Using Dell Repository Manager to create a Bootable iso and perform system updates

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Contents

Executive Summary

This technical paper describes the techniques for updating Dell Systems using Dell^{TM} Repository Manager (DRM) to create a Bootable iso for use performing pre-operating system updates for system Bios and firmware. These configuration settings can be exclusive to each system or uniform settings across systems, depending on your requirements. This paper describes the steps that you should follow to:

1. Import the Dell Catalog containing system updates into Dell^{TM} Repository Manager

2. Create a bootable ISO image containing the selected updates and customized script

3. Deploy the updates to the Dell systems along with the script

Introduction

In the enterprise environment, change management is a time-consuming activity yet important and necessary. DellTM Repository Manager is a Microsoft Windows-based application that eases tedious change management tasks for administrators. DellTM Repository Manager facilitates the download, filter, and conversion of updates into various convenient deployable formats.

DellTM Repository Manager, through the bootable iso, assists IT administrators with updating Dell systems with the latest Dell BIOS, firmware, as well as configuring the system settings at the same time within a pre-operating system environment, which simplifies the systems management process.

NOTE:
- Bootable iso uses the Dell Deployment Toolkit (DTK) engine at the backend and supports system configuration which will be only Linux based.
- Only Bios and Firmware can be updated by a Bootable iso
- Bootable iso can be saved to a CD/DVD or a file location. Save to a USB key is currently not supported.

How to create a customized bootable iso for pre-operating system update using Dell Repository Manager

Prerequisites

The following prerequisites are required for the creation of bootable iso:

- Install Dell Repository Manager on a system with Internet access.
- Download the latest version of Dell Repository Manager from http://DellTechCenter.com/RepositoryManager. This site also provides a number of papers and videos on using Dell Repository Manager.
- Launch Dell Repository Manager in Data Center Mode (Double click the Dell Repository.

Manager Data Center Icon to open the application).

1. Select the My Repository Tab.
2. Create a new repository in Dell Repository Manager from the new menu by clicking Create New Repository as shown in Figure 1 and provide a name and description as shown in Figure 2.
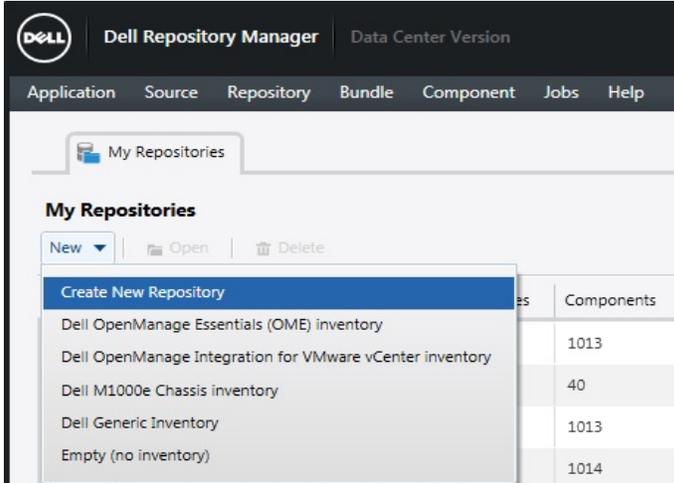
Figure 1 My Repository Screen with Create New Repository selected
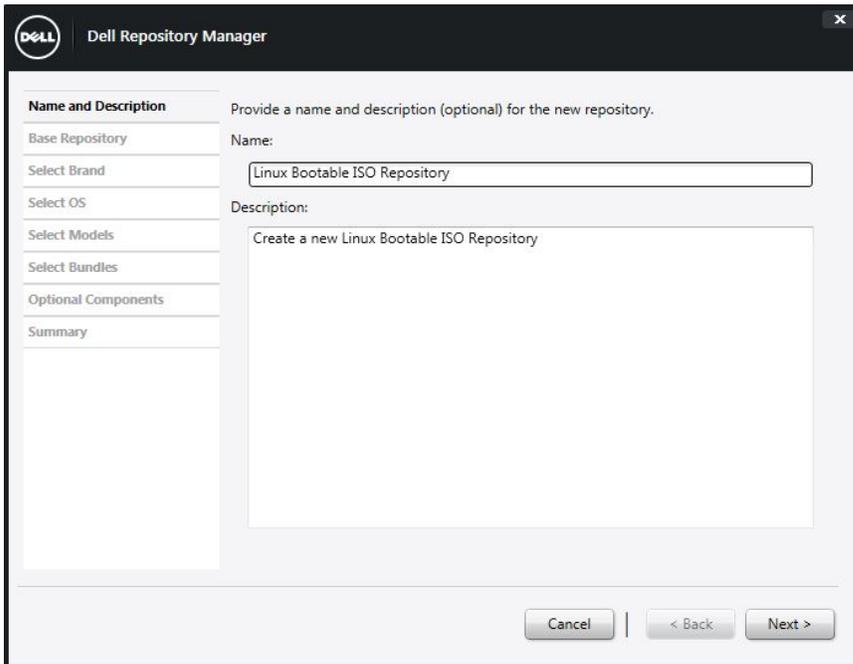
Figure 2 Repository Name and Description

