



Dell Integrated Systems for Oracle Database - Oracle Enterprise Manager Integration Guide v1.0

Dell Oracle Solutions Engineering
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1 About this Guide

This is a supplementary guide to the Dell Integrated Systems for Oracle Database (DISOD) Owner's Guide that is available on Dell Support site. This guide describes the installation, configuration, and integration of Dell infrastructure management software (Open Manage Essentials) with Oracle Enterprise Manager in order to manage and monitor the DISOD hardware components along with the Oracle databases from a single management console. This guide is intended for system administrators, storage administrators, and for Oracle database administrators (DBA).



2 Introduction

DISOD solution rack ships with a pre-integrated hardware infrastructure that is dedicated for the management and monitoring of its hardware components. Using the DISOD management infrastructure, customers and Dell Services or Support can manage and monitor any of the hardware components—either locally or remotely.

The DISOD management infrastructure consists of the following dedicated hardware:

- **Management Switch:** Dell Networking 1 GbE switch is used as the dedicated management switch. It is pre-configured and pre-cabled with the rest of the DISOD hardware components.
- **Management Server (MS):** Dell PowerEdge R320 server is used as the dedicated management server. It is pre-installed with Microsoft Windows Server 2012 R2 as the base operating system (OS), and is pre-configured with two Hyper-V virtual machines (VMs).

As mentioned in the beginning of this section, the DISOD solution ships with its management hardware infrastructure pre-integrated and pre-configured with the rest of the DISOD hardware components. However, for the DISOD management solution to be fully functional, it requires the installation and configuration of the management software at the customer site.

With DISOD being an Oracle database solution, the goal of the DISOD software management solution is to provide Oracle DBAs a single console to manage and monitor all the DISOD hardware components along with managing their Oracle databases. This is achieved by installing and integrating the following management software:

- Oracle Enterprise Manager (OEM) Cloud Control 12c
- Dell OpenManage Essentials (OME)
- Dell OME plug-in for OEM
- Dell Acceleration Appliance for Databases (DAAD) plug-in for OEM



Figure 1 shows the architectural overview of the DISOD management solution.

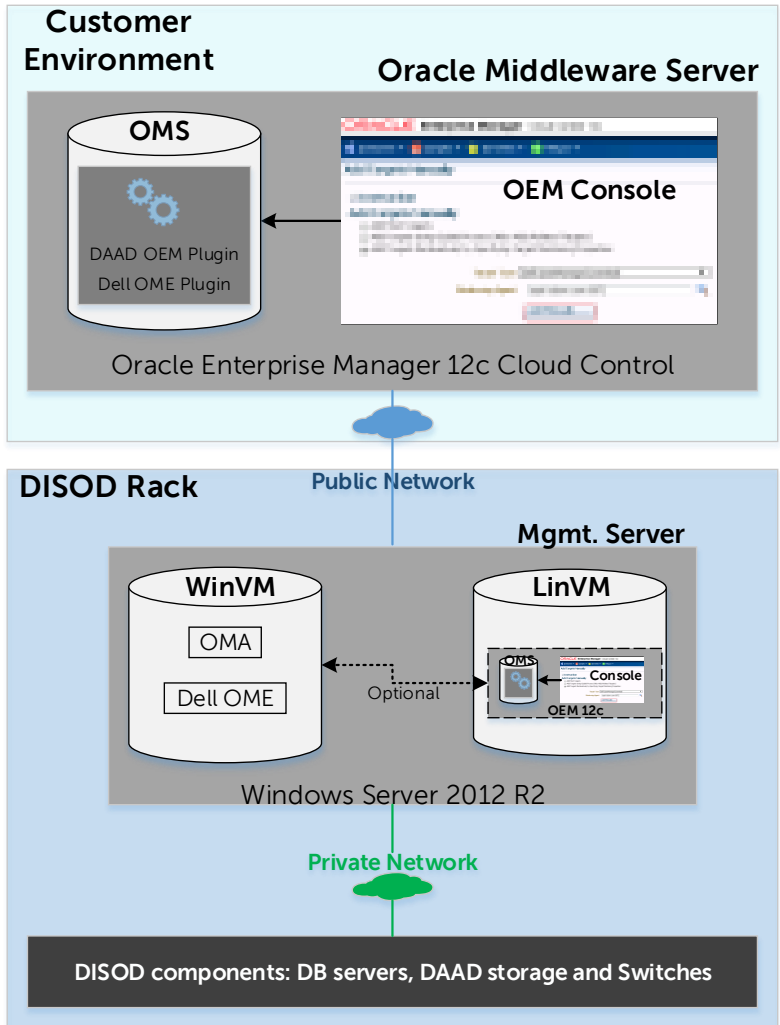


Figure 1 DISOD management solution architectural overview

The core architectural component for the DISOD management solution is the Management Server, which contains two VMs that host the required management software. Also, the network, management software, and the infrastructure must be properly configured for all the DISOD components to be managed by the Oracle Enterprise Manager Suite.

The following sections in this document describe the installation, configuration, and integration of the required management software needed to manage and monitor the DISOD solution rack from a single OEM console.



3 Installation overview

This section provides an overview of

- The Management Server OS configuration
- Management software installation flow, and
- The network prerequisites

The DISOD solution is managed primarily by using two different software components: Oracle Enterprise Manager and Dell OpenManage Essentials software application.

3.1 Management Server OS configuration overview

This section provides the OS configuration overview on the management server (R320) before it ships out to the customer.

The management server comes pre-installed with the following configuration:

- MS Windows Server 2012 R2 Standard Edition (SE) as the base physical OS
- Two Hyper-V VMs:
 - **WinVM:** This is the Windows-based VM that is pre-installed with Windows Server 2012 R2 SE as the guest OS and is pre-configured with the name WinVM. This VM is used to install the following management software:
 - Dell OpenManage Essentials
 - Oracle Management Agent (OMA)
 - **LinVM:** This is the Linux-based VM that is pre-installed with Oracle Linux 6.6 running the Red Hat Compatible Kernel as the guest OS and is pre-configured with the name LinVM. This VM is primarily used for the configuration of the DISOD components before it is shipped out to the customer. Customers can choose to install OEM on this VM at their site if they do not have a pre-existing OEM environment. It also provides for a Linux-based environment to remotely access any of the DISOD components, if required.

Hereafter in this document, these two VMs will be referred to as WinVM and LinVM, unless stated otherwise.

3.2 Management software installation overview

This section gives an overview of the required software components and the graphical flow of the installation steps. As described in the previous sections, the OEM and OME are the key software elements for managing the DISOD solution. To enable these software to work together, there are extra software components that must be installed, as noted in the list below:

- PsExec utility
- Oracle Management Agent for Windows
- Dell OME plug-in for OEM



- Dell Acceleration Appliance for Databases (DAAD) plug-in for OEM

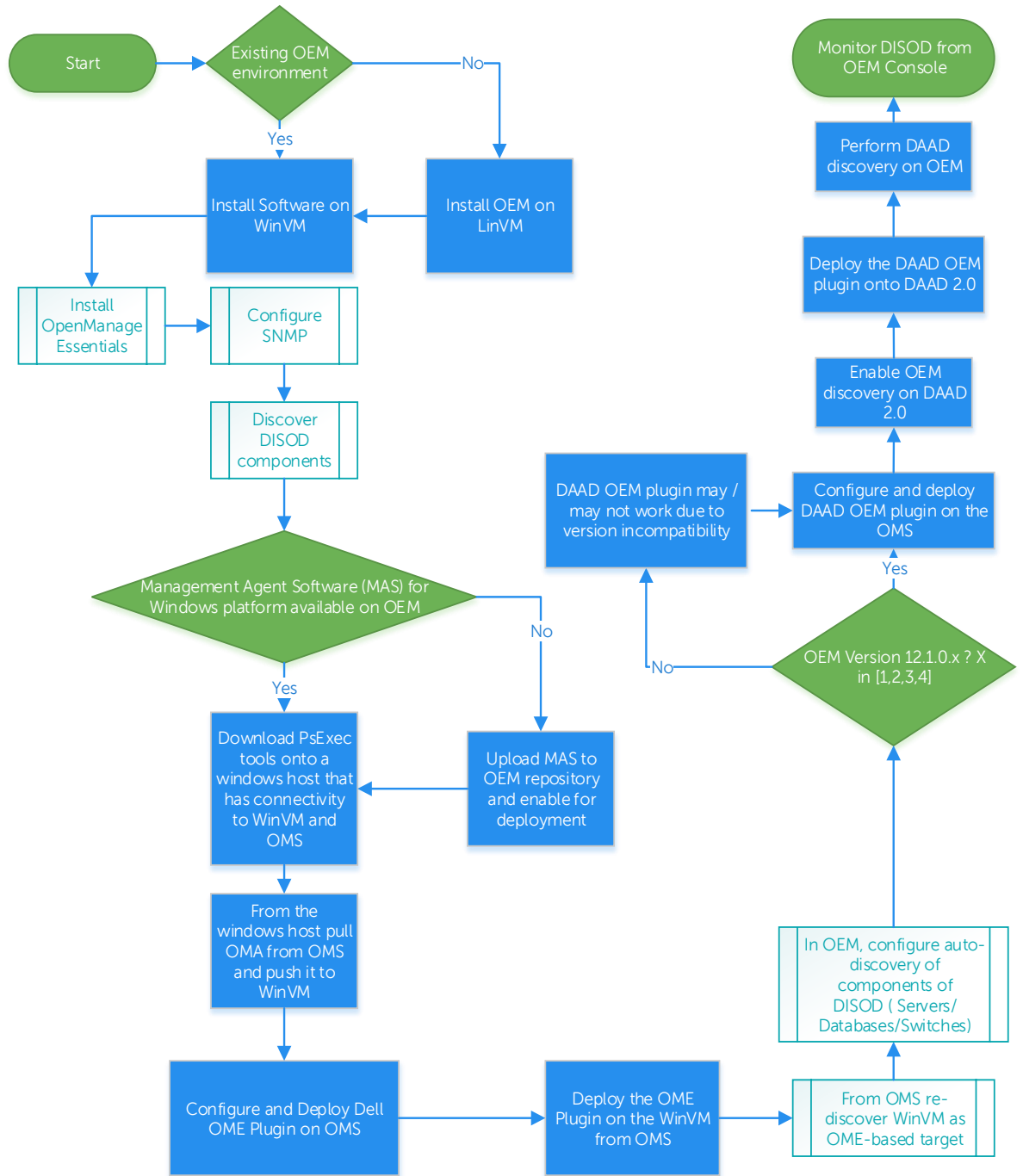


Figure 2 Management Software Installation process

Figure 2 shows the graphical flow of the installation steps of all the required management software that is described in this document.

