Technical white paper

Using System Center 2012 R2 Configuration Manager SP1 to Manage Windows-based HP Thin Clients

Windows 10 IoT Enterprise
Windows Embedded 8 Standard
Windows Embedded Standard 7

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Overview

This document describes how to use Microsoft® System Center 2012 R2 Configuration Manager Service Pack 1 (Configuration Manager) to manage HP thin clients running Windows® 10 IoT Enterprise, Windows Embedded 8 Standard, and Windows Embedded Standard 7 operating systems.

Configuration Manager features

Asset Intelligence

Asset Intelligence gives organizations better control over their infrastructure by providing IT administrators with continuous insight into what hardware and software assets they have, who is using them, and where they are.

Software Update Management

Software Update Management simplifies the delivery and management of updates to IT systems across the enterprise. IT administrators can deliver updates of Microsoft products, third-party applications, custom in-house line-of-business applications, hardware drivers, and the system BIOS to a variety of devices.

Desired Configuration Management

Desired Configuration Management ensures that IT systems comply with the organization's desired configuration to improve network-wide availability, security, and performance.

Software Distribution

Software Distribution simplifies the distribution of applications and updates to desktops, servers, laptops, and mobile devices across enterprise networks.

Operating System Deployment

Operating System Deployment is a highly flexible, automated solution that allows IT administrators to deploy and configure servers and desktops from any previous state, including bare-metal deployments.

Configuration

Server requirements

- Windows Server® 2008 R2 SP1with Active Directory (AD), Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), Windows Deployment Services (WDS), Windows Server Update Services (WSUS), and Windows Assessment and Deployment Kit (Windows ADK)
- Microsoft System Center 2012 R2 Configuration Manager SP1
- Microsoft SQL Server 2008 R2 SP1

Client requirements

Microsoft System Center 2012 R2 Configuration Manager SP1 is preinstalled on Windows-based HP thin clients as described in the following matrix.

		Windows 10 IoT Enterprise	Windows Embedded 8 Standard	Windows Embedded Standard 7P (64-bit)	Windows Embedded Standard 7E
HP thin client model	t630	X			X
	t628	X			X
	t730	X		X	
	t420				X
	t820		X	X	X
	t620 / t620 PLUS	X	X	X	X
	t520	X	X	X	X
	t610 / t610 PLUS		X	X	X
	t510				X
	t505				X
	EliteBook 745 G2				X
	mt245			X	
	mt42	X			X
	mt41				X
	mt40				X
	t5740e				X
	t5570e				X

Additional reading

For more information about supported configurations for Microsoft System Center 2012 R2 Configuration Manager SP1, go to http://technet.microsoft.com/en-us/library/gg682077.aspx.

Inventory in Configuration Manager

Configuration Manager has many methods to inventory hardware and software. Use the hardware inventory to find detailed information about the hardware of the client computers and mobile devices that are enrolled by Configuration Manager. Use the software inventory to find information about the software and files present on the client computers. Asset Intelligence extends these inventory capabilities to help manage licenses for software in the enterprise.

Hardware inventory in Configuration Manager

For more information about hardware inventory, go to http://technet.microsoft.com/en-us/library/gg682093.aspx.

Software inventory in Configuration Manager

For more information about software inventory, go to http://technet.microsoft.com/en-us/library/gg682126.aspx.

Asset Intelligence in Configuration Manager

For more information about Asset Intelligence, go to http://technet.microsoft.com/en-us/library/gg699382.aspx.

Installing Configuration Manager

The following methods can be used to install Configuration Manager:

- Client push installation
- Software update point installation
- Group Policy installation
- Logon script installation
- Manual installation
- Upgrade installation by using application management
- Automatic client upgrade
- Client imaging

Be sure that the latest Configuration Manager (5.00.8239.1000) is installed before continuing. For more information, go to http://technet.microsoft.com/en-us/library/gg682132.aspx#BKMK_DeployClientComputers.

Distributing applications to Windows-based HP thin clients

Configuration Manager provides a set of tools and resources that can help you create, manage, deploy, and monitor applications in the enterprise.

For more information on how to create an application, go to http://technet.microsoft.com/en-us/library/gg682159.aspx.

For more information on how to deploy an application, go to http://technet.microsoft.com/en-us/library/gg682082.aspx.

For more information on how to create packages and programs, go to http://technet.microsoft.com/en-us/library/gg682112.aspx.

For more information on how to deploy packages and programs, go to http://technet.microsoft.com/en-us/library/gg682178.aspx.

When you deploy applications to a Windows-based HP thin client with the write filter enabled, you can specify whether to disable the write filter on the device during the deployment. You must restart the device after the deployment. If the write filter is not disabled, the software deploys to a temporary overlay and is not installed when the device restarts unless another deployment forces the changes to persist.

The checkbox **Commit changes at deadline or during a maintenance window (requires restarts)** controls the write filter behavior.

Imaging with Configuration Manager 2012 R2 SP1

Complete the deployment process first. For instructions, go to http://technet.microsoft.com/en-us/library/gg682108.aspx#BKMK_Workflow.

Then, use one of the following methods to deploy the operating system to a computer with the Configuration Manager client.

- PXE initiated deployments
- Multicast deployments
- Bootable Media Deployments
- Stand-alone Media Deployments
- Pre-staged Media deployments

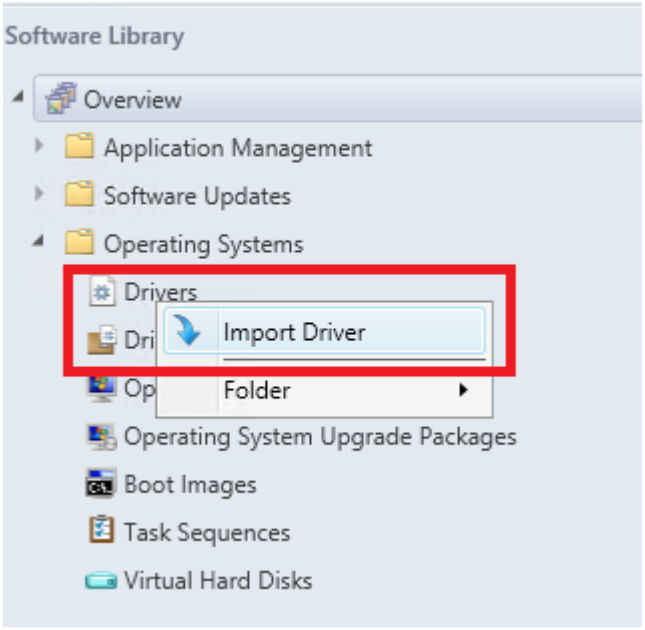
For more information about deployment methods, go to http://technet.microsoft.com/en-us/library/gg682108.aspx#BKMK_OSDMethods.

Preparing a Windows Preinstallation Environment boot image

The default boot image in Configuration Manager supports most of the images provided by HP. The HP Windows 10 IoT Enterprise image is deployed in Compact Mode, which is the new format for Windows 10. A customized Windows 10 boot image is required to manage an HP thin client with a Windows 10 IoT Enterprise image using Configuration Manager. For more information on creating a boot image, see Appendix C—Preparing a boot image and adding the correspondent drivers.

Creating a driver package for imaging

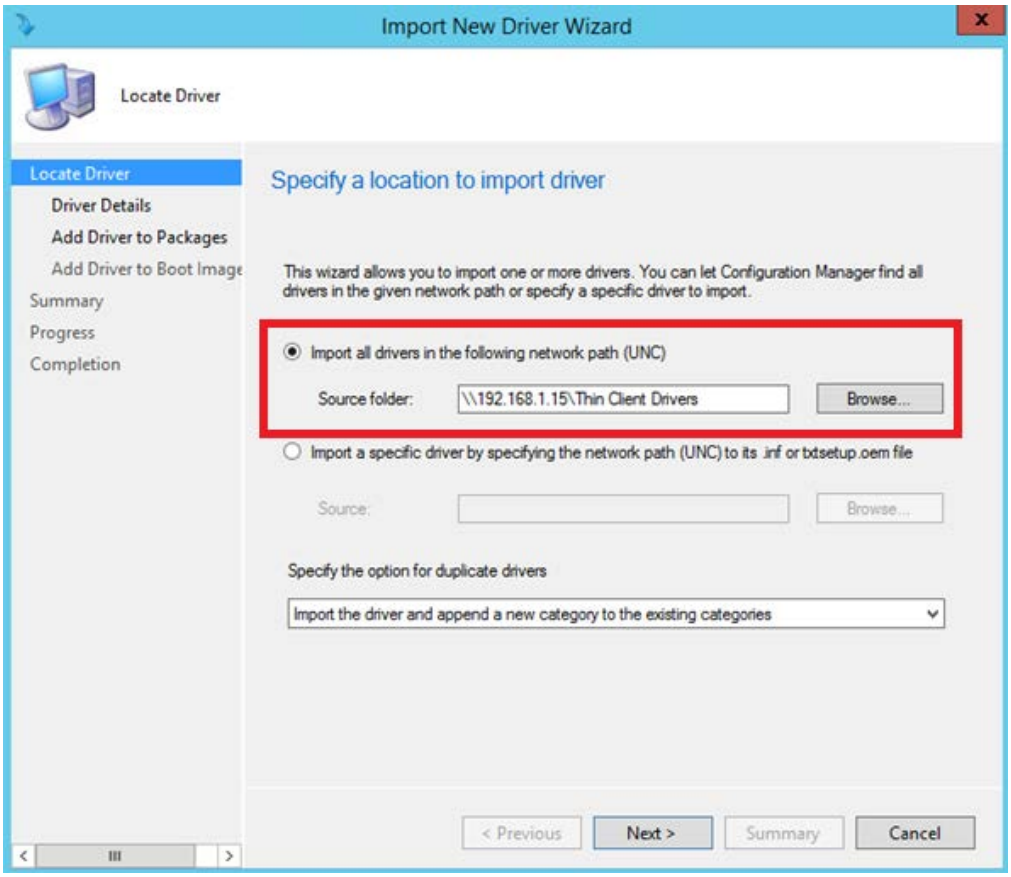
1. Select **Start**, select **All Programs**, select **Microsoft System Center 2012**, and then select **Configuration Manager**.
2. Navigate to **Software Library**. Select **Overview** from the left panel, and then select **Operating Systems**. Right-click **Drivers**, and then select **Import Driver**.



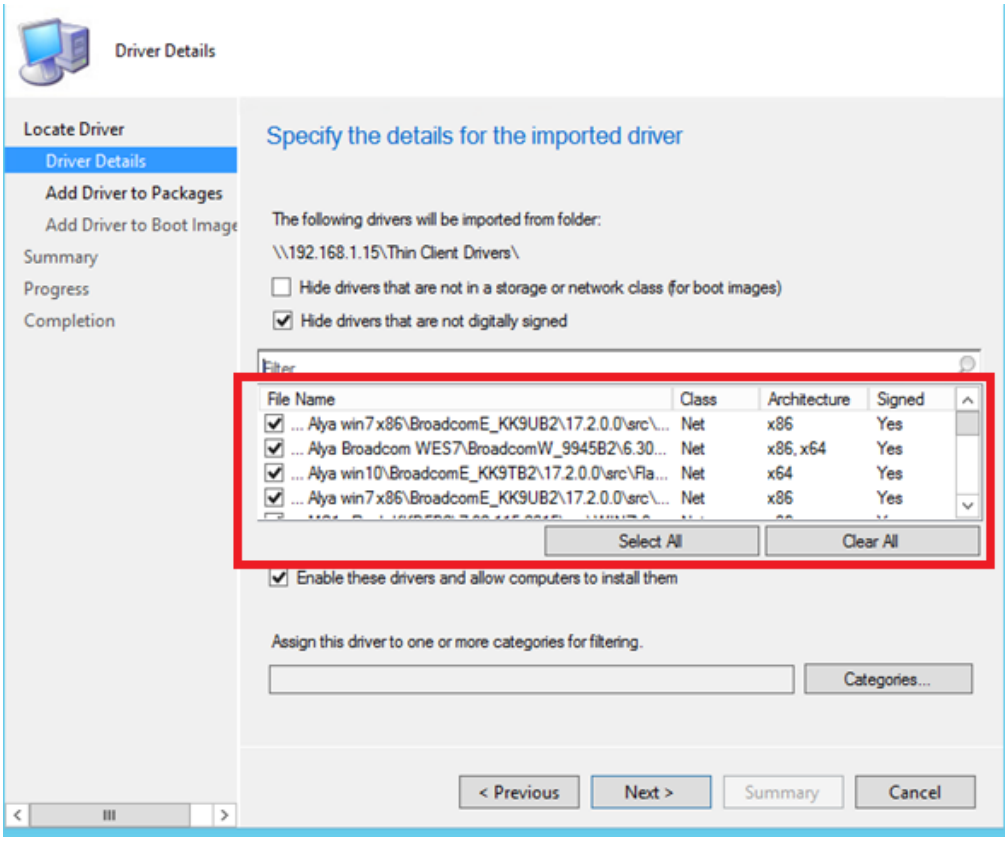
3. In the Import New Driver wizard, specify the source folder of the driver, and then select **Next**.

Note

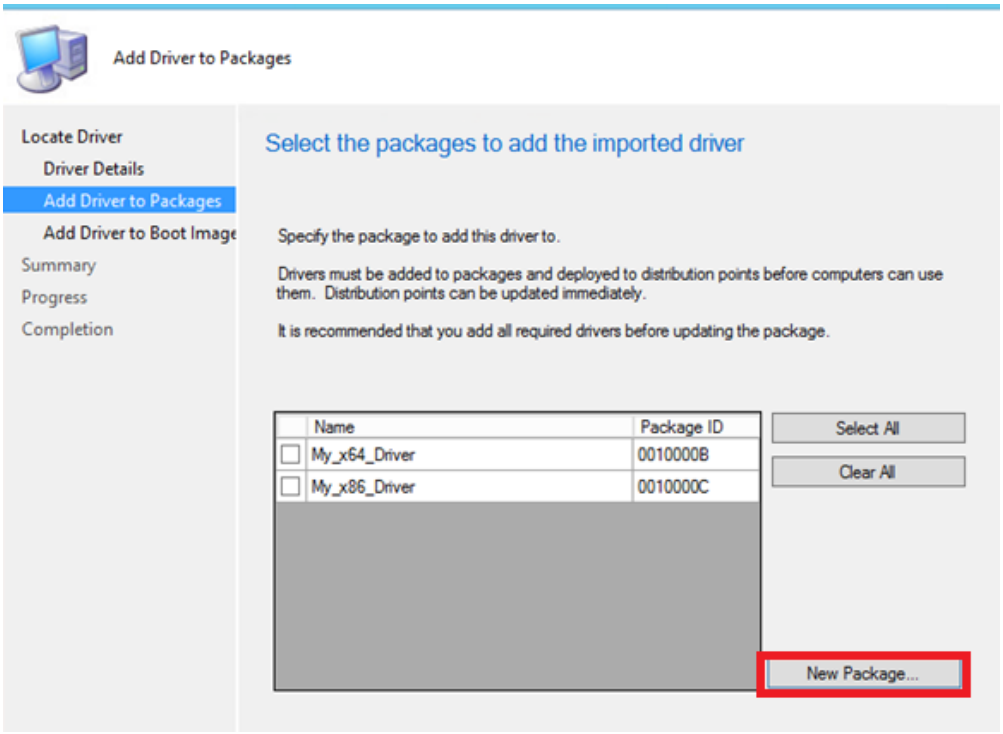
You can download drivers from http://www.hp.com/go/bizsupport (search for the thin client model, and then select **drivers, software & firmware**).



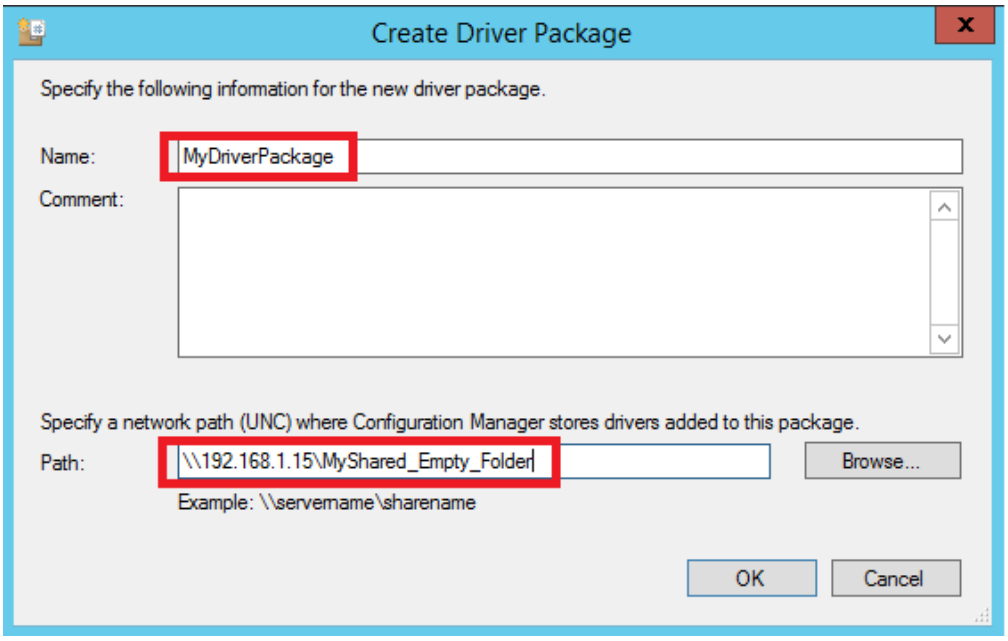
4. Select the driver to import, and then select **Next**.



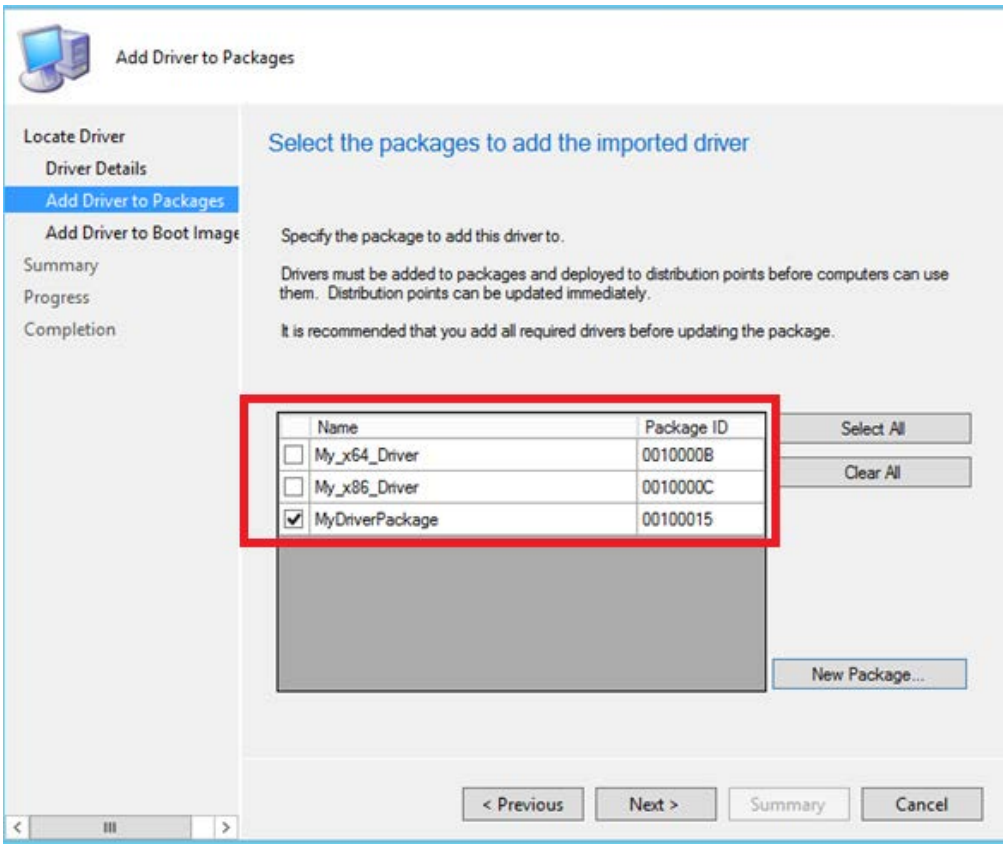
5. On the Add Driver to Packages screen, select **New Package**.



