



Dell OpenManage Plug-in Version 2.0 for Oracle Enterprise Manager 12c

User's Guide

June 2014

Revisions

Date	Description
March 2014	Initial release
June 2014	Version 2.0 with updated support for OEM 12c R4 version and several fixes to version 1.0

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1 About Dell OpenManage Plug-in for Oracle Enterprise Manager

1.1 Key features

Dell OpenManage Plug-in for Oracle Enterprise Manager provides a proactive approach to data center management that delivers features for monitoring Dell server, storage, and networking infrastructures in an environment managed by Oracle Enterprise Manager (OEM). The Dell OpenManage plug-in protects your existing investment in the OEM console and helps in ease of integration and monitoring of Dell devices. The OpenManage plug-in equips the Database or IT administrators with information necessary to make rapid yet informed decisions impacting the availability of data center resources and thus helps increase productivity and reduce costs.

The following are the key features of Dell OpenManage Plug-in for Oracle Enterprise Manager:

- **Discovery, Inventory, and Monitoring of Dell hardware** – The OpenManage plug-in enables data center customers to discover Dell devices, view inventory information, and periodically monitor the health of the following Dell devices:
 - Dell PowerEdge 12th generation (12G) servers using agent-free, out-of-band method through Integrated Dell Remote Access Controller 7 (iDRAC7) with Lifecycle Controller
 - Dell PowerEdge 9th generation (9G) to 12th generation (12G) servers using in-band method through Dell OpenManage Server Administrator (OMSA)
 - All Dell storage, including Dell Compellent, Dell EqualLogic, and Dell PowerVault devices
 - Dell PowerEdge VRTX and PowerEdge M1000e chassis
 - Dell Networking switches (previously Force10 and PowerConnect devices)
- **Mapping of Oracle database workload to Dell hardware** – Databases and servers are linked together automatically based on the server host name. You can also manually link other targets such as storage and switches in Oracle Enterprise Manager.
This feature allows database administrators to quickly pinpoint outage/performance issues that may occur in the Oracle infrastructure, and thus empower the DBAs to contact the appropriate team faster.
- **Device association of Dell modular systems** – OpenManage Plug-in for OEM correlates Dell Modular servers, EqualLogic blade arrays, and Force10 blade IO modules with PowerEdge VRTX and PowerEdge M1000e chassis, thus enabling the DBAs/IT admins to identify where the modular systems are residing in a data center.



- **Device specific one-to-one console launch from OEM console** – OpenManage Plug-in for OEM enables the DBAs/IT administrators to perform further troubleshooting after the issue has been identified. The OpenManage plug-in allows the administrator to take corrective action through link and launch of device-specific element management tools. It also helps to perform configuration, update, and management of Dell devices. The following are the one-to-one Dell tools supported by the OpenManage plug-in through the OEM console:
 - Integrated Dell Remote Access Controller (iDRAC) console
 - OpenManage Server Administrator (OMSA) console
 - EqualLogic Group Manager console
 - Compellent Storage Manager console
 - Chassis Management Controller (CMC) and VRTX CMC console
 - OpenManage Switch Administrator console
- **One-to-many console launch of OpenManage Essentials from Oracle Enterprise Manager** – This feature enables the administrator to view detailed inventory information of Dell devices and to perform configuration, update, and management of multiple Dell hardware through OpenManage Essentials.

The OpenManage plug-in integrates with OpenManage Essentials to retrieve hardware information to the OEM console and is a mandatory component that must be installed on a physical server or virtual machine. Multiple OpenManage plug-in instances may be pointed at the same Oracle Enterprise Manager environment at a given time. This includes instances on the same Oracle Management Agent (OMA) or instances on a separate OMA. However, each additional plug-in instance added increases the total amount of queries made to the OpenManage Essentials environment.

1.2 Support matrix

For the list of supported hardware, software and operating systems, see the *Dell OpenManage Plug-in Version 2.0 for Oracle Enterprise Manager 12c Installation Guide* at dell.com/openmanagemanuals.

Note: For the complete list of Dell hardware devices supported by OpenManage Essentials, see the *Dell OpenManage Essentials Support Matrix* at dell.com/openmanagemanuals.