NOTE: To check the Oracle Management Agents certified with the customer's existing OEM version, refer to the OEM certification matrix.



3.3 Network prerequisites

The following are the network prerequisites that must be configured before installing DISOD management software.

- Switch prerequisites:
 - Ensure that the customer's public network is connected to the public network port(s) that are pre-defined¹ on the top-of-rack (ToR) S6000 switch(es).
- Management server prerequisites:
 - a. Configure public IP address for the public network adapter `dMan-pub` on the Management Server's base Windows Server 2012 operating system.
 - b. Configure public IP address for the public virtual network adapter `WinVM-pub` in WinVM.
 - c. In the DNS server, add a DNS (A) record for the WinVM's computer name `WinVM- <servicetag>`² and map it to the public IP address of `WinVM-pub` that was assigned in step b. This will provide `WinVM- <servicetag>` with a Fully Qualified Domain Name (FQDN). This is required in order for OEM to communicate with OMA in WinVM.

NOTE: It is assumed that a DNS setup exists at the customer site. If it does not exist then DNS can be set up on WinVM. Use the **Roles and Features** section under Windows Server 2012 Server Manager in WinVM and add the **DNS and AD** roles. While enabling the AD feature, ensure to set up the appropriate domain name as per customer's DNS policies and standards. Hereafter in this document, reference to DNS server assumes that it exists either at customer's site or as a new one in WinVM.

- d. The public virtual network adapter `eth1` in LinVM is pre-configured from factory with a temporary routable IP address. Therefore, ensure that this public routable IP address is reconfigured with the customer's appropriate public IP address.
- e. In the DNS server, add a DNS (A) record for LinVM's hostname `LinVM- <servicetag>` and map it to the public IP address of LinVM's public network adapter `eth1` that was reconfigured in step d.

NOTE: It is recommended for the Management Server (R320) to have internet connectivity because the installation of some of the management software such as PsExec, require online connectivity to download the necessary packages.

¹ For pre-defined port functions on the S6000 switches, see the *DISOD Owner's Guide*.

² `<servicetag>` is the unique Service Tag ID of the management server. This is used to define the unique computer name of WinVM.



- Database nodes prerequisites:
 - a. Create bonding (`bond0`) by using the public network ports on each of the database nodes and configure public IP address to ensure that the database nodes can be reached from the customer's public network.

NOTE: In the R730-based database nodes, `eth4` and `eth6` are the public network ports, and in the R930-based database nodes, `eth2` and `eth4` are the public network ports.

- b. Assign hostnames to each of the database nodes.
 - c. In the DNS server, add the DNS (A) records for the hostnames of all the database servers and map it to their respective public IP addresses that was assigned in step a. This will establish the FQDN for each of the database servers. For example, `database.domain.local`, which in turn, will map to their respective IP addresses.
- DAAD nodes prerequisites:

All the DAAD nodes are configured with a temporary domain name, public cluster IP address, and public management IP address. Therefore, ensure to reconfigure them according to customer's public network standards and policies. To reconfigure DAAD nodes:

1. Ensure all DAAD nodes are turned on.
2. From the management server, by using a browser, log in to iDRAC of the first DAAD node.

NOTE: Refer to DISOD 2.0 Owner's Guide to determine the pre-configured IP address of each DAAD node's iDRAC.

3. After logging in to the iDRAC GUI, click the **Launch** button to start the Virtual Console of the DAAD server.
4. From the Virtual Console of the DAAD server, perform the following steps to reconfigure the DAAD node's management IP address, domain name, and cluster IP address:
 - a. Log in as `admin/oracle` to the DAAD node.
 - b. At the CLI, enter `maintenance on`.
 - c. Enter `setup lan` to view the **Setup** dialog box for LAN configuration.
 - d. Press the Tab key to highlight **Ethernet Network Adapter** (the management IP adapter), and then press ALT + i to edit its IP address.
 - e. Enter the appropriate customer's public IP address and Subnet Mask, and then press ALT + n.
 - f. Press ALT + s to switch to the **Hostname/DNS** tab.
 - g. Press ALT + D to edit the Domain Name and add the appropriate domain name.

NOTE: Customers need not change the hostname of DAAD, unless it is necessary to conform to their DNS standards and policies.



- h. Move the cursor to Name Server 1 and add the appropriate DNS server IP address.

NOTE: The DNS IP address is either the customer's existing DNS server IP address or the new one set up in WinVM.

- i. Press ALT + u to change the Routing (customer's network gateway) IP address of the DAAD Node
- j. Press ALT + o to ensure the configuration changes done in previous steps are accepted and to close the dialogue box.
- k. At the CLI, enter `setup cluster` to view the **Setup** dialog box for cluster configuration.
- l. Press Tab to switch to the **Hostname/DNS** screen.
- m. Press tab and select the `Enter Cluster IP address field` to change the IP address of the cluster.

NOTE: Customers need not change the cluster name of the DAAD, unless it is necessary to conform to their DNS standards and policies.

- n. Repeat step j to save changes and to return to CLI.
- o. Enter `maintenance off`
5. Repeat steps 2 to 4 on each of the remaining DAAD nodes.
6. In the DNS server, add the DNS (A) records for the cluster names of all the DAAD HA pairs and map it to their respective public cluster IP addresses that was assigned in step 4.m. This will establish the FQDN for each of the DAAD HA pairs. For example, `daadcluster1.domain.local`, which in turn will map to their respective cluster IP addresses.

The following sections provide the detailed procedures for the installation, configuration, and integration of each of the management software.



4 Installing OEM 12c on LinVM (optional)

Oracle Enterprise Manager (OEM, 12c Cloud Control) is an integrated management suite that allows the database administrator to manage and monitor the health of both Oracle and non-Oracle IT infrastructure from applications to storage. In this section, installation and configuration of OEM 12c is described.

NOTE: If you have an existing Oracle Enterprise Manager Cloud Control (OEM12c) setup that you want to use for managing DISOD, go to section *5 Installing Dell OME on WinVM*.

4.1 Prerequisites

Install Repository Database (OMS)

Install and configure the oracle database (11gR2) on the host (LinVM), which shall be the repository database to store all the Oracle Enterprise Manager related data. For detailed instructions about installing and configuring the Oracle database, complete the instructions on this [link](#). After successful repository database installation, do the tasks in the following sections to install OEM12c.

4.2 Software

Download the compressed files listed in Figure 3 by visiting <https://edelivery.oracle.com/>

Oracle Enterprise Manager Cloud Control 12c Release 4 (12.1.0.4) for Linux x86-64

Download the complete files

↓ [em12104_linux64_disk1.zip](#) (2,195,693,096 bytes) (cksum - 4176170445)
↓ [em12104_linux64_disk2.zip](#) (1,877,449,643 bytes) (cksum - 3219437597)
↓ [em12104_linux64_disk3.zip](#) (2,727,123,784 bytes) (cksum - 2554054536)

Figure 3 Screenshot of files to be downloaded

4.2.1 Installing and configuring OEM12c (12.1.0.4)

Prerequisites:

Copy the downloaded software into a directory on the LinVM host server. Create directories for Middleware and Agent as oracle user in OMS host (LinVM).

```
$ mkdir -p /u01/app/oracle/Middleware  
$ mkdir -p /u01/app/oracle/Agent
```

As Oracle user, unzip expand the three files and run the `runInstaller` command as given here: `$. /runInstaller`

For detailed information about OEM12c installation, click [link](#).



5 Installing Dell OME on WinVM

This section describes the installation and configuration instructions for the Dell OpenManage Essentials (OME). Dell OpenManage Essentials is an easy-to-install, intuitive, and simple-to-use, systems management console solution from Dell, optimized for monitoring and managing Dell servers, switches, and storage.

5.1 Prerequisites

To provide network connectivity from one server to another, you have to manually update the hosts file on each server. On Windows 2012, the file is located at the `%windir%\system32\drivers\etc\hosts` location. The file has to be populated with server's IP addresses followed by their Fully Qualified Domain Names (FQDNs). For example, `192.168.*.* dellome.****.com dellome`

5.2 OME Software download

Download the software mentioned in the Figure 4 from [link](#).



Figure 4 Screenshot of OpenManage Essentials version to be downloaded

5.3 Installing Dell OME

Copy the downloaded software into a folder on the WinVM machine.

To install Dell OME:

1. Extract the downloaded OpenManage Essentials installation software package.
2. Double-click the `autorun.exe` file available in the folder where you extracted the installation package.
3. Select Dell OpenManage Essentials from Install screen.
4. Complete the OME installation by using default options.

NOTE: For more information about Dell OME installation, click [link](#).



5.4 Discover DISOD Components in Dell OpenManage Essentials

This section provides steps to discover the DISOD components in Dell OME. After successful Dell OME installation, proceed to discover by using the following information:

- To Discover the DISOD database nodes, refer to this [wiki](#) article.
- To Discover Dell Force10 Switches, refer to this [wiki](#) article.
- To Discover DAAD nodes, refer to this [wiki](#) article.



