

Windows Server Part 1 - Active Directory

Activities

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How to Create Screenshots: Please use the Windows Snip and Sketch Tool or the Snipping Tool. Paste a screenshot of just the program you are working on. If you are snipping a virtual machine, make sure your focus is outside the virtual machine before you snip.

1. Press and hold down the **Windows key & Shift**, then type **S**. This brings up the on-screen snipping tool.
2. Click and Drag your mouse around whatever you want to snip.
3. Release the mouse button. This places the snip into the Windows Clipboard.
4. Go into Word or wherever you want to paste the snip. Hold down **CTRL**, then type **V** to paste the snip.

Figure It Out

There will be times in any assignment where you may miss a step or the instructions are not quite correct or as clear as they could be. Research and figure out what is needed to complete the assignment. Explain what you did and why. I am looking for evidence of understanding. Directions in IT are not always complete or accurate. They need interpretation and research. Take the concepts of that we are learning and figure out an answer.

1. Google it

2. Watch the videos
3. Read the book
4. Ask for help

Activity 1-0: Set Server1 to a Static IP

Time required: 10 minutes

Set the server to a static IP address.

1. In Server Manager → Click **Local Server**.
2. Click **Ethernet → Properties → Internet Protocol Version 4 → Properties**.
3. Server1:
IP Address: 10.10.1.10
Subnet Mask: 255.255.255.0
Default Gateway: 10.10.1.1
DNS: 8.8.8.8
4. Change the Time zone to your time zone.
5. Turn off **IE Enhanced Security Configuration**.
6. Click on Computer Name → Change to **Server1**
7. Reboot when prompted.

Activity 1-1: Install Active Directory

Time Required: Approximately 20–30 minutes

Objective: Install Active Directory

Required Tools and Equipment: Server1

Description: To make a Windows Server a domain controller, you must install the Active Directory Domain Services role. In this activity, you learn how to install the role. You'll need to sign into Windows Server as Administrator. Additionally, make sure that all other programs and windows are closed before you start (because the computer will reboot when you finish the installation)

1. Logon to **Server1**. Open **Server Manager**, if it is not already open.

2. Ensure that **Dashboard** is selected in the left pane.
3. In the right pane, click **Add roles and features**.
4. If you see the Before you begin window, click Next.
5. In the **Select installation type** window, ensure that **Role-based or feature-based installation** is selected. Click **Next**.
6. Be sure **Server1** is selected in the **Select destination server window**. Click **Next**.
7. Click the check box for **Active Directory Domain Services, DHCP Server, and DNS Server**.
8. In the **Add Roles and Features Wizard** dialog box, notice the tools to be installed with the Active Directory installation. Click **Add Features**.
9. Make sure the check box for **Active Directory Domain Services** and **DNS Server** is checked. Click **Next**.
10. **Select features:** Notice that **Group Policy Management** is checked. Click **Next**.
11. Read the information about Active Directory Domain Services.
12. How many **domain controllers are recommended as a minimum for a single domain?**

[Click or tap here to enter text.](#)
13. Click **Next**.
14. Read about DNS. Click Next.
15. **Confirm installation selections:** Click **Install**.
16. Wait a few minutes until the installation is completed.
17. Insert **a screenshot of the installation progress:**

[Click or tap here to enter text.](#)
18. Review the information in the Installation progress window, which also shows whether the installation succeeded.
19. Click **Close**.
20. Restart **Server1**.

Activity 1-2: Configure Active Directory

Time Required: 30 minutes

Objective: Configure Active Directory

Description: After the Active Directory Domain Services role is installed, you need to promote the server to a domain controller and configure the AD DS role.

1. Restart **Server1** if you didn't restart it in the last activity.
2. Return to **Server Manager**. Notice there is an exclamation point inside a yellow caution symbol to the left of Manage just under the title bar in Server Manager. Click the exclamation point and then click **Promote this server to a domain controller**. The Active Directory Domain Services Configuration Wizard opens.
3. Select **Add a new forest**. Enter a root domain name: **business.local**
4. Click **Next**.
5. Enter **Password01** for the password for the Directory Services Restore Mode (DSRM), which is used to restore Active Directory, if needed. Confirm the password and click **Next**.
6. Don't specify DNS delegation. Click **Next**.
7. Additional Options: Verify the NetBIOS domain name: **BUSINESS** Click **Next**.
8. In the Paths window leave the database, log files, and SYSVOL folder paths as the defaults. Click **Next**.
9. Review the selections you have made. Click **Next**.
10. The wizard performs a prerequisite check to verify your configuration for what Microsoft calls best practices. For example, if the server is not connected to a network, an error message is shown, and the installation process is stopped until this is resolved. If the server does not have a static IP address, the prerequisites check shows a warning. Also, you may see a warning that the delegation for a DNS server cannot be created, if the DNS server installed is not fully configured. If you see warnings, you can continue to install Active Directory and make a note to fix problems associated with the warnings later, if necessary. If you see an error, you cannot continue with the Active Directory Domain Services installation until the error is corrected.

11. Click **Install**. It will take a few minutes for the installation process to complete. The Installation window will open again, review any warnings.
12. Wait for the computer to reboot. Sign in after the computer has rebooted.

