

Deploying Dell OpenManage Server Administrator with Altiris Deployment Solution

Altiris® Deployment Solution™ is designed to be an intuitive, cost-effective tool for deploying, configuring, and managing servers and software from a centralized location. This article examines how administrators can use Altiris Deployment Server to deploy Dell™ OpenManage™ Server Administrator 4.3 (or later), which leverages installation technologies that are native to the Microsoft® Windows® and Linux® operating systems.

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Altiris Deployment Solution is part of the Altiris Server Management Suite™ for IT life-cycle management, which enables administrators to cost-effectively deploy and manage servers from a centralized management console that helps streamline OS deployment, software deployment, and configuration tasks. Altiris Deployment Solution supports multiple operating systems, including Microsoft Windows and Linux. Because installers for Dell OpenManage Server Administrator 4.3 (or later) leverage installation technologies that are native to the Windows and Linux operating systems, these installers can be integrated easily into the Altiris Deployment Solution. This article explains methods for deploying Windows- and Linux-based Dell OpenManage 4.3 (or later) software installation packages using Altiris Deployment Solution.

Installing and setting up Altiris Deployment Solution

A simple setup of Altiris Deployment Solution includes the Altiris Deployment Server, a SQL database, and an optional Altiris Preboot Execution Environment (PXE) server. The Altiris Deployment Server itself runs on the Microsoft Windows 2000 Server or the Windows Server™ 2003 OS and requires a deployment database in the form of Microsoft Data Engine (MSDE) or Microsoft SQL Server. Managed servers can be Windows or Linux

systems and require an agent to be installed; alternatively, servers can be provisioned from bare metal. The Altiris Deployment Server provides a user-friendly console to allow easy, remote management of the servers. This article focuses on a simple installation; for in-depth details, refer to the *Altiris Deployment Solution 6.1 Product Guide* at www.altiris.com/docs/support/deploymentserver/6.1/deployment.pdf.

For a simple installation, administrators must first install Altiris Deployment Server on a Windows 2000 or Windows Server 2003 system with MSDE or Microsoft SQL Server. MSDE is available from Microsoft. It is also available on the Dell Systems Management Consoles CD because it is a prerequisite for the installation of Dell OpenManage IT Assistant. On a Windows 2000 system, administrators also need to install Microsoft .NET Framework 1.1, which is available for download from Microsoft. Administrators who are installing Altiris Deployment Solution for the first time will also need specific DOS files available from a Windows 95 or Windows 98 CD. These DOS files are required for DOS-specific preboot tasks that leverage the Dell Deployment Toolkit bundled with the Altiris solution. After a successful installation of the Altiris Deployment Server, administrators will be able to see three entries in the Add/Remove Programs window: Altiris eXpress Deployment

Console, Altiris eXpress Deployment DataStore, and Altiris eXpress Deployment Server.

For each managed server on which administrators intend to install Dell OpenManage Server Administrator, they must first install the Altiris agent software. For Windows systems, the simplest way to install the agent is to click the Remote Agent Install icon in the task bar of the Deployment Server Console. For systems running Red Hat® Enterprise Linux 2.1 (or later), administrators must install the Linux agent manually—push installation is not available out-of-the-box for Linux servers, although many administrators deploy Linux images with the Altiris agent already installed. When a simple installation of the Deployment Server is performed, the Altiris Linux agent is available in the `c:\Program Files\Altiris\Express\Deployment Server` directory. The name of the agent is `altiris-adlagent-x.y-b.i386.rpm`—for example, `altiris-adlagent-2.2-14.i386.rpm`. Administrators must transfer this Red Hat Package Manager (RPM™) file locally to the Linux system and run a simple RPM installation. After the installation, they can configure the agent by running the configure utility under the `/opt/altiris/deployment/adlagent/bin` directory. Once the Altiris agent is installed, an icon representing the server is created in the Altiris console. From that point forward, Linux servers are managed through many of the same features used to manage Windows servers.

With a simple installation as described in this article, administrators can launch the Deployment Server Console, view the Windows and Linux managed servers, and begin setting up jobs to remotely deploy Server Administrator onto these remote managed systems. Altiris Deployment Solution provides a sample job for installing Server Administrator on Dell servers. This article describes some advanced concepts beyond the scope of the sample job. Figure 1 shows the Deployment Server Console with two active computers: a Dell PowerEdge™ 2800 server running Windows Server 2003 and a PowerEdge 2600 server running Linux. The Jobs pane of this console shows several Altiris Deployment Solution jobs—described in the following sections—that can be executed on these servers.

