LAB 2
CONFIGURING SERVERS

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This lab contains the following exercises and activities:

Exercise 2.1	Completing Post-Installation Tasks
Exercise 2.2	Adding Roles and Features
Lab Challenge (optional)	Using the Server Core Interface

BEFORE YOU BEGIN

The lab environment consists of computers connected to a local area network, along with a server that functions as the domain controller for a domain called *adatum.com*. The computers required for this lab are listed in Table 2-1.

Table 2-1
Computers Required for Lab 2

Computer	***Operating System***	***Computer Name***
Domain controller	Windows Server 2016	SERVERA
New member server	Windows Server 2016	SERVERB
Member server	Windows Server 2016	SERVERC

In addition to the computers, you also require the software listed in Table 2-2 to complete Lab 2.

Table 2-2
Software Required for Lab 2

Software	*Location*
Lab 2 student worksheet	Lab02_worksheet.docx (provided by instructor)

Working with Lab Worksheets

Each lab in this manual requires that you answer questions, create screen shots, and perform other activities that you will document in a worksheet named for the lab, such as Lab02_worksheet.docx. It is recommended that you use a USB flash drive to store your worksheets, so you can submit them to your instructor for review. As you perform the exercises in each lab, open the appropriate worksheet file, fill in the required information, and save the file to your flash drive.

After completing this lab, you will be able to:

- Complete the initial setup tasks required on a newly installed server
- Convert a Windows Server 2016 interface from GUI to Server Core and back again
- Add roles and features using the wizard and Windows PowerShell

Estimated lab time: 50 minutes

1. Install SERVERB and SERVERC

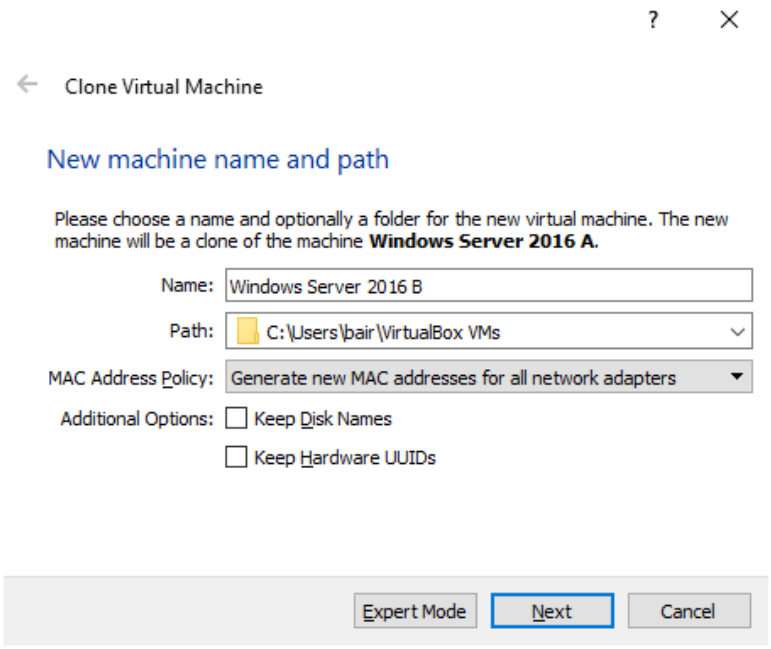
You can repeat the installation process of SERVERA, and use a fresh Windows Server 2016 installation for SERVERB and SERVERC. This is a safer path.

Or, you can clone from SERVERA. This is a trickier path. The following instructions show the clone method.

