smartdeploy

SMARTDEPLOY

User's Guide



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New Hardware



PC Refresh

Windows Migration

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About SmartDeploy

Introduction

SmartDeploy is computer imaging software for deploying Windows operating systems and applications. IT professionals choose SmartDeploy to simplify the customization, deployment, and management of operating systems, applications, and data across any Windows device. It is easy to use, requiring little to no training, and it eliminates unnecessary IT infrastructure and costs, allowing you to invest these resources elsewhere to advance your IT strategy and make work more enjoyable.

SmartDeploy is a privately owned, self-funded business, dedicated to providing world-class solutions to IT implementers in small, mid, and enterprise organizations all over the world. SmartDeploy is a low-cost, high value solution for everyday use designed to simplify and reduce the workload for IT departments.

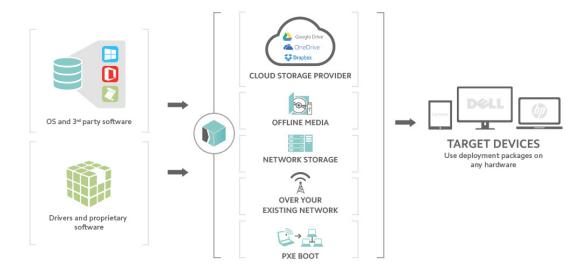
Customers use SmartDeploy in a number of scenarios, the most common being provisioning new and existing devices with Windows and Windows applications. Customers also use SmartDeploy for migration projects. Customers can migrate the user's data as well as the OS and applications. SmartDeploy can be used on premise or leverage 3rd party cloud storage providers for imaging over the internet. All of this work can be done attended or zero-touch, making it ideal for break-fix scenarios as well.

Setting up SmartDeploy is simple and fits easily into existing infrastructure. To get started you'll need an IT workstation to install SmartDeploy on, this can be a desktop, laptop, or server. You'll need some virtualization software, many versions are inexpensive or free, and to build a golden reference computer. You'll need your Windows OS installation media and any other line-of-business software installation packages to build your golden reference computer. The last thing you'll need are some target devices that you would like to reimage with SmartDeploy.

With SmartDeploy, you build your golden reference computer with the Windows version and applications necessary for a specific department or lab and SmartDeploy will create a single, hardware-independent image of that software. You download pre-built device driver packages from SmartDeploy, called Platform Packs, for your standard business class devices. There are several options for doing the actual deployment and you can create various types of boot media to do so.

There are many options and customizable settings for deployment that can be performed zero-touch, unattended or light-touch, as desired. During most deployments, SmartDeploy will reformat the hard disk, run any custom scripts you designate, perform a data migration if desired, run Sysprep automatically, automatically name the device, join the domain, and install all the correct drivers using SmartDeploy's patented boot-time driver injection process. After a couple restarts, the device is ready for the user.

Deployment times vary from approximately 10 to 60 minutes and depends on a number of factors including the overall size of the image, how the deployment is performed, and how performant the target device is.



This guide will explain, in detail, how to use all the features and functions of SmartDeploy. If you have questions, we're here to help, call 888-7DEPLOY or email sales@smartdeploy.com.

Installation: Configure Your SmartDeploy Console Host

System Requirements

Review the Release Notes for important system requirements.

Required User Privileges

User rights or privileges control how a user account can interact with the operating system. A number of these privileges are required when using SmartDeploy. If these rights are not assigned to the logged in user account many of the SmartDeploy processes will fail.

The following privileges are required for SmartDeploy to function properly:

- 1. SeManageVolumePrivilege
- 2. SeSecurityPrivilege
- 3. SeTakeOwnershipPrivilege
- 4. SeLoadDriverPrivilege
- 5. SeBackupPrivilege
- 6. SeRestorePrivilege
- 7. SeChangeNotifyPrivilege
- 8. SelmpersonatePrivilege
- 9. SeCreateGlobalPrivilege

Checking privileges available to user

To view the rights available to the current user account run "whoami /priv" from an administrative command prompt. The output will look like the example below. The list must match the items specified in the list above. If any privileges are missing update Group Policy following details at https://technet.microsoft.com/en-us/library/dd349804(v=ws.10).aspx to enable the privilege for the account. Alternately, log into the computer that has SmartDeploy installed with an account that holds all privileges.

Note: The state of the privilege does not correspond with it being a held privilege by the user account, it simply determines if the privilege is enabled for the current process.

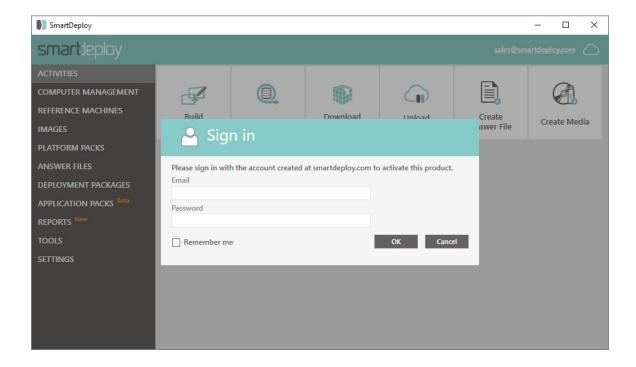
RIVILEGES INFORMATION		
ATVIELEE IN ON ATTOM		
rivilege Name	Description	State
eIncreaseQuotaPrivilege	Adjust memory quotas for a process	Disable
eSecurityPrivilege	8	Disable
eTakeOwnershipPrivilege	· · · · · · · · · · · · · · · · · · ·	Disable
eLoadDriverPrivilege		Disable
eSystemProfilePrivilege		Disable
eSystemtimePrivilege	8)	Disable
eProfileSingleProcessPrivilege		Disable
eIncreaseBasePriorityPrivilege		Disable
eCreatePagefilePrivilege	F-8	Disable
eBackupPrivilege		Disable
eRestorePrivilege		Disable
eShutdownPrivilege		Disable
eDebugPrivilege	0 F: -0:	Disable
eSystemEnvironmentPrivilege		Disable
eChangeNotifyPrivilege	Bypass traverse checking	Enabled
eRemoteShutdownPrivilege	· · · · · · · · · · · · · · · · ·	Disable
eUndockPrivilege		Disable
eManageVolumePrivilege		Disable
eImpersonatePrivilege	Impersonate a client after authentication	Enabled
eCreateGlobalPrivilege	Create global objects	Enabled
eIncreaseWorkingSetPrivilege		Disable
eTimeZonePrivilege		Disable
eCreateSymbolicLinkPrivilege		Disable
eDelegateSessionUserImpersonatePrivilege	Obtain an impersonation token for another user in the same session	Disable

Install SmartDeploy

- a. Create an account and sign in at www.smartdeploy.com.
- b. Download SDESetup.exe from www.smartdeploy.com.
- c. Double-click SDESetup.exe and follow the installer prompts.
- d. Upon installation SmartDeploy will create a working directory in Local Disk (C:) where you will save all your files for SmartDeploy.

C:\SmartDeploy

- Answer Files
- Application Packs
- Deployment Packages
- Images
- Logs
- Media
- Platform Packs
- Reference Machines
- e. Once installed, access the SmartDeploy Console from the Start menu.
- f. After launching the Console, you'll be prompted to Sign In. Enter your account credentials from the account you created at www.smartdeploy.com. Check the Remember me box to stay signed in.



Trial & Licensing

SmartDeploy is free to download, install, and use for 15 days. During this trial period you may use SmartDeploy to create and update images, Platform Packs, and deployment media, as well as deploy to target devices. All of the work that you do during your trial period is yours to keep. When you purchase SmartDeploy, you can pick up where you left off with your trial. We recommend simply recreating your boot media using the Media Wizard.

Licensing and Activation FAQ

What if I need more time to evaluate SmartDeploy?

You can extend the 15-day evaluation period one time by contacting your Account Manager or sending an email to sales@smartdeploy.com.

Once I've purchased, how do I activate SmartDeploy?

Upon purchase, your Account will be activated. Your login information can be used on other installations of SmartDeploy throughout your organization.

Will activation authorize any boot or deployment media I have already created?

No. If you created boot or deployment media with the trial, you will simply need to rerun the wizard to remove an expiration from it. All other work that you have done will still be valid.

For additional questions on licensing please see the Licensing FAQ or contact us.

Install a Virtualization Application

You can use any of the virtualization applications listed in the Release Notes.

SmartDeploy Quick Start Guide

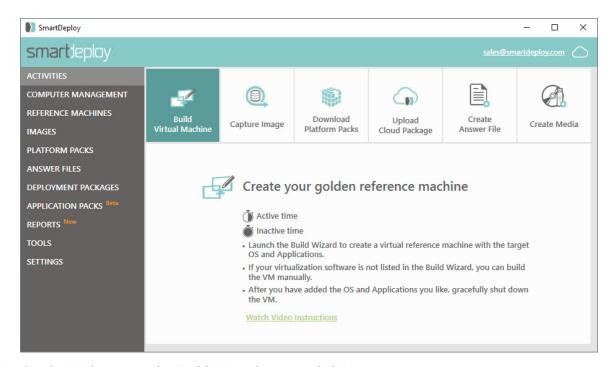
Download here.

Build Deployment Packages

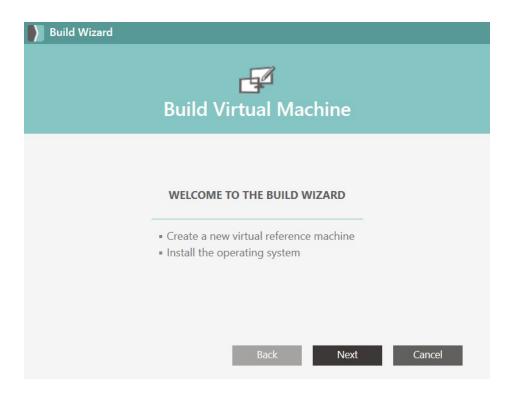
Step 1: Build Virtual Machine

Use the Build Wizard to create a reference VM, which will become your golden reference machine. If you prefer to create your VM manually or already have a VM built with a supported virtualization software you can skip this wizard and move to step <u>Step 2</u>: <u>Capture Image</u>, on page 14.

From the SmartDeploy Console, in the **Activities** tab, select **Build Virtual Machine** to launch the Build Wizard.

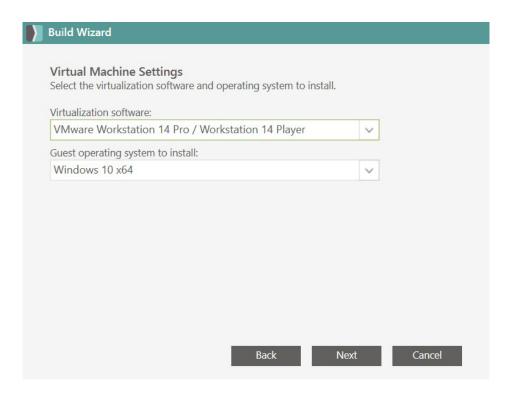


1. On the Welcome to the Build Wizard screen, click **Next**.

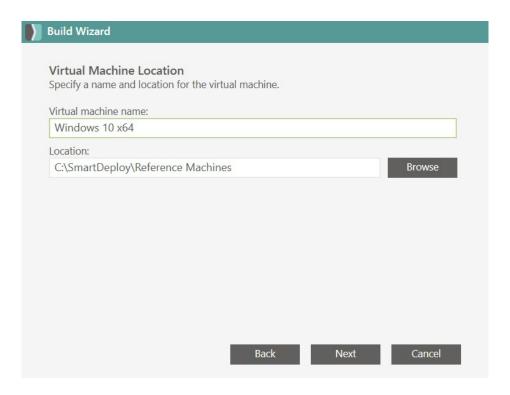


2. On the Virtual Machine Setting page, select the virtualization software you would like to use and the Windows version you will be installing.

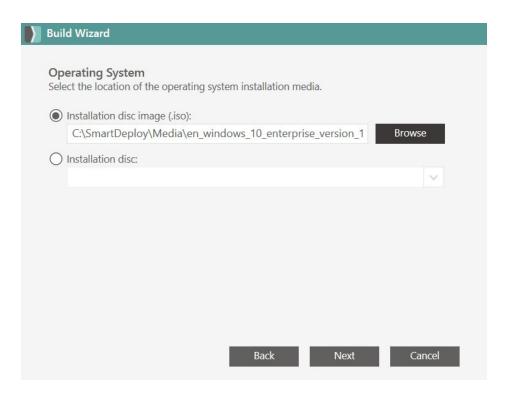
Note: If you are building your virtual machine with Hyper-V or ESX, you will need to build your VM manually.



3. Name the new virtual machine (VM) and save it to C:\Smartdeploy\Reference Machines.

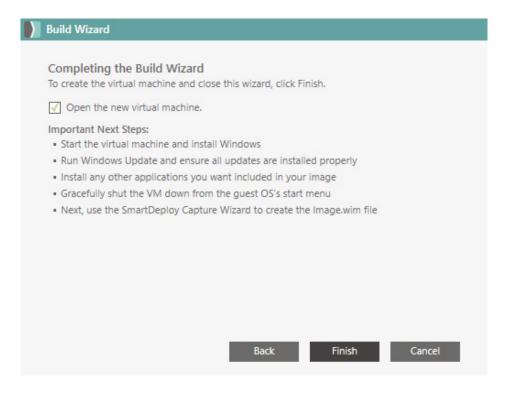


4. Browse to your Windows Installation Media ISO or physical disk.



5. Click **Finish** to open your new virtual reference computer. Install Windows just as you would with a physical machine, run Windows Update and ensure all updates are installed properly.

Note: This virtual machine contains the master installation that will be captured and deployed (duplicated) to each future installation on a target device. You can run the Build Wizard multiple times to create multiple reference VMs.



Best practices when creating master installations for the Build Wizard

Each virtual machine that you create by using the Build Wizard will contain the master installation for a particular set of deployments to target devices. Therefore, it is important that the master installation be as clean as possible. Consider the following best practices when configuring the virtual machines that you create with the Build Wizard:

- Complete the entire OS and application installation process and make sure that no serious errors occur.
- When running Windows Update on the master installation, make sure that the entire process has completed. Reboot the machine if necessary and let all updates complete before shutting down.
- While configuring your master virtual machine, do not install any tools or virtual machine additions. All additions (device drivers, etc.) should be deployed to your target devices via a Platform Pack. See below, page 18, for more information about Platform Packs.
- If you are joining the installation to the domain, revert back to a workgroup before capturing the image.
- Do not run Sysprep before capturing your virtual reference machine. As part of deployment, SmartDeploy will run Sysprep, with an answer file created by the Deployment Wizard, to generalize every computer that the image is deployed to.
- Do not attempt to capture a physical machine or Physical-toVirtual (P2V) converted virtual machine with SmartDeploy, this is not supported.
- If you are using VMWare virtualization platform, and the VM is running Windows 8.1 or 10, you must shutdown by opening a command prompt and executing the following command: shutdown /s /t 0

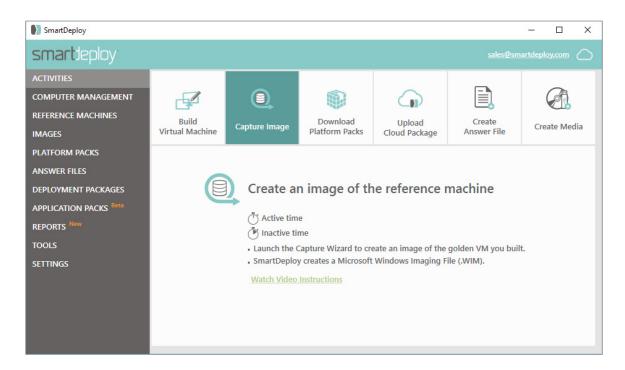
Step 2: Capture Image

Once you have built and configured your master installation, you will use the Capture Wizard to capture an image of that installation for deployment to target devices.

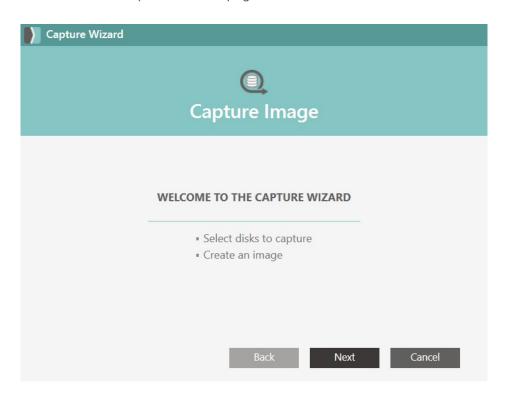
It is recommended to use the Capture Wizard to capture your image with the VM powered off. However, for advanced users or in some scenarios it's more reliable to capture the VM while powered on to the SmartDeploy PreInstallation Environment, for example if your reference computer has complex disk layouts, if you want to capture a VM in a snapshotted state, or if you use virtualization products such as VMware ESX. If you would like to capture your image with the VM running, see Appendix 1: Capture with the VM running (Warm Capture), on page 106.

With the VM powered off

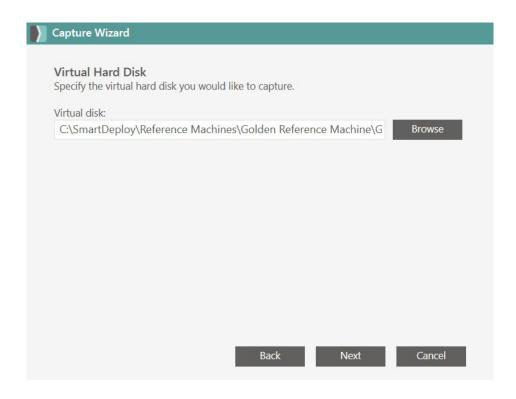
From the Activities tab in the SmartDeploy Console, click Capture Image to launch the Capture Wizard.

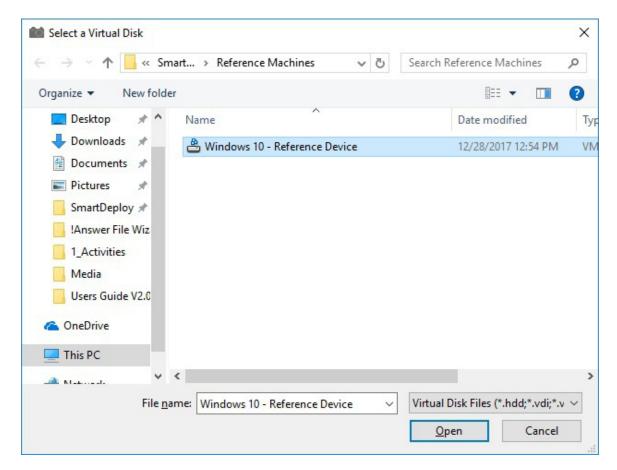


1. On the Welcome to the Capture Wizard page, click **Next**.

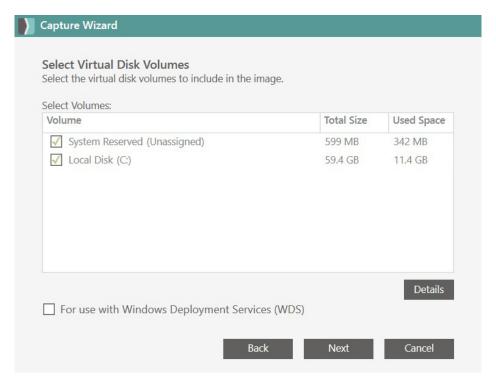


2. On the Virtual Hard Disk page, click **Browse**, and select your virtual hard disk. Click Open, and then click **Next**.





