

Using Dell™ Unified Server Configurator to Deploy a Customized Microsoft® Windows Server® Operating System

Dell | Product Group

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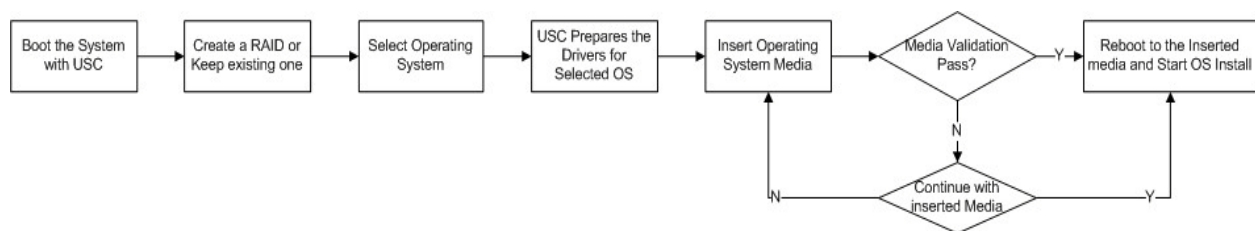
Introduction

Dell Lifecycle Controller, an embedded management solution included with Dell 11th-generation PowerEdge™ servers, has eliminated the need for traditional media-based system management. One of its key components, Unified Server Configurator (USC), provides a graphical user interface (GUI) to configure system settings such as RAID and NIC using a simple wizard, diagnose the system using the embedded diagnostic utility, and assist the operating system installation by providing drivers for the selected OS. Dell USC simplifies the OS deployment process, reduces the deployment time, and eliminates potential issues caused by the traditional media-based OS deployment method. However, for users not yet familiar with using Dell's media-free OS Deployment capacity, Dell USC also supports the common, media-based method of OS installation. Moreover, in addition to supporting media-based OS installation, Dell USC version 1.4 or later also supports installation using customized OS media.

Customized Windows Deployment

Businesses often need to deploy a customized OS instead of a standard one for various reasons. To customize OS deployment, unattended install scripts and update packages are added into the OS image or they are added during the OS deployment process. Dell USC provides a verification mechanism to ensure the proper drivers are prepared for the deployment of the selected OS. If a non-standard or customized media is used, Dell USC 1.4 will allow the installation to continue after showing a confirmation prompt. The driver set for the selected OS will still be prepared for installation. Figure 1 illustrates the deployment process for a customized OS with Dell USC.

Figure 1 Deploying Customized OS with Dell USC



Windows OS Deployment Customization Methods

A number of methods and tools are available to customize a Windows OS deployment. Each of them is useful in different scenarios; Dell USC 1.4 supports these customized OS media or deployment processes.

OS Deployment with a Configuration Set

A configuration set is useful in scenarios in which the IT administrator desires to automate the OS deployment process in an unattended mode by skipping the installation prompts. It can also ensure Windows setup consistency across all of the systems in the organization. A configuration set can be created with Windows System Image Manager (Windows SIM). It is composed of an unattended script file along with a set of source files that can include out-of-box drivers, applications, and packages such as security updates, hot fixes, and language packs. For information on how to create a configuration

set, follow Microsoft's Walkthrough: Build a Configuration Set published at:

[http://technet.microsoft.com/en-us/library/dd799266\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/dd799266(WS.10).aspx)

Once the configuration set is created, you can store it onto a USB flash drive (UFD) and start the custom OS deployment using the following steps:

1. Copy all the configuration set content onto a UFD; the AutoUnattend.xml file and the AutoUnattend_Files folder need to be on the root of the UFD.
2. Boot your system into Service Mode by pressing F10 during POST.
3. Click **OS Deployment** on Unified Server Configurator.
4. Select **Configure RAID Now** or **Go Directly to OS Deployment**. Follow the online instructions to configure the RAID settings.
5. Select an OS; USC prepares drivers for the selected OS.
6. Insert the OS media into the DVD ROM, and the UFD prepared in Step 1 and click **Next**.
7. Click **Finish**. The system will reboot to begin the OS installation process.

When the system reboots to the Windows media, it will automatically install the device drivers provided by USC and will also automatically configure Windows settings, install packages, applications, and additional drivers defined and provided by the configuration set. While it is not required to use USC for OS deployment, it helps ensure that the latest certified drivers are added during the OS installation and eliminates the need to assemble the driver packages and detail them in the configuration set. Prior to the install, it is important to verify that the latest USC OS driver packages are installed; these updates are available at support.dell.com. In addition to these advantages, USC can help create the storage RAID volume, something that is beyond the capabilities of the configuration set.

OS Deployment using Customized Windows Media

A configuration set can be merged into, or stored on, the Windows media directly using the oscdimg.exe tool provided in the Windows Automated Installation Kit (Windows AIK). This tool eliminates the need to use a USB flash drive during the Windows setup; one drawback is the need to recreate the customized Windows media whenever an update to the configuration set is required, such as to include newly released Microsoft security updates, change settings, etc.

You can also customize the Windows install image using two other methods with Windows AIK: Offline and Online Servicing.

Offline Servicing is performed using the DISM tool (Deployment Image Servicing and Management) that is included in Windows Server 2008 R2 and Windows 7, and also included in Windows AIK. Offline servicing allows you to add Microsoft update packages and hot fixes, new drivers, change various settings, and add multiple language support into a Windows image before its installation. With offline servicing, you can efficiently manage an existing custom Windows image because there is no need to deploy the image and recapture it after the changes are made. Offline servicing supports a more limited set of changes and modifications than with online servicing; for example, applying service packs is not supported.

Online servicing modifies the Windows image while it is running, and captures the modified image with WinPE for later deployment. It allows you to install service packs, update packages, system components, applications, drivers, and language packs on a running Windows install booted in the audit mode. A key difference in using this method is that applications can be installed and tested during this online process providing greater flexibility. When compared to offline servicing, the drawback to

online servicing is that the image must be deployed, manipulated/updated, and then recaptured for deployment. Both methods can be useful depending on the types of changes, updates or additions that are required for your customization.

Summary

There are a number of ways to customize the Windows OS installation. When selecting a customization method, you should identify the organization requirements and make sure that the selected method complies with license terms. In addition, it is a good practice to keep the Dell Unified Server Configurator (USC) firmware up-to-date to take advantage of utilizing USC to deploy the customized Windows OS with the latest certified drivers.

Reference

- Dell Embedded Management:
http://www.dell.com/content/topics/global.aspx/sitelets/solutions/management/server_embedded
- Simplify Management with the Dell Unified Server Configurator:
http://www.dell.com/content/topics/global.aspx/power/en/simplify_management?c=us&l=en&cs=555
- Microsoft Windows Automated Installation Kit for Windows 7:
[http://technet.microsoft.com/en-us/library/dd349343\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/dd349343(WS.10).aspx)