



Additional Information to Add Windows 10 21H2 BaseWIMs, Language Packs and Features on Demand

WimAsAService

Pascal Berger
22.11.2021
Version 1.0



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1 Purpose of this document

This document will explain how to add Windows 10 21H2 content to WimAsAService for our on-premises customers.

The topics covered in this document are:

- 21H2 baseWIM implementation
- Language Packs
- Features on Demand
- Update the ADK and Win PE

2 Overview

2.1 What's New

Microsoft released a new version of Windows 10 with the version number 21H2. The new version of Windows has exactly the same build number as it was in version 2004. This is not something new, since this was the same for 1903, 1909, etc. already. The build number for 21H2 is 19041 when you download it. That means that you will run into problems when importing the baseWIM into MDT. Once you install the 21H2 version of Windows the build number switches to 19044 during staging, which affects the installation steps of the language packs and features on demand. Within the task sequence, language packs and features on demand get installed according to the build number present at this step. Because the version 21H2 version uses the exact same LP and FoD as 2004, you have to copy the folder containing the LP and FoD of 2004 and rename it to 19044.

Important:

It is required for 21H2 to install correctly to update the ADK and Windows PE.

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2.2 Required scripts

The Required scripts are stored in the WimAsAServiceLogic folder.
Usually under E:\WimAsAServiceLogic.

The following scripts are provided to help adding the ISO files to WimAsAService. When importing files for a new Windows Version, you need to follow the order described below.

Order	Name	Description
1	AutoImportBaseWIM.ps1	Adds Multiple ISO files of the selected folder and its subfolders to MDT. A new Version of this Script is required since 1909 to import 21H2 properly. Get in contact with us to receive it.
2	AutoImporterLanguagePacks.ps1	You don't have to add specific Language Packs for the Version 21H2 of Windows. A copy/rename task of the Language Packs is enough.
3	AutoImporterFeaturesOnDemand.ps1	You don't have to add specific Features on Demand for the Version 21H2 of Windows. A copy/rename task of the Features on Demand is enough.

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3 Usage of the scripts

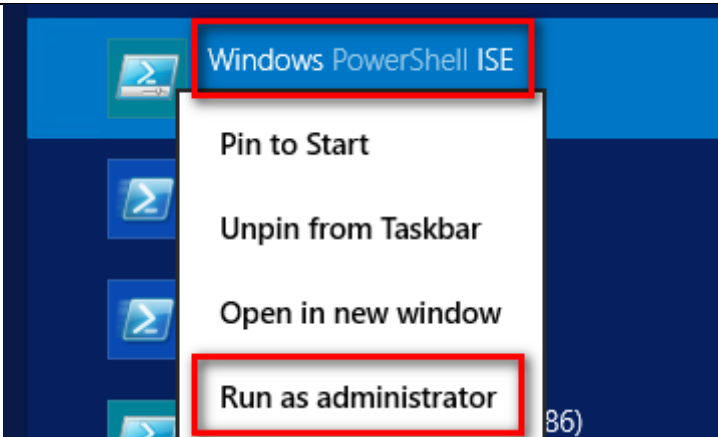
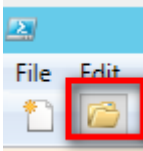
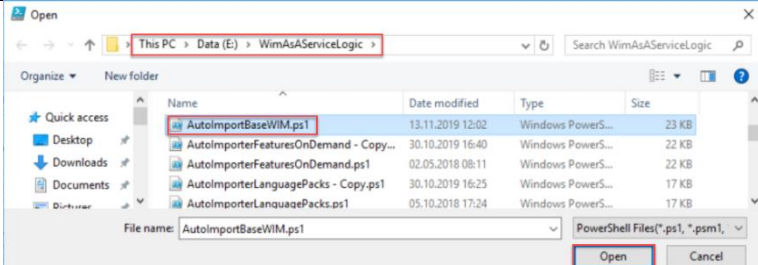
Attention: All these scripts need to be opened in a PowerShell ISE that is running with administrator permissions.

3.1 AutoImportBaseWIM.ps1

Attention: This script imports the baseWIM ISOs stored in the selected folders and all its subfolders. The choice of the folder should be well-considered and double importing of the same WIM should be prevented.

Attention: You have to execute these steps 4 Times to add 2 Languages for Example EN and DE in x64 and x86 Platform. Otherwise some ISOs will be skipped even if they are in the same folder.

