Installing and Configuring WDS for PXE Boot on Windows Server 2016 2019 2022

| Created by:	Ari Novikoff, MCPS Senior Pre-Sales Engineer Macrium Software

---

IMPORTANT ASSUMPTIONS AND NOTES

1. You are using this WDS server in a closed testing / deployment environment. Please do NOT do this in a live production environment without the necessary clearance / permission / authority / licensing to do so.
2. You are a network administrator and have domain administrator access or permission to use a Windows Server / Server license for this project.
3. You are a network administrator and have the appropriate authority / permission to complete this project.
4. You understand how to, are licensed to, and have created the Technician's USB stick from your Deployment Kit for use further on in this document.
5. You have the proper Microsoft licensing to use the Deployment Kit for the purpose of this project.
6. This server will be both a WDS and DHCP server for this closed environment.
7. Macrium Software, its parent company Paramount Software UK Ltd, its affiliates and/or employees are not liable under any circumstances for issues arising directly or indirectly from the use of this document.

If the above assumptions and notes above do not pertain to your environment, license compliance, and/or permission, and/or if you do not agree with the assumptions and notes above, then please DO NOT proceed. Your use of this document is subject to and constitutes your acceptance of the above and is done so completely at your own risk.

Install and configure the WDS Role on Windows Server 2016/2019/2022.
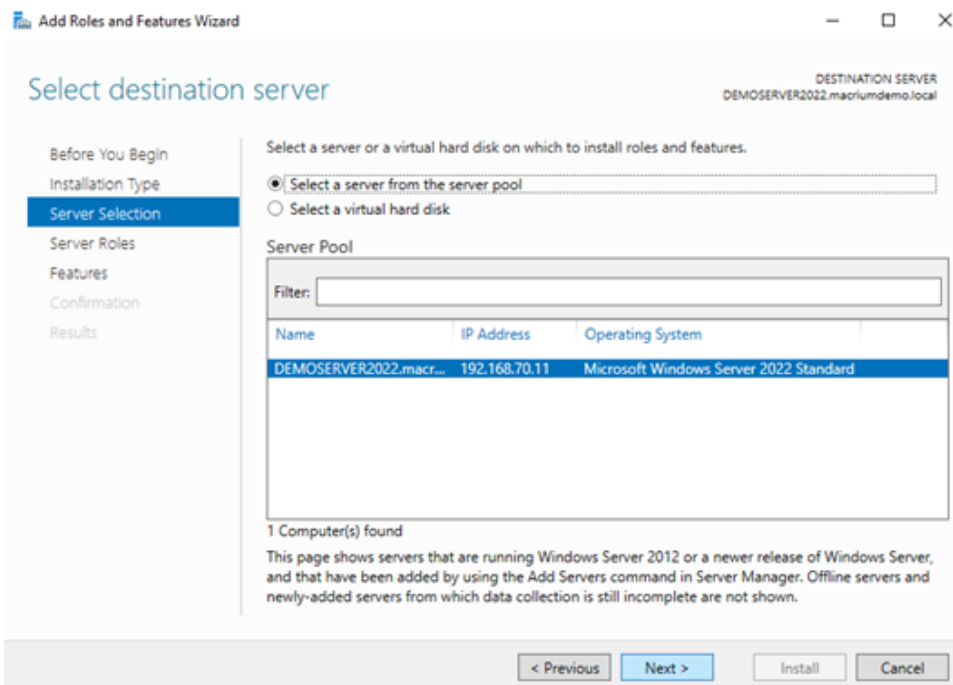
1. Open Server Manager and select the Local Server

