

# How to Update an Appliance BIOS and firmware using the Dell Repository Manager

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## Background

The [Dell Repository Manager \(DRM\)](#) is the recommended method for obtaining non O/S updates for Dell Appliance Server. This is an alternative mechanism to an online update with yum through Dell OpenManage which can take several hours per appliance and requires a direct internet connection which may not be available. With the DRM the latest updates are downloaded to a PC where the update media can be created and shared with each appliance. The updates can be applied with Lifecycle Controller (F10) during the boot sequence or from a bootable CD, DVD or USB.

The procedure in this article was carried out on a Dell R610 with a 4GB USB flash drive but it should work equally well on the newer R620 hardware.

The DRM update method has the advantage of being independent of the Operating System so it has less issues with compatibility.

The DRM software itself is Windows based (installed on Windows 7/8).

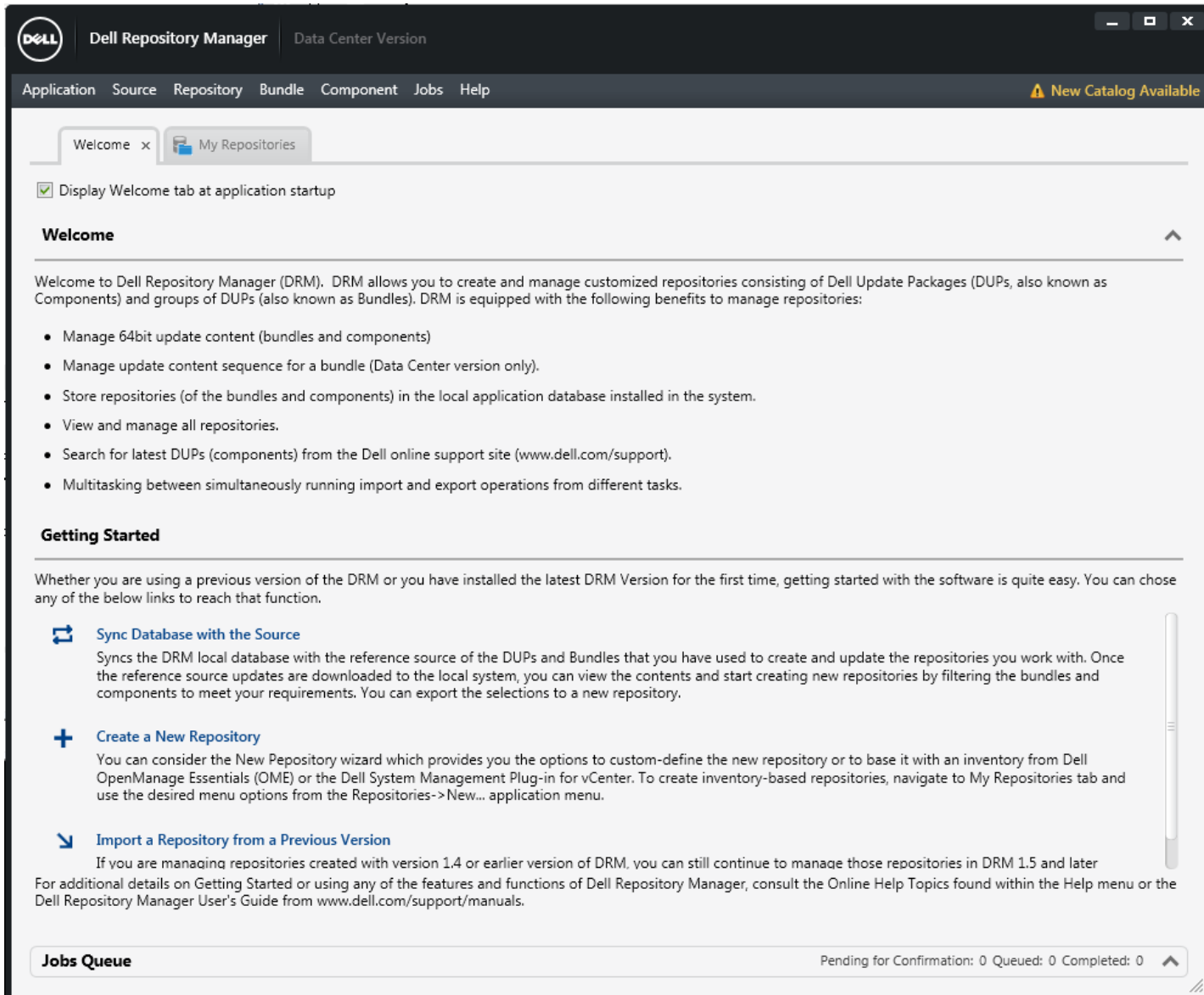
Once installed there is a DataCenter version for rack, tower and blade servers and a Client version for desktops and laptops.

So this can in theory be used to update all shipped appliance versions from the Dell PowerEdge 1950, R610 to latest R620 - it could even update a Dell Latitude laptop!

## Installing and configuring the Dell Repository Manager

1. Download and Install the "Dell Repository Manager" on a Windows machine (needs at least Vista/2008 for ISO creation to work) <http://www.dell.com/support/drivers/us/en/555/DriverDetails?driverId=XV4NV>  
(Note the version used in this guide is 1.7 A00 08/15/2013)
2. Launch the Dell Repository Manager Data Center Version from the start menu
3. Accept plugin notification options manually check and online (ftp.dell.com)

4. First time it is run a new catalog is needed so click on **New Catalog Available** in top right corner



The screenshot shows the Dell Repository Manager (DRM) interface. The title bar includes the Dell logo, "Dell Repository Manager", and "Data Center Version". The navigation menu contains "Application", "Source", "Repository", "Bundle", "Component", "Jobs", and "Help". A notification in the top right corner says "New Catalog Available". The main content area has a "Welcome" tab selected. Below the tab, there is a checkbox for "Display Welcome tab at application startup" which is checked. The "Welcome" section contains a paragraph of introductory text and a bulleted list of features. The "Getting Started" section provides instructions on how to sync the database, create a new repository, or import from a previous version. At the bottom, there is a "Jobs Queue" section showing "Pending for Confirmation: 0", "Queued: 0", and "Completed: 0".

**Application** Source Repository Bundle Component Jobs Help New Catalog Available

Welcome x My Repositories

Display Welcome tab at application startup

### Welcome

Welcome to Dell Repository Manager (DRM). DRM allows you to create and manage customized repositories consisting of Dell Update Packages (DUPs, also known as Components) and groups of DUPs (also known as Bundles). DRM is equipped with the following benefits to manage repositories:

- Manage 64bit update content (bundles and components)
- Manage update content sequence for a bundle (Data Center version only).
- Store repositories (of the bundles and components) in the local application database installed in the system.
- View and manage all repositories.
- Search for latest DUPs (components) from the Dell online support site ([www.dell.com/support](http://www.dell.com/support)).
- Multitasking between simultaneously running import and export operations from different tasks.

### Getting Started

Whether you are using a previous version of the DRM or you have installed the latest DRM Version for the first time, getting started with the software is quite easy. You can chose any of the below links to reach that function.

- [Sync Database with the Source](#)  
Syncs the DRM local database with the reference source of the DUPs and Bundles that you have used to create and update the repositories you work with. Once the reference source updates are downloaded to the local system, you can view the contents and start creating new repositories by filtering the bundles and components to meet your requirements. You can export the selections to a new repository.
- [Create a New Repository](#)  
You can consider the New Repository wizard which provides you the options to custom-define the new repository or to base it with an inventory from Dell OpenManage Essentials (OME) or the Dell System Management Plug-in for vCenter. To create inventory-based repositories, navigate to My Repositories tab and use the desired menu options from the Repositories->New... application menu.
- [Import a Repository from a Previous Version](#)  
If you are managing repositories created with version 1.4 or earlier version of DRM, you can still continue to manage those repositories in DRM 1.5 and later

For additional details on Getting Started or using any of the features and functions of Dell Repository Manager, consult the Online Help Topics found within the Help menu or the Dell Repository Manager User's Guide from [www.dell.com/support/manuals](http://www.dell.com/support/manuals).

**Jobs Queue** Pending for Confirmation: 0 Queued: 0 Completed: 0

## Creating the new custom Repository for the Appliance

5. Click **Create a New Repository** from Welcome page
6. Give your repository a name. e.g. **610** for the Dell appliance model being updated at this time

**Dell** Dell Repository Manager Create Repository

**Name and Description** Provide a name and description (optional) for the new repository.

Base Repository

Generic Inventory

Select Brand

Select OS

Select Models

Select Bundles

Additional Components

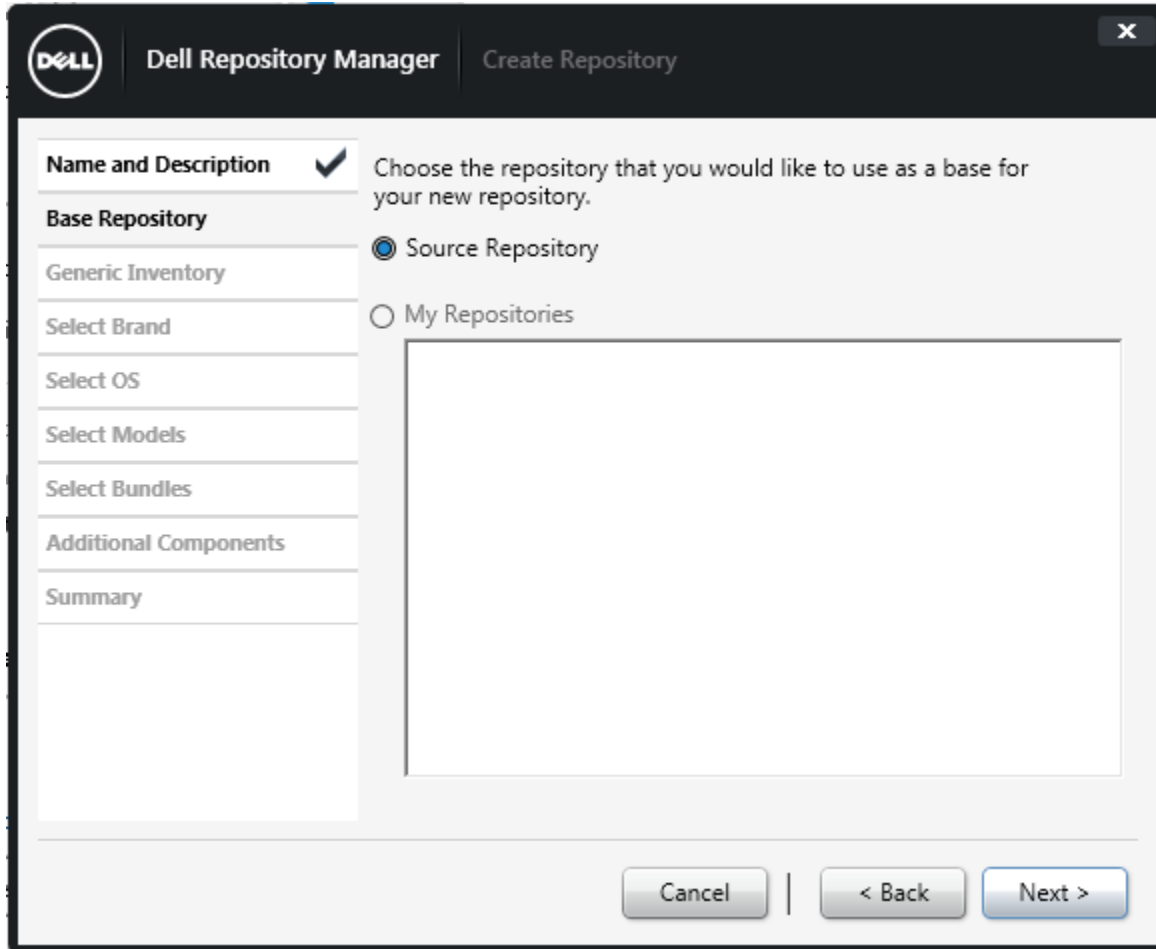
Summary

Name: 610

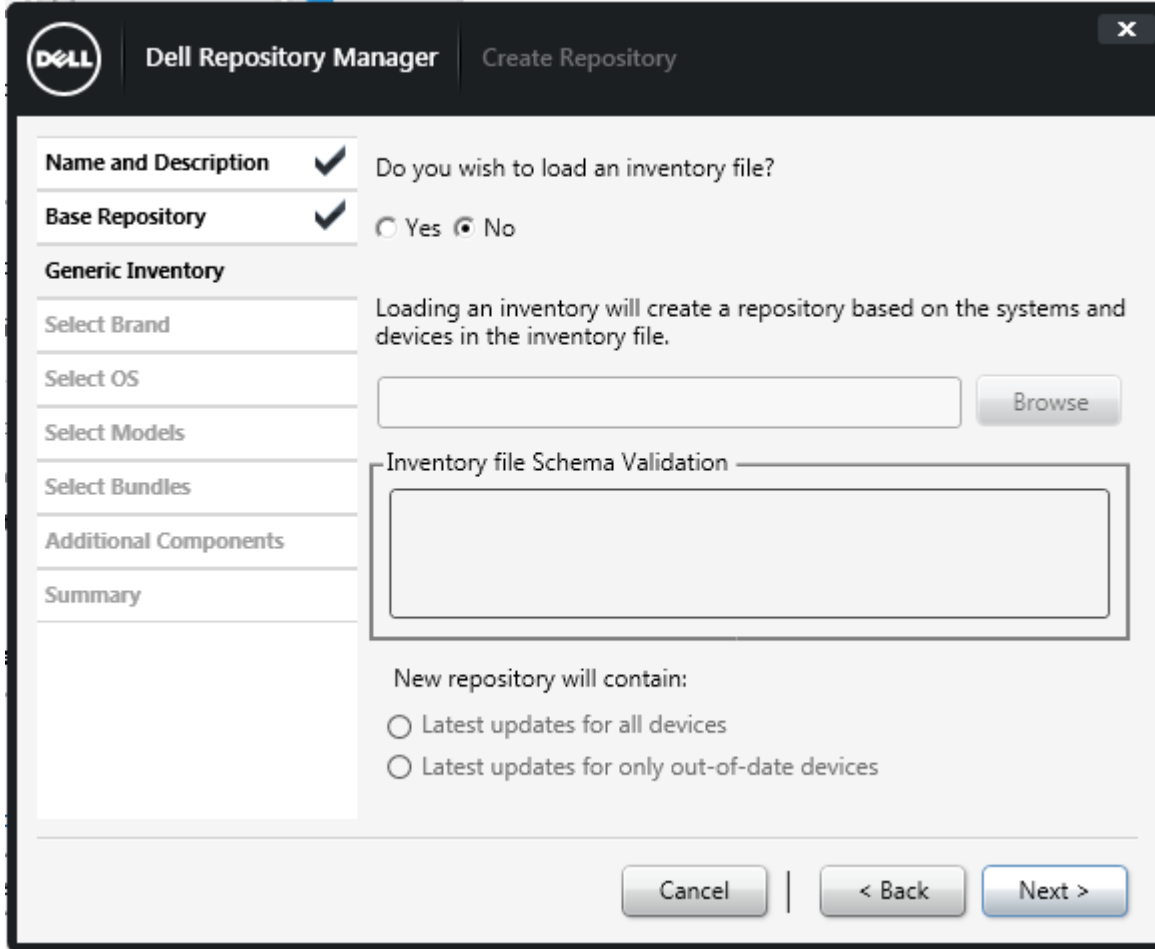
Description:

Cancel | < Back Next >

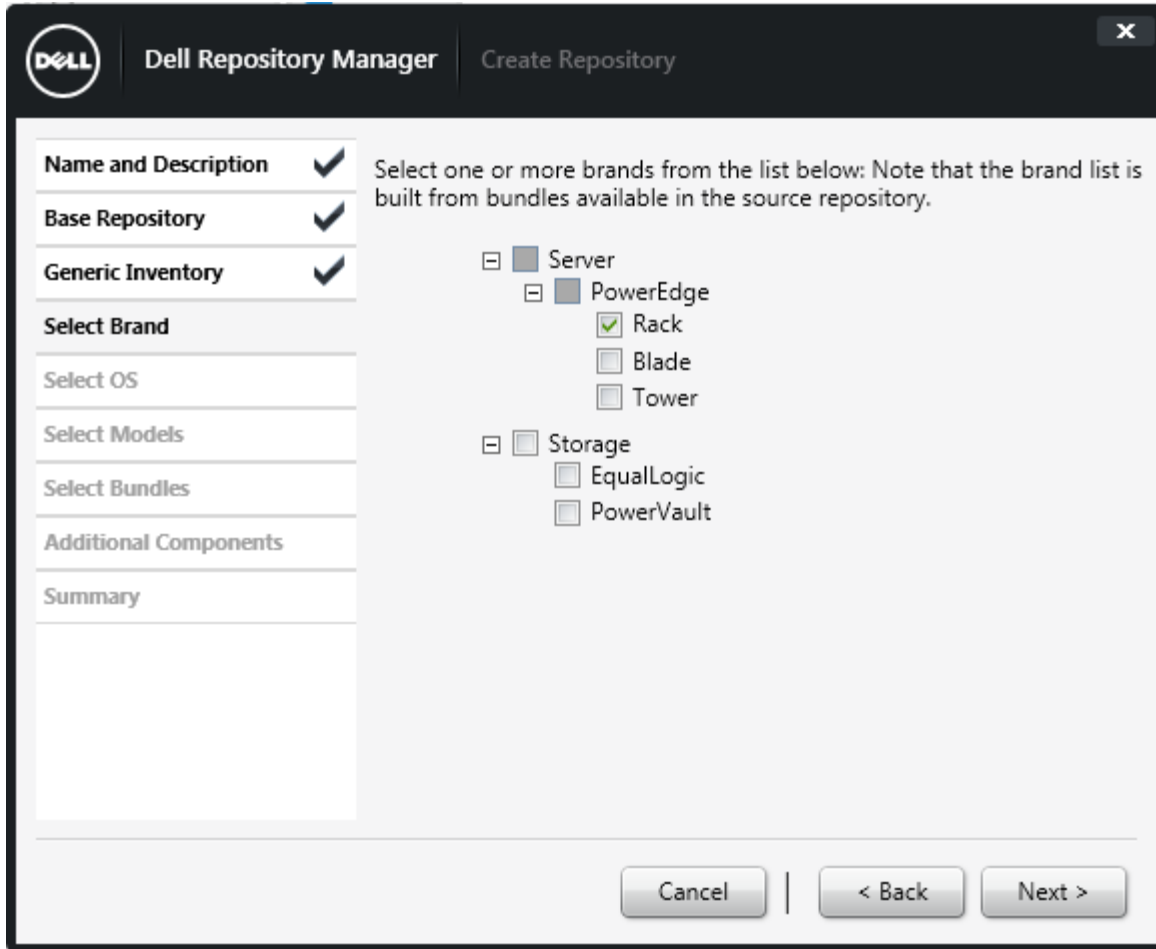
7. Leave the source repository selected and click Next.



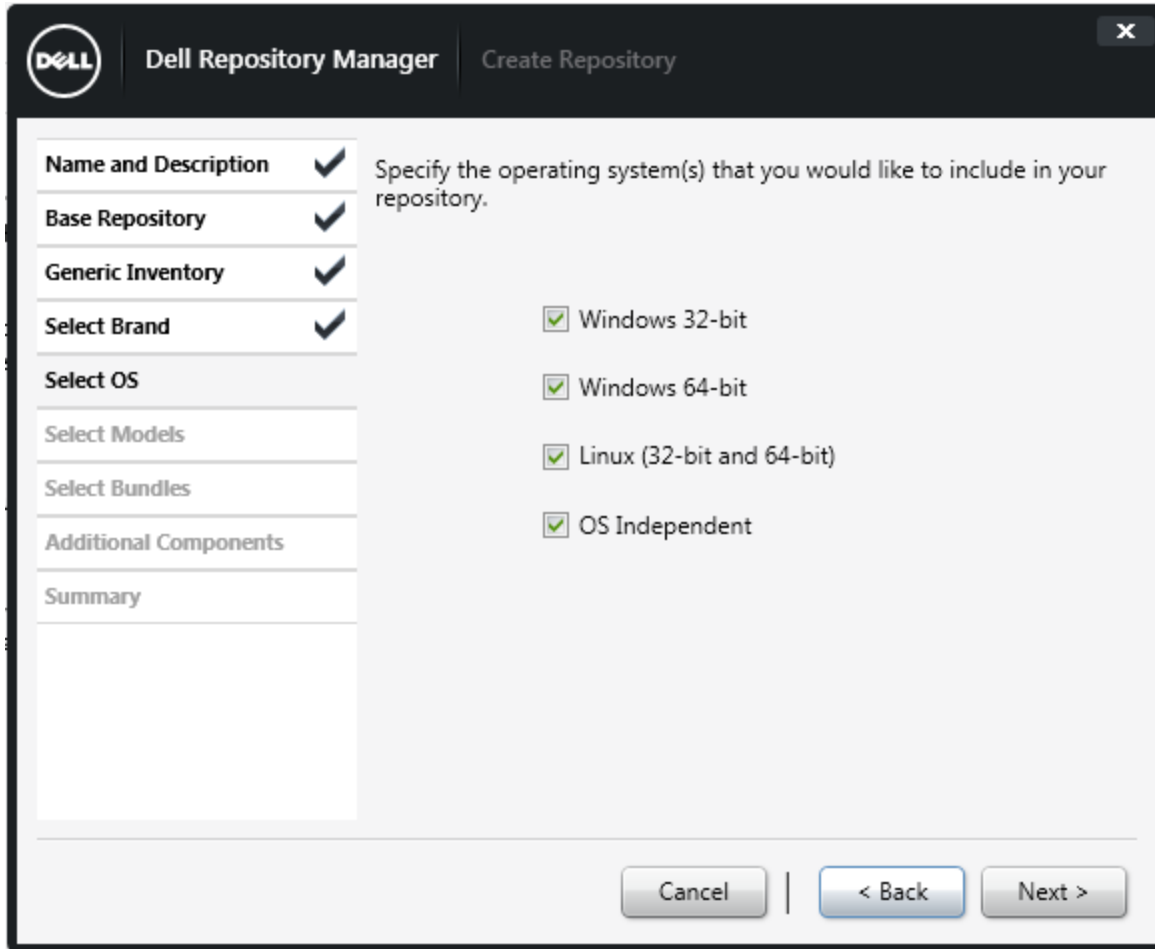
8. Accept default no for loading an inventory file.



