Deploying The Integrated Dell Remote Access Controller (iDRAC) Service Module using OpenManage Essentials 2.0

This Dell Technical Whitepaper provides detailed instructions to deploy iDRAC Service Module using OpenManage Essentials.

Dell Engineering
September 2014
### Revisions

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 2014</td>
<td>Initial release</td>
</tr>
</tbody>
</table>

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Executive summary

Dell OpenManage Essentials version 2.0 is designed and implemented to deploy OpenManage Server Administrator and the iDRAC Service Module. Earlier versions of OpenManage Essentials only supported the deployment of OpenManage Server Administrator. As an extension to existing Deploying OpenManage Server Administrator through OpenManage Essentials white paper, this white paper highlights the changes in OpenManage Essentials version 2.0 for the iDRAC Service Module deployment.

The Integrated Dell Remote Access Controller (iDRAC) Service Module provides operating system data such as operating system name and version to iDRAC, and thus presents one-to-many consoles such as OpenManage Essentials with access to systems management data through the standard operating system interface.

You can deploy the iDRAC Service Module on a managed target using OpenManage Essentials version 2.0.

This white paper provides detailed information about:

- Advantages of installing the iDRAC Service Module on managed systems
- Downloading the iDRAC Service Module packages
- Protocols used for discovery of the iDRAC Service Module targets
- Creating an iDRAC Service Module deployment task in OpenManage Essentials version 2.0
1 Introduction

OpenManage Essentials is a web-based one-to-many hardware management application that provides a comprehensive view of Dell systems, devices, and components in the enterprise’s network.

Using OpenManage Essentials, you can discover and inventory Dell systems and other devices/components, monitor system health, and perform system updates.

A managed system is any system that is monitored and managed.

A management system can be any system where you install OpenManage Essentials to discover and monitor a managed system.

The iDRAC Service Module can be deployed on a managed system using the Remote Tasks feature in OpenManage Essentials.

OpenManage Essentials version 2.0 supports the installation of the iDRAC Service Module on managed systems running the following operating systems:

- Microsoft Windows Server
- Red Hat Enterprise Linux (RHEL)
- SUSE Linux Enterprise Server (SLES)
- Community Enterprise Operating System (CentOS)
2 Advantages of installing the iDRAC Service Module on the managed system

When the iDRAC Service Module is installed on a managed system, the operating system information is available to iDRAC.

OpenManage Essentials enables you to view the following operating system information when the iDRAC is discovered:

- Operating system name
- Operating system version

Figure 1: Operating System Information
3 Downloading the iDRAC Service Module packages

To download the iDRAC Service Module installation packages:

2. Click Servers, Storage, & Networking.
3. Click PowerEdge.
4. Select the appropriate server model.
5. Click Drivers and Downloads.
6. Click Systems Management.
7. Download the latest version of the iDRAC Service Module packages supported by the managed system.
4 iDRAC Service Module packages

The iDRAC Service Module can be installed on target systems running Windows and Linux operating systems. For more information about the iDRAC Service Module installation and configuration, visit the following link:


The iDRAC Service Module packages for Windows operating systems and the supported installation types are listed in the following table.

<table>
<thead>
<tr>
<th>Package type</th>
<th>Fresh installation</th>
<th>Major version upgrade (1.x to 2.x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.msi</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>.msp</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>.exe</td>
<td>Supported</td>
<td>Supported</td>
</tr>
</tbody>
</table>

4.1 iDRAC Service Module packages for Linux

Use You can use the consolidated iDRAC Service Module packages to install/upgrade the iDRAC Service Module on any target systems running Linux (RHEL, SLES, and CentOS).

The iDRAC Service Module package for Linux is of three types:

- OM-iSM-Dell-Web-LX****.tar along with OM-iSM-Dell-Web-LX***.tar.gz.sign
- DciSM-***.rpm
- Systems-Management_Application****.BIN along with Systems-Management_Application****.BIN.sign

4.2 Dependencies of the iDRAC Service Module package for Linux

While deploying the iDRAC Service Module on target systems running Linux, check make sure that the signature file resides with the iDRAC Service Module tar.gz/bin package and the RPM key file (optional) with iDRAC Service Module rpm package. The signature file for tar.gz and bin has a .sign extension. For example:

OM-iSM-Dell-Web-xxxx.tar.gz.sign
OpenManage Essentials communicates with a target system running Linux through SSH. Make sure that you provide the correct SSH port while creating the iDRAC Service Module deployment task. By default, OpenManage Essentials uses SSH port 22 and generates a trusted key.

