Simplified discovery for Dell PowerEdge modular infrastructure (M1000e, FX2, and VRTX) in Dell OpenManage Essentials

This Dell technical white paper provides information about discovering a Dell chassis and its associated blades and IOA switches using the Guided Discovery wizard.

A Dell Technical White Paper

Revisions

Date	Description
September 2015	Initial release

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Executive summary

Dell OpenManage Essentials version 2.1 introduces a new chassis discovery feature, which simplifies the discovery process for Dell PowerEdge modular infrastructure (M1000e, FX2 and VRTX). This white paper describes the use of chassis discovery feature which helps to perform discovery and inventory of a chassis along with all the components located within the chassis such as blade servers and IOA switches using only the IP address of the chassis.

1 Introduction

The complete chassis discovery feature introduced in OpenManage Essentials version 2.1 is enabled with the help of the new **Chassis (CMC) Discovery - All Components** filter in the **Guided Discovery wizard**. With the help of complete chassis discovery feature, you can discover all the iDRACs as well as IOA switches located within the same chassis by only discovering the CMC with its IP address. In earlier versions of OpenManage Essentials (prior to version 2.1), IP address ranges and configuration for each individual iDRACs/IOA switches was required to be added manually, in addition to the CMC IP address, to discover the CMC and all the components located within the chassis.

1.1 Prerequisites

The following are the prerequisites for successfully discovering the chassis and its components using the complete chassis discovery feature:

- Complete chassis discovery feature is supported only on OpenManage Essentials version 2.1 or later.
- To access the **Chassis (CMC) Discovery - All Components** filter, the discovery range should be added using **Guided Discovery wizard**.

Note: From OpenManage Essentials version 2.1 onwards, **Guided Wizard** is the default discovery wizard configuration setting. You can change this setting by accessing **Settings→ Discovery Settings**.

- The following table provides the prerequisites information for discovering CMC, iDRACs (Blades) and IOA switches using complete chassis discovery feature:

Chassis (CMC) type	CMC/iDRACs (Blades) Discovery Prerequisites	IOA Switch Discovery Prerequisites
M1000E	Dell PowerEdge 11th generation and later (iDRAC 6 or later). CMC Firmware version 5.0 or later.	CMC Firmware version 5.1 or later.
VRTX	All supported servers. All CMC Firmware versions.	Not applicable.
FX2/FX2s	All supported servers. All CMC Firmware versions.	CMC Firmware version 1.3 or later.

Note: In case the prerequisite criteria is not met for the devices (CMC, iDRACs or IOA switches), it is recommended to discover those devices by manually adding individual IP ranges of those devices without using complete chassis discovery feature.

2 Complete chassis discovery

2.1 Steps to discover the chassis and associated components

1. Click **Manage → Discovery and Inventory**.
    The **Discovery and Inventory Portal** is displayed.

2. Under **Common Tasks,** click **Add Discovery Range**.
    The **Discovery Range Configuration** page is displayed.

3. Select the **Save as Group** option and type a name for the group in the appropriate field.

Note: It is mandatory to save the discovery range as a group for discovering the chassis and its components using the **Chassis (CMC) Discovery – All Components** filter.

