



# Using Microsoft Solutions and Dell For Staged Operating System Deployments

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## 1. Overview

Microsoft System Center Configuration Manager (SCCM) and Deployment Toolkit (MDT) are technologies for automating client deployment. These technologies support staged deployments in which a manufacturer (OEM) installs a reference image on a bare-metal computer. Once onsite, the computer starts using a boot image and connects to the site management point for available task sequences to complete the download process. Staged deployments can reduce network traffic because the boot image and operating system image are already on the destination computer.

## 2. Dell Requirements

Dell supports the following versions of SCCM and MDT for staged deployments:

### **Configuration Manager (Prestaged Media, WIM)**

- 2012 R2.1.1, R2.1.3, R0.2, and R0.2.1
- 1511, 1602, 1606, 1606.3, and 1704

### **MDT (Lite Touch OEM Preload, ISO)**

- 2013 Update 2
- Build 8443

Dell will create 2 partitions for GPT/UEFI disks and 1 partition for MBR/Legacy BIOS disks.

## 3. Main Phases

The staged deployment process can be viewed as three main phases:

1. Create a media-based image for OEM deployments and provide it to Dell.
2. Apply the OEM deployment to the target computers in a staging environment.
3. Complete deployment of the target computers in the production environment.

Phase 1 is performed by the customer. Phase 2 is performed by Dell. Phase 3 may be performed by the customer or Dell partners depending on whether the customer has ordered onsite installation service.

The remaining sections of this document focus on Phase 1.

## 4. SCCM: Prestaged Media

These are instructions for customers using SCCM who want to use Dell for staged operating system deployments on new Dell computers.

Prestaged media in System Center Configuration Manager is a Windows Imaging Format (WIM) file that can be installed on a bare-metal computer by the manufacturer. Prestaged media contains the boot image used to start the destination computer and the operating system image that is applied to the destination computer. You can also specify applications, packages, and driver packages to include as part of the prestaged media. The task sequence that deploys the operating system is not included in the media. Prestaged media is applied to the hard drive of a new computer before the computer is sent to the end user.

### Create Prestaged Media for Delivery to Dell

Before you create prestaged media by using the Create Task Sequence Media Wizard, be sure that all the following conditions are met:

Task	Description
Boot image	<p>Consider the following about the boot image that you will use in the task sequence to deploy the operating system:</p> <ul style="list-style-type: none"><li>- The architecture of the boot image must be appropriate for the architecture of the destination computer. For example, an x64 destination computer can boot and run an x86 or x64 boot image. However, an x86 destination computer can boot and run only an x86 boot image.</li><li>- Ensure that the boot image contains the network and mass storage drivers that are required to provision the destination computer.</li></ul>
Create a task sequence to deploy an operating system	<p>As part of the prestaged media, you must specify the task sequence to deploy the operating system.</p>

Task	Description
Distribute all content associated with the task sequence	You must distribute to at least one distribution point all content that is required by the task sequence. This includes the boot image, operating system image, and other associated files. The wizard gathers the information from the distribution point when it creates the stand-alone media. You must have <b>Read</b> access rights to the content library on that distribution point.
Hard drive on the destination computer	The hard drive of the destination computer must be formatted before the pre-staged media is staged onto the hard drive of the computer. If the hard drive is not formatted when the media is applied, the task sequence that deploys the operating system will fail when it attempts to start the destination computer.

**Note:** The Create Task Sequence Media Wizard sets the following task sequence variable condition on the media: **\_SMSTSMediaType = OEMMedia**. You can use this condition in your task sequence.<sup>1</sup>

Use the following procedure to create prestaged media:

1. In the Configuration Manager console, click **Software Library**.
2. In the **Software Library** workspace, expand **Operating Systems**, and then click **Task Sequences**.
3. On the **Home** tab, in the **Create** group, click **Create Task Sequence Media** to start the Create Task Sequence Media Wizard.
4. On the **Select Media Type** page, specify the following information, and then click **Next**.
  - Select **Prestaged media**.
  - Optionally, if you want to allow the operating system to be deployed without requiring user input, select **Allow unattended operating system deployment**. When you select this option the user is not prompted for network configuration information or for optional task sequences. However, the user is still prompted for a password if the media is configured for password protection.
5. On the **Media Management** page, specify the following information, and then click **Next**.
  - Select **Dynamic media** if you want to allow a management point to redirect the media to another management point, based on the client location in the site boundaries.

- Select **Site-based media** if you want the media to contact only the specified management point.
6. On the **Media Properties** page, specify the following information, and then click **Next**.
    - **Created by:** Specify who created the media.
    - **Version:** Specify the version number of the media.
    - **Comment:** Specify a unique description of what the media is used for.
    - **Media file:** Specify the name and path of the output files. The wizard writes the output files to this location. For example: `\\servername\folder\outputfile.wim`
  7. On the **Security** page, specify the following information, and then click **Next**.
    - Select the **Enable unknown computer support** check box to allow the media to deploy an operating system to a computer that is not managed by Configuration Manager. There is no record of these computers in the Configuration Manager database.
    - For HTTP communications, select **Create self-signed media certificate**, and then specify the start and expiration date for the certificate.
    - For HTTPS communications, select **Import PKI certificate**, and then specify the certificate to import and its password.
    - **User Device Affinity:** To support user-centric management in Configuration Manager, specify how you want the media to associate users with the destination computer.
      - Specify **Allow user device affinity with auto-approval** if you want the media to automatically associate users with the destination computer. This functionality is based on the actions of the task sequence that deploys the operating system. In this scenario, the task sequence creates a relationship between the specified users and destination computer when it deploys the operating system to the destination computer.
      - Specify **Allow user device affinity pending administrator approval** if you want the media to associate users with the destination computer after approval is granted. This functionality is based on the scope of the task sequence that deploys the operating system. In this scenario, the task sequence creates a relationship between the specified users and the destination computer, but waits for approval from an administrative user before the operating system is deployed.
      - Specify **Do not allow user device affinity** if you do not want the media to associate users with the destination computer. In this scenario, the task sequence does not associate users with the destination computer when it deploys the operating system.
  8. On the **Task Sequence** page, specify the task sequence that will run on the destination computer. The content referenced by the task sequence is displayed in **This task**

**sequence references the following content.** Verify that the content, and then click **Next**.

9. On the **Boot image** page, specify the following information, and then click **Next**.

**Important:** The architecture of the boot image that is distributed must be appropriate for the architecture of the destination computer. For example, an x64 destination computer can boot and run an x86 or x64 boot image. However, an x86 destination computer can boot and run only an x86 boot image.

