions x86 with Service Pack 2
	Red Hat Enterprise Linux 4 for x86 with Update 5
	Red Hat Enterprise Base Server/Advanced Platform Linux 5 for x86
	SUSE Linux Enterprise Server 9 for x86 with Service Pack 3
	SUSE Linux Enterprise Server 10 for x86 with Service Pack 1
Operating system (64-bit)	Microsoft® Windows® Server 2003 for AMD64 and Intel® EM64T with Service Pack 2
	Microsoft® Windows® Server 2003 Enterprise Edition For Itanium®-based Systems with Service Pack 2
	Red Hat 4 for Itanium® with Update 5
	Red Hat Enterprise AS/ES Linux 4 for AMD64 and Intel® EM64T with Update 5
	Red Hat Enterprise Base Server/Advanced Platform Linux 5 for Itanium®
	Red Hat Enterprise Base Server/Advanced Platform Linux 5 for AMD64 and Intel® EM64T

Hardware and software	Suggested minimum requirements
	SUSE Linux Enterprise Server 9 for AMD64 and Intel® EM64T with Service Pack 3
	SUSE Linux Enterprise Server 9 for Itanium® with Service Pack 3
	SUSE Linux Enterprise Server 10 for AMD64 and Intel® EM64T with Service Pack 1
	SUSE Linux Enterprise Server 10 for Itanium® with Service Pack 1
	HP-UX 11.0 for HP 9000 with patch bundle HPUX_800_11.0_11081152, PHCO_28112*
	<p>HP-UX 11i v1 (11.11) with the following patches for all v1 machines: PHNE 28799, PHNE_29887, PHSS_22535*</p> <p>Patches for B2000 machines include the v1 patches, plus the following patches: PHKL_28253, PHSS_28547, PHSS_28548*</p>
	HP-UX 11i v2 (11.23) with the latest patch bundle*

* For the latest updates of HP-UX patches, see the HP Patch Firmware Database website (<http://www1.itrc.hp.com/service/patch/mainPage.do>).

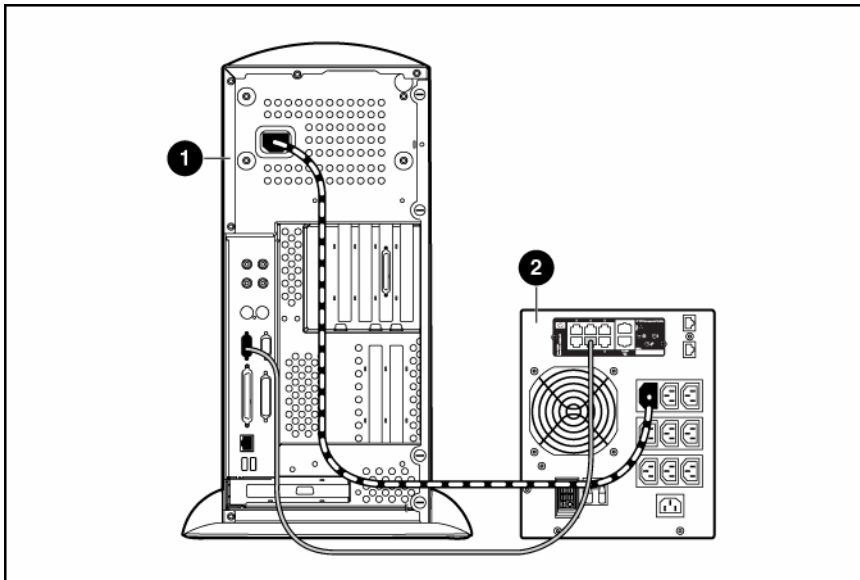
Typical hardware configurations

The management module can be attached in any of the following configurations:

- Configuration A (on page 10)—UPS connected serially to devices that monitor, manage, and control the UPS
- Configuration B (on page 10)—UPS connected to devices that monitor the UPS over the network.
- Configuration C (on page 11)—UPS connected serially to devices that monitor, manage, and control the UPS, and connected to devices that monitor the UPS over the network
- Configuration D (on page 12)—Redundant UPS configuration with serial connections
- Configuration E (on page 13)—Redundant UPS configuration with network connections
- Configuration F (on page 14)—Redundant UPS configuration with serial and network connections
- Configuration G (on page 15)—Redundant UPS configuration with dual subnet

Configuration A

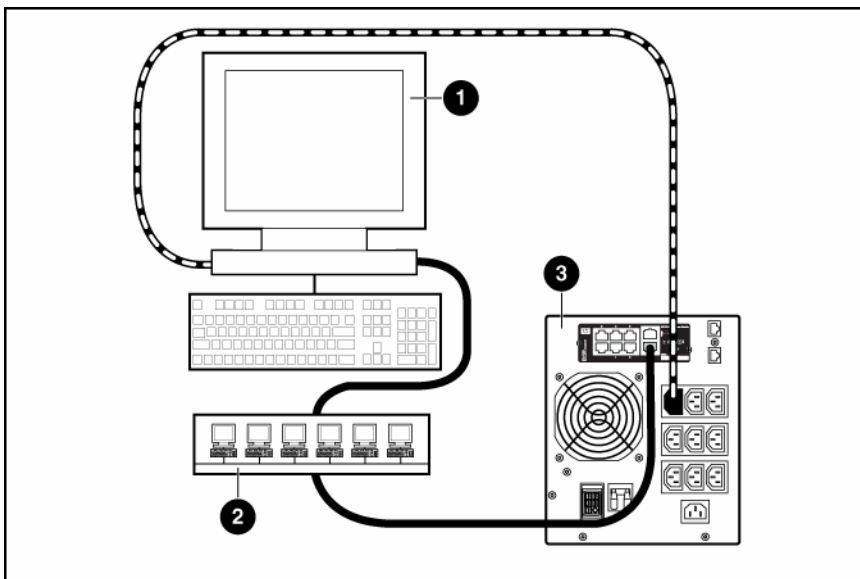
This figure illustrates a UPS with a management module installed that is serially attached to a server running the UPS Power Protection Agent. The server is plugged into a load segment of the UPS, and is able to monitor, manage, and control the UPS.



Item	Description
1	Server with UPS Power Protection Agent installed
2	UPS with management module installed

Configuration B

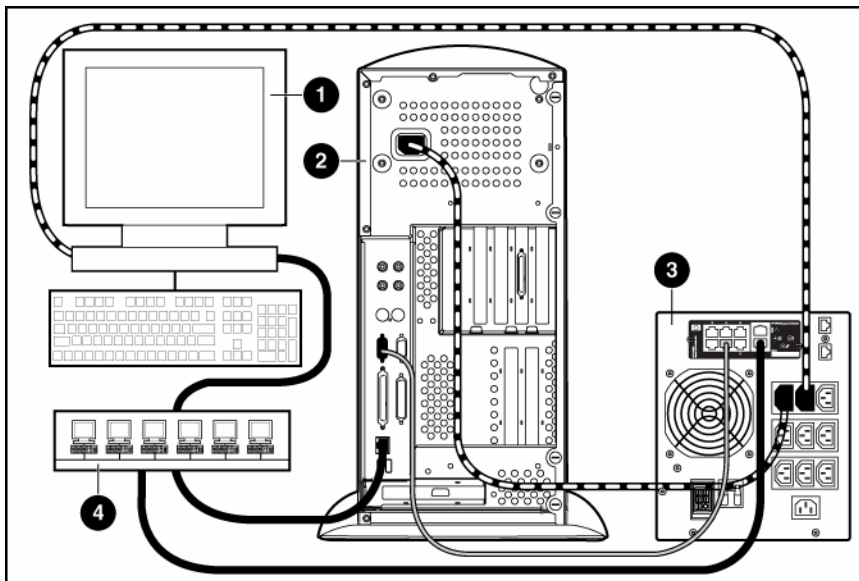
This figure illustrates a UPS with a management module installed that is connected to the network. A server on the same network running the UPS Power Protection Agent monitors the UPS.



Item	Description
1	Server with UPS Power Protection Agent installed
2	Network
3	UPS with management module installed

Configuration C

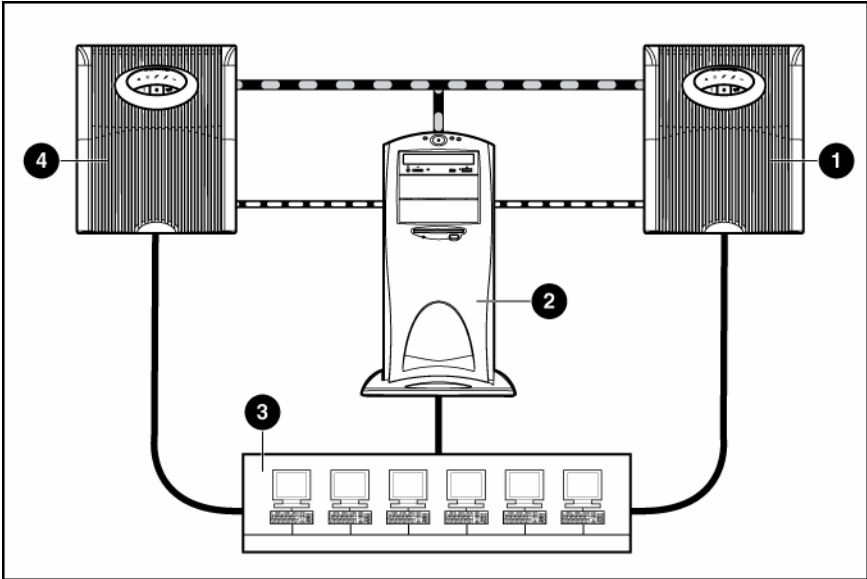
This figure illustrates a UPS with a management module installed that is serially attached to a server running the UPS Power Protection Agent. The server is plugged into a load segment of the UPS, and is able to monitor, manage, and control the UPS. The management module is also connected to a network where another server running the UPS Power Protection Agent monitors the UPS.





Item	Description
1	Network server with UPS Power Protection Agent installed
2	Server with UPS Power Protection Agent installed that is serially attached to the UPS
3	UPS with management module installed
4	Network

Configuration D

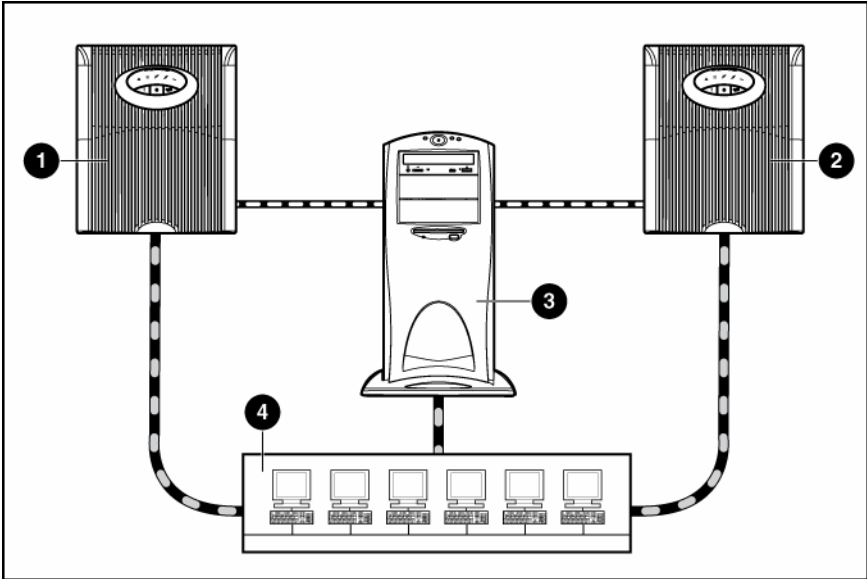
This figure illustrates a redundant configuration with serial connections.





Item	Description
1	UPS A
2	Server
3	Network
4	UPS B
	Power connection
	Communication path

Configuration E

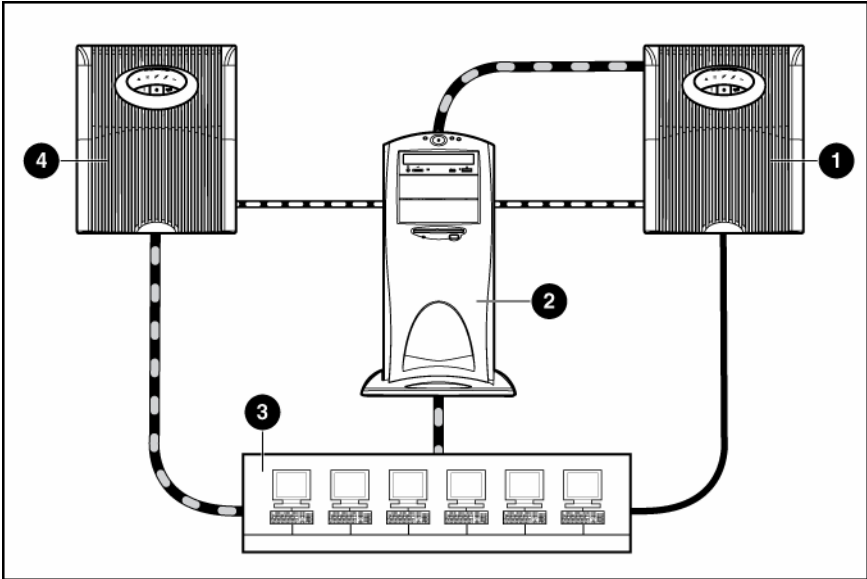
This figure illustrates a redundant configuration with network connections.





Item	Description
1	UPS A
2	UPS B
3	Server
4	Network
	Power connection
	Communication path

Configuration F

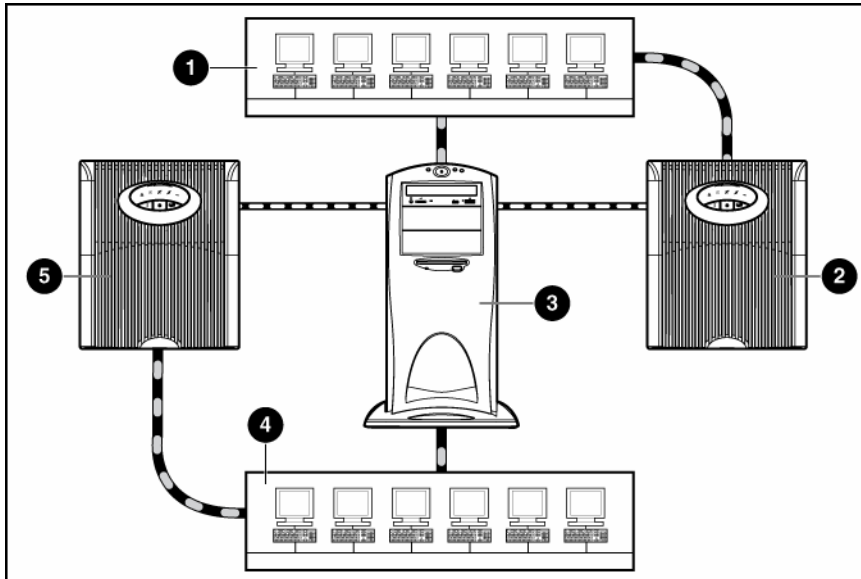
This figure illustrates a redundant configuration with serial and network connections.





Item	Description
1	UPS A
2	Server
3	Network
4	UPS B
	Power connection
	Communication path

Configuration G

This figure illustrates a redundant configuration with dual subnet.



Item	Description
1	Subnet A
2	UPS A
3	Server
4	Subnet B
5	UPS B
	Power connection
	Communication path

Web interface requirements

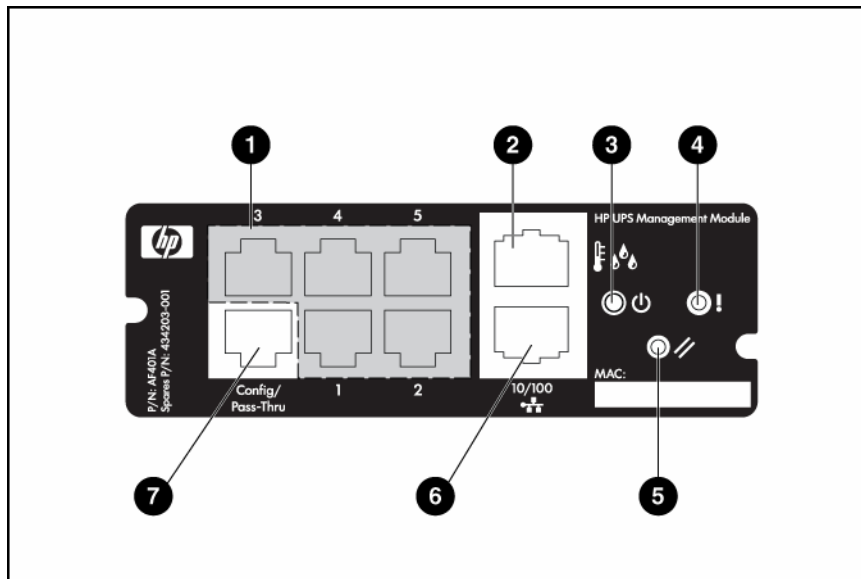
The following table lists the minimum requirements necessary to operate the web interface.

Software	Browser
Web browser on a client	Microsoft® operating systems <ul style="list-style-type: none"> • Microsoft® Internet Explorer 6.0 with Service Pack 1 (32-bit only) • Microsoft® Internet Explorer 7.0 (32-bit only) Red Hat Linux operating system (32-bit only) <ul style="list-style-type: none"> • Firefox 1.5.x • SeaMonkey 1.0.1 SUSE Linux operating system (32-bit only) <ul style="list-style-type: none"> • Firefox 1.5.x • Mozilla 1.7.8

Software	Browser
Monitor resolution	Minimum supported resolution of 1024 x 768, 16-bit high color (maximize browser window for optimal display)

Component identification

Front panel



Item	Description
1	Serial device connectors
2	Environmental connector (for future use)
3	Power LED
4	Error LED
5	Reset button
6	Network connector
7	Config/Pass-Thru connector

Installing the HP UPS Management Module

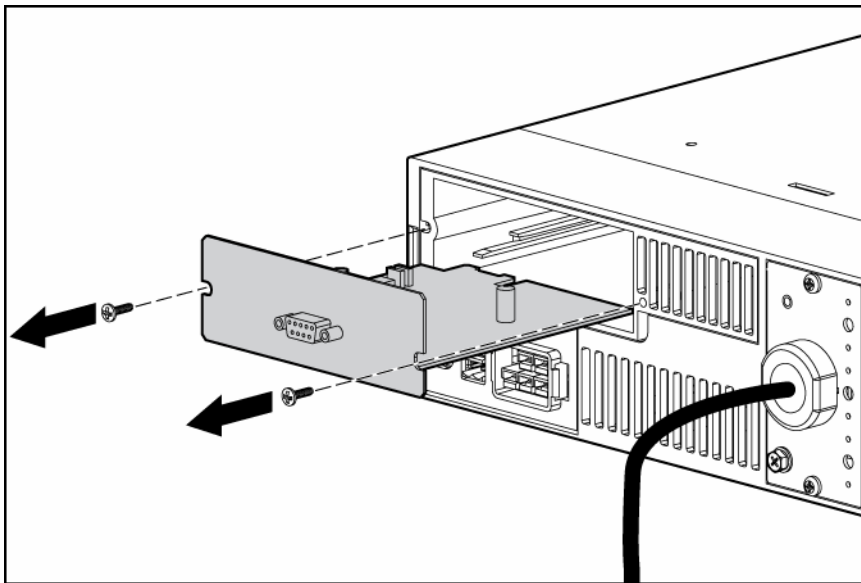
Required tools

No. 2 Phillips screwdriver

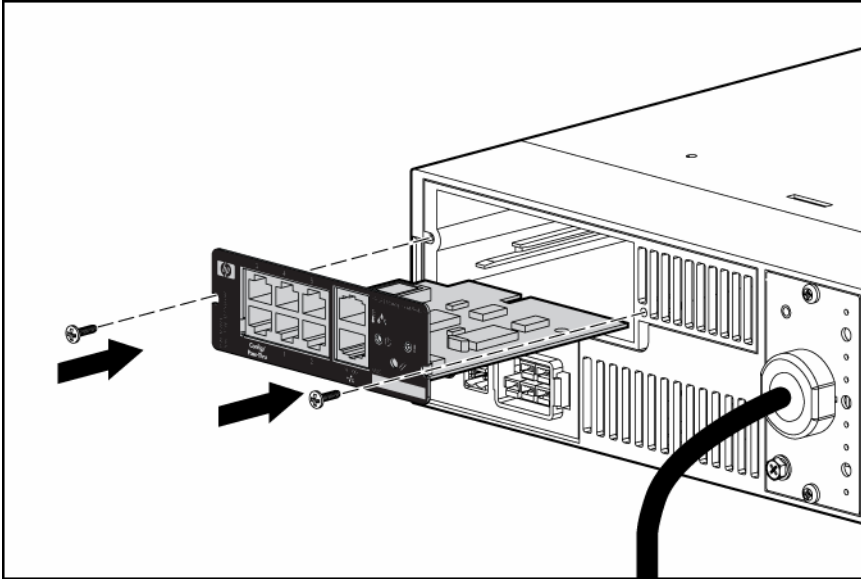
Installing the management module

NOTE: It is not necessary to power down the UPS before installing the management module.

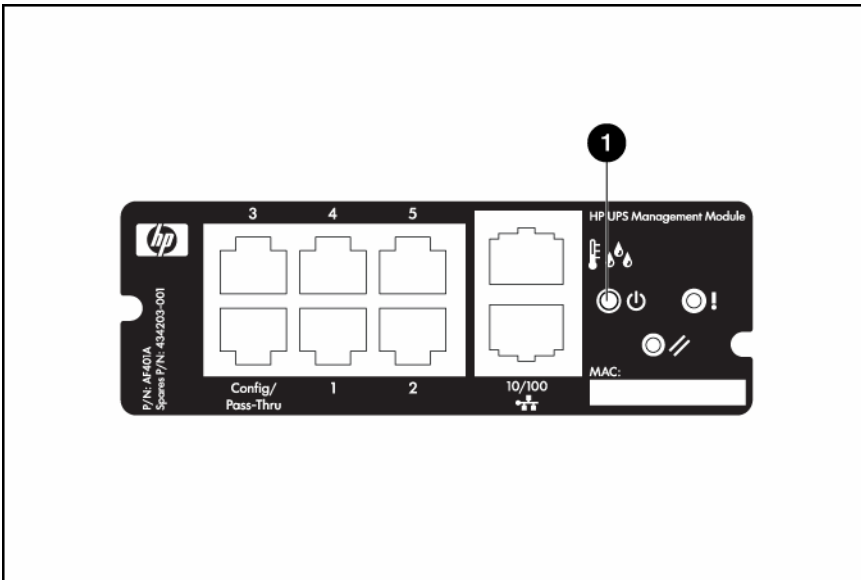
1. Disconnect the communications cable from the option card.
2. Remove the two screws securing the option card or cover plate and slide the card or plate out.



3. Install the management module along the alignment channels in the option slot.



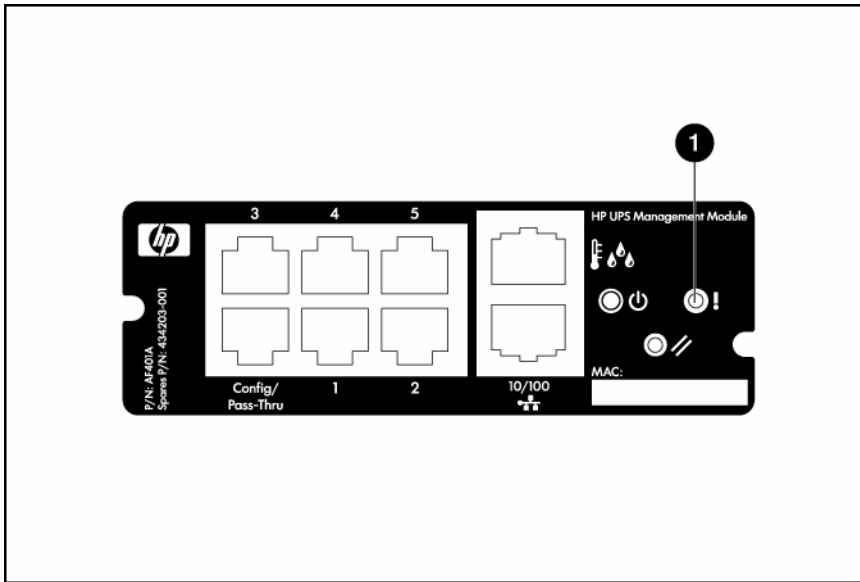
4. If the UPS is powered up, you can be sure that the management module is seated properly and receiving power by verifying that the Power LED is illuminated solid green.



