Dell EMC OpenManage Installation Guide — Linux
Version 9.4
Notes, cautions, and warnings

**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.
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This topic provides information about:

- Installing Server Administrator on managed systems.
- Installing and using the Remote Enablement feature.
- Managing remote systems using Server Administrator Web Server.
- Configuring the system before and during a deployment or upgrade.

**NOTE:** If you are installing management station and managed system software on the same system, install identical software versions to avoid system conflicts.

**Topics:**

- What's new in this release
- Systems Management Software
- Security Features
- Other Documents You Might Need

**What’s new in this release**

- Support for yx5x server R7525
- Support for Java Runtime Environment 11.0.4

**Supported Operating systems:**

- Red Hat Enterprise Linux 7.7
- Red Hat Enterprise Linux 8.1
- SLES 15 SP1
- Ubuntu 18.04.03
- VMware ESXi 6.5 U3
- VMware ESXi 6.7 U3

**Supported Network Cards**

- Broadcom 5720 1GbE OCP3.0 2P
- Broadcom BCM57416 10G BT Dual Port OCP3 Mezz
- Emulex LightPulse LPe35000-M2 1-Port 32Gb Fibre Channel Adapter
- Intel(R) Ethernet 10G 2P X710-T2L-t Adapter
- Intel(R) Ethernet 10G 4P X710-T4L-t Adapter
- Intel(R) Ethernet 10G 2P X710-T2L-t OCP
- Intel(R) Ethernet 10G 4P X710-T4L-t OCP
- Intel(R) Ethernet 10G 4P X710 OCP
- Intel FPGA Programmable Acceleration Card D5005
- NVIDIA Quadro RTX6000
- NVIDIA Quadro RTX8000
- Marvell FastLinQ 41154 Quad Port 10/25GbE SFP28, OCP NIC 3.0
- Marvell FastLinQ 41154 Quad Port 10GbE BASE-T, OCP NIC 3.0
- Marvell QLogic Fibre Channel Single Port 32GFC PCIe Gen4 x8 Adapter
- Marvell QLogic Fibre Channel Dual Port 32GFC PCIe Gen4 x8 Adapter
- Solarflare XtremeScale X2562 10/25G Adapter

**NOTE:**

- For the list of supported operating systems and Dell EMC servers, see the *Dell EMC OpenManage Software Support Matrix* in the required version of OpenManage Software at www.dell.com/OpenManageManuals.
Software Availability

The Server Administrator software can be installed from:
- Systems Management Tools and Documentation software
- Support site—For more information, see [www.dell.com/Support/Home](http://www.dell.com/Support/Home).
- VMware Update Manager (VUM)—For more information, see [http://vmwaredepot.dell.com/](http://vmwaredepot.dell.com/).
- Linux Repository using YUM or zypper—For more information, see Linux Repository.

Systems Management Software

Systems management software is a suite of applications that enables you to manage the systems by monitoring, notification, and remote access.

Systems management software comprises of the ISO Dell EMC Systems Management Tools and Documentation image.

**NOTE:** For more information about these ISO images, see Dell EMC Systems Management Tools And Documentation Installation Guide on [www.dell.com/OpenManageManuals](http://www.dell.com/OpenManageManuals).

Server Administrator Components On A Managed System

The setup program provides the following options:
- Custom Setup
- Typical Setup

The custom setup option enables you to select the software components you want to install. The table lists the various managed system software components that you can install during a custom installation.

**Table 1. Managed System Software Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>What is installed</th>
<th>Deployment Scenario</th>
<th>Systems to install</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Administrator Web Server</td>
<td>Web-based Systems Management functionality that enables you to manage systems locally or remotely.</td>
<td>Install only if you want to remotely monitor the managed system. You do not require physical access to the managed system.</td>
<td>Any system. For example, laptop or desktops. <strong>NOTE:</strong> For a list of supported laptops and desktops, see the Dell EMC OpenManage 9.4 Release notes at <a href="http://dell.com/support/manuals">dell.com/support/manuals</a>.</td>
</tr>
<tr>
<td>Server Instrumentation</td>
<td>Server Administrator Instrumentation Service</td>
<td>Install to use the system as the managed system. Installing Server Instrumentation and the Server Administrator Web Server installs Server Administrator. Use Server Administrator to monitor, configure, and manage the system.</td>
<td>Supported systems. For a list of supported systems, see the Dell EMC OpenManage Systems Software Support Matrix at <a href="http://dell.com/support/manuals">dell.com/support/manuals</a>. <strong>NOTE:</strong> If you choose to install only Server Instrumentation, you must also install one of the Management Interfaces or the Server.</td>
</tr>
<tr>
<td>Component</td>
<td>What is installed</td>
<td>Deployment Scenario</td>
<td>Systems to install on</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------</td>
<td>---------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td><strong>Storage Management</strong></td>
<td>Server Administrator Storage Management</td>
<td>Install to implement hardware RAID solutions and configure the storage components that are attached to the system. For more information about Storage Management, see the Dell EMC OpenManage Server Administrator Storage Management User’s Guide in the docs directory.</td>
<td>Only those systems on which you have installed Server Instrumentation or the Management Interfaces.</td>
</tr>
<tr>
<td><strong>Command Line Interface (Management Interface)</strong></td>
<td>Command Line Interface of Server Instrumentation</td>
<td>Install to provide local and remote system management solutions to manage Server and Storage instrumentation data using command-line interfaces.</td>
<td>Supported systems. For a list of supported systems, see the Dell EMC OpenManage Systems Software Support Matrix.</td>
</tr>
<tr>
<td><strong>WMI (Management Interface)</strong></td>
<td>Windows Management Instrumentation Interface of Server Instrumentation</td>
<td>Install to provide local and remote system management solutions to manage Server data using WMI protocol.</td>
<td>Supported systems. For a list of supported systems, see the Dell EMC OpenManage Systems Software Support Matrix.</td>
</tr>
<tr>
<td><strong>SNMP (Management Interface)</strong></td>
<td>Simple Network Management Protocol Interface of Server Instrumentation</td>
<td>Install to provide local and remote system management solutions to manage Server and Storage instrumentation data using SNMP protocol.</td>
<td>Supported systems. For a list of supported systems, see the Dell EMC OpenManage Systems Software Support Matrix.</td>
</tr>
<tr>
<td><strong>Remote Enablement (Management Interface)</strong></td>
<td>Instrumentation Service and CIM Provider</td>
<td>Install to perform remote systems management tasks. Install Remote Enablement on one system and Server Administrator Web Server on another system. You can use the system with the Server Administrator to remotely monitor and manage the systems which have Remote Enablement installed.</td>
<td>Supported systems. For a list of supported systems, see the Dell EMC OpenManage Systems Software Support Matrix.</td>
</tr>
<tr>
<td><strong>Operating System Logging (Management Interface)</strong></td>
<td>Operating System Logging</td>
<td>Install to enable local system management-specific events logging on the operating system for Server and Storage instrumentation. On systems running Microsoft Windows, use the Event Viewer to locally view the collected events.</td>
<td>Supported systems. For a list of supported systems, see the Dell EMC OpenManage Systems Software Support Matrix.</td>
</tr>
<tr>
<td><strong>iDRAC Command Line Tools</strong></td>
<td>Hardware application programming interface and iDRAC (depending on the type of the system)</td>
<td>Install to receive email alerts for warnings or errors that are related to voltage, temperature, and fan speed. Remote Access Controller also logs event data and the most recent crash screen (available only on systems running Windows operating system) to help you diagnose the probable cause of a system crash.</td>
<td>Only those systems on which you have installed Server Instrumentation or Management Interface.</td>
</tr>
</tbody>
</table>
Security Features

Systems management software components provide the following security features:

- Support for Network Information Services (NIS), Winbind, Kerberos, and Lightweight Directory Access Protocol (LDAP) authentication protocols for Linux operating systems
- Role-based authority that enables specific privileges to be configured for each user
  
  **NOTE:** Applicable only for systems running Red Hat Enterprise Linux, SUSE Linux Enterprise Server, or VMware ESXi
- User ID and password configuration through the web-based interface or the command-line interface (CLI), in most cases
- SSL encryption (Auto Negotiate and 128-bit or higher)

**NOTE:** Telnet does not support SSL encryption.

- Session time-out configuration (in minutes) through the web-based interface
- Port configuration to enable systems management software to connect to a remote device through firewalls

**NOTE:** For information about ports that the various systems management components use, see the User Guide for that component.


Other Documents You Might Need

For more information, see the following guides:

- The Lifecycle Controller Version 4.00.00.00 User's Guide provides information about using the Lifecycle Controller.
- The Dell EMC OpenManage Management Console User’s Guide provides information about installing, configuring, and using the Management Console.
- The Dell EMC OpenManage Systems Software Support Matrix provides information about the various systems, the operating systems supported by these systems, and the systems management components that can be installed on these systems.
- The Dell EMC OpenManage Server Administrator User's Guide describes the installation and use of Server Administrator.
- The Dell EMC OpenManage Server Administrator SNMP Reference Guide documents the SNMP management information base (MIB).
- The Dell EMC OpenManage Server Administrator CIM Reference Guide documents the Common Information Model (CIM) provider, which is an extension of the standard management object format (MOF) file. This guide explains the supported classes of management objects.
- The Dell EMC OpenManage Server Administrator Messages Reference Guide lists the messages that are displayed on the Server Administrator home page Alert log, or on the event viewer of the operating system. This guide explains the text, severity, and causes of each alert message that the Server Administrator displays.
- The Dell EMC OpenManage Server Administrator Command Line Interface Guide documents the complete command line interface for Server Administrator, including an explanation of CLI commands to view system status, access logs, create reports, configure various component parameters, and set critical thresholds.
- The Remote Access Controller User’s Guide provides complete information about installing and configuring a DRAC controller and using DRAC to remotely access an inoperable system.
- The Integrated Remote Access Controller User’s Guide provides complete information about configuring and using an integrated Remote Access Controller to remotely manage and monitor the system and its shared resources through a network.
- The Update Packages User's Guide provides information about obtaining and using the Update Packages for Windows and Linux as part of the system update strategy.
- The Dell EMC OpenManage Systems Management Tools and Documentation software contains readme files for applications found on the media.

**NOTE:** If the product does not perform as expected or you do not understand a procedure described in this guide, see Getting Help in the system’s Hardware Owner’s Manual.
Preinstallation Setup

Ensure that you perform the following before installing Server Administrator:

- Read the installation instructions for the operating system.
- Read the Installation Requirements to ensure that the system meets or exceeds the minimum requirements.
- Read the applicable readme files and the Systems Software Support Matrix.
- Close all applications running on the system before installing the Server Administrator applications.

On systems running the Linux operating system, ensure that all operating system RPM Package Manager (RPM) packages required by the Server Administrator RPMs are installed. If the system had VMware ESXi factory-installed, Red Hat Enterprise Linux, or SUSE Linux Enterprise Server, see the Dependent RPMs for Remote Enablement section for information about any RPMs that you need to manually install before installing managed system software. Typically, manual installation of RPMs is not required.

Topics:
- Installation Requirements
- Configuring SNMP Agents
- Remote Enablement Requirements
- Winbind configuration for openwsman and sfcb for Red Hat Enterprise Linux operating systems
- Work around for the libssl issue
- Winbind configuration for openwsman and sfcb for SUSE Linux Enterprise Server operating system

Installation Requirements

This section describes the general requirements of the Server Administrator and provides information about supported operating systems and web browsers.