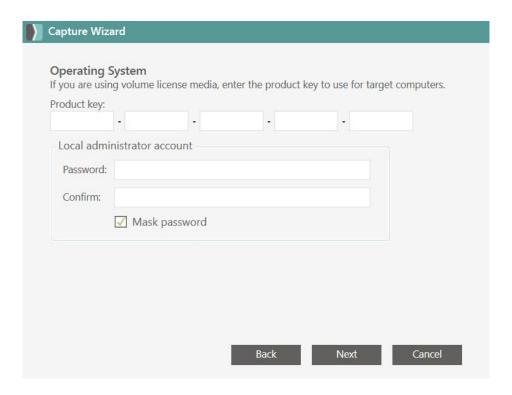
3. On the Select Virtual Disk Volumes page, make sure the Local Disk (C:) volume is selected. For more information about the displayed volumes, click Details. Then click **Next**.



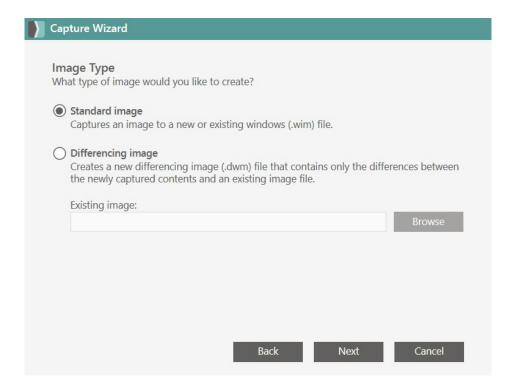
For more information about the WDS checkbox, see <u>The Windows Deployment Services (WDS)</u> checkbox, on page 20.

4. On the Operating System page, if you have a volume license key type the product key here. If you plan to use individual product keys that are different on each device, do not enter a product key at this time. If you do not enter a product key, you will be prompted for one when you use the Deploy Wizard.

In the Password box, type the local administrator account password. In the Confirm box, type the password again. Then click **Next**.

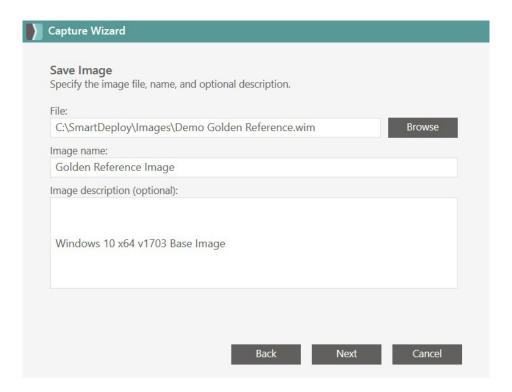


- 5. On the Image Type page, select Standard image or Differencing Image, and then click **Next**.
 - A standard image contains all the files needed for the target device, while a
 differencing image contains only the files that have been changed between a standard image
 and an updated virtual machine.
 - If you create a differencing image, you will need to browse to the location of the previous version of the image.



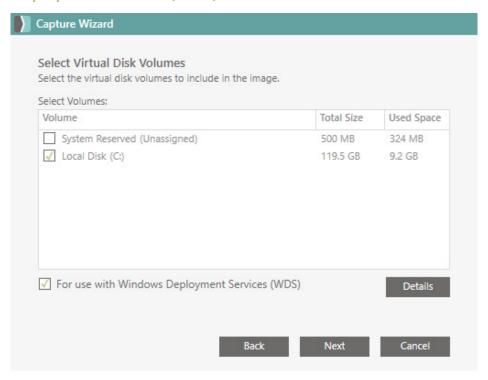
- 6. On the Save Image page, browse to where you want to save your image file. You can save the file locally, or map a network drive to save it remotely.
 - In the Image name box, type a name for the image that will make it easy to recognize when you deploy or update the image.
 - In the Image description (optional) box, you can type a more detailed description of the image. This information might help you or others identify any special or unique characteristics of the image, when deciding whether or not to deploy or update it. Click **Next**.

Note: You can save more than one image in a single .WIM file by selecting an existing .WIM. If you save more than one image in a .WIM file, all the duplicate files are single instance stored. Therefore, a single .WIM that contains two images will likely require less disk space than the same two images saved as two .WIM files.



- 7. On the Completing the Capture Wizard page, click **Finish**. The wizard may take several minutes to capture the image.
 - **Note**: As a best practice we recommend disabling anti-virus or real-time protection software, as occasionally mounting can cause antivirus software to incorrectly report it as malicious.
- 8. When the process is complete, a Capture Wizard dialog box will appear. Click OK.

The Windows Deployment Services (WDS) checkbox



Windows Deployment Services is the Microsoft technology for network-based installation of Windows operating systems over a local area network (LAN). SmartDeploy supports using WDS as a Preboot Execution Environment (PXE). For more information about integrating WDS with SmartDeploy, please download the Windows Deployment Services guide.

The WDS checkbox is used to prepare a Windows reference machine for multicast deployment. You can use the WDS checkbox when selecting virtual disk volumes. BIOS mode machines install with tow-partitions, UEFI mode machines install with four-partitions. However, WDS only accepts single-partition images. If you select the WDS checkbox, only the partition Windows is on will be captured. The single-partition image can then be imported to WDS. The System Reserved partition is recreated during deployment.

Step 3: Download Platform Packs

A Platform Pack is a compressed, single-instance stored file that contains device drivers and other platform-specific software for a specific make, model, and operating system of a target device. Platform Packs are merged with your captured reference image at deployment time, installing only the correct drivers for the specific target device. By separating the hardware layer from the operating system and applications, SmartDeploy makes it easier to maintain consistent desktop images for an entire organization, without tying specific images to specific hardware.

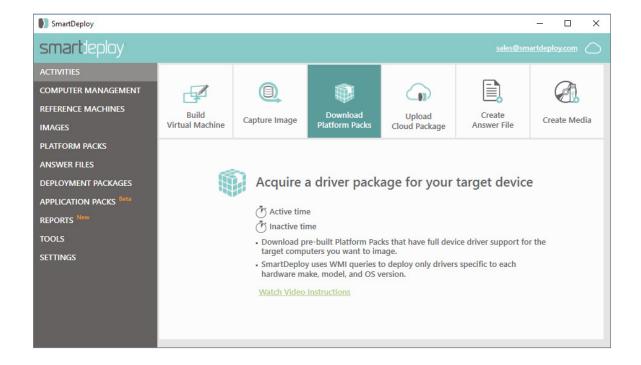
You can use the Platform Pack Library tab and the Platform Manager to import, create, and maintain Platform Packs, as well as to see which operating systems and chipsets are supported (e.g. Windows 8.1 (x64)), for more information see page 89. These packs save you time by including the most current device drivers and support software for systems from Dell, HP, Lenovo, and other major hardware manufacturers. They also contain the necessary selection filters and device driver settings to ensure that only the correct pack will be used for a particular device, and all driver settings and required components will install properly for that device.

If you require a Platform Pack that is not available on the SmartDeploy website use the online request form. A valid support agreement is required in order to request a modification or creation of a Platform Pack, and counts as a support ticket.

If you are an advanced user with unique hardware support requirements, you can modify an existing Platform Pack or create a new Platform Pack. See Platform Packs on page 89.

Platform Packs for popular hardware systems are available from the SmartDeploy Console, including Platform Packs for virtual environments. This lets you deploy images to virtual and physical environments. Download a Platform Pack for each machine you will deploy.

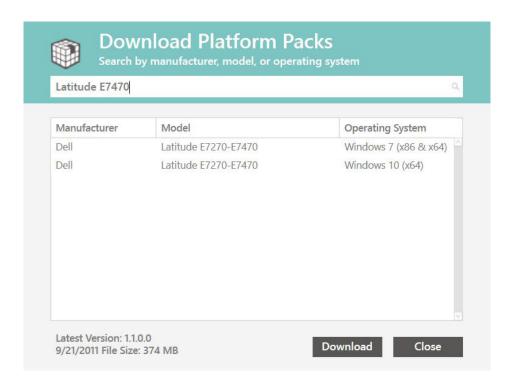
From the Activities tab, click Download Platform Packs to launch the Platform Pack download window.



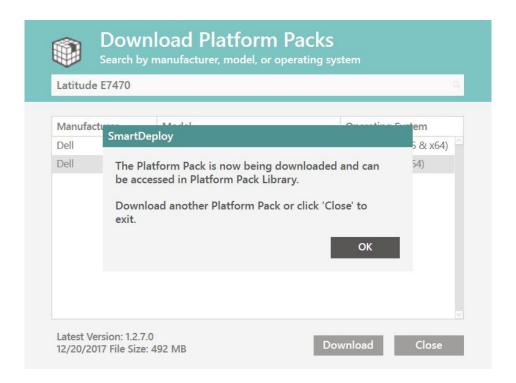
1. Search Platform Packs by manufacturer, model, or operating system. Start typing in the search box and the list will automatically filter.



2. Once you have selected the correct machine, click **Download**.



3. The Platform Pack will automatically be saved to C:\SmartDeploy\Platform Packs and will appear in the Platform Packs tab of the Console.



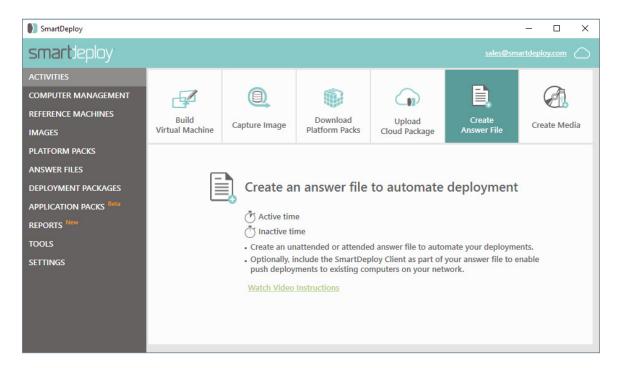
Step 4: Create Answer File

Answer files are XML files that you can use to automate deployments, so your technicians won't have to manually click through the Deploy Wizard for each device at deployment time. Any setting that you would normally configure in Deploy Wizard at deployment time (including mapping a network share and selecting a network-based image file) can be automated with an answer file to create a light or zero-touch deployment.

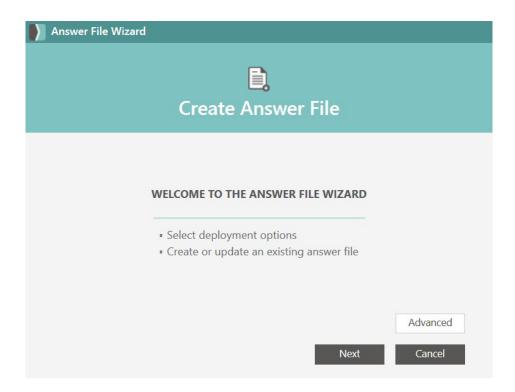
SmartDeploy makes creating an answer file easy with a simple wizard. An answer file created by SmartDeploy is meant to replace the use of the Deploy Wizard and fully automate the deployment. Alternatively, you can walk through the Deploy Wizard on a manual deployment and export the answer file which will save all of the options you selected for future deployments.

Note: Answer files are by default set to unattended, you can adjust this setting in the Advanced Options. An unattended answer file is required for Deployment Packages for network-based deployments from the SmartDeploy Console.

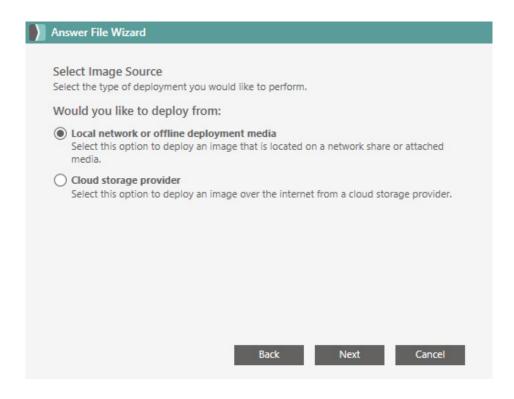
Launch the Answer File Wizard by clicking **Create Answer File** from the **Activities** tab of the SmartDeploy Console.



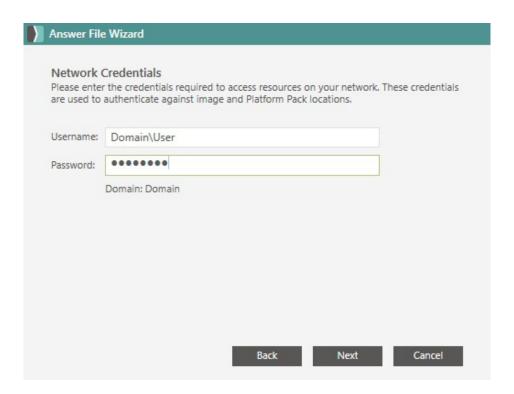
1. On the Welcome screen, you'll see the Advanced button, for details about the Advanced options, see Advanced Options, on page 33. Click **Next**.



2. On the Select Image Source page, select where you would like to deploy from, then click **Next**. For deployments using a cloud storage provider, see page 63.

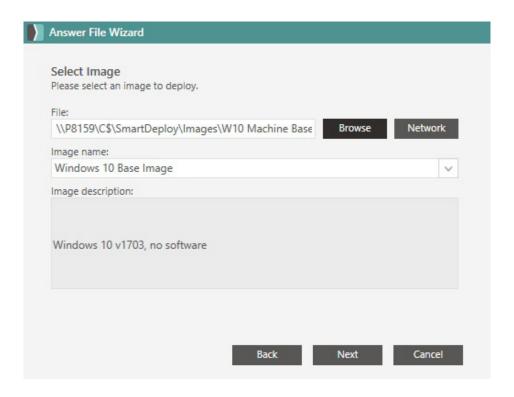


3. On the Network Credentials page, enter the credentials to access the location of your image and Platform Packs.



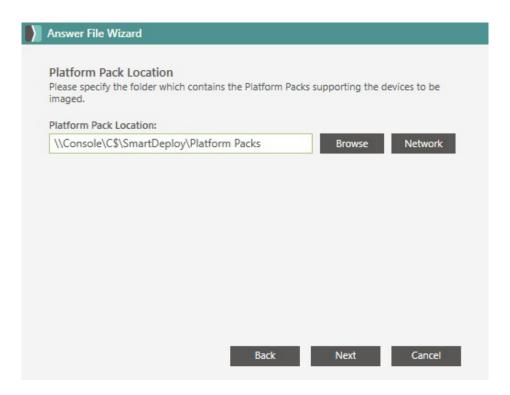
4. On the Select Image page, click Browse. Select the image you want to use for deployment and click Open. Then click **Next**.

Note: If you had appended to your exisiting .WIM file, use the dropdown menu on the Select Image page, to select the image index you would like to deploy.



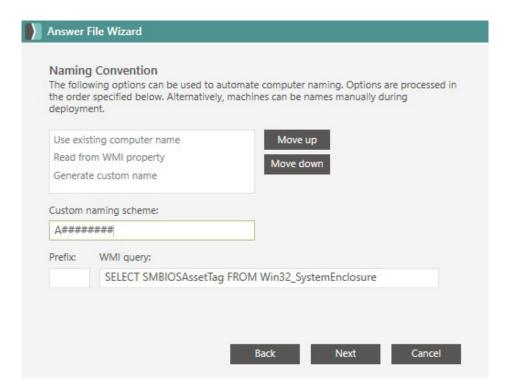
5. On the Platform Pack Location page you can click **Browse** and specify the folder where your Platform Packs are located. By default the wizard will look in the same directory as the Image.WIM file you select to deploy by using the [ImageFolder] macro. When you've specified the correct location, click **Next**.

Note: In SmartDeploy versions older than 1.1.4000, SmartDeploy by default searched for a single file named Default.PPK in the same directory as the Image.wim file. In SmartDeploy versions 1.1.4000 and later, all .PPK files, single or combined, are scanned for in the same directory as the Image.wim file.

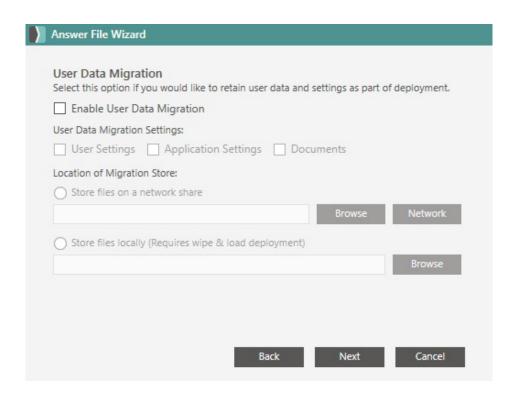


- 6. On the Naming Convention page, you can modify the naming hierarchy by moving the options in the list up or down. You can also modify the WMI query (e.g. to look for the machine serial number rather than asset tag), or set up a custom naming scheme with different prefixes or a different number of random digits. By default, SmartDeploy will use the following hierarchy to assign a name to the deployed computer:
 - 1. Use existing computer name. If the computer already has a name (e.g. if you are deploying a new image to an existing machine), SmartDeploy will detect it.
 - **2. Read from WMI property**. The next priority is to read from a WMI property, such as an asset tag.
 - **3. Custom name**. If the machine has no WMI property to read, SmartDeploy will assign a random name based on the scheme A#######, where each # is a random digit.

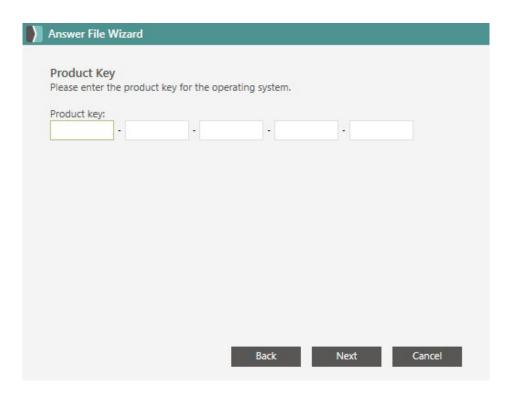
Once you have set your preferred naming convention, click **Next**.



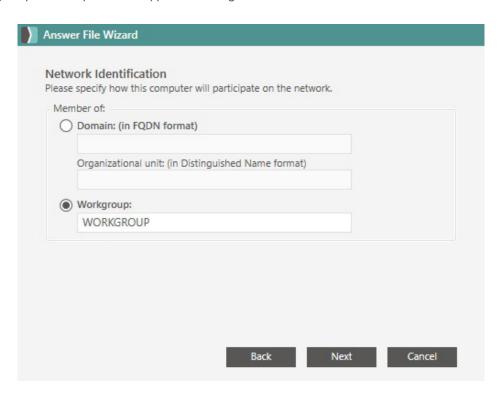
- 7. If you would like to migrate a user's data and settings during a deployment, check the box to Enable User Data Migration. For more information on User Data Migration, <u>Appendix 2: User Data Migration</u>. If you enable User Data Migration:
 - 8. Select the settings you want to migrate
 - **User Settings:** this includes the full user account, any personalized setting and documents (C:\Users\Demo)
 - **Application Settings:** this includes Microsoft Office and other Microsoft related applications
 - **Documents:** this includes everything on the C: drive that was not added by the operating system or applications (C:*)
 - 9. Select the location you want to save the migration data
 - **Network Share (recommended):** this option will copy all the data to a network share during deployment and copy it back to the local machine post deployment to complete the migration. The data will remain on the network share after the migration is complete.
 - Locally: this option requires the use of Wipe & Load. Select a folder on the local drive and the migration data will be added to that folder, all other contents on the drive will be wiped. You will receive an error if the existing partitions do not match the partition structure of the reference virtual machine.



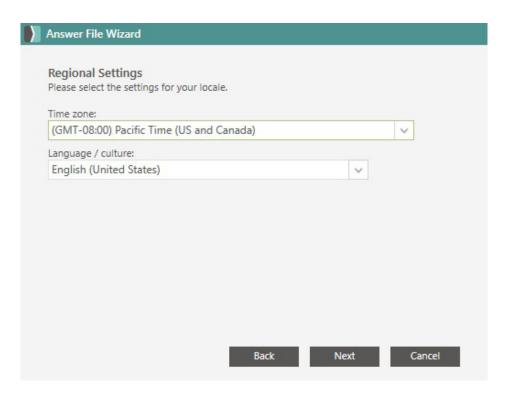
8. On the Product Key page, you can enter the product key now if you did not specify one when you captured your image. Click **Next**.



