

Dell™ Lifecycle Controller
Integration for Microsoft®
System Center Configuration
Manager Version 1.0
Enablement Guide



Notes



NOTE: A NOTE indicates important information that helps you make better use of your computer.

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About This Document

This document details the usage and features of the Dell™ Lifecycle Controller Integration for Microsoft® System Center Configuration Manager (DLCI for ConfigMgr).

For information on Microsoft System Center Configuration Manager (ConfigMgr) such as installation, features, and functionalities, see the Microsoft TechNet site at technet.microsoft.com.

In addition to this guide, there are other product guides and white papers you should have for reference.

You can find the following guides on the Dell Support website at support.dell.com/manuals.

- The *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide* provides comprehensive information on setting up and using the Dell Deployment Pack.
- The *Dell Lifecycle Controller User's Guide* provides comprehensive information on managing systems locally and remotely on a network.
- The *Integrated Dell Remote Access Controller 6 User's Guide* provides information about installation, configuration, and maintenance of the Integrated Dell Remote Access Controller 6 (iDRAC6) on management and managed systems.

You can find the following white papers at www.delltechcenter.com.

- The *Dell Lifecycle Controller Remote Services Overview* provides comprehensive information about the features, functionalities and usage of the Dell Lifecycle Controller remote services.
- The *Dell Lifecycle Controller Web Services Interface Guideline* provides information about the methods available to deploy an operating system using Web Services Management (WS-MAN).
- The *Dell Auto-Discovery Network Setup Specification* provides information about auto-discovery, auto-discovery error messages, descriptions, and response actions.

Overview

This chapter provides an overview of Dell™ Lifecycle Controller Integration for Microsoft® System Center Configuration Manager (DLCI for ConfigMgr).



NOTE: Systems on the network should have a minimum configuration of iDRAC6 Express (henceforth referred to as iDRAC in this document) for DLCI for ConfigMgr to discover and authenticate them.

Some of the key features of DLCI for ConfigMgr are:

- Auto-discovery of systems with iDRAC on the network
- Removal of Pre Execution Environment (PXE) dependency
- Usage of drivers from Lifecycle Controller or from ConfigMgr repository
- Deployment of operating systems remotely

Features and Functionalities

Auto-Discovery and Handshake

The auto-discovery feature enables automated discovery and credential management of unprovisioned systems with iDRAC Express on the network by management consoles that have integrated the Dell provisioning server. The DLCI for ConfigMgr integrates the provisioning server within ConfigMgr.



NOTE: DLCI for ConfigMgr does not support auto-discovery of modular systems with flex-addressing.

Once a system with iDRAC is discovered, a collection called **All Dell Lifecycle Controller Servers** is created under **Computer Management** → **Collections** in the ConfigMgr console. There are two sub-collections within the collection:

- Managed Dell Lifecycle Controller (OS Deployed)
- Managed Dell Lifecycle Controller (OS Unknown)

After an operating system is deployed on a discovered system with iDRAC, the system moves from **Managed Dell Lifecycle Controller (OS Unknown)** to **Managed Dell Lifecycle Controller (OS Deployed)**.

For more information on how to configure DHCP/DNS settings, see the *Dell Lifecycle Controller User Guide* on the Dell Support website at support.dell.com/manuals.

Removal of PXE Dependency

The removal of PXE dependency feature provides the ability to boot a collection of systems with iDRAC to the task sequence ISO available on a Common Internet File System (CIFS) share. You should provide credentials to access this ISO on the CIFS share.

Driver Maintenance

The driver maintenance feature of DLCI for ConfigMgr provides the ability to expose drivers embedded in the Lifecycle Controller to install a particular operating system, and allows fall-back to the ConfigMgr console for drivers, if needed. It also provides the ability to choose drivers from the console repository without depending on the Lifecycle Controller.

Remote Operating System Deployment

Remote operating system deployment is the ability to execute an unattended installation of a target operating system on any auto-discovered system with iDRAC. As a part of this feature, the pre-operating system image is mounted as a virtual media over the network and the drivers for the target host operating system are leveraged either from the ConfigMgr console repository or the Lifecycle Controller. If you select drivers from the Lifecycle Controller, the list of operating systems supported is based on the current driver pack flashed on the iDRAC.

