Installing Dell OpenManage Server Administrator Using DSA and the DRAC 4

Beginning with version 4.3 of Dell™ OpenManage™ software, Dell OpenManage Server Administrator (OMSA) takes advantage of native Microsoft® Windows® and Linux® OS installation capabilities. This advance enables enterprises to reduce the business impact of installing systems management software by deploying OMSA quickly and flexibly using Dell OpenManage Server Assistant and the Dell Remote Access Controller 4, which supports virtual media and console redirection.

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In today’s fast-paced global economy, enterprises have zero tolerance for downtime. As a result, IT administrators can be at odds with demanding service-level requirements when faced with the time-consuming and cumbersome task of deploying systems management software across the enterprise. To streamline this process and help reduce business exposure to downtime, Dell has enhanced the features and capabilities of the Dell OpenManage systems management software suite.

Beginning with version 4.3 of Dell OpenManage software, Dell OpenManage Server Administrator (OMSA) is designed to work with native Microsoft Windows and Linux OS installation functionality. As a result, administrators can deploy the remote management capabilities of OMSA—such as virtual media and console redirection—quickly and efficiently in enterprise environments using Dell OpenManage Server Assistant (DSA) and the Dell Remote Access Controller 4 (DRAC 4). This article describes key changes introduced to the OMSA installation process starting with version 4.3, and describes how administrators can use the DRAC 4 to cost-effectively deploy and manage the OMSA application.

Streamlined operations and flexible framework
OMSA 4.3 (and later) is designed to simplify operations and provide a flexible framework for system administrators to use in scripted and automated environments. In previous versions, OMSA installation on Windows and Linux operating systems required a Java Runtime Environment exceeding 75 MB. Now that the Java Runtime Environment no longer needs to be packaged on the systems management media, Dell can provide DSA and OMSA installation files on the same CD.

DSA copies installation files to the hard drive and places an installation launch icon on the desktop during installation on Windows and Linux operating systems. To install OMSA on Windows-based systems, administrators can use Microsoft Windows Installer (MSI); to install OMSA on Linux-based systems, administrators can use Red Hat® Package Manager (RPM™).

Dell OpenManage server support kit
Prior to version 4.3, the Dell OpenManage server support kit included a set of three CDs: Dell OpenManage Server Assistant, Dell OpenManage Systems Management, and
Dell OpenManage Product Documentation. For version 4.3 (and later), the Dell OpenManage server support kit is available in two editions: one accompanies server systems that are currently being shipped, and another supports subscription-based legacy systems.

The CD set that is included with shipping systems comprises four CDs: Dell PowerEdge™ Installation and Server Management, Dell Systems Management Consoles, Dell PowerEdge Service and Diagnostic Utilities, and Dell PowerEdge Documentation. The set that supports legacy systems includes the preceding four CDs plus the Dell PowerEdge Update Utility CD.1

The CD set for Dell OpenManage 4.3 (and later) redistributes the functionality of earlier versions. This article focuses on the Dell PowerEdge Installation and Server Management CD, which contains the following:

- **Dell OpenManage Server Assistant**: The main setup portion from the previous Dell OpenManage Server Assistant CD helps administrators install a supported OS on a server.
- **Dell OpenManage Server Administrator**: The managed system portion of the previous Dell OpenManage Systems Management CD now resides on the same CD as DSA.

The Dell Systems Management Consoles CD contains the Dell OpenManage Management Station portion of the previous Dell OpenManage Systems Management CD. This CD also contains console applications such as Dell OpenManage IT Assistant and the BMC (baseboard management controller) Management Utility. In addition, the Dell PowerEdge Service and Diagnostic Utilities CD contains the service portion of the previous Dell OpenManage Server Assistant CD and also provides the latest BIOS, firmware, and peripheral drivers.

**Integration of Dell OpenManage Server Assistant and Dell OpenManage Server Administrator**

In Dell OpenManage versions prior to version 4.3, integrated DSA and OMSA installation is supported only for Windows platforms. The “Install Server Administrator” checkbox on the DSA interview screen offers administrators the default option to proceed with DSA installation. When this option is checked, DSA runs a small program on reboot after the OS is installed. This program prompts the administrator to insert the Systems Management CD and launches a silent, express installation of Dell OpenManage software when the CD is inserted. Because DSA and OMSA files reside on the same CD in version 4.3 (and later), a tighter integration is possible.

