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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” Display** describes how to create a backup file (*.apc) that saves all the InfraStruXure Manager server configuration settings, including device group and power zone definitions.
- **“Restore Server” Display** describes how to import configuration settings from an *.apc file that was created using the **“Backup Server” Display**, or from a psxconfig.xml file that was created using the procedures provided in the *InfraStruXure Manager: Importing v1.2-v1.3.4 Settings Addendum*.
- **Release Notes** provides information about browser and display requirements and known issues, as well as a section, **How to Restore Access to the InfraStruXure Manager Server**. Use the information in that section if the Administrator username or password becomes unknown, or **RADIUS only** is selected in the **“Authentication Settings”** display and a RADIUS server is unavailable.

Overview

An InfraStruXure Manager server can monitor the status of **Supported Devices** that connect to its **Public (User LAN) and Private (APC LAN) Networks**, and generate reports about those devices.

- Two main displays provide status and other information about the monitored devices, including access to additional detail. This additional detail can include configuration options or links to device management applications.
 - The **“Device Status” Display** allows you to assign monitored devices to **Device Groups** that provide status and other information about those devices. These device groups allow you to control the content of reports and logs and to configure how an InfraStruXure Manager server uses e-mail notifications for each device group.
 - A **“Power Zones” Display** allows you to create diagrams by assigning monitored devices to the **Power Zones** you create. The diagrams identify the relationship of the devices within a power zone to each other and to the available power sources, and provide status and other information about those devices.



For information about the icons an InfraStruXure Manager server uses to identify the severity level of conditions that exist at monitored devices, see **Status, Alarm, and Event Severity Levels**.

- A **“Logs” Display** allows you to generate logs (**Data Logs** and an **Event Log**) for devices the InfraStruXure Manager server monitors.



Note

You can use **Logs** in the navigation bar or in the **View Menu** to access the “Logs” display.

- A “Reports” Display allows you to generate Reports for the devices the InfraStruXure Manager server monitors.



Note

You can use **Reports** in the navigation bar or **View Menu** to access the “Reports” display.

- 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



Access to some menus and options depends on whether you log on as the Administrator (full access) or as a General user (restricted access). For more information, see **Administrator versus General access**.

Supported Devices

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



Note

An InfraStruXure Manager server uses the “**Add Devices**” Display to discover devices on its corporate (User LAN) network. Devices on its private (APC LAN) network are discovered automatically.

- A PowerChute[®] Business Edition Agent running on a computer that uses NetWare[®], Windows[®] 2000, Windows 2003, Windows NT[®], or Windows XP



Note

SNMP service must be installed and 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 information about the general status events that can be reported for these devices, see **<General APC Device Status>: 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



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

Public (User LAN) and Private (APC LAN) Networks

An InfraStruXure Manager server has two networks on which it can monitor **Supported Devices**:

- Private (APC LAN) network: The APC InfraStruXure Manager server connects to a hub, which, in turn, connects to the APC devices that provide power and environmental protection for the InfraStruXure zone being monitored by the InfraStruXure Manager server.
- Public (User LAN) network: The APC InfraStruXure Manager server connects to the corporate network to monitor APC power and environmental protection devices on that network.

Initial Configuration Requirements

Overview

The following procedure sets up an InfraStruXure Manager server to be fully operational.

1	Use the InfraStruXure Manager Setup Wizard	<p>The InfraStruXure Manager Setup Wizard accesses the configuration options that are most important to the InfraStruXure Manager operation.</p> <p>When you log on to an newly-installed InfraStruXure Manager server, click Yes to run the wizard immediately. If you click No, you can select Setup Wizard in the System Management Menu to run the wizard at any time.</p>
2	Review configuration settings that are not accessible by the InfraStruXure Manager Setup Wizard	<p>Select Client Preferences in the System Management Menu to define whether Fahrenheit (the default) or Celsius 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.</p> <p>NOTE: No personal information is sent about any user, server, network, system, etc., only general information about how the InfraStruXure Manager features are used.</p> <p>Select System Identification in the System Management Menu to define the InfraStruXure Manager System Name, Contact, and Location values.</p> <p>Select Log Settings in the System Management 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.</p>
3	Create the device groups	See Device Groups 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 identifies the wizard displays, in the order in which they appear, and provides a link to the help for the settings accessed through the wizard. In addition, a **Help** button is available in each of the displays accessed by the wizard.

Network Settings	<p>Accesses settings for the Public (User LAN) and Private (APC LAN) Networks: By default, the private network uses 192.168.1.* as its IP address, and a DHCP server provides the settings needed for public (corporate) network access.</p> <p>NOTE: If you change a private (APC LAN) or public (User LAN) network setting, the InfraStruXure Manager server must reboot to apply the change.</p> <p>To change the IP address (192.168.1.*) used by private network from its default (192.168.1.*) setting:</p> <ol style="list-style-type: none">1. Click Network Settings.2. Click Private Network.3. Select 10.0.1.* and click Ok.4. Click Ok to reboot the InfraStruXure Manager server.5. After the reboot finishes, log on and access this wizard again. <p>If no DHCP server is available to provide the network settings the InfraStruXure Manager server needs for public network access:</p> <ol style="list-style-type: none">1. Click Network Settings.2. Select Static Network Address.3. Define the six network settings.4. Click Ok.5. Click Ok to reboot the InfraStruXure Manager server.6. After the reboot finishes, log on and access this wizard again.
Server Time	<p>Accesses the Date, Time, and Time Zone settings the InfraStruXure Manager server will use.</p> <p>NOTE: 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>Accesses the licence-key list that determines how many devices the InfraStruXure Manager server can monitor.</p> <p>NOTE: 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>Accesses the settings used to select the authentication method used to log on to the InfraStruXure Manager server and to configure the settings used by that method.</p>
E-Mail Settings	<p>Accesses the e-mail recipients and SMTP settings the InfraStruXure Manager server uses to send e-mail for events, device group summaries, and firmware update notifications.</p> <p>NOTE: At least one e-mail recipient, and the SMTP settings, must be defined before the InfraStruXure Manager server can use its e-mail feature.</p>
Global Device Thresholds	<p>Accesses the global thresholds the InfraStruXure Manager server monitors for possible warning conditions.</p> <p>NOTE: Changes in the global threshold settings will not affect any threshold settings at the monitored devices, and any changes to the threshold settings at the monitored devices will not affect the global threshold settings.</p>
Device Access	<p>Accesses the settings required for InfraStruXure Manager SNMP communication with monitored devices, as well as the user names and passwords required for administrative access to monitored devices.</p>
Remote Monitoring Service	<p>Accesses the settings used to register the InfraStruXure Manager server to use APC Remote Monitoring Service (RMS) support.</p>
Add Devices	<p>Accesses the display used to discover the public network devices the InfraStruXure Manager server will monitor.</p> <p>NOTE: If the InfraStruXure Manager server is not connected to the public network yet, make that connection and use the “Add Devices” Display to discover the public network devices.</p>

Status, Alarm, 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 event severity levels are also used to define the following status and alarm conditions.

Critical	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 the InfraStruXure Manager displays as a critical-status alarm: 
Warning	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 the InfraStruXure Manager displays as a warning-status alarm: 
Informational (or Normal)	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 the InfraStruXure Manager displays, the following icon indicates that a device is operating normally: 

“Device Status” Display

When you log on to the InfraStruXure Manager server, the “Device Status” display appears. This display has three frames:

“Device Groups” Frame	<p>The left frame lists the Device Groups and allows you to select which group is displayed in the “Device List” Frame.</p> <p>NOTE: Device groups also allow you to tailor reports, as described in “Select Report Filter” Display.</p>
“Device List” Frame	<p>The top-right frame, which also appears in the “Power Zones” Display when the Devices tab is selected, displays status and other information about the devices within the device group selected in the “Device Groups” Frame.</p> <p>The “Device List” Frame displays only the information selected by the “Configure Columns” Display.</p> <p>You can select (highlight) a device to view more detail about its status in the “Recommended Actions” Frame.</p> <p>NOTE: You can double-click a device to access either its management application or a display that provides more information about the device, depending on the type of device. See “Device Details” Display.</p>
“Recommended Actions” Frame	<p>The bottom-right frame, which also appears in the “Power Zones” Display when the Devices tab is selected, provides more detailed status for the device selected (highlighted) in the “Device List” Frame.</p>

Device Groups

Overview

The device groups feature allows you to arrange monitored devices into device groups, with each group based on criteria you consider important (for example, device types or location).



Note

You use the “Add Devices” Display (accessed by the **Add Devices** option in the **Edit Menu**) to select the **Supported Devices** the InfraStruXure Manager server monitors on its public network; supported devices on the InfraStruXure Manager private (APC LAN) network are discovered automatically.

Use the procedures in **Device Group Management** to create and manage the device groups. These device groups are listed in the left frame of the “**Device Status**” Display and provide the following functions:

- The list in the “**Device Groups**” Frame allows you to select which set of devices (device group) is displayed in the “**Device List**” Frame.
- The **Print Device List** option in the **View Menu** allows you to print a copy of the devices listed in the “**Device List**” Frame for the selected device group.
- The “**Select Report Filter**” Display that appears when you create **Reports** allows you to select whether a report includes all the device groups identified in the filter, or just the groups you select.
- The “**E-mail Configuration for Group**” Display allows you to customize how the InfraStruXure Manager server uses e-mail notifications for a selected device group.
- The InfraStruXure Manager server generates **Events** when specific power problems occur at any UPS system assigned to a device group. Each event identifies the type of problem and the device group that has the problem.

“Device Groups” Frame

This frame lists the **Device Groups** you create, as well as two groups which cannot be renamed or deleted:

- **All Devices**: The “Device List” Frame lists all the devices monitored by the InfraStruXure Manager server.
- **Unassigned**: The “Device List” frame lists the devices not currently assigned to a device group.

When you select a device group, only the devices assigned to that group are listed in the “Device List” frame. By default, **All Devices** is selected when you log on to the InfraStruXure Manager server.

The device groups, including the **All Devices** and **Unassigned** selections, use status icon to indicate whether problems exist at the devices assigned to a device group:



The device groups, including **All Devices** and **Unassigned**, use status icons to indicate whether problems exist at any of the devices assigned to the device groups. See **Status, Alarm, and Event Severity Levels**.

Device Group Management

All devices are listed in the **Unassigned** device group until you add them to the device groups you create. Two menus provide the options you use to manage the device groups:

- Right-click menu: Right-click on 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**.



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

When enabled, all menu options are available except if **All Devices** (**Add Device Group** only) or **Unassigned** (**Configure Notification** only) is selected (highlighted).

To Create a Device Group	Select All Devices , and use the Add Device Group option in the right-click or Edit Menu .
To Create a Sub-group	Select a device group that does not have any devices assigned, and use the Add Device Group option in either the right-click or Edit Menu . NOTE: You cannot create a sub-group for a device group that has devices assigned, unless those devices are assigned to an existing sub-group.
To Assign or Move Devices to a Device Group (or Sub-Group)	<ol style="list-style-type: none">1. Select the device group in which the devices are located.2. In the “Device List” Frame, highlight the devices you want to move, and drag those devices to the new group or sub-group. NOTE: If a group (or sub-group) has any sub-groups assigned, you can only assign the devices to a sub-group that does not have any sub-groups of its own assigned.

<p>To Assign Devices to Multiple Device Groups (or Sub-groups)</p>	<ol style="list-style-type: none"> 1. Select any device group in which the devices are assigned. 2. In the “Device List” Frame, highlight the devices to assign to both the currently selected group and to another device group (or sub-group) to be selected. 3. Hold the CTRL key down and drag the highlighted devices into the new group or sub-group. <p>NOTE: You can assign the devices only to a group (or sub-group) that does not have a sub-group assigned.</p>
<p>To Remove Devices from Device Groups (or Sub-groups)</p>	<ol style="list-style-type: none"> 1. Select the device group from which you want to remove the devices. 2. In the “Device List” Frame, highlight the devices you want to remove. 3. Right-click a highlighted device, and do one of the following: <ul style="list-style-type: none"> • Select Remove Device from All Assigned Groups to move the devices to the Unassigned group from all groups to which they are assigned. • Select Remove Device from Selected Group to remove the devices from the selected group only. A device will move to the Unassigned group only if it is not assigned to another group. 4. Click Yes when asked to verify the removal.
<p>To Remove a Device Group (or Sub-group)</p>	<p>Select the device group, and use the Remove Device Group option in either the right-click or Edit Menu.</p> <p>NOTE: Any devices assigned to the deleted device group are moved to the Unassigned device group (if they are not assigned to any other device group). The devices will still be monitored by the InfraStruXure Manager server.</p>
<p>To Rename a Device Group</p>	<p>Right-click the device group, and select Rename Group.</p>

To Configure Notification for a Device Group

1. Right-click the device group, and select **Configure Notification**.
2. See “E-mail Configuration for Group” Display to configure how the InfraStruXure Manager server will use e-mail in response to events that occur at the devices assigned to the selected device group.
3. Repeat this procedure for all device groups for which e-mail configuration is required.

“E-mail Configuration for Group” Display

To customize how the InfraStruXure Manager server uses e-mail for a device group, right-click on the device group in the “Device Groups” Frame, and select **Configure Notifications**.



To define the e-mail recipients and SMTP settings required for e-mail notifications, see **E-Mail Settings**.

1. Double-click a listed e-mail recipient, or, to configure multiple recipients using identical settings, select those recipients and click **Configure**.
2. Use the “Select Notifications” display to select only the items for which you want to send e-mail notifications.



For information about the selections you can make, 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 **Public (User LAN) and Private (APC LAN) Networks**.

To access additional information about a listed device:

- Click a device once to display information about that device in the “**Recommended Actions**” Frame.
- Double-click any other device to access its “**Device Details**” Display.
 - 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.



Note

You can double-click an APC InfraStruXure Manager listing to access the “**Server Log On**” Display. However, attempts to log on to an InfraStruXure Manager 4.0-4.1.x server will fail. You can access these servers only by using a compatible InfraStruXure Manager client.

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.

Right-Click Menus

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

- A column-management menu appears when you right-click on any column heading in the “Device List” frame. Use this menu to enable or disable individual columns, or to access the “Configure Columns” Display.
- A device-management menu, which has the options described in the following table, appears when you right-click on any device selected (highlighted) in the “Device List” Frame.



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

Remove Device	Deletes all highlighted devices. The InfraStruXure Manager server will no longer monitor the removed devices.
Register as a Trap Receiver Un-register as a Trap Receiver	These options control whether the InfraStruXure Manager server will receive SNMP traps from a highlighted device. When multiple devices are highlighted, one of these options will be enabled if all selected devices can use the same option (Register or Un-register). Otherwise, both are disabled. NOTE: 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 Trap receiver feature .
Remove Device from Selected Group	Removes the device from the selected device group or sub-group displayed in the “Device List” frame. NOTE: The device is moved to the Unassigned group unless it is assigned to another group.
Remove Device from All Assigned Groups	Removes the device from any groups or sub-groups to which it is assigned. NOTE: The device is moved to the Unassigned group.

Device Details	Accesses the “ Device Details ” Display for a highlighted device (disabled when multiple devices are selected).
Device Information	Accesses the “ Device Identification ” Display for a highlighted device (disabled when multiple devices are selected).
HTTP Properties	Accesses the “ HTTP Properties ” Display for one or more highlighted devices.
Set Rack Name	Accesses the “ Set Rack Name ” Display for a highlighted device (disabled when multiple devices are selected).
View Group Membership	Accesses the “ View Group Membership ” Display for a highlighted device (disabled when multiple devices are selected).
View Log	Creates a data log for the selected device. NOTE: If the InfraStruXure Manager server cannot generate a data log for the type of device selected, an error message appears. For information about the available logs, see Data Logs .