6. In the Create Driver Package dialog box, enter the package name and specify the network UNC path—use an empty folder.

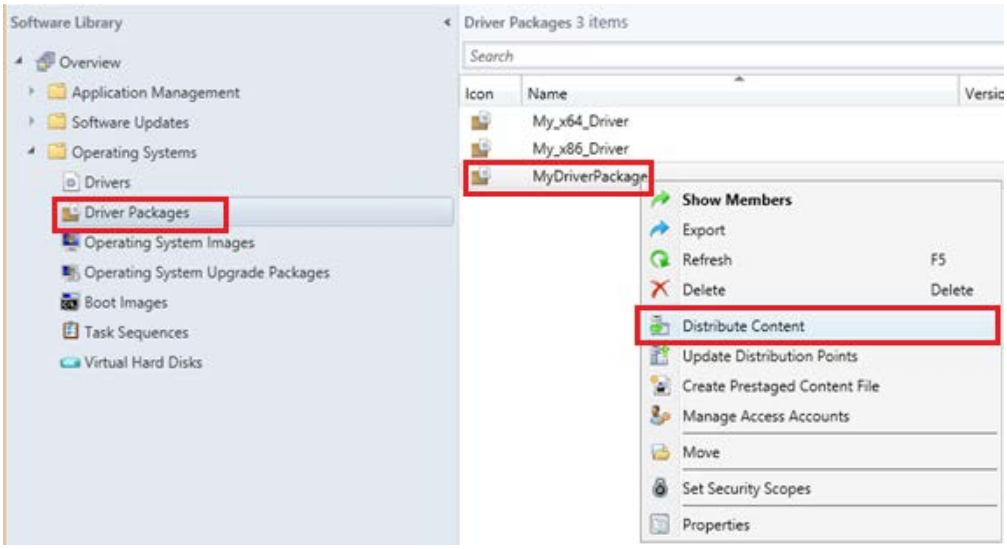


7. Select **OK** to close the Create Driver Package dialog, and then select **Next**.

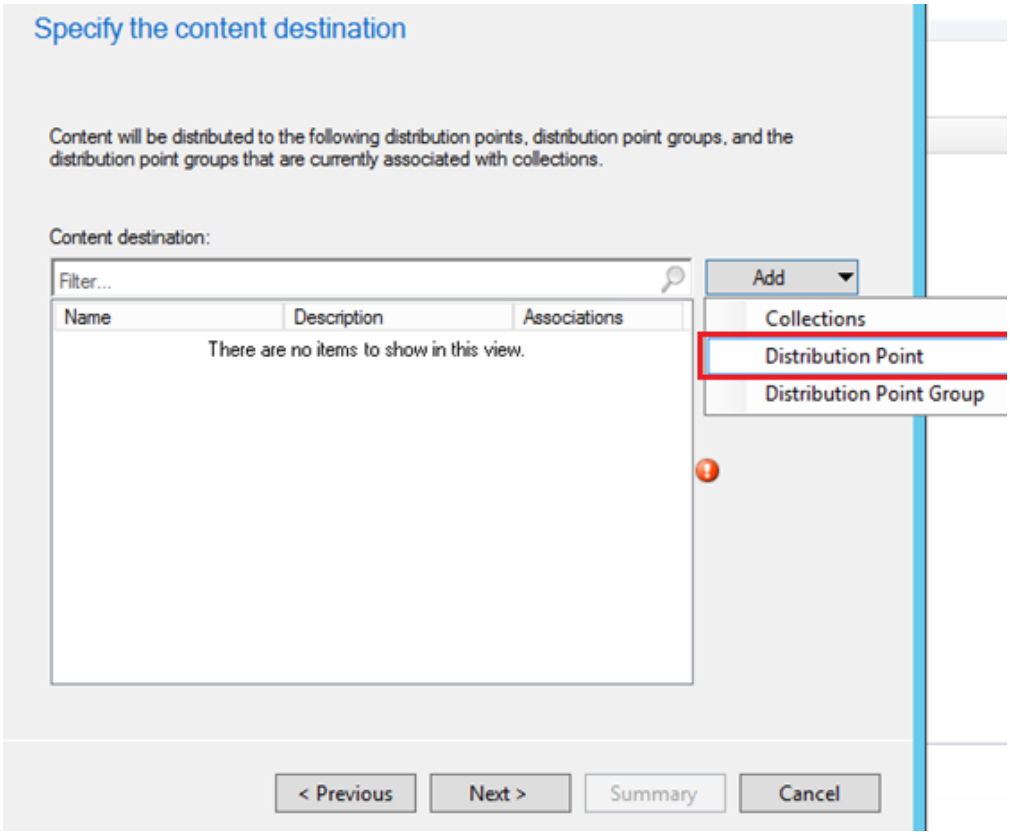


8. On the Add Driver to Boot Images page, do not change the default options. Select **Next**.
9. On the Summary page, select **Next**.
10. After the wizard completes, select **Close**.
11. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, select **Operating System**, and then select **Driver Packages**.

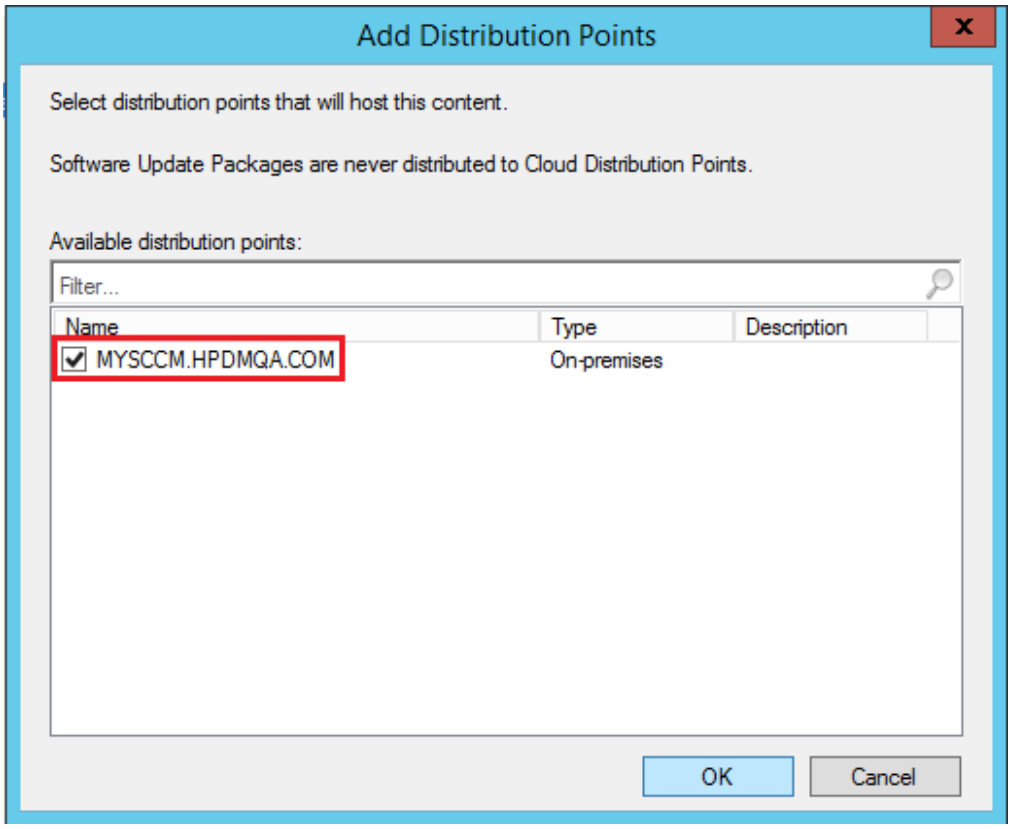
12. Right-click the driver package you imported, and then select **Distribute Content**.



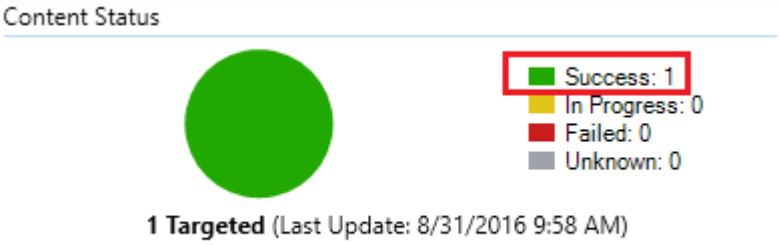
13. In the Distribute Content wizard, select **Next** on the General page.
14. Select **Add** and select **Distribution Point**.



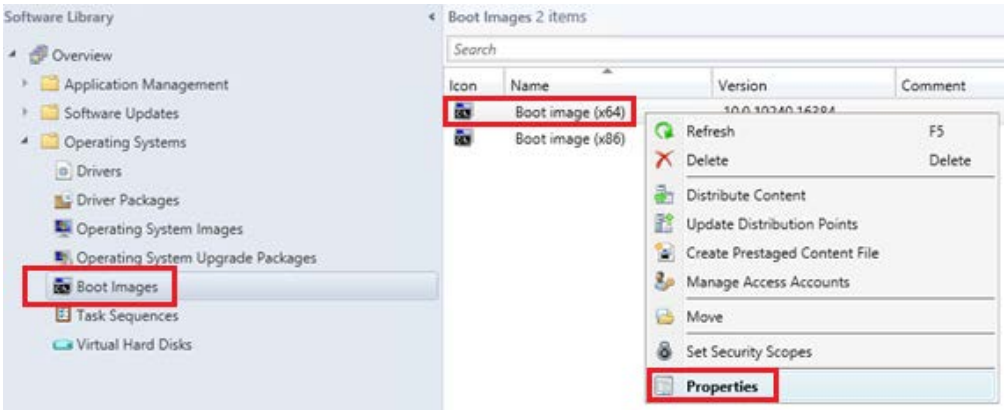
15. In the Add Distribution Points dialog box, select the available distribution points, and then select **OK** to close the dialog box.



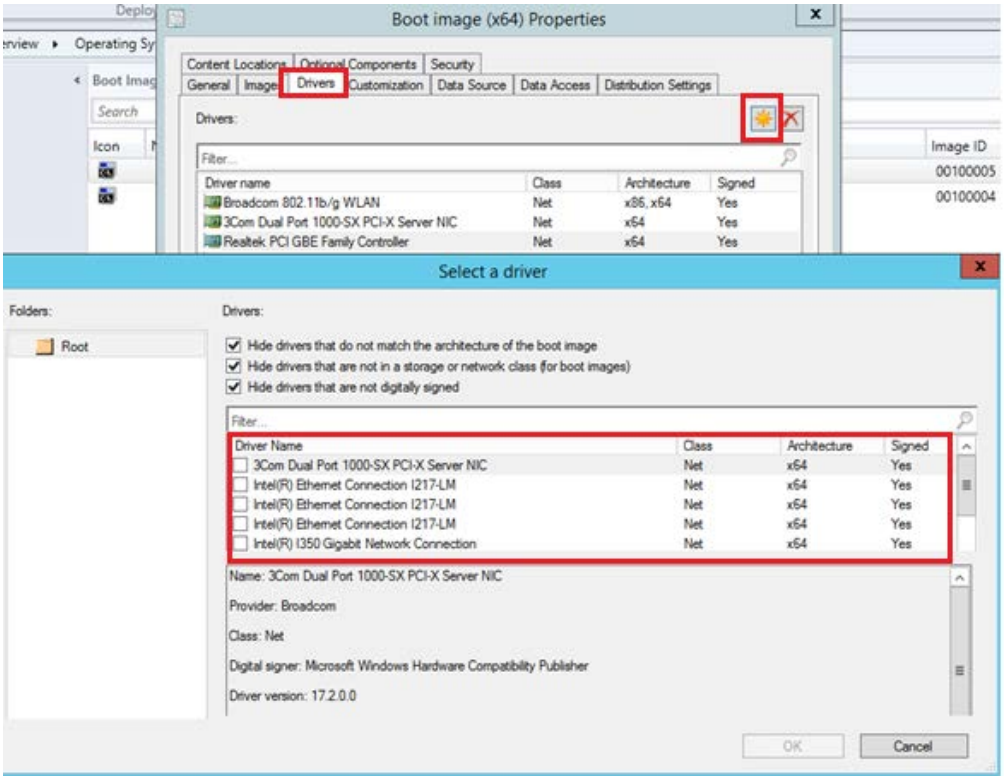
16. Select **Next** until the wizard finishes, and then select **Close**.
17. Refresh the **Driver Packages** screen and make sure that the content status is **Success** before proceeding.



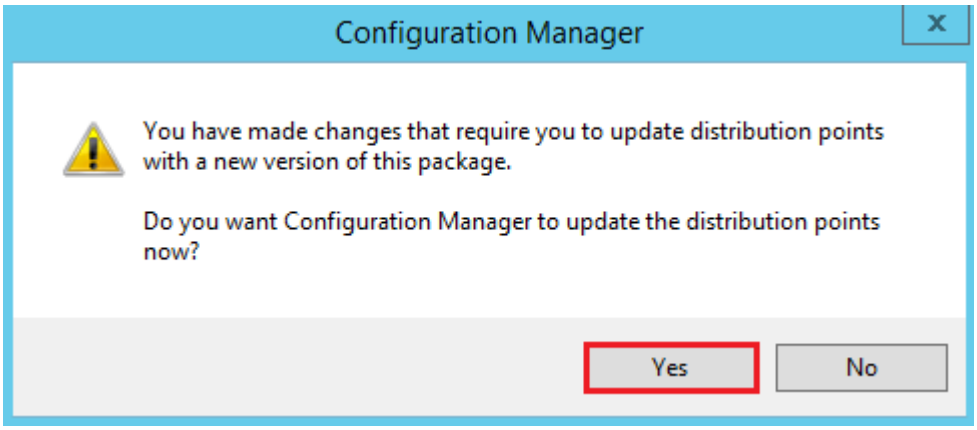
18. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, select **Operating System**, and then select **Boot Images**.
19. Right-click the appropriate boot image, and select **Properties**.



20. In the Properties dialog box, select the **Drivers** tab and add the target driver.



21. Select **Apply**, and then **Yes**.



22. In the Update Distribution Points wizard, select **Next**, and then **Close** the finish the wizard.
23. Select **OK** to close the **Properties** tab.
24. Refresh the **Boot Images** screen and make sure that the content status is **Success** before proceeding.

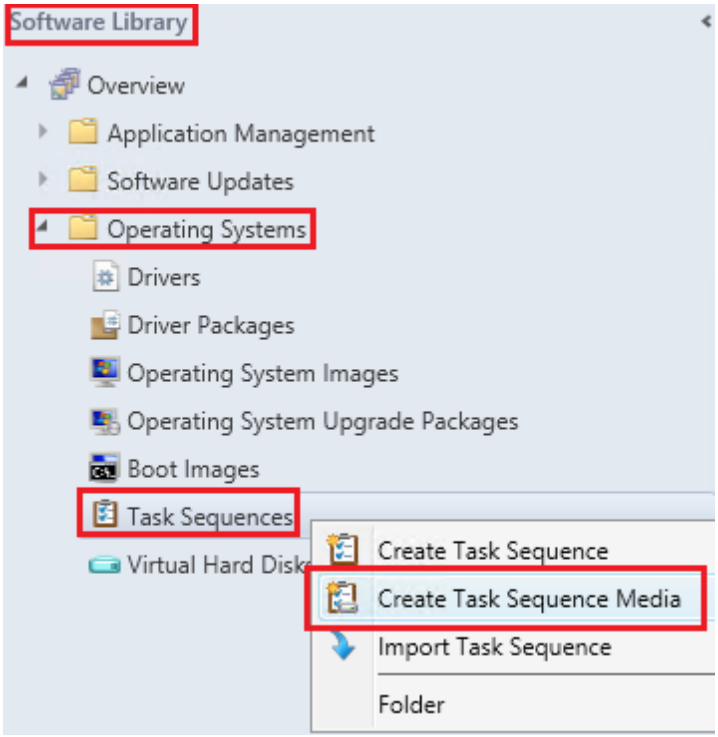
Capturing an operating system image

Before capturing an image, be sure that the corresponding driver package has been created and pushed to the distribution points. See Creating a driver package for imaging for details.

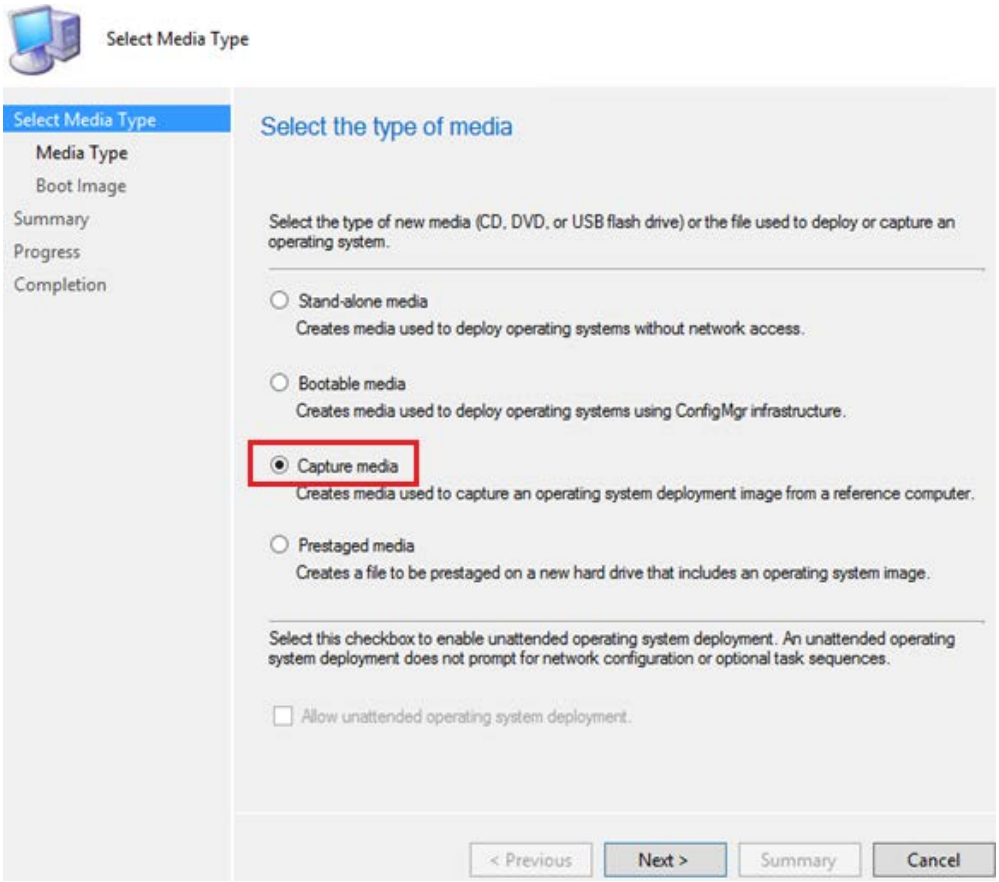
Creating a capture media task sequence

1. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, and then select **Operating Systems**.

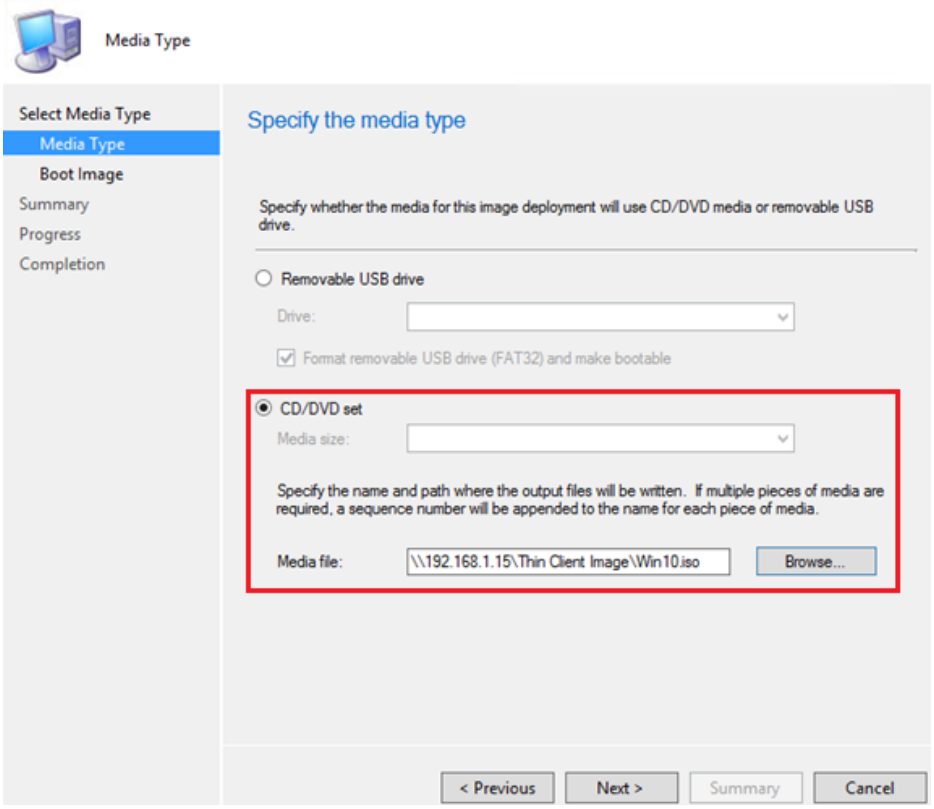
2. Right-click **Task Sequences** in the left panel and choose **Create Task Sequence Media**.



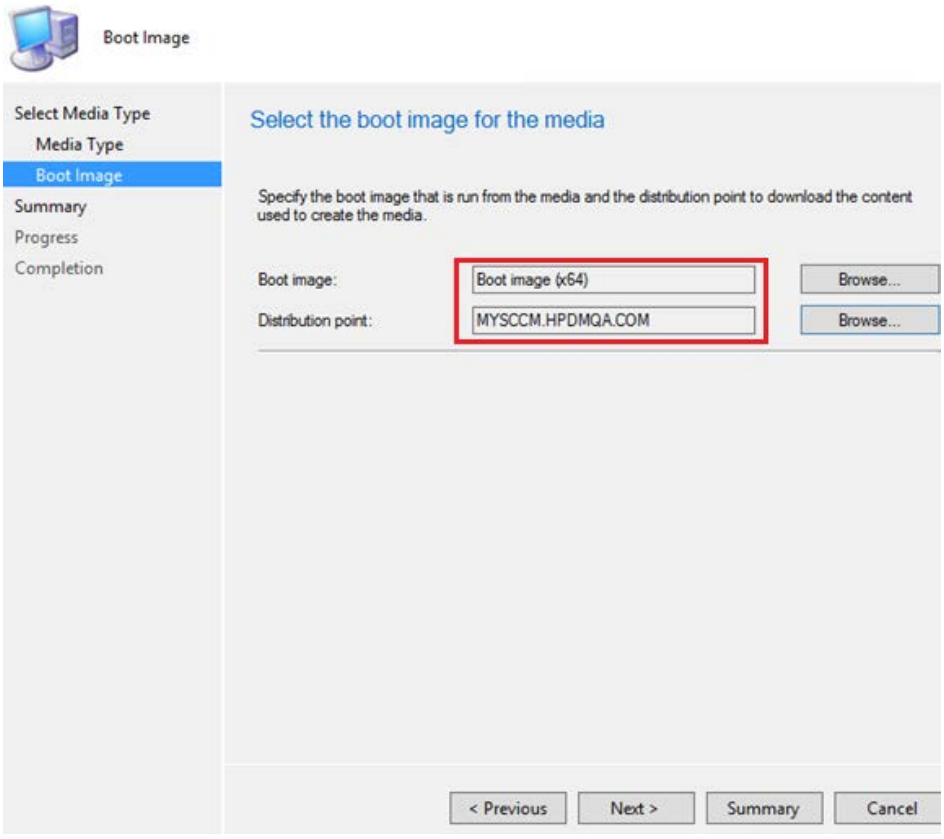
3. In the Create Task Sequence Media wizard, select **Capture Media**, and then select **Next**.



4. Select the media type, and then specify either the **Drive** (if using Removable USB drive type) or the path/name of the **Media file** (if using the CD/DVD set type).