**Windows installation**

DSA copies the OMSA Windows installation files into the \serveradministrator directory under the systems drive (typically, C:\serveradministrator). It also copies an MSI file (dsaomi.msi) to the \omsw directory under the systems drive (typically, C:\omsw). On reboot, the MSI file launches silently and creates two desktop icons: “Install Server Administrator” and “Delete Server Administrator Installation Files.”

The install icon launches the Dell OpenManage Installer (OMI) Windows graphical setup from the serveradministrator directory. The icon remains on the desktop after the installation so administrators can use the same icon to modify and repair the installation later. After confirmation from the administrator, the delete icon removes the OMSA files copied by DSA, the dsaomi.msi file, and both icons. However, the delete icon does not affect OMSA software that has been installed.

**Scripting silent installation.** Administrators can script a silent installation of OMSA using files under the /serveradministrator directory.2 An example command follows:

```bash
msiexec.exe /i c:\serveradministrator\ systemsmanagement\SysMgmt.msi /qn
```

**Scripting silent uninstallation.** To silently remove all OMSA installation files, including the install and delete icons on the desktop, administrators can use the following command:

```bash
msiexec.exe /x c:\omsw\dsaomi.msi /qn
```

**Linux installation**

DSA copies the OMSA Linux image—specifically, the RPM System (RPMs) and supportscripts folders under Linux—into the directory /home/serveradministrator. It then executes the ominstall-links-version=BUILD#.rpm package in the postinstallation section. The ominstall-links.rpm package creates two icons on the desktop: “Install Server Administrator” and “Delete Server Administrator Installation Files.”3 It also installs a command-line utility to provide an option to install OMSA when an administrator first logs into a command shell before starting the X Window System.

The install icon launches the srvadmin-install.sh custom installation script under the /home/serveradministrator/supportscripts directory on an X Window terminal. The icon remains after installation so administrators can use the same icon to add packages later. The delete icon removes the /serveradministrator directory data, the icons, and the command-line utility. It does not affect OMSA software that has been installed.

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1 For more details about the contents and functionality of the Dell OpenManage server support kit, visit support.dell.com/support/edocs/systems/pes2000/multilang/en/infopd/64268400.pdf.

2 For more information, see the Dell OpenManage installation and security user’s guide at support.dell.com/support/manuals/software/omsa/4.4/en/ug/index.htm?c=us&l=en&cs=&s=gen.

3 These desktop icons are supported only by the GNU Network Object Model Environment (GNOME). For more information about GNOME, visit www.gnome.org.

For more information about DRAC 4 virtual media and console redirection, see the Last remote Access Controller 4 User’s Guide at support.dell.com/support/esecurity/software/smdrac4/1.1/en/UG/index.htm.

For details about performing remote MSI- and RPM-based OMSA installations on Windows and Linux platforms, respectively, visit the Dell OpenManage Installation and Security User’s Guide at support.dell.com/support/esecurity/software/smsom/4.4/en/ug/security.htm.

Do you want to install Server Administrator? (y for yes, n for no):

Figure 1. OMSA command-line utility login message

Command-line utility. The command-line utility appears when logging in to the base Linux shell (see Figure 1). If the administrator chooses to install OMSA, the utility launches the custom installation script under the /home/serveradministrator directory. After a successful installation—verifying the existence of OMSA—the utility is removed. In that case, the utility does not launch on subsequent logins. However, subsequent modifications can be performed using the install icon on the desktop.

If OMSA is not installed, the command-line utility prompts for OMSA installation again on subsequent logins. If the administrator chooses not to install OMSA, the command-line utility is removed but the install and delete icons remain on the desktop.

Silent installation. Administrators can script a silent installation of OMSA using files under the directory /home/serveradministrator. An example command is as follows:

```
sh /home/serveradministrator/supportscripts/srvadmin-install.sh --express
```

Silent uninstallation. To silently remove all OMSA installation files, including the install and delete icons on the desktop and the command-line utility, the administrator can uninstall the oinstall-links RPM file using the following command:

```
rpm -e oinstall-links
```

OMSA deployment using the DRAC 4

Features of the DRAC 4 such as system console redirection and virtual media allow system administrators to monitor and manage their servers remotely. Enhanced features in the Dell OpenManage installation framework enable administrators to use DRAC 4 capabilities not only to monitor system status but also to deploy and update OMSA software on remote Windows- and Linux-based systems. Administrators can also use virtual media capabilities through the command-line interface (CLI) along with Telnet to deploy OMSA through a scripted framework.