**NOTE:**

- Prerequisites specific to an operating system are listed as part of the installation procedures.
- Server Administrator 9.4 RPM packages have been signed with Dell SHA-512 signature key. The installation or upgrade from previous versions of Server administrator to Server Administrator 9.4 prompts you an interactive message. During silent installation or upgrade, you must download the key from the following location:

  https://linux.dell.com/repo/hardware/dsu/public_gpg3.key

  Before installing or upgrading Server Administrator 9.4, you must import the Dell SHA-512 key once to each host with `rpm --import <key_file>`. Once the key is imported, you are not required to import the key every time while installing, or upgrading to 9.4.

Supported Operating Systems And Web Browsers

For information about the supported operating systems and web browsers, see the Dell EMC OpenManage Systems Software Support Matrix available at www.dell.com/openmanagemanuals.

**NOTE:** Ensure that the web browser is configured to bypass the proxy server for local addresses.

System Requirements

Install Server Administrator on each system that requires to be managed. You can manage each system running Server Administrator locally or remotely through a supported web browser.

**NOTE:** For the list of supported operating systems and Dell EMC servers, see the Dell EMC OpenManage Software Support Matrix in the required version of OpenManage Software at www.dell.com/openmanagemanuals.
Managed System Requirements

- One of the supported operating systems and web browser
- Minimum 2 GB RAM
- Minimum 512 MB free hard drive space
- Administrator rights
- TCP/IP connection on the managed system and the remote system to facilitate remote system management.
- One of the Supported Systems Management Protocol Standards
- Monitor with a minimum screen resolution of 800 x 600. The recommended screen resolution is at least 1024 x 768.
- The Server Administrator Remote Access Controller service requires remote access controller (RAC) installed on the managed system.
- The Server Administrator Storage Management Service requires Server Administrator that is installed on the managed system.

See the relevant Remote Access Controller User’s Guide for complete software and hardware requirements.

Related Link:
- Supported Operating Systems and Web Browsers

Supported Systems Management Protocol Standards

Install a supported systems management protocol on the managed system before installing the management station or managed system software. On supported Linux operating system, systems management software supports:

- Common Information Model (CIM)
- Simple Network Management Protocol (SNMP)

Install the SNMP package provided with the operating system. If SNMP is installed post Server Administrator installation, restart Server Administrator services.

**NOTE:** For information about installing a supported systems management protocol standard on the managed system, see the operating system documentation.

The following table shows the availability of the systems management standards for each supported operating system:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>SNMP/CIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Red Hat Enterprise Linux operating system.</td>
<td>Install the SNMP/CIM package provided with the operating system.</td>
</tr>
<tr>
<td>Supported SUSE Linux Enterprise Server operating system.</td>
<td>Install the SNMP/CIM package provided with the operating system.</td>
</tr>
</tbody>
</table>

**NOTE:** Dell EMC recommends installing the SFCB, SFCC, OpenWSMan, and CMPI packages from the operating system media, if available.

Configuring SNMP Agents

The systems management software supports the SNMP systems management standard on all supported operating systems. The SNMP support may or may not be installed depending on the operating system and how the operating system was installed. An installed supported systems management protocol standard, such as SNMP, is required before installing the systems management software.

Configure the SNMP agent to change the community name, enable set operations, and send traps to a management station. To configure the SNMP agent for proper interaction with management applications, perform the procedures that are described in the Dell EMC OpenManage Server Administrator User’s Guide.

Related Links:
- Installation Requirements
- Supported Systems Management Protocol Standards
Remote Enablement Requirements

The Remote Enablement feature is supported on:

- Red Hat Enterprise Linux
- SUSE Enterprise Linux
- VMware vSphere (ESXi)

Dependent RPMs For Remote Enablement

If you choose to install the Remote Enablement feature, you have to install certain dependent RPMs and configure these RPMs before installing the feature. Install the following RPMs:

- libcmpiCppImpl0
- libwsman1 (RHEL)
- libwsman3 (SLES15)
- openwsman-server
- sblim-sfcb
- sblim-sfcc

**NOTE:** Make sure that Pegasus RPMs are uninstalled.

Post Installation Configuration For Remote Enablement

This section details the steps to configure the dependent RPMs if you have installed the Remote Enablement feature.

The post installation configuration script is available at `/opt/dell/srvadmin/etc/` on the server file system.

After installing all the dependent RPMs and the Remote Enablement feature, run the `autoconf_cim_component.sh` script.

Before running the `autoconf_cim_component.sh` script, ensure that Systems Management is installed.

Run the following command to configure `sfcb` and `openwsman` as per the default configurations: `./autoconf_cim_component.sh`

**NOTE:** To configure `openwsman` on the managed node to run on a different port, use the `-p <port>` option with `autoconf_cim_component.sh`. This is optional and by default the `openwsman` is configured to run on port 443.

**NOTE:** To successfully use `openwsmand` and `sfcbd` services on systems running the supported Linux server operating system with SELinux enabled, use the following commands:

- `openwsmand`
  
  ```bash
  #grep openwsmand /var/log/audit/audit.log | audit2allow -M mypol
  #semodule -i mypol.pp
  ```

- `sfcbd`
  
  ```bash
  #grep sfcbd /var/log/audit/audit.log | audit2allow -M mypol
  #semodule -i mypol.pp
  ```

Related Links:

- Installing Managed System Software on Supported Linux and VMware ESX

Creating Server Certificate For WSMAN

You can either create a certificate for WSMAN or reuse an existing certificate.

Creating A New Certificate

You can create a new server certificate for WSMAN by running the `owsmangencert.sh` script that is `/etc/openwsman`. The `openwsman` RPM provides the script. Follow the steps in the wizard to create the server certificate.
NOTE: On RHEL8, comment RANDFILE and change bits to 2048 in ssleay.cnf before running owsmangencert.sh for openwsman to run properly.

Reusing An Existing Certificate

If you have a self-signed or CA-signed certificate, you can use the same certificate for the openwsman server by updating the ssl_cert_file and ssl_key_file values, which are grouped under [server] tag, in /etc/openwsman/openwsman.conf with the existing certificate values.

Configuring CRL for the openwsman client

To configure the Certificate Revocation List (CRL) used by Server Administrator Web Server, do the following:

1. Mention a valid CRL file in /etc/openwsman/openwsman_client.conf.
2. If left blank, the CRL check is ignored.

NOTE: CRL support is only present on the supported SUSE Linux Enterprise Server and Red Hat Enterprise Linux Server. For other operating systems, contact the operating system vendor to provide the required CURL library with CRL support.

Running sfcb and openwsman

Run sfcb and openwsman:

- /etc/init.d/sfcb start
- /etc/init.d/openwsmand start

NOTE: On Red Hat Enterprise Linux 6, replace sfcb with sblim-sfcb.

On Red Hat Enterprise Linux 6, for the sblim-sfcb and openwsman to start automatically after a reboot you need to change the run-levels using the chkconfig utility. For example, if you want to run sblim-sfcb in run-levels 3 and 5, use the following command:

# chkconfig sblim-sfcb on --level 35

NOTE: For more information about chkconfig and its usage, see the operating system documentation.

The managed system is configured and is ready to be used by the Server Administrator Web Server.

Winbind configuration for openwsman and sfcb for Red Hat Enterprise Linux operating systems

Perform the following to configure openwsman and sfcb:

1. Back up these files:
   - /etc/pam.d/openwsman
   - /etc/pam.d/sfcb
   - /etc/pam.d/system-auth

2. Replace the content of /etc/pam.d/openwsman and /etc/pam.d/sfcb with the following:

   auth required pam_stack.so service=system-auth
   auth required /lib/security/pam_nologin.so
   account required pam_stack.so service=system-auth

3. Replace the content of /etc/pam.d/system-auth with the following:

   %PAM-1.0
   This file is auto-generated.
   User changes will be destroyed the next time authconfig is run.
   auth required /lib/security/$ISA/pam_env.so
   auth sufficient /lib/security/$ISA/pam_unix.so likeauth nullok
   auth sufficient /lib/security/$ISA/pam_krb5.so use_first_pass
   auth sufficient /lib/security/$ISA/pam_winbind.so use_first_pass
Work around for the libssl issue

If the required library needed by openwsman is present on the system, the `autoconf_cim_component.sh` script tries to resolve the libssl.so issue. However, if the library is not present, the script reports the same. Check if the latest version of the libssl library is installed on the system and then create a soft link with libssl.so.

For example: If you have libssl.so.0.9.8a and libssl.so.0.9.8b in /usr/lib, create soft link with the latest libssl.so.0.9.8b:

- ln -s /usr/lib64/libssl.so.0.9.8b /usr/lib64/libssl.so
- ldconfig

Winbind configuration for openwsman and sfcb for SUSE Linux Enterprise Server operating system

Perform the following to configure openwsman and sfcb:

1. Back up the following files:
   - /etc/pam.d/openwsman
   - /etc/pam.d/sfcb
   - /etc/pam.d/system-auth
   - /etc/pam.d/common-account

2. Replace the content of /etc/pam.d/openwsman/ and /etc/pam.d/sfcb with the following:

   ```
   %PAM-1.0
   auth include common-auth
   auth required /lib/security/pam_nologin.so
   account include common-account
   ```

3. Replace the content of /etc/pam.d/common-auth with the following:

   ```
   auth required pam_env.so
   auth sufficient pam_unix2.so debug
   auth sufficient pam_winbind.so use_first_pass debug
   ```

4. Replace the content of /etc/pam.d/common-account with the following:

   ```
   account sufficient pam_unix2.so
   account sufficient pam_winbind.so
   ```
Installing Managed System Software On Supported Linux and VMware ESXi operating systems

The following table explains the operating system installation matrix for Systems Management.

**Table 3. Operating System Installation Matrix**

<table>
<thead>
<tr>
<th>Operating System Architecture</th>
<th>64-bit Architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux 8.1</td>
<td>Install</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 7.7</td>
<td>Install</td>
</tr>
<tr>
<td>VMware ESXi 6.5</td>
<td>Install</td>
</tr>
<tr>
<td>VMware ESXi 6.7</td>
<td>Install</td>
</tr>
<tr>
<td>Client OS support on R7920 for Red Hat Enterprise Linux 7.6 workstation and Red Hat Enterprise Linux 8.0 workstation</td>
<td>Install</td>
</tr>
<tr>
<td>Ubuntu 18.04.03</td>
<td>Install</td>
</tr>
</tbody>
</table>

**NOTE:**
- On a Systems Management upgrade, Dell EMC recommends upgrading to the latest open-source components available on the Dell EMC OpenManage Systems Management Tools and Documentation software or from www.dell.com/Support/Home.
- If you are upgrading the operating system to a major version, uninstall the existing version of Systems Management and install the supported version.

The installation scripts and RPM packages specific to supported Linux and VMware ESXi operating systems are provided to install and uninstall the Server Administrator and other managed system software components. These installation scripts and RPMs are located in the SYSMGMT/srvadmin/linux/supportscripts directory available in the Dell EMC OpenManage Systems Management Tools and Documentation software.

**NOTE:** Before you migrate to Systems Management software, ensure that you uninstall the Systems Management and other open-source components (openwsman-server, openwsman-client, libwsman1, sblim-sfcb, sblim-sfcc, libcmipiCpplmpl0, libsmbios2, smbios-utils-bin) installed as part of the Systems Management.

