

# How to set up Windows Deployment Services on Windows Server 2016

WDS (Windows Deployment Services) is a server role, providing a simple and secure means to remotely deploy the Microsoft operating system to computers over the network. This tutorial introduces how to set up WDS Server 2016.

In order for WDS to install the operating system on a remote computer, the computer must have PEE enabled.

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## Set up WDS Server 2016 (installation options)

WDS can be installed as a Transport or Deployment Server or both. These options are available when installing roles using Server Manager.

### Transport Server

This option provides a subset of the functions of WDS. It only contains the main network parts that you can use to transfer data on a standalone server. The transport server uses Multicasting technology to transfer data.

You can also use the transport server if you want a PXE server that allows clients to perform PXE booting and download your own custom setup application. You should use this option if you fall into either of these categories, but don't want to combine all the components of WDS.

### Deployment Server

This option provides the full functionality of Windows Deployment Services, providing all the options for configuring and installing the Windows operating system remotely. The Deployment server depends on the core

parts of the Transport Server.

You can install the WDS server role through the Server Manager or by using Windows PowerShell. After the Windows Deployment Services role is installed, the server must be configured before it can be used to deploy Windows operating systems automatically.

WDS can be configured as a standalone server or Active Directory integration. This tutorial introduces how to set up WDS Server 2016 as an Active Directory integrated WDS server.

## Set up WDS Server 2016

1. The Deployment Server requires DNS and DHCP server on the network.
2. Both the Deployment and Transport server require NTFS partitions for file storage.
3. After installation, you must configure WDS using WDSUtil.exe or run the Windows Deployment Services Configuration wizard.
4. You must add at least one boot image and one install image to the image store.

The boot image provides the initial environment in which you boot the computer, while the install image is the operating system image.

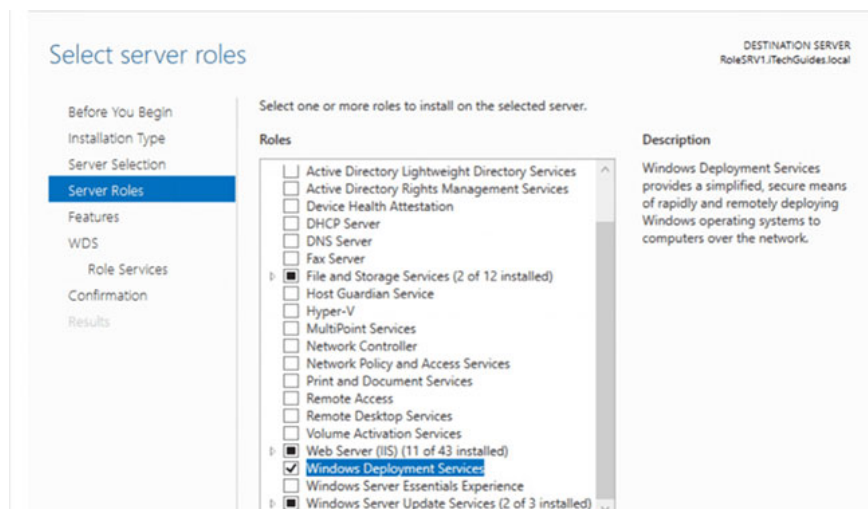
This manual does not cover DNS and / or DHCP settings.

In order for PXE clients to rent out an IP address, configure the DHCP scope for both DHCP and BOOTP.

## Steps to set up WDS Server 2016

There are 3 main steps to setting up WDS Server 2016:

### 1. Install the Windows Deployment Services Role (WDS Server 2016)



Install the Windows Deployment Services Role (WDS Server 2016)

The first step to setting up WDS Server 2016 is to install the WDS server role.

