Module 1: Installing and configuring domain controllers

Lab: Deploying and administering AD DS

(VMs: 20742B-LON-DC1, 20742B-LON-SVR1)

Exercise 1: Deploying AD DS

Task 1: Install AD DS binaries

1. On **LON-DC1**, in **Server Manager**, click **Tools**, and then click **Windows PowerShell**.
2. At the command prompt in the Windows PowerShell command-line interface, type the following command, and then press Enter:
Install-WindowsFeature –Name AD-Domain-Services –ComputerName LON-SVR1
3. Type the following command to verify that the AD DS role is installed on **LON-SVR1**, and then press Enter: ***Get-WindowsFeature –ComputerName LON-SVR1***
4. In the output of the previous command, scroll up and search for **Active Directory Domain Services**.
Verify that this check box is selected. Search for **Remote Server Administration Tools**. Look for the **Role Administration Tools** node below it, and then look for the **AD DS and AD LDS Tools** node.

Note: *Below the **AD DS and AD LDS Tools** node, only **Active Directory module for Windows PowerShell** has been installed and not the graphical tools, such as the Active Directory Administrative Center. If you centrally manage your servers, you will not usually need these on each server. If you want to install them, you need to specify the AD DS tools by running the **Add-WindowsFeature** cmdlet with the **RSAT-ADDS** command name.*

Note: *You might need to wait a short time after the installation process completes before verifying that the AD DS role has installed. If you do not see the expected results from the **Get-WindowsFeature** command, you can try again after a few minutes.*

Task 2: Prepare the AD DS installation and promote a remote server

Add LON-SVR1 to Server Manager on LON-DC1

1. On **LON-DC1**, in **Server Manager**, select the **All Servers** view.
2. On the **Manage** menu, click **Add Servers**.

3. In the **Add Servers** dialog box, maintain the default settings, and then click **Find Now**.
4. In the **Active Directory** list of servers, select **LON-SVR1**, click the arrow to add it to the **Selected** list, and then click **OK**.

Remotely configure AD DS by using Server Manager

1. On **LON-DC1**, ensure that the installation of the AD DS role on **LON-SRV1** is complete and that the server was added to **Server Manager**. Then click the **Notifications** flag symbol.
2. Note the post-deployment configuration of **LON-SVR1**, and then click the **Promote this server to a domain controller** link.
3. In the **Active Directory Domain Services Configuration Wizard**, on the **Deployment Configuration** page, under **Select the deployment operation**, verify that **Add a domain controller to an existing domain** is selected.
4. Ensure that the **Adatum.com** domain is specified, and then in the **Supply the credentials to perform this operation** section, click **Change**.
5. In the **Credentials for deployment operation** dialog box, in the **User name** box, type ***Adatum\Administrator*** and then in the **Password** box, type ***Pa55w.rd***
6. Click **OK**, and then click **Next**.
7. On the **Domain Controller Options** page, clear the selections for **Domain Name System (DNS) server** and **Global Catalog (GC)**. Ensure that **Read-only domain controller (RODC)** is cleared.
8. In the **Type the Directory Services Restore Mode (DSRM) password** section, type and confirm the password ***Pa55w.rd*** and then click **Next**.
9. On the **Additional Options** page, click **Next**.
10. On the **Paths** page, keep the default path settings for the **Database** folder, **Log files** folder, and **SYSVOL** folder, and then click **Next**.
11. On the **Review Options** page, click **View script** to open the generated Windows PowerShell script.
12. In Notepad, edit the generated Windows PowerShell script:
o Delete the comment lines that begin with the number sign (**#**).
o Remove the **Import-Module** line.
o Remove the grave accents (`) at the end of each line.
o Remove the line breaks.
13. Now the **Install-ADDSDomainController** command and all the parameters are