**Note:** By default, the root login through SSH is not enabled on VMware ESX servers. As a result, all OpenManage Essentials tasks that use root account are unsuccessful. To enable the SSH root login on the ESX server, set "PermitRootLogin=YES" in "/etc/ssh/sshd_conf" file.

To install the iDRAC Service Module on a target system running Linux, install the following rpms and their dependent packages before running the iDRAC Service Module deployment task in OpenManage Essentials:

- OpenIPMI
- Filesystem
- Grep
- Coreutils
- Usbutils
- Findutils
- Bash
- Net-tools
- iputils

**Note:** Most of the dependencies listed earlier may have been during the installation of Linux.
5 Pre-requisites and recommended protocols

OpenManage Essentials version 2.0 or later has a filtering logic for the iDRAC Service Module Deployment task that sets target systems to an enabled or disabled state. The following are the conditions which should be met for the target system to be set in an enabled state:

- The target system must be a 12th generation or later Dell PowerEdge server. If the system is a 12th generation PowerEdge server, the iDRAC firmware must be version 1.51.51 or later.
- The target must be running a 64-bit operating system.

The protocol combination and its effect on the state of the target in the deployment wizard is listed in the following table.

![Table 2 Discovery protocol, iDRAC discovery, and target state](image)

<table>
<thead>
<tr>
<th>Protocol</th>
<th>OMSA installed?</th>
<th>iDRAC discovery (WS-Man/SNMP)</th>
<th>Target state</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pre-requisites met</td>
</tr>
<tr>
<td>SNMP/WMI</td>
<td>Yes</td>
<td>Not mandatory</td>
<td>Enabled</td>
</tr>
<tr>
<td>SNMP</td>
<td>No</td>
<td>-</td>
<td>Disabled</td>
</tr>
<tr>
<td>WMI</td>
<td>No</td>
<td>Mandatory</td>
<td>Enabled</td>
</tr>
<tr>
<td>SSH</td>
<td>-</td>
<td>Mandatory</td>
<td>Enabled</td>
</tr>
</tbody>
</table>

Steps to discover a server using SNMP (if OMSA is installed):

1. Launch Discovery wizard from Manage→ Add Discovery range
2. Enter the IP address / host name and add to the list
3. In Device Type Filtering, select the corresponding protocol – SNMP
Depoying The Integrated Dell Remote Access Controller (iDRAC) Service Module using OpenManage Essentials 2.0

Figure 2: Discovery of server when OMSA present

Note: OpenManage Essentials version 2.0 has introduced a new Guided Discovery wizard. Using the legacy Standard Wizard you can discover servers with OMSA using SNMP/WMI/SSH.

Steps to discover a server using WMI/SSH (if OMSA is not installed) and iDRAC with WS-Man

1. Launch the discovery wizard from Manage → Add Discovery range.
2. Enter the IP address / host name and add to the list.
3. In Device Type Filtering, select the corresponding protocol WMI/SSH.
4. Launch the discovery wizard again.
5. Enter the IP address / host name of iDRAC and add to the list.
6. In Device Type Filtering, select the corresponding protocol – WS-Man.
Figure 3: Discovery of iDRAC when OMSA not present
Creating an iDRAC Service Module deployment task

To create an iDRAC Service Module deployment task.

1. Navigate to Manage → Remote Tasks.
2. Click Create Deployment Task.

3. In the Create Deployment Task window:
   - Select iDRAC Service Module
   - Select the type of operating system (Windows/Linux). The targets will be filtered in the Task Target tab based on the operating system type.
   - Browse to location where the iDRAC Service Module package is saved, and select the package.

   **Note:** iDRAC Service Module deployment does not require any install arguments.
4. Click **Next**.
5. In the **Task Target** tab, select the target for the iDRAC Service Module installation or upgrade.

