Dell Lifecycle Controller Integration Version 1.2 for Microsoft System Center Configuration Manager

User's Guide

Notes and Cautions

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

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

Contents

1

Introduction

Dell Lifecycle Controller Integration for Microsoft System Center Configuration Manager (DLCI for ConfigMgr) enables the administrators to use the ConfigMgr console to leverage the remote enablement capabilities of Dell Lifecycle Controllers (DLC), available as part of the integrated Dell Remote Access Controller (iDRAC).

At a high level, the remote enablement capabilities consists of:

- Autodiscovery
- Hardware configuration
- Firmware comparison and updates
- Remote OS-Deployment for individual or a collection of Dell systems

Key Features and Functionalities

Table 1-1.   Features and Functionalities

Feature	Description
Auto-discovery and Handshake	This feature enables the iDRAC on bare metal systems locate the provisioning service and establish communication with the Site Server. For more information, see Auto-Discovery and Handshake.
System Viewer Utility *	This feature leverages the remote enablement capabilities of DLC to configure individual systems. For more information, see System Viewer Utility.
Config Utility *	This feature leverages the remote enablement capabilities of DLC to configure a collection of systems. For more information, see Config Utility.

Table 1-1.   Features and Functionalities

Feature	Description
Launching the iDRAC Console ✱	This feature enables you to launch the iDRAC console from the Task Viewer and from a system in the collection that contains Dell 11g systems. For more information, see Launching the iDRAC Console.
Task Viewer ✱	This feature enables you to track the status of the tasks handled by DLCI for ConfigMgr. For more information, see Task Viewer.
Hostname change functionality ✱	Earlier, when you changed the hostname of the target system after you deploy the operating system, the system would not be visible under the **All Dell Lifecycle Controller Servers** collection and would have to be re-discovered. Now you do not need to re-discover the system if you change the hostname after deploying the operating system.

✱   Indicates the features that are new or are modified.

Supported Operating Systems

Table 1-2 provides information on supported operating systems for the Site Server, Dell Provisioning Server, and ConfigMgr Admin Console. The matrix presented in the table lists the operating systems supported to install DLCI for ConfigMgr.

For information, on the supported configurations for ConfigMgr, see **http://technet.microsoft.com/en-us/library/cc161860.aspx.**

Table 1-2. **Support Matrix for Dell Components**

Operating Systems	Dell Provisioning Service	Dell Lifecycle Controller Utility (DLCU) on the ConfigMgr Server	DLCU on the SCCM Admin Console
Windows Server 2003 SP1— Standard, Enterprise, and Datacenter x86 Editions	✗	✓	✓
Windows Server 2003 SP1— Standard, Enterprise, and Datacenter x64 Editions	✗	✓	✓
Windows Server 2003 SP2— Standard, Enterprise, and Datacenter x86 Editions	✓	✓	✓
Windows Server 2003 SP2 — Standard, Enterprise, and Datacenter x64 Editions	✗	✓	✓
Windows Server 2003 R2 SP2 — Standard, Enterprise, and Datacenter x86 Editions	✓	✓	✓
Windows Server 2003 R2 SP2 — Standard, Enterprise, and Datacenter x64 Editions	✗	✓	✓
Windows Server 2008 — Standard, Enterprise, and Datacenter x86 Editions	✓	✓	✓
Windows Server 2008 — Standard, Enterprise, and Datacenter x64 Editions	✓	✓	✓

Table 1-2.   Support Matrix for Dell Components *(continued)*

Operating Systems	Dell Provisioning Service	Dell Lifecycle Controller Utility (DLCU) on the ConfigMgr Server	DLCU on the SCCM Admin Console
Windows Server 2008 SP2 — Standard, Enterprise, and Datacenter x86 Editions	✅	✅	✅
Windows Server 2008 SP2 — Standard, Enterprise, and Datacenter x64 Editions	✅	✅	✅
Windows Server 2008 R2 — Standard, Enterprise, and Datacenter Editions	✅	✅	✅
Microsoft Windows XP SP2 x86 Professional Edition	❌	❌	✅
Microsoft Windows XP SP2 x64 Professional Edition	❌	❌	✅
Microsoft Windows XP SP3 x86 Professional Edition	❌	❌	✅
Microsoft Windows XP SP3 x64 Professional Edition	❌	❌	✅
Microsoft Windows XP SP2 x86 Business Edition	❌	❌	✅
Microsoft Windows XP SP2 x64 Business Edition	❌	❌	✅
Microsoft Windows XP SP3 x86 Business Edition	❌	❌	✅
Microsoft Windows XP SP3 x64 Business Edition	❌	❌	✅

Table 1-2.   Support Matrix for Dell Components *(continued)*

Operating Systems	Dell Provisioning Service	Dell Lifecycle Controller Utility (DLCU) on the ConfigMgr Server	DLCU on the SCCM Admin Console
Microsoft Windows Vista x86 Business Edition	✗	✗	✗
Microsoft Windows Vista x64 Business Edition	✗	✗	✗
Microsoft Windows Vista SP1 x86 Business Edition	✗	✗	✓
Microsoft Windows Vista SP1 x64 Business Edition	✗	✗	✓
Microsoft Windows 7 x86 Edition	✗	✗	✓
Microsoft Windows 7 x64 Edition	✗	✗	✓

Supported Microsoft .NET Versions

Table 1-3 provides the list of supported .NET versions to install DLCI for ConfigMgr.

Table 1-3.   Supported .NET Versions for DLCI Components

Microsoft .NET Version	Dell Provisioning Service	Dell Lifecycle Controller Utility (DLCU) on the ConfigMgr Server	DLCU on the SCCM Admin Console
Microsoft .NET 3.5	✗	✗	✗
Microsoft .NET 3.5 SP1	✓	✓	✓
Microsoft .NET 4.0	✓	✓	✓

Supported Target Systems

For information on the supported Dell target systems, see the Dell Lifecycle Controller Integration 1.2 Readme available at **support.dell.com/manuals**. On the **Manuals** page click **Software→ Systems Management→ Dell Lifecycle Controller Integration for Microsoft System Center Configuration Manager** to access the latest readme.

2

Setting Up Dell Lifecycle Controller Integration (DLCI)

This chapter provides information on software prerequisites and requirements to setup DLCI for Microsoft System Center Configuration Manager (ConfigMgr). It lists the steps to install and uninstall DLCI for ConfigMgr.

Pre-requisites to Install DLCI

You should be familiar with deploying operating systems using **Dell Server Deployment Pack for Microsoft System Center Configuration Manager (DSDP for ConfigMgr) version 1.2** or later. For more information, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide* on the Dell Support site.

Before you install DLCI for ConfigMgr, there are some basic procedures that you need to follow:

1 Configure an account for use with Discovery and Handshake. For more information, see Configuring an Account for Use With Discovery and Handshake.

2 Configure the target systems. For more information, see Configuring Target Systems.

3 Ensure the availability of software pre-requisites and requirements. For more information, see Software Prerequisites and Requirements.

Configuring an Account for Use With Discovery and Handshake

If you do not want to use an administrator account for the provisioning server to access the ConfigMgr Server, create a user account with minimal permissions.

To create a user account with minimal user permissions:

1 Create a user account on the domain, as the Dell Provisioning Server impersonates this account while writing the Data Discovery Record (DDR) to the Site Server's inbox.

2 Grant the user the following permissions:

   • **Collection — Read, Modify, Create**

   • **Site — Read, Import computer entry**

3 Configure user access to Windows Management Instrumentation (WMI). For more information, see Configuring User Access to WMI.

4 Grant share and folder permissions to write files to the DDR inbox. For more information, see Granting Share and Folder Permissions.

Configuring User Access to WMI

To configure user to access WMI remotely:

NOTE: Ensure that firewall of your system does not block the WMI connection.

1 Using **DCOMCNFG.exe**, grant the Dell Provisioning Server user permissions needed to the **DCOM** on this system remotely:

   a From the left pane of the **Component Services** console, expand **Computers**, right-click on the Provisioning Server Computer, and select **Properties**.

   b On the **COM Security** tab:

      • From **Access Permissions**, click **Edit Limits** and select **Remote Access**.

      • From **Launch and Activation Permission**, click **Edit Limits** and select **Local Launch**, **Remote Launch** and **Remote Activation**.

2 Using **DCOMCNFG.exe**, grant the Dell Provisioning Server user permissions needed to the **DCOM Config** Windows Management and Instrumentation (WMI) components:

   a Expand **My Computer** and expand **DCOM Config**.

   b Right-click **Windows Management and Instrumentation**, and select **Properties**.

   c On the **Security** tab, from **Launch and Activation Permission**, click **Edit** and select **Remote Launch** and **Remote Activation** permissions.

3 Launch the **WMIMGMT.msc** to set the namespace security and grant permissions. To grant the permissions:

   a In the **WMI Control** pane, right-click **WMI Control**, select **Properties**, and then select the **Security** tab.

   b Navigate to **ROOT\SMS\Site_**<*sitecode*> **Namespace**.

   c Select the **Execute Methods**, **Provide Write**, **Enable Account**, and **Remote Enable** permissions.

Alternatively, the ConfigMgr user becomes a member of the **SMS_Admin** group when created in ConfigMgr, and you can grant **Remote Enable** to the existing permissions of the group.

4 From the Dell Provisioning Server, validate user permissions of the account. To validate user permissions:

   a Use **WBEMTest** to verify that you can connect via WMI to the Site Server.

