Customizing Update Deployment using Dell™ Client System Update and Dell™ Repository Manager Software Integration

Dell OpenManage™

Systems Management

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Introduction

If you are a system administrator who manages a network of client systems, from ten to a thousand clients in number, and uses customized scripts and/or tools rather than a sophisticated management suite — such as Dell Client Manager, KACE, Microsoft® Software Configuration Manager, etc. — you will be interested in two of the new software utilities that are available for free from Dell: Dell Client System Update and Dell Repository Manager. These are standalone utilities that, individually, can help simplify custom update deployment solution management. But, they can also work together to provide increased efficiency in your network environment.

Dell Client System Update (DCSU) is an easy-to-use utility for updating Dell systems such as OptiPlex™, Latitude™, and Dell Precision™ with the latest available drivers, BIOS, firmware, and systems management software. Although DCSU was designed, first and foremost, for individuals who must manage systems in an independent manner, the software is also configurable by system administrators, enabling specific settings to be enforced via policy. DCSU also accommodates completely automated client update deployments via a command line interface. These more advanced features allow its capabilities to scale up for use in larger or more centrally managed environments.

Figure 1: Dell Client System Update GUI
Dell Repository Manager (RM) is a utility that enables defining, manipulating, and exporting custom repositories of Dell drivers, BIOS, firmware, and systems management software updates. The repository of Dell Update Packages (DUPs) can be utilized in several ways, including standalone scripts, or in combination with other update deployment software such as Dell Client System Update.

**Figure 2: Dell Repository Manager**

Why Combine Dell Client System Update and Dell Repository Manager?

Utilizing RM alone, an administrator can easily export a repository of updates and then deploy them to clients via a simple batch script. This approach to update deployment is relatively easy and straightforward. The problem is that the variability between client hardware and software configurations can be high, resulting in a large repository; consequently, the amount of internal network bandwidth and client processing time wasted from this method may become overly taxing, especially in larger scale ecosystems. All DUPs in the repository must be copied over the network, one by one, to each client system and then executed to determine whether or not the update is even applicable to that system. A simple deployment batch script, alone, is effectively a “brute force” solution that will not scale up in an optimal way.

DCSU, however, assesses the client system hardware and software state, only transferring and executing the DUPs that a client requires. Adding DCSU to the deployment process keeps the script simple and straightforward, scalable and optimal.

Conversely, utilizing DCSU alone in larger scale ecosystems, or those that have constraints on external internet bandwidth, might not be ideal, because every individual client system will query and retrieve updates over the internet from the official Dell software repository (DCSU’s default setting). Additionally, some IT organizations choose to closely control deployment of software to client systems,
allowing only preselected versions to be installed. In scenarios such as this, having client systems utilize a custom source of update packages located and maintained within a local area network may be a better overall solution.

The creation of custom, or just local, update sources for use with DCSU is accomplished by using RM to import, manipulate, and output a repository of DUPs in a DCSU compatible format.

This document demonstrates how to accomplish the following:

- Download the DCSU and RM software packages from Dell.
- Use RM to create a custom repository/baseline of updates for use with DCSU.
- Prepare DCSU to utilize a custom repository created via RM.

**Note:** For more extensive information on the various features and operations of either DCSU, or RM, that are outside the scope of this document, see the Appendix on page 13.

**Downloading DCSU and RM Software from the Dell Support Website**

**Downloading DCSU**

DCSU can be downloaded from the Dell Support website using one of the following methods:

- Enter the system service tag
- Select the system model, OS type, and architecture
- Use the **Scan My System** option to list the available updates

Once the results display, DCSU is located under the **Systems Management** category (see Error! Reference source not found.).

![Figure 3: DCSU Download from Dell Support](image)

Alternatively, a DCSU page is also available on the Dell Tech Center website. The web address is located in the Appendix on page 13.