1.3 Other information you may need

Installing an Oracle Management Agent: [Installing Oracle Management Agents](#)

Basic understanding of Oracle Enterprise Monitoring: [Oracle® Enterprise Manager Cloud Control Administrator's Guide](#)

Dell OpenManage Essentials Information: [Dell OpenManage Essentials Wikis](#)



2 What is new in Dell OpenManage Plug-in Version 2.0 for Oracle Enterprise Manager

Dell OpenManage Plug-in Version 2.0 for Oracle Enterprise Manager 12c newly supports OEM 12c R4 (12.1.0.4.0) version and also includes several fixes for the previous version of the plug-in (version 1.0). The issues fixed are:

- Oracle database not being detected/displayed on the 'Health and Availability' sub-section within VM target
- Alert timestamps are returned in UTC time zone
- Using periods in Dell OpenManage Essentials (Home) Target Name breaks data collection of specific metrics
- Duplicate device names result in repeating key value error in metric collection
- Incorrect Data Source labels in the Plug-in



3 Getting started with Dell OpenManage Plug-in for Oracle Enterprise Manager

3.1 Configuring OpenManage Plug-in for Oracle Enterprise Manager

Dell OpenManage Plug-in for OEM follows the standard installation steps for an Oracle Enterprise Manager plug-in. For step-by-step instructions, see the *Dell OpenManage Plug-in Version 2.0 for Oracle Enterprise Manager 12c Installation Guide* at dell.com/openmanagemanuals.

3.1.1 Enable filtering of acknowledged alerts

By default, OpenManage Plug-in for OEM collects all alerts for devices. This includes both alerts that have been acknowledged in OpenManage Essentials and alerts that have not been acknowledged. However, if it is preferred to not show alerts that have been acknowledged, there is a configuration option to disable the collection of these alerts.

To disable the collection of acknowledged alerts:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the web console, navigate to the OpenManage Essentials home target: **Targets** → **All Target** and click the target link.
3. When viewing the OpenManage Essentials home page, click the **Dell OpenManage Essentials** drop-down list and select **Target Setup** → **Monitoring Configuration**. In this view, the basic configuration options for the plug-in can be modified.
4. Change the value for **View Acknowledged Alerts (yes/no)** to **no**.
5. Click **OK**.

Add Dell OpenManage Essentials
Add a target to be monitored by Enterprise Manager by specifying target monitoring properties.

* Target Name
Target Type Dell OpenManage Essentials
Agent <https://em-win8-qa2.bluededora.localnet:3872/emd/main/>

Properties

* Dell OpenManage Essentials Hostname
Dell OpenManage Essentials Port
* Password
* Username
View Acknowledged Alerts (yes/no)

> **Global Properties**

Figure 1 Filtering acknowledged alerts

3.1.2 Configuring plug-in collection intervals

Oracle Enterprise Manager enables you to set the intervals at which the plug-in collects data for specific metrics. As certain metrics need to be updated more or less frequently, the interval can be adjusted accordingly. This can be useful for fine-tuning plug-in performance to your needs.

Note: The metric collection interval of some of the metrics may not be configurable.

To configure the plug-in collection intervals:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the web console, navigate to the OpenManage Essentials home target: **Targets** → **All Target** and click the target link.
3. When viewing the OpenManage Essentials Home page, click the **Dell OpenManage Essentials** drop-down list and select **Monitoring** → **Metric and Collection Settings**. Metrics for which you can adjust collection intervals are listed.
4. Click the link under the collection schedule column for the metric to be adjusted to begin the process of changing the interval.

