

Usage of Reports in Data Center through Dell EMC OpenManage Enterprise Power Manager

Abstract

This technical white paper provides information about the best practices that you can follow using Dell EMC OpenManage Enterprise Power Manager reports generated through OpenManage Enterprise to optimize the usage of Dell EMC servers and chassis.

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Revisions

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July 2020	Initial release with OpenManage Enterprise 3.4 and Power Manager 1.2

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Acronyms

Acronym	Expansion
OME	OpenManage Enterprise
GUI	Graphical User Interface

Executive summary

This technical whitepaper provides an overview about power and thermal reports of Power Manager 1.2 deployed on OpenManage Enterprise 3.4.0. The report contains power and thermal data that is used to assess the power consumption and thermal emission of devices over a time period and thus helps administrators to take proper actions in reducing the power consumption in the devices using Power Manager features.

OpenManage Enterprise 3.4.0 version allows you to run built-in or create, define and run custom power and thermal reports.

1. Introduction

This white paper illustrates several examples and provides complete steps on how to gain maximum benefit of reports using Power Manager. Also, the white paper describes the report actions in OpenManage Enterprise and provides information on how the IT administrators can leverage them.

1.1 Managing Power and Thermal Report in OpenManage Enterprise

The power and thermal reports have an output table consisting of rows and columns that contain the report parameters along with power and thermal data consumption over different time intervals.

Use the power and thermal report to determine actual power usage of devices and groups over a period of time, so that you can apply policies accordingly on the individual devices and groups to reduce the power usage. Use the data obtained from the reports to infer cost cutting and optimize power usage.

Below is a power and thermal report example which illustrates the daily power and thermal usage of a device:

Power Manager: Power and Thermal Report of Devices Jul 31, 2020 5:27:33 AM

Group: All Devices
Description: This report contains power and thermal information of devices collected by Power Manager

DEVICE NAME	DEVICE TYPE	DEVICE MODEL	DEVICE SERVICE TAG ...	MAXIMUM POWER (W/...	MINIMUM POWER (W/...	AVERAGE POWER (W/...	MAXIMUM TEMPERAT...	AVERAGE TEMPERATU...	INSTANT TEMPERATUR...	TOTAL ENERGY CONSUM...	COLLECTED AT
1	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		23.188	25.000	2020-07-30 23:45:02.5	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		22.885	25.000	2020-07-29 23:45:02.6	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		23.115	25.000	2020-07-28 23:45:02.5	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		23.115	26.000	2020-07-27 23:45:02.2	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		23.073	26.000	2020-07-26 23:45:02.6	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		23.010	26.000	2020-07-25 23:45:02.5	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		23.021	26.000	2020-07-24 23:45:03.0	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		23.000	26.000	2020-07-23 23:45:02.6	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		22.063	26.000	2020-07-22 23:45:18.8	
	CHASSIS	PowerEdge M17000		1218.000	455.000	30.000		22.000	26.000	2020-07-21 23:45:02.6	
	CHASSIS	PowerEdge M17000		1218.000	423.000	30.000		21.558		2020-07-20 23:45:02.6	
	CHASSIS	PowerEdge M17000		1129.000	423.000	30.000		21.854	30.000	2020-07-19 23:45:02.4	
	CHASSIS	PowerEdge M17000		1129.000	423.000	30.000		22.265	29.000	2020-07-18 23:45:02.3	
	CHASSIS	PowerEdge M17000		1127.000	423.000	30.000		22.000	9.000	2020-07-17 23:45:02.3	

Figure 1 Built-in power and thermal for a device

You can export this report to a CSV (Excel) spreadsheet that can be used to analyze the power and thermal consumption and in order to reduce the power usage of the device by applying power policies based on the power and thermal readings.

Custom reports specify selection criteria, to determine the output in form of rows and columns. Output row for a report is a set of devices (server and chassis).

Power and thermal reports are created and managed on the Monitor -> Reports page. You can create, edit, run, email, copy, export, and delete reports.

