



*Powering Business Worldwide*

# Visual Capacity Optimization Manager

*3D Client User Guide*

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## Eaton

[www.eaton.com/powerquality](http://www.eaton.com/powerquality)

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# 1. Introduction

## 1.1. 3D Application Overview

The 3D Client User Guide provides detailed instructions for implementing and maintaining the application.

The application portal lets you access a wide array of data information from several disparate sources in one consolidated interface. The power of this aggregation is the simplicity it provides to operators to monitor and control both Facilities and IT devices in the data center environment. Since the application is vendor neutral, any device can be included in the interface and monitoring capabilities.

The application provides the following features for data center operators:

- Visual Navigation and Information to multiple floor plans
- Navigation to Main Data Center floor plans or Remote IT closets
- Real-time data metrics related to any device in the system
- Historical trend analysis for metrics defined for devices
- Reporting capabilities for user, device, performance and executive reporting requirements.
- Service Management scheduling and Warranty Tracking
- Integration to third party software solutions. For example, Power Strip controls, IP Camera Systems, Card Access Security Systems, Other Vendor Support and Maintenance portals, third party Monitoring applications, and more are supported.
- Integrated File Depot for document aggregation and management. This feature provides a single location for all data center related As Built drawings, Vendor Contract, Support Agreements, Photos, Policies and Procedures related to your environment.
- Complete Design management of navigation and floor plans. Administrators can assign new devices to floor plans and customize the images and menu links associated with them.
- Full featured Rack Builder. This feature permits administrators to create online graphical representations of their rack layouts. Key information related to devices and racks can then be viewed individually or at the rack level to understand the Weight, Power and physical characteristics of that rack.
- Complete Administrator command of the Access Control Rights of users on the system. Floor plans, Devices and Reports are all controlled by standard User and User Group access rights in the System Administrator area of the application.



## 1.2. Client versus Web

The application provides two interfaces for the user to access with each providing some different functions. In many cases the features overlap, the 3D Client interface is the interface which provides advanced data analysis and visualization features.

- Location Studio – Build and configure the navigation tree for all locations managed by the application. Create floor plans for assigning devices. 3D Client links to Web Interface.
- Device placement – Assign, remove and relocate devices on floor plans. Available in both 3D Client and Web Interface.
- Device Data Viewing – View all data related to a device including alarms, graphs, trend charts, service events, port mappings, file depot and more. Available in both 3D Client and Web Interface.
- Alarms – View all alarm information for locations and devices. Available in both 3D Client and Web Interface.
- Site Summary Data – View summary data related to sites for energy consumption and energy costs based on device performance of devices at that location.
- Port Mapping – Define network and power relationships between devices. 3D Client links to Web Interface.
- Project Wizard – Create work order based device actions and assign tasks to users of the application. 3D Client links to Web Interface.
- Network and Power Paths – Create one-line summary of the network, a power tree of a facility, or both. This feature allows logical and physical definitions.
- Capacity Planner – Analyze key capacity metrics related to locations and devices. This tool allows for what if comparisons of actual and modeled device scenarios.
- Root Cause | Impact Analysis – Analyzes the port connections to determine impacts and dependencies for devices connected on the power and network paths.
- Data Control – Manual change of data values or scheduled calendar changes to be automatically changed based on a user defined calendar for changes.
- Reports – View all reports related to device performance and application information. 3D Client links to Web Interface.
- Services – View and manage calendar events and warranty data for all devices in the system.

## 2. 3D Client Interface

### 2.1. How to Access the Client Interface

The application client package is installed on the client computer system. The package provides application files to use for accessing an instance. The following are three ways to access the client interface from a computer on which the application is installed:

- Start Menu – Lets you run the program from the Start Menu.
- Desktop Icon – Lets you run the 3D client by double-clicking this icon. During the client installation process, a desktop icon is added to the user's desktop.
- File Manger – Lets you run the .exe file, which is installed to the following location by default (the final folder will have a version number of the installation package). Note that installers can install this package to a different folder during the installation process.

### 2.2. Login to the Client Application

The login process and login issues for the client are the same as those defined for the web interface. When prompted, you provide a user name and password combination to access the main application interface. During the logon process, you can choose supported language variants from a drop-down list. The same issues and messages appear for the logon and the web-based interface.

### 2.3. Login Profiles

The application lets you create multiple access profiles. This feature lets you access multiple instances from your client by using a single version of the client software. If one or more of the instances are of different versions, you will need to have a different client for each. All clients will access the same Settings file so maintenance of separate Settings files is not needed.

When the client installation is complete, you are prompted to create the default access profile. The profile consists of the URL used to access the interface in the web browser. If new profiles need to be added to the client, you can create them by accessing the Settings application from the Windows Program menu.

When this program is opened, you can click the New button to define a new profile for the client. Enter the URL to be used to access the new instance. The new profile is added to the profile list. Note that these settings are saved to the following windows file:

```
c:\users\[your windows logon name]\appdata\local\VDC\VDC.exe.config
```

If multiple profiles exist on the client, you can select the profile that you want to use to connect when you open the application. If the client can establish a connection to the selected server instance, the logon page appears to let you connect to the system.

## 2.4. Login to Incorrect URL Error Message

When user's login with the incorrect URL, an error message window will indicate that the URL is not correct and the correct URL is provided.

Incorrect URLs include:

- Any URL other than the one designated during installation
- The IP address
- A URL that resolves to the IP address but was not the URL designated during installation

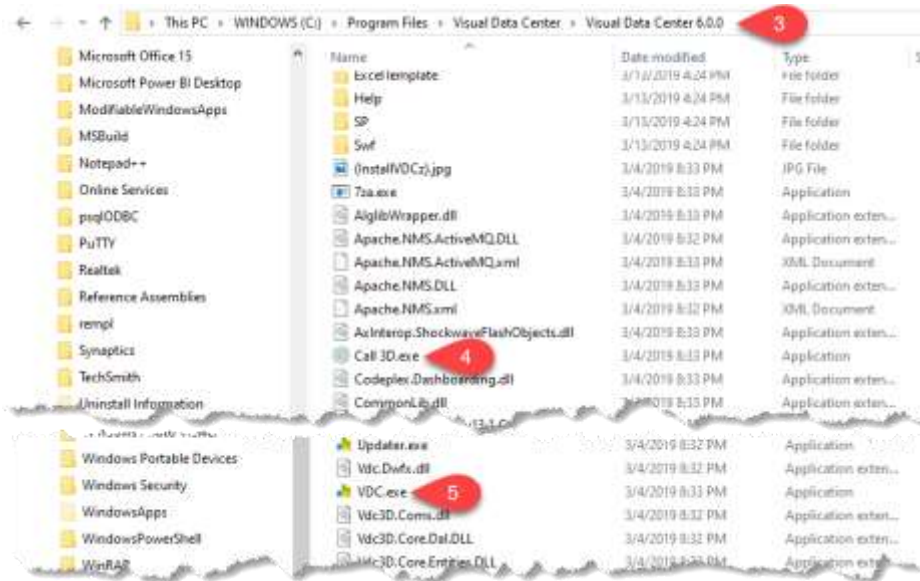
## 2.5. Running the Client in a Citrix Environment

In a Citrix environment the user does not have a personal folder to retain the 3D client settings. This can be resolved by adding login information to the application string in the desktop shortcut. You will need the following information:

- URL including the http:// or https://
- Your VCOM username
- The encrypted password for that VCOM username

The steps below will walk you through getting the necessary information and imbedding it in a 3D client shortcut for future use.

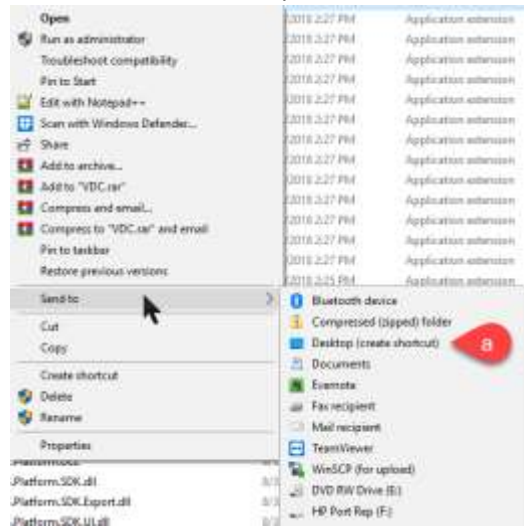
1. Open a notepad document so you can paste the information strings for use in the final step.
2. Add URL to the notepad document including the http:// or https:// with final slash and your username  
**http://vdc55-2543.company/  
username**
3. In a Windows Explorer window, navigate to the Visual Capacity Optimization Manager 6.x folder



4. Locate the Call 3D.exe tool and double click to run



- a. Input your password
  - b. Click the Encrypt button
  - c. Click Copy button to copy the Encrypted text to the clipboard
  - d. Paste the Encrypted password text to the notepad file
5. Create a desktop shortcut for the VCOM.exe file.
- a. Right click on VCOM.exe and select Send to Desktop (create shortcut). This creates a shortcut on the desktop named VCOM.exe.



6. In the notepad file construct the information string that will be pasted into the shortcut and Copy.

The syntax is: **-H URL -u USERNAME -p ENCRYPTEDPASSWORD**

Untitled - Notepad

File Edit Format View Help

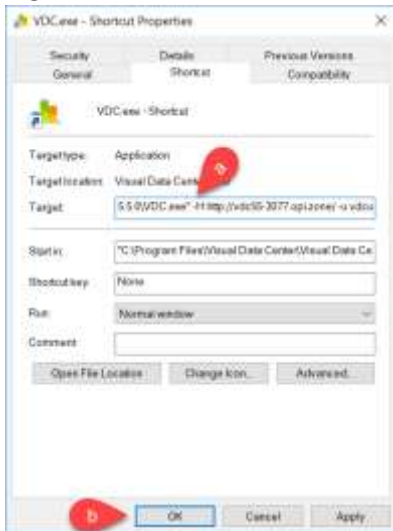
http://vdc55-3077.opi.zone/

vdcuser

SEML+zRu2MGqw39ZFGvUAw==

**-H http://vdc55-3077.opi.zone/ -u vdcuser -p SEML+zRu2MGqw39ZFGvUAw==**

7. Right Click the VCOM.exe shortcut on your desktop.



- a. In the Target field, after the quote at the end of the path add a space and paste the information string from your notepad file.
  - b. Click OK to save the change.
8. Double Click the desktop shortcut and the 3D Client should launch and automatically connect to the URL and login.

## 2.6. Manage Proxy Settings

The application has a built-in SSH Proxy component that lets you connect to the instance from a remote location (only if connection to the server through SSH is granted). This setup is configured through the Settings page. The port tunneling service performed through the 3D application remains connected during the duration of your session.

Note: You can access the 2D session of a server connected through SSH only if the 3D application is running and a connection is established.

### Follow these steps:

1. Add the following line to your C:\Windows\System32\drivers\etc\hosts file:  
127.0.0.1 SERVER\_URL  
Save and Close the hosts file after this edit has been made.
2. Open the Settings application.

For new installations, the settings window is automatically opened by the application when the installation of the server is completed.

To add a profile or modify an existing profile after the initial installation of the application, follow these steps:

- a. Locate the application folder in the Start menu.
- b. Select the Settings application within the directory.

- c. Click New to create a new profile or double click an existing profile to edit its properties.
3. Select the SSH Proxy check box.
4. Specify values in the SSH Proxy input fields.
  - a. **Server IP** - Specifies the IP address of the server that you are trying to SSH into.
  - b. **Port** - Indicates port 22 unless you specify a different value.
  - c. **Username** - The username should be a user with access to the server such as root.
  - d. **Password** - Enter the root password.