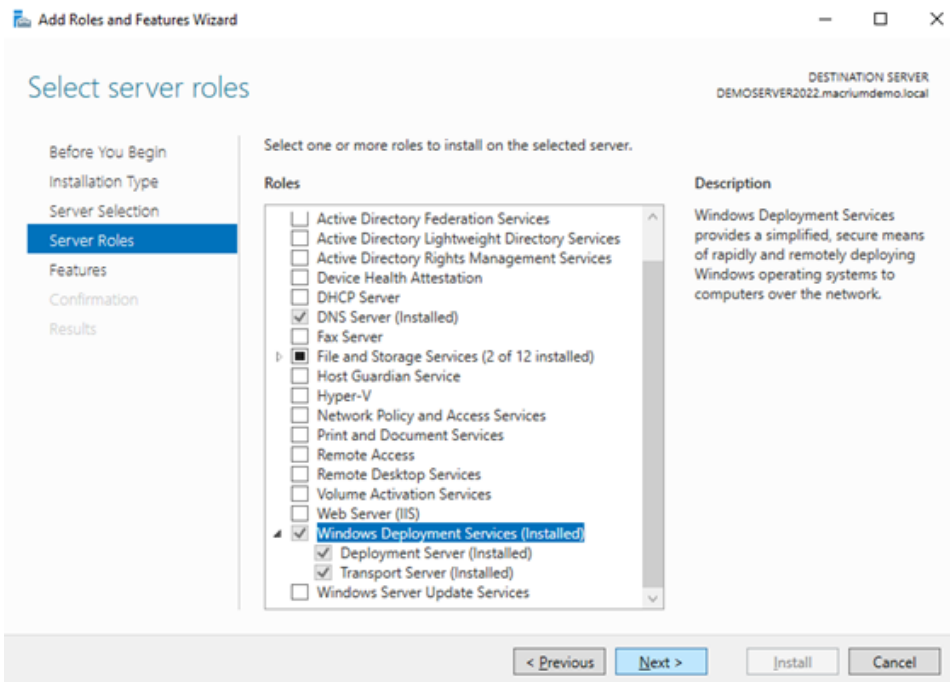2. Click on Manage, then select "Add Roles and Features"
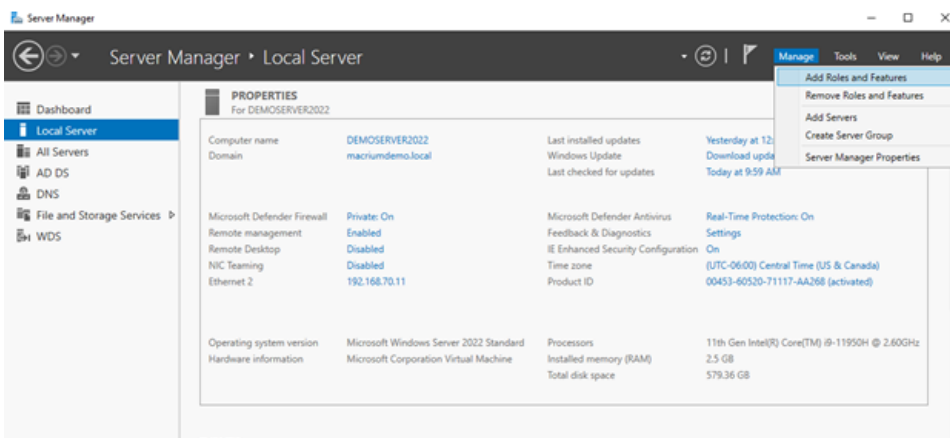
3. Select "Role-based or feature-based installation". Click "Next" when done.
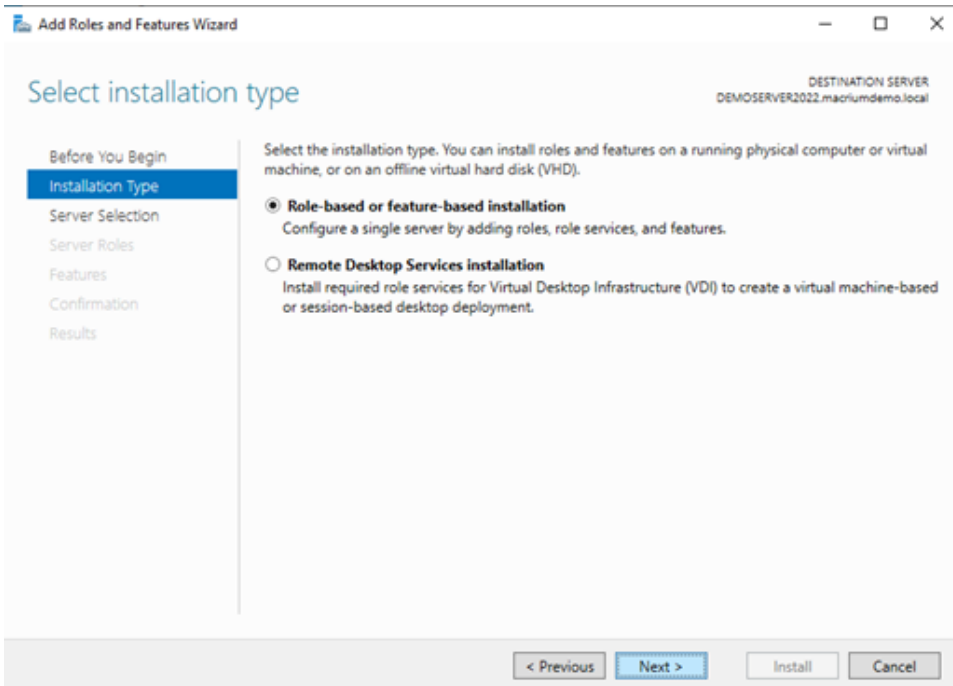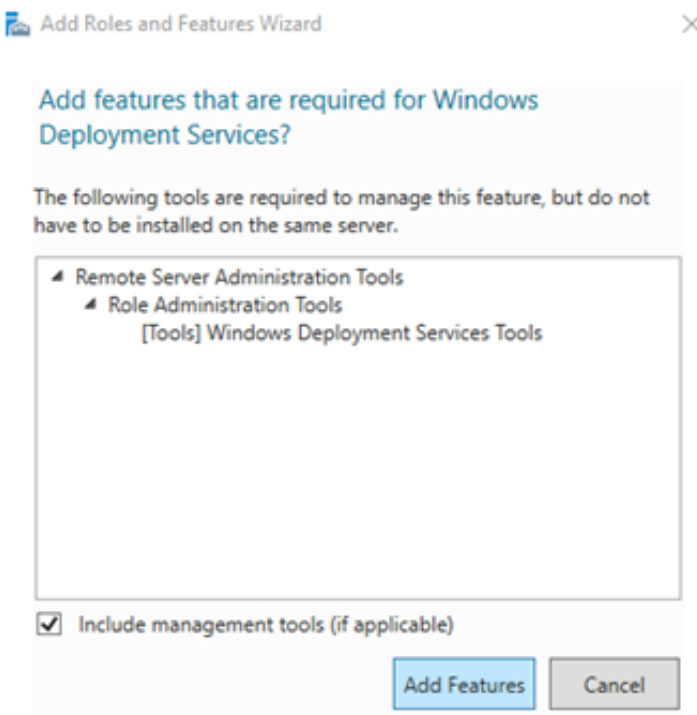
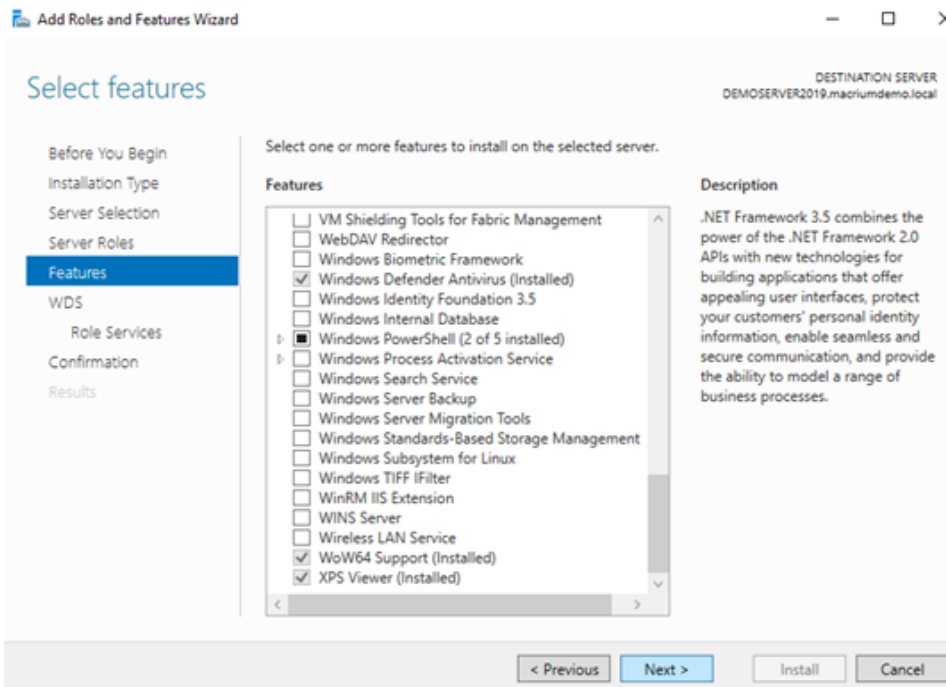4. Select the destination server. Click "Next" when done.

5. Select "Windows Deployment Services" from the Roles list. Click "Next" when done.
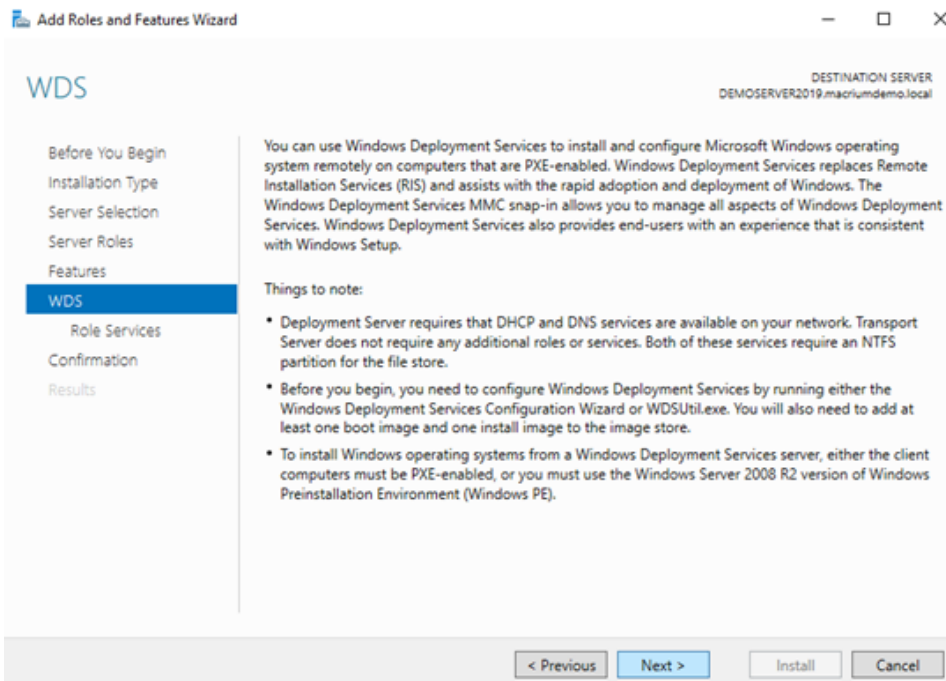
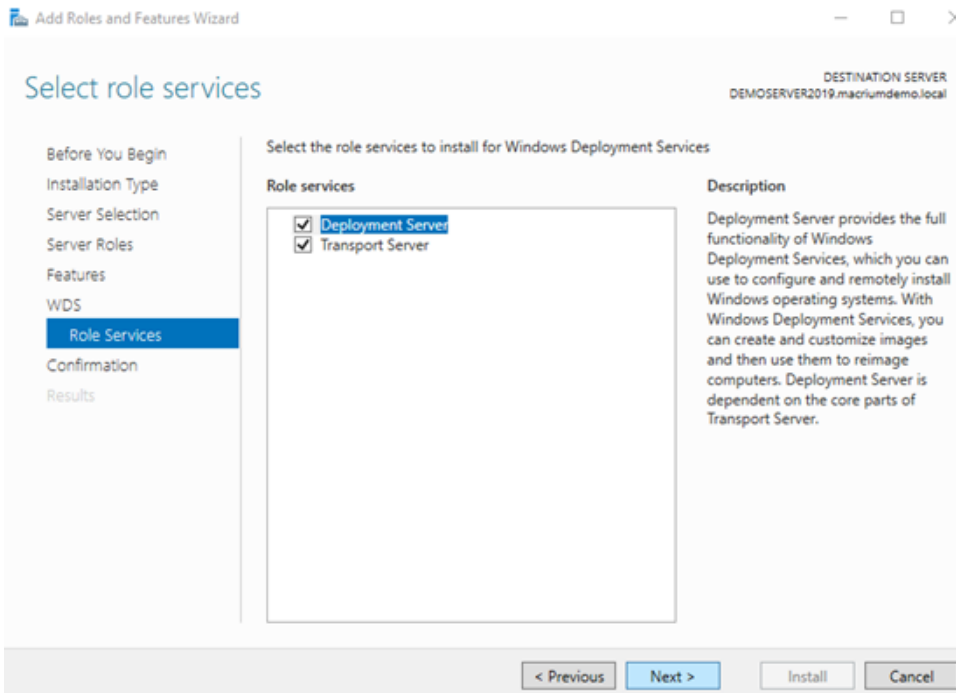6. To confirm the features that are required, click "Add Features".