5. Select **Next**.
6. Select the appropriate **Boot image** and **Distribution point**, and then select **Next**. The boot image must include the NIC driver of the target thin client.



7. On the Summary screen, select **Next**. The wizard creates the capture media or ISO.

8. When the wizard has completed, select **Close**.
9. Burn the ISO on media.

Capturing a Windows image from a reference system

Local access to a client is required for the following procedure.

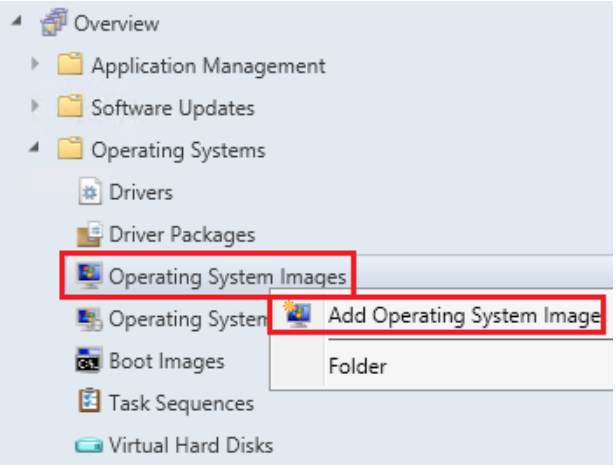
1. Disconnect the reference system from the domain, if necessary.
2. Do not change the Administrator account password from the default value (`Administrator`).
3. Disable the write filter, and then restart.
4. Log on as Administrator.
5. If the Embedded Device Manager (EDM) is running on your device, stop the EDM write filter services using Windows services.msc.
6. For the task sequence to include User State Migration, make sure that the RAM disk on the source/destination image is configured so that there is at least 250 MB of space to support USMT operations. For more information on preparing a task sequence to include User State Migration, see Appendix A—Preparing a task sequence to include User State Migration.
7. Insert the media containing the ISO.
8. If AutoRun does not launch, manually browse to `<Task Sequence Capture Media>:\SMS\bin and launch tsmbautorun.exe`.
9. A wizard appears. Follow the instructions on the screen. You can specify a network location for the WIM file, if your Windows PE boot image has network connection capability (that is, if a NIC driver is installed).
10. After it is complete, the wizard closes automatically. The system restarts to load Windows PE and initiate capture within 2 to 5 minutes. If necessary, remove the capture media so that the device does not boot from it.
11. By default, the local admin account is disabled after capturing an image.

Deploying an operating system image through Operating System Deployment

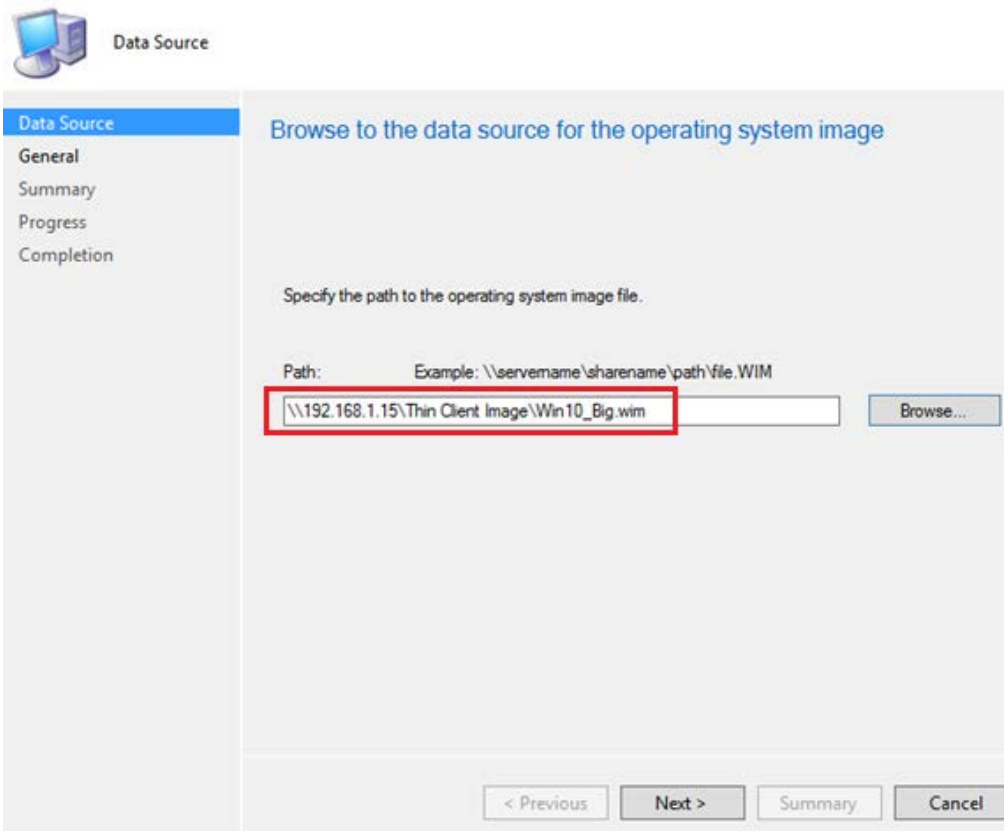
Before deploying an image, be sure that the corresponding driver package has been created and pushed to the distribution points. See Creating a driver package for imaging for details.

Importing a captured Windows reference image into Configuration Manager

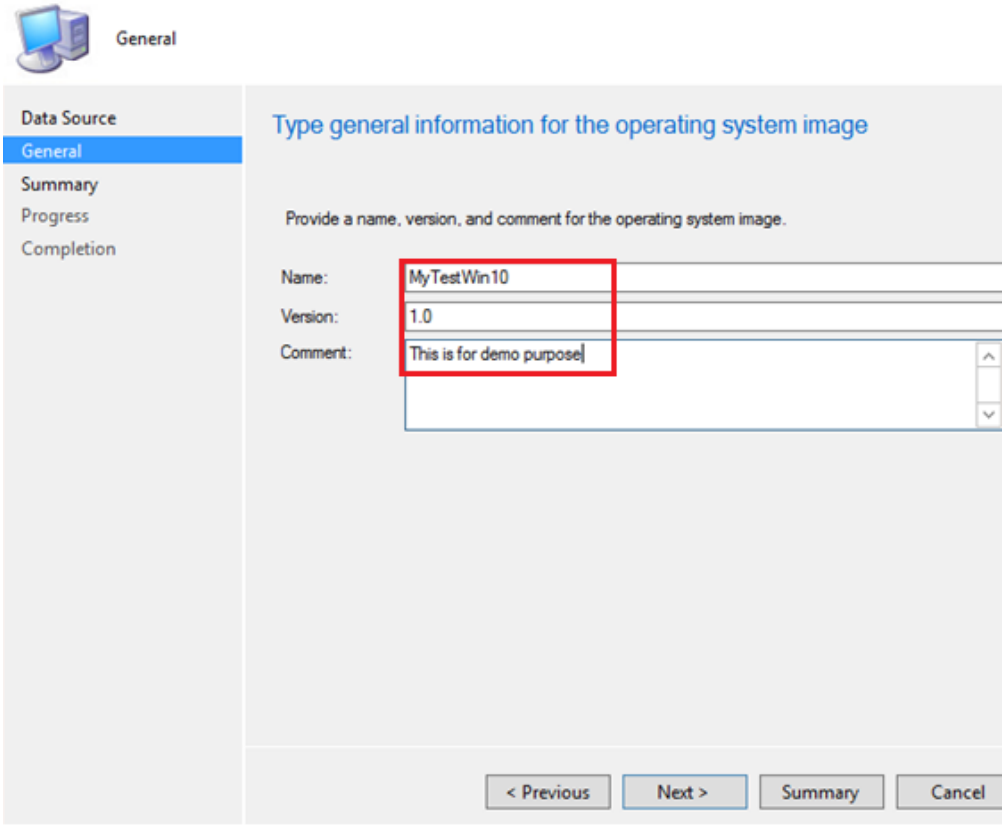
1. Create a shared folder on the Configuration Manager server use to store the image file. Be sure to give all users access to the folder.
2. Copy the captured reference Windows WIM file to this folder.
3. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, and then select **Operating Systems**.
4. Right-click **Operating System Images**, and then select **Add Operating System Image**.



5. In the Add Operating System Image wizard, enter the network path (UNC), and then select **Next**.

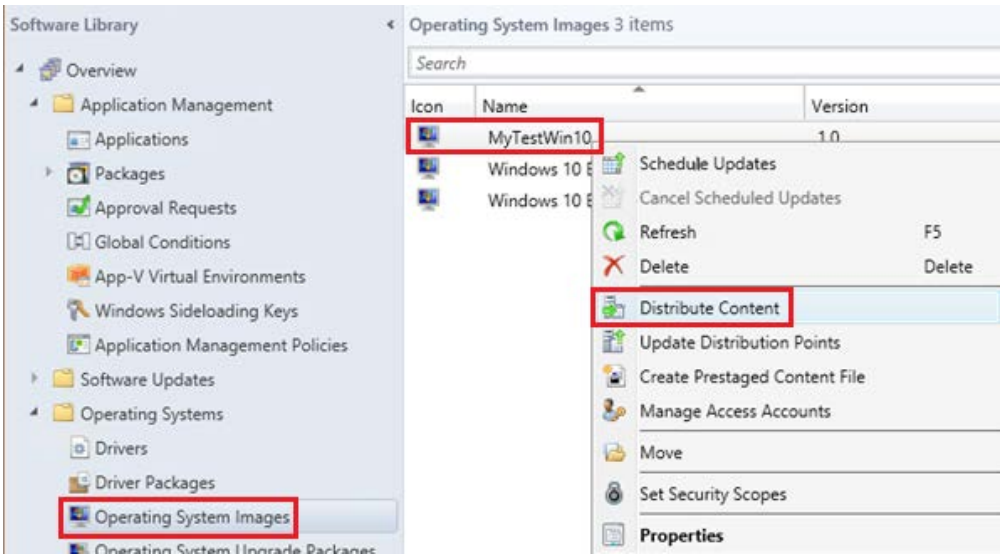


6. On the General page, enter any necessary information and then select **Next**.



7. On the Summary page, select **Next**.
8. When the wizard completes, select **Close**.

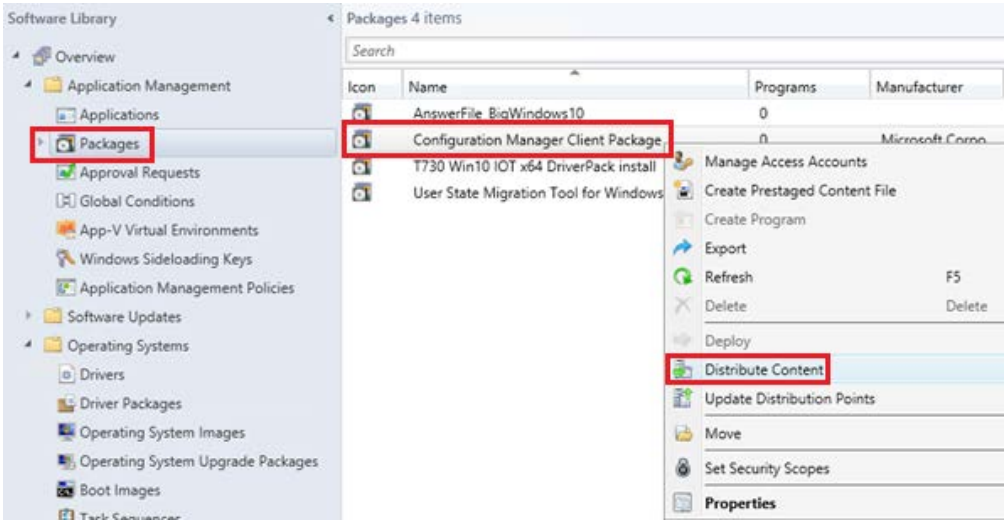
9. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, select **Operating Systems**, and then select the newly added operating system image.
10. Right-click **Distribute Content**, and then select **Next**.



11. Under **Content Destination**, add a **Distribution Point**.
12. Select the available **Destination Point**, and then select **Next**.
13. On the Summary page, select **Next**.
14. When the wizard completes, select **Close**.
15. Refresh the **Operating System** screen and make sure that the content status is **Success** before proceeding.

Deploying the Configuration Manager client package to the Destination Point

1. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, select **Application Management**, and then select **Packages**.
2. Right-click the Configuration Manager client package, and then select **Distribute Content**.

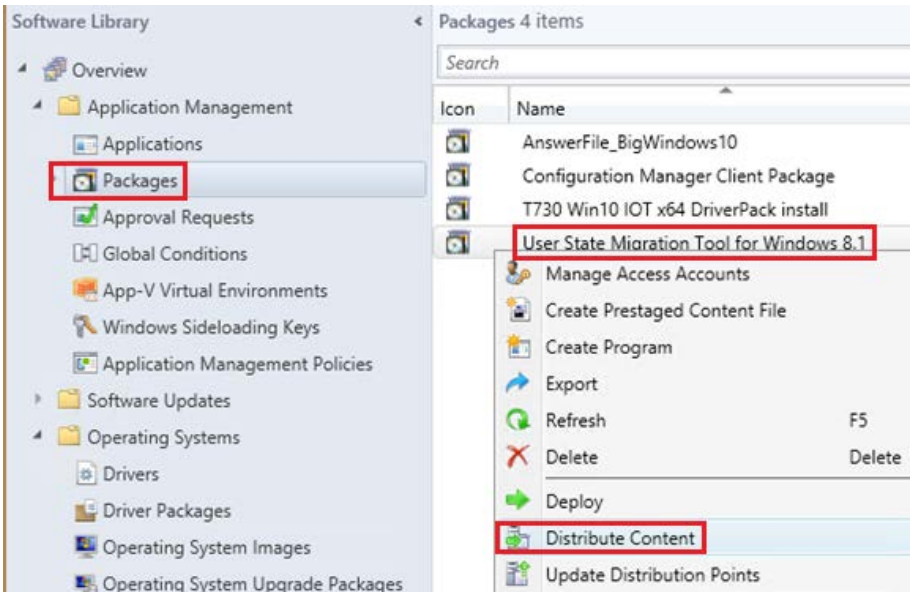


3. In the Distribute Content wizard, select **Next**.
4. Under **Content Destination**, add a **Distribution Point**.
5. Select the available **Destination Point**, and then select **Next**.
6. On the Summary page, select **Next**.
7. When the wizard completes, select **Close**.
8. Refresh the **Packages** screen and make sure that the content status is **Success** before proceeding.

Syncing the User State Migration Tool package to the Distribution Point (optional)

Make sure to use the User State Migration Tool (USMT) that corresponds to the image. The USMT from Windows 10 Assessment and Deployment Kit (ADK) is used for Windows10 IoT Enterprise imaging, and the USMT from Windows 8 ADK is used for Windows Embedded 8 Standard imaging. The USMT package is created by installing ADK.

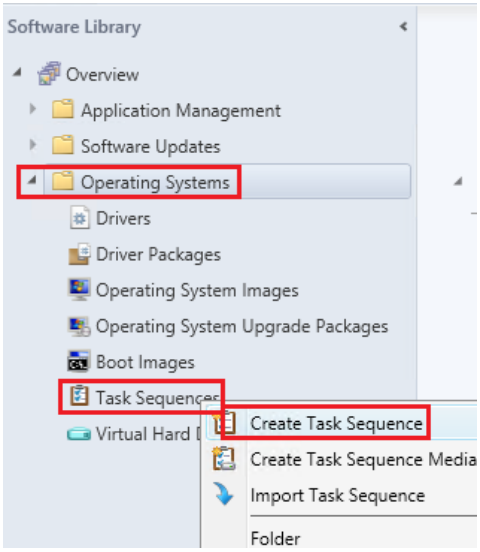
1. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, select **Application Management**, and then select **Packages**.
2. Right-click the USMT package created by installing ADK, and then select **Distribute Content**.



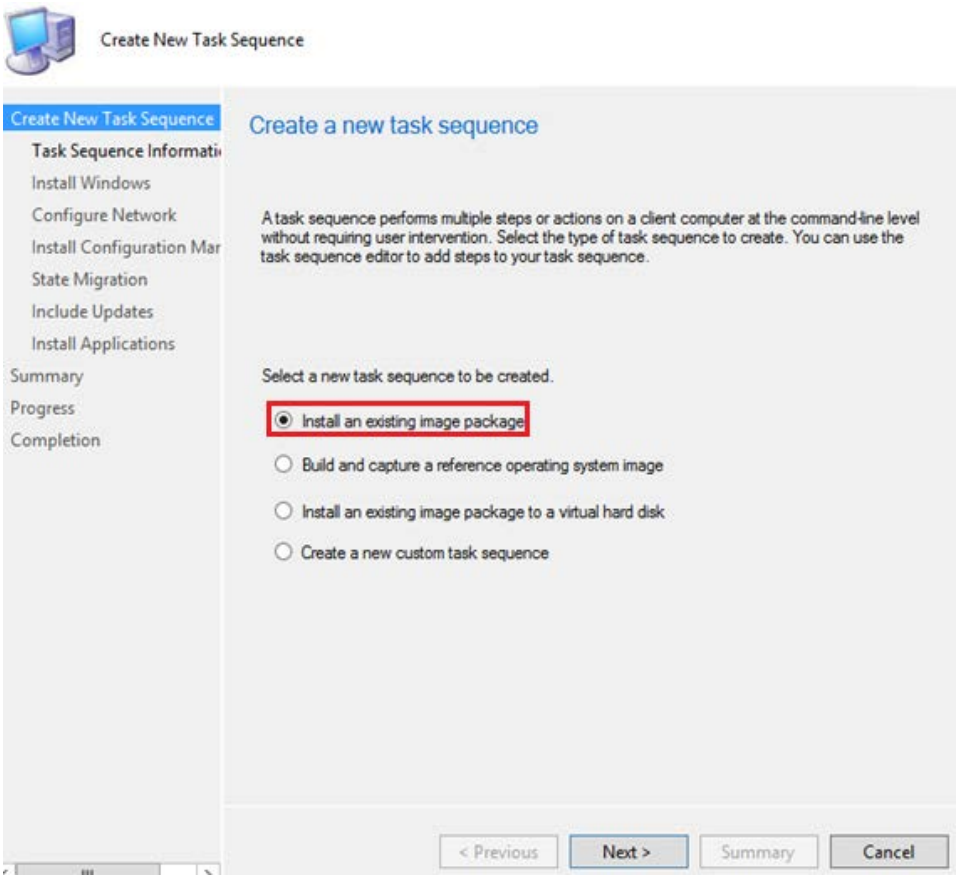
3. In the Distribute Content wizard, select **Next**.
4. Under **Content Destination**, add a **Distribution Point**.
5. Select the available **Destination Point**, and then select **Next**.
6. On the Summary page, select **Next**.
7. When the wizard completes, select **Close**.
8. Refresh the **Packages** screen and make sure that the content status is **Success** before proceeding.

Creating a task sequence to deploy a Windows reference image

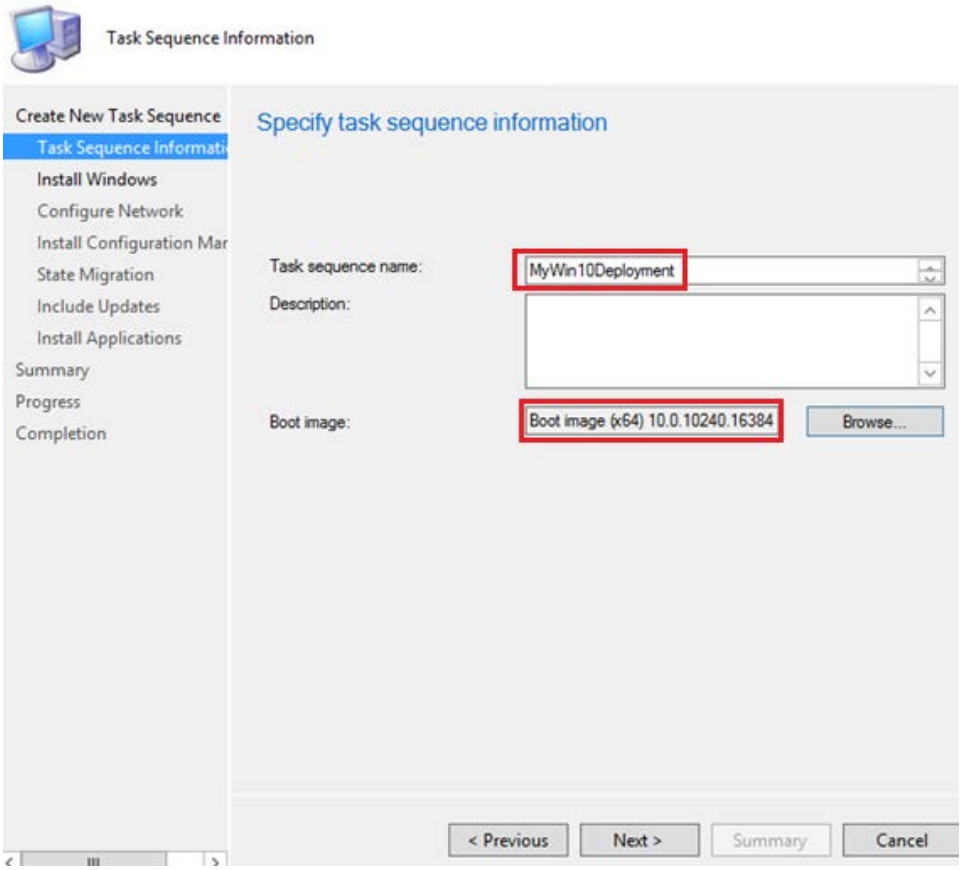
1. Select **System Center Configuration Manager**, select **Software Library**, select **Overview**, and then select **Operating Systems**.
2. Right-click **Task Sequence**, and then select **Create Task Sequence**.