“Set Rack Name” Display

Use this display to identify the **Rack Name** for the rack in which the device selected in the device list resides, then click **Apply**.

“Device Identification” Display

Use this display to define the **System Name**, **Contact**, and **Location** values for the device selected in the device list, then click **Apply**.

“View Group Membership” Display

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

“Device Details” Display

Overview

To access more information about any device the InfraStruXure Manager server monitors, perform any of the following actions:

- Highlight a device in the “**Device List**” Frame and select **Device Details** in the **View Menu**.
- Double-click a device in the “Device List” frame.
- 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** or **Data Logs**.

For a monitored APC InfraStruXure Manager server, the “Server Log On” display appears with that server selected in the **Server** field.



Note

However, attempts to log on to an InfraStruXure Manager 4.0-4.1.x server will fail. You can access these servers only by using a compatible InfraStruXure Manager client.

For all other devices, one of the following “Device Details” displays appears:

- For an InfraStruXure Power Distribution Unit (PDU), the **InfraStruXure PDU Details** display provides a **General (Device Information)** option and up to ten **Status** options.
- For some versions of the Metered Rack Power Distribution Unit (Rack PDU), the **Metered Rack PDU Details** display provides **General**, **Configuration**, and **Status** options.
- For all other monitored devices, an **HTML “Device Details” Display** allows direct access to the management applications at those devices.

HTML “Device Details” Display

Except for an InfraStruXure PDU ([InfraStruXure PDU Details](#)), or some versions of the Metered Rack PDU ([Metered Rack PDU Details](#)), an HTML frame appears when you do any of the following actions:

- Highlight a device in the “[Device List](#)” Frame and select **Device Details** in the [View Menu](#).
- Double-click a device in the “Device List” frame.
- 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](#) or [Data Logs](#).

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 on 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.



See also

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.

“HTTP Properties” Display

Use this display to define the parameters that allow the InfraStruXure Manager server to use the [HTML “Device Details” Display](#) to access the management cards at monitored devices.

Username and Password	<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 HTML “Device Details” Display 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>NOTE: For more information about the two levels of access, see Administrator versus General access.</p>
Port Number	<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 HTML “Device Details” Display to access a device, this port number must match the port number used at that device’s management card.</p> <p>NOTE: To access the logon display for a PCBE agent, this port number must be 3052.</p>
Protocol	<p>Identifies the protocol used to communicate with the device’s management card.</p> <p>To use the HTML “Device Details” Display to access a device, this protocol must match the protocol used at that device’s management card.</p> <p>NOTE: 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, as well as 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.

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

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

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

Branch Breakers

Up to four tabs provide graphical representations of 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:

RDP Feed	Identifies whether a breaker supports a remote distribution panel (RDP).
Current (Amps)	Identifies the current output from each breaker.
Alarm	Identifies whether an overcurrent or undercurrent threshold violation exists at a breaker.
Description	Identifies a description for each breaker. Typically this description identifies the racks or devices that connect to the circuit breaker for power.
Breaker Rating	Identifies the maximum current each breaker can support without being tripped.
Undercurrent (%)	Identifies, as a percentage of the Breaker Rating , the current that will result in an undercurrent alarm for each breaker.
Overcurrent (%)	Identifies, as a percentage of the Breaker Rating , the current that will result in an overcurrent alarm for each breaker.

The **Rating (Amps)**, **Description**, **Overcurrent (%)**, and **Undercurrent (%)** 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 (%)**, **Undercurrent (%)**, and **Alarm** columns, and the **Overcurrent** and **Undercurrent** thresholds are disabled in the “PDU Breaker Panel Settings” display.

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

Bypass Input

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

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

Main Input

Use this **Status** option in the **InfraStruXure PDU Details** display to view status information about the main input power at an InfraStruXure PDU, and to set voltage thresholds.

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

Output Current

Use this **Status** option in the **InfraStruXure PDU Details** display to view status information about the output current at an InfraStruXure PDU, and to set current thresholds.

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

Output Voltage

Use this **Status** option in the **InfraStruXure PDU Details** display to view status information about output voltage at an InfraStruXure PDU, and to set voltage thresholds.

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

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

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

Metered Rack PDU Details

The InfraStruXure Manager server can use the [HTML “Device Details” Display](#) to log on to the management application at some versions of the Metered Rack PDU. For Metered Rack PDUs to which the InfraStruXure Manager server cannot log on, the “Metered Rack PDU Details” display provides general device information, and **Configuration (Settings)** and **Status** options that can be used to configure current and load thresholds.

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

Outlet Status (Status option)

Uses a status icon to report the status of each available phase, and provides the following information for a phase:

Current: Identifies the output current, in Amps

Threshold: Identifies the acceptable range for the current, as defined by the **Undercurrent** and **Overcurrent** threshold settings in the **Settings** option.

Overload: Identifies the current, in Amps, that represents an overload, as defined by the **Overload** threshold setting in **Settings** option.

Status: Reports **Normal**, when no threshold violation exists, or identifies a threshold that has been violated (**Undercurrent**, **Overcurrent**, or **Overload**).

“Recommended Actions” Frame

Highlight a single device in the “[Device List](#)” Frame to display the following information about that device in the “Recommended Actions” frame:



Note

No information is displayed when multiple devices are highlighted.

- **Hostname**, **Model Name**, **Contact**, and **Location** values for the selected device
- The device’s condition, with a status icon that identifies the severity of that condition



For more information about status icons and the conditions they represent, see [Status, Alarm, and Event Severity Levels](#).

- A description of the condition
- Recommended actions for any critical or warning condition



Note

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

“Power Zones” Display

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

“Power Zones” Frame	The left frame lists the Power Zones and allows you to select which Power Zone or Power Source is displayed in either the Devices tab or Diagram tab.
Devices tab	<p>Select this tab to access two frames that are also used in the “Device Status” Display: the “Device List” Frame and the “Recommended Actions” Frame.</p> <p>The power node (power zone or source) selected in the “Power Zones” Frame determines which devices will be listed in the Devices tab.</p> <p>The Devices tab displays only the information selected by the “Configure Columns” Display.</p> <p>You can select (highlight) a device to view more detail about its status in the “Recommended Actions” Frame.</p> <p>NOTE: You can double-click a device to access either its management application or a display that provides more information about the device, depending on the type of device. For more information, see “Device Details” Display.</p>
Diagram tab	<p>Select this tab to view the diagrams for the Power Zones you created.</p> <p>NOTE: For information about the two basic types of diagrams, see InfraStruXure PDU Diagrams and Device Diagrams.</p>

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.



For information about the device list that appears in the **Devices** tab of the “Power Zones” Display, see “Device List” Frame.

“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 you chose this selection, all the devices monitored by the InfraStruXure Manager server are listed in the **Devices** tab.
- **Unassigned:** When you chose this selection, all the devices not currently assigned to a power zone are listed in the **Devices** tab.



Note

For information about the device list in the **Devices** tab of the “Power Zones” Display, see “Device List” Frame.

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

- **InfraStruXure PDU Diagrams:** Illustrate power zones that can include up to two power sources, with one of the following InfraStruXure PDUs assigned to at least one of those sources:
 - 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.

Select the power zone, or any of its power sources or devices in the “Power Zones” frame to display a full diagram of the power zone when the **Diagrams** tab is selected.

- **Device Diagrams:** Illustrate the power relationship of the devices at 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. Selecting the power zone or its power sources does not display a diagram in the **Diagrams** tab; selecting one of its devices displays a diagram that identifies the power relationship of the device to other devices assigned to the power zone.



For information about the icons that power zones and the **All Devices** and **Unassigned** selections use to indicate status conditions, see **Status, Alarm, 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](#).

Before the InfraStruXure Manager server can create a diagram of a power zone, you must use the procedures described in the following table to perform the following steps:

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 the **Power Zones Wizard** option in the **Edit Menu** to launch the [InfraStruXure Manager Power Zones Wizard](#). This wizard automates the process of creating diagrams for devices that the InfraStruXure Manager server monitors on its private (APC LAN) network.

To Add a Power Zone	<ol style="list-style-type: none"> 1. Select All Devices. 2. Select Add Power Zone in the right-click or Edit Menu.
To Add a Power Source	<ol style="list-style-type: none"> 1. Select the power zone. 2. Select Add Power Source in the right-click or Edit Menu.
To Assign Devices to a Power Source	<ol style="list-style-type: none"> 1. Select the Unassigned device group. 2. In the Devices tab, highlight the devices to assign to the power zone, and drag those devices to a power source. 3. Release the mouse button when the selected power source becomes highlighted.
To Arrange Devices	<p>This procedure is critical to creating accurate Device Diagrams; it has no affect on the InfraStruXure PDU Diagrams except to represent the proper power relationship of the devices in the power zone.</p> <ol style="list-style-type: none"> 1. Highlight a device in the power zone, and drag it to the device to which it connects for its power. 2. Release the mouse button when the second device becomes highlighted. 3. Repeat the preceding steps until all devices are connected in the order in which they receive power.
To Set Rack Names	<p>This procedure is critical to creating accurate InfraStruXure PDU Diagrams; it has no affect on Device Diagrams.</p> <ol style="list-style-type: none"> 1. Highlight a device in the Devices tab. 2. Right-click and select the Set Rack Name option. 3. Assign the rack name, if the appropriate name is not already assigned. 4. Repeat the preceding steps for the other devices.
To Remove a Power Source or Power Zone	<ol style="list-style-type: none"> 1. Select the zone or source. 2. Select Remove Selected Zone or Source in the right-click or Edit Menu. <p>NOTE: Any devices assigned to the deleted zone or source are moved to Unassigned; they are not deleted.</p>
To Rename a Power Zone or Source	<p>Right-click the power zone or power source, and select Rename.</p>

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 status 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
 - Allows you to click a device in the list of devices assigned to a rack to access the “[Device Details](#)” Display for that device.



Note

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. For more information, see “[Set Rack Name](#)” 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.

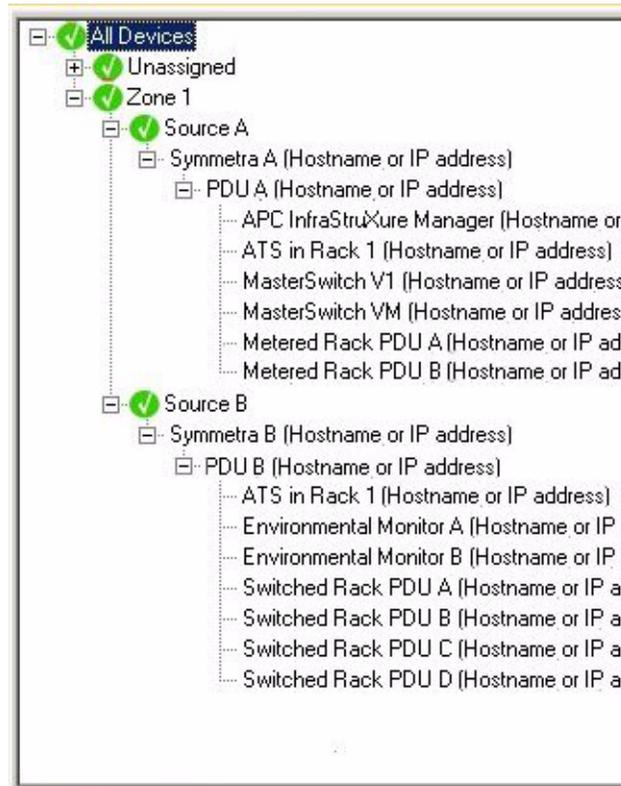
The power zone in this example was created using the **InfraStruXure Manager Power Zones Wizard**. Once you create the power zone using this wizard, you can arrange the devices in the order in which they connect to each other for power.



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.

1. Select a device and drag it to the device to which it connects for its power, releasing the mouse button when the second device becomes highlighted.
2. Repeat step 1 until all devices have been connected to each other in the order in which they receive power.



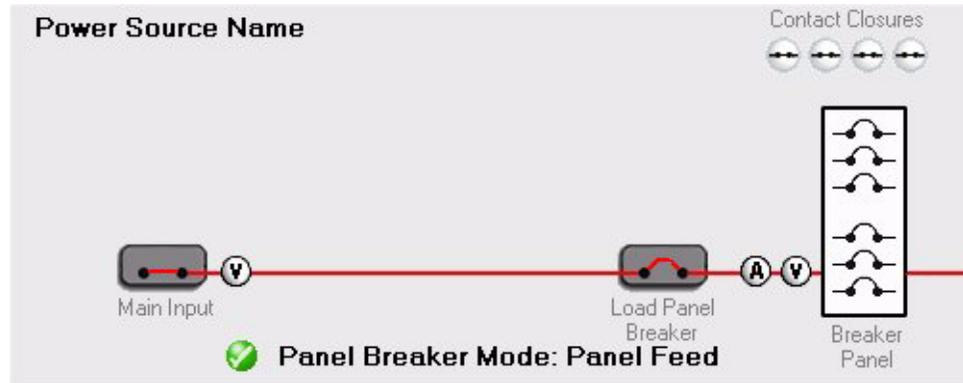
InfraStruXure PDU diagram example

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.

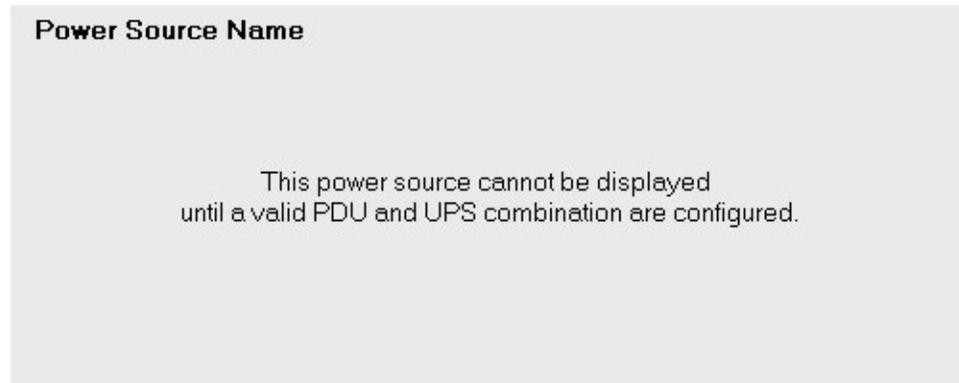
The following conditions would change the appearance of the InfraStruXure PDU diagram as described:

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

- 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](#).