6 Install Oracle Management Agent (OMA) on WinVM

This section describes the installation and configuration of Oracle Management Agent for Windows platform on WinVM. The Oracle Management Agent is used to convert an unmanaged host to a managed host in the Enterprise Manager System, which uses the Oracle Management Agent to monitor targets running on the managed host.

6.1 Prerequisites

Before proceeding to OMA installation, make sure you have the data about the following parameters:

```
OMS Hostname (Oracle Management Server Hostname)
EM_UPLOAD_PORT
AGENT_PORT
AGENT_REGISTRATION_PASSWORD
```

To get the details of parameters mentioned above, either contact Oracle EM Administrator or execute the following command on OMS host. Go to OMS home and run the following command and verify the output. A sample output is given here.

```
$ ./emctl status agent -details
OMSHOSTNAME (OMS_HOST): Full Qualified name (EX: - d****xyz.com)
EM_UPLOAD_PORT: 4904
AGENT_PORT: 7803
AGENT_REGISTRATION_PASSWORD: dell*****
```

Acquire Windows management software on OMS

To install a Management Agent on Windows host, the OMA software must be downloaded on the OMS host and applied by using Self Update. Installation of OMA on Windows platform can be done by using the following methods.

- Acquiring the Management Agent Software in Online Mode
- Acquiring the Management Agent Software in Offline Mode

To acquire Windows management software on the OEM server, [link](#).

6.2 Installing OMA on WinVM

After the OMS supports Windows platform and proper connectivity is ensured between OMS host and the WinVM, you can use the PsExec tools to pull the Windows agent from the OMS onto a staging host. This host can be used to push the Oracle management agent for Windows onto any number of target Windows hosts (WinVM in our case).



If your environment doesn't have a Windows-based system that can connect to both OMS and WinVM, you can use the DISODs management server (R320) for this purpose.

NOTE: This staging Windows host should not be the same as WinVM and also should have connectivity to WinVM.

For the process of installing OMA on Windows host by using PsExec tools, see the Oracle enterprise manager release documentation by clicking [link](#). However, for a more detailed installation process, you can access the following support article [link](#) by using your *My Oracle Support* credentials.

NOTE: For EM12c versions 12.1.0.4 and 12.1.0.3 the **agentDeployPSEXec.bat** script mentioned in the release documentation can be downloaded from the following Oracle support knowledge article [Note:1636851.1](#) (To access the article, you require ORACLE SUPPORT credentials, or you may contact Oracle support and request this script).



7 Dell OpenManage Plug-in installation steps

This section describes the installation, configuration, and deployment of Dell OpenManage essentials plugin that pairs the OEM with the WinVM on which the OpenManage Essentials software is installed.

Download the Dell OpenManage Plug-in for Oracle Enterprise Manager from this [link](#).

Product Download

1. Dell OpenManage Plug-in for Oracle Enterprise Manager, v2.0, A00

Figure 5 Screenshot for the Dell OEM plugin

To deploy the Dell OpenManage Plug-in for Oracle Enterprise:

- Import the plug-in on the Oracle Management Server
- Deploy the plug-in on Oracle Management Server
- Deploy the plug-in on Oracle Management Agent (OMA). That is, agent installed on OpenManage Essentials host (WinVM)
- Discover the OpenManage Essentials host manually from the OEM
- Discover and promote the sub-targets into OEM

7.1 Importing the OPAR file

1. The Oracle Plugin Archive (OPAR) file is distributed as a compressed zip file. Extract the contents of the zip file and make the OPAR (for example, `dell.em.ome_12.1.0.2.0.opar`) file available to OMS (LinVM).

NOTE: At this stage of the process, it is assumed that the Oracle `emcli` utility on the OEM server has been properly configured and set up prior to installation.

2. Import the OPAR file into the Software Library of the OMS. The following is an example of an `emcli import` command (in this example, the contents of the downloaded media have been extracted to the `/tmp` folder):

```
$ emcli import_update -file=/tmp/dell.em.ome_12.1.0.2.0.opar - omslocal
```

Processing update: Plug-in - Dell OpenManage Essentials monitoring for Servers, CMCs, Storage, and Switches Operation completed successfully. Update has been uploaded to Enterprise Manager. Please use the Self Update Home to manage this update.



3. Log in to Enterprise Manager and navigate to **Setup** → **Extensibility** → **Self Update**.

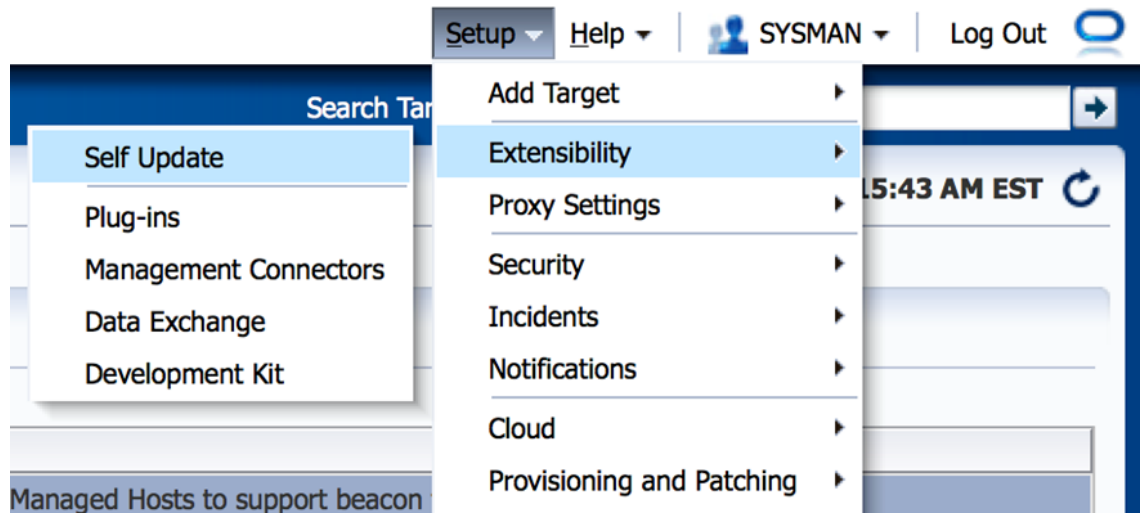


Figure 6 Selecting the appropriate menu to check the uploaded plug-in

4. Click the **Plug-in** Folder and make sure that Dell OpenManage Plug-in for OEM has been successfully uploaded to the Software Repository.

7.2 Deploying the plug-in on OMS

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** → **Extensibility** → **Plug-ins**.
3. On the **Plug-ins** page, select the **Dell OpenManage Essentials** row under the **Servers, Storage and Network** folder.

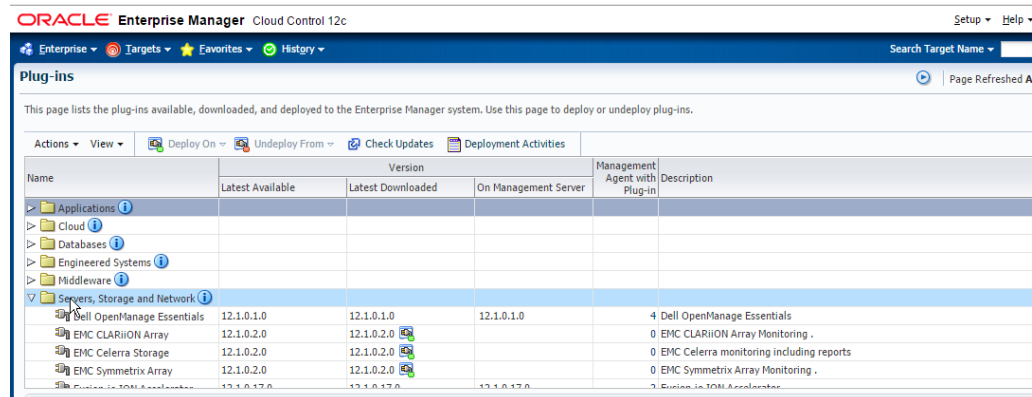


Figure 7 Plug-in available under the Servers, Storage and Network folder

4. Right-click **Dell OpenManage essentials**, pause the pointer over **Deploy On**, and then click **Management Servers**.



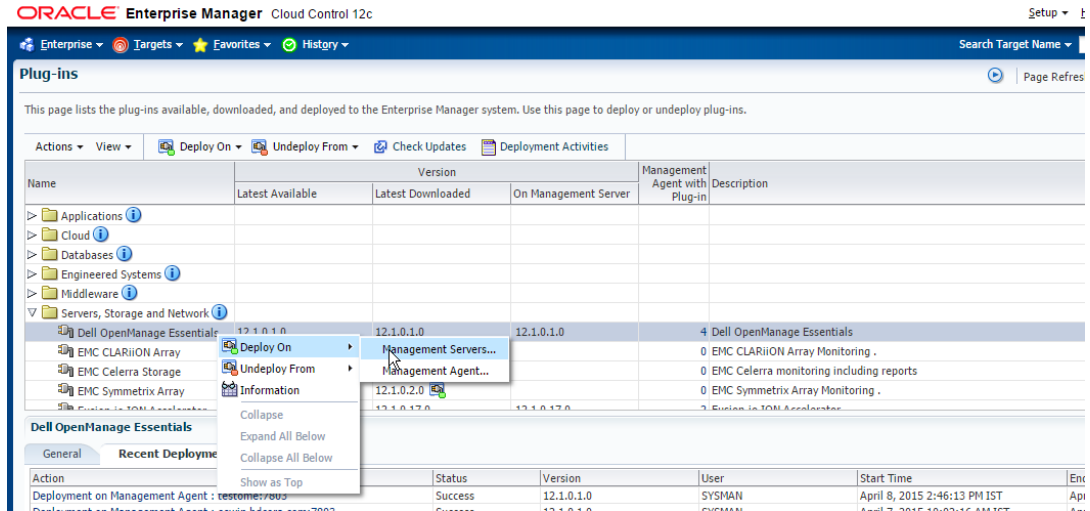


Figure 8 Screenshot for deploying DELL OME plug-in on OMS

- In the **Deploy Plug-in on Management Servers** dialog box, type the Repository SYS Password, and then click **Continue**.
- Review the results of the pre-requisite check and click **Next**.
- If the details in the review page are correct, click **Deploy** to begin the plug-in deployment.