For more information on remote operating system deployment, see the *Dell Lifecycle Controller User Guide* on the Dell Support website at support.dell.com/manuals.

Setup and Use

This chapter contains information on software prerequisites and requirements to use the Dell™ Lifecycle Controller Integration for Microsoft® System Center Configuration Manager (DLCI for ConfigMgr). It also lists the steps to install and uninstall the plug-in, and some typical console user scenarios.

Before you Begin

To use DLCI for ConfigMgr, you should be familiar with deploying operating systems using **Dell Server Deployment Pack for Microsoft System Center Configuration Manager (DSDP for ConfigMgr) version 1.1**.



NOTE: It is mandatory that you read the *Dell™ Server Deployment Pack for Microsoft® System Center Configuration Manager User's Guide* on the Dell Support website at support.dell.com/manuals.

Prerequisites and Requirements

- Ensure that systems on the network have a minimum configuration of iDRAC6 Express for DLCI for ConfigMgr to discover and authenticate them.
- Install the following applications on your system:
 - Microsoft System Center Configuration Manager 2007 (ConfigMgr). For details on how to download and install ConfigMgr, see the Microsoft TechNet site at technet.microsoft.com.
 - Dell Server Deployment Pack for ConfigMgr version 1.1. For details on how to install DSDP for ConfigMgr, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide*.
 - Microsoft .NET version 3.5 SP1.
 - Windows Remote Management (WinRM) on systems on which provisioning server is running on Microsoft Windows 2003 operating system.

- Utilities `regsvr32.exe` and `icacls.exe`.



NOTE: `regsvr32.exe` is installed on the system by default. `icacls.exe` is updated when you apply the hotfix from the Microsoft KB article 947870. The hotfix is available on the Microsoft support site at support.microsoft.com.

- Apply the hotfix from the Microsoft KB article 947870 on systems with Microsoft Windows 2003 operating system, on which provisioning server is installed. The hotfix is available on the Microsoft support site at support.microsoft.com.
- Install the WS-Management version 1.1 package from the Microsoft KB article 936059, available on the Microsoft support site at support.microsoft.com.
- Ensure that at least 40 MB of free disk space is available on your system.

For more information on prerequisites and requirements, see the *Dell™ Server Deployment Pack for Microsoft® System Center Configuration Manager User's Guide* on the Dell Support website at support.dell.com/manuals.

Supported Systems and Operating Systems

For more information on supported systems and operating systems, see the `readme.txt` on the Dell Support website at support.dell.com/manuals.

Installing and Uninstalling

This section lists the steps to install and uninstall the DLCI for ConfigMgr.

Installing the DLCI for ConfigMgr



NOTE: It is recommended that you read the "Prerequisites and Requirements" section before proceeding with the installation.



NOTE: If your system runs out of disk space during the installation, a message displays confirming that there is not enough disk space. It is recommended that you abort the installation and try again after ensuring that the required disk space is available.

Use the following steps to install the DLCI for ConfigMgr:

- 1 Go to the Dell Support website at support.dell.com → Drivers & Downloads.

- 2 Download the appropriate .msi package for your operating system to the local drive of your system.
- 3 Double-click the .msi package. The **Welcome** screen displays.
- 4 Click **Next**. The license agreement displays.
- 5 Select **I accept the terms in the license agreement** and click **Next**.
- 6 Enter the username and password that will be provisioned on all newly discovered systems with iDRAC and click **Next**.
- 7 Enter the administrator credentials for ConfigMgr and click **Next**. The **Ready to Install the Program** window displays.
- 8 Click **Install**. A progress screen displays the progress of the installation. Once the installation is complete, the **InstallShield Wizard Completed** window displays.
- 9 Click **Finish** to complete the installation.

You have successfully installed the DLCI for ConfigMgr.



NOTE: As part of the installation, a provisioning website is created and configured under Internet Information Services (IIS). For more information on configuring the provisioning server manually, see "Configuring Dell Provisioning Web Services on IIS."

