



<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Installation of Application	Define Navigation	Build Floorplan	Add Devices	Place Floormount	Auto Discovery	Rack Building	Port Mapping	Device Settings	Alarm Settings

## Installation of Application

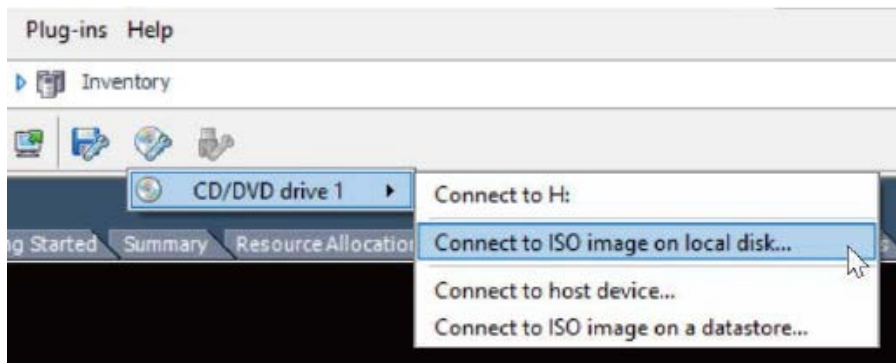
### 1. Prepare the Server

- Operating System: CentOS or Red Hat Enterprise Linux 7.3 (When using the ISO version of the application installer, the CentOS 7.3 OS will be installed automatically)
- CPU: 4 Cores Intel® Xeon® E5-2407 V2 with Passmark 4575 or above
- Physical Memory: 16GB
- Hard Drive: 100GB free disk space or above
- I/O Throughput: 125MB/second or above

### 2. Select the desired installation package

Either an OS-included ISO application installer or an application-only installer can be used to install the application to a server.

**If the OS-included ISO application installer is selected, mount the ISO image file onto the CD/DVD drive, which is accessible by the server. Then, boot the server up using the ISO image.**



- The installer will prompt the following 4 questions before starting the OS installation:
  - 1) The time zone
  - 2) The current clock time
  - 3) The URL which will be used to access the application
  - 4) The IP address for the server running the application
- After the OS installation is completed, login to the server as the root user to activate the network interface. Please ensure the IP address of the network interface matches the IP address specified during the OS installation.
- When the network interface is working, run the command "install\_vpm" as the root user to start the application installation. No user input is required for this part of the installation of Visual Power Manager.
- To obtain a license activation key, wait until the application is fully installed, run the command "/opt/VDC/bin/vdckeyreq> /tmp/my.req" as the root user and email the /tmp/my.req file to the application support team to obtain a license activation key.

- e. When the license activation key is received, upload it onto the server under /opt/VDC/.vdc directory, run “/opt/VDC/bin/setperm” and “reboot”.

**If the application-only installer is selected, install an OS (RedHat or CentOS) which is supported by the application and configure the network interface properly. Check the Installation Guides for a list of supported Operating Systems.**

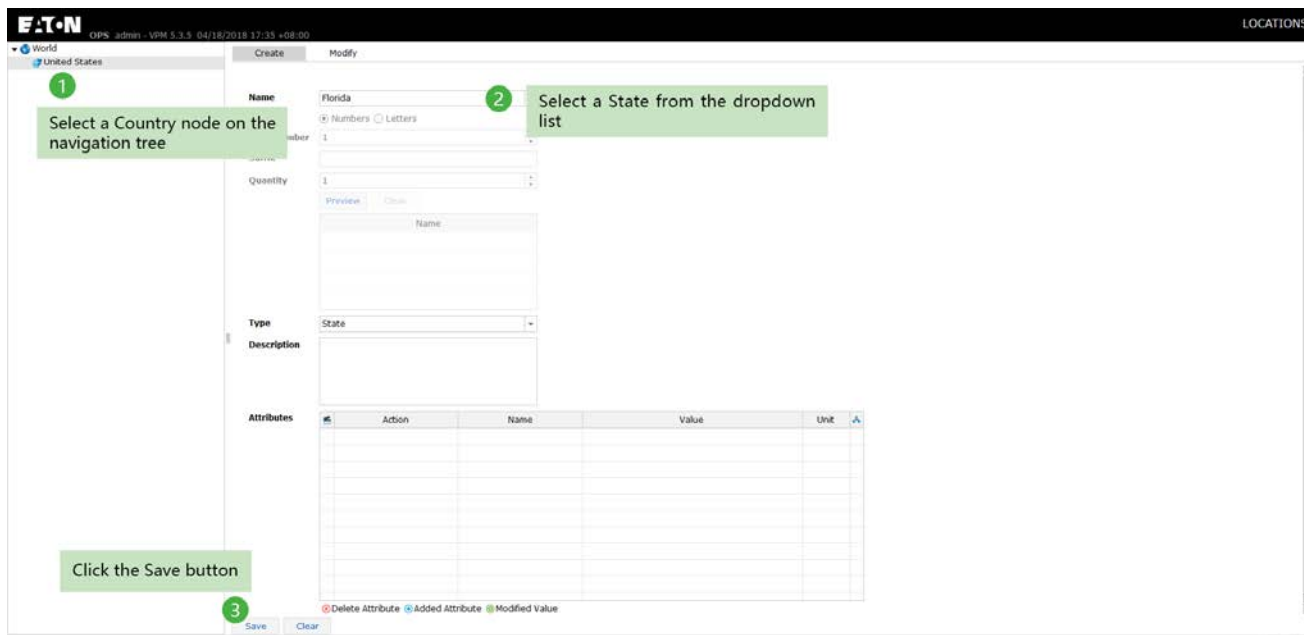
- a. Transfer (e.g. SCP) the application-only installer onto the server under the /tmp directory.
- b. Login to the server as the root user and run the command: mkdir/opt/INSTALL
- c. Extract the installation package by running command:  
tar -C /opt/INSTALL-xvf/tmp/[INSTALLATION\_PACKAGE\_NAME]
- d. Invoke the installer by running command:  
/opt/INSTALL/[INSTALLATION\_PACKAGE\_DIRECTORY]/install
- e. The installer will prompt the following questions before starting the application installation:
  - 1) The time zone
  - 2) The current clock time
  - 3) The application component to install (Select all-in-one if you are not sure)
  - 4) The URL used to access the application
  - 5) The IP Address for the server running the application.  
Note, this IP address must exist on the current server or the installer will not continue.
  - 6) The Email notification Server IP Address or hostname (Hit the Enter key if you are not sure)
  - 7) The Email notification From address which populates the From field of system generated emails (Hit the Enter key if you are not sure)
  - 8) The Email To address for system generated notifications (Hit the Enter key if you are not sure)
  - 9) Email server authentication requirements (Hit the Enter “no” if you are not sure)
  - 10) Preference to use Metric Unit or Imperial Units as a default in the application.
- f. To obtain a license activation key, wait until the application is fully installed, run the command “/opt/VDC/bin/vdckeyreq> /tmp/my.req” as the root user and email the /tmp/my.req file to the application support team to obtain a license activation key.

When the license activation key is received, upload it onto the server under /opt/VDC/.vdc directory, run “/opt/VDC/bin/setperm” and “reboot”.



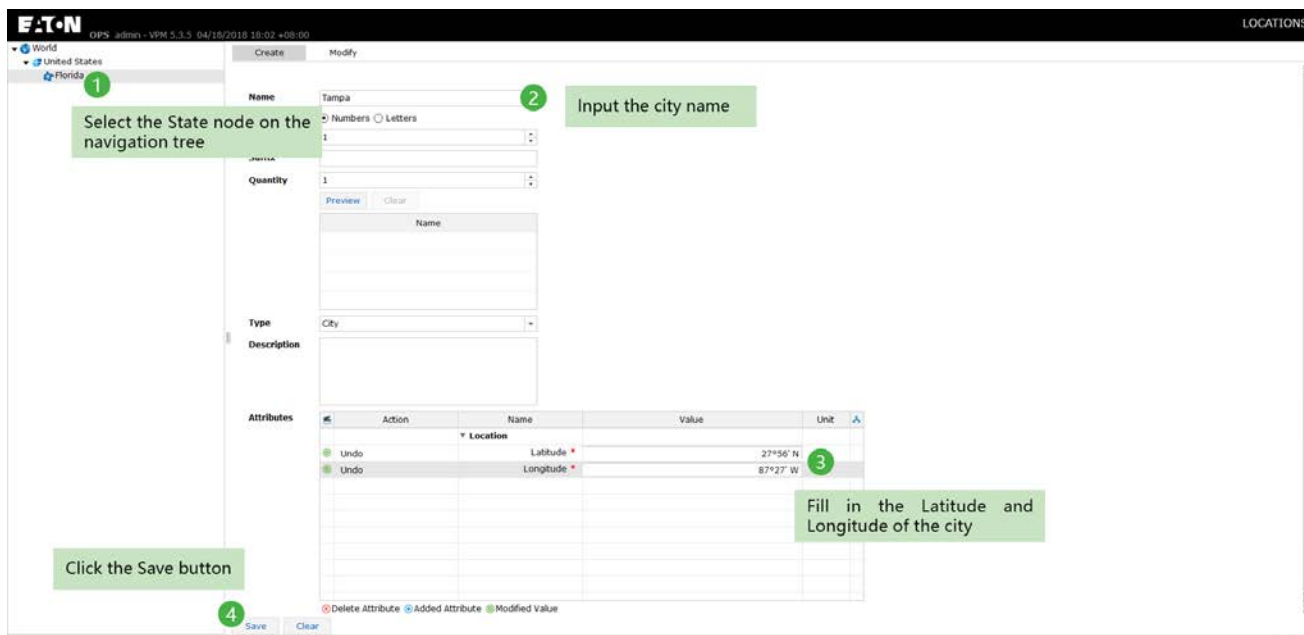
### 3. Create State

- a. Select a Country node on the navigation tree.
- b. Select a State from the dropdown list. If there are no states defined for the country, the only option for State is All areas.
- c. Click the Save button.



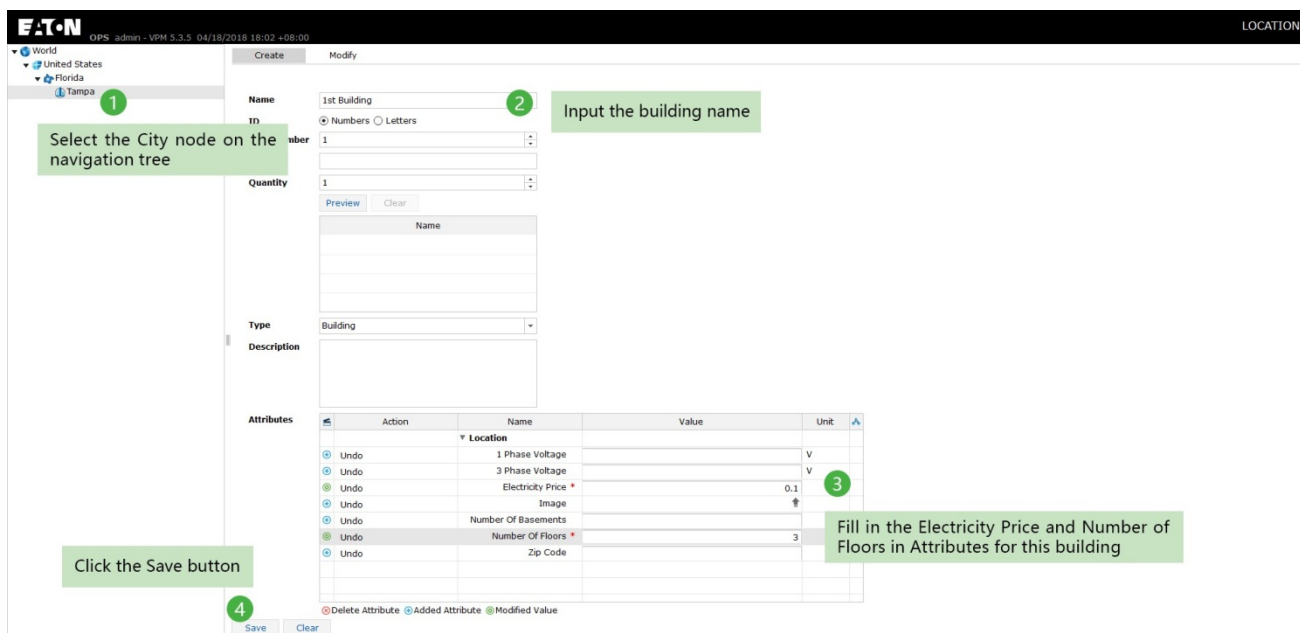
### 4. Create City

- a. Select the State node on the navigation tree.
- b. Input the city name.
- c. Fill in the Latitude and Longitude of the city. This will position the Alarm LED for this location on the World map.
- d. Click the Save button.



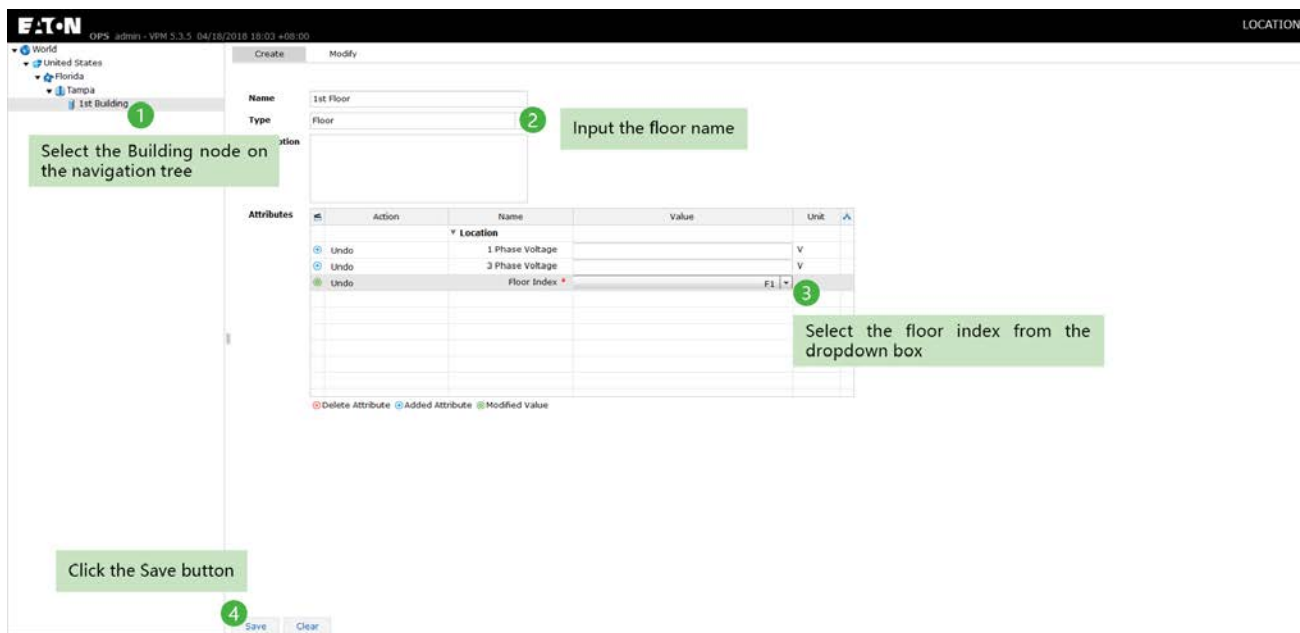
### 5. Create Building

- Select the City node on the navigation tree.
- Input the building name.
- Fill in the Electricity Price and Number of Floors in Attributes for this building.
- Click the Save button.



### 6. Create Floor

- Select the Building node on the navigation tree.
- Input the floor name.
- Select the floor index from the dropdown box. The options of the floor index are based on the Number of Floors of its building. Each Floor Index can only be assigned to one floor in the building.
- Click the Save button.



## 7. Create Area

- Select the Floor node on the navigation tree.
- Input the area name.
- If multiple areas will be created then fill in Quantity. Use the options provided to name multiple floors with specific prefix or suffix. Use the Preview button to confirm naming prior to saving.
- Click the Save button.

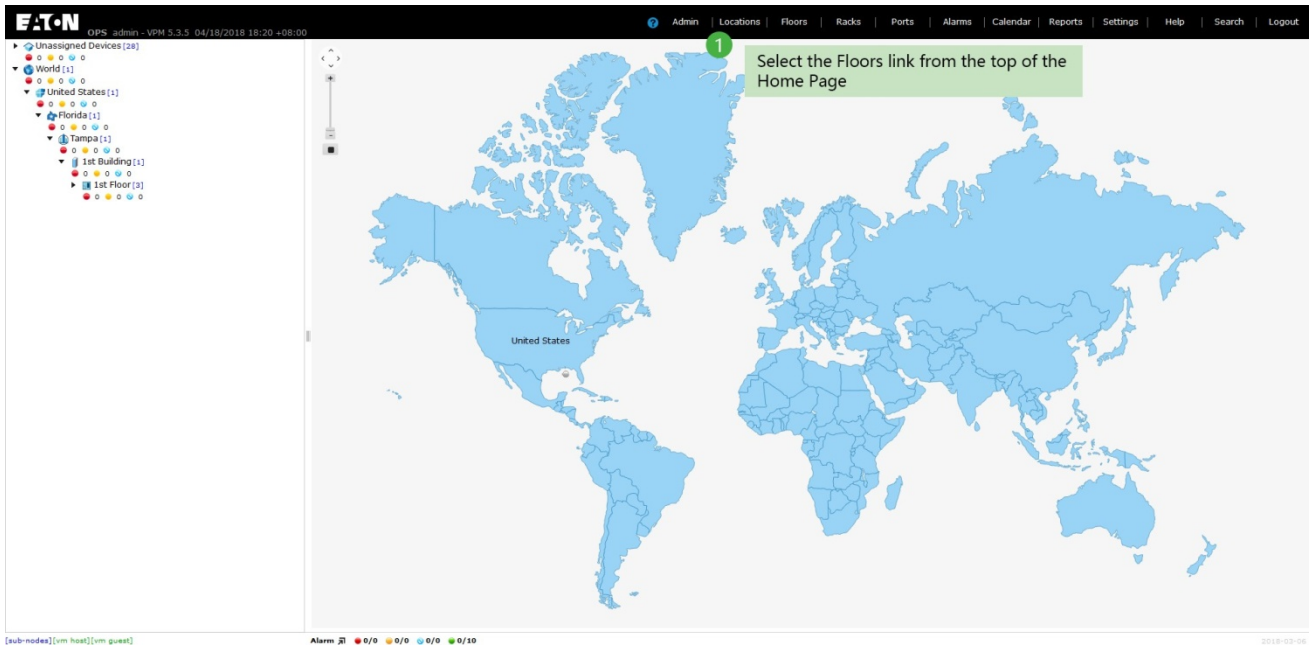
The screenshot shows the Eaton OPS admin interface for creating a new area. The navigation tree on the left shows the hierarchy: World > United States > Florida > Tampa > 1st Building > 1st Floor. The '1st Floor' node is selected, indicated by a green callout '1' and the text 'Select the Floor node on the navigation tree'. The main form has two tabs: 'Create' and 'Modify'. The 'Name' field contains 'ROOM', with a green callout '2' and the text 'Input the area name'. Below the name field, there are radio buttons for 'Numbers' and 'Letters'. The 'Start Number' is set to '1'. The 'Quantity' field contains '3', with a green callout '3' and the text 'If multiple areas will be created then fill in Quantity'. Below the quantity field, there is a 'Preview' button and a 'Clear' button. A table for multiple areas is visible, with a 'Name' column. The 'Type' is set to 'Area'. The 'Description' field is empty. The 'Attributes' table has columns for Action, Name, Value, and Unit. At the bottom, there are buttons for 'Save', 'Clear', and 'Manage'. A green callout '4' points to the 'Save' button with the text 'Click the Save button'. The interface also shows a status bar at the bottom with icons for 'Delete Attribute', 'Add Attribute', and 'Modified Value'.