2 Types of Report

There are mainly below two types of reports:

- [Built-In Report](#)
- [Custom Report](#)

2.1 Built-In Report

These reports are by default displayed after installing the Power Manager. This report contains predefined parameters that give data over a certain time interval. Below are the types of Power Manager built-in reports:

- [Power Manager: Power and Thermal Report of Devices](#)
- [Power Manager: Power and Thermal Report of Groups](#)
- [Power Manager: Metric Thresholds Report for Devices](#)
- [Power Manager: Metric Thresholds Report for Groups](#)
- [Power Manager: Policies Report of Groups](#)
- [Power Manager: Power Headroom Report for Physical Groups](#)
- [Power Manager: Space Headroom Report for Physical Groups](#)

2.1.1 Power Manager: Power and Thermal Report of Devices

- **Type:** Built-in
- **Description:** This report captures the power and thermal data of all devices those are monitored by Power Manager over a certain time period.
- **Advantages:** The benefit of this report is that you can find the complete power and thermal data that is being consumed by all devices those are monitored by Power Manager over a time period. Based on this report you can take proper action to reduce the power consumption of different devices and take necessary actions for cooling the infrastructure.

Below is a sample report:

Reports > Power Manager: Power and Thermal Report of Devices 52

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Power Manager: Power and Thermal Report of Devices										Jun 29, 2020 12:36:36 PM	
Group: All Devices											
Description: This report contains power and thermal information of devices collected by Power Manager											
DEVICE NAME	DEVICE TYPE	DEVICE MODEL	DEVICE SERVICE TAG ...	MAXIMUM POWER (W)...	MINIMUM POWER (W)...	AVERAGE POWER (W)...	MAXIMUM TEMPERAT...	AVERAGE TEMPERATU...	INSTANT TEMPERATUR...	TOTAL ENERGY CONSU...	COLLECTED AT
	CHASSIS	PowerEdge VRTX		691.000	126.000	295.000			22.034	7.080	2020-06-29 07:0
	CHASSIS	PowerEdge VRTX		691.000	126.000	295.917			22.063	7.102	2020-06-29 23:4
	CHASSIS	PowerEdge VRTX		691.000	126.000	297.000			22.059	7.128	2020-06-27 23:4

Figure 2 Built-in power and thermal report for device

2.1.2 Power Manager: Power and Thermal Report of Groups

- **Type:** Built-in
- **Description:** This report captures the power and thermal data of all groups those are monitored by Power Manager over a certain time period. The groups contain different types of devices as per your preferences.
- **Advantages:** The benefit of this is that you get a consolidated report of the power and thermal data of all devices being monitored in Power Manager based on your selections of Report duration and

granularity configured in Power Manager Settings. Using this consolidated report, you can further use it for statistical analysis of all devices data in a single report. Hence you can take proper action to reduce the power consumption of different devices as well as take necessary actions for cooling the infrastructure.

Below is a sample of report run:

Reports > Power Manager: Power and Thermal Report of Groups 45

Download Email

Power Manager: Power and Thermal Report of Groups									Jun 29, 2020 1:06:24 PM
Description: This report contains power and thermal information of groups collected by Power Manager									
GROUP NAME	GROUP CATEGORY	LOCATION	MAXIMUM POWER (Watt)	MINIMUM POWER (Watt)	AVERAGE POWER (Watt)	MAXIMUM TEMPERATURE (Celsius)	MINIMUM TEMPERATURE (Celsius)	AVERAGE TEMPERATURE (Celsius)	COLLECTED AT
dc3	Physical		636.000	314.000	604.805	34.000		33.000	2020-06-29 07:30:06.0
dc3	Physical		636.000	270.000	608.333	34.000		33.000	2020-06-28 07:30:04.0
dc3	Physical		636.000	270.000	567.364	34.000		33.000	2020-06-27 07:30:09.0

Figure 3 Built-in power and thermal report for group

2.1.3 Power Manager: Metric Thresholds Report for Devices

- Type: Built-in
- Description: This report captures the metric thresholds (of power and temperature) set and number of times the metric threshold violations happened for all devices those are monitored by Power Manager.
- Advantages: The benefit of this report is that you get to know how many times the devices metric thresholds that are monitored by Power Manager are violated and you can take proper action to reduce the power consumption of the devices as well as take necessary actions for cooling the infrastructure.