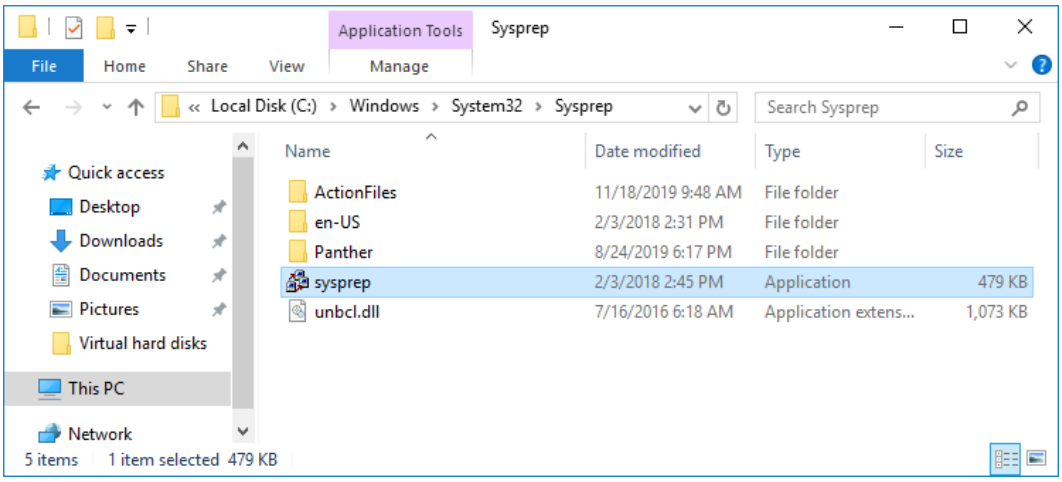
In VirtualBox, right click SERVERA, click “Clone…”.

In Clone dialogbox, change name to “Windows Server 2016 B”.

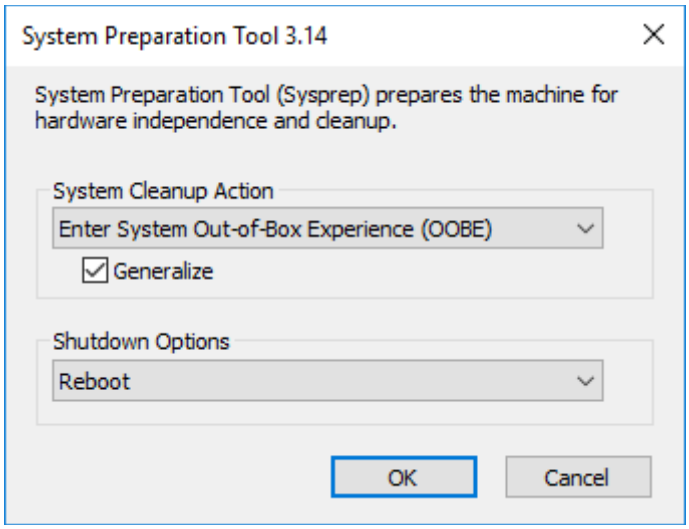
For MAC Address Policy, change to “Generate new MAC address for all network adapters” (very important).



When clone is done, launch Server B, log in as administrator, run file explorer, go to "C: > Windows > System32 > Sysprep" folder, run sysprep.



Check "Generalize" (very important)

