Deploying Windows 8.1 with MDT 2013

In this lab, you will learn how to deploy a Windows 8.1 image in production using MDT 2013.

Produced by Deployment Artist
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Introduction

Estimated time to complete this lab
60 minutes

Objectives
After completing this lab, you will be able to:

- Create a deployment share in MDT 2013.
- Add Setup files, create task sequences, and configure deployment share settings.
- Import and work with drivers.
- Deploy a Windows 8.1 image in production using MDT 2013.

Prerequisites
Before working on this lab, you must have:

- An understanding of Windows deployment.
- The ability to work with Windows PowerShell.
- An understanding of Windows Server 2012 management tools and procedures.

Overview of the lab
In this lab, you will learn how to deploy a Windows 8.1 image in production using MDT 2013.

Intended audience
This lab is intended for individuals who are responsible for deploying Windows clients and wish to leverage the features of MDT 2013 to simplify the process for deploying Windows clients.

Virtual machine technology
This lab is completed using virtual machines that run on Windows Server 2012 R2 Hyper-V technology. To log on to the virtual machines, press CTRL+ALT+END and enter your logon credentials.

Computers in this lab
This lab uses computers as described in the following table. Before you begin the lab, you must ensure that the DC01 and MDT01 virtual machines are started and then log on to the computers.

<table>
<thead>
<tr>
<th>Virtual Machine</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC01</td>
<td>An existing domain controller.</td>
</tr>
<tr>
<td>MDT01</td>
<td>An existing member server.</td>
</tr>
<tr>
<td>PC0001</td>
<td>A blank virtual machine, configured for PXE boot</td>
</tr>
</tbody>
</table>

◊ All user accounts in this lab use the password Passw0rd!
Exercise 1: Prepare for Production Deployment

In this exercise, you use an existing MDT 2013 server structure to create a new deployment share intended for production deployments of Windows 8.1. You also configure permissions in Active Directory.

Review the Service accounts

In this step, you will review the service accounts added in Active Directory. For production deployment MDT 2013 is using two accounts, one for accessing the deployment share, and one for joining the machines to the domain.

Perform this task logged on to DC01 as CONTOSO\Administrator with the password Passw0rd!

1. Using Active Directory Users and Computers, in the Contoso / Service Accounts OU, review the service accounts that are created.

   Tip. The simplest way to find application in Windows 8.1 or Windows Server 2012 R2 is by pressing the Windows button and start typing, i.e. “Active Directory”.

2. For MDT 2013 the following accounts are used.

   MDT_BA (MDT Build Account)
   MDT_JD (MDT Join Domain Account)

The Service Accounts OU.
Configure Active Directory Permissions

In this task, you configure permissions for MDT Join Domain account (MDT_JD) in Active Directory using a PowerShell script. The script configures the minimal permissions needed for joining a machine to the domain.

✔ Perform this task logged on to DC01 as CONTOSO\Administrator with the password Passw0rd!

1. In an elevated PowerShell prompt (run as Administrator), run the following commands, press Enter after each command:

   - Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Force
   - Set-Location C:\Labfiles\Scripts
   - .\Set-OUPermissions.ps1 -Account MDT_JD -TargetOU "OU=Workstations,OU=Contoso"

2. The previous script allows the MDT_JD user account permissions to manage computer accounts in the Contoso / Workstations OU. Below you find a list of the permissions that are being granted:

   **Scope: This object and all descendant objects**
   - Create Computer objects
   - Delete Computer objects
   **Scope: Descendant Computer objects**
   - Read All Properties
   - Write All Properties
   - Read Permissions
   - Modify Permissions
   - Change Password
   - Reset Password
   - Validated write to DNS host name
   - Validated write to service principal name
Install Windows ADK 8.1

In this step, you will install Windows ADK 8.1 in the default location. The Windows 8.1 ADK is required when using MDT as it provides the foundational tools that MDT uses to perform deployment.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using File Explorer, navigate to the C:\Labfiles\Windows ADK 8.1 folder.
2. Run the Windows ADK 8.1 setup (adksetup.exe), install into the default location, and select to install the following components:
   - Deployment Tools
   - Windows Preinstallation Environment (Windows PE)
   - User State Migration Tool (USMT)

The Windows ADK 8.1 Setup.
Install MDT 2013

In this step, you will install MDT 2013 in the default location. This setup also installs the Deployment Workbench, the console you use to manage the MDT 2013 Lite Touch deployment solution.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using File Explorer, navigate to the C:\Labfiles\MDT 2013 folder.
2. Run the MDT 2013 setup (MicrosoftDeploymentToolkit2013_x64.msi), and use the default options in the setup wizard.

