Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager
Release Notes

This document describes the features, important notes, and known issues and resolutions in Dell Server Management Pack Suite version 7.0 for Microsoft System Center Operations Manager.

Topics:
- Release Type and Definition
- Importance
- What is Supported
- What’s New
- Fixes
- Important Notes
- Known Issues and resolutions
- Limitations
- Installation Procedure
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Release Type and Definition

Dell Server Management Pack Suite version 7.0 for Microsoft System Center Operations Manager

The Dell Server Management Pack Suite for Microsoft System Center 2016 Operations Manager, Microsoft System Center 2012 R2 Operations Manager, System Center 2012 SP1 Operations Manager, System Center 2012 Operations Manager and System Center Operations Manager (SCOM) 2007 R2 enables the monitoring of Dell Servers, Integrated Dell Remote Access Controllers (iDRAC) and Dell Chassis Management Controllers (CMC). The management packs provide Dell-specific views that you can use to observe and drill down the system status in a network.

Version

7.0
Release Date
June 2017

Previous Version
6.3

Importance
OPTIONAL: Dell recommends the customer to review specifics about the software update to determine if it applies to your system. The update contains changes that impact certain configurations, or provides new features that may/may not apply to your environment.

What is Supported

Dell Server and Rack Workstation Monitoring

Management Server (MS) requirements:

• Supported operating systems:
  • For OpsMgr 2012 R2, OpsMgr 2012 SP1 and OpsMgr 2012, see technet.microsoft.com/en-us/library/hh205990.aspx.

• Managed System requirements:

Supported versions

<table>
<thead>
<tr>
<th>OpenManage Server Administrator (OMSA)</th>
<th>Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenManage Server Administrator (OMSA) 14G</td>
<td>9.0.1</td>
</tr>
<tr>
<td>OpenManage Server Administrator (OMSA) 13G</td>
<td>8.5 and 8.4</td>
</tr>
</tbody>
</table>

Dell Server and Rack Workstation Monitoring (Licensed)

Management Server (MS) requirements:

• Supported operating systems:
  • For OpsMgr 2012 R2, OpsMgr 2012 SP1 and OpsMgr 2012, see technet.microsoft.com/en-us/library/hh205990.aspx.

• Managed System requirements:
Table 2. Dell Server and Rack Workstation Monitoring (Licensed) requirements

<table>
<thead>
<tr>
<th>iDRAC</th>
<th>Firmware version</th>
</tr>
</thead>
<tbody>
<tr>
<td>12th generation of PowerEdge Servers with iDRAC7</td>
<td>1.6x.6x and 2.xx.xx.xx</td>
</tr>
<tr>
<td>13th generation of PowerEdge Servers with iDRAC8 with Lifecycle Controller</td>
<td>2.xx.xx.xx</td>
</tr>
<tr>
<td>14th generation of PowerEdge Servers with iDRAC9 with Lifecycle Controller</td>
<td>3.xx.xx.xx</td>
</tr>
</tbody>
</table>

iDRAC Service Module (iSM) Monitoring Feature

Management Server (MS) requirements:

- Supported operating systems:
  - For OpsMgr 2012 R2, OpsMgr 2012 SP1 and OpsMgr 2012, see technet.microsoft.com/en-us/library/hh205990.aspx.
- Managed System requirements:

  iDRAC Service Module (iSM) version 2.4

<table>
<thead>
<tr>
<th>iDRAC Service Module (iSM)</th>
<th>Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>iDRAC Service Module (iSM) 14G</td>
<td>3.0.1</td>
</tr>
<tr>
<td>iDRAC Service Module (iSM) 13G</td>
<td>2.5 and 2.4</td>
</tr>
</tbody>
</table>

Chassis Monitoring Feature

Management Server (MS) requirements:

- Supported operating systems:
  - The Chassis Detailed edition is supported only on OpsMgr 2016 and OpsMgr 2012.
    - For OpsMgr 2012 R2, OpsMgr 2012 SP1 and OpsMgr 2012, see technet.microsoft.com/en-us/library/hh205990.aspx.
    - The Chassis Scalable edition is supported on OpsMgr 2007 R2, OpsMgr 2012 and OpsMgr 2016.
- Managed System requirements:

Table 3. Dell Chassis Monitoring requirements

<table>
<thead>
<tr>
<th>Chassis</th>
<th>Firmware versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell PowerEdge M1000e</td>
<td>5.21 and 5.20</td>
</tr>
<tr>
<td>Dell PowerEdge VRTX</td>
<td>2.22 and 2.20</td>
</tr>
<tr>
<td>Dell PowerEdge FX2/FX2s</td>
<td>1.41 and 1.40</td>
</tr>
</tbody>
</table>
iDRAC Monitoring Feature

Management Server (MS) requirements:

- Supported operating systems:
  - For OpsMgr 2012 R2, OpsMgr 2012 SP1 and OpsMgr 2012, see technet.microsoft.com/en-us/library/hh205990.aspx.
- Managed System requirements:

  Table 4. iDRAC Monitoring requirements

<table>
<thead>
<tr>
<th>iDRAC</th>
<th>Firmware versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>iDRAC6 Modular</td>
<td>3.42 and 3.50</td>
</tr>
<tr>
<td>iDRAC6 Monolithic</td>
<td>1.95 and 1.96</td>
</tr>
<tr>
<td>iDRAC7 Modular and Monolithic</td>
<td>1.6x.6x and 2.xx.xx.xx</td>
</tr>
<tr>
<td>iDRAC8 with Lifecycle Controller Modular and Monolithic</td>
<td>2.xx.xx.xx</td>
</tr>
</tbody>
</table>

Chassis Modular Server Correlation Feature

The Chassis Modular Server Correlation Feature is used for correlation of Chassis slots with its Modular blades. Modular blades could be discovered either through Server and Rack Workstation Monitoring feature or Server and Rack Workstation Monitoring (Licensed) feature.

- For supported Dell Chassis versions, please see the 'Supported firmware versions' section under Chassis Monitoring Feature.
- For supported iDRAC version, please see the 'Supported firmware versions' section under Dell Server and Rack Workstation Monitoring (Licensed) feature.
- For supported OMSA versions, please see the 'Supported firmware versions' section under Dell Server and Rack Workstation Monitoring feature.

What’s New

The release highlights are as follows:

- Support for monitoring Dell servers through iDRAC Service Module (iSM) using Windows Management Instrumentation (WMI).
- Support for iDRAC 14G feature:
  - System configuration lock down mode.
  - Group Manager feature.
  - Port Configuration feature.
- Added Event Auto-Resolution feature for Dell server discovered through WS-MAN.
- Added Device Reachability feature for all monitoring feature.
- Added Chassis Power Consumption performance view for Dell Chassis Management Controller discovered through Chassis Monitoring feature.
- Added Monitoring Capacity Planning Check feature for Dell Servers discovered through Server and Rack Workstation Monitoring (Licensed) feature.
- Added detection of unresponsive CMC feature for FX2 chassis discovered through Server and Rack Workstation Monitoring (Licensed) feature.

**Fixes**

NA

**Important Notes**

**Management Pack Suite Structure**

The Dell EMC Server Management Pack Suite consists of the following management packs, which are extracted into the installation folder:

- **Feature Management**
  - `Dell.FeatureManagement.Pack.mp`

  Dell Feature Management Pack (FMP) provides a dashboard to monitor supported Dell Management Pack Suite features, import (scalable/detailed), upgrade, and remove management features. For more information, see the *Dell Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager Installation Guide*.

- **Server Monitoring**
  - `Dell.WindowsServer.Scalable.mp`


  - `Dell.WindowsServer.Detailed.mp`


  - `Dell.WindowsServer.InformationAlertsOn.mp`

  DDell Overrides utility for turning ON the Informational Alerts provided in the Dell Windows Server Scalable Management Pack.

  - `Dell.Server.OOB.mp`

  Dell Server and Rack Workstation Monitoring (Licensed) Management Pack for agent-free server discovery with detailed inventory and monitoring of 12th, 13th, and 14th generation of PowerEdge Servers on OpsMgr 2016, OpsMgr 2012 (RTM, SP1 and R2). This requires licenses and the Dell Device Helper Utility to be configured. See the Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager Installation Guide for more information.