3. Select a source repository that contains the updates from which the new repository needs to be built. This is either the online Dell Online Catalog - or a Local Source Repository (if you have a copy of Dell online catalog locally) or Custom repository stored on the local disk or network location (Figure 3).
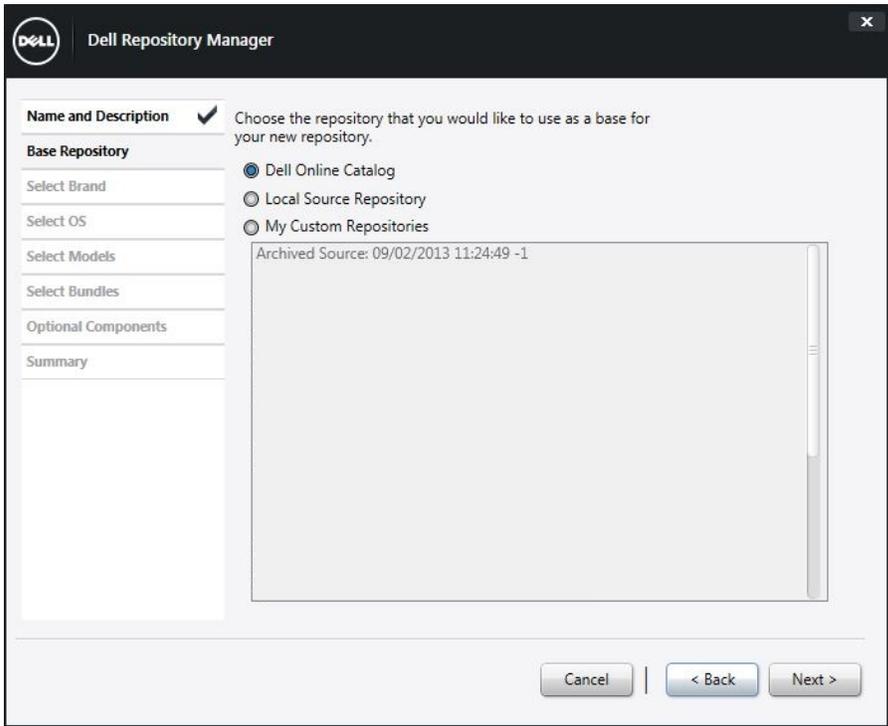
Figure 3 Source Repository Selection

4. Select one or more brand from the list available. The brand list is built from bundles available in the source repository selected (Figure 4).
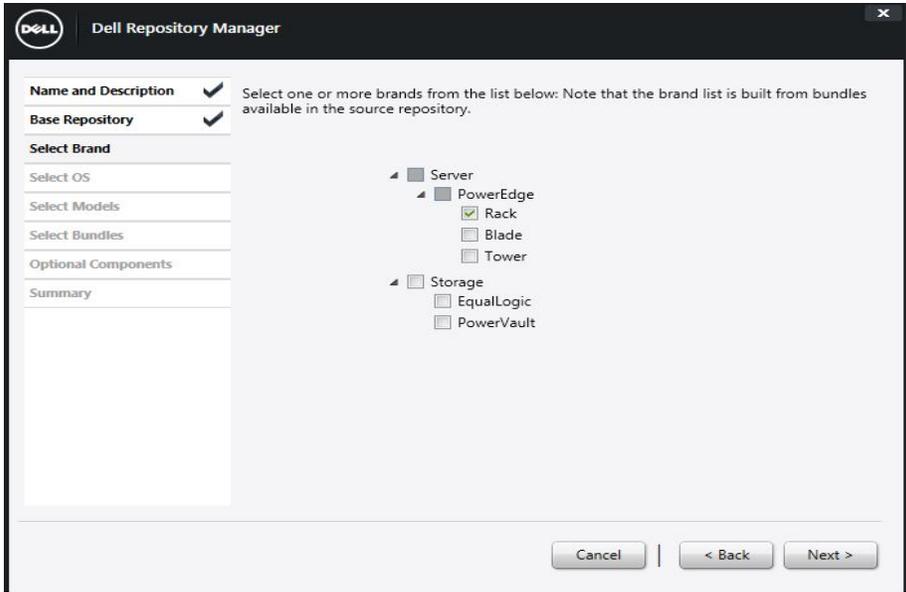
Figure 4 Brand selection

5. Select the desired operating system (s) which would be included in the repository created. Since bootable iso uses Linux to create the bootable capability, select the Linux bundles (Figure 5).
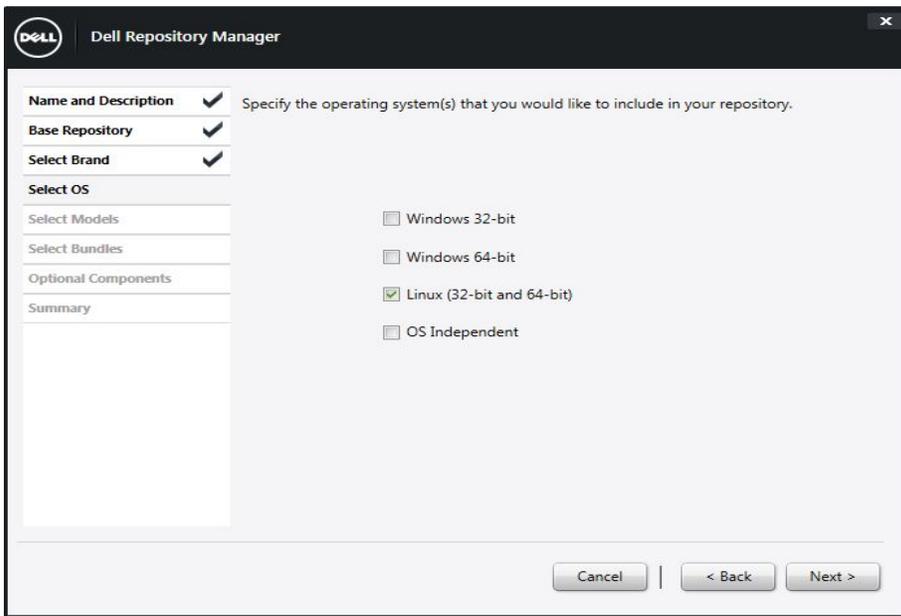
Figure 5 Select Operating System

