Dell EMC OpenManage Plug-in Version 3.1 For Nagios XI

Installation Guide

DELLEMC

Notes, cautions, and warnings

(i) **NOTE: A NOTE indicates important information that helps you make better use of your product.**

⚠ **CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.**

⚠ **WARNING: A WARNING indicates a potential for property damage, personal injury, or death.**

Contents

Introduction

The Dell EMC Open Manage Plug-in for Nagios XI guide provides information about software and system requirements, installation steps, upgrading and uninstalling the plug-in for Nagios XI.

Also provides capabilities to monitor the supported Dell EMC devices and gives you complete hardware-level visibility of Dell EMC devices including overall and component-level health monitoring. Enabling you to view the basic inventory information and conduct event monitoring of Dell EMC devices. Supports one-to-one web console launch of the Dell EMC devices for further troubleshooting, configuring devices, and managing activities.

The Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI supports the following Dell EMC devices:

- iDRAC9 based PowerEdge Servers.
- 12th Generation and 13th Generation PowerEdge servers through the agent-free method by using Integrated Dell Remote Access Controller (iDRAC) with Lifecycle Controller (LC)
- OEM Servers
- Datacenter Scalable Solutions (DSS)
- Hyperconverged Infrastructure (HCI) Platforms - Dell EMC VxRail, Dell EMC VxFlex, and Dell EMC XC device
- PowerEdge FX2/FX2s chassis, PowerEdge VRTX chassis, and PowerEdge M1000e and MX7000 chassis
- EqualLogic PS-Series Storage Arrays, PowerVault MD 34/38, ME4 Storage Arrays, and Dell Compellent SC-Series Storage Arrays
- Dell EMC Network Switches

For more details on the supported Dell EMC device models, see Support matrix *Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI Users Guide*.

Table 1. Key features

Feature	Functionality
Device Discovery	Discovers Dell EMC device
	Host, and service definitions are created for each device once the discovery is complete.
	- Discovering Dell EMC servers through iDRAC with Lifecycle Controller could be done either using SNMP, WSMan protocol or Redfish protocols. - Dell EMC storage and Dell EMC Network Switch discovery is supported using SNMP protocol. - Dell EMC chassis discovery is supported using WSMan protocol. - Dell EMC MX7000 modular chassis and ME4 Storage Arrays are discovered via REST
Security Enhancement	Enhanced security with AES 256-bit based password encryption in host definition files
Device Information	Displays information about the discovered device such as Service Tag, Firmware Version, Device Name, Device Model, and so on, after a device discovery is successful
	You can view this information in the **Hosts** or the **Services** view in the Nagios XI console.
	For more information about device services and their description, see **Device Information** in the *Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI Users Guide*.
Monitor overall health of Dell EMC devices.	Monitors the overall health of Dell EMC devices
Component level health of Dell EMC devices	Monitors health of the Dell EMC device components such as Physical Disks, Power Supply, Temperature Probe and Voltage Probe and displays the information about the respective components.
	For more information about Component level health of Dell EMC devices and their description, see **Monitor Component Health of Dell EMC Devices** in the *Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI Users Guide*.

Feature	Functionality
Monitor SNMP alerts.	Monitors SNMP alerts for Dell EMC devices This feature displays only the last received SNMP alert.
	To view all received SNMP alerts, browse **Reports** > **Alerts** > **History** in the Nagios XI console.
	You can also view the Alert Knowledge Base (KB) information for the supported Dell EMC devices corresponding to an SNMP alert for faster troubleshooting of the respective alert.
	For more information, see **Knowledge Base (KB) messages for the generated alerts** in the *Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI Users Guide*.
Launching Dell EMC device-specific consoles.	Launches the respective Dell EMC one-to-one consoles to further troubleshoot and manage the supported Dell EMC devices.
Warranty information	Monitors and displays the warranty information for the supported Dell EMC devices. For more information, see **Warranty information for Dell EMC devices** in the *Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI Users Guide*.

This plug-in supports Nagios XI versions 5.4.11 and 5.4.13.

Before installing Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI, download the latest documents from *Dell EMC OpenManage Plug-in for Nagios XI* for the latest information about this product.