**Note:** When the configuration is confirmed and the user runs the 3D Client and connects to the application server they will use their regular username and password. Their access to data on the application server will be controlled by the user access rights configured by the administrator of the application server.
  - e. **Description** - Entering a description is optional.
5. Click Submit.

The server tests the proxy settings.
6. Do one of the following:
  - a. If the connection is accepted, close the settings window.
  - b. If connection is refused, verify that settings are correct and resubmit the proxy settings.

**Note:** The session attempt will timeout if an incorrect user and password combination is supplied for the connection.

## 2.7. Login to a Profile

After creating an SSH Proxy connection in Settings, you can log in to that profile through the Profile window.

### Follow these steps:

1. Open the application.
2. Select the Server Host profile.
3. Click Verify.
  - a. If all five ports pass, continue to the next step.
  - b. If one of the five ports fail, go to the Settings window and verify SSH Proxy settings for the problematic Server Host profile.
4. Click OK to close the verification window.
5. Click OK to activate the selected Server Host profile.

## 2.8. License Quota Control

When logging into the 3D client the application will check the system usage versus the license quotas purchased by the customer. If there is an excessive number of licenses used then the access to the 3D client will be blocked. Users will need to access the application in the web interface using an administrator account to purge excessive quota items or purchase additional licenses to apply to the server. Once the quota check is in compliance, then standard login functionality is restored.

### 3. Home Page

The client interface is designed to open separate Windows for each function performed. This feature lets you take advantage of multiple monitors or easily lay out the various functions on a large network operations center screen. Each separate window function is defined further in this document, but this section describes the Home Page layout and key functions.



#### 3.1. Navigation Tree

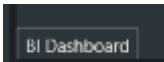
Lists all locations to which the user has View access rights. There are two tabs Navigation and My Sites.

- **Navigation Tab** - displays the full navigation tree
  - You can click the nodes of the tree to view summary data for each part of the location tree. You can also double-click floor or area names to open the floor view of the location.
  - The numbers under the node name represent the number of devices in that node and all child nodes that match the five alarm conditions. Red indicates Critical alarms, Yellow indicates Warning alarms, Blue indicates Unreachable alarms, Purple indicates Minor alarms and Lite Blue indicates Information. Monitored devices that have not been assigned a floor location are counted in the Unassigned Devices node (the last node in the tree).
- **My Sites Tab** - displays the list of pinned floor plans



## 3.2. Data Charts and Dashboards

- Shows dynamic system information and includes the main data area and several dashboards. The user's options for the home page layout are remembered for the next login.
- Main Data - is the large area in the center of the screen and the display is controlled by the Main Data icon in the Ribbon Menu. The options include Site Data, Alarms, Dashboards, Trend Charts, Abstract Model and Detailed Model. Details for each option are listed below.
- BI Dashboard - is located under the main data area and displays utilization information. It can be hidden by clicking the X in the upper right corner of the area. To show simply click on the BI Dashboard button that appears when it is hidden.



- Other Dashboards - The dashboards located on the right side of the screen include Alarms, Estimated Yearly CO2 Emission, PUE, Cooling and Tasks (current project assignments).
  - These dashboards can be re-ordered by dragging and dropping where a green line appears.



- These dashboards can be hidden by clicking on the X in the upper right corner of the dashboard. To show a hidden dashboard select it from the pull-down list at the top of the column.

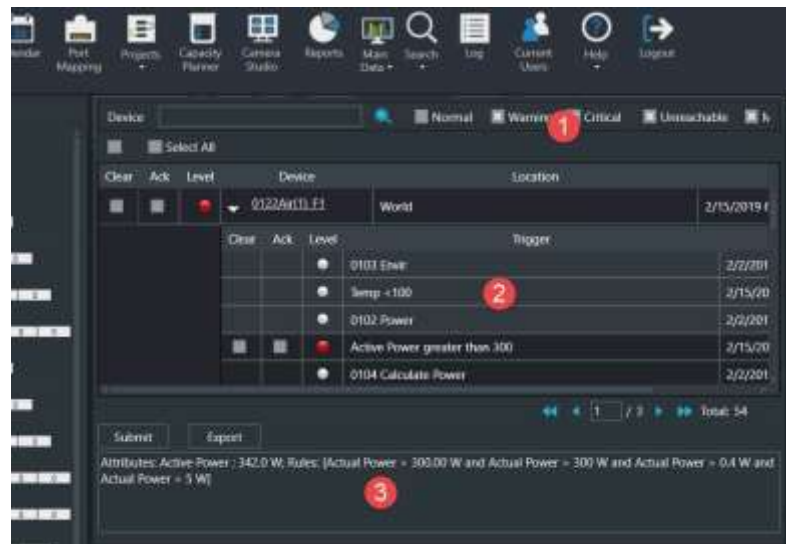




### 3.3. Ribbon Menu Icons

From left to right, these icons provide quick access to common functions from this main screen.

- Web Interface – Opens the web interface home page in a browser window.
- Location Studio – Opens the web interface navigation tree page related to managing and building out the locations present in the navigation tree.
- Profile Builder – Lets you create custom device templates.
- Services – Lets you define service events, warranty dates, and other advanced asset management items for devices in the system.
- Calendar – Opens the web interface Calendar page listing all events.
- Port Mapping – Opens the web interface port mapping page.
- Projects – Opens the web interface projects page.
- Capacity Planner – Provides building and location power consumption and power analysis functions.
- Reports – Opens the web interface data analysis reports page.
- Main Data – Lets you select the data that will be displayed in largest and Main window of the home page. The options with their descriptions are listed below. The selected option is remembered and will be displayed when the user logs in.
  - Site Data – The Site Data panel includes the Location Power, Cooling, Space information. This data here is similar to the PUE Summary.
  - Alarms – Displays the active alarms for devices in the selected node of the navigation tree. This list is updated every 30 seconds.
    - 1. Checkboxes allow user to specify which alarms are visible.
    - 2. The alarm shows the Trigger which caused the alarm.
    - 3. Details shows the attribute values and trigger rules which caused the alarm



- Abstract Model/Detailed Model – When a floor node is selected in the navigation tree these options toggle between abstract and detailed floor views.

- Search icon – Lets you search Devices, Cables and Associated Devices.
  - Devices – Lets you search for a device.
  - Cables – Opens web interface search page.
  - Associated Devices – Lets you view and create device associations.
- Log – Provides access to the system log file. Note that this icon is available only for users that belong to the administrators.
- Current Users – Lets admin users view current users logged into the application and terminate sessions as needed.
- Help – Provides information for submitting a Model Request, accesses the User Guide and links to the Support Portal.
- Logout – Lets you log out and terminate the current session.

## 4. Search for a Device

You can search for a device within the instance's device inventory by selecting the Search icon from the home page ribbon menu and selecting Devices from the drop-down list.

Two different searches can be performed:

- Standard search - Lets you search all devices based on the specified device name.
- Advanced search - Lets you apply various filters to search criteria.

The advanced search gives you more control over the search criteria. You can view previous searches that have been completed by selecting the time clock icon in the top right corner of the Search window. You can also save searches and review them at any time.

The advanced search lets you perform multiple searches. To open a new search, you select the plus icon.

The following filters can be applied to the advanced search:

Filter	Description
Type	This value is from the Device Properties.
Manufacturer	This value is from the Device Properties.
Model	This value is from the Device Properties.
Device Group	This value is from the Device Properties.
Asset Tag	This value is from the Device Attribute named Asset Tag.
Serial Number	This value is from the Device Attribute named Serial Number.
Software	This value is the Device Application from both CMDB and the custom definition.
Create Time	This value is from the Device Attribute named Create Date.
Status	This value is the Assigned/Unassigned status of the device.
Probe	This value is the Active/Inactive status of the monitoring device.
IP Address	This value is from the Monitor tab on the device if the device is set to monitor. If the device is set to static, this value is populated from the IP Address attribute for the device.

### 4.1.1. To perform a standard search, follow these steps:

1. Type the device name in the Device text box.
2. To apply a wildcard filter use the '%' symbol before the letters.
3. Click the Search icon to apply the filter.

### 4.1.2. To perform an advanced search, follow these steps:

1. Type the device name in the Device text box.  
To apply more filter options to the search select the funnel icon in the top right corner of the Search window.
2. Click Search to apply the filter.
3. Click Save. The search is saved.

A Search is performed, and qualified devices are listed in a table. The columns, starting from the left side of the table, are defined as follows:

- Device Status – Status of the device (Available, Operational, Planned, Reserved, Decommissioned)
- Device Central – Device's Device Central
- Select the icon to open that device's Device Central
- Device Information – Device attributes
- Select the icon to open the device information and modify its attributes.
- Name – Device Name
- Type – Device Type
- Model – Device Model

You can export the search results to an Excel file by selecting the Export button located on the bottom of the Search window.

## 4.2. Search for a Cable

You can search for a Cable within the instance by selecting the Search icon from the home page ribbon menu and selecting Cable from the drop-down list. This opens the web interface search function where you can search for cables, attributes and devices.

## 5. Floor Plans

The floor plan view in the client application is where you can access and view the majority of the device and site data. This section covers all the functions and features related to the floor plan view in the client application.

### 5.1. Access Floor Plans

To open a floor plan view in the client, go to the navigation tree on the main page of the client application.

- Double-click the floor name in the navigation tree to open the floor view in a new window
- If Main Data is set to Abstract Model and you see the building displayed, you can Double-click the floor on the building to open the floor view in a new window
- If you double click an area on the navigation tree, just that area and its devices will be visible in a new window. From there you can use the Up One Level button to view the whole floor.

### 5.2. Floor Plan Basics

The floor plan window provides many features. They are arranged for easy access to a variety of data points from this single screen.

#### 5.2.1. Mode Menu

Select by clicking on the drop-down Mode Menu next to the application logo on the upper left. The menu displays the current mode.

Provides these options:

- View Only Mode – Provides a read-only view option of the current floor plan. By default, any time a floor is opened, it is in View Only Mode.
- Edit Mode – Lets you assign, move and delete devices on the floor plan. Only users with rights to Edit Mode can access this menu item and make changes to the location. This right is controlled at the User Group privilege level.
- Close – Closes the floor plan window.

#### 5.2.2. Save and Pin Icons

- The save icon, saves changes to the floor plan.
- The pin icon saves the current floor plan to My Sites tab in the navigation tree.

#### 5.2.3. Ribbon Menu and Ribbon Bar

Quickly access information related to the view and perform functions on devices. Each menu option is defined further in this section.

### 5.2.3.1. Left Side Device Tabs in Edit Mode

View devices in the application.

- **Devices** – By default lists all devices in the Current Location. Using radio buttons, you can switch to All and Available devices when in Edit Mode.
  - **Search** – Search for device name, asset tag, serial number and IP address from devices in the Current Location by default. When in Edit Mode it will search All or Available devices based on radio button selected.
  - **Add Criteria** – Adds search fields for Type, Manufacturer, Product Line, Model, IP Address, Asset Tag, Serial Number and Life Cycle attributes. The system will find the device where the attribute contains the text entered in the box.
- **Model** – Select Model radio button to show list of models. Select Model Profile radio button to show list of defined Model Profiles which have been created using the Model Profile tool. (Not available in View Only Mode)
  - **Search** and **Add Criteria** behave as noted above against the list of models in the system.
  - **Note:** Users can drag and drop available devices, models and model profiles to the floor. When you drag a model or model profile the system will prompt you to name the newly created device, select Group, Life Cycle and quantity.
- **Cables** – List the cables for the current location and allows the list to be exported with the Export button. To view selected Cables go to the Cables Show/Hide icon and toggle on Cables.