Below is a sample of report run:

Reports > Power Manager: Metric Thresholds Report for Devices 46

Download Email

Power Manager: Metric Thresholds Report for Devices													Jun 29, 2020 7:30:13 PM
Group: All Devices													
Description: This report contains metric thresholds (power in Watt and temperature in Celsius) set for devices in Power Manager													
DEVICE NAME	DEVICE TYPE	DEVICE MODEL	DEVICE SERVICE TAG	METRIC TYPE	UPPER CRITICAL	UPPER WARNING	LOWER CRITICAL	LOWER WARNING	UPPER CRITICAL VIOLATIONS	UPPER WARNING VIOLATIONS	LOWER CRITICAL VIOLATIONS	LOWER WARNING VIOLATIONS	
WIN2015CONFIG.BLR_SERVER	SERVER	PowerEdge R940	R1JAT5G	Temperature			50		0	0	1	0	
		PowerEdge R940		Temperature	10				1	0	0	0	
		PowerEdge Mx7000		Temperature			40		0	0	0	1	
		PowerEdge R6415		Power	50				1	1	0	0	

Figure 4 Built-in threshold metrics report for device

2.1.4 Power Manager: Metric Thresholds Report for Groups

- Type: Built-in
- Description: This report captures the metric threshold (power and temperature) set as well as the number of times the metric threshold violation happened for all groups those are monitored by Power Manager.
- Advantages: The benefit of this report is that you know for how many times the groups metric thresholds those are monitored by Power Manager is violated and you can take proper action to reduce the power consumption of the groups as well as take necessary actions for cooling the infrastructure.

Below is a sample of report run:

Reports > Power Manager: Metric Thresholds Report for Groups >

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Power Manager: Metric Thresholds Report for Groups Jun 29, 2020 7:34:27 PM

Description: This report contains metric thresholds (power in Watt and temperature in Celsius) set for groups in Power Manager

GROUP NAME	GROUP CATEGORY	LOCATION	METRIC TYPE	UPPER CRITICAL	UPPER WARNING	LOWER CRITICAL	LOWER WARNING	UPPER CRITICAL VIOL...	UPPER WARNING VIOL...	LOWER CRITICAL VIOL...	LOWER WARNING VIOL...
dc1-rs2-rs2	Physical	dc1 / dc1-rm1 / dc1-rs2	Power	80				1	1	0	0
dc1-rs2-rs2	Physical	dc1 / dc1-rm1 / dc1-rs2	Temperature	15				1	2	1	1

Figure 5 Built-in metric thresholds report for group

2.1.5 Power Manager: Policies Report of Groups

- Type: Built-In
- Description: This report captures the Power and Thermal policies applied on all groups those are monitored by Power Manager.
- Advantages: The benefit of this report is a user will get to know the power and thermal policies which are currently applied, active and in enabled state on all groups those are monitored by Power Manager. The user will also get to know if any group policies violation has also happened

Below is a sample of report run:

Reports > Power Manager: Policies Report of Groups >

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Power Manager: Policies Report of Groups Jun 29, 2020 7:42:13 PM

Description: This report contains power and temperature triggered policies of groups set in Power Manager

GROUP NAME	GROUP CATEGORY	LOCATION	POLICY NAME	POLICY TYPE	POLICY ENABLED	POLICY ACTIVE	POWER CAP VALUE (W...)	TEMPERATURE THRESL...	VIOLATION COUNT
dc1-rs2-rs2	Physical	dc1 / dc1-rm1 / dc1-rs2	power policies	SMIC	true	true	16384		0
dc1-rs2-rs2	Physical	dc1 / dc1-rm1 / dc1-rs2	thermal policies	Temperature Triggered	true	true		10	1

Figure 6 Built-in policies report for groups

2.1.6 Power Manager: Power Headroom Report for Physical Groups

- Type: Built-in
- Description: This report captures the allocated and left over or stranded power of the physical groups those are monitored by Power Manager.
- Advantages: The benefit of this report is that you know the power allocated to the physical groups and the stranded power for the physical groups that are monitored by Power Manager. This helps you to determine the current power consumption of the physical group and if the stranded power is zero then you can apply the policy on the physical group to reduce the power usage. The power usage can be reduced so that if any free rack slots are available then new devices can be added whose power will be under the permissible limit of physical group allotted power.