5. Secure the management module using the two screws you removed in step 2.

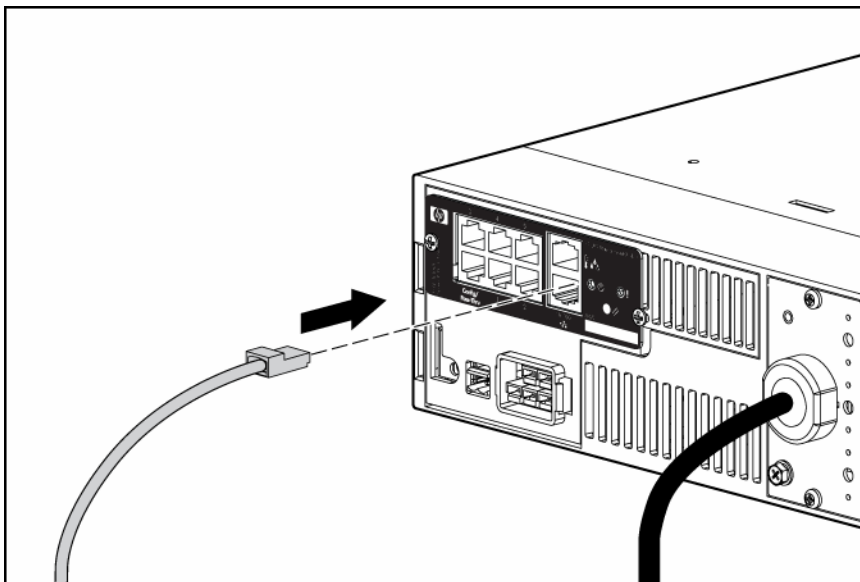
Checking the Error LED

If the Error LED illuminates red or flashes red, see the "Troubleshooting (on page 87)" section for more information.



Connecting the network cable

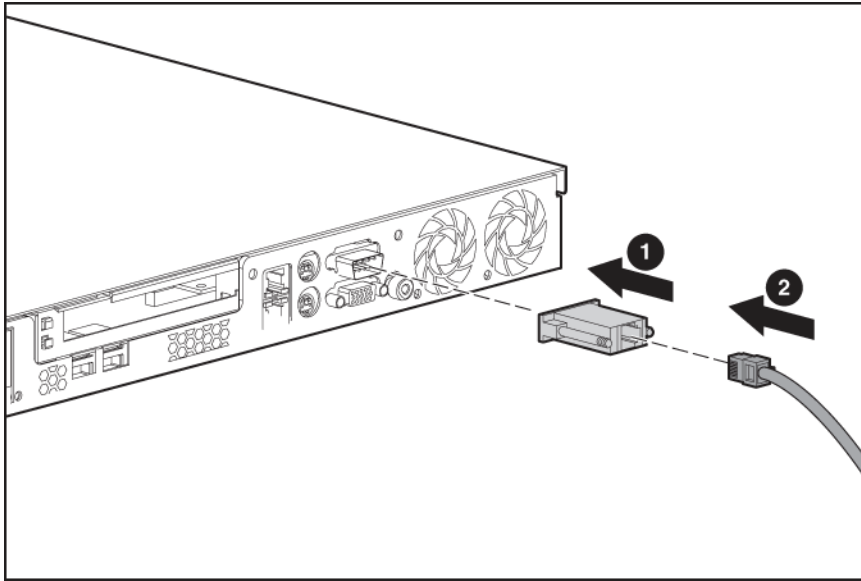
Connect a standard Ethernet cable between the network connector on the management module and a network jack.



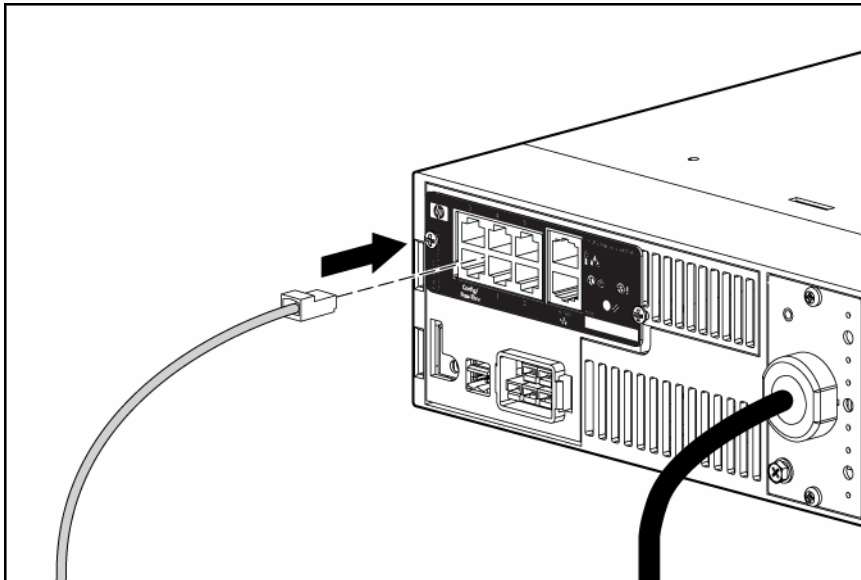
This connection is used to access the management module remotely through telnet or the web interface. The management module also uses the network connection to communicate to the configured agents and to facilitate SNMP-based monitoring.

Connecting the configuration cable

1. Connect a DB-9 to RJ-45 adapter to a serial connector on the host computer.
2. Connect one end of an RJ-45 cable to the RJ-45 connector on the adapter.



3. Connect the other end of the RJ-45 cable to the Config/Pass-Thru connector on the management module.



This connection is used to configure and access the management module locally through a terminal emulation program.

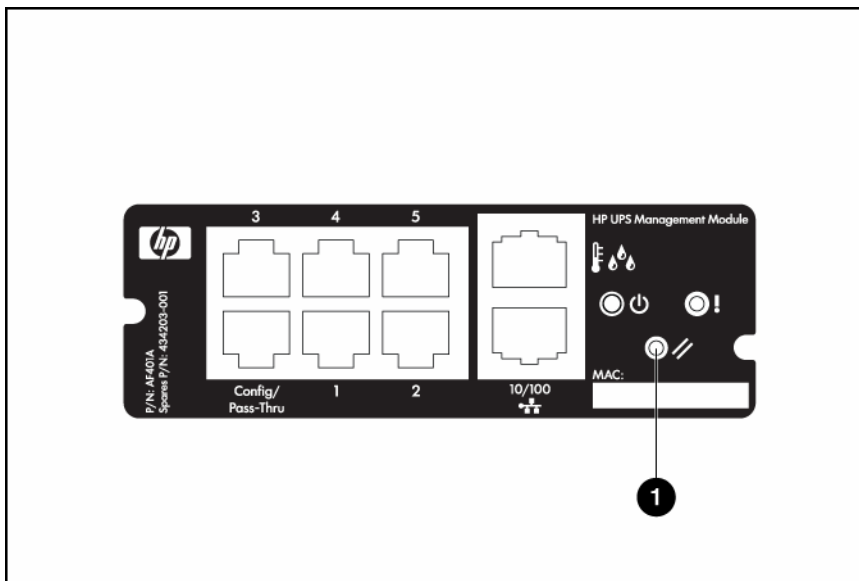
Launching a terminal emulation program

NOTE: HyperTerminal is the serial communication program provided with Microsoft® Windows® and is used in this section as an example for setting up a terminal emulation session. If you are using another utility, the steps might be different.

1. On the host computer, click **Start**, and select **Programs>Accessories>Communications>HyperTerminal**.
The Connection Description window appears.
2. Enter a description, select an icon for the connection, and then click **OK**. The Connect To window appears.
3. Select the serial connector on the host computer to which the DB-9 to RJ-45 adapter is attached, and then click **OK**. The COM Properties window appears.
4. Select the following parameter values, and then click **OK**.
 - Bits per second—115200
 - Data bits—8
 - Parity—None
 - Stop bits—1
 - Flow control—None

Configuring the management module for remote access

1. Be sure that you have connected the network cable ("Connecting the network cable" on page 20) to the management module.
2. Be sure that you have connected the configuration cable ("Connecting the configuration cable" on page 21) to the management module and the host computer with an open terminal emulation session.
3. Press the **Reset** button on the management module front panel.



On the terminal emulation session screen running on the host computer, the POST executes, and the following prompt appears:

Press any key in 5 seconds to enter Service menu.

4. Press a key to enter the HP UPS Management Module Service Menu.

Use the HP UPS Management Module Service Menu to configure the minimum settings required to access the management module remotely using telnet or the web interface. You can configure other settings using this utility in conjunction with a terminal emulation program or a telnet connection.

NOTE: If your network is configured with a BOOTP server, the network settings are automatically assigned. Verify and note the assigned values.

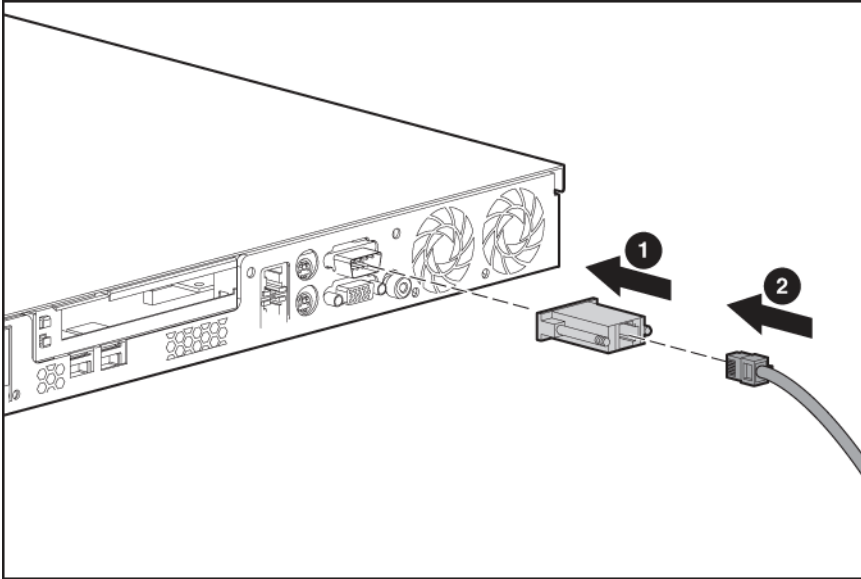
5. If your network is not configured with a BOOTP server:
 - a. On the Main menu, enter 1 at the prompt to open Module Configuration submenu.
 - b. Enter 2 at the prompt to enter the Network Configuration submenu.
 - c. Enter 1 at the prompt to enter the Network Settings submenu.
6. From this menu, change the mode used to acquire a network IP address to Static IP. You can also change the IP address, subnet mask, and default gateway of the HP UPS Management Module.
7. Configure web access:
 - a. On the Network Configuration submenu, enter 3 at the prompt to open the Web Access submenu.
 - b. Use the submenu options to select HTTP (default) or HTTPS and configure the associated port. The default port for HTTP is port 80, and the default port for HTTPS is port 443.
8. Configure telnet access:
 - a. On the Network Configuration submenu, enter 2 at the prompt to open the Remote Console submenu.
 - b. Use the submenu options to configure the telnet port. The default port is port 23.
9. Enter 0 at the prompt until you have returned to the Main menu.
10. Enter s at the prompt to save the changes and restart the management module.
11. Enter 2 at the prompt to close the configuration utility.

Connecting devices

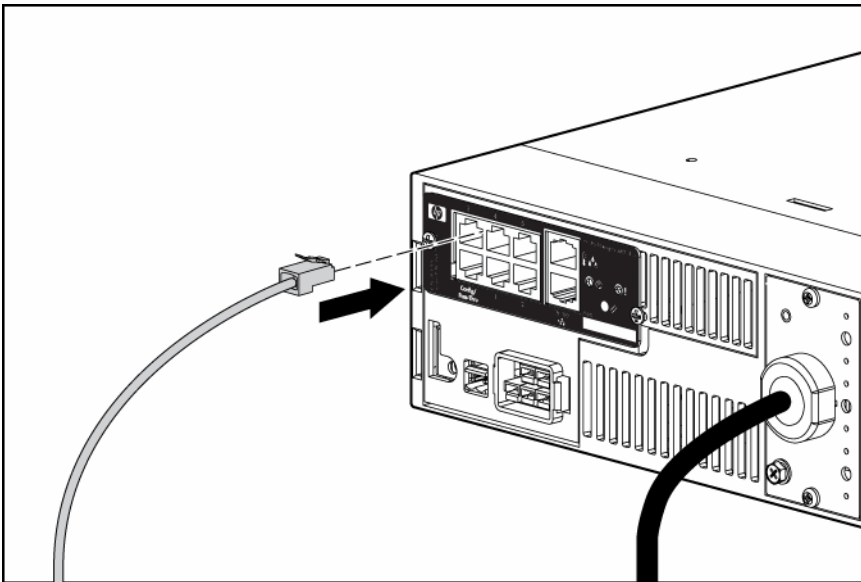
NOTE: The management module ships with one DB-9 to RJ-45 adapter for management module configuration. Five additional adapters for connecting serial devices are available for purchase in the adapter kit (part number AF402A).

1. Connect a DB-9 to RJ-45 adapter to a serial connector on the device.

2. Connect one end of a network cable to the RJ-45 connector on the adapter.

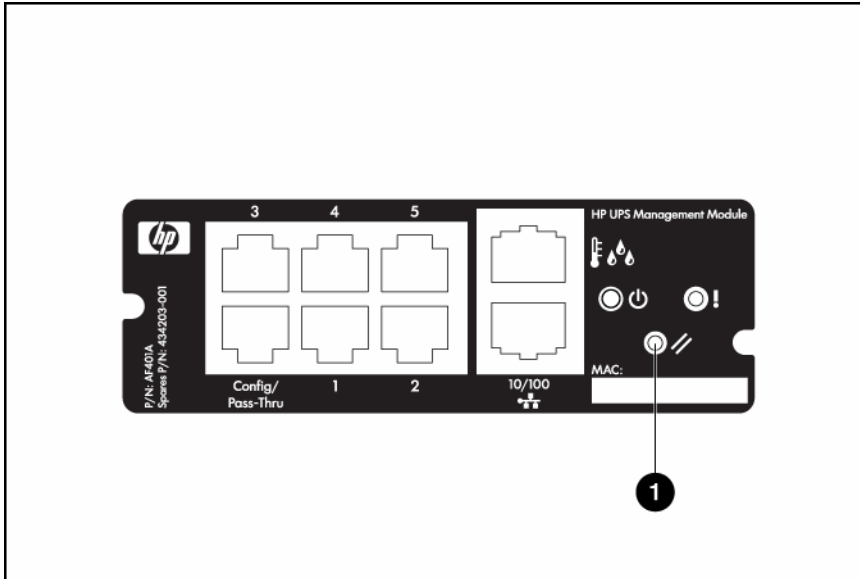


3. Connect the other end of the network cable to a serial device connector on the management module. Note the connector number on the management module to which the device is connected.



4. Connect the device to a UPS load segment receptacle using the device input power cord or a jumper cable.

5. Press the **Reset** button on the management module front panel.



Installing the HP UPS Power Protection Agent

Installation overview

Install the UPS Power Protection Agent on any machine that is powered by the UPS and any machine that the management module uses to initiate a command. There are three installation options:

- GUI installation—A series of dialog boxes and prompts guide you through the installation process.
- Non-GUI installation—A series of commands are necessary to complete the installation.
- Silent installation—A preconfigured initialization file is specified during installation. This file contains all the information a user is typically prompted to enter.

Silent installation is typically used by system administrators who have many installations that are configured identically and require minimal user interaction. During a silent installation you will:

- Install an agent through the assisted installation method that is appropriate for the operating system.
- Configure the agent exactly as the final replicated systems should be configured.
- Use the DevManRA.ini file that is generated in the directory of the application as a template in the agent silent install process.
- Change any items that should be unique, such as the Management Server IP address, through the normal operation of the software.

The following table summarizes the available installation options for each operating system.

Operating system	GUI installation	Non-GUI installation	Silent installation	Local/remote installation
Windows®	Available	-	Available	-
Linux	-	Available	Available	-
HP-UX	-	Available	Available	Available

NOTE: If you are an existing HP Power Manager user, you must uninstall the HPPM Remote Agent before installing the UPS Power Protection Agent.

Installing the agent on Windows operating systems

The UPS Power Protection Agent can be installed using the GUI or silent installation methods on any supported Windows® operating system.



IMPORTANT: To ensure your system has the minimum requirements needed to run the agent, see "UPS Power Protection Agent requirements ("HP UPS Power Protection Agent requirements" on page 8)."

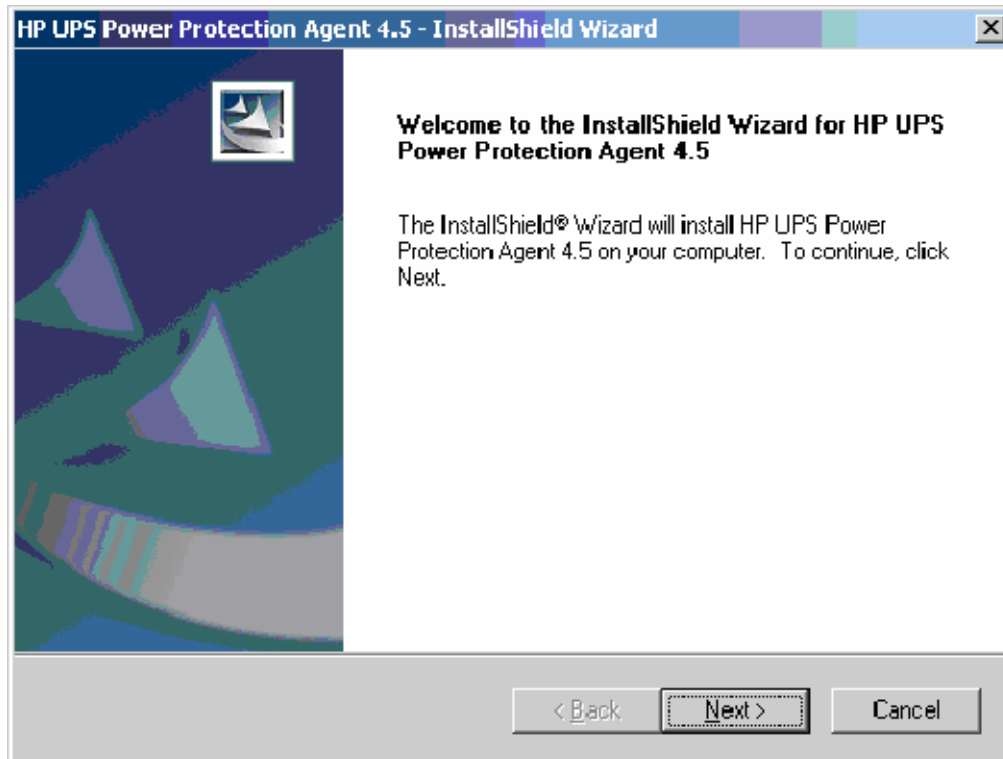
NOTE: You might need to reboot after installing the agent on Windows®.

Installing the agent using the GUI method

1. Insert the HP Infrastructure Management Pack CD into the CD-ROM drive of the computer. If the AutoPlay feature is enabled, the installation menu automatically starts. If the AutoPlay feature is disabled, explore the CD, and double-click AUTORUN.EXE in the root folder.

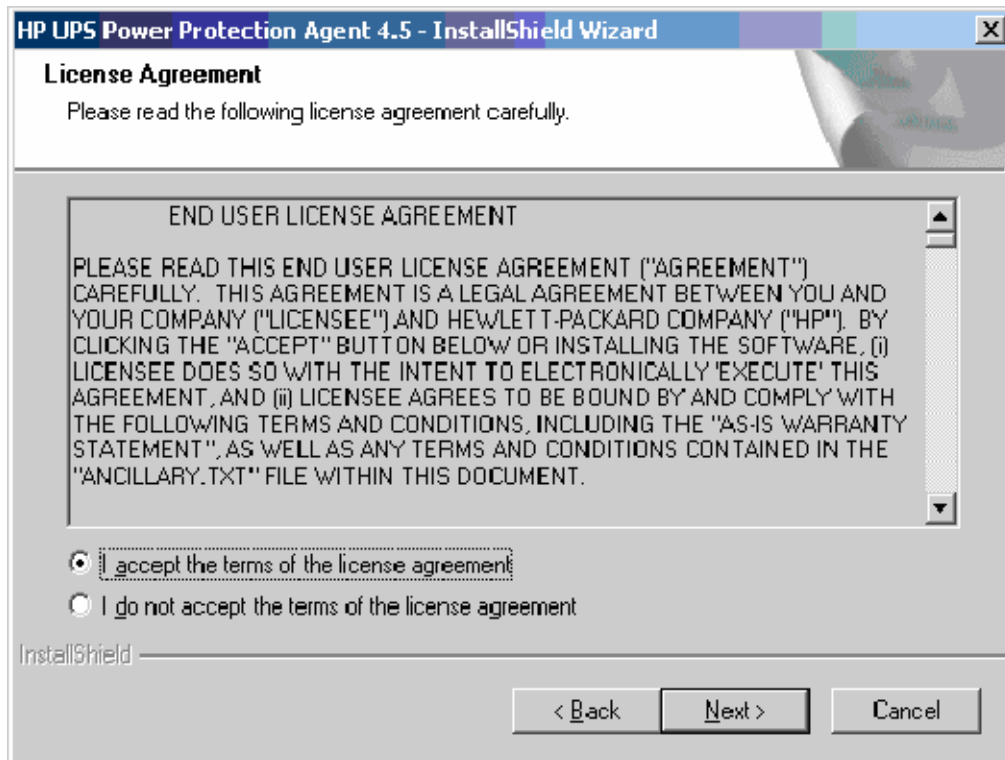
If the software has been downloaded from the HP website (<http://www.hp.com/go/rackandpower>), follow the instructions to unpack the files, then locate and run SETUP.EXE.

2. Select **HP UPS Management Module** from the side menu.
3. Select **UPS Power Protection Agent**.
The Welcome screen appears.
4. Read the introduction, and then click **Next**.



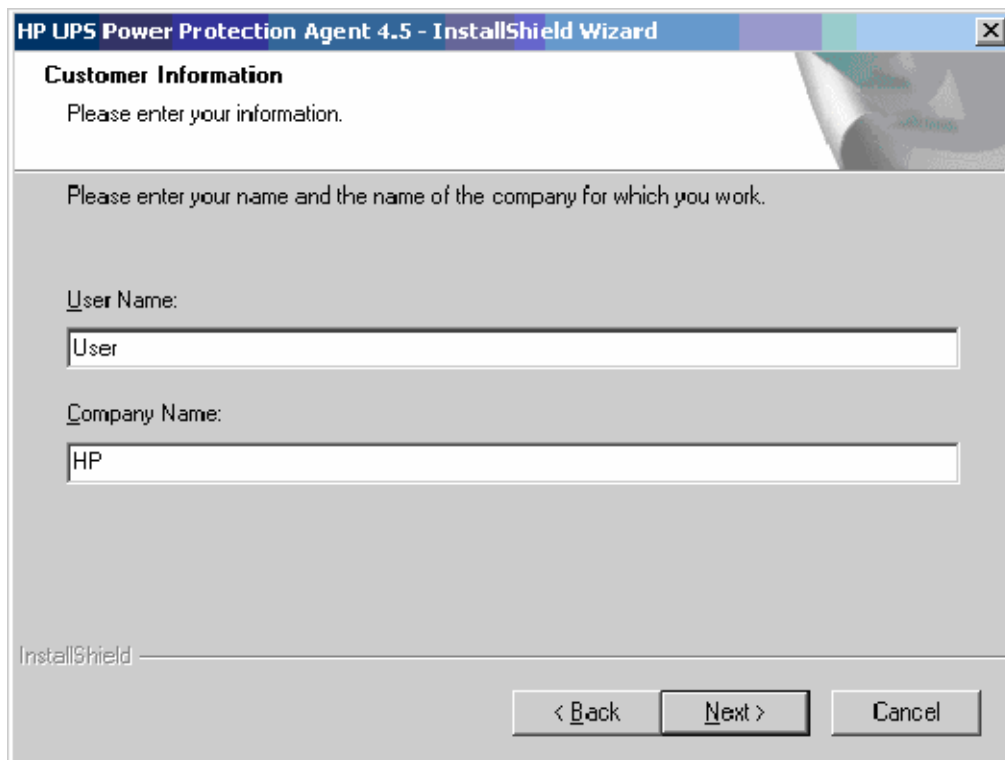
The License Agreement screen appears.

