SmartZone™ Gateway EP042
User Manual

Release 1.0
Issue 2

Table of Contents

Introduction

Overview

The SmartZone Gateway EP042 is a compact device used to monitor up to two PDUs within a rack enclosure, along with four input sensors (Temperature, Humidity, and Digital or Analog voltage).

The unit comprises an Simple Network Management Protocol (SNMP) interface and a secure web-based interface for monitoring and management.

Gateway EP042 unit features include:

- Secure web management and configuration interface.
- SNMP enabled
- Four sensor channels
- Monitoring of up to two PDUs
- Optional LCD Status module

Safety and Installation Statement

Grounding

This is a Class II product that uses double insulation to provide electrical safety of the product from the main power source.

To ensure correct operation, compliance with Class A and Class B electromagnetic emission standards, and optimal safety, connect the 4mm grounding stud (labeled “Earth” on rear face of unit) to an electrical ground.

If the network covers an area served by more than one PDU, be sure their electrical safety grounds are securely interconnected.

Network cabling may occasionally be subject to hazardous transient voltages (such as lightning or disturbances in the electrical utilities power grid). Handle exposed metal components of the installation with caution.

Servicing

There are no user-serviceable parts inside these products. Any maintenance or repair must be performed by approved service-trained personnel.

This product does not have a power switch; it is powered on when the adapter's power cord is plugged in.

Waste Electrical and Electronic Equipment (WEEE) Statements

Disposal of Waste Equipment by Users in Private Households in the European Union

This product must not be disposed of with your other household waste. It is your responsibility to dispose of your WEEE equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment.

For more information about where you can drop off your waste equipment for recycling, please contact your local city or council office, your household waste disposal service or the organization where you purchased the product.

CE EC Declaration of Conformity
In accordance with EN ISO 17050-1:2005

In accordance with the following Directives:

2006/95/EC The Low Voltage Directive

2004/108/EC The Electromagnetic Compatibility Directive

2002/95/EC The Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

1907/2006/EC The Registration, Evaluation, Authorization & Restriction of Chemicals. (REACH)
The equipment:SmartZone Gateway
Is in conformity with the applicable requirements of the following documents

Ref No.	Title
BS EN 55022:2010	Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement. Class A.
BS EN 55024:2010	Information technology equipment. Immunity characteristics. Limits and methods of measurement.
BS EN 60950-1:2006+A12: 2011	Information technology equipment. Safety. General requirements.

SmartZone Gateway Applications

Remote Temperature and Humidity Sensing

The SmartZone Gateway monitors temperature and humidity and raises alarms or takes action if a user-configured threshold is crossed.

Power Monitoring

This equipment allows around-the-clock monitoring of the electrical power environment of the rack.

SmartZone Gateway EP042 Package

The standard Gateway EP042 package contains a Gateway EP042 unit with supporting hardware:

- Gateway EP042 I Unit
- Mains voltage cable (AC version only)
- Rack mounting kit
- Supporting CD-ROM including MIB file and manuals

Front of Gateway EP042

LEDs

Three LEDs can be found on the front of the Gateway EP042.

- **CPU**: Indicates system activity.
- **Alarm**: Indicates that there is an alarm present on the unit.
- **Power** - On: Illuminates when unit is powered.

Buttons

Also found on the front of the Gateway EP042, are the following two buttons.

- **Reset**: Allows the user to reboot the unit.
- **Mode**: The mode select switch is used to reset the unit to factory defaults.

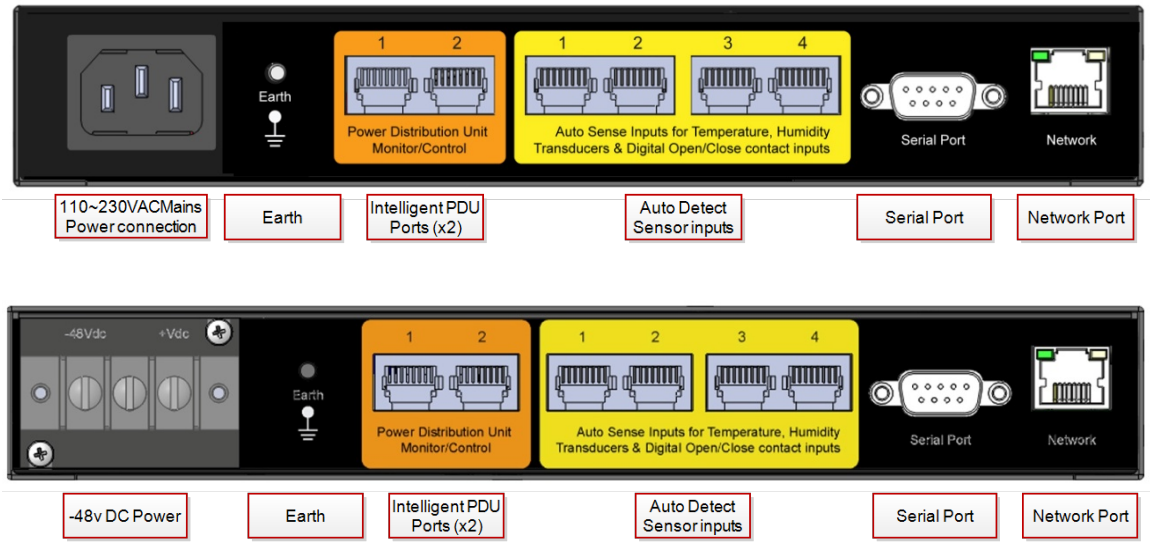
Rear of Gateway EP042

110VAC ~ 230VAC Version

The following images show the rear panel of the Gateway EP042 unit:

-48v DC Version

Ports



- **Power Feed**: Connection for Mains or -48v DC voltage.
- **Earth**: Grounding stud.
- **Intelligent PDU Ports 1 and 2**: Connect up to two power devices (such as Gateway-Enabled Rack PDUs, Inline Meters, and Clamp Meters).

- **Auto-Detect Sensors 1 through 4**: Connect up to four sensors (such as Temperature, Humidity, Water, Door Contacts, and more).
- **Serial Port**: Attach optional devices (such as an LCD Status Monitor Unit).
- **Network Port**: An RJ-45 connection provides Ethernet and Fast Ethernet connectivity to the Gateway EP042.

Installation Requirements

- SmartZone Gateway unit
- Main power cable (supplied)
- 10/100baseT network connection
- Network-connected computer system to setup the Gateway
- 1 x network crossover cable
- Screwdrivers

Rack Mounting

This section covers the rack-mounting of the SmartZone Gateway unit.

Additional Equipment Required

Along with the installation requirements listed above, you need a number-1 and a number-2 Phillips screwdriver to rack-mount the SmartZone Gateway unit.

Before You Begin

When determining where to install the Gateway, verify that these guidelines are met:

- Airflow around the Gateway unit is unrestricted.
- Front-panel LEDs can be easily read.
- Access to ports is sufficient for unrestricted cabling.
- AC/DC power cord can reach the Gateway unit.
- The 10/100 network cabling does not exceed 100 meters from the Gateway unit to the Network switch.
- Temperature around the Gateway unit does not exceed 40° C.
- Relative humidity around the Gateway unit does not exceed 90 %.

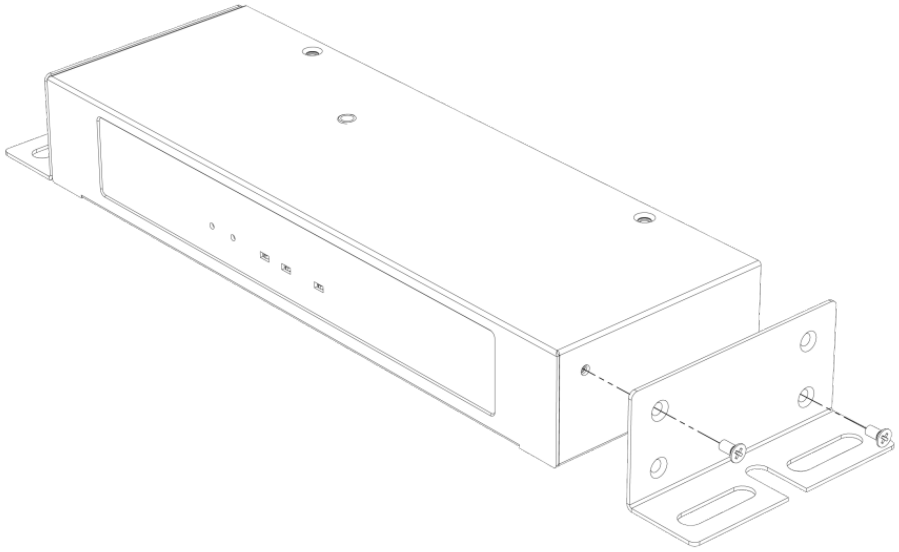
Installation Warnings

- Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
- To prevent the Gateway unit from overheating, do not operate in an area that exceeds the maximum recommended ambient temperature of 40° C.

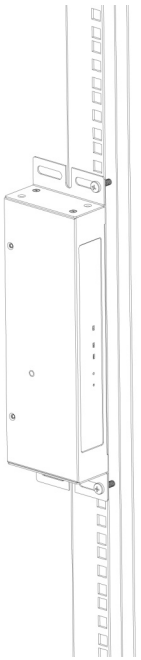
- Installation of the Gateway unit must comply with local and national electrical codes.
- To prevent personal injury when mounting or servicing the Gateway unit, ensure that the rack or cabinet is adequately secured so that the system remains stable.
- Circuit Overloading - Consult the equipment nameplate ratings when connecting the equipment to the supply circuit to avoid overloading of circuits, which can adversely affect current protection and supply wiring.
- Maintain reliable grounding of rack-mounted equipment. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, the use of PDUs)..

Attaching the Brackets

- The Gateway EP042 is not a full 1RU. It is recommended that the Gateway be mounted to the rack vertically using mounting brackets.
- Using a Phillips number-1 screwdriver, use the screws supplied with the Gateway EP042 bracket. Place the mounting bracket on the ends of the Gateway EP042 and secure using the two screws.



- Hold the Gateway EP042 and attach the bracket to the rack using two 12-24 screws.



Initial Setup

Default Settings

The SmartZone Gateway unit in factory default condition has the following network configuration. Advanced users may wish to make use of these settings to access the Gateway unit's Web Management Interface immediately and proceed with configuration.

Users who do not know how to do this should proceed through this section for information on how to configure the Gateway unit.

IP Address	192.168.0.253
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Web Management Address	http://192.168.0.253/
Default username	admin
Default password	admin

Note: Password entries are case-sensitive.

Connecting to the Web Management Interface

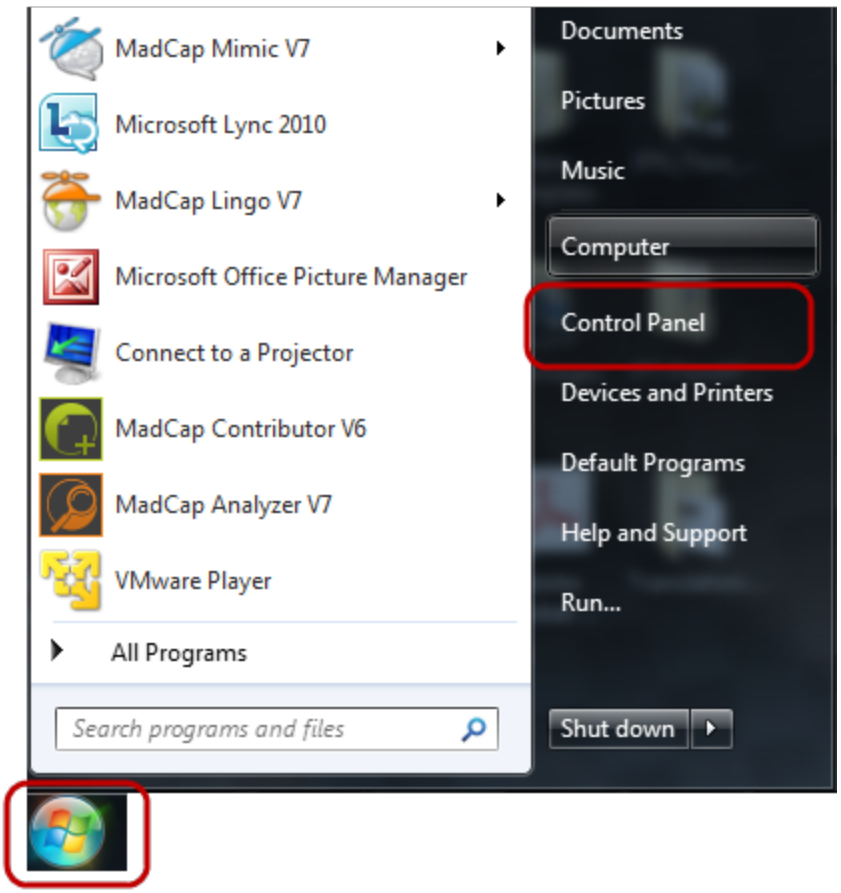
The SmartZone Gateway monitoring solution can be configured entirely using the built-in Web Management Interface.

You may need to change the IP address of the PC to connect to the Web Management Interface for the first time. The following section details how to change the IP address and connect to the Web Management Interface.

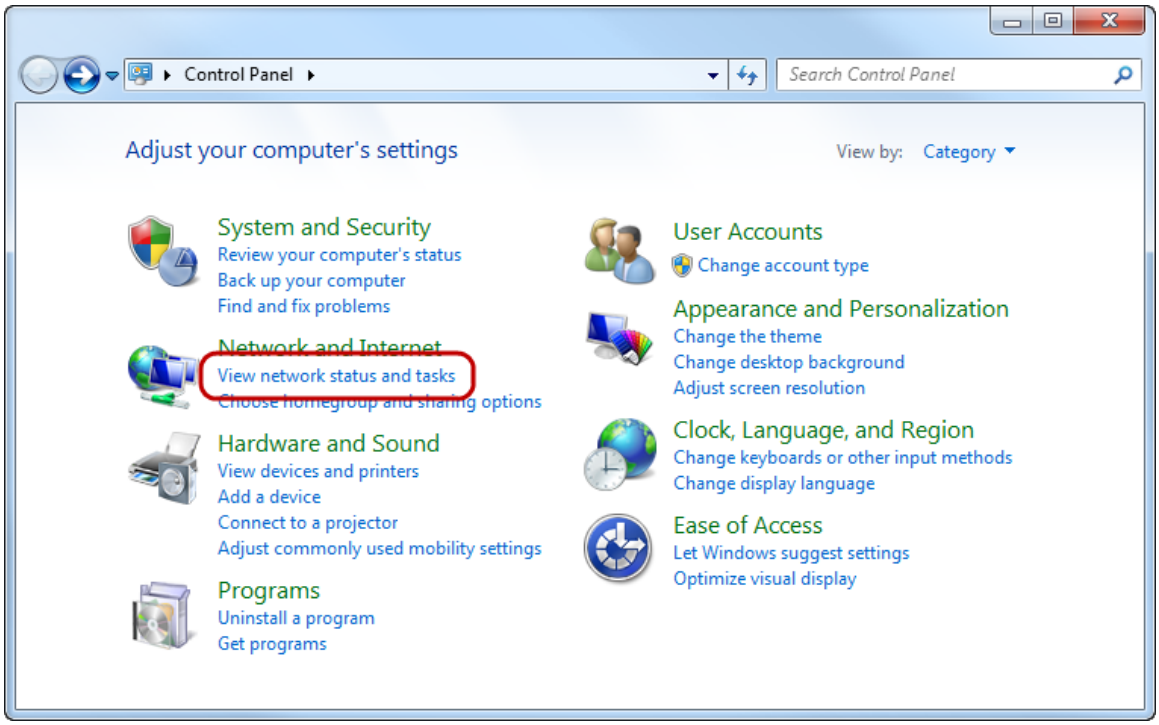
Changing your PC's IP Address

Note: Instructions refer specifically to Windows 7. Please refer to your operating system documentation if you are not using Windows 7.