### 5.2.3.2. Right Side Device Data Tabs

Quickly access information related to the current view.

- **Layer** – Displays the layer window so that you can open a layer view. Only visible when viewing the floor level. Works with Add Layer Map from the Layer tools in the ribbon bar.
- **Graphs** – Opens the selected device's Graphs page in a web browser.
- **Attributes** – Displays list of monitored datapoints, value, unit and trend charts available for the selected device.
- **Alarms** – Displays the alarm panel, which shows the active set of alarms for the current view.
- **File Depot** – If no device is select on the floor plan the File Depot tab is displayed and shows a list of files that you can open, based on the currently selected view.

### 5.2.3.3. Main Window

Displays all devices currently assigned to the floor plan. Alarm indicators show the alarm state of each device.

Alarm LED - Click the LED on the device and the Alarm panel shows Trigger name instead of Monitor Attribute. Detail is the attribute value and trigger rules.



### 5.2.3.4. Right-Click Device Option

- Right-clicking a device to presents device-specific options. Different options are made available depending on which device type is selected.

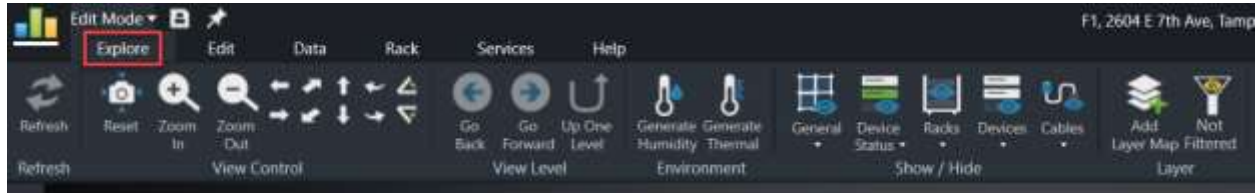
## 5.3. Application Tabs and Ribbon Bar

Application Tabs and Ribbon Bar

The tabs along the top provide maximum functionality on the floor plan page while keeping the key features organized for ease of use. The following sections cover each of the tabs and their features in the ribbon bar.

### 5.3.1. Explore Tab

The Explore tab lets you move around the screen, navigate location levels, and show or hide information on the screen.



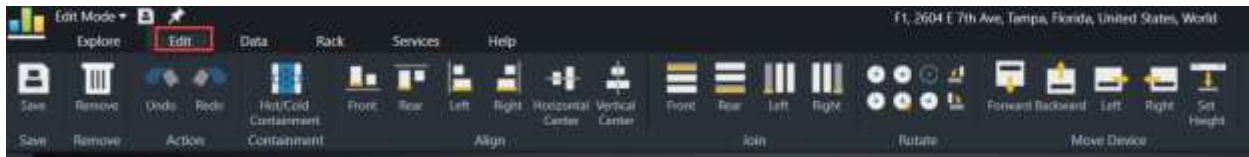
- Refresh – Updates the 3D application with the current instance. Refresh is only available when in View Only mode. To refresh the screen when in Edit mode, select View Only mode.
- Reset – Resets the view of the current floor plan to the default when the view is originally opened.
- Zoom In/Out – Zooms in and out on the current floor plan.
- Other Camera Control Buttons (arrows) – Let you move, pan, rotate, and tilt the floor plan for better viewing.
- Go Back/Go Forward – Return to the previous view. For example, if you go from floor plan to a rack view, the Go Back button returns you to the floor plan view.
- Up One Level – Moves up the navigation tree one level from the current view. The levels are Device, Rack, Floor, and Building.
- Generate Humidity/Temperature – Displays the thermographic images for associated humidity and temperature points in the current floor plan view and toggles the display.
- Show/Hide Functions – check boxes to toggle viewing of various elements on the floor are now grouped under five icons: General, Device Status, Racks, Devices and Cables
  - General – Toggles the display of the Floor, Room Name and Walls.
  - Device Status – Toggles the display of:
    - Life Cycle - Displays the lifecycle of devices in the floorplan view. A legend is displayed which defines the colors of the devices.
    - Showing LEDs for Critical, Warning, Unreachable, Minor, Information and Normal Alarms. This control is helpful when you would prefer to see only Warning, Critical, and Unreachable LEDs on the floor plan.
  - Racks – Toggles the display of:
    - Rack Capacity - Displays LEDs based on rack capacity components: weight, amps, kW, U space.
    - Rack Category – Displays the colors assigned to the racks based on the Rack Category attribute of the rack. Note, the options for Rack Category can be managed using the Attributes Manager tool in the web interface.
  - Devices – Toggles the display of the following device types: Chiller, Fire Suppression, Power Bus, Furniture and Sensor Flag.
    - Power Bus - Displays the power bus bar and associated tap boxes if checked.
    - Sensor Flag - Displays an icon where sensors are placed so users can more easily see sensor placement on large floorplans.



- Cables – Toggles the display of:
  - Cables – Displays cables selected in the right side Cables tab.
  - Cable Trays – Displays the cable tray that is above or below the racks. If cables are being displayed, clearing the cable trays check box hides the cables.
  - Fiber Channel - Displays the fiber channel components.
- Layer Functions
  - Add Layer Map – Displays an additional layer map window in the top right corner of the screen. Multiple layer maps can be opened simultaneously to view different data points in multiple windows.
  - Not Filtered/Filtered – Icon changes indicating if there is a filter applied or not. Tool allows you filter devices on the floor based on listed filter criteria.

### 5.3.2. Edit Tab

The Edit tab provides functions for organizing devices on the floor. Most of these functions are available only when you are in Edit Mode. You must have rights assigned to your User Group to be able to enter Edit Mode.



- Save – Saves changes made to the floor plan. Note that changes to device locations, and so on are not committed to the floor plan until the Save button is clicked.
- Remove – Removes the selected device from the floor plan. This action removes the device from the floor plan. It does not delete the device from the database.
- Undo/Redo – Erases previous action items or regenerates the action items that you created.
- Hot/Cold Containment – Lets you create a see-through container room that can be placed over racks. Click the icon and then drag the cursor on the floorplan to create the containment device. Once you have established the container, a pop up lets you define the name and the dimensions of the container. Once created you will see the container in the device list and you can move it around. Note, you may right click and select Modify to update the properties of the container device. If changes are made to the dimensions then you will need to close and reopen the floorplan to view the updated device dimensions.
- Align functions – Lets you align multiple devices with each other. Select the devices by pressing the Ctrl key and clicking several devices. This action aligns the chosen side of the devices. The reference for the alignment is the chosen side of the first device selected. So the movement of the devices is based on the first device selected.
- Join functions – Lets you join multiple devices side by side. This feature is very helpful for placing multiple racks in a row on the floor plan. The first device selected in the series of devices is the reference for joining devices. All devices move and attach to the first device. The second device selected attaches directly to the first device, the third device attaches to the second device, and so on. All devices automatically rotate in the join function so that all devices face the same direction.

**Note:** When the Join function is selected, you can add space between the devices by entering the distance of space required.

- Rotate functions – Lets you rotate the device based on the option selected. CW refers to clockwise, and CCW refers to counter-clockwise.
- Move Device functions – Lets you move the device in the direction selected. The device moves relative to the direction it is facing.

### 5.3.3. Data Tab

The Data tab provides easy access to the variety of data available in the application.



- General Functions
  - Summary – Provides key information related to the currently selected floor plan.
  - Properties – Displays the device attributes of the currently selected device.
  - Links – Displays the list of links configured for the currently selected device. These links can be URLs or documents.
  - Device Central – Displays everything that is pertinent—name plate data, port mapping, trend charts, alarms—to a selected device.
- Alarm Panel – Displays the Alarm Panel at the chosen level of navigation. You can view the alarms for the current device, floor, or building based on their selection.
- Graphs - Opens the selected device's Graphs page in a web browser.
- File Depot – Lets you see a list of files posted to the selected building or floor.
- Ports – Opens the port mapping module, which lets you map network and power relationships between devices. You must select a device to open the port mapping module.

### 5.3.4. Rack Tab

The rack tab is enabled only when you view a rack on the screen. The menu provides key functions that let you build racks easily. It is available only when you select Edit Mode.



- Shelf – Lets you easily add a shelf to the rack. Clicking a spot in the rack highlights that location in green. Clicking the shelf button inserts a shelf into the rack at the chosen location.
- Blanking Panel - Lets you easily add a blanking panel to the rack. Clicking a spot in the rack highlights that location in green. Clicking the blanking panel button selects the size of the panel. A blanking panel is inserted into the rack at the chosen location.

- Reserve Space - Lets you reserve a space of the rack for future use. Clicking a spot in the rack highlights that location in green. Clicking the blanking panel button selects the size of the panel. An orange reserve space panel is inserted into the rack at the chosen location.
- Patch Panel - Lets you easily add a generic patch panel to the rack. Clicking a spot in the rack highlights that location in green. Clicking the patch panel button selects the size of the patch panel. A generic patch panel is inserted into the rack at the chosen location.
- Cable Manager - Lets you easily add a cable manager to the rack. Clicking a spot in the rack highlights that location in green. Clicking the cable manager button selects the size of the cable manager. A generic cable manager is inserted into the rack at the chosen location.
- Move Up/Down – Lets you easily move a selected device in the rack up or down 1 or .1 U positions. Each U position is divided into three, which corresponds to most rack manufacturer screw hole locations.
- Move to New Rack – Lets you easily move a device from the current rack to a different rack location.
- Cut/Paste Device – Lets you cut the device from the current rack location and paste it into a different rack location.
- Remove Device – Removes the selected device from the current rack. Note this action does not delete the device from the database.
- Rotate Left/Right – Lets you rotate a device left or right to display correctly in the rack. This option is available only for devices that do not have a U size attribute defined. A good example of using this option is for a desktop computer sitting on the shelf in a rack.
- Print – Lets you print a PDF of the front and rear image of a selected rack. A list of the devices within the rack are listed below the images. Multiple racks may be selected using the Ctrl key and mouse clicks. If Print is selected with multiple racks selected then all racks and devices will be printed to the PDF document.
- Hide/Show Enclosure – Lets you toggle the view of the rack with or without the enclosure. This action is helpful for instances when a sensor or other device is mounted to the outside of the rack.

### 5.3.5. Services Tab

The Services tab lets you track advanced asset management features for the devices. This tracking includes service event, product maintenance, warranty tracking, and more. Specific details for the Services module are covered later in this document. These icons let you view data configured in the main Services module.

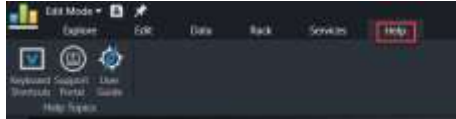


- Asset Info – Lets you track costs, purchase and service dates, and invoice or PO documents with other advanced asset information.
- Warranty – Lets you view warranty information along with access to the Warranty document.
- Services Calendar – Lets you view a calendar of scheduled events for the selected device.

- Work History – Lets you view the work logs for the selected device.

### 5.3.6. Help Tab

The Help tab provides easy access to key support topics and tools.



- Keyboard Shortcuts – Displays a list of keyboard shortcuts that can be used to navigate within the application.
- Support Portal – Opens a browser window and displays the login to the CA Support portal.
- User Guide – Opens a PDF version of the user guide.

## 5.4. Left Side Tabs

The left side tabs let you view existing devices and cables and create devices to place on the floor plan.