5. Read the license agreement, select **I accept the terms in the license agreement**, and then click **Next**.



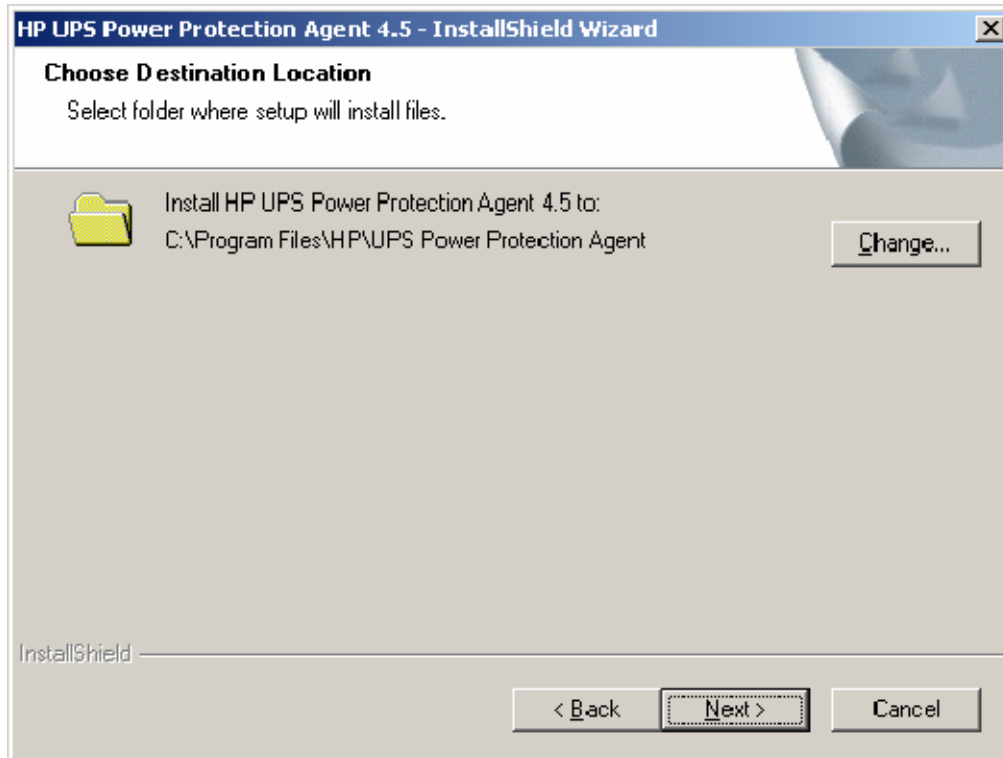
The Customer Information screen appears.

6. Enter your customer information, and then click **Next**.



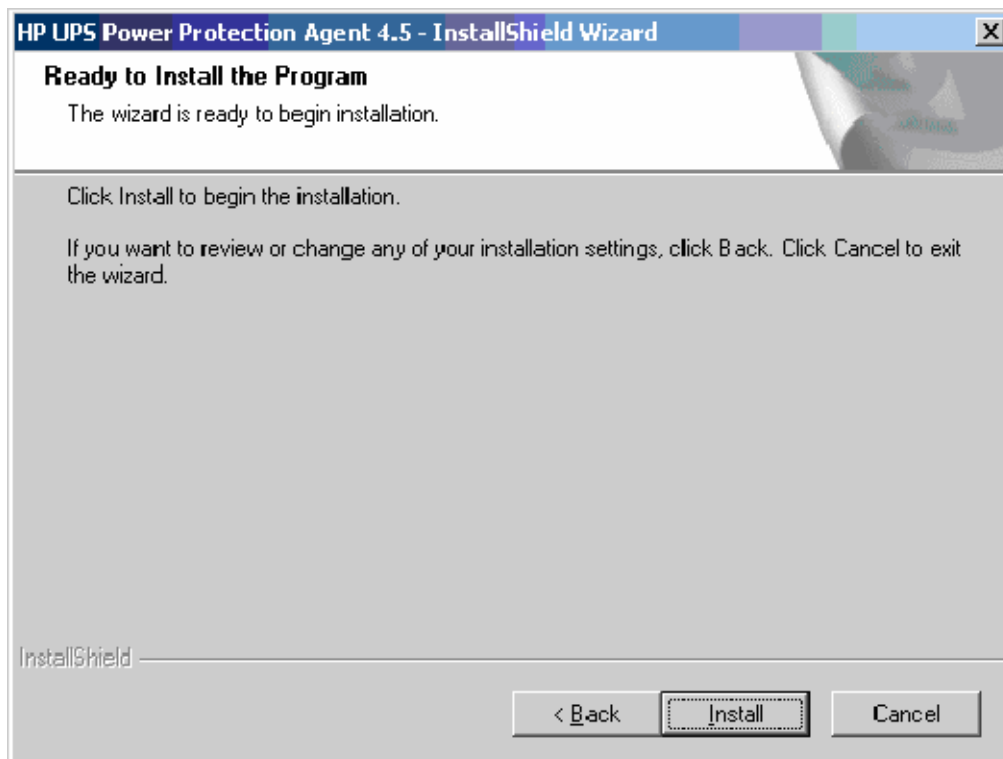
The Choose Destination Location screen appears.

7. Click **Next** to install the agent in the default folder that is displayed. To specify a different folder, click **Change**, navigate to the appropriate folder, and then click **Next**.

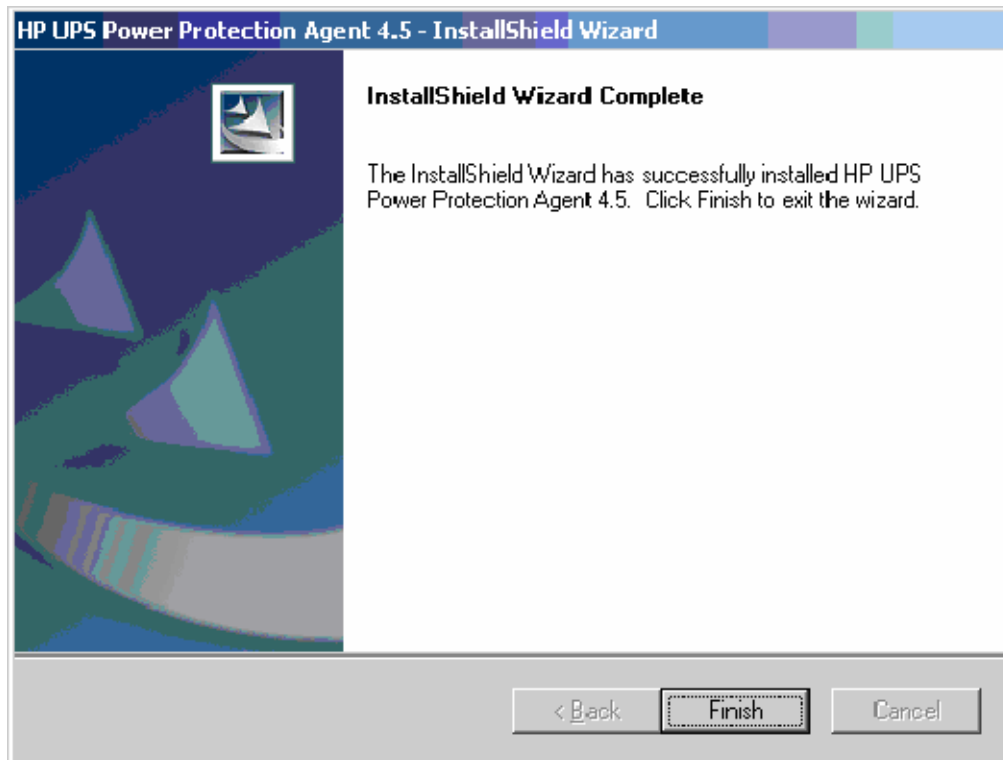


The Ready to Install the Program screen appears.

8. Click **Install**. The wizard installs the software.



9. Click **Finish** to complete the install wizard and continue with the configuration process.



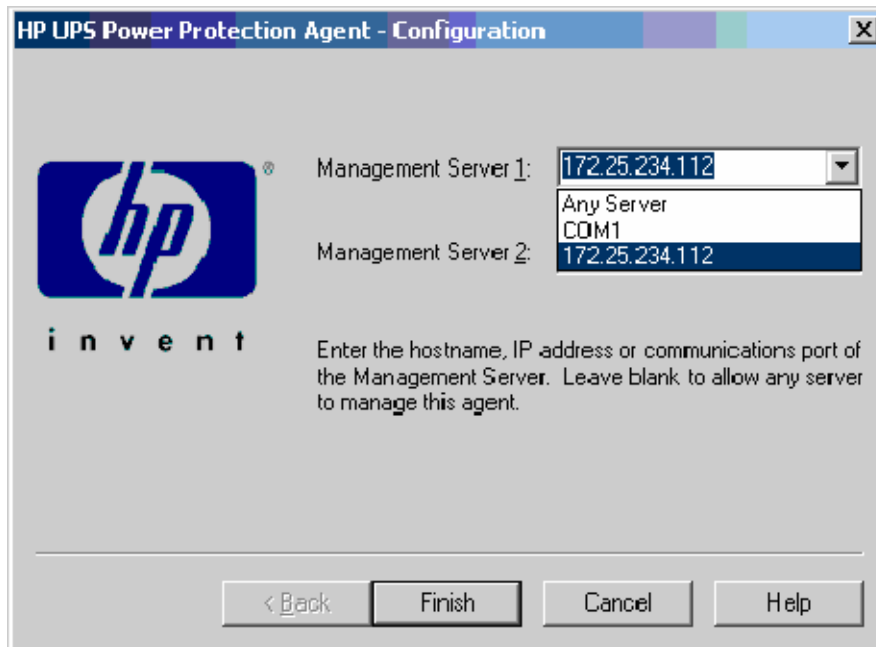
NOTE: It might take a moment for the configuration screen to appear. If there are open windows on the desktop, you might need to minimize the windows to view the configuration screen.


10. Enter the valid host name, IP address, or communications port of the management module in the Management Server 1 field. This setting ensures that a particular management module executes commands and operating system shutdowns on the computer running the agent.
If security is not a concern, leave this field blank.
11. To enable a redundant configuration, enter the host name, IP address, or communications port of the second management module in the Management Server 2 field.






IMPORTANT: If you are configuring redundant management modules, do not select Any Server in either dropdown box.

12. Click **Finish** to close the configurator.



The service starts automatically. Wait until the system tray icon displays a green check mark  to begin using the software.

NOTE: An icon in the Windows® system tray shows the status of the management module. It might take a few moments for the icon to change. A green check mark  appears if the management module is communicating with the agent without errors. If the service has stopped, a blue hexagon icon  appears. A red icon  appears if the software is not configured, the UPS is not connected, or the agent and management module are not communicating. Hover over the icon with the mouse pointer, and a tool tip displays a status message. For more information about the system tray icon status messages, see "System tray icon (on page 42)."

NOTE: To reconfigure the agent, see "Reconfiguring the agent on Windows® Operating Systems ("Reconfiguring the agent on Windows operating systems" on page 32)."

Installing the agent using the silent installation method

Silent installation is typically used by system administrators who have many installations that are configured identically and require minimal user interaction. During a silent installation you will:

- Install an agent through the assisted installation method that is appropriate for the operating system.
- Configure the agent exactly as the final replicated systems should be configured.

NOTE: You must configure the IP address of the management module. Create a DevManRA.ini file for each site. This points each agent to the correct management module and is the more secure option.

- Use the DevManRA.ini file that is generated in the directory of the application as a template in the agent silent install process.

- Change any items that should be unique, such as the Management Server IP address, through the normal operation of the software.

To install the agent using the silent installation method:

1. Create a temporary directory.
2. Copy the following files into the temporary directory you just created:
 - DevManRA.ini—During an assisted install, this file is landed in the same folder in which the agent is installed.
 - Setup.exe—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - Setup.iss—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - SetupRA.exe—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
3. From the directory that contains all four files, run `Setup.exe /s /f DevManRA.ini` to install silently.

If the .ini file is not located in the same folder as the Setup file, run `Setup.exe /s /f <path> DevManRA.ini`, where <path> is the DevManRA.ini file location.

The following command line parameters can be specified and are applicable for both interactive and silent modes.

Parameter	Function
/s	Performs a silent install.
/r	Reboots the computer at completion of setup. This option is supported only on Windows® and only for a silent install.
/f DevManRA.ini	Specifies a configuration .ini file used for clean installs. When this option is specified, the device detection and configuration step is omitted.

Reconfiguring the agent on Windows operating systems

To reconfigure the agent:

- Right-click the agent system tray icon to display a context menu from which the management service can be stopped or started. In this menu, you can also:
 - Launch a browser session using the Connect option.
 - Configure new settings using the Configure option.
 - Change the IP address or serial path that the agent uses for the management module.
 - Enable or disable a redundant configuration.

-or-

- Select **Configure HP UPS Management Module** from the HP UPS Management Module option in the Start Programs menu.

Installing the agent on Linux operating systems

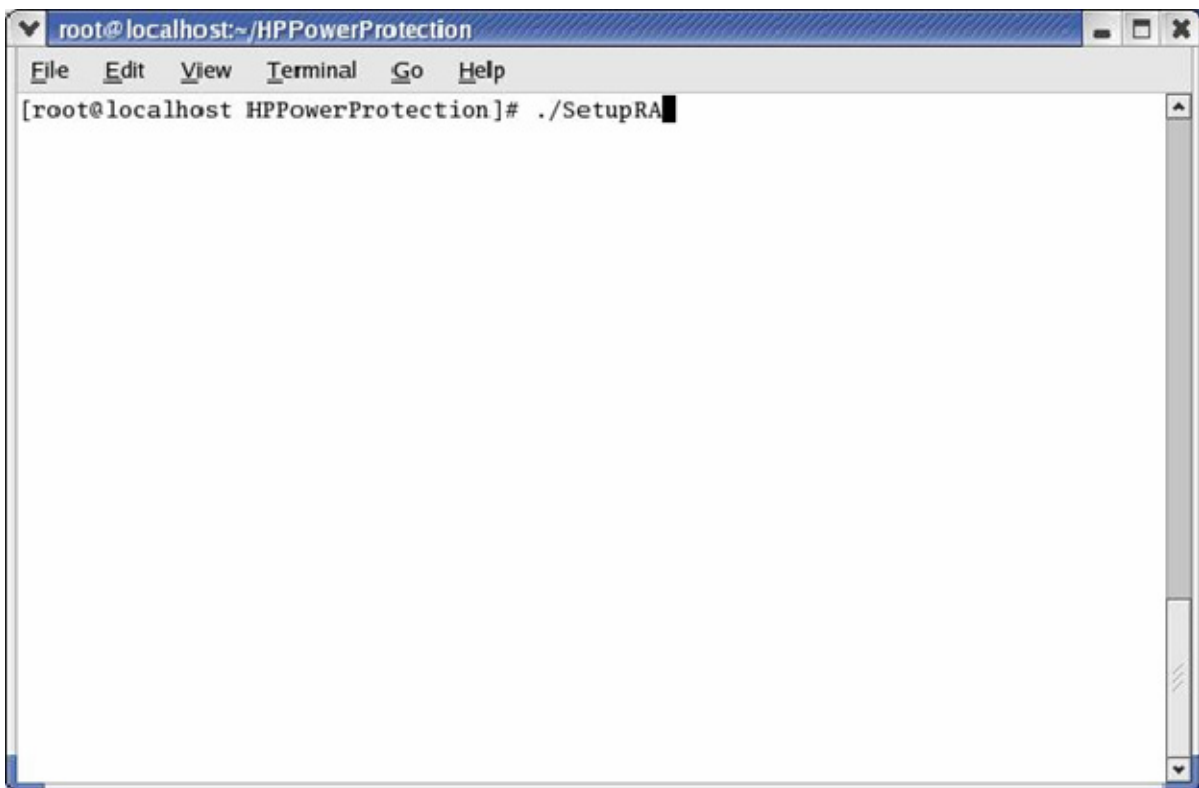
The UPS Power Protection Agent can be installed using an installation script or the silent installation option on any supported Linux operating system.



IMPORTANT: To ensure your system has the minimum requirements needed to run the agent, see "UPS Power Protection Agent requirements ("HP UPS Power Protection Agent requirements" on page 8)."

Installing the agent using the installation script

1. The agent can be installed two ways:
 - If installing the software from the HP Infrastructure Management Pack CD, insert the CD into the CD-ROM drive of the computer. From the console or a terminal window, go to the HP UPS Power Protection Agent/...Linux/Agent subdirectory. Execute the following installation script:
`./SetupRA`
 - If downloading the software from the HP website (<http://www.hp.com/go/rackandpower>), follow the instructions on the website to unpack the files. Locate the Linux agent installation script (SetupRA). Execute the following script:
`./SetupRA`



The script installs the agent and requests information to configure the application. Default values or valid options are shown in brackets following each prompt.

The installer launches a separate configuration program.

```
root@localhost:~/HPPowerProtection
File Edit View Terminal Go Help

040403 1 of 13 End User License Agreement

Do you accept the terms of the license agreement? [yes/no] yes
Installing HP UPS Power Protection Agent
Shutting down UPS Device Manager Service:
done.
Please enter a server to allow connections from.
Enter '*' to allow any server to connect to this agent.
You can enter a hostname or IP address.
To use a serial connection, enter the full path to the serial device.
[*]:
Please enter a second server to allow connections from.
Enter '*' to allow any server to connect to this agent.
Enter 'None' to disallow second connection.
[None]:
Starting UPS Device Manager Service:
EXE : DevManRA
done.
[root@localhost HPPowerProtection]#
```

The script displays: Please enter a server to allow connections from.

2. Enter the IP address of the management module or the path to the serial device. This configuration ensures that only that particular management module executes commands and operating system shutdowns on the computer running the agent.

The script displays: Please enter a second server to allow connections from.

3. Enter the IP address of a second management module or the path to the second serial device for redundant communication.



IMPORTANT: If you are configuring redundant management modules, do not enter an asterisk to allow any server to connect to the management module.

If you do not want to configure a second connection, enter `None`.

Installing the agent using the silent installation method

Silent installation is typically used by system administrators who have many installations that are configured identically and require minimal user interaction. During a silent installation you will:

- Install an agent through the assisted installation method that is appropriate for the operating system.
- Configure the agent exactly as the final replicated systems should be configured.

NOTE: You must configure the IP address of the management module. Create a `DevManRA.ini` file for each site. This points each agent to the correct management module and is the more secure option.

- Use the `DevManRA.ini` file that is generated in the directory of the application as a template in the agent silent install process.

- Change any items that should be unique, such as the Management Server IP address, through the normal operation of the software.

To install the agent using the silent installation method:

1. Create a temporary directory.
2. Copy the following files into the temporary directory you just created:
 - DevManRA.ini—During an assisted install, this file is landed in the same folder in which the agent is installed.
 - EULA.txt—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - SetupRA—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - Uninstall—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - HPRA-4.5-x.i586.rpm—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
3. From the directory that contains all five files, run `./SetupRA -s -f <path> DevManRA.ini` to install silently.
Replace `<path>` with the `DevManRA.ini` file location.

The following command line parameters can be specified and are applicable for both interactive and silent modes.

Parameter	Function
-s	Performs a silent install.
-log	Creates an installation log (/user/local/DevMan/install.log). Default is disabled for interactive mode and enabled for silent mode. This option is supported only on Linux. The installation log is created automatically for Windows® during silent installations in %systemdrive%\setup.log.
-f DevManRA.ini	Specifies a configuration .ini file used for clean installs. When this option is specified, the device detection and configuration step is omitted.

Installing the agent on SLES 10

1. Install the agent using the Linux installation script ("Installing the agent using the installation script" on page 33).
-or-
Install the agent using the Linux silent installation method ("Installing the agent using the silent installation method" on page 34).
2. Do one of the following:

- o Edit the `/etc/sysconfig/boot` file and change `RUN_PARALLEL="yes"` to `RUN_PARALLEL="no"` to remove parallel script execution.
- or-
- o Edit the `/etc/init.d/.depend.start` file and add `DevMan: network` at the end of the file to add parallel information for DevMan.

Installing the agent on an Itanium system

1. Install the `ia32*` file for your operating system from the supplementary disc.
2. Install the appropriate library files for your operating system from the compact layer in the following order:
 - a. Install the `glibc*` library file.
 - b. Install the `zlib*` library file.

	RH4-U3	RH4-U4	RH4-U5	RH5
<code>ia32*</code>	<code>ia32el-1.3-2.ia64.rpm</code>	<code>ia32el-1.3-2.ia64.rpm</code>	<code>ia32el-1.3-2.ia64.rpm</code>	<code>ia32el-1.6-13.el5.ia64.rpm</code>
<code>glibc*</code>	<code>glibc-2.3.4-2.19.i686.rpm</code>	<code>glibc-2.3.4-2.25.i686.rpm</code>	<code>glibc-2.3.4-2.36.i686.rpm</code>	<code>glibc-2.5-12.i686.rpm</code>
<code>zlib*</code>	<code>zlib-1.2.1.2-1.2.i386.rpm</code>	<code>zlib-1.2.1.2-1.2.i386.rpm</code>	<code>zlib-1.2.1.2-1.2.i386.rpm</code>	<code>zlib-1.2.3-3.i386.rpm</code>

3. Install the agent using the Linux installation script ("[Installing the agent using the installation script](#)" on page 33).
- or-
- Install the agent using the Linux silent installation method ("[Installing the agent using the silent installation method](#)" on page 34).

Reconfiguring the agent on Linux operating systems

To configure the management module IP address or serial path for Red Hat Linux, run `/etc/rc.d/init.d/DevMan setup`.

To configure the management module IP address or serial path for SUSE Linux Enterprise Server, run `/etc/init.d/DevMan setup`.

Installing the agent on HP-UX operating systems

The UPS Power Protection Agent can be installed using an installation script, SAM, or silent installation option on any supported HP-UX operating system.



IMPORTANT: To ensure your system has the minimum requirements needed to run the agent, see "[UPS Power Protection Agent requirements](#)" ("[HP UPS Power Protection Agent requirements](#)" on page 8)."

Installing the agent locally or remotely using the Installation Script method

1. The agent can be installed two ways:
 - o If installing the software from the HP Infrastructure Management Pack CD, insert the CD into the CD-ROM drive of the computer. From the console or a terminal window, go to the HP UPS Power Protection Agent/...HP-UX/Agent subdirectory. Execute the following installation script:

```
./SetupRA
```
 - o If downloading the software from the HP website (<http://www.hp.com/go/rackandpower>), follow the instructions on the website to unpack the files. Locate the installation script (SetupRA). Execute the following script:

```
./SetupRA
```

The script installs the agent and requests information to configure the application. Default values or valid options are shown in brackets following each prompt.

2. To accept the EULA, enter `yes`.
The script displays: `Please enter a server to allow connections from.`
3. Enter the IP address of the management module or the path to the serial device. This configuration ensures that only that particular management module executes commands and operating system shutdowns on the computer running the agent.
The script displays: `Please enter a second server to allow connections from.`
4. Enter the IP address of a second management module or the path to the second serial device for redundant communication.