# Build Floorplan

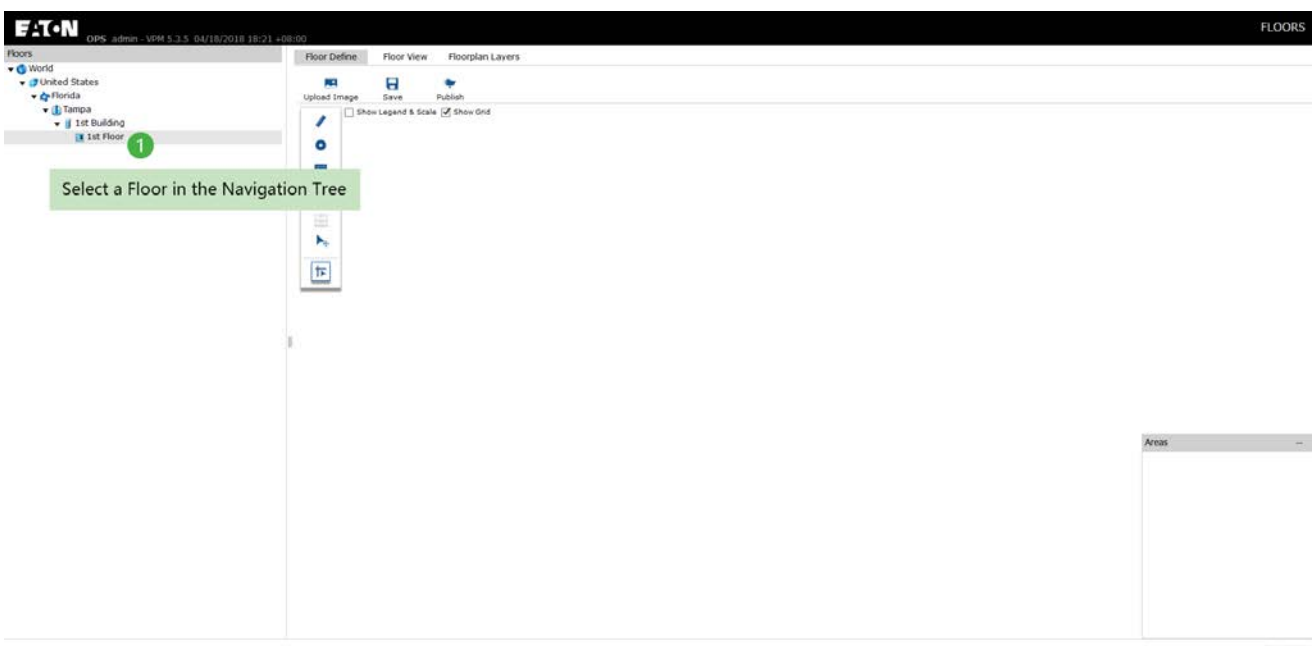
The Floors feature of the application allows users to manage the graphical floorplan details such as walls, raised floor tiles, grid name references etc and allows users to mount devices onto the floor. Prior to using this feature, the floor which needs to be configured must be defined in the navigation tree.

## 1. Select the Locations tab

Select the Floors link from the top of the Home Page.

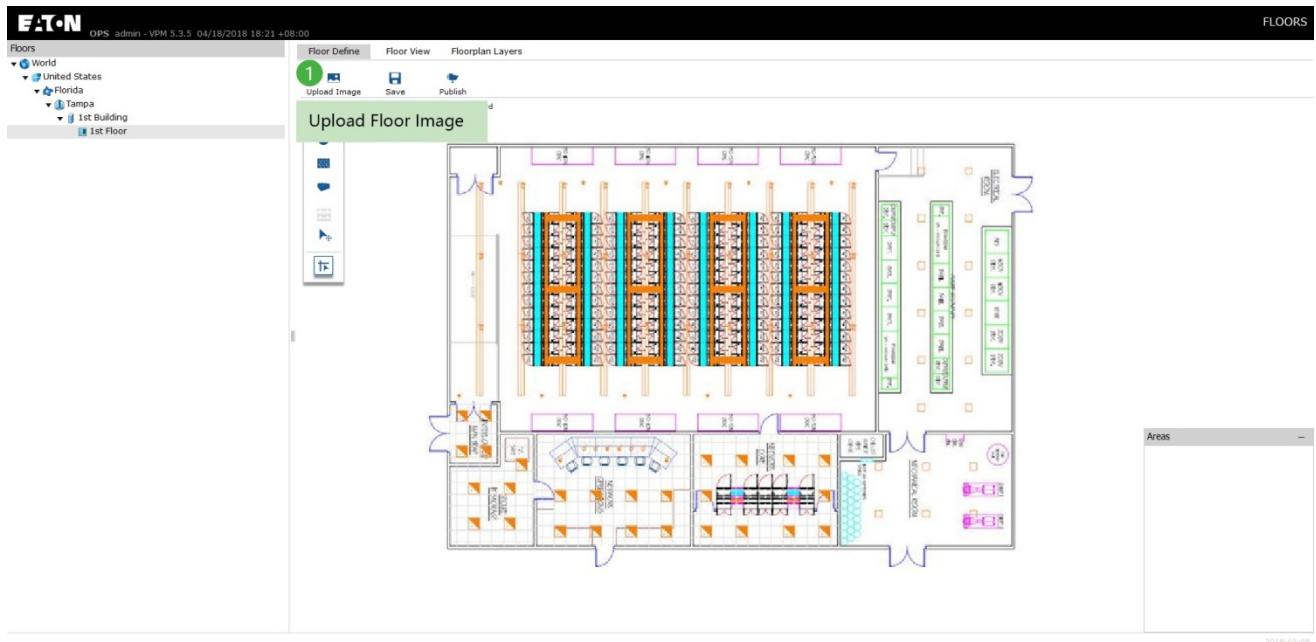


## 2. Select a Floor in the Navigation Tree



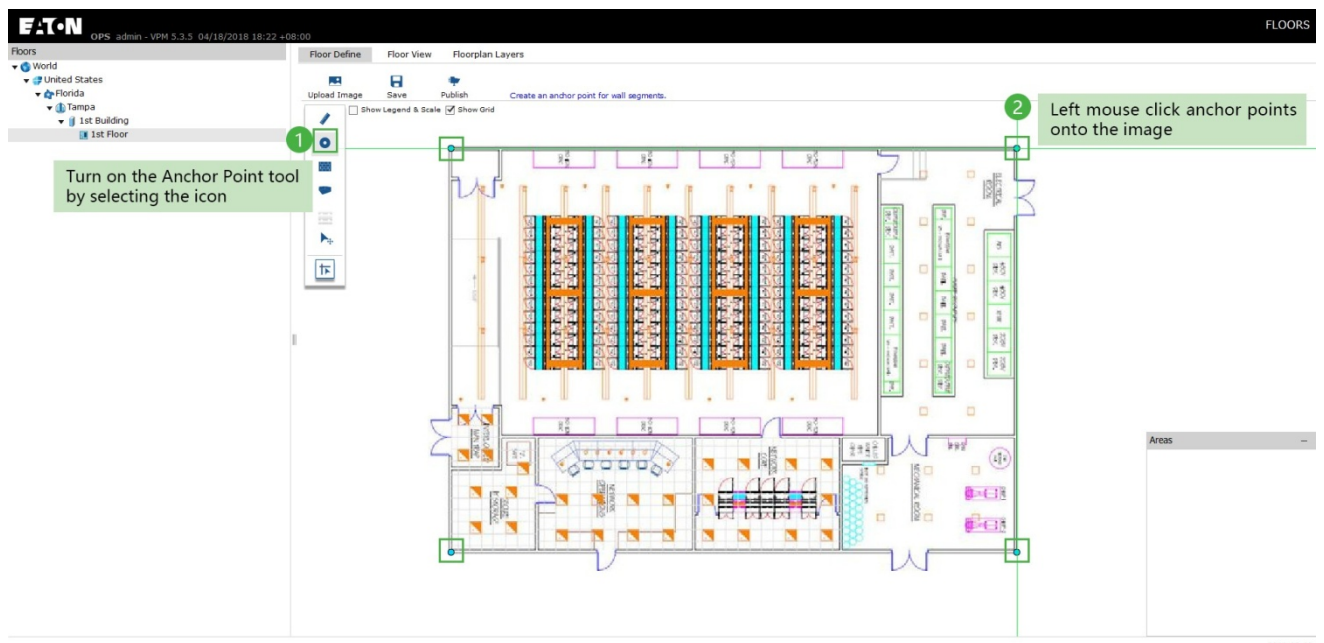
### 3. Upload Floor Image

Standard Windows picture file types such as PNG, BMP, GIF, etc are supported to upload to the application.



### 4. Create Anchor Points

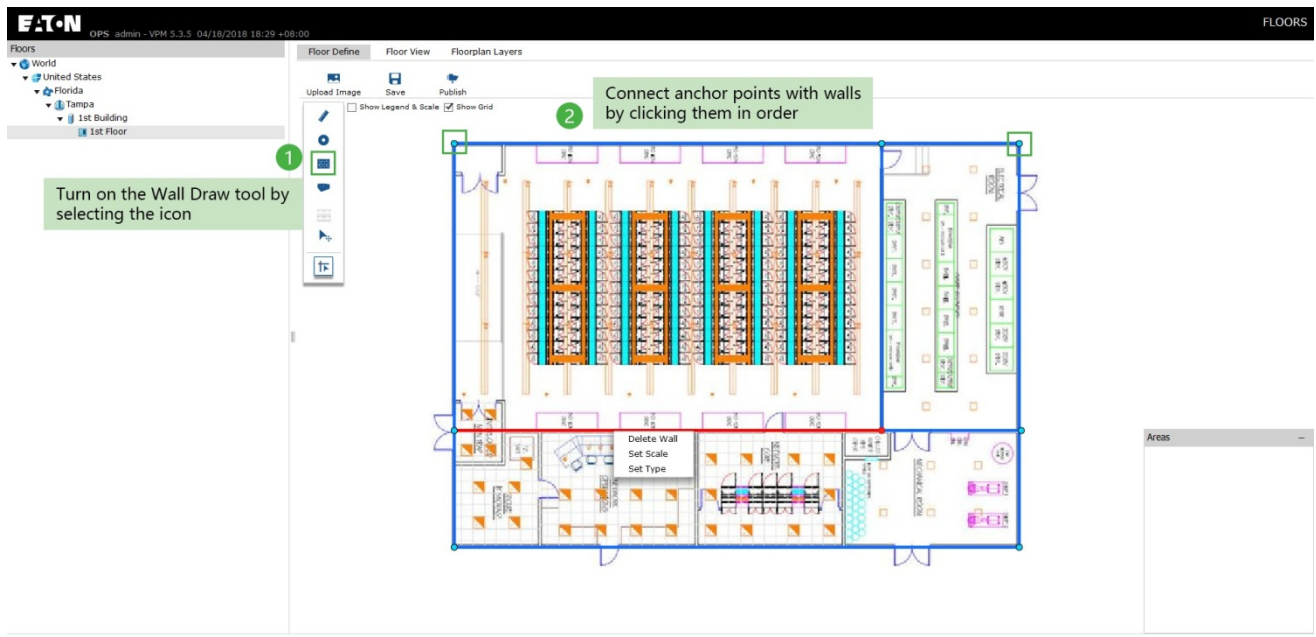
Create anchor points for wall segments where two walls are connected on the floorplan image. Turn on the Anchor Point tool by selecting the icon and then left mouse click anchor points onto the image. The crosshair tool allows users to align anchor points. For a free-form anchor placement, turn off the crosshair tool by toggling this icon to the off position. The Escape key toggles out of the Anchor Point mode.



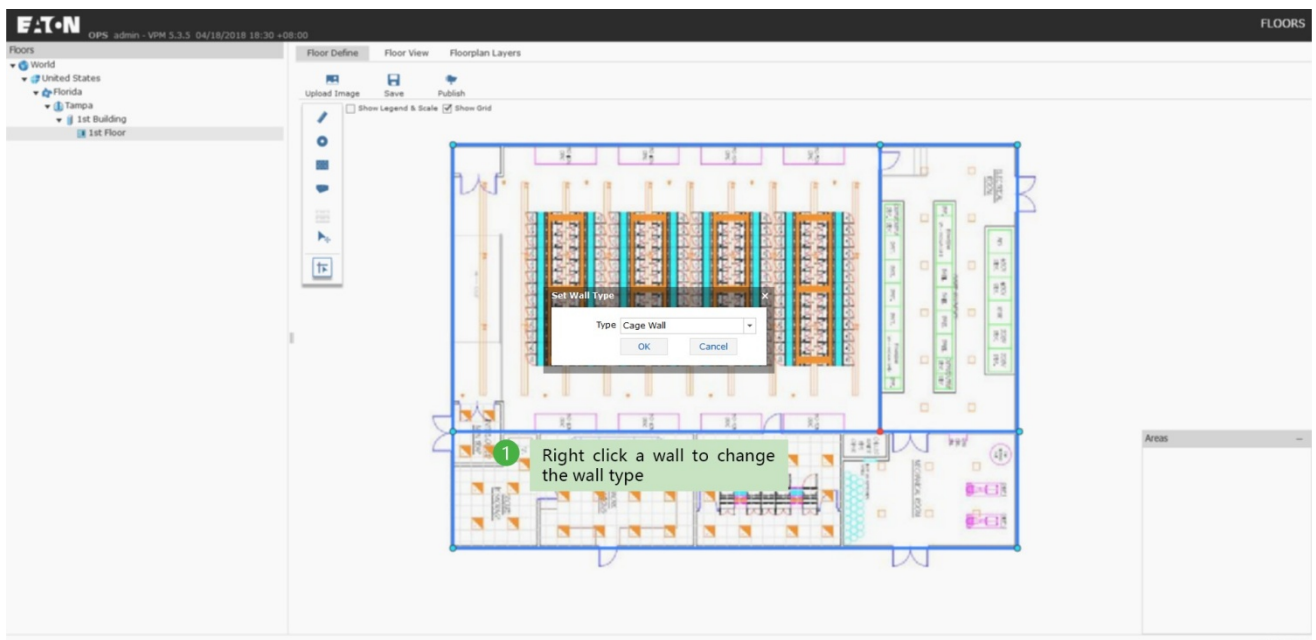


## 5. Draw Wall Segments

Draw wall segments by joining anchor points. Turn on the Wall Draw tool by selecting the icon and then connect anchor points with walls by clicking them in order. Note, the Escape key will toggle the user out of the Wall Draw mode if the user needs to define more walls in a new area of the floor.

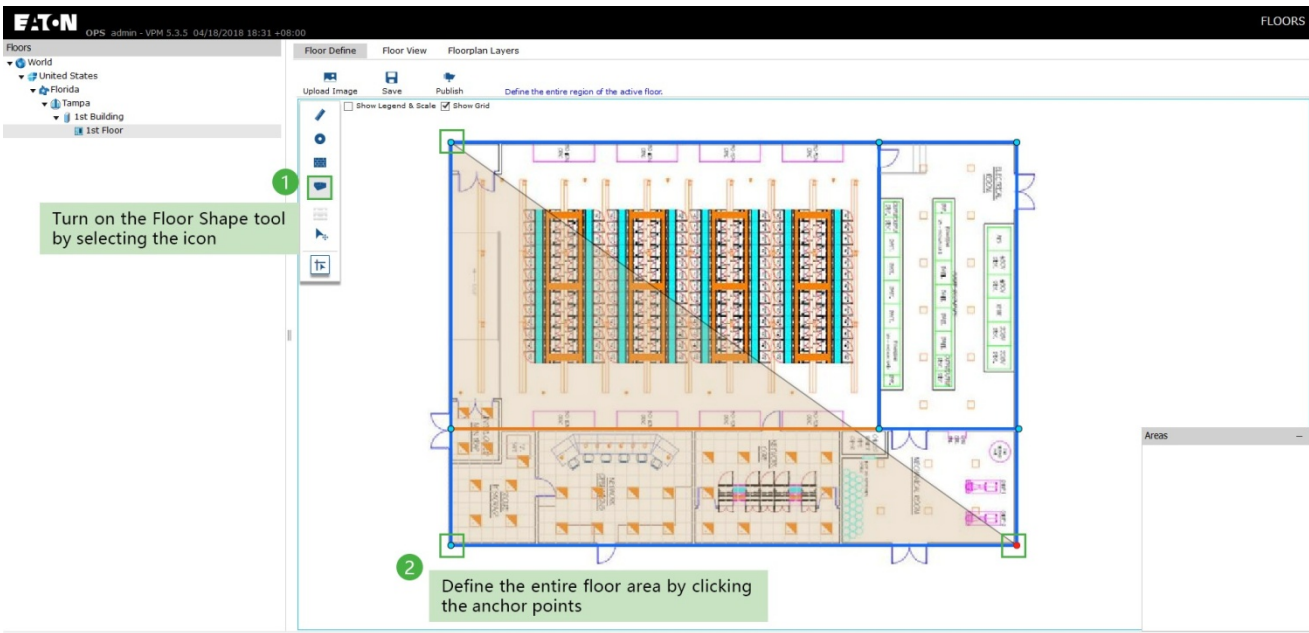


Right click a wall to change the wall type from Solid, Cage or Glass. The color of the wall on the floorplan will indicate the wall type.