Below is a sample of report run:

Reports > Power Manager: Power Headroom Report for Physical Groups

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Jul 31, 2020 6:39:31 AM

Power Manager: Power Headroom Report for Physical Groups

Description: This report contains overall power usage and available headroom for Physical groups added in Power Manager

GROUP NAME	LOCATION	ALLOCATED POWER (WATT)	STRANDED POWER (WATT)
ROOM	DATACENTER	4000	2464.0
aisle	DATACENTER / ROOM	3000	1464.0
RACK	DATACENTER / ROOM	2000	464.0
DATACENTER		3000	3464.0

4 item(s) found. Displaying items 1 - 4

Figure 7 Power Headroom report for Physical Groups

2.1.7 Power Manager: Space Headroom Report for Physical Groups

- Type: Built-in
- Description: This report captures the allocated and utilized space of the physical groups those are monitored by Power Manager.
- Advantages: The benefit of this report is that you know the space allocated to the physical groups (Rack) as well as how much space is utilized, and how much space is remaining in the physical groups (Rack) that are monitored by Power Manager. This helps you to determine empty spaces in the Rack and add more devices to the physical groups.

Below is a sample of report run:

Reports > Power Manager: Space Headroom Report for Physical Groups

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Jul 31, 2020 6:53:46 AM

Power Manager: Space Headroom Report for Physical Groups

Description: This report contains space headroom detail of physical groups added in Power Manager

GROUP NAME	LOCATION	TOTAL SPACE (U-SIZE)	UTILIZED SPACE (U-SIZE)	UTILIZATION PERCENTAGE (%)
ROOM	DATACENTER	80	10	12.50
aisle	DATACENTER / ROOM	80	10	12.50
RACK	DATACENTER / ROOM	80	10	12.50
DATACENTER		80	10	12.50

4 item(s) found. Displaying items 1 - 4

Figure 8 Space Headroom report for Physical Groups

2.2 Custom Report

Apart from the built-in reports you can also create and run custom reports. Custom reports are based on Power Manager categories, and you can select additional filters or columns defined in OpenManage Enterprise report builder. Following are the different Power Manager report categories that you can use to create the custom reports:

- Power Manager Devices
- Power Manager Groups

Below is the procedure for creating and running power and thermal custom reports for devices:

1. Go to **Monitor > Reports** tab and click **Create**. Enter **Report Name** and **Description**, and then click **Next**.

The screenshot shows a 'Report Definition' window with a 'Name and Description' section. The 'Name' field is filled with 'Power and Thermal'. The 'Description' field is also filled with 'Power and Thermal'. Below the description field, there is a character count: '(Maximum characters: 1024) You have 1007 characters left.' The window indicates 'Step 1 of 2' and has 'Next' and 'Cancel' buttons at the bottom right.

Figure 9 Name and description section for custom report

2. Build the custom report by selecting the parameters from the below fields:

- **Category:** Power Manager Devices
- **Select Columns:** **Device Power and Thermal Metrics**—you can also select the parameters from the search option.
- Sort by selecting specific parameters from the drop-down so that you can view the same after the report is run with reference to the direction.
- Use the **Direction** drop-down list to view the parameters data in ascending or descending order after you run the report.
- Filter option is available
- In **Reports Settings**—select one of the following options:
 - **Report Duration**—duration to capture the data
 - **Aggregation Period**—data captured for a certain interval either **Hourly** or **Daily**

Below is the report builder sample for Power Manager Devices category:

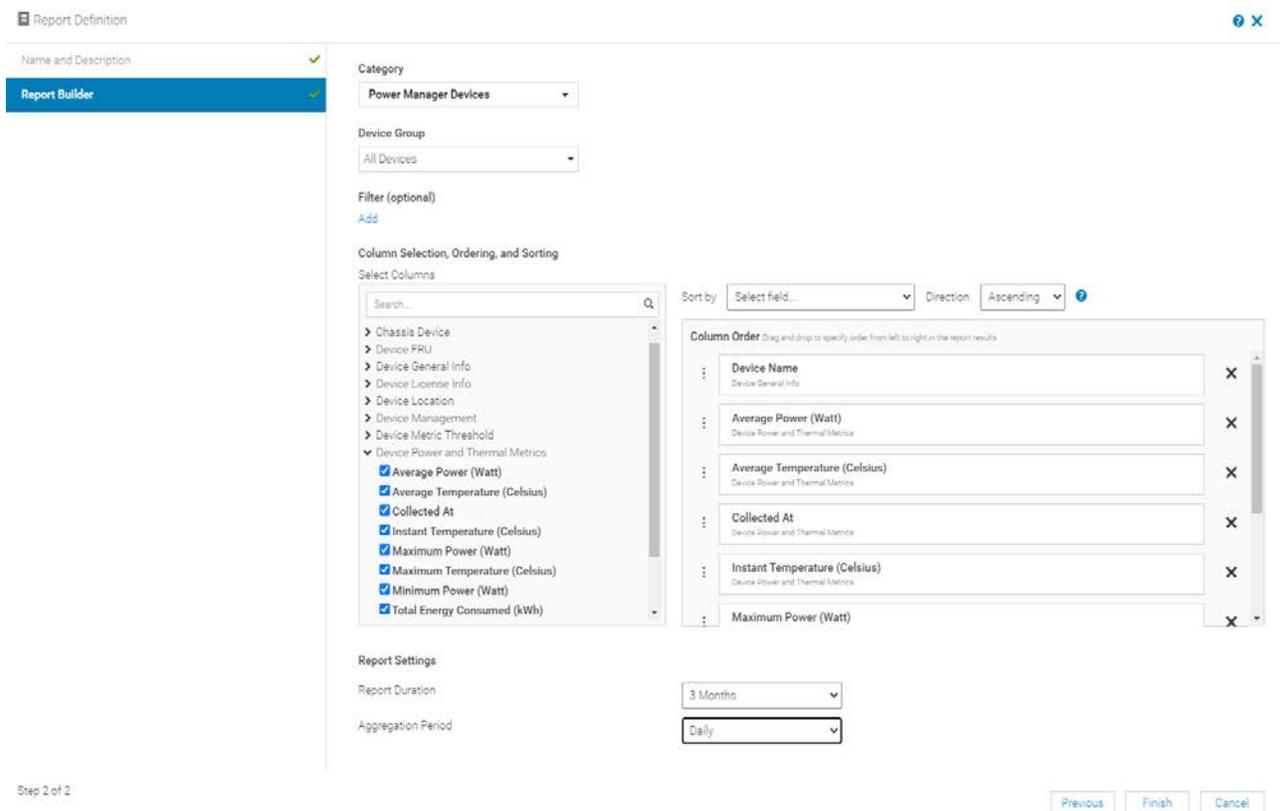


Figure 10 Report Builder for custom report for Power Manager Devices and Power and Thermal Metrics option

3. Click Finish and the custom report is created which is ready to run for collecting the data.

Below is a sample of custom report run with brief details about individual custom report:

2.2.1 Power Manager: Power and Thermal Report of Devices

- Type: Custom
- Description: This report captures the power and thermal data of all devices that are monitored by Power Manager over a certain time period.
- Advantages: The benefit of this report is that you know the complete power and thermal data that is being consumed by all devices that are monitored by Power Manager over a time period and hence you can take action to reduce the power consumption of different devices and take necessary actions for cooling the infrastructure.

Below is a sample of custom report run:

Reports > Power and Thermal 52

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Power and Thermal Jun 29, 2020 1:23:20 PM

Group: All Devices
Description: Power and Thermal

DEVICE NAME	AVERAGE POWER (WA...	AVERAGE TEMPERATU...	COLLECTED AT	INSTANT TEMPERATUR...	MAXIMUM POWER (WA...	MAXIMUM TEMPERAT...	MINIMUM POWER (WA...	TOTAL ENERGY CONSU...
cmc-85F2132	295.000		2020-06-29 07:45:09 E	22.031	691.000		126.000	7.080
cmc-85F2132	295.917		2020-06-28 23:45:08 N	22.063	691.000		126.000	7.102
cmc-85F2132	297.000		2020-06-27 23:45:08 T	22.059	691.000		126.000	7.128

Figure 11 Custom report of device for Power and Thermal Metrics

Similarly, you can create and run custom reports by selecting the various Power Manager categories along with necessary columns defined in OpenManage Enterprise report builder section:

- Power Manager: Power and Thermal Report of Groups
- Power Manager: Metric Thresholds Report for Devices – Power
- Power Manager: Metric Thresholds Report for Devices – Temperature
- Power Manager: Metric Thresholds Report for Groups – Power
- Power Manager: Metric Thresholds Report for Groups – Temperature
- Power Manager: Policies Report of Groups —Static
- Power Manager: Policies Report of Groups — Temperature Triggered
- Power Manager: Power Headroom Report for Physical Groups
- Power Manager: Space Headroom Report for Physical Groups

You can create and run custom reports by selecting the different parameters belonging to either **Power Manager Devices** or **Power Manager Groups** categories on the report builder page. The custom report gives you the flexibility to run and check the report results as per the parameters selected and your requirements.

3 Report Actions

Below is a list of actions you can perform based on reports:

- Create
- Run
- Email
- Edit
- Copy
- Delete
- Export

Below is the sample with all the actions you can perform on a report:



Figure 12 Edit option for modifying custom report

3.1 Create Action

Use this option to create a custom report that you can run to capture the power and thermal data along with device inventory details. Use the create option present on the **Monitor > Reports** tab to create a report. This action is only applicable for custom reports.

3.2 Run Action

Use this option to run a report to capture the power and thermal data along with device inventory details. Click the Run option on the **Monitor > Reports** tab to run a report. This action is applicable for built-in and custom reports.

3.3 Email Action

After running a report, use this option to email the report to any OpenManage user or administrator. Click the **Email** option on the **Monitor > Reports** tab to email a report. You can share the report in four formats; HTML, CSV, PDF, XLS. This action is applicable for built-in and custom reports.

3.4 Edit Action

Use this option to edit a custom report. Click the **Edit** option on the **Monitor > Reports** tab to modify a report. This action is applicable for only custom reports.

3.5 Copy Action

Use this option to create a copy of an existing report. Click the **Copy** option on the **Monitor > Reports** tab to copy a report. This action is applicable only for custom reports.

3.6 Delete Action

Use this option to delete a report. Click the **Delete** option on the **Monitor > Reports** tab to delete a report. This action is applicable only for custom reports.

3.7 Export Action

After running a report use this option to export a report. Click the **Export** option on the **Monitor > Reports** tab to export. You can export a report in three formats; HTML, CSV, and PDF. This action is applicable for built-in and custom reports.

For procedure information about each action, refer the OpenManage and Power Manager User Guides available on the support site.

4 Use Case for Interpreting Custom Power Reports

You can run built-in or custom reports to check the power and thermal data consumed by devices which are monitored by Power Manager. You can view the data captured in the report either in an hourly or daily format as per the configurations in **Power Manager Settings**. You can configure the following two parameters in Power Manager:

- **Report Duration**—set this value for viewing power or thermal data for a selected period. The time duration for data collection can be 1 Day, 7 Days, 15 Days, 1 Month, 3 Months, 6 Months, and 1 Year.
 - To view the report data in hourly or daily format for the built-in reports, change the configurations on **Power Manager Settings** tab.
- **Aggregation Period**—set this value for the frequency of data that you want to view. You can view the frequency of data on an hourly or daily basis.

To view the report data in hourly or daily format for custom reports, change the configurations on the report builder page.

Below are the reports listed with their advantage that can benefit you to use the reports effectively:

- **Power and Thermal Report of Devices and Groups**—the benefits of this report is that you can check the power and thermal data in a single report either in an hourly or daily format instead of navigating to the individual devices and groups. This report benefits you in a scaled infrastructure where you can check the power consumption of all the devices monitored by Power Manager in a single place.

Power Manager: Power and Thermal Report of Devices Jul 15, 2020 5:52:22 AM

Group: All Devices
Description: This report contains power and thermal information of devices collected by Power Manager

