Lab 4

Configuring VPN COnnections

This lab contains the following exercises and activities:

|  |  |
| --- | --- |
| Exercise 4.1 | Creating a VPN Connection |
| Exercise 4.2 | Troubleshooting a VPN Connection |
| Exercise 4.3 | Installing a Wireless Connection |
| Exercise 4.4 | Troubleshooting Wireless Connections |

BEFORE YOU BEGIN

The lab environment consists of student workstations connected to a local area network, along with a server that functions as the domain controller for a domain called contoso.com. The computers required for this lab are listed in Table 4-1.

Table 4-1

Computers required for Lab 4

|  |  |  |
| --- | --- | --- |
| Computer | Operating System | Computer Name |
| Server | Windows Server 2008 R2 | RWDC01 |
| Workstation 1 | Windows 7 Enterprise | NYC-CL1 |

|  |  |
| --- | --- |
| NOTE | In a classroom lab environment, there will be one classroom server and the students will have workstations named using consecutive numbers in place of the xx and yy variables. In a virtual lab environment, each student will have three virtual machines, named RWDC01, NYC-CL01, and NYC-CL02. |

In addition to the computers, you will also require the software listed in Table 4-2 to complete Lab 4.

Table 4-2

Software required for Lab 4

|  |  |
| --- | --- |
| Software | Location |
| Lab 4 student worksheet | Lab04\_worksheet.rtf (provided by instructor) |

Working with Lab Worksheets

Each lab in this manual requires that you answer questions, make screen shots, and perform other activities that you will document on a worksheet named for the lab, such as Lab04\_worksheet.rtf. Your instructor will provide you with access to the worksheets. 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 using WordPad, fill in the required information, and save the file to your flash drive.

SCENARIO

Contoso Ltd. is implementing a wireless and virtual private networking (VPN) server. The wireless network will allow users to stay connected while at the corporate offices. The VPN connection will enable users traveling or working from home to connect to the company network through the Internet.

After completing this lab, you will be able to:

Create a VPN Connection

Troubleshoot a VPN Connection

Install a Wireless Connection

Troubleshoot Wireless Connections

Estimated lab time: 90 minutes

|  |  |
| --- | --- |
| Exercise 4.1 | Creating a VPN Connection |
| Overview | In this exercise, you create a connection that enables the workstation to connect to your RWDC01 server using virtual private networking. |
| Completion time | 10 minutes |

1. Turn on the **NYC-CL1** workstation and log on using the **contoso\Administrator** account and the password **Pa$$w0rd**.
2. Click **Start** and click **Control Panel**. The *Control Panel* window appears.
3. Click **Network and Internet** > **View** **Network status and tasks**. The *Network and Sharing Center* control panel appears.
4. Click **Set up a new connection or network**. The *Set Up a Connection or Network* Wizard appears, displaying the *Choose a connection* option page.
5. Select **Connect to a workplace** and click **Next**. The *How do you want to connect?* page appears.
6. Click **Use my Internet connection (VPN)**. The *Do you want to set up an Internet connection before continuing?* page appears. Select I’ll set up an internet Connection Later.

|  |  |
| --- | --- |
| NOTE | In a classroom lab environment, the Do you want to set up an Internet connection before continuing? Page does not appear if the network is already connected to the Internet. In a virtual lab environment, the virtual network is not connected to the Internet, but you will bypass the Internet link for the purposes of this lab. |

1. In the *Internet address* text box, type **rwdc01.contoso.com**. In the *Destination name* text box, type **VPN Server Connection**. Select the *Don’t connect now; just set it up so I can connect later* option. Select the **Allow other people to use this connection** check box and click **Next**. The *Type your user name and password* page appears.
2. In the *User name* text box, type **Administrator**. In the *Password* text box, type **Pa$$w0rd**. In the *Domain (optional)* text box, type **contoso** and click **Create**. A *The connection is ready to use* page appears, which logs in to the VPN server.
3. Click **Close**.
4. Go back to the *Network Connections* dialog box by clicking the **Change adapter settings** in the *Network and Sharing Center*. Then right-click **VPN Server Connection** and click **Connect**. Type Password as **Pa$$w0rd.** Finally, click the **Connect** button.
5. Right click the **VPN Server Connection**, and click **Disconnect**.