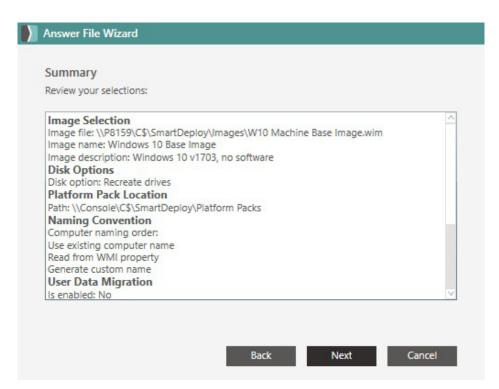
9. On the Network Identification page specify whether the device will be a member of a domain or workgroup. When you have typed the target device's network identification, click **Next**.



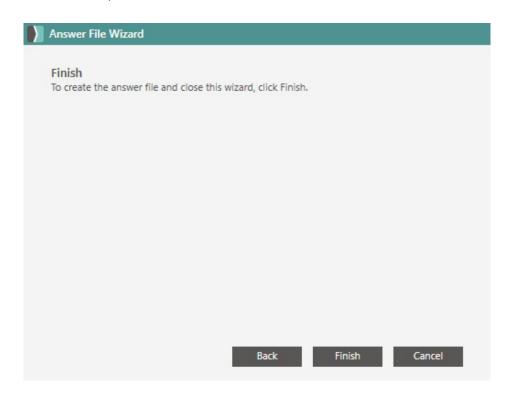
10. On the Regional Settings page, specify the time zone and language. Click Next.



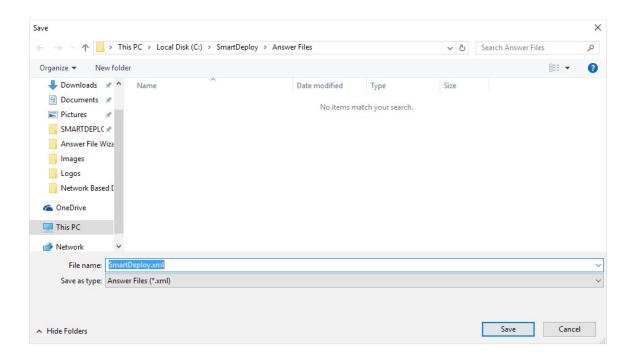
11. On the Summary page, review the information you have input. If you need to make any changes press Back. Otherwise, click **Next**.



12. Click **Finish** to create your answer file.

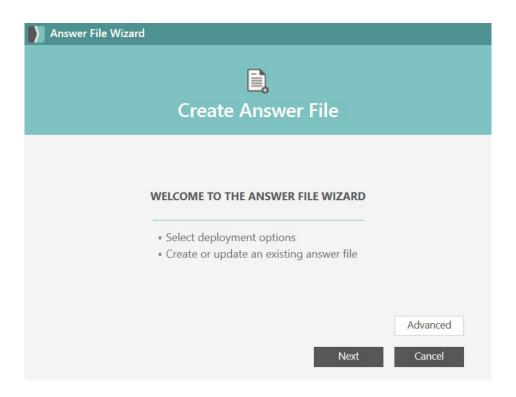


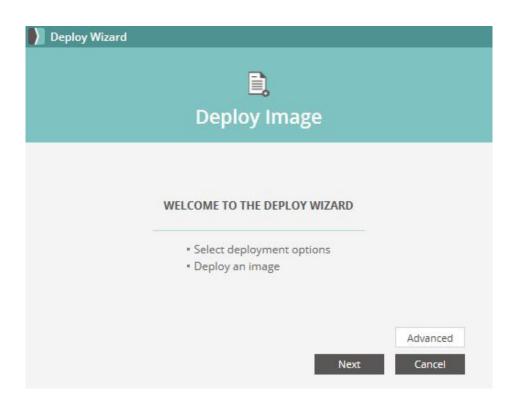
13. The Save window will appear. The default name will be SmartDeploy.xml, you can rename it here. Save your answer file to the specified location.



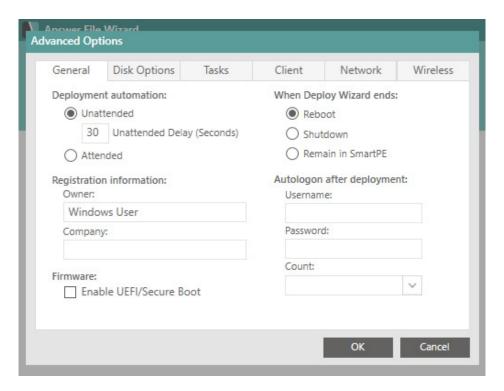
Advanced Options

Access these options by clicking the Advanced button on the Answer File Wizard (or Deploy Wizard) Welcome screen.





General Tab



Deployment Automation

By default all answer files will be designated Unattended with a 30 second delay. You can change the delay of an unattended deployment or mark the answer file for attended deployment.

Registration Information

The owner and company fields control what the windows installation thinks is the registered owner. By default SmartDeploy chooses what Windows defaults to.

Firmware

Allows you to enable UEFI/Secure Boot.

When Deploy Wizard ends

- **Reboot**: the target device will reboot after the deployment completes. The target device will go in to Sysprep, remain powered on and land at the login screen.
- **Shutdown**: the target device will be powered off after the deployment completes. This can be useful on some devices where technicians need to remove bootable media before the next startup, such as the Microsoft Surface Pro 3.
- **Remain in SmartPE**: the target device will remain in SmartPE and not complete the deployment. This can be useful for testing and troubleshooting purposes as well as a simple way to create the SmartDeploy.xml answer file without completing the deployment.

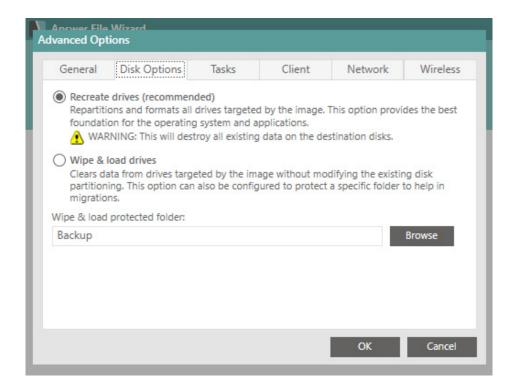
Autologon

In the Advanced section of the Answer File Wizard there is now an Autologon after deployment section. Users can enter a local or domain Username and Password and select a value for Count, which controls the number of reboots, to automatically log into an account after deployment. Microsoft has a known issue with the count value specified and currently all Autologons will be count + 1, for more information see this link: https://docs.microsoft.com/en-us/windows-hardware/customize/desktop/unattend/microsoft-windows-shell-setup-autologon-logoncount

Disk Options Tab

Disk Options allows you to select the method for applying the image to the target device. By default, Recreate drives is selected.

- Recreate drives (recommended) will delete all existing partitions, recreate the necessary
 partitions, format the new partitions, and then write image data to the partitions. The new
 partition structure is based on the partition structure from the reference virtual machine, and
 will fill any previously unused space.
- Wipe and load drives will format only the target drives specified in the image, but will not change the target device's hard disk partition scheme. You will receive an error if the existing partitions do not match the partition structure of the reference virtual machine. This method will let you leave a folder structure on the hard disk. You can choose a protected folder by using the Browse button on this tab. By default, SmartDeploy will protect the "C:\Backup" folder.



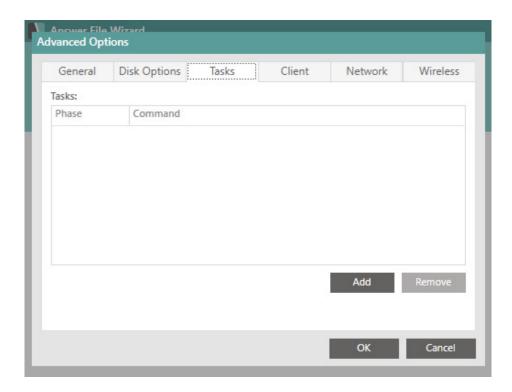
Tasks Tab

This tab gives you the option of creating custom tasks that will run during deployment. Its functionality is similar to the Filters and Tasks functionality in Platform Manager (see <u>Appendix 4: WMI Filters and Tasks</u>, on page 112)

Tasks can be created at one of 5 phases of deployment.

- Before the image is applied (before disk partition)
- After the image is applied
- Specialize/Mini setup (during Sysprep)
- Upon first boot as system
- Upon first logon to desktop

The main difference between the Tasks tab in Deploy Wizard and the Filters and Tasks functionality in Platform Manager is that if you set up tasks through the Deploy Wizard, they will run on all deployments, rather than a specific hardware type.

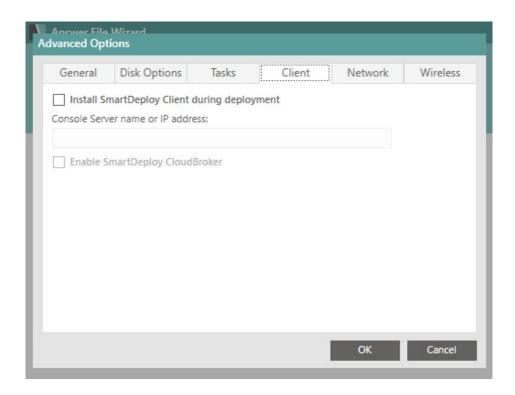


Client Tab

This tab is used for Network Deployment with SmartDeploy. Check the box to **Install SmartDeploy Client During Deployment**. This is recommended for all media, especially Offline deployment media, so after initial deployment you will be able to deploy to the device from the SmartDeploy Console.

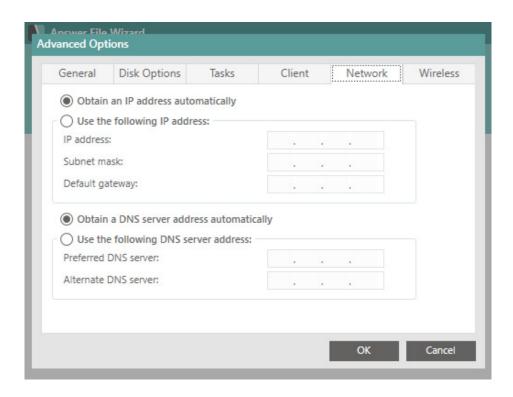
Enter the name or IP address of the Console Host so the client on the imaged device can talk to the SmartDeploy Console.

Note: Check the Enable SmartDeploy CloudBroker checkbox to enable Cloud Deployments for clients.



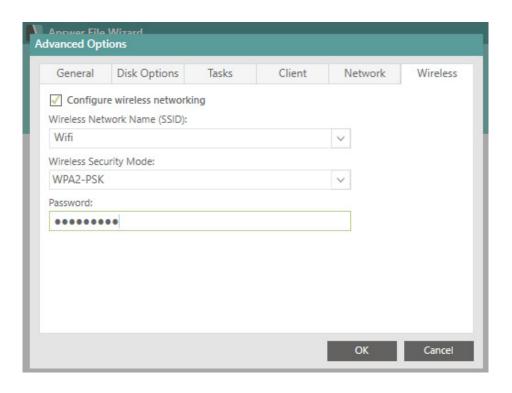
Network Tab

The Network TCP/IP Settings you can specify the target device's IP address, subnet mask, default gateway, and DNS server information. Or by default, obtain the network address information automatically.



Wireless

Configure SmartDeploy to allow devices to be imaged over a wireless connection and to configure wireless settings after the device is imaged.



Using a wireless connection

Wireless Deployment is available in SmartPE as of build 3030. This can be useful when imaging certain machines such as thin laptops and tablets that do not come with an ethernet port. However, this should not be the main deployment method as wireless is nowhere near as reliable as a hard wired connection. It will have a strong possibility to impact other users on the wireless as well.

Wireless Profiles and Two Modes

SmartDeploy makes use of wireless profiles to connect to the wireless networks. A wireless profile is created on the OS whenever a wireless network (SSID) is connected and contains all the information about connecting to the SSID. The wireless profiles on the machine can be checked by running the following from command prompt: netsh wlan show profiles. If the client is installed on a machine, the currently connected wireless profile will be captured to a file called WirelessNetworkProfile.xml in the installation folder of the SmattDeploy Client (C:\Windows\System32\SmartDeploy or C:\Windows\SysWOW64\SmartDeploy), which is encrypted so that it is not user readable. This is the "currently connected" wireless network. A wireless network can also be specified in the answer file under the Wireless tab of the Advanced Options page. A wireless name can be selected from a list or entered manually, security mode selected, and a password entered (Note: this password will be autofilled if the SSID is already part of the Console's wireless profiles). This is the "answer file specified" wireless network. A wireless profile xml will be generated and then encrypted and added to the answer file under the NetworkConnections node.

These two modes, currently connected and answer file specified, will determine how SmartPE connects to a wireless network. In the case that both modes exist, their currently connected wireless takes precedence over the answer file specified one. This was in consideration that a Console user may have used Push Deployment to push an image to a client which was connected a wireless network. If there is no WirelessNetworkProfile.xml, then SdShell will connect to the answer file specified wireless network.

Post Deployment

After a deployment has completed, any and all currently connected and answer file specified wireless networks will be added to the OS. Windows and the user will then be left to determine which wireless network to connect to.

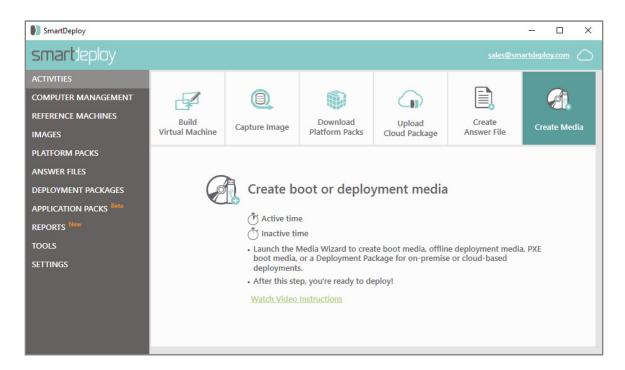
Wireless Network Drivers in SmartPE

In order for wireless deployment to work in SmartPE, the wireless drivers need to be added to the Platform Pack and the Platform Pack must then be specified to add the wireless drivers to whichever SmartPE deployment mode was used. The current version of SmartPE is the Windows 10 PE, so drivers that support Windows 10 will need to be added. There may be some incompatibilities as wireless network drivers are not natively supported in Windows PE.

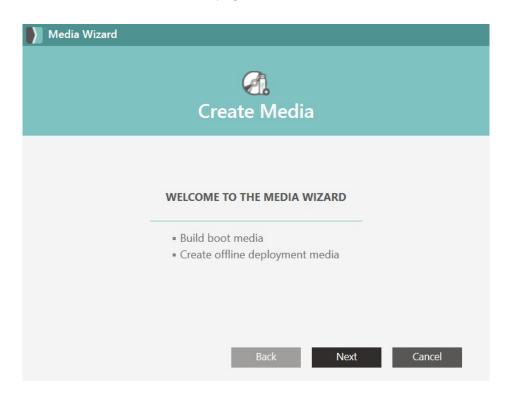
Step 5: Create Media

The Media Wizard is used to create a pre-installation environment that is used to boot and complete deployment to target devices.

From the Activities tab, select **Create Media** to launch the Media Wizard.

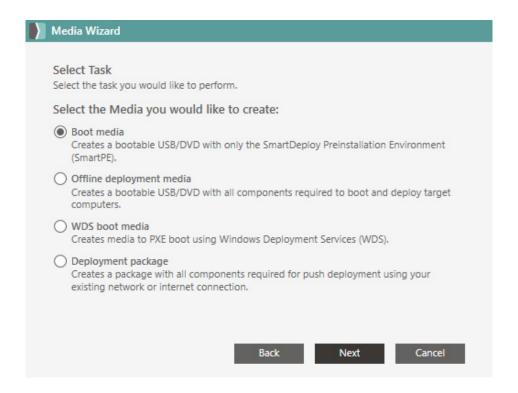


1. On the Welcome to the Media Wizard page, click **Next**.



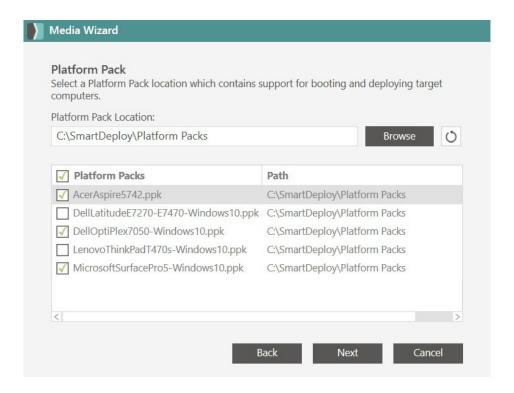
- 2. Select a task and click Next.
 - **a. Boot media**: use this option to create bootable media. Bootable media types are a USB hard drive, DVD set, or ISO with the SmartDeploy Pre-Installation environment (SmartPE).
 - b. Offline deployment media: use this option for offline deployments. This creates media that is self-contained with all the necessary files to complete the entire deployment, such as your captured OS image and Platform Packs.

 If you select this entire after you slick Next the Select Image page appears. Click Provise.
 - If you select this option, after you click Next the Select Image page appears. Click **Browse** and select the SmartDeploy image file you want to deploy. Click **Open**, and then click **Next**.
 - c. WDS boot media: this option creates media to PXE boot with Windows Deployment Services. For more information about using WDS with SmartDeploy, see <u>The Windows</u> <u>Deployment Services (WDS) checkbox, on page 20</u> and download the guide How to <u>Integrate SmartDeploy with Windows Deployment Services</u>.
 - **d. Deployment package**: a Deployment Package contains all the necessary components for a network based deployment initiated from the SmartDeploy Console. This is an alternative to using SmartDeploy boot media with Windows Deployment Services. For instructions on creating a Deployment Package see Network Deployment, on page 56.



4. On the Platform Pack page, click **Browse**. Select the folder that contains your Platform Packs. This lets SmartPE load the drivers that are required to connect to a network and copy the image to the local hard disks. If you selected Offline Deployment Media, the full contents of all the Platform Packs will be copied to the media. Click **OK**, then click **Next**.

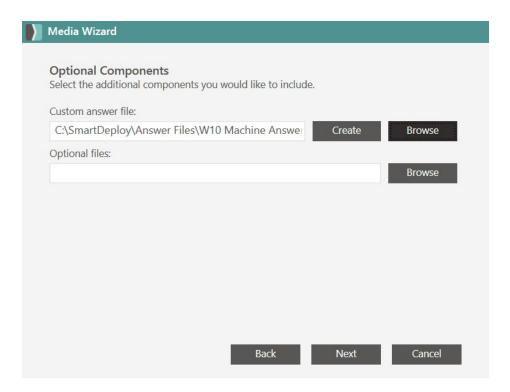
Note: If you downloaded a Platform Pack for your target device from SmartDeploy, the Platform Pack will already contain the necessary network and mass driver support. If you modified a Platform Pack or created a new one, you should modify the Platform Pack (see page 90) to include support for Windows PE, which already has network and mass storage driver support included for many computers in the market today.