### 5.4.1. Devices Tab

Allows you to search for existing devices.

- All – Searches through all devices.
- Available – Searches only the available devices.
- Current Location – Searches only the devices in the currently selected location.
- Search – The search will check if the text entered in the search field is contained in device name, asset tag, serial number and IP address.
- Add Criteria – Adds search fields for Type, Manufacturer, Product Line, Model, IP Address, Asset Tag, Serial Number and Life Cycle attributes. The system will find the device where the attribute contains the text entered in the box.

**Note:** Search fields are cumulative, a device must match all of the conditions specified to appear on the list.

- You can drag and drop the devices from the list directly onto the floor plan or rack to assign devices to the floor plan.
- The system has 9 device modes represented as icons in the first column of the device table.

Icon	Name	Type	Model	As
	APC_PDU - APC	PDU - Rackmount	AP7800	
	ATS001-A	Transfer Switch	7ATS/3000amp	
	ATS001-B	Transfer Switch	7ATS/3000amp	
	ATS001	Transfer Switch	7ATS/3000amp	

- Available – The asset is available and is not currently placed on a floor plan.
- Procurement – Refers to a device which are planned to be added in the data center. This device does not currently exist yet in the list available to the user to place on the floor plan.
- Reserved Procurement – A procured asset that has a work order created stating the device is to be placed and is awaiting work order completion. The RU that the device is to occupy has a gold blanking panel in its place signaling the reservation. All ports associated with the asset are also reserved with a gold plate covering their network port or power port.
- Reserved Available – An asset that is currently created and in the inventory list but is being used in a work order and to be installed in a rack.
- Reserved Move – This is a shallow copy of the device that is selected for a move through a work order. This copy will remain in the RU rack position until the work order is completed. Once completed the shallow copy will be removed and the original device will take its place.
- Operational – The asset is currently residing on the floor plan.
- Operational Moving – An asset that is residing in an RU that has been referred in a work order as action type Move.
- Decommissioned – An asset that is being removed from the asset list. It differs from the state of Available because it cannot be placed back on the floor plan.
- Plan Decommission – An Available/Operational asset that has been selected in a work order for decommission.

## 5.4.2. Model Tab

The Model tab is available only in Edit Mode for the floor plan.

- Model – Searches all the models in the master model database.
- Model Profile – Searches the list of Model Profiles which have been created using the Model Profile tool.
- Search – The search will check if the text entered in the search field is contained in the model name.
- Add Criteria – Adds search fields for Type, Manufacturer, Product Line and Model. The system will find the model where the attribute contains the text entered in the box.  
**Note:** Search fields are cumulative, a model must match all of the conditions specified to appear on the list.
- You can drag and drop the devices from the list directly onto the floor plan or rack to create devices and assign them to the floor plan.

### 5.4.3. Cables Tab

The Cables tab is available in both View Only Mode and Edit Mode for the floor plan. It lists the cables for the current location.

- Show/Hide the various types of cables toggling the Power Cables, Network Cables, Fiber Cables and Storage Cables check boxes.
- Export – Click to run the Cable Report to a pdf file.
- To view selected Cables on the floor plan go to Cables Show/Hide icon and toggle on Cables.

## 5.5. Right Side Device Data Tabs

The right side tabs quickly access information related to the current view.



### 5.5.1. Layer Tab

Displays the layer window so that you can open a layer view. Only visible when at the floor level. Works with Add Layer Map from the Layer tools in the ribbon bar.

You can open a 2D window that is identical to the standard 3D floor plan view. You view a variety of data points and metrics overlaid on the devices in the 2D window. Selecting the Layer tab from this list displays the thumbnail view of the layer window. Choosing the Maximize icon in the thumbnail window opens the layer window to a full screen view

### 5.5.2. Graphs Tab

Opens the selected device's Graphs page in a web browser.

### 5.5.3. Attributes Tab

Displays list of monitored datapoints, value, unit and trend charts available for the selected device.

Actions	Attribute	Value	Unit	Last Updated
	Temperature	73.40	°F	2019-02-15 07:23:04 CST

### 5.5.4. Alarms Tab

Displays the alarm panel for all devices on the floor. If a specific device is selected, only alarm data for that device is displayed in the alarm list.

- List of all alarm levels across the top.
- Trigger for the alarm is shown.
- Details at the bottom show attribute values and trigger rules which caused the alarm condition. |

The screenshot shows the Alarms Tab interface. At the top, there are filter buttons for alarm levels: Normal, Warning, Critical, Unreachable, Minor, and Information. Below this is a table of alarms with columns: Clear, Act, Level, Device, Location, and Last Time. The table lists three alarms, with the second one (FDC-2) selected. Below the table, there are sections for 'Trigger' and 'Attribute' details. Red arrows point to the 'Warning' filter, the 'FDC-2' device, the 'Trigger' section, and the 'Attribute' section.

### 5.5.5. File Depot Tab

If no device is select on the floor plan the File Depot tab is displayed which shows a list of files that you can open, based on the currently selected view.

## 6. Floor Plan Editing Tasks

### 6.1. Enter Floor Plan Edit Mode

To perform floor plan editing tasks, you must enter the Floor Plan Edit mode as follows:

1. Click the application icon in the top left corner of the window.
2. Select Edit mode.

### 6.2. Navigation Shortcut Keys

The following navigation shortcut keys are available in Floor Plan Edit mode:

- Zoom in – mouse wheel up
- Zoom out – mouse wheel down
- Move left – A, left arrow
- Move right – D, right arrow key
- Move backward – S, down arrow key
- Move forward – W, up arrow key
- Rotate clockwise – Q
- Rotate counter clockwise – E
- Tilt front – F
- Tilt rear – R
- Go back – Esc
- Generate thermal – F2
- Add layer map – F6
- Save – Ctrl + S
- Remove device – Ctrl + D
- Rotate clockwise 5 degrees – Ctrl + Q
- Rotate counter clockwise 5 degrees – Ctrl + E
- Rotate left – Ctrl + left arrow key
- Rotate right – Ctrl + right arrow key
- Show/hide rack frame – F3
- Smart interface – F12

### 6.3. Place Devices on the Floor

You can place one device on the floor or multiple devices on the floor at the same time. Available devices are listed on the Devices tab on the left.

To place one device on the floor, follow these steps:

1. Find the device to place on the floor.  
You can search for the device by using the filter or by manually putting the name in the Search bar.



2. Click the device and drag it onto the floor.  
When the device is on the floor, you can move it to the required location, as described in Move Devices.

To place multiple devices on the floor at the same time, follow these steps:

**Note:** Multiple devices to be placed on the floor at the same time must be in sequential order in the device list.

1. Select the first device to be placed on the floor from the device list.
2. Hold down the Shift key and select the last device to be placed on the floor.
3. Click the last device that you selected and drag it onto the floor while still holding down the Shift key.  
If the device is mounted on a position which belongs to more than one area (embedded areas), the area listed for the location of the device will be the smallest of the embedded areas.

## 6.4. Place Cable/Fiber Trays on the Floor

You can place cable tray/fiber channel/power bus pieces on the floor. Available cable tray/fiber channel/power bus items can be located on the Cable Tray tab on the left-hand side of the 3D floor plan.

To place a tray component on the floor, follow these steps:

1. Find the tray component to place on the floor.
2. Click the device and drag it onto the floor.  
If component being placed on the floor is a Straight Section, you must define the length of the straight piece.
3. Raise or lower the height of the tray above or below the floor by selecting the Set Height icon in ribbon bar in the Edit tab.  
By default, the tray is placed 3.048 meters or 10 feet above the data center floor.

## 6.5. Tap Box Snap-To Power Bus Bar

On power bus bars, tap boxes can be placed with a snap-to feature. The tap box appears to snap into a track along the bottom of the power bus bar.

1. Place a straight section generic power bus bar on the floor.
2. Place a tap box on the floor.

3. Select the tap box (it becomes orange) and move the virtual box outline of the tap box to the power bus bar when the bar turns orange, the tap box snaps-to the track and you can slide  
**Note:** Multiple tap boxes can be placed at the same time when selected with the Control key along the bar to the final position.



## 6.6. Connect Cable Tray Components

You can connect multiple tray components to create a full cable tray system. To connect cable tray components together, follow these steps:

1. Verify that both desired components are located on the same floor plan.
2. Locate the anchor point tray first by selecting the anchor tray's connecting side gray box. The selected box turns green to indicate that it has been selected properly.
3. Select the second component's connecting side gray box. If the second component is selected correctly, it connects to the anchor component.

## 6.7. Move Devices

To manipulate a device's position on the floor, click and drag the device to a location. More advanced device movement controls are accessible through the Edit tab at the top of the Floor Plan Edit mode ribbon bar.

- Rotate functions – Let you rotate the selected device based on the option selected. CW refers to clockwise, and CCW refers to counter-clockwise.
- Move Device functions – Let you move the selected device in the direction selected. Note that the device moves relative to the direction in which it is facing. The solid green face on the selected device is considered the front of the device.
- Align functions – Let you align multiple devices with each other. You select multiple devices by using the Ctrl key and clicking several devices. The align functions then align the selected side of the devices. The reference for the alignment is the chosen side of the final device selected. So all devices move based on the final device selected by the user. The green highlighted face of the device is the front of the device.
- Join functions – Let you join multiple devices side by side. This function is helpful for placing multiple racks in a row on the floor plan. The final device selected in the series of devices is the

reference for joining devices. All devices move and attach to the final device. The first device selected attaches directly to the final device, the second device attaches to the first device, and so on. All devices automatically rotate in the join function so that all devices face the same direction.

- When the Join function is selected, you can add space between the devices by entering the distance of space required in the information prompt.

## 6.8. Move Multiple Devices at the Same Time

You can select multiple devices from the Devices tab in Floor Plan edit mode.

**Note:** Devices must be in sequential order on the Devices tab to be placed on the floor plan simultaneously.

To move multiple devices to the floor plan at the same time, follow these steps:

1. Select a device on the Devices tab by its type name.  
Selecting its name opens up its Device Central page because the name itself is a hyper link.
2. Hold down the Shift key and select the last device to be placed on the floor.  
All the other devices to be placed as a group should be in between the first and last device selected.
3. Keep holding down the Shift key, select the last device you selected from the list, and drag it to the floor plan.  
The last device selected and all the other devices highlighted in the list are moved onto the floor plan.

## 6.9. Delete and Save Devices

Save and delete icons are located within the Edit tab in the Floor Plan ribbon bar.

To save a floor plan and update the database, do one of the following:

- Click the Save button on the ribbon bar.
- Click the save icon in the top left corner.
- Press CTRL + S

To delete a device placed on the floor, select the device and click the trash can button. If you are removing a device from a rack and ports are currently connected to that device, you are informed about the connections.

## 6.10. Clone Devices

You can clone a device in two ways:

- In the 2D Web Administrative interface
- In 3D on the floor plan

To clone devices while on the 3D floor plan, follow these steps:

1. Hold down the Ctrl key and select the devices to be cloned.  
**Note:** When you clone racks, devices in or on the rack are not cloned.  
When selecting the last device to be cloned, click and do not release the mouse button.
2. Move the mouse to a vacant spot on the floor and release the mouse button.  
All the devices that you selected are cloned and placed on the floor.

## 7. Rack Builder

The application contains a sophisticated rack building interface that lets you create images of racks and rack-mounted devices in the data center. Rack Builder also provides information about capacity and actual attributes of the rack. You can access the rack view by double-clicking a rack in the floor plan view. Note that U positions are determined based on the bottom edge of the device when it is placed in the rack.