   ✎ **NOTE:** Ensure that you select **Packet privacy** in the **Authentication level** group box when connecting to the **Site_**<*sitecode*> **Namespace**.

   b After establishing the connection, run the query `"Select*from SMS_Site"`. If permissions are properly assigned, this command returns a record with the site code.

Granting Share and Folder Permissions

To grant share and folder permissions to write files to the DDR inbox:

1 From the ConfigMgr console, under **Computer Management**, grant the user permission to write to the **SMS_**<*sitecode*> **share**.

2 Using **File Explorer**, navigate to the share location **SMS_**<*sitecode*> **share**, and then to the **ddm.box** folder. Grant full control to the domain user.

3 Validate these permissions by temporarily mapping a drive from the Dell Provisioning Server using the user credentials, and then creating, writing, modifying, and deleting a new file.

Configuring Target Systems

DLCI for ConfigMgr supports only 11G systems and above. For each system in the collection, enable **Collect System Inventory on Restart (CSIOR)** in the BIOS settings.

To enable CSIOR:

1 Re-start the system.

2 During Power-on Self Test (POST), when the system prompts you to enter the iDRAC utility, press **CTRL + E**.

3 Select **System Services** from the options available and press **Enter**.

4 Select **Collect System Inventory on Restart** and press the right or down keys and set it to **Enabled**.

Software Prerequisites and Requirements

Before you install DLCI for ConfigMgr:

1 Ensure that at least 40 MB of free disk space is available on your system to install DLCI.

2 Install Microsoft System Center Configuration Manager 2007 (ConfigMgr) R2/SP2 or ConfigMgr R3. For details on how to download and install ConfigMgr, see the Microsoft TechNet site at **technet.microsoft.com**.

3 Install Dell Server Deployment Pack (DSDP) for ConfigMgr version 1.2. For details on how to install DSDP for ConfigMgr, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide* available at **support.dell.com/manuals.**

4 Install .NET version 3.5 SP1.

5 On Microsoft Windows Server 2003 systems where you have installed the provisioning server:

    a Install Windows Remote Management (WinRM).

    b Apply the hotfix from KB947870 available on the Microsoft Support website – **support.microsoft.com**.

6 Install the **regsvr32.exe** and **icacls.exe** utilities.

> 📝 **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 **– support.microsoft.com**.

7 Install the WS-Management version 1.1 package from KB936059, available on the Microsoft support site **– support.microsoft.com**.

For information on component-specific software prerequisites and requirements, see Component-Specific Pre-requisites.

Installing DLCI for ConfigMgr

The DLCI for ConfigMgr installer contains two components — Dell Lifecycle Controller Utility (DLCU) and Dell Provisioning Server (DPS). You can use one of the following options to install DLCI:

- The **Complete** option to install all the features.
- The **Custom** option to install the Dell Lifecycle Controller Utility on a Site Server or an Admin Console, and Dell Provisioning Server on any server or Admin Console.

It is recommended that you close ConfigMgr before installing, upgrading, or uninstalling the DLCI for ConfigMgr.

Component-Specific Pre-requisites

The DLCI for ConfigMgr installer verifies the following pre-requisites before installation:

During Initial Startup

- Microsoft Windows 2003 SP1 or later
- Regsrv32.exe
- Microsoft .NET version 3.5 SP1
- WinRM

For Dell Lifecycle Controller Utility (DLCU)

- Installation on primary Site Server or ConfigMgr Admin Console
- Dell Server Deployment Pack 1.2 or later
- Windows Automation Install Kit (Windows AIK)

For Dell Provisioning Server (DPS)

- Microsoft Windows Server 2003 SP2 or later
- Internet Information Services (IIS)6 or IIS7
- IIS WMI compatibility is enabled on IIS7
- IIS6 WMI Metabase compatibility is enabled on IIS7
- icacls.exe
- DPS should be present in the same domain as that of ConfigMgr and DLCU.

To install DLCI for ConfigMgr:

1 Go to **support.dell.com**→ **Drivers & Downloads**.
2 Select your product, which should ideally be a Dell PowerEdge 11g system.
3 Select your operating system.
4 In the **Category** field, select **All**.
5 Click Lifecycle Controller from the list displayed.
6 Click **Download** against the **Dell Lifecycle Controller Integration** option.

7 Download the **DLCI_1.2.0_Axx.zip** and extract the contents to a folder on your system.

8 Double-click the **Dell_Lifecycle_Controller_Integration_1.2.0.xxx.msi** package. The **Welcome** screen is displayed.

9 Click **Next**. The license agreement is displayed.

10 Accept the license agreement and click **Next**. The **Setup Type** screen appears.

11 Select one of the following options:

- **Complete** — Select to install all features.
- **Custom** — Select to install either the Dell Lifecycle Controller Utility or the Dell Provisioning Server, or both.

For more information on complete installation, see Complete Installation. For more information on custom installation, see Custom Installation.

Complete Installation

To install the DLCI for ConfigMgr on a Site Server or Admin Console:

1 From the Setup Type screen, select **Complete** option, and click **Next**.

The **Dell Provisioning Service User Credentials for ConfigMgr Access** screen is displayed.

2 Enter the ConfigMgr credentials and click **Next.**

The **Dell Lifecycle Controller Utility User Credentials for iDRAC Access** screen is displayed.

3 Enter the iDRAC credentials and click **Next**.

The **Ready to Install the Program** window is displayed.

4 Click **Install**. The Progress bar is displayed.

5 After installation, the completion message is displayed. Click **Finish**.

📝 **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.

Custom Installation

There are three custom installation options that are available:

- Custom Installation – Dell Lifecycle Controller Utility and Dell Provisioning Server.
- Custom Installation – Dell Lifecycle Controller Utility Only.
- Custom Installation – Dell Provisioning Server Only.

Custom Installation – Dell Lifecycle Controller Utility and Dell Provisioning Server

1 From the **Setup Type** screen, select Custom option, and click **Next**.

2 Select the **Custom** option and click **Next**.

3 Select **Dell Lifecycle Controller Utility** and **Dell Provisioning Server**, and click **Next**.

4 The **Custom Setup Confirmation** screen displays the components that you have selected. Click **Next**.

   The **Dell Provisioning Service User Credentials for ConfigMgr Access** screen is displayed.

5 Perform one of the following actions: Enter

   a On a Site Server, enter an account(with required privileges) for use by Dell Provisioning service to access ConfigMgr, on all newly discovered systems with iDRAC, and click **Next**.

   b On a ConfigMgr Admin Console with IIS, enter the primary site server name, user name, and password that is provisioned on all newly discovered systems with iDRAC, and click **Next**.

6 In the **Dell Lifecycle Controller Utility Users Credentials for iDRAC Access** screen, enter the user name and password for out-of-band controller management. This account is provisioned on the iDRAC.

   📝 **NOTE:** This screen appears only if you install DLCI for ConfigMgr on a Site Server.

7 Click **Next**. The **Ready to Install the Program** screen is displayed.

8 Click **Install**. The Progress bar is displayed. After installation, the completion message is displayed.

9 Click **Finish**.

Custom Installation – Dell Lifecycle Controller Utility Only

For information on component-specific requirements, see Component-Specific Pre-requisites.

> 📝 **NOTE:** Ensure that you install the Dell Lifecycle Controller Utility on the Site Server before using it on the Admin Console.

To install only the Dell Lifecycle Controller Utility:

1 From the **Setup Type** screen, select **Custom** option, and click **Next**.

2 In the **Custom Setup** screen, select **Dell Lifecycle Controller Utility,** deselect **Dell Provisioning Server,** and click **Next**.

3 The **Custom Setup Confirmation** screen displays the component that you selected. Click **Next**.

4 In the **Dell Lifecycle Controller Utility User Credentials for iDRAC Access** screen, enter the user name and password for out-of-band controller management. This account is provisioned on the iDRAC.

5 Click **Next**. The **Ready to Install the Program** message is displayed.

> 📝 **NOTE:** This screen appears only if you are installing DLCI for ConfigMgr on a Site Server.

6 Click **Install**. The Progress bar is displayed. After installation, the completion message is displayed.

7 Click **Finish**.

Custom Installation – Dell Provisioning Server Only

For information on component-specific requirements, see Component-Specific Pre-requisites.

To install only the Dell Provisioning Server:

1 From the **Setup Type** screen, select **Custom** option, and click **Next**.

2 In the **Custom Setup** screen, select **Dell Provisioning Server,** deselect **Dell Lifecycle Controller Utility** and click **Next**.

3 The **Custom Setup Confirmation** screen displays the component that you selected. Click **Next**.

4 In the **Dell Provisioning Service User Credentials for ConfigMgr Access** screen, enter the primary site server name or IP of the server, user name and password, and click **Next**. The **Ready to Install the Program** screen is displayed.

5 Click **Install**. The Progress bar is displayed. After installation, the completion message is displayed.

6 Click **Finish**.

Installing on a UAC Enabled System

The minimum permissions required to install/uninstall the Dell Lifecycle Controller Utility feature on a Site Server are as follows:

- You should be a local administrator or a domain admin on the server.
- On a Microsoft Windows 2008 operating system with UAC enabled, launch the MSI file from a command prompt using **Run As Administrator**.
- The minimum permissions on ConfigMgr are:
  - Site = Read
  - Package = Read, Delete, Create

To install DLCI for ConfigMgr on a UAC- enabled system:

1 Right-click on **Command Prompt** and select **Run As Administrator**.

2 Run the **Dell_Lifecycle_Controller_Integration_1.2.0.xxx.msi** file from the folder where you have extracted it.

3 Follow the Installation wizard to install DLCI on the system.

Upgrading DLCI for ConfigMgr from a Previous Version

![note icon] **NOTE:** DLCI for ConfigMgr supports upgrading from version 1.1 to version 1.2 only. To upgrade from version 1.0 to 1.2, you must first uninstall version 1.0 and then install version 1.2. When you uninstall version 1.0, the previous settings are not retained and you must re-discover the target systems after you install version 1.2.