6. Select the Dell system model(s) that would like to be included in the repository. All model(s) can be included or only specific model(s) can be chosen. The model list is built from the bundles available in the repository (Figure 6).
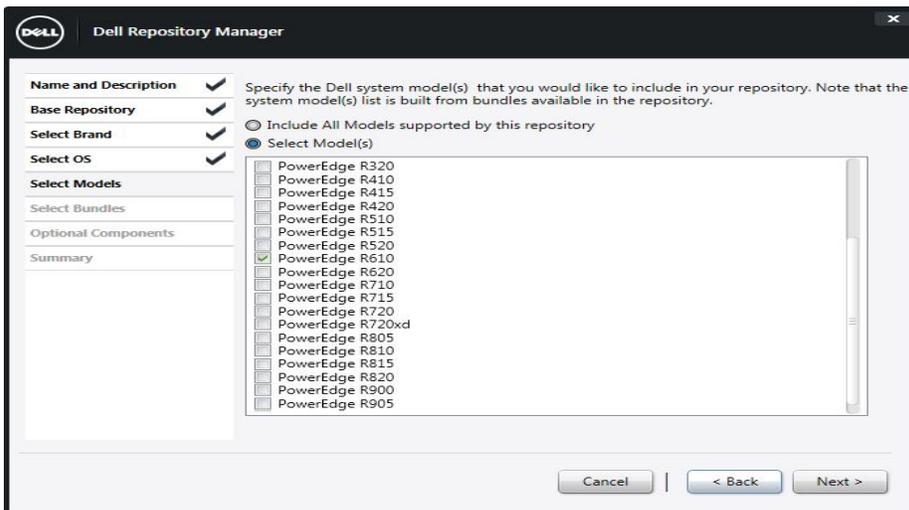
Figure 6 Select Model(s)

7. Select the bundle(s) that are available for the model(s) and the operating system(s) which would be included in the repository. By default the most recent bundle would only be selected (Figure 7).
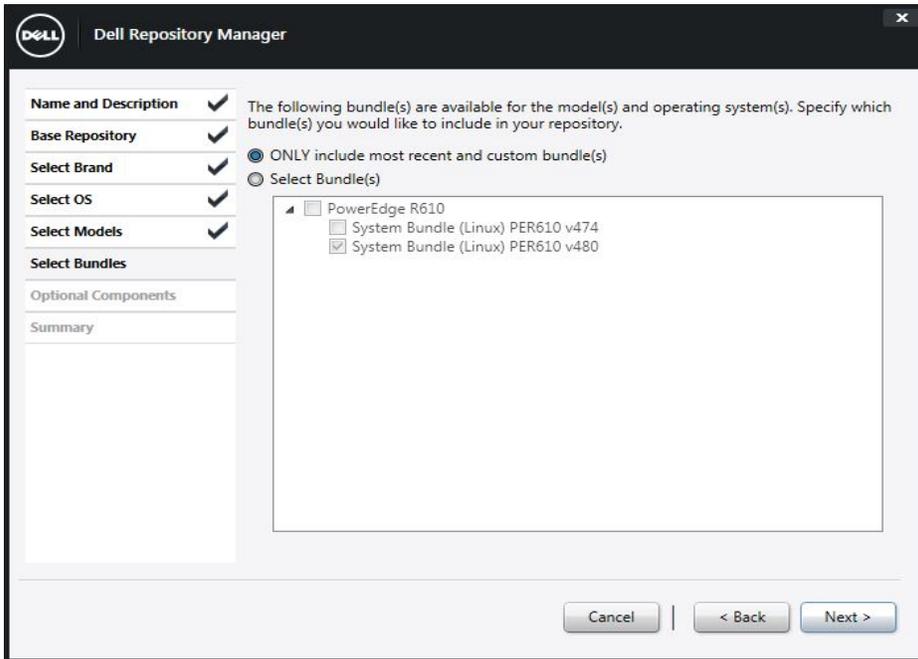
Figure 7 Select Bundles

