Automating SQL Server 2005 Deployment with Altiris

Authors: Eric Szewczyk and Todd Mitchell
Altiris Technical Strategists

Date: January 26, 2006

altiris

About Altiris

Altiris, Inc. is a pioneer of IT lifecycle management software that allows organizations to easily manage desktops, notebooks, thin clients, handhelds, industry-standard servers, and heterogeneous software, including Windows, Linux and UNIX. Altiris automates and simplifies IT projects throughout the life of an asset to reduce the cost and complexity of management. Altiris client and mobile, server, asset, network, and security management solutions natively integrate through a common Web-based console and repository. For more information, visit www.altiris.com.

Altiris, Inc.
588 West 400 South
Lindon, UT 84042
Phone: (801) 226-8500
Fax: (801) 226-8506

Contents

Introduction

Altiris® Deployment Solution™ for Servers automates server deployments from bare metal through all phases of hardware configuration (RAID/BIOS/DRAC configuration, BIOS updating, and so on), operating system deployment and application installation. Independent studies have suggested that Altiris automation can reduce the amount of time administrators must spend deploying servers by as much as 90 percent or more (see http://www2.altiris.com/docs/partners/KeyLabs%20Jan%202005%20Report%20-%20Time%20Savings%20Comparison%20for%20Dell%20Server%20Deployment.pdf)

As part of the deployment process, IT administrators are often interested in Altiris' ability to script the installation of common server applications. To help facilitate these efforts, Altiris Deployment Solution 6.5 provides pre-built sample jobs that show how to perform unattended, remote installations of such server applications as Apache, SQL Server 2000, VMware ESX (www.altiris.com/vmware), Oracle 10g (http://www2.altiris.com/dap/Portals/0/Deploying%20Oracle10g%20with%20Altiris.pdf) and so on. These jobs can be used standalone to deploy server applications to existing, provisioned servers or they can be combined with other Altiris-provided sample jobs to create a comprehensive server deployment workflow – so that the application installation becomes part of a larger automated effort to build a server from bare metal.

With the release of Microsoft SQL Server 2005 late last year, many administrators are interested in automating the rollout of this new server application. This paper provides pre-release sample jobs for automating the deployment of SQL Server 2005. The provided samples deploy the Enterprise Edition of SQL Server 2005 but could be adapted to support other editions including the free (Express) version. These jobs can be downloaded at http://www.ibase.us/content/Resources/sql2005.zip and they can be imported into Altiris Deployment Solution and customized as needed to address individual needs. The following sections review the architecture of these jobs and provide other relevant information for deploying SQL Server 2005 with Altiris.

This paper assumes that readers already have access to an installation of Altiris Deployment Server 6.5 and a working knowledge of the solution. Many other resources exist for providing a basic introduction to Altiris Deployment Solution and the tremendous value it can provide for automating server builds. Those resources can be consulted independently if a basic understanding of the product is needed.

Deploying SQL Server 2005 with Altiris

Automating the deployment of SQL Server 2005 with Altiris Deployment Solution reduces time requirements for administrators and ensures consistent database installations while eliminating operator error. This consistency translates into higher availability and reduced support times. This section will introduce system requirements for SQL Server 2005 and review the process for importing and using the provided SQL Server 2005 jobs. The detailed accompanying video can be viewed by clicking below: http://ibase.us/content/resources/dell/demo/automating_sql2005.exe.

MS SQL Server 2005 Requirements

Administrators can consult the system requirements for installing SQL Server 2005 at http://www.microsoft.com/sql/editions/enterprise/sysreqs.mspx. In short, Microsoft recommends at least 1GB of RAM, a 1Ghz or faster processor, Microsoft IE 6.0 SP1 or later, Super VGA (1024x768) resolution, and approximately 775MB of free disk space if installation options are selected.