Pre-requisites for Upgrading

Before you upgrade to DLCI for ConfigMgr version 1.2, you must upgrade the firmware on the target systems in the following sequence:

1 Upgrade the BIOS of the target systems to the latest version.

2 Upgrade Lifecycle Controller on the target systems to version 1.4 or later. For more information, see the *Dell Lifecycle Controller USC/USC-LCE Version 1.4 User's Guide* available on the **support.dell.com/manuals**.

3 Upgrade iDRAC on the target systems to version 1.5 or later for monolithic systems and version 3.02 or later for modular systems. For more information, see the *Integrated Dell Remote Access Controller 6 (iDRAC6) Version 1.5 User Guide*, and the *Integrated Dell Remote Access Controller 6 (iDRAC6) Enterprise for Blade Servers Version 3.0 User Guide* available at **support.dell.com/manuals**.

Upgrading to DLCI for ConfigMgr Version 1.2

When you upgrade to DLCI for ConfigMgr version 1.2, the installer prompts you to upgrade the firmware on the target systems to the latest versions before you proceed with the upgrade. You may continue with the upgrade process and update the firmware on the target systems later.

If you update the firmware of the discovered target systems after completing the upgrade process, you must update the firmware information on the target systems in the ConfigMgr database. For more information, see Using Import.exe to Update Target System Information.

To upgrade DLCI for ConfigMgr from version 1.1 to version 1.2:

1 Run the **Dell_Lifecycle_Controller_Integration_1.2.0.xxx.msi** file from the folder where you have extracted it.

2 A dialog box displays the message that another version of DLCI for ConfigMgr is found. Click **Yes** to continue. The **Welcome** screen is displayed.

3 Click **Next**. The license agreement is displayed.

4 Accept the license agreement and click **Next**. The **Setup Type** screen appears.

5 Select one of the following options:

• **Complete** — Select to install all features. For more information, see Complete Installation.

• **Custom** — Select to install either the Dell Lifecycle Controller Utility or the Dell Provisioning Server, or both. For more information, see Custom Installation.

> **NOTE:** You cannot abort the upgrade process by closing the installation wizard. If you close the installation wizard, the following message is displayed: **Are you sure you want to cancel Dell Lifecycle Controller Integration v1.2 installation?** The upgrade process continues irrespective of the selection you make on the message box.

Using the Modify Option in the Installer

The **Modify** option in the DLCI for ConfigMgr installer, modifies the program features that are installed. This option enables you to perform the following actions:

• Install a feature that you did not install earlier.

• Remove a feature that you have installed earlier.

To install a feature that you did not install earlier:

1 Run the **Dell_Lifecycle_Controller_Integration_1.2.0.xxx.msi** file from the folder where you have extracted it.

2 Click **Next**. The installer displays three options.

3 Select the **Modify** option. The **Custom** screen is displayed.

4 In the **Custom** screen, select the feature that you did not install earlier.

5 Click **Install** to begin installing the feature.

When the installation process completes, click **Finish** to exit the installer.

To remove a feature that you had installed earlier:

1 Repeat steps 1– 3 mentioned in the previous procedure.

2 In the **Custom** screen, select the feature that you want to remove.

3 Click the feature and select the option **This feature will not be available** and click **Next**.

4 Click **Install**. The installer removes the feature.

Using the Repair Option in the Installer

To repair the installation of DLCI for ConfigMgr:

1 Double-click the **.msi** package that you used to install DLCI for ConfigMgr initially. The **Welcome** screen is displayed.

2 In the **Program Maintenance** screen, select **Repair** and click **Next**. The **Ready to Repair the Program** screen is displayed.

3 Click **Install**. A progress screen displays the progress of the installation. Once the installation is complete, the **InstallShield Wizard Completed** window is displayed.

4 Click **Finish**.

Uninstalling DLCI for ConfigMgr

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 1.2** and click **Remove**.

3   Follow the instructions to complete the uninstallation.

Or, double-click the **.msi**, select **Remove**, and follow the instructions on the screen.

For Microsoft Windows Server 2008

1   Click **Start**→ **Control Panel**→ **Programs and Features**.

2   Select **Dell Lifecycle Controller Utility 1.2** and click **Uninstall**.

3   Follow the instructions to complete the uninstallation.

Or, double-click the **.msi**, select **Remove**, and follow the instructions on the screen.

3

Using Dell Lifecycle Controller Integration (DLCI)

This chapter discusses the various operations that you can perform after you install DLCI on Microsoft System Center Configuration Manager (ConfigMgr).

Before you begin using DLCI for ConfigMgr, ensure that the target system is auto-discovered and present in the **All Dell Lifecycle Controller Servers** collection on the ConfigMgr console.

Auto-Discovery and Handshake

The auto-discovery and handshake feature enables the iDRAC on target systems to locate the provisioning service and establish communication with the Site Server. The Dell Provisioning service provisions a management account and updates ConfigMgr with the new system. The Dell Lifecycle Controller Utility for ConfigMgr uses the provisioned account to communicate with the iDRAC of target systems to invoke the enabled features.

After DLCI for ConfigMgr discovers a system with iDRAC, it creates the **All Dell Lifecycle Controller Servers** collection under **Computer Management**→ **Collections** in the ConfigMgr console. There are two sub-collections within the collection:

- **Managed Dell Lifecycle Controller (OS Deployed) —** displays the systems on which you have deployed the operating system.
- **Managed Dell Lifecycle Controller (OS Unknown) —** displays the systems on which the operating system is not deployed.

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

Operations on Managed Dell Lifecycle Controllers

DLCI for ConfigMgr enables you to perform the following operations on all Dell systems under the **All Dell Lifecycle Controller Servers** collection:

- Apply drivers on the task sequence. For more information, see Applying Drivers on the Task Sequence".

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

- Create a task sequence media. For more information, see Creating a Task Sequence Media (Bootable ISO).

- Use the System Viewer Utility on specific systems in a collection. For more information, see System Viewer Utility.

- Use the Config Utility on a collection of Dell systems. For more information, see Config Utility.

- Launch the iDRAC console by right-clicking on any system discovered under **All Dell Lifecycle Controller Servers** on the ConfigMgr console, or any system on the Task Viewer. For more information, see Launching the iDRAC Console.

- Use the Task Viewer to view the status of tasks handled by DLCI for ConfigMgr. For more information, see Task Viewer.

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. The drivers in the ConfigMgr repository can be used as a fall back set.

Applying Drivers From Lifecycle Controller

To apply drivers from the Lifecycle Controller:

1 Create a new task sequence if there is no existing task sequence, or edit the task sequence to which drivers are exposed from the Lifecycle Controller.

   To create a task sequence, see the *Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide* at **support.dell.com/manuals**.

   To edit the task sequence:

   a Right-click on the task sequence and select **Edit** to open the **Task Sequence Editor**.

   b Click **Add**→ **Dell Deployment**→ **Apply Drivers from Lifecycle Controller** and click **Next**.

   A message is displayed that lists objects referenced in the task sequence that cannot be found.

   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 Viewing the Condition for a Fallback Step.

   c Click **OK** to close this message.

2 Select **Apply Operating System Images**.

3 Under the **Apply operating system from a captured image**, reselect and verify the image package and image.

4 Uncheck the **Use an unattended or sysprep answer file for a custom installation** checkbox.

5 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 in to the system if you do not map 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.

6 Select **Apply Drivers from Dell Lifecycle Controller** and select an operating system from the drop-down list.

7 Enter a user name and password with administrator credentials to access the ConfigMgr console.

8 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 device 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).

9 Click **OK** to close the **Task Sequence Editor**.

10 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* at **support.dell.com/manuals**.

> **NOTE:** It is required that you set the task sequence advertisement to mandatory.

> **NOTE:** If multiple advertisements to the same collection are made mandatory, the choice of advertisement to run is up to the ConfigMgr.

11 Create a Lifecycle Controller Boot Media. For more information, see Creating a Lifecycle Controller Boot Media.

Applying Drivers From the ConfigMgr Repository

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. For more information, see Adding a Set Boot Order Step.

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* at **support.dell.com/manuals**.

Adding a Set Boot Order Step

To add a **Set Boot Order** step manually:

1 Right-click on the task sequence and select **Add**→ **Dell Deployment**→ **PowerEdge Server Configuration**.

2 Select **Boot Order** from the **Configuration Action Type** drop-down list.

3 Select **Set** from the **Action** drop-down list.

4 A new drop-down list for **Configuration file / Command line parameters** appears. Select **— nextboot=virtualcd.slot.1**.

5 Click **Apply**. The name of the step changes to **Set Boot Order**.

6 Select and drag the **Set Boot Order** step to just before the **Reboot to PXE / USB** step.

7 Repeat this process to create a **Set Boot Order** step before each **Reboot to PXE / USB** step.

8 Click **OK** to close the task sequence.

Viewing the Condition for a Fallback Step

The condition **DriversNotAppliedFromLC** is automatically added by DLCI for ConfigMgr while creating a task sequence. This condition is used as a fallback step if applying drivers from Lifecycle Controller fails.