- In the **Boot image** box, specify the boot image to start the destination computer.
- In the **Distribution point** box, specify the distribution point where the boot image resides. The wizard retrieves the boot image from the distribution point and writes it to the media.

**Note:** You must have **Read** access rights to the content library on the distribution point.

- If you selected **Site-based media** on the **Media Management** page of the wizard, in the **Management point** box, specify a management point from a primary site.
- If selected **Dynamic media** on the **Media Management** page of the wizard, in the **Associated management points** box, specify the primary site management points to use and a priority order for the initial communications.

10. On the **Images** page, specify the following information, and then click **Next**.

- In the **Image package** box, specify the operating system image. If the package contains multiple operating system images, in the **Image index** box, specify the image to deploy.
- In the **Distribution point** box, specify the distribution point where the operating system image package resides. The wizard retrieves the operating system image from the distribution point and writes it to the media.

11. On the **Customization** page, specify the following information, and then click **Next**.

- Specify the variables that the task sequence uses to deploy the operating system.
- Specify any prestart commands that you want to run before the task sequence runs. Prestart commands are a script or an executable that can interact with the user in Windows PE before the task sequence runs to install the operating system.

**Tip:** During task sequence media creation, the task sequence writes the package ID and prestart command-line, including the value for any task sequence variables, to the CreateTSMedia.log log file on the computer that runs the Configuration Manager console. You can review this log file to verify the value for the task sequence variables.

12. Complete the wizard.
13. Deliver the WIM file to Dell using Dell's File Transfer application

### **Next Steps**

Once the reference image is provided to Dell, Dell will apply it to the target computers so that they are ready for deployment in the production environment. Once onsite, the target computer is started via the bootable media image placed on the hard disk by Dell.

## **5. MDT: Lite Touch OEM Preload**

These are instructions for customers using MDT Lite Touch Installation who want to use Dell for staged operating system deployments on new Dell computers.

### **Overview of MDT Configuration Files in the Lite Touch OEM Preload Process**

Separate MDT configuration files (CustomSettings.ini and Bootstrap.ini) are used by the task sequences run during Phase 1 and Phase 3 of the OEM preload process. However, both configuration files exist simultaneously in different folder structures.

In the first phase, the configuration files are used during the creation of the reference computer and are stored in the folder specific to the task sequence used in that phase. The configuration files used in the third and last phase of the OEM preload process are stored in the folder that is specific to the task sequence used in that phase.

When making modifications to the configuration files, ensure that changes to the configuration file are made that corresponds to the appropriate task sequence in each OEM preload process phase.

### **Create an ISO Image for Delivery to Dell**

The customer performs the first phase in the OEM preload process. The final deliverable of this phase is a bootable ISO image. Dell requires an ISO file. Most of these steps are performed in the Deployment Workbench.

To create a media-based image

1. Populate the following nodes for the deployment share in the Deployment Workbench:
  - Operating Systems
  - Applications
  - Packages
  - Out-of-Box Drivers
2. Create a new task sequence based on the LiteTouch OEM Task Sequence task sequence template in the Deployment Workbench.
3. Create one or more task sequences that will be used for when the computer is received in the production environment.
4. Create a selection profile that includes the applications, operating systems, OS drivers, WinPE Drivers, packages, and task sequences required for the OEM deployment media.
5. Create a second selection profile for drivers to be injected into the WinPE environment.
6. Create deployment media.
7. Configure the media to include the pre-created selection profile.
8. Configure a single WinPE environment for the Lite Touch OEM media. If the system is to receive a 64bit operating system then do not include a 32bit WinPE.
9. Ensure that the WinPE environment is configured to leverage the WinPE Selection Profile.
10. Update the deployment media created in the Deployment Workbench in the previous step. When you update the deployment media, the Deployment Workbench creates the LiteTouchMedia.iso file.
11. Deliver the ISO file to Dell using Dell's File Transfer application.

## Next Steps

Once the OEM Media is provided to Dell, Dell will run and capture the output of the Lite Touch OEM Task Sequence in WIM format. Dell will apply the captured WIM to the target computers so that they are ready for deployment in the production environment. Once onsite, the received computer will boot to the WinPE environment staged on the local hard disk. The Lite Touch Wizard will prompt to initiate any staged task sequences.

## 6. Support

For additional guidance, contact our Operating System Imaging support team:



Region	Support Email
Americas	<a href="mailto:US_OSImaging@dell.com">US_OSImaging@dell.com</a>
Europe, Middle East, and Africa	<a href="mailto:EMEA_OSImaging@dell.com">EMEA_OSImaging@dell.com</a>
Australasia	<a href="mailto:ANZ_OSImaging@dell.com">ANZ_OSImaging@dell.com</a>
South Asia	<a href="mailto:SA_OSImaging@dell.com">SA_OSImaging@dell.com</a>
India	<a href="mailto:IN_OSImaging@dell.com">IN_OSImaging@dell.com</a>
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