**Note:** Some of targets listed in the **Task Target** tab may be disabled. If you move the mouse pointer over those targets, a tool tip is displayed. The tool tip indicates why the target is disabled. If you select the **Enable all** check box, all devices will be enabled, irrespective of whether they are capable of the iDRAC Service Module deployment. However, the deployment task may fail for unsupported devices.
6. Click Next
7. Select a schedule and enter the credentials of the server on which the iDRAC Service Module is to be installed.
   - To run the task immediately, select Run now.
   - To set a date and time to run the task, select Set schedule.
   - To activate a schedule for a task, select Activate Schedule. The Activate Schedule option is enabled by default when the Set schedule option is selected.
   - To disable a scheduled task, clear Activate schedule.
8. Click Finish.
   A task is created and the task state starts running regardless of the schedule. The task execution runs in two stages:
- The iDRAC Service Module package is downloaded to the OpenManage Essentials installation directory in the \SystemUpdate\Packages folder.
- The iDRAC Service Module is deployed on the target. This task starts at the previously scheduled time.

Figure 7: Schedule and Credentials tab

![Figure 7: Schedule and Credentials tab](image)

9. To view the task execution details, right-click the task and select Details or double-click the task to open Execution Details.
10. The task is displayed as completed after the iDRAC Service Module is deployed on the target. The execution details windows displays the status, summary, and state of the tasks.

Figure 8 : Remote Task Window

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Task Label</th>
<th>Last Run</th>
<th>Created On</th>
<th>Updated On</th>
<th>Updated By</th>
</tr>
</thead>
</table>

Remote Tasks

Task Execution History:

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Time</th>
<th>% Completed</th>
<th>Task State</th>
<th>Successful/Attempted Targets</th>
<th>End Time</th>
<th>Executed by User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deploy ISM Task</td>
<td>8/13/2014 8:59:31 AM</td>
<td>0%</td>
<td>Running</td>
<td>0 / 1</td>
<td></td>
<td>WIN-H296SG2PB5PA/Administrator</td>
</tr>
</tbody>
</table>
7 Deploying the iDRAC Service Module as a sudo user

OpenManage Essentials supports the deployment of the iDRAC Service Module as a sudo user. To deploy the iDRAC Service Module as a sudo user, the default Temp folder (/temp) must be available on the target system and must have sufficient space.

**Note:** Before deploying the iDRAC Service Module as a sudo user, create a new user account, edit the sudoers file using the visudo command, and add the following:

For target systems running 32-bit operating systems and when deploying the tar package:
```
Cmd_Alias OMEUPDATE = /bin/tar, /opt/dell/srvadmin/bin/omexec, /tmp/LinuxPreInstallPackage/runbada, /tmp/LinuxPreInstallPackage/omexec <sudo_username> ALL=OMEUPDATE, NOPASSWD:OMEUPDATE.
```

For target systems running 32-bit operating systems and when deploying the rpm package:
```
Cmd_Alias OMEUPDATE = /bin/rpm, /opt/dell/srvadmin/bin/omexec, /tmp/LinuxPreInstallPackage/runbada, /tmp/LinuxPreInstallPackage/omexec <sudo_username> ALL=OMEUPDATE, NOPASSWD:OMEUPDATE.
```

For target systems running 64-bit operating systems and when deploying the tar package:
```
Cmd_Alias OMEUPDATE = /bin/tar, /opt/dell/srvadmin/bin/omexec, /tmp/LinuxPreInstallPackage64/runbada, /tmp/LinuxPreInstallPackage64/omexec <sudo_username> ALL=OMEUPDATE, NOPASSWD:OMEUPDATE.
```

For target systems running 64-bit operating systems and when deploying the rpm package:
```
Cmd_Alias OMEUPDATE = /bin/rpm, /opt/dell/srvadmin/bin/omexec, /tmp/LinuxPreInstallPackage64/runbada, /tmp/LinuxPreInstallPackage64/omexec <sudo_username> ALL=OMEUPDATE, NOPASSWD:OMEUPDATE.
```

To create an iDRAC Service Module deployment task for a sudo user, follow same steps as a normal deployment task. In the **Schedule and Credentials** tab of task deployment wizard, select the **Enable Sudo** check box as shown in the following figure.
Figure 9: Sudo User
8 Reports – iDRAC Service Module pie chart

