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# Introduction

## Before You Start

Review the following sections before you start using the APC® InfraStruXure™ Manager server:

- **Overview** provides a brief description of the main InfraStruXure Manager functions and features.
- **Initial configuration requirements** provides information about how to configure the InfraStruXure Manager server after it is installed.
- **Backup Server** describes save InfraStruXure Manager configuration settings to a backup (\*.apc) file.
- **Restore Server** describes how to import configuration settings from an \*.apc or psxconfig.xml file.
- **Network Time Protocol (NTP) server feature** provides information about using the InfraStruXure Manager server as an NTP server on its APC and User Local Area Networks (LANs).
- **How to restore access to the InfraStruXure Manager server** provides information about accessing the server if the Administrator username or password becomes unknown, or if **RADIUS only** is selected in the "Authentication Settings" display and a RADIUS server is unavailable.



See also

Also review the release notes, which provide information about requirements and known issues. A copy is available on the installation CD, and as a free download at the bottom of the InfraStruXure Manager product page at the APC Web site (<http://www.apc.com/products/family/index.cfm?id=56>).

# Overview

An InfraStruXure Manager server can monitor the status of **Supported devices** on its **APC** and **User Local Area Networks (LANs)**, and generate reports about those devices.

- Two main displays provide status and other information about monitored devices, including access to device management applications.
  - The “Device Status” display allows you to assign monitored devices to **Device groups** which provide status and other information about those devices, and allow you to control the content of reports and logs.
  - A “Power Zones” display allows you to create diagrams that identify how the devices assigned to **Power zones** relate to each other, and to the available power sources. For information about the icons used to identify the severity of conditions that exist at monitored devices, see **Status and event severity levels**.
- A “Logs” display allows you to generate logs (**Data logs** and an **Event log**) for monitored devices.
- A “Reports” display allows you to generate **Reports** for the devices the InfraStruXure Manager server monitors.

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## InfraStruXure Manager



- A menu bar, located above the main displays, provides seven menus that allow you to configure and use the InfraStruXure Manager server:
  - File menu
  - Edit menu
  - View menu
  - Event Management menu
  - System Management menu
  - Updates menu
  - Help menu



For information about how whether you log on as the Administrator or as a General user affects access to menus and options, see [Administrator versus General access](#).

## Supported devices

An InfraStruXure Manager server can monitor any APC device that it can discover on its **APC and User Local Area Networks (LANs)**. This includes any device that uses the following APC hardware and software SNMP agents:



Note

Use **Add Devices** in the **Edit menu** to discover User LAN (corporate network) devices. APC LAN devices are discovered automatically.



Note

- A PowerChute® Business Edition Agent at a NetWare®, Windows® 2000, Windows 2003, Windows NT®, or Windows XP computer

SNMP service must be enabled at the PowerChute Business Edition Agent's host computer.

- Network Management Card (all versions)
- AP9606, AP9617, AP9618, or AP9619 Web/SNMP Management Card

An InfraStruXure Manager server can also monitor the following APC devices:



New APC devices can be added to the list of devices an InfraStruXure Manager server can monitor without requiring a server update. For more information, see <General APC Device> events.

- MasterSwitch™, MasterSwitch VM, and MasterSwitch Plus units
- Environmental Monitoring Cards, Environmental Monitoring Units, and Environmental Management Systems
- NetworkAIR™ FM or PA units
- InfraStruXure Power Distribution Unit (PDU)
- Metered or Switched Rack Power Distribution Unit (Rack PDU)

- Automatic Transfer Switch (ATS)
- Other InfraStruXure Manager servers



Note

InfraStruXure Manager v4.0-v4.1.x servers can be monitored, but not accessed directly. They require a compatible version of the InfraStruXure Manager client; APC PowerStruXure Information Controllers cannot be monitored.

## APC and User Local Area Networks (LANs)

An InfraStruXure Manager server can monitor the **Supported devices** (APC devices that provide power and environmental protection) on two LANs:

- APC LAN: Monitors the APC devices for the local InfraStruXure zone.
- User LAN: Monitors APC devices on the corporate network.



For information about using the InfraStruXure Manager server as an NTP server on the APC and User LANs, see [Network Time Protocol \(NTP\) server feature](#).

## Network Time Protocol (NTP) server feature

When the InfraStruXure Manager server discovers the **Supported devices** on its APC LAN, it automatically defines itself as the NTP server for those devices. Those devices will send periodic NTP requests to the InfraStruXure Manager server, which provides its **Server Time** to each requesting device.

The InfraStruXure Manager server can also provide its server time to any device that connects to its User LAN. However, the InfraStruXure Manager server must be manually defined as the NTP server at that device.

# How to restore access to the InfraStruXure Manager server

If the username or password used for local, Administrator access becomes unknown, or **RADIUS only** is selected in the “**Authentication Settings**” display and a RADIUS server is unavailable, use the following procedure to restore access.

1. Connect a computer to the hub on the APC LAN. That computer must have the InfraStruXure Manager client installed. If it does not, connect to the InfraStruXure Manager server and select to install the client, when prompted.
2. Reboot the InfraStruXure Manager server.



Note

This may require physically disconnecting and reconnecting InfraStruXure Manager at its input power source.

3. Use the InfraStruXure Manager client (step 1) to connect to the InfraStruXure Manager server.
4. When the “**Server Log On**” display appears, use **admin** (lowercase) as the **Username**, and **apc** (lowercase) as the **Password**, to log on.



Note

If the logon fails, try again; the InfraStruXure Manager server may not have finished rebooting. After the “**Server Log On**” display appears, you must log on within about eight minutes, or you must repeat steps 2 through 4.

5. Select **Authentication Settings** in the **System Management** menu.
6. If selecting **RADIUS only** caused the problem, change the **Authentication Method** setting to **Local only**; If an unknown Administrator logon value caused the problem, click **Configure Local Users** and define new Administrator access values.

# Initial configuration requirements

## Overview

Use the following procedure to configure a newly-installed InfraStruXure Manager server.

1	Use the InfraStruXure Manager Setup Wizard	The <b>InfraStruXure Manager Setup Wizard</b> accesses the configuration options that are most important to the InfraStruXure Manager operation.  <b>NOTE:</b> When you log on to an newly-installed InfraStruXure Manager server, click <b>Yes</b> to run the wizard immediately. If you click <b>No</b> , you can select <b>Setup Wizard</b> in the <b>System Management</b> menu to run the wizard at any time.
2	Review configuration settings the InfraStruXure Manager Setup Wizard cannot access	Select <b>Client Preferences</b> in the <b>System Management</b> menu to define whether <b>Fahrenheit</b> (the default) or <b>Celsius</b> will be used to report temperatures, or to enable (disabled by default) the periodic sending of information to APC about how you use the InfraStruXure Manager features.  <b>NOTE:</b> No personal information is sent about any user, server, network, system, etc., only general information about how the InfraStruXure Manager features are used.
		Select <b>System Identification</b> in the <b>System Management</b> menu to define the InfraStruXure Manager <b>System Name</b> , <b>Contact</b> , and <b>Location</b> values.
		Select <b>Log Settings</b> in the <b>System Management</b> menu to define how often data is stored in the data logs, as well as the age at which entries will be deleted from the event or data logs.
3	Create the device groups	See <b>Device groups</b> for information about this InfraStruXure Manager feature.
4	Create the power zones	See "Power Zones" display for information about this InfraStruXure Manager feature.

# InfraStruXure Manager Setup Wizard

The following table provides an overview of the configuration settings that can be accessed using this wizard.

Network Settings	<p>The settings for the APC and User Local Area Networks (LANs): By default, the APC LAN uses <b>192.168.0.*</b> as its IP address, and a DHCP server provides the settings needed for the User LAN (corporate) network access.</p> <p><b>NOTE:</b> If you change a APC LAN or User LAN setting, the InfraStruXure Manager server must reboot to apply the change.</p>
Server Time	<p>The <b>Date</b>, <b>Time</b>, and <b>Time Zone</b> settings the InfraStruXure Manager server will use.</p> <p><b>NOTE:</b> Any change to the settings will require the InfraStruXure Manager server to reboot. After it reboots, log on and access this wizard again.</p>
License Keys	<p>The licence list that determines how many devices the InfraStruXure Manager server can monitor.</p> <p><b>NOTE:</b> A license key must be listed in this display before the InfraStruXure Manager server can monitor the number of devices allowed by that key.</p>
Authentication Settings	<p>The settings that select the authentication method used to log on to the InfraStruXure Manager server and configure the settings used by that method.</p>
E-Mail Settings	<p>The settings the InfraStruXure Manager server uses to send e-mail for events, device group summaries, and firmware update notifications.</p> <p><b>NOTE:</b> The SMTP settings must be defined before the InfraStruXure Manager server can send notifications to an identified recipient.</p>

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Global Device Thresholds	The global thresholds the InfraStruXure Manager server monitors for possible warning conditions.  <b>NOTE:</b> The global threshold settings do not affect monitored device thresholds, and monitored device thresholds do not affect the global threshold settings.
Device Access	The settings required for SNMP communication with monitored devices, as well as the user names and passwords required for administrative access to those devices.
Remote Monitoring Service	The settings used to register the InfraStruXure Manager server to use APC Remote Monitoring Service (RMS) support.
Add Devices	The settings used to discover the User LAN (corporate network) devices the InfraStruXure Manager server will monitor.

# Status and event severity levels

The InfraStruXure Manager server, and the devices it monitors, generate events that represent status changes. Each event has a severity level assigned: **Critical**, **Warning**, or **Informational** (or **Normal**).

By default, all events are recorded in the **Event log**.

The severity levels also apply to status reported by the InfraStruXure Manager server.

<b>Critical</b>	Indicates a condition that requires immediate attention. Left unresolved, the condition may damage the load equipment, or result in the loss of UPS protection during a power failure. In the event log, the following icon identifies critical events; this icon is used in InfraStruXure Manager displays to indicate a critical status: 
<b>Warning</b>	Indicates a condition that may require attention to make sure it does not deteriorate into a critical state. In the event log, the following icon identifies warning events; this icon is used in InfraStruXure Manager displays to indicate a warning status: 
<b>Informational (or Normal)</b>	In the event log, the Informational severity level identifies events which report that the device has performed a normal operation, or that a critical or warning condition has been cleared. In InfraStruXure Manager displays, the following icon indicates a device is operating normally: 

# "Device Status" display

This display appears when you log on to the InfraStruXure Manager server, or select **Device Status** in the navigation bar or **View menu**. It has three frames:

"Device Groups" frame	The left frame lists the <b>Device groups</b> and allows you to select which group has its devices displayed in the "Device List" frame.  <b>NOTE:</b> Device groups also allow you to tailor reports. See "Select Report Filter" display.
"Device List" frame (see footnote)	The top-right frame displays status and "Configure Columns" display information for the devices assigned to the group selected in the "Device Groups" frame.  You can select a device to view more detail about its status in the "Recommended Actions" frame.  <b>NOTE:</b> Double-clicking a device accesses its management application, or a display that provides more information about that device. See "Device Details" display.
"Recommended Actions" frame (see footnote)	The bottom-right frame provides more detailed status for the device selected in the "Device List" frame.
<b>NOTE:</b> This frame also appears when the <b>Devices</b> tab is selected in the "Power Zones" display.	

# Device groups

## Overview

Use the **Device group management** procedures to create and manage the device groups. These device groups, which allow you to assign devices to groups based on your criteria (for example, device locations), are listed in the left frame of the “Device Status” display, and provide the following functions:

- The “Device Groups” frame allows you to select which device group has its devices displayed in the “Device List” frame.
- A “Select Report Filter” display allows you to create **Reports** that include all the device groups identified in the filter, or just the groups you select.
- An “E-mail Configuration for Group” display allows you to customize how the InfraStruXure Manager server uses e-mail notifications for a selected group.
- The InfraStruXure Manager server generates **System events** when specific power problems occur at the UPS systems assigned to a device group.

## “Device Groups” frame

This frame lists the **Device groups** you create, and two groups which cannot be renamed or deleted. When selected, the following device group display their devices in the “Device List” frame:

- **All Devices:** All monitored devices.
- **Unassigned:** All devices that are not assigned to a created group.
- **Created Group:** The devices assigned to the selected group.



All groups, including **All Devices** and **Unassigned**, use icons to indicate whether device problems exist. See **Status and event severity levels**.

# Device group management

Two menus can be used to manage the device groups:



Unless you log on as the Administrator, the menu options are disabled. See [Administrator versus General access](#).

- Right-click menu: Right-click a device group to access up to four options: **Add Device Group**, **Remove Device Group**, **Rename Group**, and **Configure Notification**.
- Edit menu: **Add Device Group** and **Remove Device Group**.



When **All Devices** is selected, only the **Add Device Group** option is active; when **Unassigned** is selected, only the **Configure Notification** option is active.

<b>Create a Group</b>	Select <b>All Devices</b> , and use the <b>Add Device Group</b> option.
<b>Create a Sub-group</b>	Use the <b>Add Device Group</b> option at a group that has no devices. <b>NOTE:</b> An error message appears if you attempt to create a sub-group for a group (or sub-group) that has devices assigned.
<b>Assign or Move Devices</b>	1. Select the group from which the devices will be moved. 2. In the “Device List” frame, select and drag the devices you want moved to the new group. <b>NOTE:</b> You can move devices to a group (or sub-group) that has no sub-group assigned only. Otherwise, the move will fail.
<b>Assign Devices to Multiple Groups</b>	1. Select a group in which the devices are assigned. 2. In the “Device List” frame, select the devices you want assigned to both the selected group and to a new group. 3. Hold the CTRL key down and drag the selected devices into the new group. <b>NOTE:</b> You can move devices to a group (or sub-group) that has no sub-group assigned only. Otherwise, the move will fail.

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<b>Remove Devices from a Group</b>	<ol style="list-style-type: none"><li>1. Select the group from which you want to remove devices.</li><li>2. In the “Device List” frame, select the devices you want removed.</li><li>3. Right-click a selected device and use one of the following <b>Group</b> options:<ul style="list-style-type: none"><li>• <b>Remove Device from All Assigned Groups:</b> Moves the devices to the <b>Unassigned</b> group from all groups to which they are assigned.</li><li>• <b>Remove Device from Selected Group:</b> Removes the devices from the selected group only. Devices that are not assigned to another group move to the <b>Unassigned</b> group.</li></ul></li></ol> <p><b>NOTE:</b> The InfraStruXure Manager server still monitors the removed devices.</p>
<b>Remove a Group</b>	Select the group and use the <b>Remove Device Group</b> option.  <b>NOTE:</b> The InfraStruXure Manager server still monitors the deleted group's devices. Devices that are not assigned to another group move to the <b>Unassigned</b> group.
<b>Rename a Group</b>	Right-click the group and use the <b>Rename Group</b> option.
<b>Configure Notifications for a Group</b>	<ol style="list-style-type: none"><li>1. Right-click the group, and use the <b>Configure Notification</b> option.</li><li>2. Use the “E-mail Configuration for Group” display to define how e-mail is used for events that occur at a selected group's devices.</li></ol> <p><b>NOTE:</b> You can configure notifications for a group (or sub-group) that has no sub-group assigned only. Otherwise, the <b>Configure Notification</b> option is disabled.</p>

## "E-mail Configuration for Group" display

Use this display for **Configure Notifications**, a right-click menu option in the “Device Groups” frame, to customize how the InfraStruXure Manager server uses e-mail for a device group.



To define the e-mail recipients and SMTP settings required for e-mail notifications, see [E-Mail Settings](#).

1. Double-click a listed recipient, or, to configure multiple recipients using identical settings, select those recipients and click **Configure**.
2. Select only the items for which you want to send e-mail notifications and click **Apply**.  
 For information about the available selections, see [Events](#), [Global Device Thresholds](#), and [Updates](#) menu.
3. Configure any other recipients, as needed.

# "Device List" frame

## Overview

This frame displays status and other information about the devices assigned to the device group selected in the “Device Groups” frame. This frame also appears in the “Power Zones” display when the **Device** tab is selected.



Note

Select **All Devices** to have the “Device List” frame display information about all the **Supported devices** the InfraStruXure Manager server is monitoring on its APC and User Local Area Networks (LANs).

To access additional information about a listed device:

- Select a device to display information about that device in the “Recommended Actions” frame.
- Double-click a device to access a “Device Details” display that provides more detail about the device, or direct access to the device’s management application.

The following menus provide options you use with the “Device List” frame:

- Two **Right-click menus** provide column and device-management options.
- A **View** menu option accesses the “Configure Columns” display that defines what columns of information the “Device List” frame displays.
- A **File menu** option (**Print Device List**) prints a copy of the displayed list of devices.

## Right-click menus

Two right-click menus are available in the “Device List” frame.

- Right-click any column heading to enable or disable individual columns, or to access the “Configure Columns” display.
- Right-click a device to use the options described in the following table.



Unless you log on as the Administrator, these menu options are disabled. See [Administrator versus General access](#).

<b>Device Details</b>	Accesses the “Device Details” display. <b>NOTE:</b> This option is disabled if multiple devices are selected.
<b>Device Identification</b>	Accesses the “Device Identification” display. <b>NOTE:</b> This option is disabled if multiple devices are selected.
<b>Group</b>	<b>View Group Membership:</b> Accesses the “View Group Membership” display. <b>NOTE:</b> This option is disabled if multiple devices are selected. <b>Remove Device from Selected Group:</b> Removes selected devices from the group (or sub-group) highlighted in the “Device Groups” frame. <b>NOTE:</b> Unless a device is assigned to another group it is moved to the <b>Unassigned</b> group. <b>Remove Device from All Assigned Groups:</b> Moves selected devices to the <b>Unassigned</b> group from any groups (or sub-groups) to which they are assigned.
<b>HTTP Properties</b>	Accesses the “HTTP Properties” display.
<b>Rack Properties</b>	Accesses the “Set Rack Properties” display. <b>NOTE:</b> This option is disabled if multiple devices are selected.

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<b>Remove Devices</b>	The InfraStruXure Manager server will no longer monitor the selected devices.  <b>NOTE:</b> This option is disabled during a discovery. See <a href="#">Add Devices</a> .
<b>Register as a Trap Receiver</b> <b>Un-register as a Trap Receiver</b>	These options control whether the InfraStruXure Manager server will receive SNMP traps from a selected device.  When multiple devices are highlighted, one of these options will be enabled if all selected devices can use the same option ( <b>Register</b> or <b>Un-register</b> ). Otherwise, both are disabled.  <b>NOTE:</b> The trap receiver options are disabled for InfraStruXure PDUs and for some Metered Rack PDUs. To use the InfraStruXure Manager server as a trap receiver for other devices, see <a href="#">Trap receiver feature</a> .
<b>Notification</b>	Accesses the options involved in the <a href="#">Disable Notifications for Maintenance</a> feature.  <b>NOTE:</b> All <b>Notification</b> options are disabled during a discovery. See <a href="#">Add Devices</a> .
<b>Mass Configuration</b>	Accesses the options involved in the <a href="#">Mass Configuration</a> feature.
<b>View Data Log</b>	Creates a data log for the selected device.  <b>NOTE:</b> If a data log cannot be generated for the type of device selected, an error message appears. For information about the available logs, see <a href="#">Data logs</a> .

## "Set Rack Properties" display

Use this display to do the following:



Edit the **Power Settings** only when they are known to be inaccurate. For information about how these settings are initially assigned to a Metered or Switched Rack PDU, and how the settings are used to determine the kWatt values for the racks, see [Rack kWatt values](#).

<b>Rack Name</b>	Select the name of the rack for the selected device. <b>NOTE:</b> Use <a href="#">New</a> to add a rack name to the list.
<b>Power Settings (Metered and Switched Rack PDUs only)</b>	
<b>Voltage</b>	Edit the AC voltage (VAC) rating.
<b>Power Factor</b>	Edit the power factor.

## "Device Identification" display

Use this display to define the **System Name**, **Contact**, and **Location** values for the selected device.

## "View Group Membership" display

Use this display to view the list of device groups and sub-groups to which the selected device is assigned.

# “Device Details” display

## Overview

To access more details for a monitored device:

- Double-click a device in the “Device List” frame.
- Highlight a device in the “Device List” frame and select **Device Details** in the View menu.
- Right-click a device in the “Device List” frame and select **Device Details** from the right-click menu.
- Double-click a device in an Event log, or in the Reports and Data logs.

The type of details display that appears depends on the selected device:

- For monitored InfraStruXure Manager servers, the “Server Log On” display appears.
- For InfraStruXure PDUs, an InfraStruXure PDU details display appears.
- For some Metered Rack Power Distribution Unit (Rack PDU) versions, a Metered Rack PDU details display appears.
- For all other devices, an HTML “Device Details” display allows direct access to the management application at the device.

## HTML “Device Details” display

With the exception of the devices identified in the [Overview](#), the InfraStruXure Manager server uses this display to directly accesses the management application for its monitored devices.

- If the device uses a PowerChute Business Edition (PCBE) Agent to connect to the network, that agent's logon display appears for all users, including the Administrator.
- If the device uses a management card to connect to the network, and the settings in the “[HTTP Properties](#)” display are properly defined, the following occurs:
  - For the Administrator, the management application for the device is displayed automatically in the HTML frame.
  - For a General user, a logon display appears.



For more information about Administrator and General access, see [Administrator versus General access](#).

In addition to displaying a [Refresh](#) button, the HTML frame identifies whether the InfraStruXure Manager server is reporting a [Normal](#), [Warning](#) or [Critical](#) status for the device. You can click a drop-down menu to identify the warning or critical conditions that exist. Typically this status matches the status the device is reporting. However, the status can report violations of the InfraStruXure Manager [Global Device Thresholds](#), thresholds which have no direct effect on the device.



To use a management application that appears in the HTML frame, see the help for that application, as well as any documentation, such as a users guide, that may be available.

See also

## "HTTP Properties" display

Use this display to define the parameters the InfraStruXure Manager server uses to access the management card at a monitored device using the [HTML "Device Details" display](#).

<b>Username and Password</b>	<p>Identifies the values the InfraStruXure Manager server uses to log on to a device's management card automatically. The automatic logon occurs only for the InfraStruXure Manager Administrator, and not for a General user.</p> <p>To use the <a href="#">HTML "Device Details" display</a> to access a device, the username or password must match the access values required for administrative access to that device's management card.</p> <p><b>NOTE:</b> For more information about the two levels of access, see <a href="#">Administrator versus General access</a>.</p>
<b>Port Number</b>	<p>Identifies the port used for HTTP (80, by default) or HTTPS (443, by default) communication with the device's management card.</p> <p>To use the <a href="#">HTML "Device Details" display</a> to access a device, this port number must match the port number used at that device's management card.</p> <p><b>NOTE:</b> To access the logon display for a PCBE agent, this port number must be 3052.</p>
<b>Protocol</b>	<p>Identifies the protocol used to communicate with the device's management card.</p> <p>To use the <a href="#">HTML "Device Details" display</a> to access a device, this protocol must match the protocol used at that device's management card.</p> <p><b>NOTE:</b> To access the logon display for a PCBE agent, HTTP must be the selected protocol.</p>

# InfraStruXure PDU details

## Overview

This “Device Details” display includes device information, and up to ten **Status** options, depending on the InfraStruXure Power Distribution Unit (PDU) type. Except for **Output Power**, **System Breakers**, and **System Components**, the **Status** options provide thresholds and other configurable settings.



Note

One **Status** option, **Bypass Input**, is available only for a dual-input InfraStruXure PDU.

<b>Device Information (General option)</b>	Identifies the device by its <b>Model Name</b> , <b>Model Number</b> , <b>Serial Number</b> , <b>Manufacture Date</b> , <b>Firmware Revision</b> , and <b>Hardware Revision</b> .
<b>Branch Breakers</b>	Accesses four tabs that each display 21 breakers, and that provide settings that describe those breakers.
<b>Bypass Input</b>	Accesses information about the bypass input voltage for a dual-input InfraStruXure PDU, as well as settings for three thresholds.
<b>Contact Closures</b>	<b>Contact:</b> Identifies each contact zone by number.
	<b>Name:</b> Identifies the user-configurable description assigned to each zone.
	<b>Normal State:</b> Identifies either <b>Open</b> or <b>Closed</b> as the normal position for each contact.
	<b>Current State:</b> Identifies the status of each contact.

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<b>Ground Monitor</b>	<b>Current:</b> Identifies the ground wire current.
	<b>Threshold:</b> Identifies the ground current, in amps, at or above which a threshold violation occurs.
	<b>Alarm:</b> Identifies whether a violation of the ground-current threshold exists.
Main Input	Accesses information about the main input voltage, and settings for the input voltage thresholds.
Output Current	Accesses information about the output current, and settings for the output current thresholds.
<b>Output Power</b>	<b>Maximum Power:</b> Identifies the maximum power output rating for the InfraStruXure PDU.
	<b>Load (kVA):</b> Identifies the maximum load, in kVA, that each phase can support.
	<b>Load (kWatts):</b> Identifies the maximum load, in kilowatts, that each phase can support.
	<b>Power Factor:</b> Identifies the power factor for each phase, as well as the overall power factor for all phases.
	<b>Total kWatts:</b> Identifies the total kilowatts for all phases.
	<b>Total kVA:</b> Identifies the total kVA for all phases.
Output Voltage	Accesses information about the output voltage, and settings for the output voltage thresholds.

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<b>System Breakers</b>	<p><b>Input Breakers:</b> Identifies the <b>Main Input Breaker Position (Open or Closed)</b> and <b>Main Input Breaker Rating</b>.</p> <p>For a dual-input InfraStruXure PDU, the <b>Bypass Input Breaker Position (Open or Closed)</b> and <b>Cross Tie Breaker Position (Open, Closed, or Not Installed)</b> are identified.</p> <p><b>NOTE:</b> A single-input InfraStruXure PDU reports <b>Not Installed</b> for both the <b>Bypass Input Breaker Position</b> and <b>Cross Tie Breaker Position</b>.</p> <p><b>Q Breakers:</b> Identifies the <b>Q-Breaker Mode</b>, and the position and rating for the Q1, Q2, and Q3 breakers, for InfraStruXure PDUs that have these breakers.</p> <p><b>NOTE:</b> See <b>Q-Breaker Modes</b>.</p> <p><b>Panel Feed Breaker:</b> Identifies the <b>Panel Feed</b> status for InfraStruXure PDUs that have this breaker (no Q breakers).</p>
<b>System Components</b>	Identifies the components that the InfraStruXure PDU includes, and whether the <b>Emergency Power Off (EPO) Mode</b> is armed.