|  |  |
| --- | --- |
| Exercise 4.2 | Troubleshooting a VPN Connection |
| Overview | Now that you have created a VPN connection, you will look at troubleshooting common problems when a VPN connection does not connect or operate properly. |
| Completion time | 45 minutes |

1. ON **NYC-CL1,** Click **Network and Internet** > **View** **Network status and tasks**. The *Network and Sharing Center* control panel appears.
2. Click **Change Adapter settings** in the left panel.
3. Right-click **Local Area Connection 2** and select **Properties**.
4. Double-click **Internet Information Version 4 (TCP/IPv4)**.
5. Record the IP address, subnet mask and default gateway.

|  |  |
| --- | --- |
| **IP address** | 10.10.0.6 |
| **Subnet mask** | 255.0.0.0 |
| **Default gateway** | 10.10.0.1 |

1. Select **Obtain an IP address automatically**.
2. Click **OK** to close the *Internet Protocol Version 4 (TCP/IPv4) Properties* dialog box and click **OK** to close the *Local Area Connection Properties* dialog box.
3. Right-click **VPN Server Connection** and click **Connect**. Type Password as **Pa$$w0rd**. Then click the Connect button.

|  |  |
| --- | --- |
| Question 1 | What error appeared?  No error message appeared. |

|  |  |
| --- | --- |
| Question 2 | So when a user cannot connect to the VPN server using a VPN connection within the corporate network, what is the first thing you should always check when troubleshooting VPN connectivity problems?  If it is connected to the internet and it’s IP address. |

1. Click the **Close** button to close if *Error Connecting to VPN Server Connection* appears.
2. Open the **Local Area Connection Properties** box again and reset the IP address, subnet mask, and default gateway back to the settings you recorded in step 5.
3. Open a command prompt and try to **ping rwdc01**.

|  |  |
| --- | --- |
| Question 3 | You will not be able to ping many VPN servers because they will have ICMP blocked. Therefore, if you are going to connect to a VPN server over the Internet, what is the first thing you should check on the client’s computer that cannot connect to the VPN server?  Check if the ICMP is blocked, also check it’s IP address and if the machine is connected to the internet. |

1. Right-click **VPN Server Connection** and select **Properties**. Change the *Host Name* to **10.10.0.10**. Click **OK**.
2. Try to connect to the server again.

|  |  |
| --- | --- |
| Question 4 | What error message did you get?  No error message. |

|  |  |
| --- | --- |
| Question 5 | You just created a VPN connection and you have verified that you have network connectivity/Internet connectivity. However, you still cannot connect to the VPN server (you keep getting error 789) while no one else is having any problems. Therefore, what is most likely the problem? |

1. Close if the *Error Connecting* dialog box appears. Right click the **VPN Server Connection**, and click **Disconnect**.
2. Again Right-click **VPN Server Connection** and select **Properties**. Change the *Host Name* to **RWDC01**.
3. Click the **Security** tab and select **Advanced settings**. Click the **Use preshared key for authentication** option. Specify the key as **Password01**. Click the **OK** button to close *Advanced Properties* and click the **OK** button to close the *VPN Server* *Connection Properties* dialog box.
4. You will see a warning message stating that *“since the connection is currently active, some setting will not take effect until the next time you dial in “.* Click OK to close the warning message.
5. Right-click **VPN Server Connection** and click **Connect**. Type Password as **Pa$$w0rd** and Click the **Connect**button.