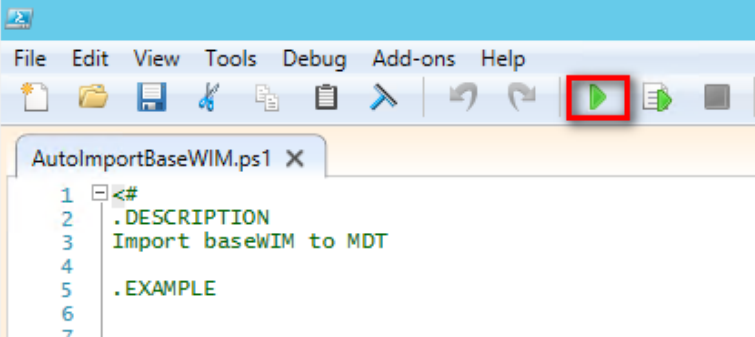
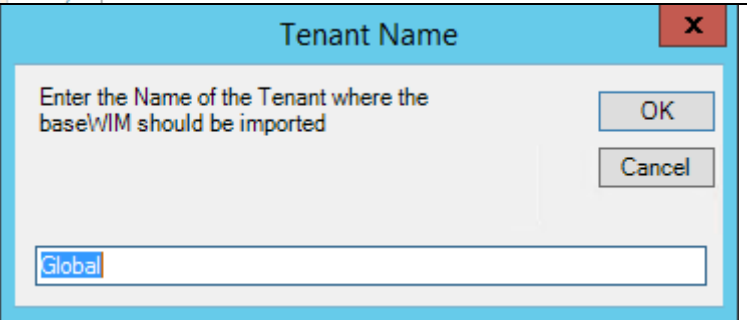
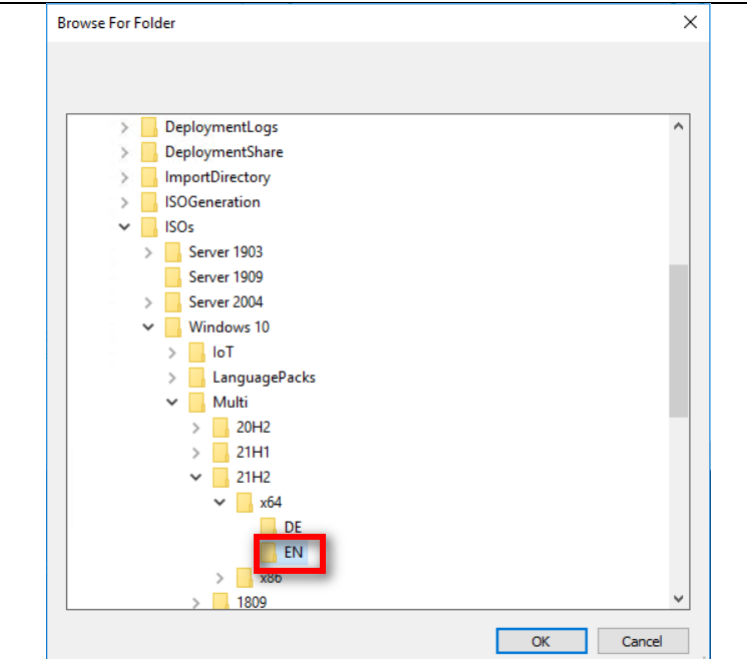
This script writes to the following logfile:
"E:\WimAsAServiceLogic\Log\AutoImportBaseWIM.log"

Step	Screenshot	Task
1.		Open PowerShell ISE with administrator privileges.
2.		Click on the "Open" button.
3.		Browse to your WimAsAServiceLogic folder and select "AutoImportBaseWIM.ps1". Click on the "Open" button.