Note: The **Review** page displays the management servers on which the plug-in is being deployed, the version of any previously deployed Dell plug-ins, and the status of the OMS.

- If it is necessary to view the progress of the plug-in deployment, click the **Show Status** button on the **Confirmation** window.

Note: It is recommended to always view the status of a job or task in OEM. This will help ensure that there are no issues during the execution of the task.

- The **On Management Server** box in the plug-ins page displays the version of OpenManage plug-in for OEM that was deployed. To view this field, navigate back to the Plug-ins page (**Setup** → **Extensibility** → **Plug-ins**).

Name	Version			Management Agent with Plug-in	Description
	Latest Available	Latest Downloaded	On Management Server		
> Applications					
> Databases					
> Middleware					
> Servers, Storage and Network					
Dell OpenManage Essentials	12.1.0.2.0	12.1.0.2.0	12.1.0.2.0	1	Dell OpenManage Essentials monitoring for Servers, CMCs, Storage, and Switches

Figure 9 Version check for the deployed OME plug-in



7.3 Deploying the Dell OpenManage plug-in on OMA (WinVM)

1. Log in to Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the Enterprise Manager Web console, click **Setup** → **Extensibility** → **Plug-ins**.
3. On the Plug-ins page, select the **Dell OpenManage Essentials** row under the **Servers, Storage and Network** folder.

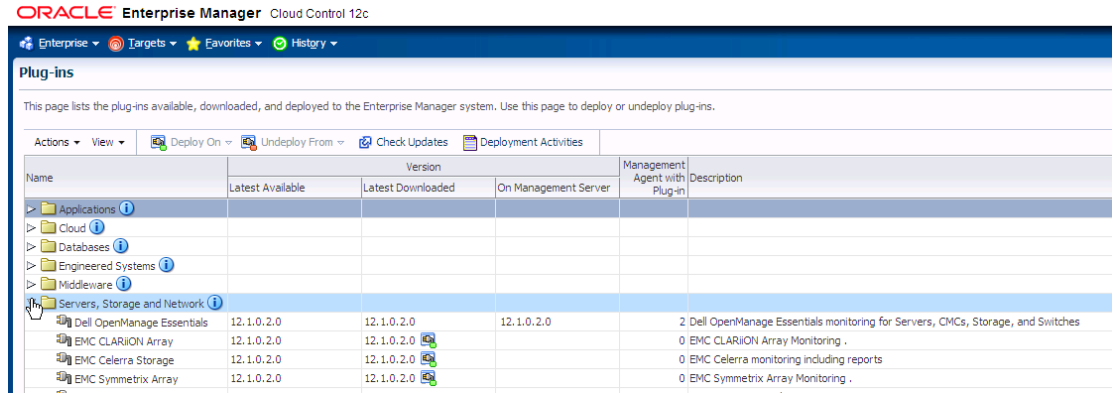


Figure 10 Successful upload of Plug-in

4. Right-click **Dell OpenManage Essentials**, pause the pointer over **Deploy On**, and then click **Management Agent**.

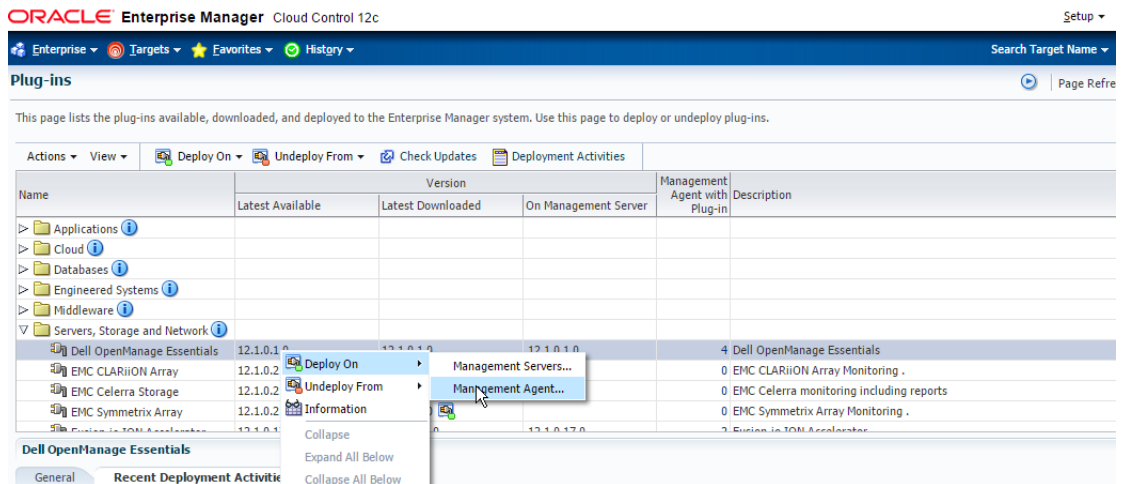


Figure 11 Select Management Agent to deploy Dell OME Plug-in on WinVM

5. Under **Selected Management Agent**, click the button to view the **Search and Select: Targets** window. Use this OEM window to find one or more OMAs acceptable to have the plug-in deployed and installed on.



Deploy Plug-in on Management Agent

Prerequisite Checks

Name Dell OpenManage Essentials

Version 12.1.0.2.0

Management Agent	Operating System	Status	Error Message
aast.trdom.com:3872	Microsoft Windows...	✓	No Error

Figure 12 Management agent status

6. After selecting the appropriate OMA, click **Continue** in the **Deploy Plug-in on Management Agent** window.
7. Review the results of the pre-requisite check and click **Next**.
8. If the details in the review page are correct, click the **Deploy** button to begin the plug-in deployment job.

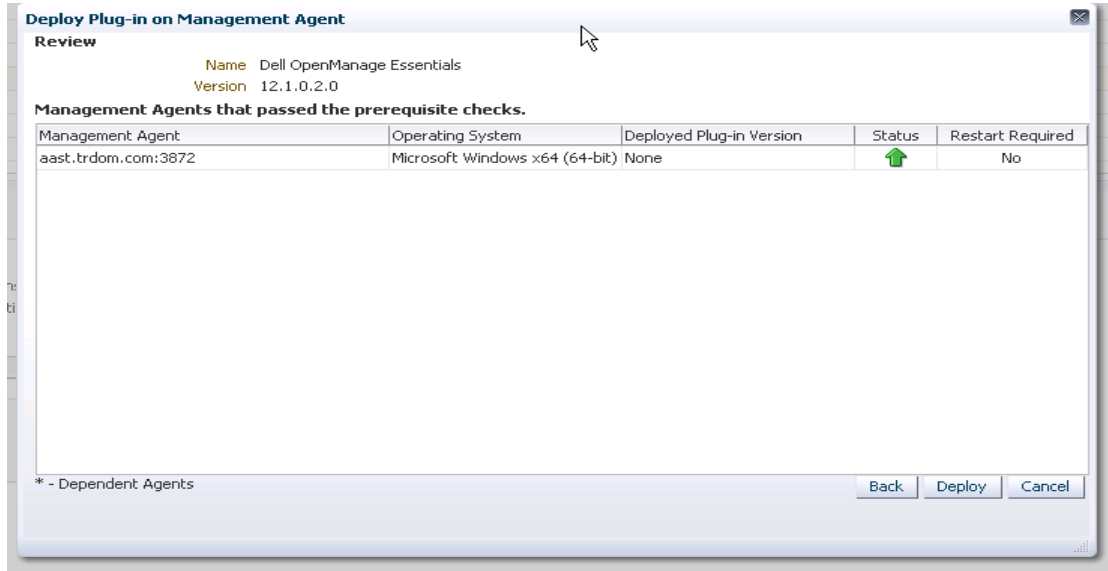


Figure 13 Final deploy screen

Note: The **Review** page displays the management servers on which the plug-in is being deployed, the version of any previously deployed Dell plug-ins, and the status of the OMA.

9. If it is desired to view the progress of the plug-in deployment, select the **Show Status** button on the **Confirmation** window.

Note: It is recommended to always view the status of a job or task in OEM. This will help ensure there are no issues during the execution of the task.

- The **Management Agent with Plug-in** field, for the plug-in, contains the number of OpenManage Essentials plug-ins that were deployed to OMAs. To view this field, navigate back to the **Plug-ins page (Setup → Extensibility → Plug-ins)**.

Name	Version			Management Agent with Plug-in	Description
	Latest Available	Latest Downloaded	On Management Server		
Applications					
Databases					
Middleware					
Servers, Storage and Network					
Dell OpenManage Essentials	12.1.0.2.0	12.1.0.2.0	12.1.0.2.0	1	Dell OpenManage Essentials monitoring for Servers, CMCs, Storage, and Switches

Figure 14 Successful deployment shows a value in Management agents with Plug-in column

7.4 Manually adding the Dell OME target

- Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
- From the Enterprise Manager Web console, navigate to **Setup → Add Target → Add Targets Manually**.
- Click **Add Non-Host Targets by Specifying Target Monitoring Properties** in the **Add Targets Manually** section. The **Target Type** and **Monitoring Agent** fields are displayed.
- From the **Target Type** drop-down list, select **Dell OpenManage Essentials target**.

