

# Dell EMC OpenManage Enterprise Power Manager Version 2.0

User's Guide

## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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# Introduction to Power Manager

Dell EMC OpenManage Enterprise Power Manager is a plugin to the Dell EMC OpenManage Enterprise (OME) console and uses fine-grained instrumentation to provide increased visibility to power consumption, system anomalies, and resource utilization on Dell EMC servers. Also, Power Manager supports virtual machine monitoring, and alerts and reports about power and thermal events in servers, chassis, and custom groups consisting of servers and chassis. This reporting enables increased control, faster response times, greater accuracy, and broader decision-making intelligence than is otherwise possible.

When used with PowerEdge servers, modular systems with an iDRAC Enterprise or iDRAC Datacenter license, or supported chassis and OpenManage Enterprise Advanced license, Power Manager leverages information from the OME console to deliver platform-level power reporting. Power Manager then communicates with Integrated Dell Remote Access Controller (iDRAC) or Chassis Management Controller (CMC) on each managed device to provide power-management data and execution of control policy—making it easy for administrators to identify areas in which they can gain efficiencies and cut wasteful costs. Also, Power Manager supports monitoring and managing power load on Power Distribution Units (PDUs) by communicating with the PDU firmware.

## Revision history

**Table 1. Revision history of document**

<b>Date</b>	<b>Document version</b>	<b>Description of changes</b>
June 2021	A00	Initial release of the document.
August 2021	A01	<ul style="list-style-type: none"><li>• Updated compatible version of OpenManage Enterprise.</li><li>• Removed the iDRAC version limitation.</li></ul>
October 2021	A02	Added network environment not supported

## What is new in this release

- Support for monitoring Power Distribution Unit (PDU) devices.
- Support for monitoring Virtual Machines (VM) that are hosted on hypervisors that have been discovered in OpenManage Enterprise and added to Power Manager.
- **Power Manager: Virtual Machine Performance Report** integrated to view VM details monitored in Power Manager.
- Support for monitoring 8000 devices that include servers, PDUs, virtual machines, and 500 groups (static and physical).
- Support for Scope-Based Access Control (SBAC) feature enhancing security.
- Support for communicating with servers to collect data through Redfish telemetry protocol.
- Support for creating physical groups by importing a CSV file.



# Compatibility matrix

## Topics:

- Supported devices in Power Manager
- Supported protocols
- Versions of Power Manager compatible with OpenManage Enterprise
- Role and scope-based access control in OpenManage Enterprise

## Supported devices in Power Manager

Power Manager supports the following list of Dell EMC PowerEdge servers and chassis.

**Table 2. Supported servers and chassis models**

Category	Model
Server	<ul style="list-style-type: none"> <li>• Dell EMC VxRail E460</li> <li>• Dell EMC VxRail E460F</li> <li>• Dell EMC VxRail E560</li> <li>• Dell EMC VxRail E560F</li> <li>• Dell EMC VxRail E560N</li> <li>• Dell EMC VxRail P470</li> <li>• Dell EMC VxRail P470F</li> <li>• Dell EMC VxRail P570</li> <li>• Dell EMC VxRail P570F</li> <li>• Dell EMC VxRail P580N</li> <li>• Dell EMC VxRail S470</li> <li>• Dell EMC VxRail S570</li> <li>• Dell EMC VxRail V470</li> <li>• Dell EMC VxRail V470F</li> <li>• Dell EMC VxRail V570</li> <li>• Dell EMC VxRail V570F</li> <li>• Dell EMC PowerEdge R320</li> <li>• Dell EMC PowerEdge R330</li> <li>• Dell EMC PowerEdge R340</li> <li>• Dell EMC PowerEdge R420</li> <li>• Dell EMC PowerEdge R430</li> <li>• Dell EMC PowerEdge R440</li> <li>• Dell EMC PowerEdge R520</li> <li>• Dell EMC PowerEdge R530</li> <li>• Dell EMC PowerEdge R530XD</li> <li>• Dell EMC PowerEdge R540</li> <li>• Dell EMC PowerEdge R620</li> <li>• Dell EMC PowerEdge R630</li> <li>• Dell EMC PowerEdge R640</li> <li>• Dell EMC PowerEdge R6415</li> <li>• Dell EMC PowerEdge R650</li> <li>• Dell EMC PowerEdge R6515</li> <li>• Dell EMC PowerEdge R6525</li> <li>• Dell EMC PowerEdge R720</li> </ul>

**Table 2. Supported servers and chassis models (continued)**

Category	Model
	<ul style="list-style-type: none"> <li>• Dell EMC PowerEdge R720xd</li> <li>• Dell EMC PowerEdge R730</li> <li>• Dell EMC PowerEdge R730Xd</li> <li>• Dell EMC PowerEdge R740</li> <li>• Dell EMC PowerEdge R740XD</li> <li>• Dell EMC PowerEdge R740xd2</li> <li>• Dell EMC PowerEdge R7415</li> <li>• Dell EMC PowerEdge R7425</li> <li>• Dell EMC PowerEdge R750</li> <li>• Dell EMC PowerEdge R750 XA</li> <li>• Dell EMC PowerEdge R7515</li> <li>• Dell EMC PowerEdge R7525</li> <li>• Dell EMC PowerEdge R820</li> <li>• Dell EMC PowerEdge R830</li> <li>• Dell EMC PowerEdge R840</li> <li>• Dell EMC PowerEdge R920</li> <li>• Dell EMC PowerEdge R930</li> <li>• Dell EMC PowerEdge R940</li> <li>• Dell EMC PowerEdge R940xa</li> <li>• Dell EMC PowerEdge M620</li> <li>• Dell EMC PowerEdge M520</li> <li>• Dell EMC PowerEdge M630</li> <li>• Dell EMC PowerEdge M640</li> <li>• Dell EMC PowerEdge M830</li> <li>• Dell EMC PowerEdge T320</li> <li>• Dell EMC PowerEdge T330</li> <li>• Dell EMC PowerEdge T340</li> <li>• Dell EMC PowerEdge T420</li> <li>• Dell EMC PowerEdge T620</li> <li>• Dell EMC PowerEdge T430</li> <li>• Dell EMC PowerEdge T440</li> <li>• Dell EMC PowerEdge T630</li> <li>• Dell EMC PowerEdge FC430</li> <li>• Dell EMC PowerEdge FC630</li> <li>• Dell EMC PowerEdge FC640</li> <li>• Dell EMC PowerEdge FC830</li> <li>• Dell EMC PowerEdge C6320</li> <li>• Dell EMC PowerEdge C6320p</li> <li>• Dell EMC PowerEdge C6420</li> <li>• Dell EMC PowerEdge C6525</li> <li>• Dell EMC PowerEdge MX740C</li> <li>• Dell EMC PowerEdge MX840C</li> <li>• Dell EMC PowerEdge XE2420</li> <li>• Dell EMC PowerEdge XE7420</li> <li>• Dell EMC PowerEdge XE7440</li> <li>• Dell EMC PowerEdge XE8545</li> </ul>
Chassis	<ul style="list-style-type: none"> <li>• Dell EMC PowerEdge M1000e</li> <li>• Dell EMC PowerEdge VRTX Blade Enclosure</li> <li>• Dell EMC PowerEdge FX2/FX2s</li> <li>• Dell EMC PowerEdge MX7000</li> </ul>

## Supported PDU device manufacturers

The following are the Power Distribution Unit (PDU) device brands that are supported in Power Manager:

- Vertiv Geist
- APC by Schneider Electric

## Hardware requirements

The following table lists the minimum set of hardware configurations that are based on the number of devices you want to monitor through Power Manager.

**Table 3. Minimum required hardware**

Minimum recommended hardware	Large deployments	Small deployments
Number of devices that Power Manager can manage.	Up to 8000	1000
RAM	32 GB	16 GB
Processors	8 cores	4 cores
Hard drive	250 GB	250 GB

## Supported web browsers

Power Manager supports the following versions of web browsers:

- Internet Explorer (64-bit) 11 and later
- Mozilla Firefox 52 and later
- Google Chrome 58 and later
- Microsoft Edge version 41.16299 and later

### Power Manager does not support the following:

- PowerEdge M1000e, PowerEdge VRTX, PowerEdge FX2, and PowerEdge FX2s chassis discovered with viewer credentials
- Servers with cabled Power Supply Units (PSUs)
- PowerEdge FM120x4
- Hypervisors with viewer credentials
- IPv6-only network environment

## Supported protocols

Power Manager supports the following protocols:

- Power Manager modifies the following with respect to **Telemetry Streaming** service in iDRAC to retrieve metrics through Redfish protocol:
  - Enables Telemetry Data Stream
  - Adds or uploads a *OME-PMP-Power-A* custom Metric Report Definition report.
- Simple Network Management Protocol (SNMP) for Power Distribution Unit (PDU) devices.
- Web Services for Management (WSMAN) protocol for servers and chassis.
- Representational State Transfer (REST) protocol for PowerEdge MX7000 chassis.

## Versions of Power Manager compatible with OpenManage Enterprise

The following table shows Power Manager and OpenManage Enterprise version compatibility.

**Table 4. Compatibility matrix of Power Manager and OpenManage Enterprise**

Power Manager Version	OpenManage Enterprise Version
Power Manager 2.0	<ul style="list-style-type: none"> <li>OpenManage Enterprise 3.6 onwards</li> </ul>
Power Manager 1.1 and 1.2	<ul style="list-style-type: none"> <li>OpenManage Enterprise 3.4</li> <li>OpenManage Enterprise 3.4.1</li> <li>OpenManage Enterprise 3.5</li> </ul>
Power Manager 1.0	<ul style="list-style-type: none"> <li>OpenManage Enterprise 3.2</li> <li>OpenManage Enterprise 3.2.1</li> <li>OpenManage Enterprise 3.3</li> <li>OpenManage Enterprise 3.3.1</li> </ul>

## Role and scope-based access control in OpenManage Enterprise

OpenManage Enterprise has Role Based Access Control (RBAC) that clearly defines the user privileges for the three built-in roles—Administrator, Device Manager, and Viewer. Additionally, using the Scope-Based Access Control (SBAC) an administrator can limit the device groups that a device manager has access to. The following topics further explain the RBAC and SBAC features.

### Role-Based Access Control (RBAC) privileges in OpenManage Enterprise

Users are assigned roles which determine their level of access to the appliance settings and device management features. This feature is termed as Role-Based Access Control (RBAC). The console enforces the privilege required for a certain action before allowing the action.

This table lists the various privileges that are enabled for each role.

**Table 5. Role-based user privileges for Power Manager**

Features	Administrator	Device Manager (scope for assigned groups)	Device Manager (scope for non-assigned groups)	Viewer
Install Power Manager	Yes	No	No	No
Upgrade Power Manager	Yes	No	No	No
Enable Power Manager	Yes	No	No	No
Disable Power Manager	Yes	No	No	No
Uninstall Power Manager	Yes	No	No	No
Add or remove supported devices from Power Manager	Yes	Yes	No	No
Add or remove static groups from Power Manager	Yes	No	No	No
Add or remove unsupported devices from Power Manager.	Yes	Yes	No	No

**Table 5. Role-based user privileges for Power Manager (continued)**

<b>Features</b>	<b>Administrator</b>	<b>Device Manager (scope for assigned groups)</b>	<b>Device Manager (scope for non-assigned groups)</b>	<b>Viewer</b>
Add or remove Power Distribution Units (PDUs) from Power Manager.	Yes	Yes	No	No
Monitor PDUs.	Yes	Yes	No	Yes
Create, edit, or delete Physical Groups.	Yes	No	No	No
Import physical groups through CSV file	Yes	No	No	No
Manage the devices in rack.	Yes	No	No	No
Monitor metrics.	Yes	Yes	No	Yes
Manage power policies for devices.	Yes	Yes	No	No
Manage power policies for groups.	Yes	No	No	No
Manage temperature-triggered policies for groups.	Yes	No	No	No
Manage alert thresholds for devices.	Yes	Yes	No	No
Manage alert thresholds for groups.	Yes	No	No	No
View alert thresholds in Power Manager	Yes	Yes	No	Yes
Modify Power Manager Settings.	Yes	No	No	No
View Power Manager Settings	Yes	Yes	No	Yes
Manage Emergency Power Reduction (EPR) for devices.	Yes	Yes	No	No
Manage EPR for groups.	Yes	No	No	No
Run and view reports for devices and groups.	Yes	Yes	No	Yes
Manage custom reports for devices.	Yes	Yes	No	No
Manage custom reports for groups.	Yes	Yes	No	No
View events	Yes	Yes	No	Yes
Dashboard	Yes	Yes	No	Yes

# Scope-Based Access Control (SBAC) in OpenManage Enterprise

With the use of Role-Based Access Control (RBAC) feature, administrators can assign roles while creating users. Roles determine their level of access to the appliance settings and device management features. Scope-based Access Control (SBAC) is an extension of the RBAC feature that allows an administrator to restrict a Device Manager role to a subset of device groups called scope.

While creating or updating a Device Manager (DM) user, administrators can assign scope to restrict operational access of DM to one or more system groups, custom groups, and / or plugin groups.

Administrator and Viewer roles have unrestricted scope. That means they have operational access as specified by RBAC privileges to all devices and groups entities.

Scope can be implemented as follows:

1. Create or Edit User
2. Assign DM role
3. Assign scope to restrict operational access

When a Device Manager (DM) user with an assigned scope logs in, the DM can see and manage scoped devices only. Also, the DM can see and manage entities such as jobs, firmware or configuration templates and baselines, alert policies, profiles and so on associated with scoped devices, only if the DM owns the entity (DM has created that entity or is assigned ownership of that entity). For more information about the entities a DM can create, see *Role-Based Access Control (RBAC) privileges in OpenManage Enterprise*.

In OpenManage Enterprise, scope can be assigned while creating a local or importing AD/LDAP user. Scope assignment for OIDC users can be done only on Open ID Connect (OIDC) providers.

## SBAC for Local users:

While creating or editing a local user with DM role, admin can select one or more device groups that defines the scope for the DM.

For example, you (as an administrator) create a DM user named dm1 and assign group *g1* present under custom groups. Then dm1 will have operational access to all devices in *g1* only. The user dm1 will not be able to access any other groups or entities related to any other devices.

Furthermore, with SBAC, dm1 will also not be able to see the entities created by other DMs (let's say dm2) on the same group *g1*. That means a DM user will only be able to see the entities owned by the user.

For example, you (as an administrator) create another DM user named dm2 and assign the same group *g1* present under custom groups. If dm2 creates configuration template, configuration baselines, or profiles for the devices in *g1*, then dm1 will not have access to those entities and vice versa.

A DM with scope to All Devices has operational access as specified by RBAC privileges to all devices and group entities owned by the DM.

## SBAC for AD/LDAP users:

While importing or editing AD/LDAP groups, administrators can assign scopes to user groups with DM role. If a user is a member of multiple AD groups, each with a DM role, and each AD group has distinct scope assignments, then the scope of the user is the union of the scopes of those AD groups.

For example,

- User dm1 is a member of two AD groups (*RR5-Floor1-LabAdmins* and *RR5-Floor3-LabAdmins*). Both AD groups have been assigned the DM role, with scope assignments for the AD groups are as follows: *RR5-Floor1-LabAdmins* gets *ptlab-servers* and *RR5-Floor3-LabAdmins* gets *smdlab-servers*. Now the scope of the DM dm1 is the union of *ptlab-servers* and *smdlab-servers*.
- User dm1 is a member of two AD groups (*adg1* and *adg2*). Both AD groups have been assigned the DM role, with scope assignments for the AD groups as follows: *adg1* is given access to *g1* and *adg2* is given access to *g2*. If *g1* is the superset of *g2*, then the scope of dm1 is the larger scope (*g1*, all its child groups, and all leaf devices).

When a user is a member of multiple AD groups that have different roles, the higher-functionality role takes precedence (in the order Administrator, DM, Viewer).

A DM with unrestricted scope has operational access as specified by RBAC privileges to all device and group entities.

**i** **NOTE:** Post upgrade of OpenManage Enterprise from versions 3.5 or earlier, the AD/LDAP and OIDC (PingFederate or KeyCloak) device managers would need to recreate all the previous-version entities as these entities are only available to the administrators post upgrade. For more information, see the Release Notes at <https://www.dell.com/support/home/en-yu/product-support/product/dell-openmanage-enterprise/docs>.

**NOTE:** Post upgrade of OpenManage Enterprise from versions 3.5 or earlier, the AD/LDAP and OIDC (PingFederate or KeyCloak) device managers would need to recreate all the previous-version entities as these entities are only available to the administrators post upgrade. For more information, see the Release Notes at <https://www.dell.com/support/home/en-yu/product-support/product/dell-openmanage-enterprise/docs>.

**SBAC for OIDC users:**

Scope assignment for OIDC users does not happen within the OME console. You can assign scopes for OIDC users at an OIDC provider during user configuration. When the user logs in with OIDC provider credentials, the role and scope assignment will be available to OME. For more information about configuring user roles and scopes, see *Configure an OpenID Connect provider policy in PingFederate for role* section in OpenManage Enterprise User's Guide.

**Transfer ownership :** The administrator can transfer owned resources from a device manager (source) to another device manager. For example, an administrator can transfer all the resources assigned from a source dm1 to dm2. A device manager with owned entities such as firmware and/or configuration baselines, configuration templates, alert policies, and profiles is considered an eligible source user. Transfer of ownership transfers only the entities and not the device groups (scope) owned by a device manager to another. For more information see, *Transfer of ownership of Device Manager entities* section in OpenManage Enterprise User's Guide.

## License requirements

Use OpenManage Enterprise Advanced license together with your iDRAC license to work with all the features of Power Manager. The following table provides the license combinations that is required to add and monitor servers in Power Manager.

**Table 6. License capability with servers**

OpenManage Enterprise Advanced license	iDRAC Base license	iDRAC Express license	iDRAC Enterprise license	iDRAC Data Center license	Device and group monitoring	Device and group management
Not added	Added	Not added	Not added	Not added	No	No
Not added	Not added	Added	Not added	Not added	No	No
Not added	Not added	Not added	Added	Not added	No	No
Not added	Not added	Not added	Not added	Added	No	No
Added	Added	Not added	Not added	Not added	No	No
Added	Not added	Added	Not added	Not added	Yes	No
Added	Not added	Not added	Added	Not added	Yes	Yes
Added	Not added	Not added	Not added	Added	Yes	Yes

The following table provides license information that is required to add chassis for power management through Power Manager.