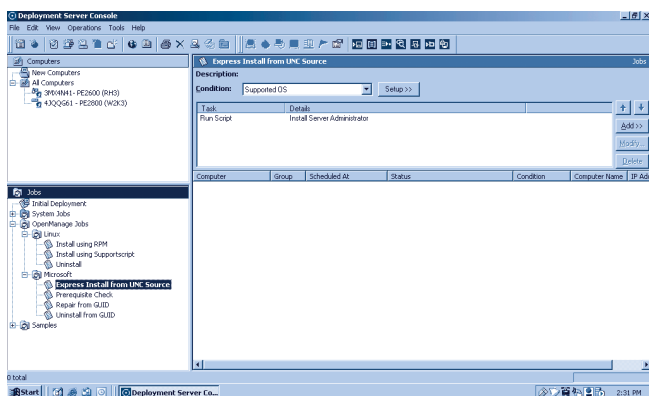


Figure 1. Altiris Deployment Server Console

Deploying Server Administrator on Windows

This section describes the various Altiris Deployment Solution jobs that can be used to deploy Dell OpenManage Server Administrator onto Windows-based servers.

Prerequisite checking

The Prerequisite Checker is a utility independent of the Server Administrator installer. It should be used in tandem with the installer to help ensure that the server meets the specified requirements prior to deploying and executing the installer via `msiexec.exe`.

The Prerequisite Checker utility is located at `/srvadmin/windows/PrerequisiteChecker/runprereqchecks.exe` on the Dell Installation and Server Management CD. Administrators can script the execution of this utility with an `/s` parameter that invokes the utility silently. This invocation returns one of several return or error codes. For more details, see the Run Script task in Figure 2. In addition to the return code, administrators can query the Windows Registry for feature-level detail regarding which features will be affected by a prerequisite warning or error.

The installer package expects the Prerequisite Checker to have been executed prior to the installation. Upon launch, it will query the registry for the prerequisite check results and then deselect default features that indicate a warning and disable features that indicate an error. If the prerequisites are not run, the installer will apply the features selected for installation and Server Administrator may, as a result, run in a degraded state.

Administrators should use the Altiris Job Wizard and create a job to execute the Prerequisite Checker. Next, they should add a Run Script task to the job and embed the script shown in Figure 2. Administrators should run this job on all servers to which they plan to deploy Server Administrator and correct any failed prerequisites.

Express installation

Several methods are available to install Server Administrator. The Express Install job applies the default features available in the Microsoft Windows Installer (MSI) package. Administrators can execute an express installation by issuing the following command:

```
msiexec /qa /i /srvadmin/windows/SysMgmt/
SysMgmt.msi /!*v c:/sysmgmt.log
```

The `/qa` parameter invokes the installation silently while the `/!*v` parameter logs the progress of the installation to the specified file. Several return codes could result from executing the installation command. These codes should be evaluated to determine whether the installation was successful. Figure 3 shows common error codes for an express installation on a Windows system.

Note that Altiris jobs can be configured to watch for specific return codes and to reroute job functions based on specific values.

```

@ECHO OFF
REM Run Prerequisite Checker
REM
\\altiris_1\srvadmin\windows\PreReqChecker\
    RunPreReqChecks.exe /s
SET ERRORLEV=%ERRORLEVEL%
REM Prereq Error
IF %ERRORLEV%==3 GOTO ErrorLabel
REM Prereq Warning
IF %ERRORLEV%==2 GOTO WarningLabel
REM Prereq Information
IF %ERRORLEV%==1 GOTO SuccessLabel
REM Prereq Success
IF %ERRORLEV%==0 GOTO SuccessLabel
REM Other errors
GOTO OtherLabel

:SuccessLabel
EXIT 0

:FailureLabel
EXIT %ERRORLEV%

:WarningLabel
REM Prerequisite Check reported a Warning
EXIT 0

:OtherLabel
REM process return code if desired
REM - Prerequisite checker did not run.
REM
REM -1 Windows Host Scripting Error
REM -2 Operating system not supported
REM -3 User lacks Administrator privileges
REM -4 Unused
REM -5 Failed to change working directory to %TEMP%
REM -6 Destination directory does not exist
REM -7 Internal error
REM -8 An instance is already running
REM -9 Windows Host Scripting Error: wrong
REM version, corrupted or not installed
REM -10 Error with scripting environment
EXIT %ERRORLEV%