**Downloading RM**

To download Dell Repository Manager from the Dell website:

1. Go to [www.dell.com](http://www.dell.com).
2. Enter **repository manager** in the site search box.
3. Click the link for the latest version listed (see Error! Reference source not found.).
4. On the software description page, click the link to download the installer.

Figure 4: RM Search on www.dell.com

Dell Repository Manager, v.1.2, A03
Dell™ Repository Manager is an application that allows you to create customized bundles and repositories on systems running the Microsoft® Windows® operating system. The customized bundles and reposi...
(Drivers and Downloads)

Figure 5: RM Download on Dell Support

Drivers & Downloads

<table>
<thead>
<tr>
<th>Support Options</th>
<th>Microsoft Windows Installer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Home Page</td>
<td>Dell_Repository_Manager_1.2.155.msi</td>
</tr>
<tr>
<td></td>
<td>Description: Microsoft Windows Installer Package</td>
</tr>
<tr>
<td></td>
<td>ReadMe_Dell_RM_1.2.155.txt</td>
</tr>
<tr>
<td></td>
<td>Description: This file format contains plain text which can be viewed with a standard text editor.</td>
</tr>
</tbody>
</table>

Alternatively, an RM page is available on the Dell Tech Center website. The web address is located in the Appendix on page 13.

Dell Repository Manager Overview

Most of the RM feature set is available for both enterprise server and client systems; however, because server and client systems have separate catalogs and differing hardware options, RM runs in different modes depending on the system category. To create a repository as a new update source location for DCSU, run RM in Client mode (see Error! Reference source not found.).

Note: When installing RM, it automatically creates shortcuts for starting the application in both client and server modes.
Customizing Update Deployment using Dell Client System Update and Dell Repository Manager Software Integration

**Figure 6: RM Mode Shortcuts**

**Repository Manager Terms**
Following are terms commonly used by RM:

- **Repository vs. Catalog** - The terms repository and catalog are sometimes used interchangeably. However, by strict definition, a repository combines a single catalog file with one or more component files. A catalog file is simply an XML file that contains the necessary information about each component in the repository, including a relative path from the catalog file to the component file.

- **Components** - Individual software items (Dell Update Packages or DUPs) in a repository.

- **Filters** - Similar in concept to the download filters within DCSU; however, the filters in RM are a tool used to reduce a larger listing of software components down to a smaller set that is easier to select. The filter criteria can contain descriptors such as criticality, device type, OS version, etc.

**Interface Quick Start**
Following are brief descriptions of the RM interface: (Refer to Figure 7 below)

1. **Mode Display** – Indicates the type of repository (client or server) with which RM is working. To change modes, you must exit RM and/or relaunch a new instance.

2. **Components Panel** – This is the main area of the interface that displays a list of available components and allows selections to be made for an operation.

3. **Catalog Panel** – Located in the upper-left area of the interface. This panel enables basic catalog operations, such as importing a new catalog and choosing the catalog to work with in the components panel.

4. **Filter Panel** – Located on the left side of the interface, under the catalog panel. The filter panel can be used to reduce the list of components displayed based on various criteria.

5. **Export Catalog** – Located on the bottom-right corner of the component panel, this operation creates a new catalog with the currently selected components.

6. **Save Repository** – Located in the upper-right corner of the components panel, this operation downloads all of the current catalog’s component files and creates a repository.
Create a Custom Update Source Repository

To create a custom update source repository:

1. Launch RM in client mode via one of the shortcuts created by the installer (see Error! Reference source not found.). By default, RM displays a welcome dialog at startup (see Error! Reference source not found.). From the welcome dialog, click Import Repository to begin the catalog creation process. If the welcome dialog does not display due to previously set options, or if you needed to cancel the process and start over, you can also choose the Add operation from within the catalog panel to begin (see Error! Reference source not found.).
2. Choose the Create New Repository option, and then click Next to proceed.
3. Enter a name for the catalog, and optionally specify a description. The name will display in various places within the RM interface to refer back to this specific catalog.
4. Click Next again, then specify the source repository used to seed this new catalog (see Error! Reference source not found.). Generally, it is recommended to choose the (client) ftp.dell.com repository option that imports and works from the latest Dell updates; however, you can also choose a previously created repository using the local or recent repository options.
5. Click Next to proceed. The remaining pages of the dialog allow you to optionally pre-filter the initial list of components populated in the catalog.
6. On the Summary and Finish page, click Finish to create the new catalog.