  - `Dell.Server.OOB.DetailedMonitoringOn.mp`


  - `Dell.Model.Server.mp`

  Library file for Server monitoring.

  - `Dell.OperationsLibrary.Server.mp`

  Library file for Server monitoring.

  - `Dell.View.Server.mp`

  Library file for Server monitoring.

  - `Dell.ManagedServer.Model.mp`

  Library file for Server monitoring using iSM

  - `Dell.ManagedServer.iSM.mp`

  Dell Server and Rack Workstation Monitoring (Licensed) Management Pack is used for discovery with scalable inventory and monitoring of 12th, 13th and 14th generation of PowerEdge Servers on OpsMgr 2016, OpsMgr 2012 (RTM, SP1 and R2).

- **Chassis Monitoring**

  - `Dell.CMC.OM07.mp`
- Dell.CMC.OM12.mp
  Dell Chassis Management Controller Management Pack for discovery, monitoring, and trap processing of Dell Chassis with OpsMgr 2016, OpsMgr 2012 versions. This is the scalable edition.
- Dell.Chassis.Detailed.mp
- Dell.Model.CMC.mp
  Library file for Dell Chassis monitoring.
- Dell.OperationsLibrary.CMC.mp
  Library file for Dell Chassis monitoring.
- Dell.View.CMC.mp
  Library file for Dell Chassis monitoring.

Remote Access Monitoring
- Dell.DRAC.OM07.mp
- Dell.DRAC.OM12.mp
- Dell.Model.DRAC.mp
- Dell.OperationsLibrary.DRAC.mp
  Library file for DRAC monitoring.
- Dell.View.DRAC.mp
  Library file for DRAC monitoring.
- Dell.View.CMC.mp
  Library file for DRAC monitoring.

Chassis Modular Server Correlation
- Dell.ChassisModularServer.Correlation.mp
  Dell Chassis Blade Correlation utility for turning ON the correlation of chassis with discovered modular server blades. This MP requires Dell.Model.Server, Dell.Model.CMC, and Dell.WindowsServer.Scalable MPs.
- Dell.DRAC.OM12.mp

Library
- Dell.Connections.HardwareLibrary.mp
  Dell Base folder utility for the basic folder structure and Root node.
- Dell.OperationsLibrary.Common.mp
  Library file used by Dell Management Pack Suite components.

**NOTE:** The Library folder also contains the DLLs used by the components of the Dell Server Management Pack Suite.
**Dell Server and Rack Workstation Monitoring:**

- The Attribute "Enable Correlation" for "Dell Windows Server Physical and Teamed Relationship Discovery Rule" is set to "False" for all Teamed Network Interface (Enriched) in the Dell Windows Server (Detailed Edition) Management Pack. Set the attribute value to "True" to see the relationships between Physical and Teamed Network Interfaces in the "Complete Diagram View", "Modular Systems Diagram View", and "Monolithic Servers Diagram View".
- The Performance Rules "Total Transmitted Packets", "Received Bytes", "Total Received Packets", and "Transmitted Bytes" are disabled by default for all Physical Network Interface (Enriched) in the Dell Windows Server (Detailed Edition) Management Pack. Enable these rules to generate performance statistics for the Physical Network Interfaces.
- The Performance Rules "Total Transmitted Packets", "Received Bytes", "Total Received Packets", and "Transmitted Bytes" are disabled by default for all Teamed Network Interface (Enriched) in the Dell Windows Server (Detailed Edition) Management Pack. Enable these rules to generate performance statistics for the Teamed Network Interfaces.
- The Dependency Monitor "Dell Server Availability Rollup (from iDRAC)" is disabled by default for all Dell Servers in the Dell Scalable management pack. Enable this monitor to roll up the iDRAC network interface health to the Dell Server health.