|  |  |
| --- | --- |
| Question 6 | What error message did you get? |

1. Close if *Error Connecting* dialog box.
2. Right-click **VPN Server Connection** and Select **Properties**. Click the **Security** tab and click the **Advanced Settings** button. Make sure the *Use certificate for authentication* option is selected. Click **OK** to close the *Advanced Properties* dialog box and click **OK** to close the *VPN Server Connection Properties*dialog box.
3. To install the Windows 7 Remote Administrative tools, click **Start**, and in the *Search programs and files* box, type **\\rwdc01\downloads\Windows6.1-KB958830-x86-RefreshPkg.msu** and press **Enter**. A *Windows Update Standalone Installer* message box appears, asking you to install the update for KB958830.
4. Click **Yes**. The *Download and Install Updates* Wizard appears, displaying the *Read these license terms* page.
5. Click **I Accept**. The wizard installs the update, and the *Installation complete* page appears. In addition, the *Windows 7 Remote Administration tools help file* appears.
6. Close the help file window and click **Close** to terminate the wizard.
7. Click the **Start** button and open the **Control Panel**.
8. In Category view, click **Programs** and click **Turn Windows features on or off** in the *Programs and Features*section. Note: It may take a minute or two for the programs to be populated.
9. Expand *Remote Server Administration Tools*. Expand *Feature Administration Tools* and select **Group Policy Management Tools**. Expand *Role Administration Tools* and expand *AD DS and AD LDS Tools*, expand *AD DS Tools* and select **Active Directory Administrative Center** and **AD DS Snap-ins and Command-line Tools**. Click **OK**. It will take a couple minutes to load the Windows features.
10. Close the Control Panel.
11. Click Start, Administrative Tools and then **Active Directory users and computers**. Expand *contoso.com*
12. Right-click **Users** and select **New> User**. Create a user called **TestUser01** where 01 is your student number. Click the **Next** button.
13. Assign the password of **Password01**. Deselect the *User must change password at next logon* option. Click the **Next** and Click Finish
14. Right-click the **TestUser01** account and select **Add to a Group**. Type in **Domain Admins** in the Enter the objects names to select and click **OK**. Close the Console.
15. Double-click the **TestUser01** account on **RWDC01 (start> administrative tools>Active Directory users and computers>users)**
16. Click the **Dial-in** tab. Click the **Deny Access** option in the *Network Access Permission*  section. Click the **OK** button to close the *TestUser01 Properties* dialog box.
17. Right-click **VPN Server Connection** and click **Connect** on **NYC-CL1**. Log in with the User Name **TestUser01** with the Password **Password01**. Click the **Connect** button.

|  |  |
| --- | --- |
| Question 7 | So what error message did you get? |

|  |  |
| --- | --- |
| Exercise 4.3 | Installing a Wireless Connection |
| Overview | The Contoso Corporation has many mobile computers running Windows 7. As a Windows technician for the Contoso Corporation, you will need to install and configure wireless connections so that clients can connect to your corporate network. |
| Completion time | 15 minutes |

|  |  |
| --- | --- |
| NOTE | **Wireless Network Connection is not supported in this Online Learning Environment. However this exercise will be helpful for Installing /Configuring a wireless connection outside the Learning Environment on any Laptop / Desktop with a wireless network card.** |

1. Turn on the NYC-CL1 workstation and log on using the **contoso\Administrator** account and the password **Pa$$w0rd**.
2. Click **Start**. Then, click **Control Panel**. The *Control Panel* window appears.
3. Click **Network and Internet** > **Network and Sharing Center**. The *Network and Sharing Center* control panel appears.
4. Click *Setup a new connection or network > connect to the internet > Broadband (PPPoE).*
5. In the *User name* text box, type **Administrator**. In the *Password* text box, type **Pa$$w0rd**. Leave the connection name as default and Click **Connect**.
6. Click **Setup the Connection Anyway** and Click **Close**.
7. If the Wireless Network Connection is disabled, right-click the connection and select **Enable**.

|  |  |
| --- | --- |
| Question 8 | When the laptop has a built-in wireless adapter or the wireless adapter is physically installed on a computer and it does not appear in Network Connections, what is most likely the problem if it does show in Network Connections? |