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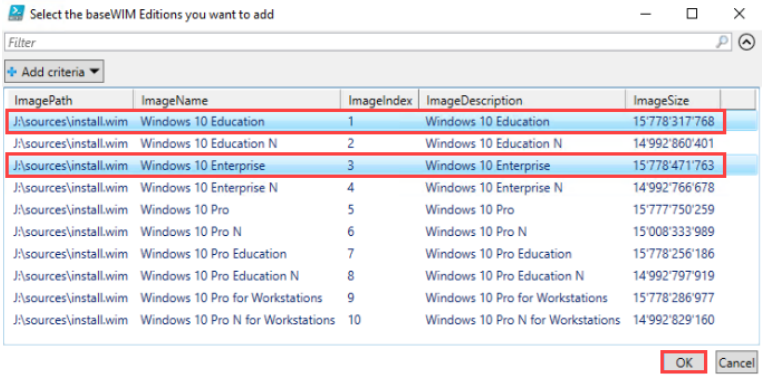
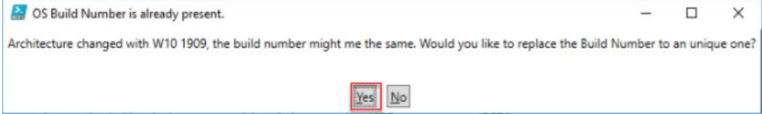
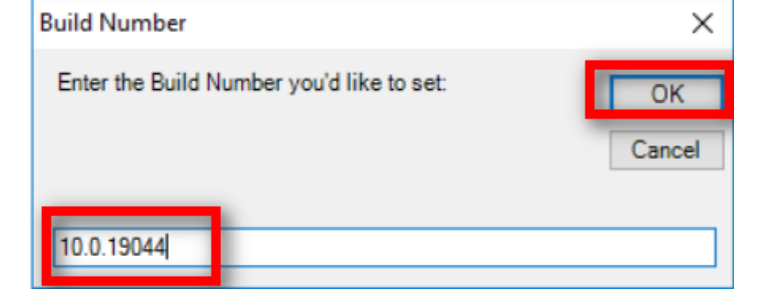
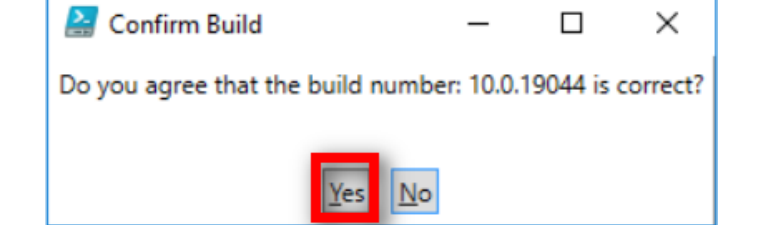
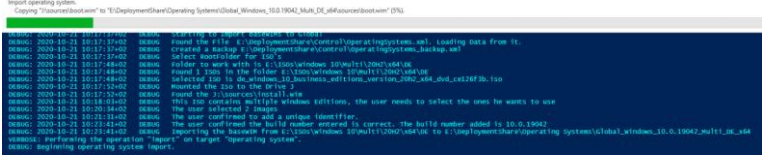
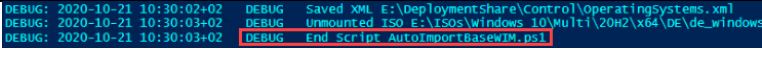
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4.		Click on the "Play" button.
5.		<p>Here you can tell the script for which tenant it should import the WIM files.</p> <p>"Global" grants all Tenants access to that baseWIM.</p> <p>If you want to restrict that baseWIM to one Tenant, enter its name here.</p> <p>When you're ready to continue click on "OK".</p> <p>Attention: On your screen this window/pop up could be covered by the ISE Window.</p>
6.		<p>Now browse to the folder that contains the ISO file for the Windows 10 21H2 baseWIM you want to add.</p> <p>When you're ready to continue click on "OK".</p> <p>Attention: Make sure to only have one multi-edition .iso is inside the folder. It might be that not both of it will be added to MDT if two .iso files are in the Folder.</p> <p>Attention: The script will also work with ISO files in subfolder of the selected folder. Not only with files in the directly selected folder.</p>

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7.		Select the Editions according what you'd like to add to WimAsAService. Once doublechecked your selection, press "OK". Note: Multiselecting is available for the Editions.
8.		If the script verified that the build number is already present this pop-up appears. Choose to add a unique build number. But only if you're sure you'd like to add it.
9.		In the next Window the unique build number can be specified. Chose the build number the OS has after a clean installation. In case of Windows 10 21H2 it is "10.0.19044". Note: The textfield is prefilled with the value the script gathered from the .iso file.
10.		Confirm you've entered the custom build number correctly with "Yes". <i>Otherwise you can still correct the build number with a click on "No".</i>
11.		Next, the script imports all the install WIMs you selected to MDT. This will take some time please be patient. Additional information: The script is automatically mounting each ISO to a virtual CD-ROM Drive and is unmounting it again once it has imported the WIMs from it.
12.		Once the script has finished it will tell you.

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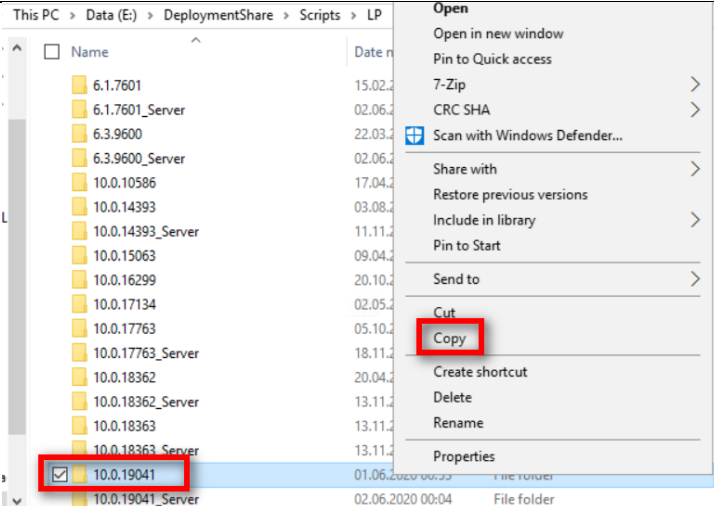
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13.		<p>Check the Deployment Workbench under Global to see if you Operating Systems have been added properly.</p> <p>Note: Maybe you need to press "F5" to refresh the list.</p>
14.	<p>Select base WIM</p> <p>OS Version (All) 10.0.19044 SKU (All)</p> <p>Language (All) Architecture (All)</p> <p> <input type="radio"/> Global_Windows_10.0.19044_Education_EN_x64 <input type="radio"/> Global_Windows_10.0.19044_Enterprise_EN_x64 </p>	<p>You can now log on to the WimAsAService website and add a new image type. Under "Select base WIM" you should now be able to find the WIM files you just added. Make sure that the unwanted OS are not in the selection.</p>

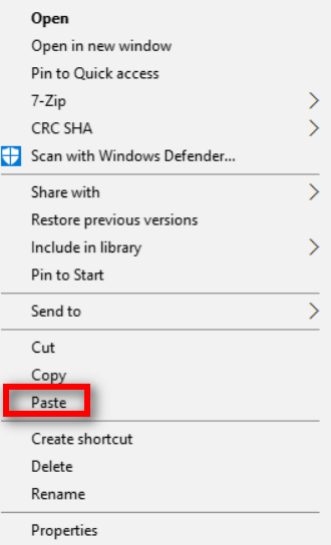
3.2 AutoImporterLanguagePacks.ps1

This script is not needed for Windows 10 Version 21H2 because it has the same language packs as Version 2004. Once Windows 10 21H2 is installed it has the build number 19044. Because the task sequence searches for language packs with this build number, the old Language Pack folder of Windows 10 2004 can be copied. After the copy job you must adjust the name of the folder to the corresponding build number of 21H2 after staging.

Step	Screenshot	Task
15.		<p>Navigate to the path "E:\DeploymentShare\Scripts\LP". In there select the folders containing the Language Packs and Feature on Demand from Windows 10/Server 2004. Right click it and select to copy those folders.</p>

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16.		Within the same folder select to paste the folder copied before. After the copy job is done, make sure to rename it. It should have the same name as Windows 10 has after staging. "10.0.19044"
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3.3 AutoImporterFeaturesOnDemand.ps1

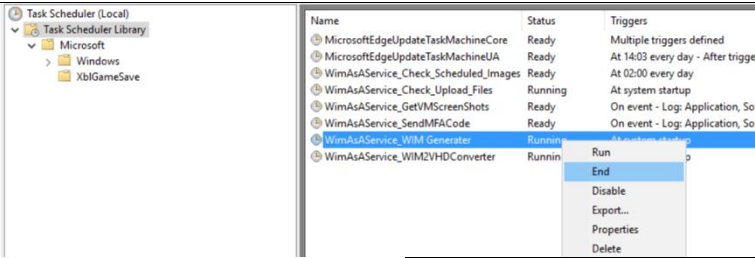
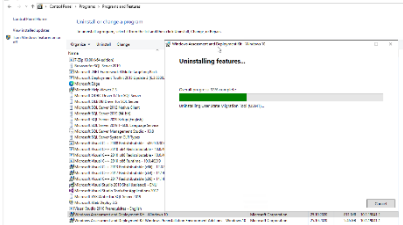
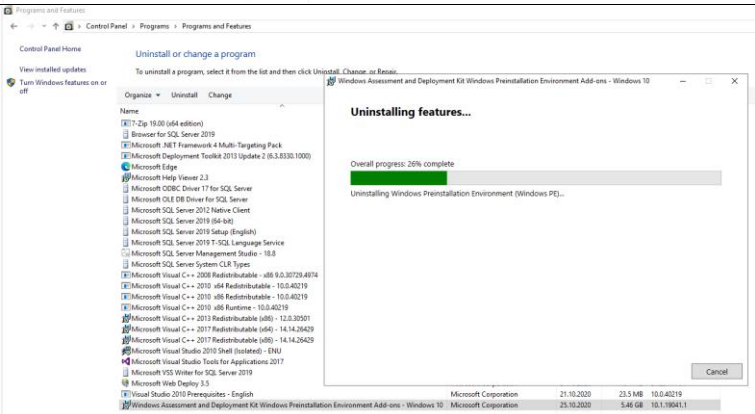
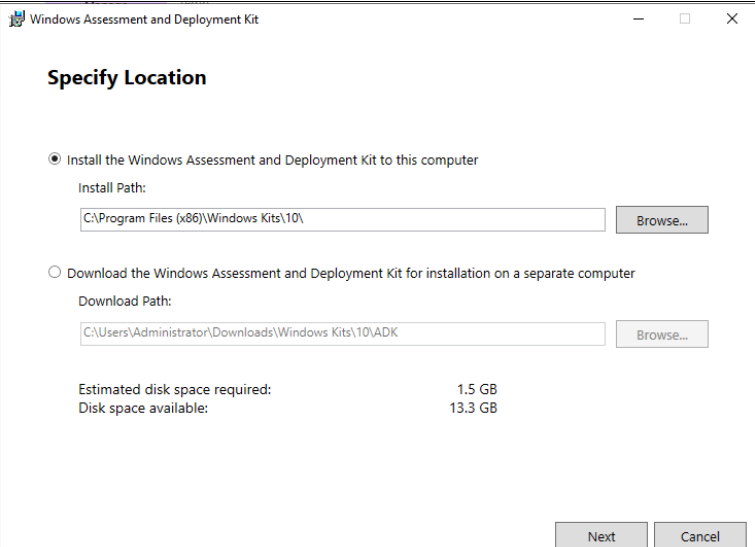
Skip this step because the features on demand are part of the Language Packs folder. You should have copied this folder already and renamed it with the according build number. Therefore this step is obsolete for this Windows build.

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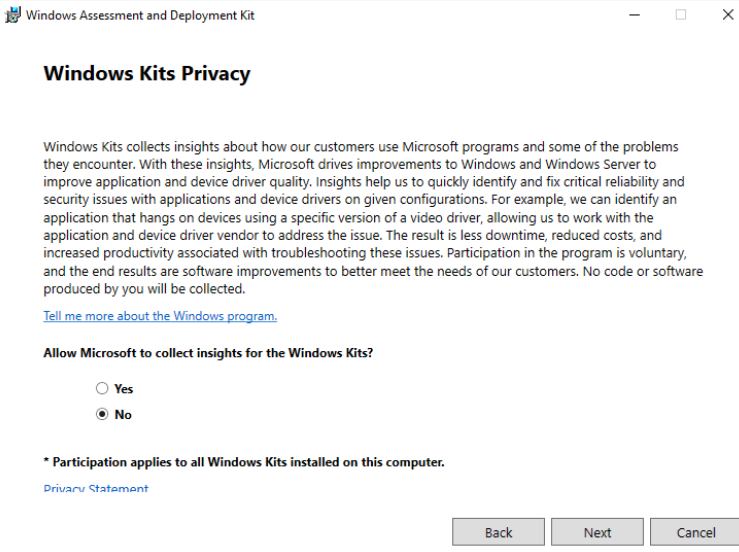
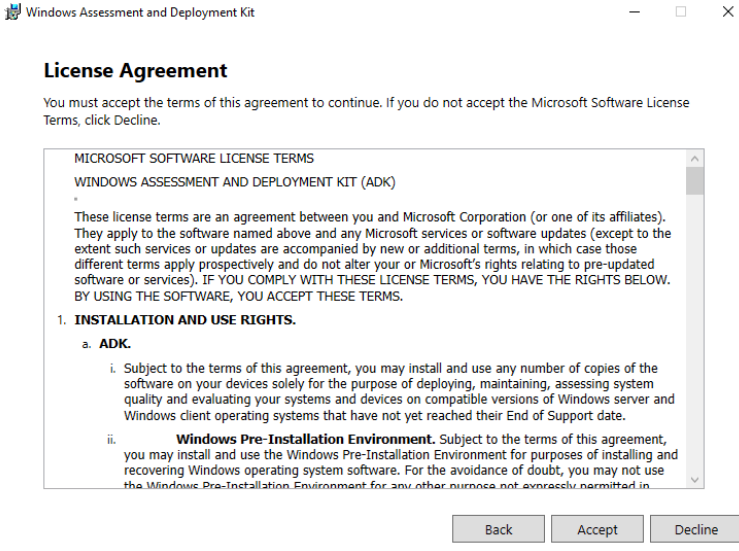
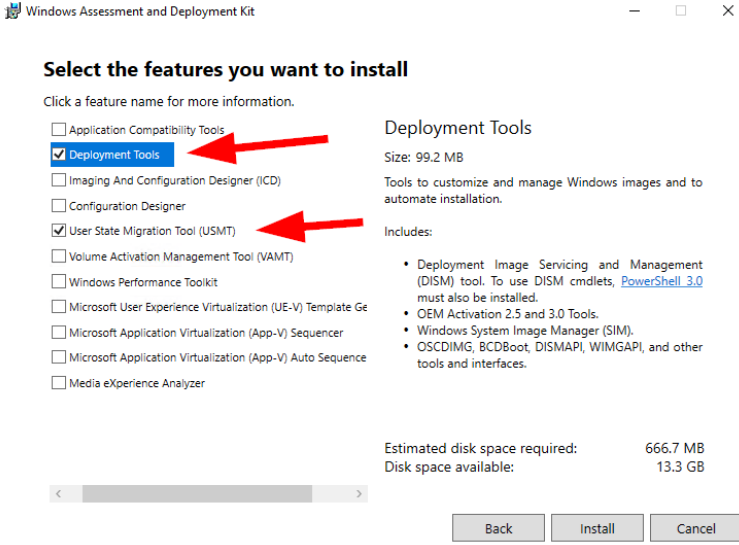
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4 Update the ADK and Windows PE

1.	Download and install the Windows ADK Microsoft Docs	Download the latest ADK & WINPE (We used Windows 11)
2.		Stop the WimAsService_WIM Generator Process
3.		Uninstall the ADK
4.		If available uninstall Windows PE
5.		Install the ADK