3. In the New Task Sequence wizard, select **Install an existing image package**, and then select **Next**.

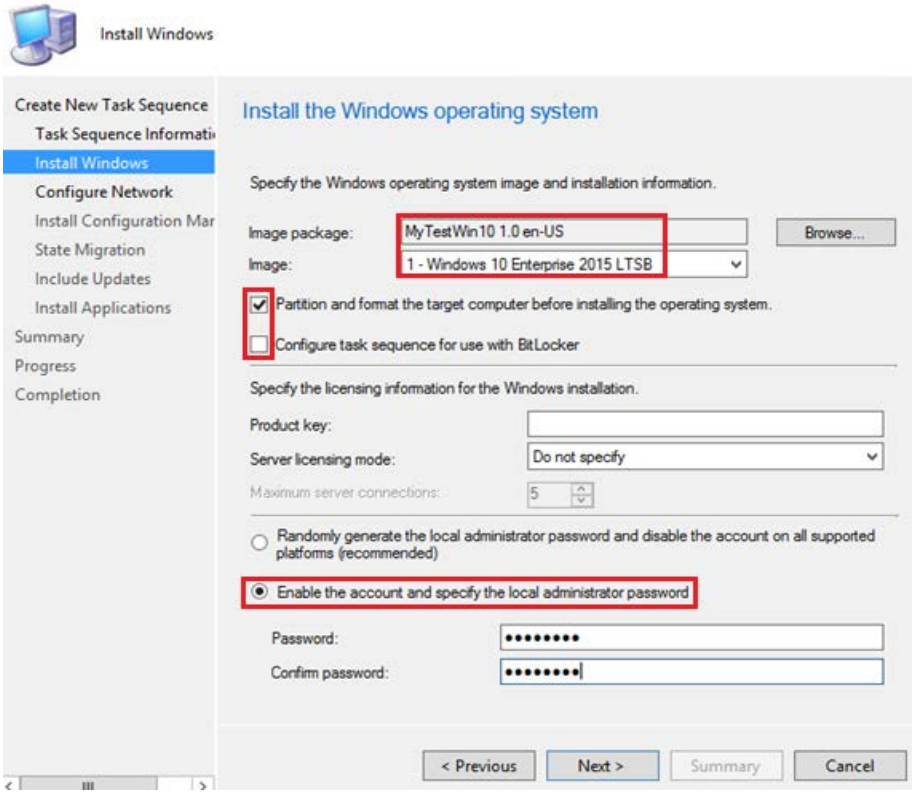


4. Enter the **Task sequence name**, select the appropriate boot image, and then select **Next**.

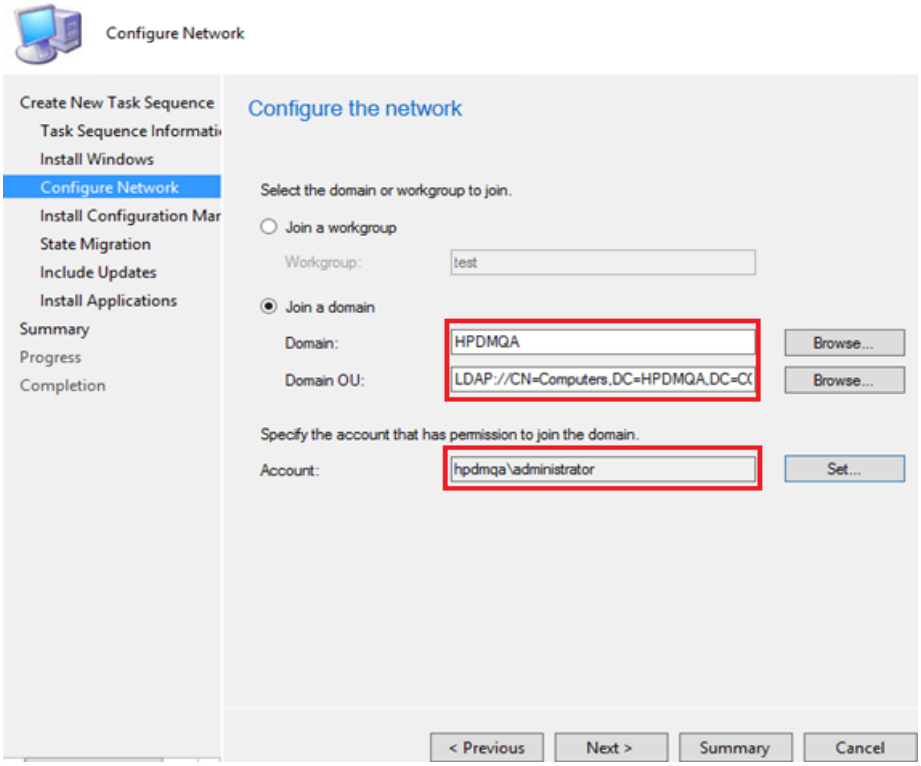


5. On the Install the Windows operating system page, browse to the previously created Windows image package.

6. Before installing the operating system, select **Partition and format the target computer before installing the operating system**. Clear **Configure task sequence for use with BitLocker**, unless your target device has a well-configured TPM module. Do not specify the **Product key**.
7. Select **Enable the account and specify the local administrator password**, and then enter and confirm the password. See Appendix E—Known issues and solutions before continuing.
8. Select **Next**.



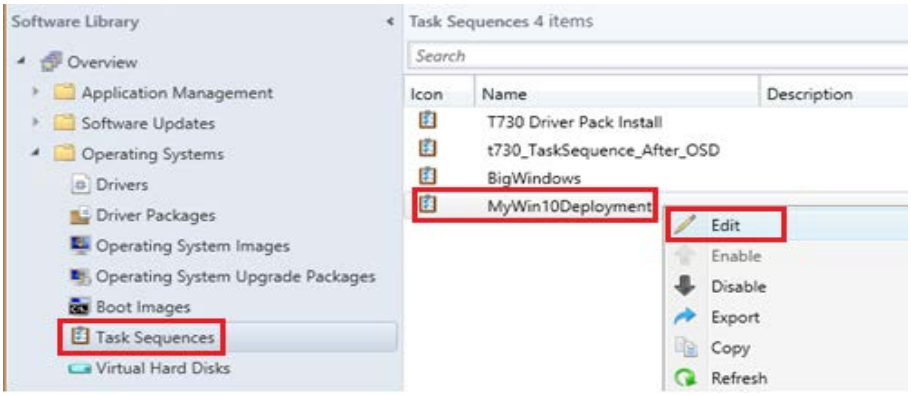
9. On the Configure the network page, specify the preferred configuration, and then select **Next**.



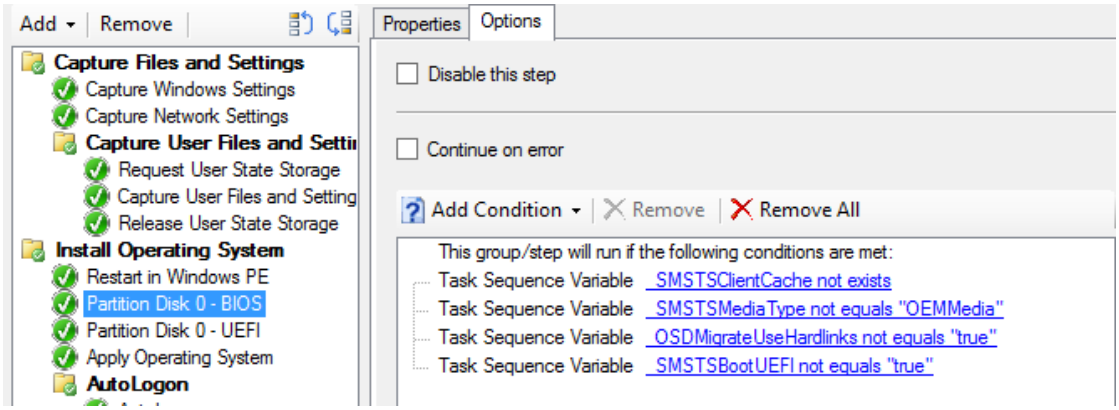
10. On the Install the Configuration Manager Client page, select **Browse** and then select **Configuration Manager Client Package**.
11. Select **Next**.
12. On the Configure State Migration page, select the preferred settings and select **Next**. For the task sequence to include User State Migration, make sure that the RAM disk on the source/destination image is configured so that there is at least 250 MB of space to support USMT operations. For more information on preparing a task sequence to include User State Migration, see Appendix A—Preparing a task sequence to include User State Migration.

Note:
If you select any settings on the Configure State Migration page, steps 18 through 23 are required.

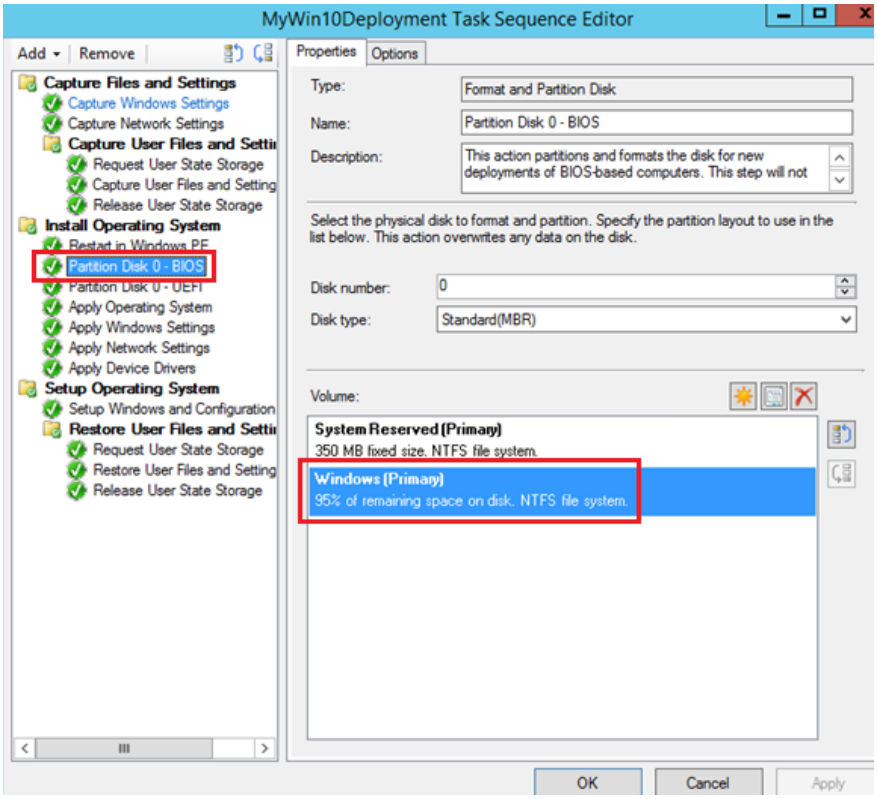
13. On the Include Software Updates page, select **Do not install any software updates**, and then select **Next**.
14. On the Install Applications page, do not select anything, and then select **Next**.
15. On the Summary page, select **Next**.
16. When the wizard completes, select **Close**.
17. Right-click the deployment task sequence, and then select **Edit**.



18. In the Task Sequence Editor, select **Partition Disk 0 - BIOS**. Select the **Options** tab to verify the running condition.



19. Select the **Properties** tab, and then double-click **Windows (Primary)** to edit its properties.

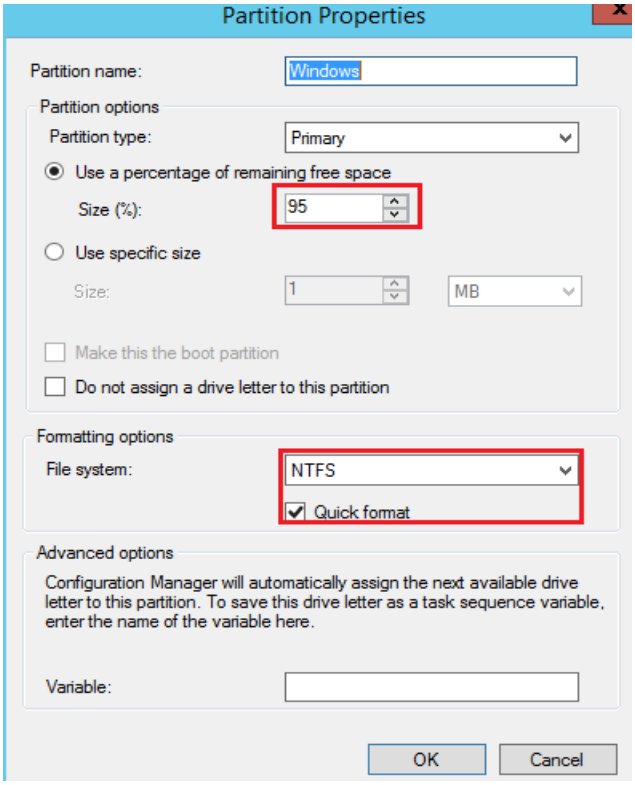


20. In the **Partition Properties** dialog, under **Use a percentage of remaining free space**, enter 95.

Note:
The deployment fails if this value is left at 100, because Windows cannot create the write filter partition.

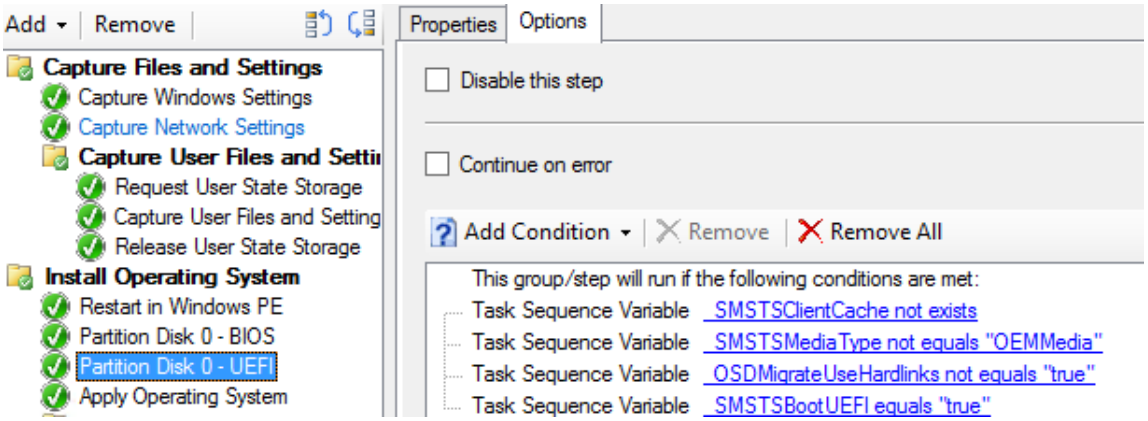
---

21. Under Formatting options, select **Quick format**. Select **OK** to close the window.

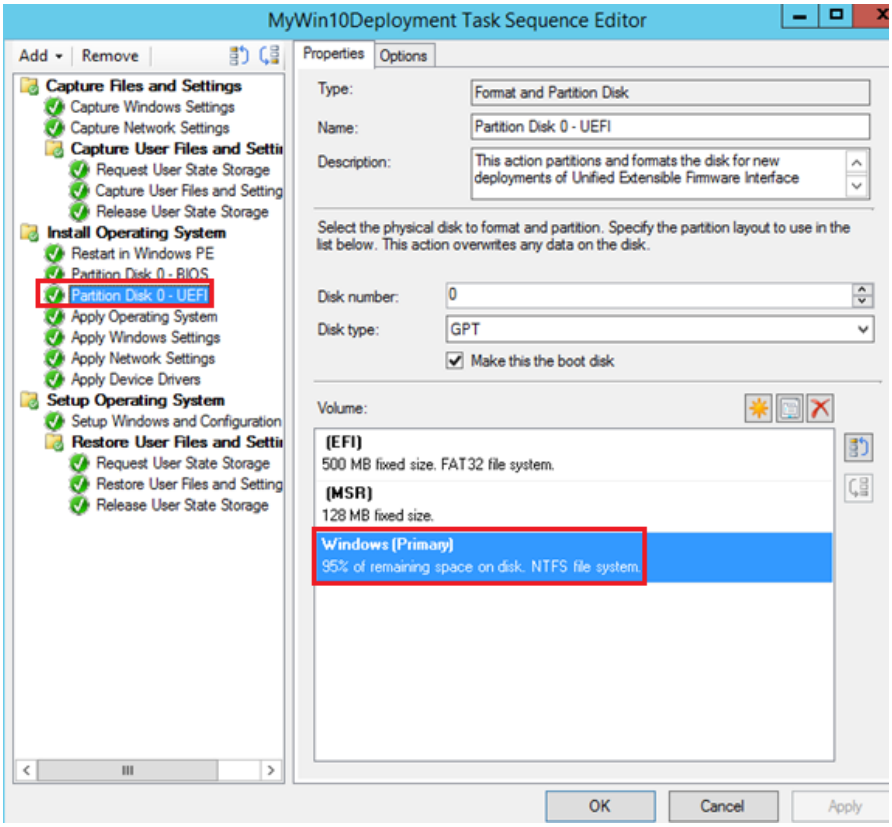


22. Reopen the **Task Sequence Editor**.

23. In the Task Sequence Editor, select **Partition Disk 0 - UEFI**. Select the **Options** tab to verify the running condition.



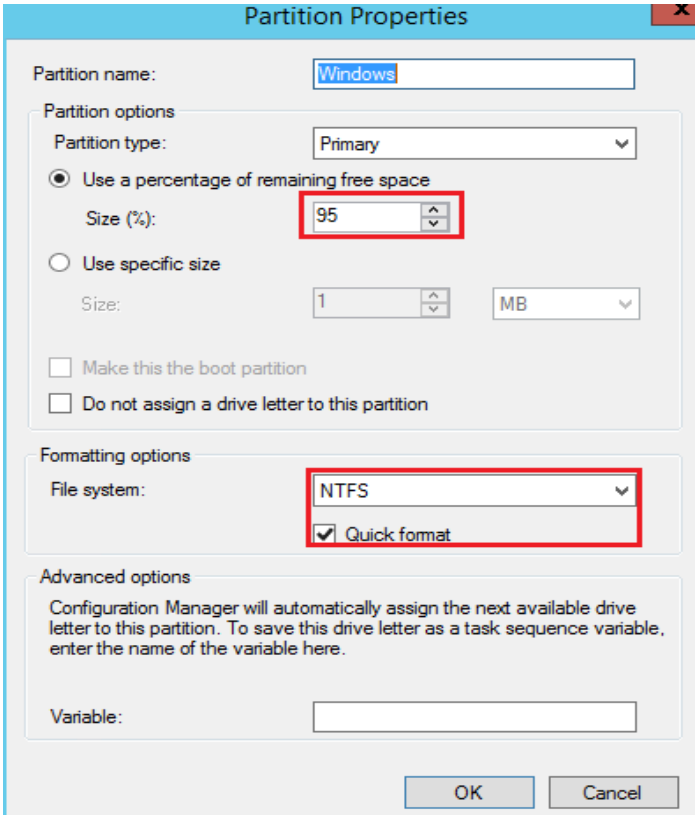
24. Double-click **Windows (Primary)** to edit its properties.



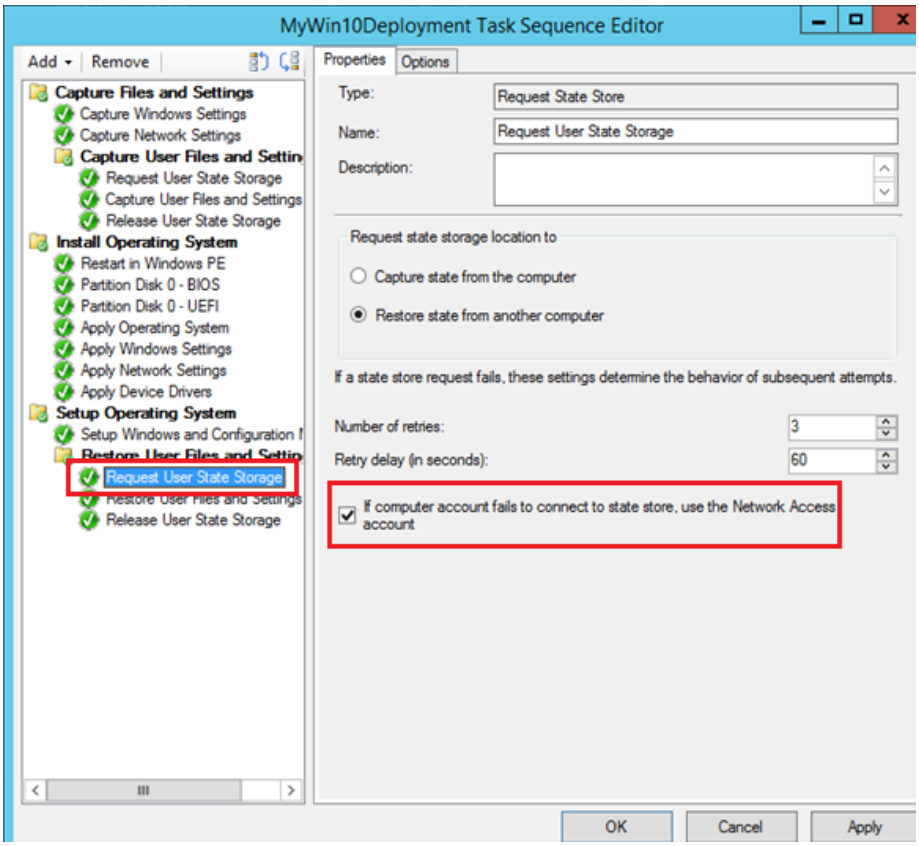
25. In the **Partition Properties** dialog, under **Use a percentage of remaining free space**, enter 95.

Note:
The deployment fails if this value is left at 100, because Windows cannot create the write filter partition.