IMPORTANT: If you are configuring redundant management modules, do not enter an asterisk to allow any server to connect to the management module.

If you do not want to configure a second connection, enter `None`.

Installing the agent locally or remotely using the SAM method

1. From a remote machine, enter `sam` at the command line prompt.
2. Click **Software Management**.
3. Click **Install Software to Local Host**.
4. Change the Source Depot Path to a fully qualified path and depot name.
5. Select the agent you are about to install.
6. Select **Actions>Install** from the top menu, and then click **OK** and **Done**.
7. Click **OK** to analyze the depot file.
8. Click **OK** to install the depot file.
9. Click **Done** to complete the installation and continue with the configuration process.
10. Enter `/sbin/init.d/DevMan setup` in the terminal, and press the **Enter** key.

The installer launches a separate configuration program.

The script installs the agent and requests information to configure the application. Default values or valid options are shown in brackets following each prompt.

The script displays: Please enter a server to allow connections from.

11. Enter the IP address of the management module or the path to the serial device. This configuration ensures that only that particular management module executes commands and operating system shutdowns on the computer running the agent.

The script displays: Please enter a second server to allow connections from.

12. Enter the IP address of a second management module or the path to the second serial device for redundant communication.



IMPORTANT: If you are configuring redundant management modules, do not enter an asterisk to allow any server to connect to the management module.

If you do not want to configure a second connection, enter None.

Installing the agent using the silent installation method

Silent installation is typically used by system administrators who have many installations that are configured identically and require minimal user interaction. During a silent installation you will:

- Install an agent through the assisted installation method that is appropriate for the operating system.
- Configure the agent exactly as the final replicated systems should be configured.

NOTE: You must configure the IP address of the management module. Create a DevManRA.ini file for each site. This points each agent to the correct management module and is the more secure option.

- Use the DevManRA.ini file that is generated in the directory of the application as a template in the agent silent install process.
- Change any items that should be unique, such as the Management Server IP address, through the normal operation of the software.

To install the agent on a system running HP-UX using the silent installation method:

1. Create a temporary directory.
2. Copy the following files into the temporary directory you just created:
 - DevManRA.ini—During an assisted install, this file is landed in the same folder in which the agent is installed.
 - EULA—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - SetupRA—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - Uninstall—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).
 - HPR4.5Buildx.depot—This file is included with the installation files on the HP Infrastructure Management Pack CD and the software download package on the HP website (<http://www.hp.com/go/rackandpower>).

- From the directory that contains all five files, run `./SetupRA -s -f DevManRA.ini` to install silently.

If the `.ini` file is not located in the same folder as the `SetupRA` file, run `./SetupRA -s -f <path> DevManRA.ini`, where `<path>` is the `DevManRA.ini` file location.

The following command line parameters can be specified and are applicable for both interactive and silent modes.

Parameter	Function
<code>-s</code>	Performs a silent install.
<code>-l</code>	Creates an installation log (<code>opt/DevMan/install.log</code>). Default is disabled for interactive mode and enabled for silent mode. The installation log is created automatically for Windows® during silent installations in <code>\%systemdrive%\setup.log</code> .
<code>-f DevManRA.ini</code>	Specifies a configuration <code>.ini</code> file used for clean installs. When this option is specified, the device detection and configuration step is omitted.

Reconfiguring the agent on HP-UX operating systems

To reconfigure the management module IP address or serial path, run `/sbin/init.d/DevMan setup`.

Uninstalling components from Windows® systems

- Click **Start>Settings>Control Panel**.
- Open **Add/Remove Programs**.
- Select **UPS Power Protection Agent**, and then click **Change/Remove**.

The uninstall wizard launches.

Select **Remove Choice**, and then click **Next**.

- Follow the prompts in the uninstall wizard to uninstall the software.

NOTE: Some files might remain following the uninstallation and can be removed manually.

Uninstalling components from Linux systems

Execute the uninstall script (`./Uninstall`).

NOTE: Some files might remain following the uninstallation and can be removed manually.

Uninstalling components from HP-UX systems

Execute the uninstall script (`./Uninstall`).

NOTE: Some files might remain following the uninstallation and can be removed manually.

HP UPS Management Module web interface

HP UPS Management Module web interface overview

The web interface graphically displays various measurements and warning and alarm messages from the management module. Also, system values and power fail settings can be configured through the web interface and sent to the management module.

NOTE: All status information and configuration parameters included on the HP UPS Management Module web interface are available using the HP UPS Management Module Service Menu (on page 78).

Accessing the web interface

You can access the web interface:

- Remotely through a Web browser (on page 41)
- Locally from the system tray icon (on page 42) in Windows®

Web browser

Use a web browser to access the HP UPS Management Module web interface:

1. If necessary, configure the management module by:
 - a. Launching a terminal emulation program (on page 21).
 - b. Configuring the management module for remote access (on page 22).
2. Be sure that you have connected the network cable ("[Connecting the network cable](#)" on page 20) to the management module.
3. Press the **Reset** button on the management module front panel. The management module discovers attached UPSs.
4. Launch a supported browser. The browser window appears.
5. In the Address field (Microsoft Internet Explorer) or the Location field (Mozilla, Firefox, and SeaMonkey), enter one of the following:

```
http://xxx.xxx.xxx.xxx
```

```
https://xxx.xxx.xxx.xxx
```


where xxx.xxx.xxx.xxx is the IP address of the management module. The log in screen appears.
6. Sign in through the web browser ("[Signing in to the web interface](#)" on page 42).





NOTE: For a complete list of the browser requirements, see "Web interface requirements (on page 15)."

System tray icon

To access the web interface through the system tray in Windows®:

1. Right-click the software system tray icon on a computer with the UPS Power Protection Agent installed to display a context menu.
2. Click **Connect** to access the software.

NOTE: If the  icon appears, the Connect option is unavailable because the service is unavailable.

Icon	Status
	Software service/daemon is running. The agent and management module are communicating. UPS status is normal.
	Software service/daemon is not running.
	UPS issues a warning alarm.
	Software is not configured, the UPS is not connected, or the agent and management module are not communicating. UPS issues a critical alarm.

Signing in to the web interface

1. Enter the user name in the User Name field. The default user name is `admin`.
2. Enter the password in the Password field. The default password is `admin`.

NOTE: Passwords are case-sensitive.

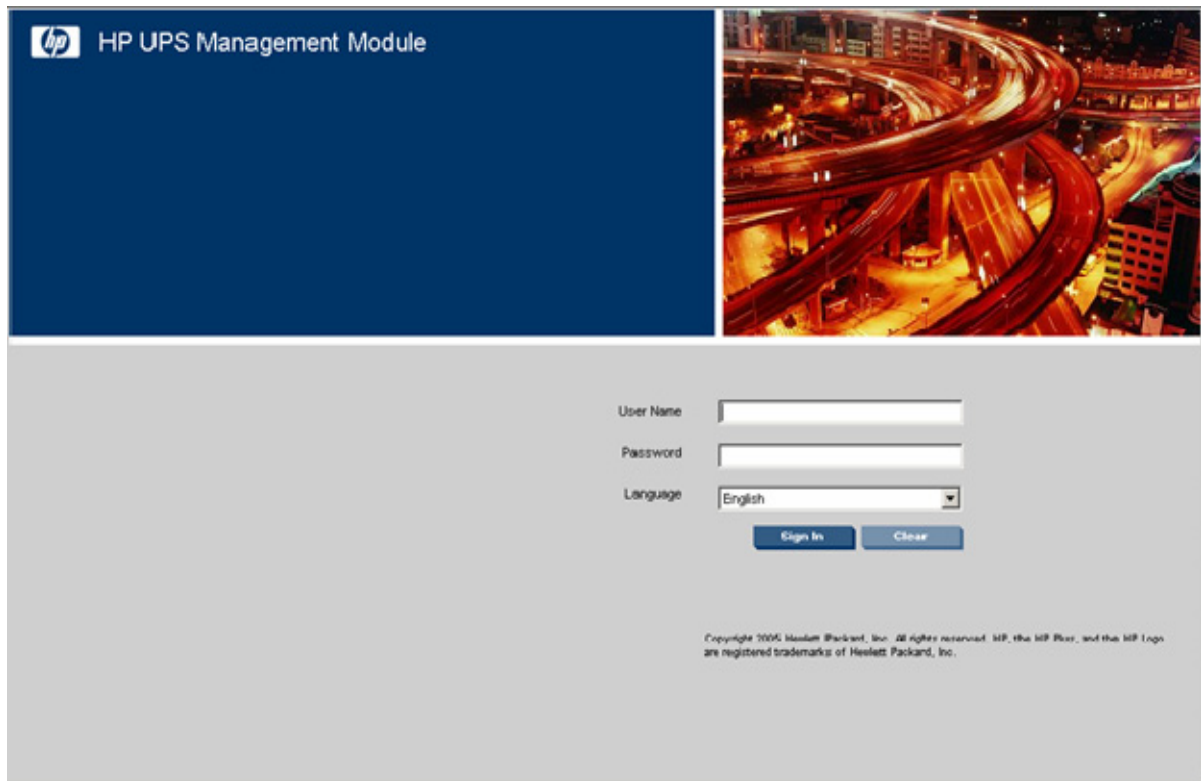
3. Select the appropriate language in the Language dropdown box.
4. Click **Sign In**. The HP UPS Management Module web interface appears.

-or-

Click **Clear** to clear the credentials.

For information regarding the interface, see "Navigating the web interface (on page 45)."

For instructions on changing the password, see "My Account menu (on page 57)."



Admin session logins, logouts, and terminations are recorded in the Event Log menu (on page 54). The console session timeout length can be modified in the Remote Access tab (on page 63).

The following is a list of recommended password guidelines.

- Passwords should not be shared with others.
- Passwords should be limited to one or two people, if shared with others.
- Passwords should be coordinated to prevent inadvertent logouts, should more than one person know them.
- Passwords are case-sensitive.
- Passwords can be between 1 and 15 alphanumeric characters in length.

Browser security alert

Secure browsing requires the use of SSL. SSL is a protocol layer that lies between HTTP and TCP that provides secure communication between a server and a client and is designed to provide privacy and message integrity. SSL is commonly used in web-based transactions to authenticate the web server, which indisputably identifies the server to the browser. SSL also provides an encrypted channel of communication between the server and the browser. The encrypted channel ensures integrity of the data between the web server and the browser, so that data can neither be viewed nor modified while in transit. The management module uses a system generated and unique key.

An integral part of SSL is a security certificate, which identifies the management module. If your browser displays a security alert when browsing to the management module, it can be for one of several reasons:

- The certificate is untrusted, meaning it was signed by a certifying authority that is unknown to your browser.
- The certificate has expired or is not yet valid. This condition can occur if you issue your own certificate and it has expired.
- The name on the certificate does not match the name of the site in the browser address field.

For more information about security considerations, see "Security considerations overview (on page 110)."

Establishing a secure session for Internet Explorer

The first time you browse to the management module, the Secure Session screen appears. To ensure a secure connection, verify that you are browsing to the desired management module:

1. Click **View Certificate**.
2. Verify that the name in the Issued To field is the name of your management module.
3. Perform any other steps necessary to verify the identity of the management module.



CAUTION: If you are not sure this is the desired management module, do not proceed. Importing a certificate from an unauthorized source relays your login credentials to that unauthorized source. Exit the certificate window and contact the system administrator.

After verifying the management module, do one of the following:

- Import the certificate and proceed.
 - a. Click **View Certificate**. The certificate appears.
 - b. Click **Install Certificate**. The Certificate Import wizard runs.
 - c. Click **Next**. The Certificate Store screen appears.
 - d. Select **Automatically select the certificate store based on the type of certificate**, and click **Next**.
 - e. Click **Finish**. A message appears, asking for verification of the root store.
 - f. Click **Yes**.
- Proceed without importing the certificate by clicking **Yes** at the Security Alert window. You continue to receive the Security Alert each time you log in until you import the certificate. Your data is still encrypted.
- Exit and import the certificate into your browser from a file provided by the administrator.
 - a. Click **No** at the Security Alert window.
 - b. Obtain an exported certificate file from the administrator.

NOTE: If using Internet Explorer, you can manually import the file into the browser by clicking **Tools>Internet Options>Content>Certificates>Import**.

Secure session for Mozilla or SeaMonkey

The first time you browse to the management module, the Secure Session screen appears. To ensure a secure connection, verify that you are browsing to the desired management module:

1. Click **Examine Certificate**.
2. Verify that the name in the Issued To field is the name or IP address of your management module.

3. Perform any other steps necessary to verify the identity of the management module.
4. After verifying the management module, do one of the following:
 - a. Click either **Accept this certificate permanently** or **Accept this certificate temporarily for this session**.
 - b. Click **OK**.

NOTE: If using Mozilla or SeaMonkey, you can manually import the file into the browser by clicking **Edit>Preferences>Privacy & Security>Certificates>Manage Certificates>Authorities>Import**.

Establishing a secure session for Firefox

The first time you browse to the management module, the Secure Session screen appears. To ensure a secure connection, verify that you are browsing to the desired management module:

1. Click **Examine Certificate**.
2. Verify that the name in the Issued To field is the name or IP address of your management module.
3. Perform any other steps necessary to verify the identity of the management module.
4. After verifying the management module, do one of the following:
 - a. Click either **Accept this certificate permanently** or **Accept this certificate temporarily for this session**.
 - b. Click **OK**.

NOTE: If using Firefox, you can manually import the file into the browser by clicking **Edit>Preferences>Advanced>Security>View Certificates>Authorities>Import**.

Navigating the web interface

The web interface is divided into three frames:

- **Top frame**—Contains a Sign Out hyperlink, Home tab, Logs tab, Setup tab, and Help tab.
 - Click the **Sign Out** hyperlink to log out of the interface.
 - Click the **Home** tab to see the menu options for viewing general status information. For more information, see "Home tab (on page 46)."
 - Click the **Logs** tab to see the menu options for displaying data logs. For more information, see "Logs tab (on page 54)."
 - Click the **Setup** tab to see the menu options for configuring the management module and setting up and modifying user accounts. For more information, see "Setup tab (on page 57)."
 - Click the **Help** tab to access the interface information and help section. For more information, see "Help tab (on page 75)."
- **Left navigation frame**—Contains a list of menu options, a list of alarms and warnings, and a legend.
 - The options menu is dynamic, and the options listed change depending on the tab selected and your access rights.
 - The list of alarms and warnings displays the individual alarm status for the managed UPS. The graphical indicator displays the number of active alarms and displays the icon for the most severe alarm. The date and time of the last update is also indicated.

- The legend displays the meaning of symbols used in the interface. Expand and collapse the legend by clicking the arrow in the upper right corner.
- **Main frame**—Contains the various interface screens based on the menu option selected in the left navigation frame.



Home tab

Menu options listed under the Home tab include:

- Overview menu (on page 46)
- Alarms menu (on page 48)
- Identification menu (on page 49)
- Parameters menu (on page 51)
- Manual Control menu (on page 53)

Overview menu

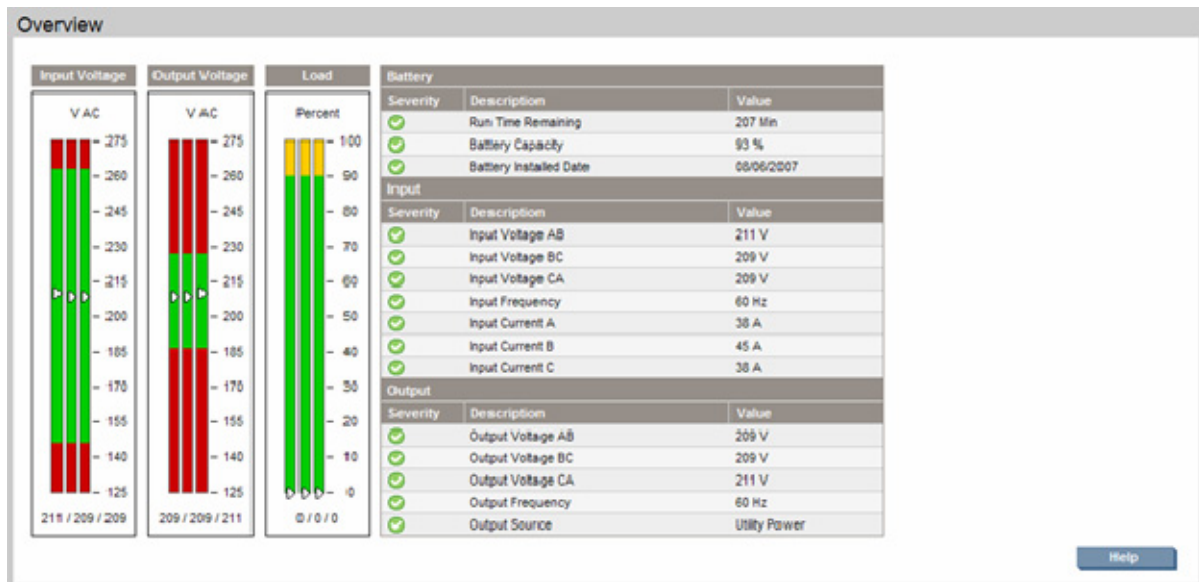
Click **Overview** in the left navigation frame to display the Overview screen. This screen displays overall views of the UPS status.

NOTE: Depending on the specific UPS model, this screen will vary.

The following example is for a single module UPS.



The following example is for a parallel UPS.



Battery, Input, and Output information is displayed on the right side of the screen. A status icon indicates the current status of each parameter.

Icon	Parameter status
✓	Normal
⚠	Warning
✖	Critical

Input, Output, and Load is displayed graphically on the left side of the screen. The color on each meter represents the current state of the UPS.

Color	Status
Green	Normal
Yellow	Warning
Red	Critical

Click **Help** to view online help.

Alarms menu

Click **Alarms** in the left navigation frame to display the Alarms screen. This screen displays the alarms for the UPS. The alarms are listed in alphabetical order. Each entry includes a description and the date and time at which the alarm most recently occurred.

The following example is for a single module UPS.



The screenshot shows the 'Alarms' screen with a table of 17 entries. Each entry has a green checkmark in the 'Severity' column, a description in the 'Description of Alarm' column, and empty columns for 'Date' and 'Time'. A 'Help' button is located at the bottom right of the screen.

Severity	Description of Alarm	Date	Time
✓	Agent(s) Not Connected		
✓	Battery Discharged		
✓	Battery Disconnected		
✓	Battery Failure		
✓	Battery Low		
✓	Bypass Not Available		
✓	Bypass On Auto		
✓	EPO Initiated		
✓	Fan Failure		
✓	Input Out of Range		
✓	Internal Failure		
✓	Loss of Redundant Communication		
✓	Loss of Redundant Power		
✓	Manual Load Dumped		
✓	On Battery		
✓	Overload		
✓	Shutdown Pending		
✓	Site Wiring Fault		

The following example is for a parallel UPS.

Severity	Description	Date	Time
✓	Agent(s) Not Connected		
✓	Battery Discharged		
✓	Battery Disconnected		
✓	Battery Failure		
✓	Battery Low		
✓	Bypass Not Available		
✓	Bypass On Auto		
✓	EPO Initiated		
✓	Fan Failure		
✓	Input Out of Range		
✓	Internal Failure		
✓	Loss of Redundant Communication		
✓	Loss of Redundant Power		
✓	Manual Load Dumped		
✓	On Battery		
✓	Overload		
✓	Shutdown Pending		
✓	Site Wiring Fault		
✓	Temperature Out of Range		

Click the UPS tabs to view detailed information for each of the sub units in the parallel system. The parallel system can contain up to six sub units.

Severity	Description	Date	Time
✓	Battery Discharged		
✓	Battery Disconnected		
✓	Battery Failure		
✓	Battery Low		
✓	Bypass Not Available		
✓	Bypass On Auto		
✓	EPO Initiated		
✓	Fan Failure		
✓	Input Out of Range		
✓	Internal Failure		
✓	Manual Load Dumped		
✓	On Battery		
✓	Overload		
✓	Shutdown Pending		
✓	Site Wiring Fault		
✓	Temperature Out of Range		

Click **Refresh** to refresh the screen, or click **Help** to view online help.

Identification menu

Click **Identification** in the left navigation frame to display the Identification screen. This screen contains contact information for the management module and specific device information about the management module and the UPS.

The following example is for a single module UPS.

Identification

Management Module	
Parameter	Value
System Name	111
System Contact	compaq
System Contact Email	111dev
System Contact Phone	123456
MAC Address	ba be ca fe ba be
IP Address	172.25.234.111
Serial Number	0123456789
Firmware Version	B.07.00
Hardware Version	0.0

UPS	
Parameter	Value
Model	HP R3000 XR
Part Number	192187-001R
Protocol	XCP
Version	2.00
Serial Number	MX16011112

[Help](#)

The following example is for a parallel UPS.

Identification

Management Module: [UPS 1](#) [UPS 2](#) [UPS 3](#) [UPS 4](#) [UPS 5](#) [UPS 6](#)

Description	Value
System Name	A
System Contact	B
System Contact Email	C
System Contact Phone	D
MAC Address	00 1a 4b 4f f7 b8
IP Address	10.222.50.248
Serial Number	P3890A9VU7051
Firmware Version	1.20.00
Hardware Version	1.00.A

[Refresh](#) [Help](#)

Click the UPS tabs to view detailed information for each of the sub units in the parallel system. The parallel system can contain up to six sub units.

The screenshot shows the 'Identification' section of the HP UPS Management Module web interface. It features a navigation bar with tabs for 'Management Module' and six individual UPS units (UPS 1 through UPS 6). The 'UPS 2' tab is currently selected. Below the navigation bar is a table displaying identification details for the selected UPS unit. The table has two columns: 'Description' and 'Value'. The data is as follows:

Description	Value
Model	HP R12000/3 UPS
Part Number	ZC121P061100000
Protocol	XCP
Version	1.05
Serial Number	BA101P9XX19

At the bottom right of the table, there are two buttons: 'Refresh' and 'Help'.

Enter the system name and contact information using the System Information tab (on page 61) on the Network Management screen.

Click **Refresh** to refresh the screen, or click **Help** to view online help.

Parameters menu

Click **Parameters** in the left navigation frame to display the Parameters screen. This screen displays the available UPS parameter values. A status icon next to each parameter indicates the current state of the parameter (Normal, Warning, or Critical).

NOTE: Depending on the specific UPS model, this screen will vary.

The following example is for a single module UPS.

Parameters

Battery		
Severity	Parameter	Value
✓	Battery Capacity	100 %
✓	Battery Installed Date	01/01/2005
✓	Battery Status	Normal
✓	Battery Temperature	0 °F
✓	Battery Voltage	138 V
✓	Run Time Remaining	83 Minutes

Configuration		
Severity	Parameter	Value
✓	High Voltage Transfer Point	144 V
✓	Low Voltage Transfer Point	80 V

Input		
Severity	Parameter	Value
✓	Input Current	4 Amps
✓	Input Frequency	60 Hz
✓	Input Voltage	122 V

[Help](#)

The following example is for a parallel UPS.

Parameters

Summary | **UPS 1** | UPS 2 | UPS 3 | UPS 4 | UPS 5 | UPS 6

Battery		
Severity	Description	Value
✓	Battery Capacity	93 %
✓	Battery Installed Date	08/06/2007
✓	Battery Status	Normal
✓	Battery Voltage	270 V
✓	Run Time Remaining	208 Minutes

Configuration		
Severity	Description	Value
✓	High Voltage Transfer Point	263 V
✓	Low Voltage Transfer Point	145 V

Environment		
Severity	Description	Value
✓	UPS Temperature	102 °F (39 °C)

Input		
Severity	Description	Value
✓	Input Current A	38 A
✓	Input Current B	45 A
✓	Input Current C	38 A
✓	Input Frequency	60 Hz
✓	Input Voltage AB	211 V

Click the UPS tabs to view detailed information for each of the sub units in the parallel system. The parallel system can contain up to six sub units.