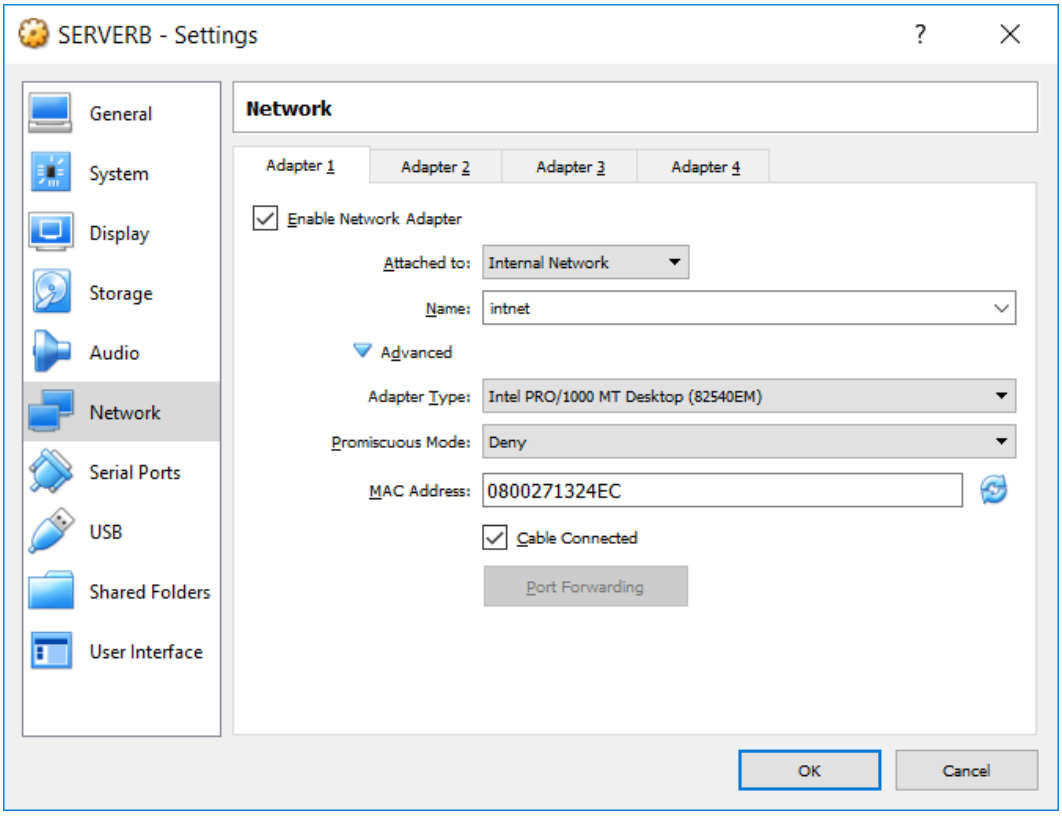


Click OK.

2. Set Network Type in VirtualBox

In VirtualBox, set SERVERA, SERVERB, and SERVERC network type to "**Internal Network**". If you don't have server C or B, install them as how you installed server A.

Select your virtual machine, go to Settings > Network > Advanced



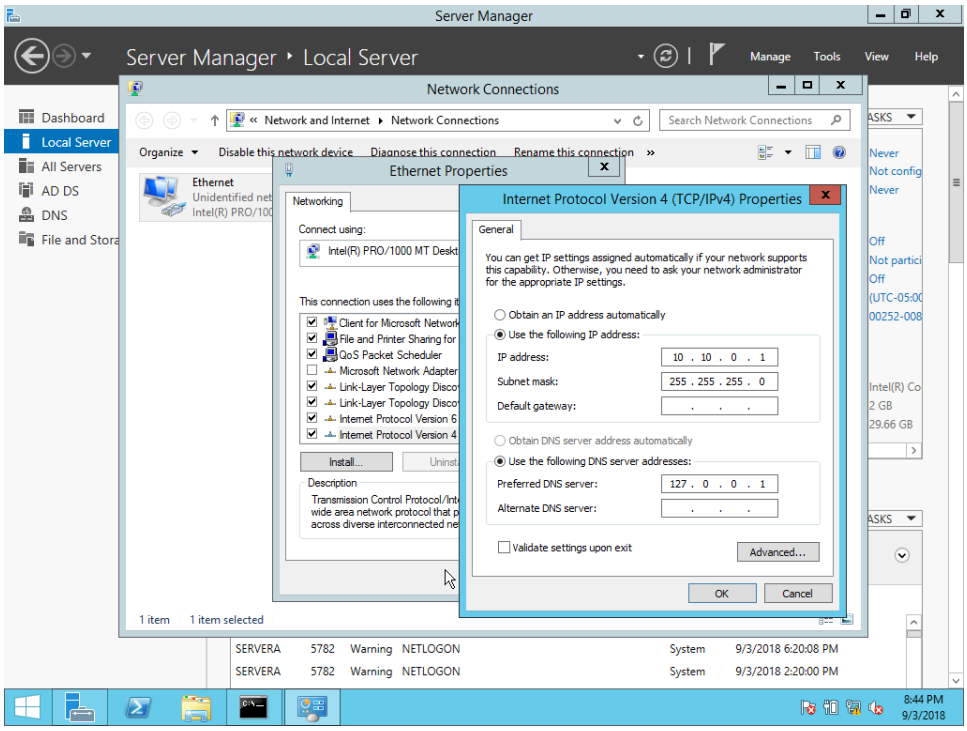
Make sure VMs have different MAC Address. If there are duplicates, click the renew button.