Uninstalling the DLCI for ConfigMgr

Use the following steps to uninstall the DLCI for ConfigMgr:

For Microsoft Windows Server 2003:

- 1 Click **Start**→**Control Panel**→**Add or Remove Programs**.
- 2 Select **Dell Lifecycle Controller Integration Utility** and click **Remove**.
- 3 Follow the instructions to complete the uninstallation.

For Microsoft Windows Server 2008:

- 1 Click **Start**→**Control Panel**→**Programs and Features**.
- 2 Select **Dell Lifecycle Controller Integration Utility** and click **Uninstall**.
- 3 Follow the instructions to complete the uninstallation.

Repairing the DLCI for ConfigMgr

Use the following steps to repair the DLCI for ConfigMgr:

- 1 Double-click the .msi package that you used to install DLCI for ConfigMgr initially. The **Welcome** screen displays.
- 2 In the **Program Maintenance** screen, select **Repair** and click **Next**. The **Ready to Repair the Program** screen displays.
- 3 Click **Install**. A progress screen displays the progress of the installation. Once the installation is complete, the **InstallShield Wizard Completed** window displays.
- 4 Click **Finish** to complete the installation.

Typical User Scenario

This section contains a typical scenario to discover a system with iDRAC and deploy an operating system remotely. You need to perform the following steps in order to deploy operating systems remotely on the discovered and authenticated systems with iDRAC:



NOTE: By default, the **checkCertificate** value is set to **true**. Ensure that you set the **checkCertificate** value to **false** if you are not using certificates. For more information, see "Security Configuration."

- 1 Ensure that the system is auto-discovered and present in the collection. For more information on auto-discovery, see the "Auto-Discovery and Handshake" section.
- 2 Create a task sequence. For information on creating a task sequence, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide*.



NOTE: Select the checkbox **Apply Drivers from Lifecycle Controller** if you want to apply drivers from Lifecycle Controller while deploying operating systems.

- 3 Create a task sequence media. For more information, see the "Creating a Task Sequence Media" section.
- 4 Advertise the task sequence for the collection containing the systems with iDRAC. For information on advertising a task sequence, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide*.

- 5 Create a Lifecycle Controller boot media. This modifies the task sequence media to ensure that the deployment is unattended. For more information, see the "Creating a Lifecycle Controller Boot Media" section.
- 6 Apply drivers on the task sequence. For more information, see the "Applying Drivers on the Task Sequence" section.
- 7 Deploy operating systems to the collection by launching the **Config Utility**. For more information, see the "Deploying Operating System Remotely" section.

Creating a Task Sequence Media

Use the following steps to create a task sequence media:

- 1 On the ConfigMgr console, under **Computer Management**→**Operating System Deployment**, right-click **Task Sequences** and select **Create Task Sequence Media**. The **Create Task Sequence Media** wizard displays.
 **NOTE:** Ensure that you manage and update the boot image across all distribution points before starting this wizard.
- 2 Select **Bootable Media** and click **Next**.
- 3 Select **CD/DVD Set**, and click **Browse** and select the location to save the ISO image. Click **Next**.
- 4 Deselect the **Protect Media with a Password** checkbox and click **Next**.
- 5 Browse and select the boot image **Dell PowerEdge Server Deployment Boot Image x86**. Select the distribution point from the drop-down menu, and select **Show distribution points from child sites** checkbox.
- 6 Click **Next**. The **Summary** screen displays the task sequence media information.
- 7 Click **Next**. A progress bar displays the status of the task sequence media creation.
- 8 Click **Finish** to complete the task sequence media creation.

You have created a task sequence media.

Creating a Lifecycle Controller Boot Media

Create a Lifecycle Controller boot media to deploy operating systems remotely. Use the following steps to create a Lifecycle Controller boot media:

- 1 From the left pane of the ConfigMgr console, under **Computer Management**→**Collections**, right-click on **All Dell Lifecycle Controller Servers** and select **Dell Lifecycle Controller**→**Launch Config Utility**.



NOTE: Config Utility can be launched for any collection.