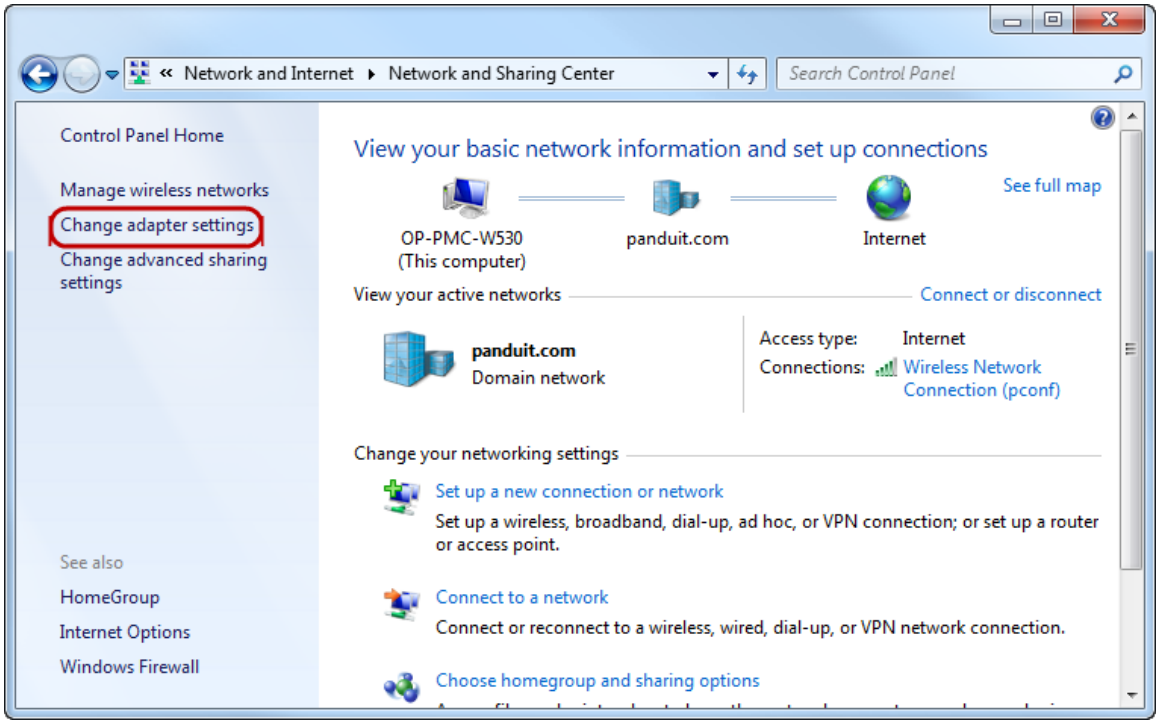
1. Click the Windows button and select **Control Panel**.



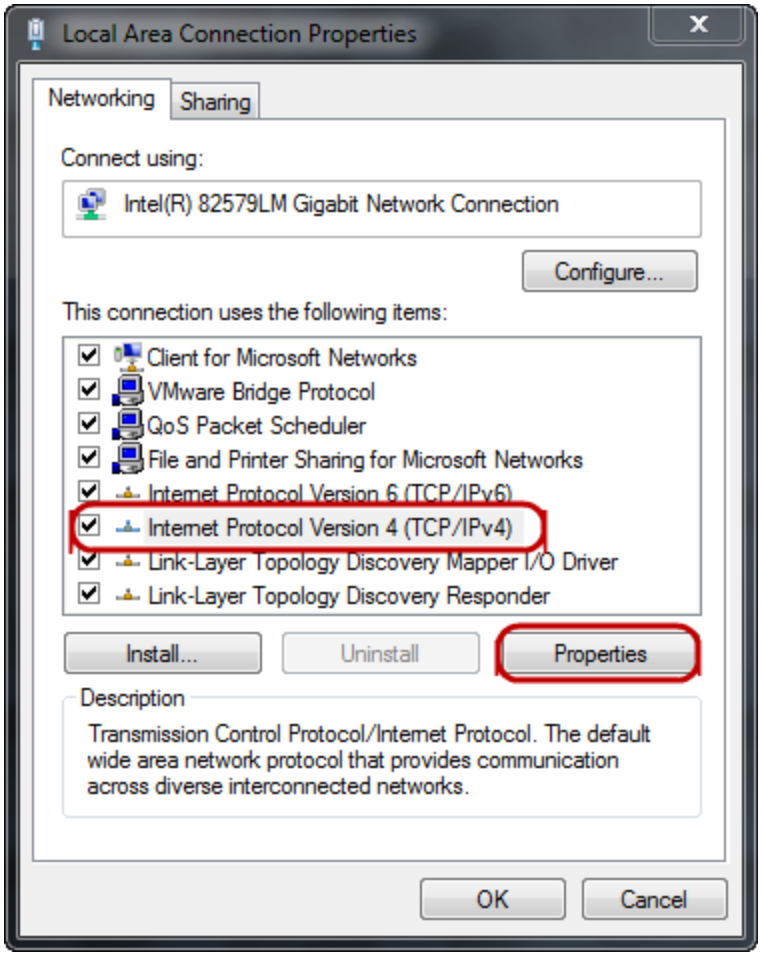
2. In the Control Panel window, select **View network status and tasks** under the Network and Internet heading.



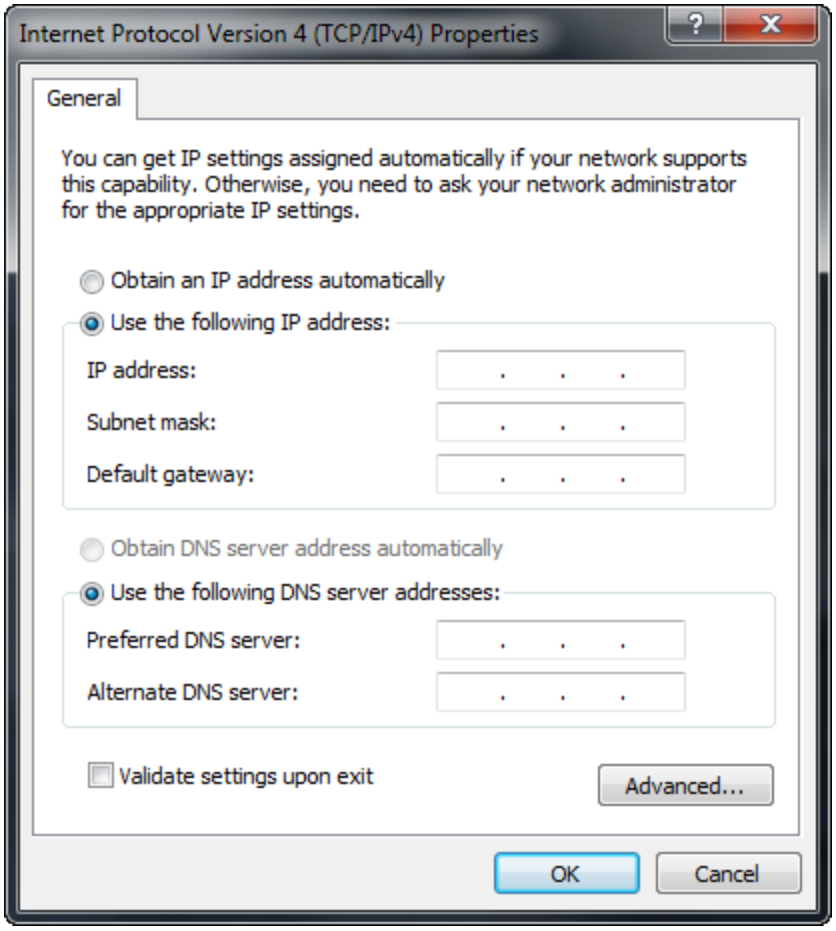
3. Select **Change adapter settings** from the menu on the left.



4. Select **Local Area Connection**.
5. Select **Internet Protocol (TCP/IP) Version 4** (you may need to scroll down). Then click the **Properties** button.



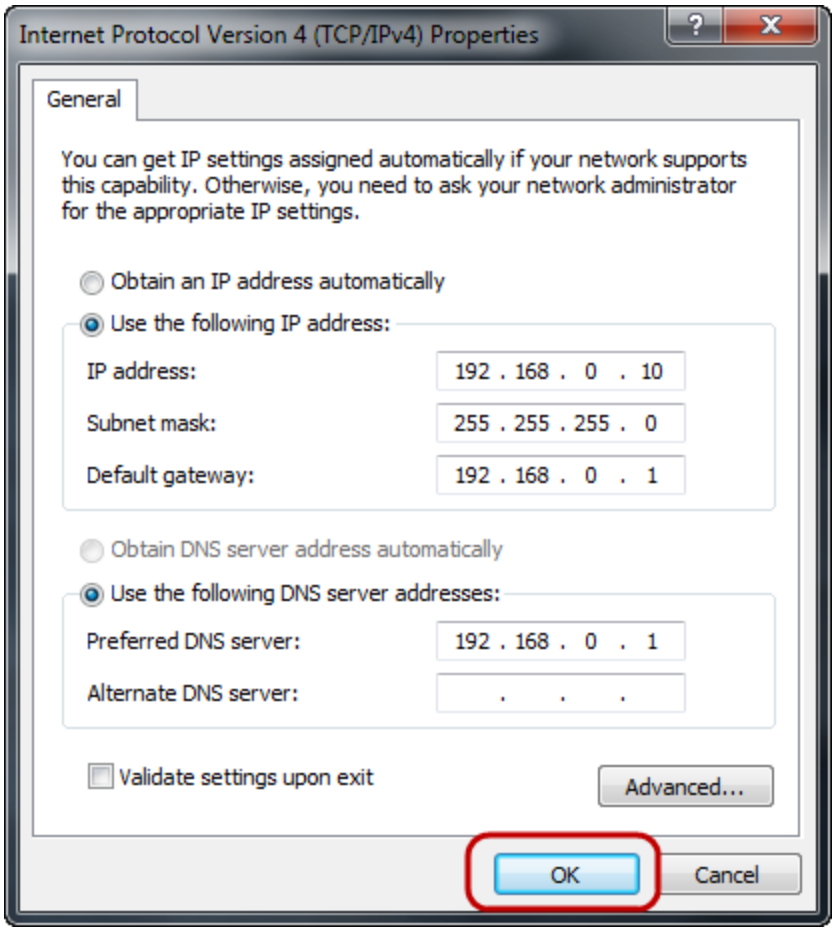
6. Select the **Use the following IP address** radio button.The **Use the following DNS server addresses** radio button then selects automatically.



Enter the following details into the appropriate boxes.

- **IP address:** 192.168.0.10
- **Subnet mask:** 255.255.255.0
- **Default Gateway:** 192.168.0.1
- **Preferred DNS server:** 192.168.0.1

7. Click **OK** to accept the entries.



8. On the Local Area Connection Properties, click **OK** to return to the desktop.

Connecting to the SmartZone Gateway Web Management Interface

1. Connect the SmartZone Gateway unit's network connection directly to a PC's Ethernet network card using a patch cable.

Note: A crossover cable must be used when directly connecting the Gateway unit to a PC's network card.

2. Power the Gateway unit.
3. Open a web browser.
4. Enter the following into the address bar: `http://192.168.0.253`.
5. The Web Management Interface loads.

6. Click login and enter the username and password. The unit defaults are:

- **Login**:`admin`
- **Password**:`admin`

Note: Password entries are case sensitive.

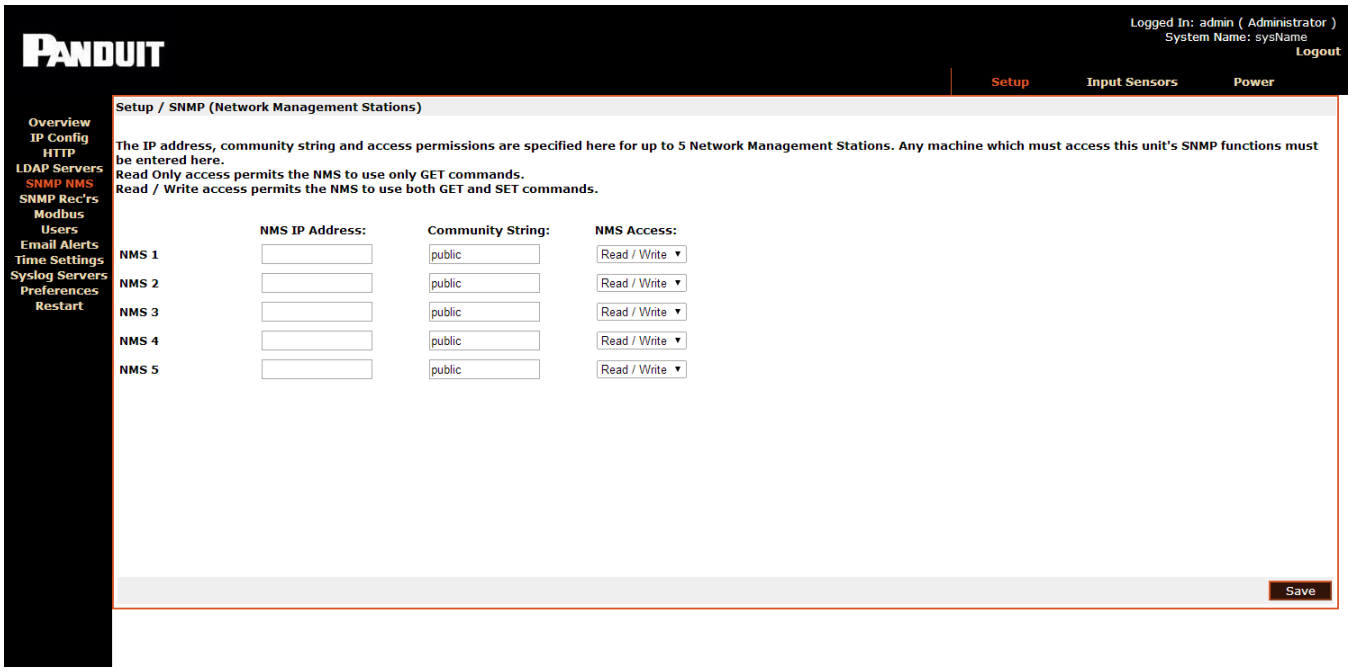
Initial Network Setup

This section provides details on preparing the unit for network access and allowing SNMP network management.

Connection to the Web Management Interface is required.

Entering NMS Details

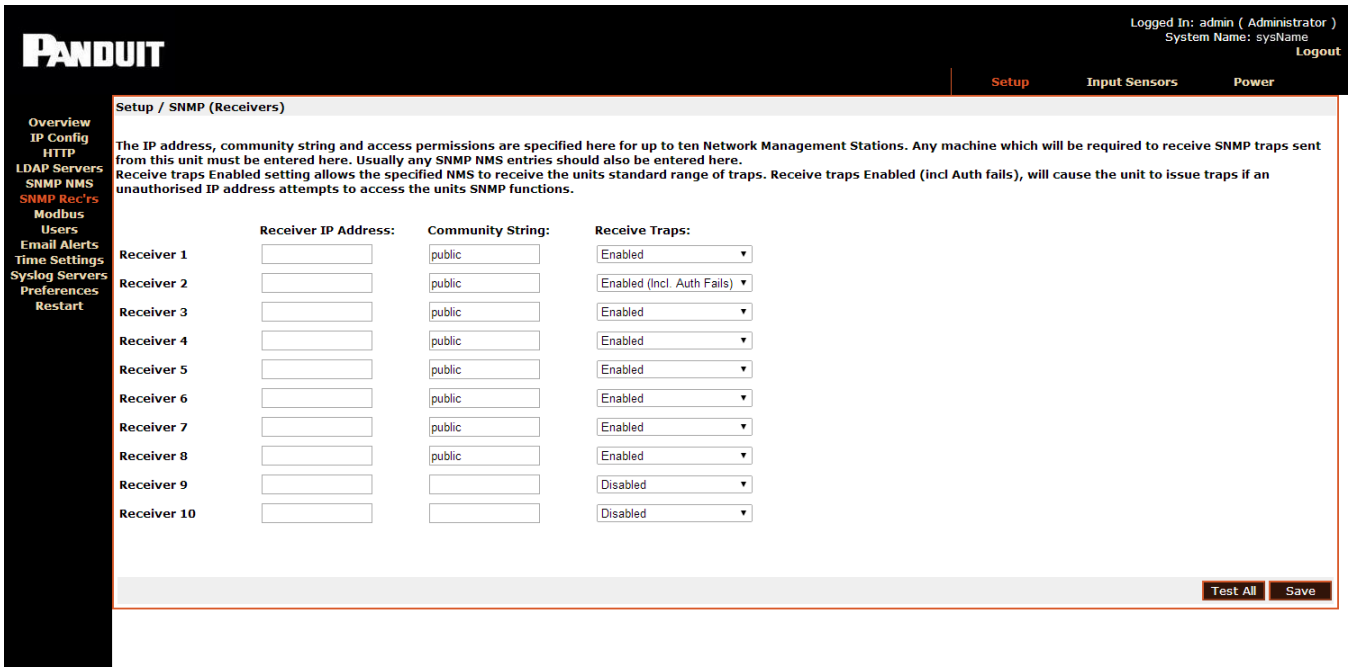
1. Click the **Setup** tab on the top menu bar then select the **SNMP NMS** link on the left menu bar.



2. Enter the IP address, chosen community string, and required NMS access permissions of the Network Management Stations to be used.
3. Click **Save** to confirm the changes.
4. To disable an NMS, select the **Disabled** option from the **NMS Access** drop-down list.