## Branch Breakers

Up to four tabs representation the InfraStruXure PDU breaker panels. Each tab illustrates 21 breaker positions:

- **Positions 1-41:** Displays odd-numbered breakers from 1 through 41
- **Positions 2-42:** Displays even-numbered breakers from 2 through 42
- **Positions 43-83:** Displays odd-numbered breakers from 43 through 83
- **Positions 44-84:** Displays even-numbered breakers from 44 through 84

Each tab provides the following information about its positions:

<b>RDP Feed</b>	Identifies whether a breaker supports a remote distribution panel (RDP).
<b>Current (Amps)</b>	Identifies the output current for each breaker.
<b>Alarm</b>	Identifies whether an overcurrent or undervoltage threshold violation exists at a breaker.
<b>Description</b>	Identifies a description for each breaker which typically identifies the racks or devices that connect to each breaker for power.
<b>Breaker Rating</b>	Identifies the maximum current each breaker can support without being tripped.
<b>Undervoltage (%)</b>	Identifies, as a percentage of the <b>Breaker Rating</b> , the current that will result in an undervoltage alarm for each breaker.
<b>Overcurrent (%)</b>	Identifies, as a percentage of the <b>Breaker Rating</b> , the current that will result in an overcurrent alarm for each breaker.

The **Rating (Amps)**, **Description**, **Overcurrent (%)**, and **Undervoltage (%)** columns report information defined by settings in the “PDU Breaker Panel Settings” display for each position.



Note

Unless a current monitoring sensor board is installed at the breaker panel, no values are displayed for the **Current (Amps)**, **Overcurrent (%)**, **Undervoltage (%)**, and **Alarm** columns, and the **Overcurrent** and **Undervoltage** thresholds are disabled in the “PDU Breaker Panel Settings” display.

The “PDU Breaker Panel Settings” display, accessed by double-clicking a listed position, includes a **Tied to Next Panel Position** option to identify whether the breaker position is linked to the next position at the breaker panel.



Note

Any change made to a **Breaker Rating** or threshold setting for a position in the “PDU Breaker Panel Settings” display will change that setting at any positions tied to the changed position.

## Bypass Input

Use this InfraStruXure PDU details **Status** option to view information about the bypass input power at a dual-input InfraStruXure PDU, and to set voltage thresholds.

<b>Voltage Table</b>	Identifies the phase-to-phase ( <b>L-L</b> ) and phase-to-neutral ( <b>L-N</b> ) voltages for each phase, and identifies whether a phase has an alarm.
<b>Undervoltage Threshold</b>	Defines the percentage of the phase-to-neutral ( <b>L-N</b> ) voltage to be used to determine if an undervoltage exists at any phase.
<b>Ovvervoltage Threshold</b>	Defines the percentage of the phase-to-neutral ( <b>L-N</b> ) voltage to be used to determine if an overvoltage exists at any phase.

## Main Input

Use this InfraStruXure PDU details **Status** option to view information about the main input power, and to set voltage thresholds.

<b>Nominal Input Voltage</b>	Identifies the voltage rating for the main input.
<b>Input Voltage Table</b>	Identifies the line-to-line voltages present for <b>L1-2</b> , <b>L2-3</b> , and <b>L3-1</b> , when a transformer is part of the InfraStruXure PDU, and identifies whether a phase has an alarm.  <b>NOTE:</b> When a transformer is not present, the <b>L1</b> , <b>L2</b> , and <b>L3</b> voltages are reported.
<b>Undervoltage Threshold</b>	Defines a percentage of the <b>Nominal Input Voltage</b> to be used to determine if an undervoltage exists at any phase.
<b>Ovvervoltage Threshold</b>	Defines a percentage of the <b>Nominal Input Voltage</b> to be used to determine if an overvoltage exists at any phase.

## Output Current

Use this InfraStruXure PDU details **Status** option to view information about the output current, and to set current thresholds.

<b>Current Information</b>	<b>Panel Breaker Rating:</b> Identifies the total Amps the branch breaker panel is rated to support.
	<b>Current (Amps):</b> Identifies the current present on each phase.
	<b>Alarms:</b> Identifies whether a violation of an overcurrent or undercurrent threshold exists at a phase.
	<b>Undercurrent Threshold:</b> Defines a percentage of the rated current that will be used to determine if an undercurrent exists at an output phase.
<b>Neutral Current</b>	<b>Overcurrent Threshold:</b> Defines a percentage of the rated current that will be used to determine if an overcurrent exists at an output phase.
	<b>Current (Amps):</b> Identifies the rated neutral current.
	<b>Threshold:</b> Defines a percentage of the rated neutral current that will be used to determine if an overcurrent exists.
	<b>Alarms:</b> Identifies whether a violation of the neutral overcurrent threshold exists.

## Output Voltage

Use this InfraStruXure PDU details **Status** option to view information about the output voltage, and to set voltage thresholds.

<b>Output Information</b>	<b>Voltage Table:</b> Identifies the phase-to-phase ( <b>L-L</b> ) and phase-to-neutral ( <b>L-N</b> ) voltages for each phase, and identifies whether a phase has an alarm.
	<b>Undervoltage Threshold (L-N):</b> Defines the percentage of the phase-to-neutral ( <b>L-N</b> ) voltage to be used to determine if an undervoltage exists at any phase.
	<b>Ovvervoltage Threshold (L-N):</b> Defines the percentage of the phase-to-neutral ( <b>L-N</b> ) voltage to be used to determine if an overvoltage exists at any phase.
<b>Frequency</b>	<b>Frequency:</b> Identifies the frequency, in Hz, of the output voltage.
	<b>Threshold Range (+/-):</b> Defines the variance, in Hz, from the rated frequency that will cause a threshold violation.
	<b>Alarms:</b> Identifies whether a violation of the frequency threshold exists.

## Q-Breaker Modes

The **Q-Breaker Mode** is determined by the open and closed conditions of the **Q1**, **Q2**, and **Q3** circuit breakers, as described in the following table.



Note

Each of the modes represents an informational, warning, or critical InfraStruXure PDU event. The table identifies the severity level for each mode.

<b>System Off (Critical)</b>	All three Q breakers open.  If the UPS is on, it switches to battery operation due to the loss of input voltage ( <b>Q1</b> open); however, <b>Q2</b> open prevents any output from the UPS from reaching the breaker panel, and <b>Q3</b> open prevents the InfraStruXure PDU input voltage from being routed to the breaker panel.
<b>On Battery (Warning)</b>	<b>Q1</b> and <b>Q3</b> open, <b>Q2</b> closed.  The UPS switches to battery operation due to the loss of input voltage ( <b>Q1</b> open); <b>Q2</b> closed allows the battery-generated output power from the UPS to be passed to the breaker panel; <b>Q3</b> open prevents the InfraStruXure PDU from routing its input voltage to the breaker panel.
<b>Maintenance Bypass (Informational)</b>	<b>Q1</b> and <b>Q2</b> open, <b>Q3</b> closed.  Maintenance at the UPS can be performed while the UPS is isolated from the InfraStruXure PDU ( <b>Q1</b> and <b>Q2</b> open); <b>Q3</b> closed routes the InfraStruXure PDU input voltage to the breaker panel.
<b>Q1 Atypical Bypass (Warning)</b>	<b>Q1</b> open, <b>Q2</b> and <b>Q3</b> closed.  The UPS switches to battery operation due to the loss of input voltage ( <b>Q1</b> open); the battery-generated output power from the UPS ( <b>Q2</b> closed) and the InfraStruXure PDU input voltage ( <b>Q3</b> closed) are both routed to the breaker panel.

<b>No Panel Feed (Critical)</b>	<b>Q2 and Q3 open, Q1 closed.</b>  The InfraStruXure PDU input voltage is routed to the UPS ( <b>Q1</b> closed), but no power is provided to the breaker panel by either the UPS ( <b>Q2</b> open) or the InfraStruXure PDU input voltage ( <b>Q3</b> open).  <b>NOTE:</b> For an InfraStruXure PDU without Q breakers, this mode indicates that the panel feed breaker is open.
<b>UPS Operation (Informational)</b>	<b>Q3 open, Q1 and Q2 closed.</b>  The InfraStruXure PDU input voltage is routed to the UPS ( <b>Q1</b> closed), and the output from the UPS is routed to the breaker panel ( <b>Q2</b> closed); <b>Q3</b> open prevents the InfraStruXure PDU from routing its input voltage to the breaker panel.
<b>Q2 Atypical Bypass (Warning)</b>	<b>Q2 open, Q1 and Q3 closed.</b>  The InfraStruXure PDU input voltage is routed to the UPS ( <b>Q1</b> closed), but no power is provided to the breaker by the UPS ( <b>Q2</b> open); the InfraStruXure PDU input voltage is routed to the breaker panel ( <b>Q3</b> closed).
<b>Forced Bypass (Critical)</b>	All three Q breakers closed.  The InfraStruXure PDU input voltage is routed to the UPS ( <b>Q1</b> closed) and to the breaker panel ( <b>Q3</b> closed); output power from the UPS is also routed to the breaker panel ( <b>Q2</b> closed).

## Metered Rack PDU details

The InfraStruXure Manager server can use the **HTML “Device Details” display** to access the management application for most Metered Rack PDUs. This Metered Rack PDU **“Device Details” display** provides device information, **Configuration (Settings)**, and **Status** options for the Metered Rack PDU models that cannot be accessed using the **HTML “Device Details” display**.

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<b>Device Information (General option)</b>	Identifies the device by its <b>Model Name</b> , <b>Model Number</b> , <b>Serial Number</b> , <b>Manufacture Date</b> , <b>Firmware Revision</b> , and <b>Hardware Revision</b> .
<b>Settings (Configuration option)</b>	<p>Defines <b>L1</b>-through-<b>L3</b> current and load thresholds for 3-phase Metered Rack PDUs, or <b>L1</b>, for single-phase models:</p> <p><b>Overload:</b> If the available current is at or above the defined Amps, an overload event occurs.</p> <p><b>Overshoot:</b> If the available current is at or above the defined Amps, an overshoot event occurs.</p> <p><b>Undershoot:</b> If the available current falls below the defined Amps, an undershoot event occurs.</p> <p><b>NOTE:</b> If the <b>Undershoot</b> threshold is <b>0</b>, an undershoot event occurs when the current falls to 0 Amps.</p> <p>The threshold settings must follow this rule:</p> <p><b>0 &lt;= Undershoot &lt; Overshoot &lt;=Overload &lt;=22 Amps</b></p> <p>Attempts to define threshold values that violate this rule will fail:</p> <ul style="list-style-type: none"> <li>If the <b>Undershoot</b> threshold is <b>5</b>, to change the <b>Overshoot</b> threshold to <b>5</b> or less you must first change the <b>Undershoot</b> threshold to a value that is less than the <b>Overshoot</b> threshold you want to set, and click <b>Apply</b> to save that change.</li> <li>If the <b>Overshoot</b> threshold is <b>12</b>, to change the <b>Overload</b> threshold to less than <b>12</b> you must first change the <b>Overshoot</b> threshold to a value that is equal to or less than the <b>Overload</b> threshold you want to set, and click <b>Apply</b> to save that change.</li> </ul>
	<b>Enable Audible Alarm:</b> Enables (the default setting) or disables the audible alarm at the Metered Rack PDU.

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<b>Outlet Status (Status option)</b>	Uses a icon to report the status of each available phase, and provides the following information for a phase:  <b>Current:</b> Identifies the output current, in Amps  <b>Threshold:</b> Identifies the acceptable current range, as defined by the <b>Undercurrent</b> and <b>Overshoot</b> threshold settings in the <b>Settings</b> option.  <b>Overload:</b> Identifies the current, in Amps, that represents an overload, as defined by the <b>Overload</b> threshold setting in <b>Settings</b> option.  <b>Status:</b> Reports <b>Normal</b> , for no threshold violations, or identifies a violated threshold ( <b>Undercurrent</b> , <b>Overshoot</b> , or <b>Overload</b> ).
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# “Recommended Actions” frame

This frame displays information about the device selected in the “Device List” frame:



Note

No information is displayed when multiple devices are highlighted.

- **Hostname, Model Name, Contact, and Location** values for the device
- The current condition, with a status icon that identifies its severity
  -  For more information about status icons and the conditions they represent, see [Status and event severity levels](#).
- A description of the condition
- The recommended actions



Note

If multiple warning or critical conditions exist, each condition is listed.

# “Power Zones” display

This display appears when you select **Power Zones** in the navigation bar or **View menu**. It has three main elements:

“Power Zones” frame	The left frame lists the <b>Power zones</b> and allows you to select which Power Zone or Power Source is displayed in the <b>Devices</b> or <b>Diagram</b> tabs.
<b>Devices</b> tab	This tab has two frames: <ul style="list-style-type: none"><li>• The “Device List” frame provides status and “Configure Columns” display information for the devices assigned to the zone or source selected in the “Power Zones” frame.</li><li>• The “Recommended Actions” frame provides more detail about the status of the device selected in the “Device List” frame.</li></ul> <p><b>NOTE:</b> Double-clicking a device accesses its management application, or a display that provides more information about that device. See “Device Details” display.</p>
<b>Diagram</b> tab	This tab displays the diagrams for the <b>Power zones</b> you created. <b>NOTE:</b> For information about the two basic types of diagrams, see <b>InfraStruXure PDU diagrams</b> and <b>Device diagrams</b> .

# Power zones

## Overview

The power zones feature allows you to create diagrams that represent the path that power travels, from a power source, through the APC power distribution devices, to the load equipment those devices support.

You create the diagrams by assigning the power sources and the monitored devices to a power zone in the “Power Zones” frame; you use the procedures provided in [Power zone management](#) to manage those power zones.

## “Power Zones” frame

This frame lists the power zones you create, as well as two selections which cannot be deleted or renamed:

- **All Devices:** When selected, all the devices the InfraStruXure Manager server monitors are listed in the [Devices](#) tab.
- **Unassigned:** When selected, all the devices not currently assigned to a power zone are listed in the [Devices](#) tab.



For more information about the [Devices](#) tab, see “Device List” frame.

No diagrams appear in the **Diagrams** tab when **All Devices** or **Unassigned** is selected. The type of diagram that appears for a power zone depends on the following:

- **InfraStruXure PDU diagrams:** Illustrate power zones that have one of the following InfraStruXure PDUs assigned to at least one power source:
  - 60 kW or 150 kW InfraStruXure PDU: A PDU with a panel feed breaker that is typically used with a large, remote 3-phase UPS (Symmetra or Silcon) to provide power to the power zone breaker panels.
  - 40 kW or 80 kW InfraStruXure PDU: A PDU that typically provides input power to a 3-phase UPS (Symmetra or Silcon) assigned to the same power source as the PDU. The PDU and its associated UPS must both be assigned to the same power source before an InfraStruXure PDU diagram for that power source can be displayed in the **Diagrams** tab.
- **Device diagrams:** Illustrate the power relationship of devices assigned to a power zone that does not have an InfraStruXure PDU, or that has an InfraStruXure PDU with system breakers, but a 3-phase UPS (Symmetra or Silcon) has not yet been assigned to the same power source as that InfraStruXure PDU. For these power zones, a device diagram appears when a device is selected; no diagram appears when the power zone or a power source is selected.



For information about the icons used to indicate status conditions, see [Status and event severity levels](#).

## Power zone management

Two menus provide the options you use to manage the power zones when the “Power Zones” display is selected:

- Right-click menu: **Add Power Zone**, **Add Power Source**, **Rename**, and **Remove**
- Edit menu: **Add Power Zone**, **Add Power Source**, and **Remove Selected Zone or Source**



Unless you log on as the Administrator, these menu options are disabled. See [Administrator versus General access](#).

You use the procedures described in the following table to create a power zone, as follows:

1. Add the power zone.
2. Add the power sources (at least one, but no more than two).
3. Assign the devices to the appropriate power source.
4. Arrange the devices in the order in which they connect with each other.
5. Assign the appropriate rack names to devices.



Note

When the “Power Zones” display is selected, you can use an **Edit menu** option (**Power Zones Wizard**) to launch the **InfraStruXure Manager Power Zones Wizard**. This wizard automates the process of creating power zones for the devices the InfraStruXure Manager server monitors on its APC LAN.

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<b>To Add a Power Zone</b>	1. Select <b>All Devices</b> . 2. Select <b>Add Power Zone</b> in the right-click or Edit menu.
<b>To Add a Power Source</b>	1. Select the power zone. 2. Select <b>Add Power Source</b> in the right-click or <b>Edit</b> menu.
<b>To Assign Devices to a Power Source</b>	1. Select the <b>Unassigned</b> device group. 2. In the <b>Devices</b> tab, select the devices you want to assign to the power source. 3. Drag the devices to the power sources.
<b>To Arrange Devices</b>	This procedure is critical to creating accurate <b>Device diagrams</b> ; it has no affect on <b>InfraStruXure PDU diagrams</b> except to represent the relationship of the devices assigned to a power zone, as displayed in the “Power Zones” frame.  1. Select a device in the power zone and drag it to the device to which it connects for its power. 2. Repeat until all devices are connected in the order in which they receive power.
<b>To Set Rack Names</b>	This procedure is critical to creating accurate <b>InfraStruXure PDU diagrams</b> ; it has no affect on <b>Device diagrams</b> . 1. Select a device in the <b>Devices</b> tab. 2. Right-click and select <b>Set Rack Name</b> . 3. Assign the rack name, if the appropriate name is not already assigned. 4. Repeat the preceding steps for the other devices.
<b>To Remove a Power Source or Power Zone</b>	1. Select the zone or source. 2. Select <b>Remove Selected Zone or Source</b> in the right-click or <b>Edit</b> menu.  <b>NOTE:</b> Any devices assigned to the deleted zone or source are moved to <b>Unassigned</b> ; they are not deleted.
<b>To Rename a Power Zone or Source</b>	Right-click the power zone or power source, and select <b>Rename</b> .

# InfraStruXure PDU diagrams

## Overview

When a power zone contains a 60 kW or 150 kW InfraStruXure PDU, or a 40 kW or 80 kW InfraStruXure PDU that has its associated 3-phase UPS (Symmetra or Silcon) assigned to the same power source, a single diagram is created that identifies the following power zone components:

- The InfraStruXure PDUs
- The UPS associated with a system-bypass InfraStruXure PDU, when this type of PDU is assigned to the power zone
- The racks that have been identified as containing the devices assigned to the power zone
- The power path from the InfraStruXure PDUs to the racks.

In addition, the InfraStruXure PDU diagram does the following:

- For an InfraStruXure PDU:
  - Uses an icon to identify the severity associated with the identified InfraStruXure PDU breaker mode.
  - Includes status information for the InfraStruXure PDU contact closures.
  - Allows you to click an InfraStruXure PDU graphic to access the InfraStruXure PDU details for that PDU.
- For a 3-phase UPS (Symmetra or Silcon):
  - Uses an icon to identify the status of any UPS associated with a 40 kW or 80 kW InfraStruXure PDU.
  - Allows you to click a UPS graphic to access the HTML “Device Details” display for that UPS.

- For device racks:
  - Uses icons to report whether a warning or critical condition exists at one or more of the devices assigned to a rack. No icon appears for a rack when all of its devices are operating normally.
  - Allows you to click a rack graphic to access a list of the devices assigned to that rack, as well as information about the status and kWatts for the rack.



Note

Double-clicking a rack's name accesses more information about that rack. See [Configure Racks](#).



Note

- Allows you to click a listed device to access the “Device Details” display for that device.

For InfraStruXure PDU diagrams to accurately portray a power zone, each device assigned to that power zone must have its rack name defined: a rack appears in the diagram only when at least one device assigned to the power zone uses that rack name. See “[Set Rack Properties](#)” display.

For an example of what a power zone that uses an InfraStruXure PDU can look like in the “Power Zones” frame, see [Power zone example](#); for an example of an InfraStruXure PDU diagram, see [InfraStruXure PDU diagram example](#).

### Power zone example

This example is for a dual-source power zone with a 40 kW or 80 kW InfraStruXure PDU and 3-phase Symmetra UPS for each power source.

This example shows how the power zone would appear in the “Power Zones” frame.

Each device is identified in the “Power Zones” frame by its system name (if a system name has been defined), with its hostname (or IP address if a hostname is undefined) in parentheses.



Note

A power zone that uses an InfraStruXure PDU typically has more devices, and more device racks, than this example.

The power zone in this example was created using the InfraStruXure Manager Power Zones Wizard. Once a power zone is created, you can click and drag devices to arrange the devices in the order in which they receive power.

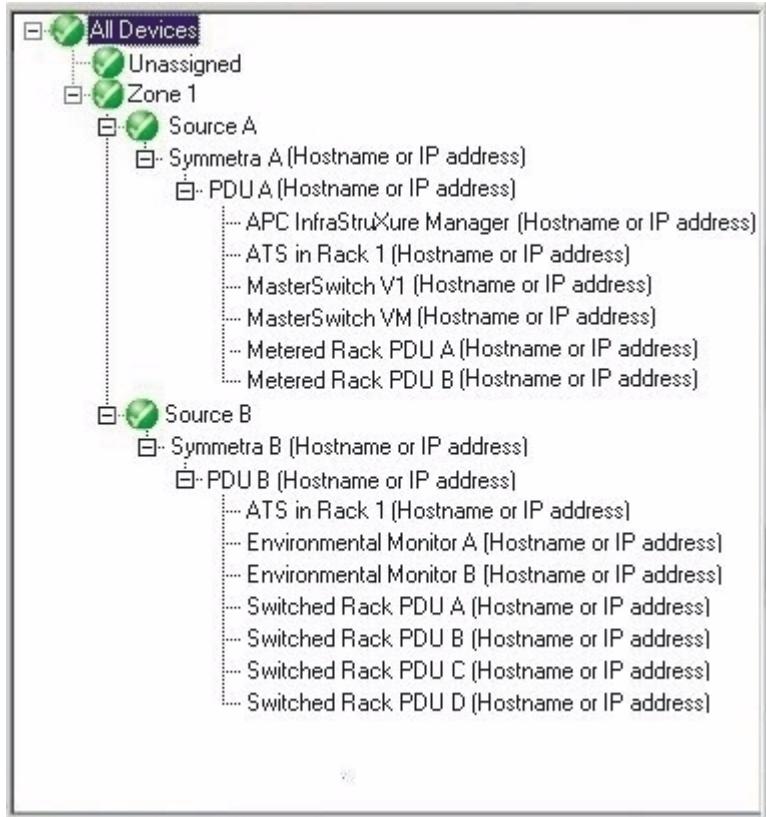


Note

Arranging the devices has no affect on the power zone diagram. It only represents the power relationship of the devices as shown in the “Power Zones” frame.

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## InfraStruXure Manager



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### InfraStruXure PDU diagram example

The example provided is for a power zone with a **40 kW or 80 kW InfraStruXure PDU** and 3-phase Symmetra UPS for each power source. The following conditions would change the appearance of the InfraStruXure PDU diagram as described:

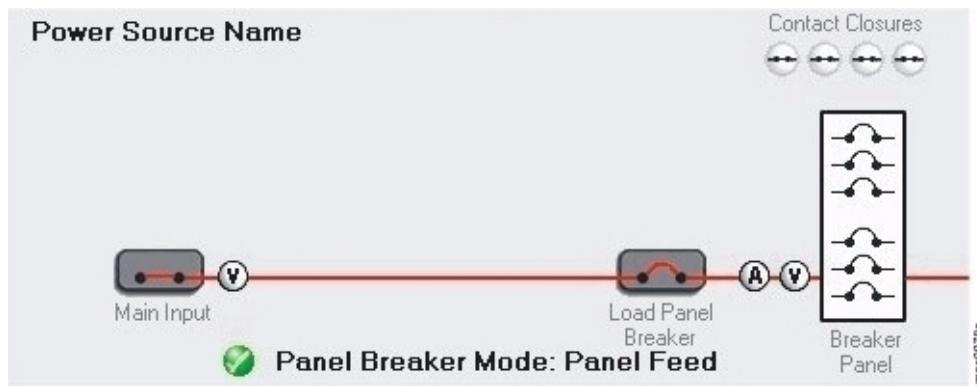
- For a power zone with only one power source, only one InfraStruXure PDU graphic appears in an InfraStruXure PDU diagram.

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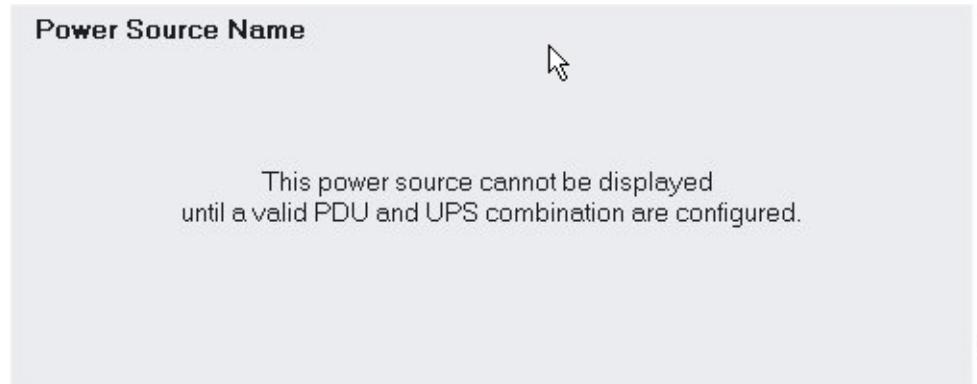
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- For a power source with a 60 kW or 150 kW InfraStruXure PDU, the InfraStruXure PDU diagram uses this graphic to represent that power source:



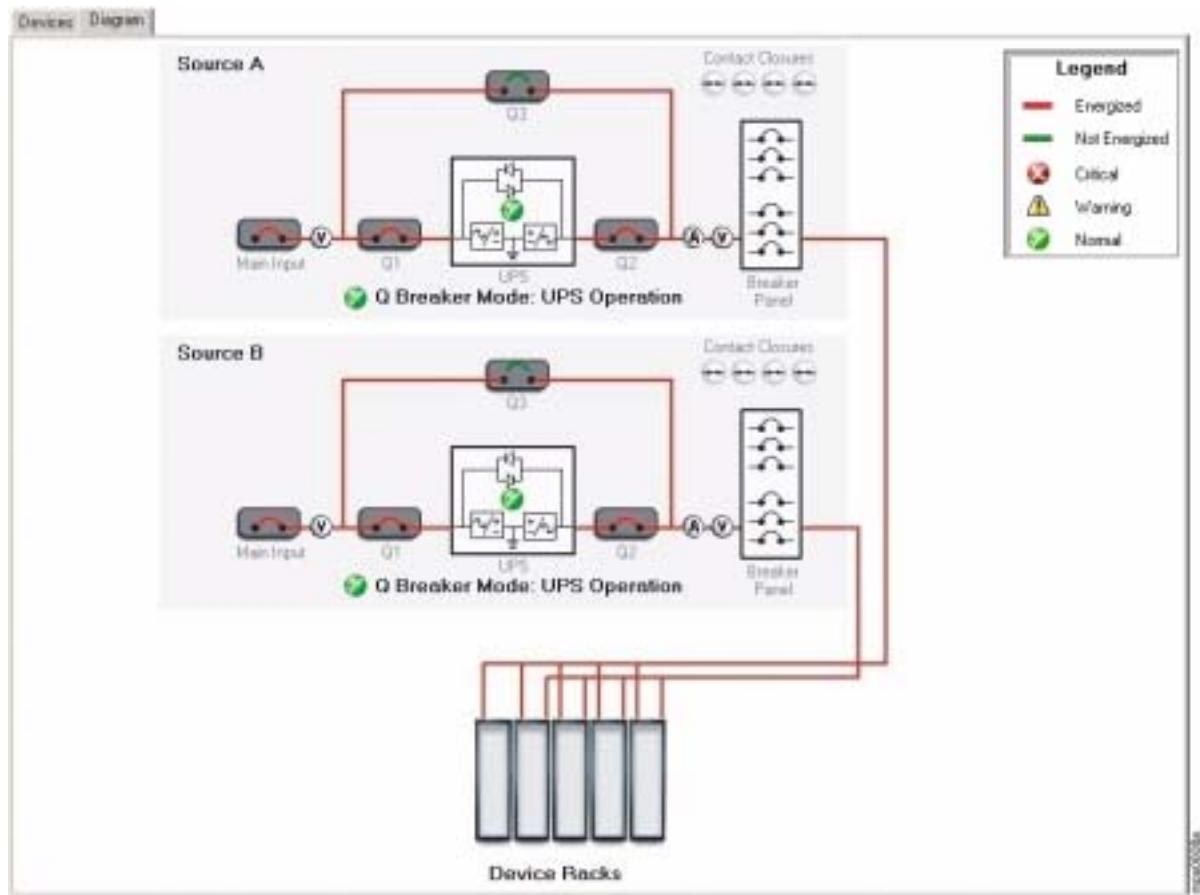
- When two power sources are assigned to a power zone, and one of those sources does not have either a 60 kW or 150 kW InfraStruXure PDU, or a 40 kW or 80 kW InfraStruXure PDU and its associated 3-phase UPS (Symmetra or Silcon), assigned to it, the InfraStruXure PDU diagram uses this graphic to represent that power source:



For information about the legend that appears in the upper-right corner of all diagrams, see [Diagram legend](#).