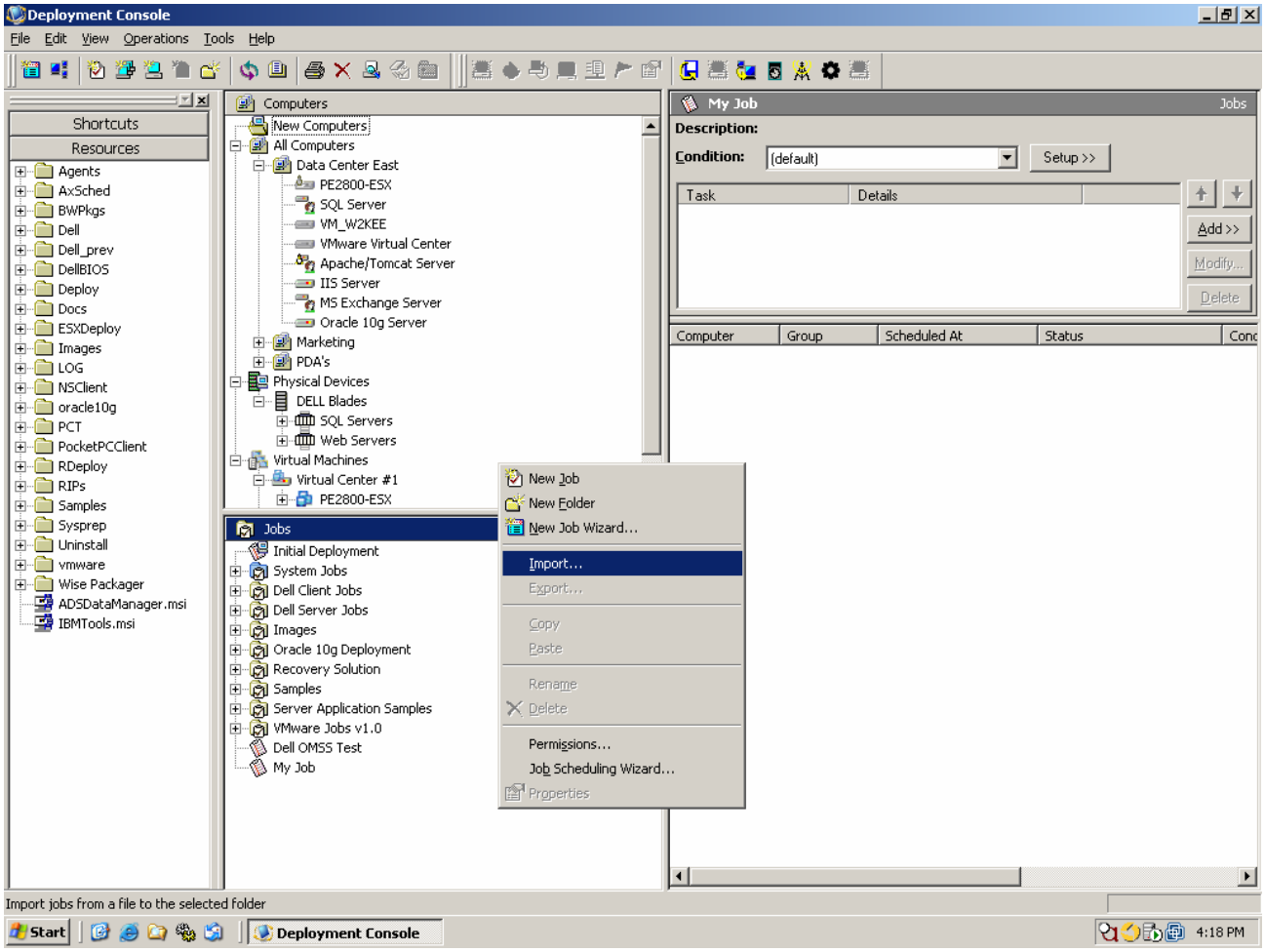
The provided Altiris sample jobs were used to install SQL Server 2005 onto a system running Microsoft Windows 2003 Server with Service Pack 1. The 2.0 version of the .NET Framework is also required; however, if it is not already installed, the SQL Server 2005 installation process will install it automatically.

Importing the Sample Jobs

Jobs created in one instance of Altiris Deployment Solution can be shared with another installation of the solution simply by exporting and importing jobs between them. The instructions below explain how to import the sample jobs for MS SQL Server 2005 provided with this white paper.

1. Open a Web browser and then go to http://www.ibase.us/content/Resources/sql2005.zip to download the zip file.
2. Copy the zip file to your Altiris Deployment Server and extract the contents.
3. To import the sql2005.bin file into Altiris Deployment Server:
    a. Open the Altiris Deployment Server console.
    b. Right-click in the Jobs pane (see Figure 1).