4. Type the IP address of the CMC in the appropriate field and click **Add**.

Figure 1   Discovery Range Configuration page

5. Click **Next**.
    The **Device Type Filtering** page is displayed

6. Select **Chassis (CMC) Discovery - All Components** and click **Next**.

Simplified discovery for Dell PowerEdge modular infrastructure (M1000e, FX2, and VRTX) in Dell OpenManage Essentials | Revision A00
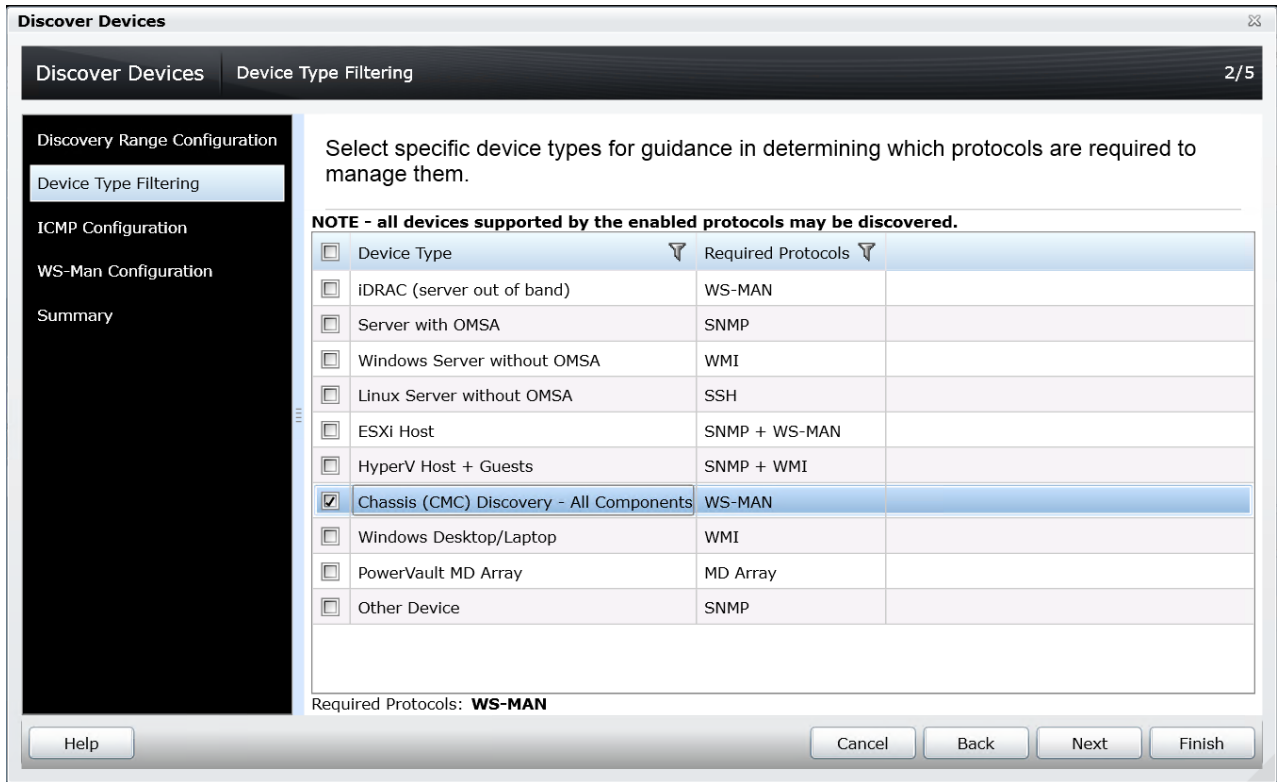
Figure 2   Device Type Filtering page

7. In the **ICMP Configuration** Page, if required, change the **Timeout** and **Retries** values based on your preference.
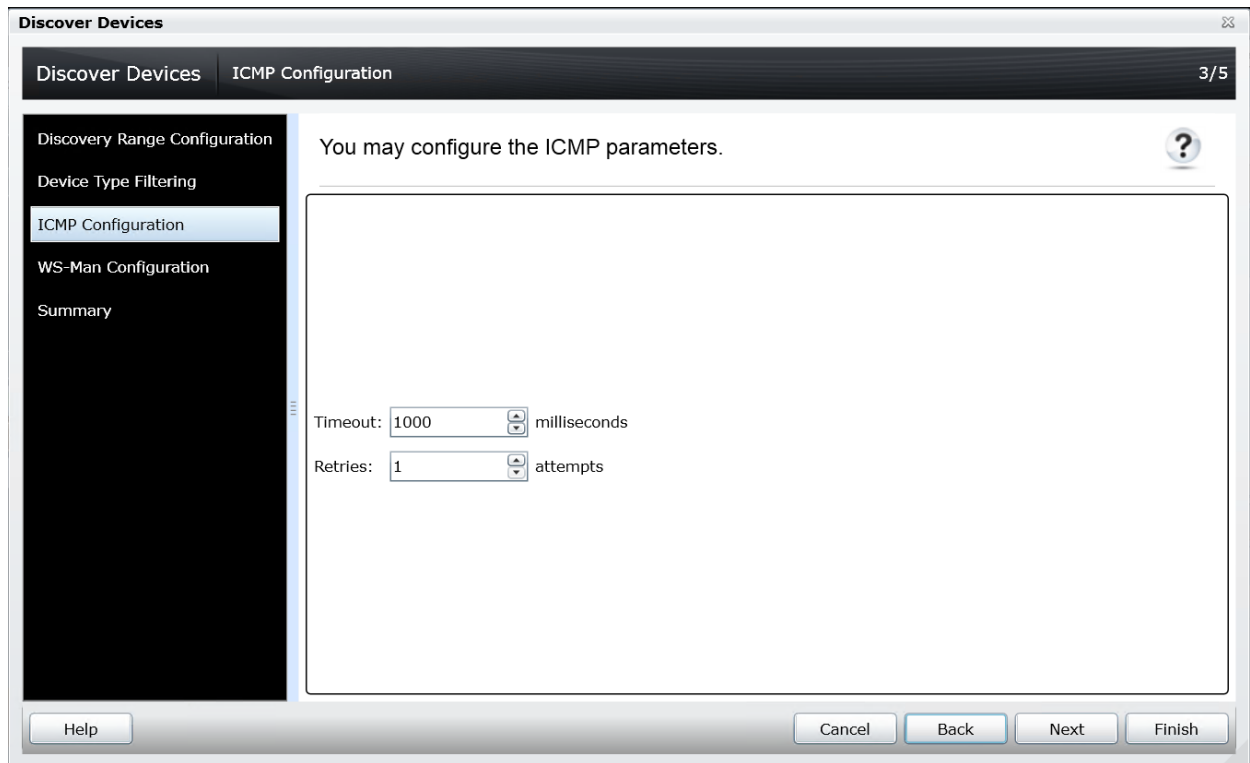
Figure 3   ICMP Configuration Page