3. Manually Set IP Address in SERVERA

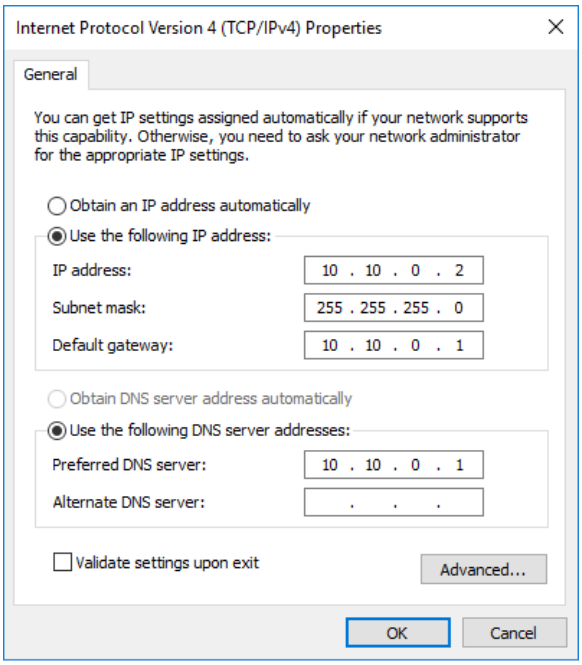
Open "**Network Connections**", right click Ethernet, click **Properties**.
(The quickest way to go directly to the network adapters is the command: **ncpa.cpl**)

Select "**Internet Protocol Version 4 (TCP/IPv4)**, click **Properties**. Manually set IP address and mask:
10.10.0.1
255.255.255.0

Set DNS Server to 10.10.0.1.



Later on, when you work on SERVERB and SERVERC, their IP addresses will be 10.10.0.2 and 10.10.0.3, and both Default gateway and Preferred DNS server should be 10.10.0.1 (i.e., SERVERA). For example, here is my SERVERB IPv4 settings:



Exercise 2.1	Completing Post-Installation Tasks
Overview	In this exercise, you complete the tasks necessary to set up a server on which Windows Server 2016 has just been installed.
Mindset	When you purchase a server from an original equipment manufacturer (OEM) with Windows Server 2016 installed, the factory runs a program called *Sysprep.exe* that prepares the server for distribution by erasing all the user-specific information on the system.
Completion time	20 minutes

1. Select SERVERB, on which Windows Server 2016 has just been installed. The Settings page appears, displaying the server's Region and Language options.

2. Click Next to accept the default values for the *Country and Region*, *Language*, and *Keyboard Layout* parameters. Another Settings page appears, displaying the server's license terms.

3. Click I accept. Another Settings page appears. In the *Password* and *Reenter password* text boxes, type **Pa$$w0rd** and click Finish. The Windows security page appears, showing the time.

4. Click Ctrl+Alt+Delete and, in the Password text box, type **Pa$$w0rd** and click the right arrow. The system logs on the Administrator user and the Server Manager console appears.

5. In the left pane, click Local Server. The Properties tile appears in the right pane.

6. Click the **Time Zone value**. The Date and Time dialog box appears (see Figure 2-1).

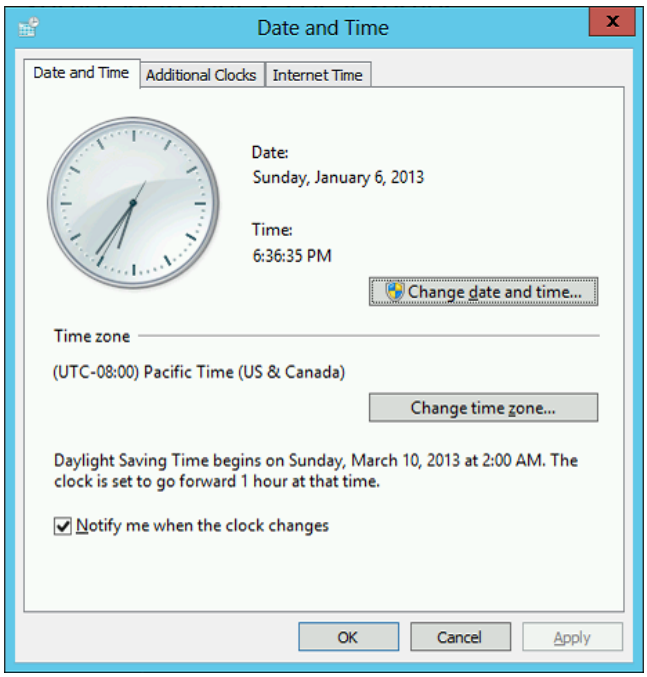


Figure 2-1
The Date and Time dialog box

7. Click **Change time zone**, if necessary. The Time Zone Settings dialog box appears.

8. In the Time Zone drop-down list, select the *(UTC -05:00) Eastern Time (US & Canada)* time zone and click OK.

Question 1	*Why must you set the time zone to Eastern time, even if that is not where you are currently located?*