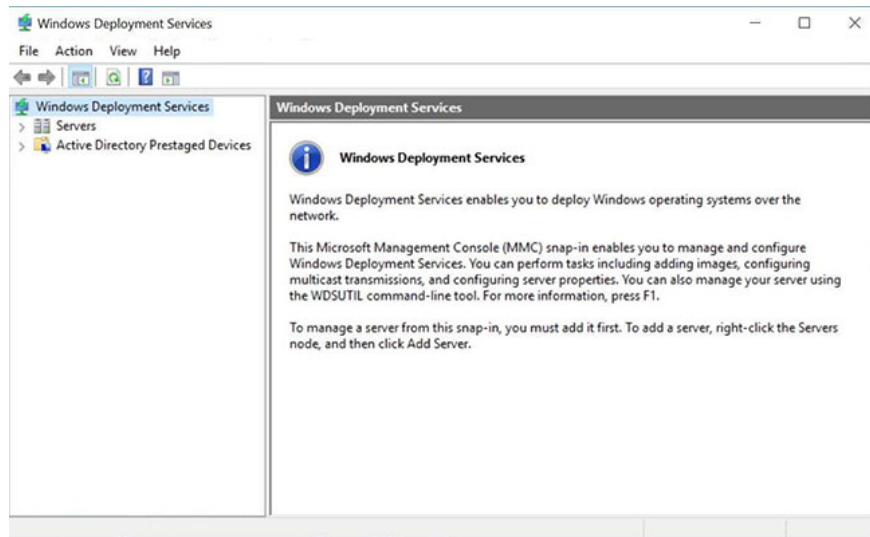
Here are the steps to take:

1. Log into the server and open the **Server Manager** (should launch by default).
2. From **Server Manager** , click **Manage** , then select **Add Roles and Features** .
3. On the **Before you begin** screen , click **Next**.
4. Next, select **Role-based or feature-based installation** and click **Next**.
5. Next, on the **Select Destination server** page , select the server you want to set up WDS Server 2016.
6. On the **Server Role** page , check the box next to Windows Deployment Services. A page will load asking you to confirm additional features to install. Click **Add Features** . Then click on **Next**.
7. On the **Select roles services** page , select both the **Deployment Server** and the **Transport Server**. Note that if you choose the **Deployment Server**, you must also choose the **Transport Server**. However, you can choose the **Transport Server** without selecting the **Deployment Server**.
8. When you get to the **Confirmation** page , review the options, then click **Install**.

To install the Windows Deployment Services role with Windows PowerShell, run the following command:

```
Install-WindowsFeature -Name WDS -IncludeManagementTools
```

## 2. Set up WDS Server 2016 (configure Windows Deployment Services)



### Set up WDS Server 2016 (configure Windows Deployment Services)

After installing the role, the next step to setting up WDS Server 2016 is to configure the role.

Here are the steps to take:

1. Open **Server Manager**. Then click **Tools** and select **Windows Deployment Services** . The WDS management console will open.
2. Expand **Servers**. Then right-click the WDS server and select **Configure Server**. The configuration wizard opens.
3. On the **Before You Begin** page , read the requirements, then click **Next**.
4. Select the option **Integrate with Active Directory** . Click **Next**.
5. Enter a path for your remote installation directory or accept the default option.

**Important tips:**

In a production environment, you should have the remote installation directory in a drive other than C.

1. Note the information on the Proxy DHCP Server page, then click **Next**.
2. Configure settings for PXE server.
3. Finally, wait for the wizard to complete the configuration. Click on **Finish**.
4. Start the Windows Deployment Services (WDS) service: Right-click on the server, point to **All Tasks** and click **Start**.

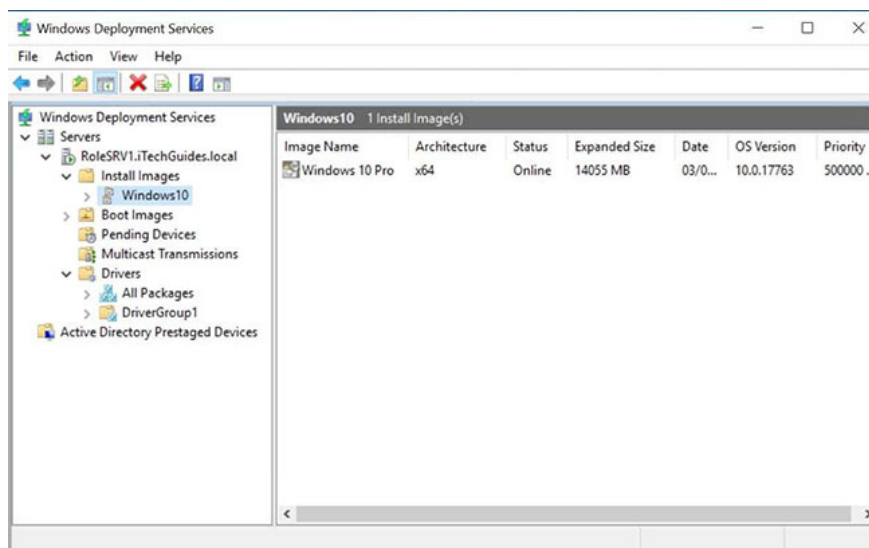
The above task can also be performed by running the following command:

```
WDSUtil.exe /Initialize-Server /Server:RolesSRV1 /REMINST:"D:RemoteInstall"
```