8. Click **Next.**
   The **WS-Man Configuration** page is displayed.

9. Enter the WS-Man credentials for CMC.

Simplified discovery for Dell PowerEdge modular infrastructure (M1000e, FX2, and VRTX) in Dell OpenManage
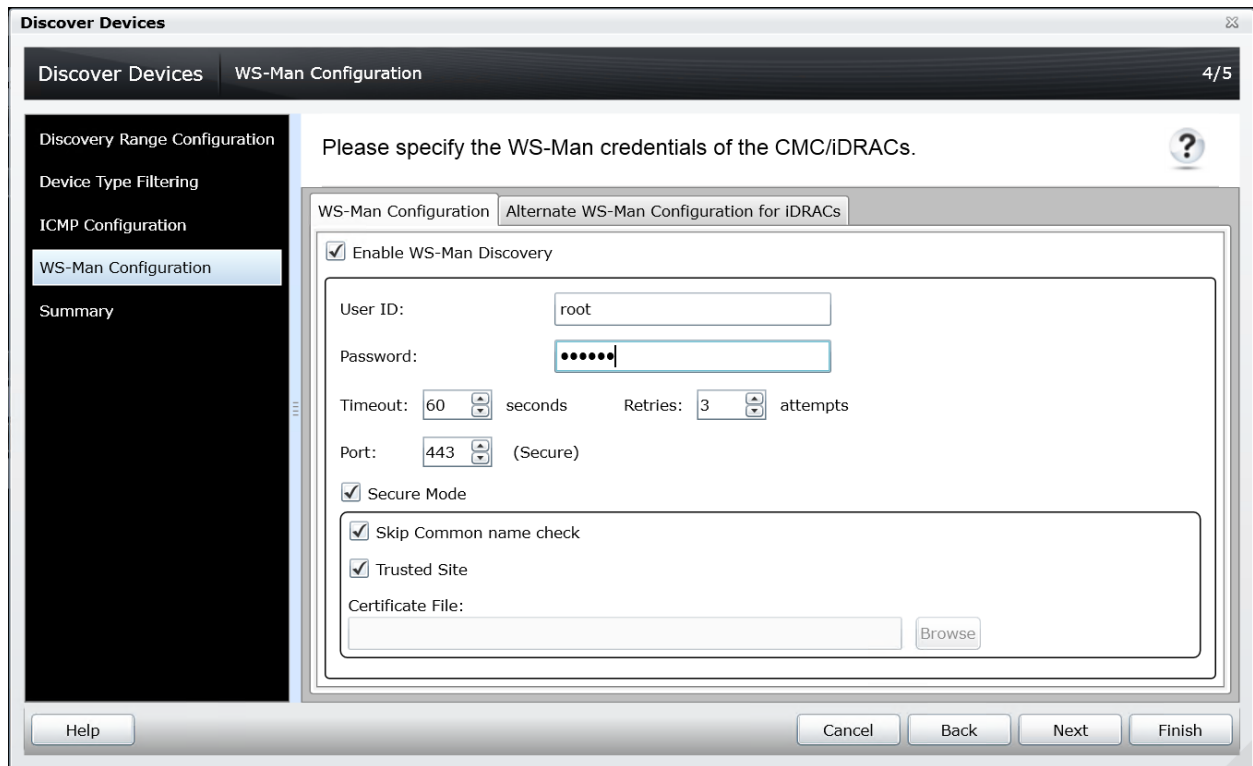Essentials | Revision A00