**Table 7. License capability with chassis**

Chassis models	CMC Enterprise license	Monitoring	Power policy	Emergency Power Reduction (EPR)
PowerEdge VRTX	Not added	Yes	No	Yes
PowerEdge VRTX	Added	Yes	Yes	Yes
PowerEdge FX2 or PowerEdge FX2s	Not added	Yes	No	Yes
PowerEdge FX2 or PowerEdge FX2s	Added	Yes	Yes	Yes
PowerEdge M1000e	NA	Yes	Yes	Yes
PowerEdge MX7000	NA	Yes	Yes	Yes

Licensing behavior in Power Manager for devices:

- If the OpenManage Enterprise Advanced license on the target devices is expired or deleted, the devices are removed from Power Manager. You must re-add the devices to Power Manager after adding the license.
- If EPR is enabled on a device, and the device is removed from Power Manager due to an expired or deleted license, then you cannot access the device through Power Manager. To disable EPR, go to the iDRAC or CMC page of the device and remove the EPR.
- If policy and alert thresholds are set on a device, and the device is removed from Power Manager due to an expired or deleted license, then the policy and alert thresholds are removed from the device.

Licensing behavior in Power Manager for groups:

- For a group, only the devices that have a valid license are added as part of the group into Power Manager. Metrics are collected only for these devices in the group.
- If the OpenManage Enterprise Advanced license is expired or deleted from the target devices that are part of a group, the devices are removed from Power Manager. After updating the license, these devices are automatically added to Power Manager in the next inventory cycle.



- If EPR is enabled on a group, and if the license is expired or deleted for any device in a group, the device is not removed from Power Manager.
- If EPR is enabled on a group, you cannot remove the group or any device that is part of the group from Power Manager.

## Scalability and performance

Power Manager supports up to 8,000 target devices that include 500 groups—static and physical groups, servers, virtual machines, and Power Distribution Units (PDUs).

Configure appropriate power and temperature sampling intervals in Power Manager. The sampling intervals impact the system performance and footprint significantly, including network bandwidth consumption, database size, and trend graph display latency.

The default power and temperature intervals in Power Manager are 15 minutes. This value is appropriate for small or medium-sized environments where the device number is less than 1,000. However, when the environment has more managed devices, the interval is automatically set to 30 minutes.

# Getting started with Power Manager

## Topics:

- [Install Power Manager](#)
- [Set preferences](#)
- [Add devices to Power Manager](#)
- [Add static groups to Power Manager](#)

## Install Power Manager

To monitor power and thermal data for devices or groups, install the Power Manager plugin on OpenManage Enterprise.

### Prerequisites


Ensure that the following prerequisites are met:

- Connectivity to the repository is successful:
  - To connect to an online repository, connect to `downloads.dell.com` portal through proxy server, if any, for a secure connection.
  - To connect to an offline repository, ensure that the offline server is configured with required plugin catalog and plugin installation files.

For more details, see OpenManage Enterprise User's Guide.

- Ensure that you have the compatible or latest version of OpenManage Enterprise. To see the list of compatible OpenManage Enterprise versions with Power Manager, see [Compatibility matrix of Power Manager and OpenManage Enterprise](#).


### About this task

 **NOTE:** Installing a plugin on OpenManage Enterprise restarts the appliance services.

To install the plugin, perform the following steps:

### Steps

1. Launch Dell EMC OpenManage Enterprise, and then click **Application Settings > Console and Plugins**.  
The **Console and Plugins** page is displayed.
2. In the **Power Manager** section, click **Install**.  
The **Install Plugin** page is displayed.
3. Select the plugin version (if there are multiple versions of the plugin that is supported on existing OpenManage Enterprise version) from the **Available Version(s)** drop-down menu and review to ensure that you meet the list of prerequisites that are mentioned in the **Prerequisites** section.

 **NOTE:** Only the versions of the plugin that is supported on the installed version of OpenManage Enterprise is listed in the **Available Version(s)** drop-down menu.

4. Click **Download plugin**.  
The progress of download is displayed, and then the plugin is downloaded and the status of the plugin is updated to **Downloaded** on the **Console and Plugins** page.
5. In **Install Details** page, click **Install plugin**.  
The **Install Plugin** window is displayed.
6. Click **Install Plugin**.  
The **End User License Agreement** window is displayed.
7. Review the agreement and then click **Accept** option.

- The details of the number of users who are logged in to OpenManage Enterprise, tasks in progress, and schedule jobs are displayed in the confirmation window.

To confirm the installation, select the **I agree that I have captured a snapshot of the OpenManage Enterprise appliance prior to performing a plugin action.** option, and then click **Confirm Install**.

The status of the installation is displayed.

- To instantly view the latest list of devices and groups that are part of Power Manager as a result of any license changes made on the target devices, click **Run Inventory** in OpenManage Enterprise, and then click the **Refresh Power Manager capabilities** option on the **Power Manager Devices** page.
- View the count of overall power-capable devices from the **Power Manager Devices Statistics** section of the OpenManage Enterprise dashboard.

## Set preferences

The settings on the page enable you to collect data for the devices and groups added to Power Manager. Set the **Sampling Intervals** according to your data center recommendations and monitor your devices.

### About this task

If you are logging in as a Device Manager, then you can only view the preferences that are configured by an Administrator.

To set the units and sampling intervals, perform the following steps:

### Steps

- Launch OpenManage Enterprise, and then click **Plugins > Power Management > Settings**. The **Settings** tab is displayed.
- Click **Edit**. The **Edit Power Manager Preferences** window is displayed.
- Select the values for the listed options, and then click **Apply**.

The following table provides more information about the attributes that are displayed in Power Manager.

**Table 8. Power Manager Settings**

Field	Description
<b>Data gathering interval</b>	Select the frequency to collect data from devices or groups. Use your data center requirements such as network traffic, and criticality of data to set the data gathering interval. <b>i</b> <b>NOTE:</b> If you have set the data gathering interval as 15 minutes, and only when the number of devices that are added to Power Manager exceeds 1000, the interval automatically changes to 30 minutes. You cannot return this 30 minutes setting to 15 minutes.
<b>Duration of top energy consumers</b>	Select the duration to view the list of devices or groups that consume maximum energy on the OpenManage Enterprise dashboard for the selected duration. Only the top five energy consumers are displayed.
<b>Report Duration</b>	View data for the selected duration.
<b>Aggregation Period</b>	Select the frequency of the level of detailed information that has to be displayed in reports. <b>i</b> <b>NOTE:</b> If you select a <b>Report Duration</b> other than 1 Day, the <b>Aggregation Period</b> is automatically set to <b>1 Day</b> .
<b>Delete Power Manager data</b>	Based on your data requirements, select one of the options:

**Table 8. Power Manager Settings (continued)**

Field	Description
	<ul style="list-style-type: none"> <li>• <b>Yes</b>—To delete configured alert thresholds and metric data that is collected from devices and groups when they are removed from Power Manager.</li> <li>• <b>No</b>—To retain the configured alert thresholds and metric data that is collected from devices and groups when they are removed from Power Manager.</li> </ul> <p><b>i</b> <b>NOTE:</b> When you add a device or group and set <b>Delete Power Manager data</b> to <b>No</b>, all Power Manager-related data for that device or group is removed from view but not deleted, when you remove the device or group from Power Manager. When you re-add the device or group, data for that device or group is available again.</p>

**i** **NOTE:** To delete the data after a specific duration, configure the **Data purge interval** option present in the following location: **OpenManage Enterprise > Application Settings > Console Preferences > Metrics Collection Settings**.

The following table provides further information about the mandatory fields and the value range for each field.

**Table 9. Details about mandatory data intervals and duration**

Field	Mandatory	Value Range
<b>Power Unit</b>	Yes <b>Watt</b> is the default unit.	<ul style="list-style-type: none"> <li>• <b>Watt</b></li> <li>• <b>BTU/Hr</b></li> </ul>
<b>Temperature Unit</b>	Yes <b>Celsius</b> is the default unit.	<ul style="list-style-type: none"> <li>• <b>Celsius</b></li> <li>• <b>Fahrenheit</b></li> </ul>
<b>Data gathering interval</b>	Yes The default value is <b>15</b> minutes.	<ul style="list-style-type: none"> <li>• <b>15</b></li> <li>• <b>30</b></li> <li>• <b>60</b></li> </ul>
<b>Duration of top energy consumers</b>	Yes The default value is <b>3 Months</b> .	<ul style="list-style-type: none"> <li>• <b>1 Day</b></li> <li>• <b>7 Days</b></li> <li>• <b>15 Days</b></li> <li>• <b>1 Month</b></li> <li>• <b>3 Months</b></li> <li>• <b>6 Months</b></li> <li>• <b>1 Year</b></li> </ul>
<b>Report Duration</b>	Yes The default value is <b>3 Months</b> .	<ul style="list-style-type: none"> <li>• <b>1 Day</b></li> <li>• <b>7 Days</b></li> <li>• <b>15 Days</b></li> <li>• <b>1 Month</b></li> <li>• <b>3 Months</b></li> <li>• <b>6 Months</b></li> <li>• <b>1 Year</b></li> </ul>
<b>Aggregation Period</b>	Yes The default value is <b>1 Day</b> .	<b>1 Day</b>
<b>Delete Power Manager data</b>	Yes The default value is <b>No</b> .	<ul style="list-style-type: none"> <li>• <b>Yes</b></li> <li>• <b>No</b></li> </ul>

# Add devices to Power Manager

To collect and monitor power and thermal utilization, and airflow data of devices, add the devices in Power Manager.

## Prerequisites

Ensure that the following prerequisites are met:

- The devices have **OpenManage Enterprise Advanced** and the required management console licenses. For more information, see the [License requirements](#).
- Devices are discovered in OpenManage Enterprise. For information about discovering devices, see *OpenManage Enterprise User's Guide*.
- The modular server is not in a **Proxied** state in OpenManage Enterprise.

## About this task

To view the list of devices that are compatible with Power Manager, before running the inventory in OpenManage Enterprise and immediately after the installation, perform the following steps:

1. In OpenManage Enterprise, click **Devices > Run Inventory** option.
2. Click **Plugins > Power Management > Power Manager Devices > Refresh the list for Power Manager capabilities** option.

The list of devices compatible with Power Manager is displayed when you start to add the devices from OpenManage Enterprise.

To add devices, perform the following steps:

## Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices**. The **Power Manager Devices** tab is displayed.
2. Click **Individual Devices > Add device(s)**. The **Add Devices to Power Manager** page is displayed.
3. View all the devices that are discovered in OpenManage Enterprise by expanding the **SYSTEM GROUPS** section on the left side and in the **All Devices** tab, select the devices that you want to add.
4. Optional: To filter and view the data:
  - a. Click **Advanced Filters**.

The following filters are displayed:

- **Health State**
- **Power State**
- **Connection State**
- **Name**
- **Identifier**
- **Model**
- **Type**
- **Managed State**

5. Optional: To clear the filters, click **Clear All Filters**.
6. To view the selected devices, click the **Selected Devices** tab.
7. To add the devices, click **Add Selected**.

All the devices added individually to Power Manager are displayed on the **Individual Devices** tab along with the total count of devices that are added to Power Manager.

All the individual devices and devices that are part of the selected group, are added to Power Manager and are displayed on the **All Monitored Devices** tab along with the total count of devices.

## Results

After adding the devices and groups in Power Manager the following changes are added:

- After adding the devices or groups to Power Manager, if the server is running iDRAC version 4.40.40.0 or above (and is a [supported model](#)), Power Manager automatically enables the iDRAC's Telemetry Streaming configuration and creates a custom Metric Report Definition for collecting data from servers.
- If the added device host Virtual Machines (VMs) and the hypervisors are compatible with Power Manager, then the VMs are listed in the **Power Manager Devices** tab. For information about viewing VMs, see [View virtual machines](#). For the list of compatible operating systems for monitoring VMs, see [Virtual Machines](#)

## Add static groups to Power Manager

To collect and monitor custom static group data, add the groups in Power Manager.

### Prerequisites

Ensure that the following prerequisites are met:

- Static groups are created in OpenManage Enterprise. For information about creating groups, see *OpenManage Enterprise User's Guide*.
- The servers that are part of a group must have an OpenManage Enterprise Advanced license. For information about adding the license, see *OpenManage Enterprise User's Guide*.
- Modular servers that are part of the group are not in a **Proxied** state in OpenManage Enterprise.
- It is recommended that each group contains less than or equal to 40 devices.
- The maximum number of groups that you can add to Power Manager is 500.
- The maximum level of group nesting is 5.

### About this task

**NOTE:** Query groups that are created in OpenManage Enterprise are not supported in Power Manager.

**NOTE:** After adding a group into Power Manager, only devices that are compatible with Power Manager are added as part of the group. Hence, the data is collected only for these devices in a group. For example, if a group you have added to Power Manager consists of five devices, but only three devices have valid licenses, only three devices are added as part of the group in Power Manager.

To add groups, perform the following steps:

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices**. The **Power Manager Devices** tab is displayed.
2. On the **Static Groups** tab, click **Add Group(s)**. The **Add Groups to Power Manager** page is displayed.
3. On the left pane, select a group from the **Static Groups** category and click **Add Selected**. The groups added to Power Manager are displayed on the **Groups** page along with the total count of groups added.  
All the individual devices and devices that are part of the selected group, are added to Power Manager and are displayed on the **All Monitored Devices** tab along with the total count of devices.

### Results


If you have created static groups and added devices to OpenManage Enterprise groups and then installed Power Manager, the total number of servers present in the groups is displayed as zero, after adding the groups in Power Manager. Hence, click the **Refresh the list for Power Manager capabilities** option on the **Power Manager Devices** tab after running an inventory in OpenManage Enterprise.

For more information about running an inventory, see *OpenManage Enterprise User's Guide*.

After adding the devices or groups to Power Manager, if the server is running iDRAC version 4.40.10.0 or above (and is a supported model), Power Manager automatically enables the iDRAC's Telemetry Streaming configuration and creates a custom Metric Report Definition for collecting data from servers. For list of supported models, see Dell EMC OpenManage Enterprise Power Manager User's Guide.

# Create a device discovery job


## About this task





 **NOTE:** To perform any tasks in Power Manager, ensure that you have necessary user privileges. For more information, see [Role and scope based access control in OpenManage Enterprise](#).

To discover a device:

## Steps

1. Launch OpenManage Enterprise and click **Monitor > Discovery > Create**.  
The **Create Discovery Job** dialog box is displayed.
2. In the **Create Discovery Job** dialog box, a default job name is populated. To change it, enter the discovery job name.  
By default, the dialog box enables you to define properties of similar devices at a time.
  - To include more devices or ranges to the current discovery job, click **Add**. Another set of the following fields is displayed where you can specify the device properties: Type, IP/Hostname/Range, and Settings.

 **WARNING: A maximum of 8,000 devices can be managed by OpenManage Enterprise. Hence, do not specify large networks that have devices more than the maximum number of devices supported by OpenManage Enterprise. It may cause the system to abruptly stop responding.**

  -  **NOTE:** When discovering a large number of devices, avoid creating multiple discovery jobs using individual IP address and instead use IP range of the devices.
3. From the **Device Type** drop-down menu, to discover:
  - A server, select **SERVER**. See *Specifying discovery mode for creating a server discovery job* section in OpenManage Enterprise User's Guide.
  - A chassis, select **CHASSIS**. See *Specifying discovery mode for creating a chassis discovery job* section in OpenManage Enterprise User's Guide.
  - A Dell EMC storage device, or network switch, select **DELL STORAGE**, or **NETWORKING SWITCH**. See *Specifying discovery mode for creating a storage, Dell storage, and network switch discovery job* section in OpenManage Enterprise User's Guide.
  - A Power Distribution Unit (PDU) device, select **PDU**.  
 **NOTE:** Only after installing or enabling Power Manager you can view the PDU device type option.
  - To discover various devices by using multiple protocols, select **MULTIPLE**.
4. In the **IP/Hostname/Range** box, enter the IP address, hostname, or the range of IP address to be discovered or included. For more information about the data you can enter in this field, click the **i** symbol.
  -  **NOTE:**
    - The range size is limited to 16,385 (0x4001).
    - IPv6 and IPv6 CIDR formats are supported.
5. In the **Settings** section, enter the username and password of the protocol that is used for discovering the ranges.
6. Click **Additional Settings**, to select a different protocol, and change the settings.
  -  **NOTE:** Ensure you select the SNMP protocol to discover PDU devices.
7. In the **Scheduling Discovery Job** section, run the job immediately or schedule for a later point of time. See [Schedule job field definitions](#) on page 25.
8. Select the **Email when complete** check box, and then enter the email address that must receive notification about the discovery job status. If the email is not configured, the **Go to SMTP Settings** link is displayed. Click the link, and configure the SMTP settings. If you select this but do not configure SMTP, the **Finish** button is not displayed to continue the task.
9. Click **Finish**. The Finish button is not displayed if the fields are incorrectly or incompletely filled.  
A discovery job is created and run. The status is displayed on the **Job Details** page.

## Topics:



- [Schedule job field definitions](#)
- [Create customized device discovery job protocol for SNMP devices](#)

## Schedule job field definitions

- **Run now** to start the job immediately.
- **Run Later** to specify a later date and time.
- **Run On Schedule** to run repeatedly based on a selected frequency. Select **Daily**, and then select the frequency appropriately.

**NOTE:** By default, the job scheduler clock is reset at 12:00 A.M. everyday. The cron format does not consider the job creation time while calculating the job frequency. For example, if a job is started at 10:00 A.M. to run after every 10 hours, the next time the job runs is at 08:00 P.M. However, the subsequent time is not 06:00 A.M. next day but 12:00 A.M. This is because the scheduler clock is reset at 12:00 A.M. everyday.

## Create customized device discovery job protocol for SNMP devices

### About this task

By default, the **Discover using SNMP** check box is selected to enable you detect the storage, networking, or other SNMP devices.