The install script srvadmin-install.sh enables silent or interactive installation. By including the srvadmin-install.sh script in the Linux scripts, install Server Administrator locally or across a network on single or multiple systems.

The second install method uses the Server Administrator RPM packages that are provided in the custom directories and the Linux rpm command. Write Linux scripts that install Server Administrator locally or across a network on single or multiple systems.

Using a combination of the two install methods is not recommended and may require that you manually install the required Server Administrator RPM packages provided in the custom directories, using the Linux rpm command.

For information about supported platforms and supported operating systems, see the Dell EMC OpenManage Systems Software Support Matrix at www.dell.com/OpenManageManuals.

**Topics:**
- Software License Agreement
- RPM for individual components
- Installing Managed System Software
- Uninstalling Managed System Software
# Software License Agreement

The software license for the Red Hat Enterprise Linux Server and SUSE Linux Enterprise Server version of the Systems Management software is located on the Dell EMC OpenManage Systems Management Tools and Documentation software. Read the `license.txt` file. By installing or copying any of the files on the provided media, you are agreeing to the terms in this file. This file is also copied to the root of the software tree where you install the Systems Management software.

## RPM for individual components

The following table lists the RPMs for individual components that can be used during installation:

### Table 4. RPM for Individual Components

<table>
<thead>
<tr>
<th>Prerequisite</th>
<th>RPM</th>
<th>Deamons Names</th>
<th>Command-Line Options for <code>srvadmin-install.sh</code></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Server Administrator</strong>&lt;br&gt;Web Server</td>
<td>OS&lt;br&gt;(For systems running Red Hat Enterprise Linux, install net-snmp-utils. For systems running SUSE Linux Enterprise, install net-snmp)</td>
<td>srvadmin-omilcore&lt;br&gt;srvadmin-omcommon&lt;br&gt;srvadmin-jre&lt;br&gt;srvadmin-omacs&lt;br&gt;srvadmin-tomcat&lt;br&gt;srvadmin-smcommon&lt;br&gt;srvadmin-smweb</td>
<td>dsm_om_connsvcd</td>
</tr>
<tr>
<td><strong>Server Instrumentation</strong>&lt;br&gt;PE Server, OS</td>
<td>srvadmin-omilcore&lt;br&gt;srvadmin-smcommon&lt;br&gt;srvadmin-omacore&lt;br&gt;srvadmin-deng&lt;br&gt;srvadmin-hapi&lt;br&gt;srvadmin-lsvc&lt;br&gt;srvadmin-omcommon&lt;br&gt;srvadmin-lsvc-snmp&lt;br&gt;srvadmin-deng-snmp&lt;br&gt;srvadmin-cm&lt;br&gt;srvadmin-omacs&lt;br&gt;srvadmin-ominst&lt;br&gt;srvadmin-xmlsup</td>
<td>dsm_sa_datamgrd&lt;br&gt;dsm_sa_eventmgrd&lt;br&gt;dsm_sa_snmpd&lt;br&gt;dsm_om_shrsvcd</td>
<td>-d or --dellagent</td>
</tr>
<tr>
<td><strong>Server Instrumentation Only</strong>&lt;br&gt;PE Server, OS</td>
<td>srvadmin-xmlsup&lt;br&gt;srvadmin-hapi&lt;br&gt;srvadmin-omilcore&lt;br&gt;srvadmin-deng&lt;br&gt;srvadmin-lsvc&lt;br&gt;srvadmin-omcommon&lt;br&gt;srvadmin-cm&lt;br&gt;srvadmin-omacs&lt;br&gt;srvadmin-ominst&lt;br&gt;srvadmin-xmlsup</td>
<td>dsm_sa_datamgrd&lt;br&gt;dsm_sa_eventmgrd&lt;br&gt;dsm_om_shrsvcd</td>
<td>-g or --agent</td>
</tr>
<tr>
<td><strong>SNMP</strong>&lt;br&gt;PE Server, OS</td>
<td>srvadmin-xmlsup</td>
<td>dsm_sa_datamgrd</td>
<td>-m or --snmp</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>RPM</td>
<td>Deamons Names</td>
<td>Command-Line Options for srvadmin-install.sh</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>(For systems running Red Hat Enterprise Linux, install net-snmp-utils. For systems running SUSE Linux Enterprise, install net-snmp).</td>
<td>srvadmin-hapi</td>
<td>dsm_sa_eventmgrd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-omilcore</td>
<td>dsm_sa_snmpd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-deng</td>
<td>dsm_sa_shrsvcdd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-isvc</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-omcommon</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-omacore</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>srvadmin-cm</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-omacs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-ominist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLI</td>
<td>srvadmin-xmlsup</td>
<td>dsm_sa_datamgrd</td>
<td>-i or --cli</td>
</tr>
<tr>
<td></td>
<td>srvadmin-hapi</td>
<td>dsm_sa_eventmgrd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-omilcore</td>
<td>dsm_sa_shrsvcdd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-deng</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-isvc</td>
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</tr>
<tr>
<td></td>
<td>srvadmin-omcommon</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>srvadmin-cm</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>srvadmin-omacs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-ominist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS Logging Option</td>
<td>srvadmin-xmlsup</td>
<td>dsm_sa_datamgrd</td>
<td>-i or --oslog</td>
</tr>
<tr>
<td></td>
<td>srvadmin-hapi</td>
<td>dsm_sa_eventmgrd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-omilcore</td>
<td>dsm_sa_shrsvcdd</td>
<td></td>
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<tr>
<td></td>
<td>srvadmin-deng</td>
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<tr>
<td></td>
<td>srvadmin-isvc</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td>srvadmin-omacs</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-ominist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote Enablement</td>
<td>srvadmin-xmlsup</td>
<td>dsm_sa_datamgrd</td>
<td>-c or --cimagent</td>
</tr>
<tr>
<td></td>
<td>srvadmin-hapi</td>
<td>dsm_sa_eventmgrd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-omilcore</td>
<td>dsm_sa_snmpd</td>
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<td></td>
<td>srvadmin-omacs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>srvadmin-ominist</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Installing Managed System Software On Supported Linux and VMware ESXi operating systems
<table>
<thead>
<tr>
<th>Prerequisite</th>
<th>RPM</th>
<th>Deamons Names</th>
<th>Command-Line Options for srvadmin-install.sh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux Enterprise, install net-snmp)</td>
<td>srvadmin-omcommon          srvadmin-omacore          srvadmin-cm          srvadmin-smcommon          srvadmin-itunnelprovider</td>
<td>dsm_sa_datamgrd       dsm_sa_eventmgrd         dsm_sa_snmpd                dsm_cm_shrsvcd</td>
<td></td>
</tr>
<tr>
<td>Storage Agent and Server Instrumentation</td>
<td>(For systems running Red Hat Enterprise Linux, install net-snmp-utils. For systems running SUSE Linux Enterprise, install net-snmp).</td>
<td>srvadmin-xmlsup          srvadmin-sysfsutils       srvadmin-storelib-sysfs       srvadmin-storelib       srvadmin-hapi          srvadmin-omacore          srvadmin-omacs          srvadmin-ominist          srvadmin-cm          srvadmin-realssd (applicable for x86_64 bit only)          srvadmin-smcommon          srvadmin-storage          srvadmin-storage-cli       srvadmin-storage-snmp</td>
<td>-s or --storage</td>
</tr>
<tr>
<td>Remote Access SA Plugin Component -&gt; Remote access core components, Server Instrumentation</td>
<td>iDRAC agent is installed if iDRAC card is available in the server. iDRAC agent is installed for yx1x generation and yx2x generation of PowerEdge servers with RAC presence. (For systems running Red Hat Enterprise Linux, install net-snmp-utils. For systems running SUSE Linux Enterprise, install net-snmp)</td>
<td>srvadmin-xmlsup          srvadmin-hapi          srvadmin-argtable2       srvadmin-omacore          srvadmin-deng          srvadmin-deng-snmp          srvadmin-isvc          srvadmin-isvc-snmp          srvadmin-omcommon          srvadmin-omacore          srvadmin-omacs          srvadmin-ominist          srvadmin-cm</td>
<td>-r or --rac</td>
</tr>
</tbody>
</table>
### Prerequisite

<table>
<thead>
<tr>
<th>RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-smcommon</td>
</tr>
<tr>
<td>srvadmin-idracadm7</td>
</tr>
<tr>
<td>srvadmin-idrac-vmcli</td>
</tr>
</tbody>
</table>

### Deamons Names

- dsm_sa_datamgrd
- dsm_sa_eventmgrd
- dsm_cm_shrsvc

### Command-Line Options for srvadmin-install.sh

<table>
<thead>
<tr>
<th>Options for srvadmin-install.sh</th>
</tr>
</thead>
<tbody>
<tr>
<td>-t or --stragent</td>
</tr>
</tbody>
</table>

### Storage Agent and Server Instrumentation

- PE Server, OS

<table>
<thead>
<tr>
<th>RPM</th>
</tr>
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<tbody>
<tr>
<td>srvadmin-xmlsup</td>
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<tr>
<td>srvadmin-omilcore</td>
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<td>srvadmin-deng</td>
</tr>
<tr>
<td>srvadmin-isvc</td>
</tr>
<tr>
<td>srvadmin-cm</td>
</tr>
</tbody>
</table>

### Storage Agent and Server Instrumentation

- PE Server, OS

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<th>RPM</th>
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<td>srvadmin-xmlsup</td>
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<td>srvadmin-isvc</td>
</tr>
<tr>
<td>srvadmin-cm</td>
</tr>
</tbody>
</table>

### Remote Enablement and Server Instrumentation

- PE Server, OS

<table>
<thead>
<tr>
<th>RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-xmlsup</td>
</tr>
<tr>
<td>srvadmin-hapi</td>
</tr>
<tr>
<td>srvadmin-omacs</td>
</tr>
<tr>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-deng</td>
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<tr>
<td>srvadmin-isvc</td>
</tr>
<tr>
<td>srvadmin-cm</td>
</tr>
<tr>
<td>srvadmin-ominst</td>
</tr>
<tr>
<td>srvadmin-itunnelprovider</td>
</tr>
</tbody>
</table>

### Installing Managed System Software

This section explains how to install managed system software by using the following installation options:

- Using the srvadmin-install.sh shell script

### NOTE:
- **To manage the server, select either Server Administrator Web Server or one of the Management Interfaces – CLI, SNMP, or OS LOG along with Server Instrumentation (SI) or Server Administrator Storage Management Service (OMSS).**

### NOTE:
- **Command-line options for [-t] and [-g] cannot be used without a management interface. These options must be combined with management interface options such as [-w], [-i], [-z], [-l], or [-m]. For more information about custom installations, see Server Administrator Custom Installation Utility.**

### Installing Managed System Software On Supported Linux and VMware ESXi operating systems

- Using the srvadmin-install.sh shell script

### NOTE:
- **For information about Ubuntu installation, see Dell EMC OpenManage Ubuntu and Debian Repositories.**

### NOTE:
- **The Server Administrator .deb packages are not carried in the OM DVD, it is supported only through repository.**

### NOTE:
- **If you have downloaded the managed system software installer (available as a .tar.gz file), the srvadmin-install.sh shell script is present as setup.sh in the root directory.**

### NOTE:
- **On a successful import of settings using srvadmin-install.sh (OMDVD) or setup.sh (webpack), the exported preferences that are stored in the default folder /opt/dell/backup/openmanage are deleted. In case the import fails, the failure is logged and preferences are rolled back to the defaults.**
NOTE: When you upgrade server administrator from the previously installed version, and if you have installed other Dell system management products, for example DTK, you may see dependency errors. Dell EMC recommends upgrading or removing the dependent products before upgrading server administrator.