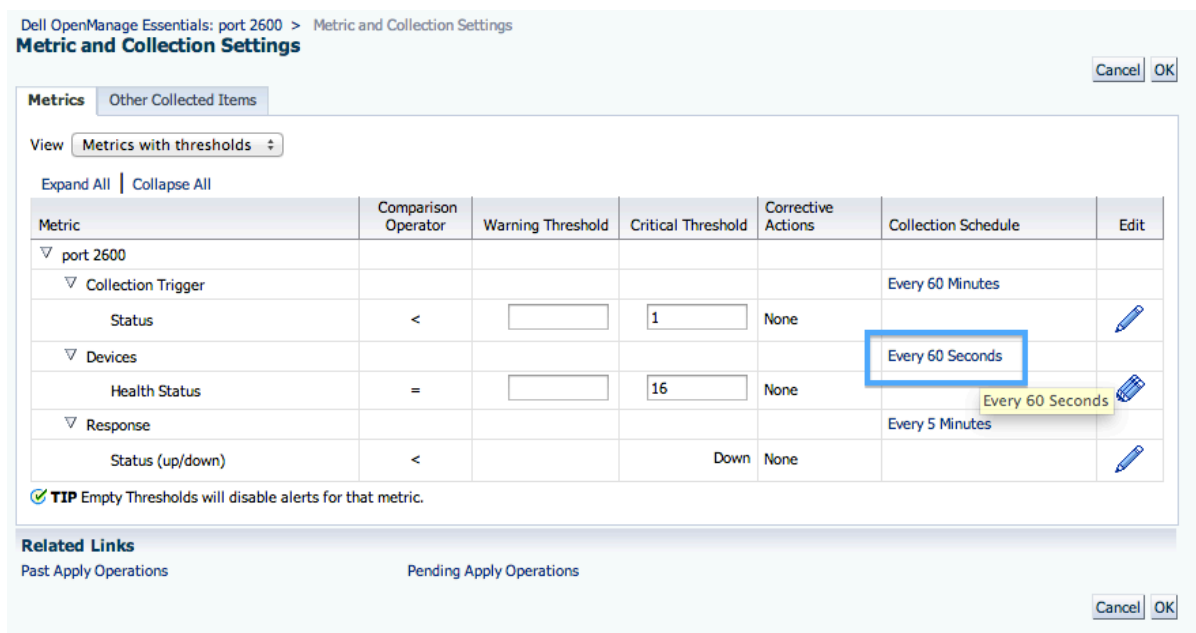


Figure 2 Adjusting a metric collection schedule

3.1.3 Creating manual associations between targets

Associating two targets in OEM can greatly enhance the monitoring capabilities of OpenManage Plug-in for OEM. It enables you to create a logical link between two groupings of data or targets. This enhances the ability to analyze issues or trends in data and understand other areas in the infrastructure that may be impacted. This is specifically relevant for Dell storage and switch association, which is only supported through manual association by the OpenManage plug-in.



To manually associate two Dell OpenManage Essentials sub-targets using Oracle Enterprise Manager:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the web console, navigate to **Setup** → **Add Target** → **Generic System**.
3. Fill out the necessary information under the **Create Generic System** form.
By default, it is required to provide the following: **Name**, **Time-Zone**, and **Members**.

Note: The **Members** field should include the two targets the association is being made for.

4. Click **Next**.
5. In the **Create Generic System** form, click the **Add** button to create a new association between the targets selected on the previous page.
6. Click **OK**.
7. Click **Next** to proceed to the **Availability Criteria** page.
8. Depending on the association made in the previous step, define the targets that are needed to be available in order for the association to be considered valid. These are called **Key Members**.
9. Click **Next**.
10. Click **Next** to review the settings, and then click **Finish**.

3.1.4 Viewing associations between targets

After the associations are created, they can be viewed in the topology view of OEM. This view is useful for understanding the relationship between the Dell OpenManage Plug-in targets as well as the Dell OpenManage Plug-in targets to other OEM targets.

To view associations within OEM:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the web console, navigate to **Targets** → **All Targets**.
3. Click the target from the list that is part of the association to be viewed.
4. From the sub-target page, select the **Dell OME Server** contextual drop-down list.
5. Navigate to **Configuration** → **Topology**.
6. Use the topology view to see the associations between the target and other targets.



4 Using OpenManage Plug-in for Oracle Enterprise Manager

4.1 Discovering and promoting devices

After completing the initial setup process of the plug-in, all devices from the monitored Dell OpenManage Essentials environment at that time will have been discovered, and based on your preference, promoted.

If additional devices are added to the environment, you will need to take additional action to collect data from these devices. The OpenManage plug-in will automatically discover these new devices and add them in the plug-in, however, the plug-in will not collect the device-specific data.

Note: The new device will be displayed in the tree view of the OpenManage Essentials target as a greyed out node and in an unknown status until the device is promoted.

From the discovered state, you must promote each additional new device from the list of discovered targets by performing the following steps:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the Enterprise Manager web console, navigate to **Setup → Add Target → Auto Discovery Results**. The **Agent-based Targets** table displays any new devices that have been discovered or any device that was chosen to not be promoted during the initial setup.

Note: Oracle Enterprise Manager sets the default interval for running discovery of devices at one day. This can be reconfigured by going to **Setup → Add Target → Configure Auto Discovery** and clicking the **Dell OME Discovery Module**. Here, choose **Use following discovery schedule for all target types on all hosts** and then fill in the frequency text box with a desired interval.

3. Select the newly discovered devices and click the **Promote** button.

Note: Multiple devices may be promoted at the same time by utilizing multi-select. However, for multiple devices to be promoted simultaneously, the devices must be of the same target type.

4. After all the desired devices have been promoted and the plug-in has completed a new collection interval, the OpenManage Essentials target displays the new devices with data.

For more information on the initial setup and configuration of the OpenManage Essentials target, see the *Dell OpenManage Plug-in Version 2.0 for OEM Installation Guide* at dell.com/openmanagemanuals.



4.3 Managing devices

Navigate to the OpenManage Plug-in for OEM 12c to view the devices from which data is collected by the plug-in. To navigate to the OpenManage Plug-in for OEM 12c:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the web console, navigate to **Targets** → **All Targets**.
3. Click the instance name that was used during configuration from the table of targets listed.