USER'S GUIDE

InfraStruXure Manager

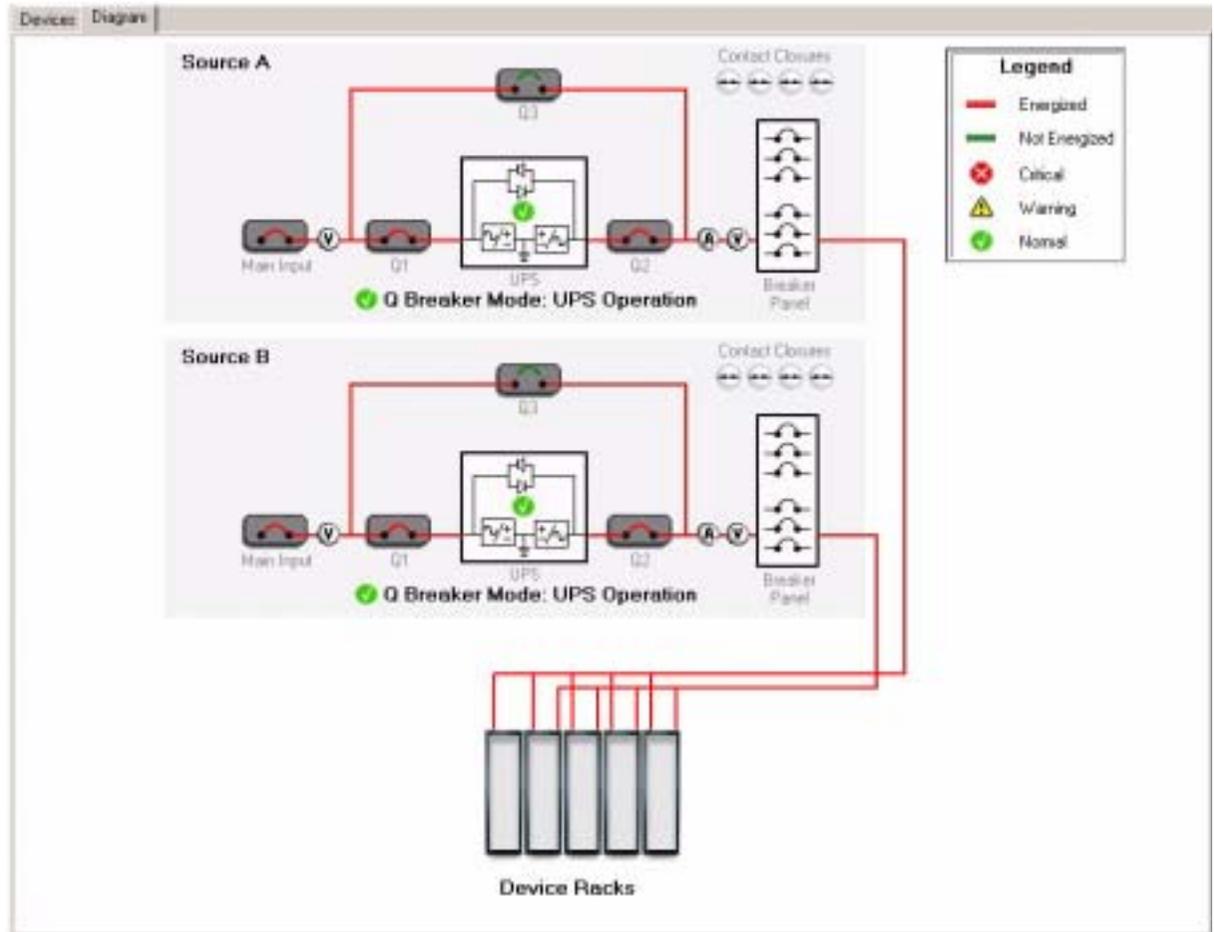


Diagram legend

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**).



Note

For more information about the warning, critical, and normal conditions, see [Status, Alarm, 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:

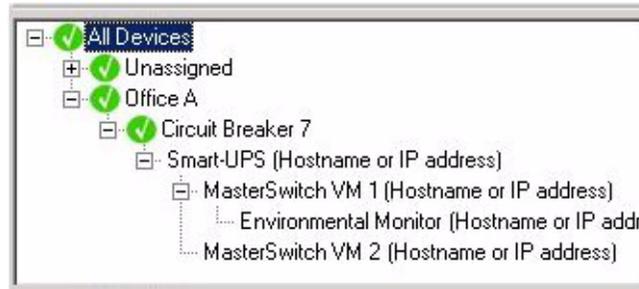
- In a power zone with a Smart-UPS that provides power to two MasterSwitch VM devices, the MasterSwitch VM devices must be assigned to the Smart-UPS.
- If one of the MasterSwitch VM devices provides power to another APC device, such as an Environmental Monitoring Unit, that APC device must be assigned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

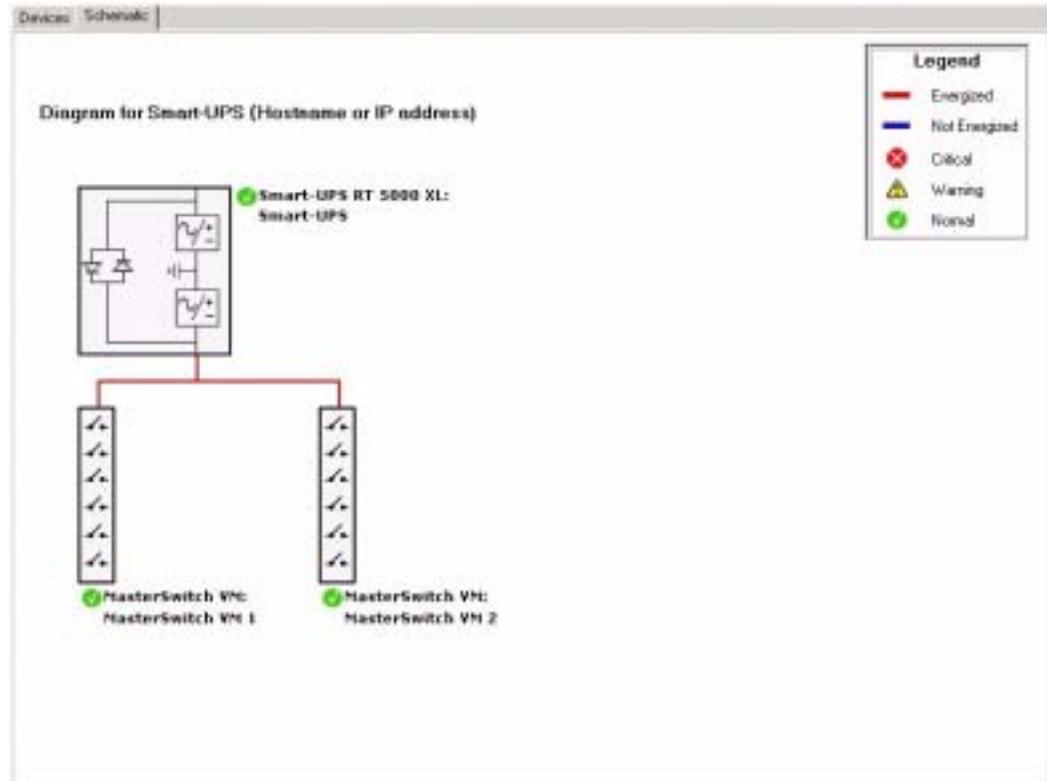
- [Smart-UPS diagram](#)
- [MasterSwitch VM 1 \(or Environmental Monitor\) diagram](#)
- [MasterSwitch VM 2 diagram](#)



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

Smart-UPS diagram. This example assumes that you selected the Smart-UPS in the **Power zone example**.

- The Smart-UPS is the APC device that provides power to all devices in the power zone.
- The two MasterSwitch VM devices are the only APC devices that obtain their power directly from the Smart-UPS.



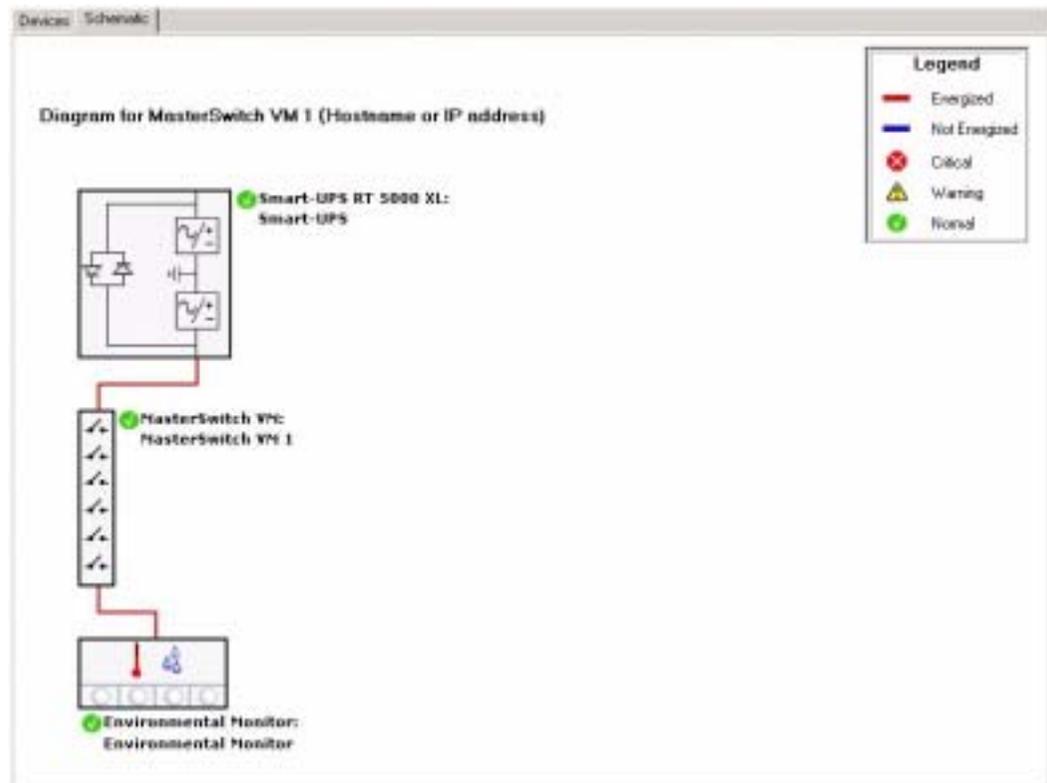
MasterSwitch VM 1 (or Environmental Monitor) diagram. This example assumes that you selected the MasterSwitch VM 1 device in the **Power zone example**.

- The Smart-UPS is the APC device that provides power to all devices in the power zone.
- The MasterSwitch VM 1 device obtains its power directly from the Smart-UPS, and provides power to the environmental monitoring device.



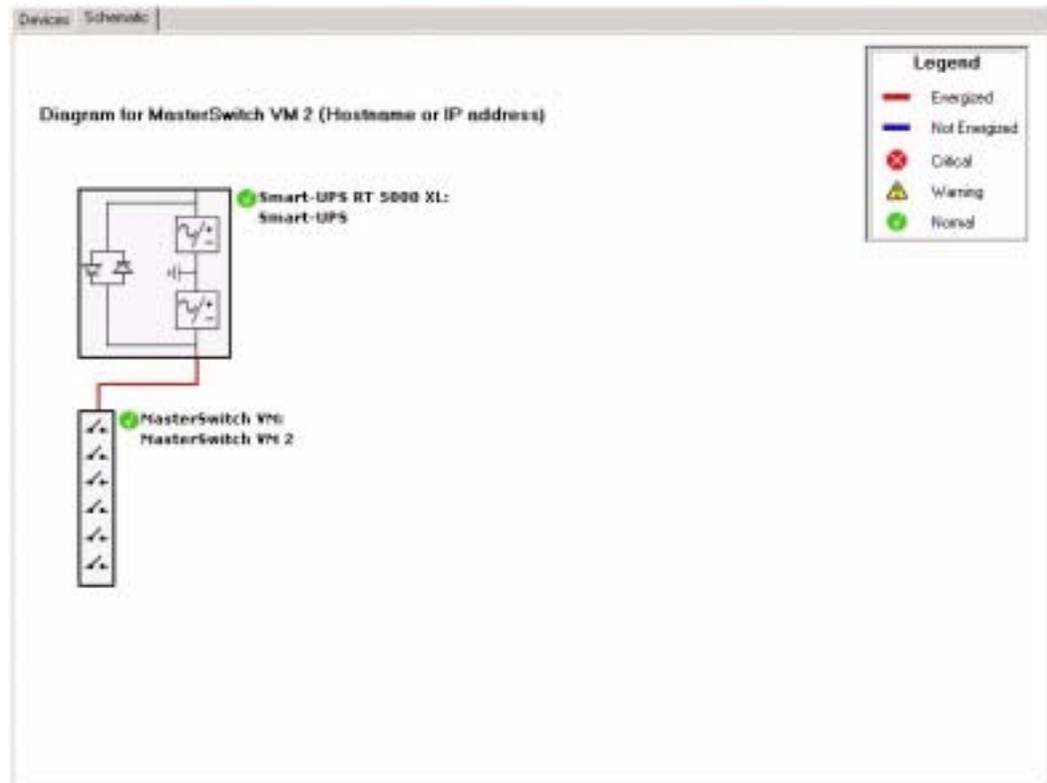
Note

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



MasterSwitch VM 2 diagram. This example assumes you selected the MasterSwitch VM 2 device in the **Power zone example**.

- The Smart-UPS is the APC device that provides power to all other devices in the power zone.
- The MasterSwitch VM 2 device obtains its power directly from the Smart-UPS, and, in this example, it provides no power to any other APC power protection or environmental monitoring device.



“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, environmental device, InfraStruXure PDU, Rack PDU, Symmetra UPS, and Silcon UPS.

File Menu

Overview

Use the menu options to do the following:

Change Server...	Access the “ Server Log On ” Display to log on to a different InfraStruXure Manager v4.2 server. NOTE: You cannot use this option to log on to any other version of the InfraStruXure Manager server.
Backup Server	Access the “ Backup Server ” Display to save the configuration settings for the InfraStruXure Manager server, including the definitions for the Device Groups and Power Zones , to a backup (*.apc) file. NOTE: Only the Client Preferences settings, which are specific to each InfraStruXure Manager client, are not saved in the backup file.
Restore Server	Access the “ Restore Server ” Display to upload settings to the InfraStruXure Manager server from either a psxconfig.xml or *.apc file.
Exit	End the InfraStruXure Manager session.

“Backup Server” Display

Use this display, which is accessed by the **Backup Server** option in the **File Menu**, to create an backup (*.apc) file that contains all the configuration settings for the InfraStruXure Manager server, including the definitions for the **Device Groups** and **Power Zones**.

You can use the backup (*.apc) file to import settings at the original InfraStruXure Manager server, or to import settings into a replacement server.

1. Click **Browse**.
2. Navigate to the folder that contains an existing backup (*.apc) file or to the folder in which a new backup file will be created.
 - To overwrite an existing file, select that file and click **Save**.
 - To create a new file, define the file name, and click **Save**.
3. Enter the **FTP Username** and **FTP Password** values defined in the “**FTP Server Settings**” display (lowercase “apc” is the default for both), and click **Download**.



To import the *.apc file settings at an InfraStruXure Manager server, see “**Restore Server**” Display.

“Restore Server” Display

Overview

Use this display, which is accessed by the **Restore Server** option in the **File Menu**, to import configuration settings into the InfraStruXure Manager server. How you use this display depends on the type of file you want to use to import those settings:

- **InfraStruXure Manager backup (*.apc) file:** Allows you to use a backup file that was created using the “**Backup Server**” Display to restore all the configuration settings for the InfraStruXure Manager server, including the definitions for the **Device Groups** and **Power Zones**.



Note

The settings for the **Client Preferences** option in the **System Management Menu**, which can vary from client to client, are not saved as part of the **InfraStruXure Manager backup (*.apc) file**.

- **InfraStruXure Manager 1.3.4 settings (psxconfig.xml) file:** Allows you to import settings that were exported from an InfraStruXure Manager v1.3.4 server.

InfraStruXure Manager backup (*.apc) file

You can import settings from any *.apc file created using the “Backup Server” Display.

1. Click **Browse**.
2. Use the “Open” display to navigate to the backup (*.apc) file with the settings you want to import.
3. Select the file, and click **Open**.
4. Define the **FTP Username** and **FTP Password** values (lowercase “apc”, by default, for both), and click **Upload**.

InfraStruXure Manager 1.3.4 settings (psxconfig.xml) file

The psxconfig.xml file allows you to import settings that were exported from an InfraStruXure Manager v1.3.4 server. Using the “Restore Server” Display to import that file is only part of the process needed to ensure that the settings are imported correctly.