Once the catalog creation process is complete, a list of components populates the components panel. At this point, you may decide to use one or more filters from the filter panel to further narrow the list to only specific components.
The filter criteria can be based on Text, Platforms, Operating systems, Devices, etc. Filter settings can also be saved and recalled for future use in creating new repositories. If you decide to filter components after creating a catalog, you must select all of the components from the current catalog that you want to keep, and then click **Export** to create a new catalog from the selected subset.

**Figure 10: Selecting Components for Export**

In the export dialog, choose the **Export as NEW Repository** option, and then enter a different name for this new catalog.

**Note:** RM also lets you choose additional locally-stored DUP files by clicking **Add** in the lower-right corner of the components panel.

Once you are ready to save the catalog as a full repository, click the **Save** icon in the top-right corner of the components panel (see Figure 10). A save dialog is displayed that allows you to select the repository location. In addition to creating the catalog xml file, this operation also transfers all of the files for each component in the catalog to the specified repository location and organizes them.

**Note:** The amount of time required for the save operation to complete depends on the number of components contained in the catalog.

**Figure 11: Save Catalog as Repository**
Publish Update Source Repository
After successfully creating a custom repository to use as an update source, the next step is to publish the repository in a location that every managed client system running DCSU can access.

To publish the source repository, copy the entire repository folder (components, folders, and catalog) to a network share, ensuring that the folder structure is maintained. If the repository will be used by DCSU in GUI mode, ensure that end-user accounts (or groups) have read access to the repository share. If utilizing DCSU via CLI in a script, make sure the account under which the script executes has read access to the repository share. Optionally, you can also publish the repository on a secondary server/share for use as a failsafe if the primary server goes down.

Note: A client machine’s built-in system accounts (e.g. Administrator, Local System, etc.) are generally not a good choice for scripts utilizing DCSU, because they cannot be authenticated by an external machine and are therefore denied access to resources such as network shares.

Configuring DCSU Update Source Location for the User Interface
To configure DCSU to utilize new repositories:

1. Launch DCSU.
2. From the home screen, click the Advanced tab in the lower-right corner of the application.
3. On the Preferences page, click Update Source Location. The Update Source Location is where DCSU lists all configured repositories.

Click the New... button in the lower-right corner of the screen, and click File to navigate to the repository location and select the catalog xml file. Once the xml file is successfully added, a new entry displays at the top of the source locations list.
Optionally, you may repeat the preceding steps to add one or more “backup” repository locations. Order them from top to bottom in the priority with which DCSU should attempt access. Click **Save** in the upper-left of the screen to commit the configuration changes.

**Note:** DCSU uses the first repository/catalog it successfully loads. DCSU will **not** load each repository listed and aggregate the contents together.

**Exporting Settings for Reuse**

To replicate the catalog configuration on multiple machines, or to utilize a policy for enforcing specific standard values in your environment, use the DCSU export feature to generate an xml file from the current settings:

1. From the **Preferences** menu, select **Export/Import Settings**.
2. Click **Export Settings**, and specify a file name and directory for the export.
3. Click **Save** to complete the export process.
Figure 13: Export Current DCSU Settings

Before importing the export file or using it as a policy elsewhere, it is recommended to open the file and review the settings in a text or XML editor, because settings contained in the file will override and lock (in the case of policy) or overwrite (in the case of import) a previously configured value. To prevent a setting from changing, remove any unneeded setting entries.