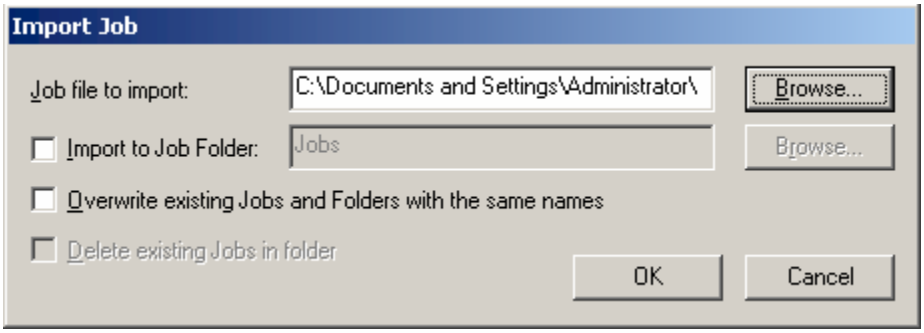
Figure 1: Importing a job into Altiris Deployment Server



c. Select **Import** from the pop-up list.

d. Click **Browse** to select the **sql2005.bin** file you copied to the Altiris Deployment Server.

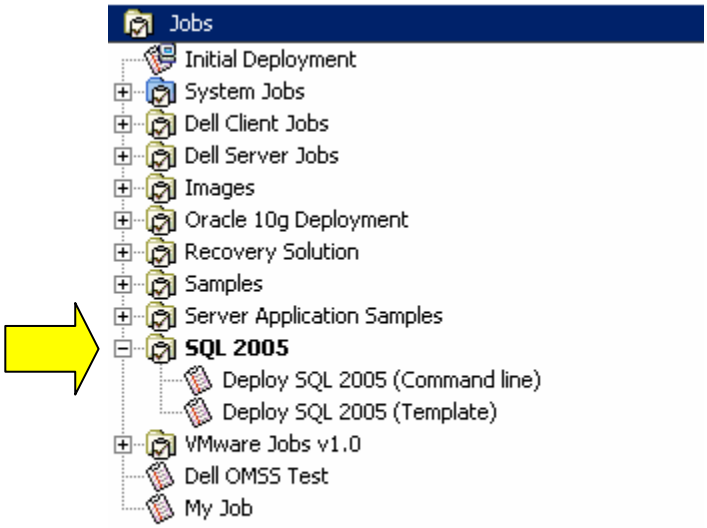
Figure 2: Importing the sql2005.bin file



e. Click **OK** to import the job to the console.

When the job is imported to the console it should create a SQL2005 folder containing two jobs (see Figure 3).