5. On the Optional Components page, select the optional components that you want to add to the deployment environment.

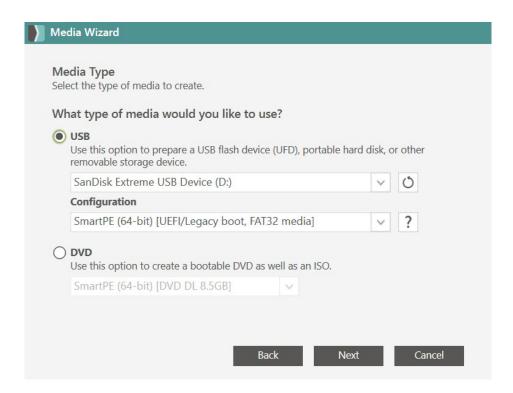
Click **Browse** to select a custom SmartDeploy answer file for the target device or click **Create** to launch the Answer File Wizard.

The Optional files option gives you the ability to copy additional resources to the Boot or Deployment media, such as a Readme.txt file that you would like included.

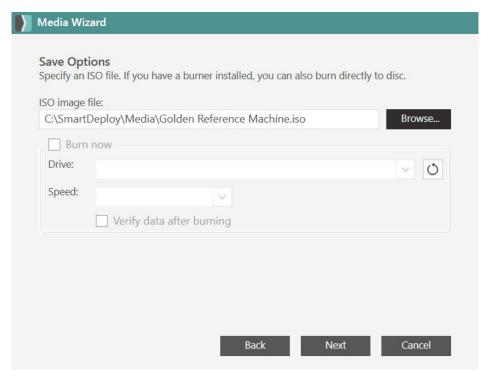


6. On the Media Type page, select the media you want to use for the target device. If you are burning a DVD, select the media capacity from the drop-down list. The Media Wizard can create images that span multiple disks, but all disks must be of the same type and capacity. If you select a removable drive, including external hard drives or USB drives, note that the drive will be formatted FAT32 if the existing format does not match what you select and all information on it will be lost. To create an ISO, select DVD.

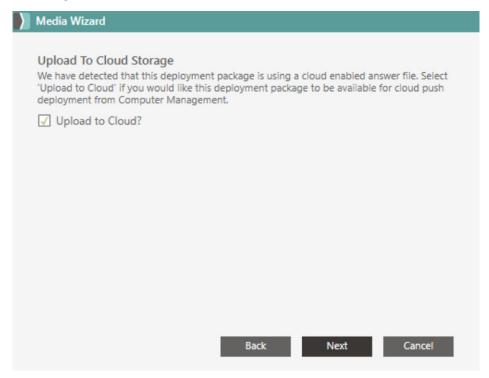
Click Next.



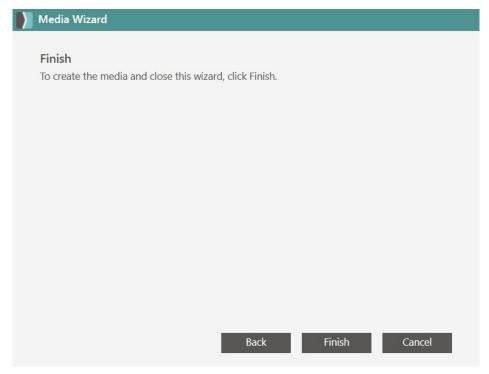
7. If you selected to burn a DVD, the Save Options page appears. You can make an ISO or burn the image to physical disks. Select the options for your image, and then click **Next**.



8. There is now an option at the end of the Media Wizard to upload Deployment Packages to the cloud when the answer file used is cloud based. This will allow for Cloud Deployment from Computer Management.



9. On the Creating Media page, click **Finish**.



10. When the deployment media is built, click **OK**. You can now deploy an image to a target device.

Use Your Deployment Packages

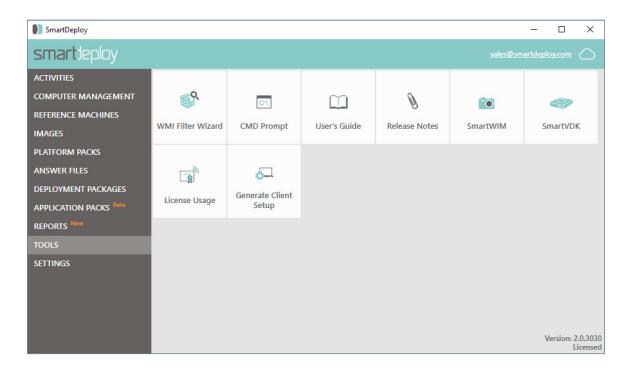
There are multiple ways to deploy your image with SmartDeploy. The type of boot media you created with the Media Wizard will indicate which deployment method you will use. If you created boot media, you will load an image over a network to the target device, or integrate with WDS for PXE boot. If you created offline deployment media this creates a complete Deployment Package. This gives you flexibility in distributing images to computers regardless of location or connection type. If you created a Deployment Package follow the instructions for Network or Cloud Deployment.

Install the SmartDeploy Client

A client agent needs to be installed on the target machines in order to communicate with the SmartDeploy Console host.

Generate Client Setup File

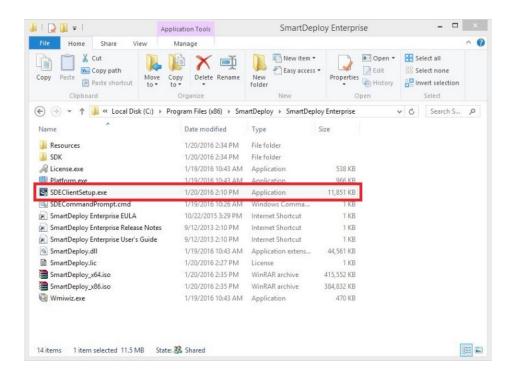
1. Select the **Tools** tab from the left menu.



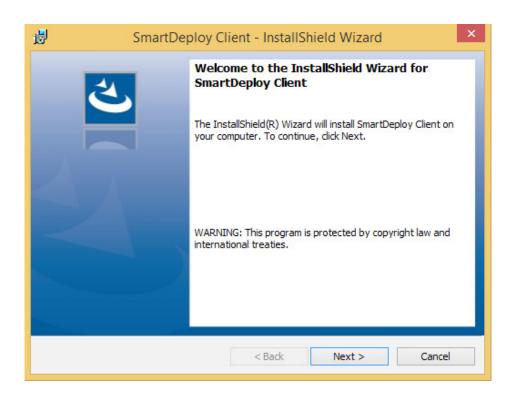
- 2. Click Generate Client Setup.
- 3. Confirm the correct Server Name or IP Address is set.
- 4. Click **Browse** to specify a location to save the SDEClientSetup.msi file.
- 5. Click **OK**.

Manually

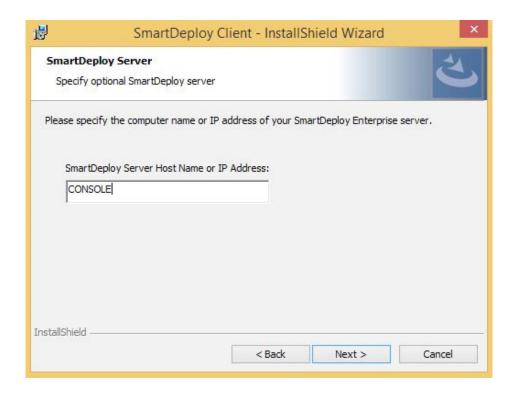
 From the SmartDeploy Console host, navigate to the location you saved the SDEClientSetup.msi file



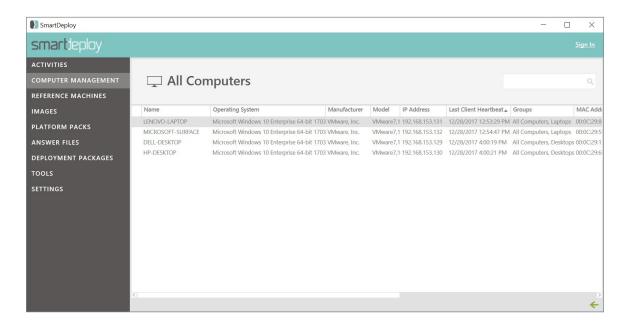
- 2. Copy this **SDEClientSetup.msi** to the target machines you want to deploy to, and run the executable.
- 3. Click Next.



- 4. Read and accept the EULA, then click Next.
- 5. Enter the computer name or IP address of your Console host. Then click Next.

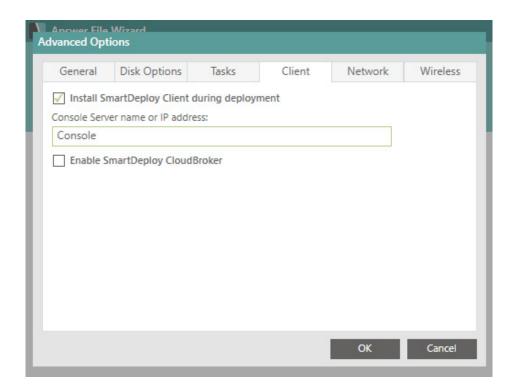


- 6. Click **Install** to complete the installation.
- 7. From your SmartDeploy Console, select the **Computer Management** tab, and verify the client has established a connection with your Console.



Automatically during deployment

- 1. On the Welcome to the Answer File Wizard page, click on the **Advanced** button.
- 2. In the Advanced Options screen, click on the **Client** tab.
- 3. Check the box for Install SmartDeploy Client during deployment and enter the name or IP address of the Console Server.



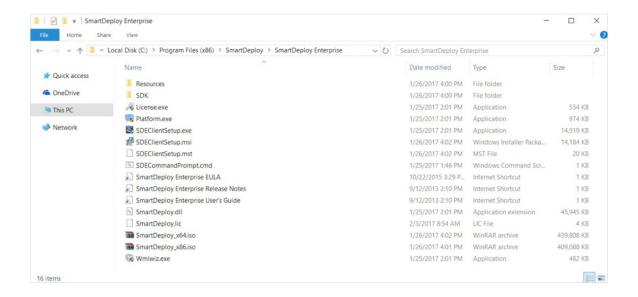
4. Click **OK** and complete the rest of the Answer File Wizard (see page 24).

Using Group Policy

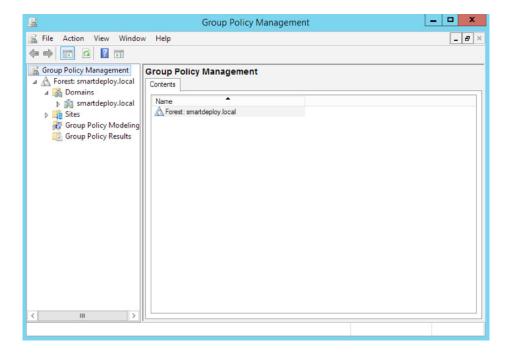
The SmartDeploy Client can be installed to your domain machines by configuring a startup script via Group Policy. Before you begin, ensure that you have the following:

- Domain Controller with Group Policy Management Installed
- A network shared folder on your domain to act as a file share
- 1. Copy the SDEClientSetup.msi file you generated on your Console Host to a network shared folder on your domain.

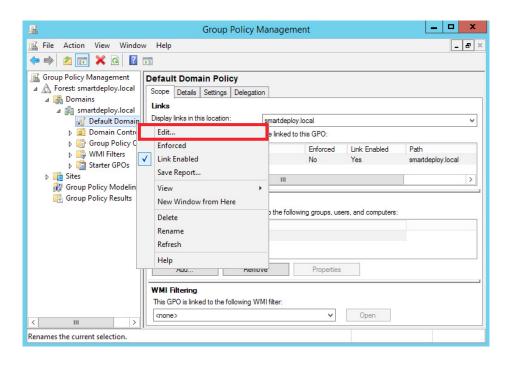
Note: The SDEClientSetup.msi contains the name for the Console Host that will be applied to the client install. The name of the Console Host is the name of the machine where SmartDeploy is installed.



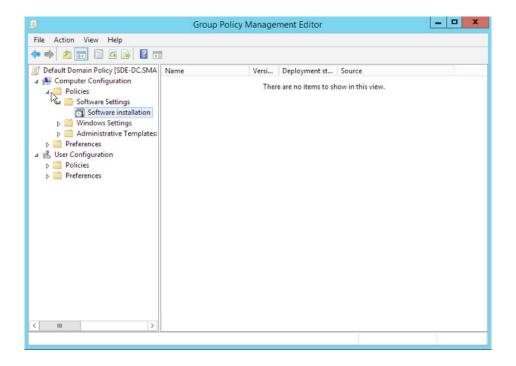
2. On your Domain Controller open Group Policy Management.



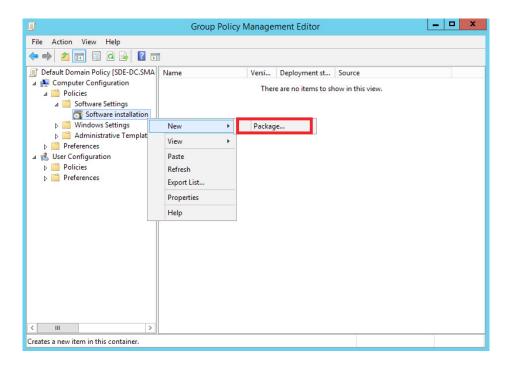
3. Find the Domain Policy for the machines you wish to add the software to and right click and select **Edit**.



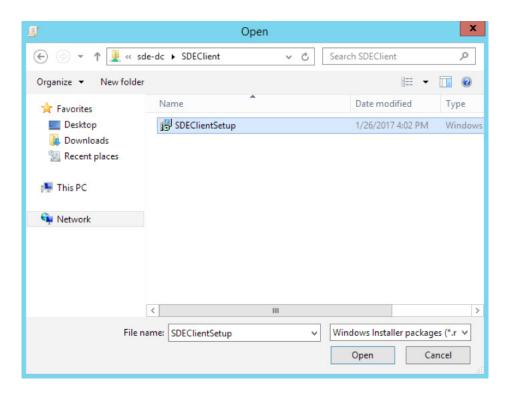
4. Expand Computer Configuration > Policies > Software Settings, and locate Software installation.



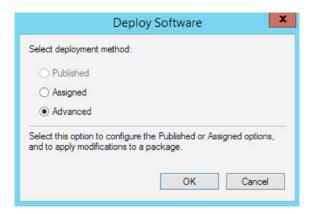
5. Right click on Software installation and select New > Package.



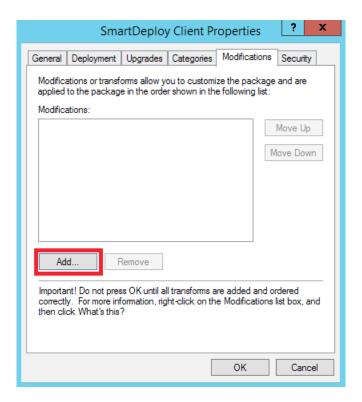
6. Select the SDEClientSetup.msi copied over in Step 1.



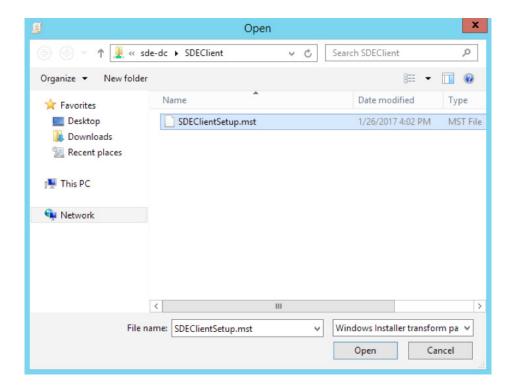
7. On the Deploy Software box, select Advanced.



8. On the Software Properties, click on the Modifications tab and click Add.



9. Select the SDEClientSetup.mst copied over in Step 1.



10. Select **OK** to close.

Network Deployment

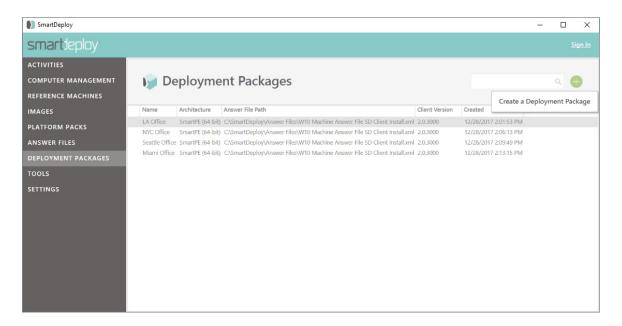
Network based deployment with SmartDeploy using the SmartDeploy Console can be used in conjunction with, or as an alternative to, creating boot media for use with Windows Deployment Services.

Before you begin

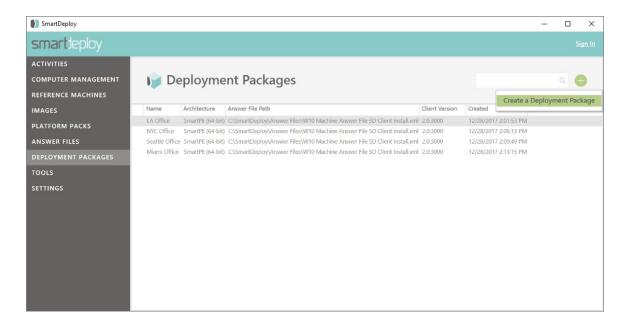
Ensure you have setup a service account to be able to access the computer where your SmartDeploy Console is installed.

Creating a Deployment Package

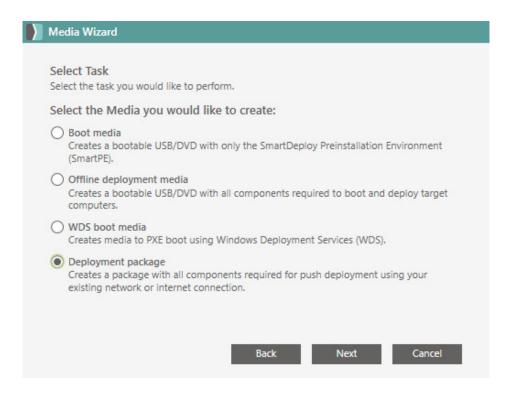
From the SmartDeploy Console, select the **Deployment Packages** tab from the left menu.



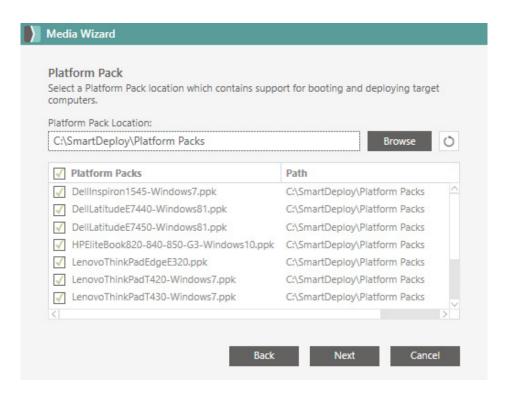
1. Click the + and then select Create a Deployment Package.



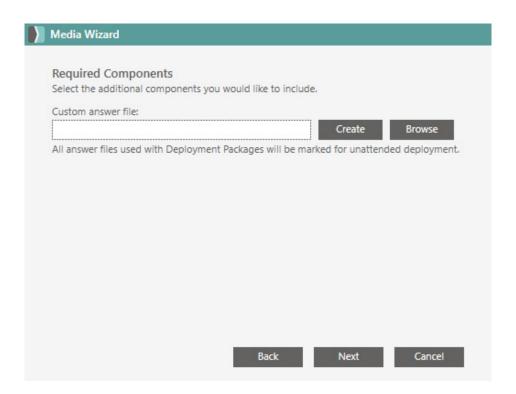
- 2. On the Welcome to the Media Wizard page, click **Next**.
- 3. Select **Deployment Package** on the Select Task page, then click **Next**.