**NOTE:** Only the IO Modules with Standalone, PMUX (Programmable MUX), VLT (Virtual Link Trunking) Modes are discoverable. Full switch and Stacked Modes will not be discovered.

### Steps

1. Under **Credentials**, select the SNMP version, and then enter the community type.
2. In the **Connection Settings** section:
  - a. In the **Retries** box, enter the number of repeated attempts that must be made to discover a server.
  - b. In the **Timeout** box, enter the time after which a job must stop running.
  - c. In the **Port** box, enter the port number that the job must use to discover.

**NOTE:** The settings in the **Retries box** and the **Timeout box** do not have any functional impact on the discovery jobs for SNMP devices. Hence, these settings can be ignored.
3. Click **Finish**.
4. Complete the tasks in *Creating a device discovery job*. For more information, see OpenManage Enterprise User's Guide.

# Monitor and manage Power Manager devices

This section provides high-level information to help administrators get started with Power Manager.

## Prerequisites

Ensure that the following prerequisites are met:

- The devices are compatible with Power Manager. For more information, see [List of supported devices](#).
- Discover the devices in Dell EMC OpenManage Enterprise.

For more information about discovering devices, see *OpenManage Enterprise User's Guide*.

- For more information about creating static groups, see *OpenManage Enterprise User's Guide*.
- Add the **OpenManage Enterprise Advanced** and the management console licenses on the target devices.  
For more information about adding a license, see the respective management console guide.

To monitor the data of devices and groups, perform the following steps:

## Steps

1. Create static custom groups or physical groups in OpenManage Enterprise.  
For more information about creating static groups under **CUSTOM GROUPS**, see *OpenManage Enterprise User's Guide*.  
For more information about creating physical groups under **PLUGIN GROUPS**, see [Creating physical groups](#).  
The physical groups that are created or deleted in OpenManage Enterprise are automatically added or removed from Power Manager.  
If you have created a physical group:
  - a. Add the [unmonitored devices](#) in Power Manager.
  - b. Add the [individual devices and unmonitored devices](#) in physical groups.
2. Add the supported [individual devices](#), or [static groups](#) to Power Manager.
3. Configure your preferences in Power Manager using the **Settings** page. For more information, see [Setting preferences](#).
4. After adding devices and groups to Power Manager, you can perform the following tasks:
  - View all the device or group [metrics details](#) using **Metrics and Monitoring History**.
  - Create and apply [Power policies](#) to regulate the power consumption on devices or groups.
  - Create and apply [Temperature-triggered policies](#) to regulate device temperature.
  - During a power emergency, reduce power consumption using the [Emergency Power Reduction](#) feature.
  - Create [alert thresholds](#) in Power Manager by configuring the warning and critical values for devices or groups that are monitored in Power Manager.
  - Run the built-in or customized [reports](#) to view in-depth information about the devices or groups, jobs, alerts, and other parameters of your data center.
  - View and acknowledge [alerts](#) that are generated in OpenManage Enterprise through Power Manager in **Alerts > Alert Logs**.
  - View and monitor virtual machines that are hosted by hypervisors. For more information, see [Virtual machines](#).
  - View generic Power Manager logs generated in OpenManage Enterprise through **Monitor > Audit Logs** tabs.

## Topics:

- [View metrics, and monitor devices and groups history](#)
- [Virtual machines](#)
- [Thresholds](#)
- [Policies](#)

# View metrics, and monitor devices and groups history


View the visual representation of the data that is collected for all devices and groups that are added to Power Manager.

## Prerequisites

Ensure that the following prerequisite is met:

- Devices or groups are added to Power Manager. For more information, see [Adding devices to Power Manager](#) and [Adding groups to Power Manager](#).

## About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view the device metrics only for the groups and devices in Device Manager DM1 user scope.

To view Power Manager metrics, perform the following steps:

## Steps

1. From OpenManage Enterprise, perform one of the following steps:

- For a device:
  - a. Click the **Devices** tab.

All the devices that are discovered in OpenManage Enterprise are displayed.
  - b. From the list of devices, click a device name.

The details of the device are displayed on the **Overview** page.
  - c. To view Power Manager-related information, click the **Power Management and Monitoring** tab.
- For a static group:
  - a. Click **Devices > Static Groups > Group name**.

All the devices that are part of the static group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.
- For a physical group, perform one of the following steps:
  - a. Click **Devices > Physical Hierarchy > Group name**.

All the devices that are part of the physical group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.

OR

- a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.

The **Rack View** tab is displayed.


Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

- **Group Name**
- **Health State**
- **Power State**
- **Connection State**
- **Type**

Select the categories of your choice and view the filtered data.

- b. Click the device name or IP address.

2. View metrics and monitoring data in the **Metrics and Monitoring History** tab.

 **NOTE:** For groups, only power, thermal, and system airflow data are displayed.

The supported metric data is displayed in a graphical format.

- To change the duration, expand the metric and select a duration from the **Duration** drop-down menu. Hover your mouse pointer over the graph to view the maximum, average, and minimum values.

The values are displayed according to the format that you have specified in the **Monitoring Units** and **Metric gathering interval** in the **Power Manager Preferences** section.

**NOTE:** You can view only **Instant temperature** for PowerEdge M1000e, PowerEdge FX2, and PowerEdge FX2s chassis.

**NOTE:** You can view only the power, temperature, and system airflow history for PowerEdge AMD processor servers.

Based on your selection, details of the granular information available are as follows:

**Table 10. Granularity of data**


Duration	Granularity of data
6 Hours or 12 Hours or 1 Day	Data is displayed based on the <b>Metric gathering interval</b> set in the <b>Preferences</b> section.
7 Days or 1 Month	Data is displayed at an interval of one hour.
3 Months or 6 Months or 1 Year	Data is displayed at an interval of one day.

- To view the latest metrics, click the refresh icon.

**Table 11. List of Power Manager metrics and supported devices**

Metric	Supported devices
<b>Power History (Watt)</b>	<ul style="list-style-type: none"> <li>12<sup>th</sup> and later generations of PowerEdge servers</li> <li><b>NOTE:</b> Cabled PSU servers are not supported.</li> <li><b>NOTE:</b> PowerEdge Fm120 aqua is not supported.</li> <li>PowerEdge MX7000</li> <li>PowerEdge M1000e</li> <li>PowerEdge VRTX</li> <li>PowerEdge FX2</li> <li>PowerEdge FX2s</li> </ul>
<b>Energy Consumption</b>	<ul style="list-style-type: none"> <li>12<sup>th</sup> and later generations of PowerEdge servers</li> <li>PowerEdge MX7000</li> <li>PowerEdge M1000e</li> <li>PowerEdge VRTX</li> <li>PowerEdge FX2</li> <li>PowerEdge FX2s</li> </ul>
<b>Thermal History (Celsius)</b>	<ul style="list-style-type: none"> <li>12<sup>th</sup> and later generations of PowerEdge servers</li> <li>PowerEdge MX7000</li> <li>PowerEdge M1000e</li> <li>PowerEdge VRTX</li> <li>PowerEdge FX2</li> <li>PowerEdge FX2s</li> </ul>
<b>CPU Utilization (%)</b>	<ul style="list-style-type: none"> <li>13<sup>th</sup> and later generations of PowerEdge Intel servers</li> <li>15<sup>th</sup> and later generations of PowerEdge AMD servers with iDRAC version 4.30.30.30 and later</li> </ul>
<b>I/O Utilization (%)</b>	<ul style="list-style-type: none"> <li>13<sup>th</sup> and later generations of PowerEdge servers (Intel)</li> </ul>
<b>Memory Bandwidth Utilization (%)</b>	<ul style="list-style-type: none"> <li>13<sup>th</sup> and later generations of PowerEdge servers (Intel)</li> </ul>
<b>System Airflow History (CFM)</b>	<ul style="list-style-type: none"> <li>Nonmodular PowerEdge servers <ul style="list-style-type: none"> <li>The latest generation of AMD servers with iDRAC Data Center license and iDRAC version 4.10.10.10 and above</li> </ul> </li> </ul>

**Table 11. List of Power Manager metrics and supported devices (continued)**

Metric	Supported devices
	 <b>NOTE:</b> 14 <sup>th</sup> generation AMD servers with iDRAC version 4.10.10.10 and above.

## Virtual machines

Discovery feature discovers the hypervisors hosting virtual machines (VM) along with host servers. The virtual machines are listed in **Guest Information** section in OpenManage Enterprise. After adding the servers in Power Manager, the required hypervisor settings are automatically enabled by Power Manager to retrieve data that is related to virtual machines from the servers and the virtual machines are listed on the **Power Manager Devices** tab.

Hypervisors do not directly provide the power and energy consumption details of the VMs. Hence, Power Manager collects the CPU usage data for each VM in the host and approximately calculates the power and energy that is consumed by the server to the individual VMs in the host. Use this feature to view resource consumption of each VM and to monitor and manage the servers hosting the VMs.

The following table lists the various operating system versions that are supported in Power Manager for monitoring virtual machines.

**Table 12. Operating Systems and the supported versions**

Operating System	Supported Versions
Microsoft Windows Hypervisors	Microsoft Windows 2022
	Microsoft Windows 2019
	Microsoft Windows 2016
VMware ESXi	ESXi 7.0
	ESXi 7.0 U1
	ESXi 6.7 U3

A VM is identified using a unique identifier, UUID for each VM. The list of VMs and their information is refreshed with each metric collection. If a new VM is created, or deleted, this information is reviewed in the next cycle. If the VM is migrated to another server, and if this new server is added to Power Manager, the VM is identified as same using the UUID and the metrics collection continues for the VM. In case the UUIDs do not match then the VM is detected as a new VM and Power Manager starts collecting the data as a new VM.

A VM cannot be added or removed manually from Power Manager. Only if the host server is added to Power Manager, the VMs are automatically added to Power Manager. And, if the host server is removed from Power Manager or deleted from OpenManage Enterprise, the VM is automatically removed from Power Manager.

## View virtual machines


View all the virtual machines (VM) added in Power Manager.

### Prerequisites

Before viewing the virtual machines, ensure the following:

- The server (iDRAC) and the hypervisor (host operating system) are discovered in OpenManage Enterprise.
- The correlation of the discovered server and the hypervisor is successful.
- The credentials provided to discover the hypervisor have Administrator privileges.
- The server is added in Power Manager. To add a server to Power Manager, ensure that you have the required licenses. For more information, see [License requirements](#).

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, and a group G1 is assigned to the Device Manager DM1 user, you can view only the virtual machines that are hosted by the devices in the G1 group.

### Steps

1. Launch OpenManage Enterprise and click **Plugins > Power Management > Power Manager Devices**.  
The **Power Manager Devices** tab is displayed.
2. To view the virtual machines monitored in Power Manager, expand the Virtual Machines section on the left pane.
3. To view details of a particular VM, click a VM name.  
A section with all the VM details is displayed on the right pane.
4. To view the power history of a VM, click **View Metrics**.  
The power history of the server and the VM are displayed.
5. To change the duration, expand and select the required duration from the **Duration** drop-down menu.  
Hover your mouse pointer over the graph to view the device and VM power at a certain time.
6. To view the latest metrics, click the refresh icon.

### Next steps

After migrating VMs from source to target server, if you create a VM on the source server, then the same UUID that was allotted to the migrated VM may get assigned to the new VM. Hence, you may not see the VMs displayed in Power Manager, if both the source and target servers are monitored. To view and monitor all the VMs hosted on servers that are monitored by Power Manager, check and delete the VMs with conflicting UUIDs.

To view the UUIDs of VMs, perform the following steps:

1. Launch OpenManage Enterprise and click **Devices**.
2. Click a device name.  
The device **Overview** page is displayed.
3. Click **Hardware** tab and then click **Guest Information**.  
The VM Guest information is displayed.

## Thresholds

Thresholds enable you to specify warnings and critical limits for power and temperature metrics on devices and groups. Power Manager generates alerts through OpenManage Enterprise when the configured limits are violated. The status of power and temperature are displayed in the form of graphs on the **Power Management and Monitoring** or **Group Details** tab.


## Create alert thresholds

To monitor devices and groups for threshold violations, define the power and temperature threshold values.

### Prerequisites

Ensure that you have added devices or groups to Power Manager.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can create and manage alert thresholds that are created by any other Device Manager user only for the devices in Device Manager DM1 user scope.

To configure alert thresholds for power and temperature, perform the following steps:

## Steps

1. From OpenManage Enterprise, perform one of the following steps:

- For a device:
  - a. Click the **Devices** tab.  
All the devices that are discovered in OpenManage Enterprise are displayed.
  - b. From the list of devices, click a device name.  
The details of the device are displayed on the **Overview** page.
  - c. To view Power Manager-related information, click the **Power Management and Monitoring** tab.
- For a static group:
  - a. Click **Devices > Static Groups > Group name**.  
All the devices that are part of the static group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.
- For a physical group, perform one of the following steps:
  - a. Click **Devices > Physical Hierarchy > Group name**.  
All the devices that are part of the physical group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.

OR

- a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** tab is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

- **Group Name**
- **Health State**
- **Power State**
- **Connection State**
- **Type**

Select the categories of your choice and view the filtered data.

- b. Click the device name or IP address.

2. To set thresholds, click the **Alert Thresholds** tab, and click **Edit**.  
The **Edit Alert Thresholds** page is displayed.

3. Provide threshold values for **Power** and **Temperature**.

**NOTE:** When the alert threshold value units are set for power in **BTU/Hr** and temperature in **Fahrenheit**, ensure that you provide only the values and no other special character as the value may change after saving.

When the power or temperature values exceed the lower or upper warning values, a warning-level alert is generated and forwarded to OpenManage Enterprise.

When the power or temperature value exceeds the lower or upper critical values, a critical-level alert is generated and sent to OpenManage Enterprise.

4. Click **Apply** to save the values.

The thresholds are saved successfully, and the scales are color-coded based on the current state of the device or group. See the following tables for each threshold value range.

**Table 13. Alert threshold range details for Watt and Celsius scale**

Field	Mandatory	Value Range
<b>Power (Watt)</b>		
Upper Warning	No	Limit: 1–29307121 integers
Upper Critical	No	Limit: 1–29307121 integers
<b>Temperature (Celsius)</b>		
Lower Critical	No	Limit: -10 to 60 degrees

**Table 13. Alert threshold range details for Watt and Celsius scale (continued)**

Field	Mandatory	Value Range
Lower Warning	No	Limit: -10 to 60 degrees
Upper Warning	No	Limit: -10 to 60 degrees
Upper Critical	No	Limit: -10 to 60 degrees

**Table 14. Alert threshold range details for BTU/hour and Fahrenheit scale**

Field	Mandatory	Value Range
<b>Power (BTU/hour)</b>		
Upper Warning	No	Limit: 3–99937283 integers
Upper Critical	No	Limit: 3–99937283 integers
<b>Temperature (Fahrenheit)</b>		
Lower Critical	No	Limit: 14-140 degrees
Lower Warning	No	Limit: 14-140 degrees
Upper Warning	No	Limit: 14-140 degrees
Upper Critical	No	Limit: 14-140 degrees

## Policies

Power Manager supports two types of policies you can use to monitor the power and temperature of your data center devices.

### Static policy

A static policy contains various settings that help regulate the power consumption of a specific device or a group. A power management policy is useful in different situations. For example, you can create a policy to:

- Ensure that power consumption does not exceed the capacity of the circuit.
- Schedule power usage according to the workload of the device or group. For example, to reduce the overall power use in your data center, apply an aggressive power cap policy when the workload is low.
- Increase rack density. For example, to increase the rack density or number of devices in a group you can set a power cap at a group level and add more servers. The policy cap keeps the power within the defined limit.

### Temperature-triggered policy

A temperature-triggered policy is used to prevent damage to devices due to overheating in the event of cooling infrastructure failure. It limits the processing capability of the devices in the group, hence reducing the heat generation. The policy helps in maintaining the data center temperature to align to the standards defined by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Create a temperature-triggered policy on a group of devices by defining a temperature threshold value. After defining the threshold value and enabling the policy, if the average inlet temperature of the group crosses the temperature threshold value, Power Manager enforces an EPR—Throttle on the group. On the EPR page, the source of EPR is displayed as Temperature-triggered—Throttle on the group.

**NOTE:** Temperature-triggered policies are applicable only for groups, and only one temperature-triggered policy is supported for a group.

**NOTE:** After applying a policy on a group, if you add more devices to the group and the power consumption exceeds the power cap, then you receive alerts in **Alert Log** with the recommended action.



In multiple policies scenario, an active policy with a power cap value of 1000 Watts is applied on a device, and then another active policy with a power cap value of 1500 Watts is applied on the same device, the policy with power cap value of 1000 Watts is applied on the device as this policy is the most restrictive policy.

## Create static or temperature-triggered policy


Create a static policy to limit the power consumption for devices and groups or apply EPR on devices in a group when the average inlet temperature exceeds the temperature threshold.

### Prerequisites

Ensure that the following prerequisites are met:

- Devices or groups are added to Power Manager.
- Servers have the iDRAC and OpenManage Enterprise Advanced licenses.
  - If a device is PowerEdge VRTX or PowerEdge FX2 chassis, it has a Chassis Management Controller (CMC) Enterprise license.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can create policies on devices and groups that are in Device Manager DM1 user scope.


When Device Manager users have common groups or devices in their scope, and Device Manager DM1 user creates a policy on any of these groups or devices:

- All the policies that are created by Device Manager DM1 user are not listed for other Device Manager users.
- If the Device Manager DM1 user creates a temperature-triggered policy on a group, the Device Manager DM2 user cannot create a temperature-triggered policy on the same group since only one temperature-triggered policy is supported on a group. And, the temperature-triggered policy is not visible or listed for Device Manager DM2 user. However, if the Device Manager DM2 user has to create a temperature-triggered policy on this group, ensure that the Device Manager DM1 user or the Administrator deletes the existing temperature-triggered policy.

To create a policy, perform the following steps:

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Policies**.  
The **Policies** tab is displayed.
2. Click **Create**.  
The **Create Policy** wizard is displayed.
3. In the **General** section, provide the following information and click **Next**.
  - a. In **Type**, select the type of policy.
    - **Static policy**—applies a cap on the power consumption of a device or group.
    - **Temperature-triggered policy**—applies Emergency Power Reduction (EPR) on a group of devices when its temperature equals or exceeds a specified value.