Figure 3: Imported SQL jobs in the Altiris Console

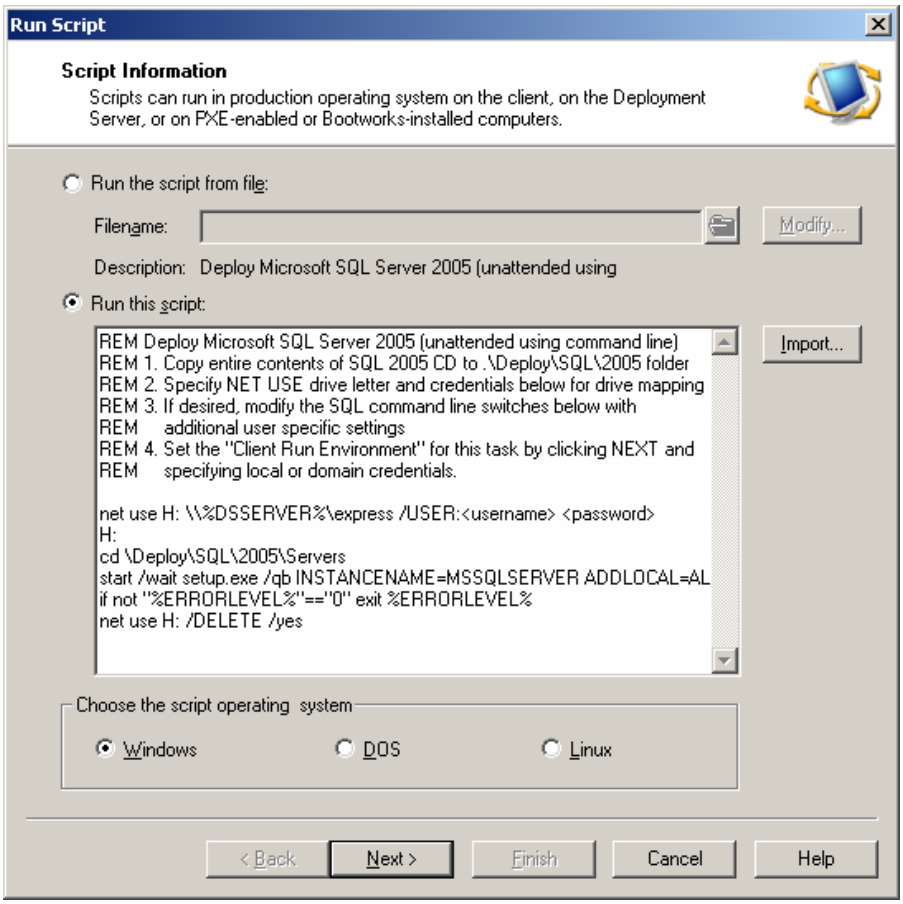


Note: The jobs provided by this white paper are offered "as is" and will NOT be supported by Altiris until they are bundled into a future release of Altiris Deployment Solution. They are offered here simply as a guide to get Altiris administrators started with SQL Server 2005 deployments as quickly and easily as possible. The authors expect that Altiris administrators will likely modify the jobs to satisfy their individual needs.

How the Jobs Work

Two sample jobs are provided. Each job contains a single Run Script task. A Run Script task can be used to run a variety of scripting languages on several different operating systems, including VB Script and DOS language commands on managed Windows servers (see Figure 4). The Run Script task allows user-defined custom scripts to be executed at any point in a job's workflow.

Figure 4: The Run Script task dialogue



The Run Script tasks provided in this paper's sample jobs contain a script that maps a network drive back to a folder in the Altiris express share that contains the entire contents of the SQL Server 2005 CD (see Figures 5 and 6). A CD with a Select license for the MS SQL Server 2005 software is recommended. The name of this folder must match the naming convention outlined in each job's comments.

Figure 5: Copy the contents of the SQL Server 2005 Install CD to the appropriate folder in the Altiris eXpress Share