System requirements

Before you install the plug-in, ensure that you meet the following requirements:

Common prerequisites:

- Nagios XI versions between 5.6.6 to 5.6.13 are installed and all the components are functional.
- OpenManage Python Software Development Kit (OMSDK) is installed.
- Python version 2.7.5 and above or 3.6.3 and above is installed.
- Python Argparse module is installed.
- Python Netaddr module is installed.
- (Optional) Java version 1.8 or later is installed to view Dell EMC warranty information.
- (Optional) SNMP Trap Translator (SNMPTT) version 1.3 or later is installed to receive SNMP alerts. It is recommended to use the latest version.

(i) **NOTE: ME4 storage and MX7000 chassis discoveries are supported using RedFish protocol. You can discover iDRAC devices either using SNMP, WSMan protocol or Redfish protocol. Dell EMC storage (except for ME4) and Dell EMC Network Switch discovery are supported using SNMP protocol. Dell EMC chassis (except for MX7000) discovery is supported using WSMan protocol. ME4 storage and MX7000 chassis discovery are supported using REST APIs**

(i) **NOTE: For information regarding installation, uninstallation and upgrade of OMSDK, see OMSDK Installation**

Topics:

System requirements for management systems

A management system is the server where Nagios XI is installed. The requirements for the management systems are as follows:

- Red Hat Enterprise Linux 7.7
- Ubuntu 18.04.3
- Ubuntu 16.04.3
- Nagios XI 5.6.6 to 5.6.13

The hypervisor that hosts the supported versions of Red Hat Enterprise Linux,and Ubuntu guest operating systems is also supported.

System requirements for managed systems

A managed system is a supported Dell EMC device that you are monitoring. The requirements for the managed systems are as follows:

Table 2. Supported firmware versions for Dell EMC PowerEdge Servers

Dell EMC PowerEdge Servers	Firmware Version
iDRAC9 based PowerEdge servers	4.0.0.0 and later versions
12th and 13th Generations PowerEdge servers	2.63.60.61 and later versions

(i) **NOTE: HCI , DSS devices also supports 13th Generation and iDRAC9**

Table 3. Supported firmware versions for PowerEdge Chassis

Dell EMC PowerEdge Chassis	CMC version
PowerEdge M1000e Chassis	6.1 and later versions

Dell EMC PowerEdge Chassis	CMC version
PowerEdge MX7000 modular chassis	1.1 and later versions
PowerEdge VRTX chassis	3.2 and later versions
PowerEdge FX2/FX2s chassis	2.2 and later versions

Table 4. Supported firmware versions for Storage

Dell EMC Storage Arrays	Supported Firmware version
Dell Compellent SC-Series Storage Arrays	7.2.1 and later versions
EqualLogic PS-Series Storage Arrays	9.1.4 and later versions
PowerVault MD 34/38 Series Storage Arrays	08.25.11.60 and later versions
PowerVault ME4 Storage Arrays	GT280R004-01 and later versions

Table 5. Supported firmware versions for Network switches

Dell EMC Operating System based Network switches	Supported firmware versions
Operating System 6	6.6.0.13 and later versions
Operating System 9	19.4.1.8 and later versions
Operating System 10	10.5.1.0 and later versions

- If you are using SNMP protocol, ensure that SNMP is configured in the respective devices.

  If you want to receive SNMP traps in the Nagios XI console, ensure that you configure the SNMP trap destination in the respective devices.

  For more information, see Appendix in the Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI Users Guide at *dell.com/ omconnectionsEnterpriseSystemsManagement.*
- If you are using WSMan protocol, it is recommended that you use a WSMan service account other than the default service account. For more information, see **Configuring User Accounts and Privileges** in the respective device Users Guide at **Dell.com/ esmmanuals**.

For the list of supported platforms, see **Support Matrix** in the Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI Users Guide.

Downloading and Installing

1. To install the Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI, extract the component-specific files on the systems.

   The installer is packaged as a `.tar.gz` file named **Dell_EMC_OpenManage_Plugin_v3.1_Nagios_XI_A00.tar.gz**.

   Before you begin deploying the files, follow the instructions below to download **Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI.**

   - Open the browser, and enter the URL www.dell.com/support.
   - Browse your **Dell EMC product page** or search **Dell EMC Service Tag**.
   - Select **Drivers and Downloads**.
   - The page displays a list of supported software and plug-in available for the selected Dell EMC device.
   - Click **Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI** and download the file.