All Devices view

Viewing the plug-in from the **All Devices** node in the tree or any other top-level node in the tree (such as Servers (OS), Servers (iDRAC), Storage, and Network), will display a list of all devices that are associated with that node and the ten most recent alerts from each device. You may view a specific device by clicking the links provided in the **Name** column under the **Devices** table or the **Device** column under the **Alerts** table. Selecting an alert from the **Alerts** table will display a pop-up window that provides details on the selected alert. Clicking the **View in OpenManage Essentials** button in the upper-right corner of the page while on the **All Devices** node will open the Dell OpenManage Essentials console to the top-level node.

Server Device view

To view a server device (OS or iDRAC), you can select the specific server from the **Devices** table in the **All Devices** top-level node, one of the **Servers** top-level node, or the server device from the tree view in the left panel. The server device view displays details on the status and health of the Dell device. Next to these status metrics is basic information on the device, such as the device Service Tag and model. Additionally, the processor and memory details are listed below. The **Database** table on the right side of the page shows any databases that were automatically discovered during the last collection interval. If there are databases listed here, a link will be provided to view the target of that database. Additional details are listed below such as contact information, operating system information, and a table listing all data sources for the device.

Storage Devices view

To view a storage device, you can select the specific storage device from the **Devices** table in the **All Devices** top-level node, the **Storage Devices** top-level node, or the specific storage device from the tree view in the left panel. The storage device view displays details on the status and health of the Dell device at the top-left corner of the page. Next to these status metrics is basic information on the device, such as the device Service Tag and model. A table listing all data sources for the device is found on the right side of the page. If applicable, each data source name is provided a link to launch a console that is specific to that data source.

Network Devices view

To view a network device, you can select the specific network device from the **Devices** table in the **All Devices** top-level node, the **Network Devices** top-level node, or the specific network device from the tree view in the left panel. The network device view displays details on the status and health of the Dell device in the top-left corner of the page. Next to these status metrics is basic information on the device, such as the device Service Tag and model. A table listing all data sources for the device is found on the right side of the page. If applicable, each data source name is provided a link to launch a console that is specific to that data source.



4.3.1 Launching consoles

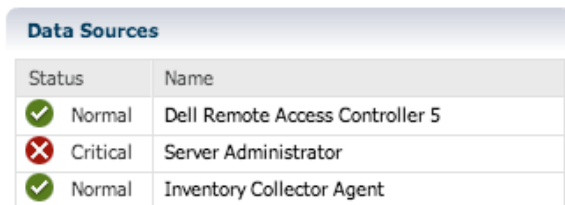
Dell OpenManage Plug-in for OEM utilizes two different types of consoles to link between the plug-in and Dell devices and software. OpenManage Plug-in for OEM enables launching a console using either the **Data Sources** or **View in OpenManage Essentials** link.

4.3.2 Data sources

OpenManage Plug-in for OEM provides linking to essential Dell hardware consoles related to the device. The plug-in provides links to any devices that have consoles available to them through OpenManage Essentials. The following are the console launch options available through the plug-in in the **Data Sources** table of Oracle Enterprise Manager:

- Integrated Dell Remote Access Controller (iDRAC) console
- OpenManage Server Administrator (OMSA) console
- EqualLogic Group Manager console
- Compellent Storage Manager console
- Chassis Management Controller (CMC) and VRTX CMC console
- OpenManage Switch Administrator console

To use the console linking, navigate to the device that is intended to link from and view the **Data Sources** table on the target page. In the **Data Sources** table, all available data sources will be listed with links to the appropriate console for administration.



Status	Name
✓ Normal	Dell Remote Access Controller 5
✗ Critical	Server Administrator
✓ Normal	Inventory Collector Agent

Figure 3 Viewing data sources



4.3.4 View in OpenManage Essentials

In addition to data source linking, Dell OpenManage Plug-in for OEM also provides linking to Dell OpenManage Essentials. This linking is contextual to your current position in the tree hierarchy of the plug-in.

When viewing a specific device from the OpenManage Plug-in Home target, the device page will contain a banner across the top of the page. Located here, is a link labeled **View in OpenManage Essentials**. This link will open a new web browser window to that specific device within Dell OpenManage Essentials.



Figure 4 Using the OpenManage Essentials console launch

Note: You must provide the credentials at the login page to access the OpenManage Essentials web console.

4.3.5 Plug-in metric collection intervals

The following table describes the frequency at which the plug-in collects metrics from the monitored Dell OpenManage Essentials targets.

Note: The frequencies are calculated on a zero latency environment and will vary depending on the monitoring environment setup.