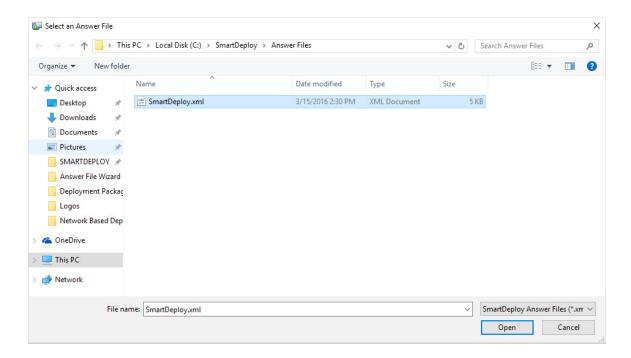
4. Select your Platform Packs, then click **Next**.

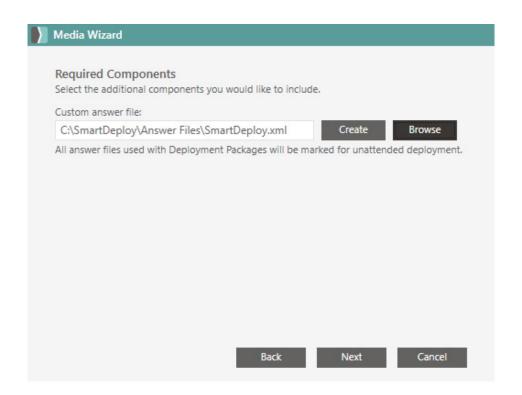


5. On the Required Components page, click **Browse** to select the answer file you have created for network deployment. If you have not yet created an answer file, select Create, and follow the Answer File Wizard (see page 24) to create your answer file.

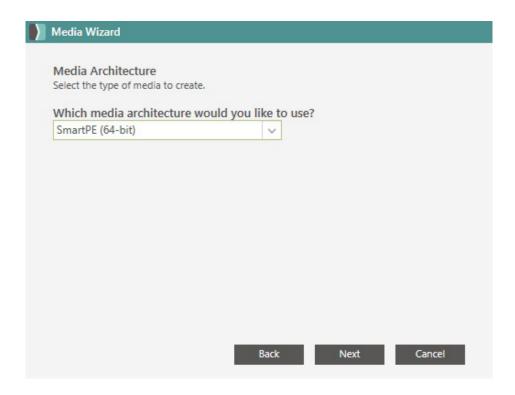


6. Click Open, and then Next.

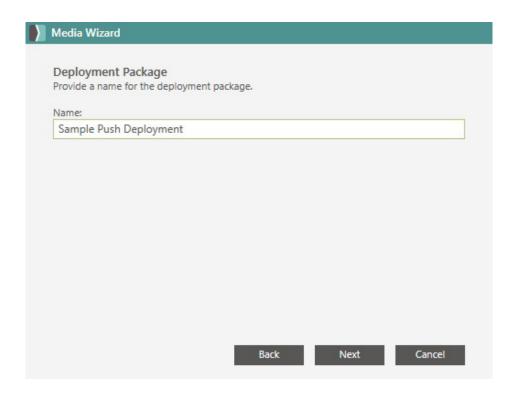




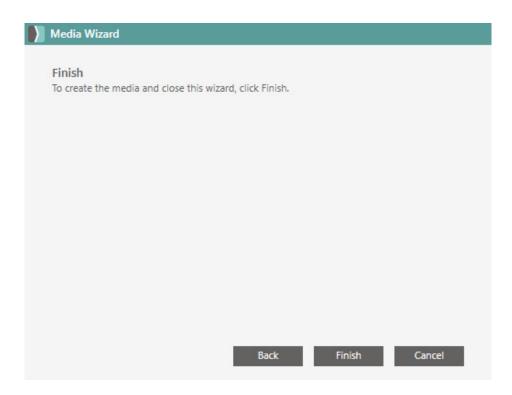
7. Select the Media Architecture that matches your image (32-bit or 64-bit), then click **Next**.



8. Enter a name for your deployment, then click **Next**.

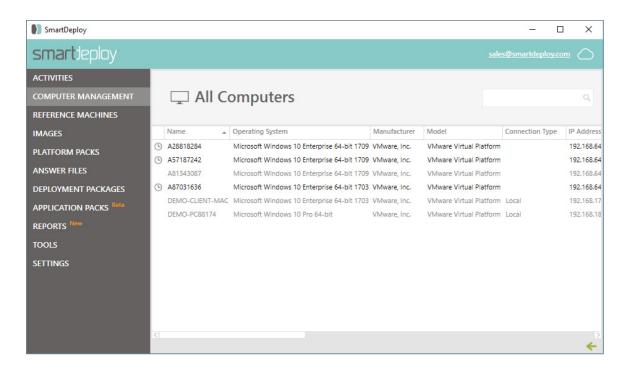


9. Click **Finish** to create your Deployment Package.

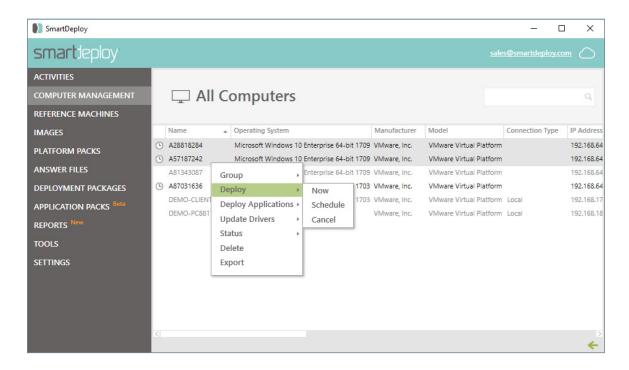


Initiate Deployment

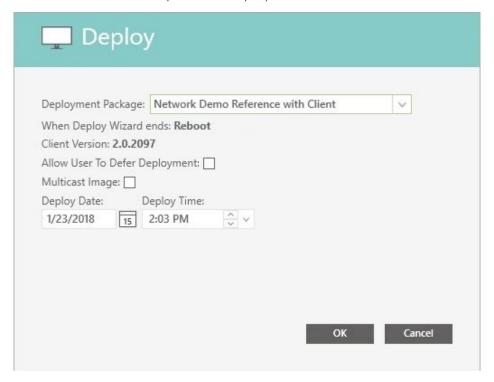
- 1. In the SmartDeploy Console, select the **Computer Management** tab.
- 2. Click on the All Computers group.



3. Right click on the device you want to deploy to. Navigate to **Deploy**, and then select **Now** or **Schedule**.



- 4. The Deployment Package window will appear. Select the Deployment Package you want to use from the dropdown. Then click **OK** to begin the deployment.
 - You can allow the user to delay the deployment by checking the box for Allow User to Defer Deployment.
 - To use Multicast to reduce the load on your network, you can select the box for Multicast Image. Multicast is recommended if you will be simultaneously deploying 25 or more clients. In order for multicast to function correctly, you must deploy an image that is located in the SmartDeploy Image Library on your SmartDeploy host. If the image is located in a different network location, multicast cannot be used.
 - If you selected Schedule from the Deploy menu, enter the date and time you would like to begin deployment. If the machine is off at the scheduled deployment time, SmartDeploy will utilize Wake-on-LAN to complete the deployment.



- 5. Your target device will receive the Deployment Package and automatically reboot into SmartPE and process your answer file to reimage your device.
 - If you checked the box to allow the user to defer deployment they will be prompted. They can reboot immediately or delay the deployment by 15, 30, 45, or 60 minutes.



Cloud Deployment

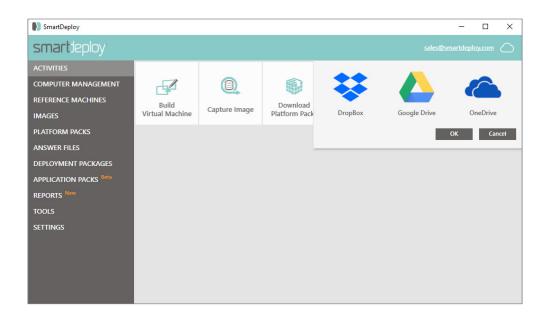
Sign In to Your Cloud Storage Provider

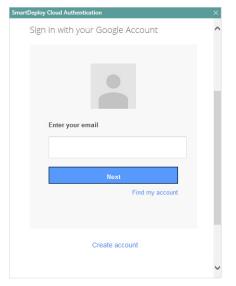
Click the Cloud icon in the top right corner of the Console. Select your preferred Cloud Storage Provider, and sign in.

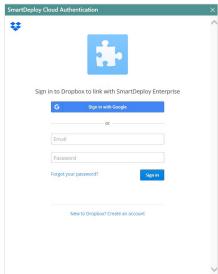
Upload Cloud Package

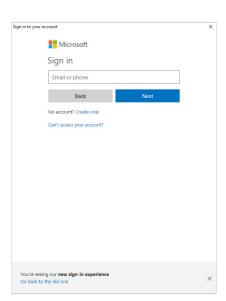
Use the Upload Wizard if you wish to store an image and Platform Packs in the cloud for deployment. SmartDeploy integrates with your existing third party storage provider to allow you to deploy images to remote offices quickly. This wizard will automatically create a Cloud Deployment Package and split the contents of your image and Platform Packs for faster and more reliable deployments.

Note: By authenticating against your cloud storage provider, you are allowing SmartDeploy access to your files. Your Cloud Storage Provider credentials are not saved as part of this process, instead a token is saved and used to re-authenticate against the service during deployment. This token will expire after an amount of time determined by the Cloud Storage Provider, at the time of expiration your answer file will need to be re-created.

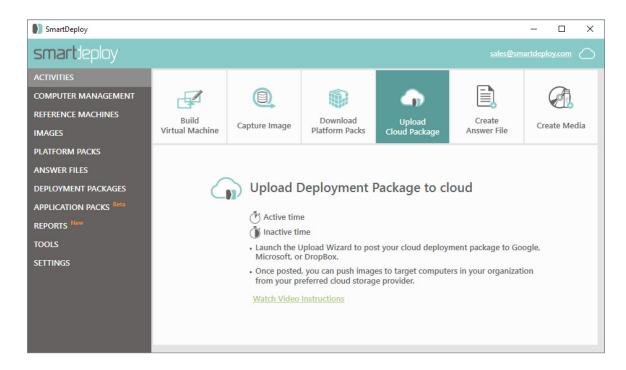




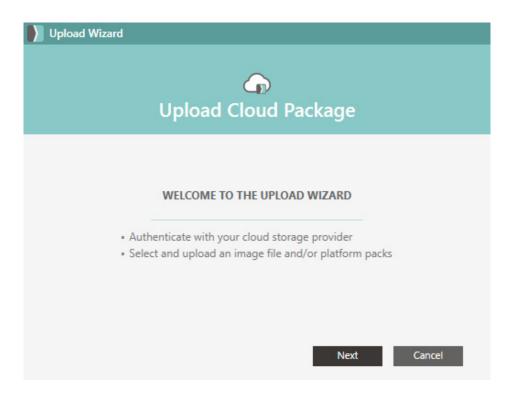




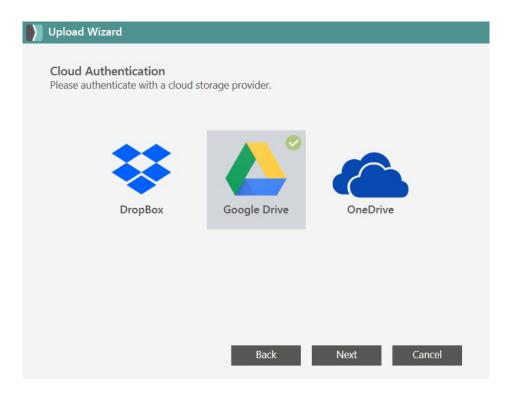
From the Activities tab, select **Upload Cloud Package** to launch the Upload Wizard.



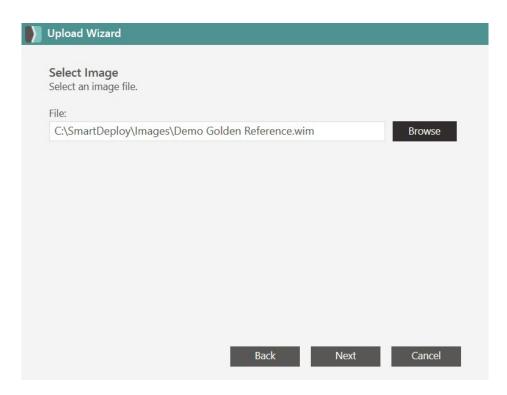
1. On the Welcome to the Upload Wizard screen, click **Next**.



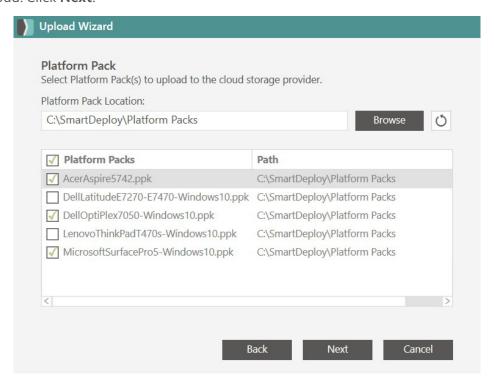
2. If you didn't already, select your cloud storage provider and sign in. Then click **Next**.



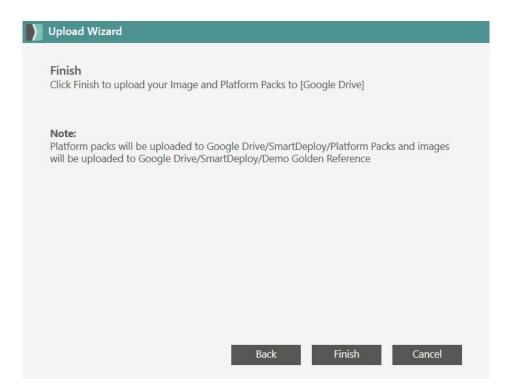
3. On Select Image page, click **Browse** and navigate to the image you want to upload. Click **Next**.



4. On the Platform Pack page, select the Platform Packs for the devices you wish to deploy from the cloud. Click **Next**.



5. Click **Finish** to upload your files to your cloud storage provider.

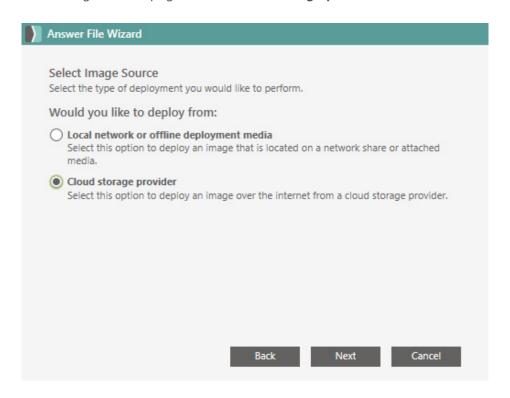


6. When the upload is complete click **OK**.

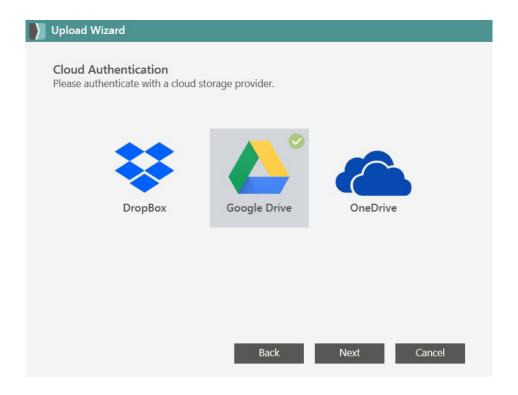
Note: The Images, Platform Packs and Deployment Packages libraries all have a new Uploaded To column that shows which items are uploaded to the selected cloud provider.

Create Answer File

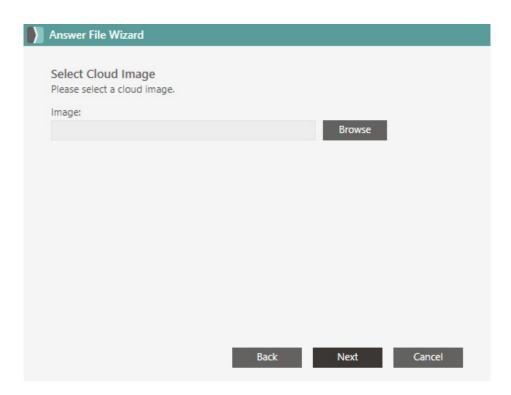
1. On the Select Image Source page, select **Cloud storage provider**.



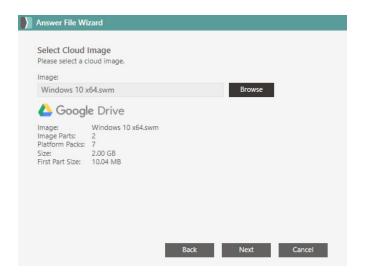
2. Authenticate with your cloud storage provider if needed, otherwise click Next.

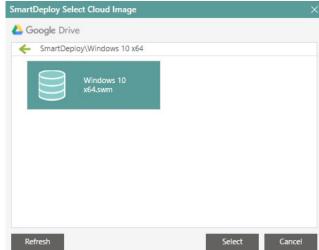


3. On the Select Cloud Image page, click **Browse** and navigate to your image.

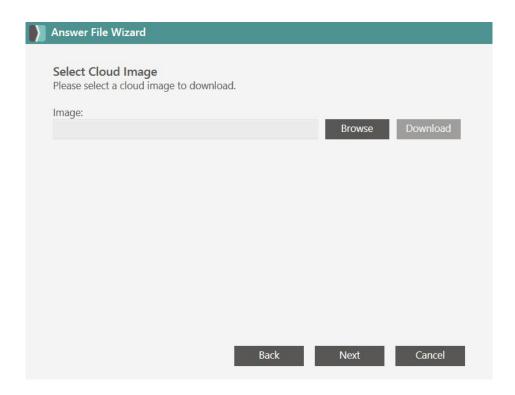


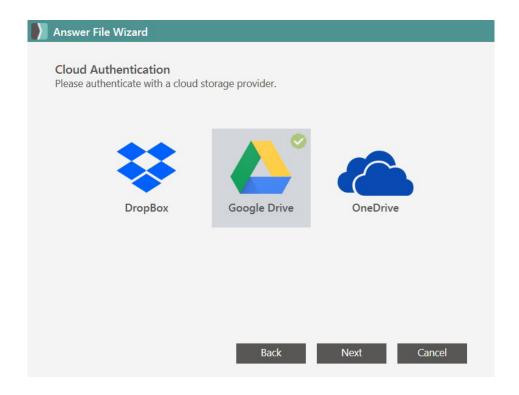
4. Select the image you want to use for deployment then click **Select**.





5. On the Select Cloud Image page, click **Download**. Once download is complete, click **Next**.

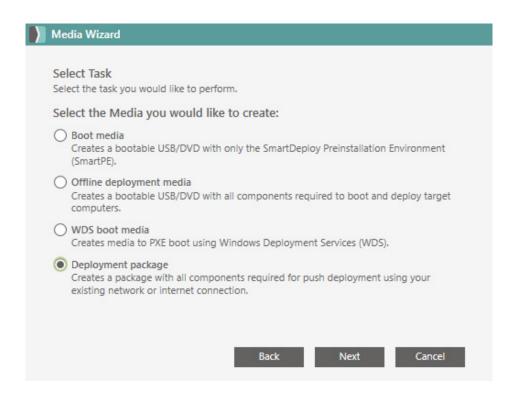




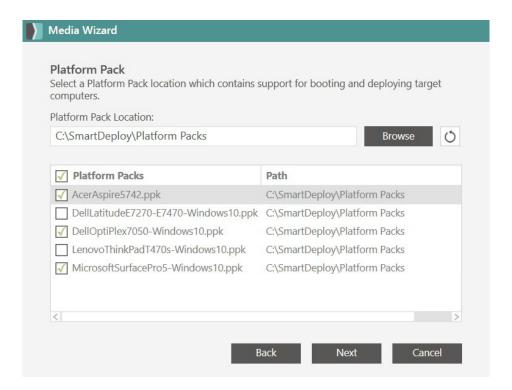
6. Follow the remaining steps in Step 4: Create Answer File, on page 24.