OpenManage Essentials version 2.0 or later enables you to view a report of the various iDRAC Service Module versions present on discovered target devices. The pie chart also displays the following categories of devices:

- iDRAC Service Module deployable Windows servers – Includes systems where the iDRAC Service Module might not be present and can be deployed using the iDRAC Service Module deployment task wizard.
- iDRAC Service Module deployable Linux servers
- iDRAC Service Module capable Windows servers – Includes 12th generation or later PowerEdge servers that are running either a 32-bit or 64-bit operating system. You can make these systems deployable with some change in the configuration or update.
- iDRAC Service Module capable Linux servers
- iDRAC Service Module incapable servers – Incudes 11th generation or earlier PowerEdge servers.

To view the report and iDRAC Service Module pie chart:

1. Click **Reports → Agent and Alert Summary**.

   Figure 10: Reports tab to view iDRAC Service Module Report

2. Click **iDRAC Service Module Summary** to view the iDRAC Service Module grid or pie chart.
3. Click the desired section of pie chart to view the list of devices.
9 Troubleshooting Tool

You can use the Dell Troubleshooting Tool that is installed along with OpenManage Essentials to verify if the iDRAC Service Module is installed and the service is running on a target server.

The Troubleshooting Tool displays a **Found** status if the iDRAC Service Module is installed and service is running on the server.

![Troubleshooting Tool](image-url)

**Figure 13 : Troubleshooting Tool**
10 Troubleshooting

10.1 Login failure
You may have entered incorrect credentials (for the managed system). Make sure the user has permission to install iDRAC Service Module on the managed system.

10.2 Unable to deploy the iDRAC Service Module
Make sure that the package used is applicable to the system where the iDRAC Service Module has to be installed.

Make sure that the .msp file is not used for fresh iDRAC Service Module installation on a target system running Windows.

For a target system running Linux, if an operating system specific package is used, make sure that the correct package is chosen.

10.3 The iDRAC Service Module task is running for a long time
Right-click the task and stop the task. Log on to the managed node, open Task Manager and end the following processes (if they are still running):

- Omexec.exe
- Msiexec.exe
- RunBada.exe

Recreate the iDRAC Service Module deployment task with the package applicable to managed system.
11 Frequently Asked Questions

1. Where are iDRAC Service Module packages downloaded in OpenManage Essentials?

   The iDRAC Service Module packages are downloaded at:
   
   C:\Program Files\Dell\SysMgt\Essentials\SystemUpdate\Packages

2. Where are iDRAC Service Module packages downloaded on the managed system?

   The iDRAC Service Module packages are downloaded at the following locations:
   
   Windows - C:\Users\<USER>\AppData\Local\Temp\<random folder name>
   Linux - /tmp/

3. How do I configure the firewall settings?

   If the firewall is enabled, you must configure it on both the OpenManage Essentials management station as well as the managed node.

   - On the OpenManage Essentials management station:
     i. Open TCP port 135.
     ii. Add the application “omremote.exe” (located in Essentials\bin) to the firewall exception list.

   - On the managed system that is to be updated:
     Windows:
     
     Run the following command using the command prompt on a Windows managed system:
     "netsh firewall set service RemoteAdmin"
     
     Linux:
     
     Refer to the specific Linux distribution for configuring the firewall settings. Configure the IPTABLES to allow access to UDP Port 161 and 162 for SNMP communication.

4. What is the maximum recommended number of targets for an iDRAC Service Module deployment tasks?

   The maximum recommended targets for an iDRAC Service Module deployment task is 30.
Summary

The Integrated Dell Remote Access Controller (iDRAC) Service Module is a lightweight optional software application that can be installed on Dell PowerEdge 12th generation or later with an iDRAC. This white paper describes how to create an iDRAC Service Module deployment task using OpenManage Essentials.

Limitation: You can use OpenManage Essentials to deploy the iDRAC Service Module only on target systems running Windows, Red Hat Enterprise Linux, SUSE Linux, and CentOS. You cannot deploy the iDRAC Service Module using OpenManage Essentials on VMware ESXi and XenServer.

To install iDRAC Service Module on ESX, ESXi, and XenServer, visit the following link: