A Geeks Guide to Windows 10 Deployment - Contributing is everything...

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Module 1

A Geeks Guide to Windows 10 Deployment

Welcome to this guide

Thanks for downloading this geeks guide to Windows 10 Deployment. While this guide does cover some generic Windows 10 deployment topics, the guide is intended for ConfigMgr admins wanting to deploy and service Windows 10.

This guide contains a crash course in planning for Windows 10 deployments, and a series of step-by-step guides to perform the following Windows 10 deployment tasks.

- Use the OSD Builder community tool to service a Windows 10 image.
- Setup MDT Lite Touch to build and capture a Windows 10 reference image.
- Setup ConfigMgr (a.k.a. MEMCM) for OS Deployment
- Use ConfigMgr for bare metal deployment of Windows 10
- Use ConfigMgr to service/upgrade Windows 10 using task sequences

Credits

Special thanks go to Mikael Nystrom for as always valuable feedback, and to Ami Arwidmark who despite recovering from two broken arms, with extensive surgery involved, powered through the technical review of the guide. I also like to give a shoutout to David Segura for his fantastic OSD Builder solution that is featured in this guide. Finally, thank you Mamata Panda and Mohammed Nawaz Kazi for your feedback.

Download the sample files

The sample files for this guide are available for download at the following link. In my lab I downloaded them to C:\Setup on my Hyper-V host: <u>https://bit.ly/AGGW10-SampleFiles</u>

Lab Environment

In this guide I'm using a set of virtual machines, which are all part of the corp.viamonstra.com domain. If you want a quick path to setup a lab environment for this, I recommend using the Hydration Kit available here: <u>http://bit.ly/HydrationKitWS2019</u>

In the various modules in this guide, I'm using the following list of virtual machines. In my lab I'm using Windows Server 2019 as a server operating system, but all step-by-step guides also work with Windows Server 2016 (and even good old Windows Server 2012 R2).

• **DC01.** A Windows Server 2019 configured as DNS, DHCP, and Domain Controller.

- MDT01. A Windows Server 2019 configured as a File Server
- **CM01.** A Windows Server 2019 configured with SQL Server and ConfigMgr (SCCM)
- **REF001.** An "empty" virtual machine, used for a Windows 10 v2004 build and capture
- PC0001. An "empty" virtual machine, used for a Windows 10 v2004 bare metal deployment
- **PC0002.** A Windows 10 v1909 client that will be upgraded to Windows 10 v2004. This machine is also used for the OSD Builder module.

Virtual Machines - Details

To build a replica of the infrastructure used for this guide, you can run all virtual machines on a single Hyper-V or VMware host with 16 GB of RAM and at least 500 GB free disk space. However, if you can have 32 GB of RAM in your lab machine, ConfigMgr will thank you for it. O

As mentioned in the introduction, you can obviously use your own custom lab environment when working through the guides in this book, but if you want all guides and scripts to match exactly, I do recommend that you use the automated lab setup (hydration).

- DC01. A Windows Server 2019 VM, fully patched with the latest security updates, and configured as Active Directory Domain Controller, DNS Server, and DHCP Server in the corp.viamonstra.com domain. Using Windows Server 2016, or even Windows Server 2012 R2 works fine too.
 - Server name: DC01
 - IP Address: **192.168.1.200**
 - Roles: DNS, DHCP, and Domain Controller
 - Disk Volumes: C: (100 GB dynamic disk)
 - vCPU count: 2
 - RAM: 2 GB
- **MDT01.** A **Windows Server 2019** VM, fully patched with the latest security updates, and configured as a member server in the **corp.viamonstra.com** domain. Using Windows Server 2016, or even Windows Server 2012 R2 works fine too.
 - Server name: MDT01
 - IP Address: **192.168.1.210**
 - o Roles: File Server
 - Software: MDT 8456
 - Disk Volumes: C: (100 GB dynamic disk), and E: (300 GB dynamic disk),
 - vCPU count: 2
 - RAM: **4 GB**

- **CM01.** A **Windows Server 2019** VM, fully patched with the latest security updates, and configured as a member server in the **corp.viamonstra.com** domain. Using Windows Server 2016, or even Windows Server 2012 R2 works fine too.
 - Server name: CM01
 - o IP Address: 192.168.1.214
 - Roles: File Server and WDS
 - Software: SQL Server 2017, Windows ADK 10 v2004, and ConfigMgr 2002
 - Disk Volumes: C: (100 GB dynamic disk), and E: (300 GB dynamic disk),
 - vCPU count: 2
 - RAM: 16 GB
- PC0001. A blank VM, used for bare metal deployment in module 5.
 - Disk Volumes: C: (100 GB dynamic disk)
 - vCPU count: 2
 - RAM: **2 GB**
- **PC0002.** A Windows 10 1909 VM, used for OSD Builder in module 3, and for Inplace upgrade / servicing in module 6.
 - Client name: PC0002
 - IP Address: DHCP
 - Disk Volumes: C: (100 GB dynamic disk)
 - vCPU count: 2
 - RAM: **2 GB**
- **REF001.** A blank VM, used for creating reference images in module 4.
 - Disk Volumes: C: (100 GB dynamic disk)
 - vCPU count: 2
 - RAM: **2 GB**

Internet Access

In terms of providing Internet access to your VMs, I highly recommend putting all the VMs on an isolated (internal) virtual network/switch, and then use the NAT feature in either Hyper-V or VMware to have the machines accessing Internet. Learn more on the links below:

• How to enable Hyper-V NAT: <u>https://bit.ly/Hyper-VNAT</u>

For more advanced networking you can use virtual routers with two or more net cards. For example, running either Windows Server, or pfSense.

- How to setup a Windows Server virtual router: <u>https://bit.ly/WSVirtualRouter</u>
- How to setup a pfSense virtual router: <u>https://bit.ly/pfSenseVirtualRouter</u>

Module 2

Planning for Windows 10 Deployment

Windows 10 Deployment

In general, if you know how to deploy Windows 7 or Windows 8.1, you are in a decent shape for deploying Windows 10. From a core setup point of view there are not too many changes, but there are a few challenges you need to be aware of: Like putting new testing processes in place because of Windows 10 servicing, as well as reducing the network impact Windows 10 will have on your environment by using peer to peer solutions like Peer Cache, BranchCache, and Delivery Optimization, Microsoft Connected Cache, and bandwidth control techniques such as BITS and LEDBAT.

Other challenges are for example keeping up with updating group policy templates, as well as cleaning up old policies that are no longer applicable.

The two most popular platform for deploying Windows 10 are Microsoft Deployment Toolkit (MDT), and Microsoft Endpoint Configuration Manager (ConfigMgr). MDT is primarily used for organizations not having ConfigMgr implemented, and need to do Windows 10 deployment and servicing. MDT can also be integrated into ConfigMgr, providing extra (optional) imaging features.

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The ConfigMgr console showing some OSD task sequences.

Assessment and Readiness Tools

To prepare for Windows 10 deployments, most of the "good old" planning tools for Windows deployment, MAP, ACT and Upgrade Readiness are no longer used, and have been replaced by a cloud service named Desktop Analytics. This service, unlike its predecessor Upgrade Readiness, is not free and require a user-based E3/E5 or A3/A5 licensing agreement.

Windows ADK 10 contains the core deployment tools that MDT and ConfigMgr are using in the background. This kit is mostly based on command line tools but also provides interfaces for developers to create their own tools. In addition to Windows ADK 10, you also need the Windows ADK 10 WinPE Addon, which is used for all types of 10 deployments except servicing.

Deployment Scenarios

Windows 10 supports the following deployment scenarios, and you'll learn how to setup two of them in this guide (New Computer and Inplace Upgrade):

- New Computer. This scenario is also known as bare metal deployment, and is used when you have a blank machine you need to deploy, or an existing machine you want to wipe and redeploy without caring about any existing data. The setup usually starts from a boot media via USB or PXE, but also supports standalone media for deployments in location with poor network connectivity.
- **Computer Refresh.** Sometimes called wipe-and-load, and is primarily used to fix broken machines, but also to "upgrade/service" machines that cannot be serviced via the Inplace upgrade process. For example, when you want to go from Windows 10 x86 to Windows 10 x64. This guide does not cover this scenario.
- **Computer Replace.** A computer replace is quite much like the refresh scenario. But since you are replacing the machine, this scenario is divided into two main tasks: Backup of the old client, and bare metal deployment of the new client. As with the refresh scenario, user data and settings are backed up and restored. This guide does not cover this scenario.
- **Inplace Upgrade.** These days, Inplace upgrade scenarios are primarily used to upgrade Windows 10 from one Windows 10 version to the next, even though recent spring releases like Windows 10 v2004 are changing that a bit. Starting with 1903, servicing a spring release to the same fall release has just been applying an update instead of a whole new image.

Module 3 Creating Great Images – Part 1

To succeed in with Windows 10 Deployment and Servicing, the image quality certainly applies. If deployment speed is not so important to you, after all new hardware and good network often compensates quite a bit for speed, you can certainly use a single thin image for all your deployments.

If going the single image route, that image must be serviced offline, otherwise it cannot be used for Windows 10 servicing. If you need a thicker image for deployment speed, meaning an image with applications in it, you will need to maintain two images. One, that you use for New Computer, Computer Refresh, and Computer Replace scenarios, and a second one that you use for Windows 10 Servicing.

In this module you learn to create a thin image using the OSD Build community tool that can be used for all Windows 10 deployment scenarios. The resulting image will later be imported into ConfigMgr for deployment and servicing.

What you need for this module

For the guides in this module, you need the following:

- A Windows 10 client with Internet access. In my lab I was using the PC0002 virtual machine which is a Windows 10 Enterprise v1909 machine.
- A Windows 10 v2004 ISO copied to the C:\ISO folder on the PC0002 client.

Create an updated OS Media using OSD Builder

OSD Builder is being developed by David Segura, and has been a fantastic tool to keep thin images updated.

Here is a guide for using the OSD Builder solution to create a better OS installation media that includes .NET Framework. When using OSD Builder, it's recommended to run the same version or newer than the OS Image you are updating.

Install OSD Builder

- 1. On PC0002, login in as administrator. If you use the Hydration Kit to setup your lab, the default password for all accounts is P@ssw0rd.
- **2.** Allow PowerShell to run script by running the following command in an elevated PowerShell prompt:

Set-ExecutionPolicy -ExecutionPolicy Unrestricted -Force

3. Install the OSD Builder by running the following command in an elevated **PowerShell prompt** (allow the installation of the Nuget provider):

Install-Module -Name OSDBuilder -Force

4. Import the OSD Builder module by running the following command in an elevated PowerShell prompt:

Import-Module -Name OSDBuilder -Force



Installing and importing the OSD Builder module.

Import OS Media, Run the Update, and Build a new Media

This process imports Windows 10 Enterprise, and updates the media with the latest updates. You are also enabling .NET Framework 3.5 in the image since many applications still needs it. Again, to follow this guide, you need the Windows 10 Business Editions x64 v2004 media downloaded.

This media can be downloaded from either <u>https://my.visualstudio.com/</u> or <u>http://microsoft.com/vlsc</u> depending on your license agreements. There is also a free 90 days trial of Windows 10 Enterprise v2004 available on the Microsoft Evaluation Center: <u>https://www.microsoft.com/en-us/evalcenter/evaluate-windows-10-enterprise</u>

Here follow the steps to import, update and build a new media:

- On PC0002, download (or copy) the Windows 10 Business Editions x64 v2004 media to C:\ISO. In my lab I renamed the download file to Windows 10 Business Editions x64 v2004.iso.
- 2. Mount the C:\ISO\Windows 10 Business Editions x64 v2004.iso file by either double-clicking it, or by running the following command in an elevated PowerShell prompt:

```
Mount-DiskImage -ImagePath
"C:\ISO\Windows 10 Business Editions x64 v2004.iso"
```

3. Import, update and build the OS Media by running the following command:

```
Import-OSMedia -ImageName 'Windows 10 Enterprise' -SkipGrid
-Update -BuildNetFX
```

Note: The preceding process takes anywhere from 30 minutes to several hours to complete, depending on your hardware. The new build content will not be available until this process completes.

4. Review the build content created in the C:\OSDBuilder\OSBuilds folder, especially the install.wim file located in C:\OSDBuilder\OSBuilds\Windows 10 Enterprise x64 2004 19041.329\OS\sources.

Note: The version number of the Windows 10 Enterprise x64 2004 19041.329 folder will be different depending on what cumulative update that is injected.

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A Quick access		info	6/19/2020 8:59 AM	File folder	
Desktop	Å	os	6/19/2020 8:59 AM	File folder	
🕂 Downloads	*	WinPE	6/19/2020 9:02 AM	File folder	
🚆 Documents	A.	AppxProvisionedPackage.txt	6/19/2020 9:07 AM	Text Document	17 KB
Pictures	*	CurrentVersion.txt	6/19/2020 9:03 AM	Text Document	3 KB
💧 Music		OSBuild.json	6/19/2020 8:59 AM	JSON File	4 KB
Videos		Sessions.txt	6/19/2020 9:07 AM	Text Document	5 KB
		WindowsCapability.txt	6/19/2020 9:07 AM	Text Document	45 KB
lesson on e Drive e Concernation e Concernatio e Concernation e Concernation e Concernation e Co		WindowsImage.txt	6/19/2020 9:13 AM	Text Document	2 KB
💻 This PC		WindowsOptionalFeature.txt	6/19/2020 9:07 AM	Text Document	17 KB
🛁 Network		WindowsPackage.txt	6/19/2020 9:07 AM	Text Document	19 KB
11 items					

Sample structure from a Widows 10 Enterprise v2004 build.

Module 4 Creating Great Images – Part 2

In this module you learn to create a thick image using the MDT Litetouch build and capture process. The resulting image will later be imported into ConfigMgr for standard deployment scenarios only. As you might remember from the previous module, you cannot use an image that has been built and captured for Windows 10 servicing. It must be an image that has been serviced offline.

Real World Note: While thick images, meaning images with applications in them, still have their uses. I see more and more organizations using a single thin image, and have the task sequence install needed application etc. during deployment. If you don't need thick images in your environment, you can safely skip to Module 5 instead.

What you need for this module

For the guides in this module, you need the following:

- A Domain Controller running either Windows Server 2012 R2, Windows Server 2016 or Windows Server 2019. In my lab I used a domain controller named DC01 that manages the corp.viamonstra.com domain (VIAMONSTRA is the NetBIOS name).
- A Member Server running either Windows Server 2012 R2, Windows Server 2016 or Windows 2019. In my lab the Member Server is named MDT01, and it's a member of the corp.viamonstra.com domain.
- A Windows 10 v2004 ISO copied to the E:\ISO folder on MDT01. I recommend using the updated Windows 10 v2004 build folder that was created in the previous module, but you can also use a Windows 10 v2004 ISO that you download from MSDN or Microsoft VLSC.
- Application(s) that you want to add to your image during build and capture. For simplicity I added Adobe Reader DC as an example.
- The sample files for this guide: <u>https://bit.ly/AGGW10-SampleFiles</u>

Why using MDT Lite Touch?

A great question to ask is the following: Since we are going to deploy the image with ConfigMgr, why don't we use ConfigMgr to also create the reference image? Well, it boils down to this:

- Using MDT Lite Touch is simply faster. This means less hours spent (in total) creating and maintaining the image.
- Installing Software Updates is extremely reliable in MDT Touch (the equivalent action in a ConfigMgr task sequence has been quite shaky over the years)
- You can use a Suspend action that allow for reboots, useful when needing to installing/configure something manually, or just want to check the reference image before it's automatically captured.
- The MDT Lite Touch build and capture is easier to automate.

Step 1 – Creating the MDT server structure

Review the service account for MDT builds

1. On DC01, using Active Directory Users and Computers, make sure you have created a user account named MDT_BA. In my lab I added that account to the ViaMonstra / Service Accounts OU, and I assigned a password of P@ssw0rd.



The Service Accounts OU in my lab.

Install MDT 8456

- 1. On MDT01, log on as an administrator.
- 2. Download MDT 8456 from https://aka.ms/mdtdownload and install it using the default settings.

Install the MDT 8456 Hotfix

Due to a code change in Windows ADK 10 v2004, and Windows 10 v2004 you need to download some updated files for MDT 8456. You can download these files here: <u>https://bit.ly/MDT8456HF</u>

- 1. On MDT01, download the MDT 8456 hotfix (MDT_KB4564442.exe), and extract it to a folder named C:\Setup\MDT 8456 Update (create the folder).
- Copy the x86 version of the new Microsoft.BDD.Utility.dll from C:\Setup\MDT 8456 Update\x86 to C:\Program Files\Microsoft Deployment Toolkit\Templates\Distribution\Tools\x86. Replace the existing file.
- 3. Copy the x64 version of the new Microsoft.BDD.Utility.dll from C:\Setup\MDT 8456 Update\x to C:\Program Files\Microsoft Deployment Toolkit\Templates\Distribution\Tools\x64. Replace the existing file.

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📌 Quick access		ListOfLanguages.xml	9/13/2017 9:09 AM	XML Document	318 KB				
📃 Desktop	*	<u> 옥</u> ListOfLanguages.xsd	9/13/2017 9:09 AM	XML Schema File	3 KB				
👆 Downloads	*	Microsoft.BDD.PnpEnum.exe	12/14/2018 3:00 AM	Application	95 KB				
		Microsoft.BDD.Utility.dll	5/27/2020 10:17 PM	Application extens	151 KB				
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Pictures	× 🗸	🚳 msvcp120.dll	9/13/2017 9:09 AM	Application extens	645 KB				~
39 items 1 item s	elected	50 KB							2

The updated Microsoft.BDD.Utility.dll added to the MDT installation folder.

Install Windows ADK 10 v2004 and WinPE Addon

- 1. On MDT01, download and install Windows ADK 10 v2004 from https://aka.ms/adk
- 2. Select the following features during setup:
 - o Deployment Tools
 - Imaging and Configuration Designer (ICD)
 - Configuration Designer
 - User State Migration Tool (USMT)

Windows Assessment and Deployment Kit - Windows 10	–				
Select the features you want to ins	tall				
Click a feature name for more information.					
Application Compatibility Tools	Deployment Tools				
Deployment Tools	Size: 91.4 MB				
☑ Imaging And Configuration Designer (ICD)	Tools to customize and manage Windows images and to				
Configuration Designer	automate installation.				
✓ User State Migration Tool (USMT)	Includes:				
Volume Activation Management Tool (VAMT)	 Deployment Image Servicing and Management 				
Windows Performance Toolkit	(DISM) tool. To use DISM cmdlets, <u>PowerShell 3.0</u>				
Microsoft User Experience Virtualization (UE-V) Template	OEM Activation 2.5 and 3.0 Tools.				
Media eXperience Analyzer	Windows System Image Manager (SIM). OSCDIMG RCDRoot, DISMARL WIMGARL and other				
Windows IP Over USB	tools and interfaces.				
	Estimated disk space required: 861.4 MB				
	Disk space available. 03.0 GD				
	<u>B</u> ack Sinstall Cancel				

The Windows ADK 10 v2004 setup.

- 3. Download and install Windows ADK 10 v2004 WinPE Addon from https://aka.ms/adk
- 4. Use the default settings during setup:

岁 Windows Assessment and Deployment Kit Windows Preinstallati	on Environment Add-ons - Windows 10 —		×
Select the features you want to in	stall		
Click a feature name for more information.			
✓ Windows Preinstallation Environment (Windows PE)	Windows Preinstallation Environm (Windows PE)	ient	
	Size: 5.5 GB		
	Minimal operating system designed to prepare a c for installation and servicing of Windows.	:omputer	
	Includes:		
	 Windows PE (x86) Windows PE (AMD64) Windows PE (ARM) Windows PE (ARM64) 		
	Estimated disk space required: Disk space available:	5.5 GB 68.8 GB	
	<u>B</u> ack	<u>C</u> ance	el l

Installing the WinPE Addon for Windows ADK 10.

Copy the Sample Files to MDT01

In this section I assume you have downloaded the sample files for this guide.

- 1. On MDT01, create the E:\Setup folder.
- 2. Extract the sample files to E:\Setup
- 3. Review the content in the MDT, and Script folders (the ConfigMgr folder is for module 5).



The E:\Setup\AGGW10-SampleFiles folder.

Create and share the Logs folder

- 1. On MDT01, start an elevated PowerShell prompt (run as administrator).
- 2. Create and share the E:\Logs folder by running the following command from an elevated PowerShell prompt:

E:\Setup\AGGW10-SampleFiles\Scripts\Create-MDT01LogsFolder.ps1

3. Verify that the Logs\$ share was created by running the following command:

Get-SmbShare

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Name	ScopeName	Path	Description				^
ADMIN\$ C\$ E\$ IPC\$ Logs\$	* * * *	C:\windows C:\ E:\ E:\	Remote Admin Default share Default share Remote IPC				
P5 C:\;	> _						~

The logs folder created, and shared.

Create the MDT Build Lab Deployment Share

- 1. On MDT01, using the **Deployment Workbench** (available on the start menu), right-click **Deployment Shares** and select **New Deployment Share**. Use the following settings for the **New Deployment Share Wizard**.
 - a. Deployment share path: E:\MDTBuildLab
 - b. Share name: MDTBuildLab\$
 - c. Deployment share description: MDT Build Lab
 - d. Options: <default settings>

Configure Permissions for the MDT Build Lab deployment share

MDT by default locks down the deployment share so that only administrators can access it, which is a bit too harsh.

- 1. On MDT01, start an elevated PowerShell prompt (run as administrator).
- Allow the MDT_BA account Modify permissions (NTFS Permissions) to the E:\MDTBuildLab\Captures folder by running the following command:

```
E:\Setup\AGGW10-SampleFiles\Scripts\
Set-MDTBuildLabPermissions.ps1
```

3. Verify that you can access E:\MDTBuildLab folder, and the \\MDT01\MDTBuildLab\$ share.

Step 2 – Add Windows installation files

When adding operating system images, always try to use a media that is already updated by Microsoft, or by you using the OSD Builder community tool. This way you don't need to install software updates during build and capture, which will save some time.

Import the Windows 10 operating system

- On MDT01, download (or copy) the Windows 10 Business Editions x64 v2004 media to E:\ISO. In my lab I renamed the download file to Windows 10 Business Editions x64 v2004.iso.
- 2. Mount the E:\ISO\Windows 10 Business Editions x64 v2004.iso media.
- **3.** Using the **Deployment Workbench**, expand the **Deployment Shares** node, expand **MDT Build** Lab, select the **Operating Systems** node and create a folder named **Windows 10**.
- 4. Right-click the Windows 10 node, and select Import Operating System. Use the following settings for the Import Operating System Wizard.
 - a. Full set of source files
 - b. Source directory: D:\ (or whatever drive letter the ISO mounted as)
 - c. Destination directory name: W10X64-V2004
- 5. After adding the operating system, using the **Deployment Workbench**, in the **Windows 10** node, delete all images except for **Windows 10 Enterprise in W10X64-V2004 install.wim**.
- 6. Rename the remaining operating system to Windows 10 Enterprise x64 v2004.



The Windows 10 node after renaming the label for the imported operating system.

Step 3 – Add Applications

In this step you are using Adobe Reader DC as example of adding an application to MDT. You can download this from: <u>https://get.adobe.com/reader/enterprise/</u>

Add Adobe Reader DC

- 1. On MDT01, download and install 7-Zip from https://www.7-zip.org
- 2. Download Adobe Reader DC from https://get.adobe.com/reader/enterprise/ and extract it using 7-Zip to the E:\Setup\Adobe Reader DC folder (create the folder).



Adobe Reader DC extracted using 7-Zip to E:\Setup\Adobe Reader DC.

- 3. Using the **Deployment Workbench**, expand the **Deployment Shares** node, expand **MDT Build** Lab, select the **Applications** node and create a folder named **Adobe**.
- 4. Expand the Applications node, right-click the Adobe folder, and select New Application, Use the following settings for the New Application Wizard.
 - a. Application with source files
 - b. Publisher: <blank>
 - c. Application name: Adobe Reader DC
 - d. Version: **<blank>**
 - e. Source Directory: E:\Setup\Adobe Reader DC
 - f. Specify the name of the directory that should be created:

E:\Setup\Adobe Reader DC

- g. Command Line: Setup.exe /sALL /rs /msi EULA_ACCEPT=YES
- h. Working directory: .\Applications\Adobe Reader DC

🚟 DeploymentWorkbench - [Deployment Wor	kbench\Deployment Shares\MD	T Build Lab (E:\MDTBuildLab)\Applications\Adobe]	ı —		×
<u>File Action V</u> iew <u>H</u> elp					
🗢 🄿 🙍 🗟					
i Deployment Workbench	Name	ShortName	Actions		
> 📑 Information Center	Adobe Reader DC	Adobe Reader DC	Adobe		• ^
 Deployment shares MDT Build Lab (E:\MDTBuildLab) 			New Applicati	on	
V 🔁 Applications			New Folder		
Adobe			View		•
Vindows 10			🔏 Cut		
> 🖳 Out-of-Box Drivers			Сору		
> 🎼 Packages			Delete		
> 📑 Task Sequences			Rename		
> in Monitoring			Refresh		- 12
			Event List		
	<	c			~
			Uroportion		

The Adobe Reader DC application added.

Step 4 – Create the MDT Task Sequence

Create and configure a Task Sequence

- 1. On MDT01, using the Deployment Workbench, in the MDT Build Lab deployment share, select the Task Sequences node, and create a folder named Windows 10.
- 2. Expand the Task Sequences node, right-click on the Windows 10 node, and select New Task Sequence. Use the following settings for the New Task Sequence Wizard.
 - a. Task sequence ID: REFW10-X64-001
 - b. Task sequence name: Windows 10 Enterprise x64 v2004
 - c. Template: Standard Client Task Sequence
 - d. Select OS: Windows 10 Enterprise x64 v2004
 - e. Specify Product Key: Do not specify a product key at this time
 - f. Full Name: ViaMonstra
 - g. Organization: ViaMonstra
 - h. Internet Explorer home page: about:blank
 - i. Do not specify an Administrator password at this time

Edit the Task Sequence

- 1. In the Task Sequences / Windows 10 folder, right-click the Windows 10 Enterprise x64 v2004 task sequence, and select Properties.
- 2. On the Task Sequence tab, configure the Windows 10 Enterprise x64 v2004 task sequence with the following settings:
 - a. State Restore. After the **Tattoo** action, add a **new Group** action with the following setting:

Name: Applications

- b. State Restore / Applications. Add a new **Install Application** action with the following settings:
 - Name: Adobe Reader DC
 - Install a Single Application: Adobe Reader DC
- 3. Click OK.

Real World Note: If your imported OS media is not already updated, or if you are adding Windows features during build and capture, you also want to enable the two Windows Update actions in the MDT task sequence. They are disabled by default.

Windows 10 Enterprise x64 v2004 Properties		×
General Task Sequence OS Info		
Add • Kerner Up Down Initialization State Capture Preinstal Postinstal State Restore State Restore State State Restore State State State Restore State State Restore State State Restore State State State Restore State State State Restore State State State Restore State State State State Restore State	Properties Options □ Disable this step Success codes: 0 3010 □ Continue on error □ □ Image: Properties of the step Image: Properties of the step □ Image: Properties of the step □ □ Image: Properis of the step □ <t< td=""><td></td></t<>	
	OK Cancel Apply Help	

The task sequence with an application added, and the Windows Update actions enabled.

Step 5 – Configure the deployment share

Prepare the deployment share rules

- 1. On MDT01, navigate to the E:\Setup\AGGW10-SampleFiles\MDT folder.
- 2. Copy the following files to E:\MDTBuildLab\Control (replace the existing files).
 - a. Bootstrap.ini
 - b. CustomSettings.ini
- 3. Review the E:\MDTBuildLab\Control\Bootstrap.ini file, note the DeployRoot value.
- 4. Review the E:\MDTBuildLab\Control\CustomSettings.ini file.

Configure the Deployment Share

- 1. Using the **Deployment Workbench**, right-click the **MDT Build Lab** deployment share and select **Properties**.
- 2. In the General tab, in the Platforms Supported area, clear the x86 checkbox.
- 3. In the Windows PE tab, in the Platform dropdown list, make sure x64 is selected.
- 4. In the Lite Touch Boot Image Settings area, configure the following settings
 - c. Image description: MDT Build Lab x64
 - d. ISO file name: MDT Build Lab x64.iso
- 5. Click OK.

neral Rules Window	s PE Monitoring	
atform: x64	\checkmark	
ieneral Features Drive	ers and Patches	
Lite Touch Boot Image	Settings	
Generate a Lite Tou	ch Windows PE WIM file	
Image description:	MDT Build Lab x64	
Generate a Lite Tou	ch bootable ISO image	
ISO file name:	MDT Build Lab x64.iso	1
		-
Windows PE Customiza	lions	_
Custom background bitm	ap file: %INSTALLDIR%\Samples\Background.bmp Browse	
Extra directory to add:	Browse	1
Cartal		
Scratch space size:	32 ~	
Generic Boot Image Set	tings	
A generic boot image is	useful for troubleshooting purposes. It contains all the same components and drivers, but no scripts.	
Generate a generic	Windows PE WIM file	
Image description:	Generic Windows PE (x64)	
Generate a generic h	bootable ISO image	
ISO file name:	Generic x64 iso	

Properties of the MDT Build Lab deployment share, Windows PE x64 settings.

Update the Deployment Share

- 1. On MDT01, right-click the MDT Build Lab Deployment Share and select Update Deployment Share.
- 2. Use the default Options for the Update Deployment Share wizard.

Note: The update process will take a few minutes.

3. Review the contents of the E:\MDTBuildLab\Boot folder.

📙 🔄 📙 👻 E:\MDTBuildLab\Boot			-		×
File Home Share View					~ 🕐
← → → ↑ 📑 > This PC > Local Disk (E:) > MDTBuildLab > Boot > 🗸 💍 Search Boot					Q
Pictures 🖈 ^ Name	Date modified	Туре	Size		
AGGW10-Sampl k64	6/19/2020 10:02 AM	File folder			
MDT x86	6/19/2020 10:02 AM	File folder			
Scripts LiteTouchPE_x64.wim	6/19/2020 10:03 AM	WIM File	337,120 KB		
Setup 🔮 LiteTouchPE_x64.xml	6/19/2020 10:03 AM	XML Document	14 KB		
This PC MDT Build Lab x64.iso	6/19/2020 10:03 AM	Disc Image File	367,314 KB		
5 items					

The contents of the E:\MDTBuildLab\Boot folder after updating the deployment share.

Step 6 – Create Windows Reference Images

Create a Windows 10 Reference WIM Image, fully automated

- 1. On MDT01, copy the E:\MDTBuildLab\Boot\MDT Build Lab x64.iso file to C:\ISO on your Host PC.
- 2. On the **REF001** virtual machine, mount the **MDT Build Lab x64.iso** media (located in the C:\ISO folder on the host PC).
- **3.** Start the **REF001** virtual machine, allow it to boot, and complete the **Deployment Wizard** using the below settings:
 - a. Select a task sequence to execute on this computer:

Windows 10 Enterprise x64 v2004

- b. Specify whether to capture an image:
 - i. Capture an image of this reference computer
 - ii. Location: <default>
 - iii. File name: <default>
- 4. The deployment process will do the following:
 - a. Installed the Windows 10 Enterprise operating system.
 - b. Installed any added applications, roles, and features.
 - c. Stage WinPE on the local disk.
 - d. Run Sysprep and reboot into WinPE.
 - e. In WinPE, captured the installation to a WIM file (saved in the E:\MDTBuildLab\Captures folder on MDT01).

Microsoft Deployment Toolkit

ViaMonstra Running: Lite Touch Installation Running action: Create WIM	ViaMonstra Running: Lite Touch Installation Running action: Create WIM	Installation Progress)
Running action: Create WIM [====================================	Running action: Create WIM [====================================	ViaMonstra Running: Lite Touch Instal	lation	
		Running action: Create WIM	%]	
]

Windows 10 WIM image capture in progress.

Module 5 Setup ConfigMgr OSD

In this module you learn to setup ConfigMgr 2002 for deploying and servicing machines with Windows 10 Enterprise v2004, with or without the MDT integration.

Real World Note: For ConfigMgr 2002, make sure you have installed KB4567007 which contains OSD fixes for UEFI-based machines.

What you need for this module

For the guides in this module, you need the following:

- A Domain Controller running either Windows Server 2012R, Windows Server 2016 or Windows Server 2019. In my lab I used a domain controller named DC01 that manages the corp.viamonstra.com domain (VIAMONSTRA is the NetBIOS name).
- A Member Server running either Windows Server 2012R, Windows Server 2016 or Windows 2019 with a ConfigMgr site server installed. In my lab I was using CM01 as single site server for the PS1 primary site. Having all the needed roles, like MP, DP, SMS provider, and site database server.
- An updated Windows 10 Enterprise v2004 WIM created either using OSD Builder (module 3), or from MDT Lite Touch build and capture (module 4).
- The sample files for this guide: <u>https://bit.ly/AGGW10-SampleFiles</u>

Step 1 – Prepare for ConfigMgr OSD

Review the service account for ConfigMgr OSD

- 1. On DC01, using Active Directory Users and Computers, make sure you have created the following user accounts:
 - a. CM_NAA
 - b. CM_JD
- 2. In my lab I added these accounts to the ViaMonstra / Service Accounts OU, and I assigned a password of P@ssw0rd.

Active Directory Users and Computers							×	
<u>File Action View H</u> elp								
← → 2 💼 ¼ 🗈 🗙 🗟 🔤 🛛 📷 🖏 📚 🗃 🍸 🧕 🍇								
 Active Directory Users and Com Saved Queries Corp.viamonstra.com Builtin Computers Domain Controllers ForeignSecurityPrincipal: Managed Service Accour Security Groups Servers Service Accounts Service Accounts Workstations 	Name CM_CP CM_JD CM_NAA CM_SR MDT_BA MDT_JD CR_SA	Type User User User User User User	Description ConfigMgr Client Push Account ConfigMgr Join Account ConfigMgr Network Access Account ConfigMgr Reporting Services Account MDT Build Account MDT Join Domain Account Orchestrator Service Account					

The Service Accounts OU in my lab.

Configure Active Directory Permissions

In this section I assume you have downloaded the sample files for this guide.

- 1. On DC01, create the C:\Setup folder.
- 2. Extract the sample files to C:\Setup.
- **3.** In an elevated **PowerShell prompt** (run as Administrator), run the following commands, press **Enter** after each command (the last command is wrapped):

```
Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Force
```

C:\Setup\AGGW10-SampleFiles\Scripts\Set-OUPermissions.ps1 -Account CM JD -TargetOU "OU=Workstations,OU=ViaMonstra"

4. The previous script allows the CM_JD user account minimal permissions to manage computer accounts in the ViaMonstra / Workstations OU.

Create a boundary

In ConfigMgr, boundaries and boundary groups are used for clients to locate management points, software update points, and content on distribution points. I prefer to use IP ranges, and your lab you should at least one of these. In this example you create an IP range for the 192.168.1.0/24 subnet.

- 1. On CM01, using the Configuration Manager Console, in the Administration workspace, in Hierarchy Configuration, select Boundaries.
- 2. Create a boundary using the following settings:
 - a. Description: New York
 - b. Type: IP address range
 - c. Starting IP address: 192.168.1.1
 - d. Ending IP address: 192.168.1.254

Create Boundary					×
General Boundary Groups					
Configure settings for thi	s boundary				
Description:	New York				
Typ <u>e</u> :	IP address range	e		~	
Sta <u>r</u> ting IP address:	192 .	168 .	1	. 1	
Ending IP address:	192 .	168 .	1	. 254	
		ОК	Cance	el <u>A</u> pply	

Creating an IP range boundary.

Create a Boundary Group

- 1. Using the Configuration Manager Console, in the Administration workspace, in Hierarchy Configuration, select Boundary Groups.
- 2. Create a boundary group using the following settings:
 - a. In the General tab
 - Name: HQ Assignment
 - Boundaries: Add the **192.168.1.1 192.168.1.254** boundary.
 - b. In the References tab

• Site assignment area: Select the Use the boundary group for site assignment check box.

Use this boundary	group for site assignment			
Set the site that C performs client pus installation, but clie	onfigMgr computer resources a sh installation. When a second ents always assign to the seco	are assigned to d dary site is selecte ondary site's pare	uring discovery. This also ed, the secondary site per nt primary site.	sets the site that forms client push
A <u>s</u> signed site:	PS1-Primary Site 1			~
elect site system serve	ers			
elect site system serve Specify the site system content. You can spe	ars n servers that are associated w cify management points, distrib	with this boundary pution points, stat	r group, which clients sho e migration points, or softv	uld use for policy an vare update points.
elect site system serve Specify the site system content. You can spe	ers 1 servers that are associated w cify management points, distrib	with this boundary pution points, stat	/ group, which clients sho e migration points, or softv	uld use for policy an vare update points.
elect site system serve Specify the site system content. You can spe Site system servers:	ers 1 servers that are associated v Cify management points, distrib	vith this boundary pution points, stat	/ group, which clients sho e migration points, or softw	uld use for policy an ware update points.
elect site system serve opecify the site system content. You can spe Site system servers: Filter	ers n servers that are associated w cify management points, distrib	vith this boundar, sution points, stat	r group, which clients sho e migration points, or softv	uld use for policy an ware update points.
elect site system server Specify the site system content. You can spe Site system servers: Filter Server Name	ers n servers that are associated v cify management points, distrib	with this boundary bution points, stat	r group, which clients sho e migration points, or soft	uld use for policy an vare update points.
elect site system serv Specify the site system content. You can spe Site system servers: Filter Server Name \\CM01.corp.viamou	ars n servers that are associated v cify management points, distrib stra.com	with this boundary pution points, stat Site PS1	r group, which clients sho e migration points, or soft	uld use for policy an ware update points.
elect site system server Specify the site system sontent. You can spe Site system servers: Filter Server Name \\CM01.corp.viamon	ers n servers that are associated v cify management points, distrib 	vith this boundary pution points, stat Site PS1	/ group, which clients sho e migration points, or softγ	uld use for policy an vare update points.
elect site system server pocify the site system content. You can spe Site system servers: Filter Server Name \\CM01.corp.viamor	ers n servers that are associated v cify management points, distrib nstra.com	with this boundary puttion points, stat	r group, which clients sho e migration points, or soft	uld use for policy an vare update points.
elect site system server Specify the site system content. You can spe site system servers: Filter Server Name \\CM01.corp.viamon	ers n servers that are associated v cify management points, distrib nstra.com	vith this boundary uution points, stat Site PS1	r group, which clients sho e migration points, or soft	uld use for policy an ware update points.

• Site system servers: area: Add the CM01 server.

Creating the HQ Assignment boundary group.

Create a Distribution Point Group

- 1. Using the Configuration Manager Console, in the Administration workspace, create a distribution point group named HQ DPs.
- 2. In the Members tab, add the CM01 distribution point.

Configure the Network Access Account

- 1. On CM01, using the Configuration Manager Console, in the Administration workspace, expand Site Configuration and select Sites.
- 2. Right-click PS1 Primary Site 1, select Configure Site Components and the select Software Distribution.
- 3. In the Network Access Account tab, configure the VIAMONSTRA\CM_NAA user account (select New Account) as the network access account. Use the new Verify option to verify that the account can connect to \\DC01\SYSVOL network share.

Windows User Acco	punt	×
User <u>n</u> ame:	VIAMONSTRA\CM_NAA Example: Domain\User	Browse
Password:	•••••	
<u>C</u> onfirm password:	•••••	
<u>V</u> erify <<		
Data source:	Network Share	~
Network share:	\\DC01\sysvol	Browse
	Example: \\server\share	
	Test connection	
	ОК	Cancel

Testing the connection.

Configure the Client Settings

- 1. On CM01, using the Configuration Manager Console, in the Administration workspace, select Client Settings.
- 2. Right-click Default Client Settings, and select Properties.
- 3. In the Client Cache Settings node, configure the following settings
 - a. Configure client cache size: Yes
 - b. Maximum cache size (MB): 25600
 - c. Maximum cache size (percentage of disk): 25

Note: With the above settings the client cache size can expand to either the maximum size in MB (25600), or the percentage of the disk (25), whichever is less.

- 4. In the **Computer Agent** node, configure the following settings
 - a. Organization name displayed in Software Center: ViaMonstra

Note: The preceding setting is still need for the organization name to show during OS deployment.

- 5. In the Software Center node, configure the following settings
 - a. Select these new settings to specify company information: Yes
 - b. Click Customize, and In the Company name text box, type in ViaMonstra.
- 6. Click OK twice.

Background Intelligen Client Cache Settings Client Policy	t Transfer Default Settings		hustom sattings
Cloud Services	Software Center Customization	×	distorn settings.
Compliance Setting Computer Agent	General Tabs Defaults		
Computer Restart	Company name	ViaMonstra	
Delivery Optimizatio	Color scheme for Software Center	Select Color	
Endpoint Protectior Enrollment	Select a logo for Software Center	Browse	Customize
Hardware Inventory	Desidence		
Metered Internet Co	Preview:		
Power Managemen			
Remote Tools			
Software Center	ViaMonstra		
Software Deployme			
Software Inventory			
Software Undates			
State Messaging	Hide unapproved applications in Software Center		
User and Device Aff	Hide installed applications in Software Center		
Windows Analytics	Hide Application Catalog link in Software Center		
		OK Cancel	
			-
		OK	Canaal

Configure client settings.

Copy the Sample Files to CM01

In this section I assume you have downloaded the sample files for this guide.

- 1. On CM01, create the E:\Setup folder.
- 2. Extract the sample files to E:\Setup



The E:\Setup\AGGW10-SampleFiles folder.

Create the Sources folder structure

1. On CM01, in an elevated **PowerShell prompt** (run as Administrator), run the following command (note that command is wrapped):

```
E:\Setup\AGGW10-SampleFiles\Scripts\
Create-ConfigMgrSourceFolders.ps1
```

2. The above script creates the following folder structure, and also shares the E:\Sources folder as Sources, and E:\Logs as Logs.

E:\Logs E:\Sources E:\Sources\OSD E:\Sources\OSD\Boot E:\Sources\OSD\DriverPackages E:\Sources\OSD\DriverSources E:\Sources\OSD\MDT E:\Sources\OSD\OS E:\Sources\OSD\Settings

Enable PXE on the CM01 Distribution Point

- 1. In the Configuration Manager Console, in the Administration workspace, select Distribution Points.
- 2. Right-click the \\CM01.CORP.VIAMONSTRA.COM DP and select Properties.
- 3. In the PXE tab, enable the following settings:
 - a. Enable PXE support for clients
 - b. Allow this distribution point to respond to incoming PXE requests
 - c. Enable unknown computer support
 - d. Enable a PXE responder without Windows Deployment Service
 - e. Require a password when computers use PXE
 - f. Password and Confirm password: P@ssw0rd

Real World Note: The "Enable a PXE responder without Windows Deployment Service" option is a fairly new PXE server for ConfigMgr, and since it's not depending on WDS, it can be installed on DPs running on Windows 10 as well.

:	CM01	CORP.VIAMON	STRA.CC	M Proper	ties					×
	General	Communication	PXE	Multicast	Group Relationships	Content	Content Validation	Boundary Groups	Security	
			for clients							
	Wi	ndows Deploymer	nt Service	s will be ins	talled if required					
		✓ Allow this distribution point to respond to incoming PXE requests								
		Anow ties assubution point to respond to incoming if Achequests Enable unknown computer support								
		✓ Enable a PXE responder without Windows Deployment Service.								
		equire a passwor	d when c	omputers us	e PXE					
	Pa	ass <u>w</u> ord:		••	•••••					
	Co	onfir <u>m</u> password:		••	•••••					
	Hear	device affinity:		De	nat una unar davian at	tioth (~	
	User	de <u>vi</u> ce annuty.		DO	not use user device a	Innity			Ý	
	Net	work interfaces								
	•	Respond to PXE	requests	on all netw	ork interfaces					
	0	Respond to PXE	requests	on specific	network interfaces				100	
	_							* 🗉	X	
	Spec	ify the PXF server	response	delav (sec	onds):		0			
	0000	.,	. Soportor		,		Ľ		•	
							ОК	Cancel	<u>A</u> pply	

Configure the CM01 DP for PXE.

4. Using CMTrace, review the E:\Program Files\Microsoft Configuration Manager\Logs\distmgr.log file. Look for ConfigurePXE lines.

👔 Configuration Manager Trace Log Tool - [E:\Program Files\Microsoft Configuration Manager\Logs\distmgr.l	og]	_		×				
Eile <u>T</u> ools <u>W</u> indow <u>H</u> elp			-	e x				
😂 🗏 🚑 🖥 👫 II 📃								
Log Text	Component	Date/Time	Thread					
Copying E:\Program Files\Microsoft Configuration Manager\bin\x64\PS100009\Windows\Boot\Fonts\segoen_sl	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:10 AM	4576 (0x11	EO) ^				
Copying E:\Program Files\Microsoft Configuration Manager\bin\x64\PS100009\Windows\Boot\Fonts\segoe_slb	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:10 AM	4576 (0x110	EO)				
Copying E:\Program Files\Microsoft Configuration Manager\bin\x64\PS100009\Windows\Boot\Fonts\wgl4_boo	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:10 AM	4576 (0x118	E O)				
Currently using 0 out of 3 allowed package processing threads.	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:11 AM	5324 (0x140	CC)				
Sleep 3600 seconds	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:11 AM	5324 (0x140	CC)				
Finished ConfigurePXE - CM01.CORP.VIAMONSTRA.COM	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:13 AM	4576 (0x11)	E0)				
Finished ConfigureDP1 - CM01.CORP.VIAMONSTRA.COM	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:13 AM	4576 (0x11F	E O)				
Found 1 web site(s).	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:13 AM	4576 (0x118	EO)				
Found SSL binding 'D407190989A6F0068F48C9C2BC11E7008E341BB5', 'MY'	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:13 AM	4576 (0x118	EO)				
Begin searching client certificates based on Certificate Issuers	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:13 AM	4576 (0x118	EO)				
Completed searching client certificates based on Certificate Issuers	SMS_DISTRIBUTION_MANA	6/21/2020 9:25:13 AM	4576 (0x11	EO)				
Renin to select client certificate	SMS DISTRIBUTION MANA	6/21/2020 9·25·13 ΔM	4576 (0v110	FON Y				
Date/Time: 6/21/2020 9:25:13 AM Component: SMS_DISTRIBUTION_MANAGER								
Thread: 4576 (0x11E0) Source:								
Finished ConfigurePXE - CM01.CORP.VIAMONSTRA.COM				~				
Element time is 12121k 1m 54- 060ms (A2625714 060 seconds)				~				
ciapsed time is 1212 in 1m 345 additis (45053714.add seconds)								

The distmgr.log showing the PXE feature being enabled.

5. Also review the SMSPXE.log in the same location.

👔 Configuration Manager Trace Log Tool - [E:\Program Files\Microsoft Configuration Manager\Logs\SMSPXE.log] - 🗆 🗙							
Eile <u>T</u> ools <u>W</u> indow <u>H</u> el	р				_ & ×		
🖻 🔜 🎒 🖿 🖊 🛛 🗖							
Log Text			Component	Date/Time	Thread		
			SCCMPXE	6/21/2020 9:24:34 AM	8040 (0x1F68)		
Start SCCM PXE as a service.			SCCMPXE	6/21/2020 9:24:34 AM	8040 (0x1F68)		
ServiceMain()		SCCMPXE	6/21/2020 9:24:34 AM	2244 (0x8C4)			
Starting sccmpxe.exe version 5.0.8	968.1000 from location	'E:\Program Files\Microsoft Configuration Manager\bi	SCCMPXE	6/21/2020 9:24:34 AM	2244 (0x8C4)		
Firewall service is already running.			SCCMPXE	6/21/2020 9:24:34 AM	2244 (0x8C4)		
Module folder: E:\Program Files\N	Aicrosoft Configuration	n Manager\bin\x64	SCCMPXE	6/21/2020 9:24:34 AM	2244 (0x8C4)		
PXE: CM01, CM01.corp.viamonstr	a.com		SCCMPXE	6/21/2020 9:24:34 AM	2244 (0x8C4)		
Starting DHCP on 00:15:5D:4B:	6C:06, 192.168.1.214, 6	7.	SCCMPXE	6/21/2020 9:24:34 AM	2244 (0x8C4)		
Starting PXE on 00:15:5D:4B:6C	:06, 192.168.1.214, 401	1.	SCCMPXE	6/21/2020 9:24:34 AM	2244 (0x8C4)		
Starting TFTP on 192.168.1.214	l		SCCMPXE	6/21/2020 9:24:34 AM	9312 (0x2460)		
Starting TFTP on fe80::54ba:81	12:4077:207c.		SCCMPXE	6/21/2020 9:24:34 AM	10084 (0x2764)		
Date/Time: 6/21/2020 9:24:34 A	M Component:	SCCMPXE					
Thread: 8040 (0x1F68)	Source:	main.cpp:562					
Start SCCM PXE as a service.					*		

The SMSPXE.log file showing the service being started.
Step 2 – Optional - Integrate with MDT

It is still quite popular to integrate ConfigMgr with MDT to get additional OSD features, but it's not a requirement for imaging with ConfigMgr. If you prefer to just use the native ConfigMgr OSD features, please skip to step 3 in this module.

Install MDT 8456

- 1. On CM01, log on as an administrator.
- 2. Download MDT 8456 from https://aka.ms/mdtdownload and install it using the default settings.

Install the MDT 8456 Hotfix

Due to a code change in Windows ADK 10 v2004, and Windows 10 v2004 you need to download some updated files for MDT 8456. You can download these files here: <u>https://bit.ly/MDT8456HF</u>

- 1. On CM01, download the MDT 8456 hotfix (MDT_KB4564442.exe), and extract it to a folder named C:\Setup\MDT 8456 Update (create the folder).
- Copy the x86 version of the new Microsoft.BDD.Utility.dll from C:\Setup\MDT 8456 Update\x86 to C:\Program Files\Microsoft Deployment Toolkit\Templates\Distribution\Tools\x86. Replace the existing file.
- 3. Copy the x64 version of the new Microsoft.BDD.Utility.dll from C:\Setup\MDT 8456 Update\x to C:\Program Files\Microsoft Deployment Toolkit\Templates\Distribution\Tools\x64. Replace the existing file.

📙 🕑 🧾 🔻 C:\Program Files\Microsoft Deployment Toolkit\Templates\Distribution\Tools\x64						_		×		
File Home Share View									\sim	?
← → × ↑ 🗌 « Microsoft Deployment Toolkit → Templates → Distribution → Tools → x64 🗸 ゼ						Search x64			Q	
🖈 Quick access	^	Name IstOfLanguages.xml	Date modified 9/13/2017 9:09 AM	Type XML Document	Size 318 Ki	3				^
📃 Desktop	*	음 ListOfLanguages.xsd	9/13/2017 9:09 AM	XML Schema File	3 KI	3				
Downloads	*	Microsoft.BDD.PnpEnum.exe	12/14/2018 3:00 AM	Application	95 KI	3				
Documents		Microsoft.BDD.Utility.dll	5/27/2020 10:17 PM	Application extens	151 KI	3				
Distures		Smsvcp100.dll	9/13/2017 9:09 AM	Application extens	594 KI	3				
Pictures	<i>*</i> v	🚳 msvcp120.dll	9/13/2017 9:09 AM	Application extens	645 KI	3				¥
39 items 1 item selected 150 KB									-	

The updated Microsoft.BDD.Utility.dll added to the MDT installation folder.

Setup MDT integration in ConfigMgr Console

- 1. On CM01, close the Configuration Manager Console before continuing.
- 2. From the Start screen, run the Configure ConfigMgr Integration wizard with the following settings
 - a. Site Server Name: CM01.corp.viamonstra.com
 - b. Site code: PS1

Configure ConfigMgr Integration		×
Options		
Options Confirmation	Specify the actions to perform.	
	Install the MDT extensions for Configuration Manager	
	✓ Install the MDT console extensions for System Center Configuration Manager	
	$\overleftarrow{\mathbf{v}}$ Add the MDT task sequence actions to a System Center Configuration Manager server	
	Site server name: CM01.corp.viamonstra.com	
	Site code: PS1	
	C Remove the MDT extensions for Configuration Manager	
	\square Remove the MDT task sequence actions from a System Center Configuration Manager server	
	Site server name: CM01.corp.viamonstra.com	
	Site code: PS1	
	Previous <u>N</u> ext <u>Cancel</u>	

Setup the MDT integration with ConfigMgr.

Create an MDT Boot Image

- 1. Using Configuration Manager Console, in the Software Library workspace, expand Operating Systems, right-click Boot Images, select Create Boot Image using MDT, and create a new boot image package using the following settings.
 - a. Package source folder to be created (UNC Path): \\CM01\Sources\OSD\Boot\Zero Touch WinPE 10 x64

Note: The Zero Touch WinPE 10 x64 folder does not yet exist, you need to type in the path, and the folder will be created later by the wizard.

- b. Name: Zero Touch WinPE 10 x64
- c. Platform: x64
- d. Scratch Space: <default>
- e. Components: <default>
- f. Customization: <default>
- 2. Right-click the Zero Touch WinPE 10 x64 boot image, and select Distribute Content. Use the following settings for the Distribute Content Wizard:

Content Destination: Add the HQ DPs distribution point group.

3. Using Configuration Manager Console, right-click the Zero Touch WinPE 10 x64 boot image and select Properties.

4. In the Data Source tab, select the Deploy this boot image from the PXE-enabled distribution point check box, and click OK.

ontent Location	s Optional Cor	nponents Secu	urity				
ieneral Image:	Drivers Cus	tomization Dat	a Source	Data Access	Distribution	Settings	
Specify the ima cannot be char Image path:	ge file that conta nged. es\OSD\Boot\2	ains the boot ima	ge for this p PE 10 x64	winPE.wim	is default bo	ot image, the ir <u>B</u> rowse	nage file
Source version	5 (6	/21/2020 11:21	:48 AM)				
Update	distribution point	s on a schedule					
Occurs every	1 days effective	6/21/2020 1:58	BPM		Ç	Sc <u>h</u> edul	e
Persist con	tent in client cac	he					
□ Enable bina	ary differential rep b <u>o</u> ot image from	blication the PXE-enable	d distributio	on point			
If the selecte downloaded	d architecture ar in advance.	nd language mat	ches that o	f the client, the	package co	ntent will be	
Architecture:		● x <u>8</u> 6	\bigcirc	(6 <u>4</u>			
Language:							~

Enabling PXE for the boot image.

5. Using CMTrace, review the E:\Program Files\Microsoft Configuration Manager\Logs\distmgr.log file.

Step 3 – Add operating system images

Create the Windows 10 Operating System Image Package

- 1. On CM01, create the E:\Sources\OSD\OS\Windows 10 Enterprise x64 v2004 folder.
- 2. Copy your reference WIM image to the E:\Sources\OSD\OS\ Windows 10 Enterprise x64 v2004 folder.

Note: In this example I copied the install.wim image from \\PC0002\C\$\OSDBuilder\OSBuilds\Windows 10 Enterprise x64 v2004 19041.329\OS\Sources to the E:\Sources\OSD\OS\ Windows 10 Enterprise x64 v2004 folder. But you can also copy the WIM image from MDT01 if you did a build and capture.



The Windows 10 image copied.

- **3.** Using **Configuration Manager Console**, add an **Operating System Image** with the following settings. Use default settings for all other options.
 - a. Path (click Browse): \\CM01\Sources\OSD\OS\Windows 10 Enterprise x64 v2004\install.wim
 - b. Name: Windows 10 Enterprise x64 v2004

Step 4 – Add Drivers

To add support for new hardware you may need to add drivers to both WinPE, and to full Windows. In this example you add some WinPE and Windows drivers from HP.

Real World Note: Except for WinPE drivers, there is no need to import any other drivers into the ConfigMgr database. It's much better to create standard packages than to create driver packages in ConfigMgr. Creating standard packages is much faster, doesn't have distribution issues (hash value is not correct type errors), allows for more flexibility during deployment, and it doesn't bloat the ConfigMgr database with info you never will use.

The drivers referenced in this guide can be downloaded from these URLs:

WinPE x64 drivers https://ftp.hp.com/pub/softpaq/sp101001-101500/sp101480.exe

HP EliteBook 745 G6 Notebook PC drivers for Windows 10 x64 v2004 https://ftp.hp.com/pub/softpaq/sp101501-102000/sp101922.exe

Add HP Drivers for WinPE

1. On CM01, download the HP Client Windows PE Driver pack for WinPE 10, and extract it to the E:\Sources\OSD\DriverSources\WinPE x64 folder (create the folder).



The HP WinPE drivers extracted to E:\Sources\OSD\DriverSources\WinPE x64.

- 2. Using the Configuration Manager Console, in the Software Library workspace, right-click the Drivers folder and select Import Driver, use the following settings for the Import New Driver Wizard.
 - a. Locate Driver

Source folder: \\CM01\Sources\OSD\DriverSources\WinPE x64

b. Driver Details (Note the new driver information and filters being available).

Click Categories, and create a category named WinPE x64

Import New Driver Wizard	I					×
Driver Details						
Locate Driver Driver Details Add Driver to Packages Add Driver to Boot Image Summary Progress	Specify the details for the The following drivers will be imported f \\CM01\Sources\OSD\DriverSource Hide drivers that are not in a store	imported from folder: s\WinPEx64	d driver 4\ k class (for boot	images)		
Completion	Hide drivers that are not digitally s	igned				
	Filter					2
	File Name network\broadcom\P00WC1 network\broadcom\P00WC1 network\broadcom\sp91977 network\intel\P00WZ2-B2F\	Class Net Net Net Net	Architecture x64 x64 x64 x64 x64	Version 214.0.0.0 10.33.419 214.0.0.0 12.18.9.11	Signed Yes Yes Yes Yes	~
		Sele	e <u>c</u> t All	a	ea <u>r</u> All	
	Enable these drivers and allow co	mputers to in:	stall them			
	Assign this driver to one or more cate	pories for filte	ring.			
	"WinPEx64"				Categorie	s
< >	< <u>P</u> rev	ious	<u>N</u> ext >	<u>S</u> ummary	Ca	ncel

Adding HP drivers for WinPE x64.

c. Add Driver to Packages

<default>

- d. Add Driver to Boot Images
 - i. Select either the **Boot Image (x64)** boot image, or the **Zero Touch WinPE 10 x64** boot image if using the MDT integration.
 - ii. Click Yes twice, and then Next, to start the update distribution process.

Add Windows 10 Drivers for HP EliteBook 745 G6 Notebook PC

In this section you learn to add drivers for the HP EliteBook 745 G6 Notebook PC model using a standard ConfigMgr package.

Real World Note: While these steps will work just fine from a technically point of view, I highly recommend looking into using the driver automation tool from Maurice Daly. That tool, which is part of the free modern driver management solution is hands down amazing. You can read more about that solution here: https://msendpointmgr.com/modern-driver-management/

 On CM01, download the HP EliteBook 745 G6 Notebook PC drivers, and extract them to the E:\Sources\OSD\DriverPackages\Windows 10 x64 v2004\HP EliteBook 745 G6 Notebook PC folder (create the folder).



The drivers for HP EliteBook 745 G6 Notebook PC extracted.

- 2. Using the Configuration Manager Console, in the Software Library workspace, right-click the Packages node and select Create Package.
- 3. Use the following settings for the Create Package and Program Wizard.
 - a. Name: Windows 10 x64 v2004 HP EliteBook 745 G6
 - b. This package contains source files
 - Source folder (click Browse): \\CM01\Sources\OSD\DriverPackages\Windows 10 x64 v2004\ HP EliteBook 745 G6 Notebook PC
 - c. Do not create a program

🛐 Create Package and Prog	ram Wizard		×
Package			
Package Program Type Standard Program Requirements Summary Progress Completion	Specify inform	nation about this package other details for the new package. To take full advantage of new features that include the Software plication instead. Windows 10 x64 v2004 - HP EliteBook 745 G6 	
		< Previous <u>N</u> ext > Summary Cancel	

Creating a standard package for drivers.

Step 5 – Create Task Sequences

In this section you create the task sequence for bare metal deployment. If you integrated ConfigMgr with MDT in step 2 of this module, skip to the second task sequence in this section.

Option #1 - Create a Native ConfigMgr Task Sequence

- 1. Using Configuration Manager Console, in the Software Library workspace, expand Operating Systems, right-click Task Sequences, and select Create Task Sequence.
- 2. Use the following settings for the Create Task Sequence wizard.
 - a. Create a new task sequence

Install an existing image package

- b. Task Sequence Information
 - Task sequence name: Windows 10 Enterprise x64 v2004
 - Boot image: Boot image (x64)
 - Select the Run as high performance power plan check box

😰 Create Task Sequence Wiz	ard		×
Task Sequence In	formation		
Create New Task Sequence Task Sequence Information	Specify task sequence	e information	
Configure Network			
Install Configuration Mar	Task sequence name:	Whendows 10 Enternation (CA) (2004	
State Migration	<u>Pasaristica</u> :	Windows TU Enterprise X64 V2004	
Include Updates	Description.	^ ^	
Summary			
Progress		×)	
Completion	Boot image:	Boot image (x64) 10.0.19041.1 Browse	
	☑ Run as <u>h</u> igh performance	power plan	
< >>		< Previous Next > Summary Cancel	

Specify task sequence information.

- c. Install Windows
 - Image Package: Windows 10 Enterprise x64 v2004
 - Image index: 1- Windows 10 Enterprise
 - Enable the account and specify the local administrator password
 - Password and Confirm password: P@ssw0rd

😰 Create Task Sequence Wiza	ard				×
Install Windows					
Create New Task Sequence Task Sequence Informatic Install Windows	Install the Wind	ows operating s	system		
Install Configuration Mar State Migration	Image package: Windows 10 Enterprise x64 v2004 en-US Browse.]
Include Updates Install Applications	Partition and format the target computer before installing the operating system.				
Summary Progress	Configure <u>t</u> ask se	quence for use with BitL	.ocker		-
Completion	Specify the licensing i Prod <u>u</u> ct key:	nformation for the Windo	ows installation.		
	Ser <u>v</u> er licensing mode Maximum server conr	ections: 5)o not specify	~	
	O Randomly generation of the platforms (recommendation of the platforms (recommendation of the platforms) and the platforms) and the platforms (recommendation of the platforms) and the platforms) and the platforms) are commendation of the platforms) and the platforms) are commendation of the platforms)	te the local administrato nended)	r password and disable the a	account on all supported	-
	Enable the account	nt and specify the local	administrator password		
	Pass <u>w</u> ord:	••••	••••		
	Confirm password:	••••	••••		
< >		< <u>P</u> revious	<u>N</u> ext > Sum	nmary Cancel	

Configuring the Install Windows page.

Real World Note: Assigning a local administrator account/password is quite useful in a lab in the event you need to do some troubleshooting, but for production deployments its recommended having ConfigMgr disable it.

- d. Configure Network
 - Join a Domain
 - Domain: corp.viamonstra.com
 - Domain OU: LDAP://OU=Workstations,OU=ViaMonstra, DC=corp,DC=viamonstra,DC=com
 - Account: VIAMONSTRA\CM_JD
 - Password: P@ssw0rd

- e. Install Configuration Manager Client
 - Accept the default Configuration Manager Client Package
- f. State Migration
 - Accept the default settings
- g. Include Updates
 - Select the **Do not install any software updates** option

Real World Note: The ConfigMgr feature of installing software updates in a task sequence during deployment have been plagued with bugs over the years, and even when working, it adds extra time to the deployment too. I recommend having your image fully patched, and then use regular software updates in ConfigMgr to keep the client updated.

- h. Install Applications
 - Select any applications you want the task sequence to install, or skip for now. Can always be added later.

Edit the Native ConfigMgr Task Sequence

Once the native ConfigMgr task sequence is created, you need to add drivers to it.

- 1. Using the Configuration Manager Console, select Task Sequences, right-click the Windows 10 Enterprise x64 v2004 task sequence and select Edit.
- 2. In the Install Operating System group, disable the Auto Apply Drivers action. (Disabling is done by selecting the action and, in the Options tab, select the Disable this step check box.)
- **3.** In the **Install Operating System** group, disable the **Apply Device Drivers** action. (Disabling is done by selecting the action and, in the **Options** tab, select the **Disable this step** check box.)
- 4. After the disabled Install Operating System / Apply Device Drivers action, add a new group named Drivers.
- 5. After the Install Operating System / Drivers group, add a Download Package Content action with the following settings:
 - a. Name: HP EliteBook 745 G6
 - b. Add package: Windows 10 x64 v2004 HP EliteBook 745 G6
 - c. Custom path: %_SMSTSMDataPath%\Drivers

Windows 10 Enterprise x64 v2004 Task Sequence Edit	or					-	
Find 👂 Scope 🗸 🖕 🔿	Properties Options						
	Type:	Download Pack	age Content				
<u>A</u> dd • <u>R</u> emove ⊗ ⊗ ≣	<u>N</u> ame:	HP EliteBook 7	45 G6				
Add • Kemove () () () () () () () () () () () () ()	Name: Description: Name Name Windows 10 x64 v/ Place into the following lo Save path as a varia Refer to the variable in a where the number corre- lists the packages. If a package downlow	HP EliteBook 7	Type Package %_SMSTSMDa using %myconten er this Download fi downloading gthe	Size (MB) 2005 taPath%\Driv t02% or %my Package Con r packages in	Package ID PS10000B		
< >>							
NO HESUITS					ОК	Cancel	Apply

Adding drivers as standard packages.

- d. In **Options**, add a **Query WMI c**ondition with the following WQL query:
 - Select * from win32_computersystem where model = 'HP EliteBook 745 G6'

Windows 10 Enterprise x64 v2004 Task Sequence Editor	_		×
Find Decope V Cope V Properties Options			
Add - Remove & S			
Copture Files and Settings Capture Werkowk Settings Capture User State Storage Capture User State Storage	n Ca		
No Results OK Canc	el	Арр	Y

Setting the condition for the driver package.

- 6. After the HP EliteBook 745 G6 Download Package Content action, add a Run Command Line with the following settings:
 - a. Name: Install Drivers via DISM
 - b. Command line: DISM.exe /Image:%OSDTargetSystemDrive%\/Add-Driver /Driver:%_SMSTSMDataPath%\Drivers\/Recurse /logpath:%_SMSTSLogPath%\dism.log
 - c. In **Options**, add a **Folder Properties condition** with the following settings:
 - i. %_SMSTSMDataPath%\Drivers exists
- 7. Click OK.

Note: Again, while this method of adding driver packages works great from technical point of view, I highly recommend adding the community developed Modern Driver Management solution available on https://msendpointmgr.com/modern-driver-management/

Windows 10 Enterprise x64 v2004 Task Sequence Editor	-		×
Find Scope			
Add ▼ <u>R</u> emove ⊗ ⊗ ∰ Ç≣ □ Disable this step			
Copture Files and Settings Capture Network Settings Capture User Network Settings Request User State Storage Relate Bit Locker Rept User State Storage Restart in Windows Settings Rept User State Storage Restart in Windows Settings Rept User State Storage Rept User State Storage	¢		
No Results OK Cancel		Арр	ŀΣ

Setting the condition on the Install Drivers via DISM action.

Distribute content to the Distribution Point

- 1. Using the Configuration Manager Console, select Task Sequences, right-click the Windows 10 Enterprise x64 v2004 task sequence and select Distribute Content.
- 2. Use the following settings for the Distribute Content Wizard:

Content Destination: Add the HQ DPs distribution point group.

3. Using **CMTrace**, verify the distribution to the **CM01** distribution point (part of the HQ DPs Group) by reviewing the **distmgr.log** file. Do not continue until you see all the new packages being distributed successfully.

Create a deployment for the Task Sequence

- 1. Using Configuration Manager Console, select Task Sequences, right-click Windows 10 Enterprise x64 v2004, and then select Deploy.
- 2. Use the following settings for the **Deploy Software Wizard**:
 - a. General

Collection: All Unknown Computers

Note: Review the high risk deployment dialog box that is displayed when browsing for collections. This feature was added already back in ConfigMgr 2012 R2 SP1 and can be configured on the site properties.

- b. Deployment Settings
 - Purpose: Available
 - Make available to the following: Only media and PXE
- c. Use the default settings for the remaining wizard pages.

Deploy Software Wizard		×
Deployment Set	ttings	
General Deployment Settings Scheduling User Experience Alerts Distribution Points Summary Progress Completion	Specify settings to control how this software is deployed Action: Install Purpose: Available Specify whether to make this task sequence available to Configuration Manager clients, and whether it is available to run when you deploy an operating system by using boot media, prestaged media, or PXE. Make available to the following: Only media and PXE	X
	< <u>P</u> revious <u>N</u> ext > <u>S</u> ummary Cancel	

Configuring the deployment settings.

Option #2 - Create an MDT integrated ConfigMgr Task Sequence

- 1. Using Configuration Manager Console, in the Software Library workspace, expand Operating Systems, right-click Task Sequences, and select Create MDT Task Sequence.
- 2. Use the following settings for the Create MDT Task Sequence wizard.
 - a. Choose Template
 - Template: Client Task Sequence
 - b. General
 - Task sequence name: Windows 10 Enterprise x64 v2004 MDT
 - c. Details
 - Join a Domain
 - Domain: corp.viamonstra.com
 - Account: VIAMONSTRA\CM_JD
 - Password: P@ssw0rd
 - d. Windows Settings
 - User name: ViaMonstra
 - Organization name: ViaMonstra
 - Product key: <blank>
 - Administrator Account
 - Enable the account and specify the local administrator password
 - Password and Confirm password: P@ssw0rd

	Create MDT Task Sequence			×
	Details			
	Choose Template	Specify the task sequence	e details.	
	Details	Join Workgroup or Do	main	
	Capture Settings	O Join a <u>w</u> orkgroup		
	Boot Image	Workgroup:	WORKGROUP	
	General Settings	Join a domain:		
	Components	<u>D</u> omain:	corp.viamonstra.com	
	Customization	Account:	VIAMONSTRA\CM_JD	<u>S</u> et
	MDT Details	Windows Settings		
	OS Image	User name:	ViaMonstra	
	Image Details		Ve-Manata	
	Install Source	Organization name.	ViaMoristra	
	Deployment Method	Product <u>k</u> ey:		
	Client Package	Administrator Account		
		Randomly generate	the local administrator password and disable the accou	unt (recommended)
	Settings Package	Enable the account	t and specify the local administrator password	
	Settings Details	Brannet		
	Sysprep Package	Password:		
	Sysprep Details	Confirm password:		
	Progress			
	Confirmation			
			<u>P</u> revious <u>N</u> e	xt <u>C</u> ancel
- 11				

Configuring the Details settings.

e. Capture Settings

This task sequence will never be used to capture an image.

- f. Boot Image
 - Specify a boot image package to use
 - Select the Zero Touch WinPE 10 x64 boot image package
- g. MDT Package
 - Create a new Microsoft Deployment Toolkit Files package
 - Package source folder to be created (UNC Path): \\CM01\Sources\OSD\MDT\MDT 8456
- h. MDT Details

Name: MDT 8456

- i. OS Image
 - Specify an existing OS image
 - Select the Windows 10 Enterprise x64 v2004 package
- j. Deployment Method

Perform a "Zero Touch Installation" OS Deployment, with no user interaction

k. Client Package

- Specify an existing ConfigMgr client package
- Select the Microsoft Corporation Configuration Manager Client Package package.
- 1. USMT Package
 - Specify an existing USMT package
 - Select the Microsoft Corporation User State Migration Tool for Windows 10 10.0.19041.1 package
- m. Settings Package
 - Create a new settings package
 - Package source folder to be created (UNC Path): \\CM01\Sources\OSD\Settings\Windows 10 x64 Settings
- n. Settings Details

Name: Windows 10 x64 Settings

o. Sysprep Package

No Sysprep Package is required

'Edit the Task Sequence

In order to have the MDT standard client task sequence supporting dynamically assigning an OU, you need to provide a default value that Configuration action can update when needed. Also, since this is a production deployment task sequence, you also add in drivers to the task sequence.

- 1. Using the Configuration Manager Console, select Task Sequences, right-click the Windows 10 Enterprise x64 v2004 MDT task sequence and select Edit.
- 2. In the Post Install group, select Apply Network Settings, and configure the Domain OU value to use the ViaMonstra / Workstations OU (browse for values).
- **3.** In the **PostInstall** group, disable the **Auto Apply Drivers** action. (Disabling is done by selecting the action and, in the Options tab, select the **Disable this step** check box.)

- 4. After the disabled PostInstall / Auto Apply Drivers action, add a new group named Drivers.
- 5. After the **PostInstall** / **Drivers** group, add a **Download Package Content** action with the following settings:
 - a. Name: HP EliteBook 745 G6
 - b. Add package: Windows 10 x64 v2004 HP EliteBook 745 G6
 - c. Custom path: %_SMSTSMDataPath%\Drivers

Windows 10 Enterprise x64 v2004 - MDT Task Sequen	ice Editor				-		×
Find D Scope V 4	Properties Options						
	Type:	Download Package Co	Intent				
Add - Remove I R I	News						\dashv
<u>Y</u> qq ◆ <u>V</u> emove ⊗ ③ Bì ¢ã	<u>N</u> ame:	HP EliteBook 745 G6					
Set Variable for Pre-provision BitLock Set Variable for Pre-provision BitLock Vae Toolkit Package Of Capture Network Settings using MD Refresh Only Set to Windows PE	Description:					* *	
Use Toolkit Package							-
Gather	Name	Туре	Size (MB)	Package ID			
	1 Windows 10 x64 v2	2004 - HP Elite Packa	age 2005	PS10000B			
Offline User State Capture							
Viscan Viscan							
Use Toolkit Package	Place into the following lo	ocation:					
Post Install	_						
	<u>Task sequence work</u>	ting directory					
Apply Windows Settings	Configuration Manage	er client cache					
Apply Network Settings	Curtar anthu	Y SI	MSTSMDataPath%\Driv	are			1
	Custom path:	<u>**_</u> 31		013			1
	Save nath as a varia	ble:					1
HP EliteBook 745 G6							1
	Refer to the variable in s where the number corre-	subsequent steps, using sponds to the order this [amycontent02% or %my Nownload Package Con	content03%, tentisten			
Setup Windows and ConfigMgr	lists the packages.						
State Restore	🖂 K a saaluaas daguda	ad faile a setious damale		ale a line			
Use Toolkit Package		ad rails, continue downio	ading <u>o</u> ther packages in	i trie list			
Set Status 4							
Opt In to CEIP and WER							
Enable BitLocker							
Install Software							
Convert list to two digita							
< >							
No Results				ОК	Cancel	Appl	Y

Adding drivers as standard packages.

- d. In Options, add a Task Sequence Variable condition with the following settings:
 - a. Model equals HP EliteBook 745 G6

Windows 10 Enterprise x64 v2004 - MDT Task Sequence Editor			_		×
Find Decope V V Properties Options					
Add • Remove (2) (3) (3) (3) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	2				
Continue on en Continue on en Continue on en	or				
Capture Network Settings using MD Add Condition	n 🗸 🔀 Remove 🗙 Remove All 🔏 Cut	Copy 📋 Paste	- E) (B		
Restart to Windows PE Use Toolkit Package Gather Gather Offline USMT Offline USMT Offline USMT Hive Offline USMT Live Offline State Capture Offline State Captu	p will run if the following conditions are met: the Variable Model equals "HP EliteBook 745 G6"				
Set Status 2					
Use Toolkit Package					
Oscillation Oscillati					
Use Toolkit Package					
Set Status 4					
No Results		ОК	Cancel	Apply	L

Setting the condition for the driver package.

- 6. After the **HP EliteBook 745 G6** Download Package Content action, add a Run Command Line with the following settings:
 - a. Name: Install Drivers via DISM
 - b. Command line: DISM.exe /Image:%OSDTargetSystemDrive%\/Add-Driver /Driver:%_SMSTSMDataPath%\Drivers\/Recurse /logpath:%_SMSTSLogPath%\dism.log
 - c. In **Options**, add a **Folder Properties condition** with the following settings:
 - i. %_SMSTSMDataPath%\Drivers exists

Prod x Scope Properties Properties Options Add • Remove @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @	Windows 10 Enterprise x64 v2004 - MDT Task Sequence Editor	_		×
Ad • Remove	Find x 🔎 Scope 🗸 🖕 Properties Optic	ns		
Set Statu 2 Set Statu 2 Set Statu 2 Set Statu 2 Set Statu 2 Set Statu 2 Set Statu 2 Set Statu 3 Ordina Congrue Add Congling Porticit and Drivers Drivers Ordina Drivers Set Statu 3 Set Statu 3 Set Statu 3 Set Statu 4 Set Statu 4 Set Statu 5 Set Statu 4 Set Statu 4 Set Statu 5 Set Statu 5 Set Statu 4 Set Statu 6 Set Statu 5 Set Statu 7 Set Statu 4 Set Statu 8 Set Statu 7 Set Statu 9 Set Statu 8 Set Statu 9 Set Statu 9 Set Statu 9 Set Statu 9 Set Statu 9 Set Statu 9 Set Statu 9 Set S	Add - Remove () S	step		
No Results OK Cancel Apply	Add - Remove Remove Refresh Collisk at the collision of t	step error ition ~ X Remove X Remove All & Cut Date ~ D G /step will run if the following conditions are met: SMSTSMDataPath % Universexists		
	No Results	OK Cancel	Ap	ply

Adding drivers to the Task Sequence.

Note: Again, while this method of adding driver packages works great from technical point of view, I highly recommend adding the community developed Modern Driver Management solution available on https://msendpointmgr.com/modern-driver-management/

Configure the Windows 10 x64 Settings Package

1. Using File Explorer, copy the E:\Setup\AGGW10-SampleFiles\ConfigMgr\Windows 10 Settings\Customsettings.ini file to the following folder (Replace the existing file):



E:\Sources\OSD\Settings\Windows 10 x64 Settings

The settings package, holding the rules and the Unattend.xml template used during deployment.

Update the Windows 10 x64 Settings package

- 1. Using the Configuration Manager Console, in the Software Library workspace, expand Application Management, and then select Packages.
- 2. Update the distribution point for the Windows 10 x64 Settings package by right-clicking the Windows 10 x64 Settings package, and select Update Distribution Points.

Note: Even though you not yet added a distribution point for this package, you still need to select update distribution points. That process, despite the name, also updates the content library with package changes.

Distribute content to the HQ DPs Distribution Point Group

- 1. Using the Configuration Manager Console, select Task Sequences, right-click the Windows 10 Enterprise x64 v2004 MDT task sequence and select Distribute Content.
- 2. Use the following settings for the Distribute Content Wizard:

Content Destination: Add the HQ DPs distribution point group.

3. Using **CMTrace**, verify the distribution to the **CM01** distribution point (part of the HQ DPs Group) by reviewing the **distmgr.log** file. Do not continue until you see all the new packages being distributed successfully.

Create a deployment for the Task Sequence

- 1. Using Configuration Manager Console, select Task Sequences, right-click Windows 10 Enterprise x64 v2004 MDT, and then select Deploy.
- 2. Use the following settings for the **Deploy Software Wizard**:
 - a. General

Collection: All Unknown Computers

Note: Review the high risk deployment dialog box that is displayed when browsing for collections. This feature was added already back in ConfigMgr 2012 R2 SP1 and can be configured on the site properties.

- b. Deployment Settings
 - Purpose: Available
 - Make available to the following: Only media and PXE
- c. Use the default settings for the remaining wizard pages.

		~
Deploy Software Wizard		~
Deployment Set	ttings	
General Deployment Settings	Specify settings to control how this software is deployed	
Scheduling		
User Experience	Action: Install	
Alerts		
Distribution Points	Purpose: Available V	
Summary		
Progress	Specify whether to make this task sequence available to Configuration Manager clients, and whether it is available to	
Completion	run when you deploy an operating system by using boot media, prestaged media, or PXE.	
	Make available to the following:	
	Only media and PXF	~
	< <u>P</u> revious <u>N</u> ext > <u>S</u> ummary Cancel	

Configuring the deployment settings.

Step 6 – Deploy Windows 10 using PXE

Deploy the Windows 10 Image

- 1. On the Host PC, start the PC0001 virtual machine, when the PXE menu is displayed, press Enter to PXE boot when prompted (you need to be quick).
- 2. After WinPE has been started, complete the deployment wizard using the following settings:
 - a. Password: P@ssw0rd
 - b. Select a task sequence to execute on this computer: Windows 10 Enterprise x64 v2004 or Windows 10 Enterprise x64 v2004 - MDT depending on what task sequence you created.
- 3. The Task Sequence will now run and do the following:
 - a. Install the Windows 10 operating system
 - b. Inject the driver package
 - c. Install the ConfigMgr Client
 - d. Join the machine to the domain
- 4. After PC0001 has been deployed, login and change the computer name to PC0001.

Note: Since you didn't add any computer naming options, or pre-staged the machine prior to deployment, ConfigMgr by default assigns a random MININT-XXXXXX type name to the machine.

Module 6

Using ConfigMgr for Windows 10 Servicing

Step 1 – Service/Upgrade PC0002 to Windows 10 Enterprise v2004

Deploy the ConfigMgr Client

- 1. On PC0002, log on as VIAMONSTRA\Administrator.
- 2. Install the ConfigMgr agent by navigating to \\CM01\SMS_PS1\Client and run the ccmsetup.exe file.
- 3. Wait until the ConfigMgr client setup is fully completed. Wait for the C:\ccmsetup\Logs\ccmsetup.log to create the entry: CcmSetup is exiting with return code 0.
- 4. On CM01, using the Configuration Manager Console, in the Assets and Compliance workspace, select Device Collections, and then double-click the All Systems collection. PC0002 should now display an active client in the PS1 site.

Note: It may take a little while before the machine shows up as active (green icon). Pressing F5 or clicking Refresh will sometimes do magic :)

P Selected Object Folder Tools M	licrosoft B	ndpoint Configuration Mar	nager (Connected	l to PS1 - Primary S	Site 1)	_		×
			-	-			<u> </u>	🏊 😶 🗸
Add Selected Install Collection + Client Script Collection + Client Script Collection - Client Collection - Client Client Collection - Client	Requests (E Deploy hip ection	触 Add Resources ments 🔛 Endpoint Protec A Export	tion • X Delete	Deploy Deploy	Properties Properties			
🗲 🔶 👻 🔪 🕨 Assets and Compliance	Overv	iew 🕨 Devices 🕨 All S	lystems					- 2
Assets and Compliance	All Sys	tems 7 items						
4 💭 Overview	Searc	h				🔀 🔎 Search	Add (Criteria 🔻
S Users	lcon	Name	Client Type	Client	Primary User(s)	Currently Logged on User	Site Co	de C
🔺 💽 Devices		CM01	None	No			PS1	
All Systems	10	MININT-2CM11P0	Computer	Yes			PS1	
💰 User Collections	10	PC0002	Computer	Yes			PS1	,
Device Collections		Provisioning Device(Pro	None	No				
Sa User State Migration	1	Unknown	None	No				
Asset Intelligence	1	x64 Unknown Compute	r None	No			PS1	
Software Metering		x86 Unknown Compute	r None	No			PS1	
Compliance Settings	•							÷.
Endpoint Protection	PC0	002						~
🛃 Assets and Compliance	Gen	eral Information		Client Activity		Related Objects		*
👘 Software Library	Na	ime: F	C0002	Policy Request:	6/21/20	2 Primary User		H
Monitoring	0.	r			PM			
Administration	Cli	ent Check Result: 1	No Recults	Heartbeat DDR: Hardware Scan				
	Re	mediation:		Software Scan:		_		
Community	Ac La	tive Directory Site: 1 st Logon:	NewYork	Management Po	oint: CM01.C0 RP.VIAM	U 1		-
	Summ	ary Client Check Detail	Malware Detail	Antimalware Policie	es Client Settings			
Ready								

The ConfigMgr console showing PC0002 having an active client.

Create the Windows 10 Operating System Upgrade Package

- 1. On CM01, using File Explorer, create the E:\Sources\OSD\OS\ Windows 10 Enterprise x64 v2004 Upgrade folder.
- Copy the content of \\PC0002\C\$\OSDBuilder\OSBuilds\Windows 10 Enterprise x64 v2004 19041.329\OS to the E:\Sources\OSD\OS\
 Windows 10 Enterprise x64 v2004 Upgrade folder.

Note: Again, the version number in OSDBuilder\OSBuilds folder is going to be different depending on what monthly updated that was injected. If you didn't complete module 3, you can also copy the content from an updated Windows 10 Enterprise x64 v2004 ISO from Microsoft.

📙 📝 📙 🖛 E:\\	Source	s\OSD\OS\Windows 10 Enterp	rise x64 v2004 Upgrade			- 0	×
File Home	Share	View					~ 🕐
$\leftarrow \rightarrow \cdot \uparrow$	« OS	D → OS → Windows 10 Ente	erprise x64 v2004 Upgrade →	ٽ ~	Search Windows	10 Enterprise	e ,P
4 Quiek errore		Name	Date modified	Туре	Size		
		- boot	6/21/2020 1:49 PM	File folder			
Desktop	R	efi	6/21/2020 1:49 PM	File folder			
Uownloads	Å	sources	6/21/2020 1:50 PM	File folder			
Documents	*	support	6/21/2020 1:50 PM	File folder			
Pictures	*	autorun.inf	4/20/2020 2:48 PM	Setup Information	1 KB		
Logs		📄 bootmgr	4/20/2020 2:48 PM	File	405 KB		
T T i D C		📄 bootmgr.efi	4/20/2020 2:48 PM	EFI File	1,506 KB		
This PC		🍕 setup.exe	4/20/2020 2:48 PM	Application	73 KB		
Petwork							
_							
8 items							

Windows 10 installation media added.

- 3. Using Configuration Manager Console, in the Software Library workspace, expand the Operating Systems node, and add an Operating System Upgrade Package with the following settings.
 - a. Data Source
 - Path (click Browse): \\CM01\Sources\OSD\OS\
 Windows 10 Enterprise x64 v2004 Upgrade
 - Architecture: **x64**
 - b. General
 - Name: Windows 10 Enterprise x64 v2004 Upgrade
 - c. Use the default settings for the remaining wizard pages.

Create a Windows 10 Upgrade Task Sequence

- 1. Using Configuration Manager Console, in the Software Library workspace, expand Operating Systems, right-click Task Sequences, and select Create Task Sequence.
- 2. Use the following settings for the Create Task Sequence wizard.
 - a. Create a new task sequence: Upgrade an operating system from an upgrade package
 - b. Name: Windows 10 Enterprise x64 v2004 Upgrade
 - c. Run as high performance power plan
 - d. Upgrade package: Windows 10 Enterprise x64 v1909 Upgrade
 - e. Edition index: 1 Windows 10 Enterprise

Note: The index number is going to be different depending on what media you are using. Images created from OSD Builder typically only have one index, whereas the Microsoft ISO will have several. Also, if using an image/media with several indexes, I recommend that you also provide the product key for the version of Windows you want to use.

😰 Create Task Sequence Wiza	ard			×
Upgrade the Wind	dows Operating System			
Create New Task Sequence Task Sequence Informatic Upgrade the Windows Of	Select an opera	iting system upgrade pao	ckage	
Include Updates	<u>U</u> pgrade package:	Windows 10 Enterprise x64 v200	14 Upgrade en-US	<u>B</u> rowse
Install Applications	Properti <u>e</u> s:			
Progress	OS version	Edition	Language	Architecture
Completion	1 10.0.19041.329	Windows 10 Enterprise	en-US	X64
	<			>
	Specify the edition inde Edition in <u>d</u> ex : Product <u>k</u> ey:	x and licensing information for this u	ograde package, if requi Enterprise	red.
		C Draviour Next >	Summan	Cancel
< >		< Previous <u>N</u> ext >	Summary	Cancer

Creating the Windows 10 upgrade task sequence.

- f. Include software updates: Do not install any software updates
- g. Use the default settings for the remaining wizard pages.

Review the Task Sequence

- 1. Using the Configuration Manager Console, select Task Sequences, right-click the Windows 10 Enterprise x64 v2004 Upgrade task sequence and select View.
- 2. Review the various actions in the task sequence, then click Cancel.

Windows 10 Enterprise x64 v2004 Upgrade Task Seque	ence Editor		- 0	×
Find 👂 Scope 🗸 🖕	Properties Options			
	Туре:	Upgrade Operating System		
Add - Remove S	<u>N</u> ame:	Upgrade Operating System		
Prepare for Upgrade Oreck Readiness for Upgrade Battery Checks Network/Wired Connection Checks	Description:			Ŷ
Remove incompatible applications	Upgrade package:	PS100011, Windows 10 Enterprise x64 v2004 Upgrade en-US	Browse	э
Remove/suspend third-party security Upgrade the Operating System	Source path:			
Upgrade Operating System	<u>E</u> dition:	1 - Windows 10 Enterprise \vee		
Restart Computer Post-Processing	Product key:			
Apply setup-based drivers				
Install/enable third-party security Set Windows default apps and asso	Pro <u>v</u> ide the followin	g driver content to Windows Setup during upgrade		
Apply customizations and personaliz	Drįver package		Browse	ə
Run Actions on Failure Collect Logs	O Staged content			
Run Diagnostic Tools	<u>T</u> ime-out (minutes):	0 \$		
	Perform <u>W</u> indows S	etup compatibility scan without starting upgrade		
	Ignore any dismissib	le compatibility messages		
	Dynamica <u>l</u> ly update	Windows Setup with Windows Update		
	Override policy a	nd use default Microsoft Update		
	Learn more			
< >				
		OK Cance	əl	Apply

The Windows 10 Enterprise x64 v2004 Upgrade task sequence in view mode.

Distribute content to the HQ DPs Distribution Point Group

- 1. Using the Configuration Manager Console, select Task Sequences, right-click the Windows 10 Enterprise x64 v2004 Upgrade task sequence and select Distribute Content.
- 2. Use the following settings for the Distribute Content Wizard:

Content Destination: Add the HQ DPs distribution point group.

3. Using **CMTrace**, verify the distribution to the **CM01** distribution point (part of the HQ DPs Group) by reviewing the **distmgr.log** file. Do not continue until you see all the new packages being distributed successfully.

Create a Device Collection, and add the PC0002 computer

- 1. On CM01, using the Configuration Manager Console, in the Assets and Compliance workspace, right-click Device Collections, and then select Create Device Collection. Use the following settings.
 - a. Name: Windows 10 Enterprise x64 v2004 Upgrade
 - b. Limited Collection: All Systems
 - c. Membership rules:
 - Direct rule
 - Resource Class: System Resource
 - Attribute Name: **Name**
 - Value: **PC0002**
 - Select Resources
 - Select PC0002
- 2. Review the Windows 10 Enterprise x64 v2004 Upgrade collection. Don't continue until you see the PC0002 machine in the collection.

Create a new Deployment

- 1. Using Configuration Manager Console, in the Software Library workspace, select Task Sequences, right-click Windows 10 Enterprise x64 v2004 Upgrade, and then select Deploy.
- 2. Use the following settings for the Deploy Software Wizard:
 - a. General
 - b. Collection: Windows 10 Enterprise x64 v2004 Upgrade
 - c. Deployment Settings
 - d. Purpose: Available
 - e. Use the default settings for the remaining wizard pages.

Initiate the Windows 10 Inplace Upgrade

1. On PC0002, using Software Center, select the Windows 10 Enterprise x64 v2004 Upgrade deployment, click Install, and then click Install again.

Note: If you don't see the deployment in Software Center, make sure that multiple users are not logged in, and force a machine policy update if needed.



Running the Windows 10 upgrade via Software Center.

2. After the upgrade has completed, log on as an administrator, and verify that the ConfigMgr client is still operational (e.g. not in provisioning mode). Check the HKLM\SOFTWARE\Microsoft\CCM\CcmExec\ProvisioningMode value, it should be false.

Step 2 - Improving the single ConfigMgr Upgrade Task Sequence

Adding Setup Upgrade Assessment and Driver support

- 1. On CM01, edit the Windows 10 Enterprise x64 v2004 Upgrade task sequence.
- 2. In the Check Readiness for Upgrade action, enable the following additional requirements
 - AC power plugged in
 - Network adapter connected
 - Network adapter is not wireless

Windows 10 Enterprise x64 v2004 Upgrade Task Seque	ence Editor			_	
Find 👂 Scope 🗸 ሩ 🔿	Properties Options				
	Туре:	Check Readiness			
Add - Remove S S	<u>N</u> ame:	Check Readiness for Upgrade			
Prepare for Upgrade O Check Readiness for Upgrade O Upgrade Operating System Battery Checks	Description:	Check whether the computer is ready for the u	upgrade of the operating	system.	< >
Remove incompatible applications				2048	
Remove/suspend third-party security		eneed (MHz):		1024	•
Upgrade the Operating System	Minimum free disk s	pace (MB):		25600	
Restart Computer	Current OS to be re	freshed is:		CLIENT	~
	Architecture of cum	ent O <u>S</u> :		64-bit	\sim
Set Windows default apps and asso	Minimum OS ve <u>r</u> sion	n:			
	Maximum OS versio	on:			
E-B Run Actions on Failure	Minimum client vers	i <u>i</u> on:			
Run Diagnostic Tools	Language of curren	nt OS:	English (United State	es)	\sim
	AC power plugged i	in			
	Network adapter co	onnected			
	Network adap	ter is not <u>wireless</u>			
< >					
No Results			ОК	Cancel	Apply

Modifying the upgrade requirements.

- **3.** After the Check **Readiness for Upgrade** action, paste a copy of the **Upgrade Operating System** action, configure it to **continue on error**, and rename it to **Run Upgrade Combability Scan**.
- 4. In the new Run Upgrade Combability Scan action select the following check boxes:
 - Perform Windows Setup Compatibility scan without starting upgrade
 - Ignore any dismissible compatibility messages

Find Scope Properties Options Type: Upgrade Operating System		
Type: Upgrade Operating System		
Add ▼ Remove ⑧ ⑨ ID GI Name: Run Upgrade Combability Scan		
Add * Remove (*) * * * * * * Purpare for Upgrade Combability Scan Propare for Upgrade * <th>Growse</th> <th></th>	Growse	
No Results OK Cancel	Apply	<u>(</u>

Adding the Run Upgrade Combability Scan action.

5. Modify the Upgrade the Operating System group to use a task sequence variable as condition: Add _SMSTSOSUpgradeActionReturnCode, and set the value to 3247440400.

Windows 10 Enterprise x64 v2004 Upgrade Task Sequen	ice Editor	_		×
Find 👂 Scope 🗸 🖨 P	Properties Options			
Add • Remove 🛛 🛞 🎯 📑 🖓	Disable this step			
Prepare for Upgrade Check Readiness for Upgrade Check Readiness for Upgrade Run Upgrade Combability Scan Battery Checks Network/Wired Connection Checks Remove incompatible applications Remove incompatible drivers Remove/suspend third-party security Upgrade the Operating System Vegrade Operating System Restart Computer Post-Processing Apply setup-based drivers Install/enable third-party security Set Windows default apps and asso Apply customizations and personaliz Run Actions on Failure Collect Logs Run Diagnostic Tools	Coglinue on error Add Condition KRemove KRemove All Cut Paste Paste Cut Paste Cut			
THE FIGURE	OK Cancel		Apply	Ľ

Configuring the Upgrade the Operating System group with a condition.

- 6. In the Upgrade the Operating System group, add a new group named Download Drivers.
- 7. add a **Download Package Content** action with the following settings:
 - a. Name: HP EliteBook 745 G6
 - b. Add package: Windows 10 x64 v2004 HP EliteBook 745 G6
 - c. Custom path: %_SMSTSMDataPath%\Drivers
 - d. In the **Options** tab, add a **Query WMI c**ondition with the following WQL query:
 - Select * from win32_computersystem where model = 'HP EliteBook 745 G6'

Note: Since the upgrade task sequences in ConfigMgr are not integrated with MDT by default, you can't just use a task sequence variable like Model. That's why you use a WMI Query in the preceding step.

Windows 10 Enterprise x64 v2004 Upgrade Task Sequ	ience Editor		- 🗆 X
Find x 👂 Scope 🗸 🖨 🔿	Properties Options		
	Type:	Download Package Content	
<u>A</u> dd • <u>R</u> emove ⊗ ⊗ ≣ງ Ç≣	<u>N</u> ame:	HP EliteBook 745 G6	
Prepare for Upgrade Check Readness for Upgrade Run Upgrade Combability Scan Battery Checks Network/Wired Connection Checks Remove incompatible applications Remove incompatible drivers Remove/suspend third-party security Upgrade the Operating System Download Drivers Upgrade Operating System Restat Computer Post-Processing Apply setup-based drivers Install/enable third-party security Set Windows default apps and asso Rollback Run Actions on Failure Collect Logs Run Diagnostic Tools Kun Diagnostic Tools	Description: Name 1 Windows 10 x64 v: Place into the following log Task sequence work Configuration Manage Issue path as a varia Refer to the variable in s where the number correlists the packages. ✓ If a package downlop	Type Size (MB) Package ID 2004 - HP Elite Package 2005 PS10000B pocation: ************************************	
No Results		OK Cancel	Apply
		Cancer	Λφριχ

Adding Download Package Content actions with driver packages.

- 8. After the HP EliteBook 745 G6 Download Package Content action, add a Set Task Sequence Variable action with the following settings:
 - a. Name: Instruct setup to install drivers if available
 - b. Task Sequence Variable: OSDUpgradeStagedContent
 - c. Value: %_SMSTSMDataPath%\Drivers
 - d. In the Options tab, add a Folder Properties condition for the %_SMSTSMDataPath%\Drivers folder.

Windows 10 Enterprise x64 v2004 Upgrade Task Sequ	uence Editor	-		×
Find x 🔎 Scope 🗸 🖨	Properties Options			
	Type:	Set Task Sequence Variable		
<u>A</u> dd ▼ <u>R</u> emove ⊗ ⊗ ∃) (⊒	<u>N</u> ame:	Instruct setup to install drivers if available		
Prepare for Upgrade Creck Readiness for Upgrade Of Check Readiness for Upgrade Of Run Upgrade Combability Scan Battery Checks	Description:			~
Network/Wired Connection Checks	Enter the task sequence variable name and value.			
Remove incompatible applications Remove incompatible drivers	Task Sequence <u>V</u> ariabl	e: OSDUpgradeStagedContent		
Remove/suspend third-party security	Do not display this value			
Obgrade the Operating System Obgrade Divers Obgrade Operating System Obgrade Operating	Val <u>u</u> e:	_SMSTSMDataPath%\Drivers		с. К
< >> No Results		0K Cancel	Apr	olv

Instruct setup to use drivers, if they exist.

Note: In this task sequence you're using the undocumented OSDUpgradeStagedContent variable, since that's the variable the Upgrade Operating System action is using by default. Technically you can also use the OSDSetupAdditionalUpgradeOptions variable, and add the /installdrivers % SMSTSMDataPath%\Drivers value, but the OSDSetupAdditionalUpgradeOptions is primarily intended for the /reflectdrivers option and for language packs.

Optional – Run the modified Windows 10 Enterprise x64 v2004 Upgrade Task Sequence

- 1. If you want to verify this modified upgrade task sequence, add another Windows 10 v1909 machine to your lab.
- 2. Install the ConfigMgr agent on it, and add it to the Windows 10 Enterprise x64 v2004 Upgrade collection.
- **3.** Then using **Software Center**, run the **Windows 10 Enterprise x64 v2004 Upgrade** task sequence.
Step 3 – Splitting the ConfigMgr Upgrade Task Sequence

Copy existing task sequence (twice)

- 1. On CM01, copy the Windows 10 Enterprise x64 v2004 Upgrade task sequence, and rename the copy to Windows 10 Enterprise x64 v2004 Upgrade Validation.
- 2. Make another copy the Windows 10 Enterprise x64 v2004 Upgrade task sequence, and rename that copy to Windows 10 Enterprise x64 v2004 Upgrade Prod.

Edit the Windows 10 Enterprise x64 v2004 Upgrade Validation task sequence

- 1. On CM01, edit the Windows 10 Enterprise x64 v2005 Upgrade Validation task sequence, and remove the following sections:
 - Upgrade the Operating System
 - Post-Processing
 - o Rollback
 - Run Actions on Failure (only available in ConfigMgr 1902 or higher)

Find 👂 Scope 🗸 🖕 🔿	Properties Options			
	Туре:	Upgrade Operating System		
<u>A</u> dd → <u>R</u> emove ⑧ ⑧	<u>N</u> ame:	Run Upgrade Combability Scan		
Prepare for Upgrade Oreck Readness for Upgrade Oreck Readness for Upgrade Oreck Readness for Upgrade Orecks Battery Checks Network/Wired Connection Checks Remove incompatible applications Remove incompatible drivers Remove/suspend third-party security	Description:			< >
	 Upgrade package 	PS100011, Windows 10 Enterprise x64 v2004 Upgrade en-US	Browse.	
	O Source path:			
	Edition:	1 - Windows 10 Enterprise $\qquad \checkmark$		
	Product key:			
	Driver package Staged content Time out (piputae):		Browge.	
	<u>Time-out (minutes)</u> :	0 🗘		
	Perform Windows Setup compatibility scan without starting upgrade			
	Ignore any dismissible compatibility messages			
	Dynamically update Windows Setup with Windows Update			
	Override policy a	and use default Microsoft Update		
	Learn more			

The Windows 10 Enterprise x64 v2004 Upgrade Validation task sequence.

Edit the Windows 10 Enterprise x64 v2004 Upgrade Prod task sequence

- 1. On CM01, edit the Windows 10 Enterprise x64 v2004 Upgrade Prod task sequence.
- 2. Remove the Prepare for Upgrade section.
- 3. Remove the condition on the Upgrade the Operating System group.



The Windows 10 Enterprise x64 v2004 Upgrade Prod task sequence.

Create the Inplace Upgrade collections and deploy the task sequences

- 1. On CM01, create a device collection named Windows 10 Enterprise x64 v2004 Upgrade Validation. Don't add any members.
- 2. Deploy the Windows 10 Enterprise x64 v2004 Upgrade Validation task sequence as an available deployment to the Windows 10 Enterprise x64 v2004 Upgrade Validation collection.
 - Make sure to enable Pre-download content option.
 - Make a note of the Deployment ID (enable the Deployment ID column under deployments to see your deployment ID)
- Create a device collection named **Windows 10 Enterprise x64 v2004 Upgrade NOT Ready**. Add the following query rule (replace the AdvertisementID with your DeploymentID:

```
select
SMS_R_SYSTEM.ResourceID,SMS_R_SYSTEM.ResourceType,SMS_R_SYSTEM.Na
me,SMS_R_SYSTEM.SMSUniqueIdentifier,SMS_R_SYSTEM.ResourceDomainOR
Workgroup,SMS_R_SYSTEM.Client from SMS_R_System where
SMS_R_System.ResourceId in (select ResourceID from
SMS_ClientAdvertisementStatus where AdvertisementID = "PS120004"
and LastStatusMessageID=11170)
```

3. Create a device collection named **Windows 10 Enterprise x64 v2004 Upgrade Ready**. Add the following query rule (replace the AdvertisementID with your DeploymentID:

```
select
SMS_R_SYSTEM.ResourceID,SMS_R_SYSTEM.ResourceType,SMS_R_SYSTEM.Na
me,SMS_R_SYSTEM.SMSUniqueIdentifier,SMS_R_SYSTEM.ResourceDomainOR
Workgroup,SMS_R_SYSTEM.Client from SMS_R_System where
SMS_R_System.ResourceId in (select ResourceID from
SMS_ClientAdvertisementStatus where AdvertisementID = "PS120004"
and LastStatusMessageID=11171)
```

4. Deploy the Windows 10 Enterprise x64 v2004 Upgrade Prod task sequence as an available deployment to the Windows 10 Enterprise x64 v2004 Upgrade Ready collection.

Optional – Run the modified Windows 10 Enterprise x64 v2004 Upgrade Validation Task Sequence

- 1. If you want to verify this modified upgrade task sequence, add another Windows 10 v1909 machine to your lab.
- 2. Install the ConfigMgr agent on it, and add it to the Windows 10 Enterprise x64 v2004 Upgrade collection.
- 3. Then using Software Center, run the Windows 10 Enterprise x64 v2004 Upgrade Validation task sequence, and wait until it completes.
- 4. On CM01, check the membership of the Windows 10 Enterprise x64 v2004 Upgrade Ready collection. This collection should now have the client as a member of that collection. Assuming the validation task sequence was successful.

Beyond the eBook

If you liked this eBook, I bet you will like any of the events and trainings I'm part of.

Live Presentations

I frequently speak at tech conferences around the world, such as Midwest Management Summit (MMS), AppManagEvent, Nordic Infrastructure Conference (NIC), and Microsoft Ignite. For current tour dates and presentations, see my blog:

• <u>https://deploymentresearch.com</u>

Video Training

For video-based training, see the following site:

• <u>https://viamonstra.com</u>

Live Instructor-led Classes

I present scheduled instructor-led classes in the US and in Europe. For current dates, see see my blog:

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And finally, yes, the Deployment Research blog have a Facebook page as well.

• <u>https://www.facebook.com/deploymentresearch</u>