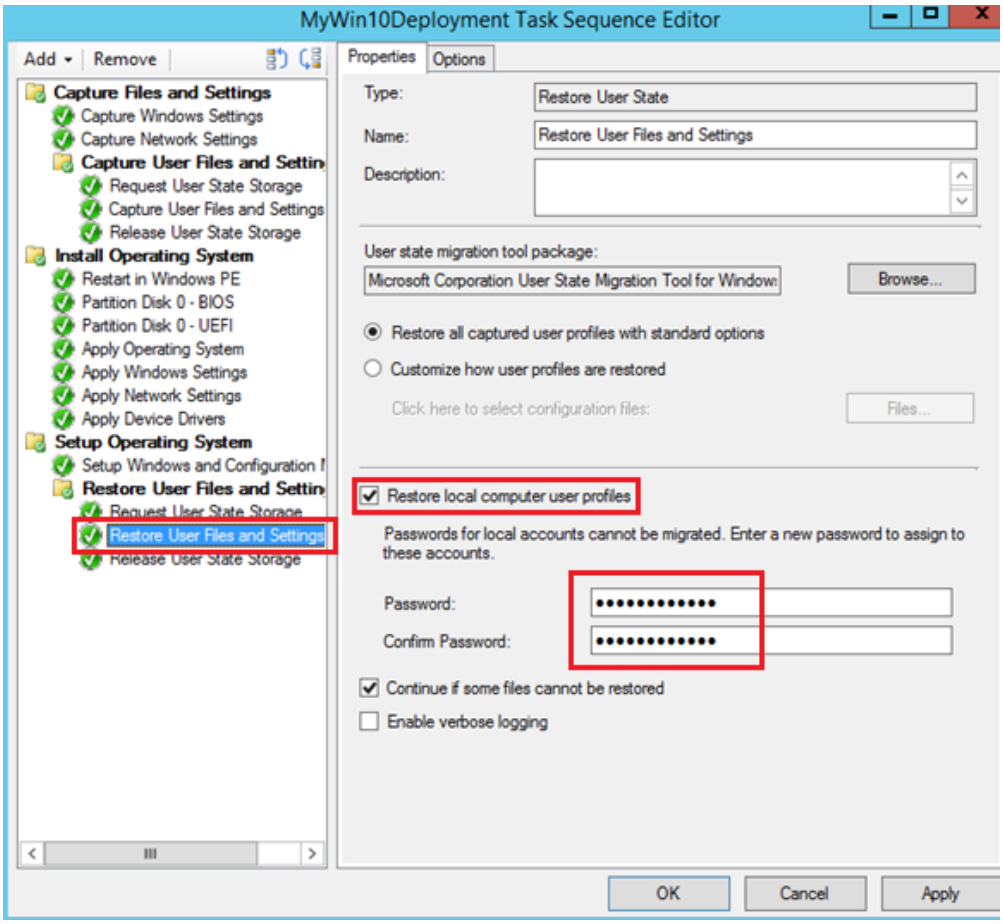
26. Under Formatting options, select **Quick format**. Select **OK** to close the window.



27. Reopen the **Task Sequence Editor**.
28. In the group Restore User Files and Settings, select **Request User State Storage**, and then select the **If computer account fails to connect to state store, use the Network Access account** option.



29. In the group Restore User Files and Settings, select **Restore User Files and Settings**, and then select the **Restore local computer user profiles** option, and then input and confirm then password.



30. Select **Apply** and then **OK** to close the **Task Sequence Editor**.

Note:

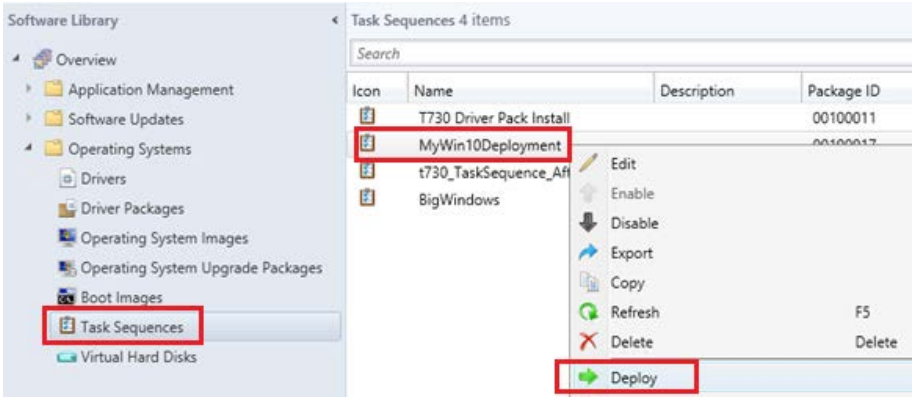
For thin clients that do not have enough disk space to store both the downloaded WIM and the extracted contents locally, a few more settings need to be modified

In the Task Sequence Editor, select **Apply Operating System**, and then select the **Options** tab. Select **Access content directly from the distribution point**.

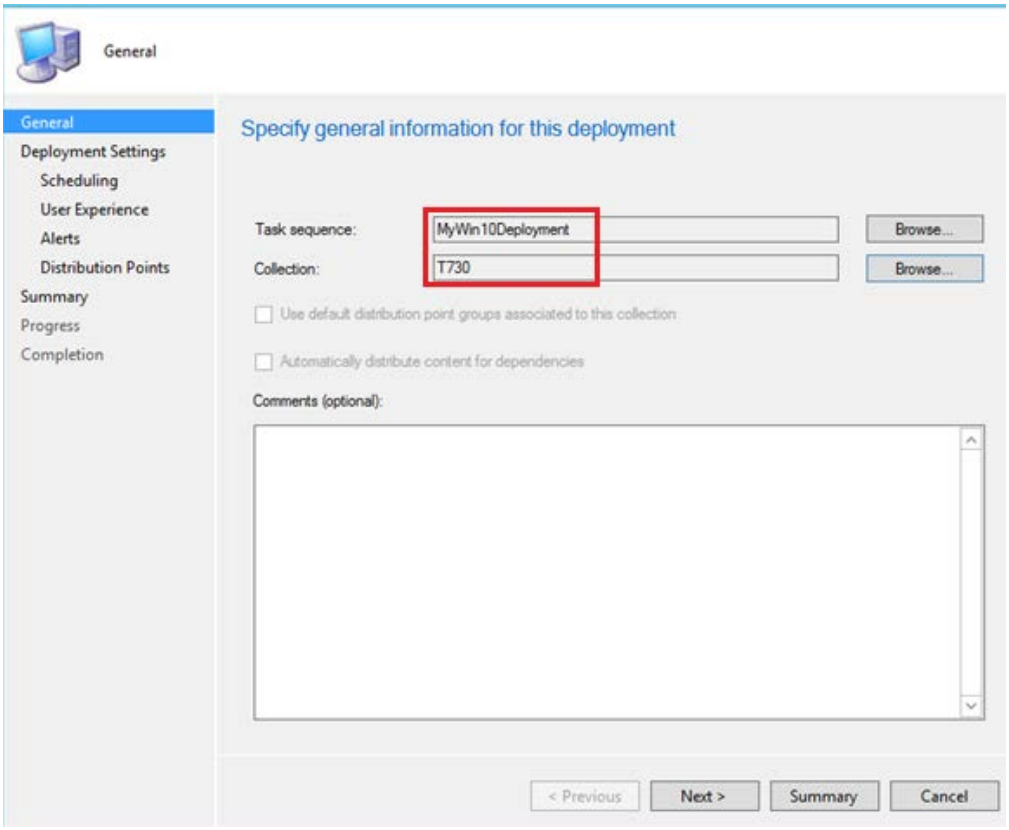
In **Operating System Images**, right-click the reference image package, and select **Properties**. On the Data Access tab, configure the **Package share settings**.

Deploying a Windows reference image

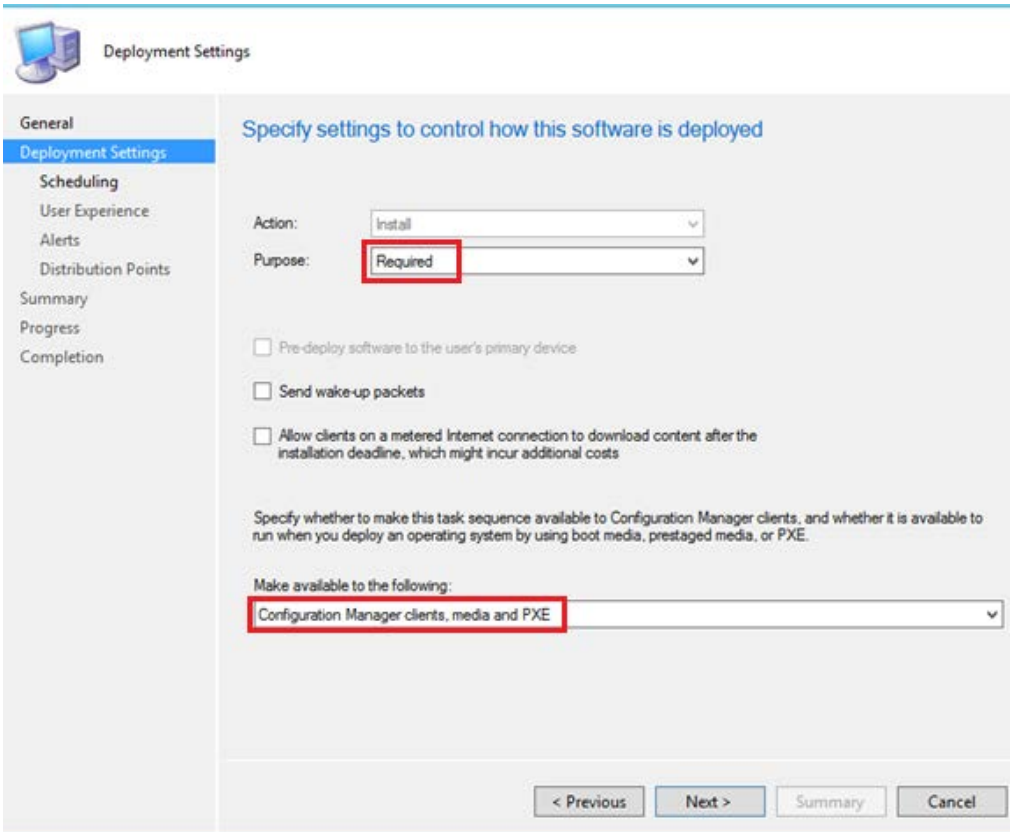
1. Right-click the new task sequence and select **Deploy**.



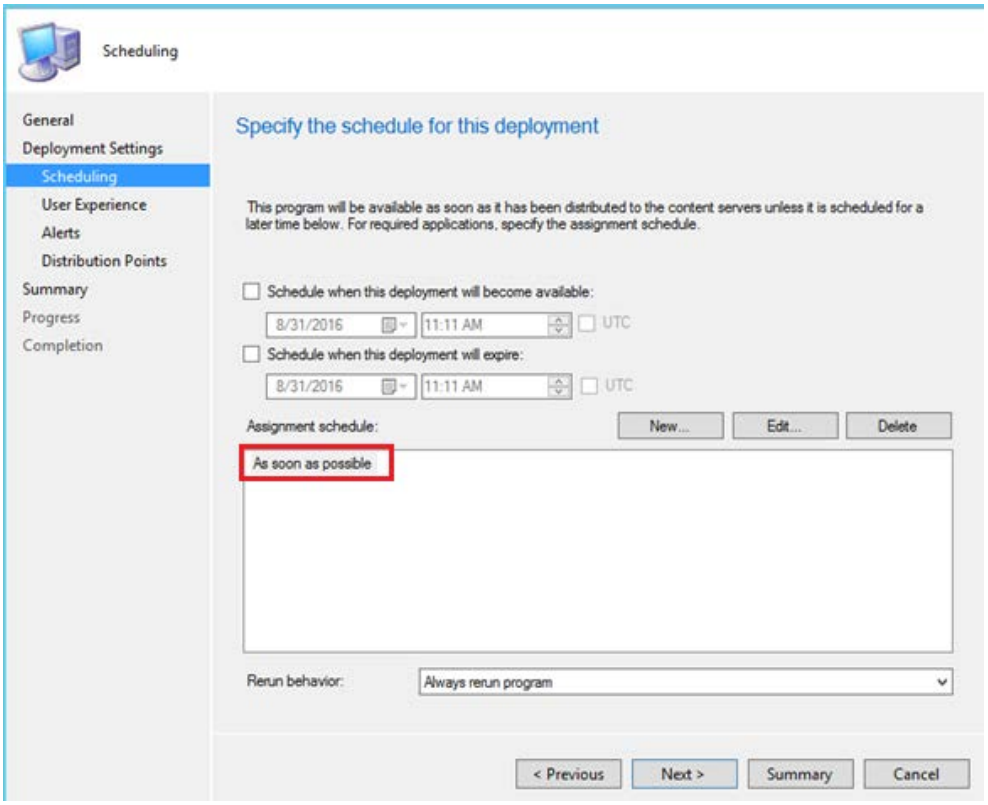
2. Specify the collection to which you want to deploy the task sequence, and then select **Next**.



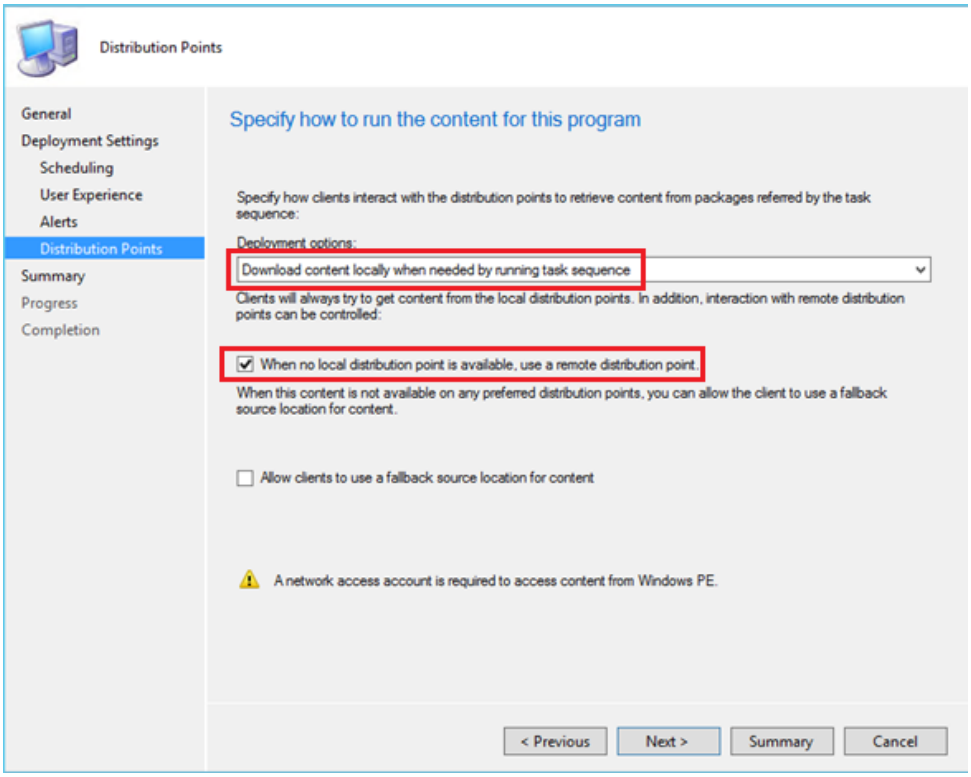
3. For the Purpose item, select **Required**. Verify that the correct collection was specified in step 2.
4. Select the option to make this task sequence available to **Configuration Manager Clients, media and PXE**.



5. Select **Next**.
6. Specify the preferred schedule for the deployment, and then select **Next**. For a PXE-initiated deployment, a mandatory assignment schedule must be created.



7. On the User Experience page, do not change the default options. Select **Next**.
8. On the Alert page, do not change the default options. Select **Next**.
9. On the Distribution Points page, select the **Download content locally when needed by running task sequence** deployment option, and then select the **When no local distribution point is available, use a remote distribution point** option.



10. Select **Next**.
11. On the Summary page, select **Next**.
12. Select **Close**.

Note:
After the task sequence finishes successfully, the write filter status is disabled by default.

Post-deployment tasks
The deployed image might require more customization. For example, the previous procedures do not configure the write filter status, domain membership, and Auto Logon options.

It is recommended to customize these options by running command lines or scripts at first boot. For more information on enabling the write filter and an example script, see Appendix B—Enabling the write filter using a deployment task sequence.

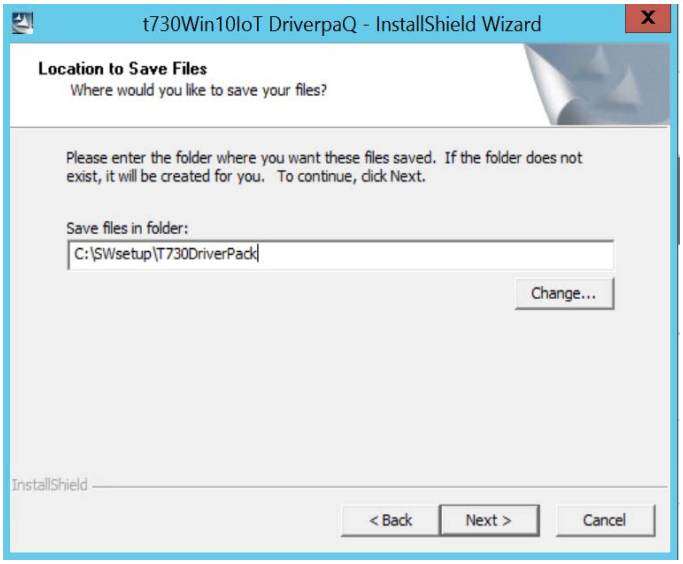
Note:
After a Windows Embedded Standard 7P image is deployed, the system does not start automatically until the settings, such as time zone and region, have been configured from the client side.

Modifying an existing operating system deployment task

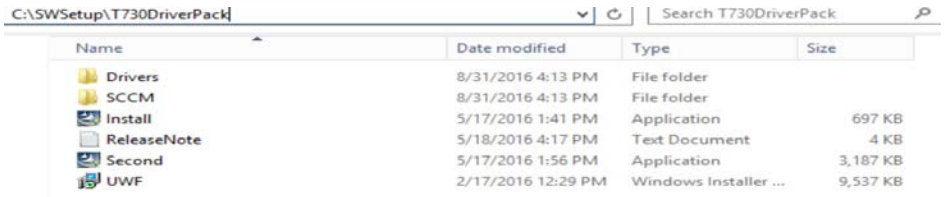
Downloading and extracting the manageability driver pack

1. Download the driver pack for the appropriate thin client model from http://www.hp.com/go/bizsupport (search for the thin client model, and then select **drivers, software & firmware**).
2. Run the driver package, and specify the location to extract the files to.

Note:
By default, this driver package extracts to c:/swsetup.

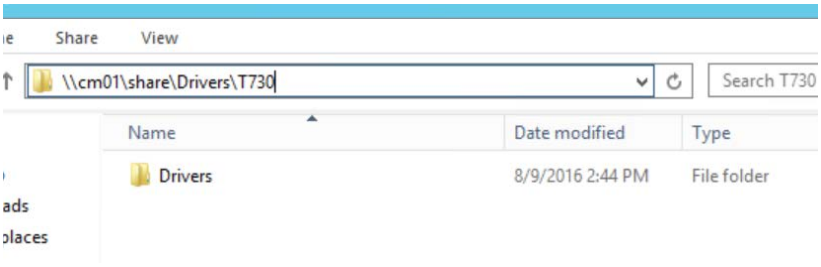


When complete, the extracted contents are as follows:

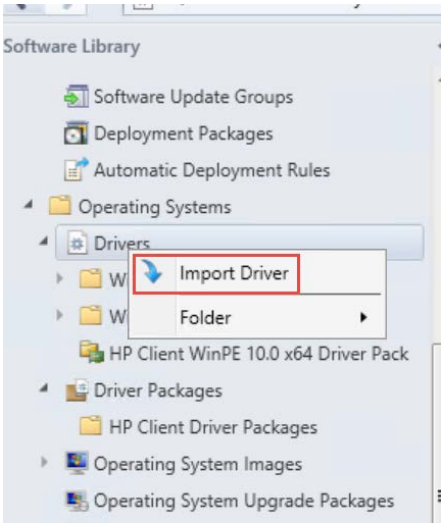


Creating a driver package for an operating system deployment task

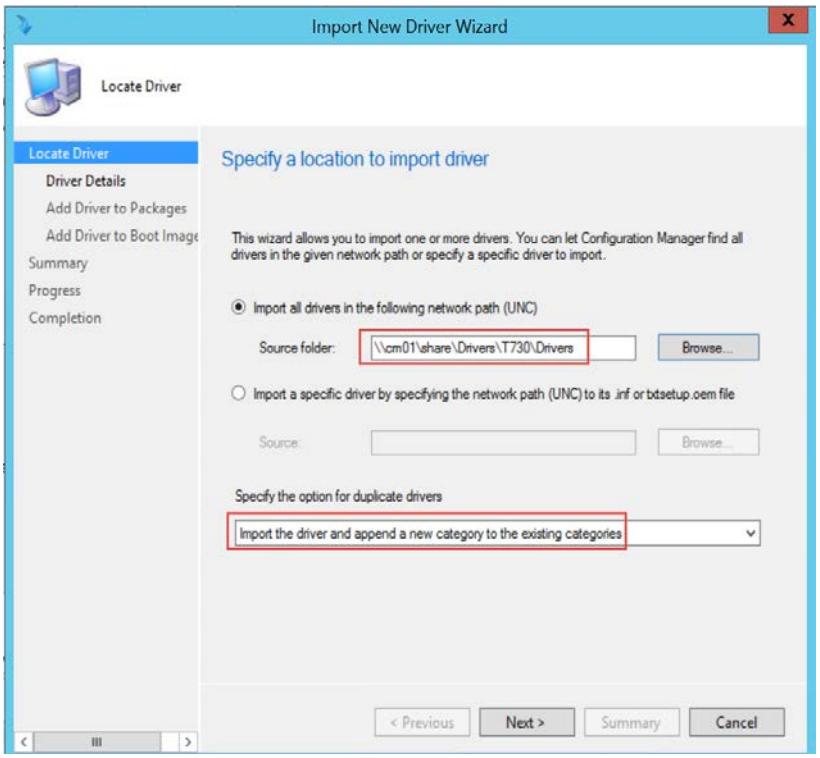
1. Create a shared folder on the Configuration Manager server to store the drivers.
2. Copy the folder created in Downloading and extracting the manageability driver pack to this shared folder.