![Running the MDT 2013 setup.](image)

Create and share the Logs folder

In this task, you create and share the E:\Logs folder on MDT01 using PowerShell. The Logs folder is used to store the server side logs that MDT provides. During deployment, if something goes wrong, MDT will copy the log files to that location for troubleshooting. MDT will also copy the log files when a deployment completes successfully.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Start an elevated Windows PowerShell prompt (run as Administrator)
2. Type the following commands, pressing ENTER after each one.
   - New-Item -Path E:\Logs -ItemType directory
   - New-SmbShare -Name Logs$ -Path E:\Logs -ChangeAccess EVERYONE
   - icacls E:\Logs /grant '"MDT_BA":(OI)(CI)(M)'

   TIP: You can use tab completion on all parameters to simplify typing.
Create the MDT Production Deployment Share

In this step, you will create the MDT Production deployment share using the MDT Deployment Workbench. A deployment share in MDT is a folder structure which is used to store all content needed for deployment.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using the Deployment Workbench (available on the Start screen), right-click Deployment Shares and select New Deployment Share. Use the following settings for the New Deployment Share Wizard.
   - Deployment share path: E:\MDTProduction
   - Share name: MDTProduction$
   - Deployment share description: MDT Production
   - Options: <default settings>

2. Using File Explorer, verify that you can access the \MDT01\MDTProduction$ share.
Verifying access to the \MDT01\MDTProduction$ share.
Exercise 2: Add Operating System Images

In this exercise, you add a previously created Windows 8.1 operating system image to the MDT Production deployment share.

Import the Windows 8.1 operating system

In this task, you will use the import function in MDT 2013 to add a Windows 8.1 operating system image to the MDT Production deployment share. The image you added is a previously sysprepped and captured image containing Office 2013, a few runtimes and software updates.

 Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using the Deployment Workbench, expand the Deployment Shares node, expand MDT Production, select the Operating Systems node and create a folder named Windows 8.1.
2. Expand the Operating Systems node, right-click on the Windows 8.1 folder, and select Import Operating System. Use the following settings for the Import Operating System Wizard:
   - Custom image file
     - Source file: C:\Labfiles\Captures\REFW81-X64-001.wim
     - Copy Windows 7, Windows Server 2008 R2, or later setup files from the specified path
       - Setup source directory: C:\Labfiles\Windows 8.1 Enterprise x64
       - Destination directory name: W81EX64RTM
   - TIP: Due to the Windows limits on path length, we are purposely keeping the operating system destination directory short, using the folder name W81EX64RTM rather than a more descriptive name.
   - Also, even though MDT is using ImageX to apply the image, we recommend copying the setup files. This because some components, like .NET Framework 3.5.1 are stored outside the image.
3. After adding the operating system, in the Windows 8.1 node, change the Operating System name to Windows 8.1 Enterprise x64 RTM.
The Windows 8.1 node after renaming the label (name) for the imported operating system.
Exercise 3: Add Applications

In this exercise, you add applications to the deployment share.

Add Skype 6.14

In this task, you add Skype 6.14 as an application in MDT 2013. The task sequence expects application deployments to be automated, meaning that providing silent install switches is needed.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using the Deployment Workbench, expand the Deployment Shares node, expand MDT Production, select the Applications node and create a folder named Microsoft.
2. Expand the Applications node, right-click the Microsoft folder, and select New Application.
3. Use the following settings for the New Application Wizard.

   **Application with source files**
   
   Publisher: `<blank>`
   Application name: **Install - Skype 6.14 - x86**
   Version: `<blank>`
   Language: `<blank>`
   Source Directory: `C:\Labfiles\Skype 6.14`

   Specify the name of the directory that should be created:
   **Install - Skype 6.14 - x86**

   Command Line: `msiexec /i SkypeSetup.msi /q /norestart`
   Working directory: `<default>`

The Skype 6.14 application added.
Add additional applications via PowerShell

Internally MDT does its operations via PowerShell, which means you can automate the same tasks easily. In this step, you add an additional application using PowerShell.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Start an elevated Windows PowerShell prompt (run as Administrator)
2. Type the following commands, pressing ENTER after each one.

   - Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Force
   - Set-Location C:\Labfiles\MDTProduction
   - .\ImportMDTApplications.ps1

3. Using Deployment Workbench, select the Applications / Microsoft node, press F5 to refresh the node, and then review the imported application.