 **NOTE:** After a policy is created, you cannot change the type of policy.

To activate the policy after creation, the **Enable** option is selected by default.

- b. Provide a policy name and description.
4. In the **Devices/Groups** section, select the required option:
    - To add a device:
      - a. Select the **Device** option and click **Select Device**.  
The **Select Device** page is displayed.
      - b. Click **Advanced Filters**.  
The following filters are displayed:
        - **Health State**
        - **Power State**

- **Connection State**
- **Name**
- **Identifier**
- **Model**
- **Type**
- **Managed State**
- **Part of Group**

c. Select the device, and click **Add Selected**.

- To add a group:

a. Select the **Group** option and click **Select Group**.

The **Select Group** page is displayed.

b. Click **Advanced Filters**.

The following filters are displayed:

- **Name**
- **Type**

c. To clear the filters, click **Clear All filters**.

d. Select the group and click **Add Selected**.

**i** **NOTE:** You can select only one device or group when creating a policy.

**i** **NOTE:** After you create a policy for a device, you cannot apply the policy to a group. Similarly, after creating a policy for a group, you cannot apply the policy to a device.

5. Click **Next**.

6. For a static policy:

In the **Policy Settings** section, select the monitoring period from the **Monitoring time period** drop-down menu, and provide the **Power cap** value, and then click **Next**.

Use the **Power History** section as a reference to set the power cap value.

- **Power History** for a device—displays minimum, average, and maximum power consumption with the lower and upper bound values. The values change as you change the duration of the **Monitoring time period**.
- **Power History** for a group—displays minimum, average, and maximum power consumption with lower and upper bound values. The minimum, average, and maximum power history of the group is the sum of all the minimum, average, and maximum power consumption of individual devices in the group. The values change as you change the duration of **Monitoring time period**. The upper and lower bound value for a group is the sum of upper bound and lower bound values for all devices part of the group. The **Power Cap** displayed is the sum of all the power cap values of the devices in the group.

Guidance for providing power cap values:

- The default **Power Cap Value** displayed is the upper bound value of the device. You can change the **Power Cap** value and the **Power Cap** percentage gets populated automatically.
- If you change the percentage of **Power Cap** then the **Power Cap** value gets populated automatically.
- If you change the **Percentage of Range** then the **Power Cap Value** gets populated automatically.
- For groups, provide the power cap value or percentage of consumption at the group level or at every device level.
- Provide the power cap value that ranges between the lower and upper bounds of the device.

**i** **NOTE:** For the following list of PowerEdge servers, the **Lower Bound** and **Upper Bound** threshold range values are always static.

**Table 15. Power cap range for servers**

Generation of servers	Models	Value Range (Watts)
14 <sup>th</sup> generation	<ul style="list-style-type: none"> <li>• PowerEdge XE7440</li> <li>• PowerEdge XE7420</li> <li>• VxRail G560</li> <li>• VxRail G560F</li> <li>• PowerEdge C6420</li> <li>• PowerEdge R6415</li> <li>• PowerEdge R7415</li> </ul>	<b>Zero to 32767</b>

**Table 15. Power cap range for servers (continued)**

Generation of servers	Models	Value Range (Watts)
	<ul style="list-style-type: none"> <li>PowerEdge R7425</li> </ul>	
13 <sup>th</sup> generation	<ul style="list-style-type: none"> <li>PowerEdge C6320</li> <li>PowerEdge C6320p</li> </ul>	<b>Zero to 700</b>

For a temperature-triggered policy:

In the **Policy Settings** section, select a monitoring period from the **Monitoring time period** drop-down menu, select or provide the **Temperature Threshold** value, and then click **Next**.

Use the **Temperature data** section as a reference to set the temperature threshold value. Based on your selection of the **Monitoring time period** value, the temperature summary details are displayed.

- The values change as you change the duration of the **Monitoring time period**.
- Select your preferred American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) temperature threshold from the **Temperature Threshold** drop-down menu. Based on your ASHRAE class selection, the temperature value is populated.

Select the ASHRAE standard relevant in your region or provide a custom value in Celsius only.

- ASHRAE Recommended**— 27°C (81°F)
  - ASHRAE Class A1 Allowable**—32°C (90°F)
  - ASHRAE Class A2 Allowable**— 35°C (95°F)
  - ASHRAE Class A3 Allowable**— 40°C (104°F)
  - ASHRAE Class A4 Allowable**—45°C (113°F)
- You can also provide a custom temperature threshold value.

- In the **Policy Schedule** section, provide the following information and click **Next**.

Power Manager enables you to create and apply multiple policies on a specific device or group. In any instance, if multiple policies are active on a device, either by policies set on the device or by policies set on the group the device is a part of, the most restrictive power cap among the policies is applied on the device.

- For the **Time Span** option, select **Always** for the policy to be active from the time of creation. If the policy does not have to be active always when enabled, click **Range** and provide a time range during which the policy must be active when it is enabled.
- For the **Day(s)** option, select **Always** for the policy to be active from the time of creation. If the policy does not have to be active always when enabled, click **Daily**, to select specific days on which the policy must be active when it is enabled.
- For the **Active Date** option, select the date range during which the policy must be active when enabled.

 **NOTE:** A temperature-triggered policy cannot be scheduled.

- In the **Summary** section, view the policy details and click **Finish**.

The policy is created successfully.

The following table provides more information about all the fields in the policy wizard.

**Table 16. Policy wizard details**

Field	Mandatory	Value Range
<b>Type</b>	Yes By default, the type is selected as <b>Static</b> .	<ul style="list-style-type: none"> <li><b>Static policy</b></li> <li><b>Temperature-triggered policy</b></li> </ul>
<b>Name</b>	Yes	Combination of characters, special characters, and numbers  Limit: 1–255 characters
<b>Description</b>	No	Combination of characters, special characters, and numbers

**Table 16. Policy wizard details (continued)**

Field	Mandatory	Value Range
		Limit: 0–255 characters
<b>Enable</b>	No By default, the check-box is selected.	<ul style="list-style-type: none"> <li>• Select</li> <li>• Clear</li> </ul>
<b>Monitoring time period</b>	Yes By default, the time period is selected as <b>1 Day</b> .	<ul style="list-style-type: none"> <li>• <b>1 Day</b></li> <li>• <b>7 Days</b></li> <li>• <b>1 Month</b></li> <li>• <b>3 Months</b></li> </ul>
<b>For static policy</b>		
<b>Power cap</b>	Yes By default, the power cap is populated with the <b>Upper Bound</b> value and a <b>hundred</b> percent.	Recommended limit: <b>Lower Bound-Upper Bound</b>
<b>Time Span</b>	Yes By default, the option is selected as <b>Always</b> .	<b>Range</b> Limit: 12 hours format
<b>Day(s)</b>	Yes By default, the option is selected as <b>Always</b> .	<b>Daily</b> Select at least one day.
<b>Active Date</b>	Yes By default, the option is selected as <b>Always</b> .	<b>Range</b> <ul style="list-style-type: none"> <li>• <b>From</b></li> <li>• <b>To</b></li> </ul> Limit: Current and future dates
<b>For temperature-triggered policy</b>		
<b>Temperature Threshold</b>	Yes By default, the option that is selected is <b>ASHRAE Recommended</b> .	<ul style="list-style-type: none"> <li>• Custom value range: -10 to 60 degrees</li> <li>• <b>ASHRAE Recommended</b></li> <li>• <b>ASHRAE Class A1</b></li> <li>• <b>ASHRAE Class A2</b></li> <li>• <b>ASHRAE Class A3</b></li> <li>• <b>ASHRAE Class A4</b></li> </ul>

# Rack management

Manage the physical groups hierarchy, and perform rack utilization for space and power using rack management features.

## Prerequisites

Ensure that the following prerequisites are met:

- The devices have **OpenManage Enterprise Advanced** and the required management console licenses. For more information, see the [License requirements](#).
- Devices are discovered in OpenManage Enterprise. For information about discovering devices, see *OpenManage Enterprise User's Guide*.
- The modular server is not in a **Proxied** state in OpenManage Enterprise.

## About this task

To monitor and manage racks in your data center, perform the following steps:

## Steps

1. Create the [physical groups](#) to replicate the group hierarchies in a data center.
2. Add the [unmonitored devices](#) in Power Manager.
3. Add the [individual devices and unmonitored devices](#) in physical groups.
4. View Power Manager details like group metrics, policy applied, power and space headroom data, by expanding **Physical Hierarchy** to a group level and click **Group Details**.
5. Associate Power Distribution Units (PDUs) to rack. For more information, see [associate PDU to rack](#) .
6. Monitor PDU information. For more information, see [View PDUs](#).

## Topics:


- [Add unmonitored device details](#)
- [Add or edit device details for Power Manager monitored devices](#)
- [Create physical groups](#)
- [Power Distribution Unit](#)

## Add unmonitored device details

Unmonitored devices are user-defined or non-compatible devices that must be considered for accurate rack management. The unmonitored devices are not monitored for any Power Manager capabilities such as power, thermal monitoring, power policy and EPR, and alert thresholds.

## About this task

Add the details of the unmonitored devices in Power Manager to replicate the physical group hierarchy present in your data center and manage the racks.

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view and cannot edit the unmonitored devices information that is part of the group in Device Manager DM1 user scope.

## Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices > UNMONITORED > Unmonitored Devices**. The **Unmonitored Devices** tab is displayed.

2. To add the Unmonitored Devices, click **Add**.  
The **Add Unmonitored Devices** page is displayed.
3. Provide the device details and click **Finish**.  
For information about each field, see the following table.


**Table 17. Details for Unmonitored Devices**

Field	Description	Mandatory	Value Ranges
<b>Device Name</b>	Provide a unique device name.	Yes	Combination of characters, special characters, and numbers. Limit: 1-255 characters
<b>Description</b>	Provide brief information about the device you are adding.	No	Combination of characters, special characters, and numbers. Limit: 0-255 characters
<b>Hostname</b>	Provide a hostname.	No	Combination of characters, special characters, and numbers. Limit: 1-255 characters
<b>Identifier</b>	Provide a unique identifier for the device.	Yes	Combination of characters, special characters, and numbers. Limit: 1-255 characters
<b>Model</b>	Provide the model name.	No	Combination of characters, special characters, and numbers. Limit: 0-255 characters
<b>Size of Device (U)</b>	Provide the space occupied on the rack.	Yes	Numbers only Limit: 1-80
<b>Estimated Max Power (W)</b>	Provide the defined maximum power that the device can consume.	No	Numbers only Limit: 1-629365631

## Add or edit device details for Power Manager monitored devices

Add device details for devices monitored through Power Manager for accurate rack management.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view and edit the device details that are part of groups that are in Device Manager DM1 user scope. However, as a Device Manager DM1 user, you cannot add any device to the group in your scope.

To add or edit the device details, perform the following steps:

## Steps

1. Launch OpenManage Enterprise.
2. On the **Devices** page, select a device by clicking anywhere on the row except on the **Name** and **IP Address** columns.
3. Scroll down to the end of the page to view the **Device Details for Power Manager** section on the bottom-right side of the page.
4. Click **Update Details**.  
The **Device Details for Power Manager** page is displayed.
5. Provide the size of the device in the rack Unit and maximum power consumption of the device in Watts and click **Apply**.  
The power value is automatically converted to BTU and displayed.  
The details for the device are updated.


## Create physical groups

Power Manager enables you to replicate and update the physical organization and hierarchy of a data center. Using the following hierarchy—Data Center, Room, Aisle, and Rack create the physical groups and add the devices at the rack level.

### About this task

Create physical groups by importing a CSV file having the physical group details or replicate your data center hierarchy virtually in Power Manager.

The physical groups that are created or deleted in OpenManage Enterprise are automatically added or removed from Power Manager.

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view only the devices and groups that are assigned to a Device Manager DM1 user.

## Creating physical groups in OpenManage Enterprise

### Steps

1. Launch OpenManage Enterprise.
2. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
3. In the **Physical Hierarchy** section, click more options, and then click **Create New Physical Group**.  
The **Create New Physical Group** page is displayed.
4. Provide a name and description for the group, select the **Group Hierarchy** and **Parent Group** with the defined power capacity.

When selecting the **Group Hierarchy** and **Parent Group** fields, ensure that you use the following hierarchy.


**Table 18. Supported parent and child group hierarchy information**


Parent Group	Group Hierarchy
Data Center	Room, Aisle, Rack
Room	Aisle, Rack
Aisle	Rack
Rack	NA

**Table 19. Physical group attributes details**

Field	Description	Mandatory	Value Range
Name	Provide a unique name for the physical group.	Yes	Combination of characters, special characters, and numbers Limit: 1–255 characters

**Table 19. Physical group attributes details (continued)**

Field	Description	Mandatory	Value Range
Description	Provide brief information about the physical group.	No	Combination of characters, special characters, and numbers Limit: 0–255 characters
Group Hierarchy	Defines the category under <b>Parent Group</b>	Yes	<ul style="list-style-type: none"> <li>• Data Center</li> <li>• Room</li> <li>• Aisle</li> <li>• Rack</li> </ul>
Parent Group	Represents the high-level hierarchy for the physical group	Yes	<ul style="list-style-type: none"> <li>• Physical Hierarchy</li> <li>• Previously created Physical Groups</li> </ul>
Power Capacity (W)	Provide the maximum defined power consumption of the physical group.	Yes, only for the <b>Rack</b> group. Optional for data center, room, and aisle groups.	Recommended limit: 1–629365631
Space Capacity (U-SIZE)	Provide the rack capacity for rack management purpose.  <b>NOTE:</b> This option is only applicable for <b>Racks</b> .	Yes	Recommended limit: 1U – 80U

 **NOTE:** The power capacity and space capacity of the device is updated only in Power Manager and not in iDRAC or CMC consoles.

## Add devices in physical group

Add devices in physical groups for accurate rack management.

### Prerequisites

Ensure that the following prerequisites are met:

- Add the size of the unmonitored device that you plan to add to a physical group.
- Emergency Power Reduction (EPR) is not enabled on the group.

### About this task

To add devices in a physical group, perform the following steps:

### Steps

1. Launch OpenManage Enterprise and perform one of the following steps:
  - a. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
  - b. To view the devices, expand the **Physical Hierarchy** group until a rack level and right-click and select the **Manage Rack** option.  
The **Manage Rack** page is displayed.

Or

- a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.

The **Rack View** page is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

- **Group Name**



- **Health State**
- **Power State**
- **Connection State**
- **Type**


Select the categories of your choice and view the filtered data.

- b. Click the rack name.  
The **Manage Rack** page is displayed.
2. To add devices discovered in OpenManage Enterprise, click **Add To Rack Slot**.  
The **Add Device(s) To Rack Slots** wizard is displayed.
3. In the **Select Device(s)** section, select the devices and click **Next**.
4. Optional: To filter and view the data, perform the following steps:
  - a. Click **Advanced Filters**.
  - b. Select your category of filters.

The following filters are displayed for devices:

- **Health State**
- **Power State**
- **Connection State**
- **Name**
- **Size of Device (U)**
- **Identifier**
- **Model**
- **Type**
- **Managed State**

5. In **Add device(s) to rack slots**, by default, the devices are automatically added in the available slots in the rack. To add a device at a specific slot, select the **Auto** drop-down menu and select the required slot.
6. Click **Finish**.  
The devices that are added are graphically displayed on the **Manage Rack** page.

 **NOTE:** The rack slot option is available for a chassis, rack servers, storage, network switches, and unmonitored devices.

To view details of modular servers inside a chassis and details of the connected Input Output Modules (IOM), locate the chassis in the **Manage Rack** page and hover the pointer at the IP address or device name.

## Create physical groups through CSV file

Use the import feature to create physical groups and add devices to rack slots in Power Manager by importing new or existing physical group details through a CSV file, instead of manually creating the physical groups with hierarchies.

### About this task

Consider the following points before creating and importing the CSV file:

- Only Administrators can import the CSV files.
- The script checks if the devices are discovered in OpenManage Enterprise.
- Ensure that the physical group you are creating adheres to the hierarchy as follows:

**Table 20. Supported hierarchy format**

Physical group	Supported hierarchies
Data Center	Room, Aisle, Rack
Room	Aisle, Rack
Aisle	Rack
Rack	Not applicable

- When creating a rack in physical group, ensure that you provide the rack name, power capacity, and space capacity.
- Each physical group and their siblings in a physical group hierarchy are identified by a unique name.
- To add a device in the physical group:

- Ensure that only one device detail is entered in each row. A device is identified by a unique identifier. The identical devices are ignored while importing, and only the unique devices are added in a rack slot.
- To place the device in a particular slot, ensure that you provide the rack slot information.
- When you are considering multiple device allocations on the same physical group hierarchy, you can duplicate the fields. However, only the rack slot and device identifier are unique fields.
- View details about the import job by selecting the **Physical Group CSV Import Task** job on the **Jobs** page. You can view the status about each row added in the file on the **Execution Details** page.

### Steps

1. Launch OpenManage Enterprise and click **Plugins > Power Management > Power Manager Devices**. The **Power Manager Devices** tab is displayed.
2. Click **Physical Groups** and then click **Import**. The **Import physical groups from CSV file** page is displayed.
3. Optional: To view the format of the CSV file, click **Download sample file**. A sample CSV file is downloaded which you can use as a reference for adding the groups information.
4. To upload the CSV file and create the physical groups, click **Import CSV file**. The groups are created successfully after importing the CSV file for valid entries.

## Power Distribution Unit

Power Distribution Unit (PDU) is a device with multiple outlets capable of supplying power to all the devices within a rack. PDUs can be classified into two categories:

- Non-Intelligent PDUs—distribute power evenly to all the outlets.
- Intelligent PDUs—provide advanced monitoring capabilities and remote control.

There are different types of PDU devices available in the market that you can choose from, however Power Manager supports only metered PDUs.

Metered PDUs are intelligent rack PDUs that display power consumption over a secure network. They help Administrators in avoiding overloading the circuits and in calculating the Power Usage Effectiveness (PUE), provide accurate power usage, and available capacity at rack level. Also, they help in identifying the power consumption at server and various device levels to charge the customers of a data center as per their usage.