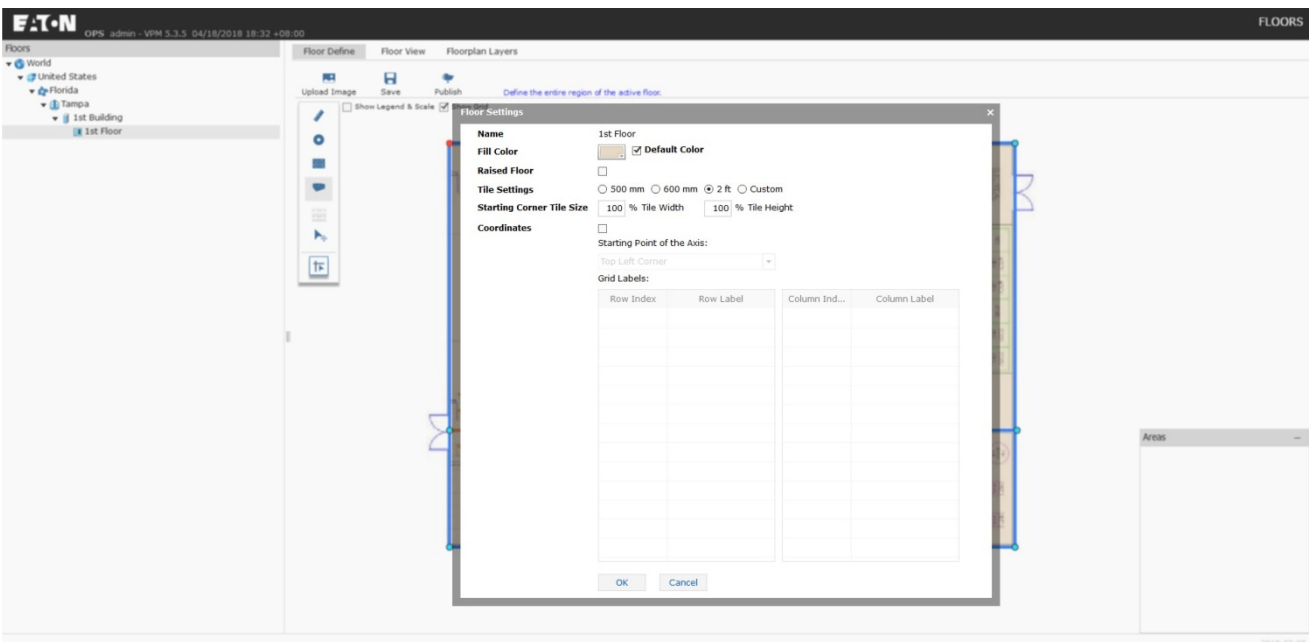


6. Draw Floor Shape

- a. Turn on the Floor Shape tool by selecting the icon from the ribbon menu on the left of the floor image. This allows the user to define the full area of the entire floor where devices may be placed in the application. The cursor changes to indicate that the session is in the Edit mode. The Escape key will toggle the user out of Floor Shape mode.
- b. Define the entire floor area by clicking the first anchor point which is part of the full floor perimeter area. Select the other anchor points in sequence to draw the full area of the floor. The graphics on the screen will update with the selection of each anchor point. Complete the floor definition by selecting the first anchor point once again which will close the full perimeter of the floor.

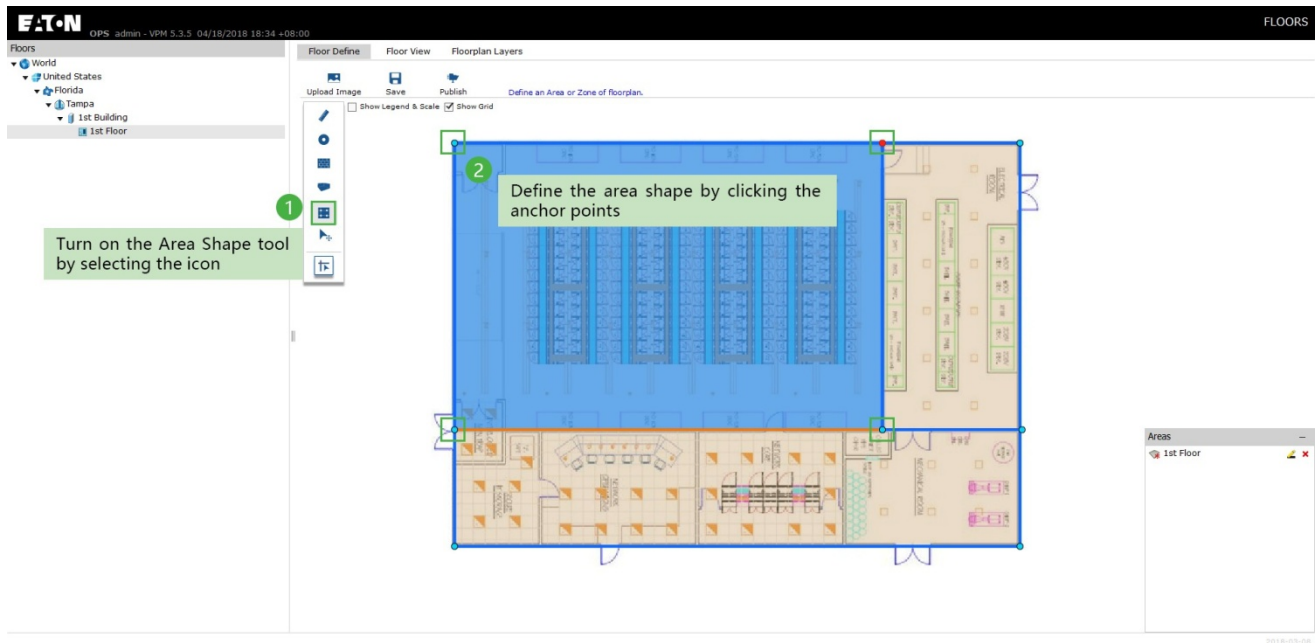


- c. When completed, the Floor configuration window will appear which allows the user to define raised floor and grid naming conventions for the floor. Note, if there are multiple areas on the floor which have combinations of raised floor and/or grid names then define these settings at the Area and not at the Floor level.

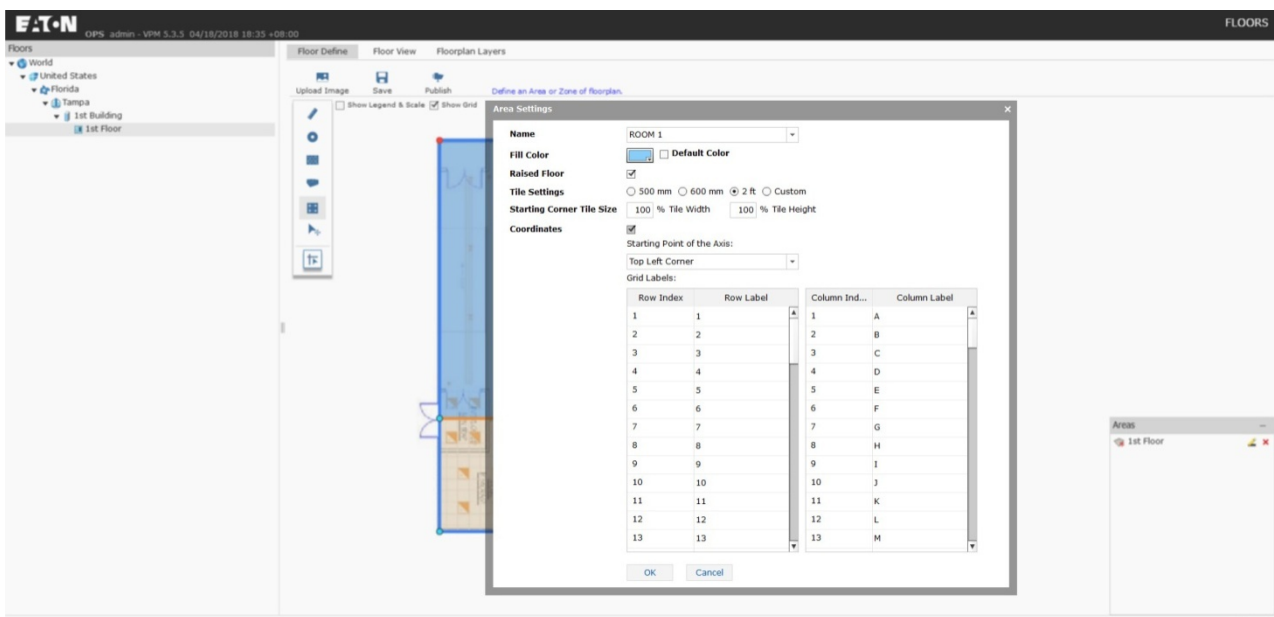


## 7. Draw Area Shape

- Turn on the Area Shape tool by selecting the icon from the toolbar. This allows the user to define each area within the floor where devices may be placed in the application. The cursor changes to indicate that the session is in the Edit mode. The Escape key will toggle the user out of Area Shape mode.
- Define the area shape by clicking the first anchor point which is part of the area. Select the other anchor points in sequence to draw the area. The graphics on the screen will update with the selection of each anchor point. Complete the area definition by selecting the first anchor point once again which will close the perimeter of the area.



- The Area configuration window will provide area settings to be defined.
  - Select the desired color for the area.
  - If the area is a raised floor then turn on the Raised Floor checkbox.
  - Set tile Tile size to standard or custom measurement.
  - Adjust the Starting Corner settings if a partial tile is needed in the corner of the raised floor area.
  - Enable the Coordinates checkbox if the area uses Row/Column grid naming conventions.
  - Choose the Starting point for the grid definitions.
  - Define the grid labels. Default settings are applied, but users may override the default values by editing the list.



8. Publish the floorplan

The screenshot displays the EATON software interface for creating floorplans. At the top left, the EATON logo and user information 'OPS\_admin - VPM 5.3.3 04/18/2018 18:36 +08:00' are visible. The main window is titled 'FLOORS' and contains several panels:

- Navigation Tree (Left):** Shows a hierarchy starting with 'World', followed by 'United States', 'Florida', 'Tampa', '1st Building', and '1st Floor'.
- Toolbar (Top Left):** Includes icons for 'Upload Image', 'Save', 'Publish', and 'Show Grid'. A green callout box with the number '1' and the text 'Click the Publish button' highlights the 'Publish' icon.
- Floorplan View (Center):** Shows a detailed floorplan of a room labeled 'ROOM 1'. A blue grid is overlaid on the room area. The room contains several rectangular tables and chairs. Other parts of the floorplan, including a hallway and another room, are visible in a lighter color.
- Areas Panel (Right):** A list titled 'Areas' showing '1st Floor' and 'ROOM 1' with expand/collapse and delete icons.

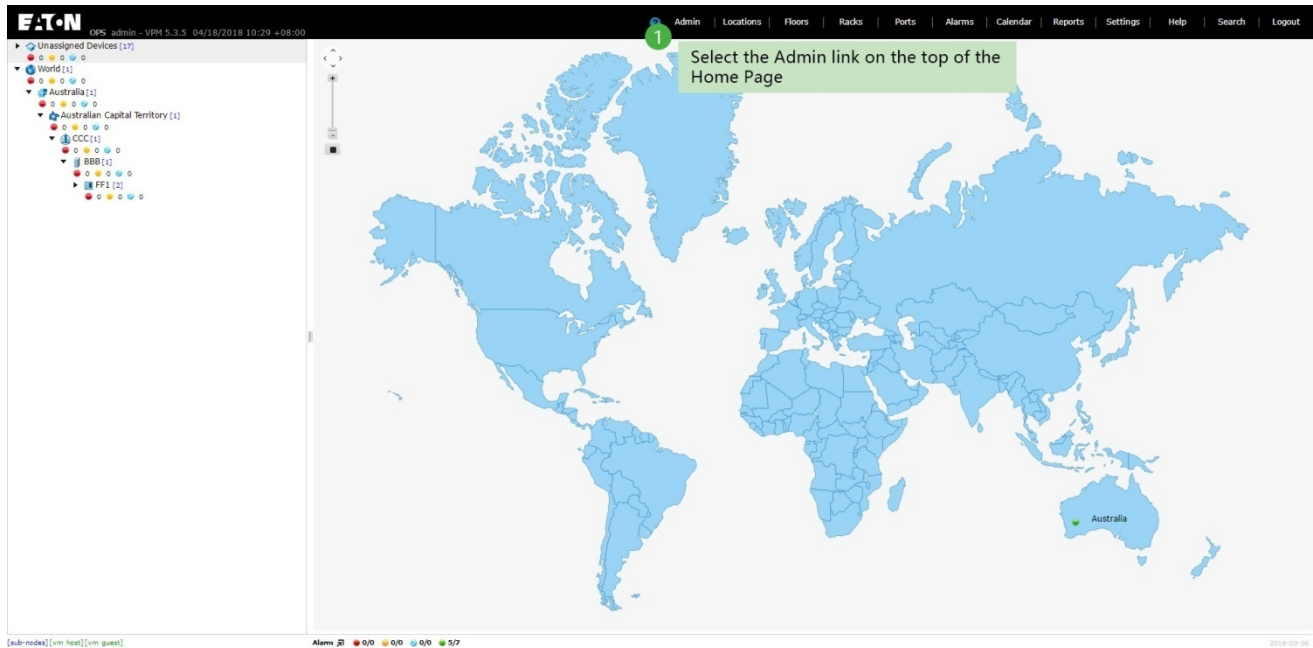
At the bottom right corner of the interface, the date '2018-03-08' is displayed.

# Add Devices

The application contains a list of over 20,000 models with which users can create devices to manage their properties, attributes, locations, connections, etc. Devices can be created manually, cloned from other devices, imported using bulk import (refer to User Guide for detailed instructions) or via auto discovery (see Step 6 of this Quick Start Guide).

## 1. Select the Admin tab

Select the Admin link on the top of the Home Page. By default, the Admin page shows the list of Devices in the application and allows users to easily manage the devices by selecting them in the device list.



## 2. Create a New Device

Complete the required fields in the device properties list and hit the Create New Device button. This will add the device to the device list. For example:

- . Name= Rack001
- . Type = Rack
- . Manufacturer=HP
- . Product Line=Rack System
- . Model=7142
- . Device Group=Public

**Device Inform** Complete the required fields in the device properties list

1

2

Create New Device    Reset

Click the Create New Device button

### 3. Find Devices in the List

- a. Type a few characters from the beginning of the device name in the progressive search field. The list will be filtered using "starts with" logic of the text entered to the search area.

**Device Information**

1

Type a few characters from the beginning of the device name in the progressive search field

- b. Use % or \* as a wild card to match characters. For example, \*001\* will filter the list using "contains" logic for the filtered device list.

The screenshot shows the Eaton UPS software interface. On the left, there is a table of devices with columns for Type, Manufacturer, Product Line, Model, and Device. A search filter icon (magnifying glass with a downward arrow) is highlighted with a green callout box containing the number '2' and the text 'Use % or \* as a wild card to match characters'. The right side of the interface shows the 'Device Information' form with fields for Device Type, Manufacturer, Product Line, Model, Model Created By, Device Group, Owner, Department, Energy Device Type, Energy Data Source, and Description. The status bar at the bottom indicates 'Attributes Manager' and 'Operation Successful!'.

- c. Use the filter icon when name is unknown or additional filtering is needed.

- 1) Click on the filter icon next to the magnifying glass.
- 2) From the drop-down menus indicate Type, Manufacturer, Product Line, Model, Device Group or Status to identify the desired devices.
- 3) Click Set to activate the filter.
- 4) To clear the filter, click the filter icon to reopen and Click Reset.

The screenshot shows the Eaton UPS software interface with the 'Device Information' form and a filtered device list. Three green callout boxes provide instructions:
 

- Callout 1: 'Click on the filter icon' points to the filter icon next to the magnifying glass in the device list table.
- Callout 2: 'From the drop-down menus indicate Type, Manufacturer, Product Line, Model, Device Group or Status to identify the desired devices' points to the dropdown menus in the filter panel.
- Callout 3: 'Click Set to activate the filter' points to the 'Set' button in the filter panel.

 The device list table shows a single device with the name '100Wall-AA-01'. The status bar at the bottom indicates 'Attributes Manager' and 'Operation Successful!'.

## 4. Use Clone to Create Additional Devices

- In the device list select the device you want to replicate.
- Click the Clone button underneath the device list.
- In the popup window enter the desired quantity of cloned devices to create.

The screenshot shows the Eaton UPS management interface. On the left, a table lists devices. The first device, '100Wall-AA-01', is selected. Below the table, the 'Clone' button is highlighted with a green box and a '2'. A 'Clone Devices' popup window is open, showing 'Create 9 copies of this device (limit 1000)' with a green box and a '3' highlighting the number '9'. The 'Device Information' panel on the right shows details for the selected device, including Name, UUID, Device Type, Manufacturer, Product Line, Model, and Model Created By.

- Cloned devices maintain the same name as the original device, but are appended with(#).

The screenshot shows the Eaton UPS management interface after cloning. The device list now contains 10 devices, from '100Wall-AA-01' to '100Wall-AA-0(9)'. The 'Clone' button is highlighted with a green box. The 'Device Information' panel on the right shows details for the selected device, including Name, Device Type, Manufacturer, Product Line, Model, and Model Created By.



## 5. Rename a device

- Select the device from the device list.
- In the Name field change the text as desired.
- Click on the Modify button.

The screenshot displays the Eaton UPS management interface. On the left, a table lists devices with columns for Name, Type, and Model. A green callout '1' points to the first row, '100Wall-AA-01'. The main area shows the 'Device Information' form for a device named '100Wall-AA-02'. A green callout '2' points to the 'Name' field, which contains the text '100Wall-AA-02'. Below the form, a green callout '3' points to the 'Modify' button. The interface also includes a 'Device Location' section with fields for Container, Rack Group, Area, Floor, Building, City, and State.