**Dell Server and Rack Workstation Monitoring (Licensed):**

- To use the Licensed Server features, download the Microsoft WS-Management template from the Microsoft download location as mentioned in the Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager User’s Guide.
- Performance rules are disabled by default. Enable "Dell Server Performance "rule" to view the Server performance data (temperature, power, Network Interface Card (NIC), CPU, Memory, IO and CUPS).
- Performance Unit Monitors are disabled by default. Enable the performance unit monitors to get performance health status.
- Health Monitoring for components under Software RAID controllers is not supported. Data required for health monitoring not available from the device for such components.
- Network Link status for PowerEdge FX2/FX2s chassis shows internal NIC connectivity; network cable removal does not affect Network Link status for PowerEdge FX2/FX2s chassis.
- Correlation of the shared storage between Dell PowerEdge VRTX chassis and the server is not available for Dell servers discovered through Dell Server and Rack Workstation Monitoring (Licensed) feature; it is supported only for servers discovered through the Dell Server and Rack Workstation Monitoring feature.
- Physical disks connections are not displayed accurately when the disks are connected to different connectors. All connected disks are displayed under a single connector.

**Remote Access Monitoring:**


**Chassis Monitoring:**

- In Slot Discovery, the slot name for the slots containing FD332 Storage block, will be shown as SLOT-(Slot Number).
- Slot names displayed by Dell Chassis Slot Discovery may differ from the slot names shown by the Dell Chassis web console.
- The Discovery Rule "Dell Chassis Detailed Discovery" in the Dell Chassis Detailed Edition) Management Pack discovers and monitors the Chassis components (Storage, Fans, Chassis Management controllers, PCIe devices etc.) This discovery requires the creation of
Run As Accounts for the Dell Chassis in your network and have them associated with the "Dell CMC Login Account". For more information on configuring Run As Accounts see the Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager User’s Guide.

The Discovery Rule "Dell CMC Slot Discovery" is disabled for all Dell Chassis Management Controllers in the Dell Chassis Management Controller Management Pack. Enable this rule to discover server modules and free slots for Dell Chassis Management Controllers after you have created Run As Accounts for the Dell Chassis in your network and associated them with the "Dell CMC Login Account". For more information on configuring Run As Accounts see the Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager User’s Guide.

- The Unit Monitor "Device Status Check" is disabled for all Dell Chassis Management Controllers in the Dell Chassis Management Controller Management Pack for SCOM 2007 R2.
- To monitor the health of Chassis devices, associate the community string Run As account with the SNMP Monitoring Account with the target as Dell Modular Chassis class or respective Chassis object (if you have different Run As accounts for different Chassis devices.)
- Health Monitoring of PCIe devices are not supported in the Chassis Detailed Monitoring feature.

**Known Issues and resolutions**

- **Issue 1**
  
  Description: If OpenManage Power Center is installed on a port other than the default port 8463, the associated Console Task will fail to launch. This issue affects the Server and Rack Workstation Monitoring (Licensed) feature in version 6.3 and the In-band or the agent based monitoring feature of versions 6.0 and later.

  Resolution: Install Dell OpenManage Power Center on default port on the management server.


- **Issue 2**
  
  Description: Dell Server "Operating System" attribute may not show the trademark and registered symbols properly. This issue affects the Server and Rack Workstation Monitoring (Licensed) feature in version 6.3 and the In-band or the agent based monitoring feature of versions 6.0 and later.

  Resolution: None.


- **Issue 3**
  
  Description: After you remove the management pack, the management pack folders are still displayed in SCOM console.

  Resolution: Close and re-open the SCOM console.

  Version affected: All

- **Issue 4**
  
  Description: When the network cable is unplugged, the iDRAC object of all modular firmware versions may not accurately reflect the state of the iDRAC network interface for modular blades. This issue affects the Server and Rack Workstation Monitoring feature in version 6.3 and the In-band or the agent based monitoring feature of versions 6.0 and later.

  Resolution: None


- **Issue 5**
  
  Description: After a server reboot, it may be possible for the displayed network interface order to change, and hence be mapped to a different network interface name. Performance statistics are collected based on the network interface name, and hence may start collecting for a different network interface. This issue affects the Server and Rack Workstation Monitoring feature in version 6.3 and the In-band or the agent based monitoring feature of versions 6.0 and later.

  Resolution: None

• **Issue 6**
  Description: With certain firmware versions of the iDRAC6 monolithic device, the firmware version attribute may have a value with a trailing "\n". This issue affects the DRAC monitoring feature in versions 6.0 and later.