Create Media

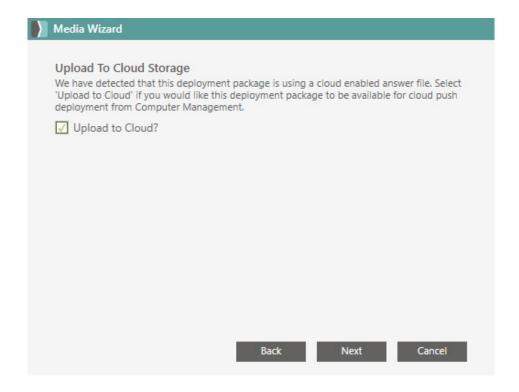
- 1. In the Activities tab, click Create Media.
- 2. On the Welcome screen, click **Next**.
- 3. Select **Deployment Package**.



4. By default, all your Platform Packs will be selected to have any WinPE drivers they contain injected into your SmartDeploy boot image. You may de-select any packs for devices that will not receive this boot image, and then click **Next**.



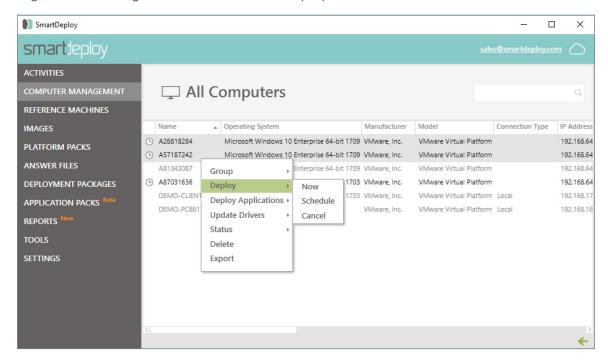
- 5. Click Browse and then browse to and select your answer file that's configured to use the Cloud Package and then click **Next**.
- 6. Select the desired architecture and then click **Next**.
- 7. Specify a name for this Deployment Package and then click **Next**.
- 8. Leave 'Upload to Cloud' selected and click **Next**.



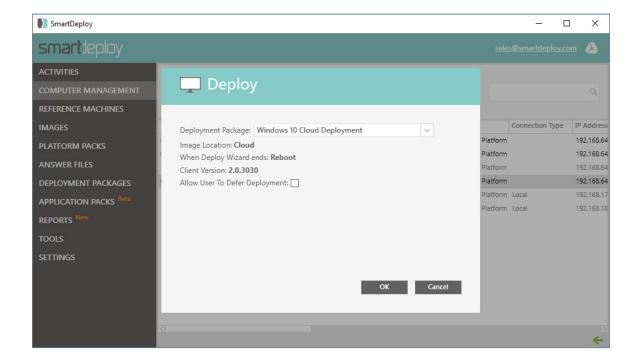
- Select your preferred Cloud Storage Provider and click Next.
 Note: You should see a green checkmark above the provider used when the Cloud Package upload was complete. Use this storage provider.
- 10. Click Finish.

Initiate Deployment

- 1. Switch to the **Computer Management** tab.
- 2. Select the group (if any) containing the target device.
- 3. Right click the target device, mouse over Deploy, and click **Now**.



- 4. Toggle the Deployment Package drop-down menu and select the desired Deployment Package.
- Confirm the Image Location is Cloud and then click OK.
 Note: It will take 5 or more minutes for the instructions to reach the client, and the SmartDeploy Deployment Package to download before the deployment process will begin.



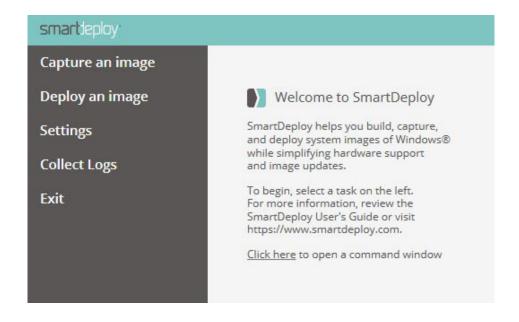
Attended Deployment

In order to complete your image deployment on your target device, you must follow the prompts in Deploy Wizard to configure options for the deployment. If you previously built and created media with an unattended answer file, then you will not need to click through these prompts – the deployment will simply start after a countdown. If you previously built and created media with an attended answer file, all of the Deploy Wizard options will be preconfigured according to your answer file, but you will need to click through the Deploy Wizard, and you will have the chance to make changes as needed.

SmartDeploy can deploy an image to a target device by using two methods: over a network or via physical media. This portion of the User's Guide will show you how to walk through the Deploy Wizard manually using boot media. If you would like to deploy your image using Windows Deployment Services, download and follow the guide: How to Integrate SmartDeploy with Windows Deployment Services. If you previously created a Deployment Package with the Media Wizard and would like to deploy your image using your network and the SmartDeploy Console, see Network Deployment, on page 56.

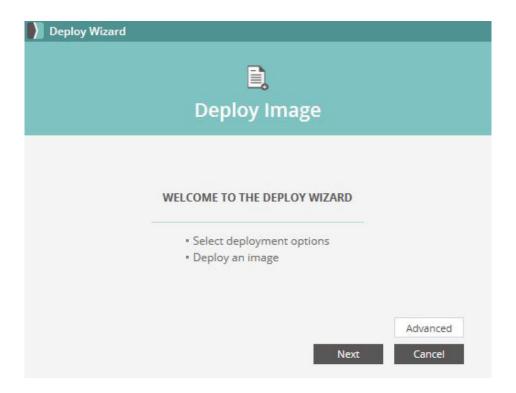
- 1. Start the target device and enter the BIOS settings. The keystroke sequence varies by manufacturer, please consult the computer's documentation for the sequence to do this.
- 2. Edit the boot sequence so the deployment media device is first on the list.

 Note: Some older computers do not support booting from a USB device, such as an external hard drive or USB memory stick. Check with your computer manufacturer to determine if this method is supported. If not, you will need to build deployment media that is supported by your target device.
- 3. Insert the CD/DVD or attach the external device with the deployment environment to the target device.
- 4. Restart the target device. When prompted, press a key to boot the deployment environment.
- 5. In the SmartPE environment, you can click Settings to confirm the correct network and mass storage drivers for the target device are loaded.
- 6. Click Deploy an image. The Deploy Wizard starts.

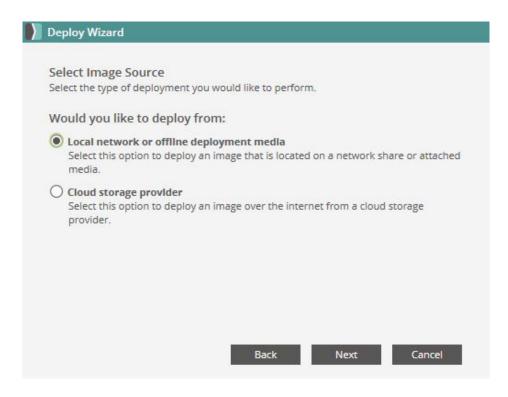


7. On the Welcome to the Deploy Wizard page, you have the option to customize several Advanced options that let you override Windows default settings.

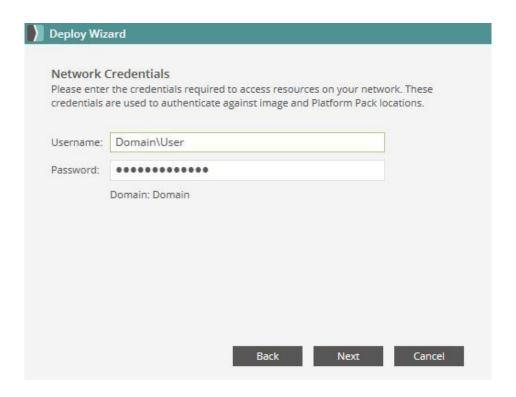
For details about the Advanced options, see <u>Advanced Options</u>, on page 33.



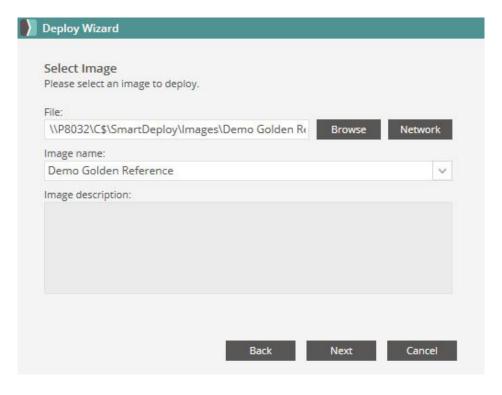
8. After you have finished any changes to the Advanced settings, click **Next**. The Select Image Source page appears, select your image source.



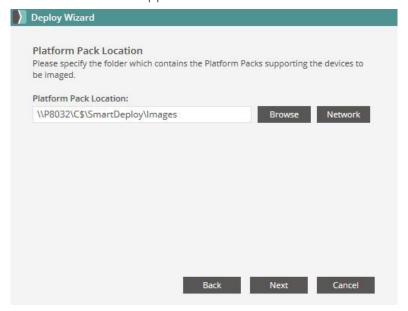
9. Enter the credentials required to access the resources on your network where your image and Platform Packs are located. Click **Next**.



10. Click **Browse** (if your image is stored on a network, click **Network** to map to a share) and select the image that you want to deploy. Click **Next**.

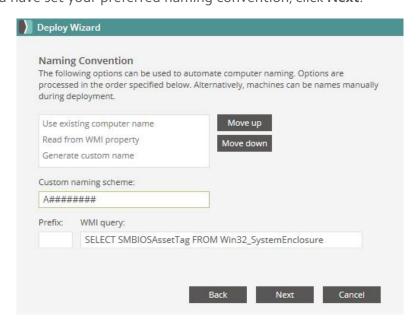


11. On the Platform Pack Location page click **Browse** (if your Platform Packs are stored on a network, click **Network**). Select the folder that contains your Platform Packs and click **Next**. **Note**: If there is no .PPK file for your target device you will be notified, and only inbox drivers that are included with Windows will be applied.

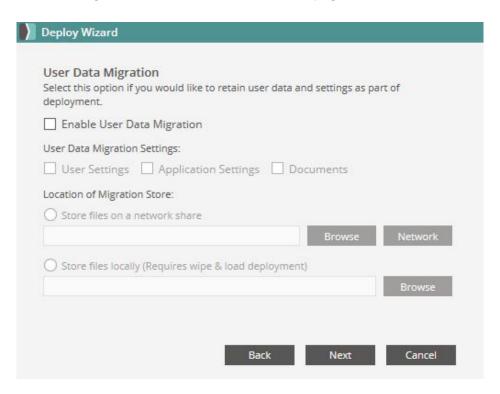


- 12. On the Naming Convention page, you can modify the naming hierarchy by moving the options in the list up or down. You can modify the WMI query (e.g. to look for the machine serial number rather than asset tag), or set up a custom naming scheme with different prefixes or a different number of random digits. By default, SmartDeploy will use the following hierarchy to assign a name to the deployed computer:
 - 1. Use existing computer name. If the computer already has a name (e.g. if you are deploying a new image to an existing machine), SmartDeploy will detect it.
 - **2. Read from WMI property**. The next priority is to read from a WMI property, such as an asset tag.
 - **3. Custom name**. If the machine has no WMI property to read, SmartDeploy will assign a random name based on the scheme A#######, where each # is a random digit.

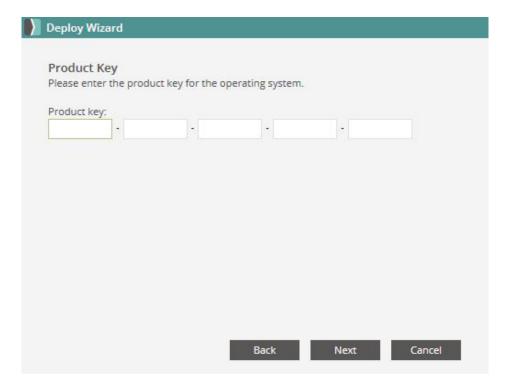
Once you have set your preferred naming convention, click Next.



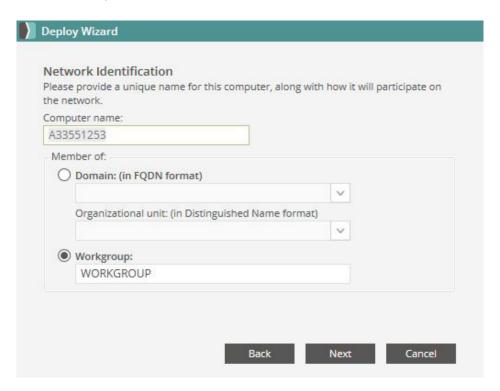
13. If you would like to migrate a user's data and settings during a deployment, check the box to Enable User Data Migration. For more information see page 29. Click **Next**.



14. On the Product Key page, you can enter the product key now if you did not specify one when you captured your image. Click **Next**.



15. On the Network Identification page you can change the computer name and specify whether the device will be a member of a domain or workgroup. When you have typed the target device's network identification, click **Next**.

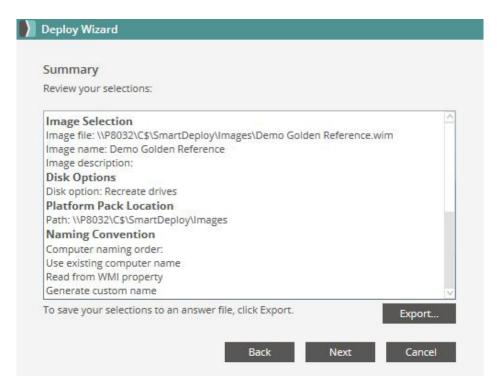


16. On the Regional Settings page, specify the time zone and language. Click **Next**.

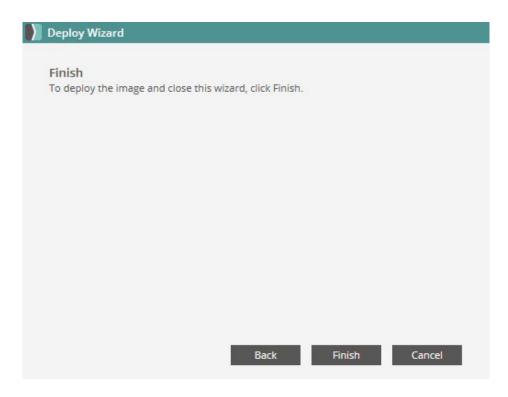


- 17. Review the information on the Summary Page. Click Back to correct any information. Click Next.
 - If you want to reuse these settings for future deployments, click Export to save the details as an XML answer file that can then be added to deployment media.

For more information about exporting an XML answer file, see <u>Appendix 5: Exporting an XML Answer File, on page 116</u>.



18. When you are ready to deploy the image, click **Finish**. The image is loaded onto the target device and the computer restarts.



SmartDeploy Console

Status & Column Information

- Sort columns by clicking any of the headings.
- Drag and drop any heading to rearrange the columns.
- Right click to select or deselect columns to display.

Computer Management

Computer Management allows the IT admin to interact with client devices in a number of ways. Most commonly to push images, push Platform Pack updates, and push applications to computers. These interactions can be done on-demand or scheduled. Devices within Computer Management can be categorized with custom names to keep the console organized. For a device to appear in the SmartDeploy Console, the client must be installed.

Icon Guide



Currently Deploying



Failed Deployment



Error Connecting to Console



Scheduled Deployment



PPK Update Available



Deploying PPK



Application Update Available

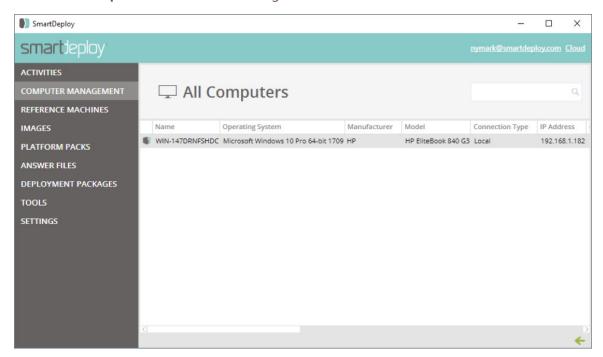


Application Deploying

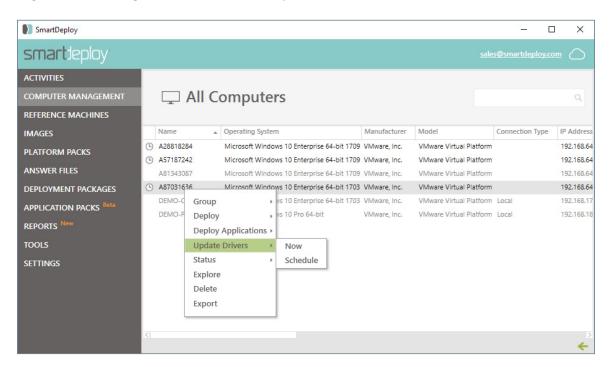
Push a Platform Pack

SmartDeploy can help keep machines running smoothly between image deployments by pushing Platform Packs to target devices. From the Computer Management tab right click on a device or group of devices to bring up the options menu. Click Update Drivers to push the latest Platform Pack to those devices.

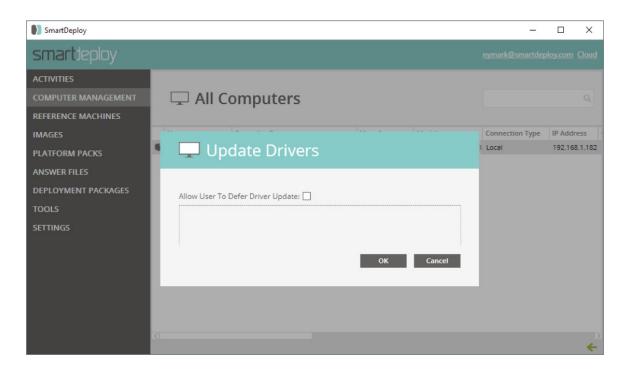
- 1. From the SmartDeploy Console select **Computer Management**.
- 2. Select All Computers and locate the target device.



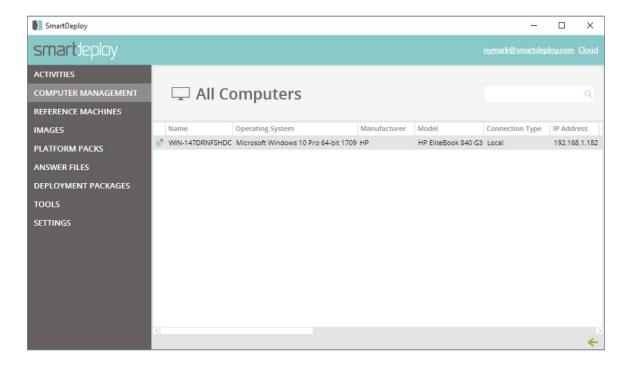
3. Right click the target device and select **Update Drivers**.



- 4. From the resulting screen specify whether to allow the user to defer the update and select **Next.**
- 5. Click **Yes** to confirm the action.