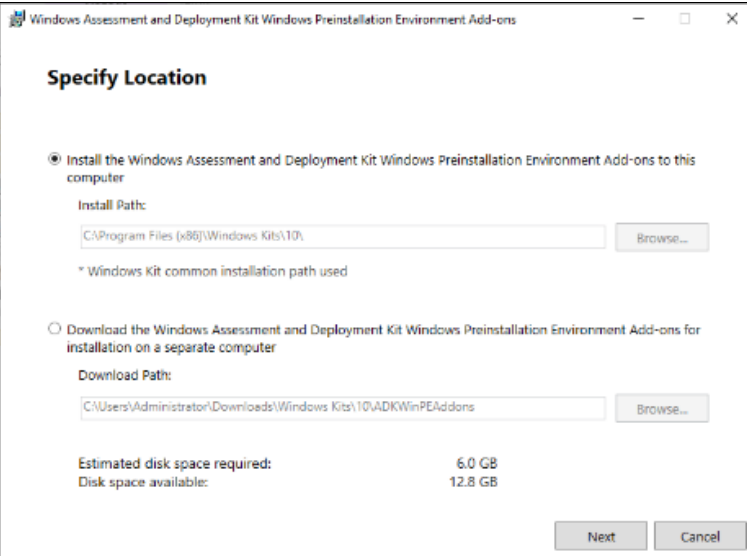
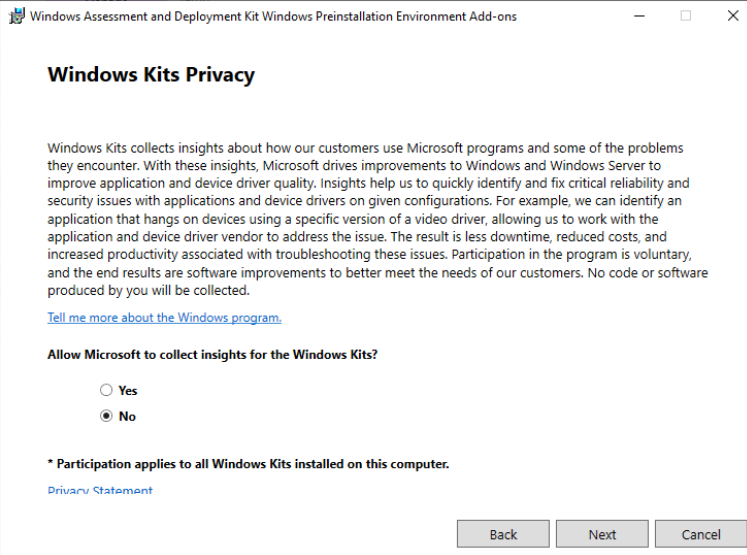
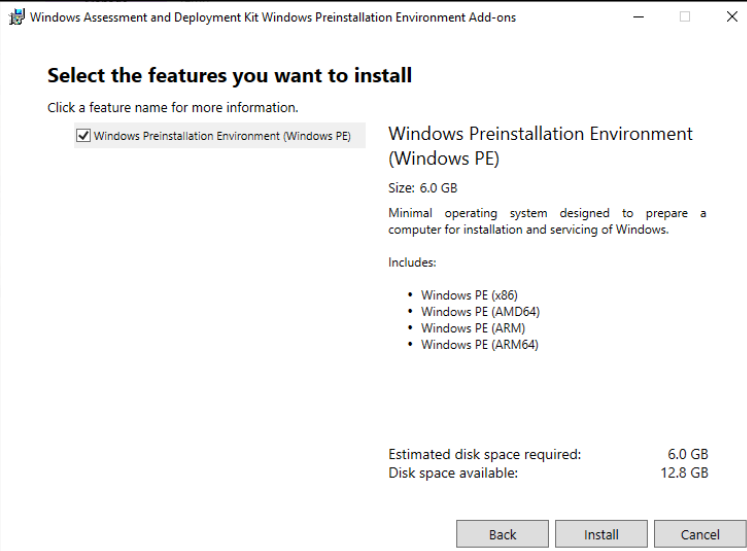
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6.	 <p>Windows Kits Privacy</p> <p>Windows Kits collects insights about how our customers use Microsoft programs and some of the problems they encounter. With these insights, Microsoft drives improvements to Windows and Windows Server to improve application and device driver quality. Insights help us to quickly identify and fix critical reliability and security issues with applications and device drivers on given configurations. For example, we can identify an application that hangs on devices using a specific version of a video driver, allowing us to work with the application and device driver vendor to address the issue. The result is less downtime, reduced costs, and increased productivity associated with troubleshooting these issues. Participation in the program is voluntary, and the end results are software improvements to better meet the needs of our customers. No code or software produced by you will be collected.</p> <p>Tell me more about the Windows program.</p> <p>Allow Microsoft to collect insights for the Windows Kits?</p> <p><input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>* Participation applies to all Windows Kits installed on this computer. Privacy Statement</p> <p>Back Next Cancel</p>	
7.	 <p>License Agreement</p> <p>You must accept the terms of this agreement to continue. If you do not accept the Microsoft Software License Terms, click Decline.</p> <p>MICROSOFT SOFTWARE LICENSE TERMS WINDOWS ASSESSMENT AND DEPLOYMENT KIT (ADK)</p> <p>These license terms are an agreement between you and Microsoft Corporation (or one of its affiliates). They apply to the software named above and any Microsoft services or software updates (except to the extent such services or updates are accompanied by new or additional terms, in which case those different terms apply prospectively and do not alter your or Microsoft's rights relating to pre-updated software or services). IF YOU COMPLY WITH THESE LICENSE TERMS, YOU HAVE THE RIGHTS BELOW. BY USING THE SOFTWARE, YOU ACCEPT THESE TERMS.</p> <p>1. INSTALLATION AND USE RIGHTS.</p> <p>a. ADK.</p> <p>i. Subject to the terms of this agreement, you may install and use any number of copies of the software on your devices solely for the purpose of deploying, maintaining, assessing system quality and evaluating your systems and devices on compatible versions of Windows server and Windows client operating systems that have not yet reached their End of Support date.</p> <p>ii. Windows Pre-Installation Environment. Subject to the terms of this agreement, you may install and use the Windows Pre-Installation Environment for purposes of installing and recovering Windows operating system software. For the avoidance of doubt, you may not use the Windows Pre-Installation Environment for any other purpose not expressly permitted in</p> <p>Back Accept Decline</p>	
8.	 <p>Select the features you want to install</p> <p>Click a feature name for more information.</p> <p><input type="checkbox"/> Application Compatibility Tools <input checked="" type="checkbox"/> Deployment Tools <input type="checkbox"/> Imaging And Configuration Designer (ICD) <input type="checkbox"/> Configuration Designer <input checked="" type="checkbox"/> User State Migration Tool (USMT) <input type="checkbox"/> Volume Activation Management Tool (VAMT) <input type="checkbox"/> Windows Performance Toolkit <input type="checkbox"/> Microsoft User Experience Virtualization (UE-V) Template Ge <input type="checkbox"/> Microsoft Application Virtualization (App-V) Sequencer <input type="checkbox"/> Microsoft Application Virtualization (App-V) Auto Sequence <input type="checkbox"/> Media eXperience Analyzer</p> <p>Deployment Tools Size: 99.2 MB Tools to customize and manage Windows images and to automate installation. Includes: • Deployment Image Servicing and Management (DISM) tool. To use DISM cmdlets, PowerShell 3.0 must also be installed. • OEM Activation 2.5 and 3.0 Tools. • Windows System Image Manager (SIM). • OSDIMG, BCDBoot, DISMAPI, WIMGAPI, and other tools and interfaces.</p> <p>Estimated disk space required: 666.7 MB Disk space available: 13.3 GB</p> <p>Back Install Cancel</p>	Only select "Deployment Tools" and "USMT"