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### Diagram legend

Every diagram, including the [Device diagrams](#), includes a legend in the upper-right corner. This legend identifies the icons used to indicate **Critical**, **Warning**, and **Normal** conditions, as well as the power status of the power paths:

- Red lines illustrate power paths that have power present (**Energized**).
- Green lines illustrate power paths that have no power present (**Not Energized**).



For more information about the warning, critical, and normal conditions, see [Status and event severity levels](#).

# Device diagrams

## Overview

When a power zone does not contain a power source that has either a 60 kW or 150 kW InfraStruXure PDU, or a 40 kW or 80 kW InfraStruXure PDU and the 3-phase UPS (Symmetra or Silcon) associated with that PDU, a set of diagrams is created. Each diagram identifies the power relationship for one of the devices assigned to that power zone.

Typically such a power zone would have only one source, but it could have two. The diagrams created for each source are independent of the other source, and only illustrate the devices assigned to that power source.

Each device that appears in a diagram is identified by model and system name, and an icon identifies the status of the device. You can click on a device to access the “[Device Details](#)” display for that device. For these diagrams to accurately portray the power relationship of the devices within a power zone, the devices must be assigned to each other in the order in which they receive power. For example:

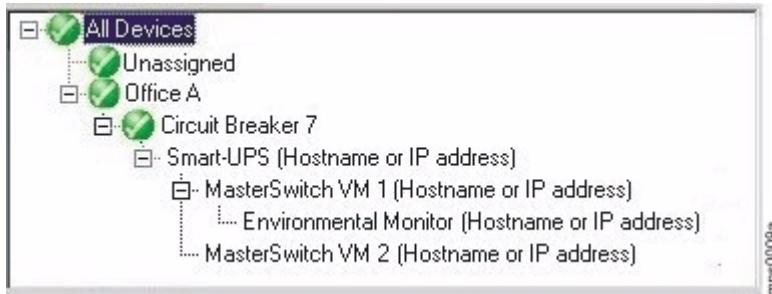
- In a power zone with a Smart-UPS that provides power to two MasterSwitch VM devices, the MasterSwitch VM devices must be assigned to the Smart-UPS.
- If one of the MasterSwitch VM devices provides power to another APC device, such as an Environmental Monitoring Unit, that APC device must be assigned to that MasterSwitch VM device.



For information about how the power zone described above would look, see [Power zone example](#); for information about the types of diagrams that would appear for this example, see [Diagram examples](#); for information about how to create power zones, including information about assigning devices, see [Power zone management](#).

## Power zone example

The following is power zone would appear in the “Power Zones” frame for the example cited in [Device diagrams](#). Each device is identified in the “Power Zones” Frame by its system name (if a system name has been defined), with its hostname (or IP address if a hostname is undefined) in parentheses:



The diagram that appears in the **Diagram** tab depends on the device you select in the power zone (no diagram appears when you select a power zone or power source). However, as shown in the [Diagram examples](#), all diagrams show the selected device, any devices that receive power directly from that device, and all of the devices through which the selected device connects to the power source.

## Diagram examples

You can click a device graphic to access its “Device Details” display.

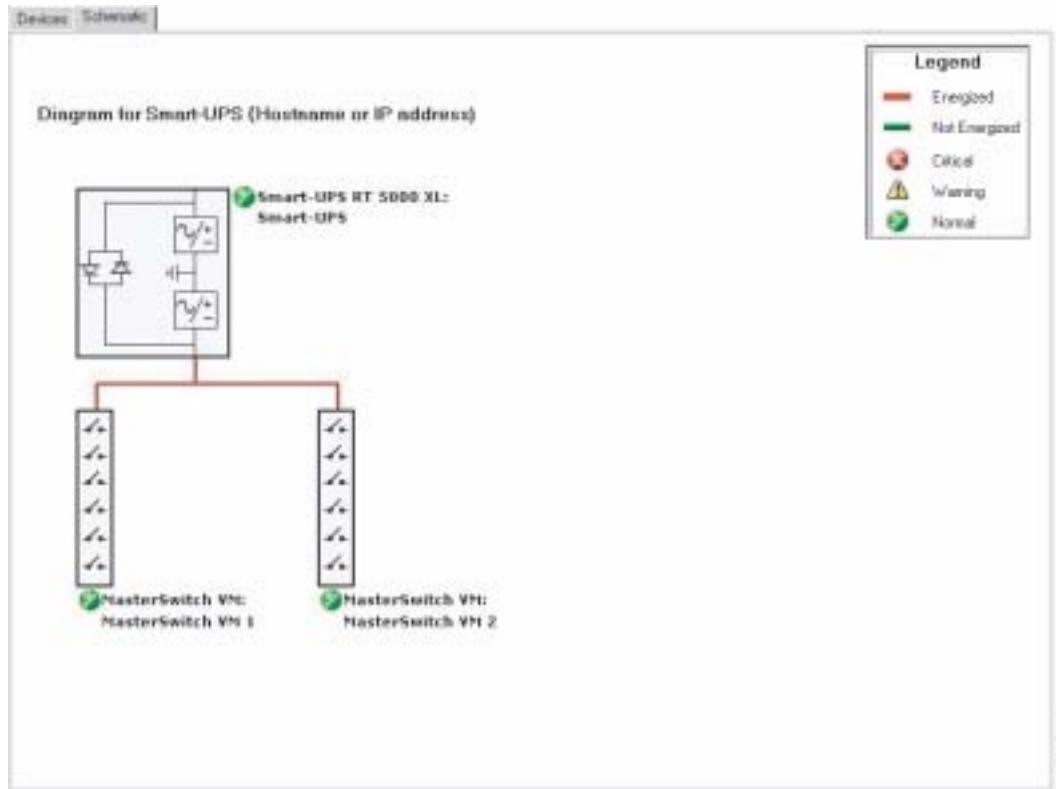
- Smart-UPS diagram
- MasterSwitch VM 1 (or Environmental Monitor) diagram
- MasterSwitch VM 2 diagram



For information about the legend in the upper-right corner of each diagram, see [Diagram legend](#).

**Smart-UPS diagram.** The Smart-UPS in the Power zone example was selected.

- The Smart-UPS provides the power for the power source.
- The only APC devices that obtain power directly from the Smart-UPS are two MasterSwitch VM devices.



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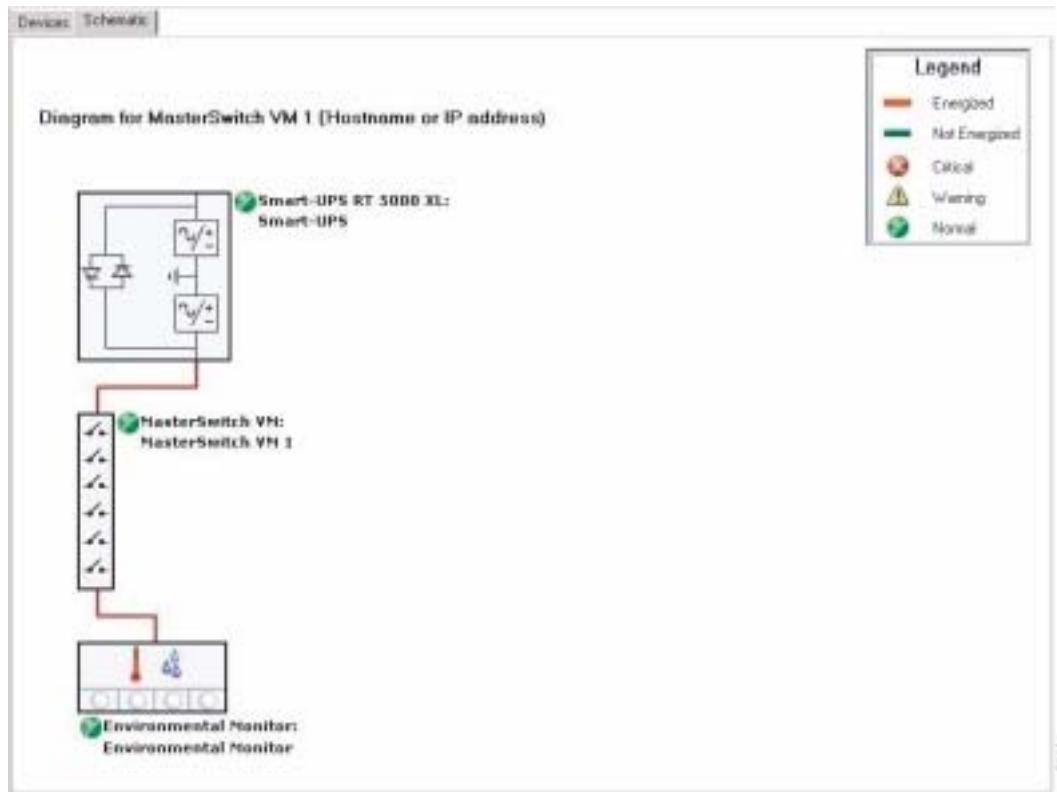
**MasterSwitch VM 1 (or Environmental Monitor) diagram.** The MasterSwitch VM 1 device in the Power zone example was selected.

- The Smart-UPS provides the power for the power source.
- The MasterSwitch VM device, which obtains its power from the Smart-UPS, provides power to the environmental monitoring device.



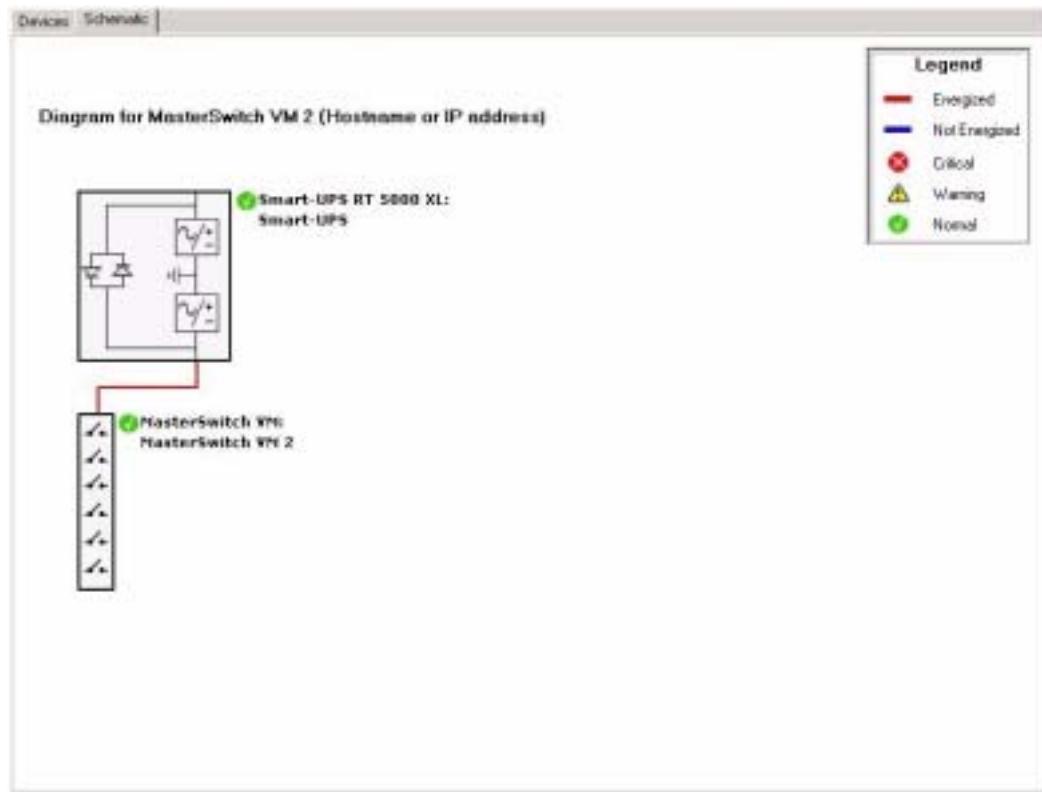
Note

The same basic diagram (but with a different name) would appear if the Environmental Monitoring Unit was selected, since all diagrams show the APC devices through which a selected device obtains its power.



**MasterSwitch VM 2 diagram.** The MasterSwitch VM 2 device in the Power zone example was selected.

- The Smart-UPS is the source of power for the other
- The MasterSwitch VM device, obtains its power from the Smart-UPS, provides no power to other APC devices.



# "Reports" display

This display appears when you select **Reports** in the navigation bar or View menu.

The left frame groups the available reports by main report type: **Environmental**, **Exceptions**, **Rack PDU**, and **UPS**. When you select a report from the left frame, a “Select Report Filter” display allows you to identify the device groups to include in the report. For one report, **Downtime**, this filter also allows you to define the date range covered by the report.



See Reports.

# “Logs” display

This display appears when you select **Logs** in the navigation bar or **View** menu.

Use the **Log Type** options to select the type of log you want to create:

- An **Event log** records information about status changes that occur at the monitored devices, as well as system information about the InfraStruXure Manager server.
- **Data logs** record information about the monitored ATS, InfraStruXure PDU, Rack PDU, Symmetra UPS, Silcon UPS, and environmental devices.

# File menu

## Overview

Use the menu options to do the following:

<b>Change Server</b>	Log on to a different InfraStruXure Manager v4.2 server using the “Server Log On” display.  <b>NOTE:</b> You cannot use this option to log on to any other InfraStruXure Manager version.
<b>Backup Server</b>	Save InfraStruXure Manager configuration settings, including the definitions for the <b>Device groups</b> and <b>Power zones</b> , to a backup (*.apc) file.  <b>NOTE:</b> Only <b>Client Preferences</b> settings, which are specific to each InfraStruXure Manager client, are not saved in the *.apc file.
<b>Restore Server</b>	Import settings from either a psxconfig.xml or *.apc file.
<b>Print Device List</b>	Print a copy of the devices listed in the “Device List” frame.  <b>NOTE:</b> Which devices are listed depends on the group selected in the “Device Groups” frame, including the <b>All Devices</b> or <b>Unassigned</b> selections.
<b>Exit</b>	End the InfraStruXure Manager session.

## Backup Server

Use the display for this **File menu** option to export InfraStruXure Manager configuration settings, including the definitions for the **Device groups** and **Power zones**, to an InfraStruXure Manager backup (\*.apc) file.

Only **Client Preferences** settings, which are specific to each InfraStruXure Manager client, are not saved in the \*.apc file.



To import \*.apc file settings at the InfraStruXure Manager server, or its replacement, see [Restore Server](#).

1. Click **Browse**.
2. Navigate to an \*.apc file or to the folder in which a new file will be created.
  - To overwrite an existing file, select the file and click **Save**.
  - To create a new file, define the file name and click **Save**.
3. Enter the **FTP Username** and **FTP Password**, and click **Backup**.



To change the FTP values (lowercase **apc**, by default, for both), see [FTP Server Settings](#).

# Restore Server

## Overview

Use the display for this **File menu** option to import configuration settings from two types of files:

- InfraStruXure Manager backup (\*.apc) file: Contains settings exported from an InfraStruXure Manager server using **Backup Server** in the **File menu**.
- InfraStruXure Manager v1.3.4 (psxconfig.xml) file: Contains settings exported from an InfraStruXure Manager v1.3.4 server.

## InfraStruXure Manager backup (\*.apc) file

To import settings from an \*.apc file:

1. Select **Restore Server** in the **File menu**.
2. Use **Browse** to navigate to the \*.apc file.
3. Select the file and click **Open**.
4. Enter the **FTP Username** and **FTP Password**, and click **Restore**.



To change the FTP values (lowercase **apc**, by default, for both), see **FTP Server Settings**.

## InfraStruXure Manager v1.3.4 (psxconfig.xml) file

To import settings from a psxconfig.xml file:



Note

The psxconfig.xml file is created using the procedures in the *InfraStruXure Manager: How to Import v1.2-1.3.4 Settings Addendum* (990-1783A). The CD that came with the new InfraStruXure Manager server has a **Contents** section with links to the addendum (**Import Settings to v4.2 Instructions**) and the support file (**Import Settings Support File**) used to create the psxconfig.xml file.

1. Select **License Keys** in the **System Management menu** to make sure the InfraStruXure Manager server has licenses needed to discover all the APC devices on its APC LAN.
2. Make sure all devices on the APC LAN have been discovered.
3. Select **Restore Server** in the **File menu**
4. Use **Browse** to navigate to the psxconfig.xml file at the InfraStruXure Manager client.
5. Select the file and click **Open**.

6. Select the configuration settings you want to import:

<b>Device Configuration</b>	The rack name and location, address, device type, device name, and device location settings for the APC devices on the APC LAN.
<b>System Configuration</b>	The system name, contact, and location settings for the server.
<b>E-Mail Configuration</b>	The SMTP server and e-mail recipients, and the setting to enable or disable e-mail for critical, warning, and informational events.
<b>Network Configuration</b>	The settings for the APC and User Local Area Networks (LANs). <b>NOTE:</b> The server must reboot to apply these settings.

7. Enter the **FTP Username** and **FTP Password**, and click **Restore**.



To change the FTP values (lowercase **apc**, by default, for both), see **FTP Server Settings**.

# "Server Log On" display

To log on to an InfraStruXure Manager server:



Note

The InfraStruXure Manager server and client versions must be compatible, or the logon will fail. For example, you cannot use a v4.2 client to log on to a v4.0-v4.1.x server.

1. Identify the **Server**.



Note

The server is already identified when you access this display using the listing for a monitored InfraStruXure Manager server in the "Device List" frame.

2. Enter the server's **Password** and **Username**.
3. Click **Connect**.



Note

A "Could not log on" error occurs if the username or password is invalid, or the InfraStruXure Manager client and server versions are not compatible. A "Could not connect" error occurs if the InfraStruXure Manager client fails to connect to the server, the server you identified does not exist, the client is disconnected from the network, or the server is not operating normally.

# Edit menu

## Overview

Use the menu options to do the following:



Unless you log on as the Administrator, these menu options are disabled. See [Administrator versus General access](#).

<b>Add Devices</b>	Discover and Add Devices to the list of devices the InfraStruXure Manager server monitors.
<b>Remove Selected Devices</b>	Remove devices from the list of devices the InfraStruXure Manager server monitors. <b>NOTE:</b> This option is disabled during a discovery. See <a href="#">Add Devices</a> .
<b>Set Rack Properties for Selected Device</b>	Access the “Set Rack Properties” display for the device selected in the “Device List” frame.
<b>Set HTTP Properties for Selected Devices</b>	Access the “HTTP Properties” display for the device or devices selected in the “Device List” frame.
<b>Notification</b>	Access the options involved in the Disable Notifications for Maintenance feature.
<b>Add or Remove Device Group</b>	Manage the device groups, as described in <a href="#">Device group management</a> .
<b>Add Power Zone</b>	Add a power zone, as described in <a href="#">Power zone management</a> . <b>NOTE:</b> This option is active only when <b>All Devices</b> is selected in the “Power Zones” frame.
<b>Add Power Source</b>	Add a power source to a selected power zone, as described in <a href="#">Power zone management</a> . <b>NOTE:</b> A power zone must have one or two power sources assigned.
<b>Remove Selected Zone or Source</b>	Remove a selected power source or power zone.
<b>Power Zones Wizard</b>	Launch the InfraStruXure Manager Power Zones Wizard.

## Add Devices

Use the display for this [Edit menu](#) option to discover and add [Supported devices](#) on the User LAN (corporate network) to the list of devices the InfraStruXure Manager server monitors.



Supported devices on the APC LAN are discovered automatically. For more information about the two LANs, see [APC and User Local Area Networks \(LANs\)](#).



Note

You cannot remove devices or use any **Notification** options during a discovery.



Note

During a discovery, only the IP addresses you define are searched for APC devices.

Before an APC device can be discovered, its read community name must be listed in the “[Device Access](#)” display (**SNMP** tab); for a Symmetra or Silicon UPS, the username, password, and authentication phrase used for administrator access must also be listed in the “[Device Access](#)” display (**Administrator Passwords** tab).

1. Select a tab:
  - **Network Address**: To define a single IP address.
  - **Network Segment**: To define all IP addresses for a specified network segment.
  - **Network Address Range**: To define a dedicated range of IP addresses that can include multiple network segments. For example, to search a User LAN that reserves 100 through 200 on the XXX.XXX.14.\* through XXX.XXX.17.\* network segments for APC devices, do the following:
    - Use **XXX.XXX.14.100** for the **IP Range Start** value.
    - Use **\*.\*.17.200** for the **IP Range End** value.
  - **Import**: To import a user-defined list of network IP addresses from a \*.csv or \*.txt file.

 **Note** This user-defined file, which can use a DOS or UNIX format, must contain numerical IP addresses only (255.255.255.1, for example). The IP addresses can be delimited by tab, space, comma, line-feed or end-of-line characters.

    - Use **Browse** to locate and select the file.
    - When the file appears in the **Import** tab, click **Import Now**.
2. Click **Add** to list the IP addresses in the **Network Addresses to Search** box.

 **Note** Right-click an address and click **Delete** to remove it from the **Network Addresses to Search** list.
3. Repeat **step 1** and **step 2** to list all the IP addresses to be searched.

4. Disable the **Configure SNMP Agents to Send Traps to Server** option if you do not want the InfraStruXure Manager server to be a trap receiver for any discovered devices.



For more information about whether monitored devices will use the InfraStruXure Manager server as a trap receiver, see [Trap receiver feature](#).

5. Click **Apply**.
6. Click **Yes** to initiate the discovery process.



Discovered devices are listed under **Unassigned** in the “Device Groups” frame.

Note

## Disable Notifications for Maintenance

Use the display for this **Notification** option in the [Edit menu](#) (or in a device's right-click menu) to disable notifications for any device or devices selected in the “Device List” frame.



**Notification** options are disabled during a discovery. See [Add Devices](#).

- Identify why notifications were disabled (**Reason**).
- Define how long notifications will be disabled:
  - The **Duration** settings define how long notifications will be disabled before they are enabled automatically.
  - The **Disable notification indefinitely** option disables notifications until the **Enable Notification** option is used.

When notifications are disabled:

- Event log entries for affected devices identify when the notifications were disabled and when they were enabled again.
- In the “Device List” frame, the information for affected devices is italicized and the regular status icons are replaced.

	If a critical condition was reported for a device when its notifications were disabled, a wrench with a red circle appears; if the device status was normal, or a warning condition existed, a wrench with a yellow triangle appears. You can click a device to view its status in the “Recommended Actions” frame: a warning or critical condition is reported along with the disabled-notifications condition; only the disabled-notifications condition is reported when the status is normal.
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The following table describes the other **Notification** options.

<b>Enable Notifications</b>	Manually enables notifications again. <b>NOTE:</b> This option is enabled only when at least one device with disabled notifications is selected.
<b>Notification Settings for Selected Device</b>	Views information about why the notifications were disabled, and when they will be enabled again. <b>NOTE:</b> This option is disabled if multiple devices are selected.

# View menu

## Overview

Use the menu options to do the following:

<b>Device Status</b>	Access the “Device Status” display.
<b>Power Zones</b>	Access the “Power Zones” display.
<b>Reports</b>	Access the “Reports” display.
<b>Logs</b>	Access the “Logs” display.
<b>Device Details</b>	Access the “Device Details” display for the device selected in the “Device List” frame.
<b>Device Identification</b>	Access the “Device Identification” display for the device selected in the “Device List” frame.
<b>View Group Membership</b>	Access the “View Group Membership” display that lists all the device groups to which the device selected in the “Device List” frame is assigned.
<b>Refresh</b>	Refresh the “Device Status” display or “Power Zones” display.
<b>Configure Columns</b>	Access the “Configure Columns” display.

## “Configure Columns” display

This display defines what type of information appears for devices listed in the “Device List” frame, as well as the columns displayed for a selected log or report. How this display is used depends on the selected feature:

- When the “Device Status” display (or **Devices** in the “Power Zones” display) is selected: Use **Configure Columns** in the View menu (or in the right-click for any column heading in the “Device List” frame) to select what type of information will appear in the device list.
- When any log or report is displayed: Use **Configure Columns** in the View menu to select which columns will appear in the displayed, printed, or filed versions of a report or log.
  - The “Configure Columns” display lists only the columns that are specific to the selected report or log.
  - Only enabled columns are included in saved, printed, or displayed versions of the selected report or log.

# Event Management menu

## Overview

Use the menu options to do the following:



Unless you log on as the Administrator, these menu options are disabled. See [Administrator versus General access](#).