### 7.1. Rack Builder Components

The Rack Builder window provides information about the rack and devices within the rack. The Assigned device list at the top left of the window shows a list of devices mounted in the rack. The Search window provides a list of devices to mount onto the rack. The Rack Summary in the bottom left of the window provides a total of key values for all devices mounted into the rack.

Note that each U position consists of three sub U positions, which allow more granular mounting of devices onto the rack. Devices can be mounted to the front, back, left, and right positions.

### 7.2. How Devices Are Assigned to a Rack

Once the Rack Builder module has been launched, you can mount devices into the rack to create images of their actual racks in the data center and network closets. Two methods for mounting devices into the rack with this module are defined in this guide. Both methods must be performed in Edit Mode for the rack, not the View Only Mode.

#### 7.2.1. Assign Devices Already Defined in Device Manager

If you have already defined a device in the Device Manager, search for the device and place it within the appropriate U space in the rack.

**Follow these steps:**

1. Select the Search menu from the top right of the Rack Builder window.
2. Find the device that needs to be mounted to the rack by using one of these options:
  - a. Type a partial device name in the progressive search box and click the Search icon to the right of the text box. A list of all devices that meet the criteria of the search is returned.
  - b. Use the filter icon to select the Type, Manufacturer, Product Line, or Model for a list of target devices. You can also use the filter function to filter based on whether a device has been assigned to a floor plan or is still available.
3. Select the device that needs to be assigned to the rack.
4. Drag the device name into the correct position on the rack.
  - a. An orange highlight indicates the final position for the device when the mouse button is released. The U position is shown if you pause mouse movement while the device is over a valid position on the rack.

- b. If the device being placed has a state of Available or Procurement and the device is to be reserved in its current RU continue to step 5. If the device being placed has a state of Available or Procurement and the device is to be mounted there based on availability, continue to step 8. If the asset is to be placed in the rack with no filter options, save the floor plan and the device will have its status changed to “Operational.”
5. With devices that have a state of Available or Procurement, right click on the device image within the rack and select the “Plan Installation” option to define the installation of the asset.
6. A popup window will appear displaying filter options: Power Available, Power Ports, Network Ports, Storage Ports, and the last option which is not shown but automatically applied is Rack Weight. Select the filter options that are to be applied to the installation of the asset. Select OK to apply the filter.
7. If the device meets the filter requirements the device will now change states:
  - a. “Reserved” for a device with the status of “Available” and the device will get an “R” placed on the device image front symbolically representing the reserved state.
  - b. “Reserved Procurement” for a device with a status of “Procurement” and the device will get an “RP” placed on the device image front symbolically representing the reserved procurement state.
8. With devices that have a state of Available or Procurement, right click on the device to be formally mounted in the rack and select the “Move Device” option.
9. A popup window will appear displaying filter options: Power Available, Power Ports, Network Ports, Storage Ports, and the last option which is not shown but automatically applied is Rack Weight. Select the filter options that are to be applied to the installation of the asset. Select OK to apply the filter.
10. If the device meets the filter requirements, the port connections and RU will be populated and the device state will change to “Operational.” If the device does not meet the filter requirements the device will not be mounted.

## 7.2.2. Creating New Devices

Devices can be defined within the Rack Builder module.

Follow these steps:

1. Use the filter function in the device Search window to select the model of the new device to be created.
  - a. Choose the appropriate options from the Type, Manufacturer, Product Line, and Model drop-down boxes.
2. Click the Add icon.
3. A popup window will appear asking of input on the devices attributes and Status. The two options available in the Status menu for the new device are Procurement and Available. Refer to the Device Status section for a definition of each state.
  - a. The device is added to the device list.
4. Drag the newly added device from the device list onto the rack.

## 7.3. Reposition/Re-State Rack Devices

All the actions below are completed through the rack view on the 3D floor plan.

### 7.3.1. Manual Moving

To reposition devices within the rack, click and drag a device to a new position in the Rack Builder module. The device is anchored to the nearest U position. As the device is being moved, an indicator lists the current U position of the device.

Icons on the Rack ribbon menu also let you reposition a device. Click the Move Up/Move Down icons to reposition the device by 1.0 or 0.1 U positions.

### 7.3.2. Re-State Rack Devices

To change the state of “Reserved” to “Operational” of a device while in the rack view, follow the steps below:

1. Select a rack mounted device in the rack that has a device state of “Reserved Available”, “Reserved Procurement”, or “Reserved Move” and right click to select the “Set Operational Status.”
  - a. A popup window will appear prompting the user for the following:
  - b. “The device and its connections will now have a status of ‘Operational,’ do you want to continue?”
2. Select Yes to complete the action or select No to return to the rack view.

### 7.3.3. Cancel Reservation

To cancel the reservation of a device while in the rack view, follow the below steps:

1. Select a rack mounted device in the rack that has a device state of “Reserved Available”, “Reserved Procurement”, or “Reserved Move” and right click to select the “Set Operational Status.”
  - a. A popup window will appear prompting the user for the following:  
“Are you sure you want to cancel the reservation?”
2. Selecting No will close the popup. Selecting Yes will remove the reservation. The below actions will also be completed based on the devices current state:
  - a. If the asset currently has a “Reserved Available” status, then the asset will be unmounted from the rack and all connections removed. The device status will be changed to “Available.”
  - b. If the asset has a “Reserved Procurement” status, then the asset will be unmounted from the rack and all connections will be removed. The device status will be changed to “Procurement.”
  - c. If the asset has a “Reserved Move” status, the shadow copy will be removed from the rack, all connections will be removed, and the device will be deleted. The parent asset will be unlocked and its status will change from “Operational Moving” to “Operational.”

### 7.3.4. Decommissioning a Device

To decommission an asset from the rack view, follow the below steps:

1. Select an operational rack mounted asset from the rack view and right click to select the “Decommission Device” option.
  - a. A popup window will appear prompted the user as follows:  
“Are you sure you want to decommission the device? Yes or No?”
2. Selecting “Yes” will change the “Operational” status to “Decommission.” The device will get unmounted from the rack, all peripherals removed, all connections and all related assets will be removed.

### 7.3.5. Planning a Decommission

To plan the decommission of a rack mounted asset, follow the below steps:

1. Select an operational rack mounted asset from the rack view and right click to select the “Plan Decommission” option.
2. The device will appear shadowed out and will have a “PD” placed on the device image symbolically representing that the asset is planned for decommission.

### 7.3.6. Decommission a Planned Decommissioned Asset

To decommission a planned decommissioned asset, follow the below steps:

1. Select a device with a status of “Plan Decommissioned” in the rack and right click to select the “Decommission Device” option.
  - a. A popup window will appear prompting the user with the following:  
“The device will be decommissioned, are you sure you want to continue?”
2. Selecting No will return user to rack view. Selecting Yes will change the asset’s status to “Decommissioned,” all connections will be removed, all peripherals and related assets will be removed.

### 7.3.7. Cancel a Decommissioning

To cancel the decommissioning of a “Planned Decommission” asset, follow the below steps:

1. Select a device with a status of “Plan Decommissioned” in the rack and right click to select the “Decommission Device” option.
  - a. A popup window will appear prompting the user with the following:  
“Are you sure you want to cancel the decommissioning of the asset?”
2. Selecting No will return the user to the previous screen. Selecting Yes will change the device’s status from “Plan Decommission” to “Operational.”



## 7.4. Remove Devices from Racks

To remove devices from their rack assignment, click the device in the rack and then click the Remove icon on the Edit menu on the ribbon toolbar at the top of the window. If a device has separate components, for example such as blade chassis and blade servers, all components will be removed from the Rack if the blade chassis is removed.

Removing devices from the rack does not delete them from the database. Instead, it removes the device from the rack and floor plan view and changes the device state to Available.

## 7.5. Add Non-Rackmount Devices

In some cases, you may need to add devices to the rack, but they are not able to be mounted directly to the rack frame. Examples of these scenarios are the need to add a monitor, modem, zero U power strip and other similar devices. The rack building tool lets you mount these devices directly into the front or back of the rack. You can also mount zero U power strips to the side of the rack by dragging and dropping devices from the device list directly to the side view of the rack.

## 7.6. View a Rack Summary

The Rack Summary display provides capacity information for the rack being viewed. When you view the rack, the summary window is displayed on the bottom left of the main window.

On the summary detail, you can see the Rack Capacity and Actual information related to a series of categories which include Weight, Watts, Amps, and BTU. In some cases, you may see a value such as "2000+?" accompanied by a Yellow LED in the LED column. The question mark indicates that the attribute is not defined for one of the devices mounted to the rack.

Placing the mouse over the LED lets you see which devices do not have that attribute defined so they can update the attributes of that device to eliminate the indicator. When the rack capacity has been exceeded by the Actual value, a Red LED appears in the LED column.

Note, if users do not have rights to the Summary feature in their User Group privileges then the Summary icons will be disabled.

## 7.7. Move Device Tool

The rack building tool lets you easily move a device from one rack to another. When viewing a rack, select a device in the rack and click the Move to New Rack icon from the Rack ribbon toolbar.

- Rack – Select the destination rack for the device being moved. The standard Search and Filter options are available for the list of racks. Click the destination rack in the list.
- U Position – Depending on which rack is selected from the list, define which U position will be occupied by the device in the destination rack. The size of the device is matched against the available U positions in the rack and a list of all available positions is provided in the U Position drop-down.

- Submit and Cancel – Select the Submit button to move the device or select the Cancel button to cancel the move function.

## 7.8. Place Components into Enclosures

The Rack Builder lets you place individual blade servers within a blade enclosure or switch cards into a switch chassis. This feature is commonly used with blade chassis and blade servers or with Cisco 6500 switches and individual switch cards.

To complete this action, follow these steps:

1. Place a Blade Enclosure or Switch Enclosure on the Rack.
  - a. Complete this step with the same device placement steps defined earlier in this section.
2. Find the component device (blade server or switch card) in the device list.
3. Drag and drop the component onto the enclosure/chassis device.
  - a. If the component is supported by the chassis, an orange highlight shows the position that can be occupied by the component device.
4. Release the mouse button.
  - a. The component is assigned to the enclosure/chassis.

## 7.9. Device Collision Management

The Rack Builder has built in functionality that prevents users from adding devices that will ‘collide’ with one another when the device is placed into the Rack.

Examples of Device Collision Management:

- Mount a device in U position 20 in the front of the rack and then mount another device in U position 20 in the back of the rack. If these two devices are too deep and ‘collide’ with one another, Rack Builder will prevent users from placing the second device in that U position.
- Mount a device in U position 25. Try to add another device to U position 25, Rack Builder will prevent users from completing this action.

## 8. Floor Plan Layers

The Layer view lets you view a single data element on multiple devices simultaneously. This function enables you to evaluate trends in the data center. Depending on the data element being viewed, you can take appropriate action to fix issues if needed. This floor plan layer function is located on the right side of the 3D floor plan window. If the layer window is not visible, click the button on the ribbon bar to add a layer window.

Clicking the Add Layer Map button multiple times adds more than one layer window for viewing. On the layer box, click the maximize option to expand layer.

### 8.1. Layer Options

Selecting a layer from the floor plan layers menu on the right displays that characteristic or value of the device in the main view of the floor. Typically, a legend appears on the top right of the screen to define the color codes used for that particular view. The following is a brief description of the available layers that you can select:

#### 8.1.1. UI Layers

- Alarm – This default view of the floor plan lets you see the alarm LEDs on each device if that device is in an alarm state. The LED displayed corresponds to the exact state of the device as of the most recent polling event.
- Device Names – Displays the device name. If no device is assigned, then this field is blank.
- Device Type – Displays the device type. If it is an object and not a device, the field is shaded gray and does not display any name.