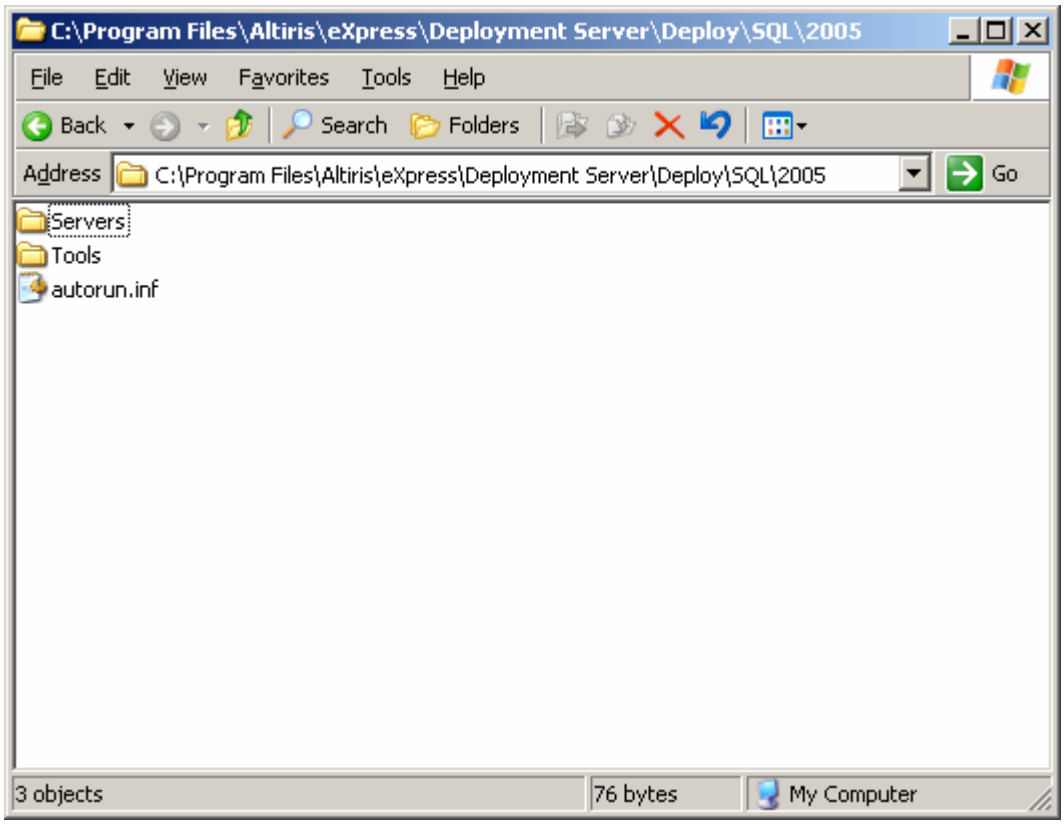
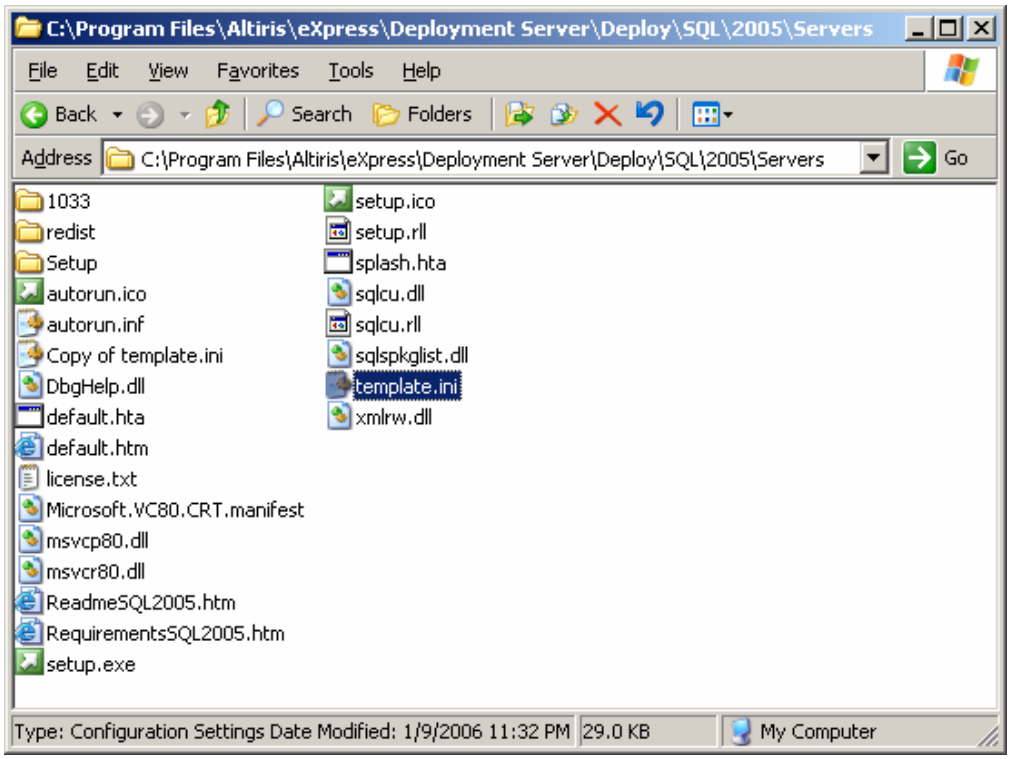


Figure 6: Detailed view of the .\Servers Directory Where the SQL Setup Files reside (including the Template.ini file used with provided template sample job)



The Command line job runs the SQL Server 2005 setup executable and passes the necessary parameters to set certain database options (see Figure 7). The template job runs the same setup process but provides needed parameters via a template.ini file (see Figure 8).

Consult Microsoft SQL Server 2005's product documentation for a review of all the available configuration parameters that can be supported for an unattended installation.

Note: The provided jobs simply incorporate the native SQL Server 2005 unattended install process into the Altiris Console, making remote database deployments as simple as a "drag-and-drop" event. Using a standard, recommended install process ensures Microsoft's support for the application.

The Altiris SQL Server 2005 Run Script task can be copied into other jobs that perform other management functions. Thus, a single job could be created to set a RAID 5 configuration, configure a server's BIOS, perform a scripted installation of Windows Server 2003 SP1 and then install SQL Server 2005. Administrators can drag and drop this job on to one or more servers simultaneously and then move on to other tasks leaving the Altiris server to execute the workflow contained in the job.