```

Figure 2. Prerequisite Checker sample script for Windows systems

For example, the default setting for a return code of zero will allow the job to advance to the next sequenced task included in the job. For a return code of 1603, administrators may want to use the Altiris LogEvent utility to write a specific message back to the Altiris console and store it in the database. In the case of a 1602 code, administrators may want the console to display “The user canceled the installation.”¹

Administrators can use the Altiris Job Wizard to create a Software Deployment Job. When the wizard prompts, administrators should browse to the /srvadmin/windows/SysMgmt/SysMgmt.msi installation package on the Dell Installation and Server Management CD. In the Package Distribution Options pane associated with the package, administrators should select “Copy all files and subdirectories” and add the logging parameter to the optional parameters field as discussed earlier. Administrators should run this job on all servers on which they want Server Administrator installed.

Note: Best practices recommend that the installation package is deployed only to servers that have successfully executed the Prerequisite Checker job with no warnings or errors. Administrators can enforce this recommendation by defining specific return code actions. For more information, see the *Altiris Deployment*

Value	Description
0	The action completed successfully.
1601	The Windows Installer service could not be accessed.
1602	The user canceled the installation.
1603	A fatal error occurred during the installation.
1618	Another installation is already in progress.
1619	The installation package could not be opened. The administrator should verify the package exists and that it is accessible.
1638	Another version of this product is already installed.
1639	An invalid command-line argument was provided.
1641	The installer has started a reboot after a successful installation.

Figure 3. Common return codes after an express installation on a Windows system

Solution 6.1 Product Guide at www.altiris.com/docs/support/deploymentserver/6.1/deployment.pdf.

For sample scripts to repair installation and uninstall Dell OpenManage Server Administrator, visit *Dell Power Solutions* online at www.dell.com/powersolutions.

¹ For more information about using the Altiris LogEvent and WLogEvent utilities within custom code, see page 170 in the *Altiris Deployment Solution 6.1 Product Guide* at www.altiris.com/docs/support/deploymentserver/6.1/deployment.pdf.

Deploying Server Administrator on Linux

This section describes the various Altiris Deployment Solution jobs that can be used to deploy Dell OpenManage Server Administrator onto Linux-based servers.

Installation using RPM

To deploy Server Administrator onto a Linux system using the express setup, administrators should use the Altiris Job Wizard to create a job with three tasks. The first task copies source RPM files

```
rpm -ivh /tmp/srvadmin/* 2>&1 | tee
  -a /tmp/ominstall.log
ecode=$?
case "$ecode" in
0)
/opt/altiris/deployment/adlagent/bin/logevent
  -c:0 -l:1 -ss:"Install Succeeded."
sh /opt/dell/srvadmin/omil/supportscripts/
  srvadmin-services.sh start
rcode=0;;
*)
/opt/altiris/deployment/adlagent/bin/logevent
  -c:$ecode -l:3 -ss:"Install Failed."
rcode=255;;
esac
exit $rcode
```

Figure 4. RPM sample script for installing Server Administrator on Linux systems

```
sh /tmp/srvadmin/supportscripts/srvadmin-install.sh
  --express 2>&1 | tee -a /tmp/ominstall.log
ecode=$?
case "$ecode" in
0)
/opt/altiris/deployment/adlagent/bin/logevent
  -c:0 -l:1 -ss:"Install Succeeded."
sh /opt/dell/srvadmin/omil/supportscripts/
  srvadmin-services.sh start
rcode=0;;
*)
/opt/altiris/deployment/adlagent/bin/logevent
  -c:$ecode -l:3 -ss:"Install Failed."
rcode=255;;
esac
exit $rcode
```

Figure 5. Supportscript sample script for installing Server Administrator on Linux systems

to a temporary location on the system; the second task performs the actual installation from the temporary location and starts the related services; and the third task cleans up the files in the temporary location.