Battery		
Severity	Description	Value
✓	Battery Capacity	93 %
✓	Battery Installed Date	06/06/2007
✓	Battery Status	Normal
✓	Battery Voltage	271 V
✓	Run Time Remaining	208 Minutes

Configuration		
Severity	Description	Value
✓	High Voltage Transfer Point	283 V
✓	Low Voltage Transfer Point	145 V

Environment		
Severity	Description	Value
✓	UPS Temperature	99 °F (37 °C)

Input		
Severity	Description	Value
✓	Input Current A	6 A
✓	Input Current B	6 A
✓	Input Current C	6 A
✓	Input Frequency	60 Hz
✓	Input Voltage AB	211 V

Click **Help** to view online help.

Manual Control menu


Click **Manual Control** in the left navigation frame to display the Manual Control screen. This screen contains manual commands such as Initiate Battery Test and Restart Management Module.

NOTE: Depending on the specific UPS model, this screen will vary.

Select	Command Description
<input type="radio"/>	Initiate Battery Test
<input type="radio"/>	Restart Management Module

Execute Command **Help**

The Initiate Battery Test option is not available for all UPSs. To initiate a UPS battery test:

 **CAUTION:** Selecting this option might result in an ungraceful shutdown.

 **IMPORTANT:** Do not run a battery test while the UPS is On Battery.

1. Select **Initiate Battery Test**.
2. Click **Execute Command**. The results of the test appear on the Parameters screen ("Parameters menu" on page 51) in the Test Results Summary field, and a log entry is created in the Application Log ("Application Log menu" on page 56).

To reset the management module:

1. Select **Restart Management Module**.
2. Click **Execute Command**.

NOTE: Restarting the management module does not drop the UPS load. The web interface is not available while the management module restarts.

Click **Help** to view online help.

Logs tab

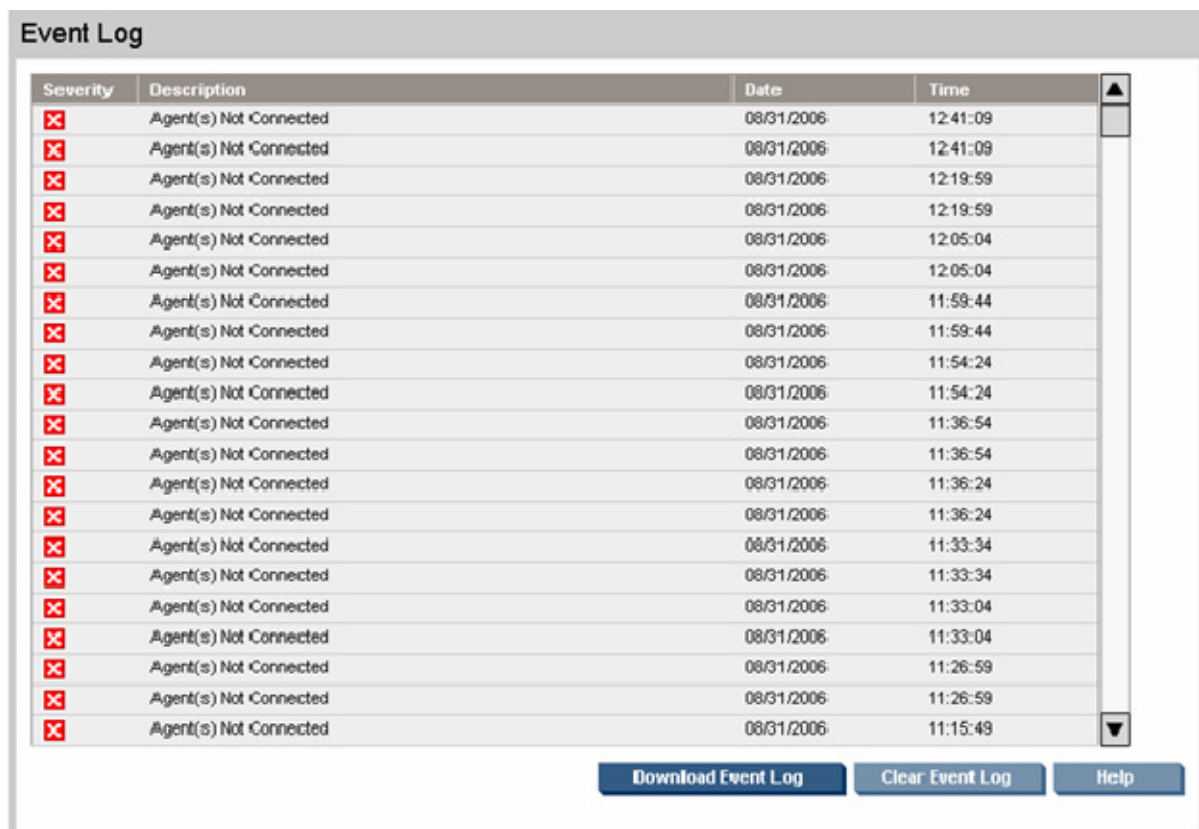
Menu options listed under the Logs tab include:

- Event Log menu (on page 54)
- Application Log menu (on page 56)

Event Log menu

Click **Event Log** in the left navigation frame to display the Event Log screen. This screen displays a log of the events that have occurred on the UPS, such as the UPS switching to battery power.

The following example is for a single module UPS.



The screenshot shows the 'Event Log' interface with a table of events and three buttons at the bottom: 'Download Event Log', 'Clear Event Log', and 'Help'.

Severity	Description	Date	Time
✘	Agent(s) Not Connected	08/31/2006	12:41:09
✘	Agent(s) Not Connected	08/31/2006	12:41:09
✘	Agent(s) Not Connected	08/31/2006	12:19:59
✘	Agent(s) Not Connected	08/31/2006	12:19:59
✘	Agent(s) Not Connected	08/31/2006	12:05:04
✘	Agent(s) Not Connected	08/31/2006	12:05:04
✘	Agent(s) Not Connected	08/31/2006	11:59:44
✘	Agent(s) Not Connected	08/31/2006	11:59:44
✘	Agent(s) Not Connected	08/31/2006	11:54:24
✘	Agent(s) Not Connected	08/31/2006	11:54:24
✘	Agent(s) Not Connected	08/31/2006	11:36:54
✘	Agent(s) Not Connected	08/31/2006	11:36:54
✘	Agent(s) Not Connected	08/31/2006	11:36:24
✘	Agent(s) Not Connected	08/31/2006	11:36:24
✘	Agent(s) Not Connected	08/31/2006	11:33:34
✘	Agent(s) Not Connected	08/31/2006	11:33:34
✘	Agent(s) Not Connected	08/31/2006	11:33:04
✘	Agent(s) Not Connected	08/31/2006	11:33:04
✘	Agent(s) Not Connected	08/31/2006	11:26:59
✘	Agent(s) Not Connected	08/31/2006	11:26:59
✘	Agent(s) Not Connected	08/31/2006	11:15:48

The following example is for a parallel UPS.

Severity	UPS #	Description	Date	Time
✓	UPS 5	Battery Disconnected Cleared	08/20/2007	09:08:22
✓	UPS 4	Battery Disconnected Cleared	08/20/2007	09:08:12
✓	UPS 3	Battery Disconnected Cleared	08/20/2007	09:08:01
✓	UPS 2	Battery Disconnected Cleared	08/20/2007	09:07:51
✓	UPS 1	Battery Disconnected Cleared	08/20/2007	09:07:40
✓	Mgmt Module	Battery Disconnected Cleared	08/20/2007	09:07:35
⚠	UPS 5	Battery Disconnected	08/20/2007	09:07:15
⚠	UPS 4	Battery Disconnected	08/20/2007	09:07:01
⚠	UPS 3	Battery Disconnected	08/20/2007	09:06:48
⚠	UPS 2	Battery Disconnected	08/20/2007	09:06:34
⚠	UPS 1	Battery Disconnected	08/20/2007	09:06:20
⚠	Mgmt Module	Battery Disconnected	08/20/2007	09:06:10
✗	Mgmt Module	EPO Initiated	08/20/2007	09:00:52
⚠	Mgmt Module	Battery Disconnected	08/20/2007	09:00:52
✓	UPS 1	Bypass On Auto Cleared	08/20/2007	08:14:05
✓	Mgmt Module	Bypass Not Available Cleared	08/20/2007	08:13:18
⚠	Mgmt Module	Bypass Not Available	08/20/2007	08:13:07
⚠	UPS 1	Bypass On Auto	08/20/2007	08:12:59
✗	UPS 5	EPO Initiated	08/19/2007	03:33:57
⚠	UPS 5	Battery Disconnected	08/19/2007	03:33:57
✗	UPS 4	EPO Initiated	08/19/2007	03:33:47
⚠	UPS 4	Battery Disconnected	08/19/2007	03:33:47
✗	UPS 3	EPO Initiated	08/19/2007	03:33:36
⚠	UPS 3	Battery Disconnected	08/19/2007	03:33:36
✗	UPS 2	EPO Initiated	08/19/2007	03:33:26

The following information is displayed for each event:

- **Severity**—An icon indicating the severity or status of the alarm (Critical, Warning, Normal, or Unknown)
- **Description**—The name of the event
- **Date**—The date at which the event occurred
- **Time**—The time at which the event occurred

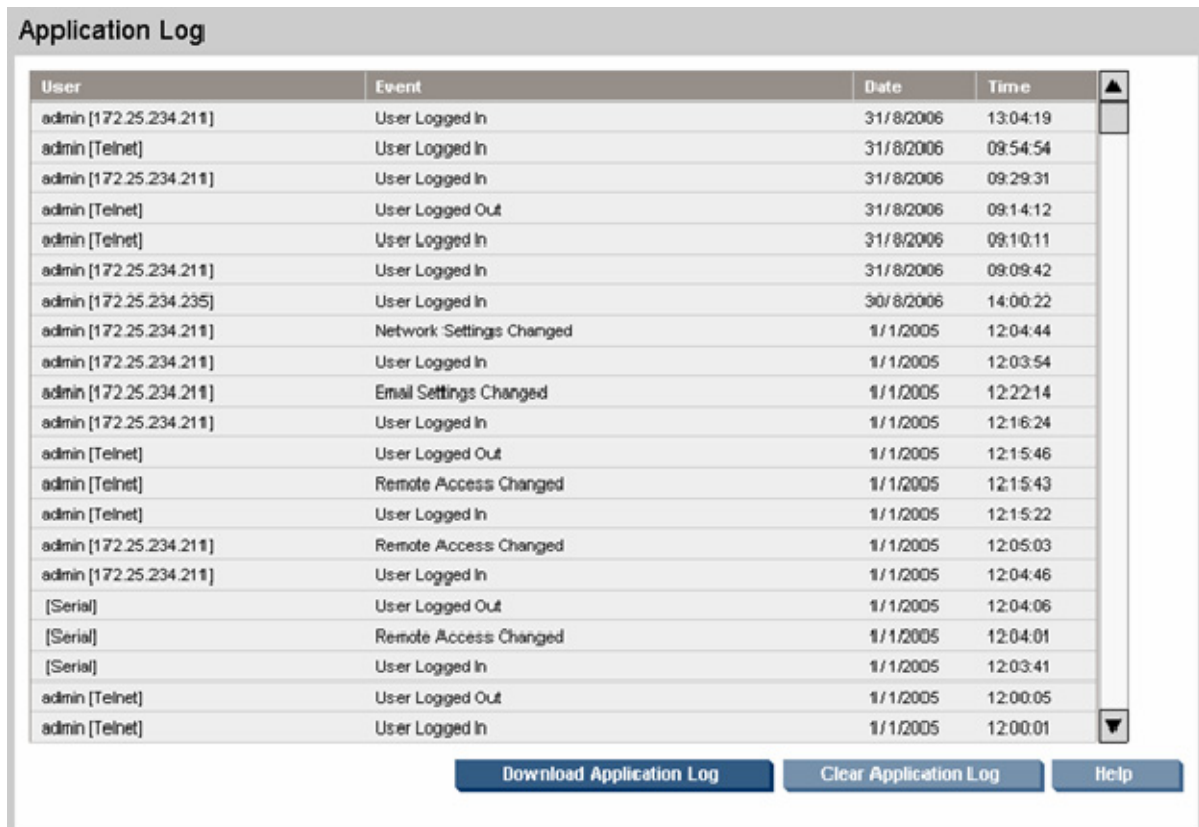
NOTE: When the log reaches the maximum of 500 entries, new entries overwrite the oldest entries in the log.

On the Event Log screen:

- Click **Download Event Log** to export the event log. The File Download screen appears.
 - Click **Open** to view the log in a user-selected application.
 - Click **Save** to save the log file (.csv) to your computer.
- Click **Clear Event Log** to clear the log files.
- Click **Help** to view online help.

Application Log menu

Click **Application Log** in the left navigation frame to display the Application Log screen. This screen displays a log of all application events that have occurred, such as a user logging in.



User	Event	Date	Time
admin [172.25.234.211]	User Logged In	31/8/2006	13:04:19
admin [Telnet]	User Logged In	31/8/2006	09:54:54
admin [172.25.234.211]	User Logged In	31/8/2006	09:29:31
admin [Telnet]	User Logged Out	31/8/2006	09:14:12
admin [Telnet]	User Logged In	31/8/2006	09:10:11
admin [172.25.234.211]	User Logged In	31/8/2006	09:09:42
admin [172.25.234.235]	User Logged In	30/8/2006	14:00:22
admin [172.25.234.211]	Network Settings Changed	1/1/2005	12:04:44
admin [172.25.234.211]	User Logged In	1/1/2005	12:03:54
admin [172.25.234.211]	Email Settings Changed	1/1/2005	12:22:14
admin [172.25.234.211]	User Logged In	1/1/2005	12:16:24
admin [Telnet]	User Logged Out	1/1/2005	12:15:46
admin [Telnet]	Remote Access Changed	1/1/2005	12:15:43
admin [Telnet]	User Logged In	1/1/2005	12:15:22
admin [172.25.234.211]	Remote Access Changed	1/1/2005	12:05:03
admin [172.25.234.211]	User Logged In	1/1/2005	12:04:46
[Serial]	User Logged Out	1/1/2005	12:04:06
[Serial]	Remote Access Changed	1/1/2005	12:04:01
[Serial]	User Logged In	1/1/2005	12:03:41
admin [Telnet]	User Logged Out	1/1/2005	12:00:05
admin [Telnet]	User Logged In	1/1/2005	12:00:01

Buttons: Download Application Log, Clear Application Log, Help

The following information is displayed for each application event:

- **User**—The login name of the user who performed the action
- **Event**—A description of the application event
- **Date**—The date at which the event occurred
- **Time**—The time at which the event occurred

NOTE: When the log reaches the maximum of 500 entries, new entries overwrite the oldest entries in the log.

On the Application Log screen:

- Click **Download Application Log** to export the application log. The File Download screen appears.
 - Click **Open** to view the log in a user-selected application.
 - Click **Save** to save the log file (.csv) to your computer.
- Click **Clear Application Log** to clear the log files.
- Click **Help** to view online help.

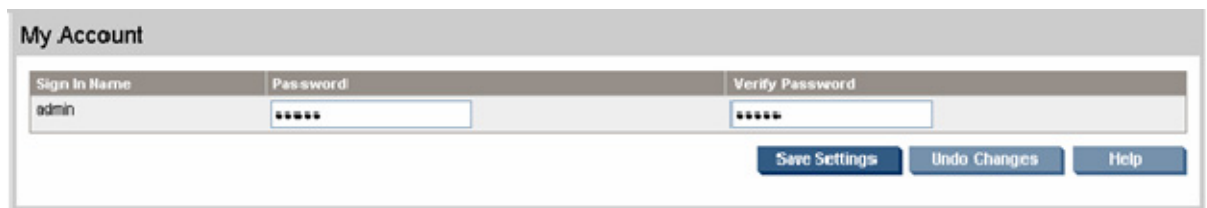
Setup tab

Menu options listed under the Setup tab include:

- My Account menu (on page 57)
- User Accounts menu (on page 58)
- Network menu (on page 59)
- Network Management menu (on page 60)
- Event Notifications menu (on page 64)
- Attached Devices menu (on page 67)
- Power Fail menu (on page 71)
- Shutdown Events menu (on page 73)
- Scheduled Shutdowns menu (on page 74)

My Account menu

Click **My Account** in the left navigation frame to display the My Account screen. This screen enables you to change your login password.



The screenshot shows the 'My Account' web interface. It features a form with three input fields: 'Sign In Name' containing 'admin', 'Password' with six asterisks, and 'Verify Password' also with six asterisks. Below the form are three buttons: 'Save Settings', 'Undo Changes', and 'Help'.

To change your password:

1. Enter the new password in the Password field.
2. Enter the new password again in the Verify Password field.
3. Do one of the following:
 - Click **Save Settings** to save the new password.
 - Click **Undo Changes** to undo the changes.
 - Click **Help** to view online help.

User Accounts menu

Click **User Accounts** in the left navigation frame to access the User Accounts screen. This screen enables administrators to manage user accounts.

Delete	Sign In Name	Password	Verify Password	Administrator
<input type="checkbox"/>	admin			<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

Save Settings Undo Changes Delete Users Help

On the User Accounts screen:

- Click **Undo Changes** to undo the changes.
- Click **Help** to view online help.

To add a user account:

1. Enter the user's sign-in name in the Sign In Name field.
2. Enter the user's password in the Password field.
3. Enter the user's password again in the Verify Password field.
4. If the new user is authorized to change the management module settings, select the **Administrator** checkbox.
5. Click **Save Settings** to save the account information.

To modify a user name:

1. Enter the changed name in the Sign In Name field.
2. Enter the user's password in the Password field.
3. Enter the password again in the Verify Password field.
4. If the user has administrator rights added or removed, select or deselect the **Administrator** checkbox.
5. Click **Save Settings** to save the updated account information.

To modify a user password:

1. Enter the user's login name in the Sign In Name field.
2. Change the password:
 - a. Enter the new password in the Password field.
 - b. Enter the new password again in the Verify Password field.
3. If the user has administrator rights added or removed, select or deselect the **Administrator** checkbox.
4. Click **Save Settings** to save the updated account information.

To delete a user account:

1. Select the **Delete** checkbox for the user account that is to be removed.

2. Click **Delete Users** to delete the user account. The account is removed and no longer appears on the User Accounts screen.

Network menu

Click **Network** in the left navigation frame to access the Network screen. This screen enables administrators to configure network settings for the management module.

The management module MAC address is displayed on the Network screen for informational purposes.

Parameter	Setting / Value
BootP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IP Address	172 . 25 . 234 . 111
Network Mask	255 . 255 . 0 . 0
Default Gateway	172 . 25 . 234 . 1
Parameter	Setting / Value
Network Time Protocol (NTP)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Primary NTP Server	172 . 25 . 234 . 56
Secondary NTP Server	172 . 25 . 234 . 42
NTP GMT Offset	-6 Central Time
NTP Update Frequency	24 [Default = 24]
Manual Date and Time	
Date	31.08/2006 [MM / DD / YYYY or DD / MM / YYYY]
Time	13:18:26 [HH : MM : SS]
Date Format	DD / MM / YYYY
Daylight Saving Time	
Automatically adjust for daylight saving time	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Start Month	April Week First Day Sunday Time 02:00 [HH : MM]
End Month	October Week Last Day Sunday Time 02:00 [HH : MM]
Time Offset	1 Hour
<input type="button" value="Save Settings"/> <input type="button" value="Download Configuration File"/> <input type="button" value="Undo Changes"/> <input type="button" value="Help"/>	
Other Information	
MAC Address	ba be ca fe ba be

To configure the network settings:

1. Select a radio button to enable or disable BOOTP. By default, BOOTP is enabled.
2. Change the IP address of the management module.
3. Change the network mask of the management module.
4. Change the default gateway of the management module.
5. Select a radio button to set the date and time manually or enable NTP.
6. If you enabled NTP in step 5:
 - a. Enter the IP address of the primary NTP server.
 - b. Enter the IP address of the secondary NTP server.

- c. Select the time zone from the dropdown box.
 - d. Enter the number of hours that should pass between each date and time update.
7. If you enabled manual date and time in step 5:
 - a. Enter the date.
 - b. Enter the time.
 - c. Select the date format from the dropdown box.
8. Select the Disable radio button if daylight saving time should not be reflected in the time on the management module.

-or-

Select the Enable radio button to configure time adjustment for daylight saving time:

- a. Enter the month, day, week, and time for which daylight saving time should start.
 - b. Enter the month, day, week, and time for which daylight saving time should end.
 - c. Select the amount of time the clock should change for daylight saving time in your region. Available options are 30 minutes and 1 hour.
9. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Help** to view online help.
10. Click **Download Configuration File** to save a configuration file you can use to duplicate the settings for this management module on other management modules in your environment.

NOTE: Before saving the configuration file, configure all the settings available on the web interface exactly as the duplicated modules should be configured.

- a. Click **Save** on the File Download screen.
- b. Use the HP UPS Management Upgrade Utility to upload the configuration file to other management modules. For more information, see "Using the HP UPS Management Upgrade Utility (on page 115)."

Network Management menu

Click **Network Management** in the left navigation frame to access the Network Management screen. This screen enables administrators to configure network management settings for the management module.

The Network Management screen contains the following:

- System Information tab (on page 61)
- Trap Receivers tab (on page 62)
- SNMP Managers tab (on page 62)
- Remote Access tab (on page 63)

System Information tab

This screen enables administrators to enter contact information for the management module. The information entered on this screen appears on the Identification screen ("[Identification menu](#)" on page 49).

The screenshot shows the 'Network Management' interface with the 'System Information' tab selected. The form contains the following fields and values:

Parameter	Setting
System Name	112
Contact Name	compaq
Contact Email	compaq@dev.net
Contact Phone	1234567890
Battery Installed Date	02/10/2000 [MM / DD / YYYY]

At the bottom right of the form are three buttons: 'Save Settings', 'Undo Changes', and 'Help'.

1. Enter the name of the management module in the System Name field. This name appears throughout the interface application and is used in SNMP traps. Use a unique name for each management module.
2. Enter the name of the contact person in the Contact Name field.
3. Enter the email address of the contact person in the Contact Email field.
4. Enter the phone number of the contact person in the Contact Phone field.
5. Enter the date that the battery was installed.
6. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Help** to view online help.

Trap Receivers tab

This screen enables administrators to enter information for servers that should receive SNMP traps from the management module.

Network Management

System Information | **Trap Receivers** | SNMP Managers | Remote Access

Parameter	Setting / Control	IP Address	Community
Trap Receiver #1	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #2	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #3	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #4	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #5	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #6	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #7	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #8	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #9	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #10	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public

Save Settings | Send Test Trap | Undo Changes | Help

To configure which servers should receive traps:

1. Enable SNMP traps for up to 10 servers.
2. Enter the IP address for up to 10 trap recipients in the IP Address field.
3. Enter the community string for each trap recipient.
4. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Help** to view online help.
5. Click **Send Test Trap** to send a test SNMP trap.

SNMP Managers tab

This screen enables administrators to enter information for SNMP managers. SNMP managers are computers that use the HP Power MIB to request information from the management module.

Network Management

System Information | Trap Receivers | **SNMP Managers** | Remote Access

Name	Enable	IP Address	Read Community	Write Community	Access Type
Manager # 1	<input checked="" type="checkbox"/>	255 . 255 . 255 . 0	Public	Private	<input checked="" type="radio"/> RO <input type="radio"/> RW
Manager # 2	<input type="checkbox"/>	255 . 255 . 255 . 255			<input checked="" type="radio"/> RO <input type="radio"/> RW
Manager # 3	<input type="checkbox"/>	255 . 255 . 255 . 255			<input checked="" type="radio"/> RO <input type="radio"/> RW
Manager # 4	<input type="checkbox"/>	255 . 255 . 255 . 255			<input checked="" type="radio"/> RO <input type="radio"/> RW
Manager # 5	<input type="checkbox"/>	255 . 255 . 255 . 255			<input checked="" type="radio"/> RO <input type="radio"/> RW

Save Settings | Undo Changes | Help

To configure SNMP managers:

1. Enable the SNMP manager configuration for up to five servers.
2. Enter the IP address for each SNMP manager in the IP Address field.

NOTE: SNMP managers cannot communicate with the management module until the IP address is entered on the SNMP Managers screen.

3. Enter the Read community string for each SNMP manager.
4. Enter the Write community string for each SNMP manager.
5. Configure the access type for each SNMP manager.
 - o RO—Read Only
 - o RW—Read/Write
6. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Help** to view online help.