Figure 4   WS-Man Configuration Page

10. To use the same credentials for the discovery of the iDRACs, click **Next.** Otherwise, to provide alternate credentials for the discovery of the iDRACs, click the **Alternate WS-Man Configuration for iDRACs** tab.

11. Clear the **Use same credentials of CMC for discovering iDRACs** option, and type the username and password of the iDRAC of the blade servers in the appropriate fields.

Note: If you want to disable the auto discovery of iDRACs and switches, clear the **Auto discover iDRACs and switches in the CMC** option shown in Figure 5.
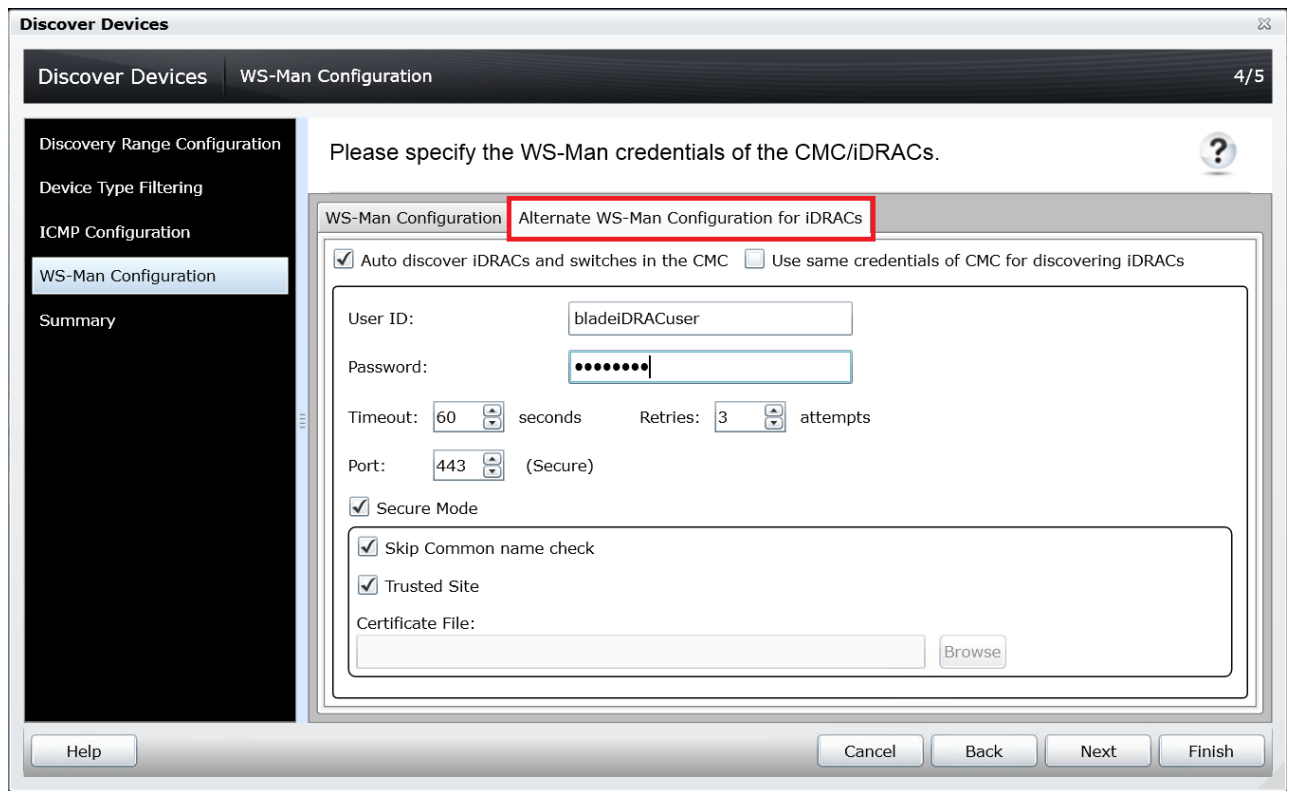
Figure 5   Alternate WS-Man Configuration for iDRACs page