Deployment Workbench listing applications in the Microsoft node.
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Exercise 4: Add Drivers

In this exercise, you import drivers for both WinPE 5.0 and the full Windows 8.1 operating system.

Add Drivers for WinPE 5.0

In this task, you import some network and storage drivers for WinPE 5.0. Since WinPE 5.0 is a subset of Windows 8.1 the drivers added are Windows 8.1 drivers. These drivers are injected to the boot image when updating the deployment share.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using the Deployment Workbench, in the MDT Production node, select the Out-Of-Box Drivers node, and create a folder named WinPE x64.
2. Right-click the WinPE x64 folder and select Import Drivers, use the following settings for the Import Driver wizard:
   Driver source directory: C:\Labfiles\Drivers\WinPE x64

A few WinPE drivers added.

   NOTE: The wizard will give you a warning: "Warning: Driver Intel Corporation SCSIAdapter iaStorAC.inf 11.6.0.1030 does not appear to support platform x86 as indicated. Overriding the indicated platform."
   This is normal, you can ignore this. MDT is smart enough to detect when driver INF files are not formatted correctly and configures them for the right platform.

3. Expand the Advanced Configuration node, right-click Selection Profiles, and select New Selection Profile. Use the following settings for New Selection Profile wizard.
   Selection profile name: WinPE x64
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Folders: select the **WinPE x64** folder in **Out-Of-Box Drivers**

**Add Drivers for HP EliteBook 8560w**

MDT provides multiple ways of dealing with drivers, and in this lab you are injecting drivers on a per model basis, something that has been named the “Total Control” by the deployment community. In this task, you import Windows 8.1 drivers for the HP EliteBook 8560w model.

> Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using the Deployment Workbench, in the MDT Production node, in the Out-Of-Box Drivers node, create a folder named **Windows 8.1 x64**. Then, in the **Windows 8.1 x64** folder, create a subfolder named **HP EliteBook 8560w**.

2. Right-click the **HP EliteBook 8560w** folder and select Import Drivers, use the following settings for the Import Driver wizard:

   - Driver source directory: `C:\Labfiles\Drivers\Windows 8.1 x64\HP EliteBook 8560w`

![Deployment Workbench with imported drivers](image)

MDT Production deployment share with imported drivers.
Exercise 5: Create the production MDT Task Sequence

In this exercise, you create and edit the production MDT task Sequence for Windows 8.1

Create and configure a Task Sequence

In this task, you create a task sequence using the standard client task sequence template. The task sequence is just a list of actions that are carried out during deployment.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using the Deployment Workbench, in the MDT Production deployment share, select the Task Sequences node, and create a folder named Windows 8.1.
2. Right-click on the Windows 8.1 node, and select New Task Sequence. Use the following settings for the New Task Sequence Wizard:
   - Task sequence ID: W81-X64-001
   - Task sequence name: Windows 8.1 Enterprise x64 RTM
   - Task sequence comments: Production image with Office 2013
   - Template: Standard Client Task Sequence
   - Select OS: Windows 8.1 Enterprise x64 RTM
   - Specify Product Key: Do not specify a product key at this time
   - Full Name: Contoso
   - Organization: Contoso
   - Internet Explorer home page: about:blank
   - Do not specify an Administrator password at this time

The production task sequence created.
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Edit the Task Sequence

In this task you configure the task sequence to inject model specific drivers only. This is done by configuring a built-in variable named DriverGroup001.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. In the Task Sequences / Windows 8.1 node, double-click the Windows 8.1 Enterprise x64 RTM task sequence, and click the Task Sequence tab.

2. Expand the Preinstall group. After the Enable BitLocker (Offline) action, add a new Set Task Sequence Variable action with the following settings:
   - Name: Set DriverGroup001
   - Task Sequence variable: DriverGroup001
   - Value: Windows 8.1 x64\%Model%

3. Select the Inject Drivers action, and configure the following:
   - Choose a selection profile: Nothing
   - Install all drivers from the selection profile

4. Click OK.

The task sequence configured for drivers, total control style.
Exercise 6: Configure the deployment share

In this exercise, you configure the deployment share settings and rules.

Prepare the deployment share rules

In this step, you configure the deployment share rules for a production build. The deployment share rules controls the behavior of the deployment wizard as well as settings for the task sequence.

♫ Perform this task logged on to **MDT01 as CONTOSO\Administrator** with the password **Passw0rd!**

1. Using **File Explorer**, navigate to the **C:\Labfiles\MDTProduction\Control** folder.
2. Copy the **Bootstrap.ini** and **CustomSettings.ini** files to **E:\MDTProduction\Control** (replace the existing files).
3. Review the **E:\MDTProduction\Control\Bootstrap.ini** file, note the **DeployRoot** value.