Dell OpenManage Essentials

Metric	Category	Collected (min.)	Read from cache (min.)
Response	Performance	5	-
Collection trigger	Performance	60	-
Dell OpenManage Essentials group metrics	Configuration	5	5
Dell OpenManage Essentials group hierarchy	Configuration	5	5
Device	Performance	1	-
Device details	Performance	60	-
Software agent	Performance	60	-
Alerts	Performance	1	1

Dell OpenManage Essentials CMC

Metric	Category	Collected (min.)	Read from cache (min.)
Response	Performance	5	-
Dell OpenManage Essentials group hierarchy	Configuration	-	120
Device	Performance	-	5
Device details	Performance	-	60*
Software agent	Performance	-	60*

* Metric collected via "Is Target Separator"

Dell OpenManage Essentials Server

Metric	Category	Collected (min.)	Read from cache (min.)
Response	Performance	5	-
Dell OpenManage Essentials group hierarchy	Configuration	-	120
Device	Performance	-	5
Device details	Performance	-	60*
Software agent	Performance	-	60*

* Metric collected via "Is Target Separator"

Dell Open Manage Essentials Storage

Metric	Category	Collected (min.)	Read from cache (min.)
Response	Performance	5	-
Dell OpenManage Essentials group hierarchy	Configuration	-	120
Device	Performance	-	5
Device details	Performance	-	60*
Software agent	Performance	-	60*

* = Metric collected via "Is Target Separator"



Dell OpenManage Essentials Switch

Metric	Category	Collected (min.)	Read from cache (min.)
Response	Performance	5	-
Dell OpenManage Essentials group hierarchy	Configuration	-	120
Device	Performance	-	5
Device details	Performance	-	60*
Software agent	Performance	-	60*

* = Metric collected via "Is Target Separator"



5 Best practices

The following are the best practices recommended for implementing and using Dell OpenManage Plug-in for Oracle Enterprise Manager:

5.1 Dell PowerEdge servers

To monitor Dell PowerEdge 12th generation (12G) servers, it is recommended to use agent-free, out-of-band method, using Integrated Dell Remote Access Controller 7 (iDRAC7). By using out-of-band management, IT administrators no longer need to install or periodically certify/validate traditional in-band OpenManage Server Administrator (OMSA) installed on the server. The out-of-band management method allows IT administrators to effectively monitor Dell systems with increased availability from any location, without the use of agents, and regardless of the operating system or hypervisor presence or state.

Alternatively, Dell PowerEdge servers from 9th generation (9G) to 12th generation (12G) can be monitored using in-band method through OpenManage Server Administrator (OMSA) installed server. This includes Microsoft Windows, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), ESX/ESXi, Hyper-V, and Citrix XenServer support. OMSA is currently not supported on Oracle Linux operating system. To monitor servers running Oracle Linux operating system, use iDRAC7 supported only with PowerEdge 12G servers. The *Dell OpenManage Server Administrator Support Matrix* can be accessed at delltechcenter.com/omsa.

5.2 Dell OpenManage Essentials

While discovering devices in OpenManage Essentials, for optimal operation it is recommended to:

- Discover target devices running Linux operating system using SSH protocol and iDRAC using WS-Man protocol
- Discover target devices running Windows operating system using WMI protocol and iDRAC using WS-Man protocol
- If OMSA is installed and supports the operating system of the target device, SNMP protocol can also be used instead of the SSH/WMI protocol
- In server generations prior to Dell PowerEdge 11G, WS-Man protocol is not supported for discovering iDRAC; SNMP protocol must be used instead.

Discovering devices using the recommended protocol in OpenManage Essentials enables OpenManage Plug-in for OEM to discover Dell devices, and for the automatic association of the server-to-database to happen in the Oracle Enterprise Manager console.



5.4 OMA considerations for plug-in deployment

Careful consideration of Oracle Management Agent (OMA) distribution should be used when designing and preparing the Oracle Enterprise Manager environment for the OpenManage plug-in. While it is possible for the plug-in to utilize the OMA that is local to an Oracle Management Server (OMS), it is a best practice to always use an OMA that is installed on a separate system. This allows for a proper dedication of hardware for the data collection process of the plug-in.

Depending on how many device targets are promoted for the plug-in deployment, more OMA systems may be needed. This is to compensate for additional workload and collections that occur with each additional device target. For more information, see the "Sizing Your Enterprise Manager Deployment" section in the [Advanced Oracle Installation and Configuration Guide](#).

5.5 Plug-in maintenance

As OpenManage Essentials environments have the potential to change over time, it is recommended that the OpenManage Plug-in periodically runs its discovery process, promotes newly discovered device targets, and removes device targets that are no longer needed.

5.5.1 Configuring auto discovery

Regular running of the OEM auto discovery process will ensure that all newly added devices to the OpenManage Essentials environment will be discovered. If the default configuration of the auto discovery process has not been modified, the OMA on which the plug-in is deployed will run a collection once every day for new device targets.