Global Device Thresholds	Define thresholds that the InfraStruXure Manager server monitors.
SNMP Trap Forwarding	Enable the InfraStruXure Manager server to forward SNMP traps to identified the IP addresses.
Building Management System	Define settings that allow the Building Management System (BMS) to get data from devices that connect to the InfraStruXure Manager server's APC LAN.
Remote Monitoring Service	Register to use the APC Remote Monitoring Service (RMS).

# Global Device Thresholds

## Overview

Use the display tabs for this [Event Management](#) menu option to define the global device thresholds the InfraStruXure Manager server monitors, and to schedule e-mail notifications for device group summaries, summaries which include information about any global threshold violations.

- UPS tab
- Environmental Monitor tab
- Metered Rack PDU tab
- Schedule tab



Note

An [Exceptions Summary report](#) includes information about existing global device threshold violations and certain status events (lost-communication, bad-battery, and self-test failed).

The global device thresholds are independent of the threshold settings at the monitored devices. Global threshold changes have no affect at the monitored devices, and threshold changes at the monitored devices have no affect on the global thresholds.

## UPS tab

Use this tab to define the values the InfraStruXure Manager server monitors for its global UPS thresholds.

<b>Battery Age Exceeds</b>	The maximum age for a UPS battery, from 1 to 150 months.
<b>UPS Age Exceeds</b>	The maximum age for a UPS, from 1 to 150 months.
<b>Runtime Remaining Less Than</b>	The minimum amount of runtime remaining, from 1 to 999 minutes.
<b>UPS Load Exceeds</b>	The maximum load, as a percentage of full capacity, from 0% to 100%.

## Environmental Monitor tab

Use this tab to define the humidity and temperature values the InfraStruXure Manager server monitors for its global Environmental Monitor thresholds.

<b>Temperature Below Temperature Above</b>	The boundaries of the normal temperature range, from 32 F to 140 F (0 C to 60 C).
<b>Humidity Below Humidity Above</b>	The boundaries of the normal relative humidity range, from 32 F to 140 F (0 C to 60 C).

## Metered Rack PDU tab

Use this tab to identify the value that the InfraStruXure Manager server monitors for its global load threshold for devices that have metered outputs: Switched Rack PDUs, Metered Rack PDUs, and MasterSwitch VM units.

<b>Load Exceeds &lt;n&gt; Percent</b>	The maximum load, as a percentage of full capacity, from 0% to 100%.
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## Schedule tab

Use this tab to define how often summary notifications are sent, or to disable these notifications (enabled by default).

Summary notifications can be sent for any device group that has an e-mail recipient configured to receive these notifications. The notifications identify any global threshold violations that exist within a device group, as well as other status exceptions (communication-lost, UPS self-test failed, or UPS bad-battery conditions).



For the e-mail recipient and SMTP settings required for e-mail notifications, see [E-Mail Settings](#); to define which e-mail recipients receive summary notifications, see “[E-Mail Configuration for Recipient](#)” display.

<b>Send Periodic Exceptions Summary Notifications</b>	Enables or disables notifications.
<b>Date and Time</b>	Identifies when the next notifications will be sent.
<b>Recurrence</b>	Defines how often notifications will be sent.

## SNMP Trap Forwarding

Use the display for this [Event Management menu](#) option to enable the InfraStruXure Manager server to forward SNMP traps it receives from monitored devices, and to identify the IP addresses for the trap receivers.



The InfraStruXure Manager server can forward SNMP traps it receives from a monitored device only when the server is defined as a trap receiver at that device. For more information, see [Trap receiver feature](#).

To enable SNMP trap forwarding	Checkmark the <b>Enable SNMP Trap Forwarding</b> option.
To add a trap receiver	<ol style="list-style-type: none"><li>1. Click <b>Add</b> to access the “Add SNMP Trap Destination” display.</li><li>2. Define the IP address of the <b>Trap Destination</b>.</li><li>3. Define the <b>Community Name</b> needed to send the SNMP traps to the <b>Trap Destination</b>.</li></ol>
To remove a trap receiver	Select any listed IP addresses and click <b>Remove</b> .

## Building Management System

Building Management System (BMS) personnel can use the display tabs for this **Event Management menu** option to configure support for the BMS through the RS-485 port at the InfraStruXure Manager server.



Caution

The **Slave Addresses** tab should be used by BMS personnel only. Improper or failed communication will result if the **Slave Address** settings do not exactly match the corresponding BMS settings.



See also

For information about how the InfraStruXure Manager server uses MODBUS for its BMS support, see *InfraStruXure Manager v4.x Addendum: Building Management System Integration*. A copy is available on the installation CD, or by selecting the User Manuals and Installation Guides link at the InfraStruXure Manager product page (<http://www.apc.com/products/family/index.cfm?id=56>).

<b>BMS Support tab</b>	Enables or disables BMS support through the RS-485 port.
<b>Port Settings</b>	Selects the baud rate for the RS-485 port: Either 19200 (default rate) or 9600. This port also uses Data Bits (8), Stop Bits (1), and Parity (even) settings that cannot be changed.  <b>NOTE:</b> To wire a connector for use with the RS-485 port, see <a href="#">Pinout for the RS-485 port connector</a> .
<b>Slave Addresses tab</b>	Configures the <b>Slave Address</b> (1-247) each device requires for BMS integration.  <b>NOTE:</b> This tab lists devices only when BMS support is enabled; each device must have a unique <b>Slave Address</b> setting in order to function properly within the BMS framework.

### Pinout for the RS-485 port connector.

The following table identifies the active pins for a 9-pin, female (DB9-F) connector used to connect to the RS-485 port.

<b>DB9-F Pin</b>	<b>RS-485 Signal</b>
1	-
2	-
3	RxD/TxD+
4	GND
5	-
6	GND
7	-
8	RxD/TxD-
9	-
Shell	Chassis GND

# Remote Monitoring Service

Use the display for this **Event Management menu** option to register for the Remote Monitoring Service (RMS) support available from APC, and to disable or enable this service, once you register.



To use a proxy server for HTTP-based communication with the remote RMS server, see [Proxy Settings](#).

<b>To register for APC RMS support</b>	<ol style="list-style-type: none"><li>1. Click <b>RMS Settings</b>.</li><li>2. Click <b>New RMS Customer</b> in the “Access RMS Settings” display. <b>NOTE:</b> A message will inform you if the InfraStruXure Manager server is already registered for RMS support.</li><li>3. Provide the required company and contact information in the “RMS Settings” display, and click <b>Save</b>.</li><li>4. Checkmark the <b>Enable APC's Remote Monitoring Service</b> option, and click <b>Apply</b>.</li><li>5. Click <a href="http://rms.apc.com">http://rms.apc.com</a> to go to the RMS Web page.</li><li>6. Log on to the RMS Web site using the logon values (e-mail address and password) you created.</li><li>7. Follow the on-screen instructions to finish configuring the RMS support.</li></ol>
<b>To enable or disable RMS support</b>	Check or uncheck the <b>Enable APC's Remote Monitoring Service</b> option, and click <b>Apply</b> .
<b>To change customer or contact information</b>	<ol style="list-style-type: none"><li>1. Click <b>RMS Settings</b>.</li><li>2. Use the RMS logon values for the <b>E-mail</b> and <b>Password</b> settings in the “Access RMS Settings” display, and click <b>Ok</b>. <b>NOTE:</b> If you have not finished registering the InfraStruXure Manager server, click <b>New RMS Customer</b> to access the company and contact information settings.</li><li>3. Modify the company and contact information in the “RMS Settings” display, and click <b>Save</b>.</li></ol>

# System Management menu

## Overview

Use the menu options to do the following:



All options except **Client Preferences** are disabled unless you log on as the Administrator. See [Administrator versus General access](#).

Authentication Settings	Select the authentication method used to log on to the InfraStruXure Manager server, and configure the settings used by that method.
Device Access	Define settings used to access monitored devices.
Mass Configuration	Apply configuration settings to multiple devices.
Racks	Define settings the InfraStruXure Manager server uses to calculate, monitor, and report the power used at monitored racks.
<b>Server options</b>	<b>Server Time:</b> Define the time and date settings used by the InfraStruXure Manager server. <b>Shut Down or Reboot Server:</b> Shut down or reboot the InfraStruXure Manager server. <b>NOTE:</b> You can use this option to reset the server to its factory-default settings. <b>Setup Wizard:</b> Access the wizard that is used for part of the Initial configuration requirements.

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## InfraStruXure Manager

<b>Network options</b>	<p><b>Network Settings:</b> Define the settings the InfraStruXure Manager server needs to operate on its APC and User Local Area Networks (LANs).</p> <p><b>E-Mail Settings:</b> Define the settings that enable the InfraStruXure Manager server to use e-mail notifications.</p> <p><b>FTP Server Settings:</b> Start or stop the FTP service, and define the FTP logon settings.</p> <p><b>System Identification:</b> Define the <b>System Name</b>, <b>Contact</b>, and <b>Location</b> values for the InfraStruXure Manager server.</p> <p><b>Proxy Settings:</b> Define the settings that enable the use of a proxy server for HTTP-based <b>Remote Monitoring Service (RMS)</b> transmissions.</p>
<b>Log Settings</b>	Define settings that affect how long data remains in the event and data logs, and how often data is sampled and saved in the data logs.
<b>License Keys</b>	Manage the license requirements.
<b>Client Preferences</b>	Define client-specific preferences.

# Authentication Settings

## Overview

Use the display for this **System Management menu** option to select the authentication method used to log on to the InfraStruXure Manager server, and to configure the settings used by that method: Local, Remote Authentication Dial In User Service (RADIUS), or both.



Caution

Do not select **RADIUS only** unless a RADIUS server that is properly configured to validate logon attempts for the InfraStruXure Manager server, as described in [Configure RADIUS settings](#), will be used. Otherwise, when you log off, you will need to perform the procedures described in [How to restore access to the InfraStruXure Manager server](#) before you can log on again.

<b>Authentication Method</b>	Select the method used to verify log on attempts: <ul style="list-style-type: none"><li>• <b>Local only:</b> Check the logon values against the <a href="#">Configure local users</a> settings only.</li><li>• <b>Local, then RADIUS:</b> If the logon values do not match the <a href="#">Configure local users</a> settings, check the settings stored at the RADIUS server.</li><li>• <b>RADIUS, then Local:</b> If the logon values do not match the settings stored at the RADIUS server, check the <a href="#">Configure local users</a> settings.</li><li>• <b>RADIUS only:</b> Check the logon values against the settings stored at the RADIUS server.</li></ul>
<b>Configure local users</b>	Configure the <b>Administrator</b> and <b>General</b> settings used for local access.
<b>Configure RADIUS settings</b>	Configure the settings used to access the RADIUS server.
<b>Allow users to save their logon settings</b>	Allow the <b>Save Logon Settings</b> option in the <a href="#">"Server Log On"</a> display to be used for local access to this InfraStruXure Manager server.

### Configure local users

Use the display for this **Authentication Settings** button to manage the case-sensitive **Administrator** and **General** usernames and passwords used for local access.

The initial settings include the **Administrator (apc**, lowercase, for the default username and password) and a **General** user (**guest** [username] and **apc** [password], both lowercase, for the default values). To help prevent unauthorized access, change the default values as soon as possible.



There can be only one **Administrator** and up to 24 **General** users, each with its own username and password. For information about how the type of user affects which features are available, see [Administrator versus General access](#).

To add a <b>General</b> user	Click <b>Add</b> and define the <b>Username</b> and <b>Password</b> for the new user.
To delete a <b>General</b> user	Select the user, and click <b>Remove</b> .
To change the <b>Username</b> or <b>Password</b> for any user	Select the <b>Administrator</b> or <b>General</b> user, and click <b>Modify</b> to change the <b>Username</b> or <b>Password</b> .

## Configure RADIUS settings

Use the display for this **Authentication Settings** button to identify the settings used to communicate with the primary and secondary RADIUS servers to authenticate the settings used to log on to the InfraStruXure Manager server.



**Note**

A secondary server authenticates settings only when the primary server is unavailable. It will not verify settings the primary server rejects.

Before a RADIUS server can validate logon attempts, it must be configured as follows:

- It must be enabled to use the Password Authentication Protocol (PAP).
- Administrator username and password combinations must be configured to support the following Service-Type attribute:  
Console Access Level Administrator: Service-Type = Administrative
- General username and password combinations must be configured to support the following Service-Type attribute:  
Console Access Level General: Service-Type = Login



For information about how the type of user affects which features are available, see [Administrator versus General access](#).

<b>IP Address</b>	The IP address or hostname to be used to access the server.
<b>Port Number</b>	The port the InfraStruXure Manager server will use to communicate with the RADIUS server.
<b>Shared Secret</b>	The phrase used to validate a logon attempt.
<b>Test a RADIUS username and password</b>	Verifies whether a username and password combination will be recognized by the RADIUS servers as valid.

## Administrator versus General access

The **Administrator** has full access. A **General** user can generate reports and logs, access status, and use only the following menu options:

- All **Help** menu options
- **Change Server** and **Exit** in the **File** menu
- Client Preferences in the **System Management** menu

## Device Access

### Overview

Use the display tabs for this **System Management** menu option to enable the InfraStruXure Manager server uses to communicate with **Supported devices**. If the following settings are not all properly defined, the server may not be able to monitor or communicate with some APC devices.

<b>SNMP tab</b>	Define the <b>Community names</b> and <b>Timeout settings</b> the InfraStruXure Manager server uses for its SNMP communications.  <b>NOTE:</b> For information about how the InfraStruXure Manager server controls whether it receives SNMP traps from monitored devices, see <a href="#">Trap receiver feature</a> .
<b>Administrator Passwords tab</b>	Define administrator username, password, and authentication phrase combinations the InfraStruXure Manager server needs to communicate with APC devices that use non-SNMP protocols.  <b>NOTE:</b> When adding an administrator, you must define the <b>Authentication Phrase</b> ( <b>admin user phrase</b> , lowercase, is the default phrase used by all APC devices). This phrase is critical to administrative access to devices such as Symmetra or Silcon UPS models.
<b>FTP Settings tab</b>	Define the <b>FTP Settings</b> used during a <a href="#">firmware update</a> or <a href="#">Mass Configuration</a> .

## Community names

The InfraStruXure Manager server uses the community names in the Device Access **SNMP** tab to do the following:

- Read community names are used to access devices for status and other information: the InfraStruXure Manager server cannot add a device to the list of devices it monitors if that device uses a read community name that is not listed in the **SNMP** tab.
- Write community names are used to perform SNMP SETs that change settings at monitored devices. This includes using SETs to define itself as a trap receiver at those devices: if a device uses a write community name that is not listed in the **SNMP** tab, the InfraStruXure Manager server cannot define itself as a trap receiver or change thresholds and settings at that device.



For more information about how the InfraStruXure Manager server controls whether it is defined as a trap receiver, see [Trap receiver feature](#).

To add a <b>Read Community Name</b> or <b>Write Community Name</b>	Click the appropriate <b>Add</b> button and define the new community name.
To remove a <b>Read Community Name</b> or <b>Write Community Name</b>	Select the community name and click <b>Remove</b> .

### Timeout settings

The InfraStruXure Manager server uses the following settings in the **Device Access** **SNMP** tab when it attempts to communicate with a device using SNMP.

<b>Retries</b>	How many times the InfraStruXure Manager server will attempt to establish SNMP communication after an initial attempt fails (the default is <b>1</b> ).  <b>CAUTION:</b> The InfraStruXure Manager server uses SNMP to discover ( <a href="#">Add Devices</a> ) that it can monitor, and to poll monitored devices for status information. The <b>Timeout (ms)</b> and <b>Retries</b> values can dramatically increase the time it takes to discover devices, particularly when a lot of the IP addresses to be searched do not have a supported APC device; these values can also increase the time needed to poll monitored devices for status when a network problem exists. This is because the timeout value doubles for each retry. For example, if the <b>Timeout (ms)</b> used for the initial attempt is the default setting of <b>1000</b> ms (1 second), the timeout value for the first retry is <b>2000</b> ms (2 seconds), <b>4000</b> ms (4 seconds) for a second retry, and so on. Thus, for a <b>Retries</b> setting of <b>5</b> , the InfraStruXure Manager server can take 63000 ms (63 seconds) to determine that it cannot connect to one device: 1000 ms for the initial attempt, and 62000 ms for the five retries ( $2000+4000+8000+16000+32000 = 62000$ ).
<b>Timeout (ms)</b>	The amount of time, in milliseconds (ms), the InfraStruXure Manager server waits when it first tries to communicate with an SNMP agent before it considers the attempt failed (the default is <b>1000</b> ).

## Trap receiver feature

You can use the [SNMP Trap Forwarding](#) option in the [Event Management](#) menu to enable the InfraStruXure Manager server to forward SNMP traps it receives from its monitored devices to the trap receivers you define. However, the InfraStruXure Manager server can receive SNMP traps only from devices at which it is defined as a trap receiver.

 For a Matrix-UPS, a Smart-UPS, and some Environmental Monitoring Units, some events can be reported and logged only when the InfraStruXure Manager server is defined as a trap receiver at those devices. See [UPS events](#) and [Environmental events](#).

The InfraStruXure Manager server uses SNMP SET commands to define itself as a trap receiver at monitored devices:

- If the [Configure SNMP Agents to Send Traps to Server](#) option is enabled when you [Add Devices](#), the InfraStruXure Manager server can register itself as a trap receiver at the added devices.
- The “Device List” frame has [Register as a trap receiver](#) and [Unregister as a trap receiver](#) options in a right-click menu you can use to control whether the InfraStruXure Manager server is defined as a trap receiver at any selected devices.



The InfraStruXure Manager server cannot be defined as a trap receiver at an InfraStruXure PDU or at some Metered Rack PDU models. For information about what can cause the InfraStruXure Manager server to fail to register itself at other devices, see [Failed to register as a trap receiver for a device](#).

### FTP Settings

Use this **Device Access** tab to define the FTP access values the InfraStruXure Manager server uses to log on to devices during a **firmware update** or **Mass Configuration**.

FTP must be enabled at a device, and the correct FTP username and password for that device must be used, before firmware can be downloaded to that device. By default, the InfraStruXure Manager server can download firmware only to devices that use **apc** (lowercase) for the FTP username and FTP password.

Use **Add** and **Remove** to modify the list of usernames and passwords the InfraStruXure Manager server can use for FTP access to the devices it monitors.

<b>Username</b>	The usernames the InfraStruXure Manager server can use during logon attempts.
<b>Password</b>	The passwords the InfraStruXure Manager server can use during logon attempts.
<b>FTP Port</b>	The port used for FTP communication at the devices.
<b>Update Retries</b>	How many times the InfraStruXure Manager server will attempt to log on to a device before a failure occurs.

## Failed to register as a trap receiver for a device

The InfraStruXure Manager server cannot be defined as a trap receiver at the following devices:

- An InfraStruXure PDU
- Some older Metered Rack PDU models
- Any device that uses a PowerChute Business Edition agent to communicate with the InfraStruXure Manager server
- Any device that reports <General APC Device> events only

The InfraStruXure Manager server fails to register itself as a trap receiver at other devices under the following circumstances:

- The device uses a write community name that is not listed in the write “Device Access” display’s write community name list.
  - a. Select **Device Access** in the **System Management** menu.
  - b. Use the **Community names** section of the **Device Access** **SNMP** tab to add the write community name.
  - c. Right-click the device in the “Device List” frame and select **Register as a trap receiver**.
- All of the device’s trap receiver definitions are assigned to other trap receivers.
  - a. Double-click the device in the “Device List” frame to access its management application.
  - b. Change a trap receiver definition to the InfraStruXure Manager server’s IP address.
- Communication with the device’s agent, or with the device, was lost. Try again, after communication is established.
- Someone is logged on to a management application at the device. Try again, after the user logs off.

# Mass Configuration

## Overview

The mass configuration feature allows you to configure multiple devices using the same configuration settings. Except for direct current (DC) products, any device that uses an internal or external network management card with an APC operating system (AOS) of 2.5.0 or higher can be mass configured.

- Configuration procedure
- “Send Configuration to Selected Devices” display
- “One or More Settings Failed” display
- Available mass configuration settings
- Excluded configuration settings

## Configuration procedure

To configure multiple devices with the same settings, do the following in the “Device List” frame:

1. Highlight the device that has the configuration settings to be used for the mass configuration and select **Use Configuration from Selected Device** in the right-click or System Management menu.
2. Highlight the devices at which the configuration settings will be applied and select **Send Configuration to Selected Devices** in the right-click or System Management menu.



Select devices that match the model and firmware revision of the device selected in step 1. Only compatible, shared settings are applied at a device. See Available mass configuration settings.

3. Click **Yes** to start the configuration process.



**Note** The process, which takes about six minutes for every ten devices, is reported in the “Send Configuration to Selected Devices” display.

## "Send Configuration to Selected Devices" display

The display for this **Mass Configuration** option reports the configuration progress, including the status at each device.



**Note**

You can use **View Mass Configuration Status** in the right-click or **System Management menu** to access status information for the last mass configuration process, unless the InfraStruXure Manager server reboots.

After the settings are successfully applied at a device, **Completed** is reported as the status for that device. The following table describes the error status that can be reported.

<b>Aborted</b> or <b>Deleted</b>	<p><b>Description:</b> The device was removed from the list of monitored devices before the InfraStruXure Manager server could apply the settings.</p> <p><b>Recommended Action:</b></p> <p>Use <b>Add Devices</b> in the <b>Edit menu</b> to rediscover the device. Then use the <b>Configuration procedure</b> to apply the settings at the device.</p>
<b>FTP Logon Failed</b> or <b>FTP Transfer Failed</b>	<p><b>Description:</b> The InfraStruXure Manager server could not log on to the device (<b>FTP Logon Failed</b>) or the FTP connection was lost before the configuration settings could be applied (<b>FTP Transfer Failed</b>).</p> <p><b>Recommended Action:</b></p> <ul style="list-style-type: none"><li>• Make sure the device is turned on and connected to the network.</li><li>• Correct any network connection problem.</li><li>• Make sure the FTP service is enabled at the device, and the <b>Device Access</b> option (<b>FTP Settings</b>) in the <b>System Management menu</b> identifies the username, password, and FTP port needed to access the device.</li><li>• If the problem persists, contact <b>APC Customer Support</b>.</li></ul> <p>Once the problem is corrected, use the <b>Configuration procedure</b> to apply the configuration settings at the device.</p>

<b>Initialization Failure</b>	<p><b>Description:</b> The InfraStruXure Manager server could not find the configuration file to be used for the mass configuration.</p> <p><b>Recommended Action:</b></p> <p>Use the Configuration procedure to select the initialization file you want to use (<b>Use Configuration from Selected Device</b> option) and apply the settings (<b>Send Configuration to Selected Devices</b> option). If it fails again, contact <i>APC Customer Support</i>.</p>
<b>Interrupted</b>	<p><b>Description:</b> The device was removed from the list of monitored devices before the InfraStruXure Manager server finished applying the configuration settings.</p> <p><b>Recommended Action:</b></p> <p>Use Add Devices in the Edit menu to rediscover the device. Then use the Configuration procedure to apply the settings at the device.</p>
<b>Not Supported</b>	<p><b>Description:</b> The device does not support the mass configuration process.</p> <p><b>Recommended Action:</b></p> <ul style="list-style-type: none"> <li>• If the device connects to the network through a PowerChute Business Edition agent, it cannot support mass configuration.</li> <li>• If the device uses network management firmware earlier than v2.5.0, it must be updated using the Updates menu or configured individually.</li> <li>• If the device cannot use any of the configuration settings being applied, you must configure that device individually.</li> </ul>
<b>One or More Settings Failed</b>	<p><b>Description:</b> At least one of configuration settings was not changed because the applied setting's value was incompatible with the values the device has available for that setting.</p> <p><b>NOTE:</b> See “One or More Settings Failed” display.</p> <p><b>Recommended Action:</b></p> <p>Double-click the listed device (or highlight and click <b>Details</b>) to view information about the configuration settings that do not match.</p>

## "One or More Settings Failed" display

To access this display, double-click a device that reports **One or More Settings Failed** as its status in the "Send Configuration to Selected Devices" display, or select that device and click **Details**.

This display provides information about any attempt to apply a configuration setting value that is incompatible with the values the device has available for that setting: For example:

- Not all Smart-UPS configuration values match the values a Matrix UPS uses. Use a mass configuration process only with identical models (for example, Smart-UPS 1000 to Smart-UPS 1000).
- The devices use different firmware versions. Use the [Updates menu](#) to update all [Configuration procedure](#) devices to use the same firmware.



For information about the configuration settings that can be applied, see [Available mass configuration settings](#).

The following table describes the information provided for failed settings:

<b>Section Name</b>	The section of the device's initialization (*.ini) file which contains the affected setting.
<b>Key Name</b>	The name the setting uses in the *.ini file.
<b>Expected Value</b>	The value that the InfraStruXure Manager server expected the setting would have after the configuration was completed.
<b>Actual Value</b>	The value that the setting has at the device.

### Available mass configuration settings

During a **Mass Configuration**, the InfraStruXure Manager server uses the settings contained in the initialization (config.ini) file of the last device selected by the **Use Configuration from Selected Device** option, as follows:

- **Excluded configuration settings** are not applied at any device.
- Only shared settings that are applied at a device. For example, if the configuration settings are from a Smart-UPS 1000, few of those settings would be applied at a Metered Rack PDU.



Some devices can share a configuration setting, but not the values available for that setting. See “**One or More Settings Failed**” display.

## Excluded configuration settings

The following settings are not applied during a Mass Configuration.

Section Name	Key Name	Description
NetworkTCP/IP	Entire Section	All network settings
PowerChute	Entire Section	All PowerChute Network Shutdown settings
FTPServer	Entire Section	All FTP server settings
SystemID	Entire Section	All system identification settings
NetworkAirFMIInputs Outputs	Entire Section	All input and output settings
NetworkAirFMGroup	Entire Section	All group settings
NetworkAirFMSystem	Entire Section	All system settings
NetworkAirFMMModules	Entire Section	All module settings
UPS	UPSName	The name used by the UPS
UPS	BatteryDate	The date that the battery was last replaced
UPS	ExternalBatteries	The number of external batteries
Modbus	UniqueTargetID	The Modbus address assigned to the device
RackPDUOutlet	All Outlet Names	Names assigned to outlets
Environment	All Probe Names	Names assigned to probes at an environmental monitoring device
InputContacts	All Contact Names	Names assigned to contacts
OutputRelays	All Relay Names	Names assigned to output relays
Sensors	All Sensor Names	Names assigned to Environmental Management System sensors
Outlets	All Outlet Names	Names assigned to outlets
External	All Probe Names	Names assigned to external environmental probes
Integrated	All Probe Names	Names assigned to integrated environmental probes

# Racks

## Overview

The racks feature allows the InfraStruXure Manager server to do the following:

- Monitor the power (in kWatts) and status for racks that receive power from Metered and Switched Rack PDUs monitored by the InfraStruXure Manager server.
- Report the rack power and status information for monitored racks in a “Configure Racks” display, and in any InfraStruXure PDU diagrams that include racks in the “Power Zones” display.