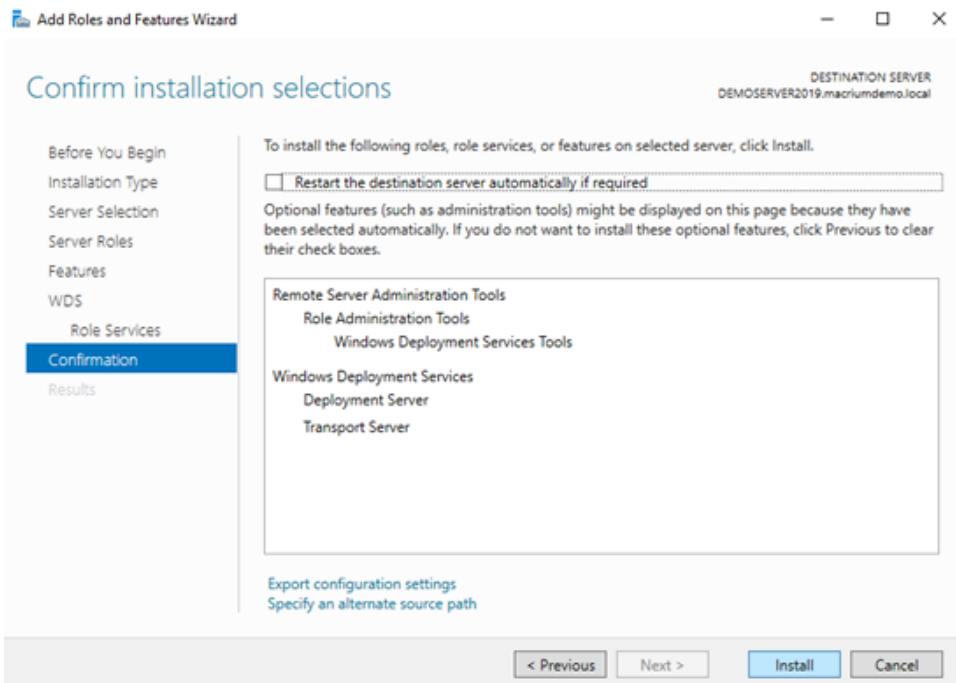7. Click "Next" on the Features list.

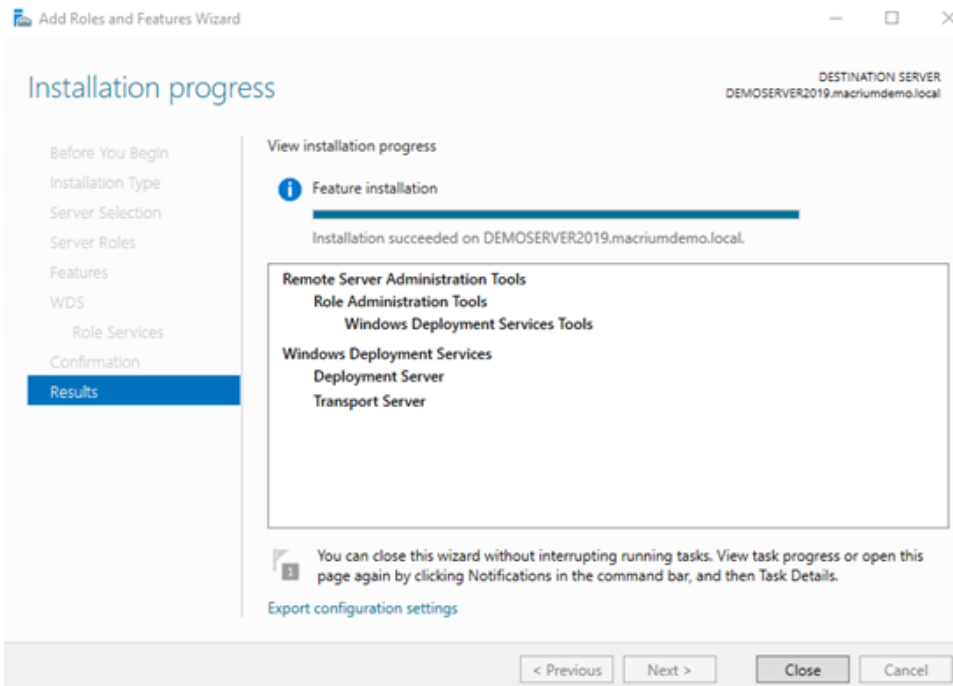8. Read through the notes for WDS installation and click "Next"

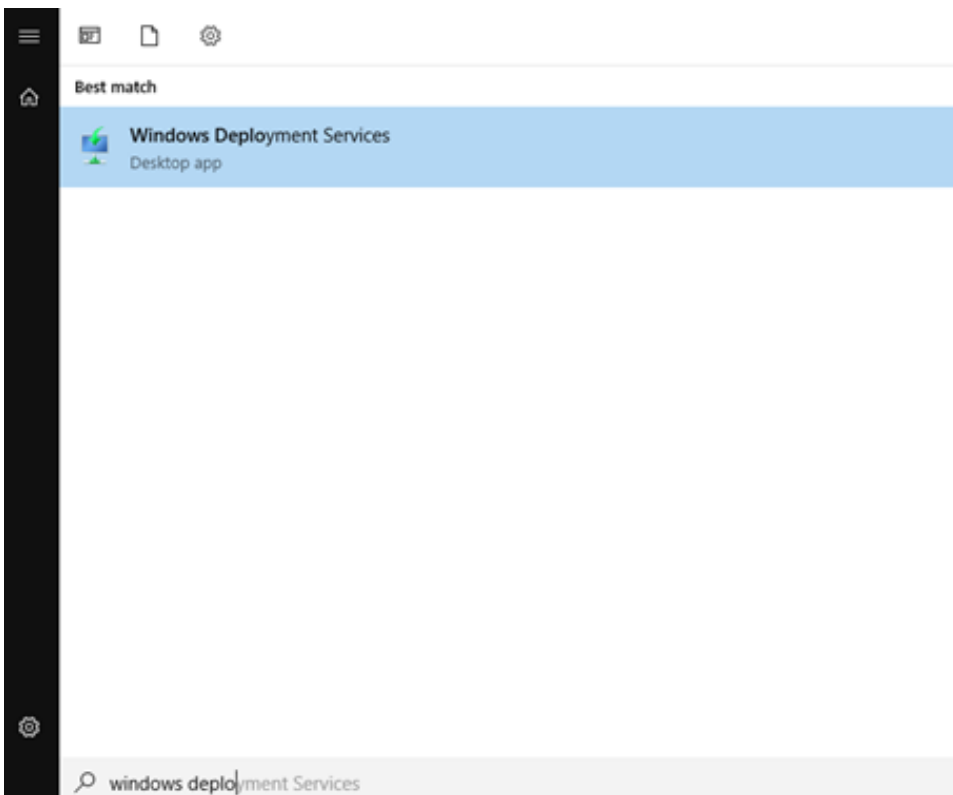9. Confirm the Role Services and click "Next".