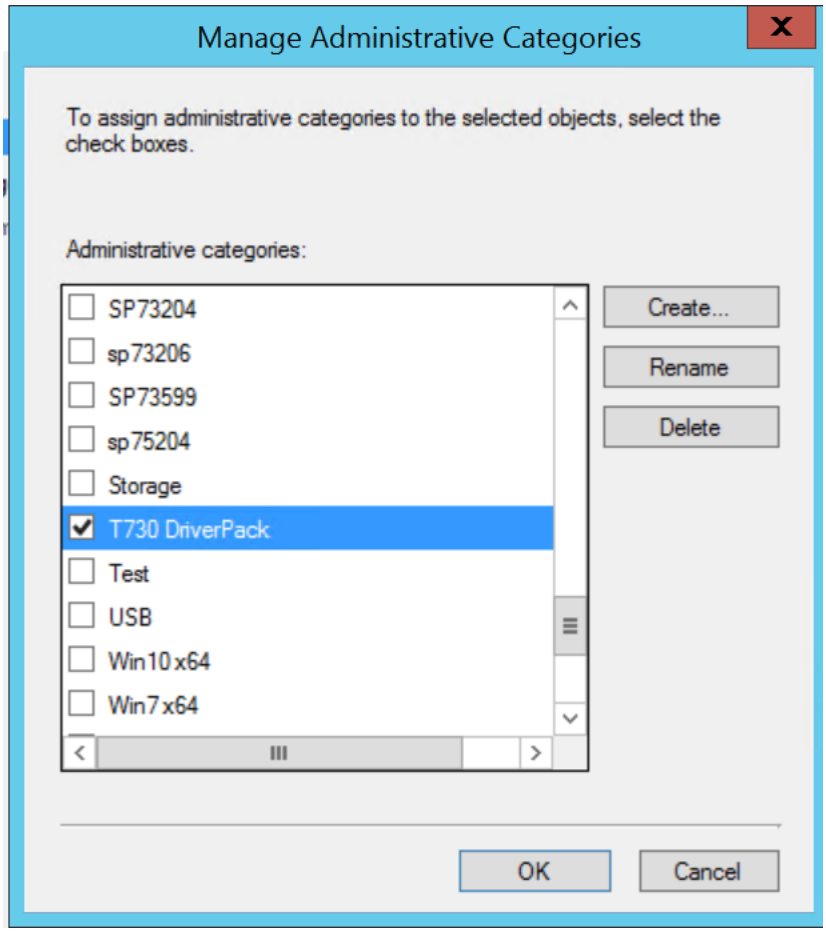
3. Select **System Center Configuration Manager**, select **Software Library**, right-click **Drivers**, and then select **Import Driver**.



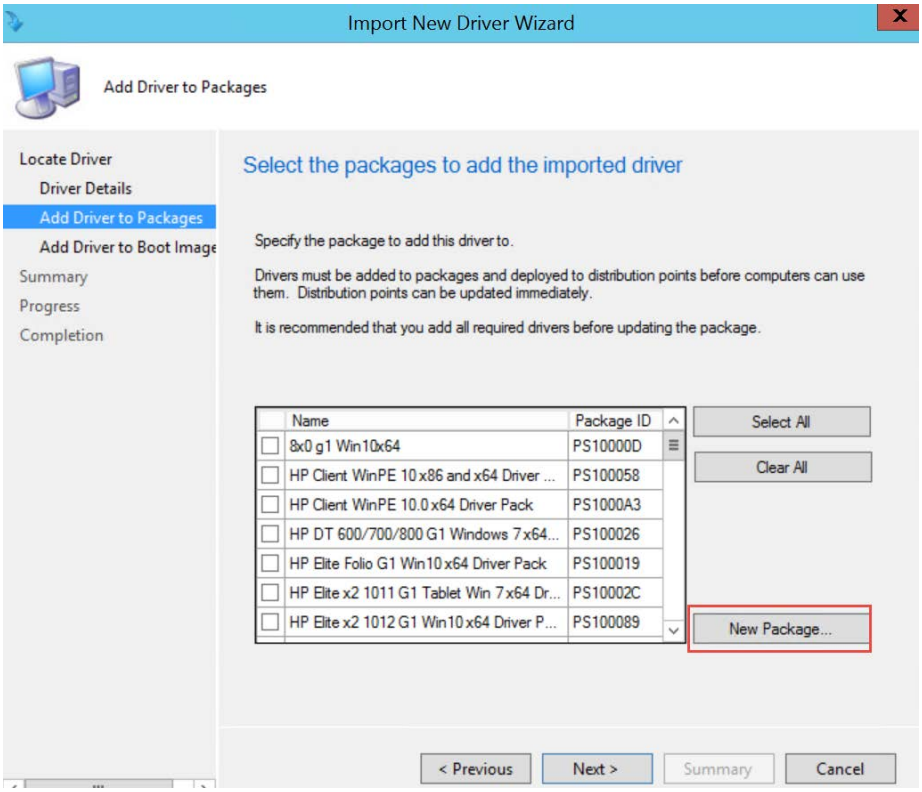
4. Select **Import all drivers in the following network path (UNC)**, select **Browse**, and then select the shared folder. HP recommends that under Specify the option for duplicate drivers, you select **Import the driver and append a new category to the existing categories**.



5. Select **Create** to create an administrative category for the driver package, and then select that category to assign it to the driver package. Select **OK**.

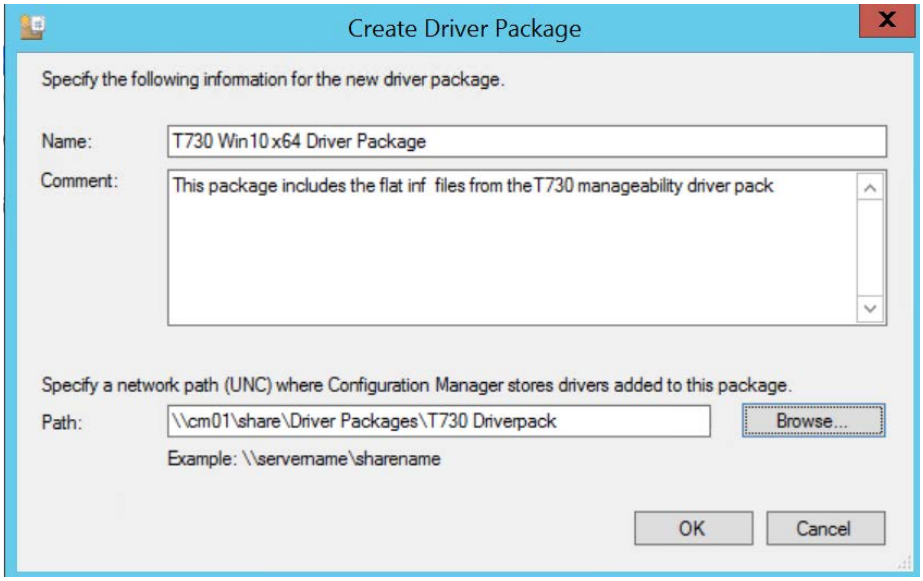


6. On the Add Driver to Packages page, select **New Package**.



7. Enter a **Name** for the package and select **Browse** to specify the location to store the driver package to. Select **OK**.

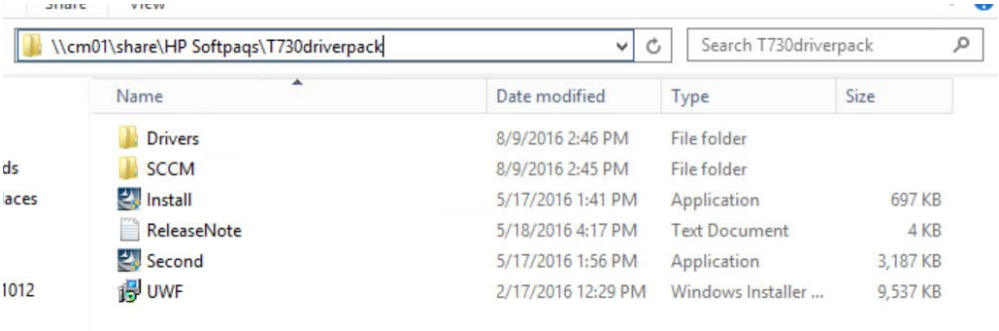
Note:
Do not save these drivers to boot images. HP recommends that you leverage the appropriate WinPE driver pack from this location: http://ftp.hp.com/pub/caps-softpaq/cmit/HP_WinPE_DriverPack.html.



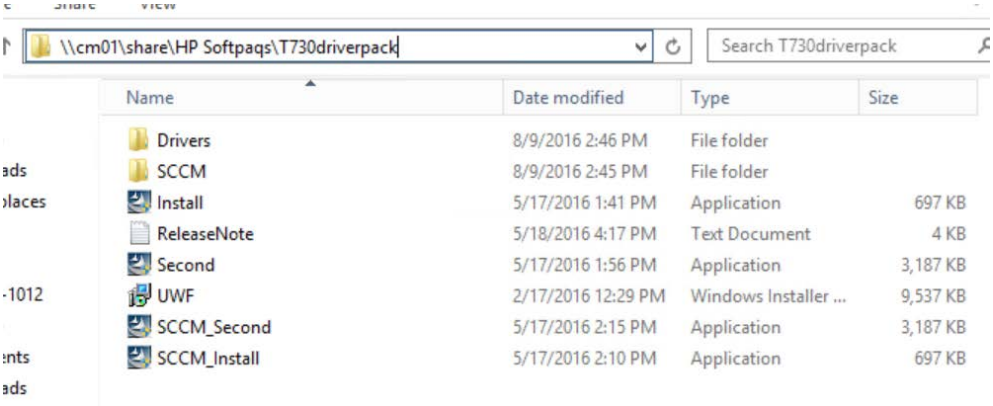
8. Distribute the driver package to the distribution points.

Creating a driver package for HP thin client software configuration

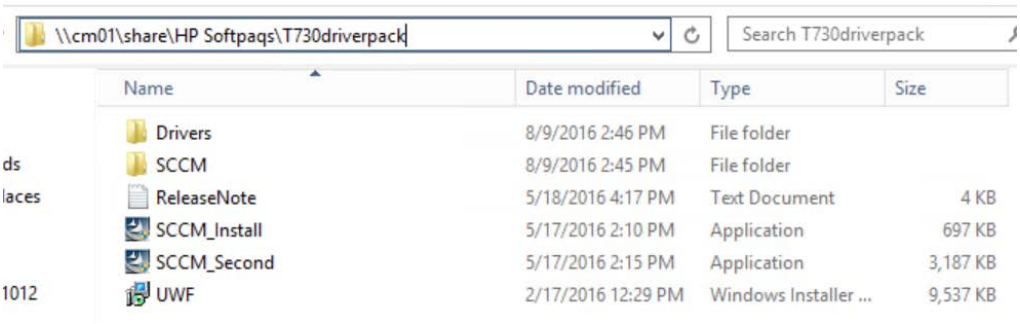
1. Create a shared network folder on the Configuration Manager server to store contents of the thin client manageability driver package.
2. Copy the entire contents of the extracted driver pack to this new location.



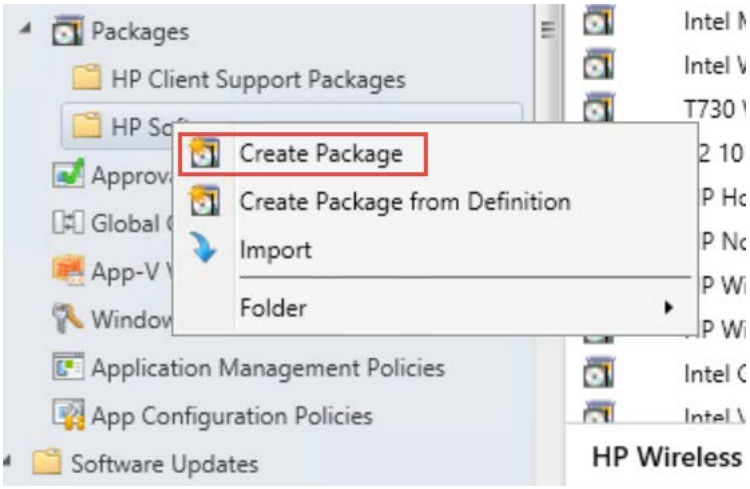
3. Copy the .exe files from the **SCCM** folder to the root folder of the package.



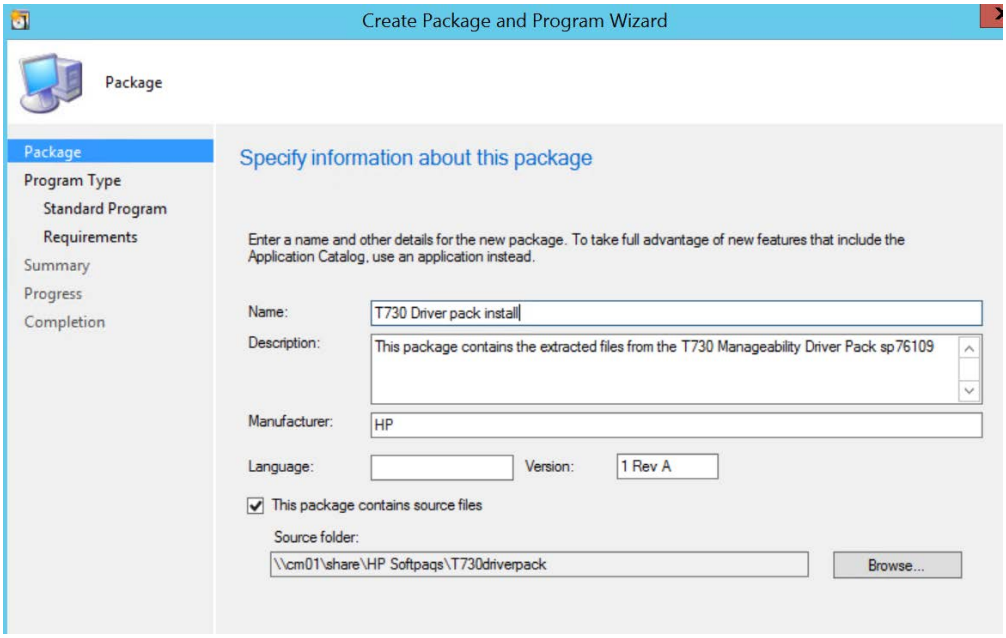
4. Delete the **Install.exe** and **Second.exe** files from the root folder of the package.



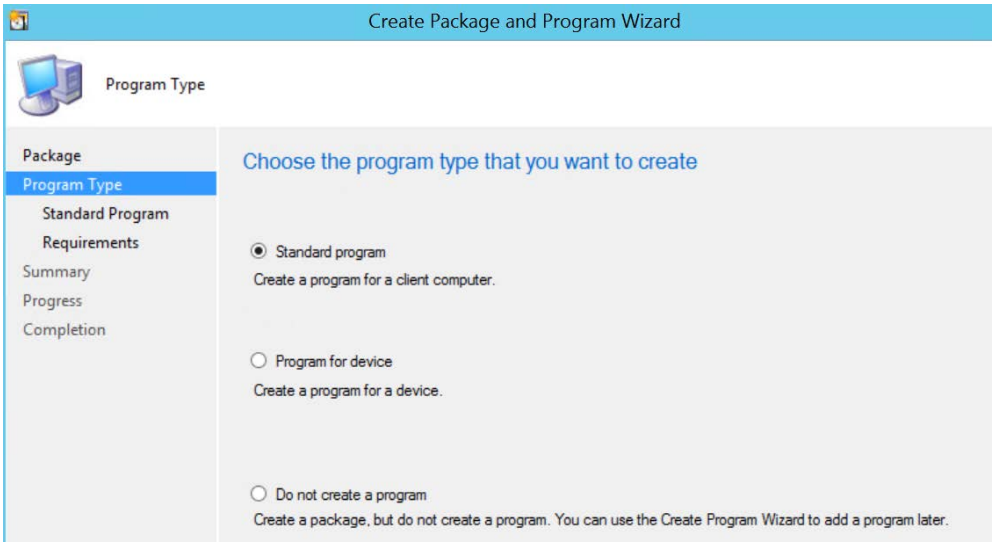
5. Select **System Center Configuration Manager**, select **Software Library**, right-click **Packages**, and then select **Create Package**.



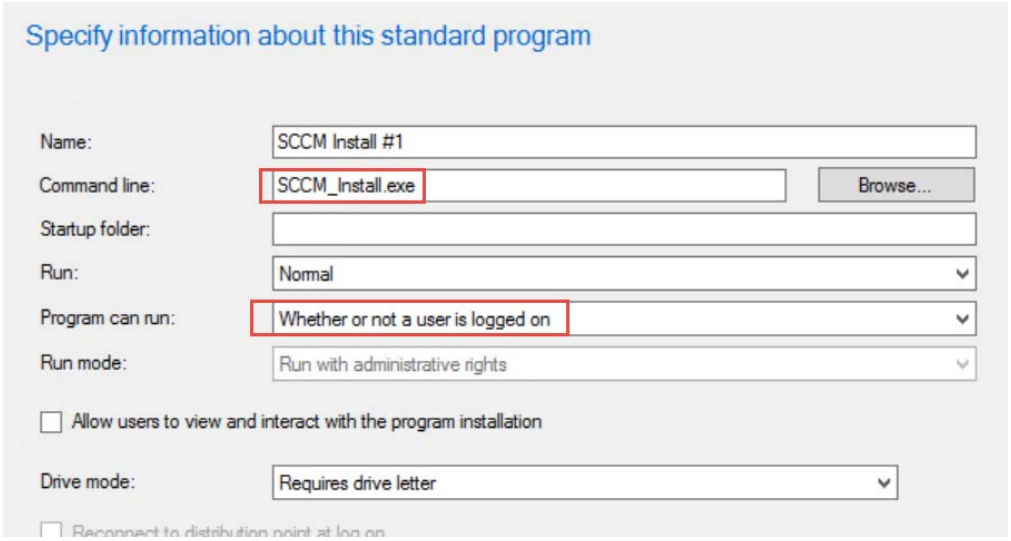
6. Specify any necessary information, select **This package contains source files**, select **Browse**, and then select the shared folder created in step 1.



7. On the Program Type page, select **Standard program**.

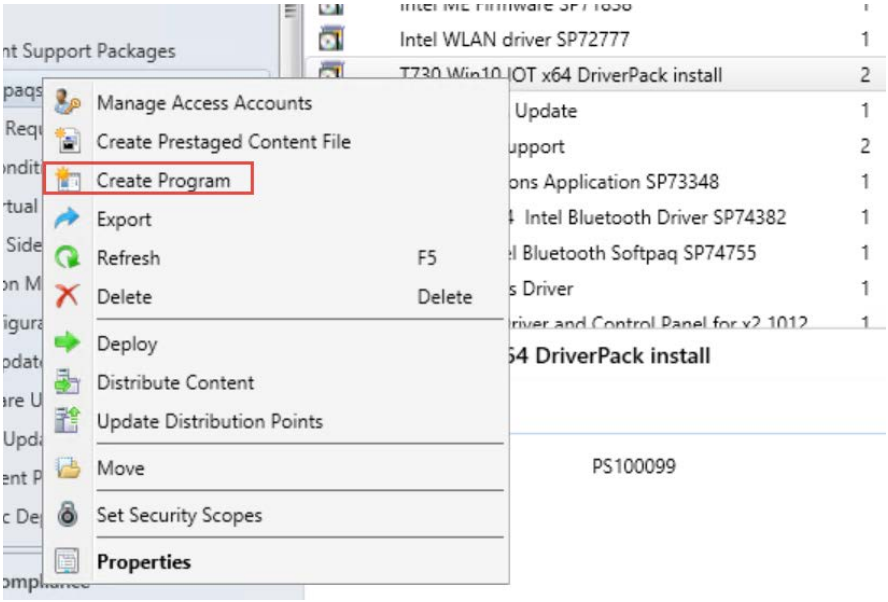


8. Specify the **Name**, select the **SCCM_Install.exe** as the Command line, and then select **Whether or not a user is logged on** under Program can run.

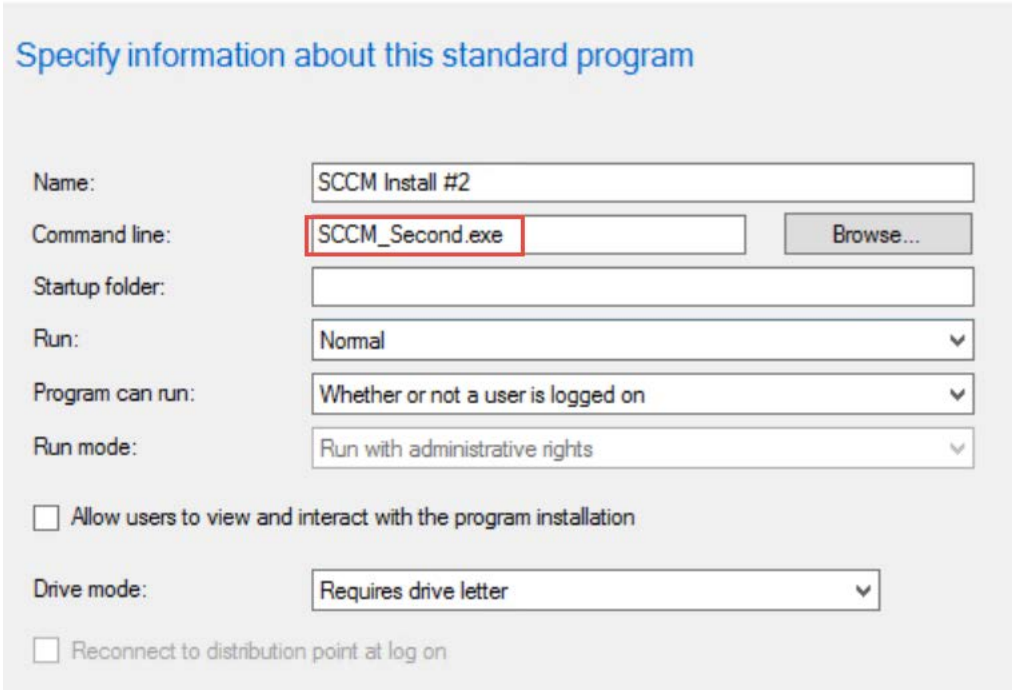


9. On the Requirements page, do not change the default settings.

10. Right-click the new package, and then select **Create Program**.



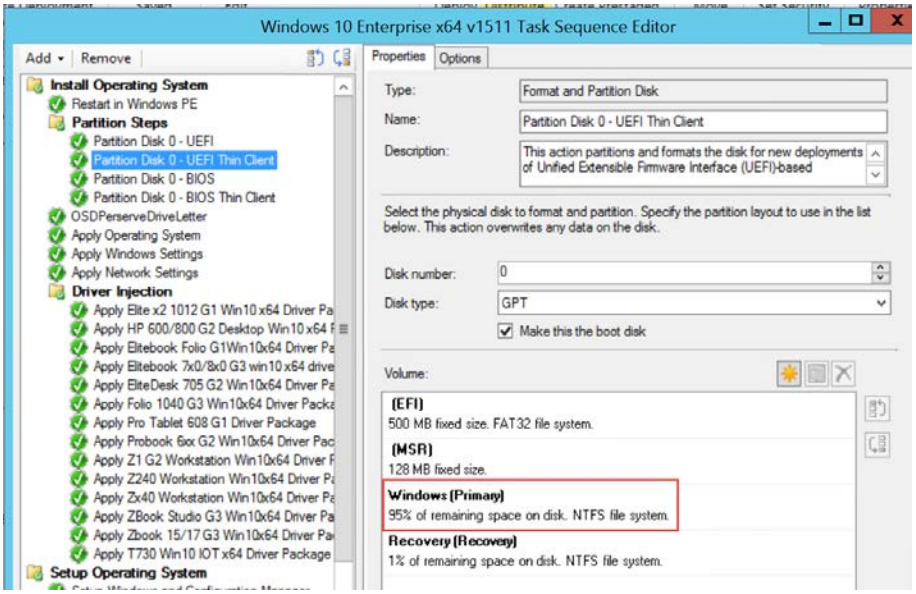
11. Repeat steps 7 and 8, but specify **SCCM_Second.exe** as the Command line.