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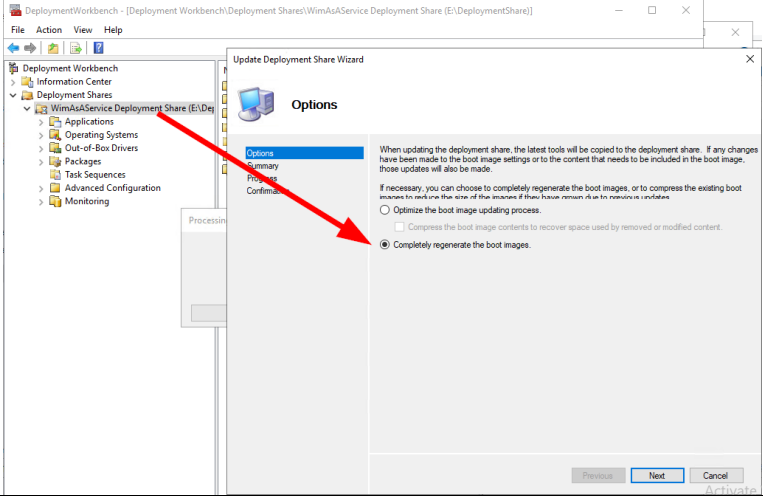

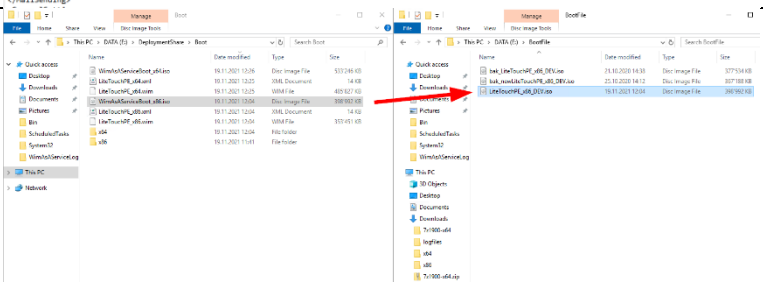
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9.		Install WinPE
10.		
11.		

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12.		Update Deployment Share → Completely regenerate the boot images.
13.		Check the BootISO Path in the Config_WimAsAServiceLogic.xml and Make a backup copy of the current Bootimage.
14.		Replace the existing x86 Bootimage with the newly created from the deployment share.
15.		Start the WimAsAService_WIM Generater Process
16.		Do some Testing
17.		Delete the Backup copy of the old Bootimage

5 Version history

Wann	Version	Wer	Beschreibung
22.11.2021	0.1	PAB	First Version