2. Browse the location where you have downloaded the file, and extract its contents.
   The following files are extracted:

   - `Dell_EMC_OM_NagiosXI_monitoring_wizard.zip` file
   - `Dell_EMC_OM_Plugin_3_1_For_NagiosXI_IG.pdf` file
   - `Dell_EMC_OM_Plugin_3_1_For_NagiosXI_ReadMe.txt` file
   - `license_en.txt` file
   - `Upgrade` folder.

3. Log in to Nagios XI console with your credentials.
   The Nagios XI home page is displayed.

4. Click the **Admin** tab.

5. In the left pane, under **System Extensions**, click **Manage Config Wizards**.
   The **Manage Configuration Wizards** page is displayed.

6. In the **Upload a Wizard** menu, click **Browse**.
   The **File Upload** window is displayed.

7. Browse the location where you have extracted the contents of the **Dell_EMC_OpenManage_Plugin_v3.1_Nagios_XI_A00.tar.gz** file, select the **Dell_EMC_OM_NagiosXI_monitoring_wizard.zip** file and click **Open**.

8. Click the **Upload & Install** button.
   The Dell EMC OpenManage Plug-in for Nagios XI is successfully installed in your system and is displayed under the **Wizard Information** menu along with its copyright and version information.

Topics:

- Post Installation

Post Installation

Nagios host configuration files contain the check script definition which require passwords. Dell EMC Nagios 3.1 Plug-in provides a way in which the passwords can be encrypted. The passphrase for the encryption is stored in a secure location with required permission to the file. Following are the steps to create a file and a passphrase:

1. Create a Passphrase Resource file to store a passphrase for encryption and decryption.
2. Navigate to `<NAGIOS_HOME>/etc/resource.cfg` and define a macro `$OMINAGIOSRESPATH$=<absolute path>` in the resource.cfg and provide the absolute path of the file created in step 1.
3. Restart the Nagios core services by running the following command:

```
service nagios restart
```

Guidelines to create a Passphrase Resource file and a Passphrase

- Passphrase Resource file should have a read permission for the Nagios user and the user running discovery script.
- Passphrase shall contain any alphanumeric and special characters.
- The length of the passphrase should be minimum of 10 characters and maximum of 25 characters.

- It is recommended to change the passphrase at regular interval of time.
- Passphrase Resource file should have a read permission for the Nagios user.

Post installation requirements

This section lists the optional steps that you must perform based on your monitoring requirements.

Once you have successfully installed the Dell EMC OpenManage Plug-in for Nagios XI version 3.1, perform the following steps:

- Configuring alerts or events to monitor traps.
- Configuring Knowledge Base (KB) articles to be able to view more information about the alerts or events (traps) received.

If you have installed Nagios XI in a non-default location, then perform the steps that are listed in the section Configuring Nagios XI installed in non-default path.

Topics:

- Configuring alerts or event traps
- Configuring Knowledge Base articles
- Configuring Nagios XI installed in non-default path

Configuring alerts or event traps

Monitoring SNMP traps is an optional prerequisite. To configure SNMPTT to receive SNMP alerts, perform the following steps:

1. Navigate to `cd <NagiosXI installed path>/html/includes/configwizards/ Dell_EMC_OM_NagiosXI_monitoring_wizard/plugins` and run the following command:

   `./postinstall.sh trap`

   The default location for Nagios XI is `/usr/local/nagiosxi`.

2. Provide the path where the `snmptt.ini` file is installed and then press **ENTER**.

   Alternatively, you can press **Enter** to continue with the default file path, `/etc/snmp/snmptt.ini`.

3. Provide the path where trap configuration files are installed and then press **ENTER** to continue. Alternatively, you can press **Enter** to continue with the default file path, `'/usr/local/nagios/libexec'`.

4. Restart the SNMPTT services by running the following command:

   `service snmptt restart`

You will now be able to receive SNMP alerts or events (traps).

Configuring Knowledge Base articles

Knowledge base articles are associated with alerts or events generated by the discovered Dell EMC devices. To be able to view KB articles in the Nagios XI console, you must configure it.

Navigate to `cd <Nagios XI installed path>/html/includes/configwizards/ Dell_EMC_OM_NagiosXI_monitoring_wizard/plugins` and run the following command:

`./postinstall.sh dellkb`

The default location for Nagios XI is `/usr/local/nagiosxi`.