To revert the changes made during server configuration or initialization, execute the command:

```
WDSUtil.exe /UnInitialize-Server /Server:RolesSRV1
```

### 3. Configure and manage boot, install, discover image



Configure and manage boot, install, discover image

After configuring the Windows Deployment Services server, the final step to completely set up WDS Server 2016 is to add the required image files.

The following images are required:

1. **Boot Image:** Boot Image is a Windows PE image that you boot the client computer to perform operating system installation. In most cases, you should use the Boot.wim file from the operating system installation media.
2. **Install Image:** Install Image is the image of the operating system that you deploy to the client. You can also use the Install.wim file from the operating system installation media.
3. **Discover Image:** In some cases, the computer may not have a network card that supports PXE. In this situation, the discover image can be created and used to install the operating system on those computers.

The Discover image can be saved on media (CD, DVD or USB) and then the client computer can be booted with the media. Discover image on the Windows Deployment Services server and the deployment server installs the

image onto a computer.

Discover images are not required to use Windows Deployment Services.

## Prepare boot and install image for Windows Deployment Services

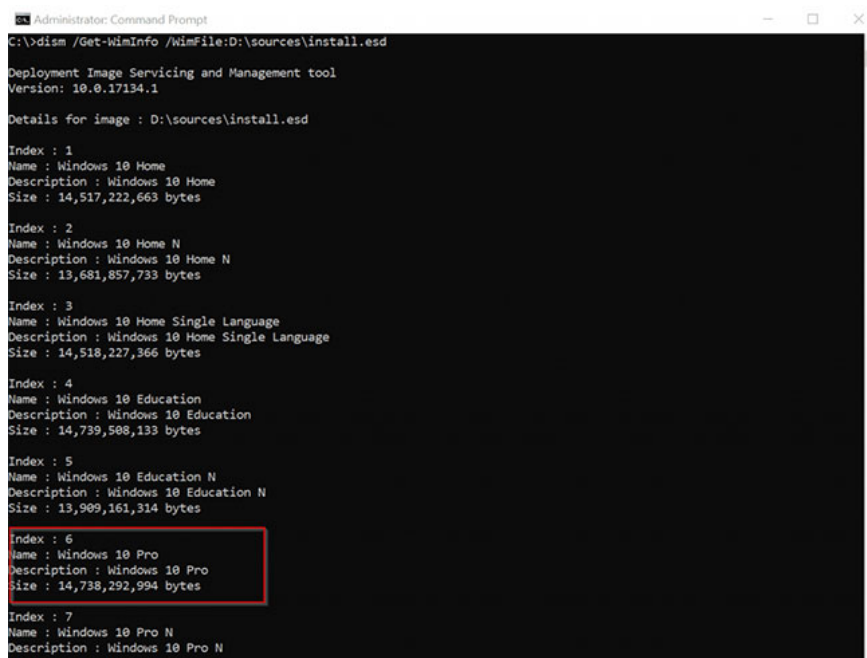
Copy boot.wim from DVD Windows 10 (if you have Windows 10 ISO, mount it. Boot.wim is in the source directory).