Activity 1-3: Configure DHCP

Time Required: Approximately 10 minutes

Objective: Learn how to install the DHCP role.

Description: DHCP is installed as a server role in Windows Server using Server Manager. You want to assign IP addresses dynamically to client computers. In this activity, you install DHCP.

1. Start **Server1** and log on as your administrator account.
2. Open Server Manager, if necessary.
3. Click **Tools → DHCP** to open the DHCP console.
4. Click to expand the **server node** (server1.business.local). Notice that the IPv4 and IPv6 nodes have a red down arrow, indicating that the service is disabled.
5. To authorize the server, right-click the **server node**. Click **Authorize**.
6. Right Click the **server node** → Click **Refresh**. You see a check mark in a green circle on the IPv4 and IPv6 nodes.
7. Insert a screenshot.

Click or tap here to enter text.

8. Right Click the server node: Notice that there are commands for starting, stopping, pausing, resuming, and restarting the DHCP service.
9. Click the **IPv4** node. Read the information in the middle pane about adding a scope, which you do in the next activity.

Description: In this activity, you practice configuring a scope on a DHCP server. Before you start, obtain the address or computer name of a DNS server from your instructor (or use the address of this computer) and ask for a range of addresses for the scope, plus an address to exclude from the scope. You will also need to know the subnet mask. In the later steps of the activity you ensure that the DHCP server is authorized.

NOTE: A LAN can have many different private IP address ranges. You can use any of the following combinations. It is typical for the address to end in .1, and sometimes 254. For example: 192.168.1.1 would be a valid gateway address. We used 10.10.1.0/24 for the private network addresses for our labs.

Private IP Address Ranges	Subnet Mask	/ Notation
10.0.0.1 - 10.255.255.254	255.0.0.0, 255.255.0.0, 255.255.255.0	/8
172.16.0.1 - 172.31.255.254	255.255.0.0, 255.255.255.0	/12
192.168.0.1 – 192.168.255.254	255.255.255.0	/24

1. Right-click **IPv4** → **New Scope**.
2. **New Scope Wizard:** Click **Next**.
3. **Scope Name:** **Business.local** Click **Next**.
 - a. **Start IP address:** **10.10.1.50**
 - b. **End IP address:** **10.10.1.60**
 - c. **Subnet mask:** **255.255.255.0**.
4. Click **Next**.
5. **Add Exclusions and Delay** → You can exclude an IP address. For instance, there might be a device with a static IP address in the DHCP range. Click **Next**.
6. **Lease Duration:** You can configure the lease duration. This is how long the client can have the IP address configuration.
7. What is the default lease time?

Click or tap here to enter text.
8. For what types of situations would this default be appropriate?

Click or tap here to enter text.

9. **Lease Duration: 3** days. Click **Next**.
10. For what types of situations would 3 days be appropriate?
[Click or tap here to enter text.](#)
11. Ensure that **Yes, I want to configure these options now** is selected. Click **Next**.
12. Router (Default Gateway): **10.10.1.1**
13. **Domain Name and DNS Servers:** business.local and 10.10.10.10 are already entered. Click **Next**.
14. **WINS Server: Click Next.**
15. Ensure that **Yes, I want to activate this scope now** is selected. Click **Next**.
16. Click **Finish**.
17. Click **Scope → Address Pool**.
18. Insert a screenshot.
[Click or tap here to enter text.](#)
19. **Scope Options.** Insert a screenshot.
[Click or tap here to enter text.](#)
20. Leave the DHCP window open.
21. Logon to your **Win11** virtual machine
22. At a command prompt: Type **ipconfig /all**
23. Insert a screenshot showing your IP configuration. You should have obtained IP configuration from Server1.
[Click or tap here to enter text.](#)

Activity 1-4: Add a Computer to the Domain

Time Required: 15 minutes

Objective: Add a workstation to a domain

Required Tools and Equipment: Server1, Win11

Description: After active directory is installed and functional, the other computers should be added to the domain for complete client server functionality.

1. Start the Windows 11 Virtual Machine created earlier.
2. Logon to **Win11**.
3. Click **Start → Settings → Rename: Win11**
4. Click **Next**. Click **Restart now**.
5. Click **Start → Settings →** search for **Advanced System Settings**.
6. Click the **Computer Name** tab.
7. Click **Change**. Click **Domain**, type in **business.local**
8. Click **OK**. Enter the administrator account and password for the domain. Click **OK**.
9. Insert a screenshot of **Welcome to the business.local domain**.
[Click or tap here to enter text.](#)
10. Close all windows and reboot the computer.
11. Logon to **Server1 → Server Manager → Tools → Active Directory Users and Computers**.
12. Right Click **business.local → New → Organizational Unit**. Type **Workstations**. Click **OK**.
13. Go to the **Computers** folder. Drag **Win11** into the **Workstations** Organizational Unit. You will receive a warning. Click **Yes**.
14. Insert a screenshot of the new Workstations OU with Win11 inside.

[Click or tap here to enter text.](#)

Assignment Submission

Attach this completed document to the assignment in Blackboard.