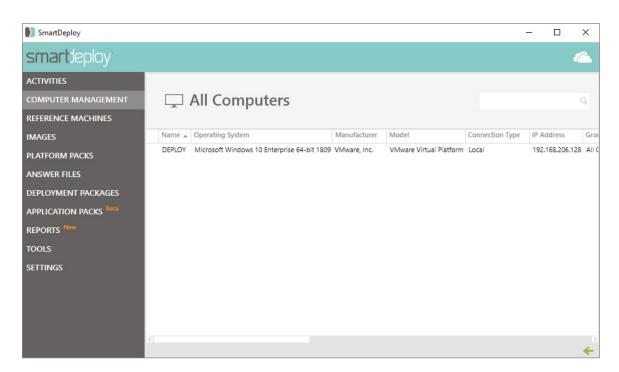
6. Note the icon next to the computer will update to show that drivers are being applied.



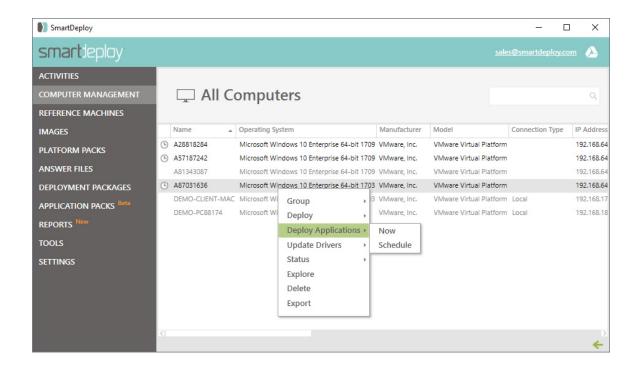
7. Once the process is complete the icon will go away and you can see the status of driver installation from the Application event log in Event Viewer on the target device.

Application Deployment

1. Click **All Computers** and locate your target device.

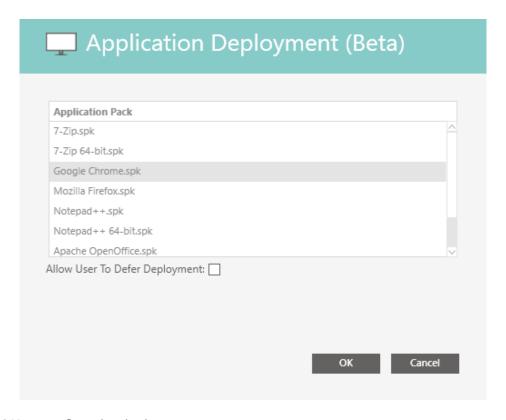


2. Right click on the target device and click **Deploy Application**.

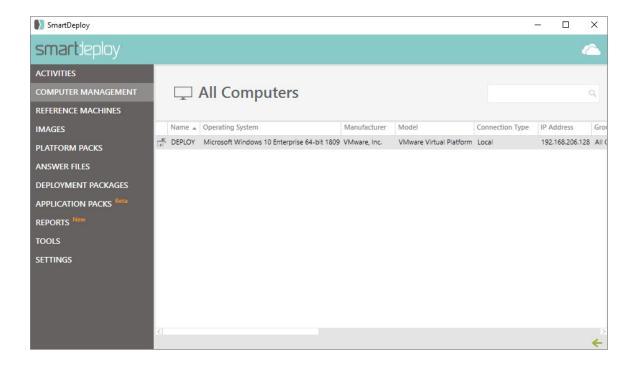


3. To deploy immediately, click **Now**. To schedule a later deployment, click **Schedule**.

4. Select an Application Pack, check the box to allow the user to defer the application deployment, and a time, if you selected schedule, then click **OK**.



- 5. Click **OK** to confirm the deployment.
- 6. The icon next to the computer will display the state of the deployment: scheduled, deploying, or failed. The icon will clear when the application has successfully been deployed.



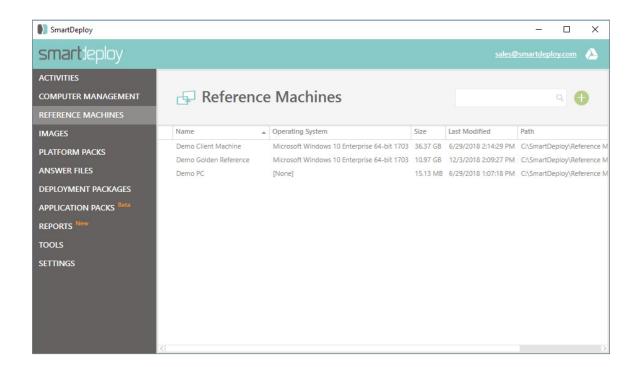
Connection Type

There is a field in computer management called "Connection Type." The Connection type will be "Local" if the target machine is on the same network as the console host. If the target machine is on a network that is not routable to the console host machine but has a Cloud Broker enabled license key input into the client it will be "Cloud."

Reference Machines

Reference Machines are used to build images for SmartDeploy. Reference Machines should contain the Operating System, patches, and applications that the IT admin ultimately wants installed on target devices.

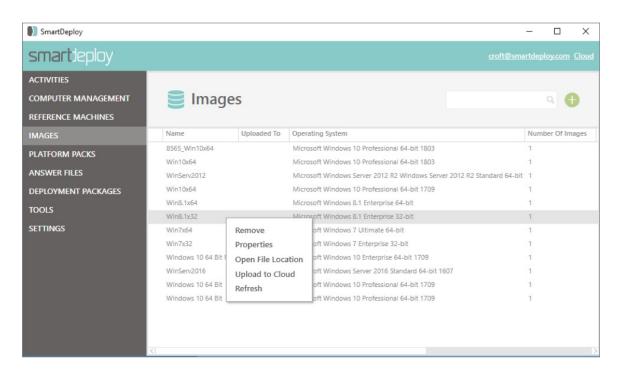
- Click the + button on the top right to:
 - Create a Reference Machine. This selection will launch the Build Wizard.
 - Import a Reference Machine. This selection will open file explorer for you to navigate to a virtual machine file.
- Capture any of your reference machines, by right clicking and selecting Capture. This will launch the Capture Wizard.



Images

SmartDeploy images are discrete files that contain a compressed set of all the information captured from a reference machine. Images contain all of the operating system files, applications, data, settings, and properties of a reference machine.

- Click the + button on the top right to:
 - Capture an Image. This selection will launch the Capture Wizard
 - Import an Image. This selection will open file explorer for you to navigate and select a .wim file
- View the properties of an image, including the name and description that was provided at creation. Right click and select Properties.
- Upload your image to your Cloud Storage Provider. Right click and select Upload to Cloud. The upload will be queued.



Platform Packs

The Platform Packs tab displays your Platform Pack library. This includes all the Platform Packs you have downloaded.

- Click the + button on the top right to:
 - Create a Platform Pack
 - Download a Platform Pack. This will open the Download Platform Pack window.
 - Import a Platform Pack
- Right click a Platform Pack to edit it. This will open Platform Manager.
- Right click to Upload a Platform Pack to your Cloud Storage Provider by selecting Upload to Cloud.

Icon Guide



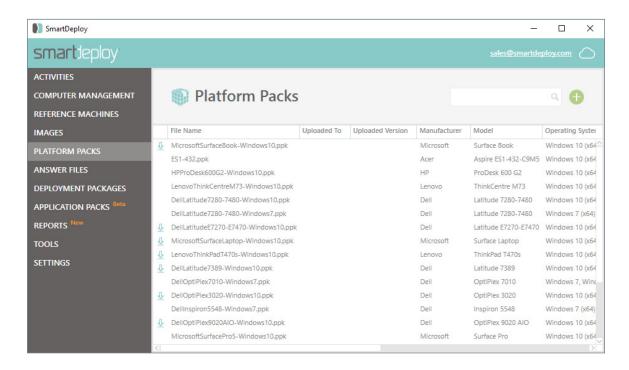
Uploading to Cloud (Platform Packs, Images, Answer Files)



Platform Pack Update Available

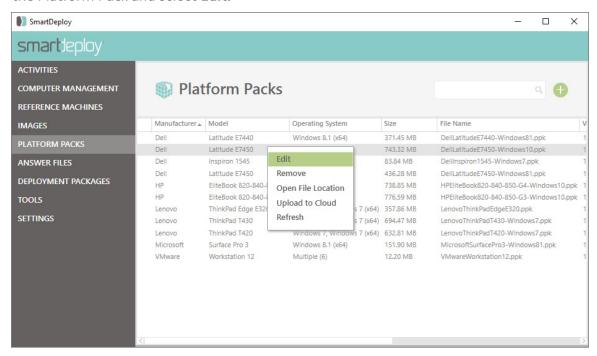


Platform Pack Downloading

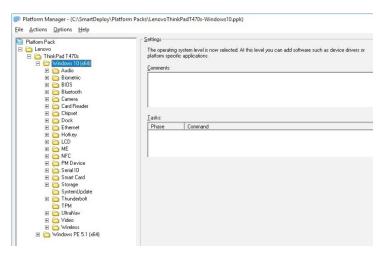


Open a Platform Pack

1. From the **Platform Pack Library** tab in the Console, select the PPK you wish to open. Right click the Platform Pack and select **Edit.**



Your Platform Pack should look similar to the one in the following image:



Note: Refer to this image for editing and extracting.

Editing Platform Packs

You can modify an existing Platform Pack if you'd like to add or remove support for a particular operating system, or specific driver.

Remove support for an operating system from a Platform Pack

- 1. From the **Platform Pack Management** tab, right click the Pack you wish to edit and select **Edit**.
- 2. Expand the tree to the manufacturer and model you want to modify.
- 3. Right click the operating system that you want to remove. Then click **Delete**.
- 4. In the confirmation dialog, click Yes. The operating system will be removed from the Platform Pack.
- 5. Click File and then Save.

Add or remove drivers in a Platform Pack

- 1. From the **Platform Pack Management** tab, right click the Pack you wish to edit and select **Edit**.
- 2. Expand the tree to the manufacturer and model you want to modify.
- 3. Right click the node you want to modify. Right click functionality is available at the Make/Model, OS/Device node level.
 - a. To add a driver, select right click on the OS node and select Add, browse to the folder containing the driver you want to add, and click OK.
 - b. To delete a driver, right click on the driver node and select Delete.

Extracting Platform Packs

This functionality is available for advanced users. However, most editing tasks can be accomplished by simply right clicking the appropriate node and selecting Add or Delete.

Note: This functionality is not available with the trial version of SmartDeploy. You must have a properly licensed version of SmartDeploy to extract the contents of a Platform Pack.

- 1. Right click the Make, Model, OS or Device node that you want to modify. Then click Extract.
- 2. Browse to an empty folder or create a new folder for the extracted drivers. Then click OK. The device drivers are extracted to the folder.
 - **Caution**: The next step deletes the entire operating system tree under the selected manufacturer and model. This includes all custom filters, tasks, and settings for the device drivers and supporting software. Make sure that you are working from a copy of the original Platform Pack, and take a few minutes to note this information so that it can be easily reentered when needed at the end of this section.
- 3. In the Platform Manager, right click the operating system that you just extracted, and then click Delete. Click OK.
- 4. Open Windows Explorer to the folder where the drivers were extracted. Do one of the following:
 - a. To add drivers, add the desired files and/or folders. For more information and best practices, see Create a new Platform Pack, on page 110.
 - b. To remove drivers, delete the desired files and/or folders.
- 5. In the Platform Manager, expand the tree to the manufacturer and model you want to modify.
- 6. Right click the computer model, then click Add. The Add new software dialog will appear.
- 7. In the Target operating system list, select the same operating system you just deleted.
- 8. Click Browse, and then select the platform folder that contains your device drivers. Click OK.
- 9. Browse the device driver tree and confirm your device drivers have been added.
- 10. Go through the device driver tree, and recreate the custom filters, tasks, and settings.
- 11. When you have finished your changes to the Platform Pack, click File, and then click Save.

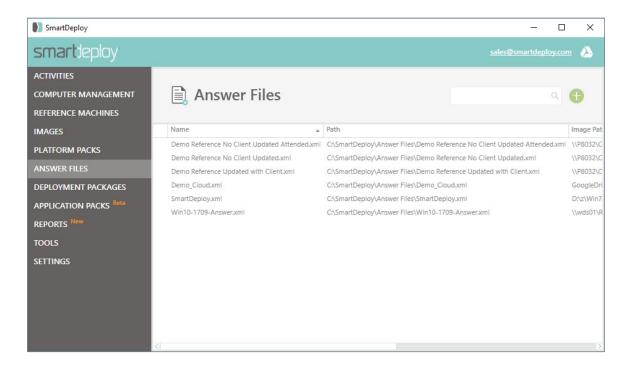
Adding filters and tasks to Platform Packs

If desired, you can add WMI filters and tasks to a Platform Pack so that they will run when the pack is deployed to a target device. For more information about the WMI Filter Wizard, refer to <u>Appendix 4:</u> WMI Filters and Tasks, on page 112.

Answer Files

Answer files contain all the information and settings that an IT admin would like to use during a deployment. Answer files contain information like computer name, domain-join credentials, custom scripts, and more.

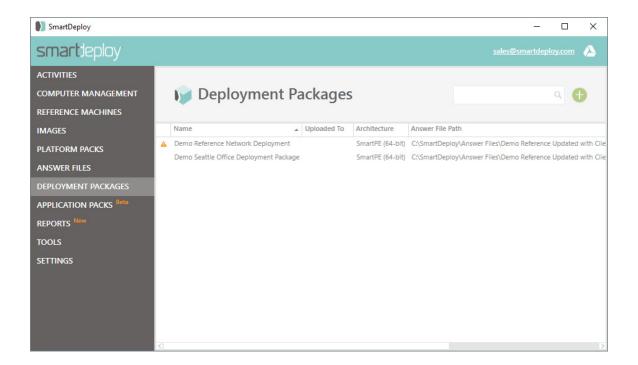
- Click the + button on the top right to:
 - Create an Answer File. This selection will launch the Answer File Wizard.
 - Import an Answer File. This selection will open file explorer for you to select an .xml file.
- Right click a selection from the list to edit an answer file.



Deployment Packages

Deployment Packages contain all the information necessary to perform a zero-touch push deployment with SmartDeploy. Deployment Packages are a media type that includes an answer file, image, and Platform Packs to be used on a target device. Deployment Packages are used to push an image across a local network or from the internet.

- Click the + button on the top right to:
 - Create a Deployment Package for push deployment from the Console (see page 56)
- Right click a Deployment Package in the list to edit it.



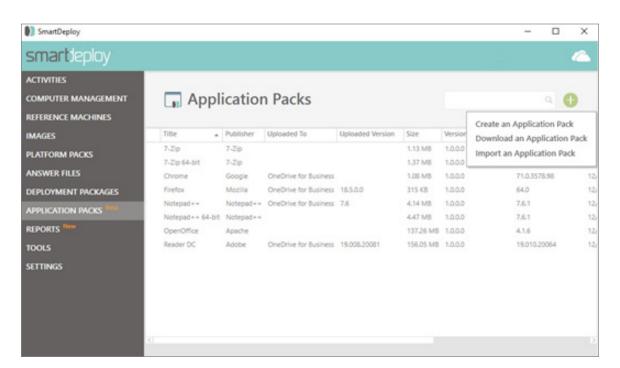
Application Packs

Application Packs are files that contain all the information needed to install individual software applications in an automated fashion to SmartDeploy client devices. IT admin's can download, import, or create new Application Packs that provide the ability to push software to devices. Application Packs are often used after a computer has been imaged with SmartDeploy to keep a device up-to-date with new software versions as well as patches or updates.

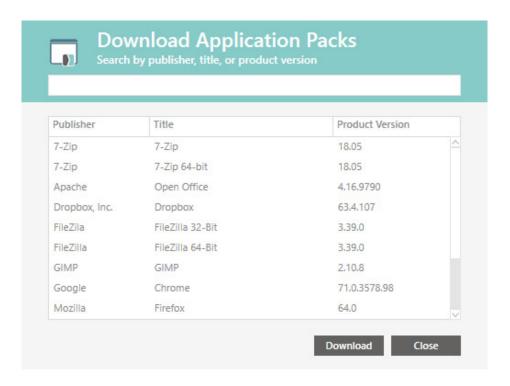
- Click the + button on the top right to:
 - Create new Application Packs
 - Download new Application Packs
 - Import new Application Packs
- Right click an Application Pack to edit it.
- Right click an Application Pack to upload it to your Cloud Storage Provider.

Download an Application Pack

1. From the Application Packs tab click on the + and click **Download an Application Pack**.

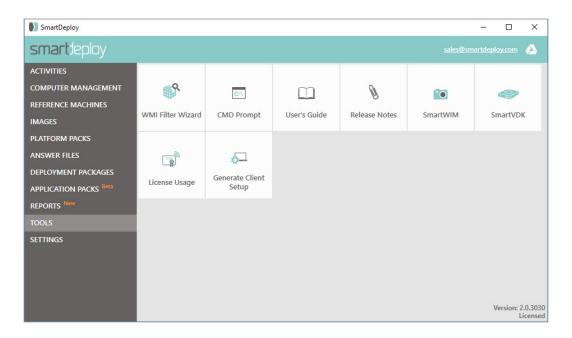


2. In the Download Application Pack window search for an application by publisher, title, or product.



3. Select the pack you wish to download and click **Download**.

Tools



WMI Filter Wizard

WMI Filter Wizard is used to help IT admin's create custom WMI filters that usually limit a desired function to occur on devices that meet a specific criteria. For example, a WMI filter may be used to run on only one manufacturer or model of device.

CMD Prompt

SmartDeploy CMD line tools are used to service and modify WIM and virtual machine files.

SmartWIM and SmartVDK

For advanced users, the SmartWIM and SmartVDK deployment tools provide programmatic access to Windows Imaging files and virtual hard disks, respectively. SmartDeploy includes the latest versions of these tools.

SmartWIM provides programmatic access to the Windows Imaging (WIM) file format. Smart VDK provides programmatic access to virtual hard disk files.

Each tool can provide a Parameter List of available functions.

Example:

SMARTVDK [Flags] /Operation [Parameter List]
Operation [COPY | CREATE | INFO | MOUNT | SIGNATURE | SERIAL | UNMOUNT]

For help on a specific operation type, use the built-in "?" flag: SMARTVDK /Operation /?

Example flags:

SMARTVDK /COPY /?
SMARTVDK /CREATE /?
SMARTVDK /INFO /?
SMARTVDK /MOUNT /?
SMARTVDK /SIGNATURE /?
SMARTVDK /SERIAL /?
SMARTVDK /UNMOUNT /?

License Usage

Licensed SmartDeploy customers can check the status of their deployments at www.smartdeploy.com/account.

SmartDeploy is licensed on a per-machine basis. A license is required for each machine on which a SmartDeploy Deployment Package is used. The total number of target machines on which you use SmartDeploy-created Deployment Packages may not exceed the quantity of machine licenses purchased.

For more information on licensing see the Licensing FAQ and the End User License Agreement.

Contact

Whether you need to report a bug, make a feature recommendation, ask a question, or provide general feedback, feel free to contact us. Email is the primary product support channel, and we will respond to your request within one business day.

For product support, send an email to support@smartdeploy.com or submit a ticket. If you have a critical situation you can call SmartDeploy directly at 1 (888) 7-DEPLOY.

SmartDeploy

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Appendix 1: Capture with the VM running (Warm Capture)

Create a SmartDeploy Boot ISO

- 1. From the Activities tab, Click the Create Media.
- 2. On the Welcome Screen, click Next.
- 3. Select Boot Media and click Next.
- 4. Click the checkbox next to **Platform Packs** to deselect all the Platform Packs and click **Next**. Note: Most Virtual Box, VMware, and Hyper-V machines do not require additional drivers in the SmartDeploy boot media intended for warm captures.
- 5. Click **Yes** when asked to confirm leaving out Platform Packs.
- 6. Leave the Optional Components fields blank, skipping the selection or creation of an answer file and click **Next**.
- 7. On the Media Type page select DVD and click **Next**.
- 8. Click **Browse** and select a location and file name for the new SmartDeploy ISO file.
- 9. Leave the 'Burn Now' unchecked and click **Next**.
- 10. Click Finish to create the ISO.