Name	Type	Model
100Wall-AA-01	Rack	HP Rack System 7142
100Wall-AA-01(1)	Rack	HP Rack System 7142
100Wall-AA-01(2)	Rack	HP Rack System 7142
100Wall-AA-01(3)	Rack	HP Rack System 7142
100Wall-AA-01(4)	Rack	HP Rack System 7142
100Wall-AA-01(5)	Rack	HP Rack System 7142
100Wall-AA-01(6)	Rack	HP Rack System 7142
100Wall-AA-01(7)	Rack	HP Rack System 7142
100Wall-AA-01(8)	Rack	HP Rack System 7142

**Device Information**

Name: 100Wall-AA-02

VID: Pe197af0c-0679-40a7-9a1f-2a

**Properties**

Rack: HP  
Rack System: 7142

Model Created By: System

Device Group:  Public

Owner: [Dropdown]  
Department: [Dropdown]  
Energy Device Type: [Dropdown]  
Energy Data Source: State  
Description: [Text Area]

**Device Location**

Container: 100Wall-AA-01  
Rack Group: [Dropdown]  
Area: [Dropdown]  
Floor: [Dropdown]  
Building: [Dropdown]  
City: [Dropdown]  
State: [Dropdown]

Modify Reset Print

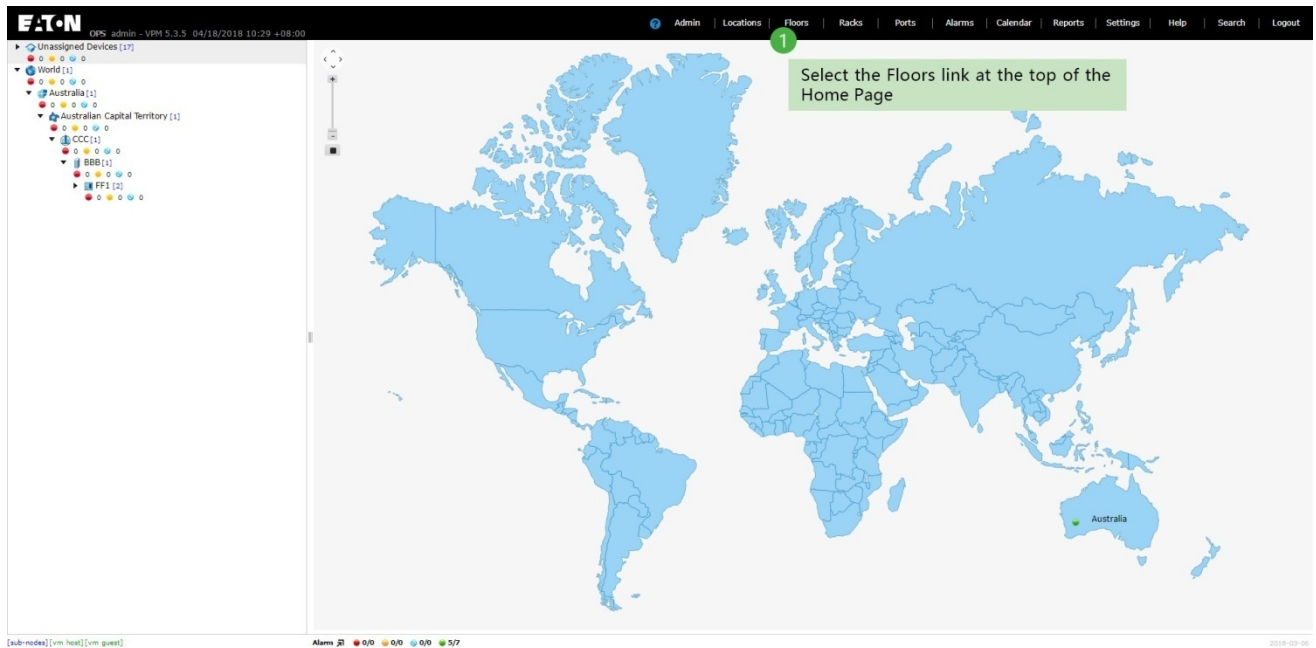
Click the Modify button

# Place Floormount Devices

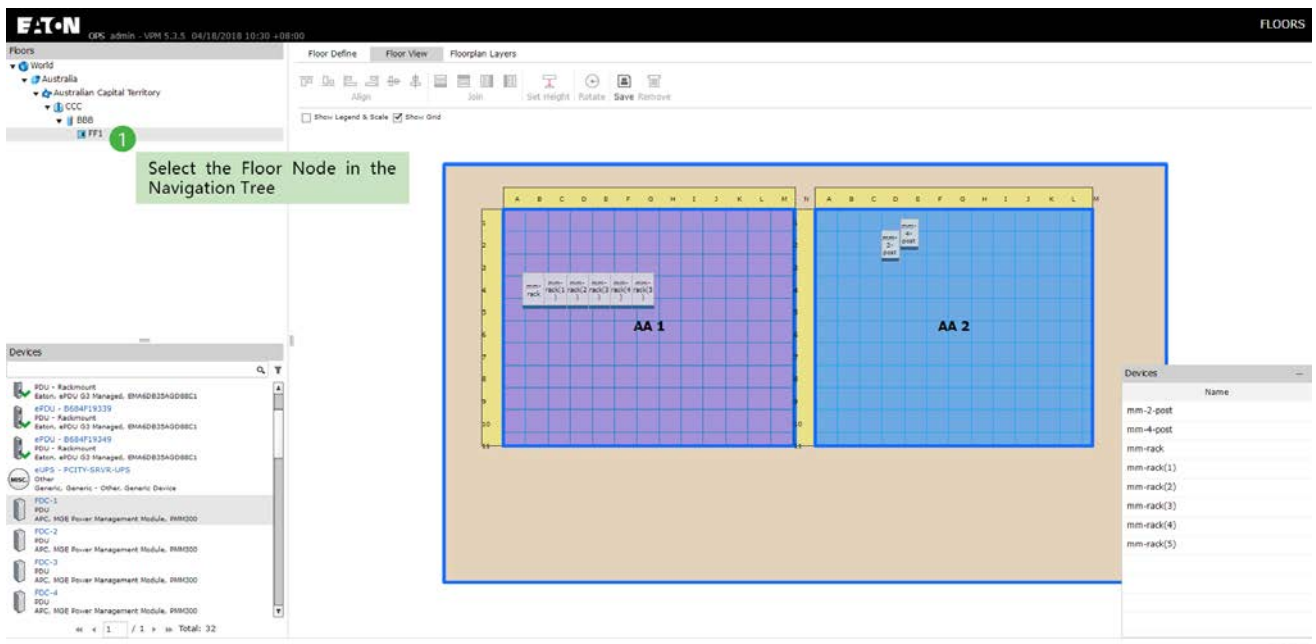
When floor configurations are completed and Rack/Facility devices have been created, users can place these devices on the floorplans. The Floor tools provide easy ways to place, rotate, align, raise devices on the floors.

## 1. Select the Floors Page

Select the Floors link at the top of the Home Page.

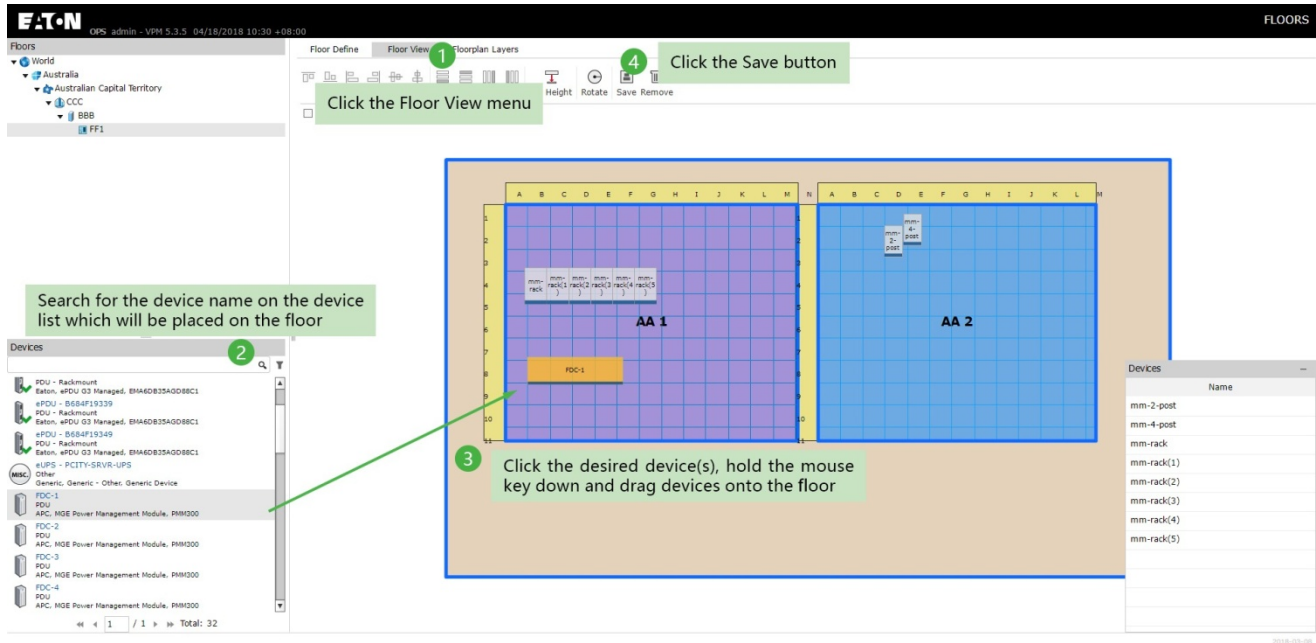


## 2. Select the Floor Node in the Navigation Tree



### 3. Mount Devices to the Floor

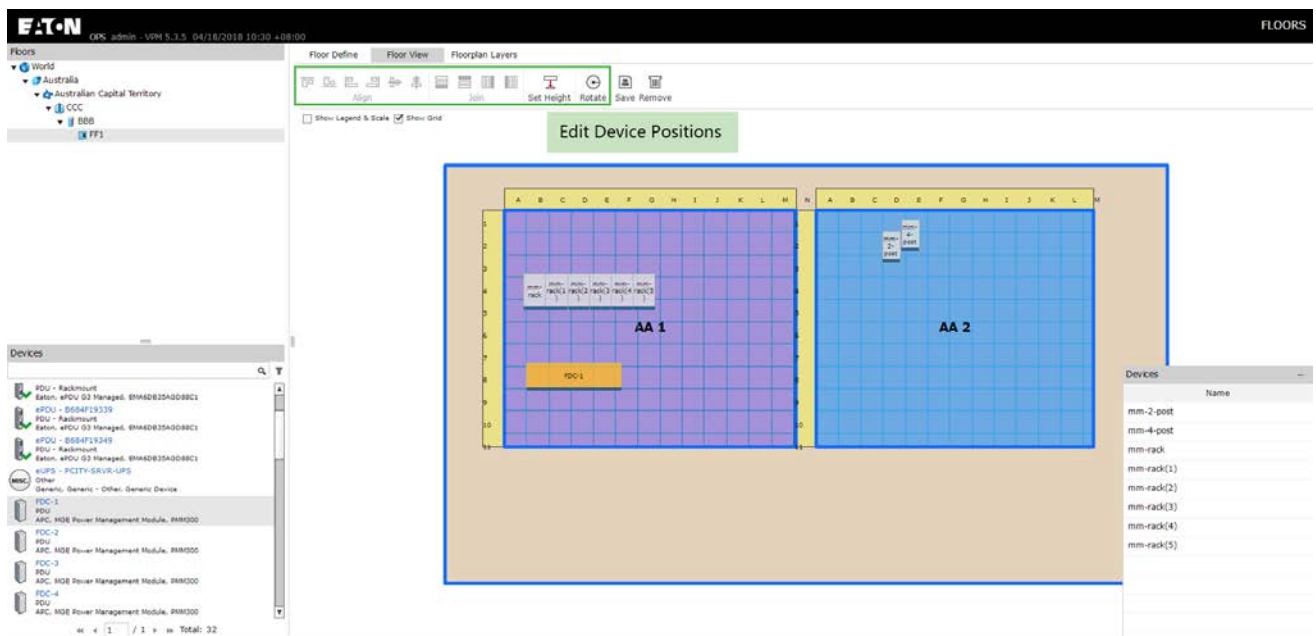
- Click the Floor View menu.
- Search for the device name on the device list which will be placed on the floor.
- Click the desired device(s), hold the mouse key down and drag devices onto the floor. Release the mouse key to place devices on the floor. Multiple devices can be selected using the Ctrl or Shift keys.
- Click the Save button.



### 4. Edit Device Positions

There are four primary functions performed on the floormount devices once they are placed on the floor. In all cases, multiple devices can be selected by holding the Shift key and selecting multiple devices on the floorplan. For the Align and Join features, the first device selected in the series will act as the reference for the join and align functions.

- 1) Move – Click and drag devices to move them on the floor.
- 2) Rotate – Click devices and then choose the Rotate icon to rotate in 90 degree increments.
- 3) Join – Select multiple devices and join devices to the left, right, top or bottom of the first device selected in the series.
- 4) Align – Select multiple devices and join devices to the left, right, top and bottom of the first device selected in the series

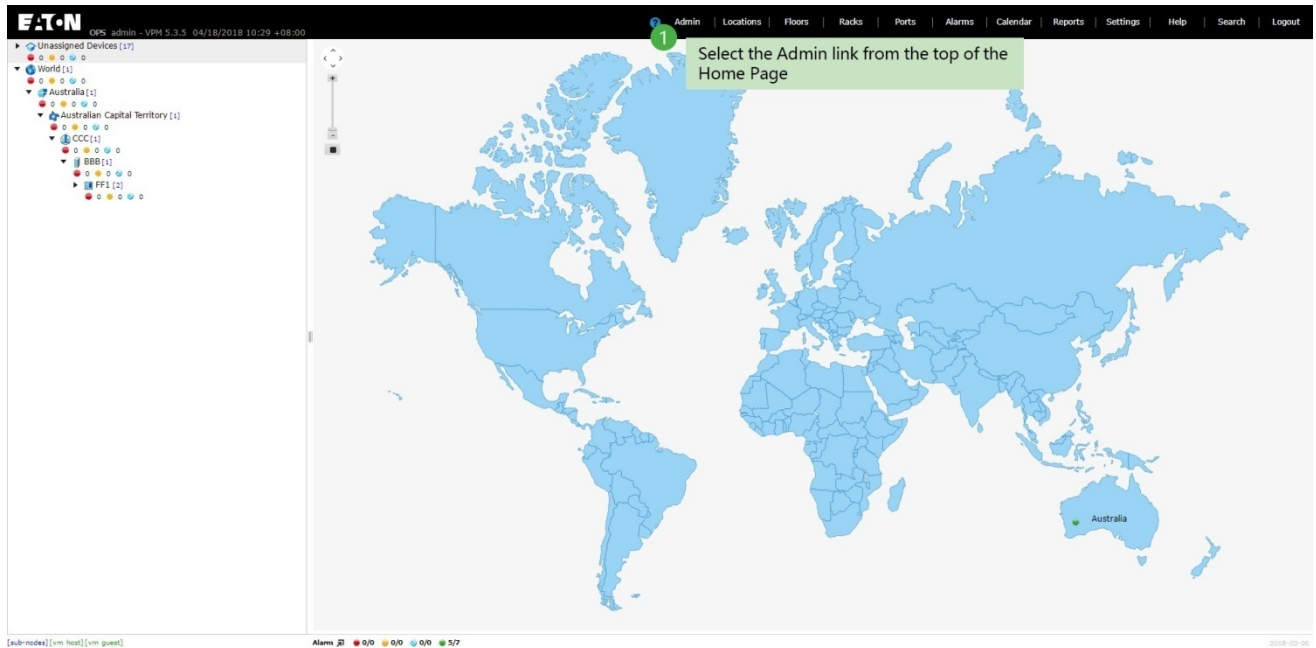


# Auto Discovery

The Discovery feature allows users to define discovery settings for polling networks to automatically find and activate monitoring for devices to be managed in the application.

## 1. Select the Discovery Page

Select the Admin link from the top of the Home Page and then select the Discovery link from the top of the Admin Page.



## 2. View Defined Discovery Jobs

Click the Edit button from the discovery status page.

 COMPLETED | 2018-04-18 11:06:27+0800 | 24 | 7 |test
 10.10.10.1 | 10.10.10.225 | HOURLY |  | COMPLETED | 2018-04-18 11:06:57+0800 | 21 | 2 |public/etom4
 10.10.10.226 | 10.10.10.226 | HOURLY |  | COMPLETED | 2018-04-18 11:06:26+0800 | 1 | 1 |


</table>
 The background shows a 'Device Information' window with a table of devices including names like 'AT901', 'ePDU - 8672038319', and 'FDC-1'."/>

### 3. Add a Discovery Job

- Click the Add button on the discovery job window.
- Enter the job name and Start/End ranges for the IP addresses to be polled for devices.

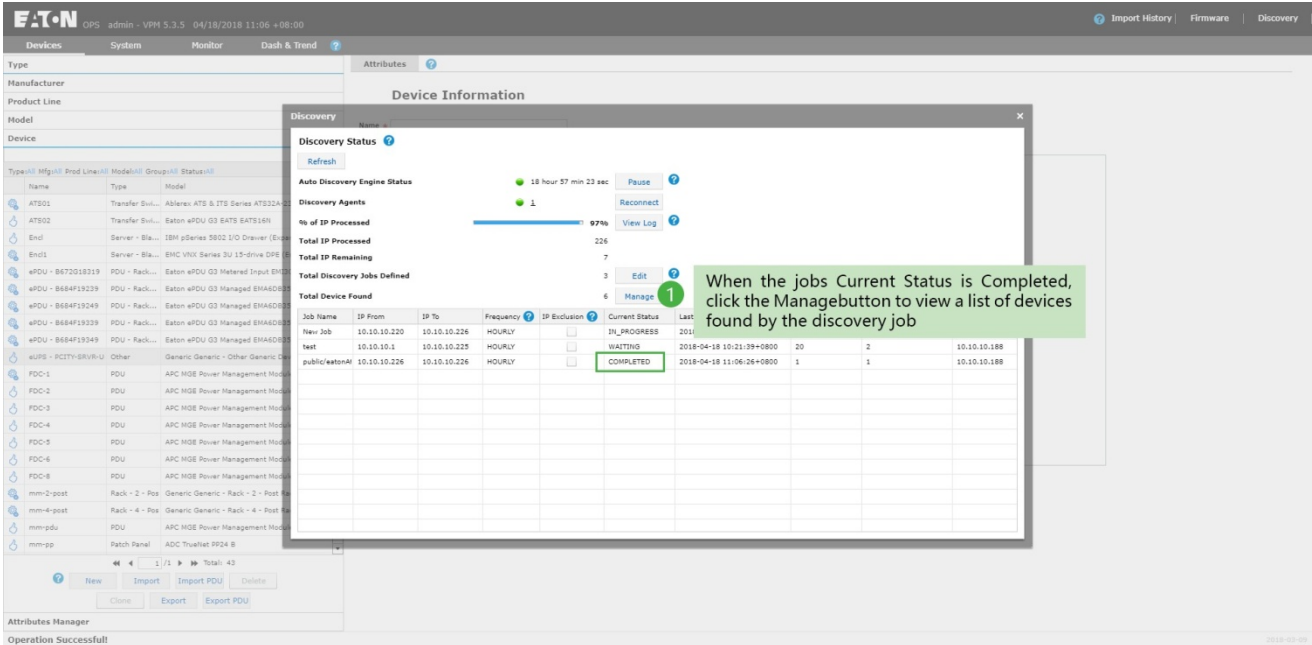
The screenshot shows the Eaton VPM interface with the 'Discovery Job' window open. The window has a table with columns: Active, Job Name, IP From, IP To, Description, Frequency, IP Exclusion, SNMP, RF Code, and Agent. The 'Add' button is highlighted with a green callout box. The 'Job Name' field contains 'test' and the 'IP From'/'IP To' fields contain '10.10.10.1' and '10.10.10.226' respectively. A second green callout box points to these fields with the text 'Enter the job name and Start/End ranges for the IP addresses to be polled for devices'.