  Resolution: None


• **Issue 7**
  Description: Temporary files are not removed when the RACADM tool fails. When remote RACADM takes a long time to get server module or free slot information from a Dell Chassis, SCOM may terminate the "CMC Slot Discovery" scripts. As a result, you will see "Script or Executable failed to Run" alert in the SCOM Alerts View and some files will be left over in the %windir%\Temp \ChassisRemoteAccess_Logs directory in the management station managing the Dell Chassis. This issue affects the Chassis monitoring feature in versions 6.0 and later.

  Resolution: Remove the temporary files manually.


• **Issue 8**
  Description: On SCOM 2007 R2 distributed setups, though an FMP task is completed functionally and the Task History is displayed this as complete, occasionally SCOM may still continue to have the task popup in running state. This issue affects the Feature Management in versions 6.0 and later.

  Resolution: Close the task popup window.


• **Issue 9**
  Description: Despite updating the default port number, CMC or DRAC running firmware version 3.0 returns the wrong URL. This issue affects the DRAC and the Chassis monitoring features in versions 6.0 and later.

  Resolution: None.


• **Issue 10**
  Description: Servers discovered through the Server and Rack Workstation Monitoring feature are shown with the default logical device icon. This issue affects the Server and Rack Workstation Monitoring feature in version 6.3 and the In-band or the agent based monitoring feature of versions 6.0 and later.

  Resolution: None.


• **Issue 11**
  Description: When the Dell Server Management Pack Suite is installed on one of the management servers of a distributed setup, workflows may have propagated to the other management servers that expect the Dell Device Helper utility to be present. This generates a Warning event in both Operations Manager console and Windows event log with id 21406. This may also be seen during the uninstallation of Dell Server Management Pack Suite.

  Resolution: If required, install Dell Server Management Pack Suite on the remaining management servers of the distributed setup, for more information see the Dell Server Management Pack Suite Version 6.3 for Microsoft System Center Operations Manager Installation Guide. Otherwise, ignore the alerts.

  Version affected: All.

• **Issue 12**
  Description: If the component is under a Software RAID controller, Inventory for Bus Type and Media Protocol in Virtual Disk is not supported.

  Resolution: Please see the iDRAC documentation for updated support.
**Issue 13**
Description: Inventory field Manufacturer for SATA Disks may be incorrectly reported as "ATA". This issue affects the Server and Rack Workstation Monitoring (Licensed) feature in version 6.3 and the out-of-band or the agent based monitoring feature of versions 6.0 and later.
Resolution: None

**Issue 14**
Description: Unit Monitors for Memory Group Redundancy are disabled. This issue affects the Server and Rack Workstation Monitoring feature in version 6.3 and the in-band or the agent based monitoring feature of versions 6.0 and later.
Resolution: None.

**Issue 15**
Description: NIC Inventory field for Virtual MAC Address are displayed as "00:00:00:00:00:00", if Virtual MAC Address has not been configured for the NIC. This issue affects the Server and Rack Workstation Monitoring (Licensed) feature in version 6.3 and the out-of-band or the agent based monitoring feature of versions 6.0 and later.
Resolution: None.

**Issue 16**
Description: If no scope is selected in the Authoring Pane and Dell.DRAC.OM07 MP is imported, a Dialog Box with message “Object not found” is displayed by OpsMgr. This issue affects the DRAC monitoring for Dell Server Management Suite Pack versions 6.0 and later.
Resolution: Close the Dialog Box. Select a scope target in the OpsMgr Authoring Pane.

**Issue 17**
Description: While upgrading from SCOM 2007 (with Dell Chassis or iDRAC) to SCOM 2012, the auto-import of CMC(2012) and DRAC(2012) MPs happens in the second discovery cycle after the upgrade. In a few cases successful upgrade occurs in the first cycle itself. This issue affects the iDRAC monitoring for Dell Server Management Suite Pack versions 6.0 and later.
Resolution: Apply manually.