8. The repository selected as the source may contain individual update files that are not assigned to any system. The optional components wizard provides an opportunity to browse and select manually those files and add to your repository. Example of an optional component is OMSA (Figure 8).
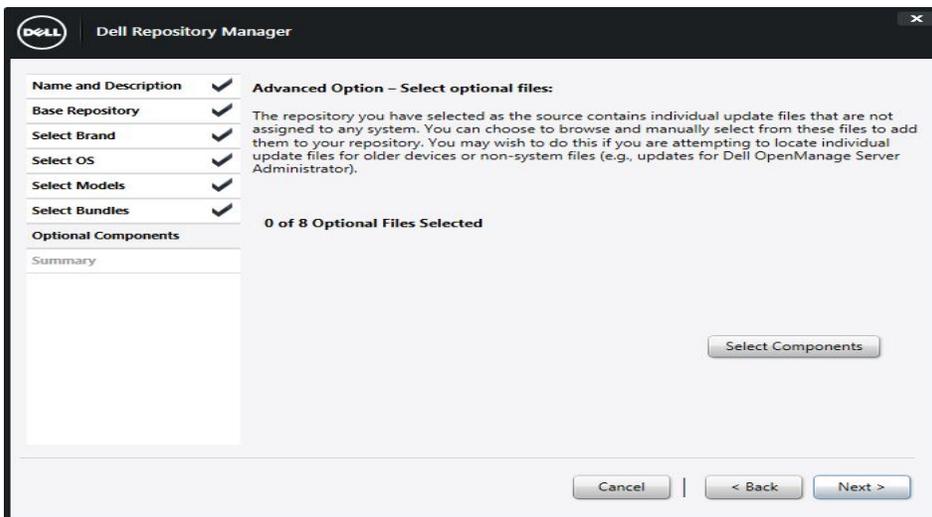
Figure 8 Select optional components

9. Click Finish on the Summary page to create a repository (Figure 9). The repository contains bundles for the model(s) and the operating system(s) selected.
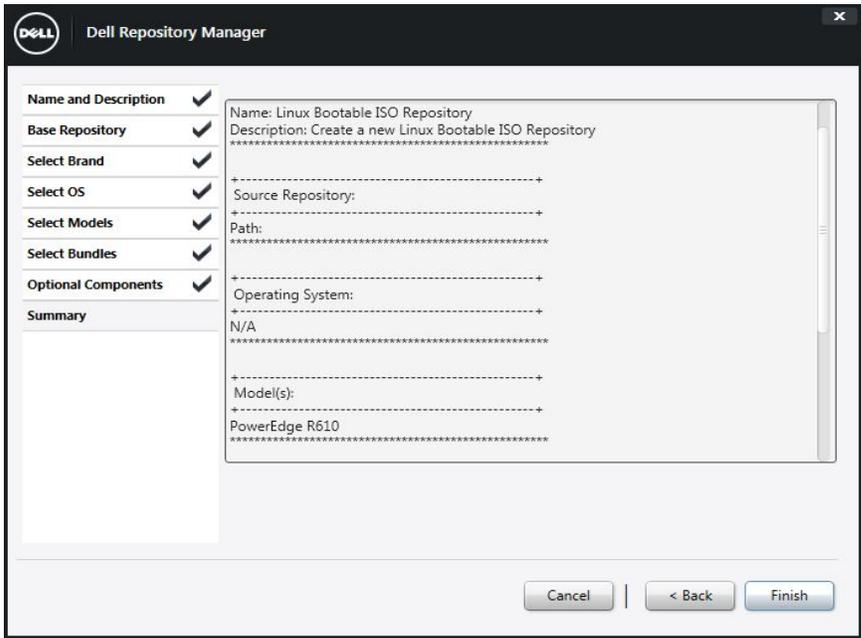
Figure 9 Summary of repository creation steps

10. After the repository is created, select the newly created bundle and navigate on to the components tab. From the components tab you can select just the specific files you want to include in your Bootable iso. Only desired components may be selected or search filters can also be used to get a filtered list of components. With the selected components a new repository needs to be created using Copy To or New Bundle option to export it as a Bootable ISO as shown in Figure 10.

11. Alternatively you can open up the bundle and delete file from the bundle and utilize the modified bundle to create the Bootable iso. Either method will help you to create a Bootable iso with just the Firmware desired.
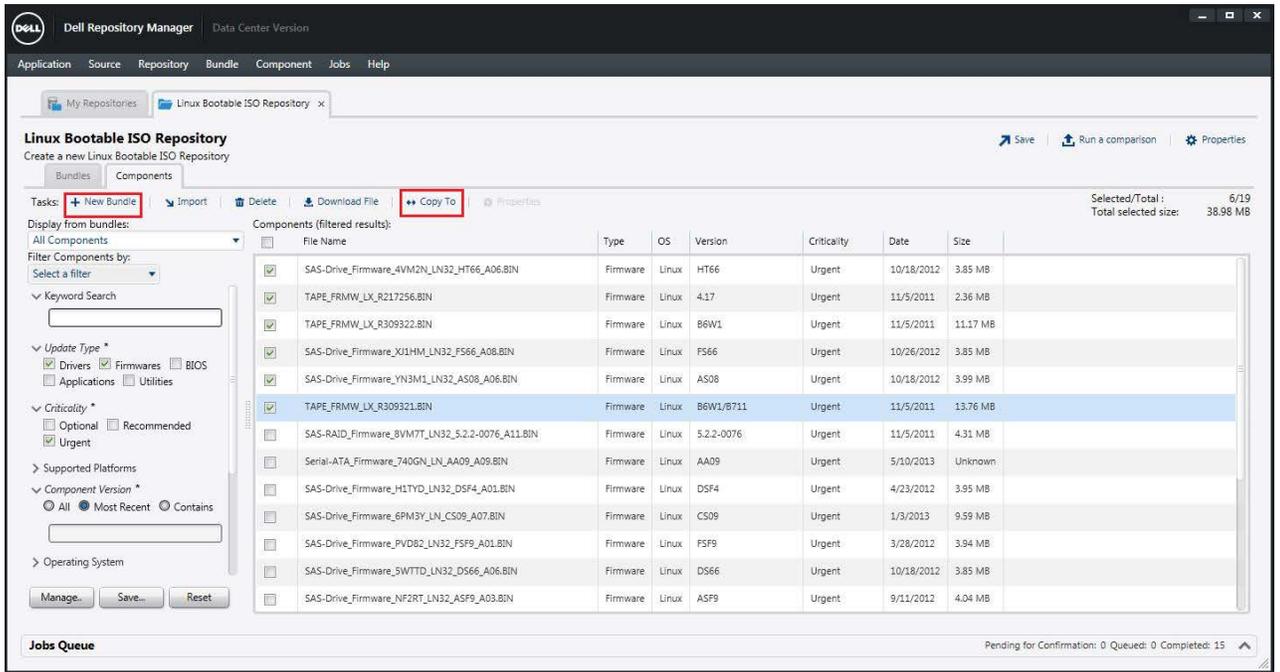
Figure 10 Selecting desired components