#### 8.1.2. Rack Layers

Each of these values are displayed only if the device is a rack. If the device is not a rack, they are shaded gray and do not display any data.

- Ports – Fiber Available – Displays the total number of unoccupied fiber ports on that rack.
- Ports - Fiber Reserved – Displays the total number of reserved fiber ports on that rack.
- Ports – Fiber Total – Displays the total number of fiber ports that are in that rack. A fiber port may be located in another rack and have its fiber ports reserved/mapped for another rack. In that instance, the ports would be visible on the reserved rack, not the rack it is placed in. Refer to Port Reservation for more information.
- Ports - Fiber Used – Displays the total number of occupied fiber ports on that rack.
- Ports – Network Available – Displays the total number of unoccupied network ports on that rack.
- Ports – Network Reserved – Displays the total number of reserved network ports on that rack.
- Ports – Network Total – Displays the total number of network ports that are in that rack. A network port may be located in another rack and have its network ports reserved/mapped for

another rack. In that instance, the ports would be visible on the reserved rack, not the rack it is placed in. Refer to Port Reservation for more information.

- Ports – Network Used – Displays the total number of occupied network ports on that rack.
- Ports – Power Available – Displays the total number of unoccupied power ports on that rack.
- Ports - Power Reserved – Displays the total number of reserved power ports on that rack.
- Ports - Power Total – Displays the total number of power ports in that rack. A power port may be located in another rack and have its power ports reserved/mapped for another rack. In that instance, the ports would be visible on the reserved rack. Refer to Port Reservation for more information.
- Ports – Power Used – Displays the total number of occupied power ports on that rack.
- Rack Capacity – Displays the capacity of the rack in U.
- RU Front Max Contiguous – Displays the largest continuous amount of rack space available in the front of the rack. This value is helpful in understanding where a 10U blade chassis can be deployed.
- RU Front Reserved – Displays the amount of reserved rack space and is displayed in U. The value will have the format of Front Space Reserved/Capacity (for example, 14/42).
- RU Front Used – Raw number of U positions used in the front of the rack.
- RU Front Utilization – Displays the amount of front rack space used and is displayed in U. The value has the format of Front Space Used/Rear Capacity (for example, 14/42). Floor spaces are color-coded to show the % of rack space currently utilized. The legend defines the colors as compared to percentages.
- RU Rear Max Contiguous – Displays the largest continuous amount of rack space available in the rear of the rack. This value is helpful in understanding where a 10U blade chassis can be deployed.
- RU Rear Reserved – Displays the amount of rear rack space reserved. The value is displayed in U and has the format of Rear Reserved Space/Capacity (for example 14/42).
- RU Rear Used – Raw number of U positions used in the rear of the rack.
- RU Rear Utilization – Displays the amount of rear rack space used. The value is displayed in U and has the format of Rear Space Used/Rear Capacity (for example, 14/42). Floor spaces are color-coded to show the % of rack space currently utilized. The legend defines the colors as compared to percentages.

### 8.1.3. Environment Layers

Each of these options has color-coded results that tie back to the colors defined in the legend on the top right of the floor plan window.

- Humidity – Displays the humidity value for that device. This value maps to the monitor attribute located in 2D under the Device tab. Refer to Web Administration User Guide for more information.
- Temperature – Displays the temperature value for that device. This value maps to the monitor attribute located in 2D under the Device tab. Refer to Web Administration User Guide for more information.

- Temperature Discharge and Temperature Return – Display the values assigned to the "AC – Discharge Temp" and "AC – Return Temp" monitor attributes.
- Thermal Lower, Middle and Upper – Provide a thermal graphic on the floor plan, based on the values assigned to devices in the EnvTemp monitor attribute setting. If these monitor attributes have values mapped to them, the thermal layers display those temperatures in a thermal graphic by using the thermal algorithm in the product. When you view thermal layers, the value assigned to the Layer – Temperature monitor attribute is displayed as the value on the device.

#### 8.1.4. Energy Layers

- A/B Side Current – Available for Rack devices only. This shows the Current Actual values for the racks.
- A/B Side L1 Current – Available for Rack devices only. Shows the Phase 1 Current data for the racks.
- A/B Side L2 Current – Available for Rack devices only. Shows the Phase 2 Current data for the racks.
- A/B Side L3 Current – Available for Rack devices only. Shows the Phase 3 Current data for the racks.
- Current Actual (A) – Displays the Amps collected for that device. If the device is set to monitor, this value is real time data. If it is set to Static, this value is pulled from the device attributes.
- Current Derated (A) — This value is mapped to the device attribute Current Derated.
- Current Utilization (A) — This value is math-based on the other Amps layers as follows: Current Actual/Current Derated \* 100.
- Power Actual (kW) – Displays the Kilowatts collected for that device. If the device is set to monitor, this value is real-time data. If it is set to Static, this value is pulled from the device attributes.
- Power Derated (kW) – This value is mapped to the device attribute Power Derated and is a static data point.
- Power Utilization – This value is math-based on the other kW layers as follows: kW Actual/Rack Kilowatts Capacity \* 100.

## 8.2. Layer Filters

Layer Filters let you limit the viewable devices by constraining their display with one or multiple criteria. This tool can help you understand how certain components of the data center are operating at a given time.

The Layer Filter options let you filter devices by using two different methods: By Layer or By Device. These options can work in with each other to provide maximum viewing flexibility.

### 8.2.1. Filter By Layer

Filtering by Layer lets you filter device views based on a series of data filters. The following is an example of how the Layer Filter tool lets you find racks on the floor plan that meets certain criteria:

- Rack has under 16U contiguous space available
- Power Ports remaining is greater than 80
- Rack Temperature is less than 82 degrees

Each required criterion is added to the filter list and the Filter button finds devices that match the defined criteria. Selecting a single criterion item and clicking Delete removes the filter item from the list. Clicking the Clear button clears all filter settings. You must click the Filter button after changes to the filter list to update the device view on the main page.

Add these filter criteria to the filter tool as follows:

- Select the Add button to define the first criterion for the Search.
- Select the Layer Type. If the layer is a value, select the Value option. If the value is Yes or No, select the Enumerate option.
- Select a layer to view (for example, the Temperature Layer).
- Select the operator for the value being compared.
- Enter the Value used for the comparison in the filter.
- Click the Add button. Criteria are added to the search window.
- If additional criteria need to be added, repeat these steps as required.
- Click the Filter button. Only devices that match the criteria are displayed.

When you click the Execute button, the resulting image displays only the devices that meet the filter criteria.

### 8.2.2. Filter By Device

Filtering by Device lets you view only data for certain Device Type, Manufacturer, Product Lines, Models, or Device Groups.

To use this function, select the required filter criteria from the drop-down boxes provided and click the Filter button.

Note that the By Layer and By Device filter options work in with each other. This feature provides maximum flexibility in viewing the device layers based on data or on device characteristics.

## 8.3. Layer History

A unique feature of the application is how you can view the history of certain layer values over a user-specified time. This feature provides a different graphical view of historical data related to environmental and power conditions in your facility.

The layer history has these components and settings available to control the playback of the historical data for the chosen layer view:

- Start Time – Lets you specify the starting date and time to begin the replay of data.
- End Time – Lets you specify the ending date and time to stop the replay of data.
- Speed – Lets you specify the number of seconds to pause on each frame of the view.
- Play, Stop, Reset – Lets you control the playback of the data.
- Timeline – Provides information on progression from start to end time and the currently viewed Date/Time.

## 9. Alarm System

### 9.1. Alarms Overview

The alarm engine generates alarms when actual values collected in the monitoring process cross into user-defined threshold ranges. The result of this threshold-to-data relationship is that the device is tagged with an Alarm LED on the floor plan, and the alarm panels are updated with that information.

A device can have one of the following alarm states:

- Alarm State Acknowledged
- Normal (green)
- Critical (red)
- Warning (yellow)
- Unreachable (blue)
- Minor (lavender)
- Information (light blue)
- Exceptions (aqua)

Each time a device is polled, it returns one of these six states to the system (Acknowledged state occurs only when you acknowledge an alarm). The Alarm Panel provides an easy way to see the overall state of monitored devices and their data elements and polling history.

**Note:** A device can maintain two other alarm states related to the Critical and Warning levels. When setting a threshold for a data element, you can configure a Min Time On or Min Time Off setting. When a device reaches a warning or critical value but is still within the Min Time On/Off time settings, the LED displays half green/half red or half green/half yellow if the threshold is set to Critical or Warning, respectively.

The Critical and Warning alarm will popup in the bottom-right corner of 3D client. There is a Config to disable / enable the alarm popup window in the System Settings. The critical and Warning alert sound are same and used the default one. There is a config to disable / enable the alarm sound.

### 9.2. Active Alarm Panel

You access the Active Alarm Panel on the 3D home page application.

In the Floor Plan Editor mode, a ribbon bar on the right has an Alarms tab. By clicking the tab, a panel opens and shows all Alarm panels that are not in a Normal state by default.

#### 9.2.1. Filter Options

The alarm panel lets you apply a series of filters to the list to limit the items provided in the table.

- Locations – Select either the Current Floor or System radio buttons to view devices only on the currently viewed floor or to view devices managed throughout the application in all locations.



- Device Name – Enter a partial device name in the field provided to return only a list of items that match the partial device name search. The partial name must be the first characters of the device name. Device Name search is not case-sensitive.
- Alarm Level – Check each alarm status to be viewed in the list while executing a search. Devices with a status that match the selected check boxes are displayed. Note that the Normal option shows all devices currently being monitored that are not in an alarm state.
- Last Time – Show the last time that that event for the device occurred.

Clicking the Submit button executes the search command based on the user-defined filter options.

### 9.2.2. Acknowledge Alarms

System operators can acknowledge an alarm. This action indicates to other users that the alarm has been received and is being addressed.

#### Follow these steps:

1. Open the Active Alarm Panel and click the check box in the Ack column for all alarms to be changed to an Acknowledged status.
  - a. The Select All check box at the top of the list lets you automatically select all alarms in the list.
2. Click the Submit button.
  - a. An embedded A is shown in the LED on the device.
  - b. **Note:** After an alarm has been acknowledged, it will continue to have an Acknowledged status until it returns to Normal status. Then, any subsequent alarms for the device will maintain the standard Warning, Critical, or Unreachable status.
  - c. Acknowledging an alarm also has an impact on the Notification engine. When an alarm is acknowledged, notification escalations for that device or data element end until it returns to Normal and enters an alarm state once again.

### 9.2.3. Clear Alarms

System operators can clear an alarm from the list by selecting the check box in the Clear column for all alarms that you want to remove from the list.

Clearing the alarm sets the status of that device/data element to normal. On the next polling interval, the device will reappear in the alarm list if an alarm condition is generated again.

## 9.2.4. View Detailed Alarm Information

When you highlight the data element under a device, detailed information related to the alarm and alarm condition are displayed in the Detailed Alarm Information section at the bottom of the list.

### Follow these steps:

1. Click the Expand button next to a device.
2. Select the alarm.
  - a. The bottom of the Alarm Panel window provides a detailed description of how the alarm went into that state.

## 9.3. View Alarm History

A detailed alarm history of each data element for all devices is maintained in the alarm panel.