on one line. Place the cursor in front of the line, and then press Shift+End to select the whole line. On the menu, click **Edit**, and then click **Copy**.
14. Switch to the **Active Directory Domain Services Configuration Wizard**, and then click **Cancel**.
15. When prompted for confirmation, click **Yes** to cancel the wizard.
16. Switch to **Server Manager**. On the menu, click **Tools**, and then click **Windows PowerShell**.
17. At the Windows PowerShell command prompt, type the following command:
Invoke-Command –ComputerName LON-SVR1 { }
18. Place the cursor between the braces (**{ }**), and then paste the content of the copied script line from the clipboard. The whole line should now be as follows:
Invoke-Command –ComputerName LON-SVR1 {Install-ADDSDomainController –NoGlobalCatalog:$true –Credential (Get-Credential) –CriticalReplicationOnly:$false –DatabasePath "C:\Windows\NTDS" –DomainName "Adatum.com" –InstallDns:$false –LogPath "C:\Windows\NTDS" –NoRebootonCompletion:$false –SiteName "Default-First-Site-Name" –SysvolPath "C:\Windows\SYSVOL" –Force:$true }
19. Press Enter to start the command.
20. In the **Windows PowerShell Credential Request** dialog box, type ***Adatum\Administrator*** in the **User name** box, type ***Pa55w.rd*** in the **Password** box, and then click **OK**.
21. When prompted for the password, in the **SafeModeAdministratorPassword** text box, type ***Pa55w.rd*** and then press Enter.
22. When prompted for confirmation, in the **Confirm password** text box, type ***Pa55w.rd*** and then press Enter.
23. Wait until the command runs and the **Status Success** message is returned. The **LON-SVR1** virtual machine restarts.
24. Close Notepad without saving the file.
25. After **LON-SVR1** restarts, on **LON-DC1**, switch to **Server Manager**, and on the left side, click the **AD DS** node. Note that **LON-SVR1** has been added as a server and that the warning notification has disappeared. You might have to click **Refresh**.

Task 3: Run the AD DS Best Practices Analyzer

1. On **LON-DC1**, in **Server Manager**, go to the AD DS dashboard view.

2. Scroll down to the **Best Practices Analyzer** section, click the **Tasks** menu, and then click **Start BPA Scan**.
3. In the **Select Servers** dialog box, select **LON-DC1.Adatum.com** and **LON-SVR1.Adatum.com**.
4. Click **Start Scan**, and then wait until the Best Practices Analyzer (BPA) finishes the scan.
5. Review the results of the BPA.

***Results**: After this exercise, you should have successfully created a new domain controller and reviewed the Active Directory Domain Services (AD DS) Best Practices Analyzer (BPA) results for that domain controller.*

Exercise 2: Deploying domain controllers by performing domain controller cloning

Task 1: Check for domain controller clone prerequisites

1. On **LON-DC1**, in **Server Manager**, click **Tools**, and then click **Active Directory Administrative Center**.
2. In the Active Directory Administrative Center, double-click **Adatum (local)**, and then in the management list, double-click the **Domain Controllers** organizational unit (OU).
3. In the management list, select **LON-DC1**, if it is not already selected, and then in the **Tasks** pane, in the **LON-DC1** section, click **Add to group**.
4. In the **Select Groups** dialog box, in the **Enter the object names to select** box, type ***Cloneable***, and then click **Check Names**.
5. Ensure that the group name is expanded to **Cloneable Domain Controllers**, and then click **OK**.
6. On **LON-DC1**, on the taskbar, click the **Windows PowerShell** icon.
7. At the Windows PowerShell command prompt, type the following command, and then press Enter: ***Get-ADDCCloningExcludedApplicationList***
8. Verify the list of critical apps, if any. (In production, verify each app or use a domain controller that has fewer apps installed by default.) Type the following command, and then press Enter:
Get-ADDCCloningExcludedApplicationList –GenerateXML

9. Run the following command to create the **DCCloneConfig.xml** file:
New-ADDCCloneConfigFile

Task 2: Copy the source domain controller

1. Type the following command to shut down **LON-DC1**, and then press Enter:
Stop-Computer
2. On the host computer, in **Hyper-V Manager**, in the management list, select the **20742B-LON-DC1** virtual machine.
3. In the **Actions** pane, in the **20742B-LON-DC1** section, click **Export**.
4. In the **Export Virtual Machine** dialog box, type the location ***D:\Program Files\Microsoft Learning\20742*** and then click **Export**. Wait until the export finishes.

Note: *Depending on your classroom's setup, the* ***Program Files\Microsoft Learning\20742*** *folder might be on drive C. Please locate and use the existing folder for the remainder of the lab.*

5. In the **Actions** pane, in the **20742-LON-DC1** section, click **Start,** and then sign in as **Adatum\Administrator** with the password **Pa55w.rd**.