12. Select the bundle under the new repository created (Figure 11) and select Export option.
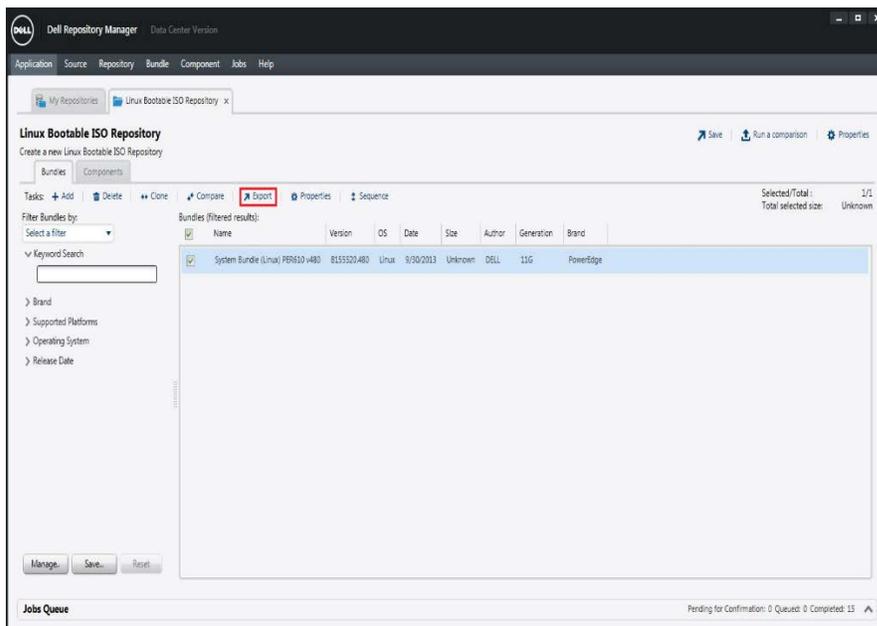
Figure 11 Select bundle and export

13. Select Bootable iso (Using the Linux Bundle). Click Next.
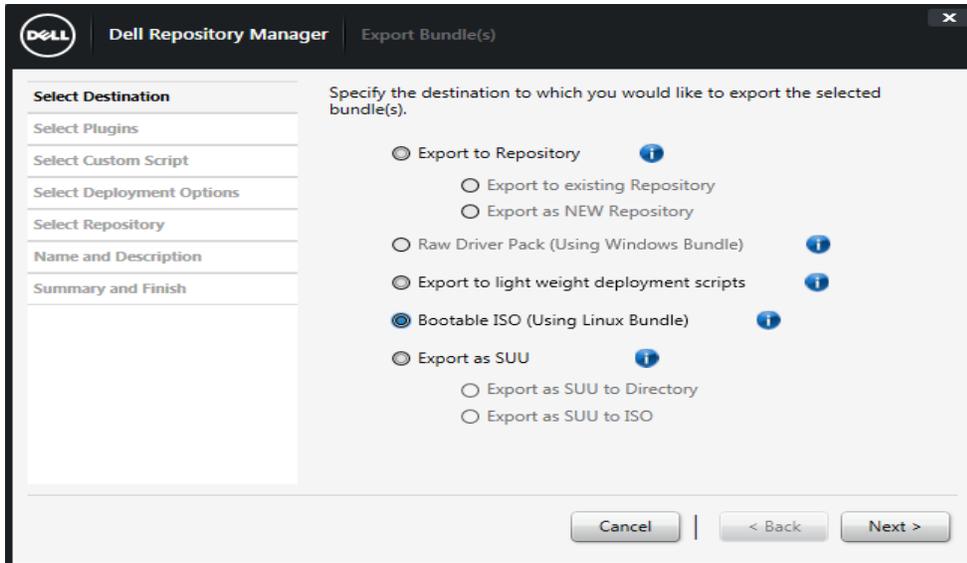
Figure 12 Specifying the export bundle destination