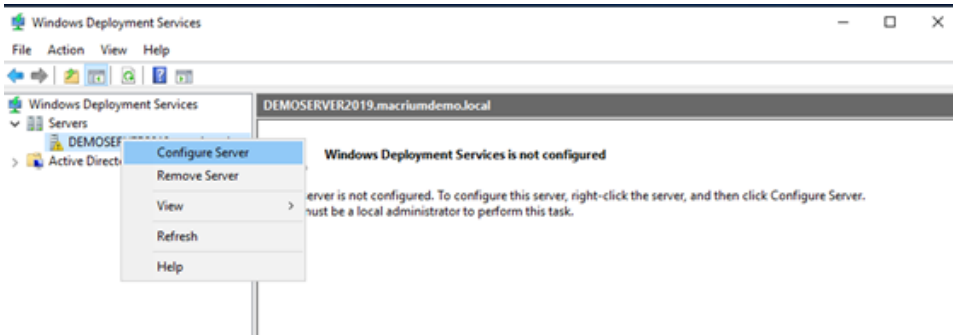10. One last chance to make changes. Confirm by clicking "Install".

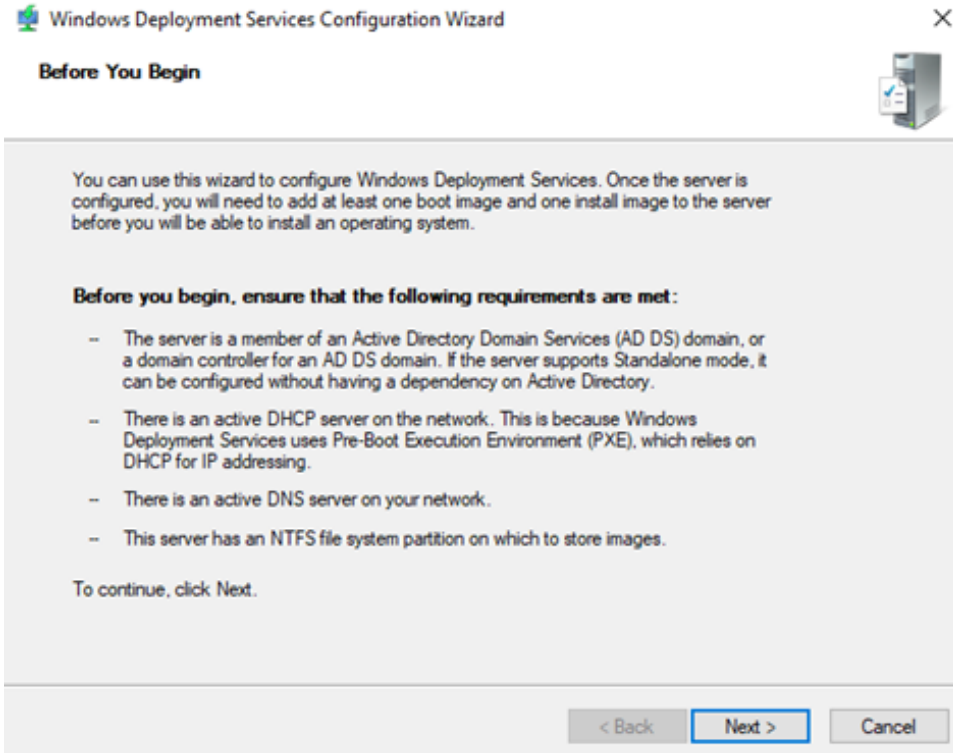11. Wait for the installation to complete and click "Close"

12. In the search pane type "Windows deployment services" and click on the app when it comes up.

13. Now we begin the process of configuring WDS. Right click on your server and select "Configure Server".
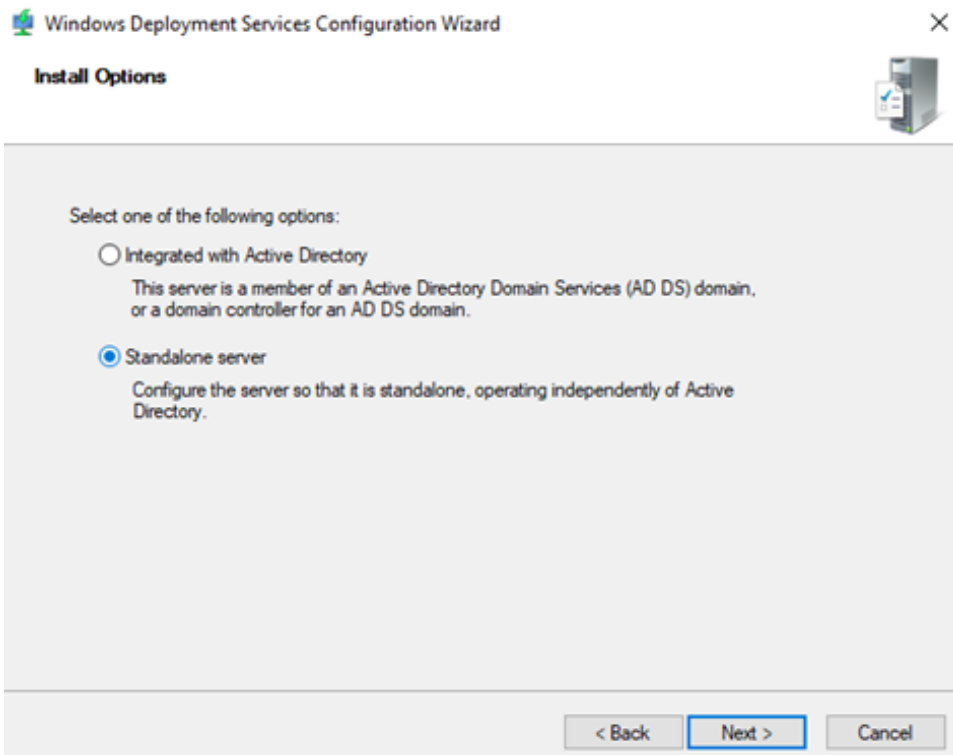
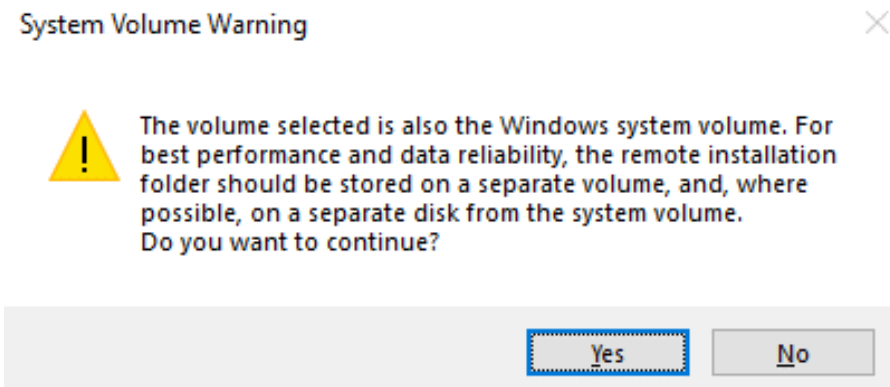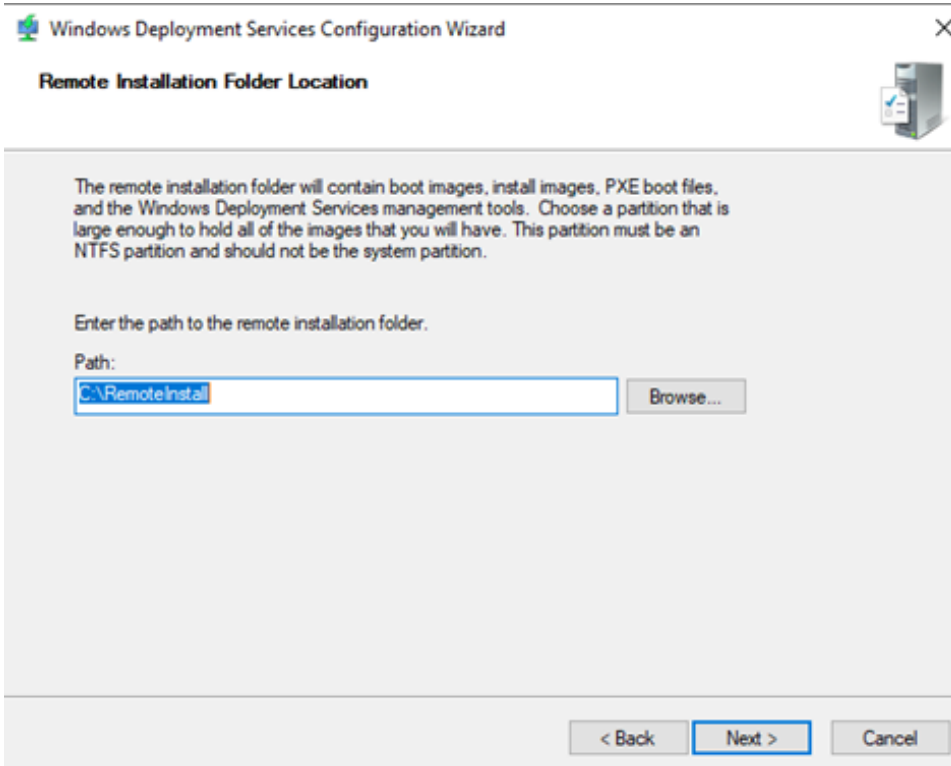14. Read through the information screen and click "Next".