Figure 7: The Command line Sample Script

```
REM Deploy Microsoft SQL Server 2005 (unattended using command line)
REM 1. Copy entire contents of SQL 2005 CD to .\Deploy\SQL\2005 folder
REM 2. Specify NET USE drive letter and credentials below for drive mapping
REM 3. If desired, modify the SQL command line switches below with
REM     additional user specific settings
REM 4. Set the "Client Run Environment" for this task by clicking NEXT and
REM     specifying local or domain credentials.

net use H: \\%DSSERVER%\express /USER:<username> <password>
H:
cd \Deploy\SQL\2005\Servers
start /wait setup.exe /qb INSTANCENAME=MSSQLSERVER ADDLOCAL=ALL
REMOVE=SQL_Documentation SAPWD=password SQLBROWSERACCOUNT="NT AUTHORITY\SYSTEM"
SQLACCOUNT="NT AUTHORITY\SYSTEM" AGTACCOUNT="NT AUTHORITY\SYSTEM" ASACCOUNT="NT
AUTHORITY\SYSTEM" RSACCOUNT="NT AUTHORITY\SYSTEM"
if not "%ERRORLEVEL%"=="0" exit %ERRORLEVEL%
net use H: /DELETE /yes
```

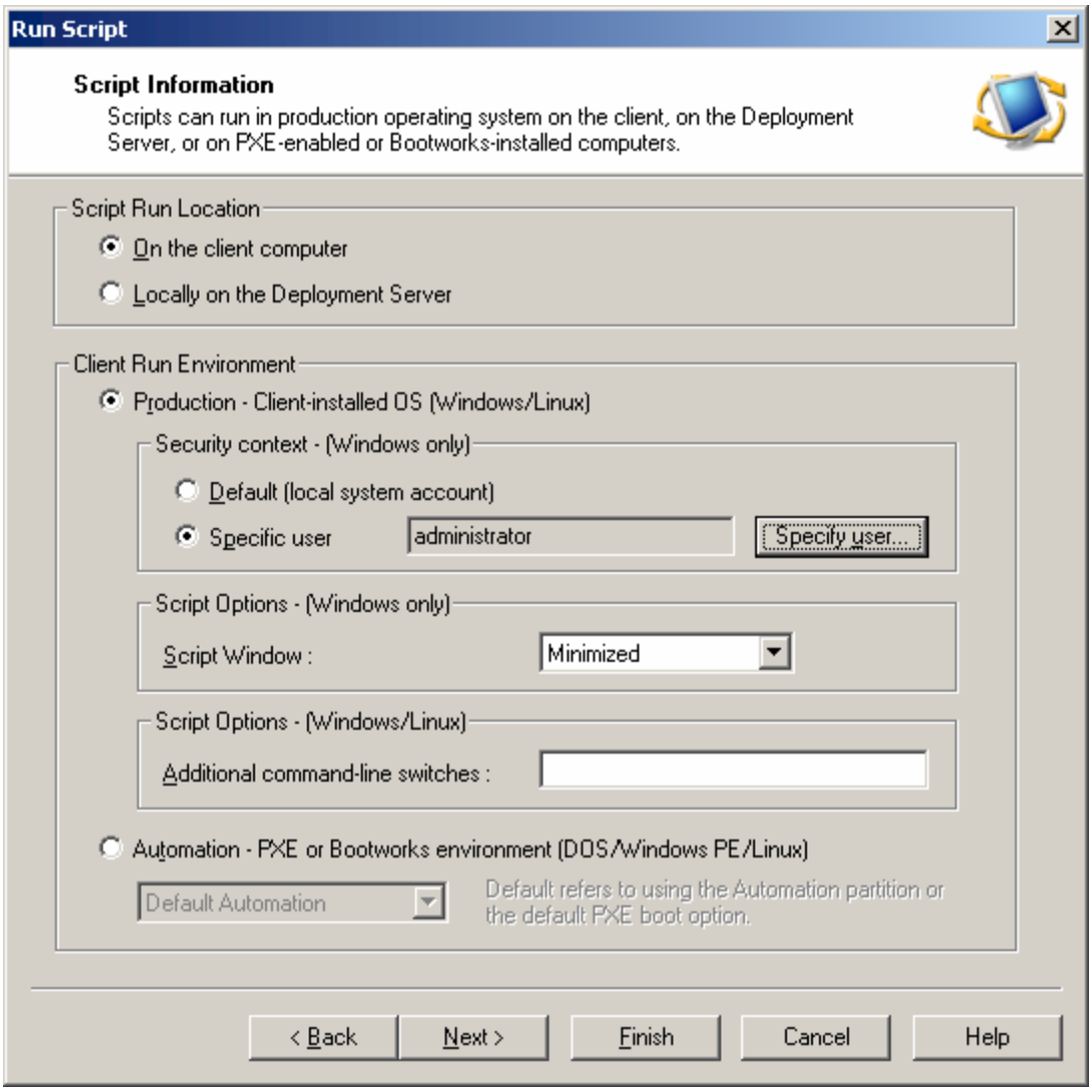
Figure 8: The Template Sample Script

```
REM Deploy Microsoft SQL Server 2005 (unattended using template file)
REM 1. Copy entire contents of SQL 2005 CD to .\Deploy\SQL\2005 folder
REM 2. Specify NET USE drive letter and credentials below for drive mapping
REM 3. If desired, modify the TEMPLATE.INI from SQL 2005 with
REM     additional user specific settings
REM 4. Set the "Client Run Environment" for this task by clicking NEXT and
REM     specifying local or domain credentials.

net use H: \\%DSSERVER%\express /USER:<username> <password>
H:
cd \Deploy\SQL\2005\Servers
start /wait setup.exe /qb /settings H:\Deploy\SQL\2005\Servers\template.ini
if not "%ERRORLEVEL%"=="0" exit %ERRORLEVEL%
net use H: /DELETE /yes
```