14. If the required plug-in is not available, it downloads during the export process as mentioned in the note on Figure 13.
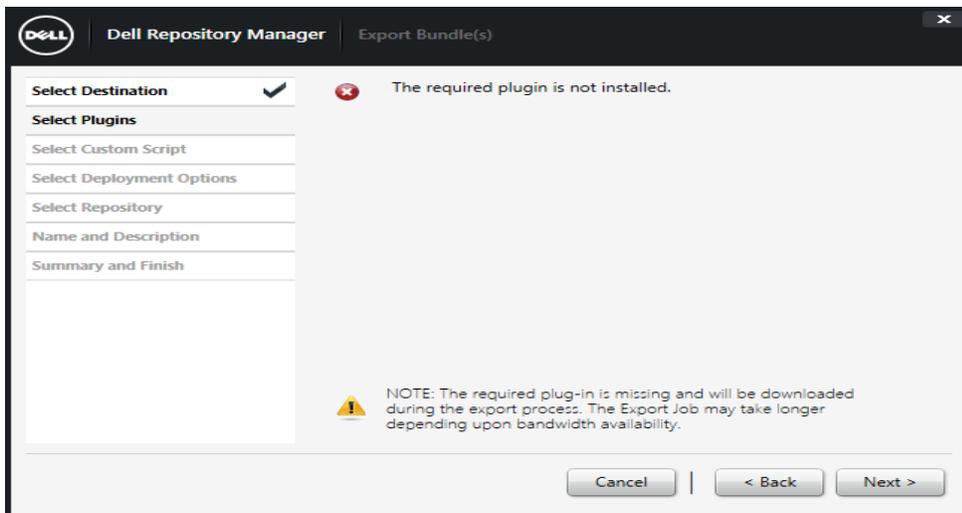
Figure 13 Installing the Plugin

15. Optionally if the plug-in is not available, it can also be downloaded by navigating to the menu as follows:
Application->Settings->Plug-in Update. Refer Figure 14.
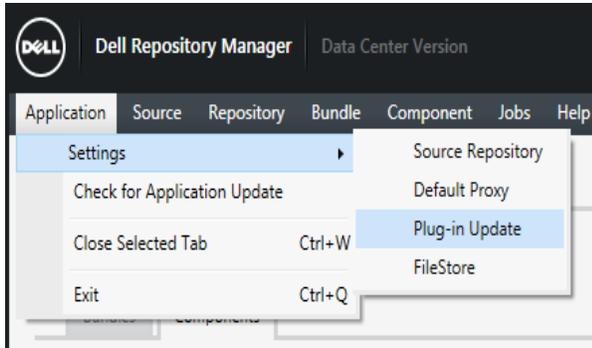
Figure 14 Plug-in Update

16. On clicking the Plug-in Update, Dell Repository Manager will retrieve the plug-in information from ftp.dell.com and gives a dialog box showing the available plug-in's to download. Desired one's can be selected or all can be selected for download. Once Download is clicked, the plug-in(s) get downloaded and a job-queue will be submitted. Optionally the plug-in(s) can also be downloaded to a desired location by checking the "Save a copy of the latest plugins to".   Refer Figure 15.
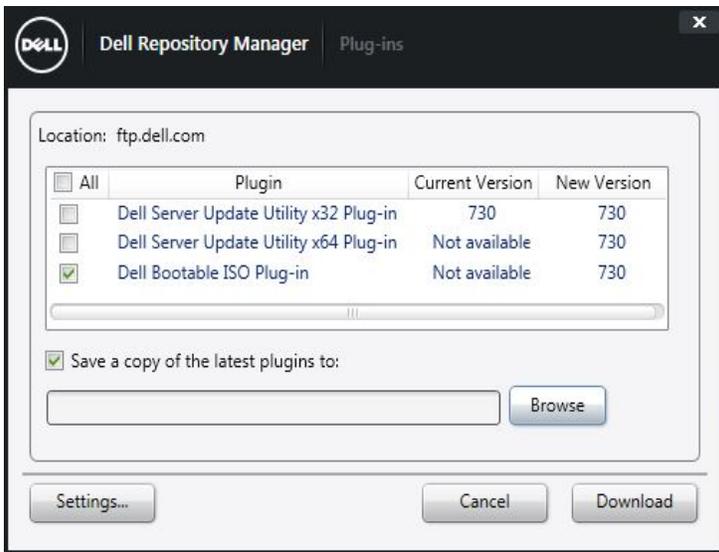
Figure 15 Plugin Browser

17. Once the required plug-in is available, during the export wizard, you will see a note saying that required plug-in is found. Refer Figure 16.
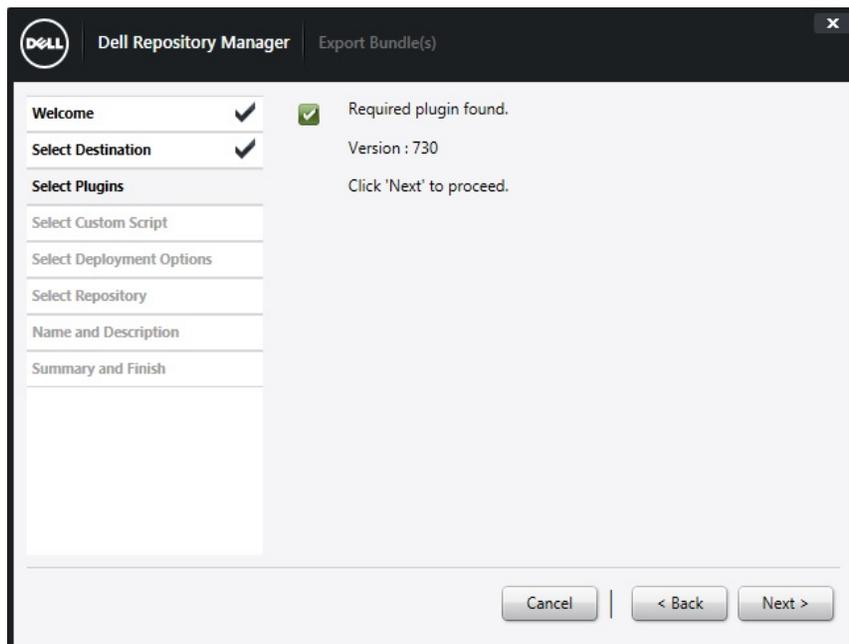
Figure 16 Plug-in found Wizard