NOTE: It is recommended not to disable or delete this condition.

To view the condition for a fallback step:

1 On the ConfigMgr console, select **Computer Management**→ **Operating System Deployment**→ **Task Sequence**.

2 Right-click on the task sequence and click **Edit**. The **Task Sequence Editor** appears.

3 Select **Apply Driver Package** or **Auto Apply Drivers**.

4 Click the **Options** tab. You can view the **DriversNotAppliedFromLC** condition.

Creating a Task Sequence Media (Bootable ISO)

DLCI for ConfigMgr does not depend on a Pre-execution Environment (PXE) to boot a collection of systems with an iDRAC to the task sequence ISO available on a Common Internet File System (CIFS) share. You must provide credentials to access this ISO on the CIFS share.

To create a task sequence ISO:

1 On the ConfigMgr console, under **Computer Management**→ **Operating System Deployment**, right-click **Task Sequences** and select **Create Task Sequence Media**.

    ![NOTE icon] **NOTE:** Ensure that you manage and update the boot image across all distribution points before starting this wizard.

2 From the **Task Sequence Media Wizard**, 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 Uncheck the **Protect Media with a Password** checkbox and click **Next**.

5 Browse and select **Dell PowerEdge Server Deployment Boot Image**.

6 Select the distribution point from the drop-down menu, and select the **Show distribution points from child sites** checkbox.

7 Click **Next**. The **Summary** screen appears with the task sequence media information.

8 Click **Next**. The Progress bar is displayed.

9 On completion, click **Close** and eject the media.

System Viewer Utility

You must change the iDRAC credentials of the target system before you launch the System Viewer utility to perform the various tasks.

To change the iDRAC credentials and launch the **System Viewer** utility:

1 Under a collection, right-click on a Dell *xx1x* system and select **Dell Lifecycle Controller→ Launch System Viewer**.

2 The **iDRAC Authentication Information** screen displays the default credentials known to the ConfigMgr. Uncheck **Use Credentials Known to ConfigMgr (Default)** and enter the new credentials. Ensure that you enter the valid credentials of iDRAC.

3 Click **OK** to launch the **System Viewer** utility.

You can use the System Viewer utility to:

- View and edit the hardware configuration. For more information, see Viewing and Editing Hardware Configuration.

- View and edit the RAID configuration. For more information, see Viewing and Configuring RAID.

- View the current firmware inventory, compare it against a baseline, and update the firmware. For more information, see Comparing and Updating Firmware Inventory.

- Compare the hardware configuration profiles. For more information, see Comparing Hardware Configuration Profile.

- Export the LC logs. For more information, see Exporting Lifecycle Controller Logs.

- View the hardware inventory for the system. For more information, see Viewing the Hardware Inventory for the System.

NOTE: You can only edit the hardware configuration and RAID configuration profiles directly, and not edit the system configurations directly.

Viewing and Editing Hardware Configuration

This feature enables you to view and modify the current hardware configuration of a system or a collection of systems and save them as a profile.

By default, the **System Viewer** utility displays the **Hardware Configuration** screen. Select **Create New Profile** to create a new profile, or **Edit an Existing Profile** to edit an existing profile. The **BIOS Attributes** tab displays the BIOS attributes and current settings of the system. The **Boot Sequence** tab displays the system's boot sequence information.

> ![NOTE icon] **NOTE:** Applying Boot sequence across target systems works only if the target systems have the same, equal, or less number of boot devices as it appears on the profile.

Creating a New Profile

To create a new profile:

1 In the **Hardware Configuration** screen, select **Create a New Profile** and click **Next**.

2 The **BIOS Attributes** tab displays the BIOS attributes and current settings of the system. The **Boot Sequence** tab displays the boot sequence information of the system.

3 In the **BIOS Attributes** tab, select the attributes to be included in your profile by selecting the checkbox against each attribute. If you check **Select All**, all the attributes in the list are selected.

> ![NOTE icon] **NOTE:** You can leave the BIOS attributes in a profile unchecked. If you do not select any of the BIOS attributes in a profile, then only the boot sequence information is considered when you import the profile.

4 Click **Save As Profile** to save the profile as an XML file.

Editing an Existing Profile

To edit an existing profile:

1 In the **Hardware Configuration** screen, select **Edit an Existing Profile**, and click **Browse** to browse for the profile.

2 Select the profile that you want to edit and click **Next**.

3 The **BIOS Attributes** tab displays the BIOS attributes of the selected profile. Select the attributes that you want to edit, and click **Edit Attribute**.

4 The **Custom Attribute Editor** displays all the attributes in the drop-down list against the **Attribute Name** field. Select the attribute that you want to edit, and make the necessary changes.

5 Click **OK** to save the changes and exit the **Custom Attribute Editor**.

> 📝 **NOTE:** Click Reset to reset any changes made.

Adding a New Attribute

To add a new attribute:

1 In the **Hardware Configuration** screen, select **Create a New Profile** or **Edit an Existing Profile**, and click **Browse** to browse for the profile.

2 In the **BIOS Attributes** tab, click **Add Attribute**.

3 In the **Custom Attribute Editor**, enter a name for your attribute in the **Attribute Name** field. A value in this field is mandatory.

4 Select the type of attribute that you want to add from the **Attribute Type** drop-down list. Attributes are of three types:

- **Enum Attribute** — Displays a combo box with multiple values. At least one value should be selected.

- **Text Attribute** — Displays a field with text values. This field can be empty.

- **Numeric Attribute** — Displays a field with integer values. This field cannot be empty.

5 Enter the values of the attributes based on the type of attribute that you select. Let us assume that you have selected the attribute type **Enum Attribute**.

   a To add a value, enter the value of the enumeration attribute in the **Possible Value** field, and click **Add**.

   b To update the value of the attribute, select the value that you want to update, make the necessary changes in the **Possible Values** field, and click **Update**.

   c To delete a value, select the value and click **Delete**. A dialog box appears asking for confirmation. Click **Yes** to delete the value.

6 Click **OK** to close the **Custom Attribute Editor** and go back to the **BIOS Attributes** tab.

Editing an Existing BIOS Attribute.

To edit an existing BIOS attribute, see step 2 to step 5 of Editing an Existing Profile.

Changing the BIOS Boot Sequence and Hard Disk Drive Sequence

To change the BIOS boot sequence and hard disk drive sequence:

1 In the **Hardware Configuration** screen, select **Create a New Profile** or **Edit an Existing Profile**, and click **Browse** to browse for the profile.

2 Click on the **Boot Sequence** tab. The current BIOS boot sequence and hard disk drive sequence appears.

3 Use the **Move Up** and **Move Down** buttons to change the BIOS boot sequence or the hard disk drive sequence.

4 Click **OK** to save the changes.

   📝 **NOTE:** Click Reset to reset any changes made.

Viewing and Configuring RAID

This feature enables you to view and configure RAID on the server.

To configure RAID:

1 On the **System Viewer** utility, click on **RAID Configuration**. The RAID Configuration screen displays the RAID information of your system, such as number of virtual disks, their controller IDs, RAID levels, and physical disks.

2 Click **Create RAID Profile** to create a new RAID configuration profile using **Array Builder**. For more information on using the Array Builder, see Using the Array Builder.

Comparing and Updating Firmware Inventory

This feature enables you to view, compare, and update current firmware versions for specific systems. It also enables you to compare the BIOS and firmware versions of your system against another system, or against a PDK catalog that you downloaded from the Dell Support site.

To compare and update the firmware inventory of a system:

1 On the **System Viewer** utility, click **Firmware Inventory, Compare, and Update**. The system components and their current firmware versions are displayed in the right-hand pane.

2 Click **Export Profile** to export the software inventory information in XML format.

3 Click **Next** and select one of the following options to specify the baseline against which you want to compare the firmware inventory of the collection of servers:

- **Dell PDK Catalog** — to specify a Dell PDK catalog that you can use to compare the firmware inventory. To specify a PDK catalog:

  - Click **Browse** to navigate to the file location where you have saved the catalog. Ensure that the catalog resides on a CIFS share that is accessible to the Dell Lifecycle Controller of the system.

  - Specify the **User Name** and **Password** to the CIFS share where your catalog resides if you want to update the firmware inventory from the catalog. You do not need to specify the user name and password if you are viewing or comparing against the catalog.

  ![NOTE icon] **NOTE:** To update the firmware inventory, you must point to a local repository.

- **Firmware Inventory Profile** — to specify an existing profile that you have saved and use it to compare and update the firmware inventory for the system.

4 Click **Next**. The screen displays the following baseline details against which you want to compare the firmware of your collection:

- **Component** — displays the component names.

- **Version** — displays the firmware versions of the components.

- **Baseline Version** — displays the baseline versions of the components.

- **Status** — displays the status of the firmware and indicates if the firmware of your system is compliant, or needs an update.

5 You can filter the information based on any of the baseline details and click **Update** to update your system with the latest firmware.

Comparing Hardware Configuration Profile

This feature enables you to compare and report the hardware configuration profiles that are applied on a system.

To compare the hardware configuration profile:

1 On the **System Viewer** utility, click **Compare Hardware Configuration Profile**.

2 Under **Select Profile to Compare**, click **Browse** and select any previously saved hardware configuration profile to compare. The **Compare Hardware Configuration Profile** screen displays the following fields:

- **Attribute Name** — Lists the BIOS attributes.

- **System Value** — Lists the current value of the BIOS attribute. If there are no values, the value displayed is NA.