- Select the discovery protocol check box. In most cases, this will be SNMP discovery only.
- Fill the SNMP version, Port and community to be used with the SNMP discovery settings. These should match the configuration of the devices which will be discovered and added to the application.
- Select the Active check box to activate the new discovery job.
- Click the Save button on the top left corner of the page.

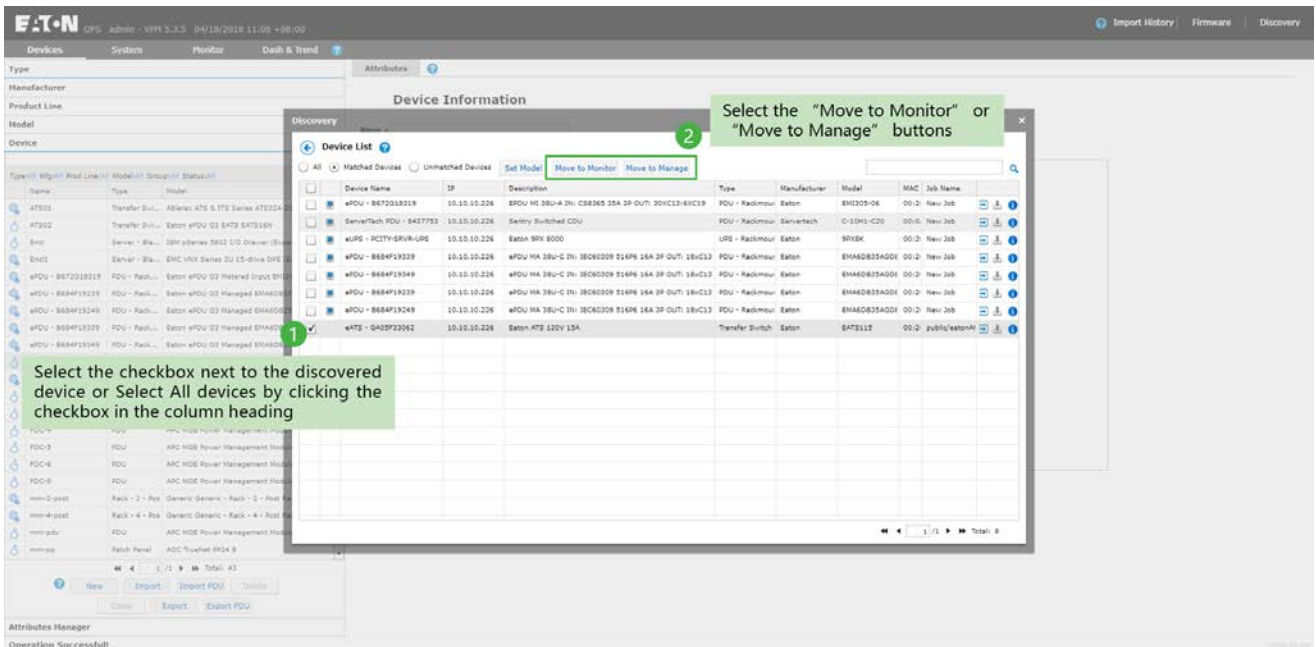
The screenshot shows the Eaton VPM interface with the 'Discovery Job' window open. The window has a table with columns: Active, Job Name, IP From, IP To, Description, Frequency, IP Exclusion, SNMP, RF Code, and Agent. The 'Save' button is highlighted with a green callout box. The 'Active' checkbox is checked, and the 'SNMP' checkbox is also checked. A green callout box points to the 'SNMP' checkbox with the text 'Select the discovery protocol check box. In most cases, this will be SNMP discovery only'. Below the table, there are fields for 'V1', 'V2', 'V3', 'Port', 'Read Community', and 'Write Community'. A green callout box points to these fields with the text 'Fill the SNMP version, Port and community to be used with the SNMP discovery settings'.

## 4. Manage Discovered Devices

- Return to the Discovery Status page by hitting the back button from the Discovery Job definition page.
- When the jobs Current Status is Completed, click the Manage button to view a list of devices found by the discovery job.



- Select the checkbox next to the discovered device or Select All devices by clicking the checkbox in the column heading.
- Select the "Move to Monitor" or "Move to Manage" buttons, choose the Device Group for the selected devices and click the OK button. Note, Move to Monitor will add the device to the application and enable Monitoring data collection, but Move to Manage will simply add the device to the device list with no active data collection.

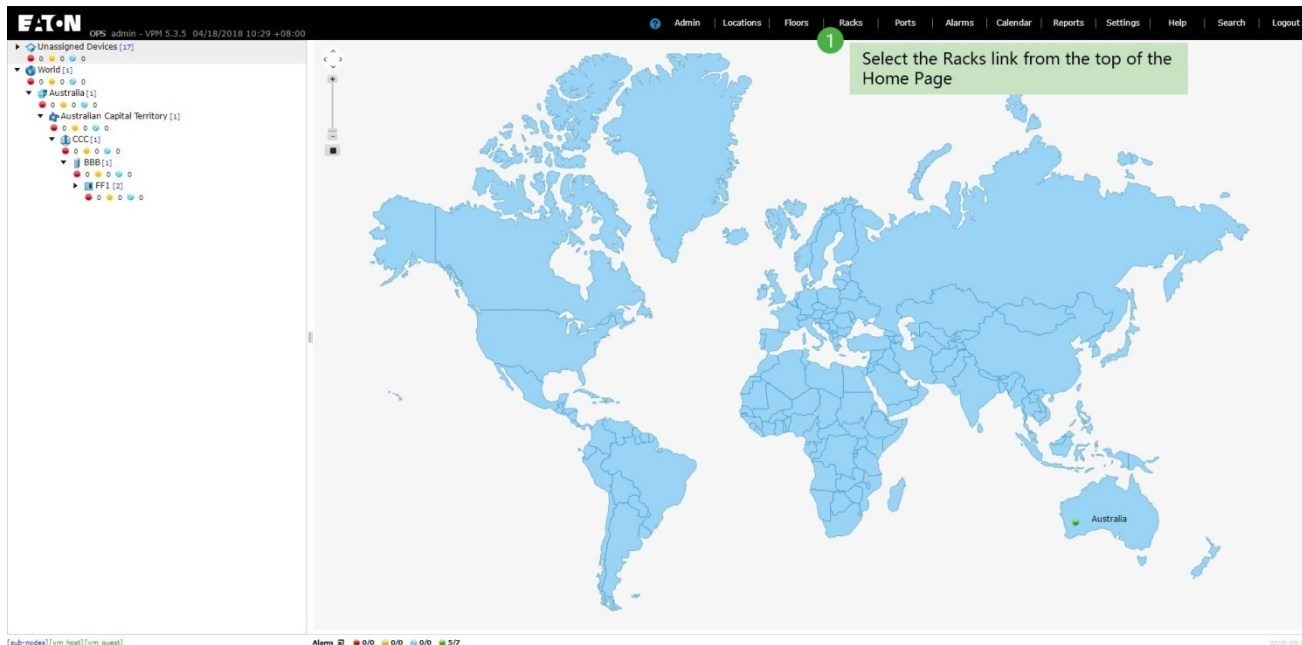


# Rack Building

The Racks feature allows users to manage devices within the rack and to view rack detail and capacity information.

## 1. Select the Racks Page

Select the Racks link from the top of the Home Page.



## 2. Choose a Rack to Manage

Find the rack in the list and single click to highlight the rack. Use the search and filter options to limit the racks listed if there are many racks in the list. This will display the rack detail image and rack dashboard. Use the mouse scroll wheel to zoom in/out or click and drag the rack image to pan the view to the desired view settings.

**U Capacity**

	Total	Used	Available	% Util
Rack Front	42.0	13.0	29.0	31.0
Rack Rear	42.0	0.0	42.0	0.0

**Properties**

Name	Value
Name	mm-rack
Type	Rack
Manufacturer	Generic
Product Line	Generic - Rack
Model	Rack 42U
IP Address	127.0.0.1
MAC Address	
Position	
Row	5
Column	A

**Mounted Devices**

Name	Type	Model	IP	U-Pos	Enclosure	Slot ID	Side
Switch 02	Switch	1912C		28.0			
switch	Switch	1U Fiber L2U		27.0			
End1	Server - Blade Endc	3U 15-drive DPE (E)		24.0			
Server 03	Server - Rackmount	2850 II		8.0			
Server02	Server - Rackmount	2296-T		6.0			
Server01	Server - Rackmount	2029A-HTTK		3.0			
UPS	UPS - Rackmount	91300100R-10.2UE		1.0			

### 3. Find Devices to Place in Rack

Use the search and filter options on the Device list to find the device that needs to be placed into the rack. Note, the rack has available mount positions on the front, rear right and left of the rack. Left and right are typically reserved for 0U Rackmount PDU devices. For devices which mount to the outside of the rack, such as sensors or door locks, use the Show Enclosure checkbox to toggle the view with the rack enclosure.

The screenshot shows the EATON RACKS interface. On the left, there is a 'Racks' list and a 'Devices' list. The 'Devices' list has a search bar and a filter icon. A green callout box with a white background and a green border points to the search bar, containing the text: "Use the search and filter options on the Device list to find the device". The central part of the interface shows a 3D model of a rack with a blue background. On the right, there is a 'U Capacity' table and a 'Properties' table.

	Total	Used	Available	% Util
Rack Front	42.0	13.0	29.0	31.0
Rack Rear	42.0	0.0	42.0	0.0

Name	Value
Name	mim-rack
Type	Rack
Manufacturer	Generic
Product Line	Generic - Rack
Model	Rack 42U
IP Address	127.0.0.1
MAC Address	
Position	
Row	5
Column	A

Name	Type	Model	IP	U-Pos	Enclosure	Slot ID	Side
Switch 02	Switch	1912C		28.0			
switch	Switch	1U Fiber LIU		27.0			
Enc1	Server - Blade Endc	3U 15-drive DPE (E)		24.0			
Server 03	Server - Rackmount	2850 II		8.0			
Server02	Server - Rackmount	2296-T		6.0			
Server01	Server - Rackmount	20279R-HTTR		3.0			
UPS	UPS - Rackmount	913001000R-VL2UE		1.0			

### 4. Assign Device to U Position

Click, hold and drag the device to into the Rack. The position the device is when the mouse is released defines where the device will be mounted. A green highlight will indicate the positions to be occupied by the device if the user releases

the mouse. Note, blades can be mounted directly into Enclosures in this view with the same user function.

The screenshot shows the EATON RACKS interface. On the left, there is a 'Racks' list and a 'Devices' list. The 'Devices' list has a search bar and a filter icon. A green callout box with a white background and a green border points to a device in the 'Devices' list, containing the text: "Click, hold and drag the device to into the Rack". The central part of the interface shows a 3D model of a rack with a blue background. On the right, there is a 'U Capacity' table and a 'Properties' table.

	Total	Used	Available	% Util
Rack Front	42.0	13.0	29.0	31.0
Rack Rear	42.0	0.0	42.0	0.0

Name	Value
Name	mim-rack
Type	Rack
Manufacturer	Generic
Product Line	Generic - Rack
Model	Rack 42U
IP Address	127.0.0.1
MAC Address	
Position	
Row	5
Column	A

Name	Type	Model	IP	U-Pos	Enclosure	Slot ID	Side
Switch 02	Switch	1912C		28.0			
switch	Switch	1U Fiber LIU		27.0			
Enc1	Server - Blade Endc	3U 15-drive DPE (E)		24.0			
Server 03	Server - Rackmount	2850 II		8.0			
Server02	Server - Rackmount	2296-T		6.0			
Server01	Server - Rackmount	20279R-HTTR		3.0			
UPS	UPS - Rackmount	913001000R-VL2UE		1.0			



### 5. Save the Rack

The screenshot shows the EATN RACKS management interface. On the left, there are panels for 'Racks' and 'Devices'. The 'Racks' panel shows a list of racks, including 'mm-2-post', 'mm-4-post', and 'mm-rack'. The 'Devices' panel shows a list of components like 'ATS01 Transfer Switch', 'Enclosure', and 'PDU'. In the center, a 3D model of a rack is displayed with a 'Save' button highlighted in green and a callout box that says 'Click the Save button'. On the right, there are two tables: 'U Capacity' and 'Properties'. The 'U Capacity' table shows usage for 'Rack Front' and 'Rack Rear'. The 'Properties' table lists details for the 'mm-rack' such as 'Name', 'Type', 'Manufacturer', 'Model', 'IP Address', and 'Position'. Below these is a 'Mounted Devices' table listing components like 'Switch 02', 'switch', 'Enc1', 'Server 03', 'Server02', 'Server01', and 'UPS' with their respective types, models, and positions.

	Total	Used	Available	% Util
Rack Front	42.0	13.0	29.0	31.0
Rack Rear	42.0	0.0	42.0	0.0

Name	Value
Name	mm-rack
Type	Rack
Manufacturer	Generic
Product Line	Generic - Rack
Model	Rack 42U
IP Address	127.0.0.1
MAC Address	
Position	
Row	5
Column	A

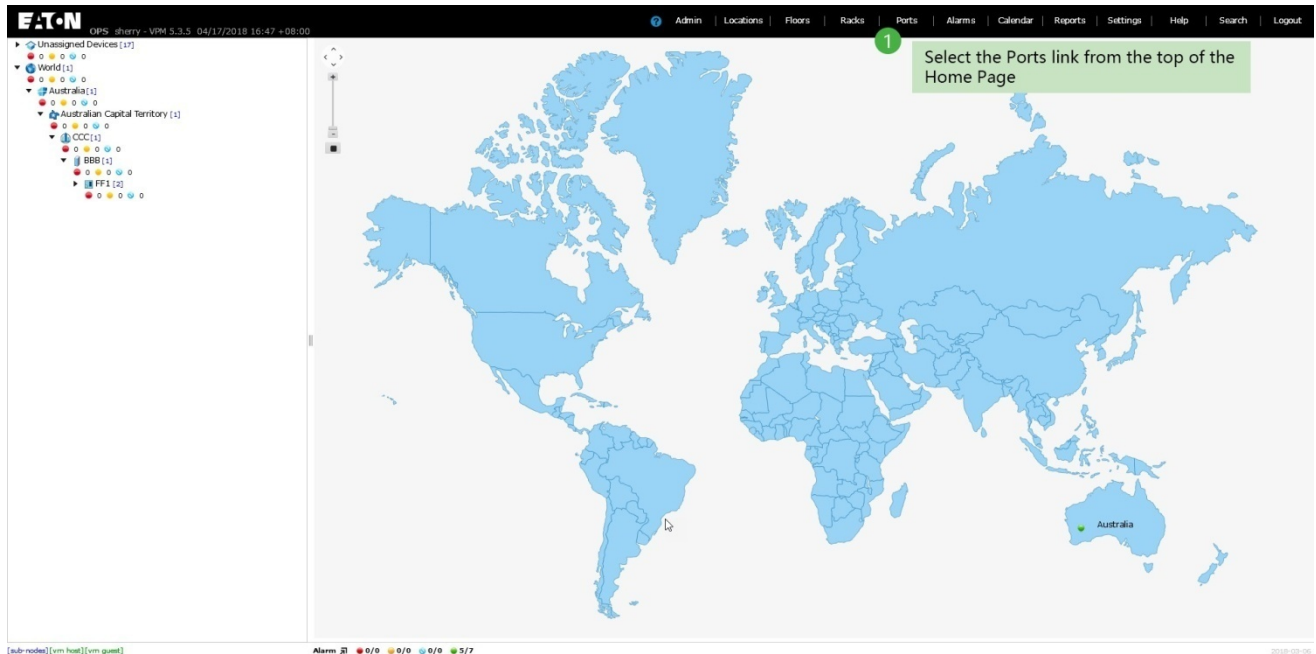
Name	Type	Model	IP	U-Pos	Enclosure	Slot ID	Side
Switch 02	Switch	1912C		28.0			
switch	Switch	1U Fiber LRU		27.0			
Enc1	Server - Blade Endc	3U 15-drive DPE (E)		24.0			
Server 03	Server - Rackmount	2850 II		9.0			
Server02	Server - Rackmount	2296-T		6.0			
Server01	Server - Rackmount	2027PR-WTRK		3.0			
UPS	UPS - Rackmount	9130G1000R-VL2UE		1.0			

# Port Mapping

The Ports feature allows users to create mappings between devices for power ports. This helps define the hierarchy of power delivery from facility to end IT devices.

## 1. Select the Ports Page

Select the Ports link from the top of the Home Page.