When viewing the data elements of the device in the alarm panel, do the following:

1. Double-click one of the listed data elements.
  - a. The alarm panel shows a list of all alarm states that data element has been in during polling activity. An entry included in this list shows if an alarm has been Cleared or Acknowledged by a user.
2. Access the Alarm History by double-clicking the device's Monitor Attribute that is in the alarm state. A separate window displays the data history.
  - a. Level – Indicates the alarm state of that device during the period of time defined in the record. If the alarm was cleared or acknowledged, the user name is included in parentheses.
  - b. Alarm Count – Indicates the number of alarm events that occurred for that device-data element at that alarm level.
  - c. Start/End Time – Indicates the time of the initial polling event that resulted in that alarm condition and the last time that condition was returned in the monitoring engine before a new state was reached.

## 9.4. Export Data to an Excel Spreadsheet

Each alarm panel page has an Export button that lets you export the data to a spreadsheet.

To export a list of items to an Excel spreadsheet, click the Export button.

## 10. Capacity Planner

This feature is found at the Capacity Planner icon in the 3D Home Page ribbon bar.

The Capacity planner function provides summary data for space, power, and cooling for a given location in the navigation tree. When you are viewing the data for a location, you can model the impact of adding new racks, power devices, servers, or projects defined in the Project Wizard function.

### 10.1. Capacity Information

The left side of the What If Analysis screen displays the navigation tree of locations managed by the application. You select a node in the tree to view the summary data for key metrics based on devices in those locations. These key metrics are grouped in the following sections:

- Site Energy Information – Summarizes the total power and IT loads along with PUE/DCiE ratios.
- Space Summary – Summarizes the rack and port capacity for the selected location.
- Power Summary – Summarizes the UPS, PDU and PDU Rackmount capacity and used power for the location.
- Cooling Summary – Summarizes the cooling capacity for the location.

### 10.2. Model New Devices

You can select new models of devices to assign to a given location and determine the impact to the overall space and power capacity of the floor. You can define a list of models to assign to the selected floor. Alternatively, you can choose the Project option, which provides a list of the defined projects in the Project Wizard tool.

1. Click the 'By Model' or 'By Project' radio button at the top of the screen.
2. Define the list of models or project to assign.
3. Click the Analyze button to see the impact of assigning these devices to the location.
  - a. In the summary information screen, new values appear on each line to show the new value of that data point if the devices are added to the location. The % number reported indicates the % Capacity of space or power for each of the data points defined in the summary.
  - b. The new values displayed in the table during the Analyze process are color-coded as follows:
    - i. Red lettering indicates that over 100% of capacity is required to accommodate the new devices.
    - ii. Green lettering indicates that the new devices do not exceed the stated capacity for the space or power devices in the location.

## 10.3. Plan for the Decommissioning of Devices

The What If Analysis tool lets you simulate what will happen to your data center during the decommissioning of devices. To use the tool, follow these steps:

1. Open the What If Analysis window from the 3D ribbon bar menu.
2. Select the desired location node from the navigation tree.
3. Click the Advanced button to open the Advanced window.
  - a. Check the Decommission radio button and click the search icon to list all the devices on the selected location.
  - b. Check the devices in the list that you want to decommission and click the Add button.
  - c. Click the OK button to see the results.
    - i. Green means that you are still within capacity.
    - ii. Red means that you have exceeded capacity.

## 11. Services Module

The Services module is designed to provide detailed information about an asset as related to warranties, service scheduling and the location history of the device within the application. The Services tab can be found on the floor plan page in the ribbon bar.



### 11.1. Services – Asset Info

The Asset Information tab lets you attach PO and Invoice documents to a device and define advanced device configuration values. You can also add device condition, overall status, and valuation information to a device record on this page.

**Note:** A device must be selected from the device list before any information can be entered into the fields or saved.

- Device ID – System-derived value based on the creation of the device in the device manager.
- S/N, Asset Tag – Attributes taken directly from the device attributes.
- MFG Part Number, Part Description, RFID Tag # – Optional input fields.
- Value Options – Specifics about the device condition, purchase date, purchase value, owner, and device status.
- Status – Located in the Value section, states the status of the device: Active, Lost, Decommissioned.
- Comments – Optional field for further describing the device.
- Attached Invoice – Upload copies of the invoice used to procure the device.

**To upload files for the invoice feature, follow these steps:**

1. Click the plus (+) button at the bottom of the file list.
2. Browse to the file name to be uploaded to the system.
  - a. To remove a file from the list, click the filename and select the minus (–) button at the bottom of the file list.
  - b. To open a file, double-click the filename in the list. A separate window opens to display the file.

### 11.2. Services – Warranty

The Warranty page lets you track Vendors and active dates for both the Parts and Labor components of their device warranties. The dates applied to these warranty components are used to determine if a device is currently covered with an Active, Partially Expired, or No Warranty status. Actual warranty documents can also be attached to this page to provide a document trail for the warranty terms, dates, vendor information, and so on.

- Status – Determined by the combination of the Parts and Labor warranty dates. This field can contain one of these options:
  - No Warranty – No dates are defined for either the Parts or Labor dates, or both the parts and labor warranty end dates are in the past.
  - Active – Device is covered with active Parts date ranges, Labor date ranges, or both. Note that if only Parts dates are provided, the device can still have an active Warranty state.
  - Partially Expired – Both the Parts and Labor date ranges are provided, and only one of the date ranges has expired.
- Warranty Vendor, Claim Phone – Basic contact information for filing a warranty claim.
- Component ID, Serial Number – Detail for only a specific system component covered under the warranty. This value is not the Serial Number of the device stored in the device attributes.
- Start and End Dates – Date ranges for Parts and Labor covered under the warranty.
- Description – (Optional) Additional detail about the warranty.
- Attached Files – Lets you upload documents detailing the warranty coverage.
  - To upload a document, click the + symbol at the bottom of the list and browse to the file.
  - To remove a file, click the filename and click the – symbol at the bottom of the file list.

## 11.3. Services - Event Scheduling

The Services sub-tab displays a list of upcoming service events.

To schedule events go to Device Central for the device and select the Services tab.



This tab includes three components in its overall functionality: Schedule, Calendar and Log.

### 11.3.1. Schedule

The Schedule page lets you create a scheduled event for a device. This event can be a single scheduled event or a recurring event, typically used for device maintenance. The main screen on this tab displays a list of currently scheduled events for the device.

#### 11.3.1.1. Schedule Single Appointments

To schedule single appointments, follow these steps:

1. Select the device from the Device menu on the left.

2. Click the New button to create a new service event.
  - a. A window appears. Required fields are marked with a red asterisk.
  - b. Device Name is the actual device name selected from the menu on the left.
3. Type is the Device Type of the chosen device.
4. Choose the Service Type and Device Status for the event to be scheduled.
5. Provide basic information about the Vendor Tech Assigned.
6. Provide the Date, Start Time, and Duration for the service event.
  - a. If this is a recurring event, set the Date to the first appointment date.
7. Click the Appointment option for the frequency of the event.
  - a. If the event is a one-time event, choose Appointment. If this is a regularly scheduled event, choose the Recurrence option.
8. Do the following if Downtime is required to perform this service event:
  - a. Select the Downtime required check box.
  - b. Provide the Maintenance Window start time and duration, which must be created for the device.
  - c. **Note:** This time is associated with the alarm subsystem. It suppresses notifications for this device during this time period. Any alarm events and notifications during a scheduled downtime are expected.
9. Click the OK button to save the Service event.

### 11.3.1.2. Schedule Recurring Appointments

To schedule recurring appointments, follow these steps:

1. Select the device from the Device menu on the left.
2. Click the New button to create a new recurring service event.
  - a. Device Name is the actual device name selected from the menu on the left.
  - b. Type is the Device Type of the chosen device.
3. Choose the Service Type and Device Status for the event to be scheduled.
4. Provide basic information about the Vendor Tech Assigned.
5. Provide the Date, Start Time, and Duration for the service event.
  - a. If this is a recurring event, set the Date to the first appointment date.
6. Click the Recurrence option for the frequency of the event.
7. Define the frequency of the recurring event in the Recurrence Pattern section.
  - a. Depending on the option selected, provide the additional information to the right of the pattern options.
8. Define the Start Date for the event and the duration of the recurring event in the Range of Recurrence.

For the duration, you can select no end date, a number of occurrences, or the end date for the event.
9. Do the following if Downtime is required:
  - a. Select the Downtime required check box.
  - b. Provide the start and duration times so that the Maintenance Window can be created for the device.

- c. **Note:** This time is associated with the alarm subsystem. It suppress notifications for this device during this time period.
10. Click the OK button to save the Service event.
  - a. After these events are submitted, they appear in the list on the Schedule tab.
  - b. To edit the event settings, double-click an entry from this list.
  - c. To remove the event from the schedule for the device, click the event and click the Delete button.

### 11.3.2. Calendar

The Calendar view provides a list of all scheduled events for a particular device.

You can use any of the following filters in combination to filter the event list:

- Event Type – By default, the All Items option is selected.
- All Items – Lets you select the active duration. Select the timeframe (Day, Week, Month, and Date Range) to show all items for that particular time selection.
- Overdue – Lets you display all overdue service items for a device.
- Scheduled – Lets you display all scheduled service activity for a device.
- Timeframe – By default, the Day option is selected.
- Day – Shows only items in the current day.
- Week – Shows only items for the current week.
- Month – Shows only items for the current month.
- Date Range – Shows only items for the custom date range.

The detailed event list provides relevant information about the event and the status of the device. The first three columns provide information about the event by using icons to define the status. Placing the mouse over the icons displays the meaning of the icon image.

The first column indicates whether the event time was in the past or in the future.

- Scheduled - Blue
- Overdue - Orange

To provide detail on a service event in the Calendar view, double-click an entry or select a calendar event and click the Add Entry button. A window displays the following fields:

- Vendor, Service Technician, Phone – Specify contact information for the vendor performing the service.
- RMA#, RMA Return Date – Complete these fields if the device or part is being handled with RMA.
- Device Status – Select the option that defines the state of the device when this work is performed.
- Work Performed – Select the option that defines the work performed on the device.
- Work Completed – Select this check box to indicate that the work has been completed. If the work is still in progress, do not check this box.



- Description – Basic description of work completed.
- Documentation – Lets you upload documentation that may have been provided by the vendor during the completion of this event.
- Service Window – Defined service window used for this event.
- Downtime Window – Defines the downtime required to perform this event.

To update the record, apply new values to the fields and drop-downs as required and click the OK button. This event is added into the log history for the device and can be viewed on the Log tab.

### 11.3.3. Log

As service events are performed and the corresponding calendar records are updated with details of vendor activities, the specific details for that event are added to the device Service Log which is viewed on the Log tab. This tab provides a consolidated listing of all events performed against the device.

Three options are available for managing these log event items:

- New – If an unscheduled event has occurred for a device, add a log event by selecting the New button. You can then add a log event without also adding a scheduled event to the calendar.
- Modify – If an existing log event has to be updated, select the event and click the Modify button. Update the information related to the event and click the Save button.
- Delete – If a log event needs to be removed from the list, select the event and click the Delete button.

## 12. Device Central

Device Central is an all-in-one window that collects all information on a device. All the attributes within Device Central are specific to the device that was selected.

There are several ways to access Device Central:

- In the floor plan window, select the Data tab and select the Device Central icon
- Select a device on the floor, right click and select Device Central
- Use the search tool and in the results table select the Device Central icon

### 12.1. Summary Tab

The summary tab displays all basic information specific to the Device Central device that was selected. All the information is self-populated from the Device Attributes in the Web Administration Interface. Links to documents or websites are placed in the Links section, located to the right of the basic information. These links are self-populated from the Device Information – Links tab in the Web Administration Interface. Peripheral devices can be added or removed from the peripherals section. Devices can be linked together logically using the Associated Devices section.