Two **Racks** options in the System Management menu define how the InfraStruXure Manager server calculates, monitors, and reports the power that Metered and Switched Rack PDUs provide at the monitored racks.



**Note**

The InfraStruXure Manager server cannot report the power provided by MasterSwitch, MasterSwitch Plus, or MasterSwitch VM devices.

<b>Configure Racks</b>	Use to manage a list of monitored racks that reports the kWatts and status for those racks.  <b>NOTE:</b> For information about how the kWatts value is determined for a rack, see <a href="#">Rack kWatt values</a> .
<b>Default Power Settings</b>	Use to define the default power settings that may be assigned to Rack PDU models. These values will be used if the InfraStruXure Manager does not have specific values for a Rack PDU model. Typically, this occurs for new Rack PDU models that were released after the InfraStruXure Manager server was last updated.  <b>NOTE:</b> The power settings assigned to any Rack PDU can be edited using the <a href="#">Edit Power Settings</a> or the “Set Rack Properties” display.

## Configure Racks

Use the display for this **Racks** option to manage a list that identifies the monitored racks by name, and the kWatt power and status for each rack.



For information about how the rack kWatt values are defined, see [Rack kWatt values](#).

- Use **Add** and **Remove** to manage the rack list.
- Use **Modify** to access the “**Modify Rack**” display.
- Use **Print** to print a copy of the rack list.

The following status conditions can be reported for a listed rack:

<b>Normal</b>	At least one Rack PDU is identified as providing power at the rack, all Rack PDUs are communicating normally, and no power threshold violation exists (or those thresholds are disabled).
<b>Device not communicating</b>	Communication has been lost with at least one of the Rack PDUs identified as providing power at the rack.
<b>Device initializing</b>	Communication is initializing with at least one of the Rack PDUs identified as providing power at the rack.
<b>No power devices selected</b>	No Rack PDU is identified as providing power at the rack. <b>NOTE:</b> Use the <b>Modify</b> button to select which Rack PDUs provide power at a rack. See <a href="#">Devices tab</a> .
<b>Violates the low-power threshold</b>	These <a href="#">Thresholds tab</a> settings define the high and low limits of an acceptable power range that provides a means to discover problems that can adversely affect the devices that receive their power at the rack. For example, an overload can violate the high threshold, while turning off an outlet at a Switched Rack PDU can violate the low threshold.
<b>Violates the high-power threshold</b>	<b>NOTE:</b> If communication is lost with a Rack PDU at a rack that has a threshold violation, the rack status changes to <b>Device not communicating</b> , and the event that indicates the violation no longer exists cannot occur until after the communication problem clears.

## Default Power Settings

When you use the **Devices** tab in the “**Modify Rack**” display to assign a Rack PDU to a rack, the **Racks** feature uses the **Nominal Voltage** and **Power Factor** assigned to that Rack PDU to compute how much kWatts that Rack PDU provides at the rack.



For information about how the power settings are used to determine the kWatt values for the racks, see **Rack kWatt values**.

Use the display for this **Default Power Settings** option to define the values that will be assigned to a Rack PDU when both of the following circumstances exist:

- The InfraStruXure Manager server cannot assign the **Nominal Voltage** and **Power Factor** associated with the Rack PDU, because it does not recognize the Rack PDU model number. This typically occurs because the Rack PDU model was released after the InfraStruXure Manager server version was last updated.
- Neither the **Edit Power Settings** or the “**Set Rack Properties**” display was used to define the values for the Rack PDU.

The “Default Power Settings” display’s **Nominal Voltage** and **Power Factor** values are set to **120V** and **1.0** respectively. These values are based on power settings that are common to models used in the United States. You can edit these settings to match your local requirements.



Once these settings are assigned to a Rack PDU, you can use the **Edit Power Settings** or the “**Set Rack Properties**” display to edit the assigned settings.

## Modify Rack

The display for the [Configure Racks](#) **Modify** button has two tabs:

- Devices tab
- Thresholds tab

**Devices tab.** Use this tab to do the following:

- Redefine the rack's name.
- Use check marks to identify which of the listed Rack PDUs provide power at the selected rack. The list includes all monitored Rack PDUs that are not assigned to another rack.



Caution

For the racks feature to work properly, only the Rack PDUs that provide power to the equipment installed in a rack can be assigned to the rack, and those Rack PDUs must provide power to that rack's equipment only.

- Select a listed Rack PDU and click [Edit Power Settings](#) to modify the **Voltage (VAC)** or **Power Factor** for that Rack PDU.



For information about how the power settings are used to determine the kWatt values for the racks, see [Rack kWatt values](#).

**Thresholds tab.** Use this tab to define the upper and lower power thresholds, in kWatts, for the identified rack's normal power consumption range, and to define how long a threshold violation must exist before the InfraStruXure Manager server acts on that violation. These thresholds help measure how planned and unplanned equipment changes impact a rack's power and heat management.

When a threshold is violated for the defined period of time, the following occurs:

- The violation is reported as the rack's status in the [Configure Racks](#) list, and in any [InfraStruXure PDU diagrams](#) that include the rack.
- A notification is sent to e-mail recipients configured to receive warning notifications for [System events](#).
- The violation is recorded in the [Event log](#) when it occurs and when it no longer exists.

If the rack status changes to [Device not communicating](#) while a threshold violation exists, the event that indicates the violation no longer exists cannot occur until after the communication problem clears. For information about the possible causes and corrective actions for these threshold violations, see [System: The power consumed by rack <rack name> has violated the <high or low> power threshold of <n> kWatts for over <time>](#).



## Edit Power Settings

Use the display for this [Modify Rack \(Devices tab\)](#) button to change the voltage and power factor settings assigned to a listed Metered or Switched Rack PDU only when those settings are known to be inaccurate.



For information about how the power settings are used to determine the kWatt values for the racks, see [Rack kWatt values](#).

## Rack kWatt values

The [Configure Racks](#) option reports the total power consumed at each monitored rack. This figure is the sum of the power values reported for each Rack PDU identified as providing power at the rack.

- Each Metered or Switched Rack PDU is assigned a voltage and power factor value when it is assigned to a rack. These power values can be viewed using the [Edit Power Settings](#) or the “Set Rack Properties” display, and edited under the following circumstances:
  - The [Default Power Settings](#) were assigned to a Rack PDU, and more accurate values have since been determined.
  - The voltage assigned to a Rack PDU model that can use different input voltages (only one voltage value can be assigned to a Rack PDU) does not match the input voltage actually used.
  - A measurement of a Rack PDU’s input voltage shows the value is within the range a Rack PDU supports, but the difference between the actual voltage and the assigned nominal voltage affects the accuracy of the kWatt calculation.
  - A detailed analysis indicates that the efficiency of the load equipment does not match the power factor assigned to the Rack PDU.



Before you edit the power factor for a Rack PDU, see [Power factor values](#).

- The output current at a Metered or Switched Rack PDU is combined with that Rack PDU’s voltage and power factor to calculate the kWatts that the Rack PDU provides at the rack.
- A green icon of an open book with horizontal lines representing text.
- For information about how the Rack PDUs that provide power to a rack are identified, see [Modify Rack](#).

## Power factor values

The power factor is the ratio between the kW (kilowatts) and the kVA (kilo-Volt Amperes) drawn by an electrical load, where kW is the actual load power and kVA is the apparent load power. It is a measure of how effectively the current is converted into useful work output and is a good indicator of the effect the equipment load current has on the efficiency of the supply system.

An equipment load with a power factor of 1.0 indicates the most effective use of voltage and current by the connected load (the voltage and current are in phase with each other and have the same wave shape), while a power factor of 0.5 indicates a less effective use of voltage and current (the voltage and current are not in phase with each other, and do not have the same wave shape). Either of the following can cause a poor power factor:

- The voltage and current are out of phase with each other, resulting in the kW drawn having a lower value than the kVA.
- A high harmonic content or distorted/discontinuous current waveform.

The power factor directly affects the kW drawn from a Rack PDU.

- When equipment with a power factor of 1.0 is drawing 10 amps of current at 208 volts from a 3-phase Switched Rack PDU, 2.1kW will be drawn from the Rack PDU.

For a 3-phase Rack PDU, the InfraStruXure Manager server assigns a power factor value to the Rack PDU when it is configured to power equipment in a rack. This single power factor value applies to the equipment powered by all three banks of the Rack PDU (e.g. groups of sockets identified as B1, B2 and B3). If the equipment connected to the three banks have various power factors, it may result in an inaccurate power calculation for that Rack PDU. Care should be taken to match, as much as possible, the power factor of the load equipment on each bank.



- When equipment with a power factor of 0.8 is drawing 10 amps of current at 208 volts from a 3-phase Switched Rack PDU, 1.7kW will be drawn from the Rack PDU.



1.0, the default power factor assigned to a Rack PDU, represents the most effective use of the Rack PDU's current and voltage by its load equipment. Do not change a Rack PDU's power factor unless the manufacturer's specifications for its load equipment indicates that the equipment has a less effective power factor.

## Server Time

Use the display for this **System Management menu** option to define the date and time settings for the InfraStruXure Manager server.



When these settings are enabled (the settings are disabled while a 30-day evaluation period is in effect), the InfraStruXure Manager server must reboot before a change to any setting can take effect.

<b>Server Date</b>	The date the server is currently using.
<b>Server Time</b>	The time the server is currently using. <b>NOTE:</b> Click <b>Use Client Time</b> to set the time to match the client.
<b>Time Zone</b>	The time zone in which the server is located.

# Shut Down or Reboot Server

## Overview

Use the display for this [System Management menu](#) option to shut down or reboot the server.



Using the **Reset to Factory Defaults** option during a shutdown or reboot, deletes all report and log data, and resets all configuration settings to their default values. Also, if a computer that connects to the APC LAN is not turned off, its IP address could be inadvertently assigned to another APC LAN device. See [Duplicate IP addresses assigned on the APC LAN](#).

<b>Shutdown</b>	Shuts down the server.
<b>Reboot</b>	Reboots the server.
<b>Reset to Factory Default Settings</b>	When checked, resets the InfraStruXure Manager server to its factory default settings during a shutdown or reboot procedure.

## Duplicate IP addresses assigned on the APC LAN

If a computer that connects to the APC LAN is not turned off when the [Shut Down or Reboot Server](#) option is used with **Reset to Factory Defaults** enabled (or the InfraStruXure Manager server is replaced), the computer's IP address may inadvertently be assigned to another APC device. To clear this problem, release and renew the computer's IP address. For example, use `ipconfig /release` and `ipconfig /renew` at the command prompt of a Windows-based computer.

## Setup Wizard

Use this [System Management menu](#) option to launch the [InfraStruXure Manager Setup Wizard](#).

# Network Settings

Use the display for this **System Management** menu option to define the settings the InfraStruXure Manager server uses to communicate over the **APC** and **User Local Area Networks (LANs)**.



Note

The InfraStruXure Manager server must reboot before a change to any network setting can take effect.

<b>Hostname</b>	Defines the name for the InfraStruXure Manager server.
<b>MAC Address</b>	Identifies the Media Access Control (MAC) address assigned to the InfraStruXure Manager User LAN card.
<b>APC LAN</b>	<p>Accesses the display that identifies the <b>192.168.*.*</b> or <b>10.0.*.*</b> address range the InfraStruXure Manager server uses on its APC LAN.</p> <p>The available settings select address ranges that allow the InfraStruXure Manager server to monitor up to 1000 devices on the APC LAN. For example, the default settings (<b>192.168</b> as the network and <b>0</b> as the segment) select <b>192.168.0.2</b> though <b>192.168.3.254</b> as the network address range.</p> <p><b>NOTE:</b> Select a different <b>192.168.*.*</b> or <b>10.0.*.*</b> address range only when the default setting conflicts with another network segment.</p>
<b>DHCP Network Address</b>	<p>Selects to use the TCP values provided by the User LAN's Dynamic Host Configuration Protocol (DHCP) server.</p> <p><b>NOTE:</b> When DHCP is used, a permanent IP address must be reserved for the InfraStruXure Manager server at the DHCP server.</p>

<b>Static Network Address</b>	Selects to use the following manually defined address values for the User LAN:  <b>IP Address:</b> The network address of the InfraStruXure Manager server.  <b>Subnet Mask:</b> The TCP/IP subnet address for the local segment.  <b>Gateway:</b> The IP address of the gateway.  <b>Domain Name:</b> The name of the network domain on which the InfraStruXure Manager server resides.  <b>Primary DNS Server:</b> The IP address of the primary Domain Name Service (DNS) server used to map IP addresses to domain names.  <b>Secondary DNS Server:</b> The IP address of the DNS server used when the primary DNS server is busy or off-line.
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## E-Mail Settings

### Overview

Use the display tabs for this **System Management menu** option to define the recipients and SMTP settings the InfraStruXure Manager server uses to send e-mail for events, exceptions summaries, and firmware updates:

- Recipients tab
- Settings tab



At least one e-mail recipient, and the SMTP server settings, must be properly defined before the InfraStruXure Manager server can send notifications.

### Recipients tab

Use this tab to manage the e-mail recipients the InfraStruXure Manager server uses for notifications.

<b>To add a recipient</b>	Click <b>Add</b> to define the e-mail address of the new recipient.
<b>To remove a recipient</b>	Select the recipient in the <b>E-Mail Address</b> list and click <b>Remove</b> .
<b>To configure the e-mail notifications to be used with a recipient</b>	Select the recipient in the <b>E-Mail Address</b> list and click <b>Configure</b> to access the “E-Mail Configuration for Recipient” display.
<b>To send a test e-mail to a recipient</b>	Select the recipient in the <b>E-Mail Address</b> list and click <b>Test</b> . <b>NOTE:</b> For information about the error messages that may occur, see <b>SMTP error message during an e-mail test</b> .

### Settings tab

Use this tab to define the SMTP server settings the InfraStruXure Manager server needs for e-mail notifications.

<b>SMTP Server</b>	The hostname (or IP address) of the server.
<b>E-Mail Address</b>	The SMTP server account name (e-mail address) that will be used as the sender in notifications.

## SMTP error message during an e-mail test

If an SMTP error message appears when you send a test e-mail, do the following:

- Make sure the **SMTP Server** and **E-Mail Address** values are defined correctly in the **Settings** tab.
- Make sure the SMTP server is configured to allow the InfraStruXure Manager server to send e-mails.
- Consult the SMTP server documentation to make sure the server is properly configured to receive and send E-Mail.



Note

The error message may contain an SMTP error code (for example, 550 5.7.1) that can help identify the setting to investigate at the SMTP server.

## "E-Mail Configuration for Recipient" display

Use the display for the **Configure** button in the Recipients tab to customize the **Device group notifications** and **System event notifications** for the selected recipient.

**Device group notifications.** Configure which notifications are enabled or disabled for each device group:

1. Double-click a **Device Group**, or to configure multiple device groups, select those groups and click **Configure**.
2. In the “Select Notifications” display, select the items you want enabled for notifications for the selected device group:
  - **Critical, Warning, and Informational Events:** Send a notification when an event with a selected severity occurs at a device.



Note

For more information about Informational, Critical, and Warning events, see [Status and event severity levels](#).



Note

For more information about firmware updates, see [Apply Firmware Updates](#).



To schedule when summary notifications will be sent for all device groups, see [Schedule tab \(Global Device Thresholds\)](#).

3. Configure any other device groups, as needed.

**System event notifications.** In the box near the bottom of the Schedule tab, double-click **System Events** and use the “Select Notifications” display to identify the severity levels that will result in notifications.



For more information about **Critical**, **Warning**, and **Informational Events**, see [Status and event severity levels](#).

## FTP Server Settings

Use the display tabs for this [System Management menu](#) option to do the following:



FTP must be enabled before you can download software updates using the [Apply Server Updates](#) option in the [Updates](#) menu.

<b>Status tab</b>	Start or stop FTP access to the InfraStruXure Manager server.
<b>Username/Password tab</b>	Define the <b>Username</b> and <b>Password</b> used for FTP access (apc, lowercase, is the default value for both).

## System Identification

Use the display for this [System Management menu](#) option to define the InfraStruXure Manager **System Name**, **Contact**, and **Location** values.

## Proxy Settings

Use the display for this **System Management menu** option to enable using a proxy server for HTTP-based communication.

Select the **Proxy Enabled** option and define the following values:

<b>Proxy Host</b>	The IP address or hostname of the proxy server
<b>Port Number</b>	The port at the proxy server the InfraStruXure Manager server will use to communicate with that server
<b>Username and Password</b>	The username and password used to access the proxy server. <b>NOTE:</b> If the proxy server does not require a username and password, leave these fields blank.

## Log Settings

Use the display for this **System Management menu** option to define settings that affect the event and data logs.

<b>Event Log</b>	<b>Clear events after:</b> The age, in days, at which events are deleted automatically from the event log. <b>Clear Event Log:</b> Clears all events from the log.
<b>Data Log</b>	<b>Clear data after:</b> The age, in days, at which data are deleted automatically from any data log. <b>Log data every:</b> How often, in minutes, data is recorded in the data logs. <b>Clear Data Log:</b> Clears all data from all data logs.

# License Keys

## Overview

When a new InfraStruXure Manager server is installed, its features and functions can be used for 30 days without any license keys. When an existing InfraStruXure Manager server is updated to at least version 4.3, the new version can be used for 30 days without updating the previous version's license keys.

The 30-day evaluation process allows you to identify how many supported APC power and environmental protection devices you want the InfraStruXure Manager server to monitor (up to 1000) on the InfraStruXure Manager server's **APC and User Local Area Networks (LANs)**. Once you add or update license keys at the server, the evaluation period ends, and the ability to monitor devices is limited to the number of devices allowed by those license keys.

The following displays are involved in adding or updating license keys at a new or updated InfraStruXure Manager server:

- “License Keys” display
- “Evaluation Period” display
- “Update License Keys” display
- “Product Activation” display
- “Insufficient License Keys” display

## "License Keys" display

Use the display for this **System Management menu** option to manage (add or remove) InfraStruXure Manager license keys. This display identifies the total nodes allowed by the existing licenses, and lists those licenses in the **Entered Keys** section.



When an InfraStruXure Manager server is updated, the previous version's license keys must be updated. Until they are, the "License Keys" display description includes a **Click here to update the license keys online** link. To use this link to update the license keys, even if your InfraStruXure Manager client has no internet access, see [Using the "License Keys" display to update license keys](#).

**Add a license key.** Identify the license key in the **New Key** field at the bottom of the "License Keys" display, and click **Add**. The InfraStruXure Manager server will send the license key identification to an activation server. If the activation server validates the license key, that license is added in the **Entered Keys** section of the display.



For information about how to validate a license key when the InfraStruXure Manager server cannot access the activation server, see ["Product Activation" display](#).

**Remove a license key.** Select the license in the **Entered Keys** section of the "License Keys" display and click **Remove**, or right-click that license and select **Remove Key**.



You can remove a license key only if the total of the remaining keys at least equals the number of **Supported devices** being monitored by the InfraStruXure Manager server.

## "Evaluation Period" display

This display appears when you log on at a recently installed InfraStruXure Manager server at which no license keys have been added. It informs you whether the evaluation period has expired, or how much of the evaluation period remains. Use this display to do the following:

- Continue to use the InfraStruXure Manager server without adding any license keys, if the evaluation period has not expired (click **Close**).
- Purchase license keys for the InfraStruXure Manager server:
  - a. Click **Purchase a license key online**, if your InfraStruXure Manager client has internet access, or use the following URL to open the InfraStruXure Manager product page at a client that has internet access:  
*[www.apc.com/products/family/index.cfm?id=56](http://www.apc.com/products/family/index.cfm?id=56)*
  - b. Select the appropriate country from the drop-down list at the top of the page.
  - c. Use the cart icons, and follow the on-screen instructions, to purchase the needed licenses.
- Add license keys that have been purchased to the "License Keys" display (click **Enter a License Key**).

## "Update License Keys" display

This display appears when you log on at an updated version of the InfraStruXure Manager server at which none of the previous version's license keys have been updated. Use this display to do the following:

- Continue to use the InfraStruXure Manager server without updating the license keys for the previous server version, if the evaluation period has not expired (click **Close**).
- Identify the new license keys for the updated InfraStruXure Manager server.
  - **At a client with internet access:**
    - a.Click **Update license keys online**.
    - b.Follow the instructions on the Update Licenses Web page to identify the e-mail address to which you want the license key identifications sent.
  - **At a client without internet access:**
    - a.Right-click **Update license keys online** and select **Copy**.
    - b.Paste the copied link information into a text file. This link information is a URL address for the Update Licenses Web page that includes the identification of the licenses that need to be updated.
    - c.At a computer with internet access, use the link information as the Web browser's URL address.
    - d.Follow the instructions on the Update Licenses Web page to identify the e-mail address to which you want the license key identifications sent.
  - Add updated license keys to the "License Keys" display (click **Enter a License Key**).

## "Product Activation" display

This display appears when you attempt to add a license key in at the "License Keys" display when the InfraStruXure Manager server cannot access the activation server. Use this display as follows:

- **At a client with internet access:**
  - a. Click the provided Web link.
  - b. Follow the on-screen instructions in the Customer Activation page.
  - c. When the activation code appears in the text box, click **Activate**.
- **At a client without internet access:**
  - a. Contact [APC Worldwide Customer Support](#) and provide the identified License Key and Serial Number.
  - b. Type the activation code that APC provides into the text box.
  - c. Click **Activate**.

## "Insufficient License Keys" display

This display appears when not enough licenses have been added or updated in the "License Keys" display to allow the InfraStruXure Manager server to continue to monitor the devices it has been monitoring during the 30-day evaluation period. For example, if the InfraStruXure Manager server was monitoring 540 devices during the evaluation period, and the license total equals 500, you must do one of the following before you can start using the InfraStruXure Manager server:

- Add license keys until the total reported in the "License Keys" display equals or exceeds the number of monitored devices.
- Access the "Device List" frame and delete devices until the number of monitored devices does not exceed the license keys total reported in the "License Keys" display.

## Using the “License Keys” display to update license keys

If your InfraStruXure Manager client has internet access, use [Click here to update the license keys online](#) to update the existing license keys online.

If your client has no internet access, do the following:

1. Right-click [Click here to update the license keys online](#) and select **Copy**.
2. Paste the copied link information into a text file. This link information is a URL address for the Update Licenses Web page that includes the identification of the licenses that need to be updated.
3. At a computer with internet access, use the link information as the Web browser’s URL address.
4. Follow the instructions on the Update Licenses Web page to identify the e-mail address to which you want the license key identifications sent.
5. Use the “License Keys” display to add the new license keys, one key at a time.

## Client Preferences

Use the display tabs for this **System Management** menu option to do the following:

<b>Temperature Units</b>	Select whether <b>Fahrenheit</b> (the default setting) or <b>Celsius</b> will be used to report temperatures.
<b>Data Collection</b>	Enable the periodic sending of information to APC about how you use the InfraStruXure Manager features. <b>NOTE:</b> No personal information is sent about any user, server, network, system, etc., only general information about how the InfraStruXure Manager features are used.

# Updates menu

## Overview

Use the menu options to do the following:



Unless you log on as the Administrator, these menu options are disabled. See [Administrator versus General access](#).

Check for Updates	Schedule how often the InfraStruXure Manager server checks for available updates, or check for updates immediately.  <b>NOTE:</b> To check for updates, the InfraStruXure Manager server must be able to use the internet to access the APC auto-update server.
Apply Firmware Updates	Apply firmware updates to devices monitored by the InfraStruXure Manager server.  <b>NOTE:</b> After a firmware update is applied, use <b>Refresh</b> in the <a href="#">View</a> menu to refresh the InfraStruXure Manager server displays.
Apply Server Updates	Apply an update to the InfraStruXure Manager server.

## Check for Updates

Use the display for this **Updates** menu option to schedule when, if ever, the InfraStruXure Manager server automatically checks for firmware updates, or to immediately check for those updates.

To check for updates, the InfraStruXure Manager server must be able to use the internet to access APC's auto-update server:

- When device firmware updates are discovered, the InfraStruXure Manager server automatically downloads those files. You can then use the **Apply Firmware Updates** option to update the firmware at monitored devices.
- When an InfraStruXure Manager update is available, you must manually **Import the product update file to the InfraStruXure Manager server** before you can use the **Apply Server Updates** option to apply the update.



The InfraStruXure Manager server can send e-mail when a firmware update is available for a monitored device. To use the e-mail feature, see **E-Mail Settings**.

<b>Automatically Check for Updates</b>	Use the <b>Date</b> and <b>Time</b> settings to identify when the first check occurs, and the <b>Recurrence</b> setting to define how often checks will occur.
<b>I want to know when server or client updates are available</b>	Enable a pop-up to appear whenever you log on after an available InfraStruXure Manager update has been discovered. The pop-up provides a link to the update. You must <b>Import the product update file to the InfraStruXure Manager server</b> before you use the <b>Apply Server Updates</b> option. <b>NOTE:</b> This setting is client-specific. It will not affect any other InfraStruXure Manager clients.
<b>Check for Updates Now</b>	Click to immediately check for available updates.

# Apply Firmware Updates

## Overview

Use the display tabs for this **Updates menu** option to do the following:



Note

FTP must be enabled at a device, and the correct FTP username and password for that device must be used, before firmware can be updated at that device. For information about adding FTP username and password settings or changing the **FTP Port** and **Retries** settings, see **FTP Settings**.

Configure Update tab	Apply available firmware updates.
Last Update Results tab	View the firmware update results.

## Configure Update tab

Use this tab to apply an available update to monitored devices:

1. Select an update from the **Available Firmware Updates** list.
2. Select the devices to be updated from the list in the lower, right-hand box of the display.



Note

Only devices that use a management card to which the available firmware update can be applied are listed.

3. Click **Update Now**.
4. Click **Yes** to start the update process.
5. When the update finishes, select **Refresh** in the **View menu** to refresh the InfraStruXure Manager server displays.

The **Configure Update** tab also includes the following elements.

<b>Next Update Check field</b>	Identifies when the InfraStruXure Manager server will check for updates, as defined by the <a href="#">Check for Updates</a> option.
<b>Update details box</b>	Provides information about the update selected in the <a href="#">Available Firmware Updates</a> list.

## Last Update Results tab

Use this tab to view the results of the last firmware update.