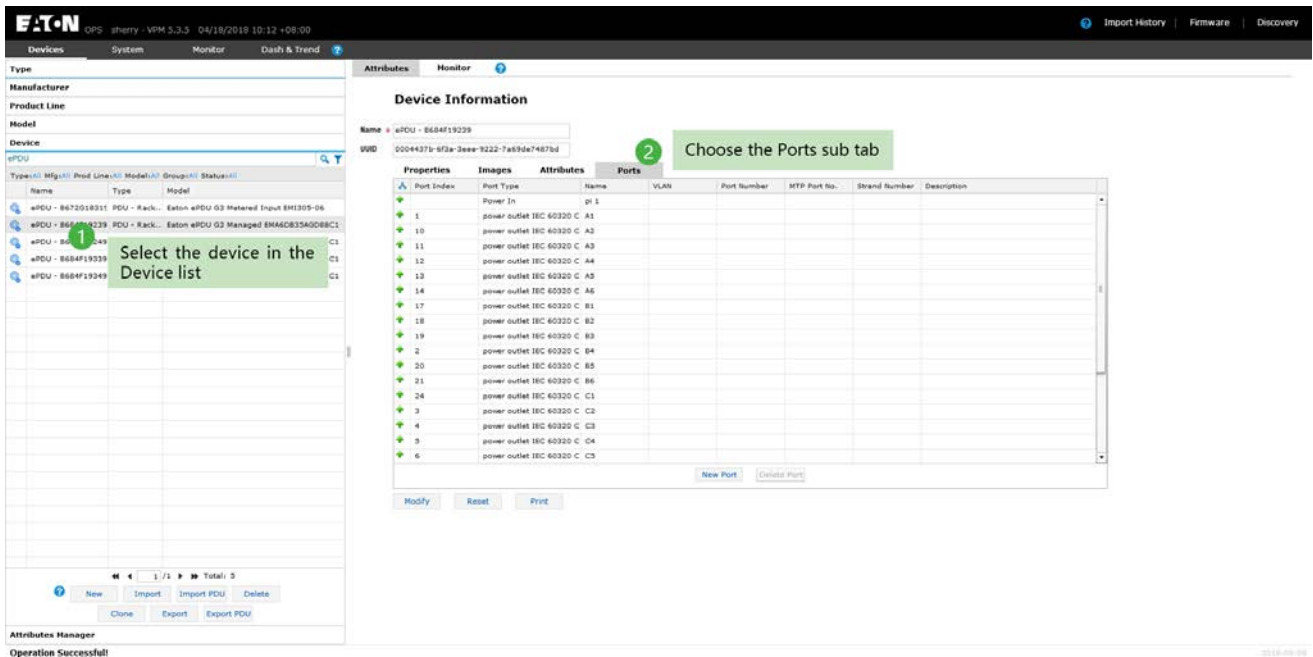
## 2. Select Devices to Connect

Use the search and filter options to find devices that need to be connected. Double click the device name in the device list to add them to the Connected Devices area of the Port page. The table under the Connected Devices will list the defined connections for those devices.

Operation	Provider	Consumer	Cable Name	Type	Color	Serial #	Length
✗	ePDU - B672G18319: A01	mm-switch: pi 1	New Cable01	Generic Power Cable			
✗	ePDU - B684F19239: A1	mm-switch: pi 2	New Cable02	Generic Power Cable		20180417	5.00m

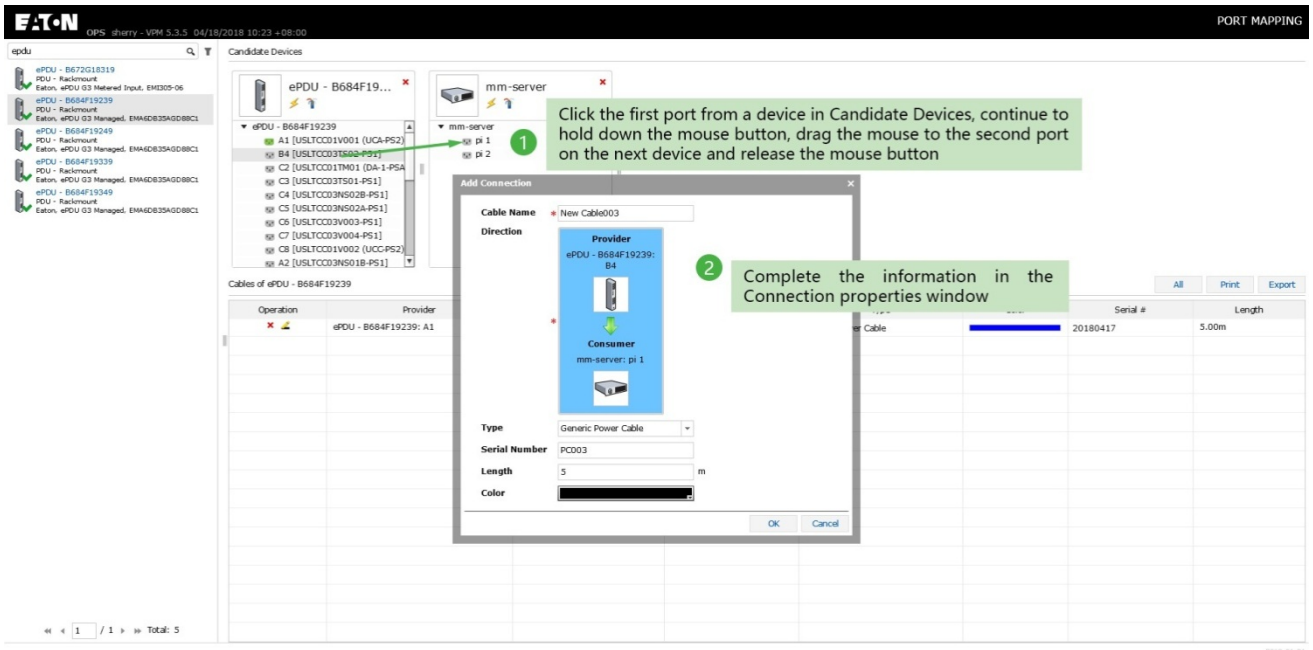
### 3. Confirm Ports are listed

The model library contains 20,000+ models with a predefined list of ports which can be used to define connections. If the ports on the device are missing then users can manage the list of available ports for the device on the Admin page. Select the device in the Device list and choose the Ports sub tab. On this page, users can create any number of ports with a specific port type from the list.



### 4. Create Port Connections

Connect ports from different devices by clicking the first port from a device in Candidate Devices, continue to hold down the mouse button, drag the mouse to the second port on the next device and release the mouse button. Complete the information in the Connection properties window including the Name, Serial Number, Length and Color.



## 5. View Power Path

Select the “Power Path” icon within the Candidate Device to view the hierarchy of power devices for that device. Note, not all downstream devices will be expanded. Click the Expand icon on the device in the power path view to further expand the connection topology.

Select the “Power Path” icon within the Candidate Device to view the hierarchy of power devices

Color	Serial #	Length
Blue	20180417	5.00m
Black	PC003	5.00m

## 6. Create Panels and Breakers on PDU/RPP Devices

The application supports the creation and management of Breakers on PDU and RPP devices. The Breakers are created on PDU and RPP devices in the Candidate Devices part of the Ports page.

- Search and add PDU or RPP devices as a Candidate Device.
- Select the PDU name in the Candidate Device port table and click the Add Panel button. This will reveal the Add Panel properties window.

Search and add PDU or RPP devices as a Candidate Device

Select the PDU name in the Candidate Device port table

Click the Add Panel button

Operation	Provider	Consumer	Cable Name	Type	Color	Serial #	Length
-----------	----------	----------	------------	------	-------	----------	--------

c. Complete the fields in the Panel properties window.

1) View Mode:

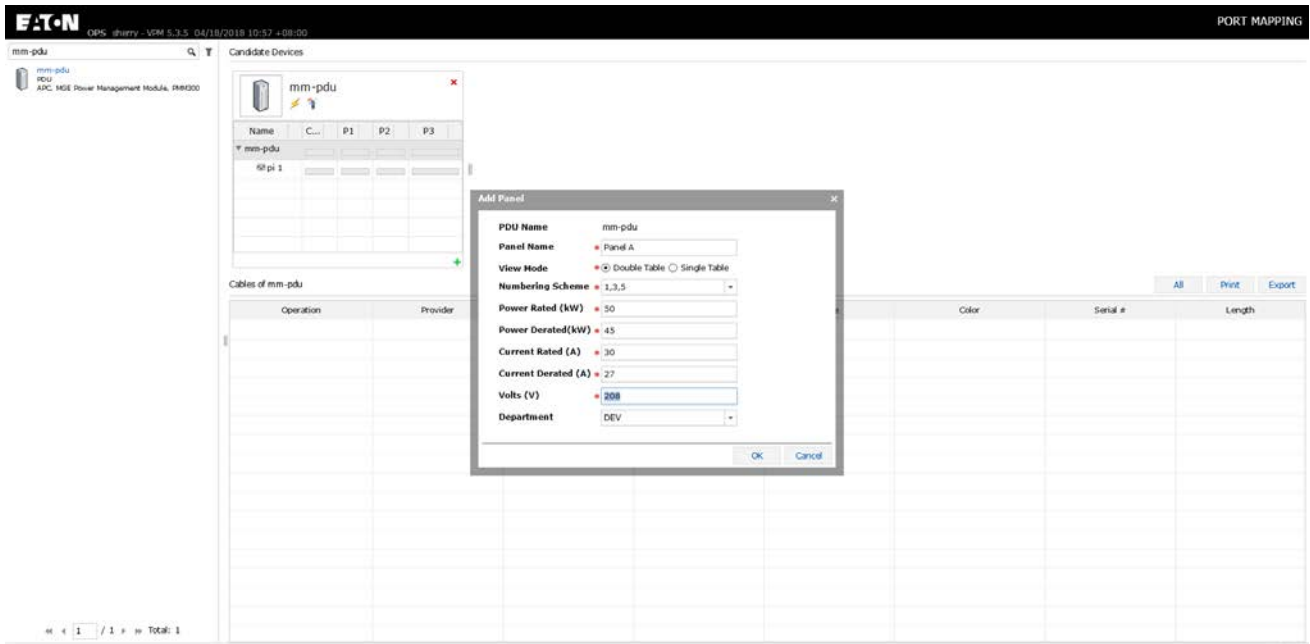
- Double Table – Panel is composed of two columns with 21 circuits in each column.
- Single Table – Panel is composed of a single column with all 42 circuits.

2) Numbering Scheme

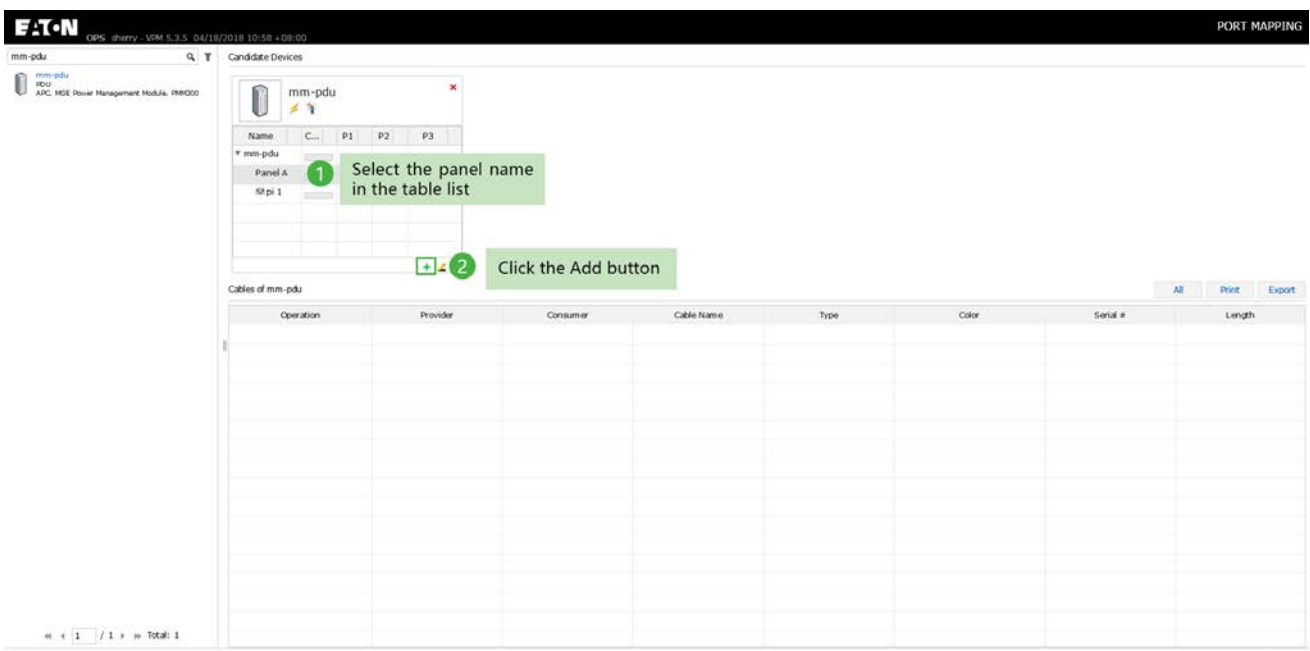
- 1, 3, 5... – Odd breakers on the left and even breakers on the right. This option is only available for the Double Table view mode.
- 1, 2, 3... –All circuits are listed in sequential order. This option is available for both Single and Double Table views. If this option is selected for a Double Table, then circuits 1-21 are in the left column and circuits 22-42 are in the right column

3) • Department:

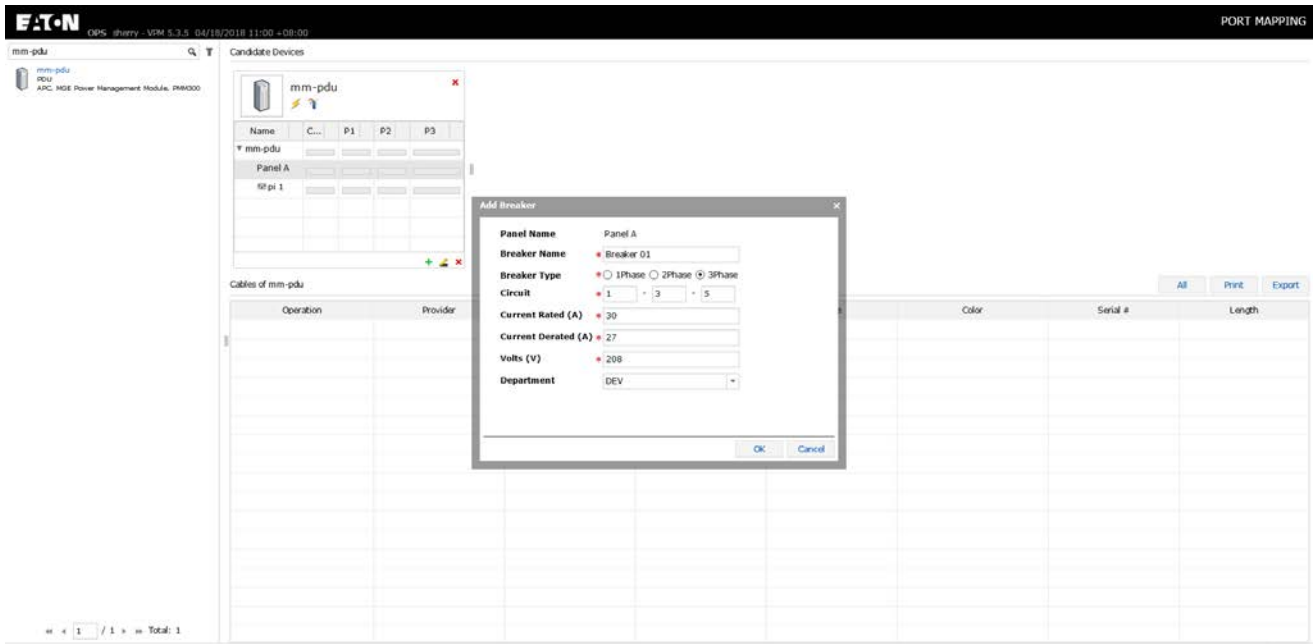
- Describes the department associated to all breakers within the panel. This setting is used to calculate the Customer Power Report.



d. Add a breaker to the panel. Select the panel name in the table list and click the Add button.

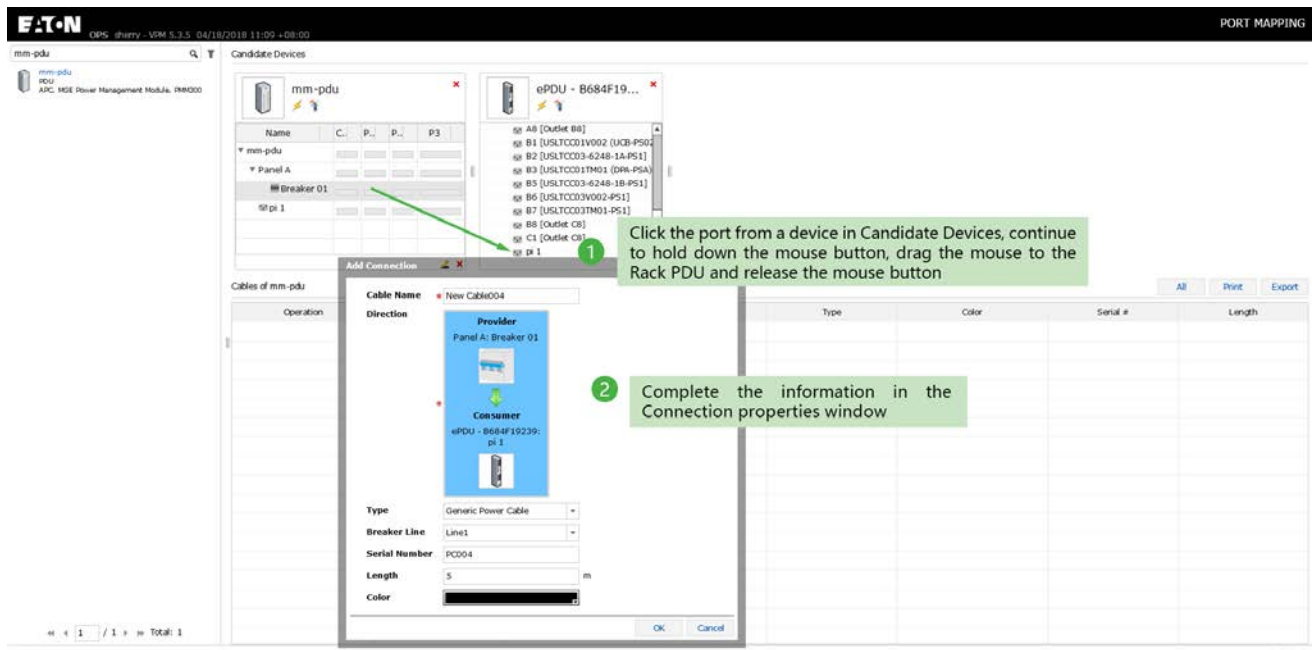


e. The Breaker properties window will appear. Complete the Breaker information and click OK to save the breaker for the panel.