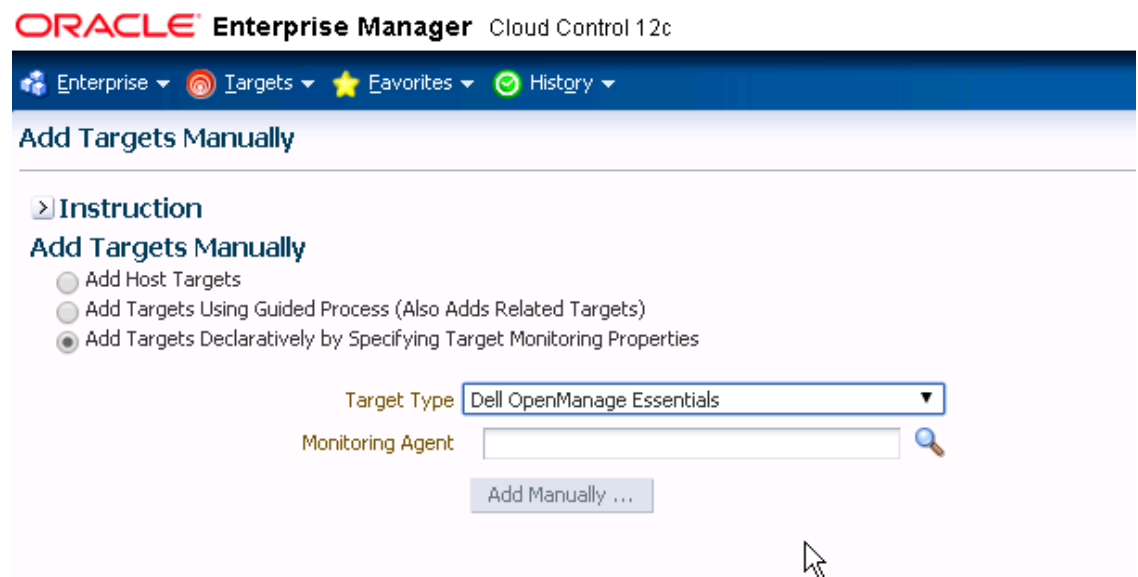


Figure 15 Manually adding Dell OpenManage Essentials target based on the Monitoring agent

- To search for a monitoring agent, click the Search symbol. The **Search and Select Targets** window is displayed. Select the OMA where the plug-in will be installed and click **Select**.



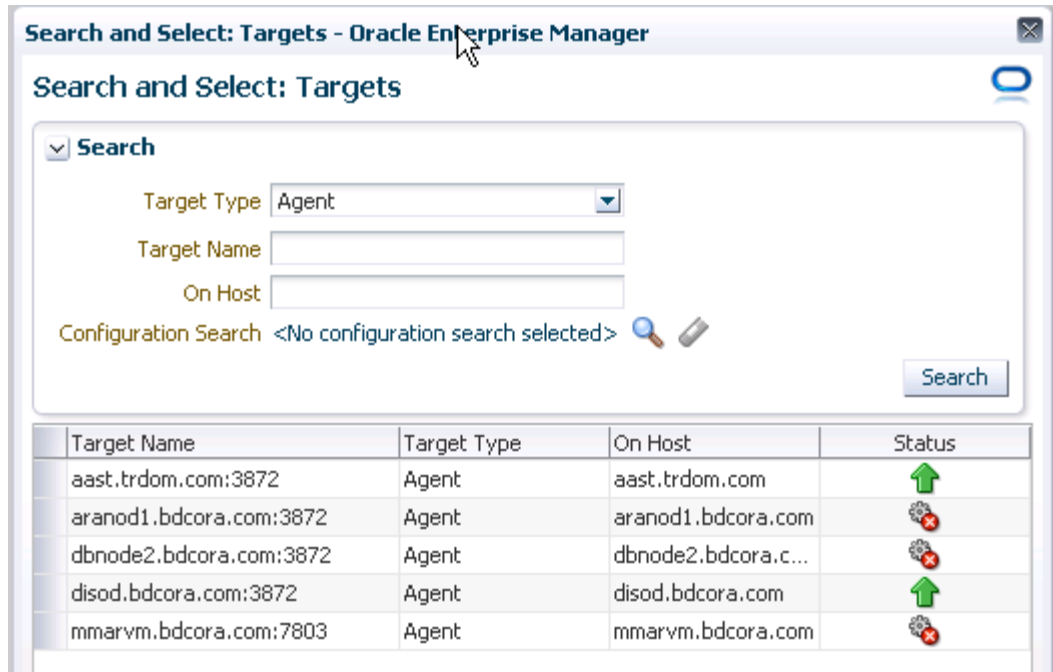


Figure 16 Selection of Windows based target

6. After selecting the OMA to use, click the **Add Manually** button to continue to the plug-in configuration page.

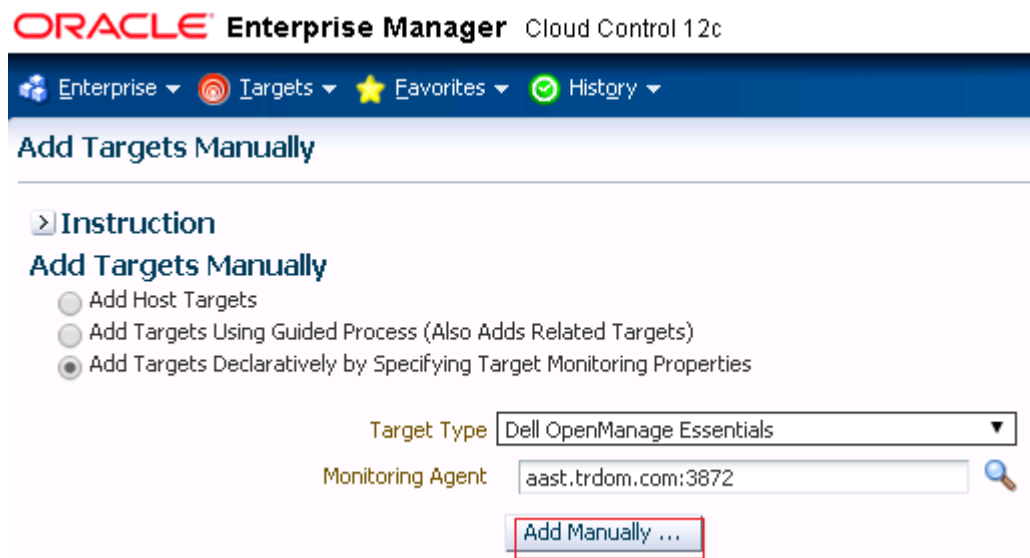


Figure 17 Select Add Manually

7. On the configuration page, set the values for customizing the plug-in connection to the OpenManage Essentials system.
 - a. **Target Name** (required): An instance name required for the OpenManage Essentials Plug-in target. This name is used to reference this specifically configured target and sub-targets inside of OEM.
 - b. **Dell OpenManage Essentials Hostname** (required): The Fully Qualified Domain Name (FQDN) of the system where OpenManage Essentials is installed. This



must be the same host name that is used when connecting the OpenManage Essentials web console.

- c. **Dell OpenManage Essentials Port:** The port that Dell OpenManage Essentials is running on. This value is optional, if it is not provided, the plug-in will use port 2607 by default.
- d. **Password** (required): A valid password in combination with the associated username is required to connect to the Dell OpenManage Essentials web services. The account used should have at least OME Users privileges.
- e. **Username** (required): A valid username in combination with the associated password is required to connect to the OpenManage Essentials web services. The account used must have at least OME Users privileges.
- f. **View Acknowledged Alerts (yes/no)** (required): Set this value to 'no' if it is necessary for the plug-in to not collect device alerts that have been acknowledged in OpenManage Essentials. If no value is set for this field, the plug-in is set to 'yes' (default).

ORACLE Enterprise Manager Cloud Control 12c

Add Dell OpenManage Essentials

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

* Target Name: aastGrp
Target Type: Dell OpenManage Essentials
Agent: https://aast.trdom.com:3872/emd/main/

Properties

* Dell OpenManage Essentials Hostname: aast.trdom.com
Dell OpenManage Essentials Port: 2607
* Password: *****
* Username: administrator
View Acknowledged Alerts (yes/no): yes

> Global Properties

Figure 18 Sample inputs for the OME based target configuration

- 8. To test the credentials that were provided in step 7, click **Test Connection** in the upper-right of the dialog box. This ensures that the plug-in is able to connect properly to the OpenManage Essentials system and collect data.