1. Right-click the **Wireless Network Connection** and select **Properties**.

|  |  |
| --- | --- |
| Question 9 | What type of wireless network adapter do you have? |

1. Right-click **Wireless Network Connection** and select **Connect/Disconnect**.

|  |  |
| --- | --- |
| Question 10 | What wireless connections are being broadcasted as available? |

|  |  |
| --- | --- |
| Question 11 | If you are using a laptop computer and you are expecting to see a wireless connection being broadcast but none are being displayed, what should you check first? |

|  |  |
| --- | --- |
| NOTE | Some OEM mobile computers may also have hot keys or software components that allow you to turn on or off the wireless radio. |

1. Click **Open Network and Sharing Center**.
2. Click **Manage wireless networks**.
3. Click the **Add** button.
4. When it asks you *How do you want to add a network*, click the **Manually create a network profile** option.
5. For the *Network name*, type **Contoso01**. For the *Security type* select **WPA2-Personal**. Type **Pa$$w0rd** for the security key.

|  |  |
| --- | --- |
| Question 12 | By default, what is the Encryption Type used for WPA2? |

1. Deselect **Start this connection automatically** and select **Connect even if the network is not broadcasting**. Click the **Next** button.
2. Click the **Close** button.
3. Go back to **Manage Wireless Networks**. You should notice the Contoso01 connection there.
4. Go back to **Network Connections**, right-click **Wireless Network Connection** and click **Connect/Disconnect**.
5. Click **Contoso01** and click **Connect**.
6. Open a command prompt and execute the **ipconfig** command.
7. Run a command to **ping** the default gateway.
8. Back at the *Network Connections*, right-click **Wireless Network Connection** and click **Status**.

|  |  |
| --- | --- |
| Question 13 | What is the SSID?  What is the speed?  What is the signal quality? |

1. Click the **Details** button. Notice that the IPv4 address is the same address that displayed when you executed the ipconfig command.
2. Click **Clos**e to close the *Wireless Network Connection Status* dialog box.
3. Notice the Wireless connection icon in the taskbar. Click the **wireless connection icon**. Then move the mouse pointer to *Contoso01*, but don’t click on it.

|  |  |
| --- | --- |
| Question 14 | What is the Radio Type? |

1. Click **Contoso01** and click **Disconnect**.

|  |  |
| --- | --- |
| Exercise 4.4 | Troubleshooting Wireless Connections |
| Overview | As your company has deployed more and more mobile computers, you are finding that you are troubleshooting wireless connections. |
| Completion time | 15 minutes |

|  |  |
| --- | --- |
| NOTE | **Wireless Network Connection is not supported in this Online Learning Environment. However this exercise will be helpful for Installing /Configuring a wireless connection outside the Learning Environment on any Laptop / Desktop with a wireless network card.** |

1. Click the wireless connection icon in the taskbar, right-click **Contoso01**, and then click **Propertie**s.
2. Change the *Network Security key* to **Password01** and click **OK**.
3. Click the **wireless connection icon**, click **Contoso01**, and click **Connect**.

|  |  |
| --- | --- |
| Question 15 | What error message did you get? |

1. Click **Troubleshoot Problems**. After Windows Network Diagnostics attempts to identify the problem, follow the instructions provided by Windows Network Diagnostics. When prompted, click **Detailed Information** to view the *Troubleshooting Report*.
2. Close the Troubleshooting Report.
3. Click the **wireless connection icon**, right-click **Contoso01**, and click **Properties**.
4. Change the *Security type* to **WPA-Personal** and use **Pa$$w0rd** for the *Network security key*.
5. Click the **wireless connection icon**, click **Contoso01**, and click **Connect**. Of course, you receive the same error message.

|  |  |
| --- | --- |
| Question 16 | When troubleshooting why you cannot connect to a certain wireless network, what are the four things that must match?  1.  2.  3.  4. |

1. Change the *Security type* back to **WPA2-Personal**.
2. Confirm that you can connect to the wireless network.