9. Select PowerEdge Rack Server

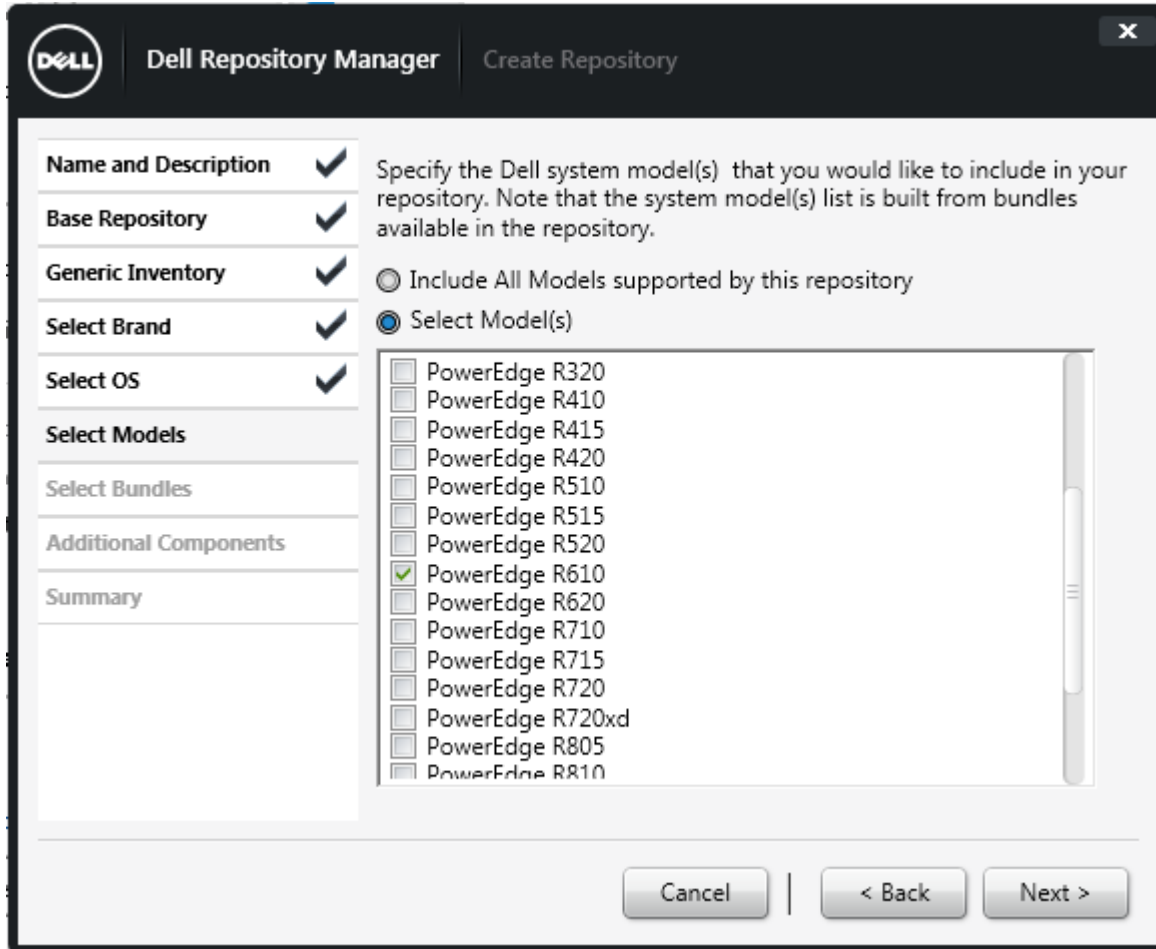


10. Choose all O/Ss

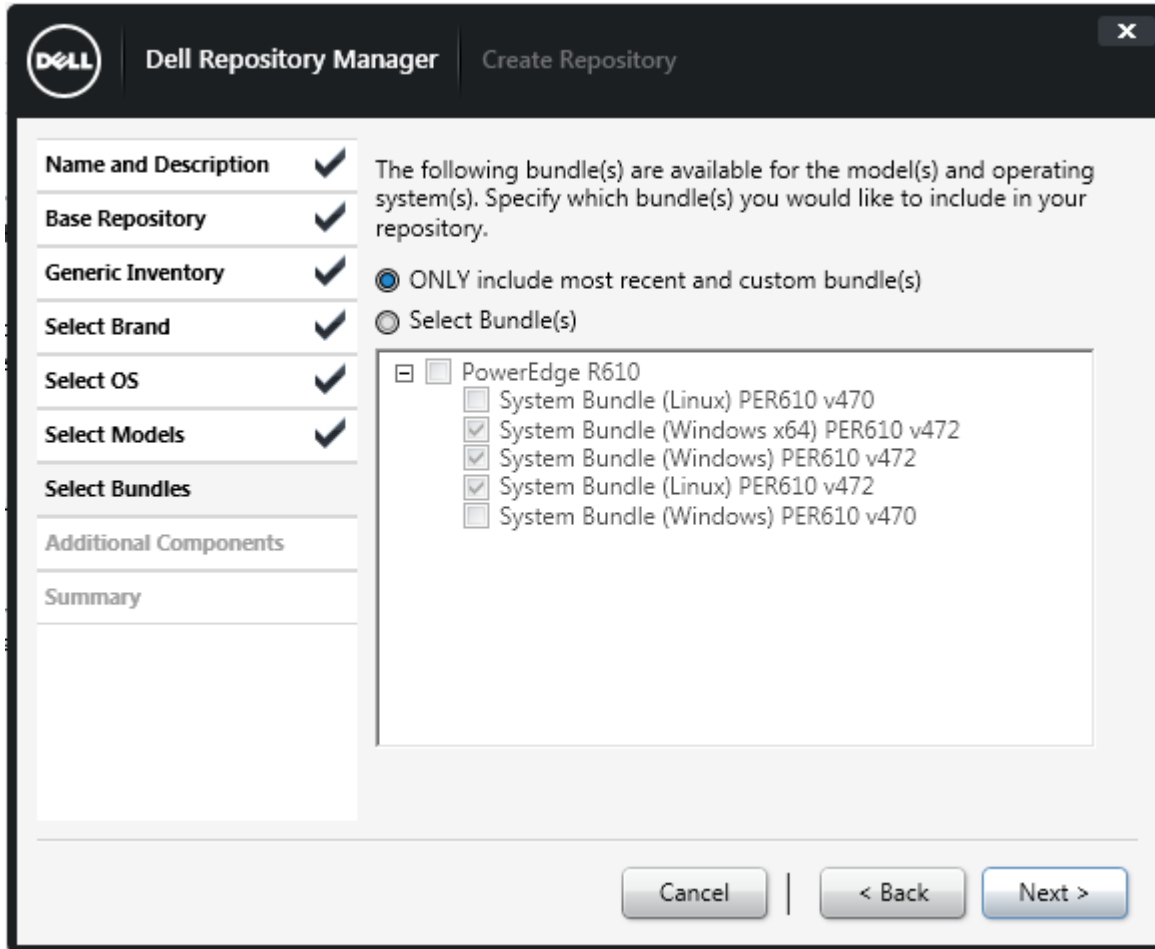


11. Select the model to include in the repository.

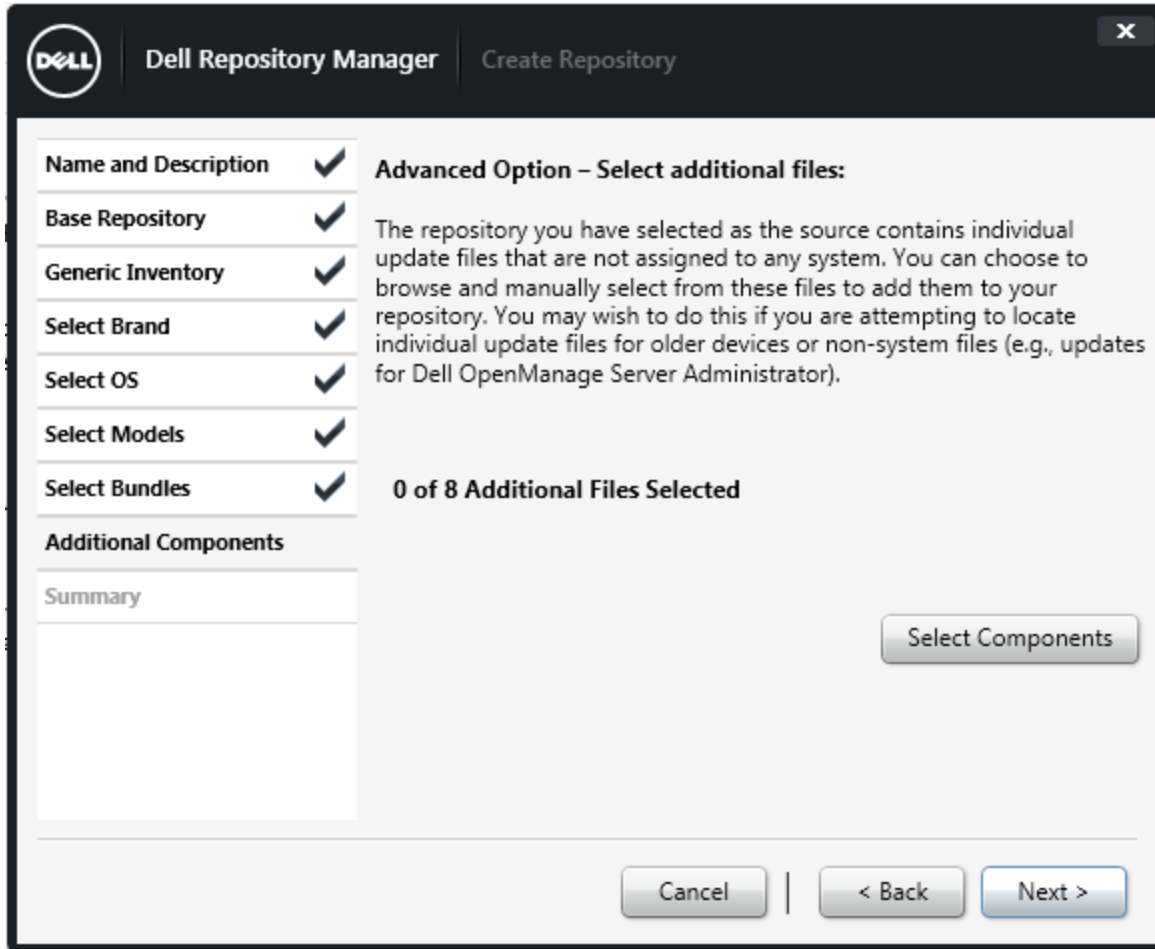
Note: A larger image file will result from selecting multiple models. PowerEdge 1950, R610 and R620 will cover all the appliance models and could be combined together.



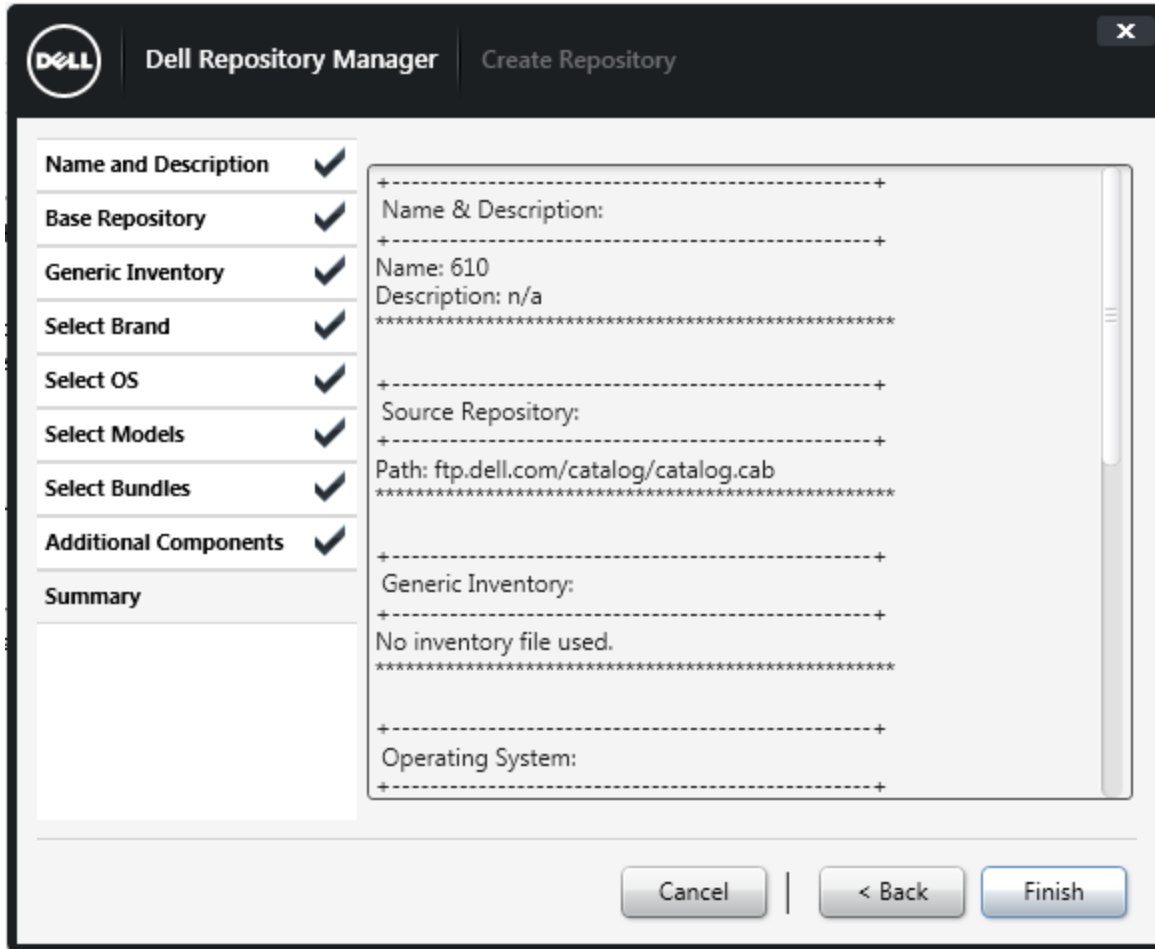
12. Select **ONLY** include the most recent and custom bundles. Click Next.



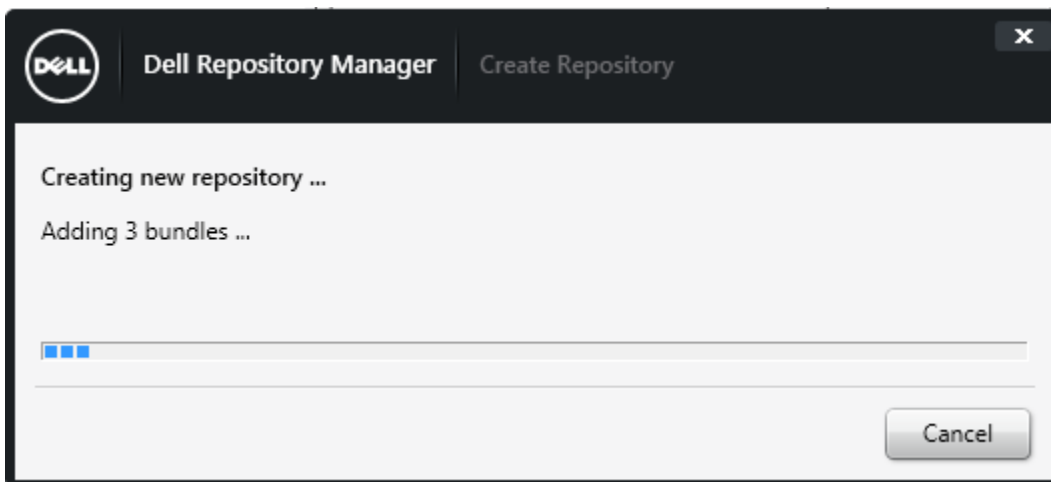
13. No additional files are required so click Next.



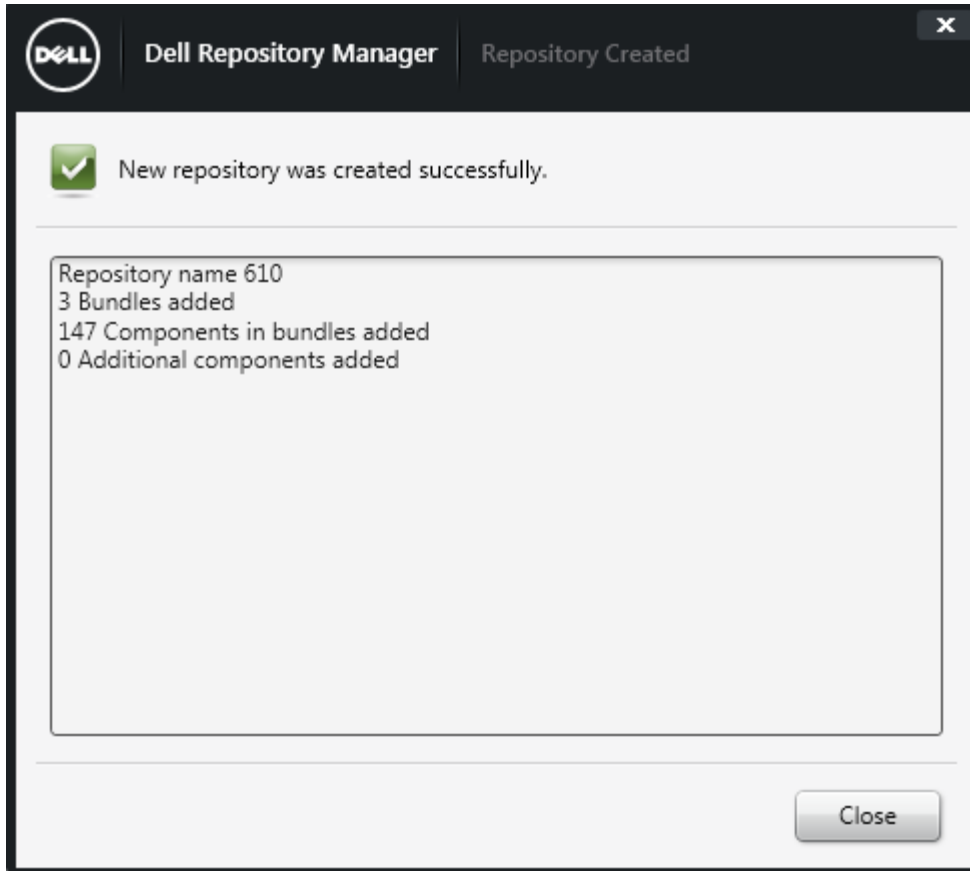
14. Review your repository settings and click Finish.



15. Your repository will be created..



16. Notice the number of components, this is the firmware updates!



## Applying the Updates

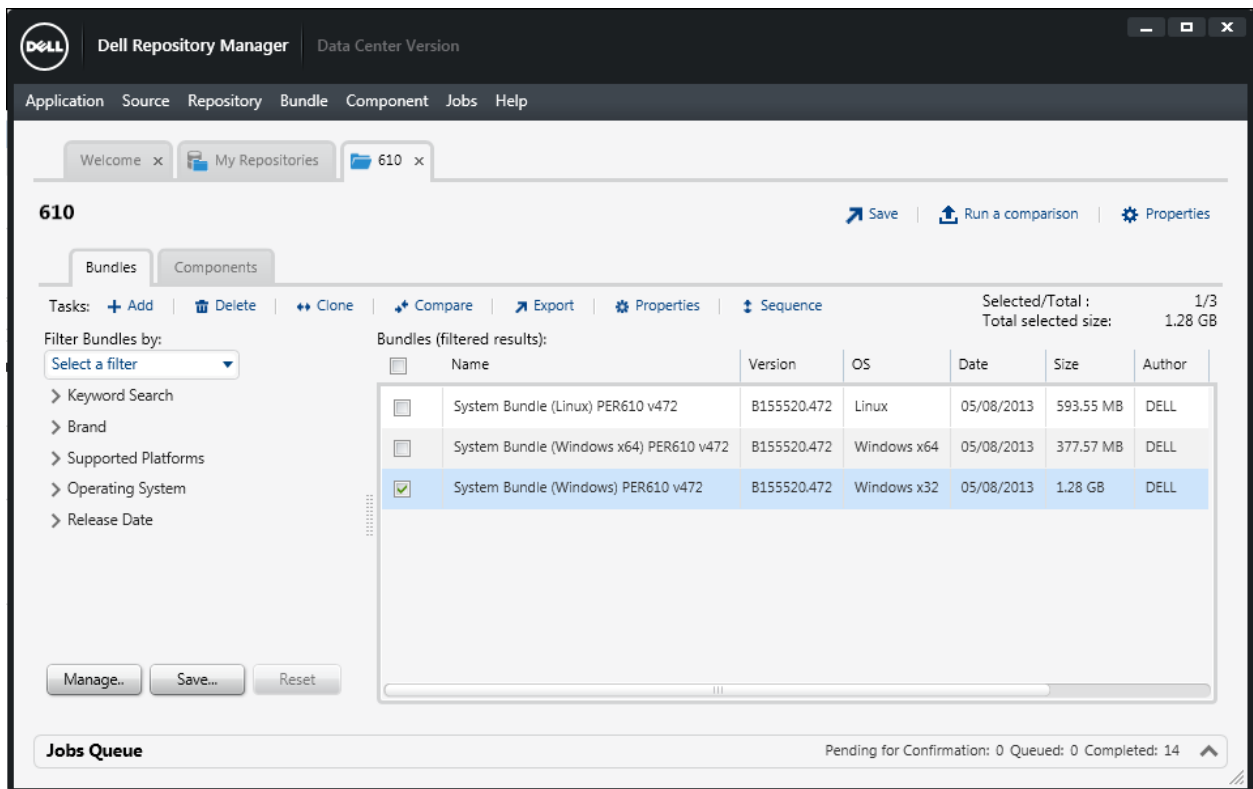
There are 2 ways to apply the updates from a USB flash drive. Lifecycle Controller would be preferred method but if this method has problems a bootable USB can be used as a fallback.

### Updating with Lifecycle Controller

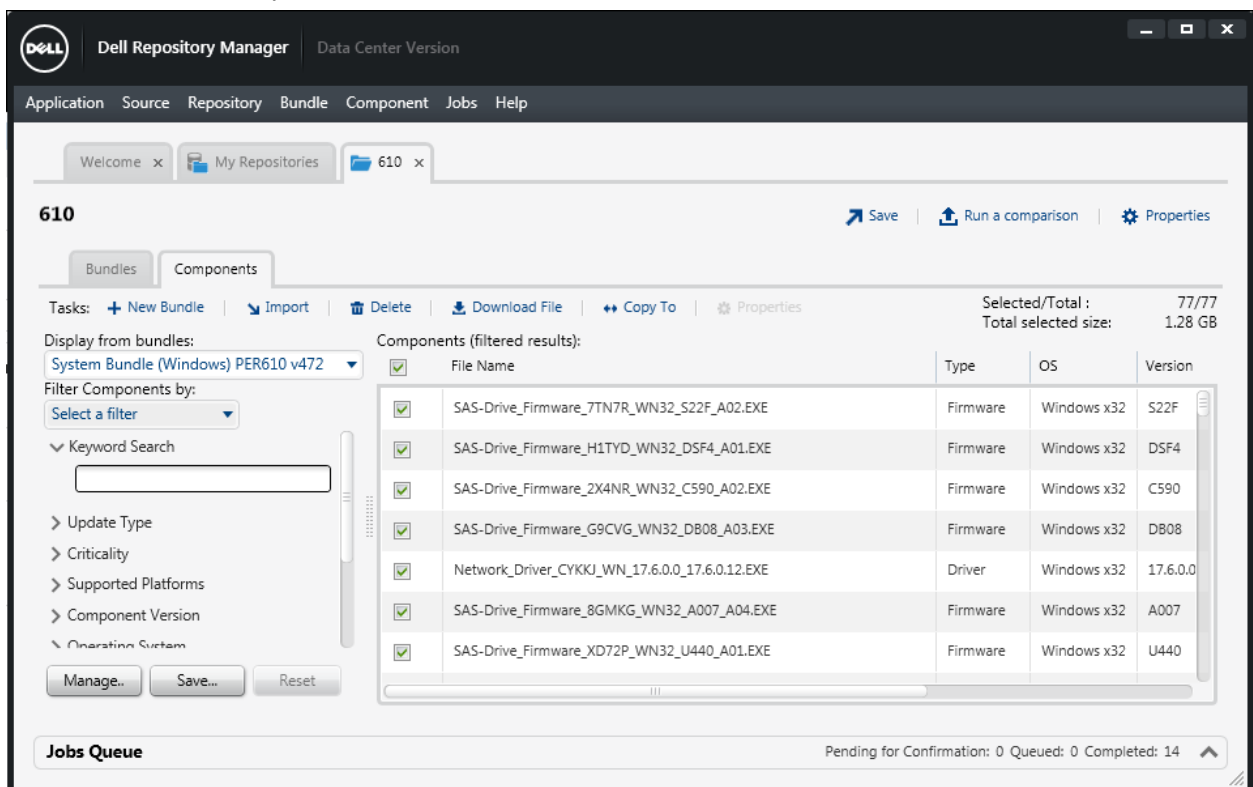
The updates are placed onto a directory on a USB flash drive and applied through the Lifecycle Controller update mechanism which is accessible during the boot sequence of the Dell server.

#### Create a directory bundle

1. Select the components - we need to choose Windows here because of bug in Lifecycle Controller which looks for some Windows files even though we are applying only non O/S updates.



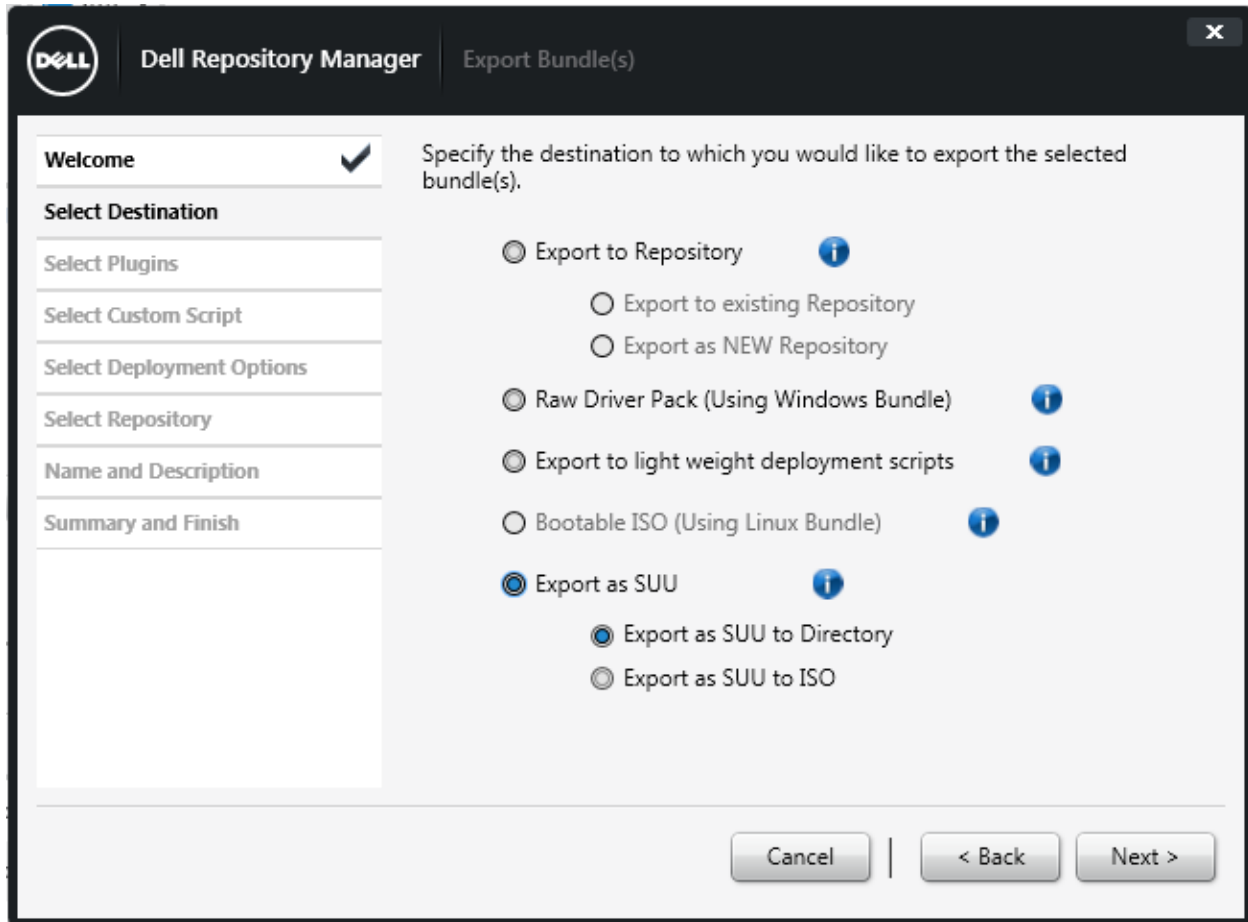
2. Go to the Components tab and select all



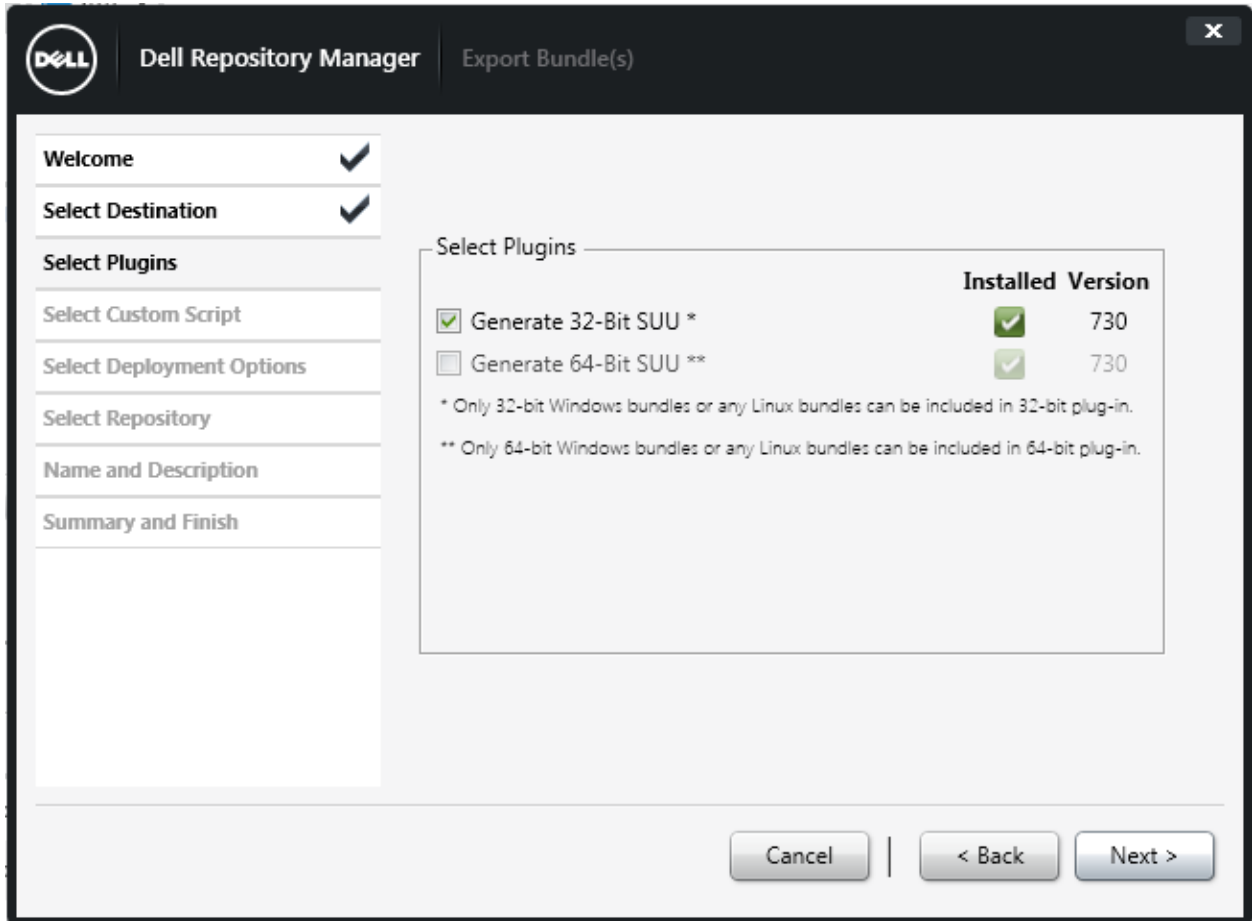
3. Go back to the bundles tab and click on **Export**

4. Click Next on the Welcome screen of Export Bundles Wizard

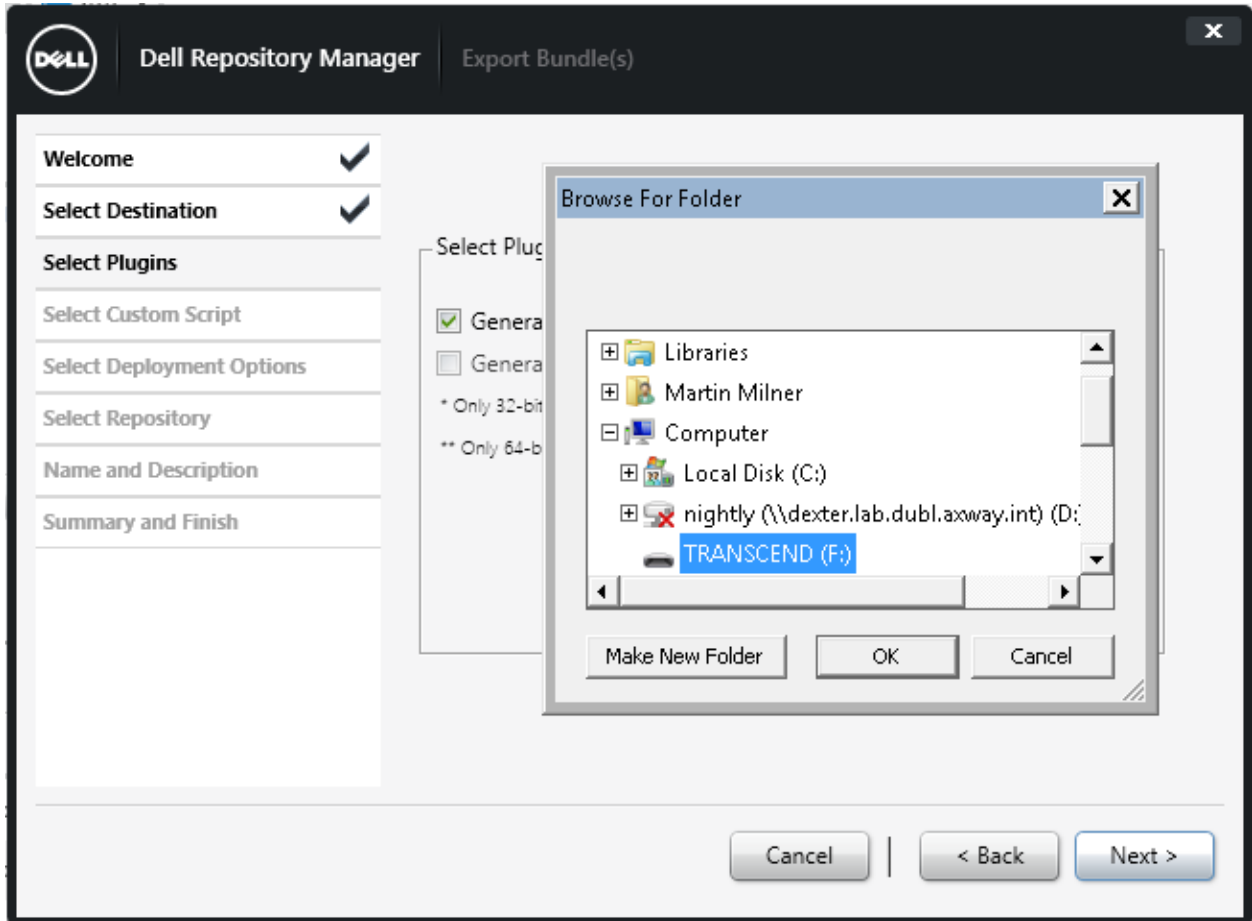
5. Select **Export as SUU to Directory** and click Next



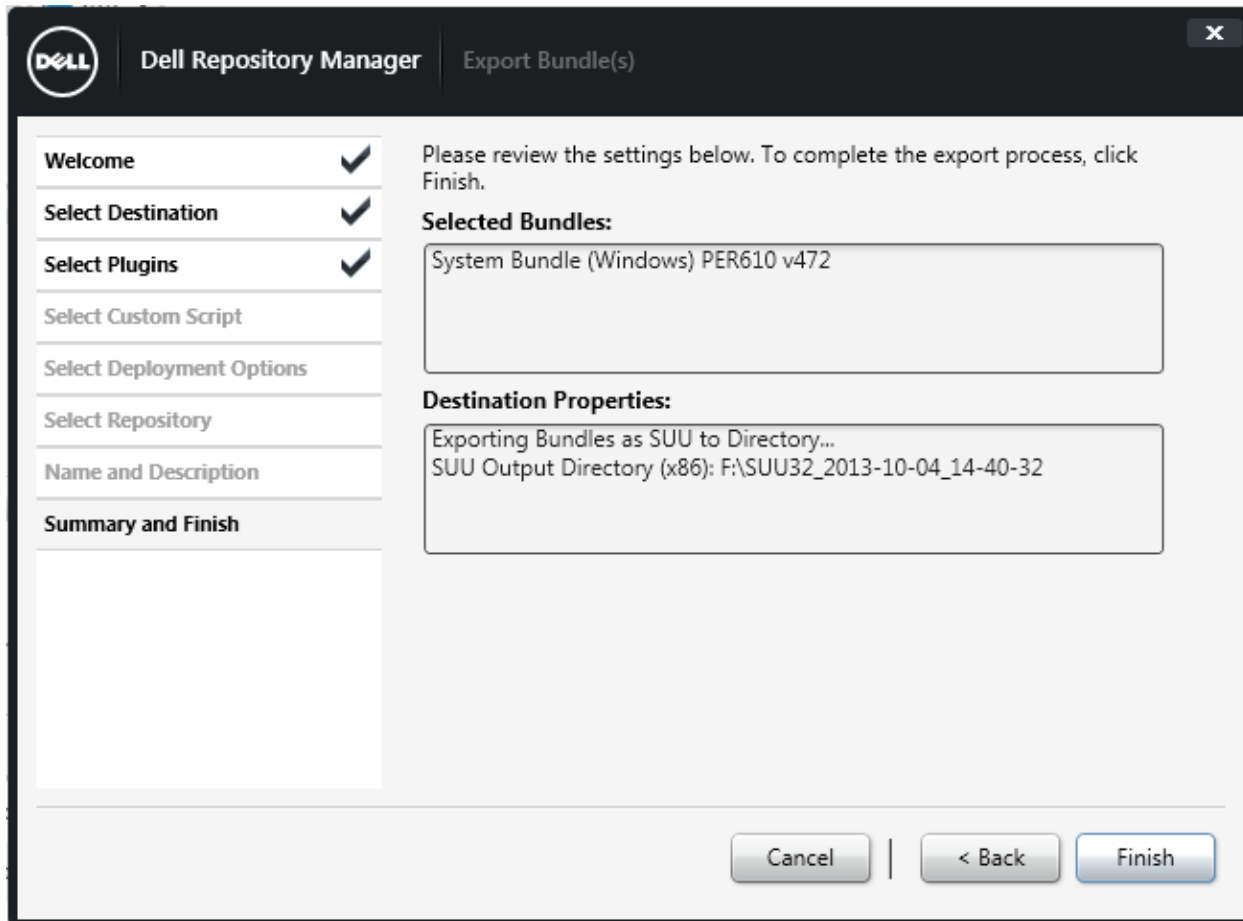
6. Plugins are checked then select **Generate 32-Bit SUU** and click Next



7. Now choose a directory for the bundles which can be direct to the USB drive. Click OK



8. Click Finish to the Summary screen



9. Open up the **Job Queue** and wait until the **export to SUU32** job is completed with success

**Tip:** rename and shorten the SUU output directory name - you have to type it into Lifecycle Controller later. e.g. to something like F:\SUU32

10. Place the USB flash drive with updates into the Dell Server and reboot

11. Press **F10** when prompted to go into Lifecycle Controller / Unified System Configurator

```
Phoenix ROM BIOS PLUS Version 1.10 6.1.0
Copyright 1985-1988 Phoenix Technologies Ltd.
Copyright 1990-2011 Dell Inc.
All Rights Reserved

Dell System PowerEdge R610
www.dell.com
Testing memory. Please wait.

F2 = Sy
F10 = Syste
F11 = BIOS Bo
F12
```

12. Move down to **Platform Update** and hit Enter



Entering System Services... Starting Unified Server Configurator

**DELL** UNIFIED SERVER CONFIGURATOR | LIFECYCLE CONTROLLER ENABLED ?

- Home
- Lifecycle Log
- Platform Update**
- Hardware Configuration
- OS Deployment
- Platform Restore
- Hardware Diagnostics
- USC Settings
- About

Exit and Reboot

# UNIFIED SERVER CONFIGURATOR

UEFI v2.1

13. Select **Launch Platform Update** and Enter



- Home
- Lifecycle Log
- Platform Update
- Hardware Configuration
- OS Deployment
- Platform Restore
- Hardware Diagnostics
- USC Settings
- About

Exit and Reboot

### Platform Update

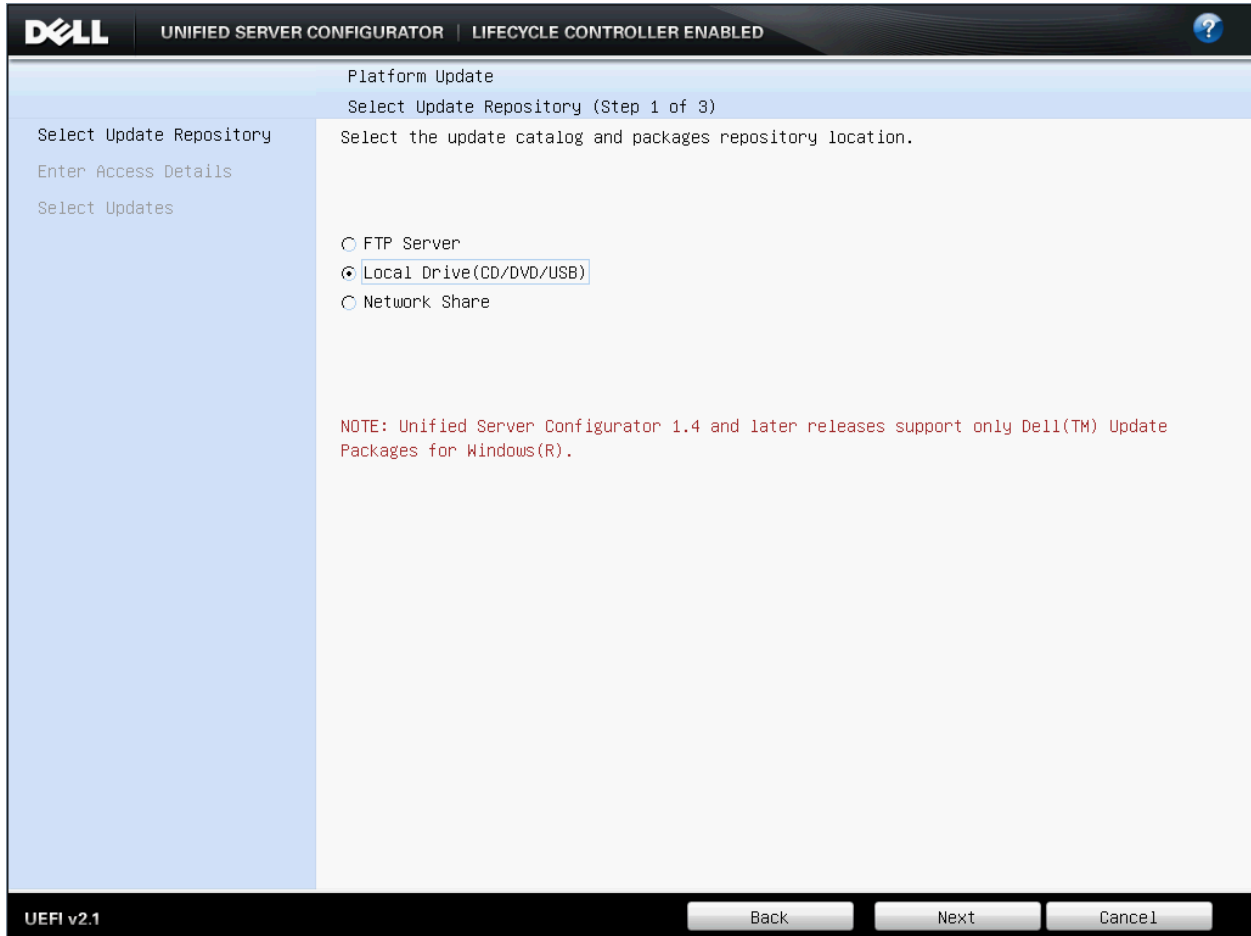
Use the Platform Update page to perform or rollback an update, or to view the current platform firmware versions.

[Launch Platform Update](#)

[Launch Platform Rollback](#)

[View Current Versions](#)

13. Select **Local Drive (CD/DVD/USB)** and hit Next



14. Select the USB volume name from the drop down list. Hit the right arrow then type the full directory path to the catalog file (e.g. use shortened name SUU32/repository). Hit next



Platform Update

Local Repository (Step 2 of 3)

Select Update Repository

Local Repository

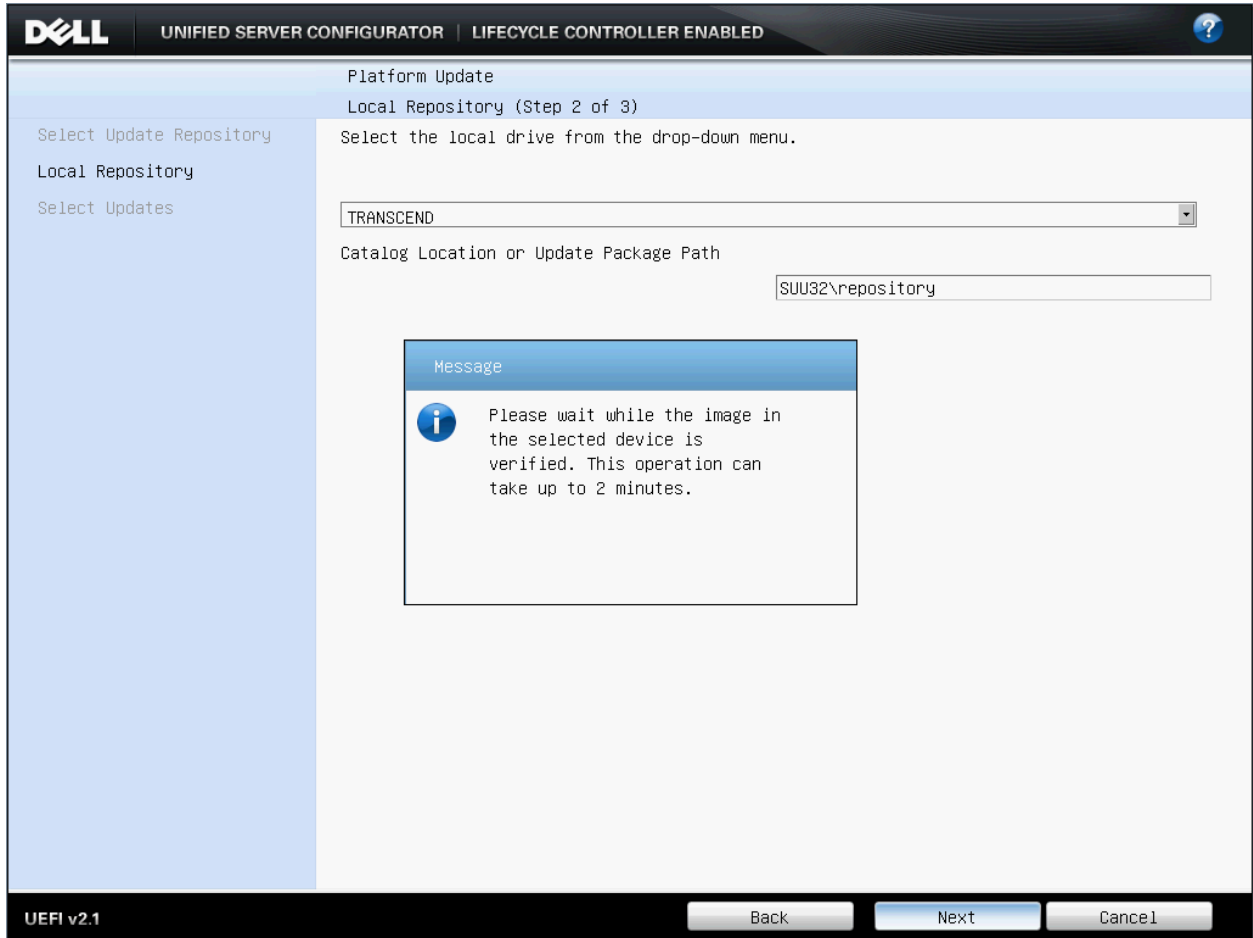
Select Updates

Select the local drive from the drop-down menu.

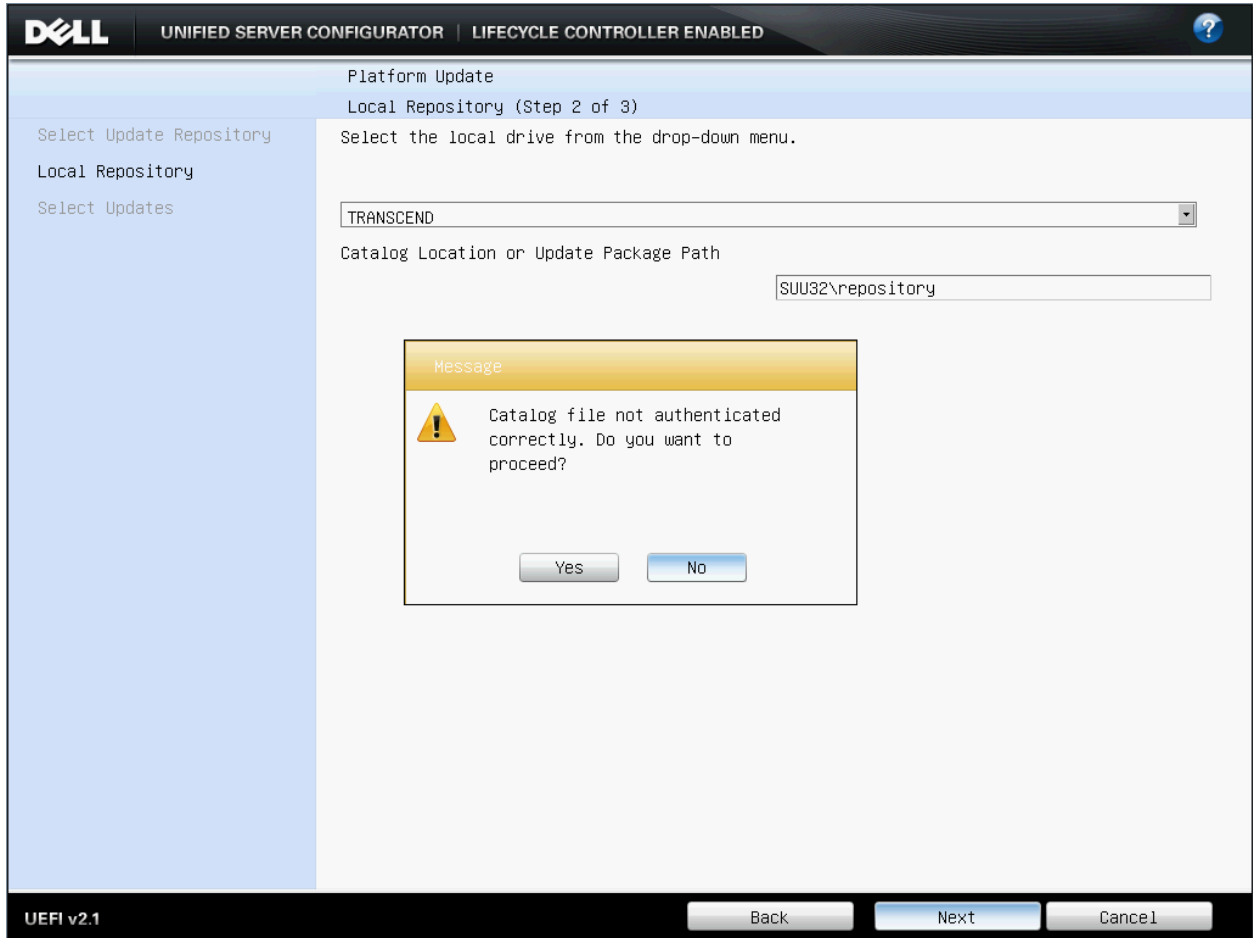
TRANSCEND

Catalog Location or Update Package Path

SUU32/repository



15. Click Left arrow and enter **Yes** to proceed



16. Check the required updates are selected e.g. BIOS, Lifecycle controller. IDRAC



Platform Update  
Select Updates (Step 3 of 3)

Select Update Repository  
Enter Access Details  
Select Updates

Apply Updates

Release Date: 2013-09-09  
Source: USB/CDROM (TRANSCEND:\SUU32\repository)

Available Updates

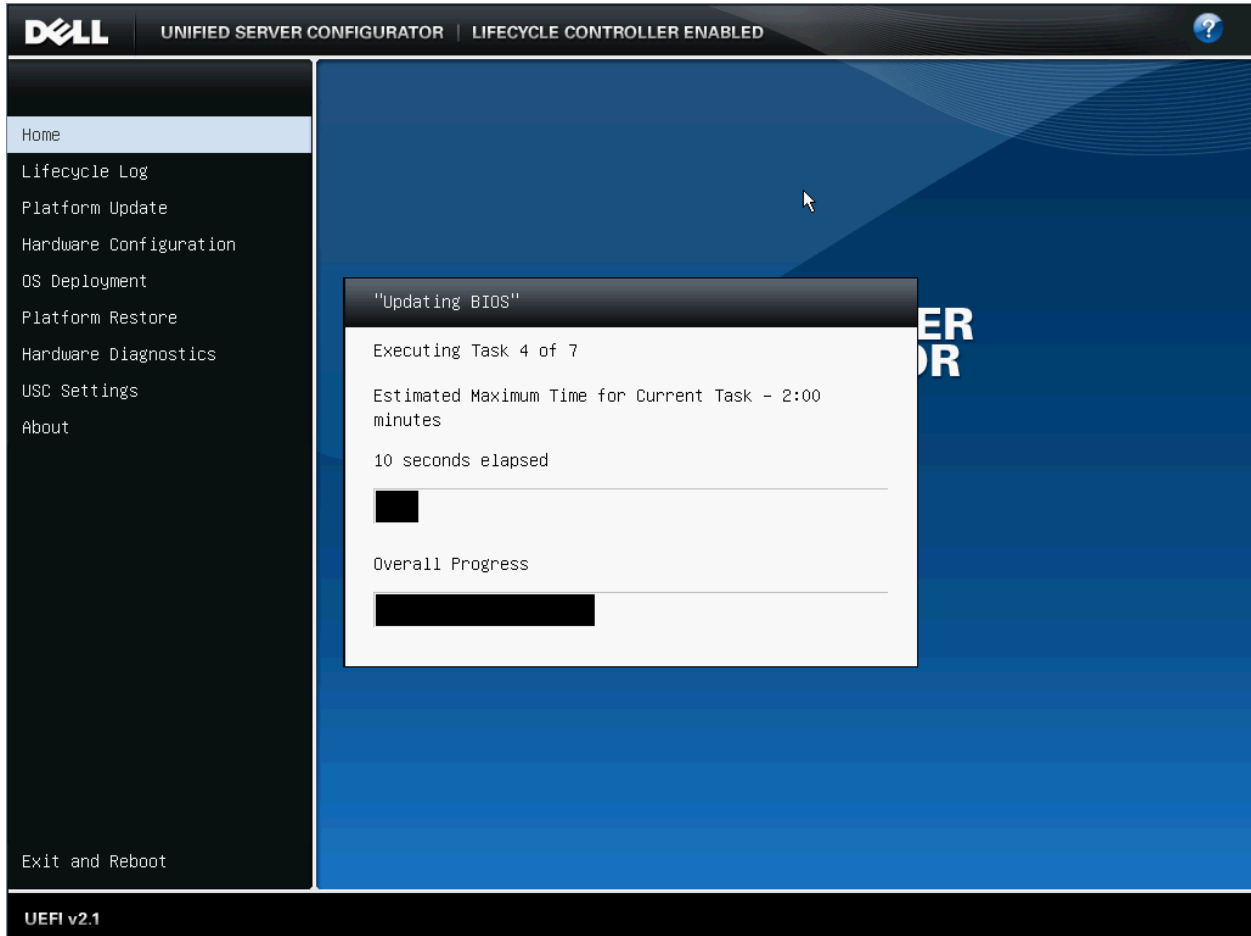
Component	Current	Available
<input type="checkbox"/> 32 Bit Diagnostics	5154A0	5154A0
<input type="checkbox"/> OS Drivers Pack	7.3.0.10	7.3.0.10
<input checked="" type="checkbox"/> Dell Lifecycle Controller, 1.5.2.32, A00	1.5.2.32	1.6.0.73
<input checked="" type="checkbox"/> BIOS	6.1.0	6.3.0
<input checked="" type="checkbox"/> PERC 6/i Integrated (Embedded)	6.3.3.0002	6.3.3-0002
<input type="checkbox"/> Broadcom NetXtreme II Gigabit Ethernet - 14:FE:B5:D1:57:33 (Embedded 1-1)	7.6.15	7.6.15
<input type="checkbox"/> Broadcom NetXtreme II Gigabit Ethernet - 14:FE:B5:D1:57:35 (Embedded 2-1)	7.6.15	7.6.15
<input type="checkbox"/> Broadcom NetXtreme II Gigabit Ethernet - 14:FE:B5:D1:57:37 (Embedded 3-1)	7.6.15	7.6.15
<input type="checkbox"/> Broadcom NetXtreme II Gigabit Ethernet - 14:FE:B5:D1:57:39 (Embedded 4-1)	7.6.15	7.6.15
<input checked="" type="checkbox"/> iDRAC6	1.92	1.95

System may reboot after selected updates have been applied.

UEFI v2.1

Back Apply Cancel

17. Apply the updates which may take some time to complete and require reboots



## Updating with a Bootable USB flash drive

A bootable ISO is created on USB with the updates from DRM. The server is booted from the USB flash drive from which the updates can be applied.

1. Click on your repository and it will open in its own tab.  
Select the Linux System Bundle for your server model.

Note: We are updating a Linux appliance, by selecting Linux we will create a bootable (linux based) ISO!

The screenshot shows the Dell Repository Manager interface. The top navigation bar includes 'Application', 'Source', 'Repository', 'Bundle', 'Component', 'Jobs', and 'Help'. The main content area is titled '610' and contains a table of bundles. The table has columns for Name, Version, OS, Date, Size, Author, Generation, and Brand. Three bundles are listed, with the first one selected. The interface also includes a filter sidebar on the left and a jobs queue at the bottom.

Name	Version	OS	Date	Size	Author	Generation	Brand
<input checked="" type="checkbox"/> System Bundle (Linux) PER610 v472	B155520.472	Linux	05/08/2013	593.55 MB	DELL	11G	PowerEdge
<input type="checkbox"/> System Bundle (Windows x64) PER610 v472	B155520.472	Windows x64	05/08/2013	377.57 MB	DELL	11G	PowerEdge
<input type="checkbox"/> System Bundle (Windows) PER610 v472	B155520.472	Windows x32	05/08/2013	1.28 GB	DELL	11G	PowerEdge

- If you click on the Components tab you will then see all the individual updates such as the RAID and SAS drive firmware shown here, there should also be a BIOS update.

Select all the components (or the ones you want)

**610** Save | Run a comparison | Properties

Tasks: [+ New Bundle](#) | [Import](#) | [Delete](#) | [Download File](#) | [Copy To](#) | [Properties](#) Selected/Total : 57/57  
Total selected size: 593.55 MB

Display from bundles: [System Bundle \(Linux\) PER610 v472](#)

Filter Components by: [Select a filter](#)

Keyword Search:

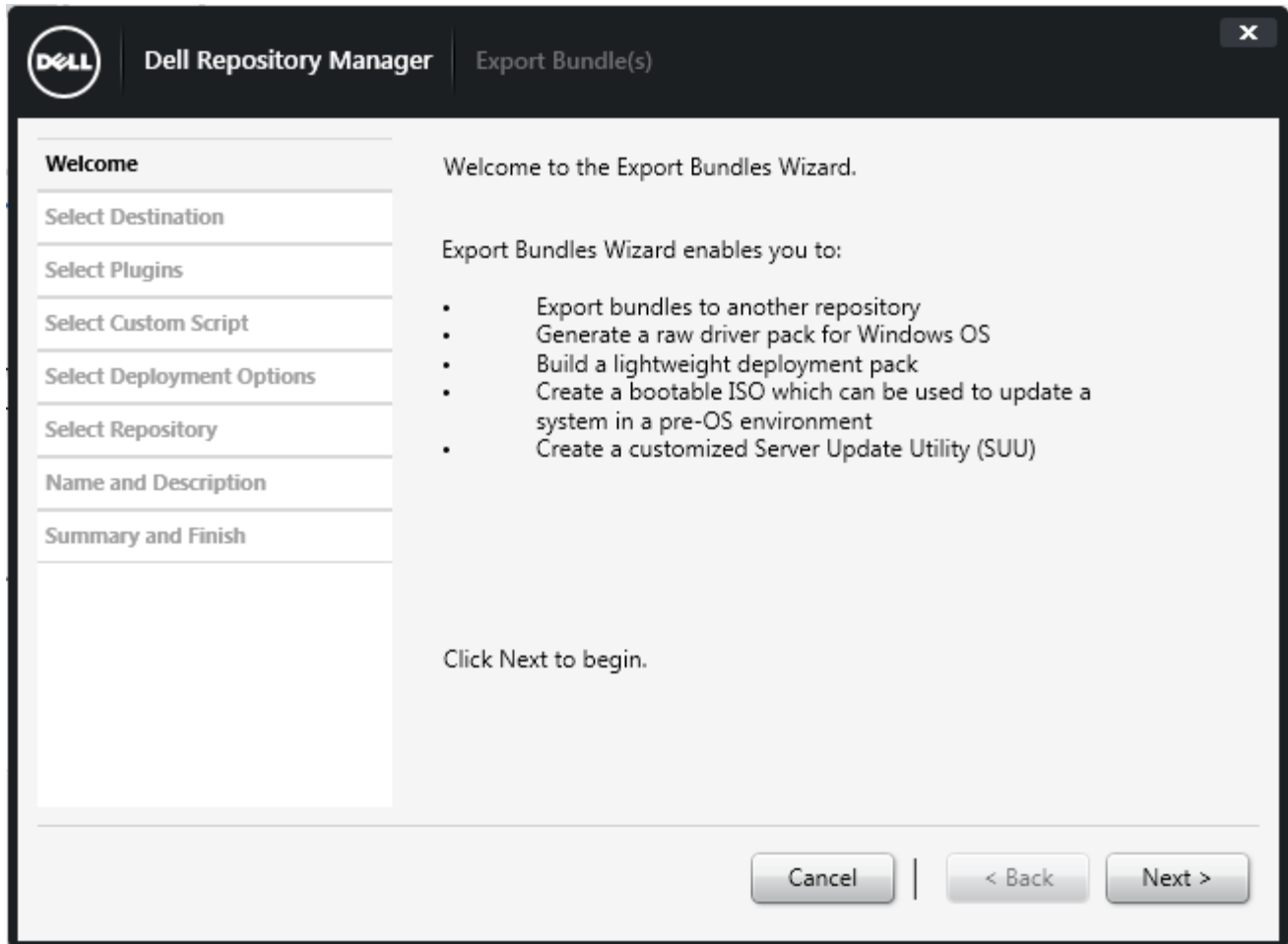
Update Type  
Criticality  
Supported Platforms  
Component Version  
Operating System  
Supported Devices  
Release Date  
PCI Device Info  
Driver Packs

Manage... Save... Reset

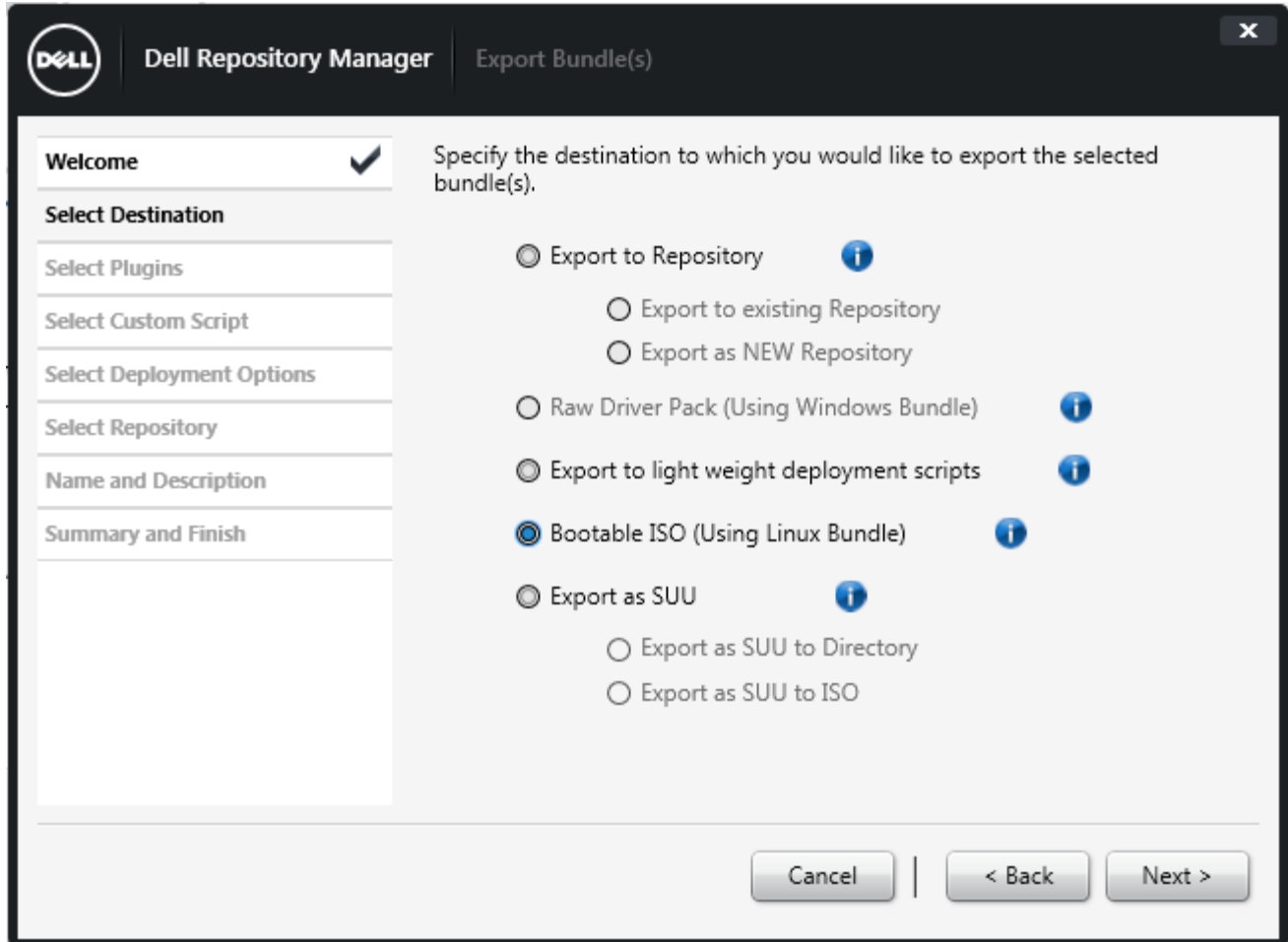
File Name	Type	OS	Version	Criticality	Date
<input checked="" type="checkbox"/> R610_Drivers-for-OS-Deployment_Application_GPJRC_LN_7.3.0.10_A00.BIN	Application	Linux	7.3.0.10	Optional	15/07/2017
<input checked="" type="checkbox"/> SAS-Drive_Firmware_YJY6C_LN_YS09_A06.BIN	Firmware	Linux	YS09	Urgent	06/07/2017
<input checked="" type="checkbox"/> SAS-Drive_Firmware_H1TYD_LN32_DSF4_A01.BIN	Firmware	Linux	DSF4	Urgent	23/07/2017
<input checked="" type="checkbox"/> R610_BIOS_93WDP_LN32_6.3.0.BIN	BIOS	Linux	6.3.0	Recommended	15/07/2017
<input checked="" type="checkbox"/> Network_Firmware_P32M4_LN_7.6.15.BIN	Firmware	Linux	7.6.15	Optional	06/07/2017
<input checked="" type="checkbox"/> TAPE_FRMW_LX_R217256.BIN	Firmware	Linux	4.17	Urgent	05/07/2017
<input checked="" type="checkbox"/> SAS-Non-RAID_Firmware_YJ78T_LN_07.03.06.00_A10.BIN	Firmware	Linux	07.03.06.00	Recommended	20/07/2017
<input checked="" type="checkbox"/> SAS-Drive_Firmware_2X4NR_LN32_C590_A02.BIN	Firmware	Linux	C590	Recommended	27/07/2017
<input checked="" type="checkbox"/> SAS-Drive_Firmware_439K4_LN32_YSF9_A03.BIN	Firmware	Linux	YSF9	Urgent	10/07/2017
<input checked="" type="checkbox"/> SAS-Drive_Firmware_5WJWP_LN_A440_A05.BIN	Firmware	Linux	A440	Recommended	06/07/2017
<input checked="" type="checkbox"/> SAS-Drive_Firmware_YN3M1_LN32_AS08_A06.BIN	Firmware	Linux	AS08	Urgent	18/07/2017
<input checked="" type="checkbox"/> SAS-Drive_Firmware_3HETR_LN32_C5E8_A03.BIN	Firmware	Linux	C5E8	Urgent	17/07/2017

**Jobs Queue** Pending for Confirmation: 0 Queued: 1 Completed: 0

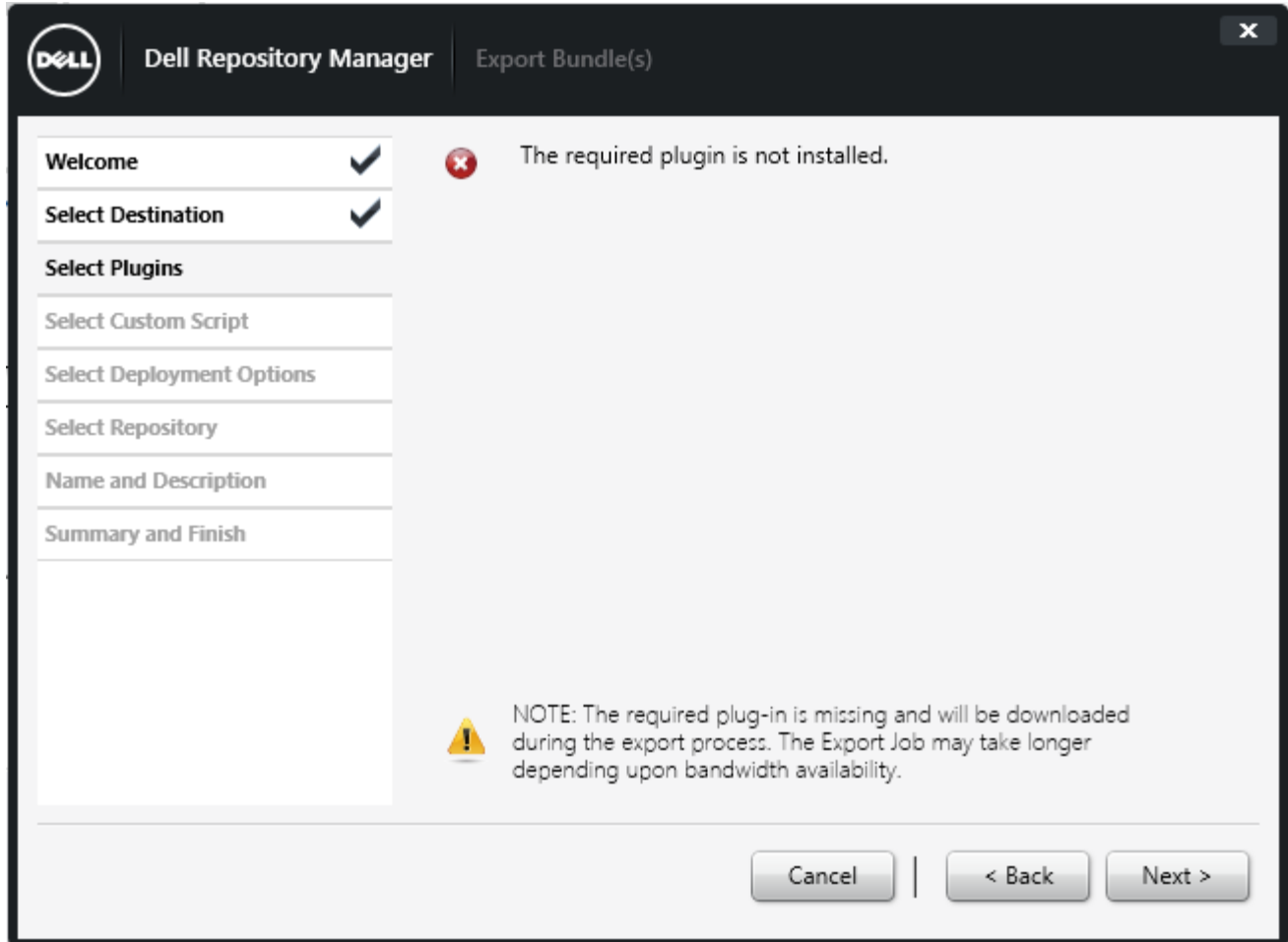
- Go back to the "Bundles" tab and Click "Export".  
We are now going to export all the updates to an ISO. Click Next.



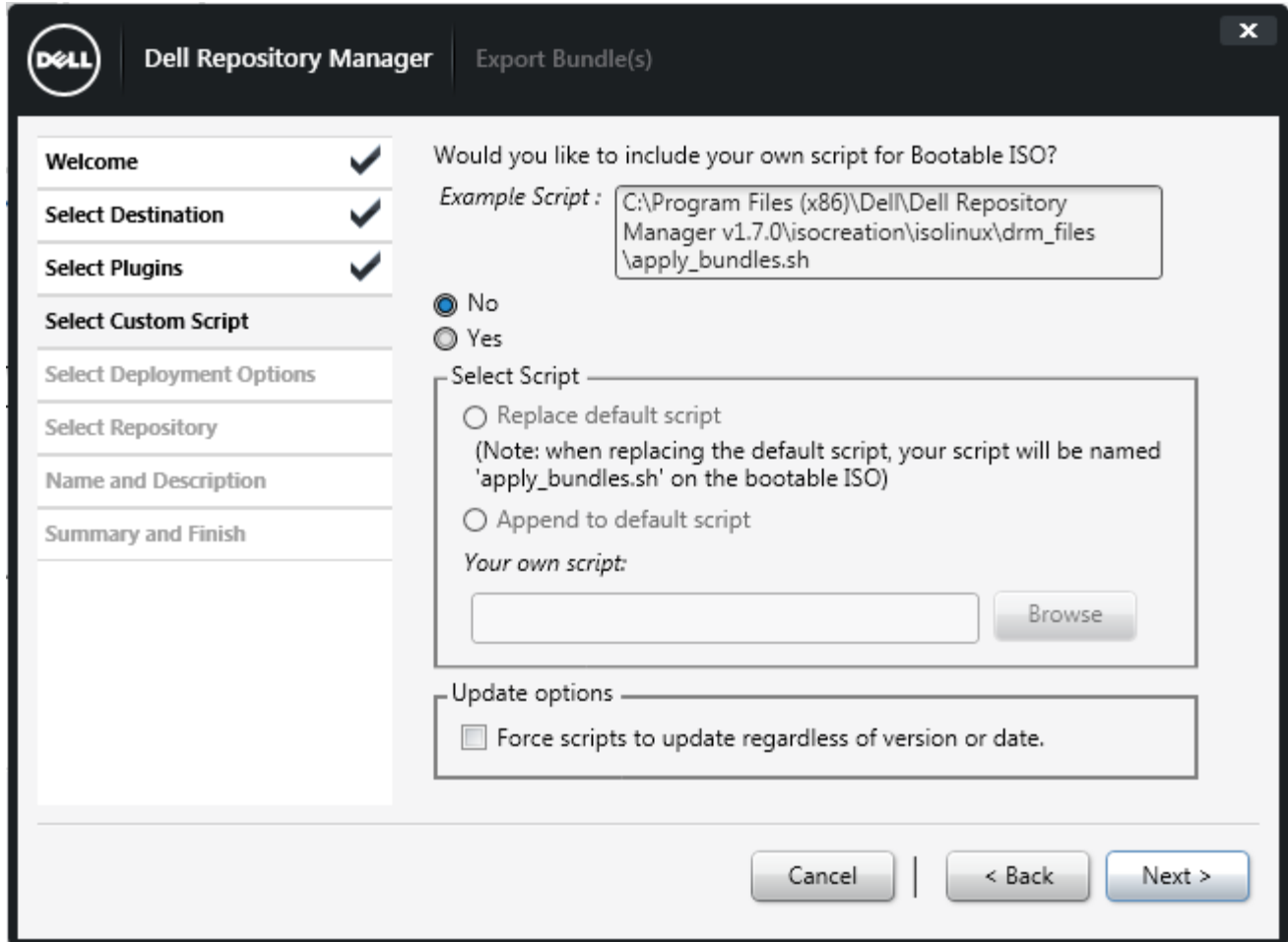
4. Select **Bootable ISO (Using Linux Bundle)** and next



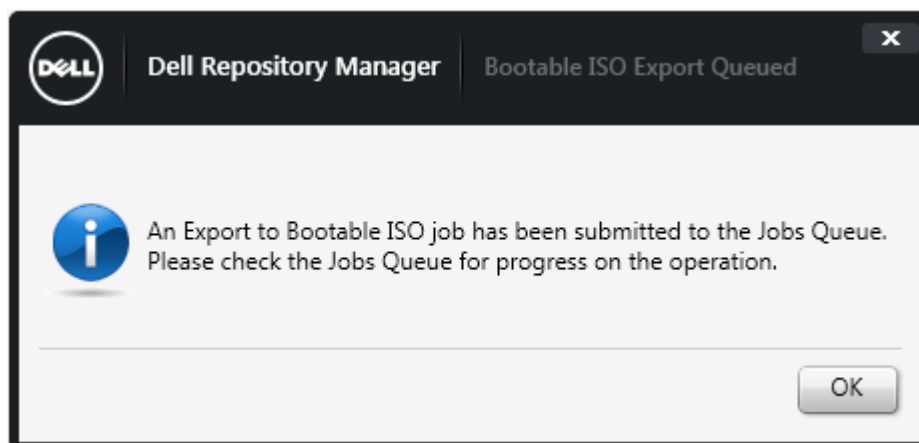
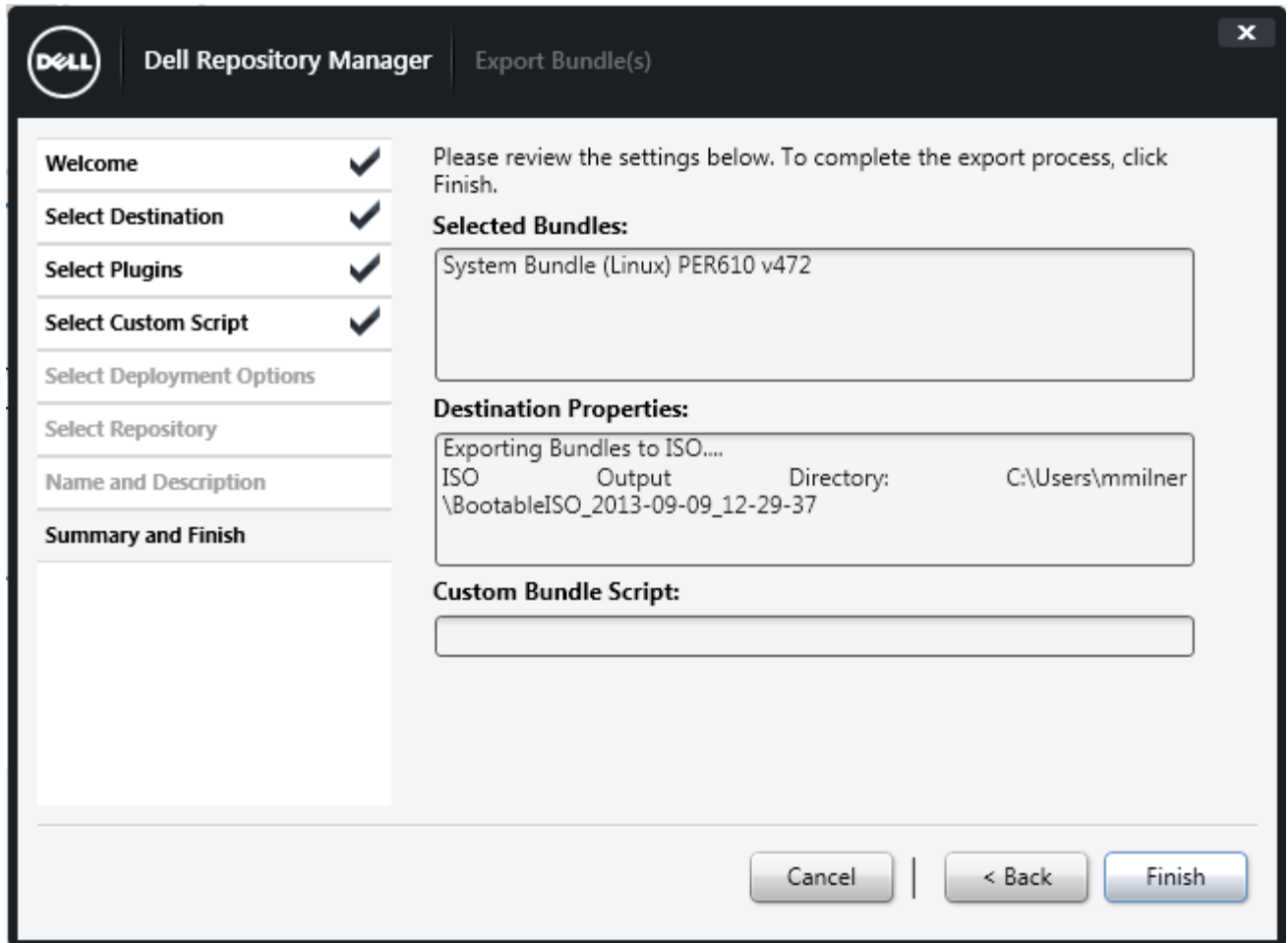
5. You will get an error message "The required plugin is not installed" if it's a first time run. Enter Next.



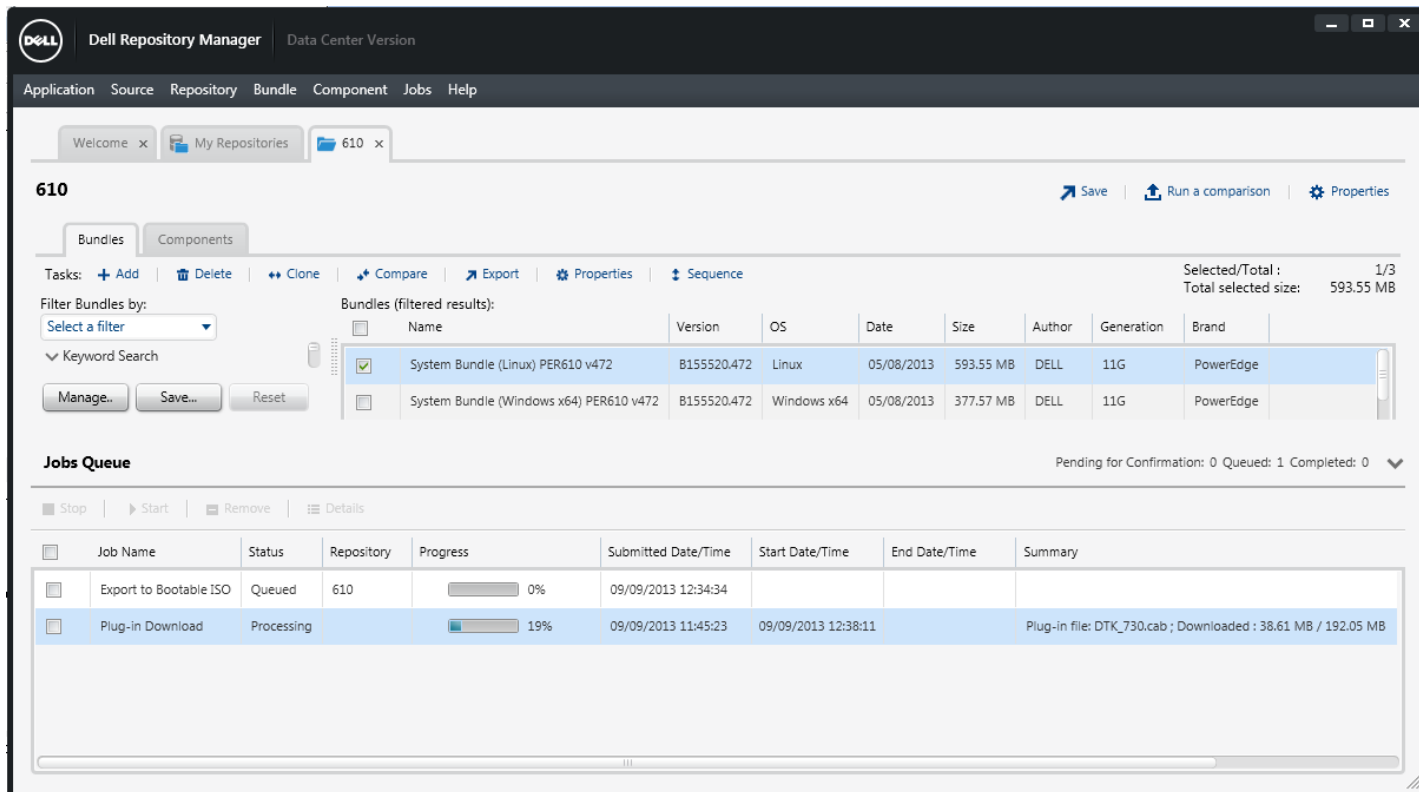
6. Select any folder for the ISO. OK
7. Select **NO** for including your own script. It will create the script to automatically install all the firmware updates. Enter Next



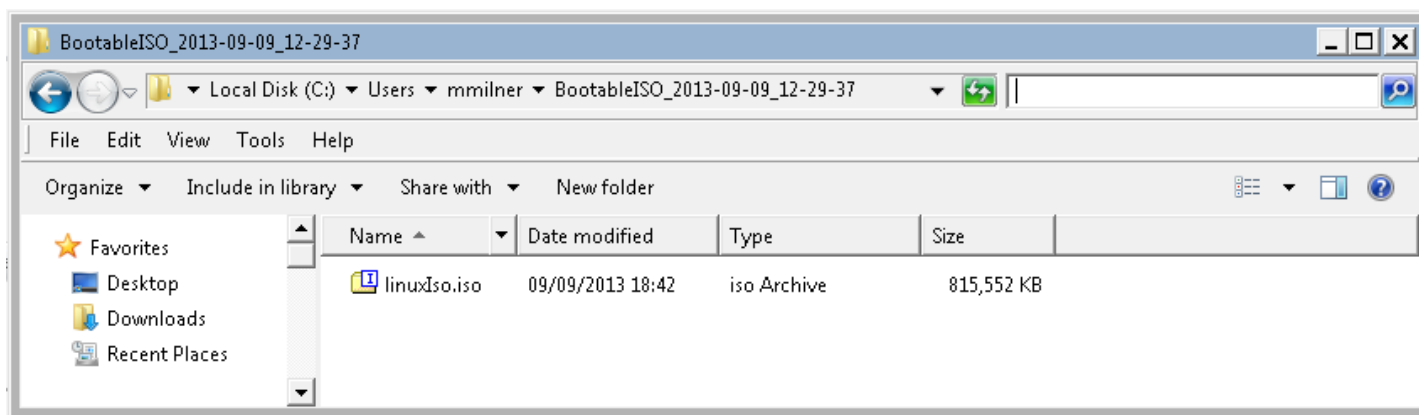
8. Review the summary and note the location of the ISO. Click **Finish**.



9. Click to open the jobs queue you will notice a task to export a bootable ISO.



10. Et voila! We now have a bootable ISO image. For the PowerEdge R610 the ISO image is currently ~800 MB which would need a USB as the R610 has no CD/DVD drive.



### Creating Bootable USB flash drive containing the Updates

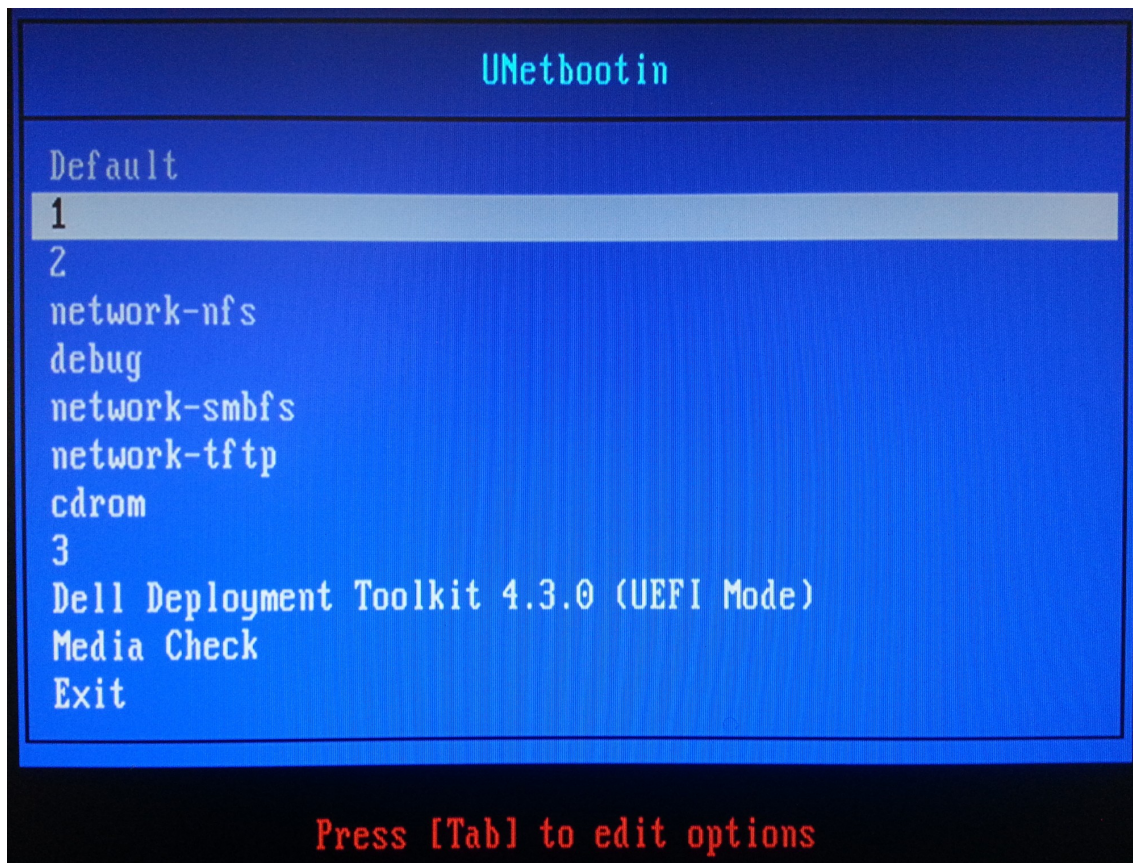
You can create a bootable USB flash drive for updates using your favourite third party or free tool. The instructions below are based on the popular tool UNetBootIn. You can start your appliance server by the bootable USB flash drive. After the system starts up, it runs the selected updates. After the update is complete, you can remove the USB drive, and reboot the system to your host operating system.

1. Download the UNetBootIn for Windows available at <http://sourceforge.net/projects/unetbootin/files/UNetbootin/>.
2. Start UNetBootIn and select the Diskimage option.

3. Click [...] adjacent to the ISO drop-down and navigate to the ISO created by Dell Repository Manager.
4. Ensure that the type setting is equal to USB drive and the location where you want to download the USB drive displays in the drive drop-down.
5. Click **OK** to start the USB writing.
6. After the USB writing is complete, insert the USB flash drive into a USB port on the appliance system you want to upgrade.

**Warning: Before updating the BIOS and firmware a backup should be taken as there is always a chance of data loss.**

7. Boot up and press **<F11>** when prompted to go into the BIOS Manager. The boot menu is displayed.
8. Select the USB flash drive as the boot target
9. Select option 1 in the UNetBootIn menu's boot menu to proceed with the component updates.



Note: At this point if you find the error below then use the manual workaround. The problem appears to be an issue with the USB mount.

```
mount /dev/disk/by-id/usb-USB_Flash_Disk_FBH1112160207735-0:0-part1 /opt/dell/toolkit/systems
COULD NOT MOUNT /dev/disk/by-id/usb-USB_Flash_Disk_FBH1112160207735-0:0-part1

mount /dev/disk/by-id/wwn-0x6842b2b0601b7c0014965a050acfdc42 /opt/dell/toolkit/systems
COULD NOT MOUNT /dev/disk/by-id/wwn-0x6842b2b0601b7c0014965a050acfdc42

mount /dev/disk/by-id/wwn-0x6842b2b0601b7c0014965a050acfdc42-part1 /opt/dell/toolkit/systems
cat: /opt/dell/toolkit/systems/isolinux/BUILD: No such file or directory
/etc/rc2.d/S99zz-stage3.sh: line 202: [: -eq: unary operator expected
mount /dev/disk/by-id/wwn-0x6842b2b0601b7c0014965a050acfdc42-part2 /opt/dell/toolkit/systems
cat: /opt/dell/toolkit/systems/isolinux/BUILD: No such file or directory
/etc/rc2.d/S99zz-stage3.sh: line 202: [: -eq: unary operator expected
mount /dev/disk/by-id/wwn-0x6842b2b0601b7c0014965a050acfdc42-part3 /opt/dell/toolkit/systems
COULD NOT MOUNT /dev/disk/by-id/wwn-0x6842b2b0601b7c0014965a050acfdc42-part3

/opt/dell/toolkit/systems/drm_files/apply_bundles.sh is invalid ....
Press Enter to reboot ...
```

10. Do not press Enter to reboot but press Alt-F2 and send to get a new console login. In the new console type the following commands.

```
sh-4.1# mv /opt/dell/toolkit/systems /opt/dell/toolkit/systems.orig
sh-4.1# mkdir /opt/dell/toolkit/systems
sh-4.1# mount /dev/sdb1 /opt/dell/toolkit/systems # where /dev/sdb1 is the usb device
sh-4.1# cd /opt/dell/toolkit/systems/drm_files
sh-4.1# ./apply_bundles.sh
```