When viewing Device Central for a PDU Floor mount device, a link will automatically be displayed for the PDU Panel Schedule. This link will open a report which summarizes the PDU branch circuit monitoring configurations.

- Graphs Link - Opens the selected device's Graphs page in a web browser.
- Calendar Link - Opens the selected device's Calendar page in a browser window.

### 12.2. Alarms

The Alarm tab in Device Central shows the status of all the alarms mapped to the device. By default, only the alarms that are in warning, critical, unreachable, minor or information are shown.

To find only alarms in a certain state, click the appropriate state from the filter tab at the top of the window. The filter is not dynamic. The Search button must be selected to apply the filter.

#### 12.2.1. Acknowledging Alarm Condition

The following check boxes are located below the Alarm filter:

- Clear All Alarm (on the left)
- Acknowledge All (on the right)

Selecting one or both box applies that action to every alarm that has that option. For example, selecting the Clear All Alarm box clears all alarms in a warning, critical, minor or information state. Selecting the Acknowledge All box acknowledges all alarms in a state other than normal and updates the status. You must click the Submit button at the bottom of the window for the decision to take effect.

To acknowledge an individual alarm, go to the desired alarm and select the check the box under the Ack column.

To clear the alarm, select the Clear check box in the Clear column. You must click the Submit button to update and save the status.

Double-clicking an individual alarm opens an alarm history window.

### 12.2.2. Export Alarms

To generate an Excel file for alarms, click the Export button at the bottom of the page.

The Excel file reads the same information shown on Device Central Alarm tab. It does not print the history of the alarm but does print the current state of the alarms for that device.

## 12.3. Services

The Services tab in Device Central lists events that are specific to the selected device. It does not show the system as a whole.

See Services Module section for more information.

## 12.4. Warranty

See Services – Warranty section for details.

## 12.5. Port Mapping

When you access Port Mapping through Device Central the web interface Device Central page will be shown with the Ports Function Tile selected for the selected device. The device's ports list will be presented along with a Connections tab where current connections are listed.

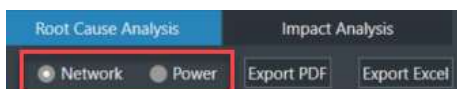
See Port Mapping section in web interface guide for more information.

## 12.6. Root Cause Analysis

The Root Cause Analysis page provides these tabs:

- List View
- Tree View

The views will display Network or Power information depending on which of the options is selected.



## 12.6.1. List View

The Root Cause Analysis tab provides a tabular view of devices that are upstream from the selected device. You can use this tool to find out which upstream device(s) are tied to a particular device and which devices are affected.

- Alarm Timestamp – When an alarm was last polled.
- Device name/Type/Manufacturer/Product Line/Model – Attributes tied to the device when it was created.
- Location – Where the device is located.
- IP – IP address from Device tab in the Web Administration Interface.
- Hops – Number of hops away from the selected device.
  - Hop 0 = The selected device.

## 12.6.2. Tree View

When you select the Tree View tab on the Root Cause Analysis page, the same information that was visible in the List View is shown in the Tree View.

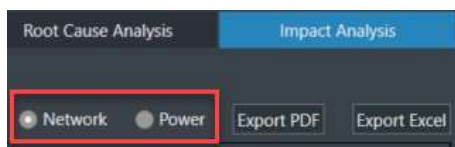
The top device is the selected device (Hop 0). Each tabbed device is another hop from the selected device. Clicking the arrow before the alarm state hides any subsequent device.

## 12.7. Impact Analysis

The Impact Analysis page provides these tabs:

- List View
- Tree View

The views will display Network or Power information depending on which of the options is selected.



### 12.7.1. List View

The Impact Analysis tool shows what devices are located downstream from the device that was selected to access the instance of Device Central.

- Alarm – Status of the device.
- Redundant – Whether the device is set up for redundant power.
  - 1 red battery – 0 to 1 power connection to one device.
  - 2 red batteries – 2 power connections to two different power supplies.
- Alarm Timestamp – When an alarm was last polled.
- Device name/Type/Manufacturer/Product Line/Model – Attributes tied to the device when created.

- Location – Where the device is located.
- IP – IP address from Device tab in 2D Web Interface.
- Hops – Number of hops away from the selected device.
  - Hop 0 = The selected device.

The Impact Analysis drop-down menu has three criteria to apply to the List View:



- Application
- Device
- Owner

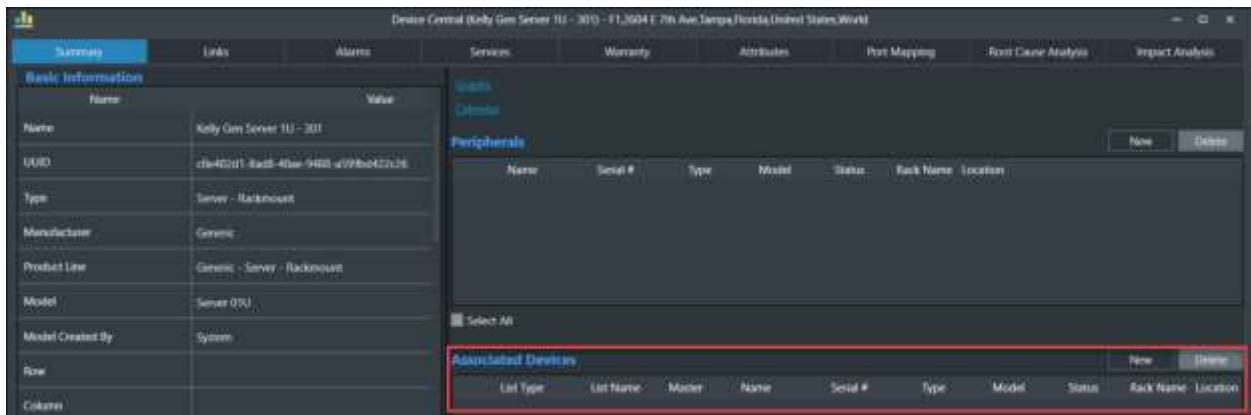
### 12.7.2. Tree View

When you select the Tree View tab on the Impact Analysis page, the same information that was visible in the List View is shown in the Tree View.

The top device is the selected device (Hop 0). Each tabbed device is another hop from the selected device. Clicking the arrow before the alarm state hides any subsequent device.

## 12.8. Associated Devices

Users have the option of logically linking devices using the Associated Devices table in device central on the Summary Tab. Devices which are linked in this way will move and decommission together.



### 12.8.1. Creating a Device Association List

1. Click the New button on the upper right side of the Associated Devices table.
2. In the devices window you can filter by Device name, Type, Manufacturer, Product Line, Model, Group, Status, and List Items.
3. After locating the devices you would like to add to the list click on the device and click add, you can also hold CTRL to select multiple or shift.
4. On the right side of the window you can provide a name for the device list.
5. When done selecting devices for the list click Submit.
6. Selected devices on the list can be removed using the Delete button.

## 13. Device Action Keys

When viewing devices in the floor plan views, Right-clicking a device lets you perform actions, depending on the type of device. These actions range from being able to access Device Central to displaying a 3D view of the Impact Analysis that device has on other devices.

The following items appear when you right-click a device:

- Rack device
  - Port Manager
  - Device Central
  - Impact Analysis
  - Network Path
  - Power Path
- Non-Rack device
  - Device Central
  - Impact Analysis
  - Network Path
  - Power Path

### 13.1. Apply the Impact Analysis Filter

The Impact Analysis option applies a filter to all the devices on the floor and shows all the devices that are impacted by the selected device. If the affected devices are located in a rack, the rack is hidden and only the device is shown.

**Follow these steps:**

1. Right-click the device.
2. Select Impact Analysis from the drop-down list.
  - a. The impacted devices, including the device that was right-clicked, are shown.
  - b. To return to an unfiltered 3D floor plan view, select the Layer Filter check box in the top ribbon bar under the Explore tab.

### 13.2. Apply the Power Path Filter

The Power Path option applies a filter to all the devices on the floor and shows all the devices connected by a power connection to the selected device, both upstream and downstream.

**Follow these steps:**

1. Right-click a device.
2. Select Power Path from the drop-down list.
  - a. The filtered devices, including the device that was right-clicked, are shown. If the device connected by a power connection is located in a rack, the rack is hidden and the only the device is shown.

## 13.3. Apply the Network Path Filter

The Network Path option applies a filter to all the devices on the floor and shows all the devices connected by a network connection to the selected device, both upstream and downstream.

**Follow these steps:**

1. Right-click a device.
2. Select Network Path from the drop-down list.
  - a. The filtered devices, including the device that was right-clicked, are shown. If the device connected by a power connection is located in a rack, the rack is hidden and only the device is shown.



## 14. Profile Builder

Profile builder lets you create custom models and create multiple instances of that model in the 3D floor plan. Models can be multiple devices, which means that you can create creating complex rack designs that are used multiple times. The Profile Builder window provides the Explore, Edit, and Rack tabs to help you create custom models.

### 14.1. Create New Model Profile

**To create a new model profile, follow these steps:**

1. Click and drag the device(s) from the device list and onto the profile canvas.
2. Create the model profile by using the standard floor plan controls.
3. Verify that all attributes of the new model profile are set and click the Save icon.
4. Specify a name for the model and select OK.

### 14.2. Delete a Model Profile

**To delete a model profile, follow these steps:**

1. Select the Model Profile tab on the left side of the Model Profile window.
2. Select the red X next to the model to be deleted.

## 15. File Depot

The File Depot is located on the Floor Plan page and is used to upload files to the floor plans. These files are available to all users to download and view. The File Depot is typically used for these types of files: engineering plans, user guides, escalation procedures, contact information or other similar types of documentation.

The following are two separate repositories available for users to upload documents:

- Public – Files loaded to the Public section can be viewed on all floor plans.
- Private – Files loaded to the Private section are viewed only on the currently viewed floor plan.

### 15.1. Create Folders

You must be in Edit Mode to be able to modify the File Depot.

**Follow these steps:**

1. Click the Create link to create Folders in the File navigation tree while viewing the File Depot.
  - a. The folder is added under the currently selected node in the tree, and you are prompted for a Folder Name.
2. Specify a name for the folder and click the Submit button.

### 15.2. Upload Files

**To upload one or multiple files to the selected folder, follow these steps:**

1. Select a file folder in the navigation tree.
  - a. The Upload link is available.
2. Click the Upload button.

The Upload File dialog appears and prompts you for a File Name.
3. Click the Browse button.
  - a. The Windows File Explorer window opens.
4. Navigate to the location of the file to be uploaded.
5. Select the file and click The Submit button.
  - a. The selected file is uploaded to the File Depot.
  - b. If a file has the same name as an existing file there will be an Error Message indicating it already exists.

## 15.3. Rename Folders and Files

After folders are created or files are uploaded, they can be renamed.

### Follow these steps:

1. Select the folder or file that needs to be renamed and select the Rename link in the File Depot.
  - a. The Rename dialog appears.
2. Provide a new name for the folder or file and click the Submit button.
  - a. **Note:** You must include the file extension in the new name.

## 15.4. Delete Folders and Files

To delete folders and files that have been added to the File Depot, select the folder or file and click the Delete link. You are prompted to confirm the deletion.

If a Folder is deleted, all files contained in that folder are also removed from the system.

## 16. Uninstall

To uninstall the client from Windows navigate to Start --> Control Panel --> Uninstall a program --> Right Click on the application and choose uninstall. The uninstall wizard will open and guide you through the uninstall process.