- Using the RPM command

Prerequisites For Installing Managed System Software

The prerequisites are:

- Log in as root.
- The running kernel must have loadable module support enabled.
- The /opt directory must have at least 250 MB of free space, and the /tmp, /etc, and /var directories must each have at least 20 MB of free space.
- Install the net-snmp package that is provided with the operating system if you use SNMP to manage the server. If you want to use supporting agents for the ucd-snmp or net-snmp agent, you must install the operating system support for the SNMP standard before you install Server Administrator. For more information about installing SNMP, see the installation instructions for the operating system you are running on the system.

NOTE: When installing RPM packages, to avoid warnings concerning the RPM-GPG key, import the key with a command similar to:

```
rpm --import <OM DVD mount point>/SYSMGMT/srvadmin/linux/RPM-GPG-KEY
```

NOTE: Before installing Server Administrator on SLES15, you must install inserv-compat package else the installation fails.

- In Red Hat Enterprise Linux or later and SLES, install the wsman and sblim packages from the operating system DVD. See, To install the wsman and sblim packages
- Install all the prerequisite RPMs required for successful installation.

Typically, you may not need to manually install any RPMs.

Installing Managed System Software On Supported Linux and VMware ESXi operating systems

1. In Package selection, select Basic Server.
2. Select Customize now and click Next.
3. Select System Management group.
4. From the subcategory, select Web-based Enterprise Management > Optional Packages option. The default selected packages are: openwsman-client, sblim-sfcb, sblim-wbemcli, and wsmancli
   - Clear the selection sblim-wbemcli package from the list.
5. Select openwsman-server and click Next.
6. After the operating system installation, install libcmpiCppImpl0 package from the operating system DVD or using the Yum utility.

Installing Managed System software using the provided media

The installer uses RPMs to install each component. The software (DVD) is divided into subdirectories to enable easy custom installation.

To review the software before you install it, do the following:

1. Load the Dell EMC OpenManage Systems Management Tools and Documentation software into the DVD drive.
2. Mount the DVD, if required.
3. When you have mounted the DVD, navigate to: <OM DVD mount point>/SYSMGMT/srvadmin/linux/
   - The installation script and RPM folder are available under the Linux directory.

Express install

Use the provided shell script to perform the express installation on supported Linux operating systems.
NOTE: On the Red Hat Enterprise Linux 6.x operating system, DVDs are auto-mounted with the -noexec mount option. You cannot run any executable program from the DVD. Manually mount the DVD and then run executable programs.

1. Log in as root to the system running the supported operating system where you want to install the managed system components.
2. Mount the Dell EMC OpenManage Systems Management Tools and Documentation software into the DVD drive.
3. Mount the DVD, if required.
4. Go to <OM DVD mount point>/SYSMGMT/srvadmin/linux/supportscripts directory. Run the srvadmin-install.sh shell script, which performs an express installation.

```
sh srvadmin-install.sh --express
```

or

```
sh srvadmin-install.sh -x
```

The setup program installs the following managed system software features:
- Server Administrator Web Server
- Server Instrumentation
- Storage Management
- Remote Access Controller

Remote enablement is not installed and Server Administrator services do not start automatically.

After the selected features are installed, the following message is displayed: iDRAC is an out-of-band management system that allows system administrators to monitor and manage the PowerEdge Servers and other network equipment, remotely. iDRAC works regardless of Power status and operating system functionality. For more information, visit [http://pilot.search.dell.com/iDRAC](http://pilot.search.dell.com/iDRAC).

With this version of Server Administrator, Security-Enhanced Linux (SELinux) is an optional security architecture that is integrated into the kernels of Red Hat Enterprise Linux operating systems. You can now install an optional SELinux security policy for Server Administrator. If the SELinux policy is set to "Permissive" mode, it logs any access to unnecessary OS resources. If the policy is set to "Enforced" mode, it fully restricts and logs any access to unnecessary OS resources.

For more information, see: [https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/7/html/selinux_users_and_administrators_guide](https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/7/html/selinux_users_and_administrators_guide).

To install this Server Administrator SELinux policy, run this installer script again adding a -S or --selinux option after installing Server Administrator.

5. Start the Server Administrator services after the installation using the srvadmin-services.sh script by using the `sh srvadmin-services start` command.

**Component-specific install using RPM commands**

The RPMs specific to a particular OpenManage component are grouped together. To facilitate an RPM-based installation, install the RPMs from the following directories:

- SYSMGMT/srvadmin/linux/custom/<OS>/Remote-Enablement/< arch>
- SYSMGMT/srvadmin/linux/custom/<OS>/SA-WebServer/<arch>
- SYSMGMT/srvadmin/linux/custom/<OS>/Server-Instrumentation/<arch>
- SYSMGMT/srvadmin/linux/custom/<OS>/add-StorageManagement/<arch>
- SYSMGMT/srvadmin/linux/custom/<OS>/add-iDRAC/<arch>

For example, if you are running Red Hat Enterprise Linux version 7, you can customize the installation by adding the RPMs from the following directories.

**Table 5. RPM Directory**

<table>
<thead>
<tr>
<th>Directory</th>
<th>RPM Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSMGMT/srvadmin/linux/custom/RHEL7/add-StorageManagement/&lt;arch&gt;</td>
<td>Storage Management component packages</td>
</tr>
<tr>
<td>SYSMGMT/srvadmin/linux/custom/RHEL7/SAWebServer/&lt;arch&gt;</td>
<td>Server Administrator Web Server component packages</td>
</tr>
</tbody>
</table>
Where <OS> is the supported operating system and <arch> is 64-bit (x86_64).

The DVD provides RPMs that enable repository-based installation using clients such as Yum and Zypper. There are RPMs that install the entire set or you can select individual RPMs to install specific components. The RPMs are available at:

SYSMGMT/srvadmin/linux/RPMS/supportRPMS/metaRPMS

The following list of RPMs enables the installation of a particular RPM set.

Table 6. Meta RPMs

<table>
<thead>
<tr>
<th>Meta RPMs</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-all</td>
<td>Installs all the components.</td>
</tr>
<tr>
<td>srvadmin-base</td>
<td>Installs the Server Instrumentation component. This component has to be installed before installing any of the other specific components.</td>
</tr>
<tr>
<td>srvadmin-iddrac</td>
<td>Installs the iDRAC component.</td>
</tr>
<tr>
<td>srvadmin-standardAgent</td>
<td>Installs the Remote Enablement component.</td>
</tr>
<tr>
<td>srvadmin-storageservices</td>
<td>Installs the storage services component.</td>
</tr>
<tr>
<td>srvadmin-webserver</td>
<td>Installs the web server component.</td>
</tr>
<tr>
<td>srvadmin-server-snmp</td>
<td>Installs the server Simple Network Management Protocol (SNMP) component.</td>
</tr>
<tr>
<td>srvadmin-server-cli</td>
<td>Installs the server Command Line Interface (CLI) component.</td>
</tr>
<tr>
<td>srvadmin-storageservices-snmp</td>
<td>Installs the storage SNMP component.</td>
</tr>
<tr>
<td>srvadmin-storageservices-cli</td>
<td>Installs the storage CLI component.</td>
</tr>
</tbody>
</table>

Related Links:
Linux Installer Packages

Custom RPMs Based Installation

The following is an example of custom RPMs-based installation of Server Administrator, including the installation of the Remote Enablement feature and the Storage Management Service components:

1. Log in as root to the system running the supported operating system where you want to install the managed system components.
2. Insert the Dell EMC OpenManage Systems Management Tools and Documentation software into the DVD drive.
3. Navigate to the operating system-specific directory corresponding to the system.
4. Type the following command:

```bash
rpm -ivh Server-Instrumentation/<arch>/*.rpm
add-StorageManagement/<arch>/*.rpm
RemoteEnablement/<arch>/*.rpm
```

Server Administrator services do not start automatically.

**NOTE:** Ensure that you install Server Instrumentation or Remote Enablement before installing Remote Access Controller or Storage Management.
NOTE: If you choose to install the Remote Enablement feature, ensure that you install the dependent RPMs before installing this feature.

5. Start the Server Administrator services after the installation by using the command:

   sh srvadmin-services start

NOTE: You can install Server Administrator on any system that meets operating system dependencies. However, after installation, certain Server Administrator services may not be started on unsupported systems.

Related Links:
Dependent RPMs for Remote Enablement

Using The Shell Script To Perform The Custom Installation

You can run the Server Administrator Custom Install script in an interactive mode.

The basic usage of the script is:

   srvadmin-install.sh [OPTION]...

Server Administrator Custom Installation Utility

The Server Administrator utility runs in an interactive mode if you do not specify any options, and runs silently if you provide one or more options.

The options are:

- `-c|--cimagent`—Installs Remote Enablement components.
- `-d|--dellagent`—Installs Server Instrumentation components. Including the granular components:
  1. Server Administrator CLI Interface
  2. Server Administrator SNMP Interface
  3. Server Administrator Operating system log Interface
- `-g|--agent`—Installs the Server Instrumentation agent only.*
- `-h|--help`—Displays the help text.
- `-i|--cli`—Installs Server Administrator Command Line Interface.*
- `-l|--oslog`—Installs operating system logging component.*
- `-m|--snmp`—Installs Server Administrator SNMP component.*
- `-r|--rac`—Installs applicable RAC components and Server Instrumentation components.
- `-s|--storage`—Installs Storage Management, Server Instrumentation, and Default Management Interfaces'.
- `-t|--stragent`—Installs Server Instrumentation and Storage Management. This requires at least one management interface option in combination.*
- `-u|--update`—Updates applicable Server Administrator components
- `-w|--web`—Installs Server Administrator Web Server.
- `-x|--express`—Installs default components. Any other options passed is ignored. The following components are installed:
  1. Server Instrumentation
  2. Storage Management
  3. RAC, if applicable
  4. Server Administrator Web Server
- `-z|--corecim`—Installs core CIM Interface.*
- `-S|--selinux`—Installs Server Administrator SELinux policies.**

The following options can be used along with options that are stated above:

- `-a|--autostart`—Starts the installed services after components have been installed.
- `-p|--preserve`—Preserves the screen without clearing the installation information.

NOTE: If you do not use the `-p | --preserve` option during the installation, the history information displayed on the screen gets erased.

*—Options included for Linux granular installation.
**—This option is applicable only for Red Hat Enterprise Linux 7.x.

### Using The Shell Script To Perform The Installation In Interactive Mode

This installation procedure uses the `srvadmin-install.sh` to prompt you for to install the specific components.

1. Log in as `root` to the system running the supported operating system where you want to install the managed system components.
2. Mount the Dell EMC OpenManage Systems Management Tools and Documentation software into the DVD drive.
3. Mount the DVD, if required.
4. Navigate to `<OM DVD mount point>/SYSMGMT/srvadmin/linux/supportscripts`.
5. Run the script with the `sh srvadmin-install.sh` command and accept the terms of the End User License Agreement. Running the command displays a list of component options. If any of the components are already installed, those components are listed separately with a check mark next to them. The Server Administrator installation options are displayed.
6. Press `<c>` to copy, `<i>` to install, `<r>` to reset and start over, or `<q>` to quit. If you press `<c>`, you are prompted to enter the absolute destination path.
   When the installation is complete, the script has an option for starting the services.
7. Press `<y>` to start the services or `<Enter>` to exit.