Complete the Warm Capture

- 1. Open your Virtual Machine settings and mount the SmartDeploy ISO you created previously on the Virtual Machine.
 - **Note:** VMware virtual machines may require you to check the box for 'Connected at Power On' to boot from the ISO.
- 2. Start the virtual machine and boot to the virtual CD/DVD drive that you mounted in Step 1. **Note:** If prompted, press any key to boot to CD/DVD. The goal is to boot the VM to the SmartDeploy PE ISO rather than the previously installed OS.
- 3. Click Capture an image, and continue through the Capture Wizard as normal.

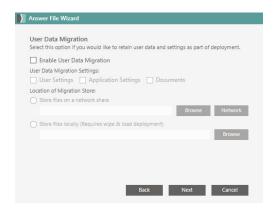
 Note: When performing a Warm Capture, you will be required to map a network drive and save your image file to that network location.





Appendix 2: User Data Migration

When deploying an image to an end user's device, you may want to migrate that user's data to the new device. To simplify this process, SmartDeploy has integrated Microsoft's User State Migration Tool (USMT) into an easy-to-use interface. This can be found on the User Data Migration page of the Answer File Wizard.



Before we begin, let's review the basics of how USMT works. There are 2 parts to USMT: ScanState and LoadState. ScanState will check the files and registry and build a migration store file (*.mig) based upon the options selected. LoadState will then take the migration store file and apply the user's data and settings to the operating system.

Steps to enable USMT:

- 1. Launch Answer File Wizard from the SmartDeploy Console
- 2. Select the settings and image for the deployment until you reach the **User Data Migration** page
- 3. Check the box to Enable User Data Migration
- 4. Under **User Data Migration Settings**, check the box(es) for the data you want to migrate:
 - User Settings: User folders, settings, and documents (C:\Users\...)
 - Application Settings: Settings for commonly used Microsoft and other software
 - Documents: Additional files on the C: drive that are not operating systems files or applications **Note**: A more detailed list of what is migrated can be found at https://docs.microsoft.com/en-us/windows/deployment/usmt/usmt-what-does-usmt-migrate

5. Decide on the **Location of Migration Store**:

- Store files on a network share: Store your .mig file to a server on the network. The .mig file will be automatically downloaded back to your device after the operating system has been deployed.
- Store files locally (Requires wipe & load deployment): Store your .mig file in the specified folder of the machine you are deploying. The wipe & load option will maintain the current partition structure, deleting all data from the disk except the folder selected as the migration store. *Note: wipe & load requires the partition structure of the image matches the current partition structure of the device (e.g. do not use wipe & load when migrating from Windows 7 to Windows 10 due to the difference in System partition sizes)
- 6. Complete the rest of the Answer File Wizard and save.

When using an answer file with USMT enabled during deployment (in SmartPE), ScanState will run before the disk is provisioned. If the migration store file is saved to a network location, the file will be downloaded back after the image is deployed. LoadState will occur once the machine boots back up into Windows. Currently, there is no interface to display the LoadState progress, but a log can be found at C:\Windows\Temp\LoadState.log. Avoid rebooting the machine until LoadState.exe completes (you can check Task Manager > Processes to check if it is still running).

Advanced Options

If you are a USMT power user and the default settings for USMT are not sufficient for your needs, you can add additional arguments to the ScanState or LoadState commands. You will need to edit the answer file directly.

- 1. Open your answer file in a text editor
- 2. Locate the <migration> node
- Add a child <usmt_scanstate_arguments> or <usmt_loadstate_arguments>
- 4. Add your argument and then close the child (e.g. <usmt_scanstate_arguments>/uel:30</usmt_scanstate_arguments)

This particular example will only capture users that have logged in within the last 30 days.

```
<prefix></prefix></prefix>
  <wmi query>SELECT SMBIOSAssetTag FROM Win32 SystemEnclosure/wmi query>
</identification>
<migration skip="0">
  cprotected_folder>Backup</protected_folder>
  <virtualization_platform />
  <create_desktop_shortcut>false</create_desktop_shortcut>
  <files_to_exclude />
  <usmt_migration>true</usmt_migration>
  <migrate_user_settings>true</migrate_user_settings>
  <migrate_application_settings>true/migrate_application_settings>
  <migrate documents>true</migrate documents>
  <hardlink_migration />
  <network_migration>true</network_migration>
  <hardlink_migration_path />
  <network_migration_path>\\p8021\c$\smartdeploy</network_migration_path>
  <usmt_scanstate_arguments>/uel:30</usmt_scanstate_arguments>
</migration>
<tasks />
<client />
```

Appendix 3: Creating Custom Platform Packs

In almost all cases, you will not have to create a new Platform Pack from scratch. It is easier to download an existing Platform Pack from the SmartDeploy library for your specific platform. If your computer model is not listed in the Platform Pack download wizard and you have a current support contract, please use the online request form to submit your request.

Creating a new Platform Pack is more suitable for advanced system administrators who support diverse hardware environments. However, with enough analysis and planning, you can create your own Platform Pack. When you plan for a Platform Pack, follow these best practices:

- Include support for as many operating systems as you can within a Platform Pack. It is better to build in support even if it is not currently needed than to need it and not have it. This is especially useful for remote locations; you can distribute a Platform Pack that is designed to support all operating systems and have it available when you need it.
- Include support for Windows PE. Windows PE provides the start-up environment for SmartPE, but it may not support newer network or mass storage devices. By adding Windows PE as a supported operating system, you ensure that the target device can be started with the appropriate support before imaging.
- Install device-dependent software from a Platform Pack; install device-independent software on the reference computer. Modem software specific to the modem chip used in a laptop would be appropriate for a Platform Pack. Device-independent software that you intend to run on all target devices, such as a plug-in for playing DVD discs, should be installed on the reference computer.

Download device drivers and support software

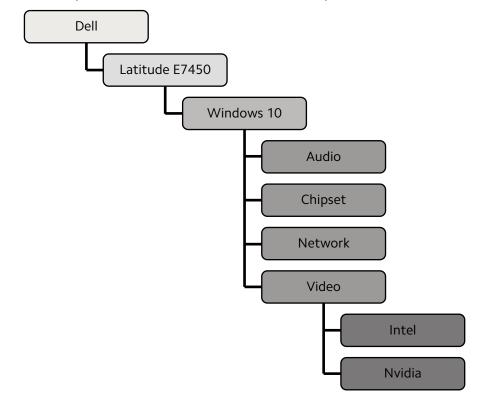
- 1. Open a browser and go to the computer manufacturer's website. For example, if you are adding support for a Dell Latitude E7450, you can find device drivers for that model by visiting the support section of http://www.dell.com.
- 2. Locate the device drivers and support software for the computer model and operating system you would like to support. **Note**: Make sure the files you select can be used with the operating system you intend to deploy. The device drivers must match the operating system version, such as Windows 10, and the processor architecture, such as 64-bit.
- 3. Download the files to a temporary folder on your hard disk.

Create a new platform folder and extract device drivers

- 1. Open Windows Explorer and create a new folder on your hard disk. Name the folder based on the manufacturer, such as C:\Dell.
- 2. Go to the new manufacturer folder and create a new folder. Name the folder based on the model, such as C:\Dell\Latitude E7450.
- 3. Go to the new model folder and create a new folder. Name the folder based on the operating system, such as C:\Dell\Latitude E7450\Windows 10.
- 4. Go to the new operating system folder and create new folders for each device class, such as C:\Dell\Latitude E7450\Windows 10\Audio.

Note: If there is more than one device driver or manufacturer for a device class, create new folders in the device class folder as required. For example, if there are two different video card manufacturers for a computer model, create folders for each manufacturer in the video folder.

5. Review the new platform folder structure. The hierarchy should be similar to the following:



- 6. Extract (do not install) each of the device driver packages to their respective folders.

 Note: Many device driver and support packages are self-extracting, or can be easily extracted with file compression software such as WinZip. Some packages can be difficult to extract, such as Setup (EXE) files. Sometimes Setup files can be extracted by using the /s /e command line switches. This will extract, but not install the software. The default extract folder varies, but it will almost always be a new folder at the root of your Windows volume. Microsoft Software Installer (MSI) packages can often be extracted by performing an administrative install. For example, "msiexec.exe /a installpackage.msi /qb TARGETDIR=C:\Temp" will extract the contents of the MSI package to C:\Temp. Once extracted, use Windows Explorer to move the files to their respective folders.
- 7. Optionally, you can remove any unnecessary files, such as files for other processor architectures. This is an advanced step that should only be performed by advanced systems administrators that are familiar with device driver installation architecture.

Create a new Platform Pack

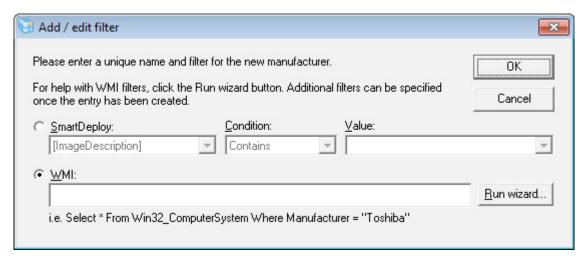
- 1. From the **Platform Pack Library** tab in the Console, click the + button and select **Create a Platform Pack**.
- 2. Click File, and then click New. Browse to the place where you want to save your new Platform Pack. Type a name for your new Platform Pack, and then click Save.
- 3. In the tree pane, right click Platform Pack, and then click Add. The Add new manufacturer dialog appears.
- 4. In the Manufacturer name list, select the computer manufacturer's name. Ensure that Automatically generate filters is selected, and then click OK.
- 5. In the tree pane, right click the new manufacturer folder, and then click Add. The Add new model dialog appears.

- 6. In the Model name field, type the computer model name, and then click OK.

 Important: The model name is used to uniquely identify the computer model during deployment. If you do not know the exact model name of the computer, click Run Wizard to start the WMI Filter Wizard. This will let you identify the manufacturer, model, and other properties of a computer.
- 7. Right click the new model folder, and then click Add. The Add new software dialog box appears.
- 8. In the Target operating system list, select the appropriate operating system.
- Click Browse, and then select the operating system folder that you created in step 2.
 For example, C:\Dell\Latitude E7450\Windows 10. Click OK.
 Note: It is important to select the operating system folder and not the manufacturer, model, or software level folders.
- 10. Browse the device driver tree, and confirm your device drivers have been added. When you have finished your changes to the Platform Pack, click File, and then click Save.

Appendix 4: WMI Filters and Tasks

Access the WMI Filter Wizard by clicking Run wizard on the Add/edit filter pane of the Platform Manager.





You can use the WMI Filter Wizard to add filters and tasks that tailor a Platform Pack to specific computers. SmartDeploy uses Windows Management Instrumentation (WMI) commands to customize an image with device-specific hardware. Because filters and WMI tasks can be complex, you should look at existing Platform Packs to see how the filters and commands are used to deploy drivers and software, and then develop and test your own Platform Packs before you put them into production.

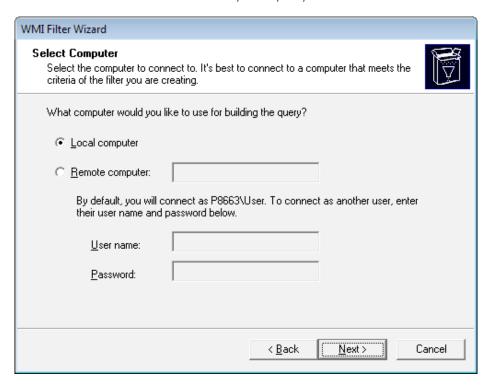
SmartDeploy uses filters to query a target device for information about its hardware and environment, and then run specific tasks on the target device that meet the filter criteria. When an image is deployed, SmartPE uses WMI to run the filters and tasks against the target device. WMI allows scripting languages, such as VBScript or Windows PowerShell, to manage Windows-based personal computers and servers locally and remotely.

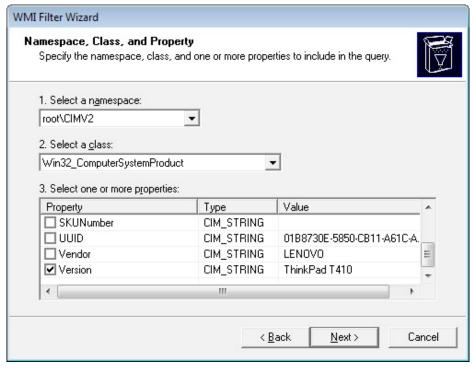
The SmartDeploy SDK contains component references and sample scripts that you can study and modify for your environment. You can find the SmartDeploy SDK by clicking **Start > All Programs > SmartDeploy > Samples**.

For more information about WMI syntax, see the WMI Reference at the Microsoft MSDN website.

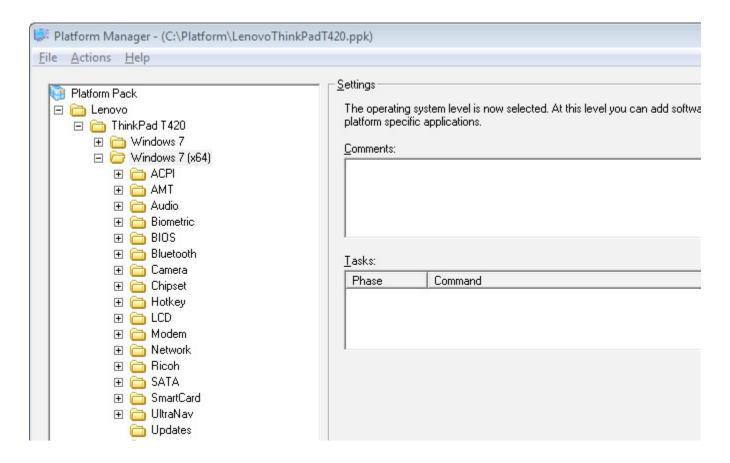
Filters

At each level in a Platform Pack, you can use filters to query the target device for specific conditions, and then take action based on the data returned by the query.





The Platform Manager also includes a Comments field at each level so you can capture information about the purpose of a filter, specific tasks and expected results, or other data that you may find useful in managing or troubleshooting computers and environments.

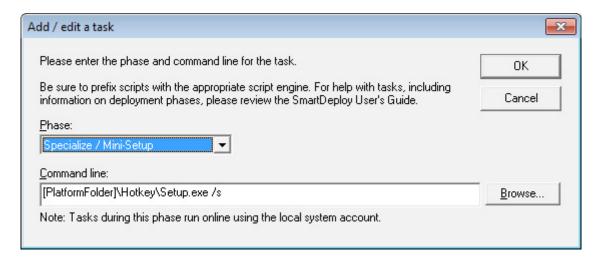


The Platform Manager provides a Modify Query pane with a general error-handling mechanism that lets you determine how SmartPE will respond when errors are generated during the deployment process. The Unknown platform action drop-down list lets you select from three different error-handling responses: Do nothing and allow deployment to continue, Display a warning dialog and allow deployment to continue (default), or Display an error dialog and do not allow deployment to continue. These help you during the Platform Pack testing phase.

Upon completing the wizard, the filter will be copied to the clipboard so that you can add it to the Platform Manager pane.

Filters are available at every level except the operating system level. Multiple filters can be added using AND / OR conditions so you can build specific tests and conditions for all computers in your organization. Filters can be run against the SmartDeploy image contents or, using WMI, against a target computer.

Tasks



You can use tasks to make changes to images during the deployment phase. For example, you can use them to create partitions on hard disk drives, add device drivers to computer images, or install software on the image. There are five different times that you can run tasks, with different security contexts for each:

- **Before image is applied.** The task is run directly before the image is applied. This phase is often used to run custom disk configuration scripts. The Windows PE system account is used to run tasks during this phase.
- After image is applied. The task is run at the very end of Windows PE before the machine reboots. This phase is often used to check the BIOS version and apply the latest if it is not already installed on the target device. The Windows PE system account is used to run tasks during this phase.
- Specialize / Mini-Setup. The task is run while Windows Setup completes configuration of the target device. This phase is often used to install support software for devices such as modems and touchpads. Best practice is to run these tasks using a "silent" installation option as well as a "no restart option." Manufacturers often use different syntax for these options; check with the hardware vendor for the appropriate switches. The local system account is used to run tasks during this phase.
- **First boot as system.** The task is run during first boot into the operating system. The local system account is used to run tasks during this phase.
- **First logon to desktop.** The task is run during the first logon into a user's account. The user account is used to run tasks during this phase. Since user accounts can have different level of access to the computer, it is recommended to only use this phase for tasks that do not require administrative permissions.

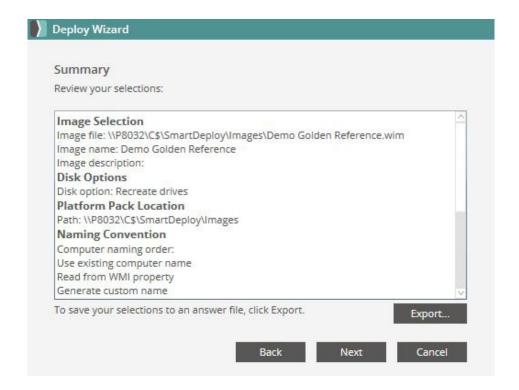
When including applications in your tasks, ensure you have added the appropriate software to the Platform Pack and that you point to the correct application in the Platform Pack. Command-line switches can be added for silent installation or no-restart options.

Appendix 5: Exporting an XML Answer File

To export an answer file that you can use to automate each deployment, click the Export button on the Summary page of the Deploy Wizard.

Note: When you complete the Deploy Wizard, SmartDeploy populates an answer file for unattended deployment, and uses the information you provided in steps 7-16 of the Deploy Wizard process (see page 75). When the target device restarts, the first-run setup GUI is loaded and the operating system uses the values in the answer file to configure the target device. If any information from steps 7-16 is missing, the operating system will ask you to fill in the necessary information.

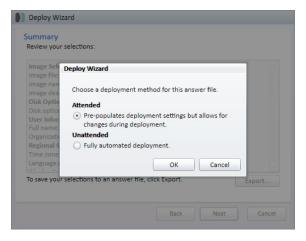
This is an alternative to using the Answer File Wizard in the Activities of the SmartDeploy Console, <u>page 24</u>.



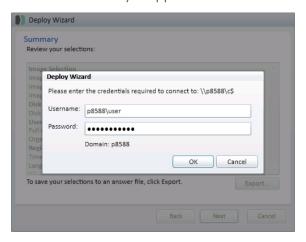
- 1. You will be prompted to:
 - a. Choose a location to save the file.



b. Select whether the answer file is for unattended or attended deployment.



c. Supply network credentials of any mapped network drives.



2. The wizard will then generate an XML file. The XML can be edited directly or the user can run the Deploy Wizard again to change it. To use the answer file that you generate with the Deploy Wizard, launch the Media Wizard, go to the optional components page (see page 41), and select the answer file.

Examples of XML edits that you may want to perform

Change from attended to unattended deployment

Change the default unattended delay time

By default, an unattended deployment will present a 30 second countdown before continuing with the deployment:

To change this, open the node and specify a number of seconds other than 30 (e.g. "<unattend_delay>15</unattend_delay>" would produce a 15-second delay). Please note that this delay is intended to ensure that all hardware resources are available when deployment starts. The minimum usable value for the unattend delay is 10 seconds; anything lower than that will cause the value to revert to 30.

Skipping certain Deploy Wizard pages

Each page of the Deploy Wizard can be set to require user input or to run automatically.

You can set the value for each page: skip value: 0 = do not skip, 1 = skip.

When using skip = 1 to skip a page please note that the answer file must be in attended mode. If you wish to skip all but one page you will need to set skip = 1 on each of the Deploy Wizard pages you wish to skip.

smartteploy