For each Run Script task administrators have several options (see Figure 9). These include the ability to run a script locally (on the Altiris Deployment Server) or the ability to run the script on a remote, managed server. For the SQL Server 2005 deployment, the scripts need to run on the remote client computer. Additionally, the scripts need to run in the production Windows OS and Altiris administrators must provide a username and password to serve as the security context for the script when it runs on the remote server.

Figure 9: Script configuration dialogue



Once the aforementioned steps have been completed, SQL Server 2005 can be installed on a remote server simply by dragging and dropping one of the SQL Server 2005 jobs in the Altiris Console onto one or more server icons in the Computers pane. Altiris provides a quick and easy method of ensuring a standardized install of SQL Server 2005 onto any managed server with only seconds of an administrator's time required to initiate the job. In our testing, the

actual time required to complete an unattended SQL Server 2005 install process was approximately 24 minutes.

Figure 10: Screenshot of the unattended SQL Server 2005 prerequisite install process

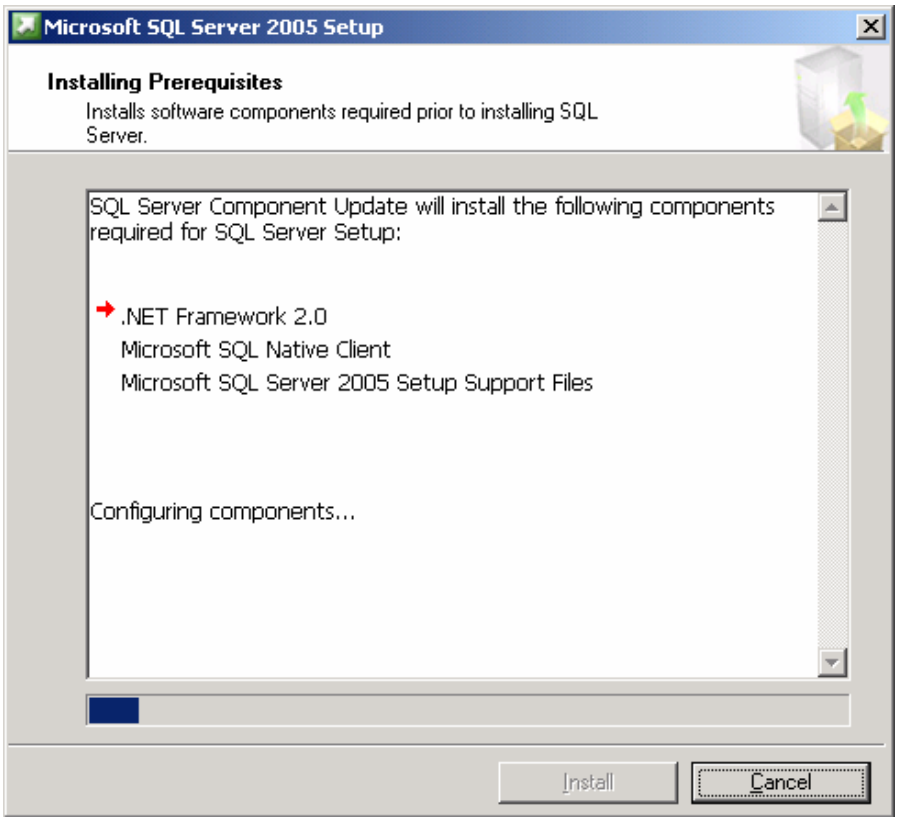


Figure 11: Screenshot of the unattended SQL Server 2005 component install process