### Using The Install Script To Run In Silent Mode

Perform the following steps for a silent installation using the `srvadmin-install.sh` shell script:

1. Log in as `root` to the system running the supported operating system where you want to install the managed system components.
2. Mount the Dell EMC OpenManage Systems Management Tools and Documentation software into the DVD drive.
3. Mount the DVD, if required.
4. Navigate to `<OM DVD mount point>/SYSMGMT/srvadmin/linux/supportscripts`.
5. To install the Storage Management Service components, type the command `sh srvadmin-install.sh --storage` OR `sh srvadmin-install.sh -s` (long options) OR `sh srvadmin-install.sh -s` (short options).
6. Start Server Administrator services after the installation by typing the command `sh srvadmin-services start`.
   **NOTE:** Long options can be combined with short options, and the opposite way.
7. Press `<y>` to start the services or `<Enter>` to exit.

### Managed System Software Installation Using Third-Party Deployment Software

You can use third-party deployment software, such as Altiris Deployment Solution, VMWare Update Manager (VUM), or Linux Repository for Yellowdog Updater Modified (YUM) and Zypper, to install managed systems software on supported systems.

To distribute and install Server Administrator using Altiris Deployment Solution:

1. Start the Altiris application
2. Import `OpenManage_Jobs.bin` located at `SYSMGMT\srvadmin\support\Altiris` on the Dell EMC OpenManage Systems Management Tools and Documentation software
3. Specify a job folder to import `OpenManage_Jobs.bin`.
4. Modify the `Run Script` and `Copy File` tasks to match the deployment environment.
5. Schedule the job to run on the supported systems that are managed from the Altiris Deployment Solution.
   **NOTE:** For more information about VMWare Update Manager, see Using the VMWare Update Manager (VUM).

### Linux Repository

The Linux Repository is the official repository for all related software and updates for your Linux systems. You can use this repository to complete the following tasks:

- Install Server Administrator
- Install drivers for all your Linux systems
- Install BIOS and firmware updates

**Setting Up The Linux Repository**

Before you can start using the Linux Repository for installing software or upgrades, you must set up the repository. For more information, see [http://linux.dell.com/repo/hardware/](http://linux.dell.com/repo/hardware/).

Set up the repository with:

```
wget -q -O - http://linux.dell.com/repo/hardware/latest/bootstrap.cgi | bash
```

**Installation Using Linux Repository**

You can install Server Administrator using the Linux Repository by any of the following methods:

**NOTE:** Ensure that you set up the Linux Repository before you install the software from the repository.

**NOTE:** Server Administrator does not install on unsupported systems. If you try installing Server Administrator on unsupported systems, you receive a message that the system is not supported and the installation fails.

**NOTE:** Starting with Server Administrator 9.2 release, the signing algorithm has changed from SHA-1 to SHA-512. If you are installing or upgrading to the latest version of Server Administrator, you must rerun the bootstrap script.

**Using YUM**

To install OMSA using the repository, type the following command:

```
yum install srvadmin-all
```

If you want to use server administrator SELinux policies, type the following command:

```
yum install srvadmin-selinux
```

**NOTE:** The SELinux policies for OpenManage are only applicable for Red Hat Enterprise Linux.

**Using ZYPPER**

You can install Server Administrator using zypper for SLES.

```
zypper install srvadmin-all
```

**NOTE:** The server administrator services start automatically during install and upgrade of OMSA.

**Uninstalling Managed System Software**

To uninstall Managed System Software, log in as `root`.

**Uninstalling Managed System Software Using The Uninstall Script**

An uninstallation script is installed when you install Server Administrator. Execute the script by typing `srvadmin-uninstall.sh` and then pressing `<Enter>`.

**NOTE:** During an uninstall of Server Administrator using `srvadmin-uninstall.sh`, the preferences are exported to the default folder. The preferences are exported to a default folder `/opt/dell/backup/openmanage`.

If there is a previous set of exported files, they are overwritten. The default folder preferences are always the last known set of preferences.
Uninstalling Managed System Software Using The RPM Command

The individual components of systems management software can be uninstalled without uninstalling all the systems management. To uninstall only the Server Administrator Web Server, use the command `rpm -e `rpm -qa | grep srvadmin-tomcat`.

During an uninstallation, files in which user settings are made are preserved with the `.rpmsave` file extension. Log files are also preserved after the uninstallation.
Installing Systems Management Software On VMware ESXi

VMware ESXi is factory-installed on some systems. For a list of these systems, see the latest Systems Software Support Matrix.

Server Administrator is available as a .zip file for installing on systems running VMware ESXi. The zip file, OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i_<bld-revno>.zip, where <version> is the supported ESXi version.

Download VMware vSphere Command Line Interface (vSphere CLI) from vmware.com and install on the Microsoft Windows or Linux system. Alternately, you can import VMware vSphere Management Assistant (vMA) to the ESXi host.

Topics:
- Using the vSphere CLI
- Using the VMware vSphere Management Assistant vMA
- Using the VMware Update Manager (VUM)
- Using The Power CLI
- Accessing Server Administrator on VMware ESXi
- Uninstalling the existing Systems Management VIB
- Configuring The SNMP Agent On Systems Running VMware ESXi
- Troubleshooting

Using the vSphere CLI

To install systems management software on VMware ESXi using the vSphere CLI:

2. Shut down all guest operating systems on the ESXi host and put the ESXi host in maintenance mode.
3. If you are using vSphere CLI on Windows, go to the directory where you have installed the vSphere CLI utilities. If you are using vSphere CLI on Linux, run the command from any directory.
4. Run the following command:
   For the supported version of VMware ESXi: esxcli --server <IP Address of ESXi host> software vib install -d /var/log/vmware/<server administrator zip file>
5. Enter the root username and password of the ESXi host when prompted.
   The command output displays a successful or a failed update.

   **NOTE:** After you install the VIB, a host reboot is not required.

   **NOTE:** After an ESXi VIB installation, the CIM services are restarted automatically to load the Server Administrator providers (DCIM service). You are required to wait for two to three minutes before logging in from any Server Administrator web server. Otherwise, the Server Administrator web server login to the ESXi host may fail.

To get the information about the installed Server Administrator:

- For ESXi, use esxcli --server <ESXi host IP> software vib get -n=OpenManage or esxcli --server <ESXi host IP> software vib list

The VIB contains the following items:
- Server Administrator Instrumentation Service
- Remote Enablement
- Server Administrator Storage Management
- Remote Access Controller

Related Links:
Troubleshooting

**Using the VMware vSphere Management Assistant (vMA)**

The vMA enables administrators and developers to run scripts and agents to manage ESXi systems. For more information about vMA, see [vmware.com/support/developer/vima/](http://vmware.com/support/developer/vima/).

1. Log on to vMA as an administrator and provide the password when prompted.
2. Copy and unzip the `OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i_<bld-revno>.zip` file to a directory on the vMA.
3. Shut down all guest operating systems on the ESXi host and put the ESXi host in maintenance mode.
4. In vMA, run the following command:
   - For VMware ESXi 6.x:
     ```
     esxcli --server <IP Address of ESXi 6.x host> software vib install -d /var/log/vmware/<Dell OpenManage file>
     ```
5. Enter the root username and password of the ESXi host when prompted.

The command output displays a successful or a failed update.

- **NOTE:** After you install the VIB, a host reboot is not required.
- **NOTE:** After an ESXi VIB installation, the CIM services are restarted automatically to load the Server Administrator providers (DCIM service). You are required to wait for two to three minutes before logging in from any Server Administrator web server. Else, the Server Administrator web server login to the ESXi host may fail.

When you run the command, the following components are installed on the system:
- Server Administrator Instrumentation Service
- Remote Enablement
- Server Administrator Storage Management
- Remote Access Controller

Install the Server Administrator Web Server separately on a management station.

After installing Server Administrator, enable the Server Administrator Services.

**Related Links:**
- Troubleshooting

### Using the VMware Update Manager (VUM)

To install Server Administrator using VUM:

1. Install VMware vSphere 6.x (vCenter Server, vSphere Client, and VMware vSphere Update Manager) on a system running the Windows Server operating system.
2. On the desktop, double-click **VMware vSphere Client** and login to vCenter Server.
3. Right-click **vSphere Client host** and click **New Datacenter**.
4. Right-click **New Datacenter** and click **Add Host**. Provide information for the ESXi server per online instructions.
5. Right-click the ESXi host added in the previous step and click **Maintenance Mode**.
6. From **Plug-ins** select **Manage Plug-ins > download VMware Update Manager** (The status is enabled if the download is successful.) Follow the instructions to install the VUM client.
7. Select the ESXi host. Click **Update Manager > Admin view > Patch Repository > Import Patches** and follow the online instructions to upload the patch successfully.
8. Click **Baselines and Groups**.
9. Click **create** from Baselines tab, mention baseline name, and select **Host Extension** as baseline type. Complete the rest as per instructions.
10. Click **Admin View**.
11. Click **Add to Baseline** (against the uploaded patch name) and select the baseline name that you have created in step 8.
12. Click **Compliance view**. Select the **Update Manager** tab. Click **Attach** and select the Extension Baseline that is created in step 8 and follow the instructions.

13. Click **Scan** and select **Patches & Extensions** (if not selected by default) and click **Scan**.

14. Click **Stage**, select **created Host Extension** and follow the instructions.

15. Click **Remediate** and follow the instructions once the staging is completed.

**NOTE:** After you install the VIB, a host reboot is not required.

**NOTE:** After an ESXi VIB, the CIM services are restarted automatically to load the Server Administrator providers (DCIM service). You are required to wait for 2-3 minutes before logging in from any Server Administrator web server. Else, the Server Administrator web server login to the ESXi host may fail.

**NOTE:** For more information about VUM, see the VMware official website.

**NOTE:** You can install Server Administrator from the VUM repository, https://vmwaredepot.dell.com/.

Server Administrator installation is complete.

### Using The Power CLI

To install Server Administrator using Power CLI:

1. Install the supported PowerCLI of ESXi on a supported Windows system.

2. Copy the `OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESXi<version>_<bld-revno>.zip` file to the ESXi host.

3. Navigate to the bin directory.

4. Run `Connect-VIServer` and provide the server and other credentials.

5. Log on to the ESXi host using supported vSphere CLI of ESXi 6.x and create a datastore.

6. Create a folder `OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESXi<version>i` on ESXi host under `/vmfs/volumes/<datastore_name>` directory.

7. Copy the ESXi .zip file on ESXi 6.x host to `/vmfs/volumes/<datastore_name>/OM-SrvAdmin-Dell-Web-<version>-%<bldno>.VIB-ESXi<version>i` directory.

8. Unzip the .zip file in the above specified directory.


**NOTE:** After you install the VIB, a host reboot is not required.

**NOTE:** After an ESXi VIB installation, the CIM services are restarted automatically to load the Server Administrator providers (DCIM service). You are required to wait for two to three minutes before logging in from any Server Administrator web server. Else, the Server Administrator web server login to the ESXi host may fail.

10. Run the following command to check if OpenManage is installed successfully on the host: `esxcli software vib list|grep -i openManage` is displayed.

**NOTE:** For more information about Power CLI, see the VMware official website.

### Accessing Server Administrator on VMware ESXi

To manage Server Administrator on VMware ESXi using the Server Administrator Web Server interface:

1. Install only the Server Administrator Web Server interface on another system.

   **NOTE:** Ensure that the version of the Server Administrator Web Server interface is greater or equal to the version of the Server Instrumentation installed.