## Associate PDU to rack

Associate the respective Power Distribution Unit (PDU) devices to a rack to monitor accurate power consumption.

### Prerequisites

Ensure that the PDU devices are discovered in OpenManage Enterprise.



### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager user, you can only view the PDU devices added to the group defined in your scope. You cannot associate any PDUs to a group.

### Steps

1. Launch OpenManage Enterprise and perform one of the following steps:
  - Click **Plugins > Power Management > Rack View**, and then right-click and select **Manage Rack** option. The **Manage Rack** page is displayed.
  - OR
  - a. Click **Devices**. The **Devices** tab is displayed.

- b. Click **PLUGIN GROUPS > Physical Hierarchy**, expand until rack level and right-click the group, and select **Manage Rack** option.  
The **Manage Rack** page is displayed.
2. To Associate the PDUs to a rack, perform one of the following steps:
  - Click the **Associated Devices** tab and then click **Associate to Rack**.  
The **Select Device(s)** wizard is displayed.  
 **NOTE:** On this page only the PDUs are displayed for selection.
  - OR
  - Click the **Add to Rack Slot** option.  
The **Select Device(s)** wizard is displayed.  
 **NOTE:** On this page all the devices added to Power Manager is displayed.
3. Optional: To filter and view the data:
  - a. Click **Advanced Filters**.  
The following filters are displayed:
    - **Health State**
    - **Power State**
    - **Connection State**
    - **Name**
    - **Identifier**
    - **Model**
    - **Type**
    - **Managed State**
4. Optional: To clear the filters, click **Clear All Filters**.
5. In the **Select Device(s)** section, select the devices and click **Next**.
6. In **Add device(s) to rack slots** section, click **Finish**.  
The PDU devices are associated with the rack and are listed in the **Associated Devices** tab.

# Manage data center during power reduction

The Emergency Power Reduction (EPR) feature helps reduce power consumption of devices immediately during a power emergency. For example, if there is a power failure occurs and your devices are running on a UPS, you can apply EPR to reduce the power consumption of your managed devices.

EPR also helps in preventing device damage due to overheating in an event of cooling infrastructure failure. Use temperature-triggered policies for enabling EPR on a group of devices when its average inlet temperature crosses a defined threshold value.

**NOTE:** Applying EPR on the devices throttles down the power to an extremely low level, impacting performance, or shuts down the devices completely. All devices on which an EPR is applied are affected. Use this feature only in an emergency situation.

Following are the EPR options available for servers, chassis, and groups:

- **Throttle**—set to minimal power consumption state.
- **Shut down**—shut down the server

**NOTE:** Only the **Throttle** option is supported for a chassis.

After applying EPR on devices and groups, they are marked as **EPR Enabled (Throttle)** or **EPR Enabled (Shut down)** on the **Power Manager Devices** tab. The summary of devices and groups on which EPR is applied is displayed on the **Emergency Power Reduction** tab in **Power Manager**.

## Topics:

- [Enable Emergency Power Reduction](#)
- [View active Emergency Power Reduction](#)
- [Disable Emergency Power Reduction](#)

## Enable Emergency Power Reduction

During a power shortage, enable the Emergency Power Reduction (EPR) on devices so that they run on minimal power.

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can enable EPR on a device or group that is defined in Device Manager DM1 user scope. And, only the Device Manager DM1 user or the Administrator can disable the EPR, if it is applied manually.

When Device Manager users have common groups or devices in their scope, and Device Manager DM1 user applies EPR on any of these groups or devices:

- Other Device Manager users, administrators, and viewers can see the red color banner. However, the active EPR is listed on **Emergency Power Reduction** and **Policies and EPR** tabs only for Device Manager DM1 user and not for any other Device Manager users since it is not a shared resource.
- If temperature-triggered EPR is applied on a group or device, due to a temperature-triggered policy created by Device Manager DM1 user, then all the other Device Manager users can see the red color banner with the source of EPR.

**NOTE:** Temperature-triggered EPR cannot be activated manually. When a temperature-triggered policy is active and the group temperature is equal to or exceeds the threshold value, Power Manager automatically applies the EPR.

To enable EPR, perform the following steps:

### Steps

1. From OpenManage Enterprise, perform one of the following steps:

- For a device:
  - a. Click the **Devices** tab.  
All the devices that are discovered in OpenManage Enterprise are displayed.
  - b. From the list of devices, click a device name.  
The details of the device are displayed on the **Overview** page.
  - c. To view Power Manager-related information, click the **Power Management and Monitoring** tab.
- For a static group:
  - a. Click **Devices > Static Groups > Group name**.  
All the devices that are part of the static group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.
- For a physical group, perform one of the following steps:
  - a. Click **Devices > Physical Hierarchy > Group name**.  
All the devices that are part of the physical group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.

OR

- a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** tab is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:



- **Group Name**
- **Health State**
- **Power State**
- **Connection State**
- **Type**

Select the categories of your choice and view the filtered data.

- b. Click the device name or IP address.

2. To enable EPR, click the **Policies and EPR** tab, and then click **Apply EPR**.

In the confirmation screen, select one of the options and click **Apply EPR**.


- **Throttle**—All selected devices and groups are allowed to consume an extremely low level of power. This setting affects performance.  
 **NOTE:** The throttle option is supported for servers with iDRAC DC or iDRAC Enterprise licenses and chassis.
- **Shut down**—All selected devices or devices part of the selected group are shut down gracefully.  
 **NOTE:** If a group consists of servers and chassis, and you select the **Shut down** option, then only the servers in the group are shut down. The shut-down option applies only to servers.

3. Click **Yes** on the confirmation screen.

EPR is enabled on the selected device or group. A red color bar indicator is displayed on the **Policies and EPR** tab along with the type of EPR option applied.

## View active Emergency Power Reduction

### About this task

-  **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

If you are logging in as a Device Manager DM1 user, you can view only the EPRs applied by Device Manager DM1 user on the assigned devices and groups.

When Device Manager users have common groups or devices in their scope, and Device Manager DM1 user applies EPR on any of these groups or devices:

- Other Device Manager users, administrators, and viewers can see the red color banner. However, the active EPR is listed on **Emergency Power Reduction** and **Policies and EPR** tabs only for Device Manager DM1 user and not for any other Device Manager users since it is not a shared resource.

- If temperature-triggered EPR is applied on a group or device, due to a temperature-triggered policy created by Device Manager DM1 user, then all the other Device Manager users can see the red color banner with the source of EPR.

To view the list of devices and groups to which Emergency Power Reduction (EPR) is applied, perform the following:

### Steps

From OpenManage Enterprise, perform any one of the following:

- To view, an EPR applied on a device or a group, click the **Devices** tab, click the device name, **Power Management and Monitoring** tab, and then click **Policies and EPR**.
- To view EPRs applied on all devices and groups in Power Manager:

a. Click **Plugins > Power Management > Emergency Power Reduction**.

The **Emergency Power Reduction** tab is displayed.

The following fields are displayed:

- **ASSIGNED TO**—Device name or service tag to which the EPR is applied.
- **ENTITY TYPE**—Type of device. The supported entity types are, devices, and groups.
- **EPR TYPE**—Type of EPR applied. The supported EPR types are **Throttle** and **Shut down**.
- **EPR SOURCE**—Source of EPR trigger. You can apply an EPR manually or automatically.
- **CREATED ON**—Time the EPR was applied.

b. To filter and view the data, click **Advanced Filters**.

You can filter your data using the following components:


- **Assigned To**—Filters EPRs based on the device name or service tag.
- **EPR Source**—Filters the EPR source. The supported filters are, **All**, **Manual**, and **Temperature-triggered**.

c. To sort any column alphabetically, click a column name so that an arrow is displayed with the column name.


## Disable Emergency Power Reduction

To restore the devices or groups to their normal state, disable the Emergency Power Reduction (EPR).

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can disable only the EPRs that Device Manager DM1 user has applied, and on the devices and groups that Device Manager DM1 user has access to.

 **NOTE:** An EPR activated due to a temperature-triggered event cannot be disabled manually. After the temperature reduces to the normal value, Power Manager automatically removes the EPR.

To disable a manually applied EPR, perform the following steps:

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Emergency Power Reduction**.
2. Select the devices or groups, and click **Disable**.  
On the confirmation page, click **Yes**.  
EPR is disabled successfully.

## Quick access to Power Manager data

To quickly view Power Manager data, navigate to the OpenManage Enterprise or Power Manager dashboards.

- To quickly view power and thermal history of your favorite groups, add them to OpenManage Enterprise dashboard. For more information, see [Viewing power and thermal history of Power Manager groups](#).
- To view top five devices or groups that consume maximum energy, see the **Top Energy Consumer** graph on the OpenManage Enterprise dashboard.
- To view a ratio of number of devices that are added to OpenManage Enterprise and are compatible with Power Manager to total devices that are managed by Power Manager, see **Power Manager Devices Statistics** graph on the OpenManage Enterprise dashboard.
- To view top 10 offenders of power and temperature, see [Viewing top 10 offenders](#).


### Topics:

- [View power and thermal history of Power Manager groups](#)
- [View top five energy consumers](#)
- [View ratio of devices discovered in OpenManage Enterprise to devices added in Power Manager](#)
- [View top ten power offenders](#)
- [View top ten temperature offenders](#)
- [View top ten underutilized racks for power and space](#)
- [View power and space headroom](#)

## View power and thermal history of Power Manager groups

### About this task

Quickly access Power Manager-specific data on the OpenManage Enterprise dashboard.

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view the power and thermal history graphs of devices and groups that are assigned to a Device Manager DM1 user. Only the groups in Device Manager DM1 user scope, and that consume maximum power and generate maximum temperature are listed.


### Steps

1. Launch OpenManage Enterprise, click **Home** and go to the **Power Manager** section.
2. To view the power or thermal history of a group, click the **Power History** or **Thermal History** tab. The graph is displayed.
3. Optional: To change the duration, select an option from the **Duration** drop-down menu.
4. Search for a group using the **Group** search box.
5. Optional: To refresh the data, click the refresh option.

## View top five energy consumers

### About this task

View the devices consuming most of the energy in the Power Manager section of the OpenManage Enterprise dashboard.

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager user, only the top five devices consuming the most energy from the groups that are assigned to Device Manager DM1 user are displayed.


### Steps

1. Launch OpenManage Enterprise, click **Home**, and then go to the **Power Manager** section.
2. To view the top five energy consumers, click the **Top Energy Consumers** tab.
3. View data regarding servers, chassis, and groups using the **Filter** drop-down menu.

## View ratio of devices discovered in OpenManage Enterprise to devices added in Power Manager

### About this task

View the ratio of total devices that are discovered in OpenManage Enterprise and that are compatible with Power Manager to the total number of devices that are monitored through Power Manager.

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view a comparison between total devices that are assigned to Device Manager DM1 user, that are capable with Power Manager for monitoring, to the number of devices added to Power Manager for monitoring within Device Manager DM1 scope of devices.

### Steps

1. Launch OpenManage Enterprise, click **Home**, and go to the **Power Manager** section.
2. To view the ratio, click the **Devices Statistics** tab.


## View top ten power offenders

### Prerequisites

Ensure that you have configured the power and temperature thresholds in the **Alert Thresholds** tab under the **Power Management and Monitoring** tab for devices, or under **Group Details** for groups.

### About this task

To view a list of devices and groups that have violated the defined threshold values of power, run the in-built for **Power Manager: Metric Thresholds Report for Devices** and **Power Manager: Metric Thresholds Report for Groups**. The total violation count for power is the sum of upper warning, and upper critical violation counts. The total violation count for temperature is the sum of upper warning, upper critical, lower warning, and lower critical violation counts.

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

If you are logging in as a Device Manager DM1 user, the top 10 devices that are assigned to the Device Manager DM1 user and that have violated the defined threshold values for the maximum number of times are displayed.

### Steps

1. Launch OpenManage Enterprise and click **Plugins > Power Management > Overview** tab. The **Overview** tab is displayed.
2. View the **Top 10 Power Offenders** section. Device information that is provided by default includes details such as device name, service tag, number of times the device has violated the defined power threshold, and the nature of violations that are based on the alert threshold values defined.
3. To view the groups that have violated the power threshold, select the **Groups** option from the **Entity Type** drop-down menu. Device information that is provided by default includes details such as group name, number of times the group has violated the defined power threshold, and nature of violations that are based on the alert threshold values defined.
4. To view devices or groups in a particular violation state, select an option from the **State** drop-down menu.



- Optional: To refresh the data, click the refresh option.


## View top ten temperature offenders

### Prerequisites

Ensure that you have configured the power and temperature thresholds in the **Alert Thresholds** tab under the **Power Management and Monitoring** tab for devices, or under **Group Details** for groups.

### About this task

To view a list of devices and groups that have violated the defined threshold values of power, run the in-built for **Power Manager: Metric Thresholds Report for Devices** and **Power Manager: Metric Thresholds Report for Groups**. The total violation count for power is the sum of upper warning, and upper critical violation counts. The total violation count for temperature is the sum of upper warning, upper critical, lower warning, and lower critical violation counts.

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.


If you are logging in as a Device Manager DM1 user, all the devices that have violated the temperature maximum number of times within Device Manager DM1 user's scope are displayed.

### Steps

- Launch OpenManage Enterprise and click **Plugins > Power Management > Overview** tab. The **Overview** tab is displayed.
- To view the devices that have violated the temperature threshold go to the **Top 10 Temperature Offenders** section. Device information that is provided by default includes information such as device name, service tag, the number of times the device has violated the defined temperature threshold, and the nature of violations that are based on the alert threshold values defined.
- To view the groups that have violated the temperature threshold, select the **Groups** option from the **Entity Type** drop-down menu. Device information that is provided by default includes information such as group name, service tag, number of times the group has violated the defined temperature threshold, and nature of violations that are based on the alert threshold values defined.
- To view devices or groups in a particular violation state, select an option from the **State** drop-down menu.
- Optional: To refresh the data, click the refresh option.

## View top ten underutilized racks for power and space

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

If you are logging in as a Device Manager DM1 user, the top 10 underutilized racks in the physical groups that are assigned to Device Manager DM1 user are displayed.

To view the top 10 underutilized racks, perform the following steps:

### Steps


- Launch OpenManage Enterprise and click **Plugins > Power Management > Overview** tab. The **Overview** tab is displayed.
- To view the racks for unutilized power, go to the **Top 10 Underutilized Racks (Power)** graph. By default, the **Actual** view is displayed. To change the scale to the percentage, click the **View** drop-down menu and select the **Percentage** option.
- To view the top 10 racks for unutilized space, go to the **Top 10 Underutilized Racks (Space)** graph. By default, the **Actual** view is displayed.

To change the scale to the percentage, click the **View** drop-down menu and select the **Percentage** option.

4. To view the information in tabular format, click the tabular image.  
The respective table is displayed.
5. To refresh the data, click the **Refresh** option.

## View power and space headroom

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

If you are logging in as a Device Manager DM1 user, the power and space headroom data for the physical groups that are assigned only to Device Manager DM1 user is displayed.

To view the consumption of power in a group, perform the following steps:

### Steps

1. Launch OpenManage Enterprise and click **Plugins > Power Management > Overview** tab.  
The **Overview** tab is displayed.
2. Go to the **Headroom** section.  
The power headroom and the space headroom graphs are displayed.
3. To change the group name, provide the group name in the **Physical Hierarchy Group** field and press the **Enter** key.  
Details of power and space headroom are displayed.
4. Optional: To refresh the data, click the refresh option.

# Maintain Power Manager

Manage the plugin and the devices and groups added to Power Manager along with managing the alerts and thresholds.

## Topics:

- [Manage Power Manager plugin](#)
- [Manage individual devices and static groups](#)
- [Manage physical groups](#)
- [Maintain alert thresholds](#)
- [Maintain policies](#)
- [Managing unmonitored devices](#)
- [Manage PDU devices](#)
- [Uninstalling Power Manager](#)

## Manage Power Manager plugin

Disable or enable the Power Manager plugin to monitor your devices for power and temperature.

### Disable Power Manager

Disables all the functionality of Power Manager on OpenManage Enterprise. The REST APIs specific to Power Manager are also disabled.


#### Prerequisites

Ensure that the following prerequisites are met:

- The Emergency Power Reduction (EPR) is not enabled on the device. View the EPR status of all devices and groups on the **Emergency Power Reduction** page.
- There are no active policies.

Information about the number of users using OpenManage Enterprise and details about the jobs running are displayed.

#### About this task

 **NOTE:** Disabling a plugin in OpenManage Enterprise restarts the appliance services.

#### Steps

1. Launch OpenManage Enterprise, and click **Application Settings > Console and Plugins**.  
The **Console and Plugins** tab is displayed.
2. In the Power Manager section, click the **Disable** option.  
The **Disable Plugin** page is displayed.
3. Click **Disable Plugin**.  
The **Confirmation** page is displayed.
4. On the **Confirmation** page, select the **I agree that I have captured a snapshot of the OpenManage Enterprise appliance prior to performing a plugin action.** option, and then click **Confirm Disable**.

Information about the number of users using OpenManage Enterprise and details about the jobs running are displayed.

#### Results

After disabling Power Manager, you cannot see any information or pages that are related to Power Manager in OpenManage Enterprise.

# Enable Power Manager

All features of Power Manager are enabled in OpenManage Enterprise. The REST APIs specific to Power Manager are also enabled in **OpenManage Enterprise**.

## About this task

 **NOTE:** Enabling a plugin in **OpenManage Enterprise** restarts the appliance services.

## Steps

1. Launch OpenManage Enterprise, and click **Application Settings > Console and Plugins**.  
The **Console and Plugins** tab is displayed.
2. In the Power Manager section, click the **Enable** option.  
The **Enable** page is displayed.
3. Click **Enable Plugin**.  
The **Confirmation** page is displayed.
4. In the **Confirmation** page, select **I agree that I have captured a snapshot of the OpenManage Enterprise appliance prior to performing a plugin action.**, and then click **Confirm Enable**.


Information about the number of users using OpenManage Enterprise and details about the jobs running are displayed.

# Manage individual devices and static groups

Remove existing individual devices or static groups in the Power Manager plugin.