Administrators add a Copy File task to copy the desired directory and files to the remote server. If deploying Server Administrator to an eighth-generation PowerEdge server with a Dell Remote Access

Controller 4 (DRAC 4), such as the PowerEdge 2800 server, administrators should use the /srvadmin/linux/express-install-with-RAC4 directory on the Dell Installation and Server Management CD. If deploying to a PowerEdge system with a DRAC 3, such as the PowerEdge 2600 server, administrators should use the /srvadmin/linux/express-install-with-RAC3 directory on the Dell Installation and Server Management CD. To

help ensure that all files within the directory are copied, administrators should choose the “Copy directory” option and set the destination path to /tmp/srvadmin. Next, they should add a Run Script task, embed the script shown in Figure 4, and select Linux as the OS.

Next, administrators should add another Run Script task, embed the following script, and choose Linux as the OS:

```
rm -rf /tmp/srvadmin
```

This installation job can then be deployed to the appropriate Server Administrator servers.

Note: The Prerequisite Checker utility is not available on Linux.

Installation using supportscript

To deploy Server Administrator onto a Linux system using the srvadmin-install support script, administrators should use the Altiris Job Wizard to create a job with four tasks. The first task copies source RPM files from the RPM System (RPMS) directory to a temporary location on the system; the second task copies source files from the supportscripts directory to a temporary location on the system; the third task performs the actual installation from the temporary location by launching the srvadmin-install support script and starts the associated services; and the fourth task cleans up the files in the temporary location.

Administrators add a Copy File task to copy the RPMS directory under the srvadmin/linux folder on the Dell Installation and Server Management CD. To help ensure that all files within the directory

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Altiris Deployment Solution
to deploy software onto
multiple Dell servers effi-
ciently and cost-effectively
from an intuitive, centralized
management console.

are copied, administrators should choose the “Copy directory” option and set the destination path to /tmp/srvadmin/RPMS.

Next, administrators should add a second Copy File task to copy the supportscripts directory under the srvadmin/linux folder on the Dell Installation and Server Management CD. They should then choose the “Copy directory” option to help ensure that all files within the directory are copied and set the destination path to /tmp/srvadmin/supportscripts. Finally, they should add a Run Script task, embed the script shown in Figure 5, and select Linux as the OS.

Administrators should add another Run Script task, embed the following script, and choose Linux as the OS:

```
rm -rf /tmp/srvadmin
```

This installation job can then be deployed to the appropriate Server Administrator servers.

Administrators can customize the parameters to install specific components using the srvadmin-install.sh script. Figure 6 describes the silent installation options of the srvadmin-install.sh script. These options can be combined, such as `sh srvadmin-install.sh --diags --web` or `sh srvadmin-install.sh -dw`.

Uninstalling Server Administrator

To remove Server Administrator from a Linux system, administrators can use the Altiris Job Wizard to create a job and add a Run Script task. They should embed the script shown in Figure 7 in the task and select Linux as the OS. Administrators can then deploy the uninstall job to the appropriate Server Administrator servers.

Deploying Server Administrator with the Altiris Deployment Solution


The procedures presented in this article can enable administrators to use Altiris Deployment Solution to deploy software onto mul-

Option	Description
-x --express	Installs all components, including remote access controller (RAC) components; any other options passed are ignored
-b --base	Installs base components
-d --diags	Installs diagnostic components, including base components
-s --storage	Installs storage components, including base components
-r --rac	Installs applicable RAC components, including base components
-w --web	Installs Web server components, including base components

Figure 6. Silent installation options of the srvadmin-install.sh script for Linux systems

```
rpm -e 'rpm -qa | grep srvadmin' 2>&1 | tee
/tmp/ominstall.log
ecode=$?
case "$ecode" in
0)
/opt/altiris/deployment/adlagent/bin/logevent
-c:0 -l:1 -ss:"Uninstall Succeeded."
rcode=0;;
*)
/opt/altiris/deployment/adlagent/bin/logevent
-c:$ecode -l:3 -ss:"Uninstall Failed."
rcode=255;;
esac
exit $rcode
```

Figure 7. Uninstall sample script for Linux systems

iple Dell servers efficiently and cost-effectively from an intuitive, centralized management console. Once a job is built, administrators can use it again and again for different Dell servers within their organizations. This article describes sample Altiris jobs for deploying Dell OpenManage Server Administrator onto Windows- and Linux-based Dell servers. These jobs can help administrators install and uninstall Server Administrator. On Windows-based systems, these jobs also can perform prerequisite checking and repairs. By understanding how to take advantage of such capabilities, administrators can use Altiris Deployment Solution to help simplify systems management in Dell server environments. 

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FOR MORE INFORMATION

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