2. Run the Server Administrator Web Server interface.

   The Managed System Login screen is displayed.

3. On the Managed System Login screen, type the following credentials of the VMware ESXi system you want to access, and then click **Submit**.
• **Hotname / IP address:** — Is the hostname or IP address of the management station. Type the hostname or IP address in the format Hostname: Port Number, or IP address: Port Number.

• **Username:**

• **Password:**

The Server Administrator screen is displayed.

### Uninstalling the existing Systems Management VIB

To uninstall the existing Systems Management VIB:

Run the following command to uninstall the VIB:

**On ESXi:**

```
esxcli --server <ESXi host IP> software vib remove <server administrator>
```

**NOTE:** After you uninstall the VIB, a host reboot is not required.

### Configuring The SNMP Agent On Systems Running VMware ESXi

Server Administrator generates Simple Network Management Protocol (SNMP) traps in response to changes in the status of sensors and other monitored parameters. Configure one or more trap destinations on the system running Server Administrator to send SNMP traps to a management station.

Server Administrator supports SNMP traps on VMware ESXi but does not support SNMP Get and Set operations because VMware ESXi does not provide the required SNMP support. You can use the VMware vSphere CLI to configure VMware ESXi to send SNMP traps to a management application.

**NOTE:** For more information about using the VMware vSphere CLI, see the VMware support site at vmware.com/support.

### Configuring The System To Send Traps To A Management Station Using The vSphere CLI

Server Administrator generates SNMP traps in response to changes in the status of sensors and other monitored parameters. One or more trap destinations must be configured on the system running Server Administrator to send SNMP traps to a management station.

Configure the ESXi system running Server Administrator to send traps to a management station:

1. Install the VMware vSphere CLI.
2. Open a command prompt on the system in which the vSphere CLI is installed.
3. Navigate to the directory in which the vSphere CLI is installed. The default location on Linux is `/usr/bin` and on Windows is `C:\Program Files\VMware\VMware vSphere CLI\bin`.
4. Configure the SNMP setting using the command: `vicfg-snmp.pl --server <server> --username <username> --password <password> -c <community> -t <hostname>@162/<community>`
   
   where `<server>` is the hostname or IP address of the ESXi system, `<username>` is a user on the ESXi system, `<password>` is the password of the ESXi user, `<community>` is the SNMP community name and `<hostname>` is the hostname or IP address of the management station.
   
   **NOTE:** If you do not specify a user name and password, you are prompted to specify the same.
5. Enable SNMP using the command: `vicfg-snmp.pl --server <server> --username <username> --password <password> -E`
6. View the SNMP configuration using the command: `vicfg-snmp.pl --server <server> --username <username> --password <password> -s`
7. Test the SNMP configuration using the command: `vicfg-snmp.pl --server <server> --username <username> --password <password> -T`

**NOTE:** The `.pl` extension is not required if you are using vSphere CLI on Linux or using vMA.
The SNMP trap configuration takes effect immediately without restarting any services.

**Troubleshooting**

- When attempting to use the `vihostupdate` command, the following error may be displayed:

  ```
  unpacking c:\OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i_<bld-revno>.zip
  metadata.zip.sig does not exist
  signature mismatch : metadata.zip
  Unable to unpack update package.
  ```

  This error is displayed if you are using an older version of the Remote CLI. To resolve this issue, download and install the latest vSphere version of the CLI.

- When attempting to use the `vihostupdate` command, the following error may be displayed:

  ```
  Unable to create, write or read a file as expected. I/O Error (28) on file : [Errno 28] No space left on device.
  ```

  See the VMware KB article 1012640 at [kb.vmware.com](http://kb.vmware.com) to fix this error.
Upgrading Systems Management Software On VMware ESXi

The Systems Management installer provides an upgrade from 9.3 version.

Topics:
- Using the vSphere CLI
- Using The Power CLI
- Using the VMware Update Manager (VUM)

Using the vSphere CLI

To upgrade systems management software on VMware ESXi using the vSphere CLI:

2. Shut down all guest operating systems on the ESXi host and put the ESXi host in maintenance mode.
3. If you are using vSphere CLI on Windows, go to the directory where you have installed the vSphere CLI utilities.
   If you are using vSphere CLI on Linux, run the command from any directory.
4. Run the following command:
   For the supported version of VMware ESXi:
   esxcli --server <IP Address of ESXi host> software vib update -d /var/log/vmware/<server administrator zip file>
5. Enter the root username and password of the ESXi host when prompted.
   The command output displays a successful or a failed update.
   
   **NOTE:** After you upgrade the VIB, a host reboot is not required.
   
   **NOTE:** After an ESXi VIB upgrade, the CIM services are restarted automatically to load the Server Administrator providers (DCIM service). You are required to wait for 2-3 minutes before logging in from any Server Administrator web server. Else, the Server Administrator web server login to the ESXi host may fail.

To get the information about the installed Server Administrator:

- For ESXi, use esxcli --server <ESXi host IP> software vib get -n=OpenManage or esxcli --server <ESXi host IP> software vib list

The VIB contains the following items:

- Server Administrator Instrumentation Service
- Remote Enablement
- Server Administrator Storage Management
- Remote Access Controller

Using The Power CLI

To upgrade Server Administrator using Power CLI:

1. Install the supported PowerCLI of ESXi on a supported Windows system.
2. Copy the OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i_<bld-revno>.zip file to the ESXi host.
3. Navigate to the bin directory.
4. Run Connect-Viserver and provide the server and other credentials.
5. Log on to the ESXi host using supported vSphere CLI of ESXi 6.x and create a datastore.
6. Create a folder OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i on ESXi host under /vmfs/volumes/<datastore_name> directory.

7. Copy the ESXi.zip file on ESXi 6.x host to /vmfs/volumes/<datastore_name>OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i directory.

8. Unzip the zip file in the above specified directory.

9. Run the following command in Power CLI: Install-VMHostPatch -VMHost <ESXi host IP> - HostPath /vmfs/volumes/<datastore_name>/OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i/cross_dell-openmanage-esxi_<version>-metadata.zip

   **NOTE:** After you install the VIB, a host reboot is not required.

   **NOTE:** After an ESXi VIB installation, the CIM services are restarted automatically to load the Server Administrator providers (DCIM service). You are required to wait for 2-3 minutes before logging in from any Server Administrator web server. Else, the Server Administrator web server login to the ESXi host may fail.

10. Run the following command to check if OpenManage is installed successfully on the host: esxcli software vib list|grep -i open

   OpenManage is displayed.

   **NOTE:** For more information about Power CLI, see the VMware official website.

---

Using the VMware Update Manager (VUM)

To upgrade Server Administrator by using VUM:

1. Install VMware vSphere 6.x (vCenter Server, vSphere Client, and VMware vSphere Update Manager) on a system running the Windows Server operating system.

2. On the desktop, double-click VMware vSphere Client and login to vCenter Server.

3. Right-click vSphere Client host and click New Datacenter.

4. Right-click New Datacenter and click Add Host. Provide information for the ESXi server per online instructions.

5. Right-click the ESXi host added in the previous step and click Maintenance Mode.

6. From Plug-ins select Manage Plug-ins > download VMware Update Manager (The status is enabled if the download is successful.) Follow the instructions to install the VUM client.

7. Select the ESXi host. Click Update Manager > Admin view > Patch Repository > Import Patches and follow the online instructions to upload the patch successfully. The offline bundle is displayed.

8. Click Baselines and Groups.

9. Click create from Baselines tab, mention baseline name, and select Host Extension as baseline type. Complete the rest as per instructions.

10. Click Admin View.

11. Click Add to Baseline (against the uploaded patch name) and select the baseline name that you have created in step 8.

12. Click Compliance view. Select the Update Manager tab. Click Attach and select the Extension Baseline created in step 8 and follow the instructions.

13. Click Scan, and select Patches & Extensions (if not selected by default) and click Scan.

14. Click Stage, select created Host Extension and follow the instructions.

15. Click Remediate and follow the instructions once the staging is completed.

   **NOTE:** After you upgrade the VIB, host reboots automatically.

   **NOTE:** After an ESXi VIB upgrade, the CIM services are restarted automatically to load the Server Administrator providers (DCIM service). You are required to wait for two to three minutes before logging in from any Server Administrator web server. Else, the Server Administrator web server login to the ESXi host may fail.

   **NOTE:** For more information about VUM, see the VMware official website.

   **NOTE:** You can install Server Administrator from the VUM repository, https://vmwaredepot.dell.com/.

Server Administrator upgrade is complete.
Frequently Asked Questions

What ports do systems management applications use?

The Server Administrator uses the default port 1311. These ports are configurable. For port information of a particular component, see the User Guide of that respective component.

When I run virtual media on the iDRAC controller over a Wide Area Network (WAN) with low bandwidth and latency, launching Systems Management Install directly on the virtual media failed, what do I do?

Copy the web install package to the local system and then launch systems management Install.

Do I need to uninstall the Adaptec Fast Console application installed on the system before installing the Server Administrator Storage Management Service?

Yes, if you already have Adaptec Fast Console installed on the system, you must uninstall this application before installing the Server Administrator Storage Management Service.

Topics:

- Red Hat Enterprise Linux or SUSE Linux Enterprise Server

Red Hat Enterprise Linux or SUSE Linux Enterprise Server

What do I do when management station RAC utility installation fails due to missing RPM file?

During the installation of the management station RAC utility (`mgmtst-racadm` RPM under `/SYSMGMT/ManagementStation/linux/rac` directory on the Dell EMC OpenManage Systems Management Tools and Documentation software), the installation may fail due to missing RPM file dependencies on `libstdc++.so` libraries. Install the `compat-libstdc++` RPM provided in the same directory to resolve the dependency and retry the installation.
When using the `rpm -e 'rpm -qa | grep srvadmin'` command to remove systems management software, some RPM utility versions may schedule an uninstallation in an incorrect order, which results in users encountering misleading warning or error messages. What is the solution?

The solution is to use the systems management uninstall script `srvadmin-uninstall.sh`, provided on the DVD.

**Why am I getting a warning concerning the RPM package key during installation?**

The RPM files are signed with a digital signature. To avoid this warning, you should mount the media or package, and import the key using a command such as the following:

```
rpm --import /mnt/dvdrom/SYSMGMT/srvadmin/linux/RPM-GPG-KEY
```

**What are the names of all the Systems Management features under Red Hat Enterprise Linux or SUSE Linux Enterprise Server?**

The following table lists the names of all systems management features and their corresponding init script names under Red Hat Enterprise Linux and SUSE Linux Enterprise Server operating systems.