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 enough license keys are defined to allow the InfraStruXure Manager server to discover the APC devices on its private (APC LAN) network.
2. Make sure all devices on the private (APC LAN) have been discovered.
3. Access the “Restore Server” Display, and click **Browse**.
4. Use the “Open” display to navigate to the folder on the InfraStruXure Manager client that contains the psxconfig.xml file, select that file, and click **Open**.

5. At the bottom of the “Restore Server” Display, select the configuration settings you want to import:

Device Configuration	The rack name and location, address, device type, device name, and device location settings for the APC devices that connect to the private (APC LAN) network.
System Configuration	The system name, contact, and location settings assigned to the InfraStruXure Manager server.
E-Mail Configuration	The SMTP server and e-mail recipients, and the setting to enable or disable e-mail for critical, warning, and informational events.
Network Configuration	The public and private network settings. NOTE: If you select these settings, the InfraStruXure Manager server must reboot to apply the settings.

6. Define the **FTP Username** and **FTP Password** values (lowercase “apc”, by default, for both), and click **Upload**.

“Server Log On” Display

Use this display to log on to the InfraStruXure Manager server.



Note

The InfraStruXure Manager client version must be compatible with the InfraStruXure Manager server, or any attempt to log on to the server will fail. For example, you cannot use a v4.2 client to log on to an InfraStruXure Manager v4.0-v4.1.x server, nor can you use a v4.0-v4.1.x client to log on to a v4.2 server.

1. Define the **Server** to which you want to log on.
2. Define the **Password** and **Username** needed to log on to the identified server.
3. Click **Connect**.



Note

A “Could not log on” error message appears if the username or password is invalid, or the InfraStruXure Manager client version is not compatible with the InfraStruXure Manager server version. A “Could not connect” error message appears if the InfraStruXure Manager client failed 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](#).

Add Devices	Access the “Add Devices” Display used to define the devices the InfraStruXure Manager server monitors.
Remove Selected Devices	Remove one or more devices from the list of devices the InfraStruXure Manager server monitors.
Set Rack Name for Selected Device	Access the “Set Rack Name” Display for the device selected in the “Device List” Frame.
Set HTTP Properties for Selected Devices	Access the “HTTP Properties” Display for the device or devices selected in the “Device List” Frame.
Add or Remove Device Group	Manage the device groups, as described in Device Group Management .
Add Power Zone	Add a power zone, as described in Power Zone Management . NOTE: This option is active only when All Devices is selected in the “Power Zones” Frame.
Add Power Source	Add a power source to a selected power zone, as described in Power Zone Management . NOTE: A power zone must have one or two power sources assigned.
Remove Selected Zone or Source	Remove a selected power source or power zone.
Power Zones Wizard	Launch the InfraStruXure Manager Power Zones Wizard .

“Add Devices” Display

Use this display to have the InfraStruXure Manager server discover **Supported Devices** on the public (User LAN) network, and add those devices to its list of monitored devices.



Note

Supported devices on the private (APC LAN) network are discovered automatically. See **Public (User LAN) and Private (APC LAN) Networks**.

During the discovery process, the InfraStruXure Manager server searches for supported devices only at the IP addresses that you define.



Note

The **Device Access** option in the **System Management Menu** accesses two display tabs (**SNMP** and **Administrator Passwords**) that affect the discovery process. Before any APC device can be discovered, the read community name it uses must be listed in the **SNMP** tab; for a Symmetra or Silcon UPS, the username, password, and authentication phrase combination it uses for administrator access must also be listed in the **Administrator Passwords** tab.

1. Select a tab:

- Use the **Network Address** tab to define a single IP address.
- Use the **Network Segment** tab to define all IP addresses for a specified network segment.
- Use the **Network Address Range** tab to define a dedicated range of IP addresses that can include multiple network segments. For example, to search a public network 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.

- Use the **Import** tab 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). These 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 is listed in the **Import** tab, click **Import Now**.
2. Click **Add** to list the IP address information you defined in the selected tab in the **Network Addresses to Search** box.



Note

To remove an address from the **Network Addresses to Search** box, right-click the address and select **Delete**.

3. Repeat steps 1 and 2 until all the IP addresses to be searched for supported devices are listed.
4. If you want the InfraStruXure Manager server to receive SNMP traps from any devices it adds, make sure **Configure SNMP Agents to Send Traps to Server** is selected (checked); otherwise, disable this option.



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** in the “Confirm” display to initiate the discovery process.



Note

Any devices discovered are listed under **Unassigned** in the “Device Groups” Frame.

View Menu

Overview

Use the menu options to do the following:

Device Status	Access the “Device Status” Display.
Power Zones	Access the “Power Zones” Display.
Reports	Access the “Reports” Display.
Logs	Access the “Logs” Display.
Device Details	Access the “Device Details” Display for a device that is highlighted in the “Device List” Frame.
Print Device List	Print, or save as a file, the list of devices displayed in the “Device List” Frame. NOTE: Which devices are listed depends on what group is selected in the “Device Groups” Frame, including the All Devices or Unassigned selections.
Refresh	Refresh the “Device Status” Display or “Power Zones” Display.
Configure Columns	Access the “Configure Columns” Display used to define what information appears for the devices listed in the “Device List” Frame, as well as what columns are displayed for a selected log or report.

“Configure Columns” Display

How you use this display depends on the feature you are using when you access it:

- When the “Device Status” Display or the **Devices** tab in the “Power Zones” Display is selected: Use **Configure Columns** in the **View Menu** (or in the menu that appears when you right-click on any column heading in the “Device List” Frame) to select the columns of information that will appear in the device list whenever it is displayed.



The only category that must be selected is **Hostname**; for information about **Trap Receiver**, the only category that is not self-explanatory, see **Trap receiver feature**.

- 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 the InfraStruXure Manager server monitors.
SNMP Trap Forwarding	Enable or disable trap forwarding, and when enabled, identify the IP addresses to which the InfraStruXure Manager server will forward SNMP traps.
Building Management System	Define settings that allow the Building Management System (BMS) to get data from devices that connect to the InfraStruXure Manager private (APC LAN) network.
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 InfraStruXure Manager global thresholds are independent of the threshold settings at the monitored devices. Changes to the global thresholds have no effect on threshold settings at monitored devices, and changes to threshold settings at the monitored devices have no effect on the global thresholds.

UPS tab

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

Battery Age Exceeds	Identifies the maximum age for a UPS battery, in months.
UPS Age Exceeds	Identifies the maximum age for a UPS, in months.
Runtime Remaining Less Than	Identifies the minimum amount of runtime remaining, in minutes.
UPS Load Exceeds	Identifies the maximum load, as a percentage of full capacity.

Environmental Monitor tab

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

Temperature Below Temperature Above	Identifies the boundaries of the normal temperature range.
Humidity Below Humidity Above	Identifies the boundaries of the normal relative humidity range.

Metered Rack PDU tab

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

Load Exceeds <n> Percent	Identifies the maximum load as a percentage of full-load capacity. NOTE: This threshold does not apply to a MasterSwitch V1, MasterSwitch V2, or MasterSwitch Plus device, none of which are metered.
---	---

Schedule tab

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

When enabled, summary notifications are sent for each device group that has an e-mail recipient configured to receive these notifications. The notifications summarize any global threshold violations that exist within the specified 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 exceptions summary notifications, see “[E-Mail Configuration for Recipient](#)” display.

Send Periodic Exceptions Summary Notifications	Enables exceptions summary notifications to be sent, when checkmarked (the default condition).
Date	Identifies the date on which the next e-mail will be sent.
Time	Identifies the time of day at which e-mail will be sent.
Recurrence	Identifies how often e-mail 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, and when enabled, to define the trap receivers to which those traps can be sent.

To enable SNMP trap forwarding	Checkmark the Enable SNMP Trap Forwarding option (disabled by default).
To add a trap receiver	<ol style="list-style-type: none">1. Click Add to access the “Add SNMP Trap Destination” display.2. Define the Trap Destination, the IP address of the trap receiver.3. Define the Community Name, the write community name needed to send the SNMP traps to the Trap Destination.
To remove a trap receiver	Highlight (select) one or more of the listed IP addresses and click Remove .

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 management personnel only. Improper or failed communication will result if the **Slave Address** settings do not exactly match the corresponding BMS settings.

BMS Support tab	Enables or disables BMS support through the RS-485 port.
Port Settings	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. NOTE: To wire a connector for use with the RS-485 port, see Pinout for the RS-485 port connector .
Slave Addresses tab	Configures the Slave Address (1-247) each device requires for BMS integration. NOTE: This tab lists devices only when BMS support is enabled; each device must have a unique Slave Address 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.

DB9-F Pin	RS-485 Signal
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 APC's Remote Monitoring Service (RMS) support, and to disable or re-enable this service, once you register.



To use a proxy server for HTTP-based communication with the remote RMS server, see **Proxy Settings**.

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

System Management Menu

Overview

Use the menu options to do the following:



One menu option, **Client Preferences**, is available to all users. All other options 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 the devices the InfraStruXure Manager server monitors.
Server options	Server Time: Define the time and date settings used by the InfraStruXure Manager server.
	Shut Down or Reboot Server: Shut down or reboot the InfraStruXure Manager server. NOTE: You can use this option to reset the InfraStruXure Manager server to its factory-default settings.
	Setup Wizard: Access the InfraStruXure Manager Setup Wizard that is used for part of the Initial Configuration Requirements .

Network options	Network Settings: Define the settings the InfraStruXure Manager server needs in order to operate on its public and private networks.
	E-Mail Settings: Define the settings that enable the InfraStruXure Manager server to use e-mail notifications.
	FTP Server Settings: Start or stop the FTP service, and define the FTP logon settings.
	System Identification: Define the System Name , Contact , and Location values for the InfraStruXure Manager server.
	Proxy Settings: Define the settings that enable the use of a proxy server for HTTP-based Remote Monitoring Service (RMS) transmissions.
Log Settings	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.
License Keys	Manage the InfraStruXure Manager license requirements.
Client Preferences	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 configure the settings used by that method: Local, Remote Authentication Dial In User Service (RADIUS), or both.



Caution

Do not select and apply the **RADIUS only** authentication method 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 to the InfraStruXure Manager server again.

Authentication Method	
	<p>Use this option to select the method to be used to log on to the InfraStruXure Manager server:</p> <ul style="list-style-type: none">• Local only: Only the access settings defined in the “Configure local users” display can be used to log on.• Local, then RADIUS: If the values used during an attempt to log on to the InfraStruXure Manager server do not match the settings in the “Configure local users” display, the logon values are checked against the settings stored at the RADIUS server.• RADIUS, then Local: If the values used during an attempt to log on to the InfraStruXure Manager server do not match the settings stored at the RADIUS server, the logon values are checked against the settings in the “Configure local users” display.• RADIUS only: Only the access settings stored at the RADIUS servers identified in the “Configure RADIUS settings” display can be used to log on.

Configure Local Users	Use this button to configure the Administrator and General user settings in the “ Configure local users ” display when an authentication method other than RADIUS only is selected.
Configure RADIUS Settings	Use this button to configure the RADIUS server settings in the “ Configure RADIUS settings ” display when an authentication method other than Local only is selected.
Allow users to save their logon settings	Use this option to enable (the default setting) or disable whether this InfraStruXure Manager server will allow users to save their logon settings using Save Logon Settings in the “ Server Log On ” Display.

Configure local users

Use the display for the **Configure Local Users** button in the “**Authentication Settings**” display to manage the case-sensitive **Administrator** and **General** usernames and passwords used for local access to the InfraStruXure Manager server.

- You can manage the **Administrator** username and password, both of which are **apc**, lowercase, by default, but you cannot add a new **Administrator**.
- You can add **General** users, and manage the username and password for each.



For information about how the type of logon access affects which features you can use, see **Administrator versus General access**.

To add a General user	Click Add , and use the “Add a General User” display to define a Username and Password for the new user.
To delete a General user	Highlight the user, and click Remove .
To change the Username or Password for any user	Highlight either the Administrator or a General user, and click Modify . Then use the “Modify Logon Settings” display to change the Username or Password values.

Configure RADIUS settings

Use the display for the **Configure RADIUS Settings** button in the “**Authentication Settings**” display 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

The secondary server is used for authentication only when the primary server is unavailable for any reason. If the primary server rejects the logon settings, the secondary server is not used.

Before you can use RADIUS to validate logon attempts at the InfraStruXure Manager server, the RADIUS server must be configured as follows:

- The RADIUS server 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 logon access affects which features you can use, see [Administrator versus General access](#).

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

Administrator versus General access

When you log on to the InfraStruXure Manager server, either locally or through the RADIUS server, the features available depend on whether you logged on as the **Administrator** or as a **General** user.

- The **Administrator** has full access to all menus and features.
- A **General** user can generate reports and logs, access status, and use the **Help Menu** options, **Change Server** and **Exit** in the **File Menu**, and **Client Preferences** in the **System Management Menu**. All other menu options are disabled.

Device Access

Overview

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

SNMP tab	<p>Define the Community names and Timeout settings the InfraStruXure Manager server uses for its SNMP communications.</p> <p>NOTE: For information about how the InfraStruXure Manager server controls whether it receives SNMP traps from the devices it monitors, see Trap receiver feature.</p>
Administrator Passwords tab	<p>Define administrator username, password, and authentication phrase combinations the InfraStruXure Manager server needs to communicate with APC devices that use non-SNMP protocols.</p> <p>NOTE: When adding an administrator, you must define the Authentication Phrase. The default Authentication Phrase used by APC devices is admin user phrase (lowercase).</p>

Community names

The InfraStruXure Manager server uses the community names in the “[Device Access](#)” display (**SNMP** tab) to do the following:

- The InfraStruXure Manager server uses its read community names 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.
- The InfraStruXure Manager server uses its write community names to perform SNMP SETs to change settings at devices it monitors. 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 Read Community Name or Write Community Name	Click the appropriate Add button and use the “Add Community Name” display to define the new community name.
To remove a Read Community Name or Write Community Name	Select (highlight) the community name and click Remove .

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.

Retries	Identifies how many times the InfraStruXure Manager server will attempt to establish communication with an SNMP agent after an initial attempt fails (the default is 1).
Timeout (ms)	<p>Identifies 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 1000).</p> <p>CAUTION:The InfraStruXure Manager server polls its monitored devices for status information. An increase in the Timeout (ms) and Retries values can dramatically increase that polling time when network issues cause communication problems. This is because the timeout value doubles for each retry. For example, if the Timeout (ms) used for the initial attempt is the default setting of 1000 ms (1 second), the timeout value for the first retry is 2000 ms (2 seconds), 4000 ms (4 seconds) for a second retry, and so on. Thus, for a Retries setting of 5, the InfraStruXure Manager server can take 32000 ms (32 seconds) to determine that it cannot connect to a device.</p>

Trap receiver feature

Supported Devices generate SNMP traps when informational, warning, or critical events occur. For most devices, the InfraStruXure Manager server does not need to be defined as a trap receiver to report status and record **Event Log** entries for all the events that occur at a monitored device.



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. For more information about these events, see **UPS: Events** and **Environmental: Events**.

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

- When you use the “**Add Devices**” **Display** with the **Configure SNMP Agents to Send Traps to Server** option enabled (the default setting), 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; highlight a listed device and use these options to control whether the InfraStruXure Manager server is defined as a trap receiver at that device.



The InfraStruXure Manager server cannot be defined as a trap receiver at any 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**.

Server Time

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



Note

The InfraStruXure Manager server must reboot before a change to any server time setting (date, time, or time zone) can take effect.

Server Date	Defines the date the server is currently using.
Server Time	Defines the time the server is currently using. NOTE: Click Use Client Time to reset the time to match the client.
Time Zone	Defines the time zone in which the server is located.