- 2 The **Dell Lifecycle Controller Configuration Utility** window opens. The left-hand pane of the window lists the following tasks:
 - Create new Lifecycle Controller Boot Media
 - Configure and Reboot to WinPE
 - Verify Communication with Lifecycle Controllers
 - Modify Credentials on Lifecycle Controllers
- 3 The default selection is **Create new Lifecycle Controller Boot Media**. Browse and select the bootable ISO that you created. For information on how to create a bootable image, see the "Creating a Task Sequence Media" section.
- 4 Specify the path where the Dell Lifecycle Controller boot media needs to be saved.



NOTE: It is recommended that you save the boot media to your local drive and then copy it to a network location, if required.

- 5 Click **Create**.

You have successfully created a boot media.

Applying Drivers on the Task Sequence

Based on the operating system to be deployed, you can either apply drivers from the Lifecycle Controller or the ConfigMgr repository.

Applying Drivers from Lifecycle Controller

Use the following steps to apply drivers from the Lifecycle Controller:

- 1 Edit the task sequence to which drivers will be exposed from the Lifecycle Controller. To edit, right-click on the task sequence and select **Edit** to open the **Task Sequence Editor**. Click **Add**→**Dell Deployment**→**Apply Drivers from Lifecycle Controller** and click **Next**.

Or, create a new task sequence if there is no existing task sequence. For information on creating a task sequence, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide*.

 **NOTE:** This step requires a fallback step for the inclusion of either the **Apply Driver Package** or **Auto Apply Drivers** step of ConfigMgr. Ensure that you have one of these steps configured with a condition in the task sequence. For more information on configuring a condition for the fallback step, see the "Adding a Condition for a Fallback Step" section.

- 2 A message displays listing objects referenced in the task sequence that cannot be found. Click **OK** to close this message.
- 3 Select **Apply Operating System Images**.
- 4 Under the **Apply operating system from a captured image**, reselect and verify the image package and image.
- 5 Deselect the **Use an unattended or sysprep answer file for a custom installation** checkbox.
- 6 Select **Apply Windows Settings**. Enter the licensing model, product key, administrator password, and time zone.

 **NOTE:** The default option is for the administrator password to be randomly generated. This may not allow you to log into the system if you do not join the system to a domain. Alternatively, you can select the **Enable the account and specify the local administrator password** option and enter an administrator password.

- 7 Select **Apply Drivers from Dell Lifecycle Controller** and select an operating system from the drop-down list.
- 8 Enter a username and password with administrator credentials to access the ConfigMgr console.
- 9 Select **Apply Driver Package**. Click **Browse** and select a driver package from the list of driver packages available in ConfigMgr.

 **NOTE:** Depending on the hardware and operating system being deployed, you may need to select a mass storage driver to correctly deploy the operating system. For example, Microsoft Windows 2003 operating system does not carry compatible drivers for the Serial Attached SCSI (SAS) or PowerEdge Expandable RAID Controllers (PERC).

- 10 Click **OK** to close the **Task Sequence Editor**.
- 11 Advertise the task sequence that you have edited. For information on how to advertise a task sequence, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide* on the Dell Support website at support.dell.com/manuals.



NOTE: It is recommended that you set the task sequence advertisement to mandatory.

- 12 Create a Lifecycle Controller Boot Media. For more information, see the "Creating a Lifecycle Controller Boot Media" section.

Applying Drivers from the ConfigMgr Repository

Use the following steps to apply drivers from the ConfigMgr repository:

- 1 Add a **Set Boot Order** step manually before each of the **Reboot to PXE / USB** steps. The **Set Boot Order** step instructs the systems to boot to a virtual CD on the next boot.