<b>Aborted</b>	<p><b>Description:</b> The device was removed from the list of monitored devices after <a href="#">Update Now</a> was clicked in the <a href="#">Configure Update tab</a>, but before the InfraStruXure Manager server could schedule the update for that device.</p> <p><b>Recommended Action:</b> Use <a href="#">Add Devices</a> in the Edit menu to rediscover the device, and apply the update.</p>
<b>AOS Connection Failed</b> <b>AOS Download Failed</b> <b>App Connection Failed</b> <b>App Download Failed</b>	<p><b>Description:</b> The InfraStruXure Manager server had the password, username, and FTP port it needed to log on to the device, but the FTP connection was lost before it could log on (connection failed) or update (download failed) the APC operating system (AOS) or APC application layer (App) file at the device.</p> <p><b>CAUTION:</b> The device may not function correctly until this problem is corrected.</p> <p><b>Recommended Action:</b></p> <ul style="list-style-type: none"> <li>• Make sure the device is turned on and connected to the network.</li> <li>• Correct any network connection problem.</li> <li>• If the problem persists, contact <a href="#">APC Customer Support</a>.</li> </ul> <p>Once the problem is corrected, use the <a href="#">Configure Update tab</a> to apply the update to the device.</p>

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<b>Cancelled</b>	<p><b>Description:</b> The device was removed from the list of monitored devices after the update was selected in the <b>Available Firmware Updates</b> list (<a href="#">Configure Update tab</a>), but before <b>Update Now</b> was clicked.</p> <p><b>Recommended Action:</b> Use <a href="#">Add Devices</a> in the <a href="#">Edit</a> menu to rediscover the device, and apply the update to that device.</p>
<b>File Verification Failed</b>	<p><b>Description:</b> The APC operating system (AOS) or APC application layer (App) files at the device do not match the files the InfraStruXure Manager server used for the update.</p> <p>The APC operating system (AOS) or APC application layer (App) file name may have changed or a file is corrupted.</p> <p><b>CAUTION:</b> The device may not function correctly until this problem is corrected.</p> <p><b>Recommended Action:</b> Contact <a href="#">APC Customer Support</a> to verify that the correct AOS and application files are available at the APC server, and then use the <a href="#">Configure Update tab</a> to apply the update after you download the update again.</p>
<b>FTP Logon Failed</b>	<p><b>Description:</b> The InfraStruXure Manager server could not log on to the device.</p> <p><b>Recommended Action:</b></p> <ul style="list-style-type: none"><li>• Make sure the FTP service is enabled at the device, and the <a href="#">Device Access</a> option (<a href="#">FTP Settings</a>) identifies the username, password, and FTP port needed to access the device.</li><li>• Make sure the device is turned on and connected to the network.</li><li>• Correct any network connection problem.</li><li>• If the problem persists, contact <a href="#">APC Customer Support</a>.</li></ul> <p>Once the problem is corrected, use the <a href="#">Configure Update tab</a> to apply the update to the device.</p>

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<b>Initialization Failure</b>	<p><b>Description:</b> The InfraStruXure Manager server could not find one or both of the files it downloaded from APC for the selected update.</p> <p><b>Recommended Action:</b> Use <a href="#">Check for Updates</a> to schedule a new update check, and after the firmware files are downloaded, use the <a href="#">Configure Update tab</a> to apply the update to the devices.</p>
<b>Update Verification Failed</b>	<p><b>Description:</b> The update was completed, but the InfraStruXure Manager server could verify that it was successful.</p> <p>In addition to the network and FTP issues that can cause this problem, the APC application layer (App) file may have caused an unrecoverable problem at the device.</p> <p><b>CAUTION:</b> The device may not function correctly until this problem is corrected.</p> <p><b>Recommended Action:</b> See the recommended actions for <a href="#">FTP Logon Failed</a>.</p>

# Apply Server Updates

Use the display for this **Updates** menu option to update the InfraStruXure Manager server and client when a product update is available.

1. Import the product update file to the InfraStruXure Manager server.
2. Select the InfraStruXure Manager server update in the **Available Product Updates list** section, and click **Apply**.

<b>Installed Products</b>	Identifies the current firmware for the InfraStruXure Manager Server and Operating System (OS).
<b>Available Product Updates</b>	Lists available updates.
<b>Apply</b>	Installs the update selected in the <b>Available Firmware Updates</b> list.

3. Click **Yes** to reboot the server.
4. When a message informs you the connection has been lost, click **OK**.
5. Follow any on-screen instructions that appear while the update progress is displayed.
6. When the “Server Log On” display appears, log on to the server.
7. Select **About** in the **Help** menu to verify that the **Server Version** and **Client Version** match the version for the applied update.

# Import the product update file to the InfraStruXure Manager server

## Overview

To import an available product update to the InfraStruXure Manager server:

1. Enable FTP at the InfraStruXure Manager server
2. Download the update file to the InfraStruXure Manager client
3. Use FTP to transfer the update file to the InfraStruXure Manager server



To apply the update once it is imported to the InfraStruXure Manager server, see [Apply Server Updates](#).

## Enable FTP at the InfraStruXure Manager server

The FTP service must be enabled before the InfraStruXure Manager server can import an update file.

1. Log on to the InfraStruXure Manager server to be updated.
2. Select **FTP Server Settings**, a **System Management** menu **Network** option.
3. In the “FTP Settings” display, check the **FTP Server Status** in the “Status” tab.
  - **Started**: The FTP service is enabled.
  - **Not Started**: Click **Apply** (**Start service** is selected when the service is disabled).



Note

You can use the “Username/Password” tab to define the username and password used for FTP access to the InfraStruXure Manager server. By default, both settings use **apc** (lowercase).

### Download the update file to the InfraStruXure Manager client

Before you can transfer an update file to the InfraStruXure Manager server, that file must be downloaded from APC.

1. Go to the download page at the APC Web site ([www.apc.com/tools/download/](http://www.apc.com/tools/download/)).
2. If necessary, select your country or region from the drop-down list at the top of the page.
3. In the **InfraStruXure Manager** section, click the update's **Free Download** button.
4. Follow the links to download the update (\*.upd) file to a directory at the InfraStruXure Manager client.
5. Import the update (\*.upd) file to the InfraStruXure Manager server.



See [Use FTP to transfer the update file to the InfraStruXure Manager server](#)

### Use FTP to transfer the update file to the InfraStruXure Manager server

Once you Download the update file to the InfraStruXure Manager client, import that file to the InfraStruXure Manager server:

1. At a command prompt, use the cd command to navigate to the directory that contains the update (\*.upd) file.
2. Type ftp and the IP address of the InfraStruXure Manager server.
3. At the User prompt, type the server's FTP username (the default is lowercase apc) and press ENTER.
4. At the Password prompt, type the server's FTP password (the default is lowercase apc) and press ENTER.
5. At the ftp> prompt, type bin (or binary) and press ENTER.
6. At the next ftp> prompt, type put <filename.upd>, where <filename.upd> is the name of the update (\*.upd) file, and press ENTER.
7. At the next ftp> prompt, type bye and press ENTER to exit FTP.
8. See [Apply Server Updates](#) to update the InfraStruXure Manager server.

# Help menu

Use the menu options to do the following:

<b>Contents</b>	Open the help at the <a href="#">Introduction</a> .
<b>Context Help</b>	Open the help for the currently selected main display: “Device Status” display, “Power Zones” display, “Reports” display, or “Logs” display.
<b>About</b>	View the <a href="#">Server Version</a> , <a href="#">Console Version</a> , <a href="#">Server Uptime</a> , and <a href="#">Server Hardware</a> information ( <a href="#">Serial Number</a> , <a href="#">Model Number</a> , <a href="#">Hardware Revision</a> , and <a href="#">Manufacture Date</a> ).

# Reports

## Overview

Use the “Reports” display to generate reports about devices the InfraStruXure Manager server monitors. Reports list devices by their IP addresses, and can include some or all of the following information about the report’s devices: **Hostname**, **Serial Number**, **Model**, **Firmware**, **Hardware**, **Manufactured**, **Contact**, **Location**, and **Device Name**.

- Environmental report
- Exceptions reports
- Rack PDU reports
- UPS reports



To customize the columns displayed, saved, or printed for the reports, see “Configure Columns” display; for information about the features the reports share, see Common report and log features; for information about the display that appears when you initiate a report, see “Select Report Filter” display.

# Common report and log features

Reports and logs share the following features:

Feature	Description
<b>Export Report</b> button: 	Use to save a report or log to a file.
<b>Print Report</b> button: 	Use to print a report or log.
<b>Filter Data</b> button:  <b>(Reports only)</b>	Use to access the “Select Report Filter” display to generate a new version of the current report.
<b>Next Page</b> and <b>Previous Page</b> buttons  <b>(Logs only)</b>	Use to move through a log, one day at a time.
Double-click a listed device to access more information about that device	For a monitored APC InfraStruXure Manager server, the “Server Log On” display appears with that server selected in the <b>Server</b> field. For an InfraStruXure PDU, an <b>InfraStruXure PDU details</b> display appears. For some Metered Rack Power Distribution Unit (Rack PDU) versions, a <b>Metered Rack PDU details</b> display appears. For all other devices, an <b>HTML “Device Details” display</b> accesses the management application at the device.
Sort by column headings	Click a column heading to sort the report or log in ascending or descending order, based on that column's data.
<b>Reports only:</b> Select the devices to be included	Use the “Select Report Filter” display to select the devices.

## "Select Report Filter" display

Use this display to customize a report:

- :“Groups” tab: Click **Selected Groups** to limit the report to the groups you select. By default, **Select All Groups** is enabled.



Note

This display lists the **Device groups** that have a relevant device. For example, for a **UPS 3-Phase Load** report, only groups with a 3-phase UPS are listed.

- “Date Range” tab (**Downtime** report only): Use **Begin** and **End** (by default, **Selected Date Range** is enabled) to define a date range for the report, or click **Select All Dates** to include all available data.

Once you select the tab settings, click **Generate Report**.

## Environmental report

A **Model** report provides information about the monitored Environmental Monitoring Units, Environmental Monitoring Cards, and Environmental Management Systems.

Devices are listed, by **IP address**, within **Model Name** categories (for example, Environmental Management System). Each device listing can include information about the number of local (**Probe Count**) and remote (**Remote Probe Count**) probes, and Air Replacement Units (**ARU Count**).

# Exceptions reports

## Overview

The following **Exceptions** reports are available:

- Bad Battery report
- Downtime report
- Exceptions Summary report

## Bad Battery report

Identifies by IP address, the UPS systems that are reporting at least one faulty battery.

## Downtime report

**Overview.** Two tabs provide information about the downtime, on-battery, and lost-communication events that occurred at the monitored UPS systems.



Note

The downtime status reports information about any UPS that turned off while the InfraStruXure Manager server was polling that UPS to monitor an on-battery condition. The downtime status lasts until InfraStruXure Manager polling indicates the UPS turned on again.



For information about how a **Downtime** report's date range is defined, see "Select Report Filter" display.

- "Detail" tab
- "Summary" tab

**"Detail" tab.** Lists, by IP address, the UPS systems at which downtime, on-battery, or lost-communication events occurred, and identifies the following information for those events:

<b>Event</b>	The type of event that occurred: Lost Communication, On Battery, or Downtime.
<b>Event Start</b>	When the event started, by date and time.
<b>Event End</b>	When the event ended, by date and time.
<b>Event Duration</b>	How long the event lasted.

**"Summary" tab.** Provides information about power and communication problems that occurred during the **Reporting Period Start** to **Reporting Period End** date range.

<b>Number of UPS systems reporting Downtime events</b>	How many UPS systems shut down due to a low-battery condition while on battery.
<b>Number of reported Downtime Events</b>	How many times the UPS systems shut down due to a low-battery condition while on battery.
<b>Estimated total time for all Downtime events (all instances/all UPS systems)</b>	The estimated total time power was shut down for all Downtime events at all UPS systems.
<b>Average time for each reported Downtime event</b>	The average amount of time a UPS was shut down in response to a power problem.
<b>Number of UPS systems reporting On Battery events</b>	How many UPS systems switched to battery operation in response to a power problem.
<b>Number of reported On Battery Events</b>	How many times the UPS systems switched to battery operation in response to power problems.

<b>Estimated total time for all On Battery events (all instances/all UPS systems)</b>	The estimated total time the UPS systems were switched to battery operation for all On Battery events.
<b>Average time for each reported On Battery event</b>	The average amount of time a UPS was switched to battery operation in response to a power problem.
<b>Number of UPS systems reporting Lost Communication events</b>	How many UPS systems lost communication with the InfraStruXure Manager server.
<b>Number of reported Lost Communication events</b>	How many times the UPS systems lost communication with the InfraStruXure Manager server.
<b>Estimated total time for all Lost Communication events (all instances/all UPS systems)</b>	The estimated total time communication was lost for all Lost Communication events at all UPS systems.
<b>Average time for each reported Lost Communication event</b>	The average amount of time communication was lost between a UPS and the InfraStruXure Manager server.

## Exceptions Summary report

Identifies devices that are violating the InfraStruXure Manager Global Device Thresholds, or that have status exceptions (**Communication Lost**, **Bad Battery**, and **Failed Self-Test**).

<b>Violation: UPS Age</b>	Identifies UPS systems that violate the UPS age threshold in the <b>UPS</b> tab.
<b>Violation: UPS Load</b>	Identifies UPS systems violate the load threshold in the <b>UPS</b> tab.
<b>Violation: Rack PDU Load</b>	Identifies Metered Rack PDU, Switched Rack PDU, and MasterSwitch devices that violate the load threshold in the <b>Metered Rack PDU</b> tab.

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<b>Violation: Battery Age</b>	Identifies UPS systems that violate the battery age threshold in the <a href="#">UPS tab</a> .
<b>Violation: High Temperature</b>	Identifies devices with probes that violate the identified threshold in the <a href="#">Environmental Monitor tab</a> .
<b>Violation: Low Temperature</b>	
<b>Violation: High Humidity</b>	
<b>Violation: Low Humidity</b>	
<b>Violation: Lost Communication</b>	Identifies devices that have lost communication with the InfraStruXure Manager server.
<b>Violation: Bad Battery</b>	Identifies UPS systems that have faulty batteries.
<b>Violation: Failed Self-Test</b>	Identifies UPS systems that failed their last self-test.
<b>Violation: Minimum Runtime</b>	Identifies UPS systems that violate the runtime threshold in the <a href="#">UPS tab</a> .

## Rack PDU reports

Three reports provide information about the monitored Metered Rack PDUs, Switched Rack PDUs, and MasterSwitch devices.

<b>1-Phase Load</b>	Lists devices, by <b>IP address</b> , in <b>Load Range</b> categories (for example, <b>0-10 Amps</b> ).  <b>NOTE:</b> A device is listed under <b>Unknown</b> when the <b>Load Range</b> cannot be determined.
<b>3-Phase Load</b>	Lists devices, by <b>IP address</b> , without categories, since the load can vary for each output phase at a device.
<b>Model</b>	Lists devices, by <b>IP address</b> , within <b>Model Name</b> categories (for example, <b>MasterSwitch VM</b> ).  <b>NOTE:</b> A device is listed under <b>Unknown</b> when the <b>Model Name</b> cannot be determined.

## UPS reports

The following reports provide information about the monitored UPS systems.

<b>1-Phase Load</b>	Lists UPS systems, by <b>IP address</b> , in <b>Output Load</b> -range categories (for example, <b>0-20%</b> ).  <b>NOTE:</b> A UPS is listed under <b>Unknown</b> when the <b>Output Load</b> cannot be determined.
<b>3-Phase Load</b>	Lists UPS systems, by <b>IP address</b> , without categories, since the load can vary for each output phase at a UPS.
<b>Battery Age</b>	Lists UPS systems, by <b>IP address</b> , within <b>Battery Age</b> -range categories (for example, <b>0-1 years old</b> ).  <b>NOTE:</b> A UPS is listed under <b>Unknown</b> when the <b>Battery Age</b> cannot be determined.

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<b>Model</b>	Lists UPS systems, by <b>IP address</b> , within <b>UPS Type</b> categories (for example, <b>Smart-UPS</b> ).  <b>NOTE:</b> A UPS is listed under <b>Unknown</b> when the <b>UPS Type</b> cannot be determined.
<b>Runtime</b>	Lists UPS systems, by <b>IP address</b> , within available <b>Runtime Range</b> categories (for example, <b>0-10 Minutes</b> ).  <b>NOTE:</b> A UPS is listed under <b>Unknown</b> when the <b>Runtime Range</b> cannot be determined.
<b>UPS Age</b>	Lists UPS systems, by <b>IP address</b> , within <b>UPS Age</b> -range categories (for example, <b>0-1 years old</b> ).  <b>NOTE:</b> A UPS is listed under <b>Unknown</b> when the <b>UPS Age</b> cannot be determined.

# Data logs

Use the “Device List” frame or “Logs” display to generate a data log for any of the types of monitored devices typically used in InfraStruXure zones:



For information about how to define how often log data is sampled, see [Log Settings](#).

- “Device List” frame: Right-click a listed ATS, InfraStruXure PDU, Rack PDU, Symmetra UPS, Silcon UPS, or environmental device and select **View Data Log** (**View Data Log** is disabled for other devices).
- “Logs” display: Do the following in the left frame:
  - a. Select **Data Log** as the **Log Type**.
  - b. Select the **Date** you want the log to display initially.
  - c. Select the IP address of the device for which you want to create a data log from the **Select a Device** list.
  - d. Click **Generate Report**.

The following table identifies the information the different data logs provide.



For information about features the data logs share, see [Common report and log features](#); to customize the columns used in displayed, saved, or printed data log, see [“Configure Columns” display](#).

<b>Automatic Transfer Switch (ATS)</b>	<ul style="list-style-type: none"><li>• The source (<b>Active Source</b>) selected when the data was sampled</li><li>• The voltage (<b>L1 (VAC) - L3 (VAC)</b>) and <b>Frequency (Hz)</b> at each source (<b>Source A</b> and <b>Source B</b>)</li><li>• The <b>Output Current (Amps)</b> at each output phase (<b>L1-L3</b>)</li></ul>
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<b>Environmental</b>	<ul style="list-style-type: none"> <li>The <b>Model Name</b> of each device</li> <li>The <b>Name</b>, <b>Temp</b> (<math>^{\circ}\text{F}</math> or <math>^{\circ}\text{C}</math>), and <b>Humidity</b> from up to ten probes (<b>Probe 1 - Probe 10</b>)</li> </ul> <p><b>Note:</b> The <b>Symmetra/Silcon</b> data log provides probe data for environmental devices that connect to the network through a Symmetra or Silcon UPS.</p> <ul style="list-style-type: none"> <li>The <b>Name</b> and three <b>Temp</b> (<math>^{\circ}\text{F}</math> or <math>^{\circ}\text{C}</math>) values from up to eight Air Removal Units (<b>ARU 1 - ARU 8</b>) at environmental devices that support these units</li> </ul> <p><b>Note:</b> To select the temperature unit (<math>^{\circ}\text{F}</math> or <math>^{\circ}\text{C}</math>) for reports and displays, see <a href="#">Client Preferences</a>.</p>
<b>InfraStruXure PDU</b>	<ul style="list-style-type: none"> <li>The <b>Main Input Voltage (VAC)</b> at each input (<b>L1-L3</b>) and transformer phase (<b>Trans L1-Trans L3</b>)</li> <li>The <b>Bypass Input Voltage</b> at each phase (<b>L1-L3</b>) of a dual-input InfraStruXure PDU</li> <li>The phase-to-phase <b>Output Voltage L-L (VAC)</b> at each output phase (<b>L1-L3</b>)</li> <li>The phase-to-neutral <b>Voltage L-N (VAC)</b> at each output phase (<b>L1-L3</b>)</li> <li>The <b>Output Current (Amps)</b> at each output phase and the neutral wire (<b>L1-L3</b> and <b>N</b>)</li> <li>The <b>Output Power (kW)</b> and <b>Output Power (kVA)</b> values at each output phase (<b>L1-L3</b>), and the <b>Total</b> for each output type</li> <li>The <b>Output Frequency (Hz)</b> and <b>Ground Current (Amps)</b></li> </ul> <p><b>Note:</b> For more information about the log values, see <a href="#">InfraStruXure PDU details</a>.</p>
<b>Rack PDU</b> (see note in description)	<ul style="list-style-type: none"> <li>The unit number (<b>Unit #</b>) for each device</li> <li>The <b>Current (Amps)</b> at each output phase (<b>L1-L3</b>).</li> </ul> <p><b>NOTE:</b> A data log can be created for any Metered Rack PDU, Switched Rack PDU, or MasterSwitch VM device; data logs are unavailable for MasterSwitch V1, MasterSwitch V2, or MasterSwitch Plus devices.</p>

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<b>Symmetra/Silcon</b>	<ul style="list-style-type: none"><li>• The <b>Input Voltage (VAC)</b> and <b>Input Current (Amps)</b> at each input phase (<b>L1-L3</b>)</li><li>• The <b>Output Voltage (VAC)</b>, <b>Output Current (Amps)</b>, <b>Output Load (VA)</b>, and <b>Output Power (W)</b> (as a percentage of full load capacity) at each output phase (<b>L1-L3</b>)</li><li>• The <b>Input Frequency (Hz)</b> and <b>Output Frequency (Hz)</b></li><li>• <b>Battery Data:</b> The <b>Capacity</b>, <b>Voltage (VDC)</b>, <b>Temp (°F or °C)</b>, and <b>Current (Amps)</b> that was available</li><li>• <b>Environmental Data:</b> The <b>Temp (°F or °C)</b> and <b>Humidity</b> values that were available from each probe</li></ul> <p><b>Note:</b> To select the temperature unit (°F or °C) used in reports and displays, see <a href="#">Client Preferences</a>.</p>
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# Event log

## Overview

Use the left frame of the “Logs” display to generate an event log:

1. Select **Event Log** as the **Log Type**.
2. Select the **Date** you want the log to display initially (use the arrow buttons to move back and forth through the log, one day at a time).
3. Select the **Event Type** options to include in the log.
  - **System**: Events that occurred at the InfraStruXure Manager server.
  - **Status**: Events that occurred at monitored devices.



Note

You must select at least one option.

4. Select the **Severity** entries to include in the log:
  - **Critical**, **Warning**, or **Informational**: **System** (InfraStruXure Manager server) or **Status** (monitored device) events for any selected severity.
  - **Summary**: E-mail was sent that summarized power-related events at a device group.
  - **Firmware**: Entries related to firmware updates for the monitored devices.



You must select at least one option. For more information about the **Critical**, **Warning**, and **Informational** selections, see **Status and event severity levels**; for more information about the **Summary** and **Firmware** selections, see **System events**.

The following table describes the information an event log provides.



To disable columns in a displayed, saved, or printed event log, see “Configure Columns” display.

<b>Log Time</b>	The date and time at which the event occurred.
<b>IP Address</b>	The IP address of the device at which the event occurred, or blank, if the event is for the InfraStruXure Manager server itself. <b>NOTE:</b> Except for System events, you can double-click an event to access more information about the device associated with the event.
<b>Severity Level</b>	The event severity level ( <b>Critical</b> , <b>Warning</b> , <b>Informational</b> , <b>Summary</b> , or <b>Firmware</b> ). <b>NOTE:</b> For more information about <b>Critical</b> , <b>Warning</b> , and <b>Informational</b> events, see <b>Status and event severity levels</b> ; for more information about <b>Summary</b> or <b>Firmware</b> events, see <b>System events</b> .
<b>Event Text</b>	The event that occurred.

# Events

## Overview

The following sections list the events that can appear in the Event log for the identified devices. For each device, events are listed alphabetically, by severity, and recommended actions are provided, where appropriate.



For information about events that use a different prefix than those listed below, see <General APC Device> events.

- APC InfraStruXure Manager events
- ATS events
- Environmental events
- <General APC Device> events
- InfraStruXure PDU events
- MasterSwitch events
- MasterSwitch Plus events
- MasterSwitch VM events
- NetworkAIR FM or PA events
- Rack PDU events
- System events
- UPS events



System events report operational and status events directly related to the operation of the InfraStruXure Manager server.

## APC InfraStruXure Manager events

The Event log can report general-status and established-communication events for a monitored InfraStruXure Manager server.



Note

Unknown APC Device is the prefix used for the lost-communication events: The identity of a monitored InfraStruXure Manager server cannot be determined when communication is lost with that device. See the description of these Unknown APC Device events in the **Critical Events** section of the <General APC Device> events table.

Critical Events	Recommended Actions
APC InfraStruXure Manager: A critical condition exists	Access the management application at the device to identify and correct the problem.
Warning Events	
APC InfraStruXure Manager: A warning condition exists	Access the management application at the device to identify and correct the problem.
Informational Events (No Action Required)	
APC InfraStruXure Manager: The agent established communication with the device	
APC InfraStruXure Manager: The InfraStruXure Manager server established communication with the agent	
APC InfraStruXure Manager: This device is now operating normally	

## ATS events

The Event log can report the following Automatic Transfer Switch (ATS) events:

Critical Events	Recommended Actions
ATS: A problem exists at the 5V power supply	The ATS cannot provide power to its hardware SNMP Agent while a 5V power supply failure exists. Contact APC Customer Support.
ATS: A problem exists at the 24V power supply	The ATS cannot switch its power source while a power supply failure exists. Contact APC Customer Support.
ATS: A violation of the overcurrent threshold exists	If the current-limit threshold is set correctly at the ATS, reduce the load on the ATS. If the problem persists, contact APC Customer Support.
ATS: The ability to switch between power sources was lost	Correct the problem at the power source that lost its AC input power. If the problem persists, contact APC Customer Support.
ATS: The agent lost communication with the device	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact APC Customer Support.
ATS: The InfraStruXure Manager server lost communication with the agent	
Warning Events	
ATS: Lost input power	Correct the AC input power failures that exist at both of the power sources. If the problem persists, contact APC Customer Support.

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<b>Firmware Events (No Action Required Except as Noted)</b>	
ATS: Agent firmware is being updated	
ATS: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support.
ATS: Agent firmware update is available	
ATS: Agent firmware update succeeded	
<b>Informational Events (No Action Required)</b>	
ATS: A problem no longer exists at the 5V power supply	
ATS: A problem no longer exists at the 24V power supply	
ATS: A reset was performed	
ATS: A violation of the overcurrent threshold no longer exists	
ATS: Switched to Source A	
ATS: Switched to Source B	
ATS: The ability to switch between power sources was regained	
ATS: The agent established communication with the device	
ATS: The InfraStruXure Manager server established communication with the agent	

## Environmental events

The Event log can report the events for environmental devices (Environmental Monitoring Cards, Environmental Monitoring Units, and Environmental Management Systems) that do not connect to the network through a UPS. For information about the temperature, humidity, contact, and relay events that occur at an environmental monitoring device that connects to the network through a UPS, see [UPS events](#).



Unless the InfraStruXure Manager server is defined as a trap receiver at some environmental monitoring devices, only [Global Device Thresholds](#) events can be logged for those devices. See [Trap receiver feature](#).