Shut Down or Reboot Server

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



Before you use the **Reset to Factory Defaults** option during either a shutdown or reboot process, make sure any laptop or other personal computer that connects to the private network is turned off. Otherwise the same IP address that is used by a laptop could inadvertently be assigned to another device on the private network. For information about how to clear a duplicate IP address problem, see [Duplicate IP addresses assigned on the private network](#).



If the **Reset to Factory Defaults** option is enabled during a shutdown or reboot process, the InfraStruXure Manager server must be completely reconfigured. All report and log data are deleted, and no changes to any configuration settings or displays are saved.

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

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 **Public (User LAN) and Private (APC LAN) Networks**.



Note

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

Hostname	Allows you to define a name for the InfraStruXure Manager server.
MAC Address	Identifies the Media Access Control (MAC) address assigned to the InfraStruXure Manager public network card.
Private Network	Accesses the “Private Network Address” display you use to select the network segment address the InfraStruXure Manager server uses on its private (APC LAN) network: 192.168.1.* or 10.0.1.* . NOTE: The default selection is 192.168.1.* . Select 10.0.1.* only if 192.168.1.* would conflict with another segment on the network.
DHCP Network Address	Select to use Dynamic Host Configuration Protocol (DHCP) to provide the TCP values used by the InfraStruXure Manager public network. This protocol provides a method of automatically assigning IP addresses to network clients. NOTE: When DHCP is used, a permanent IP address must be reserved for the InfraStruXure Manager server at the DHCP server.
Static Network Address	Select to use public (User LAN) network address values that are defined manually.
IP Address	Identifies the network address assigned to the InfraStruXure Manager server.
Subnet Mask	Identifies the TCP/IP subnet address the InfraStruXure Manager server uses for its local public (User LAN) network segment.
Gateway	Identifies the IP address of the gateway the InfraStruXure Manager server uses.

Domain Name	Identifies the network domain on which the InfraStruXure Manager server resides.
Primary DNS Server	Identifies the IP address of the primary Domain Name Service (DNS) server used to map IP addresses to domain names.
Secondary DNS Server	Identifies the IP address of the DNS server used when the primary DNS server is busy or off-line.

E-Mail Settings

Overview

Use the display tabs for this **System Management Menu** option to define the e-mail recipients and SMTP settings the InfraStruXure Manager server uses to send e-mail for events, as well as for exceptions summary and firmware update notifications:

- **Recipients tab**
- **Settings tab**



Note

At least one e-mail recipient must be identified and the SMTP server settings properly defined before the InfraStruXure Manager server can use its e-mail feature.

Recipients tab

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

To add a recipient	Click Add and use the “Enter New E-mail Address” display to define the e-mail address of the new recipient.
To remove a recipient	Select (highlight) the recipient in the E-Mail Address drop-down list, click Remove , and click Yes when the “Confirm” display appears.
To configure the e-mail notifications to be used with a recipient	Select (highlight) the recipient in the E-Mail Address drop-down list and click Configure to use the “E-Mail Configuration for Recipient” display.

Settings tab

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

SMTP Server	Identifies the server by its hostname (or IP address, if a hostname is undefined).
E-Mail Address	Identifies the SMTP server account name, the e-mail address that will be used as the sender in e-mail notifications.

“E-Mail Configuration for Recipient” display

To use this display, select an e-mail recipient in the **Recipients** tab, and click **Configure** to customize the e-mail notifications that can be sent to the selected e-mail recipient:

- Device group notifications
- System event notifications

Device group notifications. To configure which notifications are enabled or disabled for each device group, do the following:

1. Double-click a **Device Group**, or to configure multiple device groups using identical settings, select those groups, and click **Configure**.
2. Use the “Select Notifications” display to select the items you want enabled for e-mail notifications:

- **Critical, Warning, and Informational Events:** Selects whether e-mail is sent when an event with a corresponding severity level occurs at any device assigned to the selected device group.



Note

For more information about Informational, Critical, and Warning events, see [Status, Alarm, and Event Severity Levels](#).

- **Firmware Update Available:** Selects whether e-mail is sent when a firmware update is available for any device assigned to the selected device group.



Note

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

- **Exceptions Summary:** Selects whether e-mail is sent that summarizes any global threshold violations that exist for the devices assigned to the selected device group, as well as other status exceptions, such as communication lost, UPS failed self-test, or UPS bad battery conditions.



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

3. Configure any other device groups, as needed.

System event notifications. To configure the severity levels for the system events that results in e-mail notifications, do the following:

1. Double-click **System Events** in the box near the bottom of the display.
2. Use the “Select Notifications” display to define the severity levels enabled for e-mail notifications.



For more information about **Critical**, **Warning**, and **Informational Events**, see [Status, Alarm, and Event Severity Levels](#).

FTP Server Settings

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



Note

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

Status tab	Start or stop FTP access to the InfraStruXure Manager server.
Username/Password tab	Define the Username and Password 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 the use of a proxy server (which is disabled by default) for HTTP-based Remote Monitoring Service (RMS) communication.



To enable the InfraStruXure Manager server to use RMS support, see [Remote Monitoring Service](#).

To enable the use of a proxy server, check the **Proxy Enabled** box and define the four text box settings.

Proxy Host	Identify the proxy server by its IP address or hostname.
Port Number	Identify the port at the proxy server the InfraStruXure Manager server will use to communicate with that server.
Username	If the proxy server requires username and password access, identify the username; otherwise leave this field blank.
Password	If the proxy server requires username and password access, identify the password; otherwise leave this field blank.

Log Settings

Use the display for this [System Management Menu](#) option to define settings that affect the event and data logs.

Event Log	Clear events after: Defines the age, in days, at which events are deleted automatically from the event log. Clear Event Log: Clears all events from the log.
Data Log	Clear data after: Defines the age, in days, at which data are deleted automatically from any data log. Log data every: Defines how often, in minutes, data is recorded in the data logs. Clear Data Log: Clears all data from all data logs.

License Keys

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

To add a license key	Type in the license key number in the text box, and click Add .
To remove a license key	Either select the license key in the Entered Keys section and press the DELETE key, or right-click the license key and select Remove Key . NOTE: 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.

Client Preferences

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

Temperature Units tab	Select whether Fahrenheit (the default setting) or Celsius will be used to report temperatures.
Data Collection tab	Enable or disable (the default setting) the periodic sending of information to APC about how you use the InfraStruXure Manager features. NOTE: 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	<p>Schedule how often the InfraStruXure Manager server checks for available firmware updates, or select to check for available updates immediately.</p> <p>NOTE: To check for updates, the InfraStruXure Manager server must be able to use the internet to access APC's auto-update server.</p>
Apply Firmware Updates	<p>Apply firmware updates that have been downloaded from APC to devices monitored by the InfraStruXure Manager server.</p> <p>NOTE: After any firmware update is applied, select the Refresh option in the View Menu to refresh the InfraStruXure Manager server displays.</p>
Apply Server Updates	<p>Apply an InfraStruXure Manager update that has been manually downloaded from APC to the InfraStruXure Manager server using FTP.</p>

Check for Updates

Use this [Updates Menu](#) option's display to schedule when, if ever, the InfraStruXure Manager server automatically checks for firmware updates, or to initiate an immediate 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 a 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](#).

Automatically Check for Updates	When you select this option, the Date and Time settings identify when the first check occurs, and the Recurrence setting defines how often the checks occur.
I want to know when server or client updates are available	When you select this option, a pop-up display appears whenever you log on to the InfraStruXure Manager server and a check for updates has discovered that an InfraStruXure Manager update is available. The pop-up display provides a link to that update at the APC Web site. You must Import a Product Update File to the InfraStruXure Manager Server before you use the Apply Server Updates option to update the server. NOTE: This setting is client-specific. It will not affect any other InfraStruXure Manager clients.
Check for Updates Now	Click this button to initiate an immediate check of the APC Web site 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 downloaded to that device. To add FTP username and password settings other than the default value of **apc** (lowercase), or to change the **FTP Port** and **Retry** settings, click **Settings** to access the “**Firmware Update FTP Settings**” display.

Configure Update tab	Apply any available firmware updates.
Last Update Results tab	View the results of a firmware update that was applied using the Configure Update tab.

Configure Update tab

Use this tab to apply an available firmware update to devices monitored by the InfraStruXure Manager server:

1. Select an update from the list of **Available Firmware Updates**.
2. Select the devices to update from the devices listed 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 downloaded are listed.

3. Click **Update Now** to apply the update to the selected devices.
4. When asked, click **Yes** to start the update process, or **No** to cancel.
5. When the update process finishes, select **Refresh** in the **View Menu** to refresh the InfraStruXure Manager server displays.

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

Next Update Check field	Identifies when the InfraStruXure Manager server checks whether firmware updates are available, as defined by the Check for Updates option.
Update details box	Provides information about any update you select in the Available Firmware Updates list.
Settings button	Accesses the “ Firmware Update FTP Settings ” display used to define the FTP settings that allow the InfraStruXure Manager server to download firmware to the devices in the Available Firmware Updates list.

Last Update Results tab

Use this tab to view the results of the last firmware update. The following table identifies failures that can occur, and identifies the possible cause and recommended actions for each failure.

Aborted	<p>Description: The device was removed from the list of devices the InfraStruXure Manager server monitors after Update Now was clicked in the Configure Update tab, but before the InfraStruXure Manager server could schedule the update for that device.</p> <p>Recommended Action: Use Add Devices in the Edit menu to access the “Add Devices” Display. Use that display to add the device back into the list of monitored devices, and reapply the update to that device.</p>
AOS Connection Failed or App Connection Failed	<p>Description: 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 actually log on to download the <i>aos.bin</i> or <i>app.bin</i> file.</p> <p>CAUTION: The device may no longer function correctly until this problem is corrected.</p> <p>Recommended Action:</p> <ul style="list-style-type: none">• Make sure the device is turned on and connected to the network.• Correct any network connection problem that exists.• Make sure FTP service is enabled at the device, and the username, password, and port used by the device matches the FTP values identified in the “Firmware Update FTP Settings” display.• If the problem persists, contact APC Customer Support. <p>Once the problem is corrected, use the Configure Update tab to reapply the firmware update to the device.</p>

<p>AOS Download Failed or App Download Failed</p>	<p>Description: The FTP connection was lost after the InfraStruXure Manager server logged on to the device to download the <i>aos.bin</i> or <i>app.bin</i> file, but before it could begin the actual download.</p> <p>CAUTION: The device may no longer function correctly until this problem is corrected.</p> <p>Recommended Action:</p> <ul style="list-style-type: none"> • Make sure FTP service is enabled at the device, and the FTP port used by the device matches the port identified in the “Firmware Update FTP Settings” display. • Make sure the device is turned on and connected to the network. • Correct any network connection problem that exists. • If the problem persists, contact APC Customer Support. <p>Once the problem is corrected, use the Configure Update tab to reapply the firmware update to the device.</p>
<p>Cancelled</p>	<p>Description: The device was removed from the list of devices the InfraStruXure Manager server monitors after an update was selected in the Available Firmware Updates list in the Configure Update tab, but before Update Now was clicked.</p> <p>Recommended Action: Use Add Devices in the Edit menu to access the “Add Devices” Display. Use that display to add the device back into the list of monitored devices, and reapply the update to that device.</p>

<p>File Verification Failed</p>	<p>Description: The APC operating system (<i>aos.bin</i>) and application (<i>app.bin</i>) files at the device do not match the files the InfraStruXure Manager server downloaded to the device during the firmware update.</p> <p>The <i>aos.bin</i> or <i>app.bin</i> file name may have changed or a file is corrupted.</p> <p>CAUTION: The device may no longer function correctly until this problem is corrected.</p> <p>Recommended Action:</p> <p>Contact APC Customer Support to verify that the correct AOS and application files are available at the APC server, and then use the Configure Update tab to reapply the update after you download the update again.</p>
<p>FTP Logon Failed</p>	<p>Description: The InfraStruXure Manager server could not log on to the device.</p> <p>Recommended Action:</p> <ul style="list-style-type: none"> • Make sure FTP service is enabled at the device, and the “Firmware Update FTP Settings” display identifies the username, password, and FTP port needed to access the device. • Make sure the device is turned on and connected to the network. • Correct any network connection problem that exists. • If the problem persists, contact APC Customer Support. <p>Once the problem is corrected, use the Configure Update tab to reapply the firmware update to the device.</p>
<p>Initialization Failure</p>	<p>Description: The InfraStruXure Manager server could not find one or both of the firmware files it had downloaded from APC for the selected update.</p> <p>This failure will be reported for all devices.</p> <p>Recommended Action:</p> <p>Use the Check for Updates option to schedule a new update check, and after the firmware files are downloaded in response to that scheduled update check, use the Configure Update tab to reapply the update to the devices.</p>

**Update
Verification
Failed**

Description: The InfraStruXure Manager server downloaded the APC operating system (*aos.bin*) and application (*app.bin*) files but it failed in its attempt to connect to the device to verify that the update was successful.

In addition to the network and FTP issues that can cause this problem, the download of the application (*app.bin*) file may have caused an unrecoverable problem at the device.

CAUTION: The device may no longer function correctly until this problem is corrected.

Recommended Action:

- Make sure the device is turned on and connected to the network.
- Correct any network connection problem that exists.
- Make sure FTP service is enabled at the device, and the username, password, and port used by the device match the FTP values identified in the “Firmware Update FTP Settings” display.
- If the problem persists, contact [APC Customer Support](#).

Once the problem is corrected, use the [Configure Update tab](#) to reapply the firmware update to the device.

“Firmware Update FTP Settings” display

Use this display to define the FTP access values the InfraStruXure Manager server uses to log on to the devices to download firmware updates.

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** 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.

Username	Lists the usernames the InfraStruXure Manager server can use when attempting to log on to a device.
Password	Lists the passwords the InfraStruXure Manager server can use when attempting to log on to a device.
FTP Port	Identifies the port used for FTP communication at the devices.
Update Retries	Identifies how many times the InfraStruXure Manager server will attempt to log on to a device before a failure occurs.

Apply Server Updates

Use the display for this **Updates Menu** option to update the InfraStruXure Manager server and client after you use FTP to manually **Import a Product Update File to the InfraStruXure Manager Server**:

1. Check-mark the box for the InfraStruXure Manager server update listed in the **Available Product Updates** section of the display, and click **Apply**.

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

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

Import a 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

During the update procedure, FTP is used to import the update file to the InfraStruXure Manager server. To enable FTP service at the server:

1. Log on to the InfraStruXure Manager server you want to update.
2. Select [FTP Server Settings](#), a **Network** option in the [System Management Menu](#).
3. In the “FTP Settings” display, check the **FTP Server Status** in the “Status” tab and respond as follows:
 - **Started**: Do nothing; the FTP service is already enabled.
 - **Not Started**: Click **Apply** to start the FTP service (the **Start service** option 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 the update file to the InfraStruXure Manager server, the file must be downloaded from the download page at the APC Web site. The following procedure describes a simple way to access and download the update file.

1. Use a Web browser to access the APC Web site (www.apc.com).
2. In the home page, click **Support**.
3. In the list on the left side of the support page, click **Software & Firmware**.
4. Under the InfraStruXure Manager section in the download page, click the **Free Download** button associated with the available update.
5. Follow the links to download the update (*.upd) file to a directory at the InfraStruXure Manager client.
6. 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 (*.upd) file from the APC Web site, as described in [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:

Contents	Open the online help at the Introduction .
Context Help	Open the online help at the section that describes the currently selected main display: “ Device Status ” Display, “ Power Zones ” Display, “ Reports ” Display, or “ Logs ” Display.
About	View the Server Version and Console Version , as well as Server Up-time and Server Hardware information (Serial Number , Model Number , Hardware Revision , and Manufacture Date) for the InfraStruXure Manager server.