9. Click OK to close the Date and Time dialog box.

10. Click the Ethernet value. The Network Connections dialog box appears.

11. Right-click the Ethernet connection and, from the context menu, select **Properties**. The Ethernet Properties sheet appears.

12. Double-click **Internet Protocol Version 4 (TCP/IPv4)**. The Internet Protocol Version 4 (TCP/IPv4) Properties sheet appears.

13. Select the *Use the following IP address* option and, in the text boxes, type the following values:

    - IP address: **10.10.0.2**
    - Subnet mask: **255.255.255.0**
    - Default gateway: Leave blank

14. Select the *Use the following DNS server addresses* option and, in the text boxes, type the following values:

    - Preferred DNS server: **10.10.0.1**
    - Alternate DNS server: Leave blank

15. Click OK to close the Internet Protocol Version 4 (TCP/IPv4) Properties sheet.

16. Click OK to close the Ethernet Properties sheet.

17. Close the Network Connections window.

18. In the Properties tile, click the ***Computer name* value**. The System Properties sheet appears.

19. Click **Change**. The Computer Name/Domain Changes dialog box appears (see Figure 2-2).

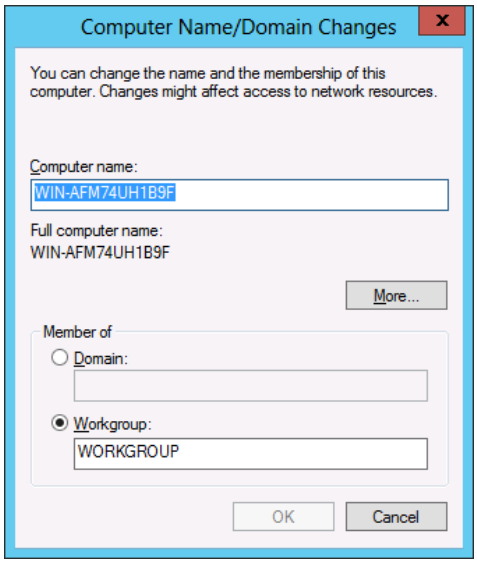


Figure 2-2
The Computer Name/Domain Changes dialog box

20. In the Computer name text box, type **SERVERB**.

Adatum.com in not ready yet, ignore this part.

21. Select the Domain option and, in the Domain text box, type **adatum.com** and click OK. The Windows Security dialog box appears.

22. In the User name text box, type **Administrator**.

23. In the Password text box, type **Pa$$w0rd** and click OK. A *Welcome to the adatum.com* message box appears.

24. Click OK. A message box appears, prompting you to restart the computer.

25. Click OK.

26. Click Close to close the System Properties dialog box. Another message box appears, prompting you to restart the computer.

27. Click Restart now. The system restarts.

End of exercise. You can leave the windows open for the next exercise.

Exercise 2.2	Adding Roles and Features
Overview	In this exercise, you use the Add Roles and Features Wizard to install additional components to a server running Windows Server 2016.
Mindset	One of the most basic tasks that administrators perform when setting up a server is to install the roles and features providing the software the server needs to perform its basic functions.
Completion time	10 minutes

1. On the SERVERB computer, which has the Server Manager console open, select **Manage** > **Add Roles and Features**. The Add Roles and Features Wizard appears, displaying the *Before you begin* page.

2. Click **Next**. The *Select installation type* page appears.

3. Leave the *Role-based or feature-based installation* radio button selected and click Next. The *Select destination server* page appears.

Question 2	*How can you install these same roles and features on SERVERB by using tools on SERVERA?*

4. Click Next to accept the default local server. The *Select server roles* page appears.

5. Select the **Print and Document Services** check box. The *Add features that are required for Print and Document Services?* page appears.