Entering Trap Receiver Details

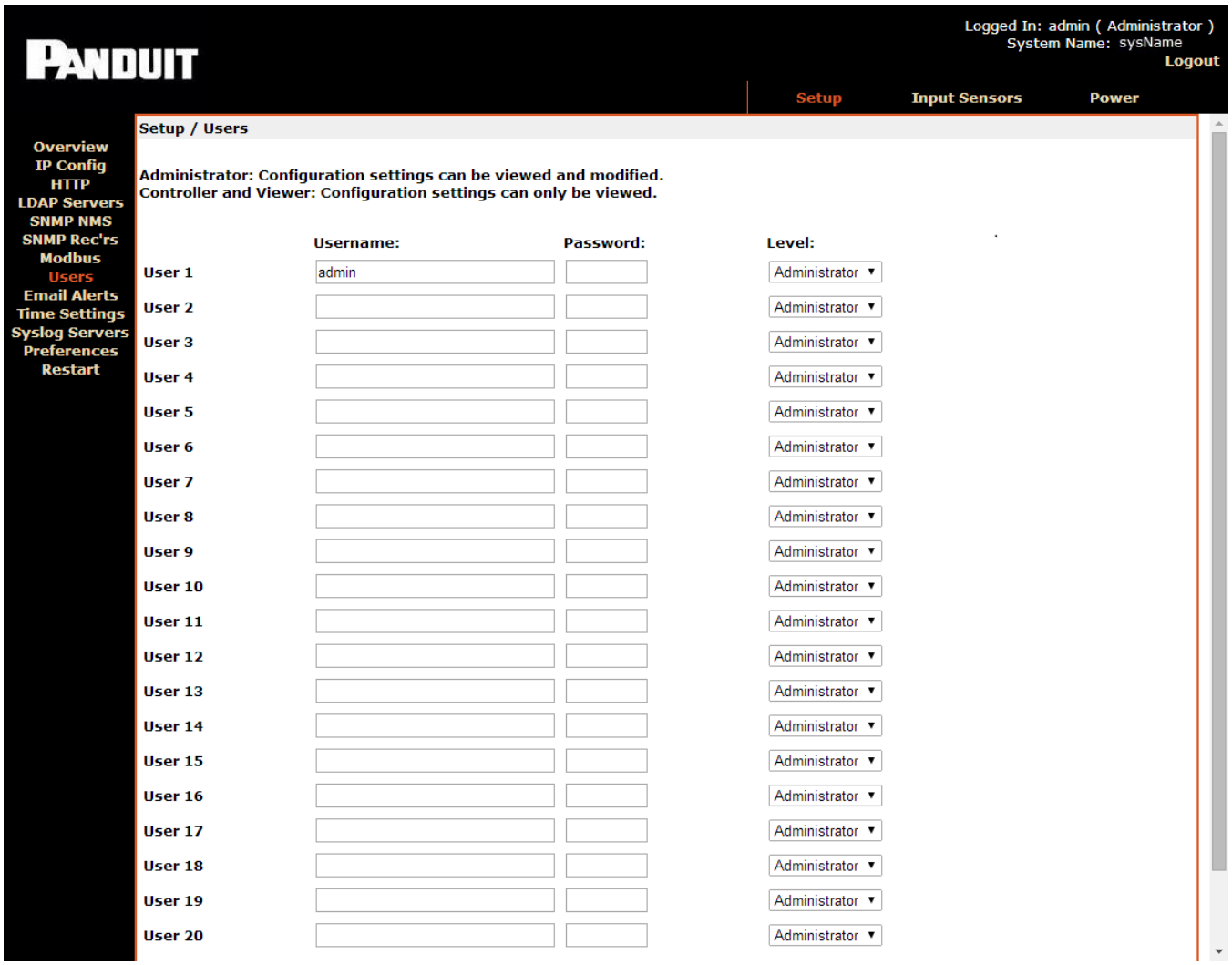
1. Click the **Setup** tab on the top menu bar.
2. Select the **SNMP Rec'rs** link on the left menu bar.



3. Enter the IP address, chosen community string, and required trap types for the Network Management Stations to be used.
4. Click **Save** to confirm the changes.

Adding Users

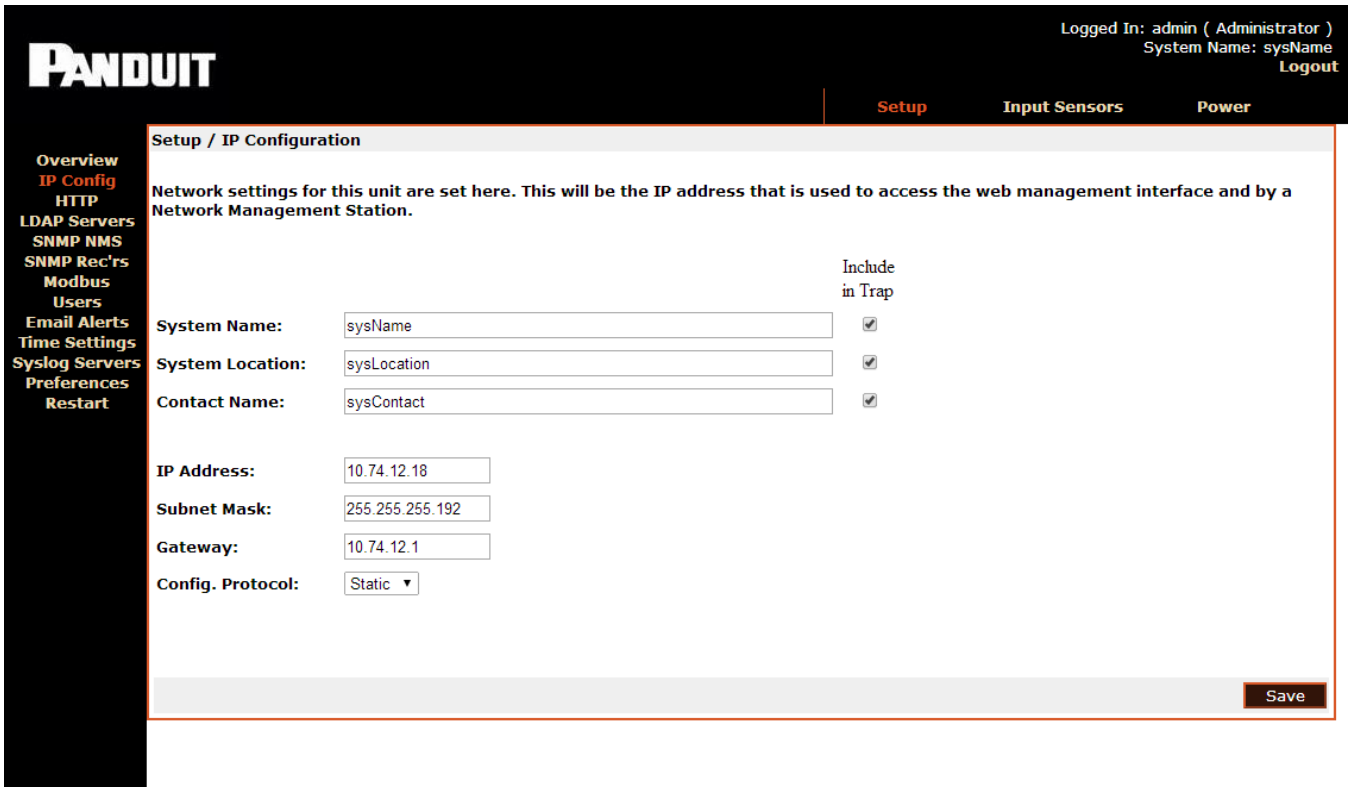
1. Click the **Setup** tab on the top menu bar.
2. Select the **Users** link on the left menu bar.



3. You can set usernames, passwords and access levels here. Unique usernames can be set for individuals who require web management access to the Gateway unit.
4. Click **Save** to confirm the changes.

Changing the Unit IP Address

1. Click the **Setup** tab on the top menu bar.
2. Select the **IP Config** link on the left menu bar.



3. Enter the IP address, subnet mask, and the Gateway that the SmartZone Gateway unit will use (required). Contact your network administrator if you do not know the values that you must enter here.

   Note: DHCP cannot be used for Rack Energy Kit Gateways. Select a Static IP instead.

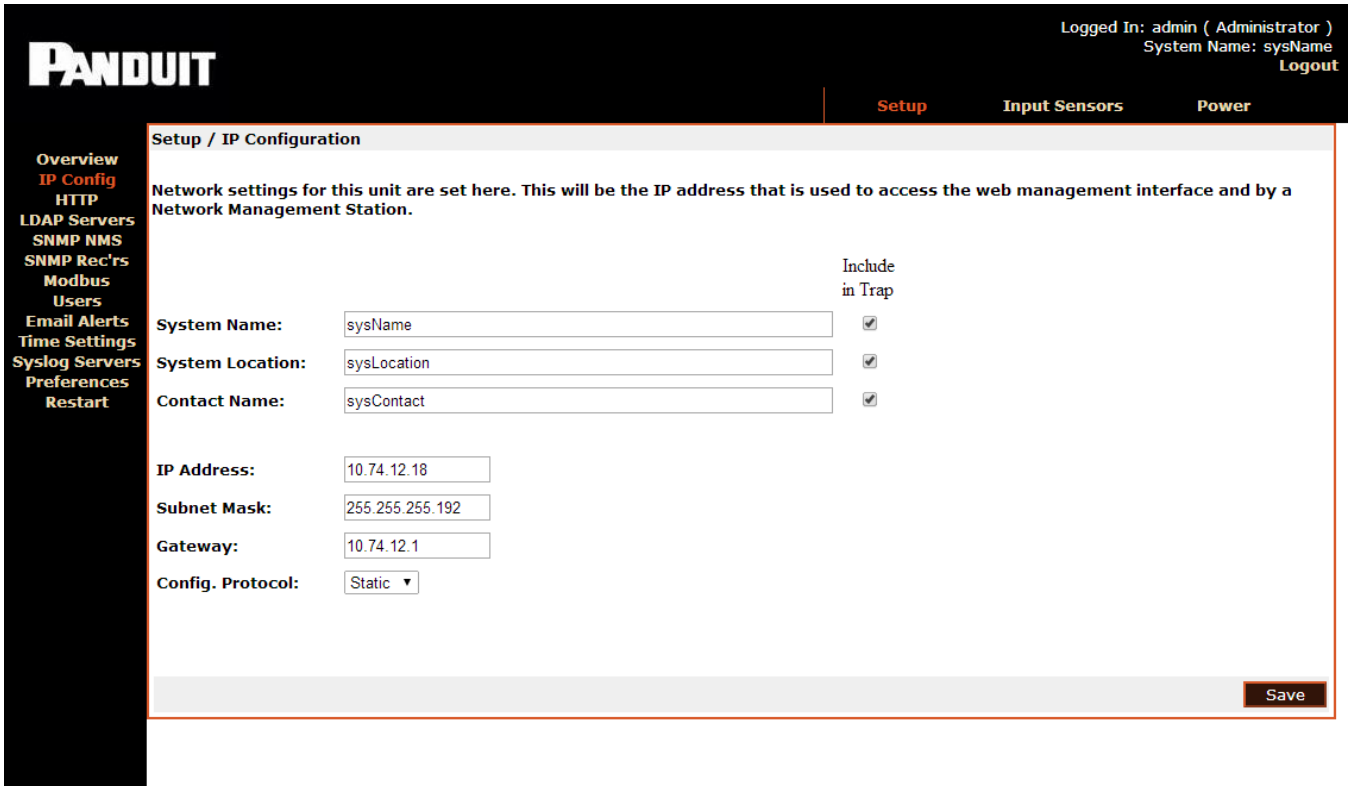
4. Enter the SNMP **System Name, System Location** , and **Contact Name** if required. These fields will be added to all SNMP traps generated by the unit.
5. Click **Save** to confirm the changes.
6. Click **Restart** ,and then select **Restart Now** to reboot the unit and implement the changes.

Note: Once the IP configuration has changed, the Gateway unit will no longer be accessible via the default IP address, because the new address will be operational.

7. The Gateway unit should now be connected to the main network and any further required configuration will be done via the unit's new IP address.

Setup - IP Configuration

The IP Config page allows you to set the SmartZone Gateway unit's own management IP address.



System Name

You can specify the system name here. This is normally the Fully Qualified Domain Name (FQDN) of the device, but this is not enforced.

You can retrieve the system name by querying the ‘sysName’ node via SNMP. This allows SNMP management platforms to obtain unique names for units where specified.

The system name has no effect on network communications, and the unit will function correctly with or without a value.

System Location

You can specify the system location here.

You can retrieve the system location name by querying the ‘sysLocation’ node via SNMP. This allows SNMP management platforms to obtain location names for units where specified.

The system location name has no effect on network communications, and the unit will function correctly with or without a value.

Contact Name

You can retrieve the unit support contact name by querying the 'sysContact' node via SNMP. The contact name has no effect on network communications and the unit will function correctly with or without a value.

IP Address

You can enter a standard IP address here. The address is entered in decimal format (for example: 192.168.0.44 or 22.10.45.33).

The address entered here will be the address by which the Gateway unit is accessed and managed.

Subnet Mask

The subnet mask is used to determine what part of the IP address is the network portion and what part is the host portion.
It is often 255.255.0.0 or 255.255.255.0. The correct setting is essential for correct operation.

The subnet mask is entered in decimal format (for example: 255.255.255.0 or 255.255.0.0).

Gateway

The Gateway setting specifies the IP address of the machine/router that the Gateway unit uses to communicate with different networks.

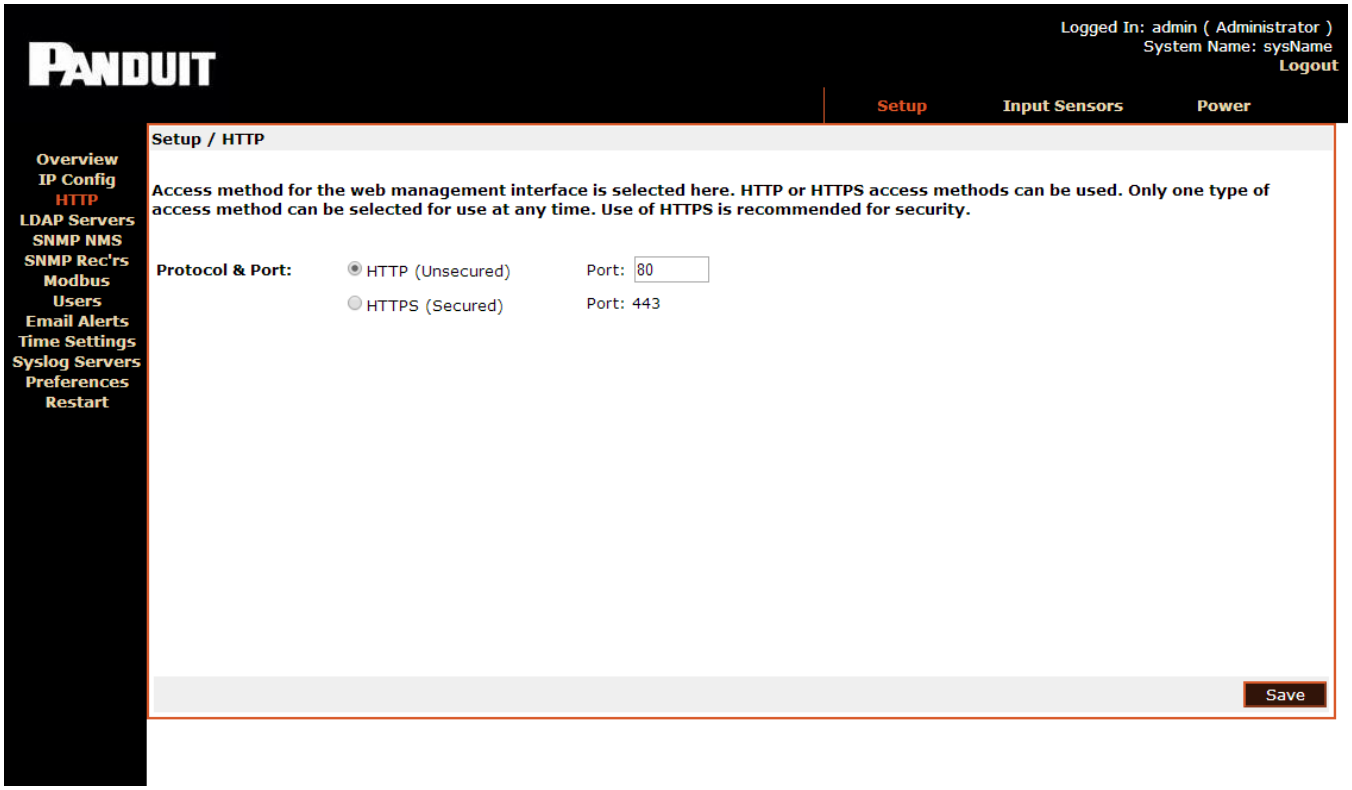
The Gateway address is entered in decimal format (for example: 192.168.0.1 or 11.2.24.103).

Most networks will have a Gateway. Correct setting is important for correct network communications.

Note: Once you enter the IP Configuration options and click **Save**, the changes take effect. If incorrect entries are made, this may result in loss of communication. If this happens, reset the Gateway unit's network configuration. Details of how to do this can be found in the Troubleshooting section.

Setup - HTTP

Select the access method for the Web Management Interface here.