12. Click **Next.**
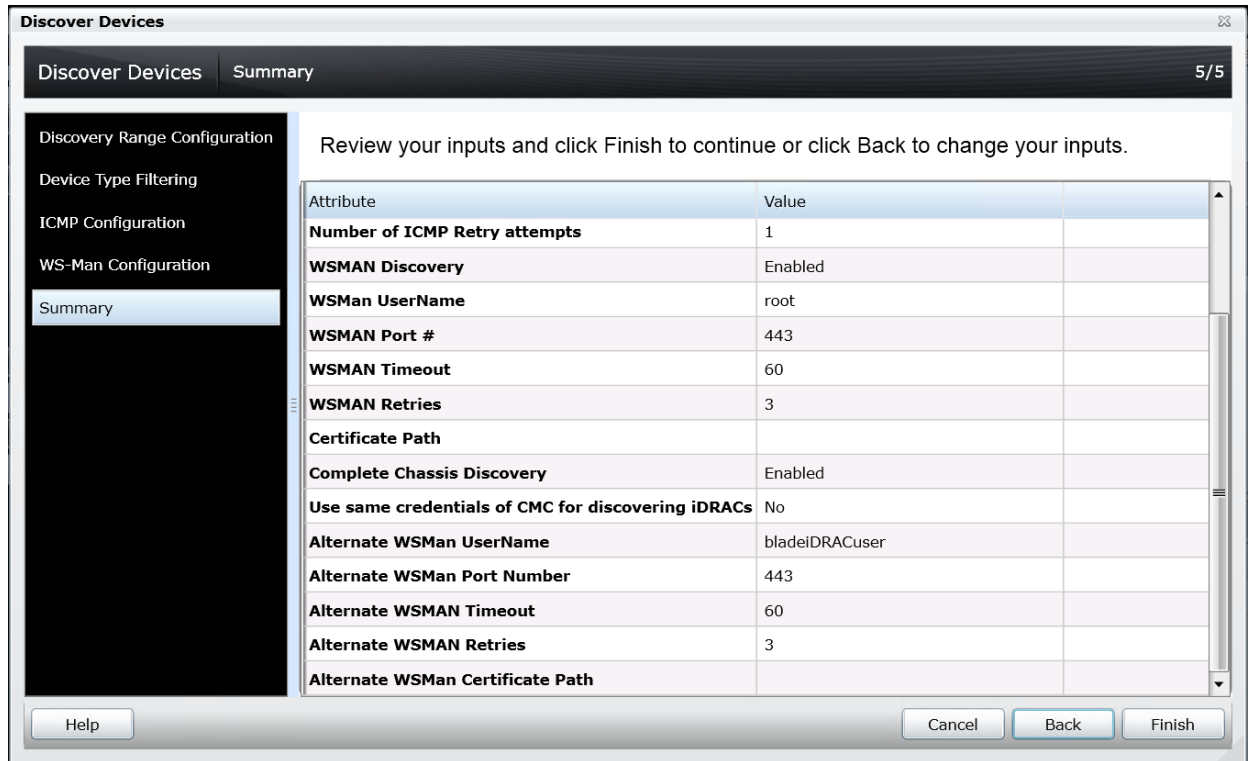   The **Summary** page is displayed

Figure 6   Summary Page

13. Click **Finish**.
    Discovery of the chassis and its components (iDRACs and IOA switches) is initiated.

During the discovery and inventory of the chassis, all the iDRACs and IOA switches are added as part of the discovery and inventory.

> **Note:** Providing IP address range in the **Discovery Configuration** page (see Figure 1) is also supported for complete chassis discovery. For example, 192.168.10.* or 192.168.1.1-30.