## 7. Create Port Connections to PDU/RPP Breakers

Similar to the standard device port connections, users can connect the PDU and RPP breakers to ports of Rack PDU and Rack UPS devices. In some cases, these connections are created directly to end IT devices such as switch or server enclosures. Click the port from a device in Candidate Devices, continue to hold down the mouse button, drag the mouse to the Rack PDU and release the mouse button. Complete the information in the Connection properties window including the Name, Serial Number, Length and Color.

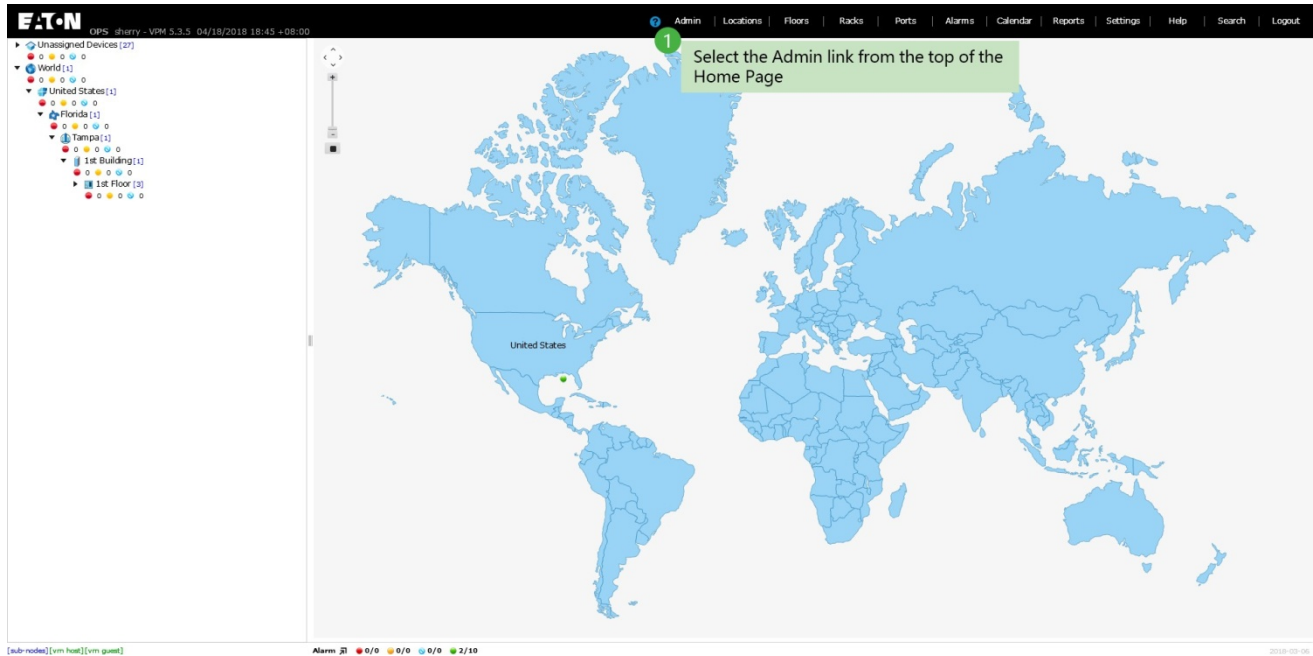


# Device Settings

Many of the capacity tools and dashboards require the devices being monitored to be configured properly for A|B power settings and derated values. These settings enable detailed tracking of capacity and failover capabilities for these devices.

## 1. Select the Admin Page

Select the Admin link from the top of the Home Page.



## 2. Configure Rack PDU or Rack UPS Attributes.

- a. Select the Device menu
- b. Use search and filter to find the device in the device list.
- c. Select the Attributes tab for the selected device.
- d. Configure the A-B Side Power, Power-Derated and Power-Rated attributes. Note, Power Rated is typically defined at the model level and Power Derated is set to equal Power Rated. Users can override these settings on each device or set these values at the Model to have them propagate to all devices based on that model.
- e. Click the Modify button to save these configurations.

**1** Select the Device menu

**2** Use search and filter to find the device in the device list

**3** Select the Attributes tab for the selected device

**4** Configure the A-B Side Power, Power-Derated and Power-Rated attributes

**5** Click the Modify button

Operation Successful!

### 3. View the Rack Dashboard

Power and Current data will now be displayed at the Rack dashboard where properly configured Rack PDU and Rack UPS devices are mounted.

**mm-rack**

View On Floor | Calendar | Alarms | Refresh

Power Source | PDU - Rackmount | A Current Derated | A B Current Derated

Current (A)

Phase	A Side	B Side
L1	3.06	3.37
L2	3.63	2.72
L3	2.46	1.99
Phase Avg	3.05	2.69

Current Deviation (A)

Phase	Deviation
L1-L1	-1.31
L2-L2	-0.66
L3-L3	1.17
L1-L2	-0.37
L2-L1	0.65

A/B Power	Current Rated (A)	Current Derated (A)	L1 Current (A)	L2 Current (A)	L3 Current (A)	Avg Current (A)
A Power			3.06	3.63	2.46	3.05
B Power			3.37	2.72	1.99	2.69

Rack UPS	A/B Power	UPS Remaining Time	UPS Load (Watts)	Rated Utilization	Derated Utilization	Redundancy Test	Input Voltage
UPS	Undefined			N/A	N/A	●	N/A

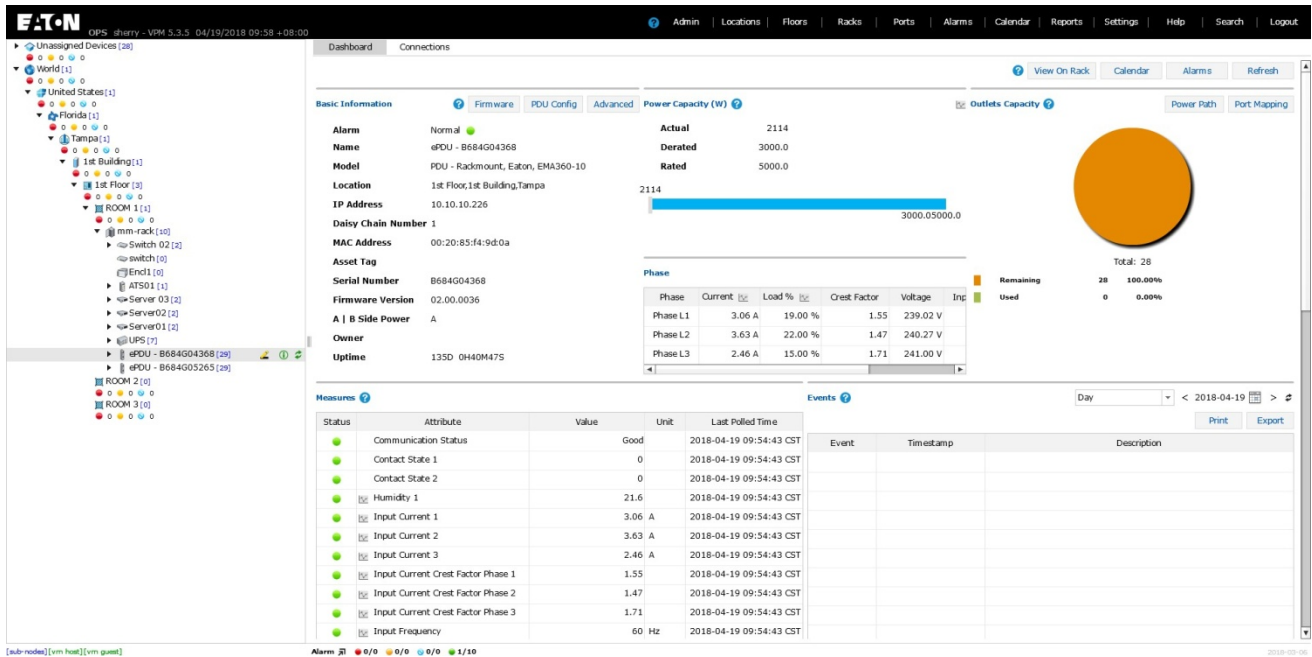
Power								
Name	A/B Power	Active Power	Max Power	Total	Used	Available	% Util	
ePDU - B68404368	A Power	2114.00W	2114.00W	Rack Front	42.0	15.0	27.0	35.7
ePDU - B68403265	B Power	1775.00W	1775.00W	Rack Rear	42.0	0.0	42.0	0.0
<b>Total Power</b>		<b>3889.00W</b>						

Alarm 2 | 0/0 | 0/0 | 0/0 | 2/10



#### 4. View the rack PDU and Rack UPS Dashboards

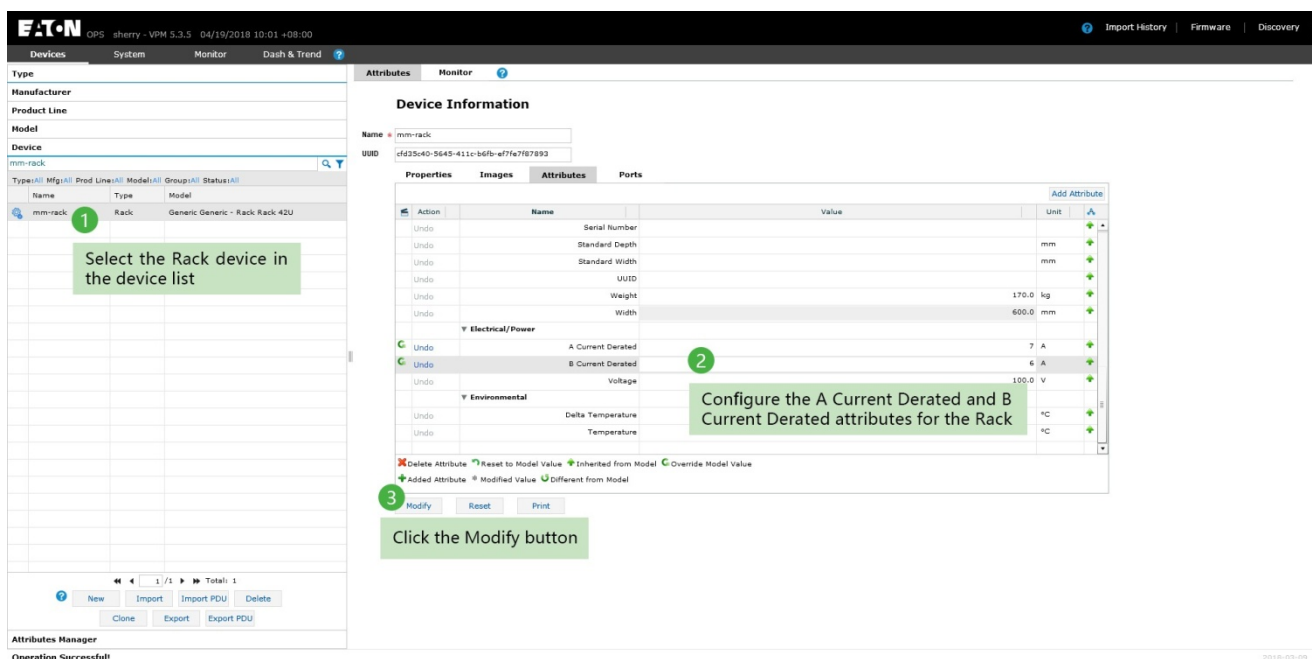
Rack PDU and Rack UPS dashboards will not correctly show the A|B Power setting and properly report phase level data for these devices. Power ratings will also be populated in the Power and Current gauges and tables.



#### 5. Configure Rack Attributes

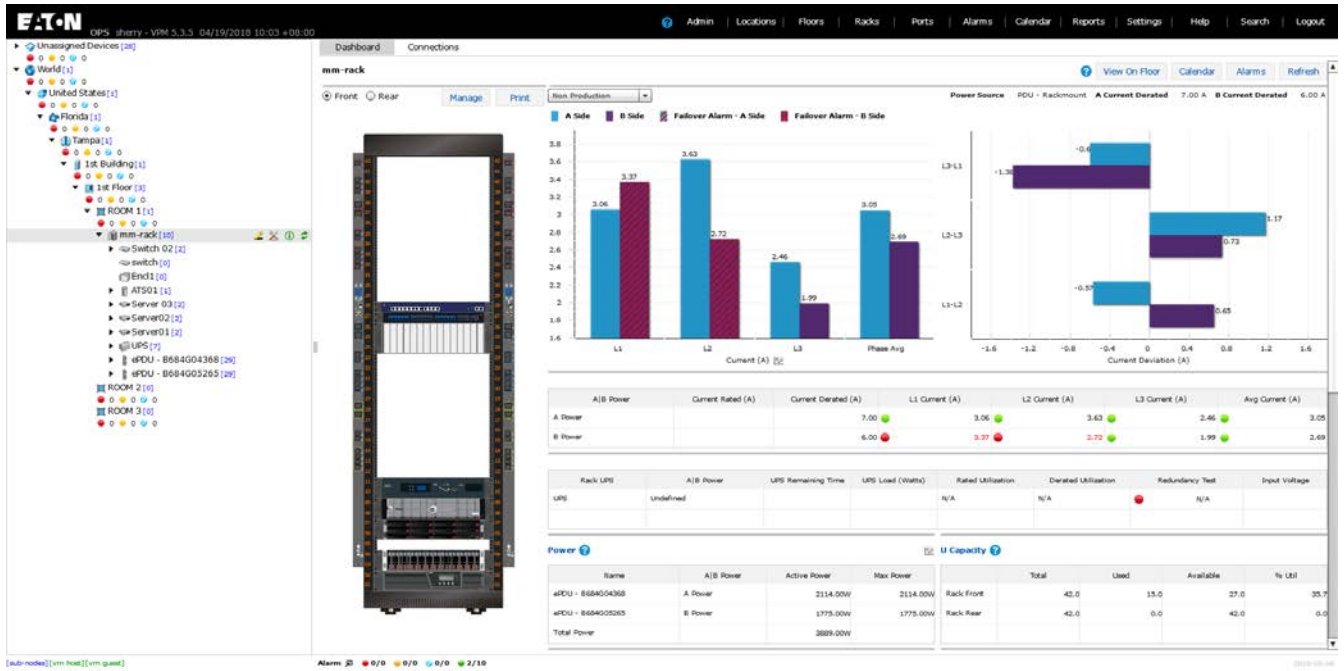
Configuring the Rack attributes will enable the failover calculations which provide advanced notice to users about issues with phase level failover capabilities for power providing devices in the racks.

- Select the Rack device in the device list on the Admin page
- Configure the A Current Derated and B Current Derated attributes for the Rack.
- Click the Modify button to save changes.



## 6. View the Rack Dashboard

The rack dashboard will now list the A|B Derated Current values. In the phase level current dashboard gauge, the red “hashed” bars indicate there is an issue with A to B or B to A failover for those phases of power.

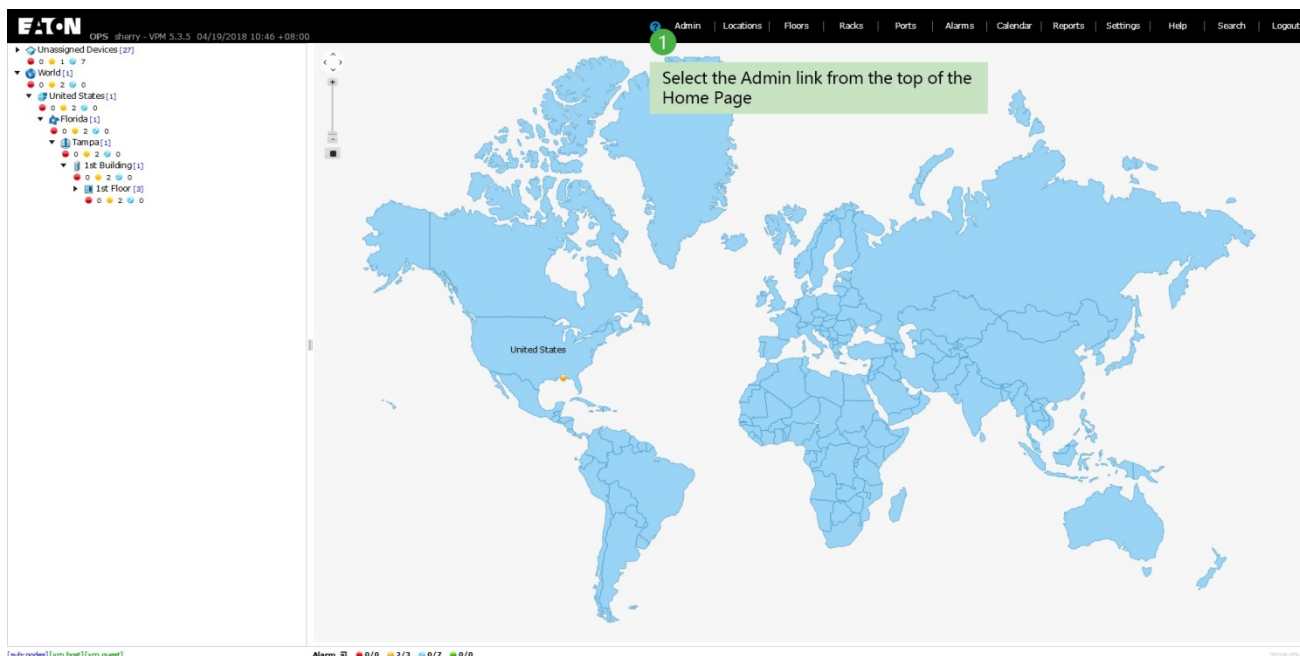


# Alarm Settings

Alarm settings allow users to define thresholds for monitored data and capacity information along with notification rules to deliver Email and SMS alarms to defined recipients.