Reports

Overview

Use the “[Reports](#)” [Display](#) options to generate reports about devices the InfraStruXure Manager server monitors. Reports list devices by their IP addresses, and each report 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**.

The following types of reports are available:

- [Environmental Report](#)
- [Exceptions Reports](#)
- [Rack PDU Reports](#)
- [UPS Reports](#)



To customize the columns displayed, saved, or printed for each of the different reports, see “[Configure Columns](#)” [Display](#); for information about the features shared by the reports, see [Common Report and Log Features](#); for information about the display that appears when you select to generate a report, see “[Select Report Filter](#)” [Display](#).

Common Report and Log Features

Reports and logs share the following features:

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

“Select Report Filter” Display

This display appears when you select a report from the “Reports” Display.

Use the “Groups” tab, available for all reports, to select the device groups that contain the devices to include in a report. By default, all device groups listed in the display will be included. Click **Selected Groups** to limit the report to the group or groups you select from the list of device groups.



Note

A device group is listed in the display only when it contains a device that is relevant to the report you want to generate. For example, if you selected **3-Phase Load** under **UPS**, only the device groups that include a 3-phase UPS will be listed.

For the **Downtime** report only, a “Date Range” tab allows you to define the date range to be included in the report. By default, all dates are included. Click **Selected Date Range** to limit the report to the **Begin** and **End** settings you define.

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

Environmental Report

A single **Model** report provides information about the monitored environmental devices (Environmental Monitoring Units, Environmental Monitoring Cards, and Environmental Management Systems).

The environmental devices are listed by IP address within categories based on the model (for example, **Model Name:** Environmental Management System), with each listing identifying how many local probes (**Probe Count**), remote probes (**Remote Probe Count**), and Air Replacement Units (**ARU Count**) are associated with the device.

Exceptions Reports

Overview

The following **Exceptions** reports are available:

- Bad Battery Report
- Downtime Report
- Exceptions Summary

Bad Battery Report

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

Downtime Report

Overview. This **Exceptions** report has two tabs that provide information about the downtime, on-battery, and lost-communication events that occurred at the monitored UPS systems.



Note

To limit the **Downtime** report to a specified date range, see “Select Report Filter” Display.

- “Detail” tab
- “Summary” tab

“Detail” tab. This tab lists, by IP address, the UPS systems at which downtime, on-battery, or lost-communication events occurred, and identifies the following information for each event that occurred at each of those UPS systems:

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

“Summary” tab. This tab provides information about power and communication problems that occurred during the date range (**Reporting Period Start to Reporting Period End**) identified at the top of the tab display:

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

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

Exceptions Summary

This **Exceptions** report identifies the devices that are violating the InfraStruXure Manager **Global Device Thresholds**, as well as the devices that have status exceptions (**Communication Lost**, **Bad Battery**, and **Failed Self-Test**).

Violation: UPS Age	Identifies the UPS systems that are older than the age defined in the “Global Device Thresholds” display (UPS tab).
Violation: UPS Load	Identifies the UPS systems with a load that exceeds the load defined in the “Global Device Thresholds” display (UPS tab).

Violation: Rack PDU Load	Identifies the Metered Rack PDU, Switched Rack PDU, and MasterSwitch devices with a load that exceeds the load defined in the “Global Device Thresholds” display (Metered Rack PDU tab).
Violation: Battery Age	Identifies the UPS systems with batteries that are older than the age defined in the “Global Device Thresholds” display (UPS tab).
Violation: High Temperature	Identifies the devices that have a probe that is reporting a temperature that violates the high-temperature threshold defined in the “Global Device Thresholds” display (Environmental Monitor tab).
Violation: Low Temperature	Identifies the devices that have a probe that is reporting a temperature that violates the low-temperature threshold defined in the “Global Device Thresholds” display (Environmental Monitor tab).
Violation: High Humidity	Identifies the devices that have a probe that is reporting humidity that violates the high-humidity threshold defined in the “Global Device Thresholds” display (Environmental Monitor tab).
Violation: Low Humidity	Identifies the devices that have a probe that is reporting humidity that violates the low-humidity threshold defined in the “Global Device Thresholds” display (Environmental Monitor tab).
Violation: Lost Communication	Identifies the devices that have lost communication with the InfraStruXure Manager server.
Violation: Bad Battery	Identifies the UPS systems that have a faulty battery.
Violation: Failed Self-Test	Identifies the UPS systems that failed their last self-test.
Violation: Minimum Runtime	Identifies the UPS systems that have less runtime available than the runtime defined in the “Global Device Thresholds” display (UPS tab).

Rack PDU Reports

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

1-Phase Load	The devices are listed by IP address within categories that are based on the amps being provided to the load equipment (for example, Load Range: 0-10 Amps). NOTE: If the InfraStruXure Manager server cannot determine the load for a device, that device is listed in a Load Range: Unknown category.
3-Phase Load	Since the load at each output phase can vary for each 3-phase device, such devices are listed by IP address, with no attempt to group them into categories.
Model	The devices are listed by IP address within categories that are based on the model (for example, Model Name: MasterSwitch VM). NOTE: If the InfraStruXure Manager server cannot determine the model type for a device, that device is listed in a Model Name: Unknown category.

UPS Reports

The following reports provide information about the monitored UPS systems.

1-Phase Load	The UPS systems are listed by IP address within categories based on 20% increments of full-load capacity (for example, Output Load: 0-20%). NOTE: If the InfraStruXure Manager server cannot determine the load for a UPS, that UPS is listed in a Output Load: Unknown category.
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<p>3-Phase Load</p>	<p>Since the load at each output phase can vary for each 3-phase UPS, each UPS is listed by IP address, with no categories.</p>
<p>Battery Age</p>	<p>The UPS systems are listed by IP address within categories based on 1-year increments of battery age (for example, Battery Age: 0-1 years old), with all UPS systems that have a battery that is at least 5 years old listed in a Battery Age: 5+ years old category.</p> <p>NOTE: If the InfraStruXure Manager server cannot determine the battery age available at a UPS, that UPS is listed in a Battery Age: Unknown category.</p>
<p>Model</p>	<p>The UPS systems are listed by IP address within categories based on the type of UPS (for example, UPS Type: Smart-UPS).</p> <p>NOTE: If the InfraStruXure Manager server cannot determine the model type of a UPS, that UPS gets listed in a UPS Type: Unknown category.</p>
<p>Runtime</p>	<p>The UPS systems are listed by IP address within categories based on 10-minute increments of runtime (for example, Runtime Range: 0-10 Minutes), with all UPS systems that have at least 50 minutes of runtime available listed in a Runtime Range: 50+ Minutes category.</p> <p>NOTE: If the InfraStruXure Manager server cannot determine the runtime available at a UPS, that UPS is listed in a Runtime Range: Unknown category.</p>
<p>UPS Age</p>	<p>The UPS systems are listed by IP address within categories based on 1-year increments of UPS age (for example, UPS Age: 0-1 years old), with all UPS systems that are at least 5 years old listed in a UPS Age: 5+ years old category.</p> <p>NOTE: If the InfraStruXure Manager server cannot determine the age of a UPS, that UPS is listed in a UPS Age: Unknown category.</p>

Data Logs

The “Logs” Display allows you to create data logs for the monitored devices that are typically part of an InfraStruXure zone (ATS, environmental device, InfraStruXure PDU, Rack PDU, Symmetra UPS, and Silcon UPS). How often the data available for reports is sampled is defined by a setting in the “Configure Log” display, a display which is accessed by **Log Settings** in the **System Management Menu**.

To generate a data log, do the following in the left frame of the “Logs” display:

1. Select the **Data Log** option in the **Log Type** box.
2. Select the **Date** you want the log to display initially.
3. Select the IP address of the device for which you want to create a data log from the drop-down list in the **Device** box.
4. Click **Generate Report**.



Note

To create a data log from the “**Device List**” Frame, right-click an ATS, environmental device, InfraStruXure PDU, Rack PDU, Symmetra UPS, or Silcon UPS in the “**Device List**” Frame and select **View Log**. If you select **View Log** for any other device, an error message appears.

The following table identifies the type of information that a data log provides based on the type of device. All data logs identify entries by **IP Address** and **Log Time** columns that can be used to sort the data.



To customize the columns that appear in displayed, saved, or printed versions of a data log, see “**Configure Columns**” Display. For information about the features shared by the data logs, see **Common Report and Log Features**.

Automatic Transfer Switch (ATS)	<p>Reports the following data:</p> <ul style="list-style-type: none"> • The source (Active Source) selected when the data was sampled • The voltage (L1 (VAC) - L3 (VAC)) and Frequency (Hz) at each source (Source A and Source B) • The Output Current (Amps) at each output phase (L1-L3)
Environmental	<p>Reports the following data:</p> <ul style="list-style-type: none"> • The Model Name of each device • The Name, Temp (°F or °C), and Humidity from up to ten probes (Probe 1 - Probe 10) • The Name and three Temp (°F or °C) values from up to eight Air Removal Units (ARU 1 - ARU 8) at environmental devices that support the Air Removal Units <p>NOTE: For information about how to select the temperature units (°F or °C) used in reports and displays, see Client Preferences; probe data for an environmental device that connects to the network through a Symmetra or Silcon UPS is provided in the Symmetra/Silcon Battery and Environmental data log.</p>

<p>InfraStruXure PDU</p>	<p>Reports the following data:</p> <ul style="list-style-type: none"> • The Main Input Voltage (VAC) at each input (L1-L3) and transformer phase (Trans L1-Trans L3) • The Bypass Input Voltage at each phase (L1-L3) of a dual-input InfraStruXure PDU • The phase-to-phase Output Voltage L-L (VAC) at each output phase (L1-L3) • The phase-to-neutral Voltage L-N (VAC) at each output phase (L1-L3) • The Output Current (Amps) at each output phase and the neutral wire (L1-L3 and N) • The Output Power (kW) and Output Power (kVA) values at each output phase (L1-L3), and the Total for each output type • The Output Frequency (Hz) and Ground Current (Amps) <p>NOTE: For more information about the log values, see InfraStruXure PDU Details.</p>
<p>Rack PDU</p>	<p>Reports the following data:</p> <ul style="list-style-type: none"> • The unit number (Unit #) for each device • The Current (Amps) at each output phase (L1-L3).
<p>Symmetra/Silcon</p>	<p>Reports the following data:</p> <ul style="list-style-type: none"> • The Input Voltage (VAC) and Input Current (Amps) at each input phase (L1-L3) • The Output Voltage (VAC), Output Current (Amps), Output Load (VA), and Output Power (W) (as a percentage of full load capacity) at each output phase (L1-L3) • The Input Frequency (Hz) and Output Frequency (Hz) • Battery Data: The Capacity, Voltage (VDC), Temp (°F or °C), and Current (Amps) that was available • Environmental Data: The Temp (°F or °C) and Humidity values that were available from each environmental probe <p>NOTE: For information about how to select the temperature units (°F or °C) used in reports and displays, see Client Preferences.</p>

Event Log

Overview

To generate an Event log, use the options in the left-hand column of the “Logs” Display, as follows:

1. **Log Type:** Select **Event Log**.
2. **Date:** Select the date you want the Event log to initially display (arrow buttons allow you to move back and forth through the log, one day at a time).
3. **Event Type:** Select the type of events you want the Event log to include.
 - **System:** For the events that occurred at the InfraStruXure Manager server itself.
 - **Status:** For the events that occurred at the devices the InfraStruXure Manager server monitors.



Note

You must select at least one option.

4. Select the **Severity** options you want to include in the Event Log:
 - The **Critical**, **Warning**, and **Informational** selections will include **System** (InfraStruXure Manager server) or **Status** (monitored device) events that have the severity selected.
 - The **Summary** selection will include events which report that a summary e-mail has been sent regarding power-related events for a device group.

- The **Firmware** selection will include events related to device firmware updates that are available for any of the devices currently monitored by the InfraStruXure Manager server.

You must select at least one option. For more information



about the **Critical, Warning, and Informational** selections, see [Status, Alarm, and Event Severity Levels](#); for more information about the **Summary** and **Firmware** selections, see [System: Events](#).

The following table describes the types of information an Event log provides. You can click on a column title to sort the log entries using that column's data in an ascending or descending order.



To disable columns in displayed, saved, or printed versions of an Event log, see [“Configure Columns” Display](#).

Log Time	The date and time at which the event occurred.
IP Address	The IP address of the device at which the event occurred, or blank, if the event is for the InfraStruXure Manager server itself. NOTE: Except for System events, you can double-click an event to access more information about the device associated with the event.
Severity Level	Identifies whether the event represents a Critical, Warning , or Informational status, or a Summary or Firmware event. NOTE: For more information about the Critical, Warning, and Informational selections, see Status, Alarm, and Event Severity Levels ; for more information about the Summary and Firmware selections, see System: Events .
Event Text	The event that occurred.

Events

Overview

The following sections list the events that can appear in the **Event Log** for each type of device. In each section, events are listed by type. For each type of event, events are listed alphabetically, and recommended actions are provided, where appropriate.



If events in the Event Log use a different prefix than those listed below, see **<General APC Device Status>: Events** for information about those events.

- APC InfraStruXure Manager: Events
- ATS: Events
- Environmental: Events
- InfraStruXure PDU: Events
- MasterSwitch: Events
- MasterSwitch Plus: Events
- MasterSwitch VM: Events
- NetworkAIR FM or PA: Events
- Rack PDU: Events
- System: Events
- Unknown APC Device: Lost-Communication Events
- UPS: Events



Note

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

For information about the lost-communication events that can occur at a monitored APC InfraStruXure Manager server, see **Unknown APC Device: Lost-Communication Events**.

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 events for an Automatic Transfer Switch (ATS):

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 AC input power failure that exists at the redundant (unselected) power source. 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 .

Firmware Events (No Action Required Except as Noted)	
ATS: Agent firmware is being updated	
ATS: Agent firmware update failed	
ATS: Agent firmware update is available	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 succeeded	
Informational Events (No Action Required)	
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 following 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 APC Customer Support .
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 APC Customer Support .
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 APC Customer Support .

Environmental: A fault exists at output relay <n> (<relay name>)	<p>If a fault exists, correct the problem.</p> <p>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 APC Customer Support.</p>
Environmental: A fault exists at sensor <n> (<sensor name>)	<p>If a fault exists, correct the problem.</p> <p>If no fault exists at the sensor, contact APC Customer Support.</p>
Environmental: A high-temperature violation exists at Air Removal Unit <n> (<unit name>)	<p>If a temperature problem exists, correct the problem.</p> <p>If no temperature problem exists, contact APC Customer Support.</p>
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 APC Customer Support .
Environmental: An exhaust-temperature violation exists at Air Removal Unit <n> (<unit name>)	<p>If a temperature problem exists, correct the problem.</p> <p>If no temperature problem exists, contact APC Customer Support.</p>
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 APC Customer Support .
Environmental: A smoke violation exists at Air Removal Unit <n> (<unit name>)	<p>If a smoke problem exists, correct the problem.</p> <p>If no smoke problem exists, contact APC Customer Support.</p>

Environmental: A violation of a <humidity or temperature> threshold exists for probe <n>	If the threshold is set correctly, and the central air conditioning system is functioning properly, see the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact APC Customer Support .
Environmental: A violation of the InfraStruXure Manager <humidity or temperature> global threshold exists for probe <n>	If the threshold is set correctly in the Environmental Monitor tab, and the central air conditioning system is functioning properly, see the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact APC Customer Support .
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 APC Customer Support .
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 APC Customer Support .
Environmental: The InfraStruXure Manager server lost communication with the agent	
Warning Events	
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 APC Customer Support .
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.