## View devices and groups added to Power Manager


### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view only the groups that are assigned to the Device Manager DM1 user.

To view devices or groups that are added to Power Manager, perform the following steps:

## Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices**.  
The **Power Manager Devices** tab is displayed.
2. To refresh the list of devices and groups that are added, click **Refresh the list for Power Manager Capabilities**.
3. To view a device or a group that is added to Power Manager, perform one of the following:
  - To view a static group, click the **Static Groups** tab.
  - To view a physical group, click the **Physical Groups** tab.  
 **NOTE:** The location of the physical group is displayed based on the hierarchy that is selected for this particular group at the time of creation.
  - To view a device, click the **Individual Devices** tab.
  - To view all the devices added to Power Manager as individual devices and as a part of groups, click the **All Monitored Devices** tab.
4. Optional: To filter and view the data on any of the tabs:
  - a. Click a tab.
  - b. Click **Advanced Filters**.
  - c. Select a filter category.

The following filters are displayed for the **Static Groups** and **Physical Groups** tabs:

- Group Name

The following filters are displayed for the **Individual Devices** tab:

- **Health State**
- **Power State**
- **Connection State**
- **Name**
- **Identifier**
- **Model**
- **Type**
- **Managed State**

The following filters are displayed for the **All Monitored Devices** tab:

- **Health State**
- **Power State**
- **Connection State**
- **Name**
- **Identifier**
- **Model**
- **Type**
- **Managed State**
- **Part of Group**

For information about each filter, see the [Appendix](#).

5. Optional: To clear the filters, click **Clear All Filters**.
6. Optional: To sort any column alphabetically, click the column name so that an arrow is displayed with the column name.

## Remove devices

To stop monitoring the devices, remove them from Power Manager.

### Prerequisites

Ensure that the following prerequisite is met:

- The Emergency Power Reduction (EPR) is not enabled on the device.

### About this task

**NOTE:** If a device is removed in **OpenManage Enterprise**, then that device is automatically removed from Power Manager.

**NOTE:** When a device is added individually and as part of a group to Power Manager, ensure that all the instances of the device are removed from Power Manager to stop monitoring the devices.

For example, if you are logging in as a Device Manager user, you can delete the devices from the physical groups that are assigned to you from the **Individual Devices** tab. However, after removing the device from Power Manager, you cannot re-add the device to Power Manager when logged in as a Device Manager user.

To remove a device, perform the following steps:

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices**. The **Power Manager Devices** tab is displayed.
2. Click the **Individual Devices** tab. The **Individual Devices** tab is displayed.
3. Select the devices that you want to remove and click **Remove Device(s)**. The **Remove Device** confirmation window is displayed.
4. To confirm removal, click **Remove**. The devices are removed from Power Manager.

## Remove groups

To stop monitoring the groups, remove them from Power Manager.

### Prerequisites

Ensure that the following prerequisite is met:

- The Emergency Power Reduction (EPR) option is not enabled on the specific devices that are part of the group.

### About this task

To remove a group, perform the following steps:

**NOTE:** If a group or a specific device in a group is removed from **OpenManage Enterprise**, then the changes are automatically reflected in Power Manager.

**NOTE:** After applying a policy to a group, if you delete the group, the policy is also removed from Power Manager.

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices**.  
The **Power Manager Devices** tab is displayed.
2. Click the **Static Groups** tab.  
The **Static Groups** tab is displayed.
3. Select the groups and click **Remove Group(s)**.  
The **Remove Group** confirmation window is displayed.
4. To confirm the removal, click **Remove**.  
The groups are removed from Power Manager.

## Manage physical groups

Edit or rearrange devices in existing physical groups in the Power Manager plugin.

## View physical groups and the hierarchies

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view only the devices and groups that are assigned to a Device Manager DM1 user.

Use this page to view the physical groups created in Power Manager.

**NOTE:** To view a complete list of devices in a physical group (including the Unmonitored Devices) click the **Rack View** tab.

To view the physical groups, perform the following steps:

### Steps

Launch OpenManage Enterprise and perform one of the following steps:

- a. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
- b. Expand the **Physical Hierarchy** group to view all the physical groups created.  
OR
- a. Click **Plugins > Power Management > Power Manager Devices**.  
The **Power Manager Devices** tab is displayed.
- b. Click **Physical Groups**.

All the physical groups that are created in Power Manager are displayed with their name, location, total devices in the group, and information about when they were added to Power Manager.

**NOTE:** The location of the physical group is displayed based on the hierarchy that is selected for this particular group at the time of creation.

## View devices added in rack

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, If you are logging in as a Device Manager DM1 user, you can view only the devices and groups that are assigned to a Device Manager DM1 user.

To view the devices added in a rack of a physical group, perform the following steps:

### Steps

1. Launch OpenManage Enterprise and perform one of the following steps:
  - a. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
  - b. To view the devices, expand the **Physical Hierarchy** group until a rack level and right-click and select the **Manage Rack** option.  
The **Manage Rack** page is displayed.

Or

  - a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** page is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

  - **Group Name**
  - **Health State**
  - **Power State**
  - **Connection State**
  - **Type**


Select the categories of your choice and view the filtered data.

  - b. Click the rack name.  
The **Manage Rack** page is displayed.
2. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** page is displayed.  
Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:
  - **Group Name**
  - **Health State**
  - **Power State**
  - **Connection State**
  - **Type**

Select the categories of your choice and view the filtered data.
3. View the devices in the rack by navigating on the **Manage Rack** page.  
All the devices added to the rack are displayed.
4. Optional: View the **Space Capacity** field at the upper right side of the page to know the amount of space consumed in the rack.

## View racks of physical groups

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view only the devices from groups that are assigned to a Device Manager DM1 user in rack view.

To view the devices in a rack, perform the following steps:

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.


The **Rack View** page is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

- **Group Name**
- **Health State**
- **Power State**
- **Connection State**
- **Type**

Select the categories of your choice and view the filtered data.


2. To view the **Power Management and Monitoring** details of a device that is monitored by Power Manager, click the device name.

 **NOTE:** Some devices that are part of a physical group do not have a link because, the device is not Power Manager capable.

The **Power Management and Monitoring** details for the device are displayed.

## Edit physical groups

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view the groups and devices in the groups that are assigned to Device Manager DM1 user. You cannot perform any management tasks on the physical groups such as editing, moving devices to different racks and so on.


To edit a physical group, perform the following steps:

 **NOTE:** You cannot edit the **Group Hierarchy** after creating a physical group.

### Steps

1. Launch OpenManage Enterprise.
2. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
3. To edit a physical group, do one of the following:
  - In the **Physical Hierarchy** section, expand the group, right-click the group, and then select **Edit Group**.

The **Edit Physical Group** page is displayed.

 **NOTE:** The power capacity for a group is the sum of power consumption of the devices within the group, and a suggestion for the total group power capacity is displayed below the **Power Capacity** field.

- To edit the power or space capacity of a physical group, in the **Physical Hierarchy** section, click the options, and then click **Attributes**.

The **Group Attributes** page is displayed.



4. Make the changes and click **Finish** or **Save**.


## Delete physical group

Delete physical groups that are no longer valid.

### Prerequisites


Ensure that the Emergency Power Reduction (EPR) option is disabled on the physical group.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view the groups and devices in the groups that are assigned to Device Manager DM1 user. You cannot perform any management tasks on the physical groups such as editing, moving devices to different racks and so on.

To delete a physical group, perform the following steps:

 **NOTE:** After applying a policy to a group, if you delete the group, the policy is also removed from Power Manager.

### Steps


1. Launch OpenManage Enterprise.
2. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
3. In the **Physical Hierarchy** section, go to the group you want to delete, right-click the group, and then click **Delete Group**.
4. In the confirmation screen, click **Yes**.

### Results

The group is deleted.

## Rearrange rack slot of devices

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view the groups and devices in the groups that are assigned to Device Manager DM1 user. You cannot perform any management tasks on the physical groups such as editing, moving devices to different racks and so on.

To rearrange the rack slot of the devices in a rack, perform the following steps:

### Steps

1. Launch OpenManage Enterprise and perform one of the following steps:
  - a. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
  - b. To view the devices, expand the **Physical Hierarchy** group until a rack level and right-click and select the **Manage Rack** option.  
The **Manage Rack** page is displayed.

Or

- a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.

The **Rack View** page is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

- **Group Name**
- **Health State**

- **Power State**
- **Connection State**
- **Type**

Select the categories of your choice and view the filtered data.

- b. Click the rack name.  
The **Manage Rack** page is displayed.
2. Locate the device that you want to move using the vertical scroll bar of the rack and select the device.
3. Click **Rearrange Rack**.  
The **Update Rack Slots** page is displayed.
4. To change the slot for a device, click the drop-down menu and select an empty slot.
5. Click **Finish**.  
The device slot is updated.


## Move device to different rack

Based on the changes in the data center, you can change the location of the device in a physical group.

### Prerequisites

Ensure that the Emergency Power Reduction (EPR) is not enabled on the target rack.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view the groups and devices in the groups that are assigned to Device Manager DM1 user. You cannot perform any management tasks on the physical groups such as editing, moving devices to different racks and so on.

To move a device to another rack within the same physical group or to another physical group, perform the following steps:

### Steps

1. Launch OpenManage Enterprise and perform one of the following steps:
  - a. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
  - b. To view the devices, expand the **Physical Hierarchy** group until a rack level and right-click and select the **Manage Rack** option.  
The **Manage Rack** page is displayed.

Or

  - a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** page is displayed.  
Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:
    - **Group Name**
    - **Health State**
    - **Power State**
    - **Connection State**
    - **Type**
 Select the categories of your choice and view the filtered data.
  - b. Click the rack name.  
The **Manage Rack** page is displayed.
2. To move the device to another rack, click **Move Device to Another Rack**.  
The **Select Group** page is displayed.
3. Optional: To filter and view the data, click **Advanced Filters**.  
Search the group using the **Group Name** field.  
To clear the filters, click **Clear All Filters**.

4. Select the rack and click **Move**.  
The device is moved to the new rack.

## Remove device from rack

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager user, you can delete the devices from the physical groups that are assigned to you from the **Individual Devices** tab. However, after removing the device from Power Manager, you cannot re-add the device to Power Manager when logged in as a Device Manager user.

To remove a device from the rack, perform the following steps:

### Steps

1. Launch OpenManage Enterprise and perform one of the following steps:
  - a. On the **Devices** page, in the left pane, expand the **PLUGIN GROUPS** section.
  - b. To view the devices, expand the **Physical Hierarchy** group until a rack level and right-click and select the **Manage Rack** option.  
The **Manage Rack** page is displayed.

Or

  - a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** page is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

  - **Group Name**
  - **Health State**
  - **Power State**
  - **Connection State**
  - **Type**

Select the categories of your choice and view the filtered data.

  - b. Click the rack name.  
The **Manage Rack** page is displayed.
2. Select the devices and click **Remove Device(s) From Rack**.
3. In the confirmation page, click **Yes**.  
The devices are removed from the rack.

## Maintain alert thresholds

### View alert thresholds

View the status of the device or group that is based on the configured alert thresholds.

### Prerequisites

Ensure that you have added devices or groups to Power Manager.

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view and manage all the alert thresholds that are configured by any Device Manager user or Administrator on the groups and devices that are in Device Manager DM1 user's scope.

To view the alert thresholds graphs for power and temperature:

### Steps

1. From OpenManage Enterprise, perform one of the following steps:

- For a device:
  - a. Click the **Devices** tab.  
All the devices that are discovered in OpenManage Enterprise are displayed.
  - b. From the list of devices, click a device name.  
The details of the device are displayed on the **Overview** page.
  - c. To view Power Manager-related information, click the **Power Management and Monitoring** tab.
- For a static group:
  - a. Click **Devices > Static Groups > Group name**.  
All the devices that are part of the static group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.
- For a physical group, perform one of the following steps:
  - a. Click **Devices > Physical Hierarchy > Group name**.  
All the devices that are part of the physical group are displayed.
  - b. To view Power Manager-related information, click **Group Details**.

OR

- a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.

The **Rack View** tab is displayed.

Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:

- **Group Name**
- **Health State**
- **Power State**
- **Connection State**
- **Type**

Select the categories of your choice and view the filtered data.

- b. Click the device name or IP address.

2. View the power and temperature status on the **Alert Thresholds** tab.

The **Collected At** field displays the last collection time.

The pointer on the scale gives the average power and thermal data.

Power Manager displays the minimum and maximum power and temperature values of the device and the previous readings that were collected. The scale is disabled if the thresholds are not set or if the threshold values are cleared off. The upper and lower warning and critical values are displayed only if the threshold values are set. To view more information about any violations, see the **Alert Log** on the **Alerts** page and the **Audit Logs** on the **Monitor** page.

## Edit alert thresholds

Update alert thresholds based on changes to device utilization or updates in group membership.

### Prerequisites

Ensure that you have added devices or groups to Power Manager.

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view and manage all the alert thresholds that are configured by any Device Manager user or Administrator on the groups and devices that are in Device Manager DM1 user's scope.

To edit the threshold values for a device or a group, perform the following steps:

### Steps

1. From OpenManage Enterprise, perform one of the following steps:
  - For a device:
    - a. Click the **Devices** tab.  
All the devices that are discovered in OpenManage Enterprise are displayed.
    - b. From the list of devices, click a device name.  
The details of the device are displayed on the **Overview** page.
    - c. To view Power Manager-related information, click the **Power Management and Monitoring** tab.
  - For a static group:
    - a. Click **Devices > Static Groups > Group name**.  
All the devices that are part of the static group are displayed.
    - b. To view Power Manager-related information, click **Group Details**.
  - For a physical group, perform one of the following steps:
    - a. Click **Devices > Physical Hierarchy > Group name**.  
All the devices that are part of the physical group are displayed.
    - b. To view Power Manager-related information, click **Group Details**.

OR

  - a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** tab is displayed.  
Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:
    - **Group Name**
    - **Health State**
    - **Power State**
    - **Connection State**
    - **Type**Select the categories of your choice and view the filtered data.
  - b. Click the device name or IP address.
2. On the **Alert Thresholds** tab, click **Edit**.  
The **Edit Alert Thresholds** page is displayed.
3. Provide the values and click **Apply**.  
Threshold values are updated successfully.

## Delete alert thresholds

To remove the thresholds that are configured on devices or groups, clear all the thresholds.

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can create and manage alert thresholds that are created by any other Device Manager user only for the devices in Device Manager DM1 user scope.

To delete alert thresholds, perform the following steps:

### Steps

1. From OpenManage Enterprise, perform one of the following steps:
  - For a device:
    - a. Click the **Devices** tab.  
All the devices that are discovered in OpenManage Enterprise are displayed.
    - b. From the list of devices, click a device name.  
The details of the device are displayed on the **Overview** page.
    - c. To view Power Manager-related information, click the **Power Management and Monitoring** tab.
  - For a static group:
    - a. Click **Devices > Static Groups > Group name**.  
All the devices that are part of the static group are displayed.
    - b. To view Power Manager-related information, click **Group Details**.
  - For a physical group, perform one of the following steps:
    - a. Click **Devices > Physical Hierarchy > Group name**.  
All the devices that are part of the physical group are displayed.
    - b. To view Power Manager-related information, click **Group Details**.

OR


  - a. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Rack View**.  
The **Rack View** tab is displayed.  
Optional: To filter and view the data, expand the **Advanced Filters** option. Following is a list of categories available:
    - **Group Name**
    - **Health State**
    - **Power State**
    - **Connection State**
    - **Type**Select the categories of your choice and view the filtered data.
  - b. Click the device name or IP address.
2. On the **Alert Thresholds** tab, click **Edit**.  
The **Edit Alert Thresholds** page is displayed.
3. To remove all the thresholds, clear all the existing threshold values, and click **Apply**.

## Maintain policies

### View policy

View all the policies that are created for devices and groups in Power Manager.

#### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view only the policies that are created by Device Manager DM1 user and apply these policies only on the groups in Device Manager DM1 user scope. However, the Administrator has access to all the policies created by all the Device Manager users.

To view a policy, perform the following steps:

## Steps

From OpenManage Enterprise, perform any one of the following:

- To view all the policies created in Power Manager:

Click **Plugins > Power Management > Policies**.

The **Policies** tab is displayed.

Select your category of filters, and view the data. Following is a list of categories available:

- **State**—Filters the policies based on the state of the policy. The supported filters are **All, Enabled, Disabled**.
- **Name**—Filters the policies based on the name of the policy.
- **Description**—Filters the policies based on the description of the policy.
- **Type**—Filters the policies based on the type of policy. The supported filters are, **All, Static, and Temperature-Triggered**.
- **Assigned To**—Filters policies based on device or group it is assigned to.

To filter and view the data, click **Advanced Filters**.

To clear the filters, click **Clear All filters**.


To sort any column alphabetically, click a column name so that an arrow is displayed with the column name.

- To view all the policies created for a device—click **Devices > Power Management and Monitoring > Policies**  
All the policies applied to the device are displayed with the details.
- To view all the policies created for a group—click **Devices**, click a custom group with static membership, click **Group Details**, and then click **Policies**.  
The policies applied to the group are displayed with the details.

## Edit policy


Update a policy based on the changes in power consumption history or average inlet temperature that is generated by the devices or groups.


### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can edit only the policies that are created by a Device Manager DM1 user.

When there are changes to group membership and the group has an active policy, then Power Manager notifies you to reevaluate the policy associated with the group.

 **NOTE:** After you create a policy for a device, you cannot apply the policy to a group. Similarly, after creating a policy for a group, you cannot apply the policy to a device.

 **NOTE:** For a temperature-triggered policy, if the temperature threshold value is increased after the EPR is applied, then Power Manager automatically removes the EPR if the updated temperature threshold value is greater than the average temperature of the group.

To edit a policy, perform the following steps:

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Policies**.  
The **Policies** tab is displayed.
2. Select a policy and click **Edit**.  
The power policy wizard is displayed.


For more information about each field in the wizard, see [Create power or temperature-triggered policy](#).

3. To save your changes, click **Finish**.  
The changes are saved successfully.

## Disable policy

To remove power consumption or temperature policy limits, disable the relevant policy.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can disable only the policies that are created by a Device Manager DM1 user.