## 1. Select the Admin Page

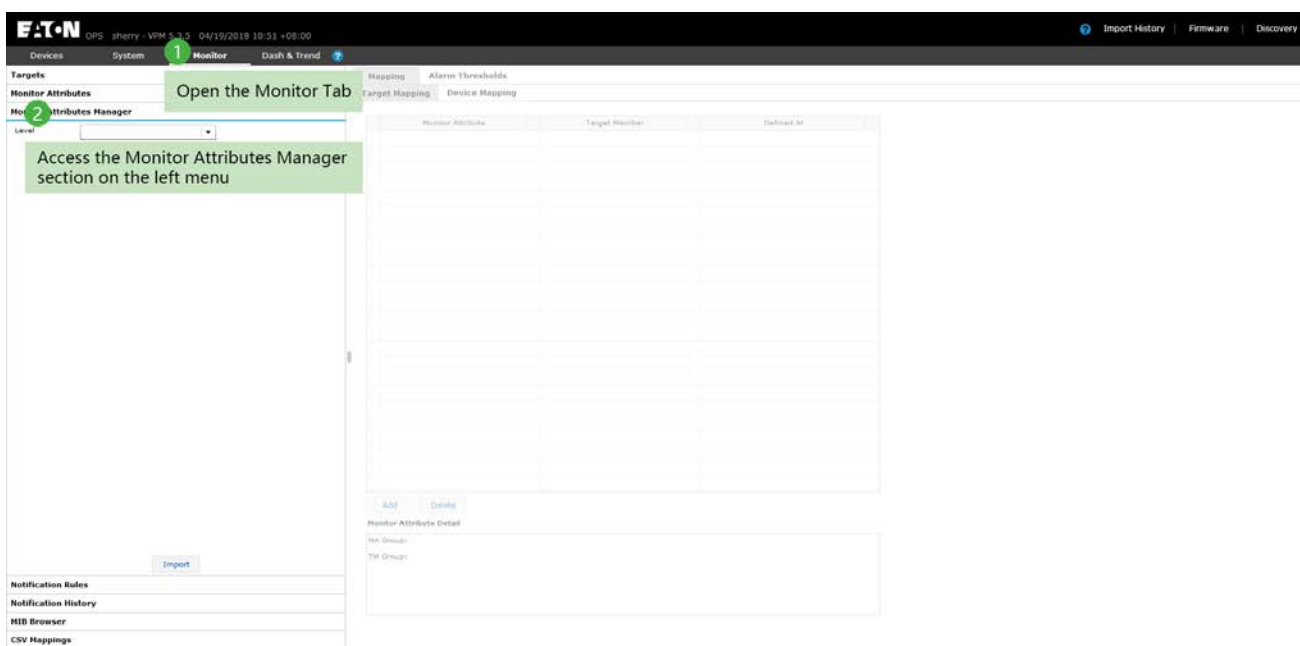
Select the Admin link from the top of the Home Page.



## 2. Open the Monitor Attributes Configuration Page

Monitor Attributes are the normalized data points in the application which are used to map raw data from various device sources to a common application reference scheme. By defining the alarm configuration at the application attribute level, profiles can be created to help reduce the administration of the settings.

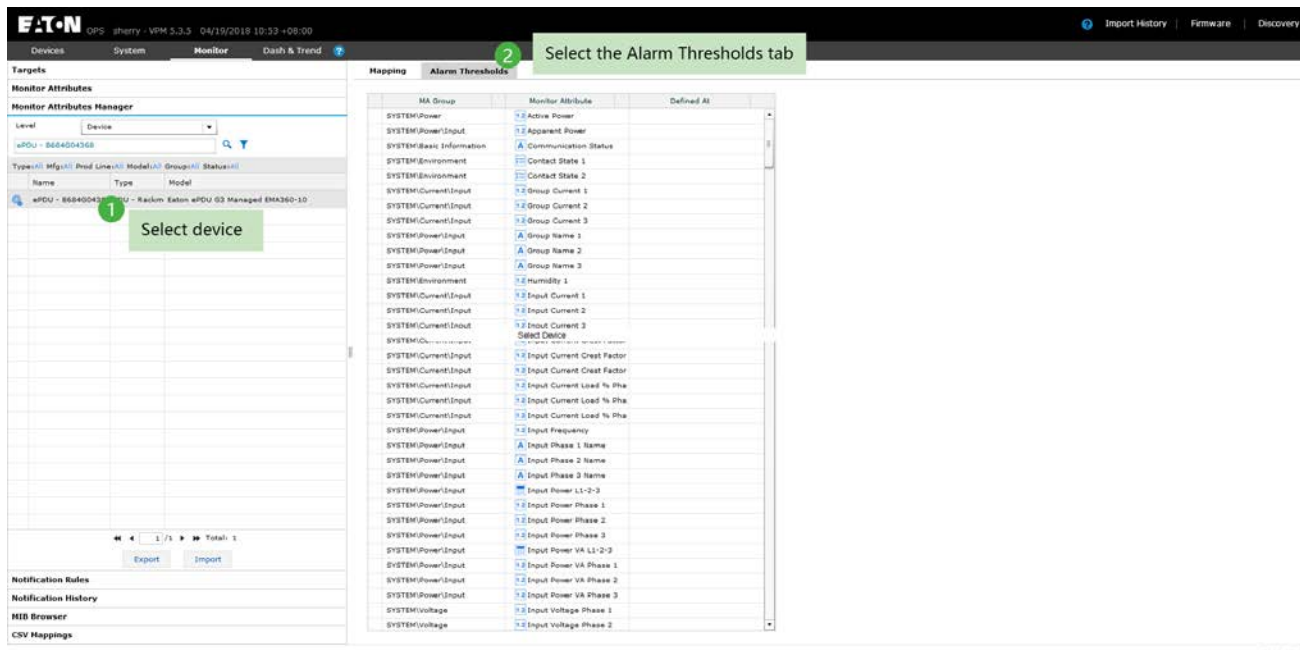
- a. Open the Monitor Tab.
- b. Access the Monitor Attributes section on the left menu.



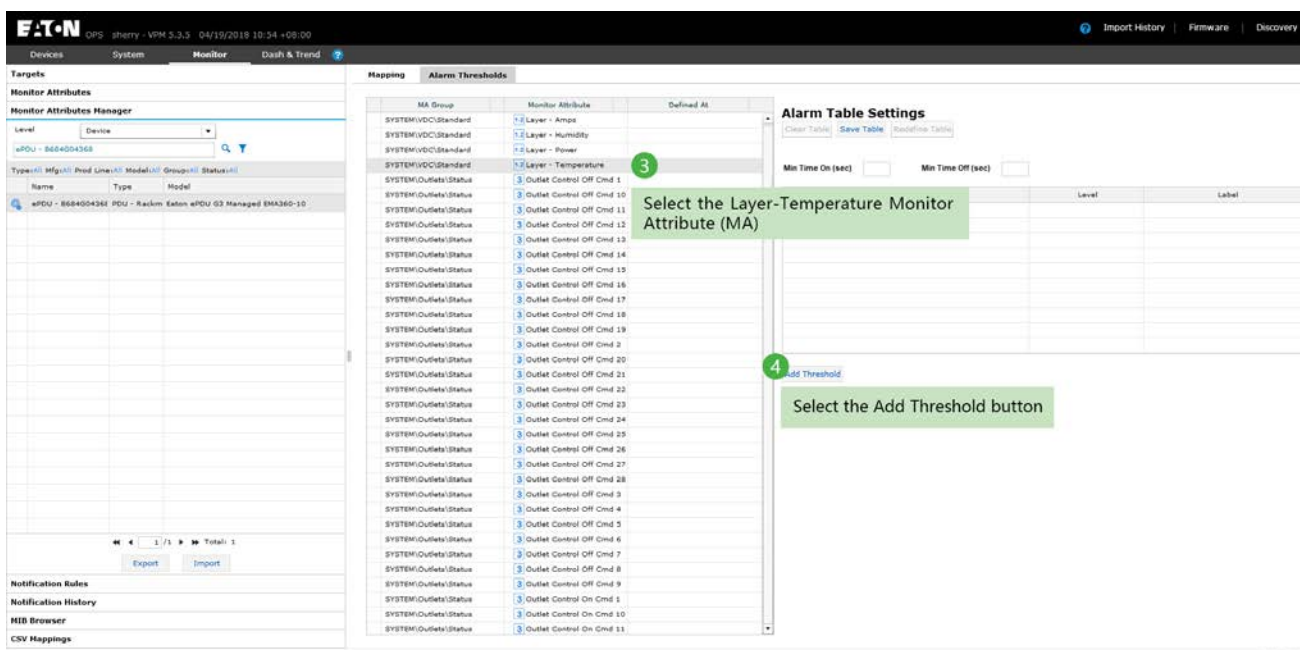
### 3. Configure Thresholds

Thresholds can be defined for multiple levels of the device hierarchy. The most common method is to define a threshold for either the Model or the individual Device. The example below uses a definition of a threshold for an individual Sensor devices using the Temperature data point.

- a. Select Device from the level dropdown to define a threshold for an individual device. Search the device name and select it in the list.
- b. Select the Alarm Thresholds tab.

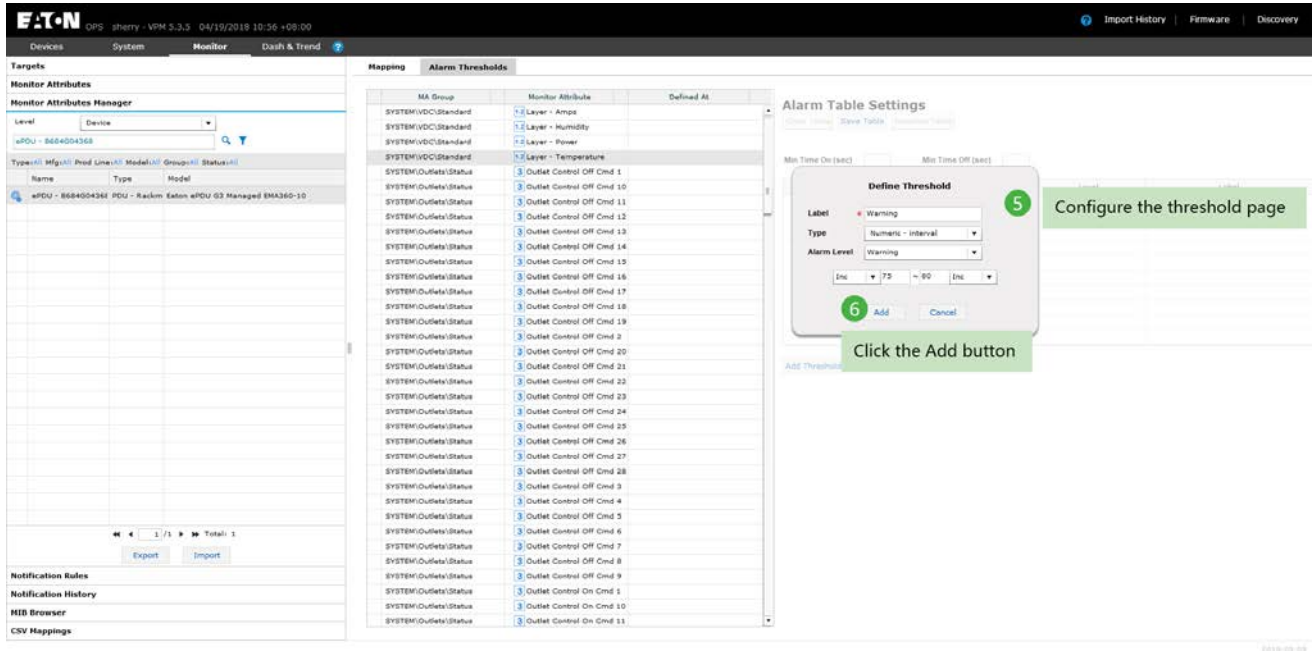


- c. Select the Layer-Temperature Monitor Attribute (MA). This is the product reference for Temperature.
- d. Select the Add Threshold button

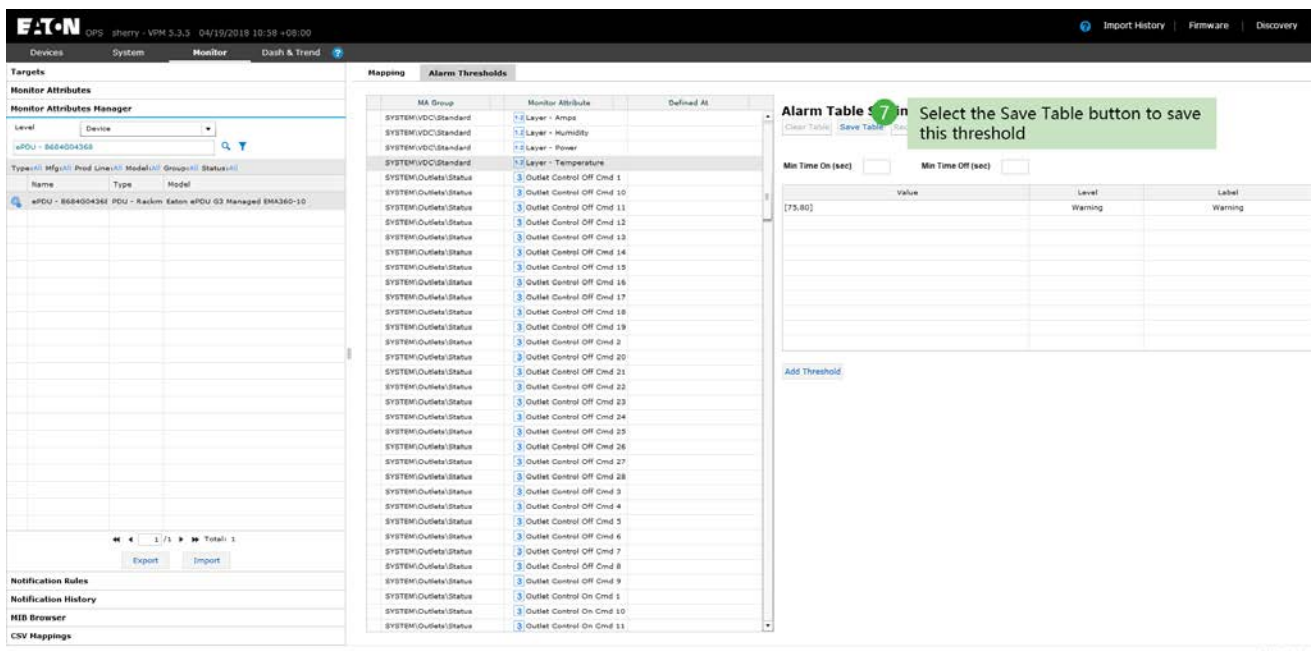


e. Configure the threshold page and click the Add button. Note, multiple rules can be defined for the same data point, but number ranges can't overlap for different alarm ranges.

- 1) Label - Name of the alarm which will be included in the alarm information and notifications.
- 2) Type - If the data point is a number there is no option for this setting; an interval will be defined for the value of the data. If the data point is a string then the user can define "starts with" or "contains" rules.
- 3) Alarm Level - Defines the Warning or Critical alarm status if the value matches the rule definition.
- 4) Inc | Not Inc - For Numeric values Inc is short for Inclusive and Not Inc is short for Not Inclusive. If the value box is null then it is infinite.



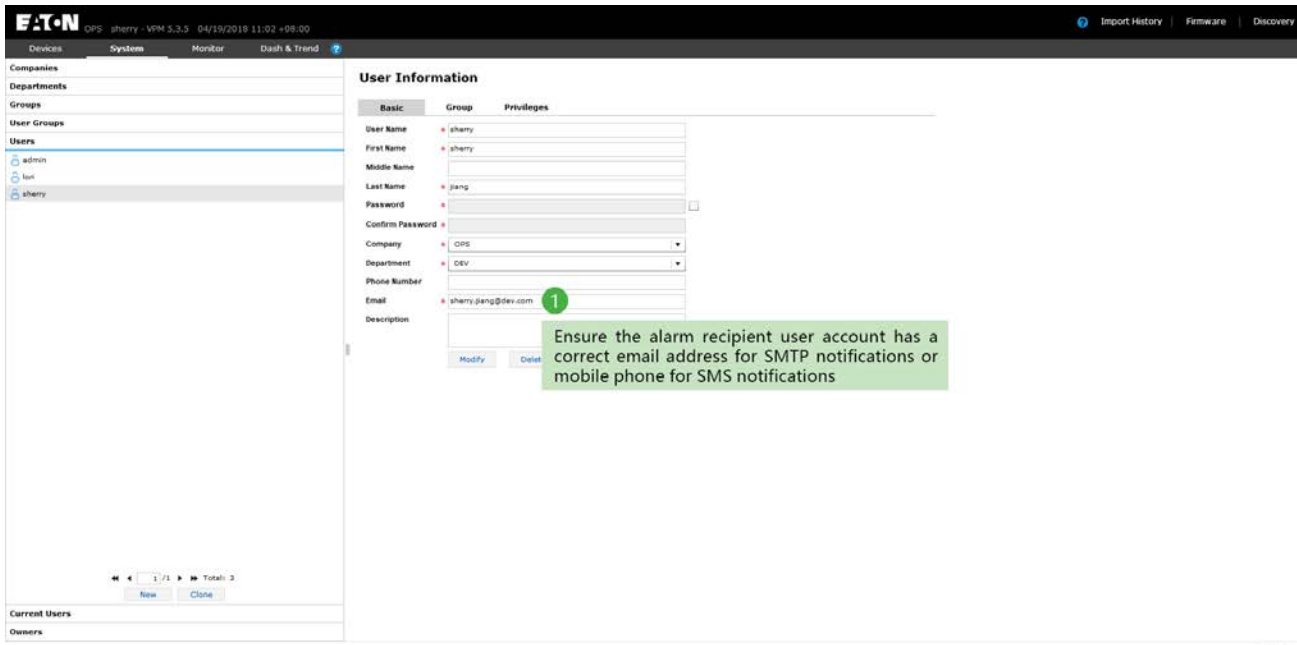
f. Select the Save Table button to save this threshold. Alarms will appear in the Alarms page and other areas of the application where alarm status is presented when the values of the device cross into the defined ranges for the alarm rule.



#### 4. Notification Configuration

The alarm engine lets you define Notification Rules so that you can be notified of certain alarms generated by devices managed within the application.

- a. Ensure the alarm recipient user account has a correct email address for SMTP notifications or mobile phone for SMS notifications.



- b. On the Admin page access the Monitor page and the Notification Rules menu in the left menu tree.
- c. Define the notification rule settings
  - 1) Rule Name – Name of the notification rule.
  - 2) Maximum Messages – Used to throttle alarm storms and limits the number of messages which can be generated by the rule.
  - 3) Alarm Level – Defines which alarm levels are included in the rule.
  - 4) Recipients – Defines the users, notification method and escalation rules for recipients of the notification.
  - 5) Devices – Defines which devices apply to the notification rule
- d. Click the Create button to save the rule. Email and SMS notifications will be delivered when alarms match the rule settings.