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

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 Status>: Events

Not all APC devices currently support being monitored by an InfraStruXure Manager server. As these APC devices are updated to support being monitored, they are added to the **Supported Devices** an InfraStruXure Manager server can monitor without requiring a server update. However, these devices are limited to general-status, established-communication, and firmware events.



Note

For information about the lost-communication events that can occur at a general-status device or its agent, see **Unknown APC Device: Lost-Communication Events**.

Critical Events	Recommended Actions
<General Device>: A critical condition exists	Access the management application at the device to identify and correct the problem.
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	
<General Device>: Agent firmware update is available	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support .
<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 events for an InfraStruXure Power Distribution Unit (PDU):

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 .

<p>InfraStruXure PDU: A violation of the overcurrent threshold exists for phase L<n> of the system output</p>	<p>If the threshold is set correctly in the “InfraStruXure PDU Details” display, review the loads on all output phases, and, if possible, switch some loads to different phases.</p> <p>Verify that no wiring shorts exist, and no overload conditions exist at the breaker panel.</p> <p>If the problem persists, contact APC Customer Support.</p>
<p>InfraStruXure PDU: A violation of the overvoltage threshold exists for phase L<n> of the bypass input</p>	<p>If the threshold is set correctly in the “InfraStruXure PDU Details” display, and an input-power problem does not exist, contact APC Customer Support.</p>
<p>InfraStruXure PDU: A violation of the overvoltage threshold exists for phase L<n> of the main input</p>	
<p>InfraStruXure PDU: A violation of the overvoltage threshold exists for phase L<n> of the system output</p>	<p>If the threshold is set correctly in the “InfraStruXure PDU Details” display, determine whether the UPS output voltage or the InfraStruXure PDU input voltage is the source of the system output voltage.</p> <ul style="list-style-type: none"> • If the UPS is the source, make sure no problem exists with the UPS output voltage, • If the InfraStruXure PDU input is the source, consider that the input voltage may not meet the limits of the selected system output thresholds. <p>If the problem persists, contact APC Customer Support.</p>
<p>InfraStruXure PDU: A violation of the undercurrent threshold exists for panel breaker <n></p>	<p>If the threshold is set correctly in the “InfraStruXure PDU Details” display, make sure all load equipment is operational and plugged in securely. If the problem persists, contact APC Customer Support.</p>

<p>InfraStruXure PDU: A violation of the undercurrent threshold exists for phase L<n> of the system output</p>	<p>If the threshold is set correctly in the “InfraStruXure PDU Details” 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 APC Customer Support.</p>
<p>InfraStruXure PDU: A violation of the undervoltage threshold exists for phase L<n> of the bypass input</p>	<p>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 APC Customer Support.</p>
<p>InfraStruXure PDU: A violation of the undervoltage threshold exists for phase L<n> of the main input</p>	
<p>InfraStruXure PDU: A violation of the undervoltage threshold exists for phase L<n> of the system output</p>	<p>If the threshold is set correctly in the “InfraStruXure PDU Details” display, determine whether the UPS output voltage or the InfraStruXure PDU input voltage is the source of the system output voltage.</p> <ul style="list-style-type: none"> • If the UPS is the source, make sure Q2 is closed, and no problem exists with the UPS output voltage. • If the InfraStruXure PDU input is the source, consider that the input voltage may not meet the limits of the selected system output thresholds. <p>If the problem persists, contact APC Customer Support.</p>
<p>InfraStruXure PDU: Bypass input breaker is open</p>	<p>If UPS maintenance is not being performed, close the bypass breaker.</p> <p>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.</p>
<p>InfraStruXure PDU: Lost the phase L<n> input to the UPS</p>	<p>Contact APC Customer Support.</p>

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 Q-Breaker Modes for descriptions of the available modes and their breaker settings.
InfraStruXure PDU: Q breakers set for system off mode	See Q-Breaker Modes 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 APC Customer Support .
InfraStruXure PDU: The input transformer is overheated	If no overload alarm exists, and the InfraStruXure PDU is not overheated, contact APC Customer Support .
Warning Events	
InfraStruXure PDU: Q breakers set for atypical bypass mode	See Q-Breaker Modes for descriptions of the available modes and their breaker settings.
InfraStruXure PDU: Q breakers set for forced bypass mode	
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
InfraStruXure PDU: A violation of the undercurrent threshold no longer exists for the circuit panel's breaker <n>
InfraStruXure PDU: A violation of the undercurrent 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 all 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	
Warning Events	
None	
Firmware Events (No Action Required Except as Noted)	
MasterSwitch: Agent firmware is being updated	
MasterSwitch: Agent firmware update failed	
MasterSwitch: Agent firmware update is available	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 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 events for a MasterSwitch Plus unit:

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 APC Customer Support .
MasterSwitch Plus plus: The InfraStruXure Manager server lost communication with the agent	
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 APC Customer Support .
Firmware Events (No Action Required Except as Noted)	
MasterSwitch Plus: Agent firmware is being updated	
MasterSwitch Plus: Agent firmware update failed	
MasterSwitch Plus: Agent firmware update is available	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support .
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 events for a MasterSwitch VM unit:

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.

Firmware Events (No Action Required Except as Noted)	
MasterSwitch VM: Agent firmware is being updated	
MasterSwitch VM: Agent firmware update failed	
MasterSwitch VM: Agent firmware update is available	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support .
MasterSwitch VM: Agent firmware update succeeded	
Informational Events (No Action Required)	
MasterSwitch VM: A load problem no longer exists at unit <n> (<unit name>)	
MasterSwitch VM: Established communication with unit <n> (<unit name>)	
MasterSwitch VM: Outlet <n> (<outlet name>) on unit <n> (<unit name>) was turned off	
MasterSwitch VM: Outlet <n> (<outlet name>) on unit <n> (<unit name>) 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 <n> 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

For information about the lost-communication events that can occur at a NetworkAir device or its agent, see **Unknown APC Device: Lost-Communication Events**.

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	
NetworkAIR <FM or PA>: Agent firmware update is available	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 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 events for a Metered or Switched Rack Power Distribution Unit (Rack PDU):

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>	
Rack PDU: An undercurrent 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	
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.

Firmware Events (No Action Required Except as Noted)	
Rack PDU: Agent firmware is being updated	
Rack PDU: Agent firmware update failed	
Rack PDU: Agent firmware update is available	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 succeeded	
Informational Events (No Action Required)	
Rack PDU: A low load no longer exists at output phase L<n>	
Rack PDU: A problem no longer exists at power supply <n>	
Rack PDU: An overcurrent no longer exists at output phase L<n>	
Rack PDU: An overload no longer exists at output phase L<n>	
Rack PDU: An undercurrent no longer exists at output phase L<n>	
Rack PDU: Outlet <n> (<outlet name>) was turned off	
Rack PDU: Outlet <n> (<outlet name>) 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<n> no longer exceeds the InfraStruXure Manager high-load global threshold	
Rack PDU: The load is no longer approaching an overload at output phase L<n>	

System: Events

The **Event Log** can report system 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)	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 . NOTE: See the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments.
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.
Warning Events	
System: All 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: All UPS systems in the <name> device group are compensating for low input voltage	
System: All UPS systems in the <name> device group are on battery	
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	Use the “ Log Settings ” display to change the maximum age allowed for data or event log entries, or save the logs to files. NOTE: 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.
System: Some 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: Some UPS systems in the <name> device group are compensating for low input voltage	
System: Some UPS systems in the <name> device group are on battery	
System: The CPU temperature exceeds the warning threshold of 60 degrees C (140 degrees F)	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 APC Customer Support . NOTE: If the CPU temperature reaches the critical threshold of 80 degrees C (176 degrees F), the InfraStruXure Manager server will shut down. See APC Cooling Solutions for information about air conditioning equipment designed specifically for UPS and IT environments
Firmware Events (No Action Required)	
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>	

Summary Event (No Action Required)
System: An exceptions summary notification was sent for the <name> device group
Informational Events (No Action Required)
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: A private (APC LAN) IP address change initiated a reboot
System: A public (User LAN) IP address change initiated a reboot
System: A server configuration file was applied
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 imported a server configuration file
System: A user is applying a server configuration file
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: 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
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: 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: A user initiated a reboot
System: A user initiated a shutdown
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 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

Unknown APC Device: Lost-Communication Events

When the InfraStruXure Manager server loses communication with a device that reports only general status, such as a monitored NetworkAIR FM device, the InfraStruXure Manager server cannot identify the device. In such cases, Unknown APC Device is used as the prefix for the lost-communication events.

Critical Events	Recommended Actions
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 APC Customer Support .
Unknown APC Device: The InfraStruXure Manager server lost communication with the agent	

UPS: Events

The **Event Log** can report the following events for a UPS, including events for an Integrated Environmental Monitor or an external environmental monitoring device that uses the same SNMP agent as the UPS to connect to the network.



Note

No UPS uses all the events identified in this table.

Critical Events	Recommended Actions
UPS: A base module fan failure exists (see footnote)	An internal hardware failure exists. Contact APC Customer Support .
UPS: A battery charger failure exists (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 .
UPS: A bypass power supply failure exists (see footnote)	An internal hardware failure exists. Contact APC Customer Support .
UPS: A fault exists at <i><external or Integrated></i> Environmental Monitor contact <i><n></i> (<i><name></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 .
UPS: A fault exists at <i><external or Integrated></i> Environmental Monitor output relay <i><n></i> (<i><name></i>)	
UPS: A graceful shutdown has started	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.

UPS: A high battery temperature exists	If the battery environment is too hot, and the central air conditioning system is functioning properly, see the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact APC Customer Support .
UPS: A high isolation transformer temperature exists	An internal hardware failure exists. Contact APC Customer Support .
UPS: A main intelligence module failure exists	Contact APC Customer Support .
UPS: An abnormal battery pack condition exists	Replace all faulty battery packs. You can use the APC Upgrade Selector page to order new battery packs.
UPS: An abnormal condition exists	An internal hardware failure exists. Contact APC Customer Support .
UPS: An extended run frame fault exists	Contact APC Customer Support .
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 APC Customer Support .
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 APC Customer Support .
UPS: An internal communications failure exists	An internal hardware failure exists. Contact APC Customer Support .
UPS: A not-synchronized fault exists	Contact APC Customer Support .

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 APC Upgrade Selector page to identify the UPS that best meets your system requirements. If the problem persists, contact APC Customer Support .
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 APC Customer Support .
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 APC Customer Support .
UPS: A redundant intelligence module failure exists	Contact APC Customer Support .
UPS: A site wiring fault exists (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 APC Customer Support .
UPS: A static bypass switch module failure exists	An internal hardware failure exists. Contact APC Customer Support .
UPS: A system ID card failure exists	Remove and reinsert the card to make sure it is installed securely. If the problem persists, contact APC Customer Support .
UPS: A system level fan failure exists	An internal hardware failure exists. Contact APC Customer Support .
UPS: A system power supply card failure exists	Contact APC Customer Support .
UPS: A system power supply card was removed	Reinsert the card.

<p>UPS: A system start up configuration failure exists</p>	<p>Reboot the UPS. If the problem persists, contact APC Customer Support.</p>
<p>UPS: A violation of a <humidity or temperature> threshold exists for external Environmental Monitor probe <n> (see footnote)</p>	<p>If the threshold is set correctly, and the central air conditioning system is functioning properly, see the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact APC Customer Support.</p>
<p>UPS: A violation of the <low or high> humidity threshold exists for <external or Integrated> Environmental Monitor probe <n></p>	
<p>UPS: A violation of the <low or high> temperature threshold exists for <external or Integrated> Environmental Monitor probe <n></p>	
<p>UPS: A violation of an InfraStruXure Manager <humidity or temperature> global threshold exists for <external or integrated> probe <n></p>	<p>If the threshold is set correctly in the Environmental Monitor tab, and the central air conditioning system is functioning properly, see the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact APC Customer Support.</p>
<p>UPS: A violation of the Internal battery temperature threshold exists</p>	<p>If the battery environment is too hot, and the central air conditioning system is functioning properly, see the APC Cooling Solutions product page for information about air conditioning equipment designed specifically for UPS and IT environments. Otherwise, contact APC Customer Support.</p>
<p>UPS: A violation of the load (kVA) alarm threshold exists</p>	<p>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 APC Upgrade Selector page to identify the UPS that best meets your system requirements. Otherwise, contact APC Customer Support.</p>

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 APC Customer Support .
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 APC Upgrade Selector 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 APC Customer Support .
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 APC Customer Support .
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 APC Customer Support .
UPS: Lost communication with the battery packs (see footnote)	Make sure the battery packs are connected correctly. If the problem persists, contact APC Customer Support .
UPS: No batteries installed	Make sure the batteries or power modules are installed and connected correctly. If the problem persists, contact APC Customer Support .
UPS: No power modules installed	
UPS: On bypass in response to a hardware failure	An internal hardware failure exists. Contact APC Customer Support .

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 APC Upgrade Selector page to identify the UPS that best meets your system requirements.
UPS: One or more faulty batteries exist	Replace all faulty batteries. You can use the APC Upgrade Selector 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 UPS tab , reduce the load, or consider upgrading to a unit that can support the existing load. You can use the APC Upgrade Selector 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 APC Customer Support .
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. 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 APC Customer Support .
UPS: The agent lost communication while the UPS was on battery	

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 APC Customer Support .
UPS: The backfeed protection relay is open	An internal hardware failure exists. Contact APC Customer Support .
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 APC Customer Support .
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	
UPS: The external DC disconnect switch is open	Contact APC Customer Support .
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 APC Customer Support .
UPS: The InfraStruXure Manager server lost communication with the UPS or its agent while the UPS was on battery	
UPS: The input circuit breaker is open	Contact APC Customer Support .
UPS: The internal DC disconnect switch is open	

UPS: The output voltage is abnormal (see footnote)	An internal hardware failure exists. Contact APC Customer Support .
UPS: The output voltage is not within its defined limits	
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	
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 APC Upgrade Selector 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 UPS tab , reduce the load, or consider upgrading to a unit that can support the existing load. You can use the APC Upgrade Selector 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 UPS tab , consider adding additional batteries or upgrading to a UPS that provides more runtime. You can use the APC Upgrade Selector page to order new batteries or to identify the UPS that best meets your system requirements.

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 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: 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 UPS tab , the battery may have exceeded its useful life. You can use the APC Upgrade Selector page to order new batteries.
UPS: Violates the InfraStruXure Manager UPS-age global threshold	If the threshold is set correctly in the UPS tab , the UPS may have exceeded its useful life. You can use the APC Upgrade Selector page to identify the UPS that best meets your system requirements.
Firmware Events (No Action Required Except as Noted)	
UPS: Agent firmware is being updated	
UPS: Agent firmware update failed	
UPS: Agent firmware update is available	Make sure FTP is enabled at the device, and try to update the firmware again. If the problem persists, contact APC Customer Support .
UPS: Agent firmware update succeeded	
Informational Events (No Action Required)	
UPS: A base module fan failure no longer exists (see footnote)	
UPS: A battery charger failure no longer exists (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	
UPS: A bypass power supply failure no longer exists (see footnote)	
UPS: A fault no longer exists at an <i><external or Integrated></i> Environmental Monitor <i><contact or relay></i>	

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
UPS: An extended run frame was installed or removed
UPS: An <i><external or Integrated></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
UPS: A site wiring fault no longer exists (see footnote)
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
UPS: A violation of a <i><humidity or temperature></i> threshold no longer exists for external Environmental Monitor probe <i><n></i> (see footnote)
UPS: A violation of a <i><low or high></i> humidity threshold no longer exists for an <i><external or Integrated></i> Environmental Monitor probe <i><n></i>

UPS: A violation of a <low or high> temperature threshold no longer exists for an <external or Integrated> Environmental Monitor probe <n>
UPS: A violation of an InfraStruXure Manager <humidity or temperature> threshold no longer exists for <external or integrated> 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
UPS: Established communication with the battery packs (see footnote)
UPS: Faulty batteries no longer exist
UPS: Input power has returned to normal
UPS: No longer compensates frequently for a <high or low> input voltage
UPS: No longer compensating for a <high or low> input voltage
UPS: No longer violates the InfraStruXure Manager battery-age global threshold
UPS: No longer on bypass in response to <named cause>
UPS: No longer on bypass
UPS: No longer on forced bypass
UPS: No longer violates the InfraStruXure Manager <name> 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<n> output, as a percentage of available <kWatts or kVA>, no longer violates the InfraStruXure Manager UPS-load global threshold
UPS: Power failures no longer occur frequently
UPS: Power modules now installed

UPS: Probe <n> was connected at the Integrated Environmental Monitor
UPS: Probe <n> 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 monitor card was inserted
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
†Some Smart-UPS/Matrix-UPS events (identified by bold text in the table) can be reported only when the InfraStruXure Manager server is defined as a trap receiver at the UPS. See Trap receiver feature .