The KB articles are now configured. You will now be able to view the KB articles.

Configuring Nagios XI installed in non-default path

By default, Nagios is installed in the following path:

`"/usr/local/nagios`

If you have installed Nagios XI in a non-default path, then, perform the following steps to integrate this path:

1. Browse `cd <Nagios XI installed path>/html/includes/configwizards/ Dell_EMC_OM_NagiosXI_monitoring_wizard/plugins` and run the following command:

```
./postinstall.sh nagiosinstallpath
```

2. Provide the path where the `submit_check_result.sh` script file is installed and then press **ENTER**.
3. Restart the SNMPTT services by running the following command:

```
service snmptt restart
```

The Nagios XI installed path is now configured.

Upgrading to Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI

You can upgrade to latest Dell EMC OpenMAnage Plug-in for Nagios XI by performing the following steps:

ⓘ **NOTE: To upgrade from OpenManage Plug-in v2.0 to v3.1., user has to first upgrade to v3.0 and then to v3.1**

1. Download the latest Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI installer from the Dell EMC support website at **Dell.com/support** or from Nagios exchange at **exchange.nagios.org/**.

   The installer is packaged as a `.tar.gz` file named **Dell_EMC_OpenManage_Plugin_v3.1_Nagios_XI_A00.tar.gz**.

2. Copy the **Dell_EMC_OpenManage_Plugin_v3.1_Nagios_XI_A00.tar.gz** file to the Nagios XI setup.

3. Browse the location where you have downloaded the folder, and extract its contents.
   The following folder and files are extracted:

   - `Dell_OpenManage_Plugin` folder
   - `Dell_EMC_OM_Plugin_3_1_For_NagiosXI_IG.pdf` file
   - `Dell_EMC_OM_Plugin_3_1_For_NagiosXI_ReadMe.txt` file
   - `license_en.txt` file
   - `Dell_EMC_OM_NagiosXI_monitoring_wizard.zip` file
   - `Upgrade` folder

4. Delete previous version of Dell EMC OpenManage Plug-in by following the steps :

   - Log in to the Nagios XI console with your credentials.

     The Nagios XI home page is displayed.
   - Click the **Admin** Tab.
   - In the left pane, under **System Extensions**, click **Manage Config Wizards**.

     The **Manage Configuration Wizards** page is displayed.
   - Locate the Dell Plug-in under **Wizard Information** and click the

     ✖

     (Delete) button under **Actions**, to uninstall the Dell OpenManage Plug-in for Nagios XI wizard.

     The Dell OpenManage Plug-in is successfully uninstalled from your system.

5. Install the Dell EMC OpenManage plug-in Version 3.1 by following the below steps.

   - Log in to Nagios XI console with your credentials.

     The Nagios XI home page is displayed.
   - Click the **Admin** Tab.
   - In the left pane, under **System Extensions**, click **Manage Config Wizards**.
   - In the **Upload a Wizard** menu, click **Browse**.

     The **File Upload** windows is displayed.
   - Browse the location where you have extracted the contents of the **Dell_EMC_OpenManage_Plugin_v3.1_Nagios_XI_A00.tar.gz** file, select the **Dell_EMC_OM_NagiosXI_monitoring_wizard.zip** file and click **Open**.
   - Click the **Upload & install** button.
   - The Dell EMC OpenManage Plug-in for Nagios XI Version 3.1 is successfully installed in your system and is displayed under the **Wizard Information**.

Perform Post Installation steps and rediscover all the devices

Uninstalling the Dell EMC OpenManage Plug-in Version 3.1 for Nagios XI

1. Log in to Nagios XI console with your credentials.
   The Nagios XI home page is displayed.
2. Click the **Admin** tab.
3. In the left pane, under **System Extensions**, click **Manage Config Wizards**.
   The **Manage Configuration Wizards** page is displayed.
4. Locate the Dell EMC Plug-in under **Wizard Information** and click the ❌ (Delete) button under **Actions** , to uninstall the Dell EMC OpenManage Plug-in for Nagios XI wizard.
   The Dell EMC OpenManage Plug-in is successfully uninstalled from your system.
5. Remove the Passphrase Resource file
6. Remove the reference to the Passphrase Resource file from `<NAGIOS_HOME>/etc/resource.cfg`