To disable a policy, perform one of the following steps:


### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Policies**.  
The **Policies** tab is displayed.
2. Perform one of the following methods:
  - a. Select the policy that you want to disable, and click **Disable**.
  - b. In the confirmation window, click **Yes**.  
OR
    - a. Select the policy that you want to disable, and click **Edit**.  
The Create Policy wizard is displayed.
    - b. In the **General** section, clear the **Enable** check-box and click **Next** until you reach the **Summary** section, and then click **Finish**.  
The policy is disabled successfully.

## Enable policy

On enabling a policy, the power or temperature cap is activated on the devices and groups.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can enable only the policies that are created by a Device Manager DM1 user.

To enable a policy, perform the following steps:

### Steps


1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Policies**.  
The **Policies** tab is displayed.
2. Enable a policy using any one of the following methods:
  - Select the policy that you want to enable, and click **Enable**.
  - At the time of creation or when editing the policy, select the **Enable** option from **Create Power Policy** wizard.
3. In the confirmation window, click **Yes**.  
The policy is enabled successfully, and a tick mark is displayed against the policy.



## Delete policy


Delete policies that are no longer required.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can delete only the policies that are created by the Device Manager DM1 user.

When an active policy is deleted, any power consumption restrictions or temperature thresholds that are applied by the policy are also deleted.

 **NOTE:** If you delete an active temperature-triggered policy, the Emergency Power Reduction (EPR) is automatically removed from the group.

To delete a policy, perform the following steps:


### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Policies**.  
The **Policies** tab is displayed.
2. Select a policy that you want to delete, and click **Delete**.
3. In the confirmation window, click **Yes**.  
The policy is deleted successfully.

## Managing unmonitored devices

### View details of Unmonitored Devices

#### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view the unmonitored devices that are part of the group in your scope.

To view the details of the devices, perform the following steps:


### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices**.  
The **Power Manager Devices** tab is displayed.
2. Click **UNMONITORED > Unmonitored Devices**.  
All the Unmonitored Devices details are listed on the **Unmonitored Devices** tab.

After adding the unmonitored devices in a physical group under a rack, the location and rack slot columns are populated for this device.

### Edit Unmonitored Devices details

#### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view and cannot edit the unmonitored devices information that is part of the group in Device Manager DM1 user scope.


To edit the details of a device, perform the following steps:

### Steps

1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices > UNMONITORED > Unmonitored Devices**.  
The **Unmonitored Devices** tab is displayed.
2. Select a device and click **Edit**.  
For information about the values of fields, see the **Details for Unmonitored Devices** table in [Adding Details of Unmonitored Devices](#).
3. Provide the details and click **Finish**.

## Delete Unmonitored Devices

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view and cannot edit the unmonitored devices information that is part of the group in Device Manager DM1 user scope.

To delete an unmonitored device, perform the following steps:

### Steps


1. Launch OpenManage Enterprise, and then click **Plugins > Power Management > Power Manager Devices > UNMONITORED > Unmonitored Devices**.  
The **Unmonitored Devices** tab is displayed.
2. Select the devices and click **Delete**.
3. In the confirmation screen, click **Yes**.

## Manage PDU devices

### View PDUs associated to rack in Power Manager

View all the associated Power Distribution Units (PDUs) to a rack on a single page.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view all the PDU devices that are part of the group that is assigned to a Device Manager DM1 user.

### Steps


1. Launch OpenManage Enterprise and perform one of the following steps:
  - Click **Plugins > Power Management > Rack View**, and then right-click and select **Manage Rack** option.  
The **Manage Rack** page is displayed.  
OR
  - a. Click **Devices**.  
The **Devices** tab is displayed.
  - b. Click **PLUGIN GROUPS > Physical Hierarchy**, expand until rack level and right-click the group, and select **Manage Rack** option.  
The **Manage Rack** page is displayed.

2. To view the PDUs, click the **Associated Devices** tab.  
All the PDUs that are associated with this rack are listed with all details.

## View PDUs discovered in OpenManage Enterprise


View the details of a PDU after discovering it in OpenManage Enterprise.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can only view all the PDU devices that are part of the group that is assigned to a Device Manager DM1 user.

### Steps


1. Launch OpenManage Enterprise and click **Devices**.
2. Expand **ALL DEVICES**, click **PDU Devices** and click a PDU device.  
The **Overview** tab is displayed.
3. All the information about the PDU is displayed.
4. To view the IP address details, click the **Hardware** tab.  
The **Device Management Info** tab is displayed with IP and MAC address along with the device URL and name.
  - To view the NIC card details, click the **NIC Information** section.  
The MAC, IPv4 address, and subnet mask information are displayed.  
 **NOTE:** Network Interface Controller (NIC) information is available only for PDUs by APC by Schneider Electric.
  - To view PDU Outlet information such as outlet number, name, and power rating, click the **PDU Outlet Information** section.

For more information about the actions, you can perform on this page, see the **Managing Devices** section from OpenManage Enterprise User's Guide.

## Remove PDU devices

Remove faulty or old and decommissioned Power Distribution Unit (PDU) devices from a rack.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you cannot remove any PDU devices that are part of the group defined in Device Manager DM1 user scope.

### Steps

1. Launch OpenManage Enterprise and perform one of the following steps:
  - Click **Plugins > Power Management > Rack View**, and then right-click and select **Manage Rack** option.  
The **Manage Rack** page is displayed.  
OR
  - a. Click **Devices**.  
The **Devices** tab is displayed.
  - b. Click **PLUGIN GROUPS > Physical Hierarchy**, expand until rack level and right-click the group, and select **Manage Rack** option.  
The **Manage Rack** page is displayed.
2. To remove a PDU device, click the **Associated Devices** tab.

3. Select the device and click **Remove Device(s)** option.
4. In the confirmation screen, click **Yes**.  
The PDU device is removed successfully from the rack.

## Uninstalling Power Manager

Uninstall Power Manager and delete all the data that is collected by Power Manager.

### Prerequisites

Ensure that the following prerequisites are met:

- The Emergency Power Reduction (EPR) is not enabled on the device. View the EPR status of all devices and groups on the **Emergency Power Reduction** page.
- There are no active policies.

Information about the number of users using OpenManage Enterprise and details about the jobs running are displayed.

### About this task

After uninstalling Power Manager, the iDRAC's telemetry configuration is still enabled on the target servers.

For a list of telemetry services enabled by Power Manager, see the [supported protocols](#).

To disable these configurations, perform one of the following actions:

- Create a server configuration template with a disabled telemetry streaming configuration in OpenManage Enterprise and deploy the template across all target devices.
- Manually disable the telemetry services in iDRAC on each device.

To uninstall Power Manager, perform the following steps:

### Steps

1. Launch OpenManage Enterprise.
2. In **Application Settings**, click the **Console and Extensions** tab.  
The **Console and Extensions** page is displayed.
3. In the Power Manager section, click the **Uninstall** option.  
The **Uninstall Extension** page is displayed.
4. Click **Uninstall Extension**.  
The **Confirmation** page is displayed.
5. In the **Confirmation** page, select **I agree that I have captured a snapshot of the OpenManage Enterprise appliance prior to performing a plugin action.**, and then click **Confirm Uninstall**.

Information about the number of users using OpenManage Enterprise and details about the jobs running are displayed.

### Results

After uninstalling Power Manager, you cannot see any information or pages that are related to Power Manager on OpenManage Enterprise.

# Alerts

An alert is helpful when monitoring thresholds and you want a notification about when the power of a device or a group exceeds the limits set on them or when there are changes to a group you are monitoring.

An alert is generated under the following circumstances:

- When the values cross the defined alert thresholds
- When the values for a device or group come back to normal state.
- When the policy cap of an active policy is violated.
- When there are changes to a group that has an active policy that is applied on it.
- When a policy is applied on a group and if new devices are added or devices are removed from the group.

You can view alerts by going to **OpenManage Enterprise > Alerts > Alert Log**:

For information about managing the alerts, see *OpenManage Enterprise User's Guide*.


## Topics:

- [Create alert policy](#)

## Create alert policy

To receive Power Manager alerts, select the Power Manager-specific sub-categories while creating an alert policy.

### About this task

 **NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can view the alert policies that are created by Device Manager DM1 user and other Device Manager users, only on groups that are in your scope.

### Steps

1. Launch OpenManage Enterprise, and click **Alerts > Alert Policies**.  
The **Alert Policies** page is displayed.
2. On the **Alert Policies** page, click **Create**.  
The **Create Alert Policy** wizard is displayed.
3. Provide a name and description for the policy.  
To activate the policy after creation, the **Enable** option is selected by default.
4. In the **Category** section, expand the **Application > System Health** category and select the following sub-categories for Power Manager alerts and click **Next**.
  - **Metrics**—to receive alerts on alert threshold violations.
  - **Power Configuration**—to receive alerts on policy cap violations.
5. In the **Target** section, select the required Power Manager devices or groups and click **Next**.
6. In the **Date and Time** section, provide a period for which the policy has to be active, select the days when the policy should be active, and click **Next**.
7. In the **Severity** section, select the severity level of the alert.  
To select all the severity categories, select the **All** check-box.
8. In the **Actions** section, select one or more check-boxes to initiate the actions when the policy is run, and click **Next**.
9. In the **Summary** section, review the information and click **Finish**.  
The alert policy is successfully created and listed in the Alert Policies section.  
For more information about creating and managing the alerts, see *OpenManage Enterprise User's Guide*.

# Reports in Power Manager

Reports contain information about the specific devices or devices part of a group, jobs, alerts, and other elements of your data center. Power Manager supports inbuilt and user-defined reports. Download these reports to view the status of Power Manager devices and groups.

You can create customized reports with Power Manager details along with other device details from OpenManage Enterprise.

Definitions and attributes that are used for an integrated report cannot be edited or deleted, however, you can edit or delete the customized reports.

For information about running and emailing reports, or deleting custom reports, see *OpenManage Enterprise User's Guide*.

## Topics:

- [Create custom report](#)
- [View and download reports](#)

## Create custom report

Create a custom report to view a detailed report for specific devices or devices that are part of a group.

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user, you can create custom reports only on the groups that are assigned to Device Manager DM1 user. Other Device Manager users cannot view the custom reports created on the same group since custom reports are not shared resources.

**NOTE:** If custom reports are created along with Power Manager categories, these categories are hidden when Power Manager is disabled or deleted when Power Manager is uninstalled.

To create a custom report, perform the following steps:

### Steps

1. Launch **OpenManage Enterprise** and click **Monitor > Reports**.  
The **Reports** page is displayed.
2. Click **Create**.  
The **Report Definition** page is displayed.
3. Provide a name and description, and then click **Next**.
4. In **Category**, select one of the following, and in the confirmation screen click **Yes**:
  - To view data of Power Manager devices:
    - a. Select **Power Manager Devices**.
    - b. On the confirmation page, click **Yes**.
    - c. In **Device Group**, select the required system groups or search for devices using the search box.
  - To view Power Manager groups data:
    - a. Select **Power Manager Groups**.
    - b. On the confirmation page, click **Yes**.
5. Optional: To create a query, click **Edit** in the **Filter** section. Create a query and click **Finish**. For more information about creating a query, see *OpenManage Enterprise User's Guide*.
6. In **Column Selection**, **Ordering**, and **Sorting**, expand the category and select the required fields using the checkbox to add them into the **Column Order** box.

The **Device Metric Threshold** and **Device Power and Thermal Metrics** columns are populated only for Power Manager devices.

The **Group**, **Group Metric Threshold**, **Group Policy**, **Group Power and Thermal Metrics**, **Physical Group Power Headroom**, and **Physical Group Space Headroom** columns are populated only for Power Manager groups.

- To sort by fields, use the **Sort by** drop-down menu and to sort the values in ascending and descending order, use the **Direction** drop-down menu.
    - If you have selected any column from the **Metric Threshold** collection, select the **Metric Type** of information you want to see.
    - If you have selected any column from the **Power and Thermal Metrics** collection, select the **Report Duration** and **Aggregation Period** to view the information.
- NOTE:** When creating a custom report, ensure that you select the **Aggregation Period** option as **Daily** if the **Report Duration** is anything other than **1 Day**.
- Review the fields added, and then click **Finish**.

## View and download reports

Run an integrated or custom report and view or download the report.

### About this task

**NOTE:** If you are logging in as a Device Manager, only the device groups and devices that are in your scope are available for viewing and management.

For example, if you are logging in as a Device Manager DM1 user you can view all the integrated reports for the devices and groups assigned to Device Manager DM1 user. However, if Device Manager DM1 user has created any custom reports, only Device Manager DM1 user and Administrator can view and access these reports.

**NOTE:** The reports are generated based on your selection for **Report Duration** and **Aggregation Period** in **Power Manager Settings** page.

To view and download a report, perform the following steps:

### Steps

- Launch **OpenManage Enterprise** and click **Monitor > Reports**.

The **Reports** page is displayed.

The following integrated reports containing details of listed devices and groups are available for Power Manager related data through OpenManage Enterprise **Reports** tab:

- Power Manager: Metric Thresholds Report for Devices**—Displays the metric and alert threshold details of all Power Manager devices such as device name, device details, metric type, the threshold values set on the devices, and number of times the values have exceeded the defined thresholds.
- Power Manager: Metric Thresholds Report for Groups**—Displays the alert threshold details of all the Power Manager groups such as group name, metric type, threshold values set on groups, and number of times the values have exceeded the defined thresholds.
- Power Manager: Policies Report of Groups**—Displays all the Power Manager policies details such as group name, policy name, policy type, whether the policy enabled, policy active, power cap, temperature threshold, and violations.
- Power Manager: Power and Thermal Report of Devices**—Displays all the power and temperature details of Power Manager devices such as device name, device details, power and temperature values, energy consumed, and what time the data was collected.
- Power Manager: Power and Thermal Report of Groups**—Displays all the power and temperature details of Power Manager groups such as the group name, power and temperature values of groups, energy consumed, and what time the data was collected.
- Power Manager: Power Headroom Report for Physical Groups**—Displays the total power consumption of the group and remaining power that is assigned for the group.
  - NOTE:** For the power headroom report, the power value that is considered for the calculation of stranded power is the most recent metric instead of the maximum power value for the selected report duration.
- Power Manager: Space Headroom Report for Physical Groups**—Displays the total space that is consumed by the devices and provides information about the remaining rack space.

- **Power Manager: Virtual Machine Performance Report**—Displays the CPU count, CPU usage, power, and energy that is consumed by Virtual Machines that are monitored in Power Manager.

2. Locate and select the report that you want to view.

3. To run and view the report, click **Run**.  
The report is displayed.

4. To download the report, click **Download**.  
The **Download Report** page is displayed.

5. To download the report, select the required format, and then click **Finish**.

Power Manager supports downloading reports in the following formats:

- HTML
- CSV
- PDF
- XLS

The report is downloaded in the selected format.



# Update Power Manager

## About this task

To update Power Manager from OpenManage Enterprise, perform the following:

### Steps

1. If you are not using the latest version of OpenManage Enterprise, upgrade OpenManage Enterprise to the latest compatible version of Power Manager.  
For the list of compatible versions of Power Manager with OpenManage Enterprise, see [Versions of Power Manager compatible with OpenManage Enterprise](#). For information about upgrading OpenManage Enterprise, see OpenManage Enterprise User's Guide.
2. Configure the location of repository to check for updates. For more information, see [Configuring OpenManage Enterprise for Power Manager updates](#).
3. Upgrade Power Manager. For more information, see [Upgrading Power Manager](#).

### Topics:

- [Configure OpenManage Enterprise for Power Manager updates](#)
- [Upgrade Power Manager](#)

## Configure OpenManage Enterprise for Power Manager updates

### About this task

Check for Power Manager updates at `downloads.dell.com` or an `offline` location. To configure OpenManage Enterprise to view updates, perform the following:

### Steps

1. Launch OpenManage Enterprise, and click **Application Settings > Console and Plugins**.  
The **Console and Plugins** tab is displayed.
2. To configure updates, click **Update Settings**.  
The **Update Settings** page is displayed.
3. In **How to check for updates**, select one of the following options:
  - **Automatic**—automatically check for updates every week. This frequency cannot be changed.
  - **Manual**—manually check for updates.
4. In **Where to check for updates**, select one of the following options and click **Apply**:
  - **Online**—check for updates at `downloads.dell.com`.
  - **Offline**—check for updates at the specified offline source.

To use an internal network share as an offline update source, download the relevant files from `downloads.dell.com` and save them on a NFS share preserving the same folder structure.

- a. In **Local Path**, provide the location of the downloaded files. The format of a network share is: `nfs://<IP Address>/<Folder_Name>`, `http://<IP Address>/<Folder_Name>`, or `https://<IP Address>/<Folder_Name>`.
- b. To verify the connection, click **Test now**.

# Upgrade Power Manager

## Prerequisites

Ensure that the version of Power Manager you plan to upgrade is compatible with the OpenManage Enterprise version. For more information, see [Versions of Power Manager compatible with OpenManage Enterprise](#).

## About this task

To update Power Manager, perform the following steps:

## Steps

1. Launch OpenManage Enterprise, and click **Application Settings > Console and Plugins**.  
The **Console and Plugins** tab is displayed.
2. In the Power Manager section, click **Update Available**.  
The **Update Plugin** page is displayed.
3. To view the updates for this version, click the **Release Notes** link.  
The support page is displayed.
4. To download the update, click **Download Plugin**.  
The **Enable plugin during update** option is selected by default.  
  
If you want to disable the plugin post upgrade, clear the **Enable plugin during update** option.  
  
The plugin is downloaded, and the status of the download is displayed on a green color band.
5. To update Power Manager, click **Update Plugin**.
6. In the **End User License Agreement** window, review and click the **Accept** option.
7. In the **Confirmation** window, select the **I agree that I have captured a snapshot of the OpenManage Enterprise appliance prior to performing a plugin action** option, and then click **Update**.  
Information about the number of users using OpenManage Enterprise and details about the jobs running in OpenManage Enterprise is displayed.

After updating Power Manager the version is displayed on the **Console and Plugins** page in the Power Manager section.

To view the list of devices and groups that are Redfish capable, click **Run Inventory** in OpenManage Enterprise, and then click the **Refresh Power Manager capabilities** option on the **Power Manager Devices** page.