12. Distribute the package to the appropriate distribution points.

Modifying an existing Windows 10 operating system deployment task to support an HP thin client

1. Configure the task sequence to add partitioning steps to leave space to use for the write filter. You must configure **Windows (Primary)** on both **Partition Disk 0 – BIOS** and **Partition Disk 0 – UEFI**.

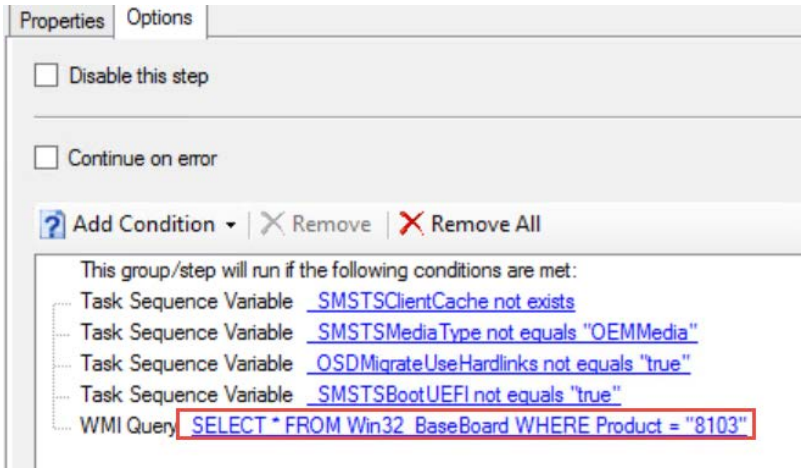


2. In the Options tab of each "Thin Client" partition step, select **Add Condition** to add a WMI Query condition to make sure this step runs only on the HP thin client models that you use.

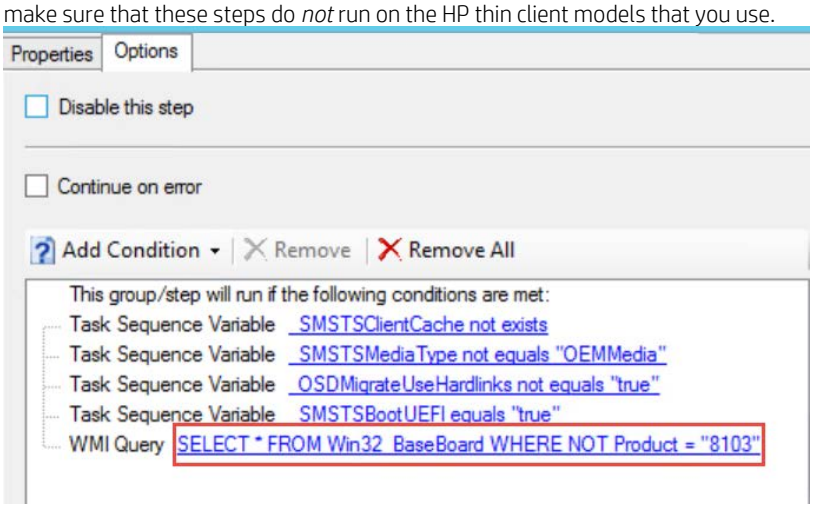
Note

This examples uses the HP t730, which has a SysID of 8103. Run the following command on your thin clients to get the SysID specific to each model:

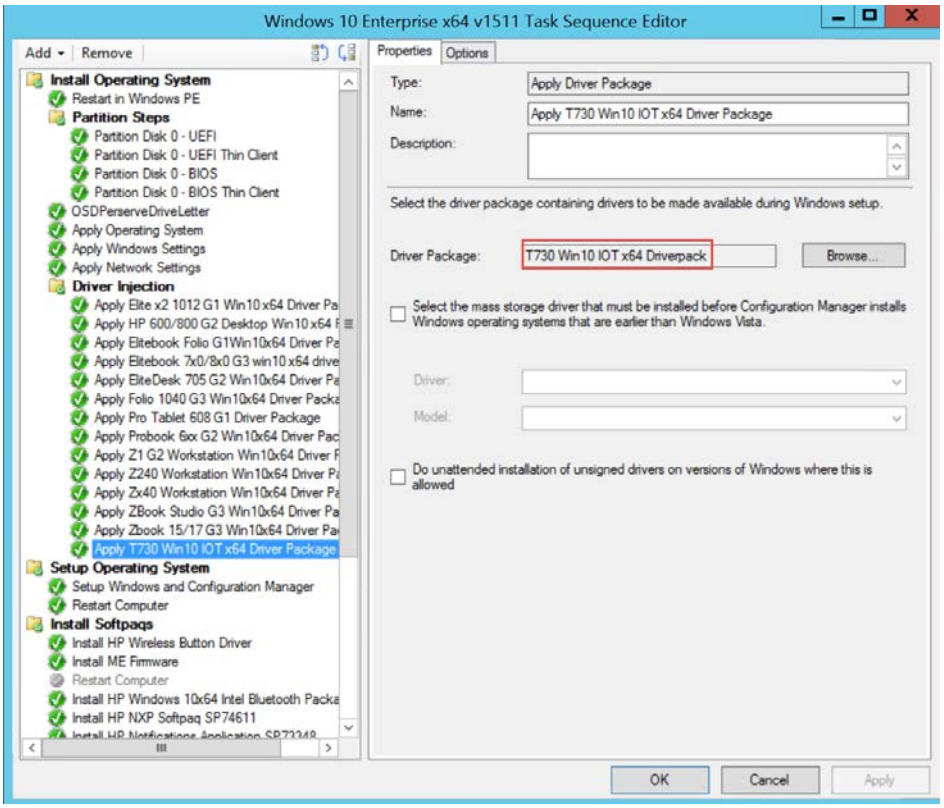
```
WMIC baseboard get Product
```



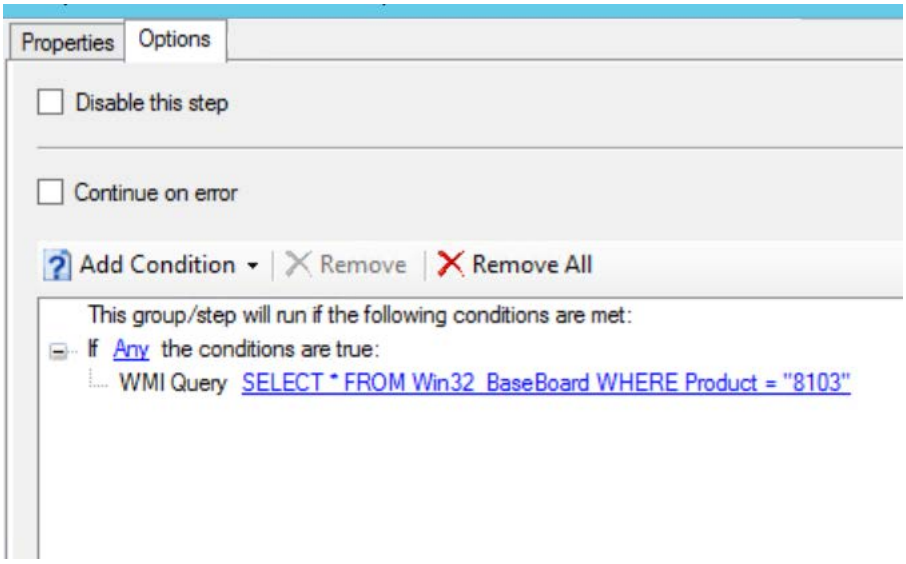
3. In the Options tab of the default (non–thin client) partition steps, select **Add Condition** to add a WMI Query condition to make sure that these steps do *not* run on the HP thin client models that you use.



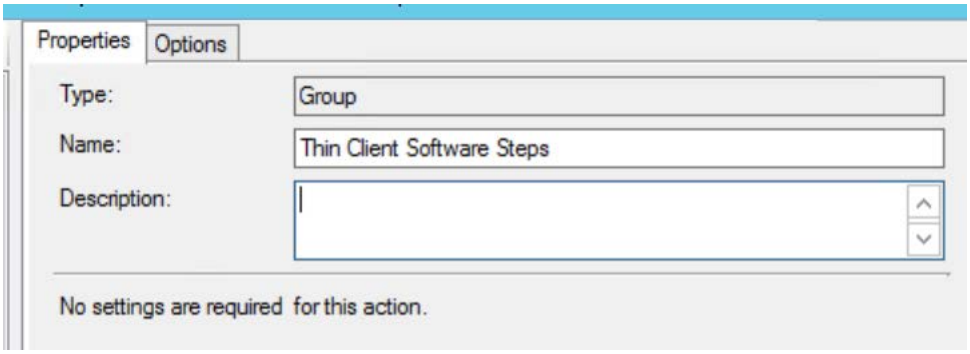
4. To the driver injection steps of the task sequence, add an **Apply Driver Package** step using the driver package created earlier.



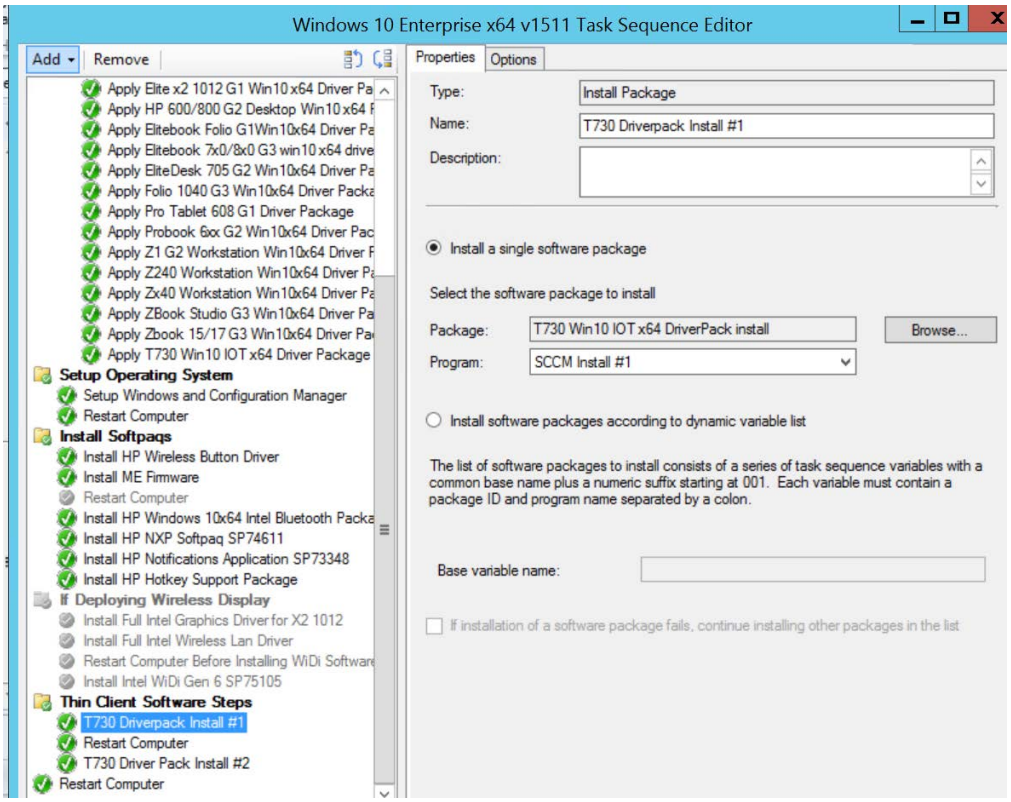
5. Add a **WMI Query** to this driver package step to make sure it runs only on the HP thin client models that you use.



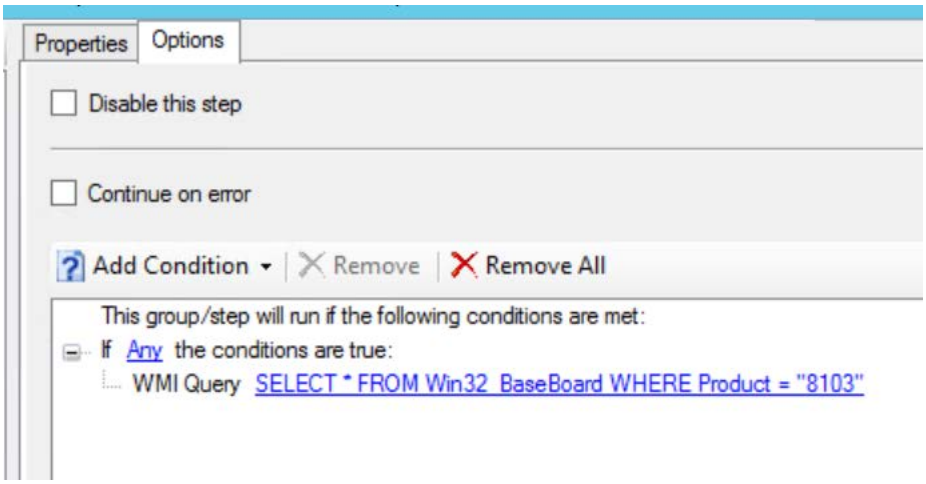
6. At the end of the task sequence, add a new group to contain the thin client software installation steps.



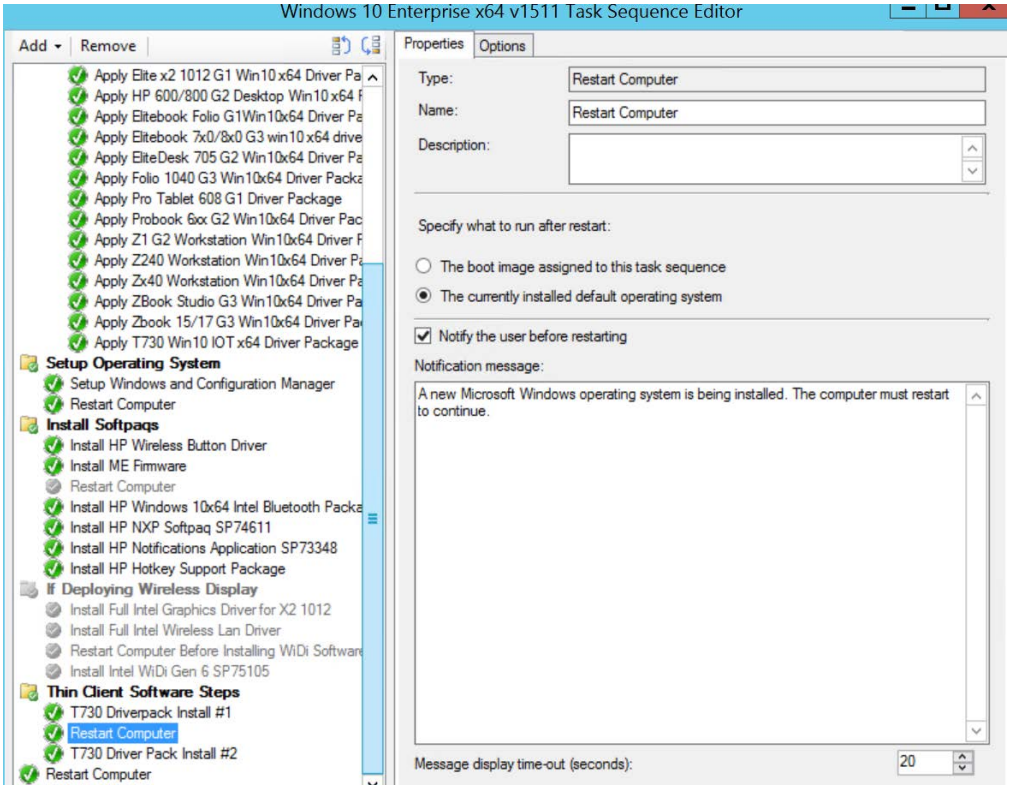
7. In this group, add an **Install Package** step. Select the driver package created earlier, and then select **SCCM Install #1** as the Program.



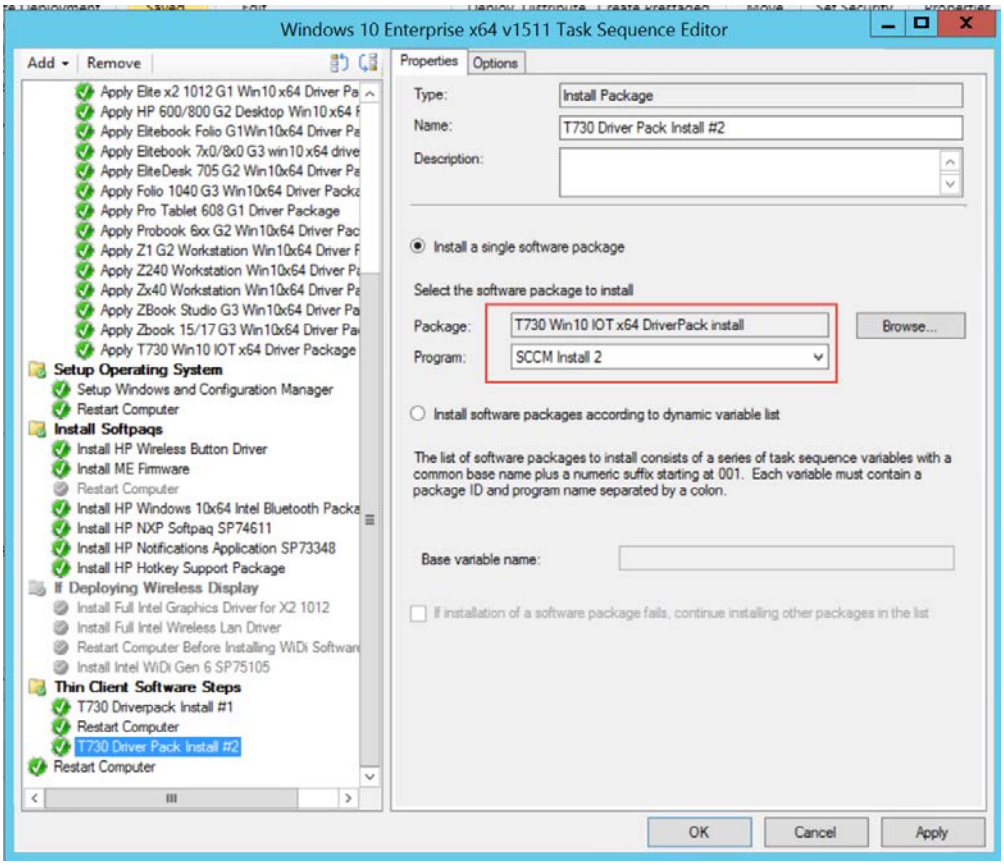
8. Select **Add Condition** to add a WMI condition to make sure this step runs only on the HP thin client models that you use.



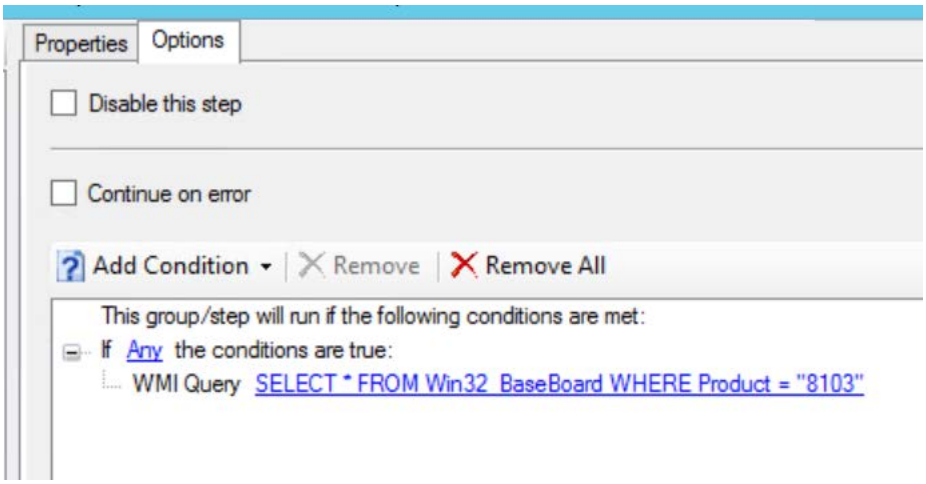
9. Add a **Restart Computer** step that boots to the currently installed default operating system.



10. In this group, add an **Install Package** step. Select the driver package created earlier, and then select **SCCM Install #2** as the Program.



11. Select **Add Condition** to add a WMI condition to make sure this step runs only on the HP thin client models that you use.



12. HP recommends adding a final restart to the task sequence.

Appendix A—Preparing a task sequence to include User State Migration

The source computer needs at least 250 MB of hard disk space to support USMT operations. For more information, go to http://technet.microsoft.com/en-us/library/dd560770%28v=ws.10%29.aspx#BKMK_SpaceReqs.