Both HTTP and HTTPS access modes are available by default. Selecting the HTTPS radio button will allow only HTTPS configuration.

Use of HTTPS is recommended for security, because HTTPS will encrypt the connections.

Additionally, you can specify the TCP port for connection to the Web Management Interface here. If you have specific requirements for default ports, these can be left at their default settings (for example, port 80 for HTTP and port 443 for HTTPS).

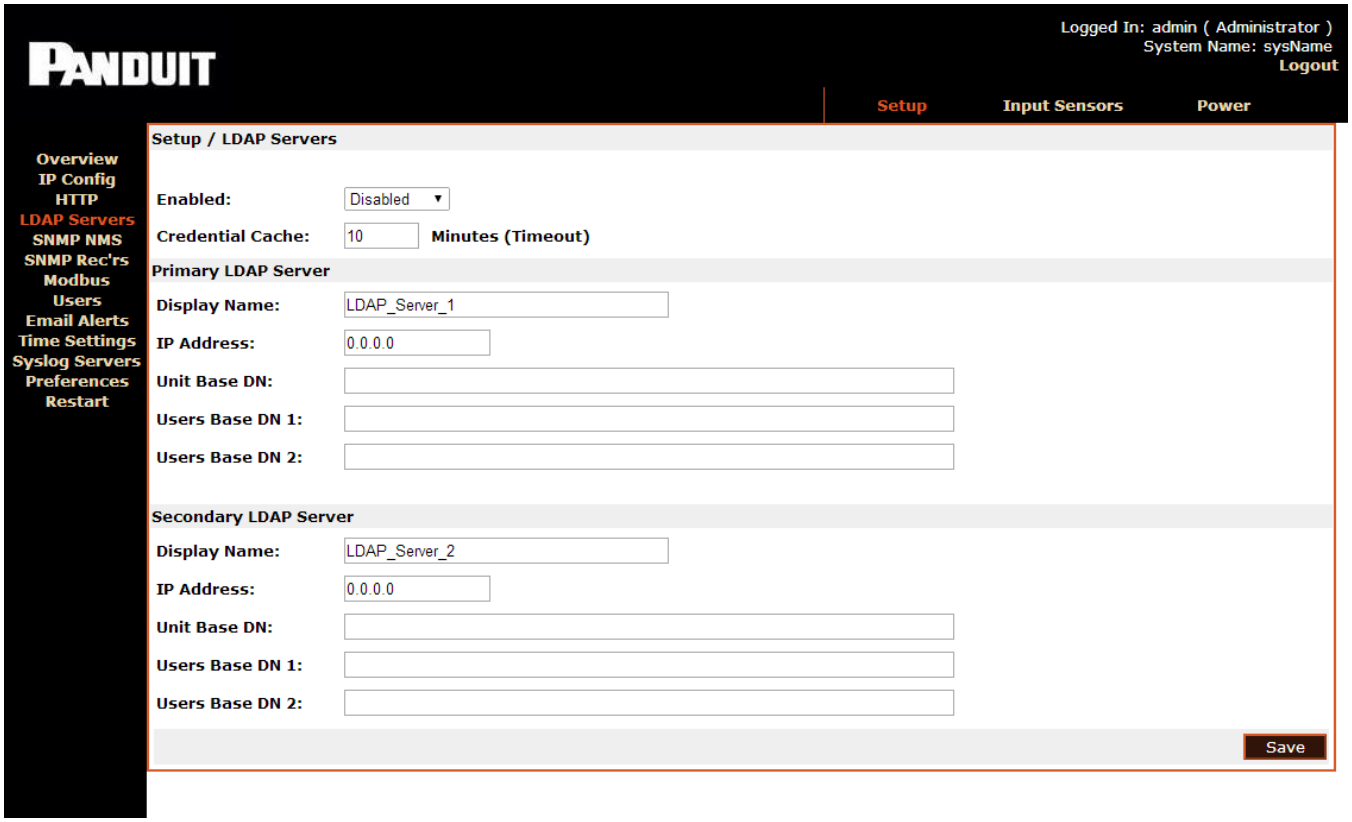
Note: Selecting HTTP or HTTPS requires a reboot for the selection to take effect.

Note: The Rack Energy Kit uses port 162.

Setup – LDAP Servers

Note: LDAP information does not apply to the Gateway EP042 when used with a Rack Energy Kit.

Lightweight Directory Access Protocol (LDAP) configuration options are specified here.



Configuration options for a Primary and Secondary server are provided with identical configuration choices.

Disabled

No LDAP servers will be queried to verify user login credentials access and privileges. Only internal users will be able to log in.

Primary

Only the Primary LDAP Server specified will be queried to verify user login credentials access and privileges.

Secondary

Only the Secondary LDAP Server specified will be queried to verify user login credentials access and privileges.

Both

Both LDAP Servers specified will be queried (with priority given to the Primary) to verify user login credentials access and privileges.

Credential Cache

This configuration option specifies how long (in minutes) users successfully authenticated via LDAP will be allowed to access the unit without re-authenticating against LDAP.

Display Name

You can create a display name for the specified LDAP server here. The Display Name is for reference and logging purposes and has no direct effect on LDAP functionality.

IP Address

Specify the IP address of the LDAP server here.

Unit Base DN

You must provide the Distinguished Name (DN) of the directory object containing the SmartZone Gateway LDAP authentication structure here. This field is required for LDAP function.
See LDAP for configuration details.

Users Base DN 1

Provide the Distinguished Name (DN) of the directory object containing directory users for authentication here. This field is required for LDAP function.

See LDAP for configuration details.

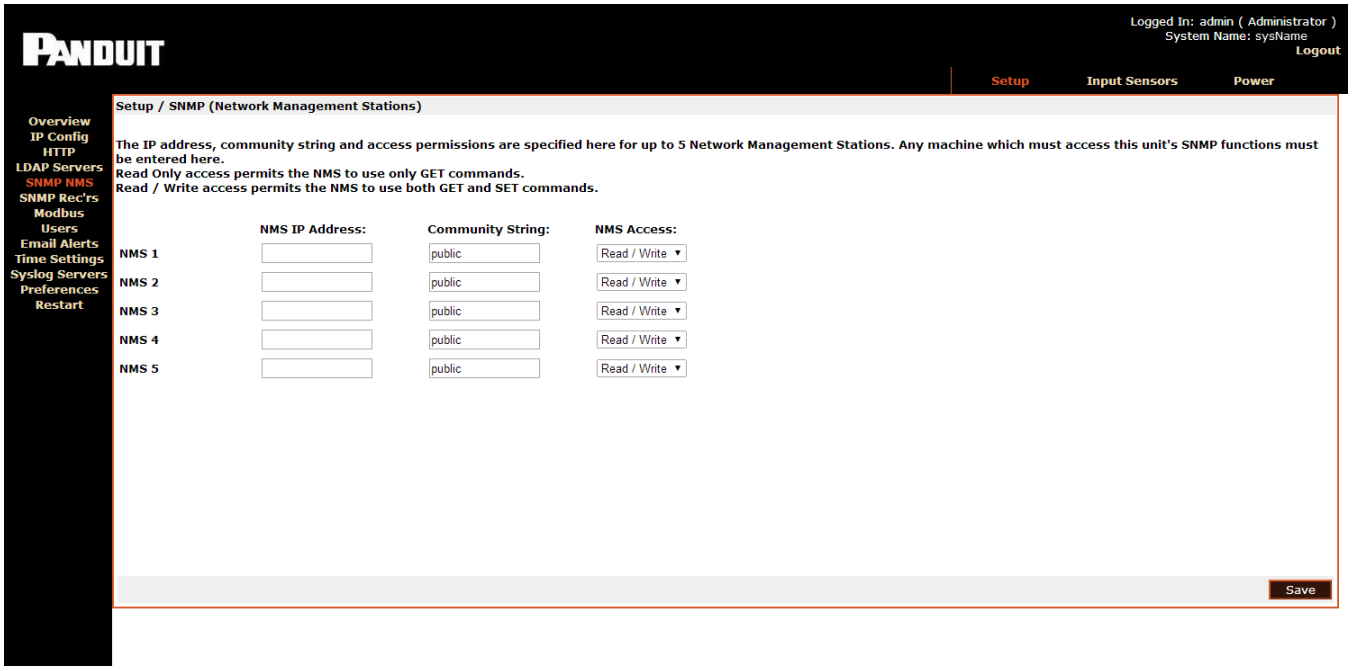
Users Base DN 2

You can specify the Distinguished Name (DN) of the directory object containing directory users for authentication here. This field is optional for LDAP function providing Users Base DN 1 has been specified.

Setup - SNMP NMS

Specify the IP address, community string, and access permissions for up to five Network Management Stations here.

Any machine that needs to access the unit's SNMP functions must be entered here.



IP Address

Enter the IP address of the NMS machine here.

Community String

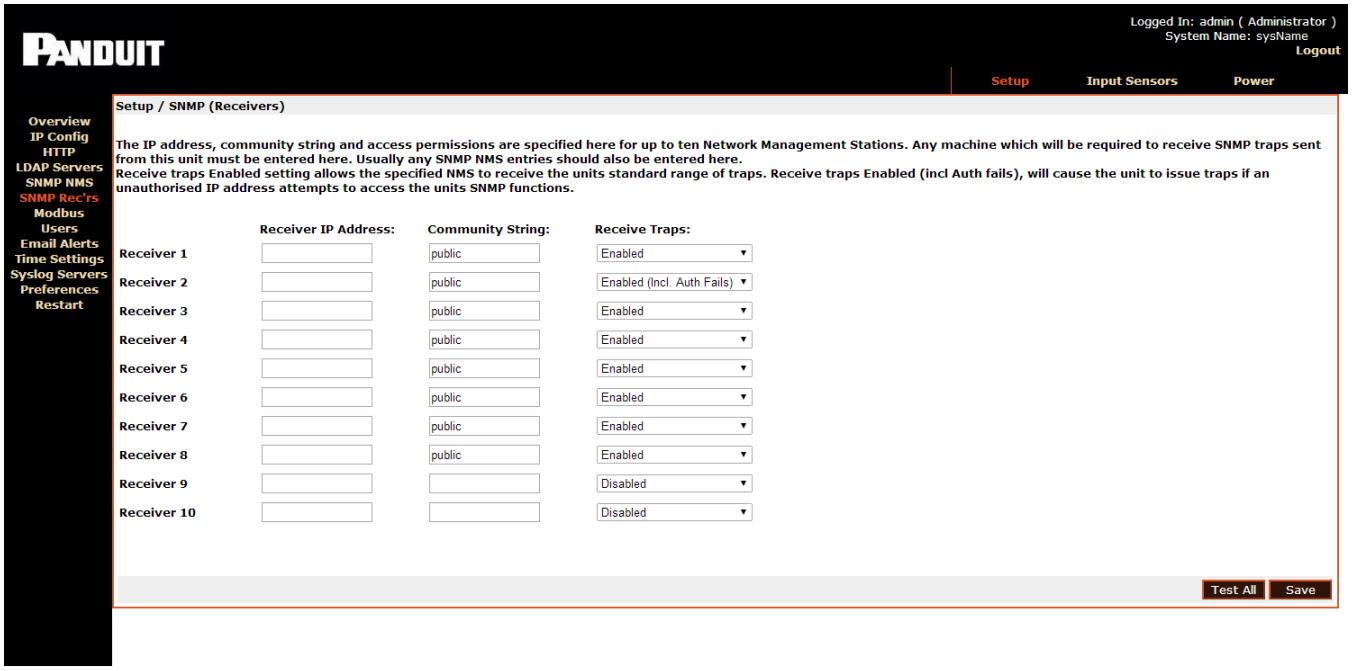
You must enter the required community string here. The default for many devices is **public**. It is recommended that the community string be changed, because it serves as an access password.

NMS Access

Read-only access permits the NMS to use only GET commands. Read/Write access permits the NMS to use both GET and SET commands.

Setup - SNMP Trap Receivers

Specify the IP address, community string, and access permissions for up to five Network Management Stations here.



IP Address

You must enter any machine that is required to receive SNMP traps sent from this unit here. Usually any SNMP NMS entries should also be entered here.

Community String

The required community string must be entered here. The default for many devices is **public**. The community string should be changed, because it serves as an access password.

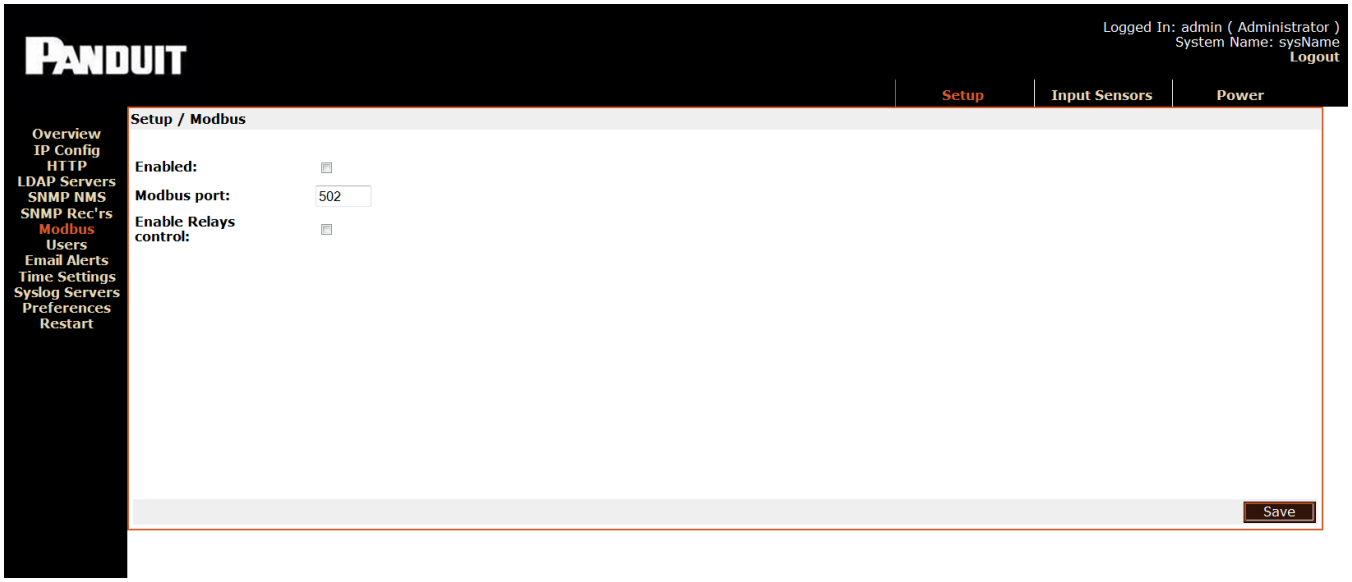
Receive Traps

The Receive Traps **Enabled** setting allows the specified NMS to receive the unit's standard range of traps. Receive Traps **Enabled (incl Auth fails)** will cause the unit to issue traps if an unauthorized IP address attempts to access the unit's SNMP functions.

Receive Traps **Disabled** prevents traps from being sent to the specified NMS IP address.

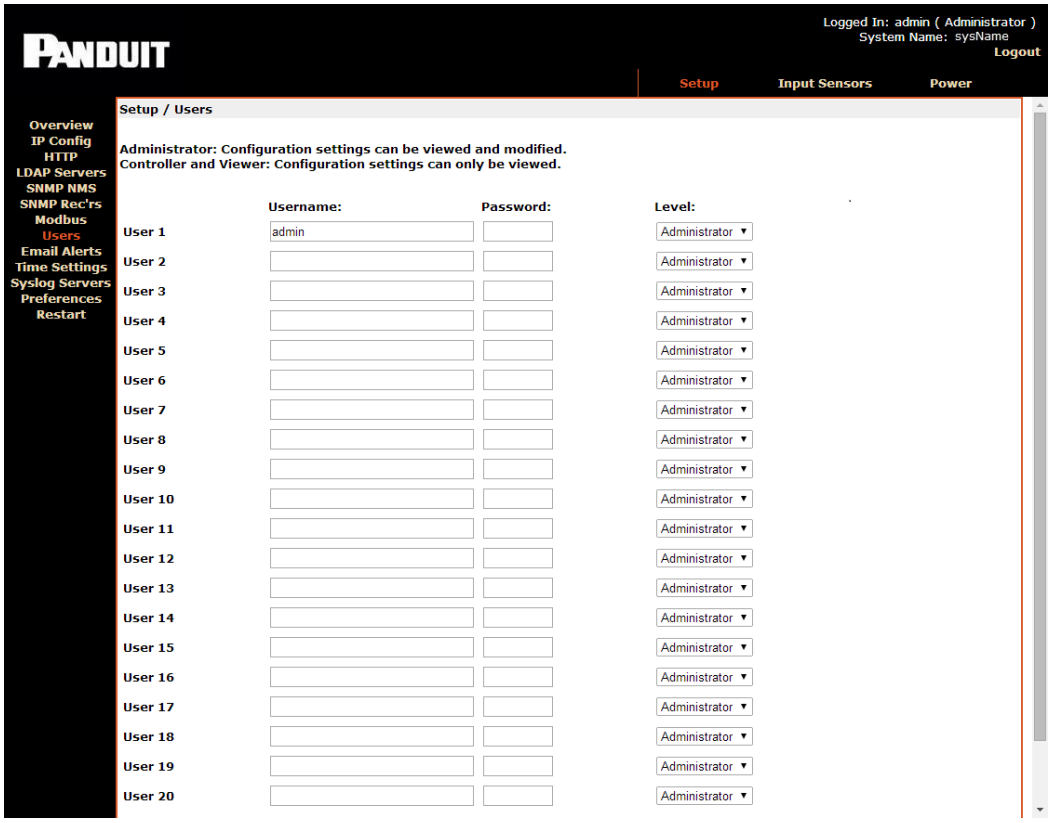
Setup - Modbus

You can enable a Modbus communications protocol, specify the Modbus port number, and enable relays control at this window.



