Using Dell™ Repository Manager to Create a Deployment Media (Bootable ISO) to Perform Systems Updates

This Dell Technical White Paper addresses how to leverage configuration scripts while updating Dell servers.

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Executive Summary

This technical white paper describes the techniques for updating Dell Systems using Dell™ Repository Manager (DRM) in a pre-operating system environment as well as how to change the vital system configuration settings (like BIOS, RAID, RAC and so on) during this operation. These configuration settings are exclusive to each system or uniform settings across systems, depending on your requirements. This white paper provides an overview of the system update process using the deployment media created by Dell™ Repository Manager. This white paper describes the steps that you should follow to:

1. Import the Dell Catalog containing system updates into Dell™ 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. Dell™ Repository Manager is a Microsoft Windows-based application that eases tedious change management tasks for administrators. Dell™ Repository Manager facilitates the download, filter, and conversion of updates into various convenient deployable formats.

Dell™ Repository Manager, through the deployment media, 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: Deployment media uses the Dell Deployment Toolkit (DTK) engine at the backend and supports system configuration.

How to create a customized deployment media (bootable ISO) for pre-operating system update using Dell Repository Manager

Prerequisites

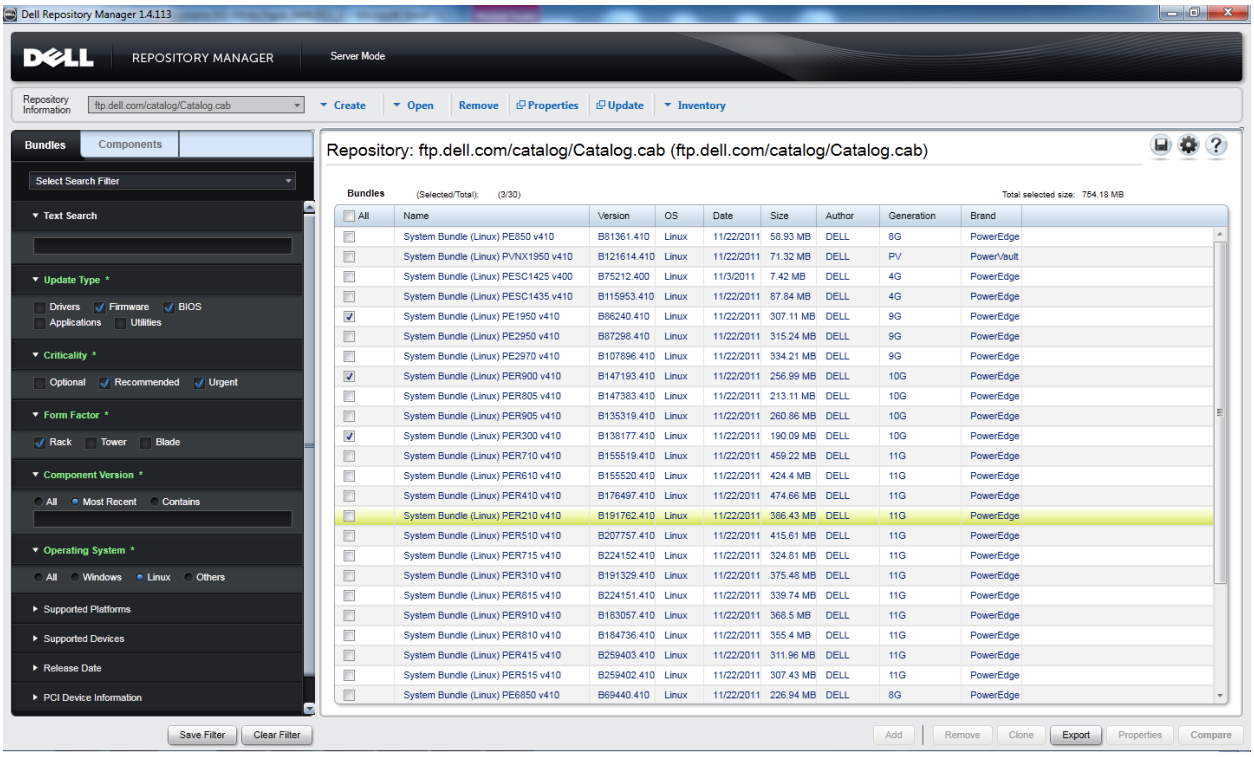
The following prerequisites are required for the creation of deployment media:

- Install Dell™ Repository Manager on a system with Internet access.
- Download the latest version of Dell™ Repository Manager from the Dell Support Site - http://support.dell.com/ or at http://DellTechCenter.com/RepositoryManager.
- Launch Dell™ Repository Manager in Server Mode (double click the **Dell™ Repository Manager** icon for servers to open the application).

1. Click the **X** button (top right corner) to close the welcome window splash screen.
2. Click **Open > Dell FTP Catalog** link.

3. Provide the network credentials to connect to an FTP site if the system is running behind a firewall.
4. Verify and accept the Security Warning pop-up windows for digital signature verification.
5. The Dell FTP catalog is loaded. Populate the bundles as shown in the screen shot below.

Figure 1. Populating the bundles

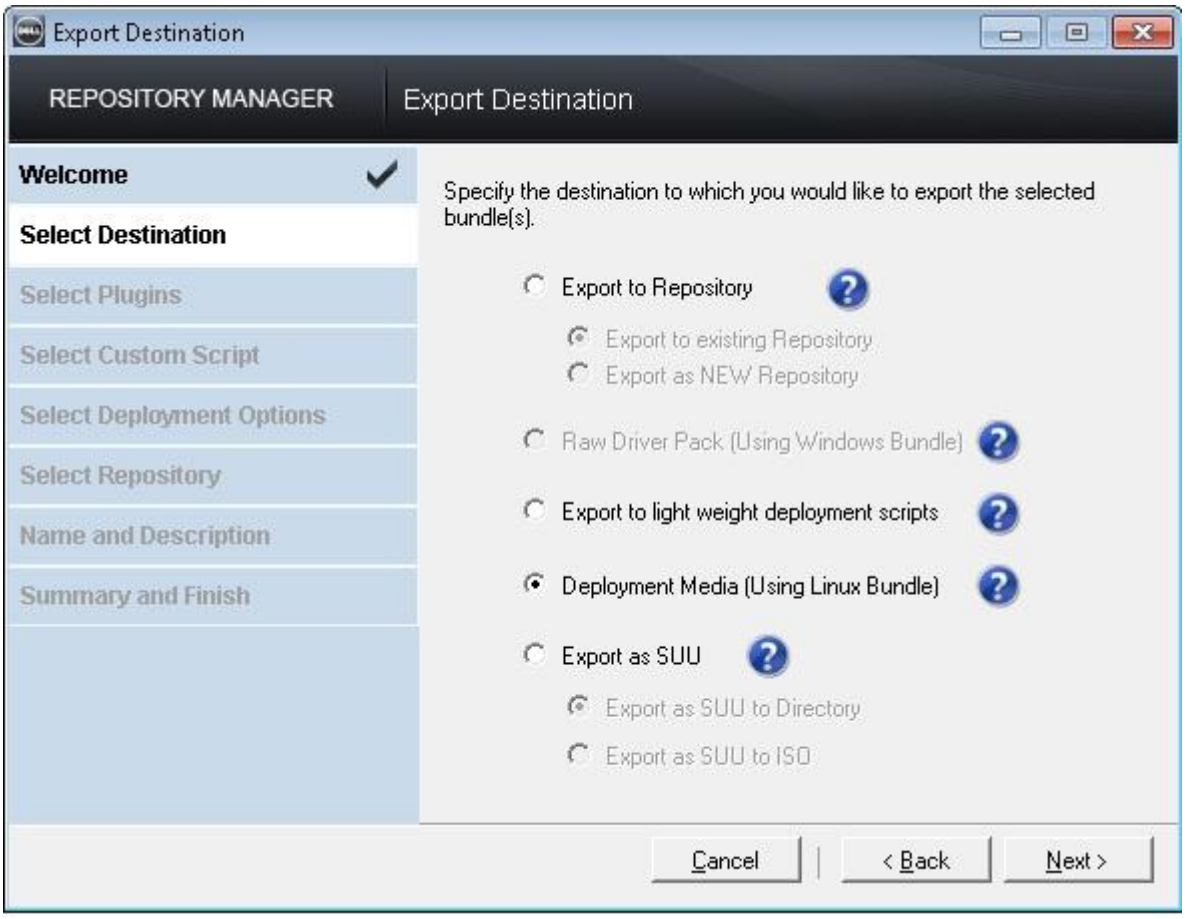


Use only search filters to view the desired bundles. Only Linux specific bundles are supported for this export option.

6. Click **Export**.

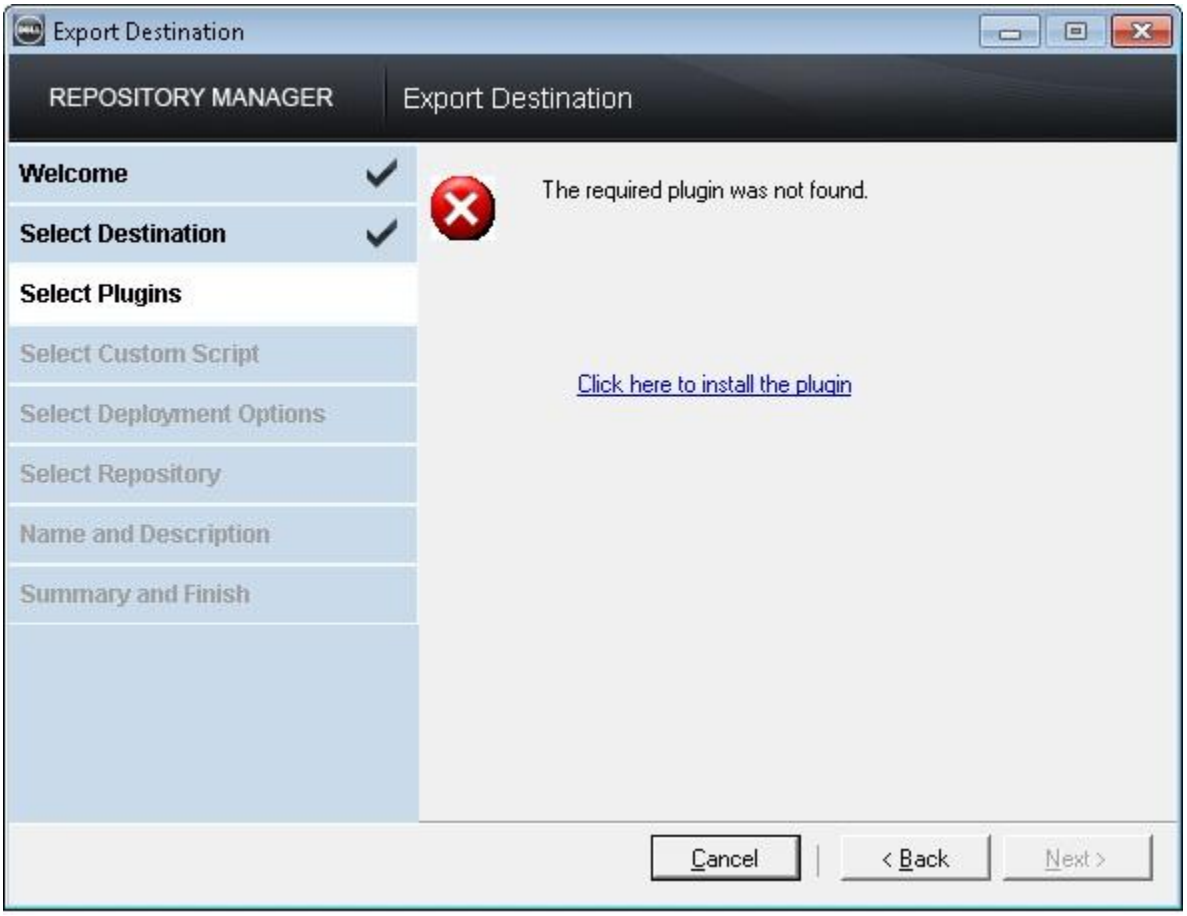
7. Select **Deployment Media (Using the Linux Bundle).** Click **Next.**

Figure 2. Specifying the export bundle destination



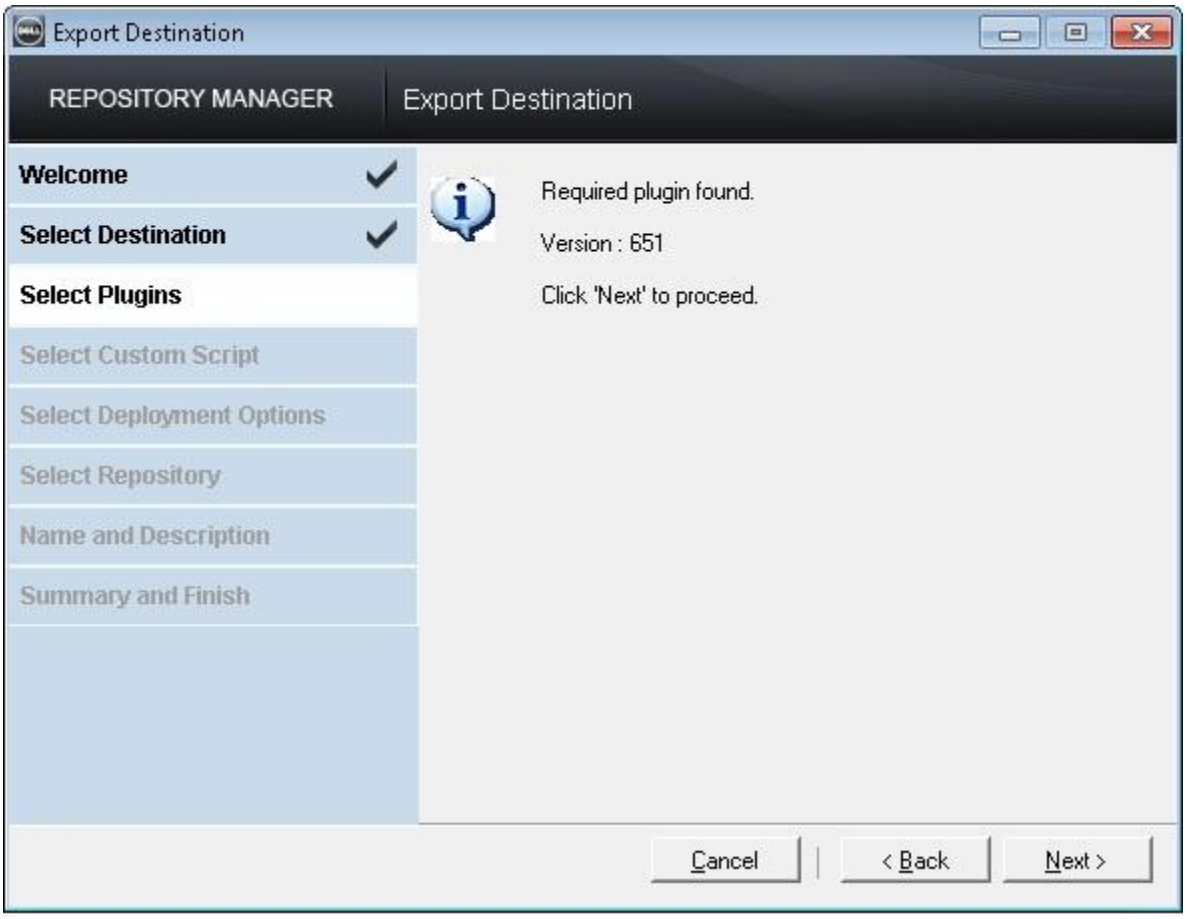
8. Click the link to install the required plug-in. Accept the security warning pop-up window for digital signature verification.

Figure 3. Installing the plugin



9. Once the plugin download is complete, click **Next**.

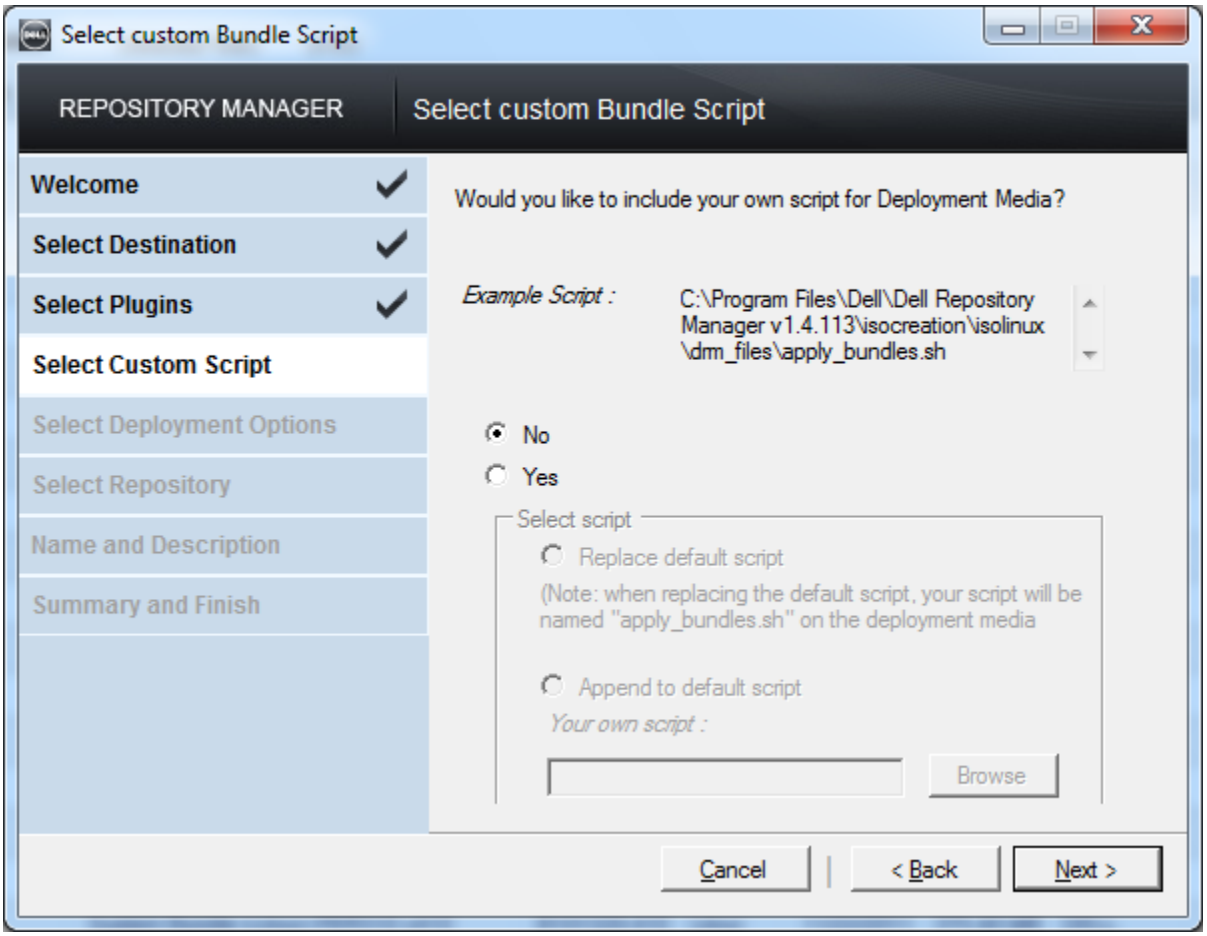
Figure 4. Verifying the plugin download



10. Choose the location to save the ISO image. Click **OK**.

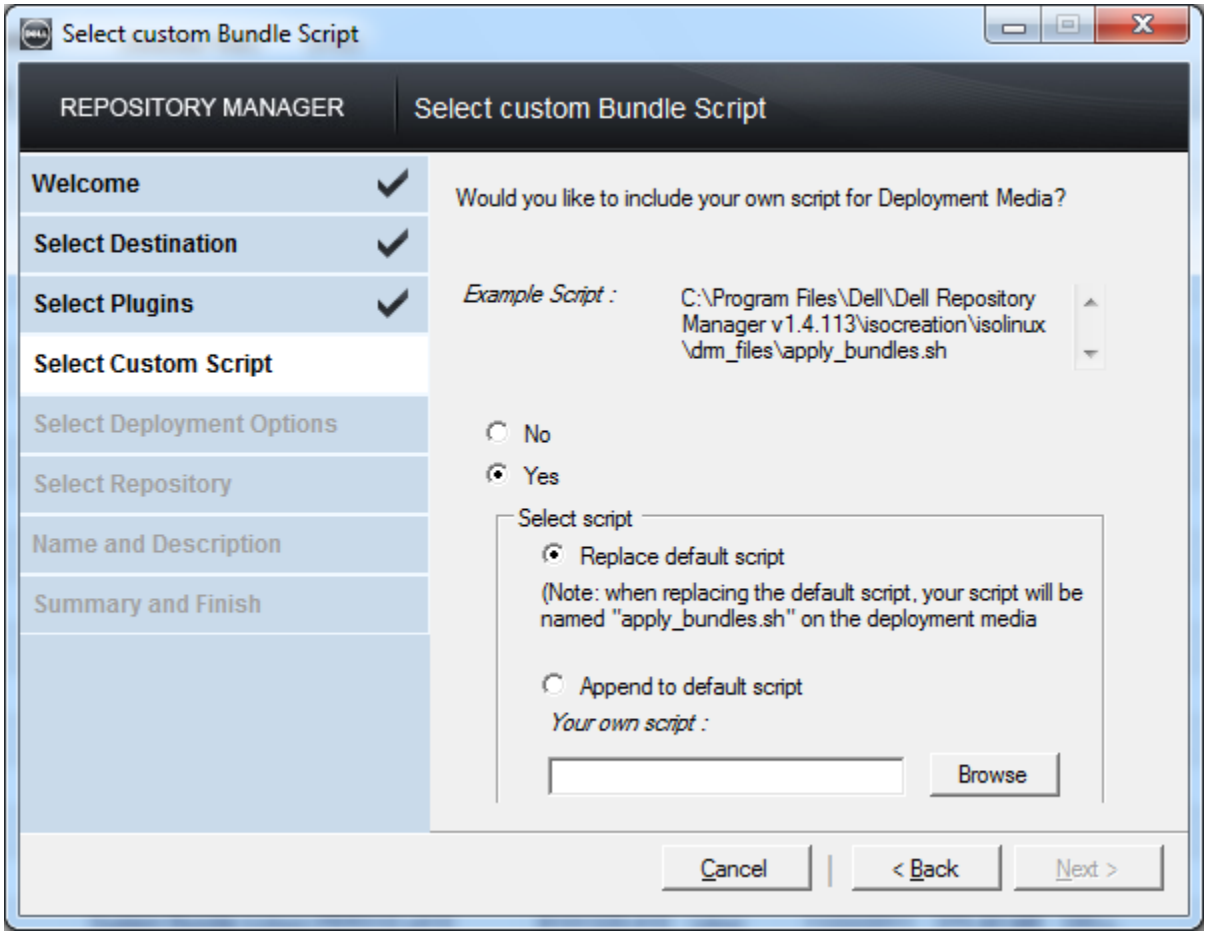
11. You are provided with an option to include your own script in the ISO image, or choose to include only the default script and proceed with the creation of the image.

Figure 5. Selecting the custom bundle script



12. 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 6. 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™ 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 deployment media
- Exclusive configuration for individual systems in the deployment media

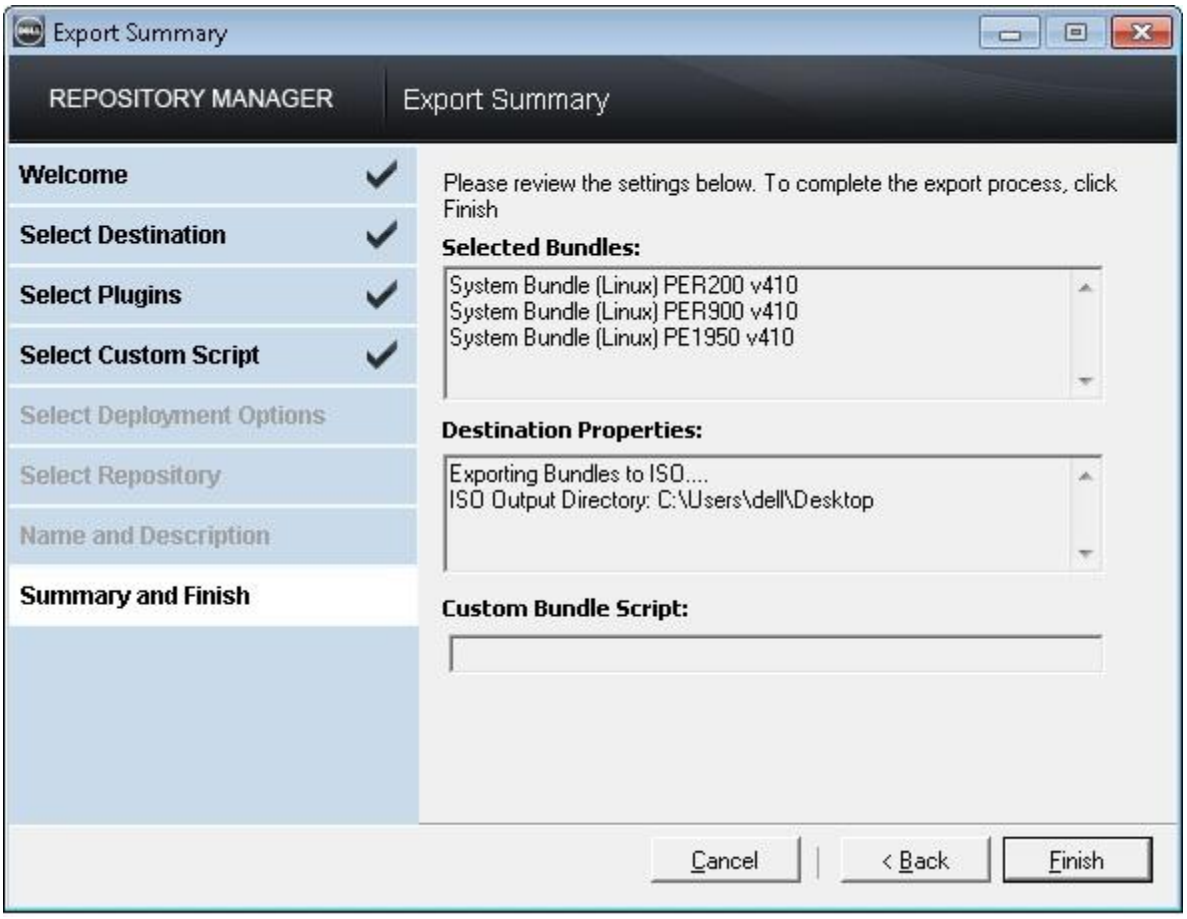
Provide a sample script of the format below:

```
#!/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
```

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

4. In the Export Summary window, click **Finish**.

Figure 7. Viewing the Export Summary



A bootable ISO image is created. This ISO image uses the Deployment Media Linux Kernel to run the Dell Update Packages. Burn the ISO image to: either a CD ROM/DVD, convert into a USB key image (make a bootable USB key image with the ISO using any third-party utility), or mount through the virtual media feature of iDRAC to perform remote updates.

- If the deployment media (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 deployment media is created using a single baseline (a single bundle), execution automatically starts when you boot the server through the media.

Summary

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

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

Using Dell™ Repository Manager to Create a Deployment Media (Bootable ISO) to Perform Systems Updates

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 DellTechCenter.com/RepositoryManager for more information about Dell Repository Manager tool.