Use the following steps to add a **Set Boot Order** step manually:

- a Right-click on the task sequence and select **Add**→**Dell Deployment**→**Create Dell PowerEdge Server Deployment Template**.
 - b Select **Boot Order** from the **Configuration Action Type** drop-down list.
 - c Select **Set** from the **Action** drop-down list.
 - d A new drop-down list for **Configuration file / Command line parameters** displays. Select **—nextboot=virtualcd.slot.1**.
 - e Select **Apply**. The name of the step will change to **Set Boot Order**.
 - f Select and drag the **Set Boot Order** step to just before the **Reboot to PXE / USB** step.
 - g Repeat this process to create a **Set Boot Order** step before each **Reboot to PXE / USB** step.
 - h Click **OK** to close the task sequence.
- 2 Apply driver packages for the selected operating systems in ConfigMgr. For more information on applying driver packages, see *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide* on the Dell Support website at support.dell.com/manuals.

Deploying Operating System Remotely

Use the following steps to deploy an operating system to the collection remotely:

- 1 From the left pane of the ConfigMgr console, under **Computer Management**→**Collections**, right-click on **Managed Dell Lifecycle Controllers (OS Unknown)** and select **Dell Lifecycle Controller**→**Launch Config Utility**.
- 2 From the left pane of the Dell Lifecycle Controller Configuration Utility, select **Configure and Reboot to WinPE**.
- 3 Select the advertisement that you have scheduled, to view its properties. The **Advertisement Properties** field displays the targeted collection, start time, expiration, and mandatory status of the advertisement selected.



NOTE: Advertisements are run based on their priority. The advertisement with the highest priority runs first.

- 4 Click **Next** if you do not want to use drivers for operating system deployment from Lifecycle Controller. You need to add a manual step to the task sequence to configure the system to reboot to Windows PE.

Or, select the **Expose drivers from Lifecycle Controller** checkbox if you are using the **Apply Drivers from Lifecycle Controller** step in the task sequence. Select the operating system to be installed from the drop-down list.



NOTE: By default, the drop-down list displays the intersection of the operating systems supported by all the driver packages of the discovered systems with iDRAC that are in the collection. Select **Show all operating systems** to view all Windows operating systems that can be deployed.



NOTE: Ensure that you select the same operating system that you selected during the **Apply Drivers from Lifecycle Controller** step while creating the task. If there is a mismatch in the operating system, the deployment will fail.

- 5 Click **Next**.
- 6 Click **Browse** and select the path where the Dell Lifecycle Controller bootable media is saved.



NOTE: If you have set a default share location for the Lifecycle Controller boot media, the default location populates automatically. See the "Applying Drivers on the Task Sequence" section for more information.

- 7 Enter the user name and password for accessing the share where the Dell Lifecycle Controller bootable media is located.

- 8 Click **Reboot Targeted Collection**. The console sends out a WS-MAN command to all the systems with iDRAC in the collection to boot from the specified Lifecycle Controller boot media.

Once a system with iDRAC receives the WS-MAN command, it reboots to Windows PE and runs the advertised task sequence. It then automatically boots to the Lifecycle Controller boot media, depending on the boot order you created in the task sequence. Once the deployment is successful, the system with iDRAC moves to the **Managed Dell Lifecycle Controller (OS Deployed)** collection under **Computer Management**→**Collections**→**All Dell Lifecycle Controller Servers**.

Additional Features

Adding a Condition for a Fallback Step

Insert the following condition if you have configured **Apply Driver Package**, or **Auto Apply Drivers**, or both the steps:

- 1 From the left-hand side of the ConfigMgr console, select **Computer Management**→**Operating System Deployment**→**Task Sequence**.
- 2 Right-click on the task sequence and click **Edit**.
- 3 The **Task Sequence Editor** displays. Select **Apply Driver Package**.
- 4 Click the **Options** tab.
- 5 Click **Add Condition**→**Task Sequence Variable**.
- 6 Enter the variable name as **DriversAppliedFromLC** and select the condition as **Exists**.
- 7 Click **OK**.

You have added a condition for a fallback step.

Setting a Default Share Location for the Lifecycle Controller Boot Media

Use the following steps to set a default share location for the Lifecycle Controller boot media:

- 1 From the left pane of the ConfigMgr console, select **Site Management**→**<site server name>**→**Site Settings**→**Component Configuration**.