15. Select "Standalone Server" and click "Next".

   Note: While you *can* select "Integrated with Active Directory", that is beyond the scope of this document.

16. Create a remote installation folder or use the default given. In this example, we're using the default "C:\RemoteInstall". Click "Next".

    Note: If you select a folder on the same volume as your operating system, you'll have a System Volume Warning pop up. Read it and click "Yes" if you're comfortable with moving forward, or pick another volume to store the Remote Install folder.

Windows Deployment Services Configuration Wizard   ✕

Remote Installation Folder Location

The remote installation folder will contain boot images, install images, PXE boot files, and the Windows Deployment Services management tools. Choose a partition that is large enough to hold all of the images that you will have. This partition must be an NTFS partition and should not be the system partition.

Enter the path to the remote installation folder.

Path:

C:\RemoteInstall   Browse...

< Back   Next >   Cancel

System Volume Warning   ✕

⚠ The volume selected is also the Windows system volume. For best performance and data reliability, the remote installation folder should be stored on a separate volume, and, where possible, on a separate disk from the system volume.
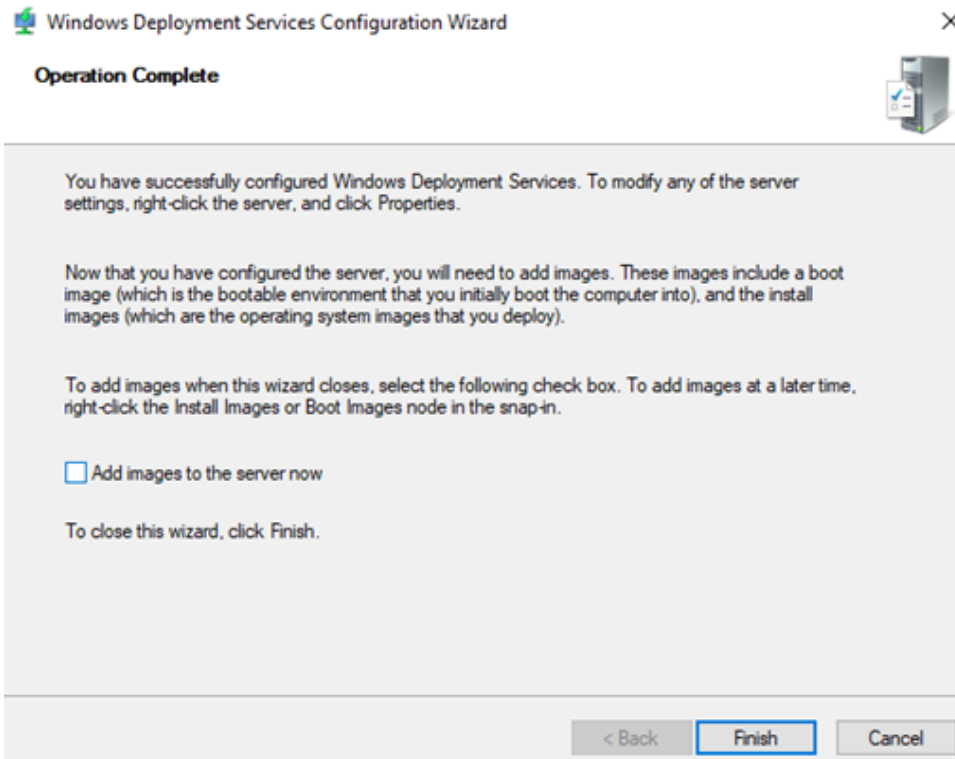Do you want to continue?