## Frequently Asked Questions

### Why am I not able to view the metrics?

**Cause:** After removing the required iDRAC or DC License, or the OpenManage Enterprise Advanced Feature license, the license-dependent features are not available on the User Interface (UI). Therefore, the metric is not available, and the values are not collected by Power Manager from the next inventory cycle.

### Why do I see two entries with the same date in the graph when the time duration chosen for showing the graph is changed?

**Cause:** When viewing the **Metrics and Monitoring History** graphs for 3 months, 6 months, or 1 year, the data is auto-converted from the UTC time zone to your current time zone and displayed. Due to the time zone differences, there are two entries for the same day on the graphs. Therefore, the last entry is for the current day, and the last but one entry is for the previous day.

### Why do I see slight variations in values of power and temperature in the Alert Thresholds section?

**Cause:** When the power and temperature values are provided in BTU/Hour and Fahrenheit, they are converted to Watt and Celsius. When the values are displayed, they are reconverted and rounded off to the next highest numbers. Therefore, the values are slightly higher when displayed in BTU/Hour and Fahrenheit scale.

### Why are there same number of power cap or threshold violations for all the entries in my report?

**Cause:** For a in-built or custom report which consists of a violation attribute along with a timestamp attribute, the violation count that is displayed for all the entries is always for the latest value.

### Why do I see blank entries for total energy consumed in reports or metrics graphs?

**Cause:** The **Total Energy Consumed** field has no entry for servers and PowerEdge MX7000 devices due to the following reasons:

- The energy consumption value is not available until the second metric collection is taken.
- If you change the **Data gathering interval** to 60 minutes, then for a 60 minutes time period the **Energy Consumption** value cannot be calculated. This happens when data is collected for a day with hourly granularity for reports.
- If the power metric in iDRAC is reset during the interval that is chosen, and the latest reading has a lower value than the oldest reading.

# Why do I not see all metric types for different types of devices?

**Cause:** Different devices support different types of metrics.

**Table 21. List of supported devices and metrics**

Device Type	Supported Metrics
12 <sup>th</sup> generation of PowerEdge servers	<ul style="list-style-type: none"> <li>● Maximum, minimum, and average power</li> <li>● Maximum and average temperature</li> <li>● System airflow</li> <li>● Energy consumption</li> </ul>
13 <sup>th</sup> generation and 14 <sup>th</sup> generation of PowerEdge servers	<ul style="list-style-type: none"> <li>● Maximum, minimum, and average power</li> <li>● Maximum and average temperature</li> <li>● Maximum, minimum, and average CPU utilization</li> <li>● Maximum, minimum, and average Input Output utilization</li> <li>● Maximum, minimum, and average Memory Utilization</li> <li>● System airflow</li> <li>● Energy consumption</li> </ul>
PowerEdge M1000e, VRTX, FX2, and FX2s chassis	<ul style="list-style-type: none"> <li>● Maximum, minimum, and average power</li> <li>● Instant temperature</li> <li>● Energy consumption</li> </ul>
PowerEdge MX7000 chassis	<ul style="list-style-type: none"> <li>● Maximum and minimum power</li> <li>● Maximum and minimum temperature</li> <li>● Energy consumption</li> </ul>

**NOTE:** Modular servers do not support **System Airflow** values.

Also, if all the criteria is met and still you are not able to view **Power Manager** data, ensure that the **Server Power Monitoring** feature is enabled on the device you are discovering. To view the discovery log of a device:

1. In OpenManage Enterprise, click **Monitor > Jobs**.

The **Jobs** page is displayed.

2. Search for the discovery type job for the device and select the job.

3. Click the **View Details** on the right side of the tab.

Details about the job are displayed.

In the **Messages:** section, check the status for **Server Power Monitoring** feature.

**NOTE:** If the **Server Power Monitoring** feature is disabled, then the device is not compatible with **Power Manager**.

# Why do I see a failure of EPR in audit log but EPR is applied successfully for the device?

**Cause:** Applying EPR on the target device may fail due to the following reasons:

- Connectivity issues between the appliance and the target device.
- If the target device is part of Power Manager with an expired license.

## Why do I see a failure of EPR in audit log but EPR is applied successfully for the group?

**Cause:** When EPR option is applied for a group, and if the EPR option is applied successfully for at least one device in the group, the EPR banner is displayed at the group level. However, the EPR option may fail on other devices within the group due to connectivity issues or license expiry and so on. Therefore, use the EPR audit logs for successful and failure scenarios for all devices of the group.

## Why are devices not listed for addition to Power Manager?

**Cause:** You cannot view certain devices in Power Manager because of the following reasons:

- If devices do not have OpenManage Enterprise Advanced license.
- If the devices are discovered in OpenManage Enterprise, and then Power Manager is installed, then the devices are not displayed in Power Manager until you **Run Inventory** on OpenManage Enterprise.
- Devices like switches, storage sleds, I/O modules are not supported in Power Manager.
- Servers that are discovered through the operating system(in-band) are not supported in Power Manager.

## Why am I not able to install Power Manager?

**Cause:** There are two cases in which the installation of Power Manager may fail:

- If you have selected the online updates option in OpenManage Enterprise, check that the connectivity for the online path is successful.
- If you have selected the offline updates option in OpenManage Enterprise, ensure that the `ome_powermanager_1.0.0.tar.gz` folder has all the files for the plugin catalog with the sign file and the plugin installer packages, including the RPMs. The installation fails if there is a mismatch between the catalog and .tar files.

## Why am I not able to disable or uninstall Power Manager?

**Cause:** If active policies or an EPR option is enabled, you cannot disable or uninstall Power Manager.

**Resolution:** Disable the active policies and EPR option, and then try to disable or uninstall Power Manager.

## Why are policies being disabled when too many policies are selected for deletion or disable or enable?

**Cause:** When you select multiple policies for enabling or disabling or deleting, the job is initiated. However, the policies are disabled on the user interface (UI) until the action is complete. After the job is complete, there are entries to the audit logs for these actions.

## Why cannot I remove some devices or groups from Power Manager?

**Cause:** If you have applied an Emergency Power Reduction (EPR) option on the device or a group, then you cannot remove the device or group from Power Manager.

**Resolution:** Disable the EPR option on the device or group, and then remove them from Power Manager.

## Why is Power Manager not listed on Console and plugins page?

**Cause:** Power Manager may not be listed due to the following reasons:

- The offline share folder is not accessible.
- Power Manager plugin and tar folder.s are not present in the offline share folder.
- If the plugin catalog file is edited, then the signature files can get corrupted.

**Resolution:** Ensure that the offline share folder is reachable through OpenManage Enterprise with the following files:

- ome\_powermanager\_1.0.0.tar.gz
- plugins\_catalog
- plugins\_catalog.json.asc

Also, download and replace the corrupt `plugins_catalog` file.

## Why am I not able to apply policies on some devices or groups?

**Cause:** You can apply a policy only on devices that are supported by Power Manager, having a valid license, and that are added to Power Manager.

You can apply policies on supported PowerEdge servers with iDRAC Enterprise, PowerEdge FX2, FX2s, and VRTX chassis with CMC Enterprise license.

 **NOTE:** PowerEdge M1000e and PowerEdge MX7000 chassis do not require a CMC Enterprise license.

## Why are some alerts not being forwarded using SNMP?

**Cause:** The following events are not forwarded as SNMP alerts:

- Device membership or group membership changes
- Device management such as change in license status

Alerts are generated by OpenManage Enterprise or Power Manager, that is displayed in the `system health` category and `metric/power configuration` subcategory the SNMP trap forwarding is not supported.

## Why some email alerts are not getting forwarded?

**Cause:** The following events are not forwarded as SNMP alerts:

- Device membership or group membership changes.
- Device management such as change in license status.

SNMP trap forwarding is not supported.

## Why are some devices automatically removed from Power Manager?

**Cause:** If the OpenManage Enterprise Advanced license has expired or is removed from a target node, then the device is removed from Power Manager after the device capability check is run.

## Why do I not see temperature metric for some devices?

**Cause:** The temperature metric is not visible for devices if they are powered off.

## Why can I not select a particular child group?

**Cause:** When you select a group, all the child groups within this group are also selected. Likewise, when you clear a child group the selection gets cleared at the main group level.

## Why am I seeing No Data Available or No Information available message for some devices metrics?

**Cause:** When the first metric collection has not yet happened or if the device is not reachable, the following message is displayed: `No Data Available`

When a device is not added to Power Manager even though it is a supported device, the following message is displayed: `No Information available`.

## Why are some of the fields in reports empty?

**Cause:** The fields may be empty in a report due to the following reasons:

- The device was not reachable for that duration.
- That category is not applicable for that device.
- The values are not defined for certain fields in Power Manager and these fields are part of the report.

For example, when you have not configured the power and temperature threshold values for a device, the following fields are added to the report, but the values are not populated:

- Upper Warning Power
- Upper Critical Power
- Lower Critical Temperature
- Lower Warning Temperature
- Upper Warning Temperature
- Upper Critical Temperature

If you have configured the above threshold values and only when the threshold values are violated, the following fields are populated and displayed in the report:

- Lower Critical Violation Count
- Lower Warning Violation Count
- Upper Critical Violation Count
- Upper Warning Violation Count

## Why do I not see regular metric data points in the metric graphs?

**Cause:** A metric graph having irregular metric points indicate that data was not collected for that device at that duration of time.

## Why can I not clear the checkbox for policies?

**Cause:** The checkbox for policies in the **Power Policies** page is disabled if that policy is being enabled, disabled, or edited. After the job is completed, you can clear the policy.

## How do I see the old metric data?

**Cause:** The old metric data is not available after a few days because the data is deleted. This configuration depends on the selection of the **Delete Power Manager data** option available in the **Power Manager Preferences** section.

## Why are the values I set using threshold REST API not configured?

**Cause:** If you use threshold REST API before installing and adding the devices to Power Manager, the values are not retained.

**Resolution:** Install and add the devices to Power Manager, and then use the threshold REST APIs.

## How to delete power cap from devices when they are removed from Power Manager?

**Cause:** When a power policy is applied on a static group through Power Manager and a member device is removed from that static group in OpenManage Enterprise, and the policy is active, then the power cap on the device is retained on the management console of the device.

**Resolution:** To remove the power cap on the device, login to the respective management console and disable the power cap policy.

## How to remove EPR on device that was part of deleted physical group

**Cause:**

**Resolution:** If one of the devices part of a physical group, have an Emergency Power Reduction (EPR) applied on them, and you delete the physical group from OpenManage Enterprise, the EPR is still active on the device.

**Resolution:** Though the device being a part of physical group is deleted in OpenManage Enterprise, the device is still part of Power Manager. To remove EPR on the device:

1. Click **Power Manager > Emergency Power Reduction**.

The **Emergency Power Reduction** tab is displayed.

2. Select the device and click **Disable**.



# Troubleshooting

## Data purge interval not reset

**Scenario:**

After reinstalling or updating to the latest version of Power Manager, the data purge interval is not reset to the default value.

**Resolution:**

Reset the data purge value at the following location after you reinstall or update to the latest version of Power Manager:

**OpenManage Enterprise > Application Settings > Console Preferences > Metrics Collection Settings**

## Failure to add devices in Power Manager

**Scenario:**

When you rediscover a device or an inventory job is in progress in OpenManage Enterprise, the following error message is displayed: `Value entered for id is invalid`

**Resolution:**

Add the devices in Power Manager after the discovery or inventory job is completed.

## Why cannot I apply Emergency Power Reduction (EPR) on target device or a group?

**Scenario:**

When you are trying to apply EPR on a device, the EPR operation may fail and there is an entry in the **Audit Logs**.

When you are trying to apply EPR option on a group, the EPR operation may fail with the following error message: `The Emergency Power Reduction feature cannot be enabled on the group <group name> because either the member devices of the group cannot be accessed, do not have necessary license, or the Emergency Power Reduction (EPR) feature is already enabled.`

**Resolution:**

Ensure that all the following conditions are met:

- There is at least one device in the group that is eligible for applying EPR.
- **Throttle** option is applicable for the following devices:
  - If the device is a server, then iDRAC Enterprise license is applied.
  - If the device is PowerEdge M1000e or PowerEdge MX7000 chassis.
- **Shutdown** option is applicable only for servers.

## Power and temperature units are not updated on UI

**Scenario:**

When you change the power and temperature units in Power Manager through REST APIs and check for the unit change updates in UI, the updates are not reflected on the UI.

**Resolution:**

To view the updates on the UI after changing the power and temperature units through REST APIs, refresh the browser.

# Why is OpenManage Enterprise unresponsive when I try to perform plugin lifecycle-related actions (install/uninstall/enable/disable)?

## Scenario:

After rebooting OpenManage Enterprise appliance, if you try to perform any plugin lifecycle-related actions for Power Manager, the job is initiated in the back-end but you still see the **Console and Plugins** page. And, the following message is displayed after some time: `This page isn't working`

## Resolution:

Wait for some time, and view the status. The plugin lifecycle-related action is completed successfully.

# Power cap value or the percentage for MX 7000 chassis is not updated when either one of the entries is changed

## Scenario:

For an MX7000 chassis, the power cap value is displayed as same as the upper bound value. When you manually change the power cap percentage, the value is not updated and even if you change the value, the percentage is not updated.

## Resolution:

Provide the power cap value, and save the policy. The policy imposes the specified power cap value on the selected devices or groups.

# Events not generated for alert thresholds

## Scenario:

Events are not generated for the following combination of temperature threshold violations:

- Lower Warning to Upper Warning
- Lower Critical to Upper Critical
- Upper Warning to Lower Warning
- Upper Critical to Lower Critical

## Resolution:

Provide realistic warning and critical values so that there are no immediate alert generating temperature changes.

# Error when removing a device from a group using REST API

## Scenario:

When you try to remove a device that is part of multiple groups using the REST API, then an error message is displayed.

## Resolution:

To remove a device that is part of multiple groups, remove the device from the group in OpenManage Enterprise. The changes are automatically reflected in Power Manager.

# Multiple alerts for group membership changes in Audit Logs

## Scenario:

Multiple entries on group membership changes in **Audit Logs**.

## Resolution:

When devices are simultaneously added to and removed from a static group through OpenManage Enterprise, there are multiple entries of this update in the **Audit Logs** and **Alert Log**.

## All options for managing physical groups are not displayed

### Scenario:

After creating a physical group, you may not see **Create New Physical Group**, **Edit Group**, **Manage Rack**, **Delete Group**, or **Attributes** options when you right-click any group.

### Resolution:





As a workaround, wait for some time or refresh the page, and then right-click the group. All the relevant options are displayed.

## Appendix

Here are the details about all the filters that are used in the **Individual Devices** tab of Power Manager.

- **Health State** indicates the working state of the device. The health status—OK, critical, and warning—are identified by respective color symbols.

**Table 22. Device health statuses in OpenManage Enterprise**

Health status	Definition
Critical 	Indicates an occurrence of a failure of an important aspect of the device or environment.
Warning 	The device is about to fail. Indicates that some aspects of the device or environment are not normal. Requires immediate attention.
Ok 	The device is fully functional.
Unknown 	The device status is unknown.

- **Power State** indicates that the device is turned on or off.
- **Connection State** indicates whether the device is connected to OpenManage Enterprise.
- **Name** indicates device name.
- **Service Tag/Identifier** indicates the unique code for the device.
- **Model** indicates the device model.
- **TYPE** indicates the type of devices—Server chassis, Dell EMC Storage, and networking switch.
- **Managed State** indicates the onboarding status of the device.
  - **Error:** Device cannot be onboarded. Try by logging in by using the recommended privileges in OpenManage Enterprise User's Guide.
  - **Managed:** Device successfully onboarded, and can be managed by the OpenManage Enterprise console.
  - **Monitored:** Device does not have management option (such as the one discovered by using SNMP).
  - **Managed with alerts:** Device is successfully onboarded, and the OpenManage Enterprise console has successfully registered its IP address with the device as a trap destination during discovery.
  - **Proxied:** Available only for MX7000 chassis. Indicates that the device is discovered through an MX7000 chassis and not directly.
- **Part of Group** indicates if the device is part of any group that is monitored in Power Manager.
- **State** indicates that the Power Manager policy is enabled or disabled.
- **Description** indicates the device, policy, or job description.
- **Hostname** indicates the unique name of the device.
- **Type** indicates static power or temperature-triggered policy.
- **Assigned To** indicates to which device the policy is assigned to.
- **EPR Source** indicates if the policy is applied manually or system-triggered policy.
- **Size of Device (U)** indicates the rack space that is consumed by the device.
- **Estimated Max Power (W)** indicates the maximum power that is defined for the device.

## Other information you may need

In addition to this guide, you can access the following documents that provide more information about Dell EMC OpenManage Enterprise Power Manager and other related products.

**Table 23. Other information you may need**

Document	Description	Availability
<i>Dell EMC OpenManage Enterprise Power Manager Release Notes</i>	Provides information about known issues and workarounds in Power Manager.	<ol style="list-style-type: none"> <li>1. Go to <a href="https://Dell.com/OpenManageManuals">Dell.com/OpenManageManuals</a>.</li> <li>2. Click <b>Dell OpenManage Enterprise</b> and select the required version of OpenManage Enterprise.</li> <li>3. Click <b>Manuals &amp; documents</b> to access these documents.</li> </ol>
<i>Dell EMC OpenManage Enterprise Power Manager REST API Guide</i>	Provides information about integrating Power Manager by using Representational State Transfer (REST) APIs and also includes examples of using REST APIs to perform common tasks.	
<i>Dell EMC OpenManage Enterprise User's Guide</i>	Provides information about using the features of OpenManage Enterprise.	
<i>Dell EMC OpenManage Enterprise Release Notes</i>	Provides information about known issues and workarounds in OpenManage Enterprise.	
<i>Dell EMC OpenManage Enterprise Support Matrix</i>	Lists the devices that are supported by OpenManage Enterprise.	
<i>Dell EMC OpenManage Enterprise and OpenManage Enterprise - Modular Edition RESTful API Guide</i>	Provides information about integrating OpenManage Enterprise by using Representational State Transfer (REST) APIs and also includes examples of using REST APIs to perform common tasks.	