DEVICE NAME	DEVICE TYPE	DEVICE MODEL	DEVICE SERVICE TAG ...	MAXIMUM POWER (WA...	MINIMUM POWER (WA...	AVERAGE POWER (WA...	MAXIMUM TEMPERAT...	AVERAGE TEMPERATUR...	INSTANT TEMPERATUR...	TOTAL ENERGY CONSI...	COLLECTED AT
SERVER	PowerEdge R940			528.000	512.000	514.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.267	28.000	26.000			2020-07-14 23:4
SERVER	PowerEdge R940			528.000	512.000	514.000	28.000	26.000	0.255		2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.265	28.000	26.000			2020-07-14 23:4
SERVER	PowerEdge R940			528.000	512.000	514.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.200	28.000	26.000	0.127		2020-07-14 23:4
SERVER	PowerEdge R940			541.000	397.000	513.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.212	28.000	26.000	0.000		2020-07-14 23:4
SERVER	PowerEdge R940			528.000	512.000	514.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.256	28.000	26.000	0.127		2020-07-14 23:4
SERVER	PowerEdge R940			528.000	512.000	514.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.265	28.000	26.000	0.255		2020-07-14 23:4
SERVER	PowerEdge R940			526.000	397.000	512.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.313	28.000	26.000	0.000		2020-07-14 23:4
SERVER	PowerEdge R940			526.000	397.000	512.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.281	28.000	26.000	0.000		2020-07-14 23:4
SERVER	PowerEdge R940			526.000	397.000	512.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.250	28.000	26.000			2020-07-14 23:4
SERVER	PowerEdge R940			541.000	397.000	513.000	28.000	26.000			2020-07-15 00:1
SERVER	PowerEdge R940			541.000	397.000	513.243	28.000	26.000	0.128		2020-07-14 23:4

Figure 13 Sample of a scalable report

- **Metric Thresholds Report for Devices/Groups**—the benefit of this report is that you can check how many times the power and thermal violations have occurred for any device or group that is monitored by Power Manager. You can navigate to any device or group, to view the current power or thermal violations. However, you can check the total number of violations only through this report.

Power Manager: Metric Thresholds Report for Devices Jul 15, 2020 6:06:54 AM

Group: All Devices
 Description: This report contains metric thresholds (power in Watt and temperature in Celsius) set for devices in Power Manager

DEVICE NAME	DEVICE TYPE	DEVICE MODEL	DEVICE SERVICE TAG	METRIC TYPE	UPPER CRITICAL	UPPER WARNING	LOWER CRITICAL	LOWER WARNING	UPPER CRITICAL VIOLA...	UPPER WARNING VIOLA...	LOWER CRITICAL VIOLA...
.SERVER	SERVER	PowerEdge R940		Power	250				3	0	0
.SERVER	SERVER	PowerEdge R940		Temperature		4			0	1	0
.SERVER	SERVER	PowerEdge R940		Power	250				0	2	0
.SERVER	SERVER	PowerEdge R940		Temperature			40		0	0	4

4 item(s) found. Displaying items 1 - 4.

Figure 14 Sample of a single report showing the total violation count

- Policies Report of Groups**—the benefit of this report is that you can check the total number of times the group policy is violated due to increase in power consumption for the devices in the group or due to addition of new devices to the group. When the group policy is violated an alert is triggered. Instead of keeping track of the number of alerts generated because of group policy violation you can track the total number of group policy violations in this single report.

5 Conclusion

Monitoring your data center is key to efficient management of IT infrastructure and business-critical operations. Such effectiveness and efficiency are enhanced by viewing the status of your data center by using micro-level data that is made possible by using the Reports feature. This technical white paper provides in-depth information about using these features by using the OpenManage Enterprise Graphical User Interface (GUI). More information about field definitions and procedures can be viewed in the product help files. Refer to the OpenManage Enterprise and Power Manager Plugin User Guides available on the support site.

6 Technical support and resources

- [Dell.com/support](https://www.dell.com/support) is focused on meeting customer needs with proven services and support.
- [Storage technical documents and videos](#) provide expertise that helps to ensure customer success on Dell Technologies storage platforms.

6.1 Related Resources

- Knowledge Base for Dell EMC OpenManage Enterprise [HTML](#)
- Knowledge Base for Dell EMC OpenManage Enterprise Power Manager and Power Center [HTML](#)
- Dell EMC OpenManage Enterprise Power Manager Version 1.2 User's Guide [PDF HTML](#)
- Dell EMC OpenManage Enterprise Power Manager RESTful API Guide version 1.2 [PDF HTML](#)
- Dell EMC OpenManage Enterprise Power Manager 1.2 Release Notes [PDF HTML](#)