To modify or enable this collection schedule:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the Enterprise Manager web console, navigate to **Setup** → **Add Target** → **Configure Auto Discovery**.
3. Select the **Dell OME Discovery Module** and select **Use following discovery schedule for all target types on all hosts**. On this page, fill in the frequency text box with a desired interval.

5.5.2 Periodically promoting device targets

If you have chosen to enable the auto discovery schedule on the OMA for the OpenManage plug-in, the process may periodically discover new device targets. These newly discovered device targets will remain listed in the **Discovery Results** table and will not be collected by the plug-in until they are promoted. If it is desired to not collect data for these device targets, no action is needed. However, if it is desired to collect data for these device targets, the targets must be promoted for the collection to be enabled.



To promote a device target:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the Enterprise Manager web console, navigate to **Setup** → **Add Target** → **Auto Discovery Results**.
3. Click the **Non-Host Targets** tab.
4. In the list that is displayed, select all newly discovered device targets that you want to promote and click **Promote**.
5. On the following page all properties will be pre-filled and will not need modification. Click **Promote**.

Note: Promoting several device targets simultaneously is possible. However, all targets being promoted simultaneously must be of the same target type.

Note: Changing pre-filled properties during the promotion process is not recommended and could cause undesired behavior.

5.5.3 Periodically deleting device targets

It is recommended to periodically review the device targets that are promoted in the OpenManage plug-in and remove plug-ins that no longer exist or desired to be collected for. Deletion of device targets will make the plug-in run more efficiently and eliminate cluttering of unwanted data.

To remove a device target:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the Enterprise Manager web console, navigate to **Targets** → **All Targets**.
3. In the list that is displayed, right-click the device target that you want to delete and select **Target Setup** → **Remove Target...**

5.5.4 Naming the target instance

When naming the OpenManage Essentials target, non-alphanumeric characters should be avoided. If non-alphanumeric characters are used, the plug-in may encounter errors during the data collection process.

Exceptions to these characters are underscores, spaces, periods, and hyphens. All alphanumeric characters are acceptable for the target name. This value can be set during the target configuration and may not be modified after the target instance is created.



6 Use case scenarios

As a database/system administrator, I would like to have a plug-in for the OEM console to perform monitoring, association, and console launch for a set of Dell devices

Dell OpenManage Plug-in for OEM monitors, associates, and provides console launch for the following Dell devices:

- **Dell PowerEdge servers (9G to 12G)**
- **Dell chassis**
 - PowerEdge M1000e
 - PowerEdge VRTX
- **Dell storage arrays**
 - Compellent
 - PowerVault
 - EqualLogic
- **Dell network switches**
 - Force10
 - PowerConnect

Notes:

- Dell PowerEdge 12G servers are supported by the OpenManage plug-in using an agent-free, out-of-band method through Integrated Dell Remote Access Controller 7 (iDRAC7) with Lifecycle Controller. PowerEdge 9G to 12G servers are supported using in-band method through OpenManage Server Administrator (OMSA). OMSA is currently not supported on Oracle Linux operating system. To monitor servers running Oracle Linux operating system, use iDRAC instead.
- It is recommended to discover devices through out-of-band method even though OpenManage Essentials can discover devices through in-band and out-of-band methods. This is because out-of-band management method allows increased availability from any location, without the use of agents.
- Association between database and server targets is automatic based on the host name. The host name should be the same in both OpenManage Essentials and the OpenManage plug-in for automatic server-to-database association. If the host name of the target is different between OpenManage Essentials and the OpenManage plug-in, the targets must be linked manually by the user. It is recommended that all servers are registered in DNS and that the DNS name resolution option (selected by default) in OpenManage Essentials is used. Other targets (storage & switches) can also be linked manually by the database/IT administrator.
- Chassis events are not associated with the server, but incidents are created based on change in chassis status.
- Out-of-band monitoring (only) is dictated by how you discover the host from OpenManage Essentials. However, if the host name is not available through out-of-band method only, you must also discover the operating system to get the host name for associations to be made.



As a database/system administrator, I want to classify my Dell hardware nodes based on the database grouping and application grouping within OEM. This allows the administrator to see what is used to host-specific workload defined in OEM.

This is specifically relevant from a Database Administrator (DBA) perspective to view database storage usage in storage systems.

This is not a workload or application viewer. Dell OpenManage plug-in nodes will be grouped consistently with the representation in OpenManage Essentials and will be automatically linked to the appropriate database targets as supported.

As a database/system administrator, I would like to see all Modular Blades, EqualLogic Blade Arrays, and Force10 Blade IO switches to be grouped under their respective chassis similar to what is done in OpenManage Essentials.

The OpenManage plug-in renders device groupings the same way Dell OpenManage Essentials renders it. A tree-view panel is used to show the relationship of devices to each other, similar to OpenManage Essentials.