Yes   No

17. For your PXE Initial Settings, please select "Respond to all client computers (known and unknown)". Click "Next".
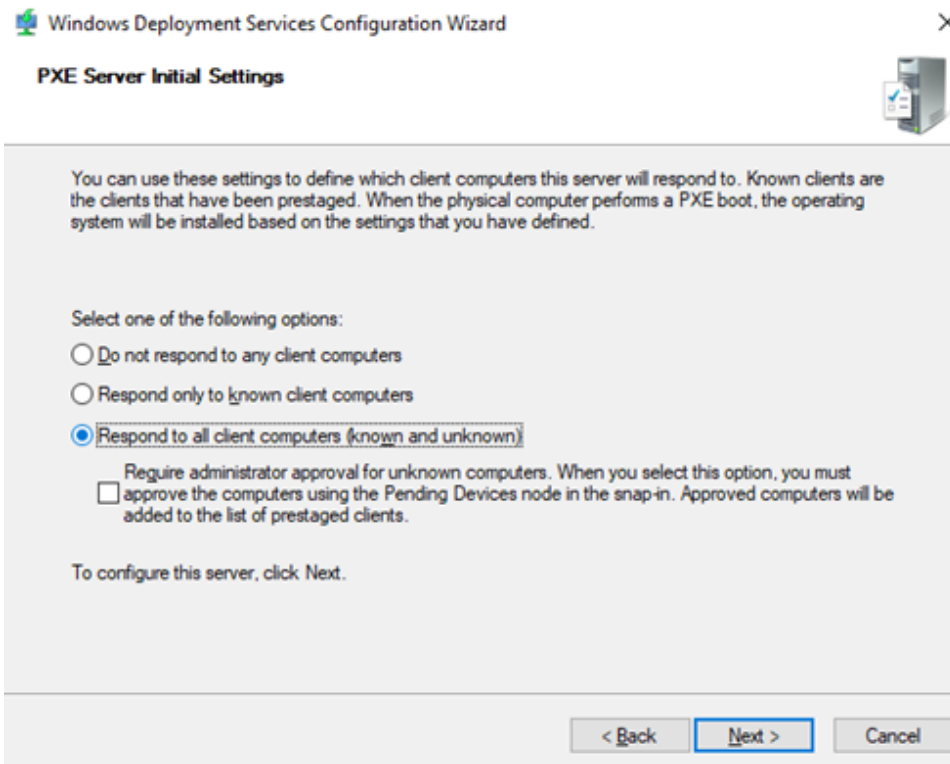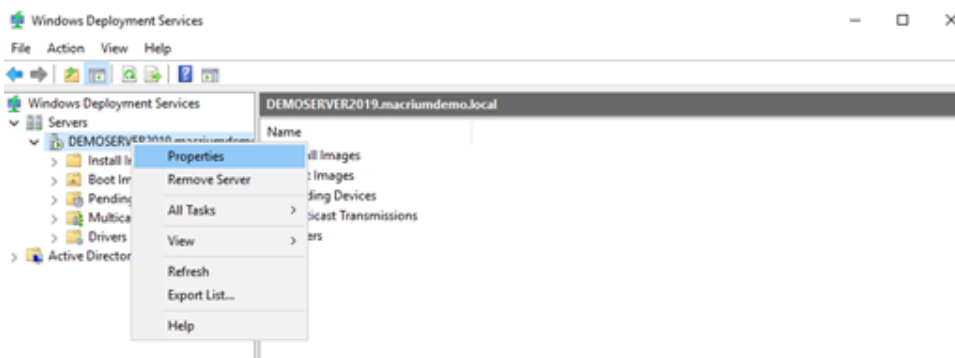
18. Wait for the WDS initial configuration to complete.
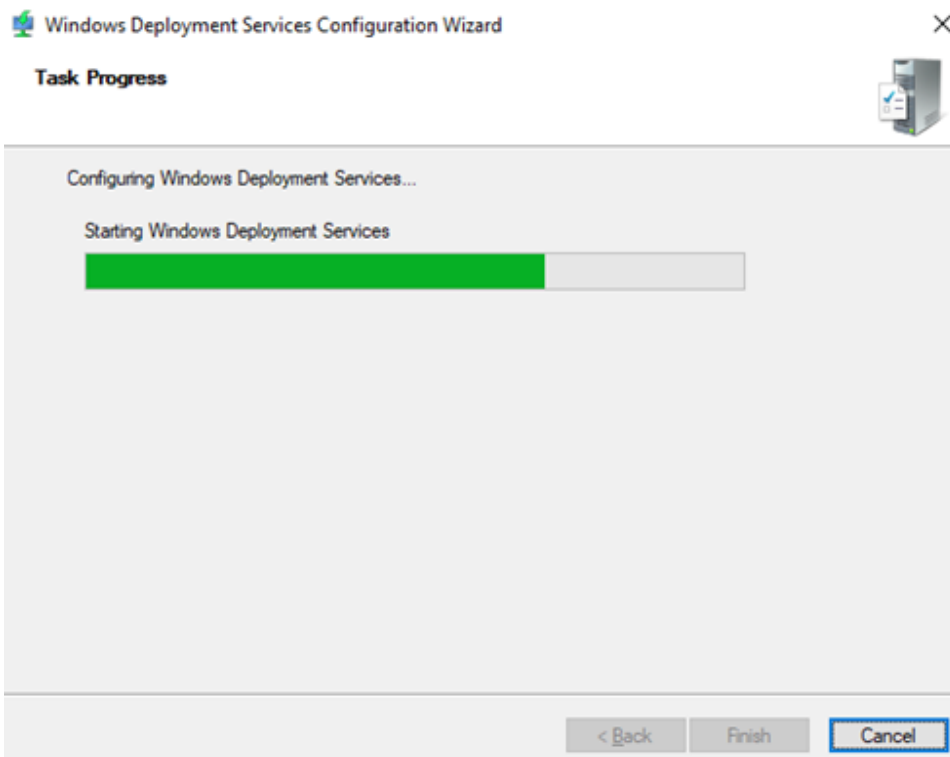
19. Click on "Finish" once the initial configuration is completed.

20. There are still a few things to set up. Right click on your server again and this time select "Properties".

21. Go to the PX Response tab. If you need to make any changes for your environment, change it here. Otherwise, leave the earlier selection of "Respond to all client computers (known and unknown)" as your choice.

22. Select the "Boot" tab and change the PXE Boot Policy. For known clients (computers that have already been identified on the network), select "Require the user to press the F12 key to continue the PXE boot". This will allow known clients to boot into their installed OS if you don't interact with the keyboard within the time limit.

    For unknown clients, select "Always continue the PXE boot". This will ensure that new machines use PXE boot to get their base Macrium Deployment Kit image.

DEMOSERVER2019 Properties   ✕

| Multicast | | Advanced | | Network | | TFTP |
| General | PXE Response | | AD DS | Boot | Client | | DHCP |

PXE Boot Policy
After a network boot is initiated, define when a PXE boot will continue.

Known clients:
- ⦿ Require the user to press the F12 key to continue the PXE boot
- ○ Always continue the PXE boot
- ○ Continue the PXE boot unless the user presses the ESC key
- ○ Never continue the PXE boot

Unknown clients:
- ○ Require the user to press the F12 key to continue the PXE boot
- ⦿ Always continue the PXE boot
- ○ Continue the PXE boot unless the user presses the ESC key
- ○ Never continue the PXE boot

Default boot image (optional)

|		
x86 architecture:		Select...
x64 architecture:		Select...
arm architecture:		Select...
arm64 architecture:		Select...
x86 (UEFI) architecture:		Select...
x64 (UEFI) architecture:		Select...

[OK]   [Cancel]   [Apply]