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 can monitor and manage on its private (APC LAN) network.



Note

Although the power zones wizard can be adapted to help create diagrams for other types of power zones, it is typically easier to use the **Power Zone Management** procedures to create these other power zones manually.

The following list provides links to descriptions of the displays used by the power zone wizard, in the order in which those displays can appear.

1. [To Define a Name for the Power Zone](#)
2. [To Power on the Power Sources](#)
3. [To Select the InfraStruXure PDU and any Associated UPS for Each Power Source](#)
4. [To Identify the InfraStruXure Manager Rack](#)
5. [To Power off the Device Racks \(Initial Setup Only\)](#)
6. [To Define a Name for the InfraStruXure Manager Rack](#)
7. [To Select the Devices Installed in the InfraStruXure Manager Rack](#)
8. [To Select Whether Another Rack Needs to Be Defined](#)
9. [To Define a Name for the Device Rack](#)
10. [To Turn on Power for the Identified Rack](#)
11. [To Select the Devices Installed in the Device Rack](#)
12. [To Create a New Power Zone or Exit the Wizard](#)

To Define a Name for the Power Zone

Define the name that identifies the power zone. This name can contain up to 32 alphanumeric characters and spaces.

When you click **Next**, the identified power zone appears in the “Power Zones” Frame, and a wizard display asks you **To Power on the Power Sources**.

To Power on the Power Sources

Make sure the power sources for the power zone are providing power. This allows the wizard to discover the InfraStruXure PDU and any associated 3-phase UPS (Symmetra or Silcon) used at each power source.

A power zone must use at least one power source, but no more than two.

When you click **Next**, the wizard asks you **To Select the InfraStruXure PDU and any Associated UPS for Each Power Source**.

To Select the InfraStruXure PDU and any Associated UPS for Each Power Source

Use the drop-down menus to select the InfraStruXure PDU, and any associated UPS, for each power source.

The top menu for each power source (**Source A** or **Source B**) lists the available UPS selections, and the bottom menu lists the InfraStruXure PDUs. To help you select the correct components for a power source, each InfraStruXure PDU and UPS are 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 type of PDU.
- For a **40 kW or 80 kW InfraStruXure PDU**, select both the PDU and its associated UPS.



Note

If the InfraStruXure Manager server is monitoring UPS systems on the public network, those UPS systems are listed in the drop-down menu for each power source, along with the UPS systems on the private network.

When you click **Next**:

- The wizard asks you **To Identify the InfraStruXure Manager Rack**.
- The power sources for which you selected at least one component (a InfraStruXure PDU or a UPS) are added to the power zone in the **“Power Zones” Frame**. The components selected for each power source are listed under that source, as follows:
 - For a **60 kW or 150 kW InfraStruXure PDU**, the InfraStruXure PDU is listed directly under the power source.
 - For a **40 kW or 80 kW InfraStruXure PDU**, the UPS associated with the InfraStruXure PDU is listed directly under the power source, and the InfraStruXure PDU is listed directly under the UPS.

To Identify the InfraStruXure Manager Rack

Identify whether the InfraStruXure Manager server is installed in the InfraStruXure PDU rack or in a device rack. The type of rack determines which of two procedures the wizard uses to identify any other devices installed in the InfraStruXure Manager rack.

When you click **Next**, the wizard asks you [To Power off the Device Racks \(Initial Setup Only\)](#).

To Power off the Device Racks (Initial Setup Only)

If you are using the wizard as part of the initial setup procedure, turn power off at all racks except the racks that contain the InfraStruXure PDU and any associated UPS for a power source, or the device rack that contains the InfraStruXure Manager server.



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.

When you click **Next**, what the wizard asks you to do depends on the rack type you selected when you were asked to [To Identify the InfraStruXure Manager Rack](#):

- For **Device Rack**, the next display asks you [To Define a Name for the InfraStruXure Manager Rack](#).
- For **PDU Rack**, the next display asks you [To Define a Name for the Device Rack](#); the PDU rack which contains the InfraStruXure Manager server remains unnamed.

To Define a Name for the InfraStruXure Manager Rack

Define the name of the InfraStruXure Manager rack. This name can contain up to 32 alphanumeric characters and spaces.

When you click **Next**, the wizard asks you **To Select the Devices Installed in the InfraStruXure Manager Rack**.

To Select the Devices Installed in the InfraStruXure Manager Rack

Select the devices installed in the same rack as the InfraStruXure Manager server. What devices appear in this display depends on whether **New Devices** or **Unassigned Devices** is selected at the bottom of the display.

- For **Unassigned Devices**, the display lists all devices that are not assigned to another power zone, power source, or device rack.
- For **New Devices**, no devices will be listed for the rack in which the InfraStruXure Manager server is installed. In order to list any **New Devices**, those devices must be discovered by the InfraStruXure Manager Power Zones Wizard by turning power off and then on again at a rack. However, if you turn power off at the InfraStruXure Manager rack, the InfraStruXure Manager server will turn off as well



Note

The primary difference between this display and the display that asks you **To Select the Devices Installed in the Device Rack** is that **New Devices** can be discovered by turning power on and off at a device rack that does not contain the InfraStruXure Manager server, or a UPS or PDU.

To select the devices that are installed in the same rack as the InfraStruXure Manager server:

1. At the InfraStruXure Manager rack, identify the devices in that rack by model and serial number.
2. Select **Unassigned Devices**.
3. In the device list, checkmark the devices identified in step 1 that you want to include as part of the power zone displayed in the “Power Zones” Frame.

When you click **Next**, the following occurs:

- The wizard asks you **To Select Whether Another Rack Needs to Be Defined**
- The devices you selected are listed under the InfraStruXure PDU in the power source that is currently being configured (**Source A** or **Source B**) in the “Power Zones” Frame (or under the UPS, if the source does not use an InfraStruXure PDU).

To Select Whether Another Rack Needs to Be Defined

If you select **Yes** and click **Next**, the wizard asks you **To Define a Name for the Device Rack**; if you select **No** and click **Next**, one of the following occurs:

- If the power zone uses a single power source, or you just 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 just finished defining the device racks for **Source A**, the wizard guides you through the process of selecting the devices that use **Source B** at those same racks:
 - a. To Power off the Device Racks (Initial Setup Only).
 - b. To Turn on Power for the Identified Rack.
 - c. To 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 **To Create a New Power Zone or Exit the Wizard**.

To Define a Name for the Device Rack

Define the name of the device rack to be included as part of the power zone. This name can contain up to 32 alphanumeric characters and spaces.

When you click **Next**, the wizard asks you **To Turn on Power for the Identified Rack**.

To Turn on Power for the Identified Rack

If you turned off power at the rack previously, turn on that power. The power-off and power-on sequence discovers the devices that obtain power at rack.

When you click **Next**, the wizard asks you **To Select the Devices Installed in the Device Rack**.



Note

When the power zone uses two power sources, this display is used twice for each rack: First to discover the devices powered by **Source A**, and then to discover the devices powered by **Source B**.

To Select the Devices Installed in the Device Rack

Select the devices that are installed in a device rack that does not contain the InfraStruXure Manager server. What devices appear in this display depends on whether the **New Devices** or **Unassigned Devices** option is selected.

- For **New Devices**, the display lists the devices discovered when power was turned off and on at the device rack. If the process of turning power off and then on was not done for the rack, no devices are listed.
- For **Unassigned Devices**, the display lists devices that were not discovered to be installed in the rack, and which are not assigned to another power zone, power source, or device rack.

To assign devices to the rack, select (checkmark) those devices in the **New Devices** list, the **Unassigned Devices** list, or both, and then click **Next**.

The following actions occur:

- The wizard asks you **To Select Whether Another Rack Needs to Be Defined**
- In the **“Power Zones” Frame**, the devices you selected are added to the power source being configured (**Source A** or **Source B**).

To Create a New Power Zone or Exit the Wizard

Click **Next** to create another power zone, or click **Finish** to exit the Wizard.

Release Notes

Overview

This section provides information about the license agreements and **Third-Party Software** the InfraStruXure Manager server uses, as well as information about the following subjects:

- **Client Operating System Requirements**
- **Browser Requirement**
- **Color Display Requirement (16 Bit)**
- **Known Issues**
- **How to Restore Access to the InfraStruXure Manager Server**
- **Third-Party Software**

Client Operating System Requirements

An InfraStruXure Manager client can use Windows[®] 2000, Windows[®] 2003, or Windows XP[®] as its operating system.

Browser Requirement

An Internet Explorer (IE) Web browser (v6.0 or higher) must be used to launch the InfraStruXure Manager client.

Once the “Server Log On” display appears, the browser can be closed.

Color Display Requirement (16 Bit)

Set the display at the InfraStruXure Manager client to use at least the 16-bit color setting.

Known Issues

Overview

See the following sections for information about known issues:

- Error encountered while setting data
- Failed to register as a trap receiver for a device
- Duplicate IP addresses assigned on the private network
- Failed to add a device
- Left frame is black in the Reports and Logs displays
- Management card fails to report on its UPS and environmental monitoring device
- Battery Last Replaced date

Error encountered while setting data

One of the following conditions can cause an error when you try to change a setting in the **InfraStruXure PDU Details** or **Metered Rack PDU Details** display:

- Communication with the device or its agent was lost. Try again later when the communication lost condition clears.
- Someone is logged on to one of the management interfaces at the device (Web interface or control console). Wait until the person who is logged on to the management interface logs off.
- The write community name for the device changed after the InfraStruXure Manager server began monitoring the device. To correct this problem, change the write community name to what it was when the InfraStruXure Manager server began monitoring the device, or do the following:
 - a. Add the new write community name to the list of **Community names** the InfraStruXure Manager server can use for SNMP SET commands.
 - b. Remove the device from the list of monitored devices.
 - c. Use the **“Add Devices” Display** to rediscover the device.

Failed to register as a trap receiver for a device

The InfraStruXure Manager server cannot be defined as a trap receiver at an InfraStruXure PDU or AP96XX Metered Rack PDU. The InfraStruXure Manager server fails to register itself as a trap receiver at the other devices it monitors under the following circumstances:

- One of the conditions identified in **Error encountered while setting data** occurred.
- The write community name for the device is not included in the list of write community names the InfraStruXure Manager server can use for SNMP SET commands. To correct this problem, do the following:
 - a. Select **Device Access** in the **System Management Menu**.
 - b. Use the **Community names** section of the “**Device Access**” display (**SNMP** tab) to add the needed write community name.
 - c. Right-click the device in the “**Device List**” **Frame** and select **Register as a trap receiver**.
- The device already has all of its trap receiver definitions defined. The InfraStruXure Manager server cannot overwrite any specific definition. To correct this problem, use the management application at the device to change one of the existing trap receiver definitions to the IP address of the InfraStruXure Manager server.
- Communication with the device’s agent, or with the device, was lost. Try again, after the communication lost condition clears.
- Someone is logged on to one of the management interfaces at the device (Web interface or control console). Try again, after the user logs off the management interface.

Duplicate IP addresses assigned on the private network

If a laptop or other personal computer that connects to the private network is not turned off during either of the following situations, the InfraStruXure Manager server may inadvertently assign duplicate IP addresses on the private network:

- The **Shut Down or Reboot Server** option is used with the **Reset to Factory Defaults** option enabled.
- An existing InfraStruXure Manager server is replaced.

If a duplicate IP address does exist, you can clear this problem by using the `ipconfig /release` and `ipconfig /renew` commands at the command prompt for the laptop or other personal computer that shares the duplicate address.

Failed to add a device

The following conditions can cause the InfraStruXure Manager server to fail to add one of its **Supported Devices** to the list of devices that it monitors:

- The SNMP agent at the device uses a **Read Community Name** that is not defined as one of the **Community names** the InfraStruXure Manager server can use.
- A supported device is not at the IP address.
- The InfraStruXure Manager server failed to establish communication within the time or number of attempts allowed by its **Timeout settings**.
- A problem exists with the SNMP agent at the IP address:
 - The APC hardware or software SNMP agent is not running at the device.
 - The device, or its APC SNMP agent, is either disconnected from the network or not configured with an IP address.
 - The APC agent is not configured to accept communication with the InfraStruXure Manager server.
 - The device uses an APC management card that has SNMP access disabled.

Left frame is black in the Reports and Logs displays

This problem occurs when an InfraStruXure Manager client uses Windows NT 4.0 as its operating system.

Use a client that has Windows 2000, Windows 2003, or Windows XP as its operating system; Windows NT 4.0 is not supported for use at an InfraStruXure Manager client.

Management card fails to report on its UPS and environmental monitoring device

This problem occurs when a UPS and an associated environmental monitoring device are added to the list of monitored devices while its management card has a problem communicating with the UPS (for example, the serial cable connection between the expansion chassis, where the management card is installed, and the UPS is disconnected). That management card cannot report on the UPS or the environmental monitoring device until you do the following:

1. Remove the UPS from the device list.
2. Correct the Management Card-to-UPS communication problem.
3. Add the UPS back into the device list.

Battery Last Replaced date

Each monitored UPS reports a user-defined **Battery Last Replaced** date the InfraStruXure Manager server uses in the following **UPS Reports**:

- **1-Phase Load**
- **3-Phase Load**
- **Bad Battery**
- **Battery Age**
- **UPS Age**
- **Model**
- **Runtime**

The **Battery Last Replaced** date must use an **MM/DD/YY** format (although a forward slant character is used in this example, any character can be used for separation).

Format Problem	Result
The UPS uses the day in the first position (DD/MM/YY) instead of the month (MM/DD/YY), and the day DD value exceeds 12 (if the DD value is 12 or less, the InfraStruXure Manager server reads the date as MM/DD/YY).	If the incorrect format is received when the data from a UPS is first recorded in the data store, the Battery Last Replaced date will be blank in reports, and the UPS will be classified under Batteries of Unknown Age in the Battery Age report.
The UPS reports a future date.	If the incorrect format is received after a UPS has had a correctly formatted date recorded in the data store, the new date is ignored, and the previous Battery Last Replaced date continues to be used in all reports.
The UPS uses text to define the date (for example, March 12, 1999).	

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, you can use the following procedure to restore access to the InfraStruXure Manager server.

1. Connect a computer to the hub on the private network. 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 to the server.



Note

If a logon attempt fails, try again; the InfraStruXure Manager server may not have finished restarting. 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** to correct the problem that required using this procedure:
 - Click **Configure Local Users** to use the "Configure local users" display to define a username and password for Administrator access.
 - Change the **Authentication Method** setting to **Local only**.

Third-Party Software

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