![Bootstrap.ini - Notepad](image)

The Bootstrap.ini for the MDT Production deployment share.

4. Review the **E:\MDTProduction\Control\CustomSettings.ini** file.

Add DaRT 8.1 files for Remote Connection to WinPE 5.0

In this step, you add the Diagnostics and Recovery Toolset (DaRT) 8.1 installation files to the deployment share. DaRT 8.1 is part of the Microsoft Desktop Optimization Pack (MDOP) 2013 R2.

♫ Perform this task logged on to **MDT01 as CONTOSO\Administrator** with the password **Passw0rd!**

1. Install **DaRT 8.1** (**C:\Labfiles\DaRT 8.1\MSDaRT81.msi**) using the default settings.
2. Using **File Explorer**, navigate to the **C:\Program Files\Microsoft DaRT\v8.1** folder.
   
   Copy the **Toolsx64.cab** file to **E:\MDTProduction\Tools\x64**.
   
   Copy the **Toolsx86.cab** file to **E:\MDTProduction\Tools\x86**.
Configure the Deployment Share

In MDT boot images are used to start the deployment process. In this step, you configure the boot image (WinPE) settings in the deployment share. You also enable monitoring.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Right-click the MDT Production deployment share and select Properties.
2. In the Windows PE tab, in the Platform dropdown list, make sure x86 is selected.
3. In the Lite Touch Boot Image Settings area, configure the following settings
   - Image description: MDT Production x86
   - ISO file name: MDT Production x86.iso
4. In the Windows PE Customizations area, set the Custom background bitmap file to: C:\Labfiles\MDTProduction\Branding\MVA-Background.bmp
5. Click Apply.

TIP: The deployment workbench console has a tendency of crashing when changing custom boot image background image, that's why you save the changes before continuing. If the deployment workbench does crash, simply open it again (you may have to end the mmc.exe process using task manager).

Configure the WinPE 5.0 boot image (x86).
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TIP: In WinPE 5.0, which MDT 2013 is using, you don’t need to set the scratch space size like you did in previous versions. This is because scratch space in WinPE 5.0 is dynamic. If you have 1 GB of RAM or more on the machine you are deploying, WinPE 5.0 will automatically configure itself for 512 MB of scratch space.

6. In the Windows PE tab, in the Platform dropdown list, select x64.

7. In the Lite Touch Boot Image Settings area, configure the following settings:
   - Image description: MDT Production x64
   - ISO file name: MDT Production x64.iso

8. In the Windows PE Customizations area, set the Custom background bitmap file to: C:\Labfiles\MDTProduction\Branding\MVA-Background.bmp

9. Click Apply.

10.Still in the Windows PE tab, in the Platform dropdown list, make sure x64 is selected.

11. In the Features sub tab, in addition to the already selected component, select the Microsoft Diagnostics and Recovery Toolkit (DaRT) check box.

![MDT Production (E:\MDTProduction) Properties]

Adding the DaRT component to the MDT boot image.
12. Still in the **Windows PE** tab, in the **Platform** dropdown list, select **x86**.

13. In the **Features** sub tab, in addition to the already selected component, select the **Microsoft Diagnostics and Recovery Toolkit (DaRT)** check box.

   ➤ TIP: Even though you can use the x86 boot image to create reference images for both x86 and x64 operating systems, you still need to create the x64 boot image. The x64 boot image are used in refresh and replace scenarios, as well is required when deploying to x64 UEFI-based machines.

14. In the **Monitoring** tab, select the **Enable monitoring for this deployment share** check box.

15. Click **OK**.
Update the Deployment Share

When you change boot image (Windows PE) properties in the deployment share, you need to update the deployment share so the boot image is updated. The first time you update the deployment share you don’t yet have any boot image so they are created for you automatically during the update deployment share process. In this task, you create the boot image by updating the deployment share.

✔ Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Right-click the MDT Production deployment share and select Update Deployment Share.
2. Use the default Options for the Update Deployment Share wizard.
3. The update process will take about 5 minutes, a perfect time to review the MDT documentation (Microsoft Deployment Toolkit Documentation Library.chm, available in the C:\Program Files\Microsoft Deployment Toolkit\Bin folder). For a start, check out the Toolkit Reference / Properties / Property Definition information. A list of the values you can use in CustomSettings.ini.