23. Because this is both the WDS and DHCP server, select the DHCP tab and ensure that both checkboxes are selected. This will automatically configure option 60 in DHCP.
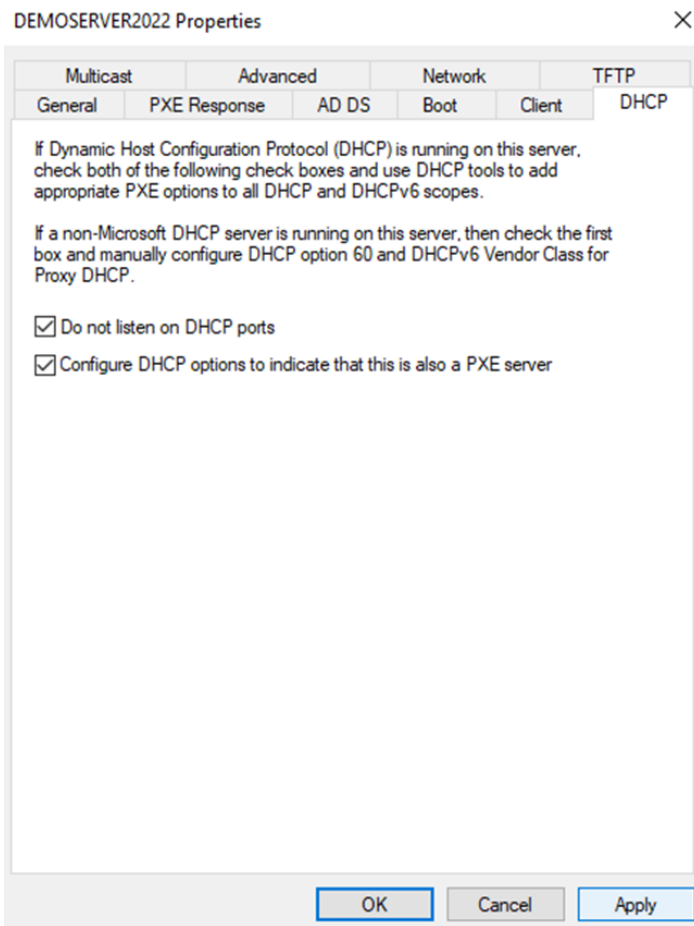
24. Now we need to add a boot image to the WDS server. Insert your Macrium Deployment Kit Technician's USB stick (or mount the ISO) to your server, and navigate to the sources folder. In this example, the USB stick is mounted as drive "D", so the path is "D:/Sources". You'll find the "boot. wim" boot image file there.
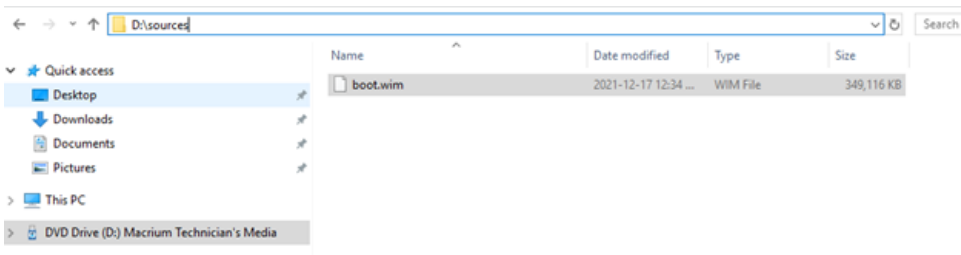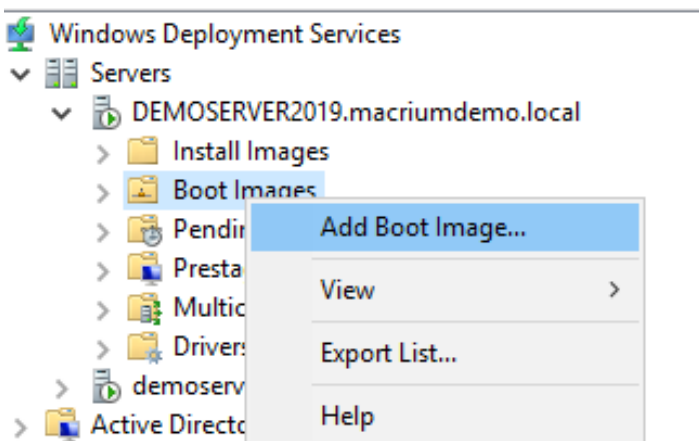

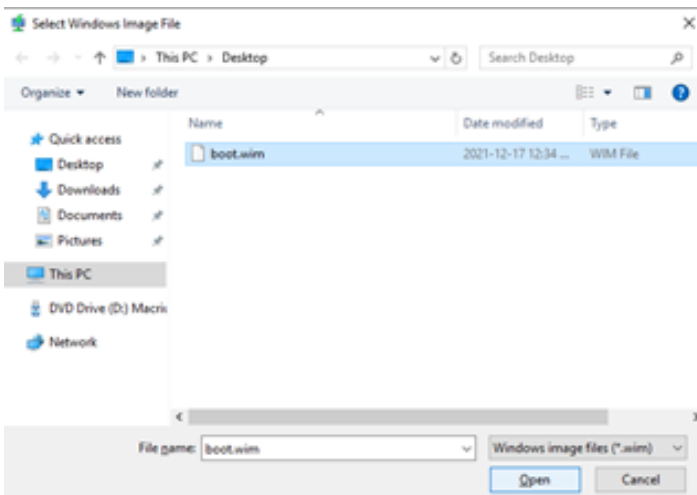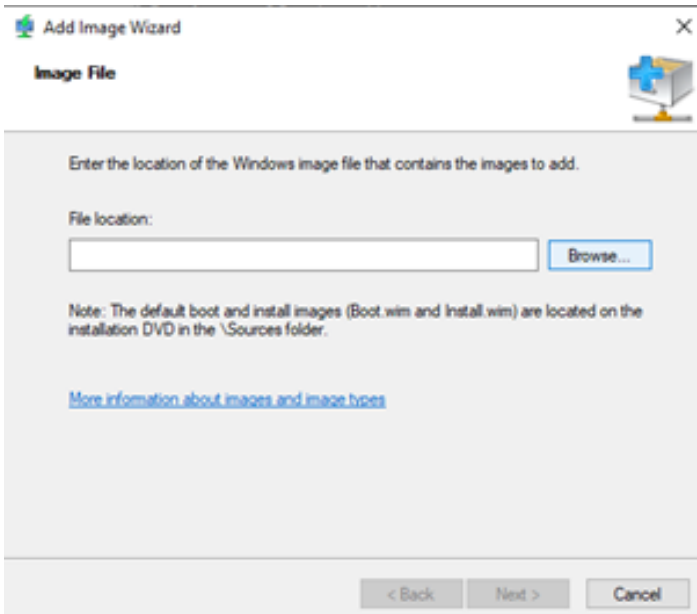25. Right click on the "boot.wim" file and select "Copy".
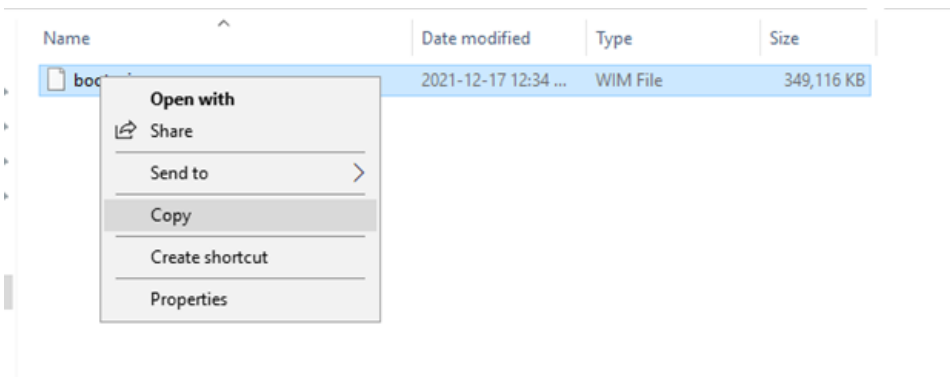
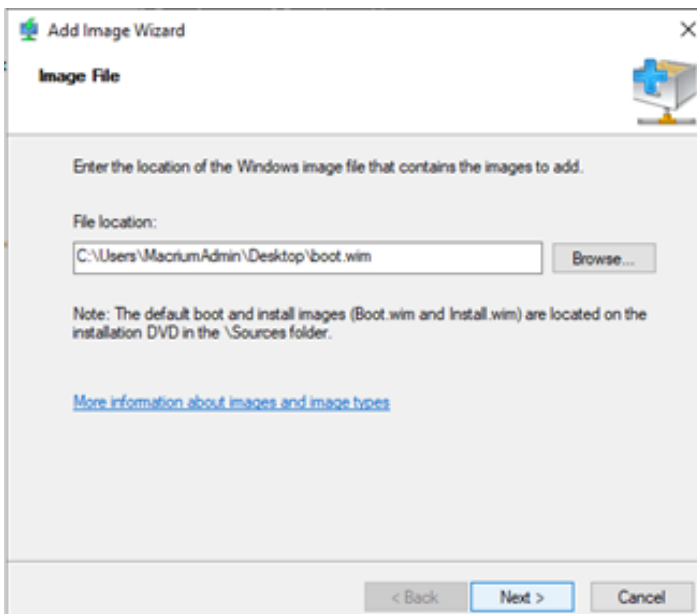26. Go to your desktop, right click and select "Paste". You should see a copy of the "boot.wim" file on your desktop now.
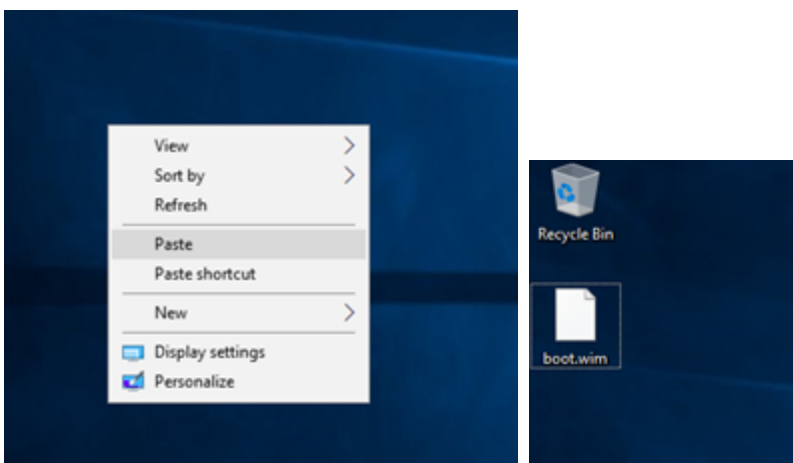
27. Go back to the WDS Console, expand your server, and right click on "Boot Images". Select "Add Boot Image".
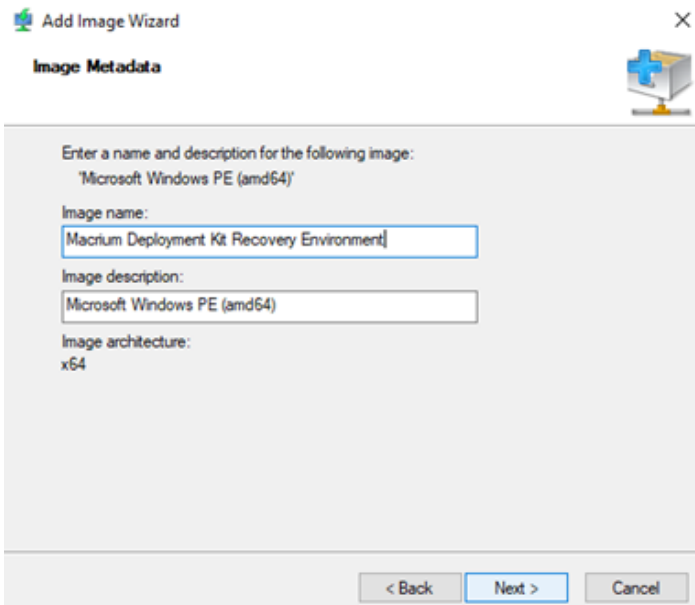