- **Profile Value** — Lists the value of the attributes in the profile. If there are no values, the value displayed is NA.

Exporting Lifecycle Controller Logs

This feature enables you to export the LC logs to an XML file and save the file in a Unified Naming Convention (UNC) or Common Internet File System (CIFS) share. The LC logs contains details such as history of firmware upgrades, changed events for updates and configuration, and user comments.

To export the LC logs:

1 On the **System Viewer** utility, select **Export Lifecycle Controller Logs**. The **Export Lifecycle Controller Logs** screen displays the following fields:

- **Path** — Specify the UNC or CIFS share where you want to save the file in the following format: *<IPAddress>**<share>*\filename.

- **User Name** — Specify the correct domain and user name required by Lifecycle Controller to access the UNC or CIFS share.

- **Password** — Specify the correct password and re-type the password to confirm it.

2 Click **Export** to begin exporting the file to the specified location.

Viewing the Hardware Inventory for the System

You can use the **System Viewer** utility to view the hardware inventory details of the selected system.

To view the hardware inventory for the system:

On the **System Viewer** utility select **Hardware Inventory**.

The right-hand pane of the **System Viewer** utility displays the following details:

- **Hardware Component** — displays the name of the hardware component.
- **Properties** — displays the attributes of the hardware component.
- **Value** — displays the value against each attribute of the hardware component.

Config Utility

You can use the Config Utility from the ConfigMgr console to:

- Create a new Lifecycle Controller (LC) boot media to deploy operating systems remotely. For more information, see Creating a Lifecycle Controller Boot Media.
- Deploy the OS on the target systems in the collection. For more information, see Deploying the Operating System.
- View the firmware inventory, compare it against a baseline, and update the firmware using a repository for all the systems in the collection. For more information, Comparing and Updating Firmware Inventory for Systems in a Collection.

  NOTE: You can create a repository using the Dell Repository Manager (RM). For more information on RM, see the *Dell Repository Manager User's Guide* available at **support.dell.com/manuals**.

- View the current hardware inventory for all the systems in the collection. For more information, see Viewing the Hardware Inventory.

- Set LC credentials for the current session and verify communication and user accounts with Dell LCs. For more information, Verifying Communication With Lifecycle Controller.

- Modify and set the LC credentials on the targeted collection of Dell systems Modifying Credentials on Lifecycle Controllers.

NOTE: DLCI performs all of the above actions for 20 systems at a time. If you have 100 systems in a collection, the first 20 systems are updated first, then the next 20 and so on and so forth.

Creating a Lifecycle Controller Boot Media

Create a Lifecycle Controller boot media to deploy operating systems remotely.

To create a Lifecycle Controller boot media:

1. From 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. In the **Dell Lifecycle Controller Configuration Utility** window, the left-hand pane lists the following tasks:

   - Overview

   - Create new Lifecycle Controller Boot Media

   - Deploy Operating System

   - Firmware Inventory, Compare, and Update

   - Hardware Inventory

   - Session Credentials, Verify Communication

   - Modify Credentials on Lifecycle Controllers

3. By default, **Overview** is selected. Select **Create new Lifecycle Controller Boot Media**.

4. Click **Browse** and select the bootable ISO that you created. For more information, see Creating a Task Sequence Media (Bootable ISO).

5 Specify the folder/path to save the Dell Lifecycle Controller boot media.

> ✐ **NOTE:** It is recommended to save the boot media to the local drive, and if required copy it to a network location.

6 Click **Create**.

Setting a Default Share Location for the Lifecycle Controller Boot Media

To set a default share location for the Lifecycle Controller boot media:

1 From the ConfigMgr console, select **System Center Configuration Manager**→ **Site Database**→ **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 appears.

3 Click the **Dell Lifecycle Controller** tab.

4 Under **Default Share Location for Custom Lifecycle Controller Boot Media**, 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**.

Deploying the Operating System

Remote operating system deployment is the ability to execute an unattended installation of a target operating system on any auto-discovered system using iDRAC.

This feature:

- Updates the firmware from a Dell repository.
- Makes changes to the hardware configuration.
- Makes changes to the RAID configuration.
- Enables you to select the advertisement and the operating system to be deployed.
- Enables you to select the bootable media to deploy the operating system.

The pre-operating system image is mounted as a virtual media over the network and the drivers for the target host operating system are applied 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. You can also download an ISO image to the vFlash SD card on the target system and boot the system to the downloaded ISO image.

NOTE: vFlash features can only be used on rack and tower servers with iDRAC version 1.3 firmware or newer, or on blade servers with iDRAC version 2.2 or newer.

For more information on remote operating system deployment and staging and booting to operating system image on vFlash, see the *Dell Lifecycle Controller User Guide* at **support.dell.com/manuals**.

To deploy the operating system to a collection:

1 From 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 Dell Lifecycle Controller Configuration Utility, select **Deploy Operating System**. This task consists of five steps which you must complete to configure the collection of servers and reboot to WinPE. The steps are as follows:

   a Select **Update Firmware from a Dell Repository** if you want to update the Firmware on the collection. For more information, see Updating Firmware During OS Deployment.

   b Select **Configure Hardware** if you want to make changes to the hardware settings. For more information, see Configuring Hardware During OS Deployment.

   c Select **Configure RAID** to configure RAID on the servers. For more information, see Configuring RAID.

   d Select the advertisement to advertise the task sequence to the collection, and the operating system to be deployed on the collection.

e Under **Select Lifecycle Controller bootable media**, select one of the following options:

- **Boot to Network ISO** — Reboots to the ISO specified by you.

- **Stage ISO to vFlash and Reboot** — Downloads the ISO to vFlash and reboots.

- **Reboot to vFlash (ISO Must be present on vFlash)** — Reboots to vFlash. Ensure that the ISO is present in the vFlash.

- Select the **Use Network ISO as Fallback** checkbox if you want the network ISO to be a fallback step.

- 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. For more information, see Setting a Default Share Location for the Lifecycle Controller Boot Media.

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

- Click **Reboot Targeted Collection**. This sends the reboot jobs for each system in the collection to the Task Viewer. To view the current tasks in the queue and their status, open the Task Viewer by clicking the Dell icon on the task bar. For more information on Task Viewer, see Task Viewer.

After 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.

📝 **NOTE:** If you want to update a system after you deploy the operating system, and the system services are still unavailable, then you can reset the iDRAC using the iDRAC6 web-based interface. For more information, see the *Dell Lifecycle Controller Remote Services User's Guide* available at **support.dell.com/manuals.**

After 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**.

> **NOTE:** If you change the hostname of the target systems after you deploy the operating system, the system continues to appear under the **Managed Dell Lifecycle Controller (OS Deployed)** collection on the ConfigMgr console. You do not need to re-discover the system when you change the hostname.

Updating Firmware During OS Deployment

To update the firmware:

1 Click **Browse** and navigate to the location where the repository catalog file resides. The catalog files normally resides in a shared folder accessible via CIFS network share.

2 Specify the username and password to the shared folder for Dell Lifecycle Controller to access the repository and update the firmware.

3 Click **Next** to proceed to configure the hardware.

Configuring Hardware During OS Deployment

To configure the hardware:

1 Click **Browse** and select the hardware profile that you created using the **System Viewer**. This profile is applied during the operating system deployment process. For more information on creating hardware profiles, see Creating a New Profile.

2 Select **Continue on Error** if you want to proceed to the next step even if this step fails. This option is selected by default. If you uncheck this option, the hardware configuration process is aborted when it encounters an error.

3 Click **Next** to proceed to configure RAID.

Configuring RAID

To configure RAID:

1   Click **Browse** and select the RAID profile that you created using the **System Viewer**. This profile is applied during the operating system deployment process. For more information on creating RAID profiles, see Using the Array Builder.

2   Click **Next** to select the advertisement.

> ✎ **NOTE:** When you configure RAID settings on a system, the original controller settings of the system are reset and the virtual disks (VDs) that are configured, or any other configuration are cleared.

Comparing and Updating Firmware Inventory for Systems in a Collection

This feature enables you to retrieve, compare, and update firmware inventory on the Dell systems with Lifecycle Controllers in a collection.

> ✎ **NOTE:** To compare and update firmware remotely, you must ensure that the Dell systems have iDRAC6 firmware version 1.5 or higher. For more information on upgrading to firmware version 1.5, see the *Integrated Dell Remote Access Controller 6 (iDRAC6) Version 1.5 User Guide* available at **support.dell.com/manuals**.

To compare and update firmware inventory:

1   From the ConfigMgr console, under **System Center Configuration Manager→ Site Database→ 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 **Firmware Inventory, Compare, and Update**.

    This retrieves the firmware information from the systems in the collection.

3   During the retrieval process, click **Pause** to pause the retrieval and **Resume** to continue.

4   The **Firmware Inventory, Compare, and Update** screen displays the following information:

    •   **Name** — displays the names of the systems in the collection.

    •   **Model** — displays the system model information.

    •   **Component** — displays the components available on the servers.

- **Version** — displays the firmware versions of the components.
- **Date Applied** — displays the dates on which the updates were applied.

Click on the down arrow next to each of the above fields to sort the list.

5 Click **Copy to Clipboard** to copy the information to clipboard, or click **Export to CSV** to export the information in comma separated values format.