<table>
<thead>
<tr>
<th>Table 7. Systems Management Features — Red Hat Enterprise Linux</th>
<th>Name in Red Hat Enterprise Linux</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
<td>Feature init Script Name</td>
</tr>
<tr>
<td>Managed System Services Feature</td>
<td></td>
</tr>
<tr>
<td>DSM SA Device Drivers</td>
<td>instsvcdrv</td>
</tr>
<tr>
<td>DSM SA Data Engine Service</td>
<td>dataeng</td>
</tr>
<tr>
<td>DSM SA Shared Service</td>
<td>dsm_om_shrsvc</td>
</tr>
<tr>
<td>DSM SA Connection Service</td>
<td>dsm_om_connsvc</td>
</tr>
<tr>
<td>Integrated Remote Access Controller (iDRAC)</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 8. Systems Management Features — Red Hat Enterprise Linux, and SUSE Linux Enterprise Server</th>
<th>Name in Red Hat Enterprise Linux 7.5 and SUSE Linux Enterprise Server 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
<td>Feature systemd unit Name</td>
</tr>
<tr>
<td>Managed System Services Feature</td>
<td></td>
</tr>
<tr>
<td>Systems Management Device Drivers</td>
<td>instsvcdrv.service</td>
</tr>
<tr>
<td>Systems Management Data Engine</td>
<td>dsm_sa_datamgrd.service</td>
</tr>
<tr>
<td>DSM SA Shared Service</td>
<td>dsm_om_shrsvc.service</td>
</tr>
<tr>
<td>DSM SA Connection Service</td>
<td>dsm_om_connsvc.service</td>
</tr>
<tr>
<td>Systems Management Event Management</td>
<td>dsm_sa_eventmgrd.service</td>
</tr>
</tbody>
</table>
What do the directories under `srvadmin/linux/custom/operating_system` contain?

The following table lists the names of the directories in the SYSMGMT/srvadmin/linux/custom/<operating system> directory.

Table 9. Names of the Directories Under the srvadmin/linux/custom/<operating system> directory

<table>
<thead>
<tr>
<th>Name of RPM</th>
<th>Description</th>
<th>Other Server Administrator RPMs required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Server-Instrumentation</strong> — This is the core code for Server Administrator. It provides motherboard alerts and contains the CLI that allows to monitor and control Server Administrator, for example, <code>omconfig</code>, <code>omdiag</code>, and <code>omreport</code>. All peripheral packages, except the stand alone DRAC support, require all or most of the RPMs in this directory to be installed. <strong>NOTE:</strong> You may need to install IPMI drivers for proper functionality.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>srvadmin-cm</td>
<td>Server Administrator Inventory Collector — Systems management change management inventory collector.</td>
<td>srvadmin-omilcore, srvadmin-deng, and srvadmin-omacore</td>
</tr>
<tr>
<td>srvadmin-deng</td>
<td>Server Administrator Data Engine — Systems management provides a data management framework for systems management software.</td>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-hapi</td>
<td>Server Administrator Hardware Application Programming Interface — This systems management package provides the device drivers and libraries needed by systems management software to access information about the hardware on supported systems.</td>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-isvc</td>
<td>Server Administrator Instrumentation Service — Server Administrator provides a suite of systems management information for keeping supported systems on the network healthy. Server Administrator Instrumentation Service provides fault management information, prefailure information, and asset and inventory information to management applications. The Instrumentation Service monitors the health of the system and provides rapid access to detailed fault and performance information about the hardware on supported systems. The Instrumentation Service requires installation of systems management device drivers.</td>
<td>srvadmin-omilcore, srvadmin-deng, and srvadmin-hapi</td>
</tr>
<tr>
<td>srvadmin-omacore</td>
<td>Server Administrator — Systems management managed mode core and CLI.</td>
<td>srvadmin-omilcore and srvadmin-deng</td>
</tr>
<tr>
<td>srvadmin-omilcore</td>
<td>Server Administrator Install Core — This is the core install package that provides the tools necessary for the rest of the Systems management install packages. All Server Administrator RPMs require this RPM.</td>
<td></td>
</tr>
</tbody>
</table>

**SA-WebServer** — Provides web access to manage the server.
<table>
<thead>
<tr>
<th>Name of RPM</th>
<th>Description</th>
<th>Other Server Administrator RPMs required</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-hapi</td>
<td>Server Administrator Hardware Application Programming Interface — This systems management package provides the device drivers and libraries needed by systems management software to access information about the hardware on supported systems.</td>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-jre</td>
<td>Server Administrator Sun Java Runtime Environment — Systems management managed node Java runtime.</td>
<td>srvadmin-omilcore, srvadmin-deng, and srvadmin-omacore</td>
</tr>
<tr>
<td>srvadmin-omcommon</td>
<td>Provides the common framework required by Server Administrator.</td>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-omilcore</td>
<td>Server Administrator Web Server Install Core — This is the core install package. All Server Administrator Web Server RPMs require this RPM.</td>
<td></td>
</tr>
<tr>
<td>srvadmin-wsmanclient</td>
<td>Operating system-specific WSMan client package.</td>
<td>srvadmin-omcommon and srvadmin-omauth</td>
</tr>
<tr>
<td>srvadmin-cm</td>
<td>Server Administrator Inventory Collector — Systems management change management inventory collector.</td>
<td>srvadmin-omilcore, srvadmin-deng, and srvadmin-omacore</td>
</tr>
<tr>
<td>srvadmin-deng</td>
<td>Server Administrator Data Engine — Systems management provides a data management framework for systems management software.</td>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-hapi</td>
<td>Server Administrator Hardware Application Programming Interface — This systems management package provides the device drivers and libraries needed by systems management software to access information about the hardware on supported systems.</td>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-isvc</td>
<td>Server Administrator Instrumentation Service — Server Administrator provides a suite of systems management information for keeping supported systems on the network healthy. Server Administrator Instrumentation Service provides fault management information, prefailure information, and asset and inventory information to management applications. The Instrumentation Service monitors the health of the system and provides rapid access to detailed fault and performance information about the hardware on supported systems. The Instrumentation Service requires installation of systems management device drivers.</td>
<td>srvadmin-omilcore, srvadmin-deng, and srvadmin-hapi</td>
</tr>
<tr>
<td>srvadmin-omacore</td>
<td>Server Administrator — Systems management managed mode core and CLI.</td>
<td>srvadmin-omilcore and srvadmin-deng</td>
</tr>
<tr>
<td>Name of RPM</td>
<td>Description</td>
<td>Other Server Administrator RPMs required</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>srvadmin-omcommon</td>
<td>Provides Common Framework required by Server Administrator.</td>
<td>srvadmin-omilcore</td>
</tr>
<tr>
<td>srvadmin-omilcore</td>
<td>Server Administrator Install Core — This is the core install package that provides the tools necessary for the rest of the Systems management install packages. All Server Administrator RPMs require this RPM.</td>
<td></td>
</tr>
</tbody>
</table>

What happens if I install the RPM package on an unsupported system or on an unsupported operating system?

If you try to install the RPM packages on an unsupported system or an unsupported operating system, you may see unpredictable behavior during the install, uninstall, or during use of the RPM package. Most of the RPM packages have been written and tested for supported systems and the Linux versions listed in the readme.

What daemons run on Red Hat Enterprise Linux and SUSE Linux Enterprise Server operating systems after Server Administrator is started?

The daemons that run on Red Hat Enterprise Linux and SUSE Linux Enterprise Server operating systems depend on what is installed and what is enabled to run. The following table displays the daemons that typically run for a full install:

Table 10. Daemons that Run on Red Hat Enterprise Linux and SUSE Linux Enterprise Server Once Server Administrator is Started

<table>
<thead>
<tr>
<th>Daemon Name</th>
<th>Name in Red Hat Enterprise Linux and SUSE Linux Enterprise Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>For RPMs in the srvadmin-base directory</td>
<td></td>
</tr>
<tr>
<td>dsm_sa_datamgr</td>
<td>DSM SA Data Manager — Server Administrator data manager daemon started by DSM SA Data Engine service.</td>
</tr>
<tr>
<td>dsm_sa_eventmgr</td>
<td>DSM SA Event Manager — Server Administrator event and logging daemon started by DSM SA Data Engine service.</td>
</tr>
<tr>
<td>dsm_sa_snmp</td>
<td>DSM SA SNMP daemon — Server Administrator SNMP daemon started by DSM SA Data Engine service.</td>
</tr>
<tr>
<td>dsm_om_shrsvc</td>
<td>DSM SA Shared Services — Server Administrator core daemon.</td>
</tr>
<tr>
<td>For RPMs in the SA-WebServer directory</td>
<td></td>
</tr>
<tr>
<td>dsm_om_connsvc</td>
<td>DSM SA Connection Services — Server Administrator Web server daemon.</td>
</tr>
</tbody>
</table>

What kernel modules are loaded when Server Administrator is started?

This is dependent on the type of systems instrumentation. The following table displays the kernel modules loaded when Server Administrator is started.
Table 11. Kernel Modules Loaded When Server Administrator Services are Started

<table>
<thead>
<tr>
<th>Driver Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For a system with IPMI</strong></td>
<td></td>
</tr>
<tr>
<td>dell_rbu</td>
<td>BIOS Update Driver</td>
</tr>
<tr>
<td>ipmi_devintf</td>
<td>IPMI device driver</td>
</tr>
<tr>
<td>ipmi_msghandler</td>
<td>IPMI device driver</td>
</tr>
<tr>
<td>ipmi_si</td>
<td>IPMI device driver — For systems running Red Hat Enterprise Linux or SUSE Linux Enterprise Server</td>
</tr>
<tr>
<td>dcdibae</td>
<td>Systems Management Base Driver</td>
</tr>
</tbody>
</table>
This section lists the Linux installer packages.

### Table 12. Meta RPMs

<table>
<thead>
<tr>
<th>RPM</th>
<th>Description</th>
<th>Dependent packages</th>
<th>Required for</th>
<th>Systems Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-all</td>
<td>Meta package for installing all Server Administrator features</td>
<td>srvadmin-base, srvadmin-idrac, srvadmin-rac4, srvadmin-rac5, srvadmin-standardAgent, srvadmin-storageservices, srvadmin-webserver</td>
<td>Complete Server Administrator features</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-base</td>
<td>Meta package for installing the Server Agent</td>
<td>srvadmin-cm, srvadmin-omacore, srvadmin-smcommon</td>
<td>Server Instrumentation, SNMP monitoring, and Server Administrator CLI</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-standardAgent</td>
<td>Meta package for installing the Standard Server Agent</td>
<td>srvadmin-cm, srvadmin-itunnelprovider, srvadmin-smcommon</td>
<td>Enabling remote management using Server Administrator CLI</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-webserver</td>
<td>Meta package for installing the Server Administrator Web Server feature</td>
<td>srvadmin-smcommon, srvadmin-smweb, srvadmin-tomcat</td>
<td>Server Administrator Web Server for local and remote node management</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-storageservices</td>
<td>Meta package for installing the Server Administrator Storage Services feature</td>
<td>srvadmin-cm, srvadmin-megalib, srvadmin-smcommon, srvadmin-storage, srvadmin-storelib, srvadmin-sysfsutils</td>
<td>Storage Management using Server Administrator GUI/CLI</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-idrac</td>
<td>Meta RPM for iDRAC components</td>
<td>srvadmin-argtable2, srvadmin-deng, srvadmin-idrac-vmcli, srvadmin-idrac-vmcli, srvadmin-idracadm, srvadmin-isvc, srvadmin-omcommon, srvadmin-omlicore, srvadmin-rac-components, srvadmin-racadm4, srvadmin-racdrsc</td>
<td>iDRAC management using Server Administrator GUI/CLI, iDRAC tools</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-server-snmp</td>
<td>Meta package that contains dependency information to automatically pull in the Server Administrator Server SNMP feature</td>
<td>srvadmin-base, srvadmin-deng-snmp, srvadmin-isvc-snmp</td>
<td>Server SNMP feature</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-server-cli</td>
<td>Meta package that contains dependency information to</td>
<td>srvadmin-base, srvadmin-omacore</td>
<td>Server CLI feature</td>
<td>Y</td>
</tr>
<tr>
<td>RPM</td>
<td>Description</td>
<td>Dependent packages</td>
<td>Required for</td>
<td>Systems Management Software</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td>automatically pull in the Server Administrator Server CLI feature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>srvadmin-storageservices-snmp</td>
<td>Meta package that contains dependency information to automatically pull in the Server Administrator Storage SNMP feature</td>
<td>storageservices, srvadmin-storage-snmp</td>
<td>Storage SNMP feature</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-storageservices-cli</td>
<td>Meta package that contains dependency information to automatically pull in the Server Administrator Storage CLI feature</td>
<td>storageservices, srvadmin-storage-cli</td>
<td>Storage CLI feature</td>
<td>Y</td>
</tr>
</tbody>
</table>