To create install.wim from a Windows 10 DVD, follow the steps below:

1. Open Command Prompt with admin rights.
2. Run the following command:

```
dism /Get-WimInfo /WimFile:D:sourcesinstall.esd
```

Here is the output of the command. Note the index number of the version you want to create install.wim for it. For example, creating an install.wim file for Windows 10 Pro. The index number is 6.



```
Administrator: Command Prompt
C:\>dism /Get-WimInfo /WimFile:D:sourcesinstall.esd
Deployment Image Servicing and Management tool
Version: 10.0.17134.1

Details for image : D:\sources\install.esd

Index : 1
Name : Windows 10 Home
Description : Windows 10 Home
Size : 14,517,222,663 bytes

Index : 2
Name : Windows 10 Home N
Description : Windows 10 Home N
Size : 13,681,857,733 bytes

Index : 3
Name : Windows 10 Home Single Language
Description : Windows 10 Home Single Language
Size : 14,518,227,366 bytes

Index : 4
Name : Windows 10 Education
Description : Windows 10 Education
Size : 14,739,508,133 bytes

Index : 5
Name : Windows 10 Education N
Description : Windows 10 Education N
Size : 13,909,161,314 bytes

Index : 6
Name : Windows 10 Pro
Description : Windows 10 Pro
Size : 14,738,292,994 bytes

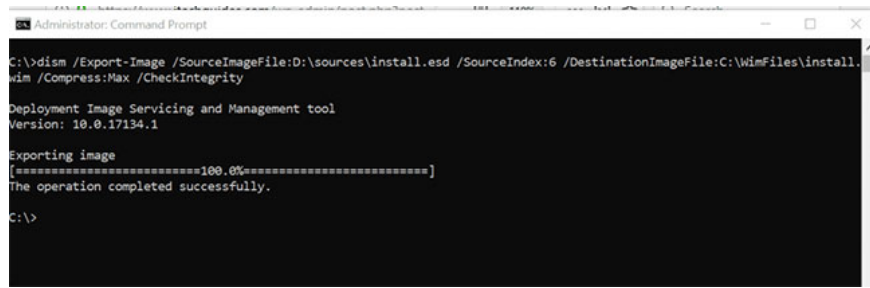
Index : 7
Name : Windows 10 Pro N
Description : Windows 10 Pro N
```

Note the index number of the version you want to create install.wim for it

To create install.wim for Windows 10 Pro, execute the command below:

```
dism /Export-Image /SourceImageFile:D:sourcesinstall.esd /SourceIndex:6 /DestinationImageFile:D:\install.wim
```

The export process will begin. See image below. When it reaches 100%, the wim file is ready.



```
Administrator: Command Prompt
C:\>dism /Export-Image /SourceImageFile:D:\sources\install.esd /SourceIndex:6 /DestinationImageFile:C:\Winfiles\install.wim /Compress:Max /CheckIntegrity
Deployment Image Servicing and Management tool
Version: 10.0.17134.1
Exporting image
[=====100.0%=====]
The operation completed successfully.
C:\>
```

When it reaches 100%, the wim file is ready

## Add boot and install image to Windows Deployment Services (WDS)

To add an install image, follow the steps below:

1. From **Server Manager**, open **Windows Deployment Services**. Expand **Servers Node**. Then expand your WDS server name.
2. Right-click **Install Images**, then select **Add Install Image**.
3. On the **Image Group** window, enter a name, then click **Next**.
4. Enter the path to install.wim, then click **Next**.
5. Select **Operating System Image**, then click **Next**.
6. On the **Summary** page, click **Next**. Wait for the image to be added.

Install image Windows 10 is now available in Windows Deployment Services!

You can add multiple image Install.wim. For example, you may have an image for different versions of the same operating system. Additionally, you can add images for different operating systems.

The steps below will guide you how to add a boot image.

1. From the WDS panel, right click on **Boot Images** and select **Add Boot Image**.
2. Enter the path to your boot.wim file. Click **Next**.
3. Rename the boot image to a more friendly name. The image name will be displayed for selection during PXE-boot.
4. On the **Summary** page, click **Next**. Then wait for the image to be imported.

Boot image is available.

## Create discover image

To create a discover image, follow the steps below:

1. Right-click on the boot image you created earlier and select **Create Discover Image**.
2. On the **Metadata and Location** page, enter all the information. For the name of the Windows Deployment Services server, click **Browse** then use the Active Directory search tool to search the server. When you're done, click **Next**.

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