6 Click **Next** and select one of the following options to specify the baseline against which you want to compare the firmware inventory of the collection of servers:

- **Dell PDK Catalog** — to specify a Dell PDK catalog that you can use to compare the firmware inventory. To specify a PDK catalog:
  - Click **Browse** to navigate to the file location where you have saved the catalog. Ensure that the catalog resides on a CIFS share that is accessible to the Dell Lifecycle Controllers.
  - Specify the **User Name** and **Password** to the CIFS share where your catalog resides if you want to update the firmware inventory from the catalog. You do not need to specify the user name and password if you are viewing or comparing against the catalog.

  NOTE: To update the firmware inventory, you must point to a local repository.

- **Firmware Inventory Profile** — to specify an existing profile that you have saved and use it to compare and update the firmware inventory for the collection.

7 Click **Next**. The screen displays the following baseline details against which you want to compare the firmware of your collection:

- **Name** — displays the names of those systems in the collection.
- **Model** — displays the server model information.
- **Component** — displays the components available on the servers.
- **Version** — displays the firmware versions of the components.
- **Baseline Version** — displays the baseline versions of the components.
- **Status** — displays the status of the firmware and indicates if the firmware of your collection is compliant, or needs an update.

8 You can filter the information based on any of the baseline details and click **Update** to update your collection with the latest firmware.

When you click **Update**, a message indicating that the task is submitted is displayed. Click **OK** . The Task Viewer displays the status of the task. When the task completes, all the systems in the collection are updated with the latest firmware.

Viewing the Hardware Inventory

You can use the Config utility to view the hardware inventory details of all the systems in the collection.

To view the hardware inventory:

1 On the ConfigMgr console, right-click on **System Center Configuration Manager**→ **Site Database**→ **Computer Management**→ **Collections**→ **All Dell Lifecycle Controller Servers** and select **Dell Lifecycle Controller**→ **Launch Config Utility**.

2 On the **Dell Lifecycle Controller Configuration Utility**, select **Hardware Inventory**.

The following details are displayed on the right pane of the **Dell Lifecycle Controller Configuration Utility:**

- **Name**: displays the name of the Dell system, which is part of the collection.
- **Hardware**: displays the hardware components of the system. For example, Memory, CPU, iDRAC Card, etc.
- **FQDD**: displays the fully qualified device description of the hardware component.
- **Description**: displays the properties of the hardware component.

✎ **NOTE:** When the Config utility is fetching the hardware inventory details of the collection, and there is a disruption in the network connectivity, close the utility and launch it again when the network connectivity is restored. The hardware inventory details do not get refreshed automatically.

Verifying Communication With Lifecycle Controller

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

1   On the ConfigMgr console, right-click on **System Center Configuration Manager**→ **Site Database**→ **Computer Management**→ **Collections**→ **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 **Session Credentials, Verify Communication**.

3   Click **Run Check** to verify communication with the iDRACs of the discovered systems. A list of iDRACs discovered on the network appears along with their communication status.

4   Once the check is complete, click **Export to CSV** to export the results in CSV format. Provide the location on your local drive.

     or

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

Modifying Credentials on Lifecycle Controllers

On systems with iDRAC, use the following steps to verify and/or modify the **WS-MAN** credentials configured with the Dell Lifecycle Controller Integration for ConfigMgr:

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

To modify the credentials on Lifecycle Controllers:

1   On the ConfigMgr console, right-click on **System Center Configuration Manager**→ **Site Database**→ **Computer Management**→ **Collections**→ **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 list of iDRACs that are discovered on the network appears along with their communication status.

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

5 After the update is complete, click **Export to CSV** to export the results in CSV format. Provide the location on your local drive.

or

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

Modifying Credentials of Lifecycle Controllers on the ConfigMgr Database

To modify the credentials on the ConfigMgr database:

1 On the ConfigMgr console, select **System Center Configuration Manager**→ **Site Database**→ **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 is displayed.

3 Click the **Dell Lifecycle Controller** tab.

4 Under **Local User Account on Lifecycle Controllers**, click **Modify**.

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 user name and password credentials in the ConfigMgr Database.

Launching the iDRAC Console

DLCI for ConfigMgr enables you to launch the Integrated Dell Remote Access Controller (iDRAC) console for any of the Dell systems from the ConfigMgr console, to view or modify the iDRAC configuration of the selected system.

After you install DLCI for ConfigMgr, you can see the **Dell Lifecycle Controller** → **Launch iDRAC Console** menu option when you right click on any system in the collection. You can also find the **Launch iDRAC Console** option when you select a system in the Task Viewer and right click on it.

To launch the iDRAC console for a system under the collection:

1 Select any system under **Collections** → **All Dell Lifecycle Controller Servers**.

2 Right click on the system and select the **Dell Lifecycle Controller** → **Launch iDRAC Console** menu option. The iDRAC console of the system is launched on your default browser.

3 Provide the credentials to login to the iDRAC console and view or edit the details of the iDRAC configuration of the system.

Launching the iDRAC Console from the Task Viewer

To launch the iDRAC console from the Task Viewer:

1 Launch the Task Viewer by clicking the Dell icon on the task bar. This icon is displayed when you are deploying the operating system on the Dell systems, or you are applying firmware updates on the systems, or performing both the actions.

   For more information on deploying the operating system, see Deploying the Operating System. For more information on applying firmware updates, see Comparing and Updating Firmware Inventory for Systems in a Collection, or Comparing and Updating Firmware Inventory.

2 Select any system on the Task Viewer, right click and select the **Launch iDRAC Console** menu option.

3 Provide the credentials to login to the iDRAC console and view or edit the details of the iDRAC configuration of the system.

Task Viewer

The Task Viewer is an asynchronous component that hides in the task bar and displays the status of tasks handled by the DLCI for ConfigMgr. All long-running tasks such as operating system deployment, or applying firmware updates to systems are displayed in the Task Viewer. It maintains a queue of tasks and displays upto twenty tasks at one time.

The task viewer displays the following details:

- **Name:** displays the name or the service tag of the system on which the task is running.
- **Task:** displays which task is running on the system.
- **Status:** displays the status of the task running on the system.
- **Start Date/Time:** displays the date and time when the task started.
- **Time Elapsed:** displays the time taken by the task after it started.

The Task Viewer also displays a status summary of the total number of tasks that are running at the bottom right hand corner.

When you start running a set of tasks on a single system or a collection of systems, the Dell icon appears on the task bar at the bottom right hand corner of your screen. Click the Dell icon to launch the Task Viewer and perform the various actions.

Table 3-1 lists the actions that you can perform in the Task Viewer.

Table 3-1. Task Viewer Actions

Button	Action
Close	Click this to close the Task Viewer. When you close the Task Viewer, it cancels all the tasks that are running. Therefore, it is recommended not to close the Task Viewer when you have tasks that are still running.
Clear Completed	Click this to clear all the completed or failed tasks from the grid.
Export Queue	Click this to export the current state of the tasks in the Task Viewer to a .csv file. You can use this file to view the summary of the total number of DLCI tasks that are running.
View Log	Click this to view the log file that contains the details of the tasks that are running.
Send to Taskbar	Click this to minimize the Task Viewer and send it to the task bar.

Additional Tasks You Can Perform with DLCI

Configuring Security

To configure security for DLCI, you must:

- Validate a Dell factory-issued Client Certificate on IDRAC. For more information, see Validating a Dell Factory-Issued Client Certificate on the iDRAC for Auto-Discovery.
- Pre-authorize systems for auto-discovery. For more information, see Pre-authorizing Systems for Auto-Discovery.
- Change administrative credentials. For more information, see Changing the Administrative Credentials Used by DLCI for ConfigMgr.

You can also use the GUI to configure the security. For more information, see Using the Graphical User Interface.

Validating 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 by running the following command:

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

📝 **NOTE:** By default, the **CheckCertificate** value is set to **true**. Ensure that you set the **CheckCertificate** value to **false** if you are not using unique certificates.

Pre-authorizing 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 by running the following command:

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

Running the command creates 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, 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 user name:

```
[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].
```

Using the Graphical User Interface

You can also use the Graphical User Interface (GUI) to change the security configurations.

Use the following command to open the GUI screen:

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

Using Import.exe to Update Target System Information

If you have discovered systems with DLCI for ConfigMgr version 1.0 or 1.1 and updated the firmware after upgrading to version 1.2, then you must re-discover the systems if you have changed their hostname during OS deployment.

To avoid re-discovering the systems and avail the hostname change functionality:

1 Launch the command prompt on the target system.

2 Navigate to *Program Files\Dell\DPS\Bin* folder.

3 Type the command: `import.exe -Servers`.

The ConfigMgr database is updated with the latest firmware information from the target systems. You can verify if the information of all the systems is correctly updated by viewing the **import.log** file in the *Program Files\Dell\DPS\Logs* folder.

Using the Array Builder

The **Array Builder** allows you to define arrays and disk sets with all available RAID settings, logical drives/virtual disks of varying sizes or use all available space, and assign hot spares to individual arrays or assign global hot spares to the controller.

When a controller is created, a default variable condition, array and disk(s) are created to ensure a valid configuration. You can choose to leave the controller unconfigured with disks set to non-RAID, or you can add arrays or perform other actions.

Defining Rules With the Array Builder

You can define rules to match configurations based on the following:

- Detected slot number that the controller is in or just the embedded controller, if any.

- Number of disks that are attached to the controller.

- Apply a blanket configuration to any controller the **Array Builder** finds.

You can also apply configuration rules based on the RAID profiles detected on the server. This allows you to define different configurations to different servers even if the detected hardware is identical.