**Issue 18**
Description: Overrides for CMC and DRAC devices if present in a single custom override MP do not get automatically transferred after SCOM upgrading from 2007 R2 to 2012.
Resolution: Apply manually.
Version affected: All

**Issue 19**
Description: Server sub-component display names are displayed incorrectly. This issue affects the Server and Rack Workstation Monitoring (Licensed) for version 6.3 or the agent-free monitoring feature for Dell Server Management Suite Pack versions 6.0, 6.1, and 6.2.
Resolution: None.
**Issue 20**
Description: While upgrading of DRAC MP from v4.1 to v5.0, FMP is designed to transfer all the overrides from DRAC 4.1 MP to DRAC 5.0 MP specific. When the overrides are for the base class "iDRAC", it is mapped to "iDRAC6Monolithic" class alone. The mapping is not done for the "iDRAC6Modular" class. This issue affects the DRAC monitoring for Dell Server Management Suite Pack versions 6.0 and later.

Resolution: Apply manually.


**Issue 21**
Description: The Fan components of the Dell PowerEdge M1000e chassis are displayed as ‘Dell Fan’.

Resolution: Upgrade the Dell PowerEdge M1000e firmware to version 5.0.1

Version affected: All

**Issue 22**
Description: Even after removing the power supply module, the overall enclosure sensor status may still be displayed as Healthy. This issue affects the Server and Rack Workstation Monitoring for version 6.3 or the agent-based monitoring feature for versions 6.0, 6.1, and 6.2.

Resolution: None


**Issue 23**
Description: In Chassis inventory, the IP address may not be updated for the IO module. This issue affects the Chassis Monitoring (Detailed) feature for CMC version 5.0.1.

Resolution: None.


**Issue 24**
Description: If FM120 server is removed from the SCOM monitoring, the main server component, and the logical FM component under which the FM120 server was grouped may still be displayed. This issue affects the Server and Rack Workstation Monitoring, and the Server and Rack Workstation Monitoring (Licensed) features for version 6.3, and both the agent-based and the agent-free features for versions 6.0, 6.1, 6.2.

Resolution: Remove the temporary files manually.


**Issue 25**
Description: If Modular servers which are correlated to a Chassis slot are removed from the SCOM monitoring, the main server object may still be shown. This issue affects the Chassis monitoring, the Server and Rack Workstation Monitoring, and the Server and Rack Workstation Monitoring (Licensed) features for version 6.3 and both the agent-based and the agent-free features for versions 6.0, 6.1, 6.2.

Resolution: None


**Issue 26**
Description: iDRAC NIC attributes (NIC Speed, NIC Duplex, MAC Address and IPV6 Address) are not displayed for Dell Server discovery. This issue affects the Server and Rack Workstation Monitoring (Licensed) feature for version 6.3 and the agent-free features for versions 6.0, 6.1, 6.2.

Resolution: Set the "iDRAC NIC Enable" override parameter to "TRUE" for Dell Server discovery.

• **Issue 27**
  Description: If the CMOS battery is removed and the server is powered on, the battery sensor unit monitor may still be displayed as healthy instead of critical. This issue affects the Server and Rack Workstation Monitoring feature for version 7.0, and OpenManage Server Administrator firmware version 9.0.1.

  Resolution: None

  Version affected: Dell EMC Server Management Pack Suite version 7.0

• **Issue 28**
  Description: When M1000e chassis is discovered with controller inserted in slot2, and slot1 is empty, then the value of the firmware version is displayed as "Not Applicable". This issue affects the Chassis Monitoring feature for version 7.0.

  Resolution: Insert the controller in SLOT1

  Version affected: Dell EMC Server Management Pack Suite version 7.0

• **Issue 29**
  Description: If a non root user is deleted with the admin credentials, then the IPMI tasks fails for the server discovered through Server and Rack Workstation Monitoring Feature. This issue affects the Server and Rack Workstation Monitoring feature for version 7.0.

  Resolution: None

  Version affected: Dell EMC Server Management Pack Suite version 7.0

### Limitations
Detection of unresponsive CMC feature is not supported for 13G FX2 chassis discovered through iDRAC Service Module (iSM) using Windows Management Instrumentation (WMI).

### Installation Procedure
To install the Dell EMC Server Management Pack Suite, run the installer executable. For detailed installation, pre-requisites, configuration, upgrade and uninstallation instructions, see the Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager Installation Guide at Dell.com/openmanagemanuals.

### Contacting Dell

**NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to Dell.com/support.
2. Select your support category.
3. Verify your country or region in the Choose a Country/Region drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.

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