Setup - Users

You can add users with permission to access the Web Management Interface here. You can specify users' access passwords and permissions.



Username

Enter the required username here. This is the name the user will have to enter to login to the Web Management Interface.

Password

Enter access passwords on a per-user basis here.

Level

Three user levels are available for assignment.

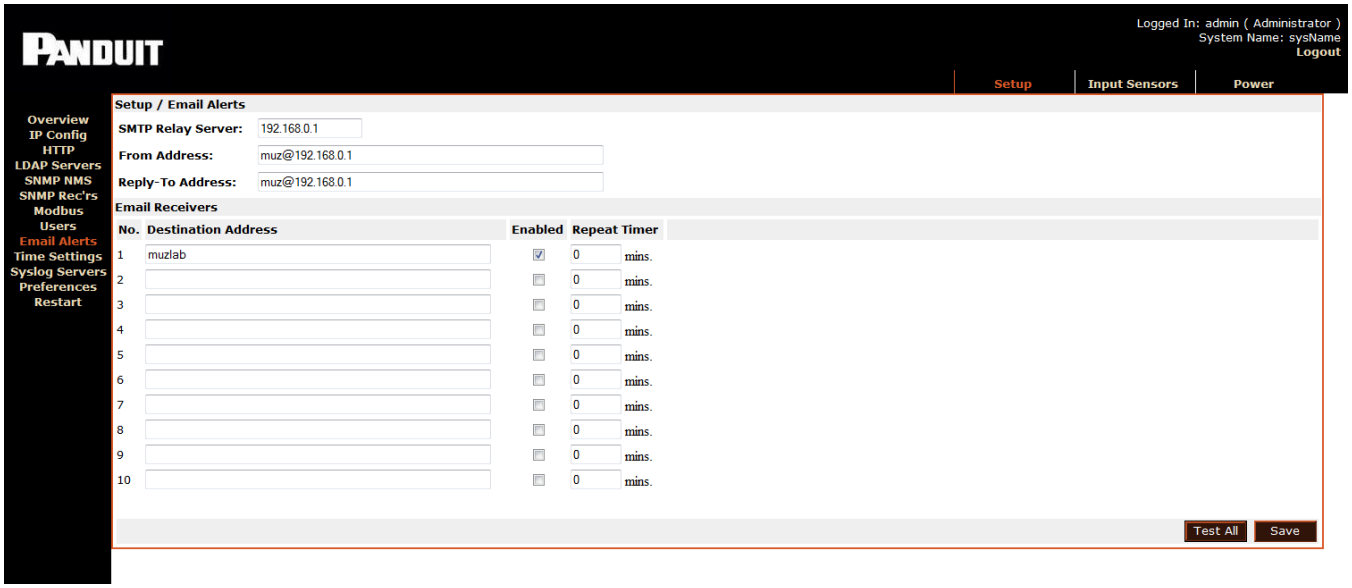
- **Administrator** : Administrators have full control of SmartZone Gateway configuration settings.

- **Controller** : Controllers can view configuration settings.
- **Viewer** : Viewers can view configuration settings.

Warning: User 1 / admin is the master administrator. It is possible to remove administrator rights from the admin user. Doing this is not recommended, because it may result in no one having administrator access. In this situation, a reset to factory defaults is the only solution. Details on how to do this can be found in the Troubleshooting section.

Setup - Email Alerts

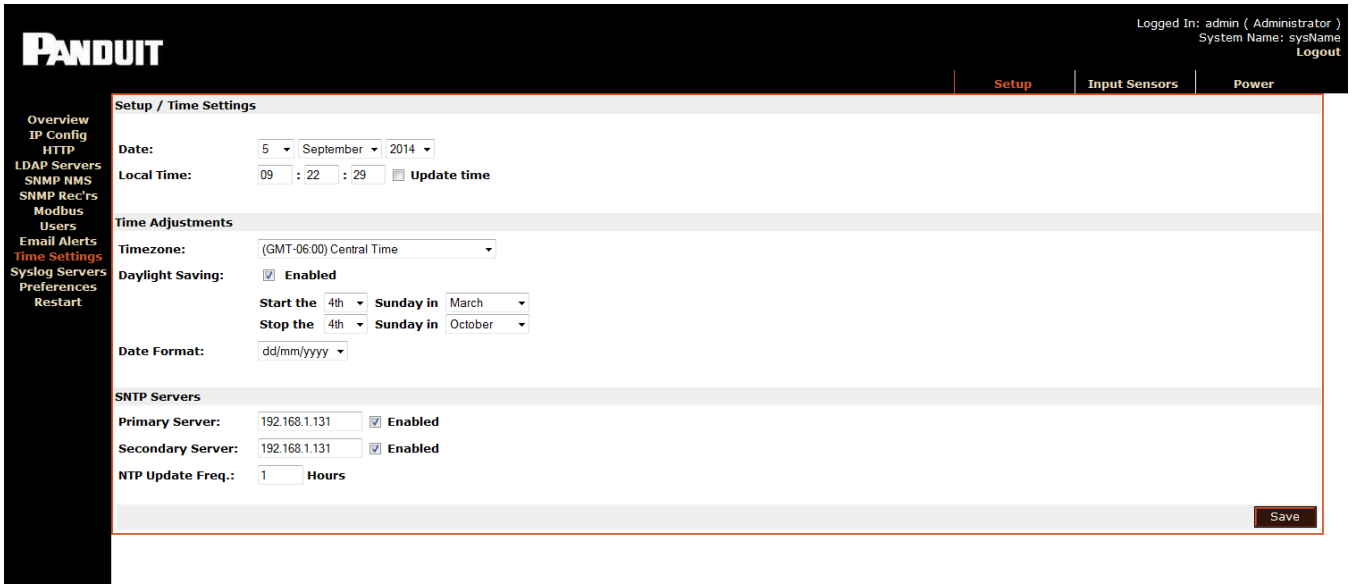
On this page, you can edit email alert settings for traps. You may set up to 10 email receivers.



Email Alerts	
SMTP Relay Server	The IP Address of the SMTP Server
From Address	Address from which the alert emails are sent
Reply-To Address	Address to which the email receivers can reply
Destination Address	Address that will receive the email alerts
Enabled	Toggle the check box to enable or disable alerts to each address
Repeat Timer	Number of minutes after which the email alert will repeat

Setup - Time Settings

The **Time Settings** page allows you to view or edit the current date and time.



Select the correct day, month, and year from the dropdown menus, and verify the local time. If you want to change the time, you must check the Update time checkbox.

Time Adjustments

Select the correct time zone from the drop-down menu.

- **Daylight Saving** can be enabled or disabled by clicking the check box. If Daylight Saving is enabled, select start/stop dates from the subsequent drop-down menus.
- **Date Format** allows the administrator to choose whether the date is displayed with the day or month first. For example, the date August 20, 2013 can be displayed in one of two ways:

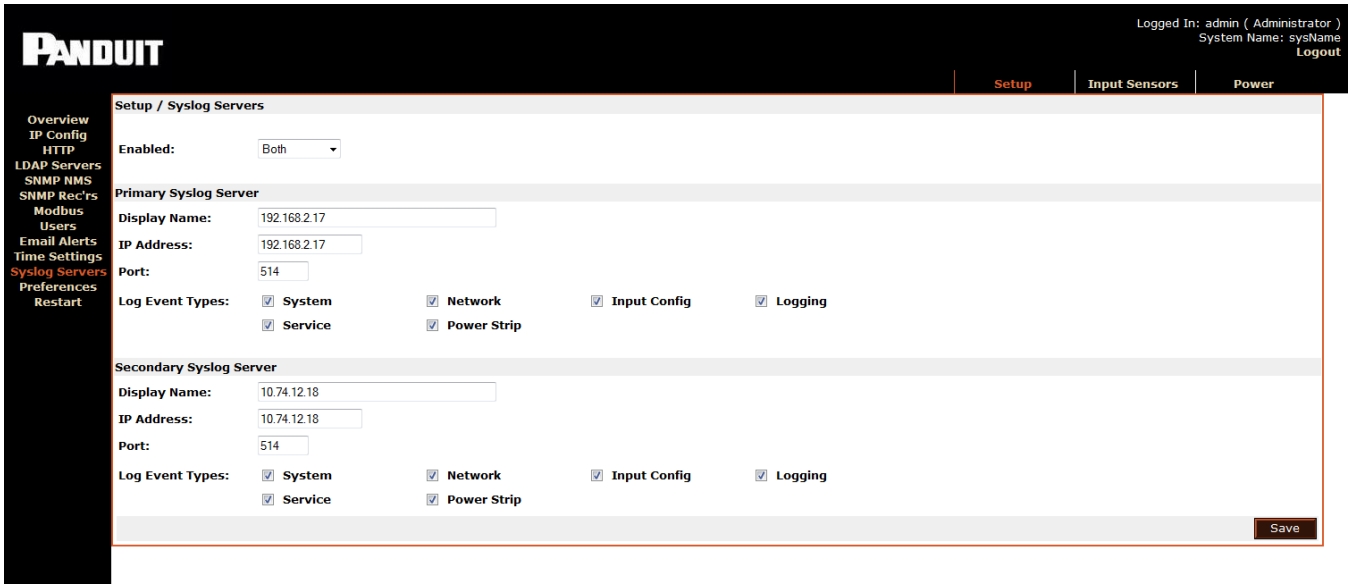
  20/08/2013 (DD / MM / YYYY)
  or
  08/20/2013 (MM / DD / YYYY)

Select the desired format from the dropdown menu.

- **SNTP Servers - Simple Network Time Protocol** synchronizes the clocks of computer systems over a network. Enter the IP address of an SNTP server, and specify (in hours) how often the time should be updated.

Setup - Syslog Servers

This page allows you to view or edit information about the Syslog Servers currently being used.

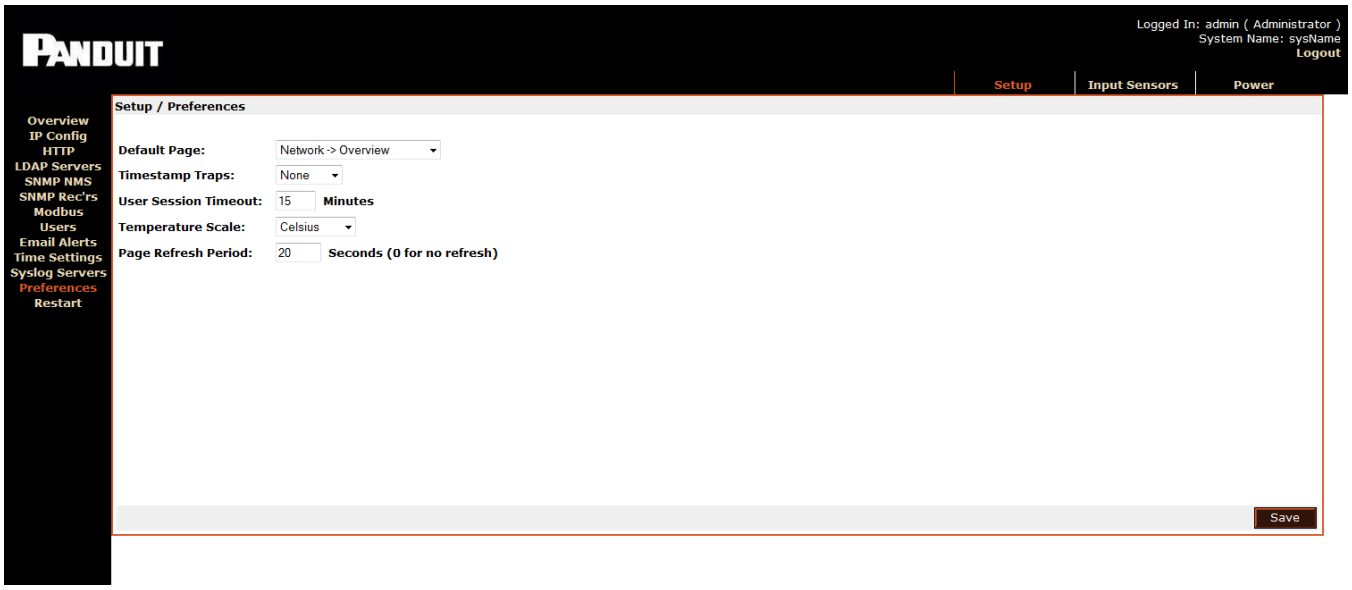


From the Enabled drop-down menu, you can choose which syslog servers are enabled. Fill in the following fields for each Syslog server.

Syslog Server Setup	
Display Name	The name of the Syslog server
IP Address	The IP address of the Syslog server
Port	The number of the port being used
Log Event Types	Click the check boxes to choose which events to log

Setup - Preferences

The Preferences page allows you to edit system preferences.



Preferences	
Default Page	From the dropdown menu, select the first page you want to open when a user logs in. The preset default page is the Overview page.
Time stamp Traps	Choose from the dropdown menu where the timestamp will be found on traps. There are three options: • Prefix – timestamp at the beginning • Append – timestamp at the end • None – no timestamp
User Session Timeout	Enter a number of minutes, after which a session will be timed out if the user is inactive.
Temperature Scale	Select Celsius, Fahrenheit, or Kelvin from the drop-down menu.
Page Refresh Period	Enter a number of seconds, after which the page will auto matically refresh. If 0 is entered, the page will not refresh automatically.

Setup – Restart

A unit may be rebooted or reset to factory defaults here.

Restart Unit

Restart Now

Selecting **Restart Now** commands the unit to reboot. Rebooting the unit will cause any outstanding configuration changes to take effect.

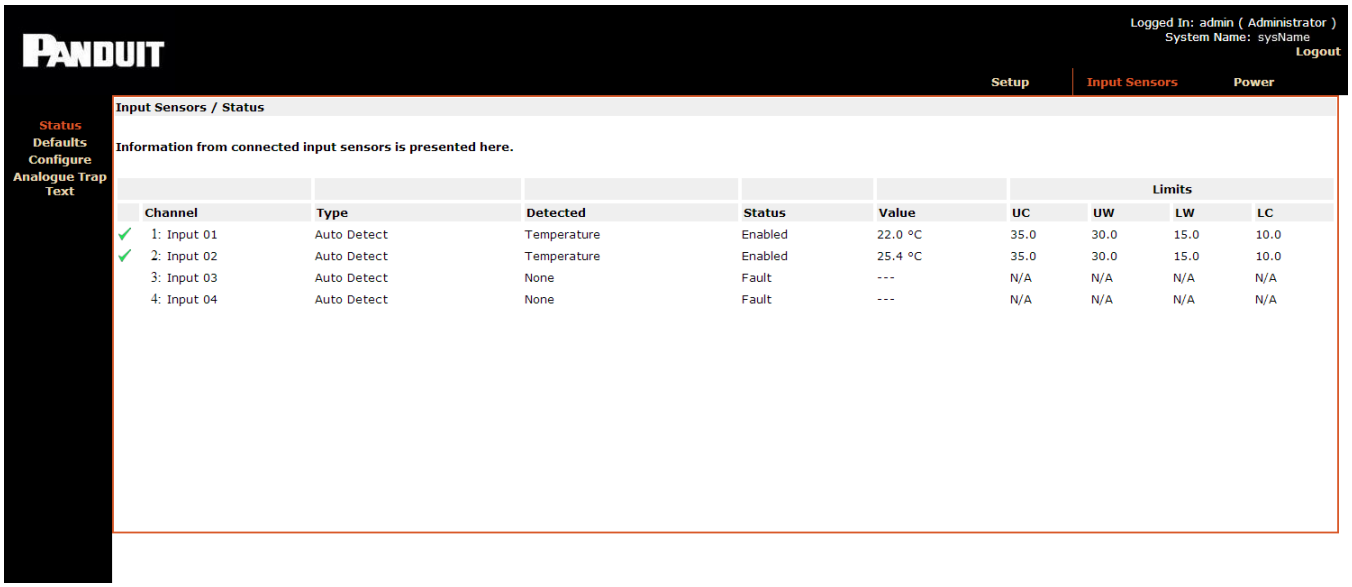
Reset to Factory Defaults

See Troubleshooting for instructions on resetting the factory default settings for the unit.

Sensor Inputs – Configuration and Status

Status

The Input Sensors status page presents an overview of the input ports. This page displays the input channel number, name, type of input sensor, status, current readings, and thresholds.



Status Indicators

Three status indicators are displayed next to the input channels to allow quick determination of normal, warning, and critical alarm statuses:

✓	Channel reading currently within threshold limits.
⚠	Upper or lower Warning limit reached/exceeded.
⊗	Upper or lower Critical limit reached/exceeded.

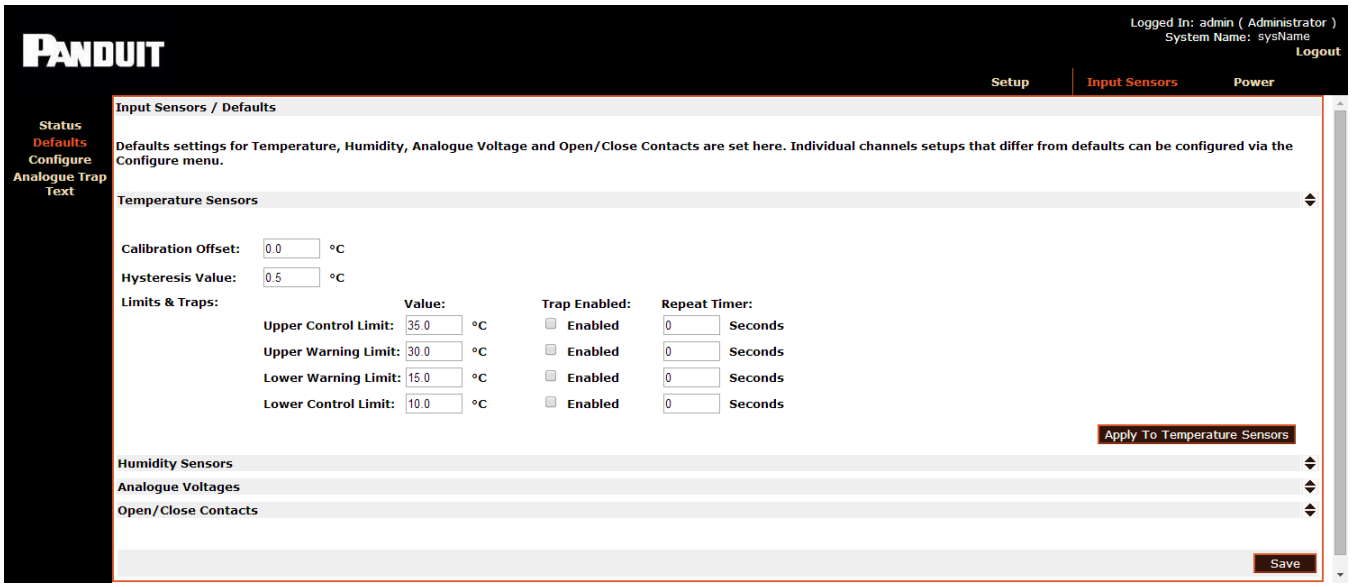
Input Sensors – Defaults

The Input Sensor Defaults menu allows configuration parameters for input sensors of specific types to be defined and applied to all inputs of that type.

The types of input sensors are:

- Temperature
- Humidity*
- Analog (Voltage)
- Open/Close Contacts (digital inputs)

***Note**: Rack Energy Kits do not support humidity sensors.



The configurable defaults are described below.

Calibration Offset

The value entered here alters the actual reading of a sensor by the amount specified.

For example, if a Calibration offset of 6 was used and a sensor's true reading was 36, the indicated reading used for display and alarm purposes would be 42. This works the same way for both temperature and humidity sensors.

Hysteresis Value

The hysteresis default value to be applied to sensors is specified here. The value specified is an offset from a sensor's threshold values.

For example, a hysteresis value of 5 would mean that, in the case of an Upper Control Limits alarm, the alarm value would have to reduce to 5 below the threshold value before another alarm is issued.

Please see Appendix B: Hysteresis Demystified for detailed information.

Limits and Traps

You can set default values for sensor alarm thresholds here. You also can set the default settings for alarm threshold traps here.

The following thresholds can be set:

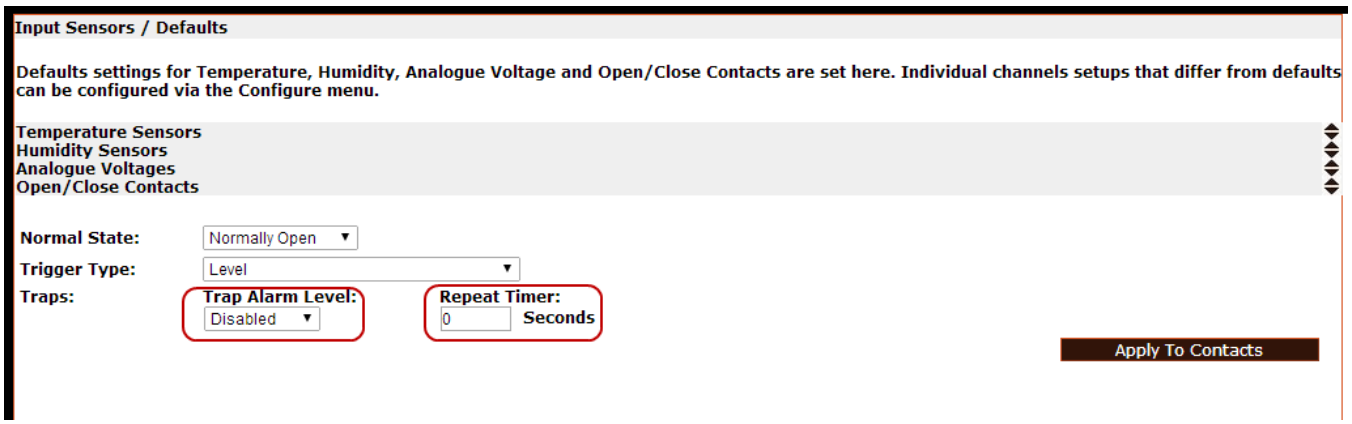
- Upper Control Limit
- Upper Warning Limit
- Lower Control Limit
- Lower Warning Limit

You can apply default trap settings for all of these thresholds. With the trap box deselected, no SNMP alarm traps will be generated, even when an alarm condition exists for that threshold.

Repeat Timer

The repeat timer causes alarm traps to be reissued after a specified amount of time if the alarm condition persists.

Setting the repeat timer to 0 will disable the repeat traps.



The defaults that can be set for Open/Close contacts differ from the Temperature and Humidity settings.

Normal State

Normal state specifies the condition in which a contact is considered to be in a Normal, Non-alarmed state.

Devices such as smoke alarms and air conditioning units often have normally open contacts. To receive alarm indications from these types of units would cause alarms to be issued when a monitored contact closes.

Setting normally closed in the case of a rack or cabinet door would cause an alarm condition when the door was opened.

Trigger Type

The trigger type defaults for Open/Close sensors are specified here.

The three available options for trigger types are:

Level

Level triggering is the default mode. When an input physically transitions from a Normal to Non-Normal state, an alarm is triggered. However, the alarm persists only while the input remains in a Non-Normal state. When the input returns to a normal state, the alarm is cleared.

Normal to Non-Normal (Positive Edge)

This type of triggering may be used in situations where a momentary type input (for example,: a shock sensor or PIR) is used. Since these types of inputs are momentary, any alarm condition that occurs will persist until manually cleared.

Positive Edge triggering is used when an alarm is required to persist after an input changes from the Normal state to the Non-Normal state.

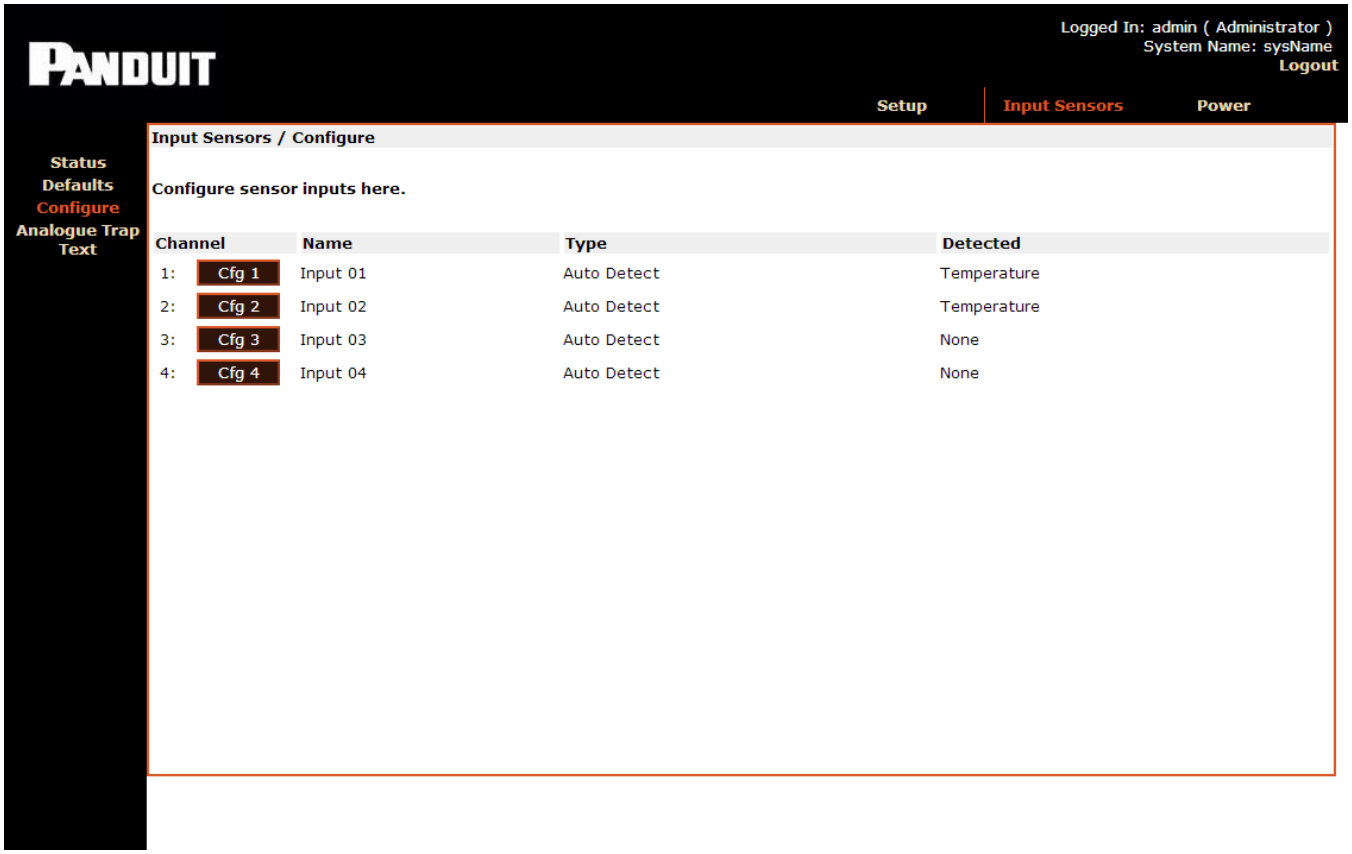
Non-Normal to Normal (Negative Edge)

This type of triggering may be used in situations where a momentary type input (for example, a shock sensor or PIR) is used. Since these types of inputs are momentary, any alarm condition that occurs will persist until manually cleared.

Negative Edge triggering is used when an alarm is required to persist after an input changes from the Non-Normal to the Normal state.

Input Sensors - Configure

You can configure the individual sensor channels in this window.



Select the **Config** option to open a detailed configuration page for the selected sensor.

The difference between the menus presented here and the menus presented on the Defaults page is that settings are applied to individual channels.

The submenus contain all the options in the Defaults menu, plus two additional options:

Name

Sensor channels can be assigned names for ease of identification (for example, “Server Room Sensor” or “UPS Battery Fail”).

Type

The type of connected sensor is specified here. The sensor channels can be set to auto detect, temperature, humidity, contact, or disabled.

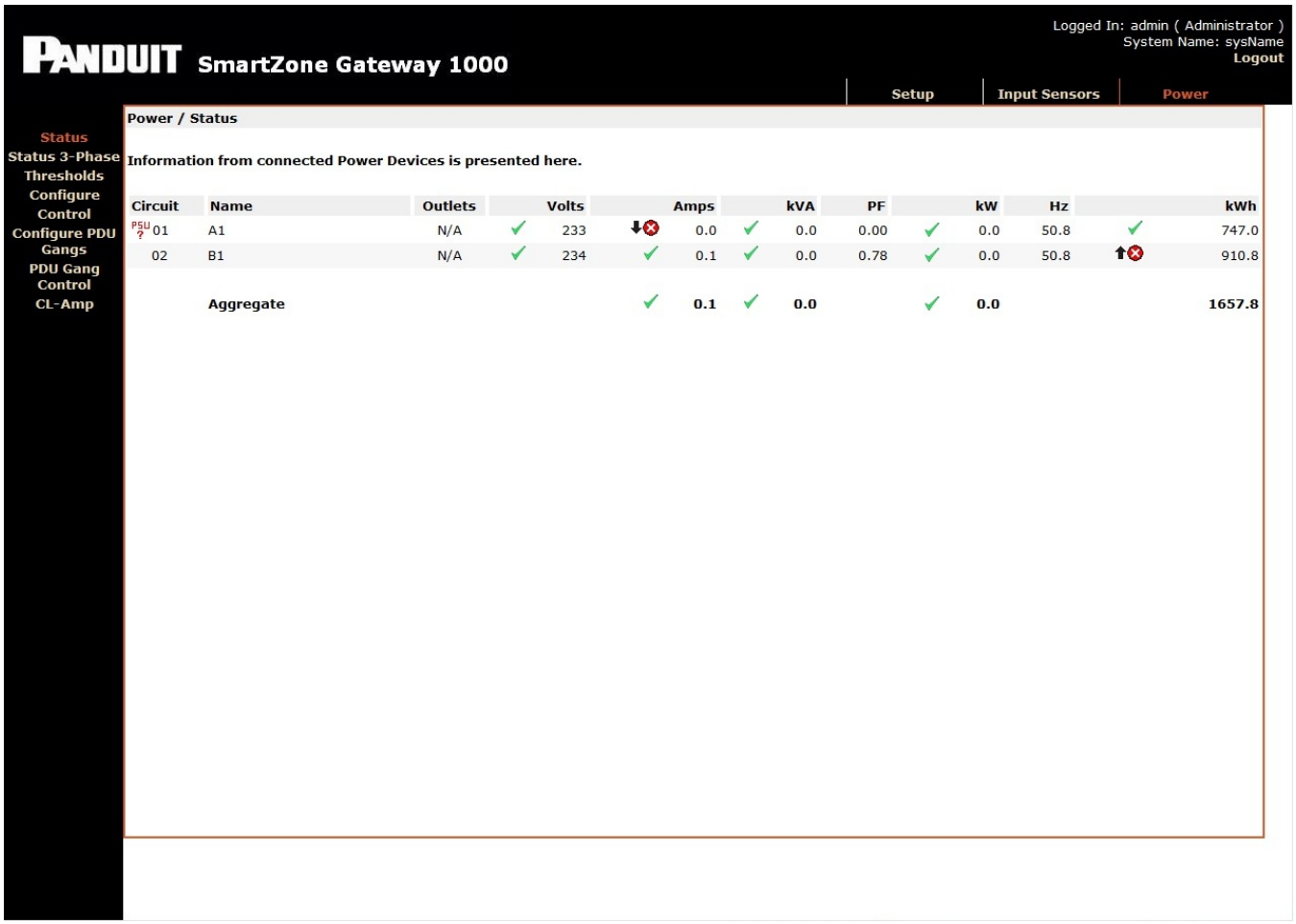
Note: Occasionally, clear traps will be sent to the NMS trap receivers while a sensor is being connected to a device. This is considered normal behavior, because some voltage

surges may be produced when input sensors are physically connected to the gateway. In normal operation, the sensors will always be connected to the device and the sensor voltages will stay within normal expected values

PDUs – Configuration and Status

PDU Status

The PDU Status page presents an overview of connected SmartZone Rack PDUs. The page displays the PDU channel number, name, voltage, and current thresholds.



Status Indicators

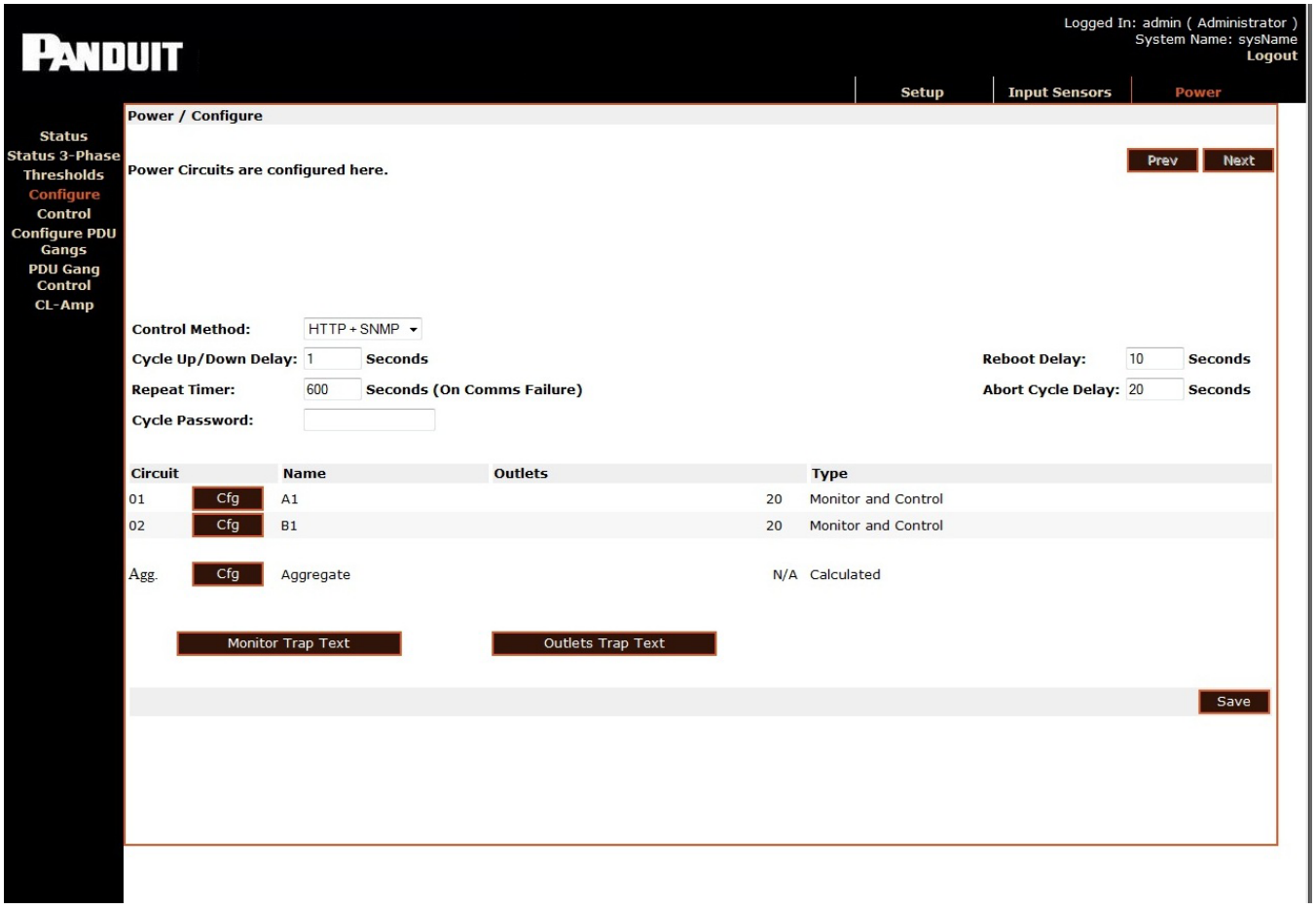
Three status indicators are displayed next to PDU channels to allow quick determination of normal, warning, and critical alarm statuses:

✓	Channel reading currently within threshold limits.
⚠	Upper or lower Warning limit reached/exceeded.
⊗	Upper or lower Critical limit reached/exceeded.

Configuring PDUs

The PDU Configuration menu provides the ability to configure individual PDU options. You can configure the two PDU channels individually by selecting the **Config** option next to each channel.

A summary of several current configuration parameters is displayed on a per-PDU channel basis.



Control Method

The Control Method parameter specifies which control methods are available to control the outlets on PDUs attached to the unit.

HTTP + SNMP

The Web Management Interface and SNMP can be used to command PDU outlets.

HTTP Only

This option allows only the Web Management Interface to command PDU outlets. This effectively disables SNMP PDU outlet control.

SNMP Only

This option allows only SNMP to command PDU outlets.

This effectively disables the Web Management Interface PDU outlet control.

RS232 Only

This option allows PDU control commands to be issued directly to a unit via the onboard RS232 port. This option disables the Web Management Interface and SNMP control.

Cycle Up/Down Delay

This parameter specifies the interval in seconds between switching on and switching off outlets when an entire PDU is cycled (all outlets commanded on or off).

Repeat Timer (on Comms Failure)

This parameter specifies the interval in seconds between when an initial PDU comms failure trap is produced and a repeat trap is issued.

Reboot Delay

This parameter specifies how long (in seconds) an outlet remains off after a reboot before switching back on.

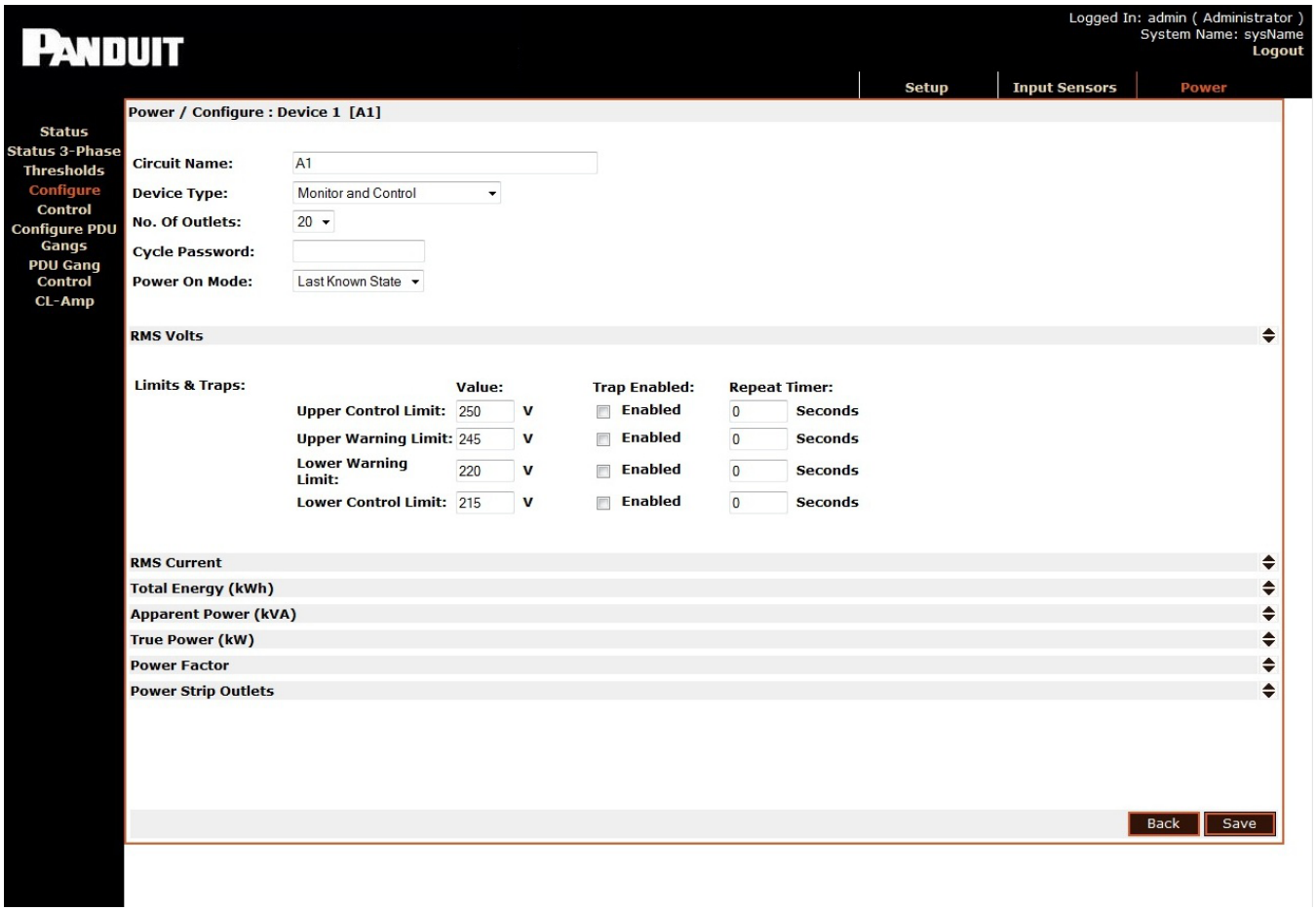
Abort Cycle Delay

This parameter specifies how many seconds must elapse before a commanded cycle begins on a PDU. This delay gives the user time to reverse the decision to cycle a PDU before any outlet states are changed.

If you do not want to use this functionality, set the delay to zero.

Power – Configure Menu

This menu allows all the available options for a specific PDU to be specified.



Name
Individual PDUs can be assigned names for ease of identification (for example, “Rack 5 PDU Sensor” or “Comm Room”).

Type
Specify the type of PDU connected to a channel.

Disabled
No monitoring or control will be performed on this PDU channel.

Monitor Only
The monitoring of power values will be performed on this PDU channel.

Monitor and Control
Both outlet control and power monitoring will be enabled on this PDU channel.

Per Outlet Monitor
This option enables PDU-level monitoring and monitoring of each individual PDU outlet.

Per Outlet Monitor and Control
This option enables PDU-level monitoring and monitoring of each individual PDU outlet, plus outlet control.

Number of Outlets
This parameter specifies the number of controllable outlets present on a PDU. This is required when the **Control Only** or **Monitor and Control** options have been selected.

For example, if you have a PDU consisting of 24 Outlets, one of which is a permanent live (non-switching) outlet, 23 outlets would be specified.

Warning: Failure to specify the correct number of outlets can lead to the incorrect outlet being switched on or off.

During unit setup and deployment, you should select the **Control Only** or **Monitor and Control** options before critical loads are connected to outlets.

Cycle Password
This field specifies the password required to set a power cycle of outlets on a controllable strip. This password is used when switching outlets using SNMP, not when switching via the web interface.

Power on Mode
In the event that power to the PDU is lost, this parameter specifies how the outlets will be switched back on once power is restored.

RMS Volts

Repeat Timer
In the event of a communications failure with a connected PDU, this entry specifies how often (in seconds) Comm Fail traps will be generated.

Limits and Traps
You can specify values for voltage, current, and total power thresholds here. You also can enable or disable traps for each threshold.

The following thresholds can be set:

- Upper Control Limit
- Upper Warning Limit
- Lower Warning Limit
- Lower Control Limit

Note: There are no lower limits for total power, because total power consumption can only go up, not down.

RMS Current

(See options for RMS Volts above)

Total Power

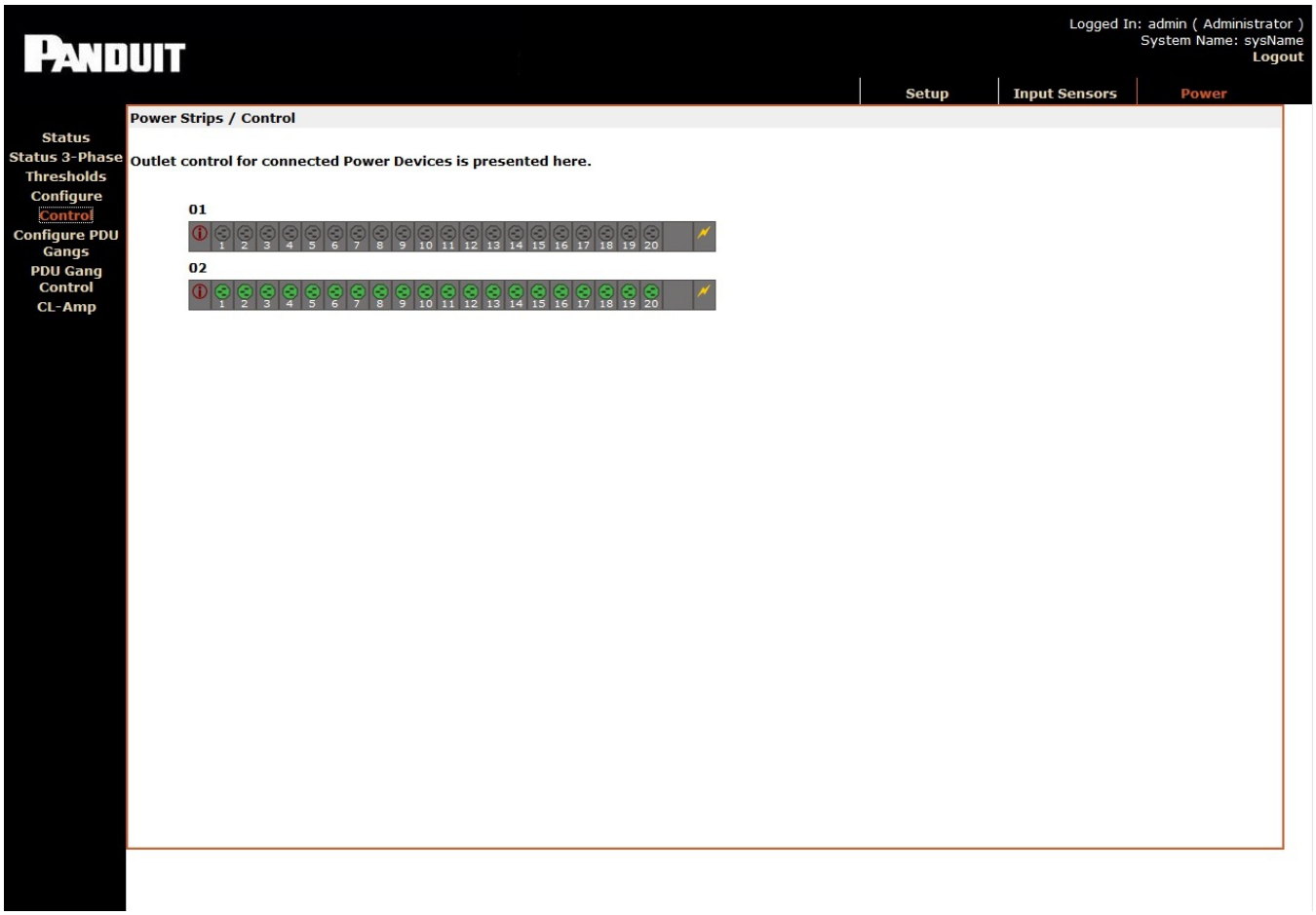
(See options for RMS Volts above)

PDU Outlets

(See options for RMS Volts above)

PDUs – Control

Individual outlets or all outlets on a given PDU can be switched on and off using this screen.



The display consists of a visual representation of PDUs that have **Control** or **Monitor and Control** enabled on the Configure page.

PDUs that are **Disabled** or in **Monitor Only** status do not display any outlet graphics and are displayed with appropriate text.

PDU inputs are numbered 1 to 2 in ascending order. PDU numbers correspond to the physical input ports on the rear of the SmartZone Gateway unit.

Switching Individual Sockets

When you click on a socket, a control menu above the socket displays further information. Three control options are also presented:

On
Selecting this option commands the selected outlet to switch On.
If the outlet is already on this will have no effect.

Off

Selecting this option commands the selected outlet to switch Off.
If the outlet is already off this will have no effect.

Reboot
The reboot option commands the selected outlet to switch off. After the time specified by the Reboot Delay timer has elapsed, the outlet will automatically switch itself back On.

Switching an Entire PDU

You can switch all the outlets on any PDU Off or On with a single command by clicking the **Lightning Bolt** symbol on the end of a PDU graphic.

A small dialog displays, offering the following options:

On
This option commands all outlets on a selected PDU to switch on. Any outlets already on will remain on; any currently off will be switched on.

Off
This option commands all outlets on a selected PDU to switch off. Any outlets already off will remain off; any currently on will be switched off.

Abort!
Once a command has been issued to turn all of a PDU's outlets on or off, you can click the **Abort!** button to abort the command.

The Abort Cycle delay option on the PDU – Configure – Config menu specifies the time allowed in seconds for an abort to be issued.

LDAP

Note: LDAP information does not apply to the Gateway EP042 when used with a Rack Energy Kit.

SmartZone Gateway LDAP Overview

The SmartZone Gateway unit implements a Lightweight Directory Access Protocol (LDAP) client. This allows the Gateway unit to authenticate user logins to the Web Management Interface using an LDAP Directory.

If LDAP is used for authentication, it is first consulted when a user attempts a login. If the user is not found or access is denied by LDAP, then the credentials are checked against the Gateway unit internal user list.

Note: Anonymous LDAP lookups are not supported.

Note: Configuration of LDAP is an advanced topic and requires existing knowledge of LDAP function and setup.

SmartZone Gateway LDAP Structure

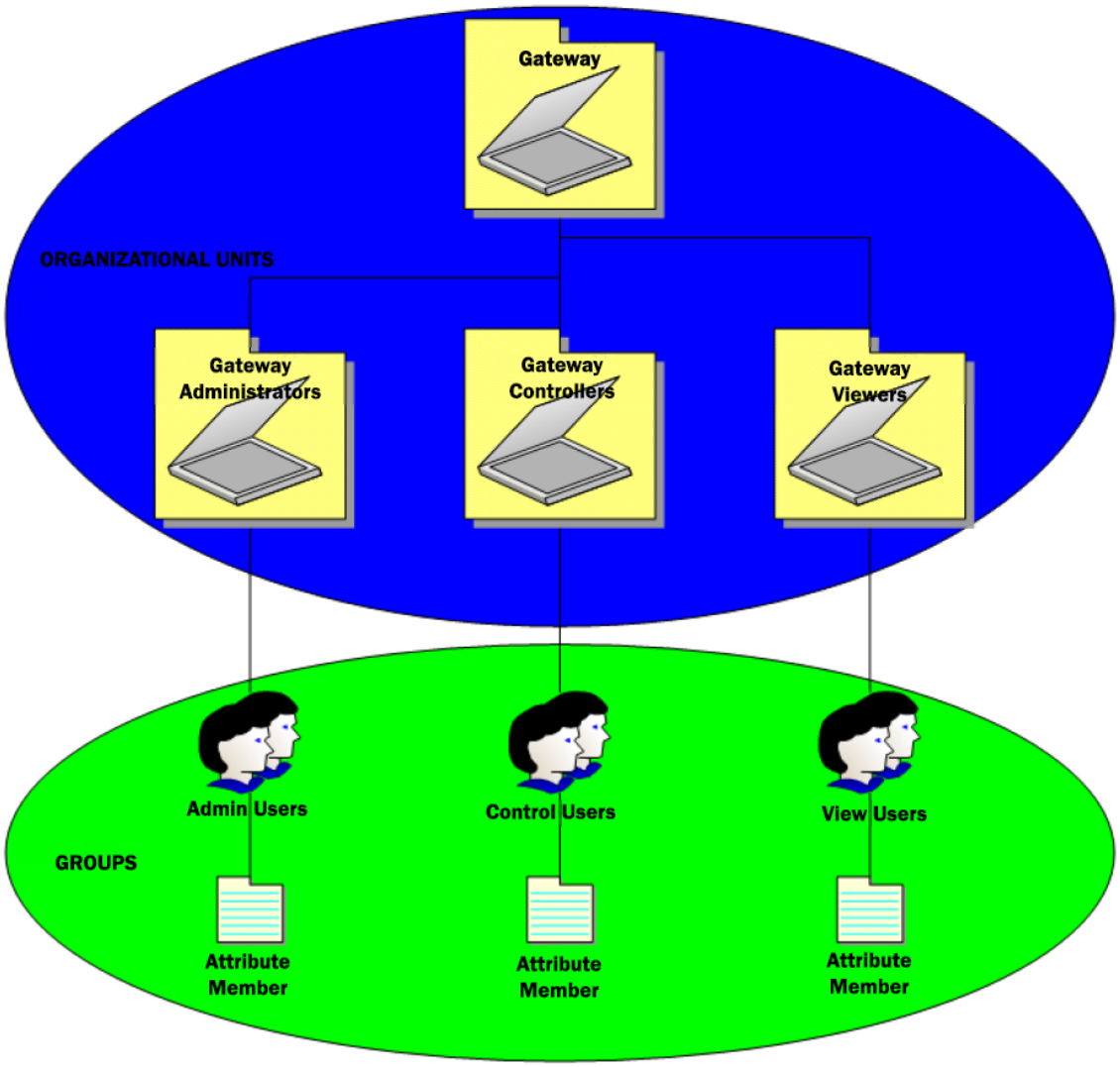
For a Gateway unit to successfully authenticate a user for a Web Management Interface login, it needs to be pointed to a specific structure within a directory. You can point a unit to this structure within a directory by specifying the **Unit Base DN** on the Network Setup – LDAP page.

You will need to create the following Organizational Units:

- Gateway (this can be named anything)
- Gateway Administrators
- Gateway Controllers
- Gateway Viewers

Note: Groups are found in the Active Directory schema. However, any implementation which provides a group with a **Members** attribute may function.

The following figure depicts the Gateway LDAP authentication structure:



Once the required LDAP structure has been created, the Distinguished Name (DN) of users should be added to either:

- Gateway AdminUsers
- Gateway ControlUsers
- Gateway ViewUsers

Group Membership and Access Level

Membership in these groups grants the following permissions on Gateway units:

Gateway AdminUsers

Users placed into this group will have Admin privileges on Gateway units.

Gateway ControlUsers

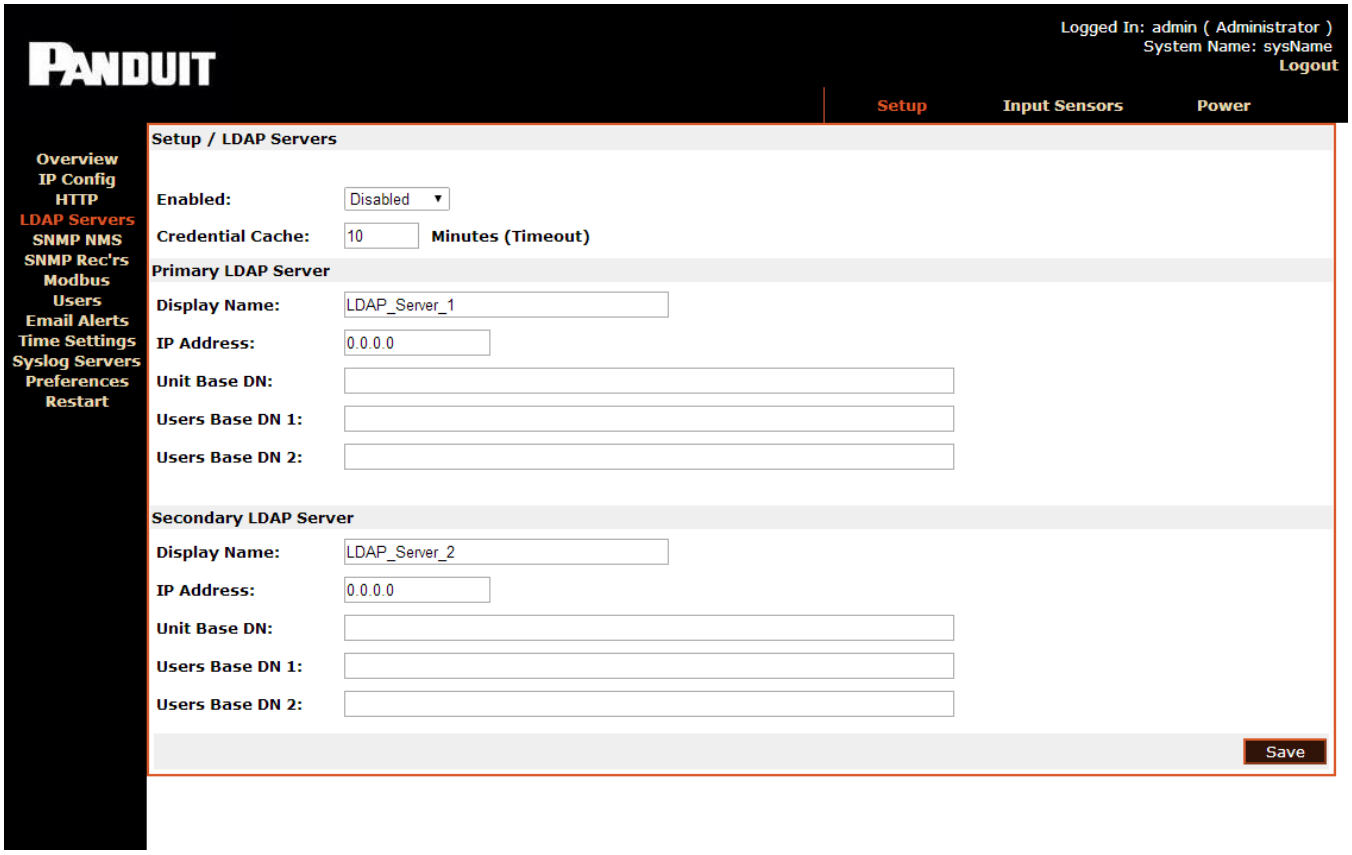
Users placed into this group will have Controller privileges on Gateway units.

Gateway ViewUsers

Users placed into this group will have View privileges on Gateway units.

SmartZone Gateway Unit Configuration

For LDAP authentication to function, you need to provide certain configuration values for each Gateway unit.



To enter the configuration values, perform the following steps.

1. If one LDAP server is to be used, select **Enabled – Primary**.
2. Enter a descriptive name (for example, AD_Server_1) into the **Display Name** (DN) field.
3. Enter the complete DN of the top level OU.
4. Enter the DN of where users that are members of Gateway access groups can be found in the Directory. These DNs can be entered into **User Base DN 1** and **User Base DN 2.**

5. Click **Save**.

Temperature Sensor Adapter Installation

Follow the instructions below to install the ZAHTLADT-02 v1.01.01 temperature sensor adapter module. This adapter allows legacy sensors to provide more accurate temperature readings.

Note: This adapter does not work with the ZETHL-14 temperature sensor.

New Installations

Follow these instructions when you are installing a standard temperature sensor, but the upgraded sensor input is required.

1. Plug the adapter directly into the back of the gateway, at the sensor port to be used for temperature.
2. Plug the temperature sensor connector into the adapter.

3. Update the gateway firmware to the latest release.

Existing Installations.

Follow these instructions when the sensor is already installed along with the gateway.

1. Unplug the current temperature sensor from the gateway, noting the location where it resided.
2. Insert the adapter into that location.
3. Plug the sensor into the end of the adapter.
4. Perform these steps for all other temperature sensors to be changed.
5. The gateway firmware must be updated to the latest firmware.

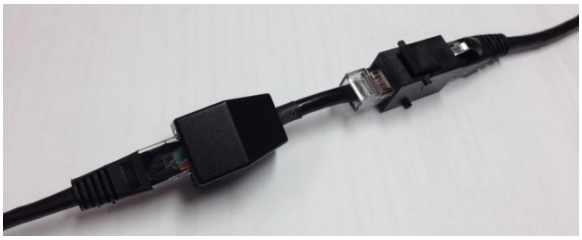
Before the adapter is fitted:

After the adapter is fitted:

Fitting the Adapter In-line.

This procedure is not recommended, but it may be the only solution in some cases.

1. Using a patch lead from the gateway and an RJ45 Jack to Jack through connector on its non-gateway end, plug the adapter RJ45 Plug into the through connector.
2. Plug either the RJ45 plug of a temperature sensor into the jack on the adapter or a patch lead with the temperature sensor on the end.



Troubleshooting

Resetting the SmartZone Gateway to Factory Default Settings

To reset the Gateway unit to factory defaults, perform the following steps:

1. Press and release the **Reset** button on the front of the unit. The Alarm LED will flash twice (off/on, off/on).
2. Immediately press and hold the **Mode** button until the alarm LED goes off.
3. Immediately press and release the **Reset** button.

NOTE: The unit will now restart. The Status LED will start flashing after around 1 minute. The reset process is complete, and the IP address is set to the default 192.168.0.253.

Problem: The NMS Cannot Poll the SmartZone Gateway Unit

- **Solution**:Make sure the network is properly connected to the Gateway unit.
- **Solution**:Make sure the cable is in good condition.
- **Solution**:Try pinging the Gateway unit from another computer on the same network segment as the Gateway unit.
- **Solution**:Ensure that the NMS IP Address is in the NMS table of the Gateway unit.
- **Solution**:Ensure that the community string has been set for the NMS via the Web Management Interface.

Technical Support

For technical support for the SmartZone Gateway system, please contact Panduit Technical Support using one of the following methods:

- 1-866-721-5302 (toll-free)
  - Orland Park, USA: 6:30 a.m. – 8:00 p.m. CST
  - Mumbai, India: 6:30 a.m. – 5:00 p.m. IST (8:00 p.m. – 6:30 a.m. CST)
  - On Call Support on Weekends
- systemsupport@panduit.com

Appendix A: Technical Details

Factory Default Settings

IP Address	192.168.0.253
Subnet Mask	255.255.255.0 (/24)
Default Gateway	192.168.0.1
Web Management Address	http://192.168.0.253/
Default username	admin
Default password	admin

Operating Information

Input Power	100 to 240VAC 50Hz / 60 Hz 0.5 Amp Maximum
Input Power	36 to 60 VDC 0.5 Amp Maximum
Operating Temperature	0 ^{O}C to 40 ^{O}C
Storage Temperature	-10 ^{O}C to 70 ^{O}C
Operating Humidity	5% to 90% Relative Humidity
Storage Humidity	5% to 100% Relative Humidity

CAUTION: There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Unit DimensionsAC)

Height	37mm [1.5”]
Width	233mm [9.2”]
Depth: (including earth stud and connectors)	85.2mm [3.4”]
DepthL (Case only)	79mm [3.1”]
Width including Mounting brackets	285mm [11.2”]
Unit net weight	760gm [26.8 oz]

Unit Dimensions (-48VDC)

Height	37mm [1.5”]
Width	242.6mm [9.6”]
Depth: (including earth stud and connectors)	104.4mm [4.1”]
DepthL (Case only)	80.4mm [3.2”]
Width including Mounting brackets	295mm [11.6”]
Unit net weight	828gm [29.2 oz]

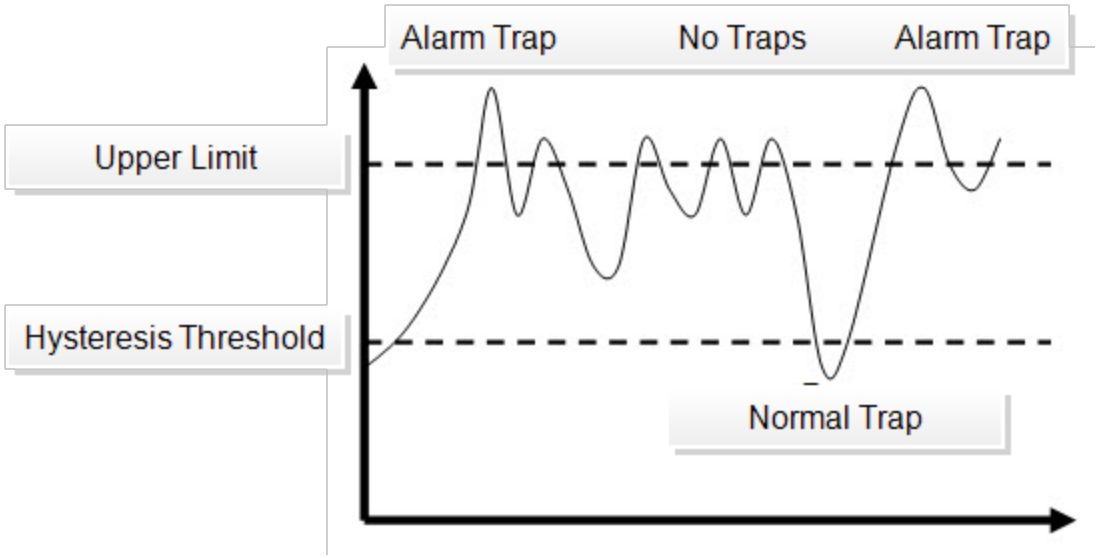
Appendix B: Hysteresis Demystified

When a temperature or humidity limit is reached and the relevant limit has its OFF to ON Trap enabled, an alarm trap is issued by the SmartZone Gateway unit.

With a zero hysteresis setting, the traps will continue to be generated each time the limit is reached.

This may be undesirable in a situation where the temperature or humidity level measure has reduced by only a small amount before rising again and triggering further traps.

The hysteresis function is provided to prevent further alarm traps from being generated until the measured value has fallen to a satisfactory level.



As shown in image above, the humidity first rises past its upper warning threshold, which generates an alarm trap.
The humidity then reduces slightly but does not reduce to the hysteresis level, which is 1.5% relative humidity lower than the alarm setting (1.5% relative humidity lower as an absolute measured value, rather than 1.5% of currently measured value).

Humidity then increases and decreases again. However, on the second decrease of humidity the level drops below the hysteresis level. The Humidity falling below the hysteresis level re-enables alarm traps for the next alarm event. An upper limit of 25 and a hysteresis threshold of 1.5 yield a threshold limit of 23.5.

The humidity level again begins to rise and again exceeds the upper limit, however this time an alarm trap is generated again.

The Hysteresis feature acts on the following Temperature and Humidity thresholds:

- Upper Control Limit (UCL)
- Lower Control Limit (LCL)
- Upper Warning Limit (UWL)
- Lower Warning Limit (LWL)

The inverse of the above description is true when applied to Temperature and Humidity lower control and warning limits.

You can configure the hysteresis threshold by using the menu options.

Appendix C: Encryption and Security

The Gateways support HTTPS encryption, and they support the following cipher configurations.

- TLS_RSA_WITH_3DES_EDE_CBC_SHA
- TLS_RSA_WITH_DES_CBC_SHA
- TLS_RSA_WITH_AES_128_CBC_SHA
- TLS_RSA_WITH_AES_256_CBC_SHA