Creating a RAID Profile using Array Builder

To create a RAID Profile:

1 Launch the **Array Builder** by clicking **Create a RAID Profile** in the **RAID Configuration** screen in the System Viewer utility.

  When you launch the **Array Builder** a default embedded controller is created.

2 Enter the configuration rule name in the **Configuration Rule Name** field.

3 Select the error handling rule from the drop-down menu. You can choose from:

  - **Fail the task if any controller does not match a configuration rule** - Reports a failure if any of the detected controllers cannot be configured by a rule.

  - **Fail the task only if the first controller does not match a configuration rule** - Reports a failure if the first controller detected (usually the embedded controller) cannot be configured by a rule.

  - **Fail the task only if none of the array controllers match a configuration rule -** Reports a failure only if all of the controllers in the system fail to match a rule; in other words, none of the controllers are configured. This rule also fails if a controller does not have sufficient disks to configure a RAID.

4 Add new controllers and define rules for them, or edit the default controller and define the rules. For more information, see Controllers.

5 Add or edit variable conditions for the default controller or the controller that you add. For more information, see Variable Conditions.

6 Create new arrays from a variable condition, if required. For more information, see Arrays.

7 If you create an array, add additional disks, hot spares or global hot spares to the array.

8 Click Save to save the profile as a **.XML** file.

You can also import an existing profile and modify the configurations using the Array Builder. For more information on importing a profile, see Importing a Profile.

How it Works?

When you use the RAID profile that you created using Array Builder as part of the operating system deployment of DLCI for ConfigMgr, it detects the existing controller(s) on the server as well as the disks attached to each controller. It then tries to match the physical configuration(s) that the utility detected, to the logical configurations you defined in the configuration rules. These array configuration rules are defined using a graphical, logical layout that allows you to visualize how your array controllers will be configured. Rules are processed in the order displayed in the **Array Builder** tree, so you know exactly which rules have priority.

Controllers

Controller elements contain variable condition elements. Controllers can be one of several configuration types:

- The embedded controller
- A controller in slot "X"
- Any controller with "X" disks
- Any controller with "X" disks or more
- All remaining controllers

Adding a Controller

To add a controller:

1 Select a controller from the list, or select an embedded controller. The **Controllers** drop-down menu to your left is enabled.

2 Click **Controllers**→ **New Controller**. The **Controller Configuration** window displays.

3 Under **Controller Selection Criteria**, select from the following options:

- **Select the controller located in slot** - Enter the slot number of the controller.

- **Select any controller with** *<exactly, atleast>* *<number of>* **disks attached** - Set a rule to select any controller which matches exactly, or at least the number of disks you have selected.

- **Select all remaining controllers in the system regardless of configuration**

4 Under **Variable Matching Criteria**, you can set a rule to apply this configuration only if it matches certain criteria that you select. Select **Apply this configuration only when the variable** to enable the rule setting options apply.

5 Click **OK**.

Editing a Controller

To edit a controller:

Select the controller and click **Controllers→ Edit Controller**. The **Controller Configuration** window is displayed where you can make changes to your controller.

Deleting a Controller

To delete a controller:

1 Select the controller and click **Controllers→ Delete Controller**. A warning informing that all the attached arrays and disks will be deleted is displayed.

2 Click **Yes** to delete or **No** to cancel.

NOTE: There must be at least one controller present on the server. If there is only one controller and you delete it, a message displays that the default controller was inserted because the last controller was deleted.

Variable Conditions

To provide the ability to use the same RAID configuration in multiple logical configurations, variable evaluation is provided so that a different configuration for arrays and logical drives can be applied to different situations.

Variable condition elements contain arrays and global hot spares, and are of two types:

- **No variables defined**: This is the default configuration inserted with every controller, and cannot be removed or moved from last in the order.
- **Variables defined**: This is where any variable is compared to a value using one of the pre-defined operators.

Ø **NOTE:** DLCI for ConfigMgr does not support variables created in an encrypted format.

Adding a New Variable Condition

To add a new variable condition:

1 Under an embedded controller, expand **Embedded Controller**, and select [**No variable conditions defined**].

2 Click **Variables**→ **New Variable Condition**. The **Variable Condition Configuration** window displays.

3 Under **Variable Matching Criteria**, you can set a rule to apply this variable only if it matches certain criteria that you select.

4 Click **OK** to apply the variable condition, or **Cancel** to return to the Array Builder**.**

Editing a Variable Condition

To edit a variable condition:

1 Select the variable condition and click **Variables**→ **Edit Variable Condition**. The **Variable Condition Configuration** window displays where you can make changes to your variable condition.

2 Click **OK** to apply the variable condition, or **Cancel** to return to **Array Builder**.

Deleting a Variable Condition

To delete a variable condition:

1 Select the variable condition and click **Variables→ Delete Variable Condition**. A message displays that all the attached arrays and disks will be deleted.

2 Click **Yes** to delete or **No** to cancel.

Arrays

Array nodes include both RAID arrays and non-RAID disk groups that are indicated by the different icons for RAID arrays and non-RAID disks. By default, a non-RAID disk group is created when a controller is created. If the controller configuration specifies the number of disks required, the same number of disks is added to the non-RAID group.

Arrays can be added, modified or deleted depending on the controller configuration and number of disks available.

Array elements contain logical drives and physical disks.

Adding a New Array

To add a new array:

1 Under a variable condition, select a variable condition and click **Arrays→ New Array**. The **Array Settings** window displays.

2 Set the required RAID level from the **Desired RAID Level** drop-down menu.

3 On RAID levels 50 and 60, enter the span length of the array.

4 Click **OK** to apply the array, or **Cancel** to return to **Array Builder**.

Editing an Array

To edit an array:

1 Select the array and click **Arrays→ Edit Array**. The **Array Settings** window displays. Here you can select a different RAID level for the array.

2 Click **OK** to apply the changes, or **Cancel** to return to **Array Builder**.

Deleting an Array

To delete an array:

1   Select the array and click **Arrays→ Delete Array**. A message displays that all the attached disks will be deleted.

2   Click **Yes** to delete or **No** to cancel.

Logical Drives (also known as Virtual Disks)

Logical drives can be present on RAID arrays and non-RAID groups. You can configure them by specifying the size (in GB) or to consume all available (or remaining) space in the array. By default, a single logical drive is created for all new arrays and is set to use all the available space.

When specific-size logical drives are defined, the **using all remaining space** logical drive will consume any remaining space after other logical drive(s) have allocated their space on the array.

NOTE: Array Builder does not support creating logical drives of sizes 10, 50, and 60 GB, and does not support creating logical drives under Non-RAID groups.

Adding a New Logical Drive

To add a new logical drive under an array:

1   Select the array and click **Logical Drives→ New Logical Drive**. The **Logical Drive Settings** window displays.

2   Under **Create a logical drive** enter the exact number of gigabytes the logical drive must contain.

3   Click **OK** to create the logical drive, or click **Cancel** to return to **Array Builder**.

Editing a Logical Drive

To edit a logical drive:

1   Select the logical drive and click **Logical Drives→ Edit Logical Drive**. The **Logical Drive Settings** window displays.

2   Change the size of the logical drive.

3   Click **OK** to apply the changes, or click **Cancel** to return to **Array Builder**.

Deleting a Logical Drive

To delete a logical drive:

1 Select the logical drive and click **Logical Drives→ Delete Logical Drive**. A message displays to confirm the delete operation.

2 Click **Yes** to delete or **No** to cancel.

Disks (also known as Array Disks)

Disks can be part of arrays (or the non-RAID disks node) and are of the following types:

- **Standard disks** - These are the basic, non-defined disk type that make up the storage on arrays.

- **Hot Spares** - These disks provide online redundancy if a RAID disk fails while assigned to a specific array.

- **All Remaining Disks** - These disks provide an option to define an array without specifying the exact number of disks.

If the controller configuration specifies the number of disks required, an equivalent number of disks are added to the non-RAID group. If the controller specifies the exact quantity, disks cannot be added or removed from the controller – they can only be moved from array to array (or the non-RAID group). If the controller specifies a minimum number of disks, you can add or remove disks, but you cannot remove disks below the lower limit of the controller configuration.

Adding a New Disk

To add a new disk to an array, select the array and click **Disks→ New Disk**.

You can choose from the following:

- Single disk
- Multiple disks
- Hot spare (only for the current array)
- Global hot spare (all arrays)

Changing a Disk

To change a disk, click on the disk and select **Disks→ Change Disk**.

You can change a disk to:

- Standard disk
- Hot spare (only for the current array)
- Global hot spare (all arrays)

Deleting a Disk

To delete a disk, click on the disk and select **Disks→ Delete Disk**.

Importing a Profile

This menu item allows you to search for and import an existing Array Builder profile. The XML profile file must be properly formatted. If it is not formatted correctly, ConfigMgr automatically modifies the XML file and sends a notification of the change.

To import an existing Array Builder XML file from another location, click **Import a Profile**.

4

Troubleshooting

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

To configure Dell provisioning web services for IIS 6.0:

1 After installing DLCI for ConfigMgr, go to **C:\Program Files\Dell\DPS\ProvisionWS** 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 In **IIS Manager**, create a new application pool called **Provisioning Web Site** and assign it to the website.

   To assign the application pool to the Provisioning Web Site:

   a In **IIS Manager**, right-click **Provisioning Web Site**, and select **Properties**.

   b Click the **Home Directory** tab.

   c Under **Application Pool**, select **Provisioning Web Site**.