   ✔ TIP. Normally you would access the MDT documentation directly from the Help menu in the Deployment Workbench, but currently its busy creating boot images.

4. When the update is completed, review the contents of the E:\MDTProduction\Boot folder.
The contents of the E:\MDTProduction\Boot folder after updating the deployment share.
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Exercise 7: Install and Configure WDS

In this exercise, you install and configure Windows Deployment Services (WDS) in Windows Server 2012 R2. Once that is completed you add the MDT 2013 boot image to WDS.

Install and configure WDS

When using MDT for Windows deployment WDS is used to start the MDT boot image over the network. In this task, you install and configure WDS on MDT01.

Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. Using Server Manager, click Add roles and features.
2. On the Before you begin page, select the Skip this page by default check box, and click Next.
3. On the Select installation type page, select Role-based or feature-based installation.
4. On the Select destination server page, select MDT01.contoso.com and click Next.
5. On the Select server roles page, select Windows Deployment services. On the Add Roles and Features Wizard dialog box, click Add Features, and then click Next.

Adding the WDS role to MDT01.

6. On the Select features page, accept the default settings, and click Next.

Lab created by Deployment Artist. For questions or comments, send an email message to labs@deploymentartist.com
7. On the **WDS** page, click **Next**.
8. On the **Select role services** page, accept the default settings, and click **Next**.
9. On the **Confirm installation selections** page, click **Install**.
10. On the **Installation progress** page, when the installations is completed, click **Close**.
11. Using **Server Manager**, in the **Tools** menu, select **Windows Deployment Services**.
12. In the **WDS** console, expand **Servers**, right-click **MDT01.contoso.com** and select **Configure Server**. Use the following settings for the **Windows Deployment Services Configuration Wizard**:
   - **Integrated with Active Directory**
   - **E:\RemoteInstall**
   - **Respond to all client computers (known and unknown)**
   - Clear the **Add image to the server now** check box

![Windows Deployment Services Configuration Wizard](image)

Configuring WDS.
Add the MDT 2013 Lite Touch Boot Image

When using WDS with MDT, only the boot images are stored in WDS. All other setup content is stored in the MDT deployment share. In this task, you add the previously created boot image to WDS.

✔ Perform this task logged on to MDT01 as CONTOSO\Administrator with the password Passw0rd!

1. In the WDS console, expand Servers, expand MDT01.contoso.com, right-click Boot Images and select Add Boot Image.

2. Browse to the E:\MDTProduction\Boot\LiteTouchPE_x64.wim file and add the image with the default settings.

The MDT Production x64 boot image added.
Exercise 8: Deploy Windows 8.1 using PXE

In this exercise, you deploy the Windows 8.1 image.

Deploy the Windows 8.1 Enterprise Image to an UEFI-based machine

In this task, you start a generation 2 (UEFI) virtual machine and deploy a Windows 8.1 image to it. Once the boot image is downloaded over the network, it connects back to the deployment share and presents the deployment wizard.

_tip_ Perform this task logged on to the **Host PC**

1. Start the **PC0001** virtual machine, at the PXE boot menu, press **Enter** to allow it to PXE boot, and wait until the Deployment Wizard starts.

PXE-booting a generation 2 virtual machine in Hyper-V.
2. On the **User Credentials** page, type in a password of **Passw0rd!** and click **OK**.
3. On the **Select a task sequence to execute on this computer** page, select the **Windows 8.1 Enterprise x64 RTM** task sequence, and click **Next**.
4. On the **Computer Name** page, type in **PC0001**, and click **Next**.
5. On the **Select one or more applications to install** page, select the following applications, and click **Next**.
   - **Install - Skype 6.14 - x86**
   - **Install - Lync 2013 PreCall Diagnostics - x86**

The MDT 2013 production deployment in progress.
Monitor the MDT deployment

In MDT 2013, the monitoring feature allows you to track your deployments in real-time. In this task, you monitor the previously started deployment.

✔ Perform this task logged on to MDT01 as CONTOSO\Administrator with the password **Passw0rd!**

1. Using the **Deployment Workbench**, use the **Monitoring** node to view the deployment process (press F5 to refresh).

PC0001 being deployed.

2. Once you see the **PC0001** entry, double-click **PC0001**, and then click **DaRT Remote Control** and review the remote control option.
The DaRT Remote Connection Viewer allowing remote access to WinPE 5.0.

3. If time permits, allow the deployment of **PC0001** to complete. Then login as **MDT_BA** in the **CONTOSO** domain and verify that **Skype** and **Lync 2013 PreCall Diagnostics** was installed.