Remote Access tab

This screen enables administrators to enter information for remote access to the management module.

Network Management

System Information Trap Receivers **SNMP Managers** Remote Access

Web Connection	Setting / Control	Value
Web Access	<input type="radio"/> Disable	---
HTTP Port	<input checked="" type="radio"/> Enable	80 [Default = 80]
HTTPS Port	<input type="radio"/> Enable	443 [Default = 443]
SSL Key		<input type="text"/>

Telnet Connection	Setting / Control	Value
Telnet Access	<input type="radio"/> Disable	---
Telnet Port	<input checked="" type="radio"/> Enable	23 [Default = 23]

Session Management	Setting / Control	Value
Automatically sign out user after	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	10 [Minutes of Inactivity]
Number of Sign-In retries allowed	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	3 Lockout Time 10 [Minutes]

File Upload	Setting / Control	Value
FTP File Upload	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	---

1. Configure web access by doing one of the following:
 - o Select **Disable** to disable web access.
 - o Enable HTTP Port and enter the port number to use HTTP.
 - o Enable HTTPS Port and enter the port number to use HTTPS.

- Upload the SSL certificate:
 - i. Open the SSL certificate file with a text editor.
 - ii. Select all content.
 - iii. Copy the selected content.
 - iv. Paste the copied text to the SSL Key field.

NOTE: If you enable HTTPS, the management module also uses the HTTP port to pass non-sensitive information. Be sure that both ports are open.

2. Configure telnet access by doing one of the following:
 - Select **Disable** to disable telnet access.
 - Enable Telnet Port and enter the port number to use telnet.
3. Configure the session management settings.
 - a. (optional) Enable automatic signout and enter the number of minutes the management module should wait before terminating an inactive session.
 - b. (optional) Enable retries allowed, enter the number of times a user can unsuccessfully log in to the management module before the account is locked, and enter the number of minutes to wait between an unsuccessful login and a new login attempt.
4. Enable FTP file upload to allow firmware and configuration upgrades.
5. Do one of the following:
 - Click **Save Settings** to save the information.
 - Click **Undo Changes** to undo the changes.
 - Click **Help** to view online help.

Event Notifications menu

Click **Event Notifications** in the left navigation frame to access the Event Notifications screen. This screen enables administrators to configure event notification settings for the management module.

The Event Notifications screen contains the following:

- Events tab (on page [65](#))
- Email Setup tab (on page [66](#))
- SNMP Traps tab (on page [67](#))

Events tab

This screen enables administrators to define the event notifications, emails, or SNMP traps the management module sends for each event.

Severity	Description	Email		SNMP Trap	
		Enable	Delay In Minutes	Enable	Delay In Minutes
✖	Agent(s) Not Connected	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	Battery Discharged	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	Battery Disconnected	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Battery Failure	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Battery Low	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	Bypass On Auto	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	Bypass Not Available	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	EPO Initiated	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Fan Failure	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	Input Out of Range	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Internal Failure	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Loss of Redundant Communication	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Loss of Redundant Power	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Manual Load Dumped	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	On Battery	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Overload	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	Shutdown Pending	<input type="checkbox"/>	0	<input type="checkbox"/>	0
⚠	Site Wiring Fault	<input type="checkbox"/>	0	<input type="checkbox"/>	0
✖	Temperature Out of Range	<input type="checkbox"/>	0	<input type="checkbox"/>	0
ℹ	UPS Stated On Battery	<input type="checkbox"/>	0	<input type="checkbox"/>	0

To configure the event notifications:

1. For each event description listed, select the **Enabled** checkbox to indicate that email notifications or SNMP traps are sent for that event. To enable all events, click the **Email** checkbox and the **SNMP Trap** checkbox at the top of each column.
2. For each email and SNMP trap enabled, enter the number of minutes that should pass between the occurrence of an alert condition and the sending of the notification.

NOTE: If the event clears before the delay time has expired, then the event notification is not sent.

3. Do one of the following:
 - Click **Save Settings** to save the information.
 - Click **Undo Changes** to undo the changes.
 - Click **Help** to view online help.

Email Setup tab

This screen enables administrators to configure email event notifications.

The screenshot shows the 'Event Notifications' configuration page with the 'Email Setup' tab selected. The page is divided into three sections: 'Email Server Setup', 'Enable Account', and a list of email addresses. The 'Email Server Setup' section has two input fields: 'Email Server Address' and 'From Address' (with a placeholder '[joe.smith@hp.com]'). The 'Enable Account' section has a table with 10 rows, each with a checkbox and an 'Email Address' input field. At the bottom, there are four buttons: 'Save Settings', 'Send Test Email', 'Undo Changes', and 'Help'.

Email Server Setup		Address
Email Server Address		
From Address		[joe.smith@hp.com]

Enable Account	Email Address
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

Buttons: Save Settings, Send Test Email, Undo Changes, Help

To configure the email notifications:

1. Enter the mail server IP address in the Email Server Address field.
2. Enter the email address that messages are marked as being sent from in the From Address field.
3. Select the Enable Account checkbox and enter up to 10 email addresses in the Email Address field. The addresses should correspond to the persons who should receive email notifications of events that occur.
4. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Help** to view online help.
5. Click **Send Test Email** to send a test email.

SNMP Traps tab

This screen enables administrators to configure SNMP trap event notifications.

Parameter	Setting / Control	IP Address	Community
Trap Receiver #1	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #2	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #3	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #4	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #5	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #6	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #7	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #8	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #9	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public
Trap Receiver #10	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	0 0 0 0	public

Save Settings Send Test Trap Undo Changes Help

To configure the SNMP trap notifications:

1. Enable SNMP traps for up to 10 servers.
2. Enter the IP address for up to 10 trap recipients in the IP Address field.
3. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Help** to view online help.
4. Click **Send Test Trap** to send a test SNMP trap.

Attached Devices menu

Click **Attached Devices** in the left navigation frame to display the Attached Devices screen. This screen enables administrators to manage attached devices.

NOTE: Depending on the specific UPS model, this screen will vary.

Attached Devices

UPS Runtime : 03 Min

Entire UPS

Cycle Shutdown Time for Entire UPS: 2 Min

RU	AS	Load	Command Procedure	Estimated Time Required To		Total Time
				Execute Command	Shut Down OS	
✓	✓	server	✓	1 Min	1 Min	2 Min
		device2		1 Min	1 Min	1 Min
		device2		1 Min	1 Min	1 Min

On Off Cycle Shutdown Time for Load 1: 2 Min

RU	AS	Load	Command Procedure	Estimated Time Required To		Total Time
				Execute Command	Shut Down OS	
						0 Min

On Off Cycle Shutdown Time for Load 2: 0 Min

RU	AS	Load	Command Procedure	Estimated Time Required To		Total Time
				Execute Command	Shut Down OS	
						0 Min

On Off Cycle Shutdown Time for Load 3: 0 Min

Add New Device Refresh Page Help

The overall status of the UPS and each load segment is indicated by a colored block in the top left corner of each section.

- **Green**—Normal
- **Yellow**—Warning
- **Red**—Critical

The status of each attached device is indicated by a status symbol in the RU (Redundant UPS) and AS (Agent Status) columns for each entry. No symbol appears in the RU column if a redundant configuration is not configured during the agent installation.

Icon	Status
	RU—The agent is communicating with both UPSs and both UPSs have normal status. AS—The agent is communicating with the management module.
	RU—A warning alarm was generated by either UPS. AS—The agent version is not compatible and should be upgraded.
	RU—The agent lost communication to one or both UPSs, or there is at least one critical alarm generated by one UPS. AS—The agent is not communicating with the management module.

For more information about the possible redundant configuration status icon combinations, see "Redundant UPS status (on page 94)."

The attached devices screen enables you to:

- View attached devices and load segment power status
- Control load segments ("Controlling a load segment" on page 69) (turn off, on, or cycle power)

The estimated UPS runtime appears at the top of the screen. The total time required to shut down the entire UPS is recalculated when attached devices are added, deleted, or modified. This time is determined by the single largest time necessary to shut down a device attached to the UPS.

To add, delete, or configure attached devices, click **Add New Device** to display the Add / Edit Attached Device screen (on page 69).

Controlling a load segment

To cycle the UPS, click **Cycle** in the Entire UPS section to gracefully shut down and turn on all load segments.

To control an individual load segment, do one of the following in the section that corresponds to the load segment you want to control:

- Click **Off** to shut down a load segment, which allows for the graceful shutdown of attached devices.
- Click **On** to turn on a load segment.
- Click **Cycle** to gracefully shut down and turn on a load segment.

Add / Edit Attached Device screen

1. Click **Add New Device** on the Attached Devices screen. The Add Device screen appears.

NOTE: Depending on the specific UPS model, this screen will vary.

The screenshot shows the 'Add / Edit Attached Device' screen. At the top, it displays 'UPS Runtime : 40 Min'. Below this is a table with two columns: 'Parameter' and 'Value'. The table is divided into three sections:

Parameter	Value
Device Information	
Description	<input type="text"/>
Type	Remote Agent
Load	Load 1
Computer Device Information	
IP Address	<input type="text"/>
Management Module Serial Port	Port 1
Run Command Procedure (SDScript) ?	<input type="checkbox"/>
Run Event Procedure ?	<input type="checkbox"/>
Estimated Time Required To	
Shut Down Operating System	1 [Minutes]
Execute Command	1 [Minutes]

At the bottom of the screen, there are four buttons: 'Save Changes', 'Undo Changes', 'Delete Device', and 'Help'.

2. Enter the device name or description in the Description field.
3. Select the type of device in the Type dropdown box:
 - Remote Agent—Select **Remote Agent** when attaching a network agent to the UPS.
 - Serial Agent—Select **Serial Agent** when attaching a serial agent to the UPS.
 - Storage Device—Select **Storage Device** when attaching a shared hard disk storage device to a UPS load segment. Storage devices have the longest runtime so servers accessing this device can save data before shutting down.
 - Other Device—Select **Other Device** for any unmanaged device, such as a router or hub. Unmanaged devices are either on or off and are not shut down gracefully.
4. If output power is supplied by controllable load segments, select the load segment to which the device is attached in the Load dropdown box. Depending on your UPS model, the number of available load segments varies.
5. If the device type is Remote Agent, enter the IP address of the machine that hosts the agent in the IP Address field.

-or-

If the device type is Serial Agent, select the serial connector on the management module to which the agent is connected in the Management Module Serial Port dropdown box.

6. To configure the command procedure SDScript to run at shut down:
 - a. Select the **Run Command Procedure (SDScript)?** checkbox.
 - b. Edit the SDScript file or create a new SDScript file. A sample SDScript file is landed in the root folder for every agent. The name of the SDScript file must be `SDScript.CMD`, and this file must remain in the root folder.



IMPORTANT: SDScript command execution can be a very powerful tool and should be tested thoroughly before being used for the first time in response to a power event. Not all programs and applications are suitable to be executed as a process, especially programs that do not create their own environments. Command execution behavior varies by operating system, and, in general, commands to be executed should be put into a batch file or shell script depending on the operating system that will be executing the commands. Using an SDScript gives you more control over the circumstances in which commands are executed and allows the commands to run in a copy of the environment.

When selecting commands to be executed in the SDScript file, choose programs and processes that do not require user input or interaction. Since the commands can be executed at any time, it is difficult to predict if a user will be available to interact with any programs that are launched. Verify that specified drive mappings, user specific directories, and programs that require special rights are accessible by the SDScript file.

Most operating systems have a method for spawning new processes. In Windows operating systems, commands can be preceded with `START`, and in most Linux/Unix systems, `sh` can be used. When designing your SDScript file, determine which commands require a separate process and which commands can be run one after another in the same process. Refer to the documentation that came with your operating system for more information on batch files or script files.

NOTE: An SDScript cannot be run on a server unless the server has an agent installed. The SDScript file must reside on the server on which the command will be executed.

NOTE: The management module shuts down the operating system gracefully. Use the SDScript file for other tasks, such as backing up files to tape or shutting down a database.

- c. Enter the estimated time required to complete the procedure in the Execute Command field.
7. Select the **Run Event Procedure** checkbox to execute the event handling script on the server on which the agent is installed and running. While the SDScript executes during a shutdown event, the EVScript executes during a UPS event. You can modify the script content to enable actions such as logging events in the system log and sending messages to a recipient.
8. Enter the estimated time required to shut down the server in the Shut Down Operating System field.
9. Enter the estimated time required to run shutdown commands in the Execute Command field.
10. Do one of the following:
 - o Click **Save Changes** to save the information. The newly added device displays under the specific load segment. The status icons in front of the device link indicate the redundant configuration status and the communication status between the agent and the management module.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Delete Device** to delete the device.
 - o Click **Help** to view online help.

Power Fail menu

Click **Power Fail** in the left navigation frame to display the Power Fail screen. This screen enables administrators to configure how the management module should shut down attached devices in the event of a power failure.

NOTE: Depending on the specific UPS model, this screen will vary.

Attached Devices		Shutdown Settings			Restart Settings			
Load	Devices	Conserve Battery Power		Maximize Runtime	Advanced	Delay (Seconds)		
	RU	AS	Shutdown Delay (Minutes)	Load Shutdown Time (After Delay)	Run until battery Depletion			
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	server	<input checked="" type="radio"/> 5	2 Minutes	<input type="radio"/>	<input type="radio"/>	0
			device2					
			device2					
2				<input type="radio"/> 5	0 Minutes	<input type="radio"/>	<input type="radio"/>	0
3				<input type="radio"/> 5	0 Minutes	<input type="radio"/>	<input type="radio"/>	0

Save Settings Refresh Page Help

To configure shutdown for the load segments:

1. Configure the Shutdown Settings for each device using one of the three options in the Shutdown Settings column.
 - o Conserve Battery Power—Use the Conserve Battery Power option to prioritize load segment shutdown. Select the radio button in the Shutdown Delay column, and enter the number of

minutes after power fails that the management module should wait before starting to shut down the load segment. Enter a shorter delay for load segments that power less critical equipment to preserve UPS battery power for other load segments. The total time needed to gracefully shut down the load segment is equal to the shutdown delay plus the number of minutes required to shut down the operating system.

- Maximize Runtime—Select the radio button in the Run Until Battery Depletion column to maximize UPS runtime. The management module initiates load segment shutdown at the time the UPS shuts down.

CAUTION: Selecting this option might result in an ungraceful shutdown. The amount of remaining runtime cannot be accurately predicted after a low battery warning is issued.

- Advanced—Select the radio button in the Advanced column to configure advanced shutdown settings. See "Advanced power fail settings (on page 72)" for more information.
2. Enter the amount of time to wait before restarting the attached device in the Restart Settings column. This option allows utility power to stabilize and disks in shared storage configurations to spin up before the server restarts.
 3. Do one of the following:
 - Click **Save Settings** to save the information.
 - Click **Refresh Page** to cancel changes and restore the page settings to the last saved configuration.
 - Click **Help** to view online help.

Advanced power fail settings

1. Click the **Advanced** tab on the Power Fail screen to display the advanced settings.

Attached Devices		Shutdown Settings			Restart Settings	
Load	Devices	Conserve Battery Power	Maximize Runtime	Do Not Shutdown	Low Battery Delay (Seconds)	Delay (Seconds)
	RU AS	Shutdown Delay (Minutes)	Load Shutdown Time (After Delay)	Run until battery Depletion		
1	server device2 device2	5	2 Minutes	<input type="radio"/>	<input type="checkbox"/>	0
2		5	0 Minutes	<input type="radio"/>	<input type="checkbox"/>	0
3		5	0 Minutes	<input type="radio"/>	<input type="checkbox"/>	0

Save Settings Refresh Page Help

2. Select one of the three radio buttons in the Shutdown Settings field, and then enter the shutdown delay, if applicable.
3. Deselect the Low Battery checkbox, or select the Low Battery checkbox and enter a shutdown delay. The following matrix describes the possible combinations.

	Low Battery—Selected	Low Battery—Deselected

	Low Battery—Selected	Low Battery—Deselected
Shutdown Settings Conserve Battery Power	The management module initiates system shutdowns after the specified delay when the UPS begins to operate on battery power, unless the UPS issues a low battery alarm before the shutdowns are initiated. If a low battery alarm occurs during the delay countdown, the management module ignores the On Battery settings and observes the Low Battery shutdown delay setting.	The management module initiates system shutdowns after the specified delay when the UPS begins to operate on battery power. If a low battery alarm occurs during the delay countdown, the management module ignores the low battery alarm and continues to observe the On Battery shutdown delay setting. ¹
Shutdown Settings Maximize Runtime	The management module initiates system shutdowns when the UPS runtime reaches zero, unless the UPS issues a low battery alarm before the shutdowns are initiated. If a low battery alarm occurs during the runtime countdown, the management module ignores the runtime remaining and observes the Low Battery shutdown delay setting.	The management module initiates system shutdowns when the UPS runtime reaches zero. If a low battery alarm occurs during the runtime countdown, the management module ignores the low battery alarm and continues to observe the runtime countdown. ¹
Shutdown Settings Do Not Shutdown	The management module initiates system shutdowns when the UPS issues a low battery alarm. The management module observes the Low Battery shutdown delay setting.	The management module does not initiate any type of system shutdown. Power is maintained until the battery is depleted. ²

¹ Selecting this option might result in an ungraceful shutdown. The amount of remaining runtime cannot be accurately predicted after a low battery warning is issued.

² Running batteries to depletion can cause an ungraceful shutdown if a second power failure occurs before the batteries have fully charged.

4. Enter the amount of time to wait before restarting the attached device in the Restart Settings column. This option allows utility power to stabilize and disks in shared storage configurations to spin up before the server restarts.
5. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Refresh Page** to cancel changes and restore the page settings to the last saved configuration.
 - o Click **Help** to view online help.

Shutdown Events menu

Click **Shutdown Events** in the left navigation frame to display the Shutdown Events screen. In addition to the typical events (such as power fail events) causing shutdowns, this screen enables administrators to configure other events to trigger a shutdown.

When a shutdown event occurs, the management module gracefully shuts down all attached devices and UPS load segments.

To specify an event for shutdown:

1. Select **Shutdown?** for the event you want to configure.
2. Enter the number of minutes to wait between the time the event occurs and the time the device shuts down in the Delay (Minutes) field.
3. Do one of the following:
 - o Click **Save Settings** to save the information.
 - o Click **Undo Changes** to undo the changes.
 - o Click **Help** to view online help.

NOTE: Depending on the specific UPS model, this screen will vary.

Shutdown Events

Event Description	Shutdown?	Delay (Minutes)
Battery Discharged	<input type="checkbox"/>	<input type="text" value="0"/>
Battery Failure	<input type="checkbox"/>	<input type="text" value="0"/>
Bypass On Auto	<input type="checkbox"/>	<input type="text" value="0"/>
Bypass Not Available	<input type="checkbox"/>	<input type="text" value="0"/>
Fan Failure	<input type="checkbox"/>	<input type="text" value="0"/>
Input Out of Range	<input type="checkbox"/>	<input type="text" value="0"/>
Internal Failure	<input type="checkbox"/>	<input type="text" value="0"/>
Overload	<input type="checkbox"/>	<input type="text" value="0"/>
Site Wiring Fault	<input type="checkbox"/>	<input type="text" value="0"/>
Temperature Out of Range	<input type="checkbox"/>	<input type="text" value="0"/>

Save Settings
Undo Changes
Help

NOTE: If the event clears before the delay time has expired, the shutdown is not executed.

Scheduled Shutdowns menu

Click **Scheduled Shutdowns** in the left navigation frame to display the Scheduled Shutdowns screen. This screen enables administrators to view a summary of the set times at which the entire UPS shuts down and restarts.

To delete a scheduled shutdown:

1. Select the checkbox in the Delete column for the shutdown event you want to delete.
2. Click **Delete Selection(s)**.

To add or edit a scheduled shutdown, click **Add New Scheduled Shutdown**. The Add / Edit Scheduled Shutdowns screen ("[Add/Edit Scheduled Shutdowns screen](#)" on page 75) appears.

Scheduled Shutdowns

Event Affects	Frequency	Shutdown	Restart	Delete
<div style="display: flex; justify-content: space-around;"> Add New Scheduled Shutdown Delete Selection(s) Help </div>				

Add/Edit Scheduled Shutdowns screen

1. In the Frequency field, select one of the following:
 - o **One Time**—Schedules a single shutdown and restart

Add/Edit Scheduled Shutdowns

Parameter	Value
Frequency	<input checked="" type="radio"/> One Time <input type="radio"/> Daily <input type="radio"/> Weekly
Shutdown (Date / Time)	01.01/2001 03:12:00 AM
Restart (Date / Time)	01.01/2001 03:01:00 AM

[Save Settings](#) [Undo Changes](#) [Help](#)

- o **Daily**—Schedules a daily shutdown and restart

Add/Edit Scheduled Shutdowns

Parameter	Value
Frequency	<input type="radio"/> One Time <input checked="" type="radio"/> Daily <input type="radio"/> Weekly
Shutdown (Date / Time)	12:00 AM
Restart (Date / Time)	Same Day at 1:00 AM

[Save Settings](#) [Undo Changes](#) [Help](#)

- o **Weekly**—Schedules a weekly shutdown and restart

Add/Edit Scheduled Shutdowns

Parameter	Value
Frequency	<input type="radio"/> One Time <input type="radio"/> Daily <input checked="" type="radio"/> Weekly
Shutdown (Date / Time)	Sunday at 12:00 AM
Restart (Date / Time)	Monday at 1:00 AM

[Save Settings](#) [Undo Changes](#) [Help](#)

2. Enter the shutdown date (if applicable) and time in the Shutdown field.
3. Enter the restart date and time in the Restart field.
4. Click **Save Settings** to save the information.

Help tab

Menu options listed under the Help tab include:

- About menu (on page 76)
- Contents menu (on page 77)
- Info & Updates menu (on page 77)

About menu

Click **About** in the left navigation frame to display the About screen. This screen displays the hardware version, the firmware version, and the MAC address for the management module, as well as a link to the HP website.

About

About HP UPS Management Module

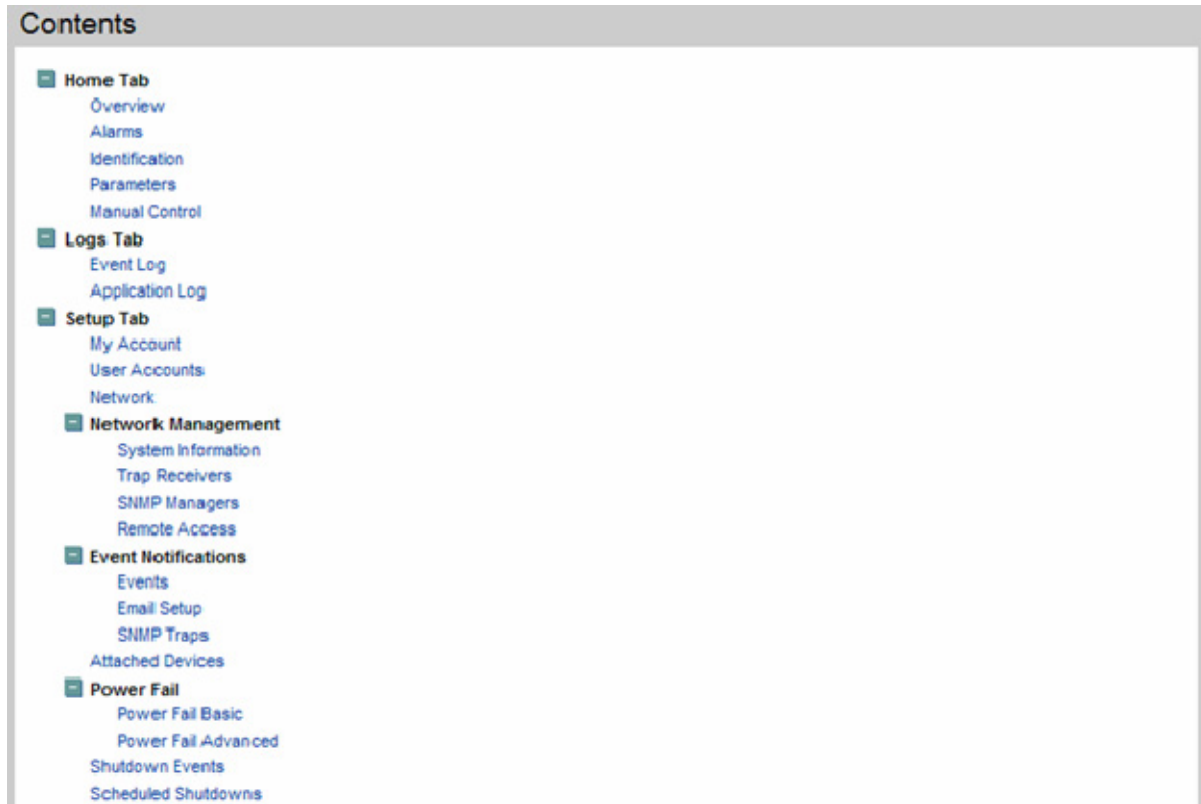
	HP UPS Management Module Firmware Version:	B.10.01
	HP UPS Management Module Hardware Version:	1.00.A
i n v e n t	MAC Address:	00 11 22 33 44 12

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<http://www.hp.com>

Contents menu

Click **Contents** in the left navigation frame to display the Contents screen. This screen provides a list of the links to help topics.