Critical Events	Recommended Actions
Environmental: A fan <n> failure exists at Air Removal Unit <n> (<unit name>)	A hardware failure exists. Contact <a href="#">APC Customer Support</a> .
Environmental: A fault exists at contact <n> (<contact name>)	If a fault exists, correct the problem. If the contact is not in its fault position, and it is connected correctly, contact <a href="#">APC Customer Support</a> .
Environmental: A fault exists at outlet <n> (<outlet name>)	If a fault exists, correct the problem. If no fault exists, make sure the outlet was not switched to its fault position using the management card's Outlet Control feature. If the problem persists, contact <a href="#">APC Customer Support</a> .

Environmental: A fault exists at output relay <n> (<relay name>)	If a fault exists, correct the problem.  If no fault exists, make sure the output relay was not switched to its fault position using the management card's Output Relay Control feature. If the problem persists, contact <a href="#">APC Customer Support</a> .
Environmental: A fault exists at sensor <n> (<sensor name>)	If a fault exists, correct the problem.  If no fault exists at the sensor, contact <a href="#">APC Customer Support</a> .
Environmental: A high-temperature violation exists at Air Removal Unit <n> (<unit name>)	If a temperature problem exists, correct the problem.  If no temperature problem exists, contact <a href="#">APC Customer Support</a> .
Environmental: A major alarm exists	Check the device's status and correct the fault that caused the alarm
Environmental: A minor alarm exists	
Environmental: An A-Link power overload exists	Make sure the A-Link device is installed correctly and that terminators are not plugged into both A-Link ports on the Environmental Management System. If the problem persists, contact <a href="#">APC Customer Support</a> .
Environmental: An exhaust-temperature violation exists at Air Removal Unit <n> (<unit name>)	If a temperature problem exists, correct the problem.  If no temperature problem exists, contact <a href="#">APC Customer Support</a> .
Environmental: A sensor connection error exists	Make sure the sensor is installed correctly, with the sensor plugged into the correct port on the Environmental Management System. If the problem persists, contact <a href="#">APC Customer Support</a> .
Environmental: A smoke violation exists at Air Removal Unit <n> (<unit name>)	If a smoke problem exists, correct the problem.  If no smoke problem exists, contact <a href="#">APC Customer Support</a> .

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Environmental: A violation of a <i>&lt;humidity or temperature&gt;</i> threshold exists for probe <n>	If the threshold is set correctly, and the central air conditioning system is functioning properly, see the <a href="#">APC Cooling Solutions</a> product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact <a href="#">APC Customer Support</a> .
Environmental: A violation of the InfraStruXure Manager <i>&lt;humidity or temperature&gt;</i> global threshold exists for probe <n>	If the threshold is set correctly in the <a href="#">Environmental Monitor tab</a> , and the central air conditioning system is functioning properly, see the <a href="#">APC Cooling Solutions</a> product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact <a href="#">APC Customer Support</a> .
Environmental: Lost communication with Air Removal Unit <n> (<unit name>)	Make sure the Air Removal Unit is connected correctly to the environmental monitoring device. If the problem persists, contact <a href="#">APC Customer Support</a> .
Environmental: The agent lost communication with the device	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
Environmental: The InfraStruXure Manager server lost communication with the agent	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
<b>Warning Events</b>	
Environmental: A beacon alarm exists	If a fault exists, correct the problem.  If no fault exists, make sure the beacon was not switched to its fault position using the management card's Beacon Control feature. If the problem persists, contact <a href="#">APC Customer Support</a> .
Environmental: The Check Event Log Light is on	Check the device's event log and correct the fault that caused the event log light to go on.

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<b>Firmware Events (No Action Required Except as Noted)</b>	
Environmental: Agent firmware is being updated	
Environmental: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact <b>APC Customer Support</b> .
Environmental: Agent firmware update is available	
Environmental: Agent firmware update succeeded	
<b>Informational Events (No Action Required)</b>	
Environmental: A beacon alarm no longer exists	
Environmental: A fan <i>&lt;n&gt;</i> failure no longer exists at Air Removal Unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> )	
Environmental: A fault no longer exists at contact <i>&lt;n&gt;</i> ( <i>&lt;contact name&gt;</i> )	
Environmental: A fault no longer exists at outlet <i>&lt;n&gt;</i> ( <i>&lt;outlet name&gt;</i> )	
Environmental: A fault no longer exists at output relay <i>&lt;n&gt;</i> ( <i>&lt;relay name&gt;</i> )	
Environmental: A fault no longer exists at sensor <i>&lt;n&gt;</i> ( <i>&lt;sensor name&gt;</i> )	
Environmental: A high-temperature violation no longer exists at Air Removal Unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> )	
Environmental: A major alarm no longer exists	
Environmental: A minor alarm no longer exists	
Environmental: An A-Link power overload no longer exists	
Environmental: An exhaust-temperature violation no longer exists at Air Removal Unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> )	
Environmental: A sensor connection error no longer exists	
Environmental: A smoke violation no longer exists at Air Removal Unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> )	
Environmental: A violation of the <i>&lt;humidity or temperature&gt;</i> threshold no longer exists for probe <i>&lt;n&gt;</i>	

Environmental: A violation of the InfraStruXure Manager <humidity or temperature> threshold no longer exists for probe <n>
Environmental: Beacon alarm connected
Environmental: Beacon alarm disconnected
Environmental: Established communication with Air Removal Unit <n> (<unit name>)
Environmental: Probe <n> connected
Environmental: Probe <n> disconnected
Environmental: Sensor <n> (<sensor name>) connected
Environmental: Sensor <n> (<sensor name>) disconnected
Environmental: The agent established communication with the device
Environmental: The Check Event Log Light is off
Environmental: The InfraStruXure Manager server established communication with the agent

## <General APC Device> events

Not all APC devices currently support being monitored by an InfraStruXure Manager server. As these APC devices are updated, they are added to the list of **Supported devices** the InfraStruXure Manager server can monitor. However, these devices are limited to general-status, communication, and firmware events.



Unknown APC Device is the prefix used for the lost-communication events: The InfraStruXure Manager server cannot identify a general-status device when communication with that device is lost.

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Critical Events	Recommended Actions
<General Device>: A critical condition exists	Access the management application at the device to identify and correct the problem.
Unknown APC Device: The agent lost communication with the device	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
Unknown APC Device: The InfraStruXure Manager server lost communication with the agent	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
Warning Events	
<General Device>: A warning condition exists	Access the management application at the device to identify and correct the problem.
Firmware Events (No Action Required Except as Noted)	
<General Device>: Agent firmware is being updated	
<General Device>: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact <a href="#">APC Customer Support</a> .
<General Device>: Agent firmware update is available	
<General Device>: Agent firmware update succeeded	
Informational Events (No Action Required)	
<General Device>: The agent established communication with the device	
<General Device>: The InfraStruXure Manager server established communication with the agent	
<General Device>: This device is now operating normally	

## InfraStruXure PDU events

The Event log can report the following InfraStruXure Power Distribution Unit (PDU) events:

Critical Events	Recommended Actions
InfraStruXure PDU: A contact fault exists	If a fault exists, correct the problem. If the contact is not in its fault position, and it is connected correctly, contact APC Customer Support.
InfraStruXure PDU: A fan failure exists	Replace the fan. Contact APC Customer Support.
InfraStruXure PDU: A violation of the frequency threshold exists for the system output	If the threshold is set correctly in the “InfraStruXure PDU details” display, make sure no problem exists with the frequency of the power (UPS output or InfraStruXure PDU input) supplied to the breaker panel. If the problem persists, contact APC Customer Support.
InfraStruXure PDU: A violation of the ground current threshold exists	If the threshold is set correctly in the “InfraStruXure PDU details” display, and the ground wire is connected securely, contact APC Customer Support.
InfraStruXure PDU: A violation of the overcurrent threshold exists for panel breaker <n>	If the threshold is set correctly in the “InfraStruXure PDU details” display, reduce the load on the breaker. If the problem persists, contact APC Customer Support.
InfraStruXure PDU: A violation of the overcurrent threshold exists for the system output neutral wire	If the threshold is set correctly in the “InfraStruXure PDU details” display, contact APC Customer Support.
InfraStruXure PDU: A violation of the overcurrent threshold exists for phase L<n> of the system output	If the threshold is set correctly, make sure the loads are balanced on all output phases. If not balanced, consider switching some equipment to different phases to balance the load. If the problem persists, contact APC Customer Support.

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InfraStruXure PDU: A violation of the overvoltage threshold exists for phase L<n> of the bypass input	If the threshold is set correctly in the “ <a href="#">InfraStruXure PDU details</a> ” display, and an input-power problem does not exist, contact <a href="#">APC Customer Support</a> .
InfraStruXure PDU: A violation of the overvoltage threshold exists for phase L<n> of the main input	
InfraStruXure PDU: A violation of the overvoltage threshold exists for phase L<n> of the system output	If the threshold is set correctly, make sure that the UPS output voltage is within limits, or if the InfraStruXure PDU is in maintenance bypass, make sure that the input to the PDU is within the limits of the selected system output thresholds. If the problem persists, contact <a href="#">APC Customer Support</a> .
InfraStruXure PDU: A violation of the undervoltage threshold exists for panel breaker <n>	If the threshold is set correctly in the “ <a href="#">InfraStruXure PDU details</a> ” display, make sure all load equipment is operational and plugged in securely. If the problem persists, contact <a href="#">APC Customer Support</a> .
InfraStruXure PDU: A violation of the undervoltage threshold exists for phase L<n> of the system output	If the threshold is set correctly in the “ <a href="#">InfraStruXure PDU details</a> ” display, make sure all breaker loads are operational and connected properly, and no problem exists with the voltage (UPS output or PDU input) supplied to the breaker panel. If the problem persists, contact <a href="#">APC Customer Support</a> .
InfraStruXure PDU: A violation of the undervoltage threshold exists for phase L<n> of the bypass input	
InfraStruXure PDU: A violation of the undervoltage threshold exists for phase L<n> of the main input	If the threshold is set correctly, make sure the circuit breaker is closed and an input-power problem does not exist. If the problem persists, contact <a href="#">APC Customer Support</a> .

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InfraStruXure PDU: A violation of the undervoltage threshold exists for phase L<n> of the system output	If the threshold is set correctly, make sure that the UPS output voltage is within limits, or if the InfraStruXure PDU is in maintenance bypass, make sure that the input to the PDU is within the limits of the selected system output thresholds. If the problem persists, contact <a href="#">APC Customer Support</a> .
InfraStruXure PDU: Bypass input breaker is open	If UPS maintenance is not being performed, close the bypass breaker.  If UPS maintenance is being performed, close the breaker as soon as the maintenance is completed to avoid dropping the load if a main input power problem occurs.
InfraStruXure PDU: Lost the phase L<n> input to the UPS	Correct any problem that is external to the PDU, such as a tripped circuit breaker. If the problem persists, contact <a href="#">APC Customer Support</a> .
InfraStruXure PDU: Q breakers set for no panel feed mode	For an 60 kW or 150 kW InfraStruXure PDU, close the Panel Feed breaker.  For all other InfraStruXure PDUs, see <a href="#">Q-Breaker Modes</a> for descriptions of the available modes and their breaker settings.
InfraStruXure PDU: Q breakers set for system off mode	See <a href="#">Q-Breaker Modes</a> for descriptions of the available modes and their breaker settings.
InfraStruXure PDU: The InfraStruXure Manager server lost communication with this device	Make sure the InfraStruXure PDU is connected properly to the network. If the problem persists, contact <a href="#">APC Customer Support</a> .
InfraStruXure PDU: The input transformer is overheated	If no overload exists, and the InfraStruXure PDU is not overheated, contact <a href="#">APC Customer Support</a> .

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Warning Events	
InfraStruXure PDU: Q breakers set for atypical bypass mode	
InfraStruXure PDU: Q breakers set for forced bypass mode	See <a href="#">Q-Breaker Modes</a> for descriptions of the available modes and their breaker settings.
InfraStruXure PDU: Q breakers set for maintenance bypass mode	
InfraStruXure PDU: Q breakers set for on battery mode	
Informational Events (No Action Required)	
InfraStruXure PDU: A contact fault no longer exists	
InfraStruXure PDU: A fan failure no longer exists	
InfraStruXure PDU: A violation of the frequency threshold no longer exists for the system output neutral wire	
InfraStruXure PDU: A violation of the frequency threshold no longer exists for the system output	
InfraStruXure PDU: A violation of the ground current threshold no longer exists	
InfraStruXure PDU: A violation of the overcurrent threshold no longer exists for panel breaker <n>	
InfraStruXure PDU: A violation of the overcurrent threshold no longer exists for the system output neutral wire	
InfraStruXure PDU: A violation of the overcurrent threshold no longer exists for phase L<n> of the system output	
InfraStruXure PDU: A violation of the overvoltage threshold no longer exists for phase L<n> of the bypass input	
InfraStruXure PDU: A violation of the overvoltage threshold no longer exists for phase L<n> of the main input	
InfraStruXure PDU: A violation of the overvoltage threshold no longer exists for phase L<n> of the system output	

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InfraStruXure PDU: A violation of the undervoltage threshold no longer exists for the circuit panel's breaker <n>
InfraStruXure PDU: A violation of the undervoltage threshold no longer exists for phase L<n> of the system output
InfraStruXure PDU: A violation of the undervoltage threshold no longer exists for phase L<n> of the bypass input
InfraStruXure PDU: A violation of the undervoltage threshold no longer exists for phase L<n> of the main input
InfraStruXure PDU: A violation of the undervoltage threshold no longer exists for phase L<n> of the system output
InfraStruXure PDU: Breakers set for panel feed mode
InfraStruXure PDU: Bypass breaker is no longer open
InfraStruXure PDU: Q breakers set for UPS operation mode
InfraStruXure PDU: Restored the phase L<n> input to the UPS
InfraStruXure PDU: The InfraStruXure Manager server established communication with this device
InfraStruXure PDU: The input transformer is no longer overheated

## MasterSwitch events

The Event log can report the following events for a MasterSwitch V2; for a MasterSwitch V1, only the communication lost and established events can be reported:

Critical Events	Recommended Actions
MasterSwitch: The agent lost communication with the device	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact APC Customer Support.
MasterSwitch: The InfraStruXure Manager server lost communication with the agent	APC Customer Support.
Warning Events	
None	
Firmware Events (No Action Required Except as Noted)	
MasterSwitch: Agent firmware is being updated	
MasterSwitch: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support.
MasterSwitch: Agent firmware update is available	
MasterSwitch: Agent firmware update succeeded	
Informational Events (No Action Required)	
MasterSwitch: Outlet <n> was turned off	
MasterSwitch: Outlet <n> was turned on	
MasterSwitch: The agent established communication with the device	
MasterSwitch: The InfraStruXure Manager server established communication with the agent	

## MasterSwitch Plus events

The Event log can report the following MasterSwitch Plus events:

Critical Events	Recommended Actions
MasterSwitch Plus: The agent lost communication with the device	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
MasterSwitch Plus plus: The InfraStruXure Manager server lost communication with the agent	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
Warning Events	
MasterSwitch Plus: Lost Communication with unit <n> (<unit name>)	Make sure the unit is operational and connected properly to any other units, and to the network. If the problem persists, contact <a href="#">APC Customer Support</a> .
Firmware Events (No Action Required Except as Noted)	
MasterSwitch Plus: Agent firmware is being updated	
MasterSwitch Plus: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact <a href="#">APC Customer Support</a> .
MasterSwitch Plus: Agent firmware update is available	
MasterSwitch Plus: Agent firmware update succeeded	
Informational Events (No Action Required)	
MasterSwitch Plus: Established communication with unit <n> (<unit name>)	
MasterSwitch Plus: Outlet <n> (<name>) on unit <n> (<name>) was turned off	
MasterSwitch Plus: Outlet <n> (<name>) on unit <n> (<name>) was turned on	
MasterSwitch Plus: The agent established communication with the device	
MasterSwitch Plus: The InfraStruXure Manager server established communication with the agent	
MasterSwitch Plus: The number of units was increased	
MasterSwitch Plus: The number of units was decreased	

## MasterSwitch VM events

The Event log can report the following MasterSwitch VM events:

Critical Events	Recommended Actions
MasterSwitch VM: An overload exists at unit <n> (<unit name>)	Reduce the load on the unit until it is within an acceptable range. If the problem persists, contact APC Customer Support.
MasterSwitch VM: The agent lost communication with the device	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact APC Customer Support.
MasterSwitch VM: The InfraStruXure Manager server lost communication with the agent	
MasterSwitch VM: The load at unit <n> exceeds the InfraStruXure Manager high-load global threshold	If the threshold is set correctly in the Metered Rack PDU tab, reduce the load on the unit until it is within an acceptable range. If the problem persists, contact APC Customer Support.
Warning Events	
MasterSwitch VM: A low load exists at unit <n> (<unit name>)	If the low-current threshold is set correctly at the unit, make sure all load equipment is operational and plugged securely into the unit. If the problem persists, contact APC Customer Support.
MasterSwitch VM: Lost Communication with unit <n> (<unit name>)	Make sure the unit is operational and connected properly to any other units, and to the network. If the problem persists, contact APC Customer Support.
MasterSwitch VM: The load is approaching an overload at unit <n> (<unit name>)	If the overload-warning threshold is set correctly at the unit, reduce the load to an acceptable level.

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<b>Firmware Events (No Action Required Except as Noted)</b>	
MasterSwitch VM: Agent firmware is being updated	
MasterSwitch VM: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact <b>APC Customer Support</b> .
MasterSwitch VM: Agent firmware update is available	
MasterSwitch VM: Agent firmware update succeeded	
<b>Informational Events (No Action Required)</b>	
MasterSwitch VM: A load problem no longer exists at unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> )	
MasterSwitch VM: Established communication with unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> )	
MasterSwitch VM: Outlet <i>&lt;n&gt;</i> ( <i>&lt;outlet name&gt;</i> ) on unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> ) was turned off	
MasterSwitch VM: Outlet <i>&lt;n&gt;</i> ( <i>&lt;outlet name&gt;</i> ) on unit <i>&lt;n&gt;</i> ( <i>&lt;unit name&gt;</i> ) was turned on	
MasterSwitch VM: The agent established communication with the device	
MasterSwitch VM: The InfraStruXure Manager server established communication with the agent	
MasterSwitch VM: The load at unit <i>&lt;n&gt;</i> no longer exceeds the InfraStruXure Manager high-load threshold	

## NetworkAIR FM or PA events

The Event log can report general-status, established-communication, and firmware events for a NetworkAIR FM or NetworkAIR PA device.



Note

Unknown APC Device is the prefix used for the lost-communication events: The identity of a NetworkAIR FM or NetworkAIR PA device cannot be determined when communication is lost with that device. See the description of these Unknown APC Device events in the **Critical Events** section of the <General APC Device> events table.

Critical Events	Recommended Actions
NetworkAIR <FM or PA>: A critical condition exists	Access the management application at the device to identify and correct the problem.
Warning Events	
NetworkAIR <FM or PA>: A warning condition exists	Access the management application at the device to identify and correct the problem.
Firmware Events (No Action Required Except as Noted)	
NetworkAIR <FM or PA>: Agent firmware is being updated	
NetworkAIR <FM or PA>: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support.
NetworkAIR <FM or PA>: Agent firmware update is available	
NetworkAIR <FM or PA>: Agent firmware update succeeded	
Informational Events (No Action Required)	
NetworkAIR <FM or PA>: The agent established communication with the device	
NetworkAIR <FM or PA>: The InfraStruXure Manager established communication with the agent	
NetworkAIR <FM or PA>: This device is now operating normally	

## Rack PDU events

The Event log can report the following Metered or Switched Rack Power Distribution Unit (Rack PDU) events:

Critical Events	Recommended Actions
Rack PDU: A low load exists at output phase L<n>	If the threshold is set correctly, make sure all load equipment is operational and plugged securely into the Rack PDU. If the problem persists, contact APC Customer Support.
Rack PDU: A problem exists at power supply <n>	A hardware failure exists. Contact APC Customer Support.
Rack PDU: An overcurrent exists at output phase L<n>	If the threshold is set correctly, reduce the load on the output phase to an acceptable level. If the problem persists, contact APC Customer Support.
Rack PDU: An overload exists at output phase L<n>	If the threshold is set correctly, reduce the load on the output phase to an acceptable level. If the problem persists, contact APC Customer Support.
Rack PDU: An undervoltage exists at output phase L<n>	If the threshold is set correctly, make sure all load equipment is operational and plugged securely into the Rack PDU. If the problem persists, contact APC Customer Support.
Rack PDU: The agent lost communication with the device	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact APC Customer Support.
Rack PDU: The InfraStruXure Manager server lost communication with the agent	Make sure the device and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact APC Customer Support.
Rack PDU: The load at output phase L<n> exceeds the InfraStruXure Manager high-load global threshold	If the global threshold is set correctly in the Metered Rack PDU tab, reduce the load on the output phase to an acceptable level.
Warning Events	
Rack PDU: The load is approaching an overload on output phase L<n>	If the threshold is set correctly, reduce the load on the output phase to an acceptable level.

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<b>Firmware Events (No Action Required Except as Noted)</b>	
Rack PDU: Agent firmware is being updated	
Rack PDU: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support.
Rack PDU: Agent firmware update is available	
Rack PDU: Agent firmware update succeeded	
<b>Informational Events (No Action Required)</b>	
Rack PDU: A low load no longer exists at output phase L< <i>n</i> >	
Rack PDU: A problem no longer exists at power supply < <i>n</i> >	
Rack PDU: An overcurrent no longer exists at output phase L< <i>n</i> >	
Rack PDU: An overload no longer exists at output phase L< <i>n</i> >	
Rack PDU: An undervoltage no longer exists at output phase L< <i>n</i> >	
Rack PDU: Outlet < <i>n</i> > (< <i>outlet name</i> >) was turned off	
Rack PDU: Outlet < <i>n</i> > (< <i>outlet name</i> >) was turned on	
Rack PDU: The agent established communication with the device	
Rack PDU: The InfraStruXure Manager server established communication with the agent	
Rack PDU: The load at output phase L< <i>n</i> > no longer exceeds the InfraStruXure Manager high-load global threshold	
Rack PDU: The load is no longer approaching an overload at output phase L< <i>n</i> >	

## System events

The Event log can report events which are directly associated with the InfraStruXure Manager status and operation. This includes four Firmware events, and one Summary event.

Critical Events	Recommended Actions
System: A shutdown occurred because the CPU temperature exceeded 80 degrees C (176 degrees F)	<p>Make sure no vents are blocked, and that the internal fan is operating. Also, make sure sufficient cooling is available and that the cooling solutions are operating properly. If the problem persists, contact APC Customer Support.</p> <p><b>NOTE:</b> See the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments.</p>
System: Disk usage exceeds the critical threshold of 80 percent	The system will delete the oldest data and event log entries until disk usage decreases to 75% or less.
System: Reduce the number of devices connected to the APC LAN as the total exceeds the DHCP lease limit of 1005	Reduce the number of devices on the APC LAN.
Warning Events	
System: At least 50% of the UPS systems in the <name> device group are compensating for high input voltage	Correct the power problem for the UPS systems at the identified device group.
System: At least 50% of the UPS systems in the <name> device group are compensating for low input voltage	
System: At least 50% of the UPS systems in the <name> device group are on battery	

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System: An attempt was made to add more devices than the license key limit allows	Add a new license key to increase the number of devices the InfraStruXure Manager can monitor.
System: Disk usage exceeds the warning threshold of 60 percent	<p>Use the “<a href="#">Log Settings</a>” display to change the maximum age allowed for data or event log entries, or save the logs to files.</p> <p><b>NOTE:</b> If disk usage reaches the critical threshold of 80%, the system automatically deletes the oldest data and event log entries until disk usage decreases to 75% or less.</p>
System: Some UPS systems (less than 50%) in the <name> device group are compensating for high input voltage	Correct the power problem for the UPS systems at the identified device group.
System: Some UPS systems (less than 50%) in the <name> device group are compensating for low input voltage	
System: Some UPS systems (less than 50%) in the <name> device group are on battery	
System: The CPU temperature exceeds the warning threshold of 60 degrees C (140 degrees F)	<p>Make sure none of the vents are blocked, and the internal fan is operating. Also, make sure sufficient cooling is available and the cooling solutions are operating properly. If the problem persists, contact <a href="#">APC Customer Support</a>.</p> <p><b>NOTE:</b> If the CPU temperature reaches the critical threshold of 80 degrees C (176 degrees F), the InfraStruXure Manager server will shut down. See <a href="#">APC Cooling Solutions</a> for information about air conditioning equipment designed specifically for UPS and IT environments</p>

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System: The power consumed by rack <rack name> has violated the <high or low> power threshold of <n> kWatts for over <time>	<p><b>For high power threshold violations:</b></p> <ul style="list-style-type: none"><li>• If equipment was recently added at the rack, change the thresholds to reflect the rack's higher kWatt requirements, or move the equipment to a rack that can better handle the increased power and heat.</li><li>• Make sure the Rack PDUs that provide power at the rack are not providing power to equipment in any other rack.</li></ul> <p><b>For low power threshold violations:</b></p> <ul style="list-style-type: none"><li>• If equipment was recently removed from the rack, change the thresholds to reflect the rack's lower kWatt requirements.</li><li>• Make sure that no equipment has been turned off.</li><li>• Make sure that no equipment is receiving power from a Rack PDU assigned to another rack.</li></ul> <p><b>For high or low power threshold violations:</b></p> <ul style="list-style-type: none"><li>• Make sure the thresholds are set to account for the normal operating range for the rack equipment, and that enough time is allowed to prevent violations from being triggered by those operations. For example, if a Rack PDU allows for staggered reboots, the time allowed before a threshold violation occurs must exceed the time needed for the staggered reboots.</li><li>• If the problem persists, contact APC Customer Support.</li></ul>
System: The power consumed by rack <rack name> has violated the low power threshold of <n> kWatts for over <time>	If the threshold is set correctly, make sure that the load equipment is turned on and properly connected to the Rack PDUs that provide power at the rack. If the problem persists, contact APC Customer Support.
<b>Firmware Events (No Action Required)</b>	
System: Checking for firmware updates	
System: Completed the firmware update requested by <console username>	

System: Firmware updates are available
System: Started the firmware update requested by <console username>
<b>Summary Event (No Action Required)</b>
System: An exceptions summary notification was sent for the <name> device group
<b>Informational Events (No Action Required)</b>
System: A hostname change initiated a reboot
System: A license key with a device limit of <n> was added
System: A license key with a device limit of <n> was removed
System: Finished applying settings from a psxconfig.xml file at the server
System: A server time change initiated a reboot
System: A server update started
System: A user changed the frequency at which entries are logged in the data logs
System: A user changed the frequency at which entries are logged in the event log
System: A user changed the maximum age for data log entries
System: A user changed the maximum age for event log entries
System: A user initiated a reboot
System: A user initiated a shutdown
System: A User LAN IP address change initiated a reboot
System: A user purged all the data logs
System: A user purged the event log
System: Added as a trap receiver at <x> of <y> selected devices
System: Added <hostname> with community name <name> to the list of hosts to which SNMP traps can be forwarded
System: An *.apc file was used to restore the configuration settings at the server
System: An APC LAN IP address change initiated a reboot
System: Applying settings from a psxconfig.xml file at the server
System: Device discovery initiated
System: Disk usage no longer exceeds the critical threshold of 80 percent
System: Disk usage no longer exceeds the warning threshold of 60 percent

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System: Discovery added <x> of <y> devices to the list of monitored devices
System: Discovery cancelled after <x> of <y> devices were added to the list of monitored devices
System: High input voltage no longer exists at any of the UPS systems in the <name> device group
System: Imported a psxconfig.xml file at the server
System: Low input voltage no longer exists at any of the UPS systems in the <name> device group
System: Power has returned to normal at all UPS systems in the <name> device group
System: Removed <x> of <y> selected devices from the list of monitored devices
System: Removed as a trap receiver at <x> of <y> selected devices
System: Removed <hostname> with community name <name> from the list of hosts to which SNMP traps can be forwarded
System: The CPU temperature no longer exceeds the warning threshold of 60 degrees C (140 degrees F)
System: The device limit has changed to <n>
System: The hardware watchdog initiated a reboot
System: The license key was not added because the device limit cannot exceed <n>
System: The number of devices connected to the APC LAN no longer exceeds the DHCP lease limit of 1005
System: The power consumed by rack <rack name> no longer violates the <high or low> power threshold
System: The server removed any entries older than <n> days from the data logs
System: The server removed any entries older than <n> days from the event log
System: The software has started following a reboot or power-on event
System: The software watchdog initiated a reboot
System: User <username> failed to log on from <hostname>
System: User <username> logged off from <hostname>
System: User <username> logged on from <hostname>

## UPS events

The Event log can report the following UPS events, including events for an Integrated Environmental Monitor or an external environmental monitoring device that connects to the network through a UPS:



**Note**

No UPS uses all the events identified in this table.