- 2 In the **Component Configuration** window, right-click **Out of Band Management** and select **Properties**. The **Out of Band Management Properties** window displays.
- 3 Click the **Dell Lifecycle Controller** tab.
- 4 Click **Modify** to modify the default share location of the custom Lifecycle Controller boot media.
- 5 In the **Modify Share Information** window, enter a new share name and share path. Click **OK**.

You have set a default share location for the Lifecycle Controller boot media.

Verifying Communication with Lifecycle Controller

Use the following steps to verify the credentials of the discovered systems with iDRAC:

- 1 From the left pane of the ConfigMgr console, under **Computer Management**→**Collections**, right-click on **All Dell Lifecycle Controller Servers** and select **Dell Lifecycle Controller**→**Launch Config Utility**.
- 2 From the left pane of the **Dell Lifecycle Controller Configuration Utility**, select **Verify Communication with Lifecycle Controllers**.
- 3 Click **Run Check** to verify communication with the iDRACs of the discovered systems. A list of iDRACs discovered on the network displays along with their communication status.
- 4 Once the check is complete, click **Export to CSV** to export the results in CSV format and provide the location on your local drive.

or

Click **Copy to Clipboard** to copy the results of this check to the clipboard and save it in plain text format.

Modifying Local User Account for Lifecycle Controllers

Use the following steps to verify or modify WS-MAN credentials used for communicating with the systems with iDRAC:



NOTE: It is recommended that you modify the credentials on the Lifecycle Controller as well as the ConfigMgr database simultaneously.

Modifying Credentials on the Dell Lifecycle Controller

- 1 From the left pane of the ConfigMgr console, under **Computer Management**→**Collections**, right-click on **All Dell Lifecycle Controller Servers** and select **Dell Lifecycle Controller**→**Launch Config Utility**.
- 2 From the left pane of the **Dell Lifecycle Controller Configuration Utility**, select **Modify Credentials on Lifecycle Controllers**.
- 3 Enter the current user name and password, and the new user name and password.
- 4 Click **Update**.

A series of WS-MAN commands are sent to all systems with iDRAC under the collection indicating the change in user name and password credentials.

Modifying Credentials on the ConfigMgr Database

- 1 From the left pane of the ConfigMgr console, select **Site Management**→**<site server name>**→**Site Settings**→**Component Configuration**.
- 2 In the **Component Configuration** window, right-click **Out of Band Management** and select **Properties**. The **Out of Band Management Properties** window displays.
- 3 Click the **Dell Lifecycle Controller** tab.
- 4 Click **Modify** to modify the local user account on the Dell Lifecycle Controllers.
- 5 In the **New Account Information** window, enter the new user name and new password. Confirm the new password and click **OK**.

You have updated the new username and password credentials in the ConfigMgr Database.

Security Configuration

Validation of a Dell Factory-Issued Client Certificate on the iDRAC for Auto-Discovery

This security option requires that a system being discovered by the provisioning website during the discovery and handshake process has a valid factory-issued client certificate which is deployed to the iDRAC. This feature is enabled by default. It can be disabled from a command prompt by running the following command:

```
[Program Files]\Dell\DPS\Bin\import.exe  
-CheckCertificate False
```

Pre-authorization of systems for Auto-Discovery

This security option checks the service tag of the system being discovered against a list of authorized service tags you have imported. To import the authorized service tags, create a file containing a comma-separated list of service tags, and import the file from a command prompt by running the following command:

```
[Program Files]\Dell\DPS\Bin\import.exe -add  
[file_with_comma_delimited_service_tags].
```

Running the command will create a record for each service tag in the repository file [Program Files]\Dell\DPS\Bin\Repository.xml.

This feature is disabled by default. To enable this authorization check, open a command prompt and run the following command:

```
[Program Files]\Dell\DPS\bin\import.exe  
-CheckAuthorization False.
```

Changing the Administrative Credentials used by DLCI for ConfigMgr

Use the following commands to change the administrative credentials for ConfigMgr used by DLCI:

To set the username:

```
[Program Files]\Dell\DPS\Bin\import.exe -CIuserID  
[New Console Integration Admin User ID]
```

To set the password:

```
[Program Files]\Dell\DPS\Bin\import.exe -CIpassword  
[New Console Integration Admin Password].
```

Trouble Shooting

Configuring Dell Provisioning Web Services on IIS

The installer configures the Dell provisioning web services for Internet Information Services (IIS) automatically during installation.