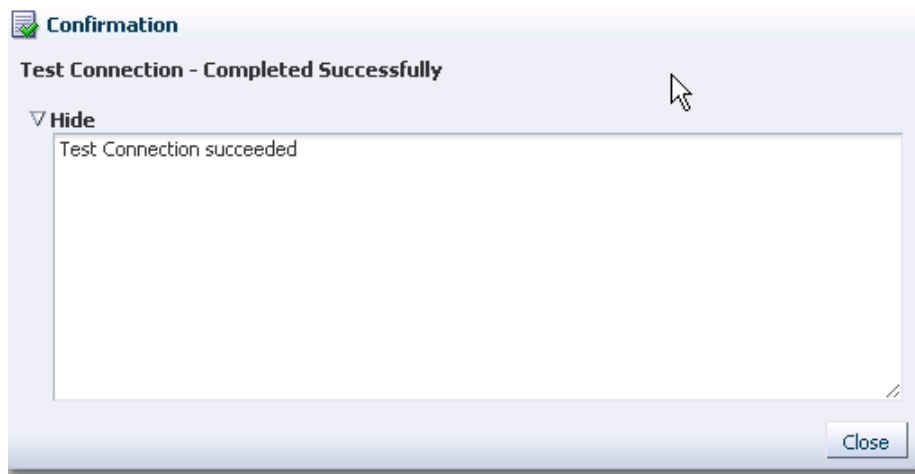


Figure 19 OEM – OME host connection status

9. If the test connection result is successful, click **OK** to finalize the target configuration.

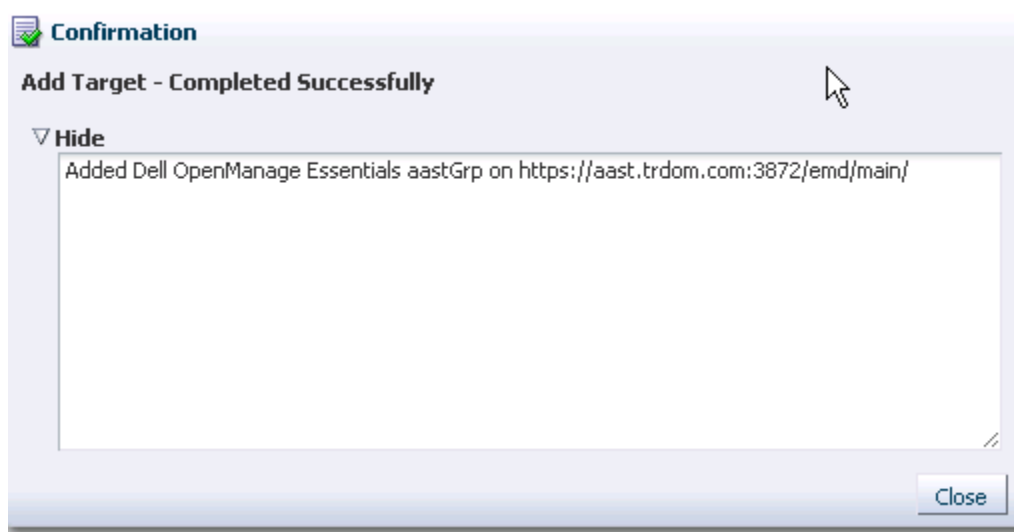


Figure 20 Target added as managed host based on target monitoring properties

10. To view the **Dell OpenManage Essentials** target that was just created, navigate to the **All Targets** view (**Targets** → **All Target**) and view the table of targets for the instance name that was used during configuration.

Note: It may take up to 20 minutes for completion of the first collection interval for the target.

At this point, the home target for the plug-in has been successfully deployed in OEM. For complete collection of the Dell OpenManage Essentials environment, it is recommended to follow the instruction in this installation guide and deploy sub-targets for each necessary device. If no devices are discovered and promoted, the plug-in will not be able



to collect device data from an OpenManage Essentials environment. Sub-target discovery and promotion is described in the “Discovering device sub-targets” section of this guide.

7.5 Discovering device sub-targets

The discovery process will find all targets related to a Dell OpenManage Essentials target.

This includes servers, chassis controllers, storage, and switches.

1. Log in to an Oracle Enterprise Manager Cloud Control web console with administrative privileges.
2. From the Enterprise Manager Web console, click **Setup** → **Add Target** → **Configure Auto Discovery**.
3. Under the **Configure Auto Discovery** section, click the **All Discovery Modules** link in the **Auto Discovery** table.

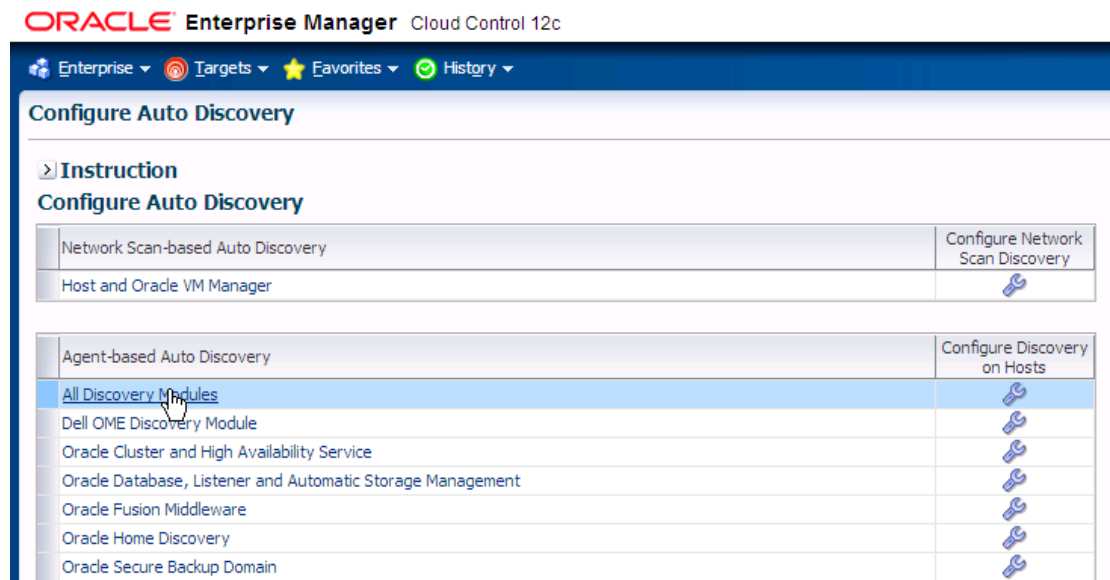


Figure 21 Configuring Auto-Discovery

4. Select the appropriate host being used for the OpenManage Essentials target and click the **Configure Discovery Modules** button.

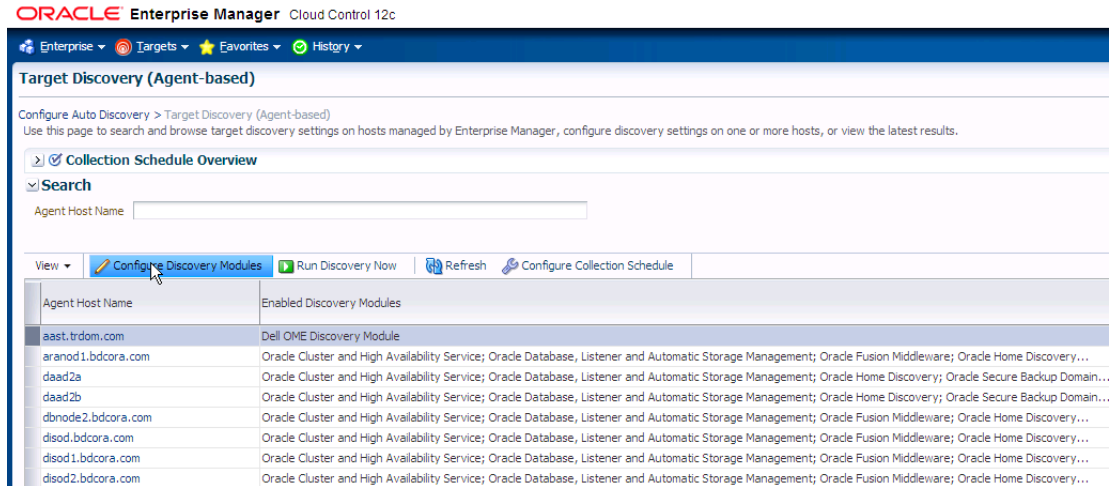


Figure 22 Selection of appropriate agents for auto-discovery

5. Clear all options except the **Dell OME Discovery Module** to disable the discovery of other targets unrelated to this plug-in.