The DRAC 4 virtual media functionality lets administrators mount floppy disk, CD, and DVD media drives from a management station to a remote server. Virtual drives appear as local drives on remote managed systems. Besides the physical media drives, the DRAC 4 also enables the virtualization of ISO images, which helps eliminate the requirement to burn CDs or use ISO mapping tools.

Virtual media is available through both the DRAC graphical user interface (GUI) and CLI. The GUI is accessed through the DRAC out-of-band Web interface; the CLI is installed as part of the Remote Access Controller (RAC) management station component using the Systems Management Consoles CD. Console redirection provides administrators complete access to remote system consoles through a management station. Console redirection is available through the DRAC Web interface and is extremely useful for performing various administrative tasks.

OMSA deployment using console redirection and virtual media through the DRAC 4 Web interface

Figure 2 shows the virtual media page of the DRAC 4 Web interface. To use virtual media and console redirection capabilities for OMSA deployment, administrators should ensure that the DRAC 4 Web interface is accessible from a remote system, as follows:

1. Log in to the DRAC 4 using valid credentials for virtual media and console redirection.
2. Click “Media” in the left pane; this displays the list of available devices that can be virtualized from a management station to a remote system after loading the virtual media plug-in.
3. Select the drive where OMSA installation files reside; this location can be either a physical medium or an ISO image.
4. Click “Connect” to virtualize the media/ISO image that contains the OMSA installation files on the remote system.
5. Click “Console” in the left pane to launch a console redirection session after the remote system’s device is virtualized.

After launching the console redirection session, administrators can use the virtualized media to perform an attended or unattended installation of OMSA, depending on the OS and specific needs of the enterprise. The virtualized media appears on the
remote system as either a removable disk or CD, depending on what is being virtualized.6

Console redirection can also be used without virtual media to perform remote deployment of OMSA software. In that case, administrators can launch either an attended or an unattended remote installation using OMSA installation files copied on the remote system drive after the DSA installation of the OS, as discussed in the “Integration of Dell OpenManage Server Assistant and Dell OpenManage Server Administrator” section in this article. Alternatively, administrators can launch an attended or unattended remote installation by using a network share carrying the OMSA installation files.

OMSA deployment using Telnet and the virtual media CLI

Beginning with Dell OpenManage 4.5, the DRAC provides a CLI to virtualize media on a remote system. The Remote Access Controller Virtual Media Command-Line Interface (RACVMCLI) is installed as part of the RAC management station component through the Systems Management Consoles CD along with the scriptable racadm utility. The RACVMCLI is supported on both Windows- and Linux-based management stations. Administrators can use this tool along with Telnet to remotely deploy Dell OpenManage software, either on a stand-alone basis or through a scripted installation. The example that follows illustrates how administrators can virtualize the Dell PowerEdge Installation and Server Management CD on a remote system using the RACVMCLI and how they can use Telnet to install Dell OpenManage. The example uses a Windows-based managed system and management station, but the concept is similar for a Linux-based managed system and management station.

From the command prompt on a Windows-based management station, the following command virtualizes CD drive E:\ containing the Dell PowerEdge Installation and Server Management CD on a remote system:

```
racvcli -r 192.168.16.11 -u root -p calvin -c e:
```

In this command, -r specifies the RAC IP address; -u specifies the username; -p specifies the password; and -c specifies that the E:\ drive is a CD device. For complete information on available switches with the RACVMCLI, see the main page available through the RACVMCLI utility.

After the CD drive is virtualized, administrators can Telnet into the system, change the directory to where the media is virtualized, and run the following command at the \srvadmin\windows\ systemsmanagement directory:

```
msiexec /i SysMgmt.msi /qn
```

This command performs an unattended express installation on the managed system. In addition, administrators can use the following command to uninstall OMSA:

```
msiexec /x SysMgmt.msi /qn
```

Flexible, compatible OMSA architecture

Enhanced features and functionalities of Dell OpenManage 4.3 (and later) streamline the OMSA installation process—enabling administrators to deploy and manage OMSA across the enterprise quickly and flexibly using Windows- and Linux-based installation capabilities. By leveraging native OS functionality, administrators can install OMSA cost-effectively within their current deployment framework using Dell OpenManage Server Assistant and the Dell Remote Access Controller 4 remote management capabilities such as virtual media and console redirection. As a result, the enhanced Dell OpenManage architecture can help improve operational efficiency and reduce business exposure to downtime during the deployment of the Dell OpenManage systems management software suite.

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