3 In **IIS Manager**, right-click **Provisioning Web Site**, select **Properties**, and click on the **Documents** tab. Set the default document to **handshake.asmx** 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 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"**) are present at the following location after running the installer: **[ConfigMgrPath]\AdminUI\XmlStorage\Extensions\bin\Deployment\Dell\PowerEdg e\LC\IISsetup**.

Dell Provisioning Web Services Configuration for IIS 7.0

To configure Dell provisioning web services for IIS 7.0:

1 On a ConfigMgr console installed with Dell Server Deployment Pack, launch the **Dell_Lifecycle_Controller_Integration_1.1.0.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 the **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**. At the command prompt, paste the following command:

```
netsh http add sslcert ipport=0.0.0.0:4433 appid=
{6cb73250-820b-11de-8a39-0800200c9a66}
certstorename=MY certhash=
fbcc14993919d2cdd64cfed68579112c91c05027
sslctlstorename=CA sslctlidentifier=
"ProvisioningCTL"
```

9 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.

  f 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 **delltechcenter.com**.

Upgrade/Repair Issues

If you have upgraded or repaired the Dell Server Deployment Pack after installing DLCI for ConfigMgr 1.2:

1   Copy the **CustomReboot.vbs** from **[ConfigMgrRoot]\AdminUI\XmlStorage\Extensions\Bin\Deployment\Dell\PowerEdge\LC** to **[ConfigMgrRoot]\OSD\Lib\Packages\Deployment\Dell\PowerEdge\CustomReboot**. Override the file in the destination folder.

2   Copy the **DellPowerEdgeDeployment.xml** from **[ConfigMgrRoot]\AdminUI\XmlStorage\Extensions\Bin\Deployment\Dell\PowerEdge\LC** to **[ConfigMgrRoot]\AdminUI\XmlStorage\Extensions\Bin\Deployment\Dell\PowerEdge**. Override the file in the destination folder.

Issues and Resolutions

- *Issue*: When you deploy an operating system on a target system with iDRAC configured in a shared network mode, the Windows PE environment may fail to startup on the network drivers, causing the system to restart before reaching the task sequence.

  Resolution: 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.

- *Issue*: If the Lifecycle Controller of a system is in use, the system is not discovered.

  Resolution: If a system does not show up in a collection, verify whether the log file contains the following error message: `Lifecycle Controller in use.` If it contains the error message:

  a   Ensure that the system is not in Power On Self Test (POST) state. A system is in POST state after it is powered on and until it boots to an operating system through any media.

  b   Power off the system and wait for ten minutes for it to show up in the collection.

- *Issue*: The **Create Lifecycle Controller Boot Media** option may fail if you have not specified local folder locations for the source and destination folders.

  Resolution: Ensure that the source and destination paths used are local paths. For example, **C:\<*folder name*>**.

- *Issue*: If the iDRAC version is older than the supported versions in any of the target systems, the **Boot to vFlash** option in the Deploy Operating Systems workflow may fail.

  Resolution: On a rack and tower server, ensure that it has iDRAC version 1.3 firmware or newer. On a blade server, ensure that it has iDRAC version 2.2 or newer.

- *Issue*: When you are deploying an operating system using the **Launch Config** utility, the advertisements of the task sequence are not displayed on the screen.

  Resolution: Ensure that you advertise against the exact collection you plan to deploy to, as advertisements against a parent collection does not apply to the child collection(s).

- *Issue*: While deploying Microsoft Windows 2008 R2 from ConfigMgr SP1 R2 with Windows Automated Installation Kit (Windows AIK) 1.1, the following error message is displayed:

  ```
  Operation failed with 0X80070002. The system
  cannot find the file specified.
  ```

  Resolution: This issue occurs if you use a Windows PE 2.X based boot image created with Windows AIK 1.X for deploying Microsoft Windows 2008 R2. Ensure that the task sequence deploying Microsoft Windows 2008 R2 uses a Windows PE 3.0 or later based boot image created with Windows AIK 2.X or later. For more information, see the Microsoft Technet site at **technet.microsoft.com**.

- *Issue*: If the target system has an older version of BIOS that does not support a particular method, the following error message is displayed in the DLCTaskManager.log file:

  ```
  Installed BIOS version does not support this
  method.
  ```

  Resolution: Update the BIOS to the latest supported version.

- *Issue*: If the Lifecycle Controller on the target system is locked by another process, the following error message is displayed in the DLCTaskManager.log file:

  ```
  Lifecycle Controller is being used by another
  process.
  ```

  Resolution: Ensure that the iDRAC of your system is not in POST state.

- *Issue*: If you do not enter the service tag name of the target system correctly, the discovery and handshake fails and the following error message is displayed:

  ```
  [Server Name] - Handshake -
  getCredentialsInternal():[Server Name]: NOT
  AUTHORIZED: No credentials returned
  ```

  Resolution: The service tag name is case sensitive. Ensure that the service tag name imported through the **import.exe** utility matches the service tag name in the iDRAC GUI.

- *Issue*: When you deploy Microsoft Windows Server 2003 operating systems and you select the **Apply Drivers from LC** option, a blue screen is displayed or the deployment fails.

  Resolution: To resolve this issue:

  a Right-click the task sequence and click **Edit**. The **Task Sequence Editor** window appears.

  b Select **Add**→ **Drivers**→ **Apply Driver Package**.

  c Check the mass storage driver option.

  d Select the applicable SAS or PERC driver.

  e Select the model of the SAS or PERC driver.

  f Save the task sequence and re-deploy the operating system.

- *Issue*: During Discovery and Handshake, the DPS.log displays an empty *Site code*: followed by a cryptography exception.

  Resolution: This issue occurs when the account entered to access ConfigMgr does not have permissions to query WMI and retrieve the site code, or when the server cannot authenticate to the Site Server or domain controller. Verify the Dell Provisioning Server user permissions and perform a **WBEMTest** connection to validate the account, and then reset and rediscover your systems.

- *Issue*: During Discovery and Handshake, the DPS.log displays numerous `createDellCollecions() Either Connection Mgr param is NULL or Collection not yet created` messages.

  Resolution: This issue occurs when the account entered to access ConfigMgr does not have permissions to create collections. For more information on setting permissions, see Dell Auto-Discovery Network Setup Specification.

- *Issue*: When an account is cloned from an existing account in ConfigMgr, it is not automatically added to the SMS_Admins group.

  Resolution: Verify that the account exists in this group. Verify the Dell Provisioning Server user permissions and perform a **WBEMTest** connection to validate your account. Reset and rediscover your systems.

- *Issue*: Installation fails while installing DLCI for ConfigMgr version 1.2 on Microsoft Windows 2008 32-bit SP2 with the **User Account Controller** (UAC) option turned on.

  Resolution: Turn off UAC and reinstall DLCI for ConfigMgr version 1.2. Alternatively, you can install DLCI for ConfigMgr though the Command Line Interface (CLI). Before you do so, right-click the installer, select **Properties**, click on the **Compatibility** tab and select the **Run as Administrator** option.

- *Issue*: The **Advertise** option does not appear in an existing task sequence after uninstalling and reinstalling DLCI for ConfigMgr.

  Resolution: Open the task sequence for editing, re-enable the **Apply** option, and click **OK**. The **Advertise** option appears again.

To re-enable the **Apply** option:

a Right-click the task sequence and select **Edit**.

b Select **Restart in Windows PE**. In the **Description** section, type any character and delete it so the change isn't saved.

c Click **OK**. This re-enables the **Apply** option.

- *Issue*: The System Viewer utility does not display the latest RAID configuration.

  Resolution: When you are vieweing the RAID configuration for a system using the System Viewer Utility, the information is cached. When you update the RAID configuration of the same system, you must close the System Viewer utility and re-open it to view the updated RAID configuration.

- *Issue*: The Modular systems cannot use the hostname in the path to the CIFS share but monolithic systems can use the hostname.

  Resolution: For Modular systems you must specify the IP address of the CIFs share.

- *Issue*: When you are updating the systems with the latest firmware, if the Dell Update Packages (DUPS) take longer than 50 minutes to download over a WAN, then the update task may fail.

  Resolution: If you face this problem, then you must copy the repository that contains the updates to the local network of the systems you are updating.

- *Issue*: If you have discovered systems with DLCI for ConfigMgr version 1.0 or 1.1 and updated the firmware after upgrading to version 1.2, then you must re-discover the systems if you change their hostname during OS deployment.

  Resolution: Ensure that you upgrade Lifecycle Controller of the target systems to version 1.4 or later and upgrade iDRAC on the target systems to version 1.5 or later for monolithic systems and version 3.02 or later for modular systems.

5

Related Documentation and Resources

For more information on ConfigMgr such as installation, features, and functionalities, see the Microsoft TechNet site at **technet.microsoft.com**.

In addition to this guide, you can access the following guides available at **support.dell.com/manuals**. On the **Manuals** page, click **Software→ Systems Management**. Click the appropriate product link on the right-side to access the documents:

- Dell Server Deployment Pack for Microsoft System Center Configuration Manager User's Guide.
- Dell Lifecycle Controller User's Guide.
- Integrated Dell Remote Access Controller 6 User's Guide.

You can find the following white papers at **delltechcenter.com**. On the Dell TechCenter Wiki Home Page, click **OpenManage Systems Management→ LifeCycle Controller**.

- Dell Lifecycle Controller Remote Services Overview
- Dell Lifecycle Controller Web Services Interface Guideline
- Dell Auto-Discovery Network Setup Specification

Obtaining Technical Support

For assistance and information about DLCI for ConfigMgr, see **support.dell.com**.