This section contains information to configure Dell provisioning web services for IIS manually.

Dell Provisioning Web Services Configuration for IIS 6.0

Use the following steps to configure Dell provisioning web services for IIS 6:

- 1 After installing DLCI for ConfigMgr, go to the `inetpub\wwwroot` directory and verify whether the folder **ProvisionWS** is present along with the files. Reinstall DLCI for ConfigMgr if the folder and files are not present.
- 2 Create a new application pool called **Provisioning Web Site** and assign it to the website.
- 3 On the website, set the default document to **handshake.aspx** and remove any other default documents.
- 4 Using the Certificates MMC plug-in, install the **PS2.pfx** certificate into the system's **Personal** store.
- 5 Install the **RootCA.pem** into the system's **Trusted Root Certificate Authorities** store.
- 6 Use the following steps to enforce SSL and client certificates for the website:
 - a Assign the **DellProvisioningServer** certificate to the website.
 - b Set the SSL port to 4433.
 - c Select the required SSL option.
 - d Select the required client certificates option.
 - e Create a **Certificate Trust List** with only the **iDRAC RootCA** in the trust list.



NOTE: The certificate files (`SITE_PFX_PASSWORD = "fW7kd2G"`) will be present at the following location after running the installer: `[ConfigMgr Path] \AdminUI \XmlStorage \Extensions \bin \Deployment \Dell \PowerEdge \LC \IISsetup \.`

Dell Provisioning Web Services Configuration for IIS 7.0

Use the following steps to configure Dell provisioning web services for IIS 7:

- 1 On a ConfigMgr console installed with Dell Server Deployment Pack, launch the **ProvisionWS.msi** and select the default values. A new virtual website called **Provisioning Web Site** is created.
- 2 Create a new application pool called **Provisioning Web Site** and assign it to the website.
- 3 Perform the following steps on **Provisioning Web Site**.
 - a If your system is running on a 64-bit operating system, set **Enable 32 Bit Applications** to **True**.
 - b Set **Managed Pipeline Mode** to **Integrated**.
 - c Set **Identity** to **Network Service**.
- 4 On the website, set the default document to **handshake.asmx** and remove any other default documents.
- 5 Using the Certificates MMC plug-in, install the **PS2.pfx** certificate into the system's **Personal** store.
- 6 Install the **RootCA.pem** into the system's **Trusted Root Certificate Authorities** store.
- 7 Import the **ProvisioningCTL.stl Certificate Trust List** file to **Intermediate Certificate Authorities**.
- 8 Create an SSL certificate configuration that applies the imported **Certificate Trust List**. Open the command prompt and paste the following command:


```
netsh http add sslcert iport=0.0.0.0:4433 appid=
{6cb73250-820b-11de-8a39-0800200c9a66}
certstorename=MY certhash=
fbcc14993919d2cdd64cfed68579112c91c05027
sslctlstorename=CA sslctlidentifier=
"ProvisioningCTL"
```
- 9 Use the following steps to enforce SSL and client certificates for the website:
 - a Add a SSL binding to set the port to 4433 and to use the **DellProvisioningServer** certificate. A warning displays that the certificate is assigned to another program.
 - b Click **OK**.

- c Remove the HTTP binding for port 4431.
- d Select the required SSL option.
- e Select the required client certificates option.

10 Click **Apply**.

Dell Auto-Discovery Network Setup Specification

For information on auto-discovery error messages, descriptions, and response actions, see the *Dell Auto-Discovery Network Setup Specification* document at www.delltechcenter.com.

Repeated Reboots of Systems Configured in Shared Network Mode

While deploying an operating system on a system with iDRAC configured in a shared network mode, the Windows PE environment startup may fail on the network drivers, causing the system to restart before reaching the task sequence. This is because the network does not assign IP addresses fast enough. To avoid this issue, ensure that you enable *Spanning Tree* and *Fast Link* on the network switch.