Info & Updates menu

Click **Info & Updates** in the left navigation frame to open the HP website.

HP UPS Management Module Service Menu

HP UPS Management Module Service Menu overview

The HP UPS Management Module Service Menu provides an alternative, limited interface to the management module when the web interface is disabled or not preferred. The menu structure textually displays various measurements and warning and alarm messages from the management module. Also, system values and power fail settings can be configured through the Service Menu and sent to the management module.

NOTE: All status information and configuration parameters included in the HP UPS Management Module Service Menu are available using the HP UPS Management Module web interface (on page 41).

Accessing the Service Menu

You can access the Service Menu:

- Remotely through a telnet session (on page 78)
- Locally through a terminal emulation session (on page 79) using an available serial port

Telnet session

Use a telnet session to access the HP UPS Management Module Service Menu:

1. If necessary, configure the management module:
 - a. Launch a terminal emulation program ("[Launching a terminal emulation program](#)" on page 21).
 - b. Configure the management module remote access settings ("[Configuring the management module for remote access](#)" on page 22).
2. Be sure that you have connected the network cable ("[Connecting the network cable](#)" on page 20) to the management module.
3. Launch telnet by entering the following command at a DOS prompt or the command line:

```
Telnet xxx.xxx.xxx.xxx
```

where xxx.xxx.xxx.xxx is the IP address of the management module.
4. At the prompt, enter the user name and password. The default user name is `admin`, and the default password is `admin`.
For more information about the Service Menu, see "[Service Menu](#) (on page 80)."

Terminal emulation session

Use a terminal emulation program to access the HP UPS Management Module Service Menu:

1. Be sure that you have connected the configuration cable ("[Connecting the configuration cable](#)" on page 21) to the management module and the host computer.
2. Launch a terminal emulation program, such as HyperTerminal ("[Launching a terminal emulation program](#)" on page 21).
3. On the session screen, the POST executes, and then a prompt appears. Press any key within 5 seconds to enter the HP UPS Management Module Service Menu.

For more information about the POST, see "POST (on page 79)."

For more information about the Service Menu, see "Service Menu (on page 80)."

POST

When the card is powered up or reset, the bootloader will perform a POST and output the following text:

```
RAM test:                PASS
DMA memory-to-memory test: PASS
IRQ test:                PASS
Ethernet loopback test:  PASS
Serial loopback test:    PASS
```

```
HP UPS Management Module
```

```
NETWORK INTERFACE PARAMETERS:
```

```
  IP address: 173.173.173.150
```

```
  Subnet mask: 255.255.0.0
```

```
  Default gateway: 169.254.1.254
```

```
HARDWARE PARAMETERS:
```

```
  Module Serial number: CN85SK000M
```

```
  MAC address: 00:13:21:C6:1C:BC
```

```
Copyright (C) 2006 Hewlett-Packard Development Company, L.P.
```

```
Press any key in 5 seconds to enter the Service menu.
```

If any error is detected in the boot process, the Error LED illuminates or flashes (on page 89).

Navigating the menus

After you have successfully initiated a terminal emulation or telnet session, the HP UPS Management Module Service Menu appears.

- Open a submenu by entering the corresponding option number at the prompt.
- To enter or change configuration information, follow the onscreen prompts.
- Enter 0 at the submenu prompt to go to the previous menu.

-or-

Enter 0 at the Main menu prompt to exit the utility.

- Press the **Enter** key to refresh the screen.
- The management module resets automatically to allow configuration changes to take effect.

Service Menu

This menu only appears when accessing the management module using a terminal emulation program.

Option number	Submenu	Description
1	Module Configuration	Opens the HP UPS Management Module Configuration Utility (on page 80)
2	UPS Pass-through	Bypasses the management module and allows direct communication with the UPS
3	Exit	Exits the Service menu and resets the management module

HP UPS Management Module Configuration Utility

Option number	Submenu	Description
1	UPS Monitor	Displays UPS status information
2	Network Configuration	Enables network configuration for the management module
3	System Configuration	Enables you to set the date, time, and daylight saving time parameters
4	User Accounts	Enables you select an entry to set up and configure user accounts
s	Save New Changes and Restart	Saves changes and resets the management module
r	Restore Configuration to Manufacturer Settings	Restores parameters to default settings

UPS Monitor submenu

Option number	Submenu	Description
1	UPS Alarms	Displays active UPS alarms
2	UPS Meters	Displays UPS input and output parameter data
3	Battery	Displays battery data, battery status, and the Battery submenu
4	Power Protection	Displays the Power Protection submenu
0	Previous Menu	Returns to the previous menu

Battery submenu

Option number	Submenu	Description
1	Battery Installed Date	Enables you to enter the date the UPS battery was installed
2	Run Battery Test	Runs a UPS battery test
0	Previous Menu	Returns to the previous menu

Power Protection submenu

Option number	Submenu	Description
1	Power Overview	Displays general power status
2	Shutdown Settings (for Protected Devices)	Enables you to configure the shutdown settings
3	Shutdown Events Settings	Enables you to configure events for which the UPS should shut down
4	Scheduled Shutdowns	Enables you to view a list of configured scheduled shutdowns, add a new scheduled shutdown, or delete a scheduled shutdown
5	Load Control	Enables you to select an entry to cycle the UPS or to turn on, turn off, or cycle individual UPS load segments
6	Device Identification	Enables you to enter a device name and contact information for the UPS
0	Previous Menu	Returns to the previous menu

Network Configuration submenu

Option number	Submenu	Description
1	Network Settings	Enables you to enter or change network properties for the management module
2	Remote Console	Enables you to enter or change parameters for telnet access
3	Web Access	Enables you to enter or change parameters for web interface access
4	File Transfer (FTP)	Enables or disables the FTP service
5	SNMP	Enables you to configure SNMP managers and SNMP traps
6	Emails	Enables you to configure a mail server and email event notifications
7	Session Settings	Enables you to configure timeouts and retries for remote sessions
0	Previous Menu	Returns to the previous menu

Network Settings submenu

Option number	Submenu	Description
1	Static IP Address	Enables you to set the management module IP address
2	Static Subnet Mask	Enables you to set the management module subnet mask
3	Static Default Gateway	Enables you to set the management module default gateway
4	Toggle Boot Mode	Enables you to toggle the boot mode between BootP and Static IP
5	Ping Utility	Pings the management module
0	Previous Menu	Returns to the previous menu

Remote Console submenu

Option number	Submenu	Description
1	Protocol Selection	Enables you to select telnet
2	Telnet Configuration	Enables you to configure the port for telnet
0	Previous Menu	Returns to the previous menu

Web Access submenu

Option number	Submenu	Description
1	Protocol Selection	Enables you to select HTTP or HTTPS
2	HTTP/HTTPS Configuration	Enables you to configure the port for HTTP or HTTPS
0	Previous Menu	Returns to the previous menu

SNMP submenu

Option number	Submenu	Description
1	SNMP Managers (NMS)	Enables you to select an entry to configure the SNMP managers (computers that use the HP Power MIB to request information from the management module)
2	SNMP Traps	Enables you to select an entry to configure the SNMP traps receiver
0	Previous Menu	Returns to the previous menu

SNMP Managers (NMS) submenu

Option number	Submenu	Description
1	IP Address	Enables you to enter or change the IP address of the SNMP manager

Option number	Submenu	Description
2	Read Community String	Enables you to enter or change the Read community string of the SNMP manager
3	Write Community String	Enables you to enter or change the Write community string of the SNMP manager
4	Access Privileges	Enables you to enter or change access privileges of the SNMP manager
5	Enable/Disable SNMP Manager	Enables you to enable or disable the SNMP manager
0	Previous Menu	Returns to the previous menu

SNMP Traps submenu

Option number	Submenu	Description
1	Trap Receiver IP Address	Enables you to enter or change the IP address of a server that should receive SNMP traps
2	Trap Community String	Enables you to enter or change the community strings of a server that should receive SNMP traps
3	Enable/Disable Trap	Enables or disables an SNMP traps receiver
0	Previous Menu	Returns to the previous menu

Emails submenu

Option number	Submenu	Description
1	Change SMTP Settings	Enables you to enter or change SMTP settings in the SMTP Settings submenu (on page 83)
2	Edit An Entry	Enables you to edit an email recipient entry on the Email Recipient submenu (on page 84)
0	Previous Menu	Returns to the previous menu

SMTP Settings submenu

Option number	Submenu	Description
1	SMTP Server	Enables you to enter or change the mail server IP address
2	Sender Email	Enables you to enter or change the email address that messages are marked as being sent from
0	Previous Menu	Returns to the previous menu

Email Recipient submenu

Option number	Submenu	Description
1	Receiver Email	Enables you to enter or change an email address that should receive email alert notifications
2	Enable/Disable Email Generation	Enables or disables the receiver of email alert notifications
0	Previous Menu	Returns to the previous menu

Session Settings submenu

Option number	Submenu	Description
1	Session Inactivity Timeout	Enables you to enter the number of minutes the management module should wait before terminating an inactive session
2	Login Retries	Enables you to enter the number of times a user can unsuccessfully log in to the module before the account is locked
3	Lock-out Period (After x Retries)	Enables you to enter the number of minutes to wait between an unsuccessful login and a new login attempt
4	Reset Login Retry Count For All Users	Enables you to reset all locked out sessions
0	Previous Menu	Returns to the previous menu

System Configuration submenu

Option number	Submenu	Description
1	Date/Time Configuration	Enables you to configure the date and time
0	Previous Menu	Returns to the previous menu

Date/Time Configuration submenu

Option number	Submenu	Description
1	Network Time Protocol	Enables you to configure the date and time using NTP
2	Manual Date/Time	Enables you to configure the date and time manually
3	Daylight Saving Changes	Enables you to configure daylight saving time parameters
0	Previous Menu	Returns to the previous menu

Network Time Protocol submenu

Option number	Submenu	Description
1	Primary NTP Server	Enables you to enter or change the IP address of the primary NTP server
2	Secondary NTP Server	Enables you to enter or change the IP address of the secondary NTP server
3	GMT Offset (time zone)	Enables you to select the time zone from the table provided
4	Update Frequency (1–8760 hours)	Enables you to enter the number of hours that should pass between each date and time update
5	NTP Client	Enables you to enable or disable the NTP client
6	Accept Changes	Enables you to save all changes
0	Previous Menu	Returns to the previous menu

Manual Date/Time submenu

Option number	Submenu	Description
1	Change Date	Enables you to enter or change the date manually
2	Change Time	Enables you to enter or change the time manually
0	Previous Menu	Returns to the previous menu

Daylight Saving Changes submenu

Option number	Submenu	Description
1	Enable/Disable Daylight Saving Time	Enables you to enable or disable daylight saving time
2	Change Time Offset	Enables you to configure the amount of time the clock should change for daylight saving time in your region
3	Change Daylight Saving Time Start	Enables you to configure the day and time that daylight saving should start
4	Change Daylight Saving Time End	Enables you to configure the day and time that daylight saving should end
0	Previous Menu	Returns to the previous menu

User Accounts submenu

Option number	Submenu	Description
1	Change User Name	Enables you to change a user login name
2	Change Password	Enables you to change a user login password

Option number	Submenu	Description
3	Administrator Privilege	Enables you to designate a user as an administrator
0	Previous Menu	Returns to the previous menu

Troubleshooting

ASCII character sequence Esc+Shift+9 directs all serial communication to the iLO port for the HP ProLiant DL380 G4

Action: Disable iLO.

Agent does not install on RH Itanium

Action:

1. Install the `ia32*` file for your operating system from the supplementary disc.
2. Install the appropriate library files for your operating system from the compact layer in the following order:
 - a. Install the `glibc*` library file.
 - b. Install the `zlib*` library file.

	RH4-U3	RH4-U4	RH4-U5	RH5
<code>ia32*</code>	<code>ia32el-1.3-2.ia64.rpm</code>	<code>ia32el-1.3-2.ia64.rpm</code>	<code>ia32el-1.3-2.ia64.rpm</code>	<code>ia32el-1.6-13.el5.ia64.rpm</code>
<code>glibc*</code>	<code>glibc-2.3.4-2.19.i686.rpm</code>	<code>glibc-2.3.4-2.25.i686.rpm</code>	<code>glibc-2.3.4-2.36.i686.rpm</code>	<code>glibc-2.5-12.i686.rpm</code>
<code>zlib*</code>	<code>zlib-1.2.1.2-1.2.i386.rpm</code>	<code>zlib-1.2.1.2-1.2.i386.rpm</code>	<code>zlib-1.2.1.2-1.2.i386.rpm</code>	<code>zlib-1.2.3-3.i386.rpm</code>

3. Install the agent using the Linux installation script ("[Installing the agent using the installation script](#)" on page [33](#)).

-or-

Install the agent using the Linux silent installation method ("[Installing the agent using the silent installation method](#)" on page [34](#)).

Attached device communication errors appear

Action: Use the device IP address, not the host name, when attaching devices.

Attached device did not shut down gracefully

Action: Be sure the shutdown settings do not exceed the UPS runtime.

Battery Test did not run

Possible Cause: The UPS is On Battery.

Action: The UPS must be in a certain state before the battery test runs. For more information, refer to the section, "Parameters menu option ("[Parameters menu](#)" on page 51)."

Browser does not display the web interface for an installed management module

Action:

1. Be sure that the IP address and port number are correct. The default port number for non-secure browser connection is port 80. The default port number for secure SSL browser connection is 443.
2. Be sure that the web interface (HTTP/HTTPS) is enabled on the management module.

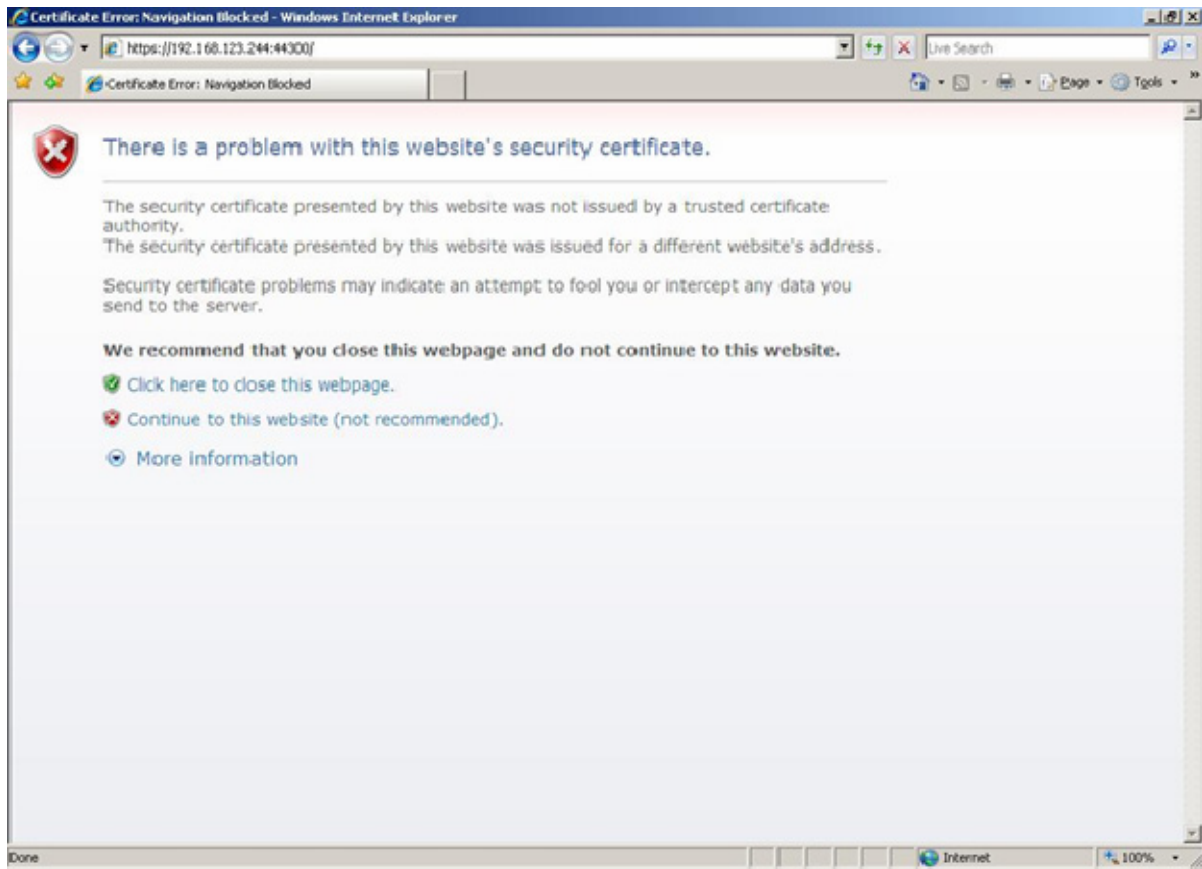
Browser incorrectly displays English or Japanese characters

Possible Cause: Another user with different language settings logs in to the web interface.

Action: Log out of the web interface, close the browser window, and then sign in to the web interface again.

Certificate error

Possible Cause: Internet Explorer 7 does not recognize the SSL certificate.



Action:

- Install an SSL certificate that Internet Explorer recognizes.
- or-
- Click **Continue to this website (not recommended)** to ignore the security warning.

Email notifications are not received from an HP-UX server

Action: Add the IP address of the email server to the host file of the computer running the UPS Power Protection Agent.

Error LED illuminates or flashes

Action: Press the **Reset** button on the management module front panel. If the problem persists, contact an authorized service provider.

The following table lists the error conditions associated with the management module LED.

Test	LED flash error code	Description
1	Permanently on	DRAM failure
2	2 flashes	DMA Mem to Mem error
3	3 flashes	IRQ error
4	4 flashes	Ethernet error
5	5 flashes	Serial loop back error
6	6 flashes	RTC error

Event notification messages do not appear on console screen

Action: If you are using SLES 9, upgrade the KDE or use a different desktop, such as GNOME.

Event notifications are not being sent

Action: While email and SNMP trap notifications must be set up on their respective screens, notifications must also be enabled per event on the Event Notifications screen ("[Event Notifications menu](#)" on page [64](#)).

FTP error messages appear when connecting through Linux

Symptom: When connecting to FTP through Linux, error messages about bad commands appear.

Action: The user can log in although the error messages appear.

Flash update fails over a serial connection

Action: Disable any serial port being configured during the flash update, such as iLO, or use an FTP connection.

HP SIM lists a discovered UPS as Unmanaged in the System Type column

Action:

1. Delete the discovered UPS from HP SIM.
2. Using the management module web interface, add the HP SIM server as a Manager on the SNMP Managers tab (on page [62](#)).
3. Rediscover the UPS in HP SIM.

HPFlash does not install image.bin on a Pentium III

Symptom: The image.bin file is not installed on a Pentium III during a serial upgrade.

Possible Cause: The minimum hardware requirement for HPFlash is Pentium 4.

Action: Be sure that the hardware meets the minimum HPFlash requirements.

Initiate Battery Test Command Has Been Sent message not displayed

Action: View the results of the battery test on the Application Log screen ("[Application Log menu](#)" on page 56).

Input frequency shows zero

Symptom: During a battery test the input frequency shows zero, but the input frequency shows a regular line voltage.

Possible Cause: When executing a battery test, the parameters might show incorrect information.

Action: Verify the parameters after the battery test is complete.

InstallShield error code -6001 appears during setup

Symptom: During installation or upgrade, the following error message appears:



Possible Cause: A previous installation of any product using InstallShield might have corrupted some of the InstallShield runtime files.

Action: InstallShield installers copy DLL files to a local folder on your machine at C:\Program Files\Common Files\InstallShield\Professional\RunTime\0701. Delete or rename the 0701 folder and retry the installation. The installer recreates the 0701 folder and includes the necessary setup files.

For more information, search the InstallShield knowledge base (<http://www.installshield.com/kb>).

Invalid IP address

Action: Verify that the IP address entered is valid.

Links in traps and emails do not work correctly for Linux

Action: Update the `/etc/hosts` file with the correct IP address.

Linux agent does not execute on Red Hat 5

Symptom: The following error appears when attempting to execute the `./SetupRA` agent:

```
bash: ./SetupRA: /bin/sh: bad interpreter: Permission denied
```

Action: Enter `SH` in front of the command. For example: `SH ./SetupRA`.

Low battery warning is displayed

Action: Plug the UPS into an AC grounded outlet for at least 24 hours to charge the batteries, and then test the batteries. Replace the batteries if necessary.

Manual Load Dumped alarm not working

Symptom: For the R3000 XR, turning off the UPS from the front panel does not result in a "Manual Load Dumped" alarm.

Possible Cause: The "Manual Load Dumped" alarm is not supported on this model.

Action: No action is required.

Messages from the Messenger Service are not displayed in Japanese

Possible Cause: The Messenger Service is working as designed.

Action: No action is required.

Network attached UPS not discovered

Action:

1. Be sure the network cable is properly connected.
2. Verify the password that is configured in the network option card installed in the UPS. The default password is `admin`. The password is case sensitive.
3. Verify that the IP address entered is the same as the IP address configured in the card.

4. Verify that the network settings are correct.

No power

Action: Verify that the UPS is connected to a working outlet and that the UPS is powered up.

Non-admin users cannot log in through telnet

Possible Cause: A user account was added, but the password was not set.

Action: An administrator must edit the user account to set a password.

On battery alarm

Action: The UPS continues to run on battery power until the battery is completely discharged (or until utility power is restored), unless the shutdown parameters specify to turn off both the system and the UPS.

On boost alarm

Possible Cause: The input voltage is too low for the UPS. The UPS boosts the voltage up to acceptable limits.

Action: For information on Boost mode, refer to the UPS documentation.

On buck alarm

Possible Cause: The input voltage is too high for the UPS. The UPS bucks the voltage down to acceptable limits.

Action: For information on Buck mode, refer to the UPS documentation.

Operating system firewall prevents management module functionality

Symptom: The management module does not connect with the agent or browser.

Action: Follow the instructions in the operating system documentation to disable the firewall or to keep the firewall enabled with port 3573 open.

Overload alarm

Possible Cause: The device load has exceeded the UPS power rating.

Action: Verify all equipment is drawing within the rated requirements. If necessary, reduce the equipment connected to the UPS. The UPS might need to be reset.

Receiving a security error

Symptom: Security error: Domain Name mismatch message when trying to browse with SSL.

Possible Cause: The IP address or server name has changed.

Action: Stop the service, delete the certificate file, and restart the service.

Redundant status error displays on the Attached Devices screen for a nonredundant configuration

Possible Cause: The HP UPS Power Protection Agent was incorrectly configured.

Action: Reconfigure the agent.