18. Choose the location to save the ISO image. Click OK.

19. You are provided with an option to include your own script in the ISO image, or choose to use the default script and proceed with the creation of the image.
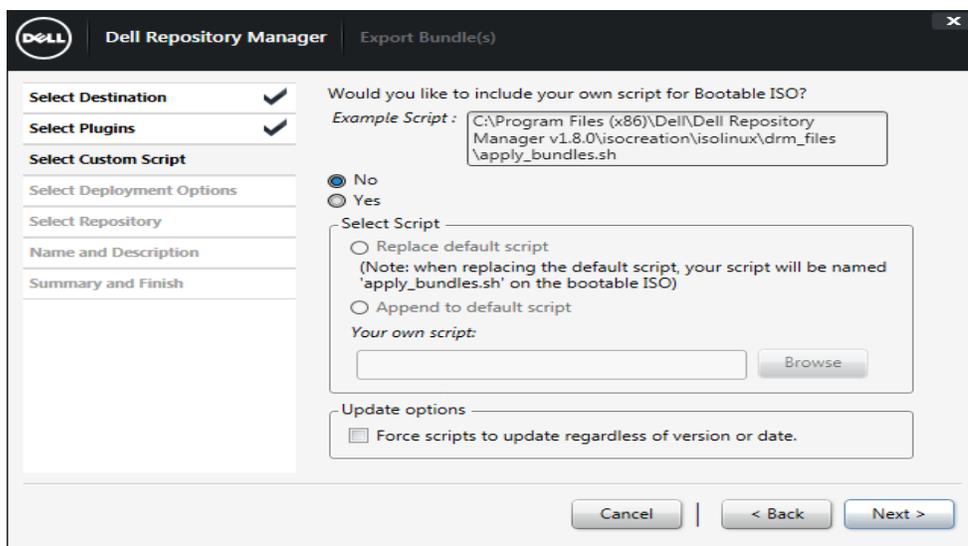
Figure 17 Selecting the custom bundle script

20. Add a custom BASH script to run system configuration commands by either replacing the default script or appending the custom script to the default script. This provides additional options to configure the system settings, in addition to running system updates.
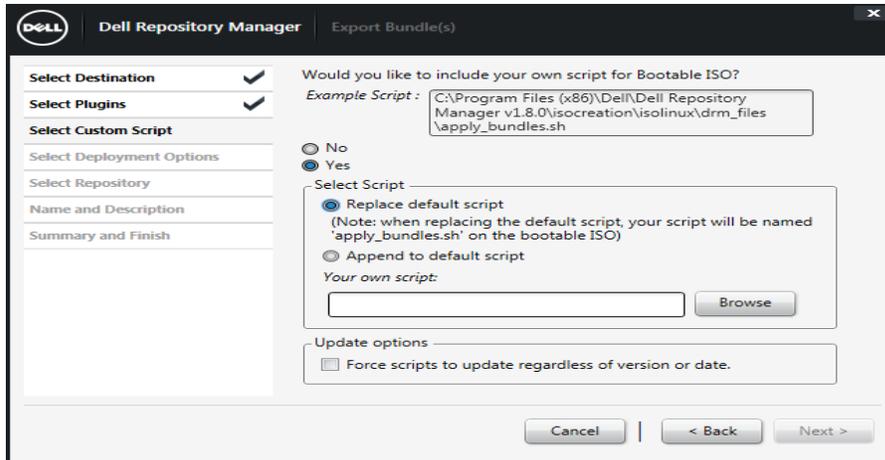
Figure 18 Adding a custom BASH script

Select Script > Option 1 – Replace Default script

Make your customized script the same format as the script *apply_bundles.sh*, which is obtained from the Dell^{TM} Repository Manager Install location.