6. Click **Add Features**.

7. Select the **Web Server (IIS)** check box. The *Add features that are required for Web Server (IIS)?* page appears.

8. Click **Add Features**.

9. Click **Next**. The *Select features* page appears. Select the following check boxes:

   - Group Policy Management
   - Internet Printing Client
   - Windows Server Backup

10. Click **Next**. The *Print and Document Services* page appears.

11. Click **Next**. The *Select role services* page appears.

12. Click **Next**. The *Web Server Role (IIS)* page appears.

13. Click **Next**. The *Select role services* page appears.

14. Click **Next**. The *Confirm installation selections* page appears.

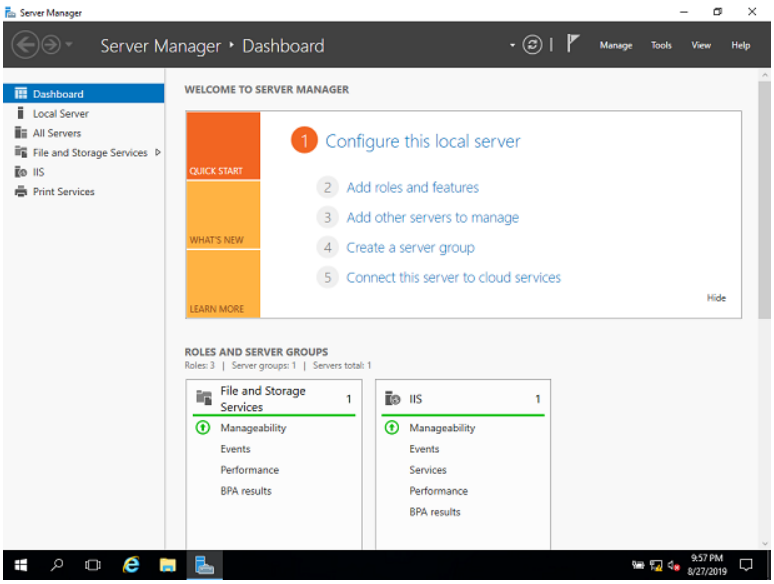
15. Click **Install**. The wizard installs the selected roles and features.

16. Click **Close**.

Question 3	*How would the installation of the roles and features selected in this exercise differ if the server was running Windows Server 2008 R2?*

Question 4	*How can you prove that the Web Server (IIS) role is installed on the server?*

17. Your Server Manager should show the new roles and features on left, as shown in the following image. If not, restart your SERVERB. Take a screen shot of SERVERB Server Manager by pressing Alt+Prt Scr (right Ctrl + E in VitualBox), save your screen shot, and submit to Blackboard.



End of exercise. You can leave the windows open for the next exercise.

Lab Challenge is optional.

Lab Challenge Using the Server Core Interface

Overview	After completing Exercise 2.3, the SERVERB server is left in the Server Core interface. Users must work from the command line to perform administrative tasks.
Mindset	Microsoft now recommends Server Core as the default installation option for Windows Server 2016. Users should become familiar with the basic command prompt and Windows PowerShell tools, because it might not be practical to install the GUI whenever additional server configuration is required.
Completion time	10 minutes

To complete the challenge, you must specify the commands you would use in the Server Core Windows PowerShell interface to uninstall the roles and features you installed in Exercise 2.2 and convert the system back to the full GUI interface.

Enable Server GUI from Server Core

(https://www.techrepublic.com/article/how-to-switch-between-gui-and-core-in-windows-server-2012-using-powershell/)

1. Log on to your server with an account that has administrative rights on that server.

2. Run PowerShell as an Administrator and elevate User Account Control permissions, if prompted. It may be necessary to call PowerShell using the runas command in order to specify administrative access elevation; this will depend on the configuration of your server. Enter the following command, and enter your admin password when prompted.

```
runas /user:administrator powershell.exe
```

3. Once PowerShell is loaded with administrative privilege, you will need to reinstall the Windows features associated with Server GUI. Enter the following command, and press Enter to process the command.

```
Get-WindowsFeature -Name *gui* | Install-WindowsFeature -
Restart
```