Following is an example of an export file:

```xml
<?xml version="1.0" encoding="utf-16"?>
<dellclientsystemupdate version="1.0" doctype="settings">
<setting name="filterupdatetype_bios">True</setting>
<setting name="filterdevicecategory_video">False</setting>
<setting name="filtercriticality_optional">False</setting>
<setting name="catalog">\WN7X64-GMKS5F1\DellUpdates\Catalog.xml;$DELL$</setting>
<setting name="filtercriticality_recommended">True</setting>
<setting name="filtercriticality_urgent">True</setting>
</dellclientsystemupdate>
```

Several download filter settings, which are extraneous for the purposes of this example, are also contained in the export file. After removing the extra settings entries, the XML file looks like this:

```xml
<?xml version="1.0" encoding="utf-16"?>
<dellclientsystemupdate version="1.0" doctype="settings">
<setting name="catalog">\WN7X64-GMKS5F1\DellUpdates\Catalog.xml;$DELL$</setting>
</dellclientsystemupdate>
```
If DCSU should not connect to the official Dell repository, then remove $DELL$ from the catalog list. The GUI will not let you delete this repository from the list, but it will not automatically add it back to the list either.

**Configuring DCSU Update Source Location for Command Line Scripting**

The command line version of DCSU has two available methods for specifying use of a custom update source/repository:

1. The simplest method is to directly specify a repository catalog file path using the `/catalog` parameter (e.g. `dcsu-cli.exe /catalog "\MyServer\MyRepositoryShare\MyCatalog.xml"` or `dcsu-cli.exe /catalog "Z:\MyRepositoryFolder\MyCatalog.xml"` for a mapped drive). This method does have one drawback: The `/catalog` parameter does not accept a list of paths—only a single path. To use a backup location, this constraint must be compensated for by checking for an error return code and repeating execution with a different path in the calling script. (DCSU Return Codes: 0 = OK/Success, 1 = Reboot Required, 2 = Fatal Error, 3 = Error, 4 = Invalid System)

2. The other option is to utilize a policy file, using the `/policy` parameter (e.g., `dcsu-cli.exe /policy "C:\temp\MyPolicy.xml"`). Since a policy can specify values for any option available within the application, the policy can include one or more catalog paths for the CLI, just like the GUI version of the application. Creating a policy file is very easy, because the DCSU policy file format is xml-based, and in exactly the same xml format used for the GUI settings import/export feature. That means you use the DCSU GUI to help generate a policy file by launching it on any sample system, setting the desired options via the preference screens, and then exporting them as a file to use with the CLI.

**Note:** For a detailed explanation of settings export, refer to *Exporting Settings for Reuse* on page 11.

**Summary**

Pairing Dell Client System Update with Dell Repository Manager for creation of custom update sources enables the software to scale upward and provide a capable update solution in several advanced scenarios, such as those required in larger and/or more managed and standardized IT ecosystems. The current versions of DCSU and RM support Dell Business Client systems starting with the original E-Series product line, and include most Latitude, OptiPlex, and Dell Precision systems.

**Appendix**

**Other Helpful Dell Client System Update Resources**

The following links provide helpful supplemental information on the general use of DCSU, including additional feature information and details outside the scope of this document.

- Simplifying E-Series Updates Using Dell™ Client System Update (Whitepaper) - [http://attachments.wetpaintserv.us/o2xEzVqVlnW3e0SEV1OSLA%3D%3D809392](http://attachments.wetpaintserv.us/o2xEzVqVlnW3e0SEV1OSLA%3D%3D809392)
- Dell Tech Center - [http://www.delltechcenter.com/page/Dell+Client+System+Update](http://www.delltechcenter.com/page/Dell+Client+System+Update)
Other Helpful Dell Repository Manager Resources
The following links provide helpful supplemental information on the general use of RM, including additional feature information and details outside the scope of this document.

- YouTube video - [http://www.youtube.com/watch?v=stgPouMQnNM](http://www.youtube.com/watch?v=stgPouMQnNM)