2.2   Auto discovered devices associated to CMC

After the discovery and inventory cycle is completed for the CMC, blade servers, and IOA switches, selecting the **Discovery Range Group** displays the complete details of the devices discovered in the range, i.e. CMC and auto discovered devices associated to CMC (iDRACs and IOA switches) as shown in Figure 7.
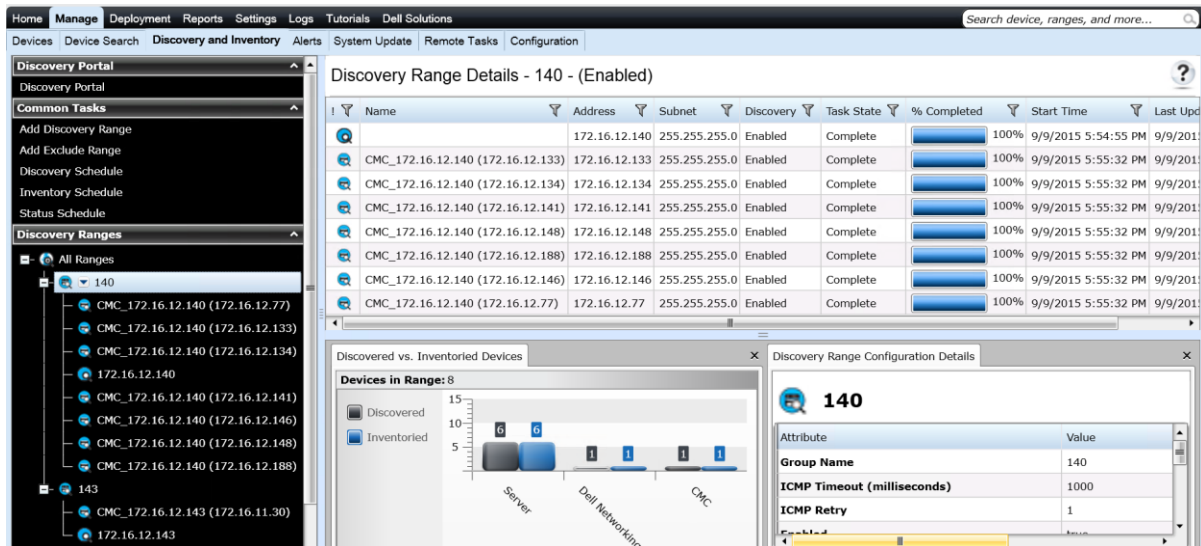
Figure 7   Discovery Range View

From Figure 7, you can notice that discovering CMC IP 172.16.12.140 using complete chassis discovery feature resulted in auto discovery of 6 Servers (iDRACs) and 1 IOA switch.

The discovery range for the auto discovered devices have the following naming convention:

CMC_*<CMC_IP_address>* (*<Component_IP_address>*)

Where <CMC_IP_address> is the IP address of CMC in which the device is present and <Component_IP_address> is the IP address of either the iDRAC or IOA switch.

The chassis range which is entered and auto discovered device discovery ranges (blade servers and IOA switches) will display different icons that allow you to easily identify the group.

2.3   Discovery, inventory, and status operations

The CMC device right-click options, **Refresh Inventory** and **Refresh Status**, available in the device tree and the **Perform Discovery Now**, **Perform Discovery and Inventory Now**, **Perform Status Polling Now** and **Perform Inventory Now** options available in the **Discovery and Inventory** portal result in the same action on all auto discovered devices.

For example, to perform status polling of the CMC and all auto-discovered devices associated to the CMC, you can perform one of the following:

- Click **Perform Status Polling Now** in the **Discovery and Inventory** portal. See Figure 8.
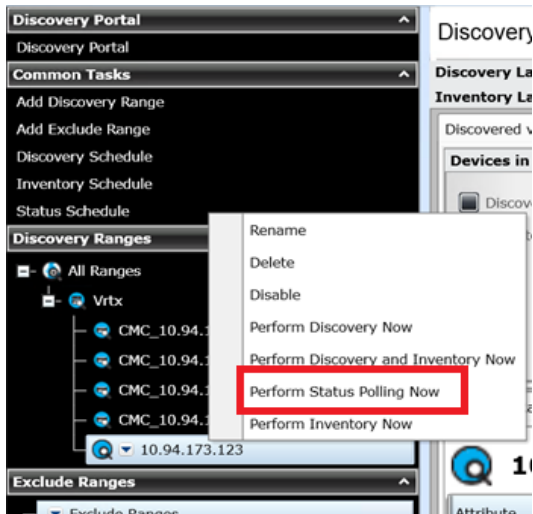- Click **Refresh Status** in the device tree. See Figure 9.