1. Open the agent configuration program for your operating system.
 - o Windows ("Reconfiguring the agent on Windows operating systems" on page 32)
 - o Linux ("Reconfiguring the agent on Linux operating systems" on page 36)
 - o HP-UX ("Reconfiguring the agent on HP-UX operating systems" on page 39)
2. Verify that the correct IP address, host name, communications port, or serial path is entered for the management server that should communicate with the agent. To allow any management server to connect to the agent, select Any Server from the dropdown box in Windows, or enter an asterisk (*) where prompted for Linux or HP-UX.
3. For a nonredundant configuration, be sure that no second management server is specified for communication with the agent.
4. Close the configuration program and check the Attach Devices screen ("Attached Devices menu" on page 67) to verify that the redundant UPS (RU) column is grayed out.

Redundant UPS status

The following table describes the possible combinations for the redundant UPS status icons found on the Attached Devices screen ("Attached Devices menu" on page 67).

Events	Agent status	Management Server 1 status		Management Server 2 status	
		RU	AS	RU	AS
Both UPSs are on utility power					
Management Server 1 UPS is on battery power and redundant power is lost					
Management Server 1 UPS has shut down and redundant communication is lost		-	-		
Management Server 1 UPS has lost communication and redundant communication is lost					

Events	Agent status	Management Server 1 status		Management Server 2 status	
Two UPSs are on battery power and redundant power is lost					
Two UPSs have shut down	-	-	-	-	-
Both UPSs have lost communication					

SLES 10 agent does not autostart after power fail or reboot

Action: Follow the instructions for installing the agent on SLES 10 (on page 35).

Servers running Windows® Server 2003 do not restart

Symptom: Servers running Windows® Server 2003 do not restart upon power restoration following a power fail shutdown.

Possible Cause: This is a known Windows® Server 2003 behavior on some servers.

Action: Refer to the Microsoft® Knowledge Base article 819760.

Shutdowns not functioning when Any Server is configured in a redundant configuration

Action: Reconfigure the management server information on the agent.

1. Open the agent configuration program for your operating system.
 - o Windows ("Reconfiguring the agent on Windows operating systems" on page 32)
 - o Linux ("Reconfiguring the agent on Linux operating systems" on page 36)
 - o HP-UX ("Reconfiguring the agent on HP-UX operating systems" on page 39)
2. Enter the correct IP address, host name, communications port, or serial path for the first management server that should communicate with the agent. Do not select **Any Server** from the dropdown box in Windows or enter an asterisk (*) where prompted for Linux or HP-UX.
3. Enter the correct IP address, host name, communications port, or serial path for the second management server that should communicate with the agent. Do not select **Any Server** from the dropdown box in Windows or enter an asterisk (*) where prompted for Linux or HP-UX.
4. Close the configuration program.

Silent install did not execute successfully

Action:

- Verify the command line parameters are correct.
- Verify the configuration .ini file is valid.
- Verify the Setup.iss destination path is correct.
- Refer to the InstallShield Knowledge Base article 101901 for the setup.log result code.

Task Bar menu does not clear

Symptom: The task bar menu does not clear when clicking off the menu onto the Windows® desktop.

Possible Cause: This is a known Windows® behavior.

Action: Start another application or open a new window, and the issue disappears.

UPS Power Protection Agent does not display a shutdown warning message in SLES operating systems

Action: The shutdown executes correctly although a countdown does not appear.

Unable to discover a UPS

Action:

- Verify that the UPS is connected to the correct communications port (COM1, COM2, and so on).
- Verify that no other software or processes are accessing the communications port to which the UPS is attached.
- Verify that you are using the communications cable that came with the UPS.
- Verify that resources for the selected communications port (such as I/O port or IRQ) are not shared with other devices.
- Try a different communications port.

Unable to edit devices using telnet

Action: To edit a device using telnet, you must delete the device and then recreate the device. Devices can be edited using the HP UPS Management Module web interface.

Unable to locate the .INI files for a silent install

Possible Cause: The DevManBE.ini file is automatically created in the top-level program directory.

Action:

- For Windows®, if installed to the default location, the file is located at /Program Files/HP/UPS Power Protection Agent.

- For Linux, the file can be found at `/usr/local/DevMan`.
- For HP-UX, the file can be found at `/opt/DevMan`.

Unable to obtain a valid network address error message displays

Possible Cause:

- The management module is unable to connect to the BOOTP server.
- The MAC address for the management module is not in the BOOTP server.
- A duplicate IP address on the network is detected.

Action:

1. Be sure that a BOOTP server is on the network.
2. Be sure that the MAC address for the management module is in the BOOTP server.
3. Be sure that the IP address is valid and not in use by another device on the network.

Unable to reboot the machine

Possible Cause: The system hangs when the InstallShield wizard for the UPS Power Protection Agent is left open and minimized during the attempted reboot.

Action: Manually power off the machine.

Unable to set event delays using telnet

Action: Event delays must be set using the HP UPS Management Module web interface.

Unable to start the HP UPS Power Protection Agent for Linux

Symptom: You cannot start the service for Linux, or the error message `Segmentation fault /usr/local/DevMan` displays.

Possible Cause:

- The server name and IP address are incorrect.
- Files are missing.

Action:

- Update the server name and IP address on `/etc/hosts`.
- Install the file `compat-libstdc++7.3-2.96.128.i386.rpm`, which is required by the HP UPS Power Protection Agent Linux package (`HPRA-4.5-x.i586.rpm`).

Unexpected problems occur with the web interface and Service menu

Possible Cause: The management module was removed from one UPS and then installed in a different UPS.

Action: Reconfigure the management module for the current UPS.

Utility alarm

Possible Cause: The utility input voltage is repeatedly outside the UPS operating range.

Action:

1. Check the management module log files to obtain specific error information.
2. Check the input voltage and reconfigure the UPS. For more information about configuring the UPS, see the UPS documentation.
-or-
Contact a qualified electrician to verify that the utility power is suitable for the UPS.
3. Rediscover the UPS so that the management module reads the new nominal voltage and shows the correct limits on the graphs.

When resetting or powering on the management module, the browser does not display the web interface

Action: Allow 15 to 30 seconds for the management module to boot.

Technical support

Before you contact HP

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

HP contact information

For the name of the nearest HP authorized reseller:

- In the United States, see the HP US service locator webpage (http://www.hp.com/service_locator).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

For HP technical support:

- In the United States, for contact options see the Contact HP United States webpage (http://welcome.hp.com/country/us/en/contact_us.html). To contact HP by phone:
 - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
 - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (<http://www.hp.com>).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

Regulatory compliance notices

Regulatory compliance identification numbers

For the purpose of regulatory compliance certifications and identification, this product has been assigned a unique regulatory model number. The regulatory model number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this regulatory model number. The regulatory model number is not the marketing name or model number of the product.

Federal Communications Commission notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

FCC rating label

The FCC rating label on the device shows the classification (A or B) of the equipment. Class B devices have an FCC logo or ID on the label. Class A devices do not have an FCC logo or ID on the label. After you determine the class of the device, refer to the corresponding statement.

Class A equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency

energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Declaration of conformity for products marked with the FCC logo, United States only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this product, contact us by mail or telephone:

- Hewlett-Packard Company
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000
- 1-800-HP-INVENT (1-800-474-6836). (For continuous quality improvement, calls may be recorded or monitored.)

For questions regarding this FCC declaration, contact us by mail or telephone:

- Hewlett-Packard Company
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000
- 1-281-514-3333

To identify this product, refer to the part, series, or model number found on the product.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Canadian notice (Avis Canadien)

Class A equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union regulatory notice

This product complies with the following EU Directives:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC

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Alert messages

UPS alarms

This management module enables you to send an email notification or SNMP trap to specified recipients if a certain alert situation prevails.

The following table lists all message texts and a description of each alarm.

Alarm text	Description
Battery Discharged	<ul style="list-style-type: none">• The battery is not fully charged.• The battery has been discharged to its maximum discharged state.• The UPS was on battery for long enough to exhaust the battery capacity and has shut down.
Batteries Disconnected	The UPS detects that at least one of the batteries is not connected. Backup power is either gone or considerably reduced.
Battery Failure	<ul style="list-style-type: none">• The battery contactor/breaker is open.• The battery voltage has exceeded a predetermined limit. Operating with this alarm set can cause permanent battery or system damage.• A battery problem has been detected.• A battery test has been executed, and the battery failed the test.• The charger circuit has detected possible bad batteries or an open circuit in connections to the batteries.
Battery Low	The battery voltage level has dropped below the predetermined "low battery warning" level.
Bypass Failure	The bypass input voltage is not available for transfer. This condition might be caused by over or under voltage, over or under frequency, out of phase lock, or other reasons.
Bypass ON Auto	The UPS is on bypass, and the critical load does not have power protection.
Bypass ON Manual	A user has flipped a switch (for example, Maintenance Bypass) that bypasses the UPS.
Check Breaker	<ul style="list-style-type: none">• The inverter output contactor/breaker is open.• The rectifier/charger input breaker is open.
Electronics Module Failure	For an "n+1" parallel system, one of the power modules has failed.
EPO Initiated	The UPS has shut down because of the activation of the remote EPO signal.

Alarm text	Description
Input Out of Range	<ul style="list-style-type: none"> • Input (Utility) fault: Measured input voltage has exceeded the upper voltage limit specification for normal operation. • Input (Utility) fault: Measured input voltage is less than the lower voltage limit specification for normal operation. • Input (Utility) fault: Measured input frequency is outside the upper or lower frequency limit specification for normal operation. • Rectifier fault: Measured rectifier input current exceeds the upper current limit specification for normal operation. • The utility input power is not within predetermined limits. This is possibly caused by over voltage, under voltage, over frequency, under frequency, or over current. • The utility input is not present, and detected voltage is zero.
Internal Failure	<ul style="list-style-type: none"> • An attempt to automatically recalibrate the UPS has failed. • Charger fault: The battery charger has failed. • DC Link fault: Measured DC link voltage has exceeded the upper voltage limit specification for normal operation. • At least one fan in the UPS has failed. • At least one fuse in the UPS has failed and must be replaced. • Inverter fault: Measured inverter output voltage has exceeded the upper voltage limit specification for normal operation. • Inverter fault: Measured inverter output voltage is less than the lower voltage limit specification for normal operation. • The inverter module has failed its power up self-test or its continuous self-test. • Inverter fault: The inverter has failed. • The inverter output has failed and cannot support the load. The reasons for this alarm are, for example, inverter over or under voltage, over or under frequency, distorted waveform, and output out-of window. • Inverter fault: The measured inverter output current exceeds the upper current limit specification for normal operation. • The inverter output voltage sensor has not been calibrated. • For a parallel system, this module has detected that the sync bus is not active. • A test of the device EEPROM has detected a checksum failure. The device either has not been programmed or contains suspicious data. • A test of the device ROM has detected a checksum or CRC error. The device's operating code is suspicious and should be replaced or reflashed. • In a multi-module system or internally to a UPS with multiple controllers, the firmware versions in place are not compatible with each other.
Loss of Redundant Communication	<p>The agent lost communication to one of the redundant UPSs. This alarm appears on the management module that is still in communication with the agent. If both management modules lose communication with the agent, this alarm does not appear.</p>
Loss of Redundant Power	<p>One of the redundant UPSs is off or on battery power.</p>

Alarm text	Description
Manual Load Dumped	The load power is off. This alarm is used to record the date and time of an EPO event.
On Battery	The UPS is using the battery to power the load.
On Boost	The UPS detected a low input condition and is increasing input voltage to a nominal level.
On Buck	The UPS detected a high input condition and is reducing input voltage to a nominal level.
Output Out of Range	<ul style="list-style-type: none"> • Measured output voltage has exceeded the upper voltage limit specification for normal operation. • Measured output voltage is less than the lower voltage limit specification for normal operation. • Measured output frequency is outside the upper or lower frequency limit specification for normal operation.
Overload	<ul style="list-style-type: none"> • Overload alarms are sent based on the individual UPS model overload protection specifications that are available in the UPS documentation. • The load on the UPS output phase exceeds its rated current or power by more than a small margin over 100%. The inverter can only sustain this overload for a short time without shutting down because of overheating.
Remote Agent Not Connected	A Remote Agent is not communicating with the management module to which it is associated.
Shutdown Imminent	The UPS has entered a state where it might abruptly shut down without further notice. It might continue to operate indefinitely, even with this alarm being issued.
Shutdown Pending	A condition in the UPS will lead to the loss of power to the loads in less than the Low Battery Time, unless the condition is cleared or removed.
Site Wiring Fault	There is a fault in the input wiring, other than Phase Rotation (for example, Ground/Neutral reversed).
Temperature Out of Range	<ul style="list-style-type: none"> • An ambient temperature probe has detected that the temperature is above its upper limit. • A heatsink at an unspecified location in the UPS has failed. • An input or output transformer used by the UPS has exceeded its upper temperature limit.
UPS Not Connected	The management module is unable to communicate with the UPS.
UPS Started On Battery	The UPS has been started on battery when AC input power is not present. This alarm is used to record the date and time of this event.

Systems Insight Manager integration

Systems Insight Manager overview

Use HP Systems Insight Manager to:

- Discover management modules. As part of the discovery process, HP SIM can detect an installed management module. The web interface for the discovered module can be launched from the HP SIM All Systems page.

The screenshot shows the HP Systems Insight Manager web interface. The main content area is titled 'All Systems' and displays a table of discovered systems. The table has the following columns: ID, HP, SW, System Name, System Type, System Address, and Product Name. The table contains 43 rows of data. A red circle highlights the row for a UPS device with System Name '172.25.234.144' and Product Name 'HP UPS Management Modu...'. The interface also includes a search bar, a legend, and a navigation menu.

ID	HP	SW	System Name	System Type	System Address	Product Name
172.25.234.96	1	1	crabbyxp	Server	172.25.234.96	
172.25.234.60	1	1		Switch	172.25.234.60	HP ProCurve Switch 282...
172.25.234.61	1	1		KVM Switch	172.25.234.61	HP IP Console Switch
172.25.234.80	1	1		Switch	172.25.234.80	HP ProCurve Switch 282...
172.25.234.81	1	1		KVM Switch	172.25.234.81	HP IP Console Switch
172.25.234.84	1	1	shylock	Server	172.25.234.84	
172.25.234.120	1	1		Switch	172.25.234.120	HP ProCurve Switch 282...
172.25.234.121	1	1		KVM Switch	172.25.234.121	HP IP Console Switch
172.25.234.124	1	1		Server	172.25.234.124	isa4
172.25.234.140	1	1		Switch	172.25.234.140	HP ProCurve Switch 282...
172.25.234.141	1	1		KVM Switch	172.25.234.141	HP IP Console Switch
172.25.234.144	1	1		UPS	172.25.234.144	HP UPS Management Modu...
172.25.234.148	1	1		Power Distribution Unit	172.25.234.148	HP PDU Management Modu...
172.25.234.160	1	1		Switch	172.25.234.160	HP ProCurve Switch 284...
172.25.234.169	1	1		Environmental Monitor	172.25.234.169	HP Modular Cooling Sys...
172.25.234.170	1	1		KVM Switch	172.25.234.170	HP4800 Serial Console ...
172.25.234.180	1	1		Switch	172.25.234.180	HP ProCurve Switch 282...
172.25.234.201	1	1		Server	172.25.234.201	00000000
172.25.234.205	1	1		Management Processor	172.25.234.205	Integrated Lights-Out ...
172.25.234.207	1	1		Management Processor	172.25.234.207	Integrated Lights-Out ...
172.25.234.215	1	1	ipmware2	Management Processor	172.25.234.215	Integrated Lights-Out ...
172.25.234.218	1	1	sanfs-ans	Server	172.25.234.218	ProLiant DL320 G2

- Receive SNMP traps from the management module. The module can send event-based traps to HP SIM that include a URL in the trap. This functionality enables administrators to easily launch the web interface of the module in context. For example, if the management module detects an alarm condition, the module can send a trap to HP SIM with an attached hyperlink that routes users directly to the Overview screen for the attached UPS.
- Conveniently launch the management module web interface from within HP SIM.
 - All Systems page—All discovered management modules appear on the All Systems page. Click the link in the System Name column to launch a browser session.
 - Event-based trap—A URL is included in each trap to link directly from HP SIM to the Overview screen for the specific device for which the trap was sent.

Discovering the management module

HP SIM automatically detects management modules as part of the device discovery process. If detected, a hyperlink is included on the HP SIM All Systems page for the UPS on which the management module is installed. The management module should be installed and running before attempting discovery through HP SIM.

If the defaults are not used, a new entry can be made to the `additionalwsdisc.props` file, located in the `CONFIG` directory in the HP SIM install directory, to allow HP SIM to correctly discover and identify the management module. For more information on editing the `additionalwsdisc.props` file, see the `additionalwsdisc.txt` file located in the same directory.

Example: `ADDITIONALWSDISC.PROPS` file with management module entry

```
# -----  
# Additional Web Server Discovery Properties  
#  
# -----  
# NOTE: See "additionalWsDisc_README.txt" for a description of entries in  
# this file and how to add or remove additional web server ports used for  
# discovery and identification.  
# -----  
#  
# -----  
# The following are actual web server ports enabled by default.  
# To remove them from the discovery process, comment out the line with a  
# '#'  
# or remove it. You will need to restart the HP SIM service for  
# the changes to take effect. In addition you will need to run the Device  
# Identification task to find any new ports that were defined.  
# -----  
411=Director Agent, ,true,false, ,http  
3201=Compaq TaskSmart, ,true,false, ,https  
8008=Default Home Page, ,true,false, ,http  
1311=Server Administrator, ,true,false, ,https  
1234=HP Management Module, ,true,false, ,https
```

The last entry allows HP SIM to detect a management module running on port 1234 and using HTTPS (Secure Socket Layer protocol).

HP SIM services must be restarted to apply the change.

Configuring HP SIM to receive traps

Before HP SIM can receive traps, the correct MIB file (`cpqpower.mib`) must be compiled into HP SIM. To download the HP Power MIB, visit the HP website (<http://www.hp.com/go/rackandpower>).

To register the MIB:

1. Copy the MIB to the HP\System Insight Manager\mibs folder.
2. From the HP\System Insight Manager\mibs folder, run `mcompile cpqpower.mib` from the command line to compile the new MIB. A new file named `cpqpower.cfg` is created.
3. Register the new MIB by entering `mxmib -a cpqpower.cfg` from the HP\System Insight Manager\mibs command line.
4. Enter `HP\System Insight Manager\mibs>mxmib` at the command line and verify that the new MIB is listed.

NOTE: For more information on uploading and registering a MIB in HP SIM, refer to the *HP Systems Insight Manager Technical Reference Guide* located on the HP Management CD.

Configuring the management module to send traps to HP SIM

1. Add the HP SIM server as an SNMP trap recipient on the SNMP Traps tab (on page 67).
2. Configure the management module to send alert notifications to HP SIM on the Events tab (on page 65).

Security considerations

Security considerations overview

The management module implements strict security for two important reasons:

- The module manages devices that have the potential to perform operations that are sensitive and destructive.
- The management module has browser accessibility.

To better ensure the security of the management module and the devices it manages, consider the following topics in accordance with your organization's security policies and the environment in which the module will operate.

- Remote access to the management module requires a user account. Logging in requires the use of a user name and password, which should be kept properly secured.
- Each account can be given different access levels, providing different capabilities. Ensure that the appropriate access level is granted to users.
- Browsing to the management module can be done using SSL, which encrypts the data between the browser and management module. The module is supported by a 128-bit encryption level. SSL also provides authentication of the management module by means of its digital certificate. Securely importing this certificate must be done to ensure the identification of the management module.
- Use a custom SSL certificate that is certified by a third-party SSL authority.
- Use non-standard ports for the management module web interface.
- Disable telnet if remote configuration is not used.
- Disable the web interface if the web interface is not preferred.

Optional power monitoring using SNMP

SNMP monitoring

Battery status, power status, events, and traps can be monitored using third-party SNMP managers. SNMP monitoring supports the RFC-1628 MIB and the HP Power MIB (CPQPOWER.MIB).

Using the SNMP submenu (on page 82):

1. Configure the third-party SNMP manager to monitor the HP UPS Management Module.
2. In the third-party SNMP manager, configure the HP UPS Management Module information to be monitor by the SNMP manager.

The HP Power MIB (CPQPOWER.MIB) can be downloaded from the HP website (<http://www.hp.com/go/rackandpower>).

Updating the firmware

Updating the firmware overview

To update the management module firmware from an application, download the HP UPS Management Upgrade Utility on the HP website (<http://www.hp.com/go/rackandpower>), and follow the attached instructions.

If the firmware is corrupted and updates using the HP UPS Management Upgrade Utility are prevented, you can update the firmware using the bootloader. This process is only available when the application is damaged.

To update the firmware from the bootloader:

1. Be sure that you have connected the configuration cable ("[Connecting the configuration cable](#)" on page 21) to the management module and the host computer.
2. Launch a terminal emulation program, such as HyperTerminal ("[Launching a terminal emulation program](#)" on page 21). The following menu appears:

```
RAM test: PASS
```

```
Boot Loader version 1.6.1
```

- ```
1) Serial Upgrade
2) TFTP Upgrade
3) Exit
```

```
Enter Option:
```

3. Follow the on-screen instructions.



---

# Redundant configuration

## Configuring the software for redundancy

1. Install the UPS Power Protection Agent on a machine that is power protected by two UPSs. Each UPS must have a management module installed.
2. Configure the redundant management server information on the agent.
  - a. Open the agent configuration program for your operating system.
    - Windows ("[Reconfiguring the agent on Windows operating systems](#)" on page [32](#))
    - Linux ("[Reconfiguring the agent on Linux operating systems](#)" on page [36](#))
    - HP-UX ("[Reconfiguring the agent on HP-UX operating systems](#)" on page [39](#))
  - b. Enter the correct IP address, host name, communications port, or serial path for the first management server that should communicate with the agent. Do not select **Any Server** from the dropdown box in Windows or enter an asterisk (\*) where prompted for Linux or HP-UX.
  - c. Enter the correct IP address, host name, communications port, or serial path for the second management server that should communicate with the agent. Do not select **Any Server** from the dropdown box in Windows or enter an asterisk (\*) where prompted for Linux or HP-UX.
  - d. Close the configuration program.
3. Configure the agent information on both management servers using the management module web interface.
  - a. Access the web interface through a web browser (on page [41](#)) or the system tray icon (on page [42](#)) in Windows.
  - b. Log in to the web interface ("[Signing in to the web interface](#)" on page [42](#)). The web interface appears.
  - c. Click the **Setup** tab in the top frame of the web interface.
  - d. Click **Attached Devices** in the left navigation frame. The Attached Devices screen appears.
  - e. If the agent is already attached, click the hyperlink for the agent. The Add / Edit Attached Device screen appears.

-or-

If the agent is not already attached, click **Add New Device**. The Add / Edit Attached Device screen appears.
  - f. If the agent has already been added, verify that the IP address or communications port for the machine that hosts the agent is entered correctly in the Computer Device Information area.

-or-

If the agent has not been added, configure the agent settings. Be sure that the IP address or communications port for the machine that hosts the agent is entered correctly in the Computer Device Information area. For more information about adding agents, see "Add / Edit Attached Device screen (on page [69](#))."



---

# Mass configuration

## Using the HP UPS Management Upgrade Utility

Use the HP UPS Management Upgrade Utility to configure multiple management modules to have identical settings using an uploadable configuration file. Configure a management module with the desired settings and download the file necessary for mass configuration using the Network screen ("Network menu" on page 59).

Download the HP UPS Management Upgrade Utility on the HP website (<http://www.hp.com/go/rackandpower>), and follow the attached instructions.

---

# Acronyms and abbreviations

## ASCII

American Standard Code for Information Interchange

## DMA

direct memory access

## DRAM

dynamic random access memory

## EEPROM

electrical erasable programmable read only memory

## EPO

emergency power off

## FTP

file transfer protocol

## HTTP

hypertext transfer protocol

## HTTPS

hypertext transfer protocol secure sockets

## I/O

input/output

## iLO

Integrated Lights-Out

## IP

Internet Protocol

## IRQ

interrupt request

## MI

media independent interface

## NTP

network time protocol

## POST

Power-On Self Test

## RAM

random access memory

## SIM

Systems Insight Manager

## SMTP

Simple Mail Transfer Protocol

## SNMP

Simple Network Management Protocol

## SSL

Secure Sockets Layer

## TCP

Transmission Control Protocol

## TFTP

Trivial File Transfer Protocol

## UPS

uninterruptible power system

---

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