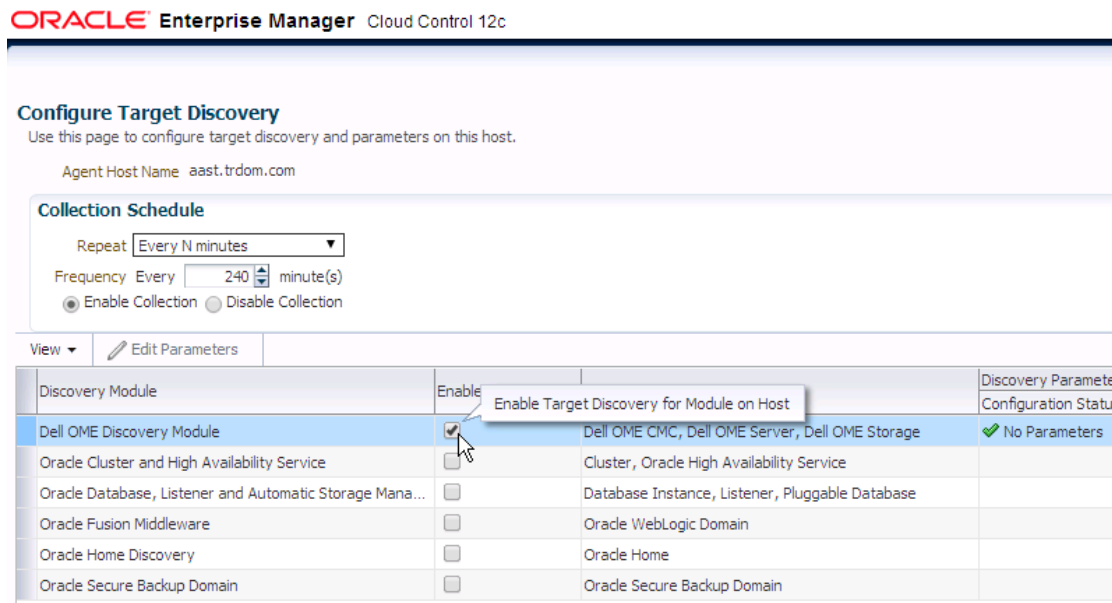


Figure 23 Select OME specific targets

6. Click **OK**.
7. Select the same host selected in step 4 and click **Run Discovery Now**.



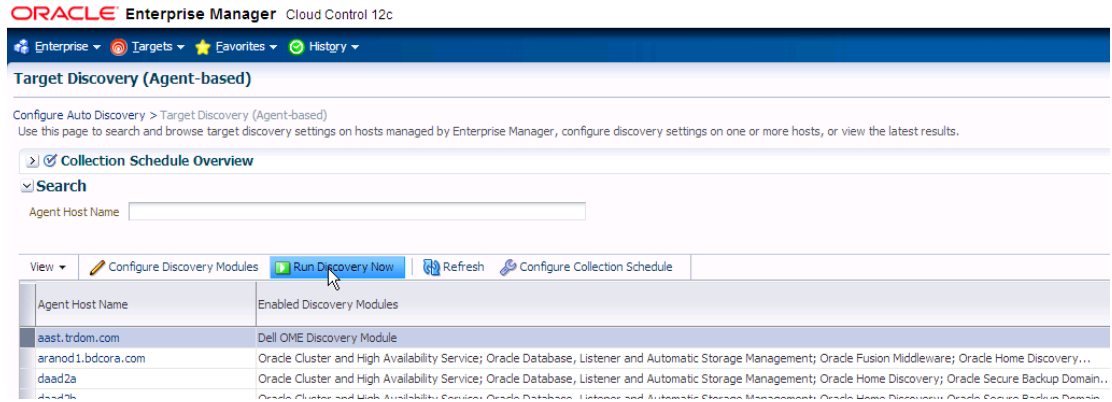


Figure 24 Run first-time discovery procedure

7.6 Promoting Discovered device sub-targets

1. After the discovery process is complete, view the discovery results to see the targets that have been discovered. You can view this by clicking **Add Target** → **Auto Discover Results**.

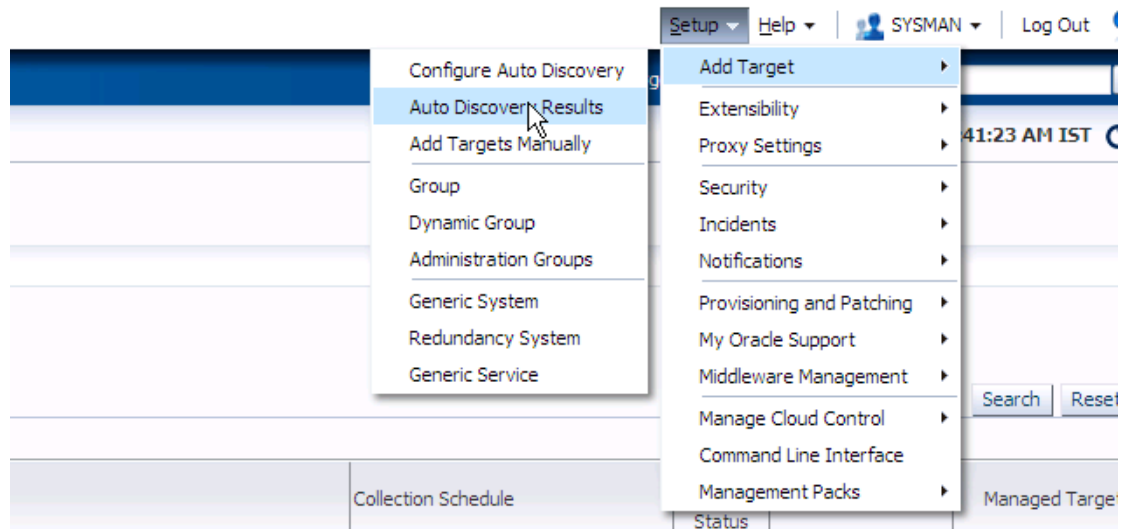


Figure 25 Check the discovered sub-targets

2. On the **Discovery results** page, select **agent based targets**. Select all targets in this list from where you want to collect data, and then click **Promote**.



Target Name	Target Type	Discovered On	Host	Agent
LISTENER_SCAN2_equin-cluster	Listener	May 27, 2015 11:51:13 PM IST	equin3.bdcora.com	https://equin3.bdcora.com:3872/emd/main/
LISTENER_SCAN2_equin-cluster_1	Listener	Jun 2, 2015 5:34:45 PM IST	equin2.bdcora.com	https://equin2.bdcora.com:3872/emd/main/
LISTENER_SCAN2_testcluster	Listener	Jun 8, 2015 11:44:45 AM IST	test.bdcora.com	https://test.bdcora.com:3872/emd/main/
LISTENER_SCAN3_cluster_1	Listener	Jun 4, 2015 3:11:25 PM IST	disod2.bdcora.com	https://disod2.bdcora.com:3872/emd/main/
LISTENER_SCAN3_equin-cluster	Listener	May 27, 2015 1:51:13 PM IST	equin3.bdcora.com	https://equin3.bdcora.com:3872/emd/main/
LISTENER_SCAN3_equin-cluster_1	Listener	Jun 2, 2015 5:34:45 PM IST	equin2.bdcora.com	https://equin2.bdcora.com:3872/emd/main/
LISTENER_SCAN3_testcluster	Listener	Jun 8, 2015 11:44:45 AM IST	test.bdcora.com	https://test.bdcora.com:3872/emd/main/
LISTENER_disod.bdcora.com	Listener	Apr 28, 2015 7:09:41 PM IST	disod.bdcora.com	https://disod.bdcora.com:3872/emd/main/
LISTENER_test.bdcora.com	Listener	Jun 8, 2015 11:44:45 AM IST	test.bdcora.com	https://test.bdcora.com:3872/emd/main/
MGMTLSNR_disod2.bdcora.com	Listener	Jun 4, 2015 3:11:25 PM IST	disod2.bdcora.com	https://disod2.bdcora.com:3872/emd/main/
MGMTLSNR_equin3.bdcora.com	Listener	May 27, 2015 1:51:13 PM IST	equin3.bdcora.com	https://equin3.bdcora.com:3872/emd/main/
MGMTLSNR_test.bdcora.com	Listener	Jun 8, 2015 11:44:45 AM IST	test.bdcora.com	https://test.bdcora.com:3872/emd/main/
NewTgt arand1.bdcora.com	Dell OME Switch	May 19, 2015 6:22:20 PM IST	mmarvm.bdcora.com	https://mmarvm.bdcora.com:7803/emd/main/
NewTgt arand1.bdcora.com	Dell OME Server	May 19, 2015 6:22:20 PM IST	mmarvm.bdcora.com	https://mmarvm.bdcora.com:7803/emd/main/
NewTgt equin3.bdcora.com	Dell OME Server	May 19, 2015 6:22:20 PM IST	mmarvm.bdcora.com	https://mmarvm.bdcora.com:7803/emd/main/
NewTgt idrac-65K3F22	Dell OME Server	May 19, 2015 6:22:20 PM IST	mmarvm.bdcora.com	https://mmarvm.bdcora.com:7803/emd/main/
Oradb12Home_1_2_test	Oracle Home	Jun 8, 2015 11:44:46 AM IST	test.bdcora.com	https://test.bdcora.com:3872/emd/main/
Oradb11g_home_1_1_disod	Oracle Home	Apr 28, 2015 7:09:42 PM IST	disod.bdcora.com	https://disod.bdcora.com:3872/emd/main/
Orag12Home_1_1_test	Oracle Home	Jun 8, 2015 11:44:46 AM IST	test.bdcora.com	https://test.bdcora.com:3872/emd/main/
aaastGrip 155.168.19.111	Dell OME Server	Jun 2, 2015 2:35:34 PM IST	aaast.trdom.com	https://aaast.trdom.com:3872/emd/main/
aaastGrip 192.168.211.15	Dell OME Server	Jun 2, 2015 2:17:40 PM IST	aaast.trdom.com	https://aaast.trdom.com:3872/emd/main/
aaastGrip ADAAD2A	Dell OME Server	Jun 10, 2015 6:18:40 AM IST	aaast.trdom.com	https://aaast.trdom.com:3872/emd/main/
aaastGrip dbnode2.bdcora.com	Dell OME Server	Jun 2, 2015 2:17:41 PM IST	aaast.trdom.com	https://aaast.trdom.com:3872/emd/main/
aaastGrip idrac	Dell OME Server	Jun 2, 2015 2:35:34 PM IST	aaast.trdom.com	https://aaast.trdom.com:3872/emd/main/
aaastGrip idrac-44K3F77	Dell OME Server	Jun 2, 2015 2:17:41 PM IST	aaast.trdom.com	https://aaast.trdom.com:3872/emd/main/

Figure 26 Sample discovered targets

3. Navigate back to **OpenManage Essentials target** to view that the data is now being collected.

The screenshot shows the Oracle Enterprise Manager interface. On the left, there is a navigation pane with 'All Devices' selected. The main area displays a table of devices:

Name	Status	Connector Status	Service Tag	Type	Model
equin3.bdcora.com	Critical	On	430932	Server	PowerEdge R930
idrac-44K3F22	Critical	On	44K3F22	Server	PowerEdge R720
dbnode2.bdcora.com	Unknown	On	1234567	Server	PowerEdge R730d

Below the table, the 'Alerts' section shows several messages:

- Warning:** 06/27/2015 4:19:13 pm dbnode2.bdcora.com. Message: Disk 3 in Backplane 1 of Integrated RAID Controller 1 is removed.
- Critical:** 06/26/2015 3:27:44 pm equin3.bdcora.com. Message: The power input for power supply 3 is lost.
- Normal:** 06/26/2015 7:32:55 pm idrac-44K3F22. Message: Log cleared.
- Normal:** 06/26/2015 7:32:21 pm idrac-44K3F22. System Event Log (SEL) Cleared.
- Normal:** 06/26/2015 3:29:00 pm equin3.bdcora.com. Power Supply AC Restored.
- Normal:** 06/27/2015 4:19:13 pm dbnode2.bdcora.com. Message: Disk 7 in Backplane 1 of Integrated RAID Controller 1 is online.
- Critical:** 06/27/2015 4:19:13 pm dbnode2.bdcora.com. Message: Disk 3 in Backplane 1 of Integrated RAID Controller 1 is not functioning correctly.
- Normal:** 06/27/2015 4:19:13 pm dbnode2.bdcora.com. Message: Disk 3 in Backplane 1 of Integrated RAID Controller 1 was reset.