Figure 8   Performing status poll of CMC and all auto discovered devices associated to the CMC by using the CMC discovery range right-click option in the **Discovery and Inventory** portal.
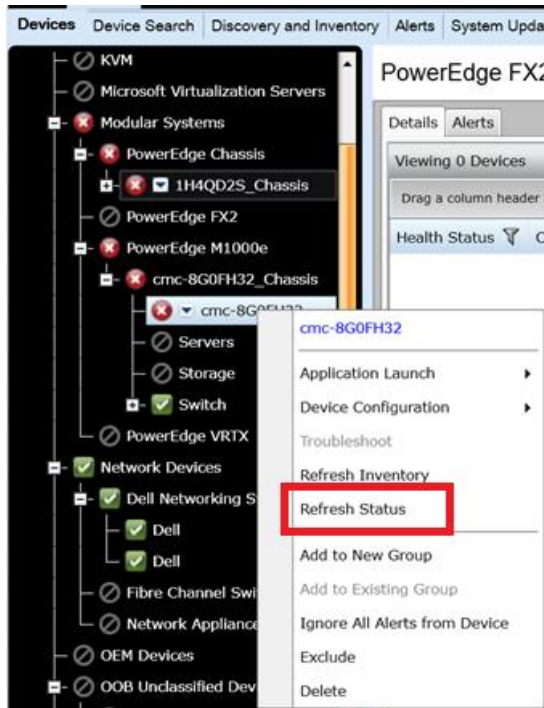

Figure 9   Performing status poll of CMC and all auto discovered devices associated to the CMC by using the CMC device right- click option in the device tree.

The right-click operations on auto-discovered iDRACs and IOA switch ranges will have the same behavior as in the case if these devices were discovered separately. This gives the flexibility to perform the required operation on auto-discovered devices from the discovery ranges in Discovery Portal.

2.4 Addition and removal of blades in CMC

When a new blade server is inserted into CMC after a CMC is discovered using the **Chassis (CMC) Discovery - All Components** filter, the iDRAC is auto discovered in the next scheduled discovery/inventory cycle of the CMC. You can also manually initiate the discovery of the iDRAC using the **Perform Discovery and Inventory Now** or **Refresh Inventory** option as described in the <u>Discovery, inventory, and status operations</u> section.

Similarly, if a blade server is removed from the CMC after the CMC is discovered using the **Chassis (CMC) Discovery - All Components** filter, the iDRAC is removed from the CMC group in the next scheduled discovery/inventory cycle of the CMC. You can also manually initiate the removal of the iDRAC from the CMC using the **Discovery and Inventory Now** or **Refresh Inventory** option as described in the <u>Discovery, inventory, and status operations</u> section. In addition to this, the removed iDRAC will be de-associated from the CMC group and associated to **All Ranges** in the **Discovery Ranges** section of the **Discovery and Inventory** page.

2.5 Associating blades to a CMC that is discovered before using the complete chassis discovery feature

It is recommended that you either use only the **Chassis (CMC) Discovery - All Components** filter to discover the chassis and its associated components or you discover the chassis and its associated components individually. However, if the iDRACs of a CMC are already discovered in OpenManage Essentials while the CMC is not discovered and you use the **Chassis (CMC) Discovery - All Components** filter to discover the CMC and its associated components (blade servers and IOA switches), all the previously discovered iDRACs' ranges will be associated to the CMC discovery range group as shown in Figure 7 and the names of iDRACs' discovery ranges are updated as described in <u>Auto discovered</u> .