As a database/system administrator, I want to see the topological view in the OEM console showing the database mapping with hardware devices.

A topological view showing the affected databases connected to the affected hosts is provided within the Topology view of Oracle Enterprise Manager for a device target. You must perform manual target associations to see additional device connections in topology view.



7 Troubleshooting

When working with Dell OpenManage Plug-in for OEM, you may encounter configuration or behavior issues. This section provides information required to troubleshoot the common issues.

7.1 Plug-in Log location and description

OpenManage Plug-in for OEM log files can be found on the local system of the Oracle Management Agent (OMA). Depending on the installation location of the OMA, the logs will be located:

```
[OMA_HOME]/plugins/dell.em.ome.agent.plugin_12.1.0.2.0/scripts/logs
```

There will be two types of log files in this directory: a plug-in target trace log and a target discovery log.

Log file	Description
Discovery log	Use this log to diagnose problems that may have occurred during the discovery process.
Trace log	This log is the main event-tracing log for the plug-in, specific to each target. The log file is named according to the target it belongs to.

Dell OpenManage Plug-in for OEM trace log file may also be viewed through the Oracle Enterprise Manager Cloud Control web console.

To view the plug-in trace log:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the web console, navigate to **Targets** → **All Targets**.
3. Click the link of the Dell OpenManage Essentials target from the list of targets.
4. After the home page of the target is displayed, click the **Dell OpenManage Essentials** contextual drop-down list and select **Monitoring** → **All Metrics**.
5. Select **Error Log** from the list on the left of the screen.



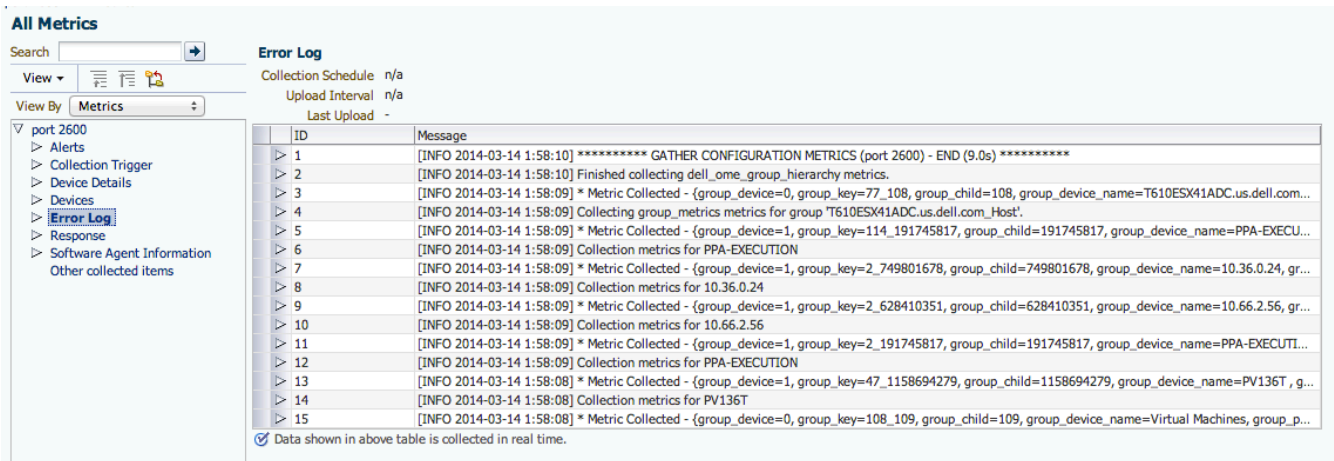


Figure 5 Viewing trace logs from OEM

7.2 Missing device data

When viewing the OpenManage Essentials Home target, navigating through the tree view shows some devices without data.

To enable data collection for the device sub-targets of the OpenManage Essentials Home target, each device sub-target must be promoted within the OEM Cloud Control. To resolve this issue:

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the Enterprise Manager web console, navigate to **Setup** → **Add Target** → **Configure Auto Discovery**.
3. Under the **Configure Auto Discovery** section, click the **All Discovery Modules** link in the **Auto Discovery** table.
4. Select the appropriate host being used for the OpenManage Essentials Home target and click the **Configure** button.
5. Uncheck all boxes except for the **Dell OME Discovery Module** to disable the discovery of other targets unrelated to this plug-in.
6. Click **OK**.
7. Select the same host as in step 4 and click **Run Discovery Now**.
8. After the discovery process is complete, view the discovery results to see the targets that have been discovered.
9. Select all targets in this list that you want to collect data from and click **Promote**.
10. After this process finishes, navigate back to the OpenManage Essentials Home target to verify if the data is now being collected.

Note: The time between the target being promoted and data for the target returning is dependent on the configured collection interval in OMA.



7.3 Target is not available

There are several possible reasons for a Dell OpenManage plug-in target to have a down status. Most often the reason for the OpenManage plug-in for OEM target to have a down status is due to an error during configuration. When configuring the plug-in, ensure that you have verified all credentials that are used to connect to the Dell OpenManage Essentials system. If any of these credentials are incorrect, the plug-in target will go into a down status until rectified.

7.4 Automatic association between database and server is not working

For the plug-in to create automatic server-to-database associations, it is recommended to discover the target running Linux operating system using SSH protocol and iDRAC using WS-Man protocol, and/or discover the target running Windows operating system using WMI protocol and iDRAC using WS-Man in OpenManage Essentials. If OMSA is installed on the target operating system, SNMP protocol can be used instead of SSH/WMI protocol. In PowerEdge server generations prior to 11G, WS-Man protocol is not supported for iDRAC; SNMP protocol must be used instead.

Note that the servers discovered in OpenManage Essentials are linked to database targets by the plug-in based on host name. If the host name of the target is different between OpenManage Essentials and the plug-in, the two targets must be linked manually by the user. It is recommended that all servers are registered in DNS and that the DNS name resolution option (selected by default) in OpenManage Essentials is used.

7.5 A device with a name that duplicates a name of another device is not discovered

OpenManage Plug-in for OEM 12c is designed to monitor an OpenManage Essentials environment where each device has a unique device name. If there are devices that exist in the environment with duplicate names, the plug-in will only discover the first of the duplicate devices (ordered by the ID assigned in Dell OpenManage Essentials).

If it is confirmed that there are multiple devices with matching device names, contact your administrator to modify these names within OpenManage Essentials. After the device names have been modified, run the auto discovery process again for the plug-in. The auto discovery process will find the newly named devices that are also available for promotion.



8 Frequently Asked Questions

Question: Can you please brief us on licensing of Dell OpenManage Plug-in for OEM?

Answer: You can install and use the OpenManage plug-in for free. There is no cost associated with the plug-in or for OpenManage Essentials, which is a mandatory software for the plug-in to work.

Question: What are the languages supported by the plug-in?

Answer: The plug-in is localized to French, German, Spanish, Japanese, and Simplified Chinese.

Question: I do not want to install OpenManage Essentials. Can I still use this plug-in?

Answer: No, installing OpenManage Essentials on a physical server or virtual machine is mandatory for the plug-in to work.

Question: What is the difference between in-band vs. out-of-band (OOB) method of monitoring Dell servers?

Answer: There are two ways to monitor Dell servers, one is through in-band method using a software agent known as OpenManage Server Administrator (OMSA) installed on the server, and the other is out-of-band method through integrated Dell Remote Access Controller (iDRAC). iDRAC is a piece of hardware attached on the motherboard of the server that allows systems administrators to monitor and manage Dell servers regardless of whether the machine is powered on, or if an operating system is installed or functional. The out-of-band method works from any location and without the use of software agents such as OMSA. In contrast, for in-band management, OMSA must be installed on the server being managed, and only works after the system has started and the operating system is running and functional. The OMSA agent has its limitations, for example, it does not allow access to BIOS settings or the reinstallation of the operating system, and cannot be used to fix problems that prevent the system from starting.

Question: I have earlier generation of Dell servers (9G to 11G) in my data center. Can I still monitor them using the plug-in?

Answer: Yes, you can still monitor earlier generation of servers (9G to 11G) using the plug-in through OpenManage Server Administrator (OMSA) installed on the server. OMSA is not supported on Oracle Linux operating system, and hence you will not be able to monitor such servers. Servers running Oracle Linux operating system can only be monitored through iDRAC7, supported only with PowerEdge 12G servers. For details on operating system support for OMSA, see the *OpenManage Server Administrator Support Matrix* at delltechcenter.com/omsa.

Question: Can I monitor Dell servers using the OMSA agent instead of out-of-band monitoring?

Answer: Yes, you can monitor Dell servers using the OMSA agent. For further details, see the previous question.



Question: How is this plug-in different from the Dell Force10 plug-in?

Answer: The Dell OpenManage plug-in for OEM is used in a data center to perform end-to-end monitoring of all Dell hardware – PowerEdge servers, M1000e/VRTX chassis, EqualLogic/PowerVault/Compellent storage and Force10/PowerConnect network switches. In contrast, the Dell Force10 plug-in is used to monitor the health of only Dell Force10 switches in the data center. The Dell Force10 plug-in gathers performance and availability metrics from the Dell Force10 switches to diagnose and troubleshoot the network issues alone.

Question: How do I download Dell OpenManage Essentials?

Answer: You can download Dell OpenManage Essentials from Dell TechCenter at delltechcenter.com/ome.