Table 13. Server Instrumentation and SNMP monitoring

<table>
<thead>
<tr>
<th>RPM</th>
<th>Description</th>
<th>OM Dependant packages</th>
<th>Required for</th>
<th>Systems Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-omilcore</td>
<td>Core Install package that provides tools for the systems management install packages</td>
<td>pciutils, sbios-utils-bin</td>
<td>Installing and functioning of Server Administrator</td>
<td>9.4</td>
</tr>
<tr>
<td>srvadmin-deng</td>
<td>Data Engine stores and manages objects for systems management</td>
<td>srvadmin-omilcore</td>
<td>Server Instrumentation and SNMP monitoring</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-hapi</td>
<td>Provides low-level hardware interface for systems management</td>
<td>None</td>
<td>Server Instrumentation</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-isvc</td>
<td>Provides systems management interface to local and remote systems management</td>
<td>srvadmin-deng, srvadmin-omilcore</td>
<td>Server Instrumentation and SNMP monitoring</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-selinux (optional)</td>
<td>Provides system management selinux policy</td>
<td>None</td>
<td>None</td>
<td>Y</td>
</tr>
</tbody>
</table>

Table 14. Packages needed for local management that are used by GUI and CLI components

<table>
<thead>
<tr>
<th>RPM</th>
<th>Description</th>
<th>OM Dependant packages</th>
<th>Required for</th>
<th>Systems Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-omcommon</td>
<td>Common framework or libraries for GUI/CLI</td>
<td>srvadmin-omilcore</td>
<td>Server Administrator GUI/CLI</td>
<td>9.4</td>
</tr>
<tr>
<td>srvadmin-omacore</td>
<td>Provides plugins that act as interfaces between back end and GUI/CLI. Also provides OM CLI tools.</td>
<td>srvadmin-omilcore</td>
<td>Server Administrator GUI/CLI and infrastructure for software updates</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-xmlsup</td>
<td>XML support library</td>
<td>None</td>
<td>Server Administrator GUI/CLI</td>
<td>Y</td>
</tr>
<tr>
<td>RPM</td>
<td>Description</td>
<td>OM Dependant packages</td>
<td>Required for</td>
<td>Systems Management Software</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>srvadmin-cm</td>
<td>Change Management inventory collector; Feeds software inventory data to management station applications</td>
<td>srvadmin-omacore</td>
<td>Software inventory and updates</td>
<td>9.4</td>
</tr>
<tr>
<td>srvadmin-oslog</td>
<td>Management interface</td>
<td>srvadmin-omacore</td>
<td>Replicating Server Administrator Events in OS Log</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-omacs</td>
<td>Server Administrator OMACS</td>
<td>srvadmin-common</td>
<td>Common services bundled in helper library</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-ominst</td>
<td>Server Administrator Core</td>
<td>None</td>
<td>Server Instrumentation Components</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Table 15. Server Administrator Web Server (GUI) for Local and Remote Management**

<table>
<thead>
<tr>
<th>RPM</th>
<th>Description</th>
<th>Dependant packages</th>
<th>Required for</th>
<th>Systems Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-jre</td>
<td>Provides JAVA Runtime for web server</td>
<td>srvadmin-omacore</td>
<td>Server Administrator GUI</td>
<td>9.4</td>
</tr>
<tr>
<td>srvadmin-tomcat</td>
<td>Server Administrator Web server</td>
<td>srvadmin-jre, srvadmin-common, srvadmin-omacore</td>
<td>Server Administrator GUI</td>
<td>Y</td>
</tr>
<tr>
<td>openwsman-client</td>
<td>Openwsman client libraries</td>
<td>None</td>
<td>Server Administrator GUI to manage remote nodes using WSMan</td>
<td>Y</td>
</tr>
<tr>
<td>libwsman1 (RHEL)</td>
<td>Openwsman libraries used by client and server components</td>
<td>None</td>
<td>Openwsman support library</td>
<td>Y</td>
</tr>
<tr>
<td>libwsman3 (SLES 15 SP1)</td>
<td>Openwsman libraries used by client and server components</td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 16. Server Administrator Remote Enablement (Standard Agent)**

<table>
<thead>
<tr>
<th>RPM</th>
<th>Description</th>
<th>OM Dependant packages</th>
<th>Required for</th>
<th>Systems Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-itunnelprovider</td>
<td>The Small Footprint CIM Broker (SFCB) provider that enables remote management of the server</td>
<td>libcmpiCpplmpO, openwsman-server, sblim-sfcb sblim-sfcc</td>
<td>Enabling remote management of server</td>
<td>9.4</td>
</tr>
<tr>
<td>libwsman1 (RHEL)</td>
<td>Openwsman libraries used by client and server components</td>
<td>None</td>
<td>Openwsman support library</td>
<td>Y</td>
</tr>
<tr>
<td>libwsman3 (SLES 15 SP1)</td>
<td>Openwsman libraries used by client and server components</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>openwsman-server</td>
<td>Openwsman server and service libraries *N/A on VMware ESX</td>
<td>None</td>
<td>Enabling remote management of server</td>
<td>Y</td>
</tr>
<tr>
<td>sblim-sfcb</td>
<td>Small Footprint CIM Broker (sfcb) - CIM server conforming to the CIM Operations over</td>
<td>None</td>
<td>Enabling remote management of server</td>
<td>Y</td>
</tr>
<tr>
<td>RPM</td>
<td>Description</td>
<td>OM Dependant packages</td>
<td>Required for</td>
<td>Systems Management Software</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------</td>
<td>--------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td></td>
<td>HTTP protocol. *N/A on VMware ESX</td>
<td></td>
<td></td>
<td>9.4</td>
</tr>
<tr>
<td>sblim-sfcc</td>
<td>Small Footprint Common Information Model (CIM) Client Library (sfcc) Runtime Libraries *N/A on VMware ESX</td>
<td>None</td>
<td>Enabling remote management of server</td>
<td>Y</td>
</tr>
<tr>
<td>libcmpiCppImpl0</td>
<td>Provides helper library to implement Common Manageability Programming Interface (CIM) C++ plugins into SFCB *N/A on VMware ESX</td>
<td>None</td>
<td>Enabling remote management of server</td>
<td>Y</td>
</tr>
</tbody>
</table>

Table 17. Storage Instrumentation, SNMP Monitoring, GUI and CLI Plugins

<table>
<thead>
<tr>
<th>RPM</th>
<th>Description</th>
<th>OM Dependant packages</th>
<th>Required for</th>
<th>Systems Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-realssd*</td>
<td>* For Red Hat Enterprise Linux 7.7, Red Hat Enterprise Linux 8.1 and SUSE Linux Enterprise Server 15 SP1</td>
<td>Meta package for installing management libraries for PCIe SSDs</td>
<td>None</td>
<td>Peripheral Component Interconnect Express Solid-State Drives (PCIe SSDs) management</td>
</tr>
<tr>
<td>srvadmin-storage</td>
<td>Core interface library for storage management</td>
<td>srvadmin-deng, srvadmin-isvc, srvadmin-megalib, srvadmin-omilcore, srvadmin-smcommon, srvadmin-storelib</td>
<td>Storage instrumentation, SNMP monitoring and CLI (for storage management)</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-storelib</td>
<td>LSI utility libraries for storage management</td>
<td>srvadmin-storelib-sysfs</td>
<td>Storage instrumentation</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-storelib-sysfs</td>
<td>Provides library for interfacing with the kernel's sys filesystem. Used by LSI storelib libraries *N/A for VMware ESX</td>
<td>None</td>
<td>Storage instrumentation</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-sysfsutils</td>
<td>Provide utilities for interfacing with sysfs file system. Used by the storage management libraries</td>
<td>None</td>
<td>Storage instrumentation</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-megalib</td>
<td>LSI utility libraries for storage management of PERC 4 controllers. *N/A for 64-bit OMSA installation, and VMware ESX.</td>
<td>None</td>
<td>Storage instrumentation of PERC 4 controllers</td>
<td>Y</td>
</tr>
<tr>
<td>RPM</td>
<td>Description</td>
<td>OM Dependant packages</td>
<td>Required for</td>
<td>Systems Management Software</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>--------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>srvadmin-smcommon</td>
<td>Common framework or libraries for GUI/CLI (for storage management)</td>
<td>None</td>
<td>Storage management using Server Administrator GUI/CLI</td>
<td>9.4 Y</td>
</tr>
<tr>
<td>srvadmin-smweb</td>
<td>GUI plugins for storage management</td>
<td>srvadmin-omcommon, srvadmin-smcommon</td>
<td>Storage management using Server Administrator GUI</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-storage-cli</td>
<td>Storage Management CLI Interface</td>
<td>srvadmin-storage</td>
<td>CLI interface access for Storage Management</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-storage-snmp</td>
<td>Storage Management CLI Interface</td>
<td>srvadmin-deng-snmp, srvadmin-storage</td>
<td>Storage-related SNMP queries and SNMP Traps</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-deng-snmp</td>
<td>Server Administrator SNMP Framework</td>
<td>srvadmin-deng</td>
<td>Server Administrator SNMP Framework</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-isvc-snmp</td>
<td>Server SNMP module</td>
<td>srvadmin-hapi, srvadmin-isvc</td>
<td>Server and operating system-related SNMP Queries and SNMP Traps</td>
<td>Y</td>
</tr>
</tbody>
</table>

Table 18. RAC Instrumentation, SNMP Monitoring, GUI and CLI Plugins

<table>
<thead>
<tr>
<th>RPM</th>
<th>Description</th>
<th>OM Dependant packages</th>
<th>Required for</th>
<th>Systems Management Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>srvadmin-idracadm7</td>
<td>Provides CLI tools for iDRAC7 administration</td>
<td>srvadmin-argtable2, srvadmin-omlcore</td>
<td>RAC CLI tools for iDRAC7</td>
<td>9.4 Y</td>
</tr>
<tr>
<td>srvadmin-argtable2</td>
<td>Library for parsing GNU style command-line argument. Used by RAC 5 and iDRAC packages</td>
<td>None</td>
<td>RAC CLI tools for RAC 5 and iDRAC management</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-idrac-ivmcli</td>
<td>Provides CLI tools that provide virtual media features from the management station to the iDRAC in the remote modular system. This is supported only for RHEL.</td>
<td>None</td>
<td>RAC CLI tools for virtual media feature</td>
<td>Y</td>
</tr>
<tr>
<td>srvadmin-idrac-vmcli</td>
<td>Provides CLI tools that provide virtual media features from the management station to the iDRAC in the remote Rack and Tower system</td>
<td>None</td>
<td>RAC CLI tools for virtual media feature</td>
<td>Y</td>
</tr>
</tbody>
</table>