For a Windows image on an HP thin client, USMT uses RAM disk Z: by default. Extend the disk size before capturing and deploying an image using the following procedure.

To extend a RAM disk:

1. Modify the registry value and commit to write filter if enabled:
   `HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Services\RamDrive\Parameters\DiskSize`
2. Run the command line: `reg add HKLM\SYSTEM\ControlSet001\services\Ramdrive\Parameters /v DiskSize /t REG_DWORD /d 0x10400000 /f`

Appendix B—Enabling the write filter using a deployment task sequence

To enable the writer filter as part of the operating system deployment process, HP recommends running the command lines or scripts at first boot. The following is a procedure to enable the writer filter.

1. Edit the **Operating System Task Sequence** to automatically log on the Administrator during deployment.
2. Use **unattend.xml** to create **First Launch Commands**.
3. After the operating system deployment completes, the task sequence exits and return full control to the operating system. These example first launch commands execute the following:
   - Automatically logs on the Administrator after deployment.
   - Enables the write filter.
   - Configures the BCD Fixup option. The Enhanced and File-Based Write Filter require the IGNOREALLFAILS policy be in the Boot Configuration Data (BCD). This flag prevents error dialogs regarding unsafe shutdowns during the boot process. Typically, in Windows Embedded Standard 7, enabling the write filter automatically sets this policy in the BCD and prevents boot errors. It might not be set automatically following a deployment tast sequence in Configuration Manager, and then needs to be set manually.
   - Removes **Administrator Autologin on next reboot** or sets **User Autologin**.
   - Restarts the system after 90 seconds.
4. After restarting, the write filter is enabled and the thin client can be used.

The following snippet is the first launch command to be included in the `unattend.xml` file under the `<settings pass="oobeSystem">` section:

```
<FirstLogonCommands>
                <SynchronousCommand wcm:action="add">
                    <Order>1</Order>
                    <CommandLine>ewfmgr c: /enable </CommandLine>
                    <Description>Enable EWF WF </Description>
                </SynchronousCommand>
                <SynchronousCommand wcm:action="add">
                    <Order>2</Order>
                    <CommandLine>bcdedit /set {current} bootstatuspolicy
ignoreallfailures
      </CommandLine>
                    <Description>Fix BCD </Description>
                </SynchronousCommand>
  <SynchronousCommand wcm:action="add">
                    <Order>3</Order>
                    <CommandLine>autologcfg /u:User /p:User</CommandLine>
                    <Description>Enables user Autologin</Description>
```

```
            <RequiresUserInput>false</RequiresUserInput>
        </SynchronousCommand>
        <SynchronousCommand wcm:action="add">
            <Order>4</Order>
            <CommandLine>shutdown -r -t 90</CommandLine>
            <Description>Restarts after 90 seconds</Description>
            <RequiresUserInput>false</RequiresUserInput>
        </SynchronousCommand>
</FirstLogonCommands>
```

Appendix C—Preparing a boot image and adding the correspondent drivers

By default, Configuration Manager 2012 R2 SP1 uses Windows PE 5.0 as the boot image. This boot image is used for Windows 8 and Windows Server 2012. To manage an HP thin client with a Windows 10 IoT Enterprise image, import Windows PE and use Windows 10 ADK.

By default, after installing Windows 10 ADK, WinPE.wim is available in the following location:

```
C:\Program Files (x86)\Windows Kits\10\Assessment and Deployment Kit\Windows Preinstallation Environment\amd64\en-us
```

For more information about Windows 10 ADK, go to https://msdn.microsoft.com/en-us/windows/hardware/dn913721.aspx.

The Windows Embedded Standard 7 image uses Windows PE 3.0. This requires a different driver package. Be sure that you have selected the corresponding package before capturing or deploying an image.

For example, HP t820 uses the Intel® Ethernet Connection I217-LM network card. Before capturing a Windows Embedded Standard 7 image on an HP t820, go to http://www.intel.com and search and download the network card driver for Windows 8 instead of Windows Embedded Standard 7.

Appendix D—Automating language selection with a customized answer file during Windows setup

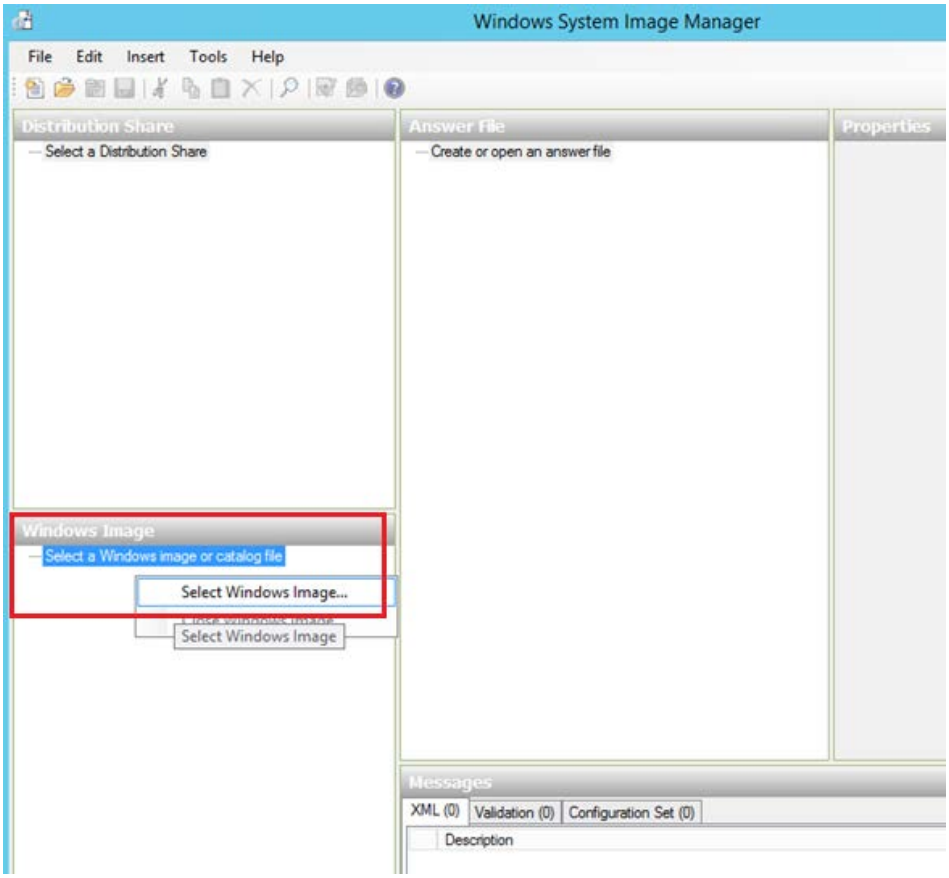
A customized answer file is required to automate the Windows setup to remove the language selection page.

The following software is required to create a customized answer file:

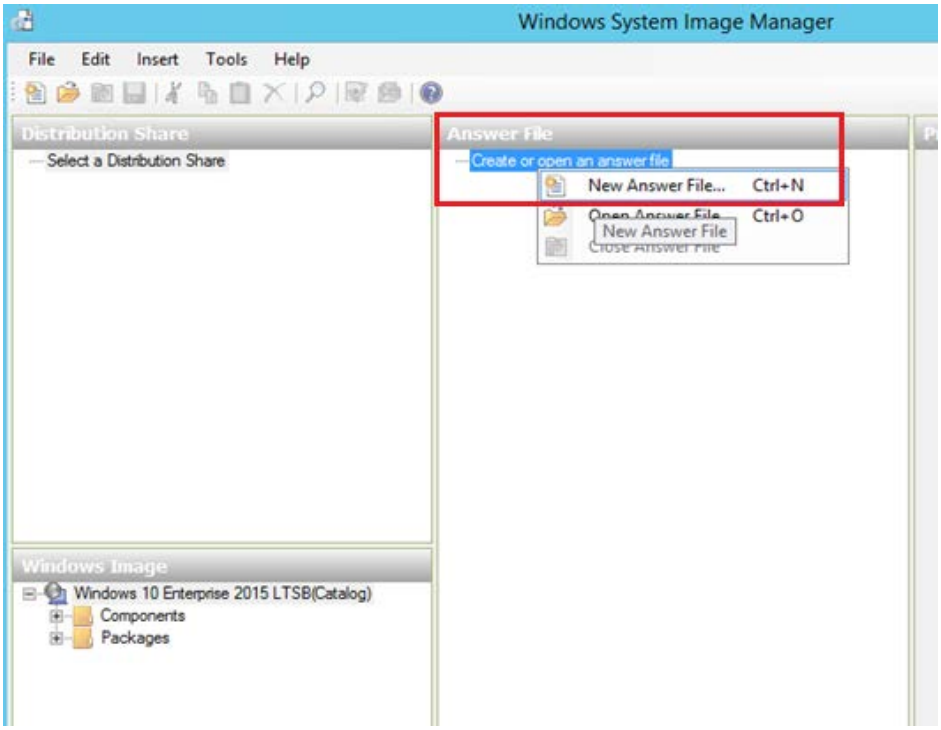
- Windows System Image Manager, which is part of Windows ADK
- install.wim file from the source folder of the operating system installation media

Creating a customized answer file

1. Open **Window System Image Manager**.
2. Right-click **Select a Windows Image or catalog file**, and then select **Select Windows Image**.

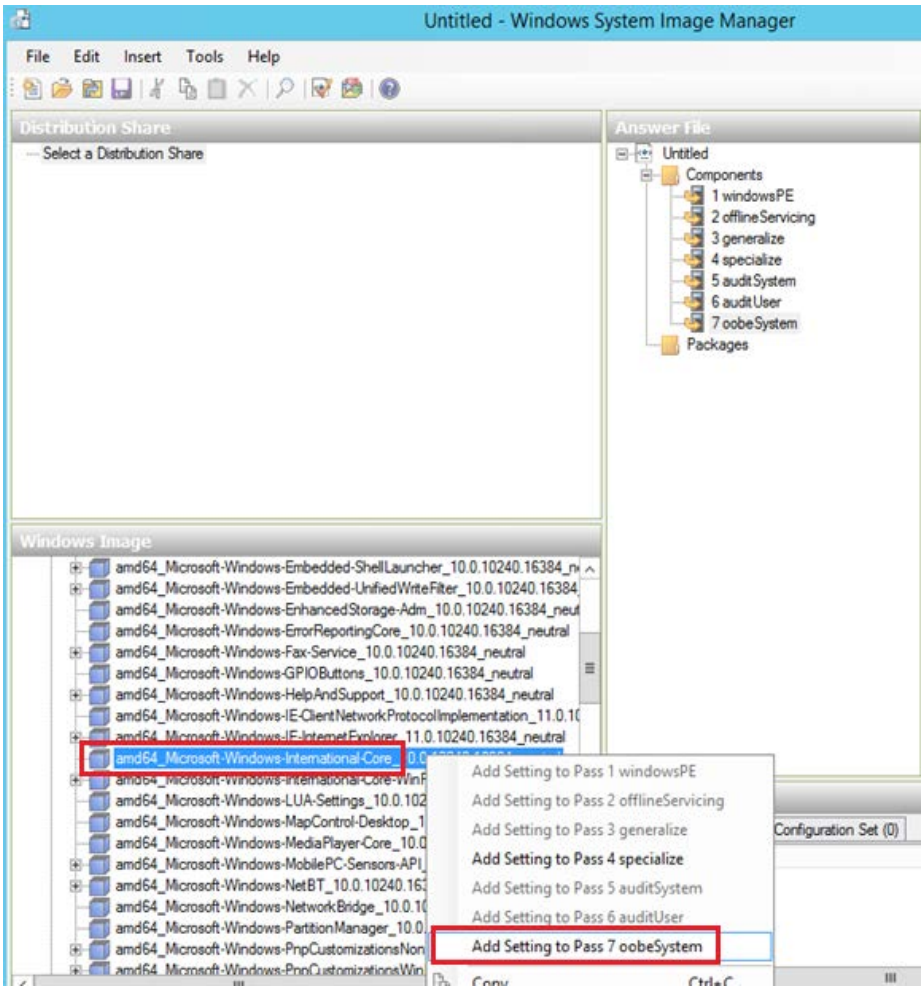


3. Broswe to the location of the install.wim file, and then select the file to import it. Select **YES** when prompted.
4. Right-click **Create or open an answer file**, and then select **New Answer File**.



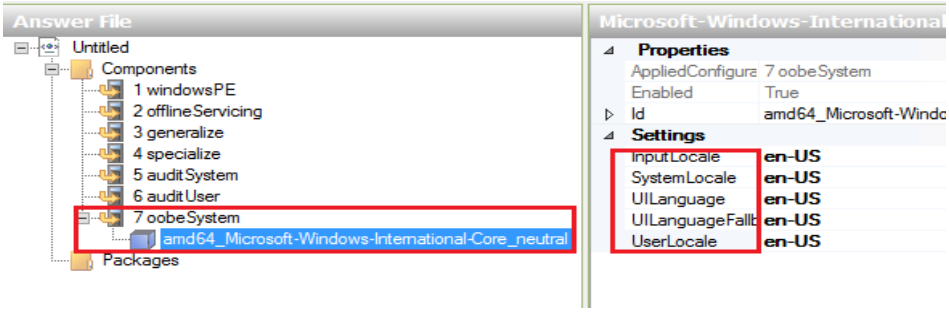
5. Expand **Components**. Right-click **amd64_Microsoft-Windows-International-Core_<version>_neutral**, and then select **Add Setting to Pass 7 oobeSystem**.

Note:
Select the component based on the architecture of the operating system that the answer file is being applied to.



6. Confirm that **amd64_Microsoft-Windows-International-Core_neutral** is selected under **oobeSystem**, and then specify the language codes in each of the following fields:
   - InputLocale
   - SystemLocale
   - UILanguage
   - UILanguageFallback
   - UserLocale

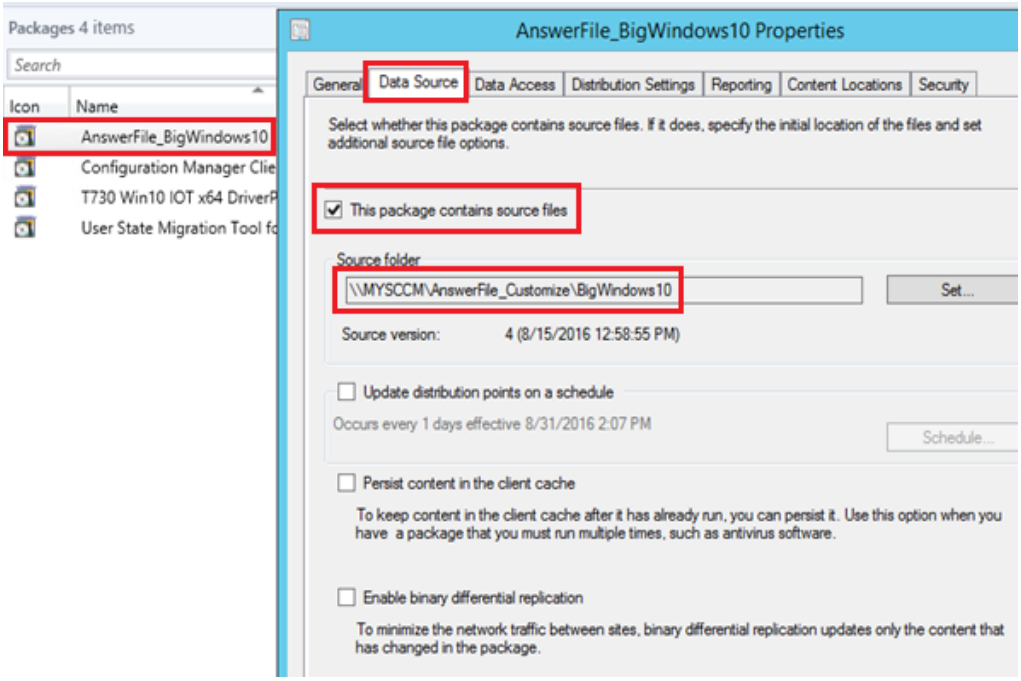
   For the latest language codes, go to https://msdn.microsoft.com/en-us/library/cc233965.aspx.



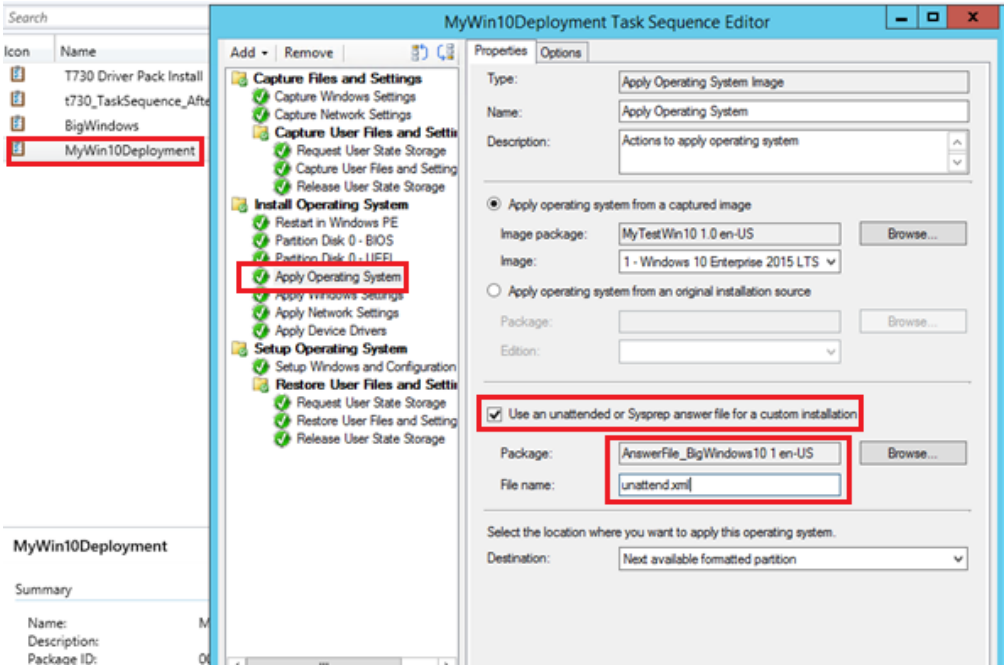
7. Select **Tools**, and then select **Validate Answer File**. The validation is successful if 0 is returned.
8. Select **File**, select **Save Answer File**, select a location to save the file, and then name the file `unattend.xml`.

Deploying the customized answer file with Configuration Manager

1. Create a new package in Configuration Manager. Select **This package contains source files**, and then specify the saved unattend.xml file as the **Source folder**.



2. Edit the task sequence used to deploy the Windows operating system.
3. Select the **Apply Operating System** step, and then select **Use an unattended or Sysprep answer file for a custom installation**.
4. Select **Browse**, select the package created in step 1, and then enter `unattend.xml` as the **File name**.



5. Select **OK** to save the template sequence.
6. Deploy the updated template sequence to remove the language selection page from Windows setup.

Appendix E—Known issues and solutions

Issue: After capturing a Windows 10 IoT Enterprise image with Configuration Manager 2012 R2 SP1, the Start menu of the user account does not work.

Solution: Remove ActivationStore.dat after running sysprep. To do this, create a .cmd file with a script like in the following example:

```
c:
cd c:\Users
del /s /f /q ActivationStore.dat
```

Copy the .cmd file to the USB device that is going to be used to capture the image, and execute the .cmd file before capturing the image.

Issue: The local administrator account is disabled after capturing and deploying an image with Configuration Manager 2012 R2 SP1.

Solution: Edit the template sequence to add the thin client to a domain after the image is deployed. Use a domain account to enable the local administrator account if necessary.

Issue: After deploying an HP Windows 10 2015 LTSB image with Configuration Manager R2 SP1, the Configuration Manager client is not installed automatically. All following subtasks abort to the desktop login.

Solution: This is an issue caused by Configuration Manager. To resolve this issue:

1. Go to http://www.catalog.update.microsoft.com/Search.aspx?q=KB3205383.
2. Download the KB3205383 cumulative update.
3. Install this update to the golden image, and then capture the image.

Note

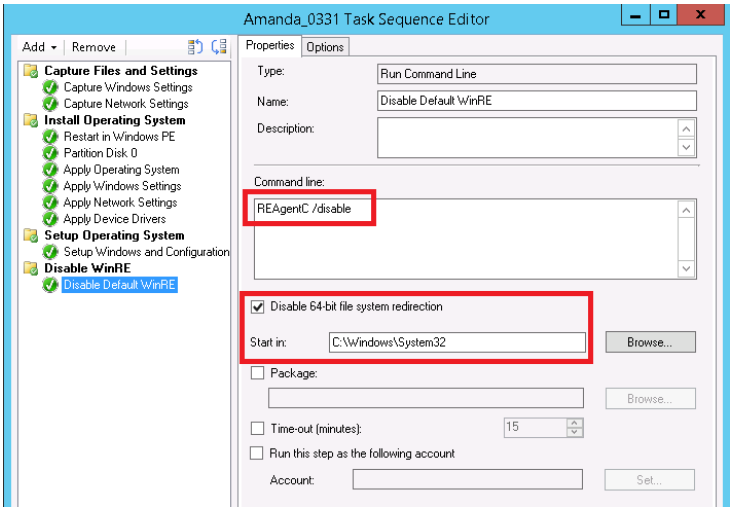
This issue is not present on the the Windows 10 2016 LTSB image from HP that has the KB3206632 update preinstalled.

Issue: After Configuration Manager was used for imaging on an HP computer with a Windows 10 2016 LTSB image with UWF enabled, BitLocker® cannot be enabled to encrypt the C drive.

Solution: This issue can occur when using Configuration Manager to capture or deploy an image. To fix this issue, enter the `Reagentc /disable` command on the client side.

To enter this command, do one of the following:

- In Command Prompt on the client computer, enter **CMD** and then press **Enter**.
- To automate the process, add the `Reagentc /disable` command-line subtask to the end of the Configuration Manager imaging task sequence. Be sure to select **Disable 64-bit file system redirection**.



- Send this command using any third-party software that has ability to remotely execute commands.

For more information

For more information about HP thin clients, go to the following websites:

- http://www.hp.com/support (Search for your thin client model. For documentation, select **Manuals**.)
- http://www.hp.com/go/thinclient

Sign up for updates
hp.com/go/getupdated

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