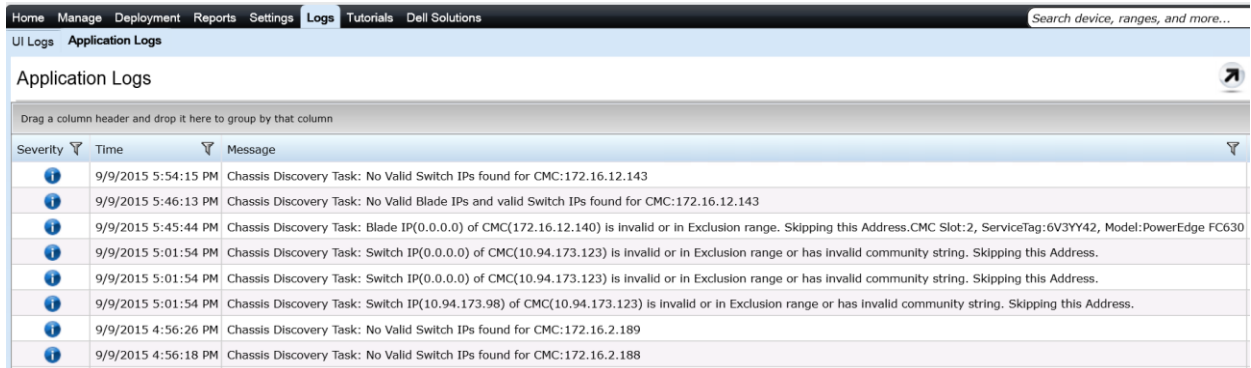## 2.6 Preventing the discovery of iDRACs

If you prefer not to include one or few associated iDRACs/IOA-switches to be grouped under the CMC or you do not want to discover one or few associated iDRACs/IOA-switches using the **Chassis (CMC) Discovery - All Components** filter, you can do so by adding the iDRAC/IOA-switch IP address to the **Exclude Ranges** in the **Discovery and Inventory** portal.

If you prefer to discover only the CMC and do want any of the associated iDRACs/IOA-switches to be auto-discovered using complete chassis discovery feature, clear the **Auto discover iDRACs and switches in the CMC** option shown in Figure 5.

3 Troubleshooting

If the complete chassis discovery feature does not successfully auto-discover the desired devices associated to the CMC, you may find more details in the **Application Logs** in the **Logs** portal. As shown in Figure 10, details will be included in the Application Logs if OpenManage Essentials found an invalid IP address, the IP address is in exclusion list, the IOA switch does not have a proper SNMP GET community string, etc.

Figure 10 Application Logs messages indicating the issues in discovering devices associated to the CMC while performing the complete chassis discovery

3.1 FAQs

Question: How do I use the complete chassis discovery feature if the CMC has one credentials and all the iDRACs have other common credentials?

Answer: You can discover the CMC and iDRAC by following the instructions in step 10 and 11 of the Steps to discover the chassis and associated components section. Also refer to Figure 5.

Question: If each blade server in the CMC has different credentials, how do I use the complete chassis discovery feature to discover all the blade servers?

Answer: The complete chassis discovery feature does not have provision to enter different credentials for each iDRAC. To auto discover all iDRACs using the complete chassis discovery feature, all iDRACs in CMC must have same credentials.

Question: The iDRAC and IOA switches in a CMC are not getting discovered while using the **Chassis (CMC) Discovery – All Components** filter. How can I troubleshoot further?

Answer: See the **Application Logs** after the discovery and inventory is completed and ensure that the CMC components have valid IP address and are not in the exclusion range.

Question: I discovered the Dell chassis and its components using the **Chassis (CMC) Discovery – All Components** filter of the **Guided Wizard**. I notice that the discovery range group of the previously discovered blade servers has moved within the discovery range group of the chassis. However, the blade servers that I had discovered earlier are still inventoried using the SNMP protocol. What should I do?

Answer: It is recommended that you either discover each blade server individually or discover the chassis and its components using the **Chassis (CMC) Discovery – All Components** filter of the **Guided Wizard**. If you had discovered a few blade servers prior to discovering the chassis using the **Chassis (CMC) Discovery – All Components** filter of the **Guided Wizard**, perform the following:

1. Edit the chassis discovery range group.
2. Select the **Chassis (CMC) Discovery – All Components** filter.
3. Provide the credentials of the chassis and the blade servers (iDRACs).

Note: Provide the iDRAC credentials only if the iDRAC credentials are not the same as the chassis credentials.

4. Save the changes.
5. Right-click the chassis range group and click **Perform Discovery and Inventory Now**.
   The blade servers will use the WS-Man credentials during the next inventory cycle.

Question: How can I delete all the auto discovered iDRACs and IOA switches along with CMC?

Answer: To delete all auto discovered iDRACs and IOA switches along with CMC, delete the Group created for the CMC.

Question: Can I discover multiple CMCs or IP Ranges using **Chassis (CMC) Discovery – All Components** filter?

Answer: Yes. See the information included after step 13 in <u>Steps to discover the chassis and associated components</u> section.