Accessing documents from the Dell EMC support site

You can access the required documents in one of the following ways:

- Using the following links:

  - For Dell EMC Enterprise Systems Management, Dell EMC Remote Enterprise Systems Management, and Dell EMC Virtualization Solutions documents — www.dell.com/esmmanuals
  - For Dell EMC OpenManage documents — www.dell.com/openmanagemanuals
  - For iDRAC documents — www.dell.com/idracmanuals
  - For Dell EMC OpenManage Connections Enterprise Systems Management documents — www.dell.com/OMConnectionsEnterpriseSystemsManagement
  - For Dell EMC Serviceability Tools documents — https://www.dell.com/serviceabilitytools

- From the Dell EMC Support site:

  1. Go to https://www.dell.com/support.
  2. Click **Browse all products**.
  3. From **All products** page, click **Software**, and then click the required link from the following:
     - **Analytics**
     - **Client Systems Management**
     - **Enterprise Applications**
     - **Enterprise Systems Management**
     - **Mainframe**
     - **Operating Systems**
     - **Public Sector Solutions**
     - **Serviceability Tools**
     - **Support**
     - **Utilities**
     - **Virtualization Solutions**
  4. To view a document, click the required product and then click the required version.

- Using search engines:

  - Type the name and version of the document in the search box.

Related Documentation

In addition to this guide, you can access the following guides available on the Dell EMC Support website at **Dell.com/support/manuals**. On the Manuals page, click **Software & Security** and click the appropriate product link to access the documents:

- *Integrated Dell Remote Access Controller 9 (iDRAC9) Version 3.00.00.00 User's Guide*
- *Dell EMC XC Series Hyperconverged Appliances manuals*
- *Dell EMC VxRail Appliance Series manuals*
- *Integrated Dell Remote Access Controller 8 with Lifecycle Controller User's Guide*
- *Integrated Remote Access Controller 7 User's Guide*
- *Dell EMC Chassis Management Controller for Dell PowerEdge M1000e User's Guide*
- *Dell EMC Chassis Management Controller for Dell PowerEdge VRTX User's Guide*
- *Dell EMC Chassis Management Controller for Dell PowerEdge FX2/FX2s User's Guide*
- *Compellent SC-Series Storage Arrays User's Guide*
- *EqualLogic PS-Series Storage Arrays User's Guide*
- *PowerVault MD-Series Storage Arrays User's Guide*
- *Dell EMC Network Switch User's Guide*

Also see **www.nagios.org/documentation** for any Nagios XI related documentation.

OMSDK Installation

OMSDK is available as a standard python package in `pypi.org`

Installing and uninstalling OMSDK package using pip

To install OMSDK package using pip, run the following commands:

```
pip install omsdk
```

```
pip install omdrivers
```

To uninstall OMSDK package using pip, run the following commands:

```
pip uninstall omsdk
```

```
pip uninstall omdrivers
```

Installing and uninstalling OMSDK package without pip

(i) **NOTE: Setup.py does not install omsdk dependent python libraries. Ensure to manually install along with the following libraries:**

- **pysnmp>=4.4.1**
- **pyasn1>=0.4.4**
- **enum34>=1.1.6**
- **requests>=2.12.3**
- **PyYAML>=3.12**
- **future>=0.16.0**
- **pysnmp-mibs>=0**

To install OMSDK package without using pip,

1. Manually download the source package from *https://github.com/dell/omsdk.*
2. Click `Clone or Download`
3. Click `Download zip` and run the following commands:

```
cd <downloaded path>
```

```
unzip omsdk-devel.zip
```

```
cd omsdk-devel/
```

```
python setup.py install
```

To uninstall OMSDK package without using pip, run the following commands:

ⓘ **NOTE: Do not alter the setup_file.txt generated during installation of omsdk using setup.py**

```
cd omsdk-devel/
```

```
python uninstall.py
```

ⓘ **NOTE: Set an environment to ensure `python` as a command is working.**

Upgrading OMSDK package using pip

ⓘ **NOTE: To upgrade OMSDK without using pip, uninstall the current version and install the supported version of OMSDK.**

Run the below command to Upgrade OMSDK using pip:

```
pip install omsdk --upgrade
```

```
pip install omdrivers --upgrade
```