Figure 27 OME specific target monitoring window

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



8 Installing and Configuring the Dell Acceleration Appliance for Databases (DAAD) Plug-in on OEM

The Dell Acceleration Appliance for Databases (DAAD) plug-in for OEM enables OEM to display information and statistics such as volume and link performance, directly from the storage array. Version 12.1.0.1 of the plug-in is compatible with the following:

- DAAD plug-in version 12.1.0.1 release 2.3.0.1.
- Oracle Management Server (OMS) versions 12.1.0.1, 12.1.0.2, 12.1.0.3, and 12.1.0.4

8.1 Prerequisites

To install and configure the DAAD plug-in for OEM, below prerequisites must be met.

- a. The DAAD software must be version 2.3 or above.
- b. Make sure the DAAD nodes are accessible by Oracle Management Server by using public IP Ethernet connection and vice-versa.
- c. The hostnames for both DAAD nodes and OMS must be resolvable by DNS or /etc/hosts.

8.2 Installing DAAD Plug-In

The following steps are required to download and configure the DAAD plug-in on the OEM and the DAAD nodes:

- a. Download the Dell Acceleration Appliance for Databases (DAAD) plug-in for OEM from <http://support.dell.com>.
- b. Copy the downloaded plug-in to a directory on the OMS host server.

8.2.1 Enabling OEM management agent on DAAD nodes

In DAAD node1, log in to the CLI as admin user. Run the following command to enable and configure the oracle agent:

```
manage:oem enable --oms-host=d***.b****.com --oms-port=4904  
Please enter Oracle Management service password:*****
```

```
admin@testdaad1/> manage:oem enable --oms-host=mahesh.bdcora.com --oms-port=4904  
Please enter Oracle Management Service password: *****
```

Figure 28 OEM configuration on DAAD nodes

Here, oms-host=oms server name (fully qualified name), oms-port=HTTPS upload port, and for agent, password=Contact OEM admin. You can get this information from OMS server, run this command or contact OEM admin

```
$ emctl status oms -detail
```



After successful execution of the command the command, the following message is displayed:

```
Agent deployment successful, The Agent is configured
successfully.Finished product -specific root actions.
```

Note: Repeat the step on the other DAAD node and view the results. If it is successful, go to the next step. Else, check connections between the nodes and continue.

After successful installation on DAAD nodes, go to the OEM console and see the DAAD nodes under the **All Targets** tab.

Fusion1	Fusion-io ION Accelerator	↑
Fusion2	Fusion-io ION Accelerator	↑

Figure 29 DAAD nodes available under all Targets tab.

8.2.2 Deploying the DAAD Plug-in on the OEM server

1. In OMS server, log in as root user, and copy the downloaded DAAD plug-in's opar file to the /tmp location
2. Change the permissions of that file by running the following commands:

```
$chown oracle:oinstall
/tmp/12.1.0.17.0_fusion.ion.ion_2000_0.opar
$chmod 775 /tmp/12.1.0.17.0_fusion.ion.ion_2000_0.opar
```
3. Log in to the emcli

```
./emcli login username=sysman
./emcli sync
```
4. To deploy the Plug-in to both the server and Agent, you must import the opar file into OMS server repository by running the following command:

```
./emcli import_update -
file=/tmp/12.1.0.17.0_fusion.ion.ion_2000_0.opar -omslocal
./emcli setup -url=https://d***.b***.com:7803/em -
username=sysman -password=ora***
```
5. Deploy the plug-in to the server by running the command:

```
./emcli deploy_plugin_on_server -plugin=fusionio.ion.ion1 -
sys_password=del**
```

NOTE: This process will take some time. To get the current status, run the following command:

```
./emcli get_plugin_deployment_status -
plugin_id=fusionio.ion.ion1
```

6. Deploy the plug-in on Agent (each of the DAAD nodes) by running the following command:

```
./emcli deploy_plugin_on_agent -
agent_names=t**t.b****.com:3872 -plugin=fusionio.ion.ion1
```



NOTE: This process will take a while. To get the status of the process, run the following command: `./emcli get_plugin_deployment_status - plugin_id=fusionio.ion.ion1`

7. Step 5 will be executed for the other DAAD node by using the command:
`./emcli deploy_plug_on_agent -agent_names=t***.b****.com:3872 -plugin=fusionio.ion.ion1`

NOTE: This process will take a while. To get the status of the process, run the following command: `./emcli get_plugin_deployment_status - plugin_id=fusionio.ion.ion1`

NOTE: For more information about fusion ion plugin for OEM, click the [link](#).

8.3 Adding a DAAD target in OEM

1. From the homepage, click **Setup -> Add Target -> Add Targets Manually**.
2. Select **Add Targets Declaratively by Specifying Target Monitoring Properties**
3. From the **Target Type** drop-down menu, click **Fusion-io ION Accelerator**.

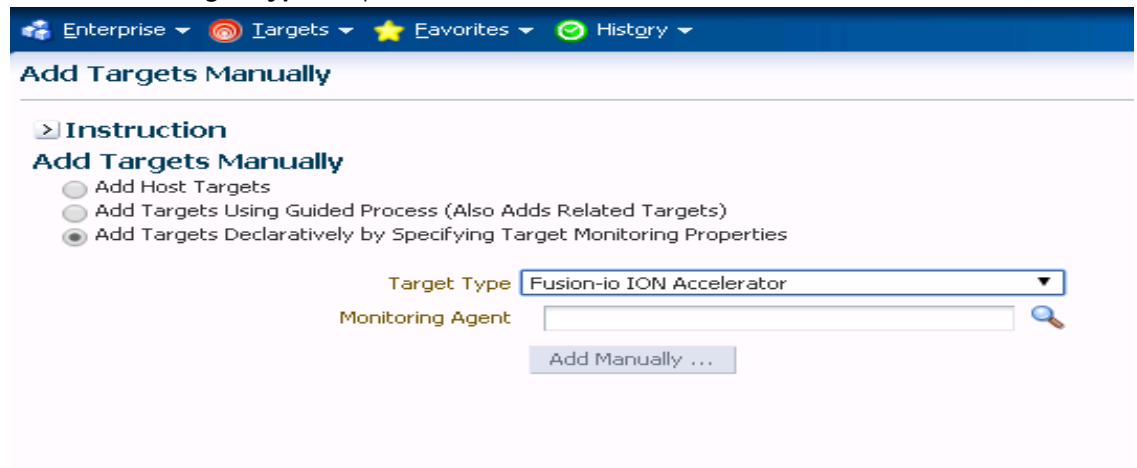


Figure 30 DAAD plugin based target configuration

4. To search for a monitoring agent, click the **Search** symbol, and then select the appropriate agent (the same agent deployed and identified by the Dell Acceleration Appliance for Databases host name).
5. After clicking the agent, click **Add Manually**.
6. Enter the relevant information, including the Oracle user name and password (created when configuring ION for Oracle in section 8.2.1).
7. Click **OK** (upper-right corner).
8. Click **Close** to finish the installation.

8.4 Opening the DAAD target in OEM:

1. Log in to the OEM console.
2. Select the **All Targets** tab from the target menu which is located in the toolbar.
3. Select the ION Accelerator target from the all targets or search for the target name from the **Search** tab located in the upper-right corner to open the ION Accelerator plug-in home page.

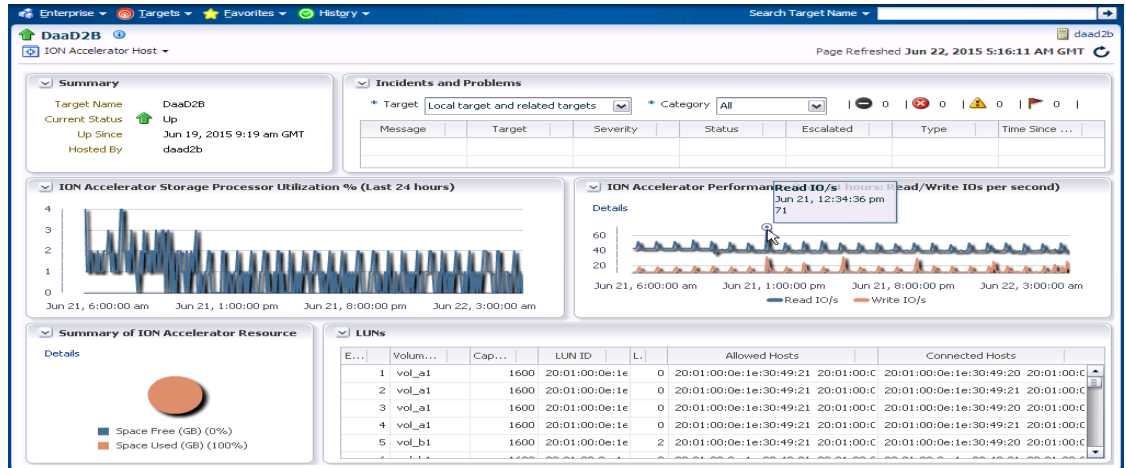


Figure 31 Dashboard for the DAAD based target in OEM

NOTE: In case of any error during DAAD plug-in installation on Agent (DAAD nodes) or incomplete or erroneous installation, clean the unsuccessful installation and re-enable the OEM plug-in on it. Installation cleanup, or disabling the installation can be done by running the command: `admin@DAAD/> manage: oem disable`