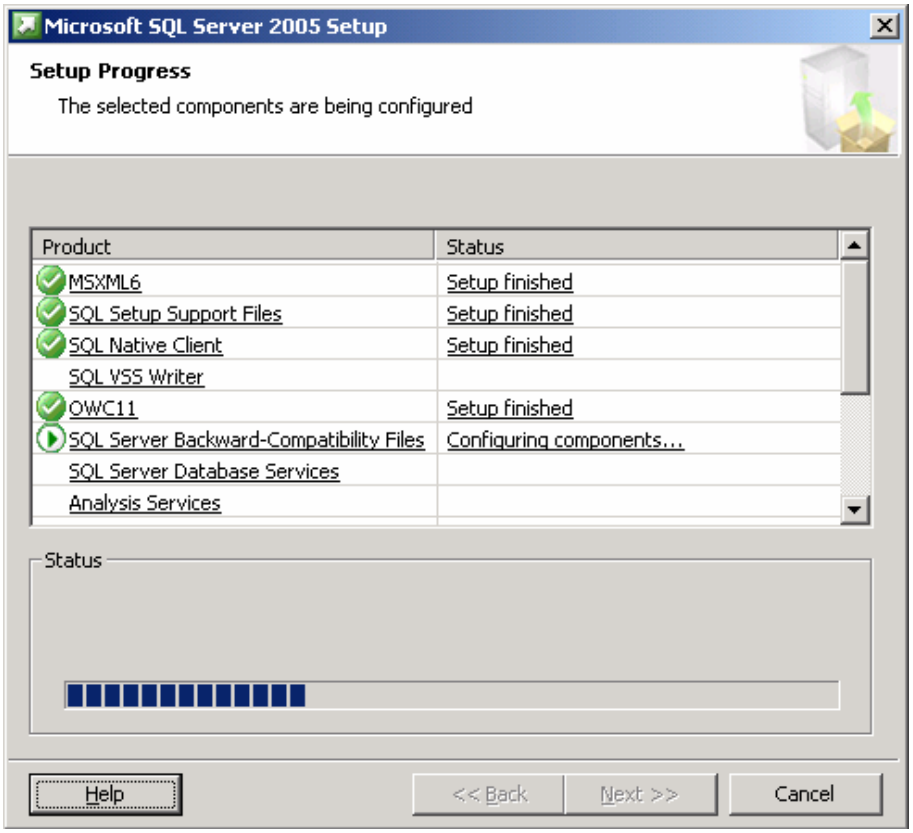
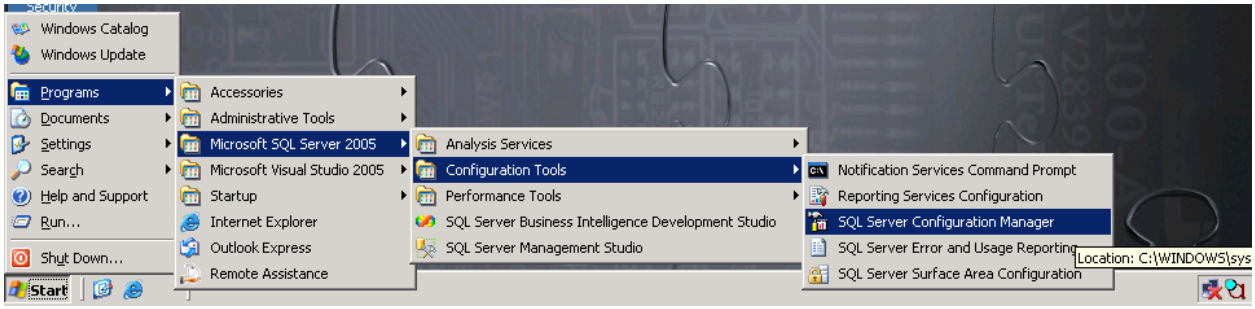


Figure 12: Final screenshot of the SQL Server 2005 installation executed by Altiris Deployment Server



Conclusion

MS SQL Server 2005 promises IT administrators advanced analytics, improved reporting, more secure data management and a host of additional features. Altiris offers IT administrators a powerful solution for automating the deployment of this application and standardizing its configuration.

Altiris can deploy SQL Server 2005 to existing servers that are already provisioned, or as part of a server build or rebuild from bare metal. For more information on Altiris Deployment Solution go to http://www.altiris.com/Products/DeploymentSolution.aspx.