Task 3: Perform domain controller cloning

1. On the host computer, in **Hyper-V Manager**, in the **Actions** pane, in the section that is named for the host computer, click **Import Virtual Machine**.
2. In the **Import Virtual Machine Wizard**, on the **Before You Begin** page, click **Next**.
3. On the **Locate Folder** page, click **Browse**, browse to the folder **D:\Program Files\Microsoft Learning\ 20742\20742B-LON-DC1**, click **Select Folder**, and then click **Next**.
4. On the **Select Virtual Machine** page, select **20742B-LON-DC1** (if it is not already selected), and then click **Next**.
5. On the **Choose Import Type** page, select **Copy the virtual machine (create a new unique ID)**, and then click **Next**.
6. On the **Choose Folders for Virtual Machine Files** page, select the **Store the virtual machine in a different location** check box.
7. For each folder location, specify **D:\Program Files\Microsoft Learning\20742** as the path, and then click **Next**.
8. On the **Choose Folders to Store Virtual Hard Disks** page, provide the path

D:\Program Files\Microsoft Learning\20742, and then click **Next**.
9. On the **Completing Import Wizard** page, click **Finish**.
10. In the management list, identify and select the newly imported virtual machine named **20742B-LON-DC1**, which has the **State** shown as **Off**. In the lower section of the **Actions** pane, click **Rename**.
11. Type **20742B-LON-DC3** as the name, and then press Enter.
12. In the **Actions** pane, in the **20742B-LON-DC3** section, click **Start**, and then click **Connect** to see the virtual machine starting.
13. While the server is starting, you might see the message "Domain Controller cloning is at *x*% completion."

***Results**: After completing this exercise, you should have successfully deployed a domain controller by cloning it in Microsoft Hyper-V.*

Exercise 3: Administering AD DS

Task 1: Use the Active Directory Administrative Center

Navigate within the Active Directory Administrative Center

1. On **LON-DC1**, in **Server Manager**, click **Tools**, and then click **Active Directory Administrative Center**.
2. In the navigation pane, click the **Tree View** tab, and then expand **Adatum (local)**. **Perform an administrative task within the Active Directory Administrative Center**
1. In the Active Directory Administrative Center, click **Overview**.
2. In the **Reset Password** section, in the **User name** box, type ***Adatum\Adam***
3. In the **Password** and **Confirm password** boxes, type ***Pa55w.rd***
4. Clear the **User must change password at next log on** check box, and then click **Apply**.
5. In the **Global Search** section, in the **Search** box, type ***Lon***, and then press Enter.

Create objects

1. In the Active Directory Administrative Center, in the navigation pane tree view, expand **Adatum (local)**, and then click the **Computers** container.
2. In the **Tasks** pane, in the **Computers** section, click **New**, and then select **Computer**.
3. In the **Create Computer** dialog box, type the following information, and then

click **OK**:
o Computer name: ***LON-CL4***
o Computer (NetBIOS) name: ***LON-CL4***

View all object attributes

1. In the Active Directory Administrative Center, double-click **Adatum (local)**, and then in the management list, double-click **Computers**.
2. Select **LON-CL4**, and then in the **Tasks** pane, in the **LON-CL4** section, click **Properties**.
3. In the **LON-CL4** window, scroll down to the **Extensions** section, click the **Attribute Editor** tab, and then note that all the attributes of the computer object are available here.
4. Close the **LON-CL4** window by clicking **Cancel**.

Use the Windows PowerShell History viewer

1. In the Active Directory Administrative Center, click the **Windows PowerShell History** toolbar at the bottom of the screen.
2. View the details for the **New-ADComputer** cmdlet that you used to perform the most recent task.
3. On **LON-DC1**, close all open windows.

Results*: After completing this exercise, you should have successfully used the Active Directory Administrative Center to manage AD DS and reviewed the Windows PowerShell cmdlets that run in the background.*

Task 2: Prepare for the next module

When you are finished with the lab, revert all virtual machines to their initial state:

1. On the host computer, start **Hyper-V Manager**.
2. In the **Virtual Machines** list, right-click **20742B-LON-DC1**, and then click **Revert**.
3. In the **Revert Virtual Machine** dialog box, click **Revert**.
4. Repeat steps 2 and 3 for **20742B-LON-SVR1**.