Critical Events	Recommended Actions
<b>UPS: A base module fan failure exists</b> (see footnote)	An internal hardware failure exists. Contact APC Customer Support.
<b>UPS: A battery charger failure exists</b> (see footnote)	An internal hardware failure exists. Contact APC Customer Support.
UPS: A battery monitor card failure exists	Remove and reinsert the card to make sure it is installed securely. If the problem persists, replace the card or contact APC Customer Support.
UPS: A boost or trim relay failure exists	An internal hardware failure exists. Contact APC Customer Support.
<b>UPS: A bypass power supply failure exists</b> (see footnote)	An internal hardware failure exists. Contact APC Customer Support.
UPS: A fault exists at <i>&lt;external or Integrated&gt;</i> Environmental Monitor contact <i>&lt;n&gt; (&lt;name&gt;)</i>	If a fault exists, correct the problem. If the contact or output relay is not in its fault position, and it is connected correctly, contact APC Customer Support.
<b>UPS: A fault exists at &lt;external or Integrated&gt; Environmental Monitor output relay &lt;n&gt; (&lt;name&gt;)</b>	If a fault exists, correct the problem. If the contact or output relay is not in its fault position, and it is connected correctly, contact APC Customer Support.
<b>UPS: A graceful shutdown has started</b> (see footnote)	Save and close any files at all devices that receive power from the UPS. The UPS will turn off as soon as the time defined by a shutdown delay at that UPS expires.

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UPS: A high battery temperature exists	If the battery environment is too hot, and the central air conditioning system is functioning properly, see the <a href="#">APC Cooling Solutions</a> product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact <a href="#">APC Customer Support</a> .
UPS: A high isolation transformer temperature exists	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .
UPS: A main intelligence module failure exists	Contact <a href="#">APC Customer Support</a> .
UPS: An abnormal battery pack condition exists	Replace all faulty battery packs. You can use the <a href="#">APC Upgrade Selector</a> page to order new battery packs.
UPS: An abnormal condition exists	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .
UPS: An extended run frame fault exists	Contact <a href="#">APC Customer Support</a> .
UPS: An external switch gear communication card failure exists	Remove and reinsert the card to make sure it is installed securely. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: An input voltage or frequency problem occurred during a hardware failure, turning off the UPS	The "Drop Load" value is selected for the "UPS If UPS fails, and frequency or voltage is out of range" option at the management card, and a frequency or voltage deviation occurred while a hardware failure existed at the UPS. The UPS front panel display can be used to turn on the output power when the input power and hardware failure are both corrected. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: An internal communications failure exists	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .
UPS: A not-synchronized fault exists	Contact <a href="#">APC Customer Support</a> .

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UPS: An overload exists	Reduce the load on the UPS to a safe level (less than 100%), or upgrade to a unit that can support the existing load. You can use the <a href="#">APC Upgrade Selector</a> page to identify the UPS that best meets your system requirements. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: An XR communication card failure exists	Remove and reinsert the card to make sure it is installed securely. If the problem persists, replace the card or contact <a href="#">APC Customer Support</a> .
UPS: Output power is off until input power returns to normal	A low-battery condition caused the UPS to shut down during an extended power failure. When input power is restored, the UPS will restore output power to the load equipment.
UPS: A power module failure exists	Replace all faulty power modules. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: A redundant intelligence module failure exists	Contact <a href="#">APC Customer Support</a> .
<b>UPS: A site wiring fault exists</b> (see footnote)	Have a licensed electrician ensure that the proper input wiring is connected to the UPS. This includes the proper phase rotation, a proper neutral connection, a proper ground connection, and a proper grounding electrode conductor connection. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: A static bypass switch module failure exists	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .
UPS: A system ID card failure exists	Remove and reinsert the card to make sure it is installed securely. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: A system level fan failure exists	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .
UPS: A system power supply card failure exists	Contact <a href="#">APC Customer Support</a> .
UPS: A system power supply card was removed	Reinsert the card.

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UPS: A system start up configuration failure exists	Reboot the UPS. If the problem persists, contact <a href="#">APC Customer Support</a> .
<b>UPS: A violation of a &lt;humidity or temperature&gt; threshold exists for external Environmental Monitor probe &lt;n&gt; (see footnote)</b>	If the threshold is set correctly, and the central air conditioning system is functioning properly, see the <a href="#">APC Cooling Solutions</a> product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact <a href="#">APC Customer Support</a> .
UPS: A violation of the <low or high> humidity threshold exists for <external or Integrated> Environmental Monitor probe <n>	
UPS: A violation of the <low or high> temperature threshold exists for <external or Integrated> Environmental Monitor probe <n>	
UPS: A violation of an InfraStruXure Manager <humidity or temperature> global threshold exists for <external or integrated> probe <n>	If the threshold is set correctly in the <a href="#">Environmental Monitor tab</a> , and the central air conditioning system is functioning properly, see the <a href="#">APC Cooling Solutions</a> product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact <a href="#">APC Customer Support</a> .
UPS: A violation of the Internal battery temperature threshold exists	If the battery environment is too hot, and the central air conditioning system is functioning properly, see the <a href="#">APC Cooling Solutions</a> product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact <a href="#">APC Customer Support</a> .
UPS: A violation of the load (kVA) alarm threshold exists	If the threshold is set correctly, reduce the load on the UPS to a safe level (less than 100%) or upgrade to a unit that can support the existing load. You can use the <a href="#">APC Upgrade Selector</a> page to identify the UPS that best meets your system requirements. Otherwise, contact <a href="#">APC Customer Support</a> .

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UPS: A violation of the redundancy alarm threshold exists	If the redundancy below alarm threshold at the UPS is set correctly, add power modules, or reduce the load. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: A violation of the runtime alarm threshold exists	If the threshold is set correctly, reduce the load on the UPS to conserve as much of the remaining runtime as needed to support critical systems. You can use the <a href="#">APC Upgrade Selector</a> page to upgrade to a UPS that best meets your system requirements.
UPS: Battery power is too low to support the load if a power failure occurs	This condition typically exists following a runtime calibration, or when the UPS returns to online operation following a prolonged power failure. In both cases, monitoring the UPS should show that battery power is recharging.  If the battery power is not recharging, and no event indicates that another battery problem exists, contact <a href="#">APC Customer Support</a> .
UPS: Cannot switch to bypass mode; the input voltage or frequency is not within its defined limits	Wait for the input power to return to normal before you attempt to switch the UPS to bypass mode. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: Failed a self-test	Initiate a new self-test. If that test also fails, verify that no battery problems exist. If the problem persists, contact <a href="#">APC Customer Support</a> .
<b>UPS: Lost communication with the battery packs</b> (see footnote)	Make sure the battery packs are connected correctly. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: No batteries installed	Make sure the batteries or power modules are installed and connected correctly. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: No power modules installed	Make sure the batteries or power modules are installed and connected correctly. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: On bypass in response to a hardware failure	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .

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UPS: On bypass in response to an overload condition	Reduce the load on the UPS to a safe level (less than 100%) or upgrade to a unit that can support the existing load. You can use the <a href="#">APC Upgrade Selector</a> page to identify the UPS that best meets your system requirements.
UPS: On bypass in response to the bypass switch at the UPS	The switch at the UPS was used to put the UPS into bypass mode, typically for maintenance. Since the UPS cannot support its load if a power failure occurs, return the UPS to online operation as soon as possible.
UPS: One or more faulty batteries exist	Replace all faulty batteries. You can use the <a href="#">APC Upgrade Selector</a> page to order new batteries.
UPS: On forced bypass in response to the InfraStruXure PDU or UPS static switch	The InfraStruXure PDU Q breakers, or the UPS static switch, were used to force the UPS into bypass mode, typically for maintenance. Since the UPS cannot support its load if a power failure occurs, return the UPS to online operation as soon as possible.
UPS: Output power has been turned off	When the load equipment is ready to use the output power from the UPS, turn on the UPS.
UPS: Output power is off for a user-defined period of time	A software command has been used to turn off the UPS for a user-defined period of time. The UPS will turn on its output power when that time elapses, or you can turn on the UPS manually at any time.
UPS: Phase L<n> output, as a percentage of available <kWatts or kVA>, violates the InfraStruXure Manager UPS-load global threshold	If the threshold is set correctly in the <a href="#">UPS tab</a> , reduce the load, or consider upgrading to a unit that can support the existing load. You can use the <a href="#">APC Upgrade Selector</a> page to identify the UPS that best meets your system requirements.
UPS: Redundancy lost	The UPS can no longer detect any redundant power modules. Correct any power module problems (removed or failed), add power modules, or reduce the load. If the problem persists, contact <a href="#">APC Customer Support</a> .

UPS: The agent lost communication with the UPS	Save and close any files at all devices that receive power from the UPS, as it may turn off at any time.
UPS: The agent lost communication while the UPS was on battery	Make sure the UPS and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: The agent lost communication with the UPS	Make sure the proper communications cable is connected securely to the device and to the correct communications port at the agent's system. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: The backfeed protection relay is open	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .
UPS: The battery charger shut down externally	Contact <a href="#">APC Customer Support</a> .
UPS: The battery monitor card was removed	Reinsert the card.
UPS: The battery voltage exceeds the Nominal Battery Voltage rating	An internal hardware failure exists. Contact <a href="#">APC Customer Support</a> .
UPS: The bypass contactor is stuck in the bypass position	
UPS: The bypass contactor is stuck in the online position	
UPS: The bypass switch at the UPS fails to put the UPS on bypass	Contact <a href="#">APC Customer Support</a> .
UPS: The external DC disconnect switch is open	
UPS: The external switch gear communication card was removed	Reinsert the card.
UPS: The InfraStruXure Manager server lost communication with the UPS or its agent	Save and close any files at all devices that receive power from the UPS, as it may turn off at any time. Make sure the UPS and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: The InfraStruXure Manager server lost communication with the UPS or its agent while the UPS was on battery	Save and close any files at all devices that receive power from the UPS, as it may turn off at any time. Make sure the UPS and its agent are connected properly to the network and that normal power is available to both. If the problem persists, contact <a href="#">APC Customer Support</a> .

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UPS: The input circuit breaker is open	Contact APC Customer Support.
UPS: The internal DC disconnect switch is open	Contact APC Customer Support.
<b>UPS: The output voltage is abnormal</b> (see footnote)	An internal hardware failure exists. Contact APC Customer Support.
UPS: The output voltage is not within its defined limits	An internal hardware failure exists. Contact APC Customer Support.
UPS: The redundant intelligence module is in control	Correct the main intelligence module problem (it was removed or failed) that switched control to the redundant intelligence module. Contact APC Customer Support.
UPS: The static bypass switch module was removed	Reinsert the module.
UPS: The system ID card was removed	Reinsert the card.
UPS: The XR communication card was removed	Reinsert the card.
UPS: Unless input power returns, the UPS may shut down because its battery power is too low to continue supporting the load	The UPS cannot continue to use its battery power to support its load equipment. The remaining runtime equals, or is less than, the runtime defined by its "Low Battery" setting. Consider upgrading to a UPS that provides more runtime. You can use the <a href="#">APC Upgrade Selector</a> page to identify the UPS that best meets your system requirements.
UPS: Violates the InfraStruXure Manager UPS-load global threshold	If the threshold is set correctly in the <a href="#">UPS tab</a> , reduce the load, or consider upgrading to a unit that can support the existing load. You can use the <a href="#">APC Upgrade Selector</a> page to identify the UPS that best meets your system requirements.
UPS: Violates the InfraStruXure Manager minimum-runtime global threshold	If the threshold is set correctly in the <a href="#">UPS tab</a> , consider adding additional batteries or upgrading to a UPS that provides more runtime. You can use the <a href="#">APC Upgrade Selector</a> page to order new batteries or to identify the UPS that best meets your system requirements.

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Warning Events	
UPS: A runtime calibration is in progress	Wait for the calibration to finish, or cancel it.
UPS: A self-test is in progress	Wait for the self-test to finish.
UPS: Compensates frequently for <high or low> input voltages	Contact APC Global Services for information about how to improve the quality of the UPS input power.
UPS: Compensating for a <high or low> input voltage	Compensating for occasional high or low input voltages is a normal function of the UPS. No action is required.
UPS: Compensating for a <high or low> input voltage for an extended period of time	Contact APC Global Services for information about how to improve the quality of the UPS input power.
UPS: No battery packs installed	Make sure the battery packs are installed and connected correctly. If the problem persists, contact APC Customer Support.
UPS: On battery in response to an extended power failure	Make sure the UPS is plugged in and that the circuit breaker is set properly. If an input-power problem does not exist, contact APC Customer Support.
UPS: On battery in response to a power failure	Make sure the UPS is plugged in and that the circuit breaker is set properly. If an input-power problem does not exist, contact APC Customer Support.
UPS: On bypass in response to a user-initiated command from a management application or UPS accessory	A user-initiated command from a management application or UPS accessory put the UPS into bypass mode, typically for maintenance. Since the UPS cannot support its load if a power failure occurs, return the UPS to online operation as soon as possible.
UPS: Power failures occur frequently	Contact APC Global Services for information about how to improve the quality of the UPS input power.
UPS: Rebooting the load equipment	The UPS is cycling its output power off and then on again to reboot its load equipment. Wait for the reboot to finish.

UPS: Violates the InfraStruXure Manager battery-age global threshold	If the threshold is set correctly in the <a href="#">UPS tab</a> , the battery may have exceeded its useful life. You can use the <a href="#">APC Upgrade Selector</a> page to order new batteries.
UPS: Violates the InfraStruXure Manager UPS-age global threshold	If the threshold is set correctly in the <a href="#">UPS tab</a> , the UPS may have exceeded its useful life. You can use the <a href="#">APC Upgrade Selector</a> page to identify the UPS that best meets your system requirements.
<b>Firmware Events (No Action Required Except as Noted)</b>	
UPS: Agent firmware is being updated	
UPS: Agent firmware update failed	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact <a href="#">APC Customer Support</a> .
UPS: Agent firmware update is available	
UPS: Agent firmware update succeeded	
<b>Informational Events (No Action Required)</b>	
<b>UPS: A base module fan failure no longer exists</b> (see footnote)	
<b>UPS: A battery charger failure no longer exists</b> (see footnote)	
UPS: A battery monitor card failure no longer exists	
UPS: A battery-power problem no longer exists	
UPS: A battery was added or removed	
UPS: A boost or trim relay failure no longer exists	
<b>UPS: A bypass power supply failure no longer exists</b> (see footnote)	
UPS: A fault no longer exists at an <external or Integrated> Environmental Monitor <contact or relay>	
UPS: A high battery temperature no longer exists	
UPS: A high isolation transformer temperature no longer exists	
UPS: A main intelligence module failure no longer exists	
UPS: An abnormal battery pack condition no longer exists	
UPS: An abnormal condition no longer exists	
UPS: An extended run frame fault no longer exists	

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UPS: An extended run frame was installed or removed
UPS: An <i>&lt;external or Integrated&gt;</i> Environmental Monitor was added or removed
UPS: An external switch gear communication card failure no longer exists
UPS: An internal communications failure no longer exists
UPS: A not-synchronized fault no longer exists
UPS: An overload no longer exists
UPS: An XR communication card failure no longer exists
UPS: A power module failure no longer exists
UPS: A power module was added or removed
UPS: A redundant intelligence module failure no longer exists
UPS: A runtime calibration was completed
<b>UPS: A site wiring fault no longer exists</b> (see <a href="#">footnote</a> )
UPS: A static bypass switch module failure no longer exists
UPS: A system ID card failure no longer exists
UPS: A system level fan failure no longer exists
UPS: A system power supply card failure no longer exists
UPS: A system power supply card was inserted
UPS: A system start up configuration failure no longer exists
<b>UPS: A violation of a &lt;humidity or temperature&gt; threshold no longer exists for external Environmental Monitor probe &lt;n&gt;</b> (see <a href="#">footnote</a> )
UPS: A violation of a <low or high> humidity threshold no longer exists for an <i>&lt;external or Integrated&gt;</i> Environmental Monitor probe <n>
UPS: A violation of a <low or high> temperature threshold no longer exists for an <i>&lt;external or Integrated&gt;</i> Environmental Monitor probe <n>
UPS: A violation of an InfraStruXure Manager <humidity or temperature> threshold no longer exists for <i>&lt;external or integrated&gt;</i> probe <n>
UPS: A violation of the load (kVA) alarm threshold no longer exists
UPS: A violation of the redundancy alarm threshold no longer exists
UPS: A violation of the runtime alarm threshold exists

UPS: Batteries now installed
UPS: Can switch to bypass mode; the input voltage or frequency is now within its defined limits
UPS: Completed a self-test
<b>UPS: Established communication with the battery packs (see footnote)</b>
UPS: Faulty batteries no longer exist
UPS: Input power has returned to normal
UPS: No longer compensates frequently for a <i>&lt;high or low&gt;</i> input voltage
UPS: No longer compensating for a <i>&lt;high or low&gt;</i> input voltage
UPS: No longer violates the InfraStruXure Manager battery-age global threshold
UPS: No longer on bypass in response to <i>&lt;named cause&gt;</i>
UPS: No longer on bypass
UPS: No longer on forced bypass
UPS: No longer violates the InfraStruXure Manager <i>&lt;name&gt;</i> global threshold
UPS: Output power has been turned on
UPS: Output power has returned to normal
UPS: Output power turned on after being off for a user-defined period of time
UPS: Passed a self-test
UPS: Phase L <i>&lt;n&gt;</i> output, as a percentage of available <i>&lt;kWatts or kVA&gt;</i> , no longer violates the InfraStruXure Manager UPS-load global threshold
UPS: Power failures no longer occur frequently
UPS: Power modules now installed
UPS: Probe <i>&lt;n&gt;</i> was connected at the Integrated Environmental Monitor
UPS: Probe <i>&lt;n&gt;</i> was disconnected at the Integrated Environmental Monitor
UPS: Redundancy restored
UPS: The agent established communication with the device
UPS: The backfeed protection relay is no longer open
UPS: The battery charger is no longer shut down externally
UPS: The battery monitor card was inserted

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UPS: The battery voltage no longer exceeds the Nominal Battery Voltage rating
UPS: The bypass contactor problem no longer exists
UPS: The bypass switch at the UPS no longer fails to put the UPS on bypass
UPS: The external DC disconnect switch is no longer open
UPS: The external switch gear communication card was inserted
UPS: The external switch gear Q<n> is closed or open
UPS: The input circuit breaker is no longer open
UPS: The InfraStruXure Manager server established communication with the UPS or its agent
UPS: The power problem and hardware failure that caused the UPS to turn off no longer exist
UPS: The internal DC disconnect switch is no longer open
UPS: The main intelligence module was inserted or removed
UPS: The output voltage is now within its defined limits
UPS: The redundant intelligence module is no longer in control
UPS: The redundant intelligence module was inserted or removed
UPS: The static bypass switch module was inserted
UPS: The system ID card was inserted
UPS: The XR communication card was inserted
<b>NOTE:</b> For some Matrix or Smart-UPS models, this event can be reported only when the InfraStruXure Manager server is defined as a trap receiver at the UPS. See <a href="#">Trap receiver feature</a> .

# InfraStruXure Manager Power Zones Wizard

## Overview

The InfraStruXure Manager Power Zones Wizard automates the process of creating diagrams for the InfraStruXure zones the InfraStruXure Manager server monitors on its APC LAN.



Although the power zones wizard can be adapted to help create diagrams for other types of power zones, you may find it easier to use the [Power zone management](#) procedures to create these other power zones.

Use the wizard displays to do the following.

1. Define a name for the power zone
2. Power on the power sources
3. Select the InfraStruXure PDU and any associated UPS for each source
4. Identify the InfraStruXure Manager rack
5. Power off the device racks (initial setup only)
6. Define a name for the InfraStruXure Manager rack
7. Select the devices installed in the InfraStruXure Manager rack
8. Select whether another rack needs to be defined
9. Define a name for a device rack
10. Turn on power for the identified rack
11. Select the devices installed in the device rack
12. Create a new power zone or exit the wizard

## Define a name for the power zone

Use up to 32 alphanumeric characters and spaces to define a name, and click **Next** to Power on the power sources. The power zone now appears in the “Power Zones” frame.

## Power on the power sources

The power sources (at least one power source, but not more than two) must be providing power to the power zone before the wizard can discover the InfraStruXure PDU and any associated 3-phase UPS (Symmetra or Silcon) used by those sources.

Click **Next** to Select the InfraStruXure PDU and any associated UPS for each source.

## Select the InfraStruXure PDU and any associated UPS for each source

Use the drop-down menus to select the InfraStruXure PDU, and any associated UPS, for each power source (**Source A** and **Source B**). The top menu for each source lists the available UPS selections, and the bottom menu lists the InfraStruXure PDUs, with each InfraStruXure PDU and UPS identified by model name and serial number, with the IP address provided in parentheses.

If the power zone uses only one power source, select the **Source A** components only:

- For a 60 kW or 150 kW InfraStruXure PDU, select the PDU for the power source, only. A local UPS is not associated with this PDU.
- For a 40 kW or 80 kW InfraStruXure PDU, select both the PDU and its associated UPS.



All monitored UPS systems are listed in the power source menus, regardless of whether they are on the User or APC LAN.

Click **Next** to **Identify the InfraStruXure Manager rack**. Any power source for which you selected at least one component (an InfraStruXure PDU or a UPS) is added to the power zone in the “Power Zones” frame.

## Identify the InfraStruXure Manager rack

The devices that use the power available at a rack can be discovered by turning power off and then on again at any rack except the rack that provides power to the InfraStruXure Manager server.

- **PDU Rack:** No attempt will be made to identify any devices in this rack.
- **Device Rack:** The wizard will allow you to select any other devices in that rack without turning power off at that rack.

Click **Next** to **Power off the device racks (initial setup only)**.

## Power off the device racks (initial setup only)

Never turn off power at the InfraStruXure PDU rack, at a rack that contains a UPS that provides power for a power source, at the InfraStruXure Manager rack, or at any rack that has load equipment turned on.



Caution

Unless you are using this wizard as part of the initial setup of an InfraStruXure zone, do not turn off power at any device rack. Turning off power risks turning off the equipment that the power zone you want to configure supports.

Click **Next** to Define a name for the InfraStruXure Manager rack (**Device Rack** was selected to Identify the InfraStruXure Manager rack) or to Define a name for a device rack (**PDU Rack** was selected).

## Define a name for the InfraStruXure Manager rack

Use up to 32 alphanumeric characters and spaces to define a name, and click **Next** to Select the devices installed in the InfraStruXure Manager rack.

## Select the devices installed in the InfraStruXure Manager rack

You must know the model and serial number of each device in the InfraStruXure Manager rack before you can use the following procedure to identify those devices:

1. Select the **Unassigned Devices** option.
2. Checkmark the devices that are known to be installed in the InfraStruXure Manager rack.
3. Click **Next** to Select whether another rack needs to be defined. The selected devices are added to the power source in the “Power Zones” frame.

## Select whether another rack needs to be defined

Select **Yes** and click **Next** to Define a name for a device rack; if you select **No** and click **Next**, the following will occur:

- If the power zone uses a single power source, or you finished defining the devices for both power sources, the wizard asks you to **Create a new power zone or exit the wizard**.
- If the power zone uses two power sources, and you finished defining the device racks for **Source A**, the wizard guides you through selecting the devices that use **Source B** at the same racks:
  - a. Power off the device racks (initial setup only).
  - b. Turn on power for the identified rack.
  - c. Select the devices installed in the device rack.
  - d. Repeat **step b** and **step c** until the devices that use **Source B** at all the identified racks are selected.



Note

When you finish selecting the devices that use **Source B**, the wizard asks you **Create a new power zone or exit the wizard**.

## Define a name for a device rack

Use up to 32 alphanumeric characters and spaces to define a name, and click **Next** to Turn on power for the identified rack.

## Turn on power for the identified rack

A power-off and power-on sequence is used to discover the devices that obtain power at rack.

If the selected power source (**Source A** or **Source B**) is turned off at the rack, turn that power on. Click **Next** to **Select the devices installed in the device rack**.

## Select the devices installed in the device rack

To select the devices, do the following:

1. Checkmark the devices the **New Devices** list, the **Unassigned Devices** list, or both.
  - **New Devices** option: Lists only the devices that were discovered by turning power off and then on again at the rack.
  - **Unassigned Devices** option: Lists any monitored devices that are not listed for the **New Devices** selection, and which are not assigned to another power zone, power source, or device rack.
2. Click **Next** to **Select whether another rack needs to be defined**. The selected devices are added to the power source in the “Power Zones” frame.

## Create a new power zone or exit the wizard

Click **Next** to create another power zone; click **Finish** to exit.

# Third-Party Software

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