28. Click "Browse" and go to your desktop. Double-click on the "boot.wim" file we copied over above.

29. Confirm the path and click "Next".

30. Give the image a name and description. For this example, we used "Macrium Deployment Kit Recovery Environment" as the Image Name, and "Microsoft Windows PE (amd64)" as the description. Click "Next" when done.
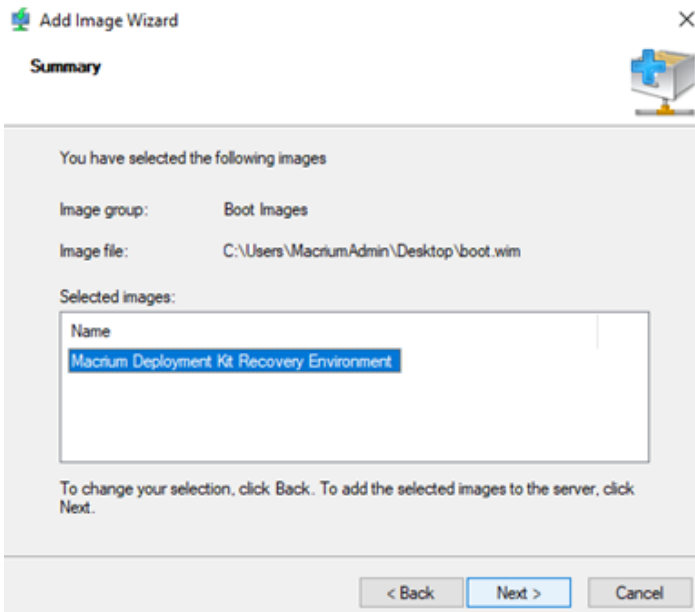
31. Review the final summary, and click "Next".

32. Wait for the operation to complete and click "Finish".
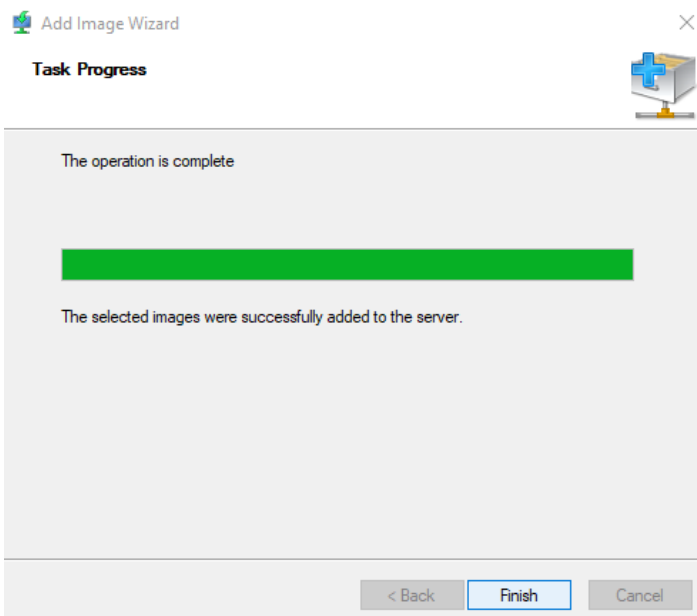
33. Confirm the boot image by going back into the WDS Console, click on "Boot Images" and see your new boot image in the right-hand pane.
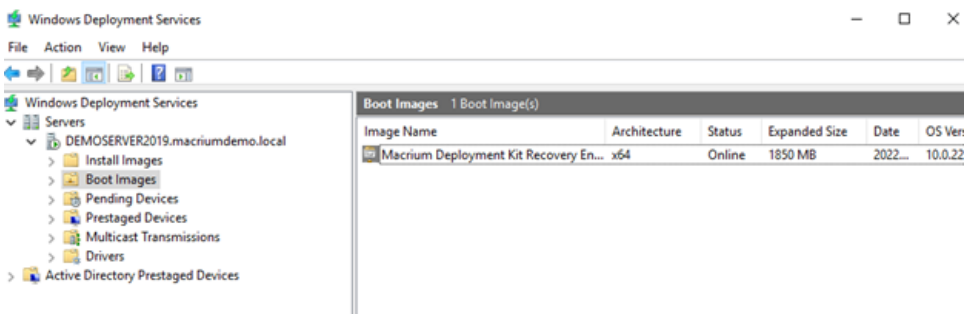
WDS is setup and ready, however you still need to ensure that DHCP is installed on this server and that option 60 is enabled to have PXE compatible systems boot into this Macrium Deployment Kit Recovery Environment.

See Installing and Configuring DHCP for PXE Boot on Windows Server 2016 2019 2022