Select Script > Option 2 - Append to default script

You have the flexibility to append the customized script for system configuration to achieve both or either of the following:

- Uniform configuration for all systems in the bootable iso

- Exclusive   configuration   for   individual   systems   in   the   bootable   iso

Provide a sample script of the format below:

```
#!/bin/bash
# This is a Sample Script
# Below path is required for Dell Deployment Toolkit Commands to run
export PATH=$PATH:/opt/dell/toolkit/bin
export LD_LIBRARY_PATH=$PATH:/opt/dell/toolkit/lib:/opt/lsi

name=`syscfg --sysname | cut -f 2 -d\= `; # This would return the Model Name
& Number of the System its currently Running on

case "$name" in
    "PowerEdge R810") # Mention the Server Model Name & Number for which the
following settings will be applied exclusively
            raidcfg -ctrl; # Dell Deployment Toolkit Command
            syscfg --numlock=on;; # Dell Deployment Toolkit Command

      "PowerEdge R715") # Mention the Server Model Name & Number for which
the following settings will be applied exclusively
            syscfg –bootsequence=3,2,1; # Dell Deployment Toolkit Command
            racadm -r 10.94.171.51 -u user_name -p xxxxx getsysinfo;; # Dell
Deployment Toolkit Command

      "PowerEdge 1950") # Mention the Server Model Name & Number for which
the following settings will be applied exclusively
            racadm -r 10.94.171.51 -u root -p calvin getsysinfo # Dell
Deployment Toolkit Command
            raidcfg –ctrl –ac=cvd –c=id –ad=id;; # Dell Deployment Toolkit
Command

      *) # The below settings will be applied to the Systems which are NOT
mentioned above – Uniform settings
            syscfg --numlock=off; # Dell Deployment Toolkit Command
            racadm -r 10.94.171.51 -u user_name -p xxxxx getsysinfo;; # Dell
Deployment Toolkit Command
esac
exit 0
```

21. Browse to the location of the script (saved in UNIX format). Click **Next**.

22. In the Export Summary window (Figure 19), click Finish.
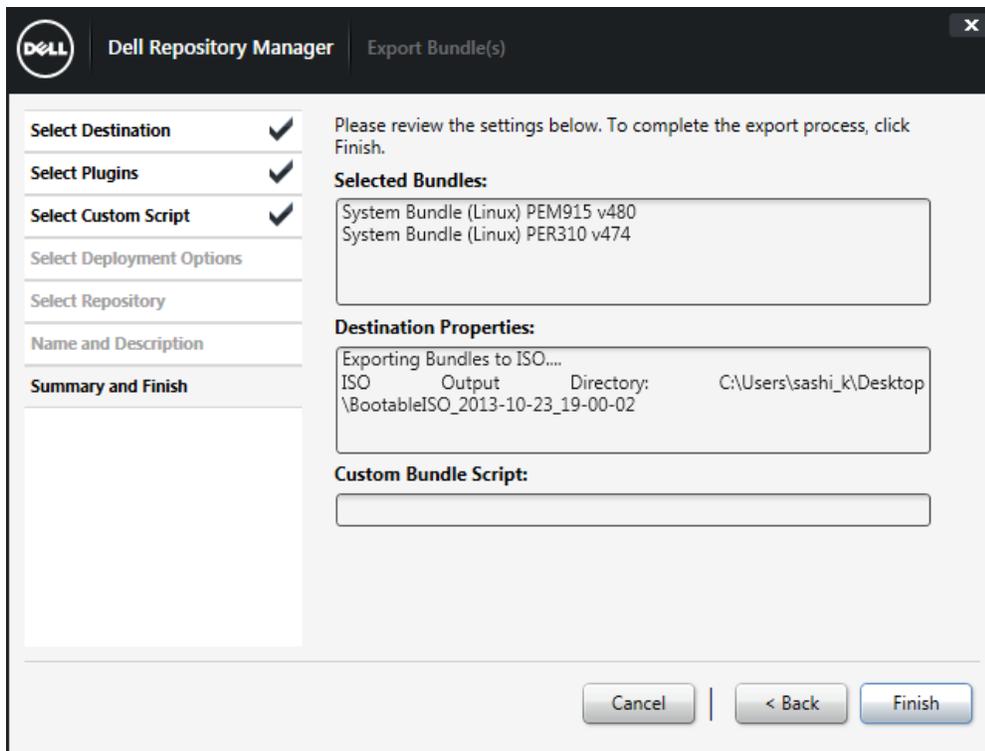
Figure 19 Viewing Export Summary

A bootable ISO image will be created. This ISO image uses the Bootable iso Linux Kernel to run the Dell Update Packages. Burn the ISO image to: either a CD or a DVD media depending on the size of the created ISO, or mount the created ISO through the virtual media feature of iDRAC to perform remote updates.

Note: The bootable ISO image created cannot be converted in to a USB key image as this feature is not yet supported.

- If the bootable iso is created using multiple system bundles, all the bundles are displayed on the console when you boot the server through the media. To start running, enter the number corresponding to the bundle and press <ENTER>. For example, if PER200 is the second in the list, press <2> and apply the bundle.

- If the bootable iso is created using a single baseline (a single bundle), execution automatically starts when you boot the server through the media.
 Figure 20 below shows one of the scenario.

Figure 20 Bootable iso getting executed

Summary

Dell^{TM} Repository Manager lets you keep Dell systems up to date in pre-operating system environment. The Dell^{TM} Repository Manager documentation is available at:

http://support.dell.com/support/edocs/SOFTWARE/smdrm/

http://www.dell.com/support/Manuals/us/en/555/Product/dell-repository-mangr-v1.8

This document lists in detail the hardware and software requirements for its installation.

Dell Deployment Toolkit documentation is available at:
http://support.dell.com/support/edocs/software/dtk

Learn more

Visit Dell.com/PowerEdge for more information about enterprise-class servers from Dell.

Visit http://www.dell.com/support/Manuals/us/en/555/Product/dell-repository-mangr-v1.8 for more information about Dell Repository Manager tool.

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