Answers: 8.1.2.12 Lab - Configure Wireless Router in Windows

Introduction

In this lab, you will configure and test the wireless settings on a wireless router.

Recommended Equipment

- A computer with Windows installed
- A Wireless NIC installed
- An Ethernet NIC installed
- A wireless Router
- Ethernet patch cable

Note: All wireless settings in this lab are for a 2.4 GHz wireless connection. Follow the same steps for setting up a 5 GHz wireless connection or when setting up both 2.4 GHz and 5 GHz connections.

Step 1: Gathering Information

Ask the instructor for the following information:

Router IP Information (IP address and subnet mask):

Router name:

DHCP Server Information (start IP address and maximum number of hosts):

Static DNS 1 (optional):

SSID:

Channel number:

Router Username/Password:

Wireless Security (passphase key):

Note: Only use configurations assigned by the instructor.

Step 2: Connecting to the Wireless Router

- a. Plug in the power of the wireless router. Boot the computer and log in as an administrator.
- b. Connect the computer to one of the **Ethernet** ports on the wireless router with an Ethernet patch cable. **Note**: If this is the first time connecting to the lab router, you must set the network location in Windows.
- c. Open the command prompt. Type **ipconfig /renew** to force the computer to request an IP address from the wireless router via DHCP.

What is the IP address of the default gateway for the computer?

What device took the role of default gateway?

Step 3: Logging into the Wireless Router

a. Open a web browser, type the IP address of your default gateway in the URL field, and then press Enter.



b. The **Windows Security** window opens. Type the password provided by the instructor in the **Password** field then click **OK**.

Windows Security					
The server 192. server reports t	The server 192.168.1.1 is asking for your user name and password. The server reports that it is from Wireless-N Broadband Router.				
Warning: Your authentication	user name and password will be sent using basic on a connection that isn't secure.				
ri ii ii cisco	User name Password Remember my credentials				
	OK Cancel				

Step 4: Configuring Basic IP Information

a. The Setup screen opens. Using the information provided by the instructor in **Step 1**, fill in the fields under **Router Address** and **DHCP Server Setting.** The information includes **IP Address**, **Subnet Mask**,

Router Name, Start IP Address, and Maximum Number of Users. Click Save Settings to save the changes.

Router Address	IP Address:	192	, 168	1		254	
	Subnet Mask:	255.25	5.255.0	•			
	Router Name :	ITE5					
HCP Server Setting	DHCP Server:	Ena	abled O	Disabled	[HCP R	eservation
	Start IP Address:	192.1	68 . 1. 25	8	1		
	Maximum Number of Users:	10					
	IP Address Range:	192.16	1. 25 t	0 34			
	Client Lease Time:	0	minute	s (0 means	s one o	fay)	
	Static DNS 1:	0	. 0	. 0	1.	0	
	Static DNS 2:	0	. 0	. 0		0	1
	Static DNS 3:	0	. 0	. 0	-	0	
	WINS:	0	, 0	. 0		0]
Time Settings							
Time Zone	(GMT-08:00) Pacific Ti	me (USA &	Canada)		1		
	Automatically adjust	clock for d	aylight sa	ving change	85.		
					2000		
Reboot							
	Reboot						

b. The Your settings have been successfully saved. A system reboot is in progress and may take up to 60 seconds message is displayed.

Your settings have been successfully saved. A system reboot is in progress and may take up to 60 seconds. Continue	
File Edit View Favorites Tools Help Your settings have been successfully saved. A system reboot is in progress and may take up to 60 seconds. Continue	(←) ⊘ @ http://192.168 ♀ ~ ≧ Ċ × @ 192.168.1.1 × 00 ☆ ☺
Your settings have been successfully saved. A system reboot is in progress and may take up to 60 seconds. Continue	File Edit View Favorites Tools Help
Your settings have been successfully saved. A system reboot is in progress and may take up to 60 seconds.	🔄 🔻 🖾 👻 🖙 Page 🕶 Safety 🕶 Tools 🕶 🕢 💭
* 100* -	Your settings have been successfully saved. A system reboot is in progress and may take up to 60 seconds.
	۳ ۲ 1000

c. Click **Continue** and wait for the wireless router boot process to complete before proceeding. After the router reboots, you may need to log back into it using the router IP address that was configured in this step.

Step 5: Configuring Wireless Settings

- a. In a web browser, enter the router IP address that you had configured in step 4 in the URL field. When prompted, enter the username and password.
- b. Click the Wireless tab.
- c. Click the Network Mode drop-down menu for the 5 GHz Wireless Settings.

Wireless	Setup Wirele	224	Security	Access	Application	IS &	Administration	Status
	Basic Wireless Settings	1	Wireless Security	Policy	Gaming uest Access	I.	Wireless MAC Filter	
Configuration View	● Manual ◯ W⊢FiPro	tected S	Setup™				<u>Help</u>	
5 GHz Wireless Settings	Network Mode:	Mix	ked 🗸					
	Channel Width: Channel:	Wir Wir Dis Au	eless-A Only eless-N Only abled to (DF 25 -	MHz) ▼				
	SSID Broadcast:	• E	nabled 🔘 Disa	abled				
2.4 GHz Wireless Settings	Network Mode:	Mb	ked	•				

What 802.11 technologies are supported?

d. Click the Channel drop-down menu under 5 GHz Wireless Settings.

Wireless	Setup Wirele	ss Security Access Application	15 & Administration Status
	Basic Wireless Settings	Wireless Security Guest Access) Wireless MAC Filter
Configuration View	🖲 Manual 🔘 Wi⊧Fi Prot	ected Setuo™	Help
5 GHz Wireless Settings	Network Mode:	Mixed •	
	Network Name (SSID): Channel Width:	Cisco55842 Auto (20 MHz or 40 MHz) 🔻	
	Channel: SSID Broadcast:	Auto (DFS) Auto (DFS) 36 - 5.180GHz abled	
2.4 GHz Wireless Settings	Network Mode: Network Name (SSID):	40 - 5.200GHz 44 - 5.220GHz 48 - 5.240GHz 149 - 5.745GHz	
	Channel Width: Channel:	153 - 5.765GHz 157 - 5.785GHz 161 - 5.805GHz	

What channels are listed?

e. Disable Network Mode for the 5 GHz Wireless settings.

f. Click the Network Mode drop-down menu under 2.4GHz Wireless Settings.

2.4 GHz Wireless Settings	Network Mode: Network Name (SSID): Channel Width: Channel: SSID Broadcast:	Mixed Mixed Wireless-B/G Only Wireless-B Only Wireless-R Only Wireless-N Only Disabled Enabled Disabled	
		Save Settings Cancel Changes	

What 802.11 technologies are supported?

g. Choose **Mixed** in the **Network Mode** drop-down menu.

2.4 GHz Wireless Settings	Network Mode:	Mixed 💌		
	Network Name (SSID):	Cisco55842	0	
	Channel Width:	20 MHz Only 🔻]	
	Channel:	Auto 🔻		
	SSID Broadcast:	Enabled Disabled		
		Save Settings	Cancel Changes	

What is the default SSID for the wireless router?

- h. Type Cisco# in the Network Name (SSID) field, where # is the number assigned by the instructor.
- i. Click the **Channel** drop-down menu for the **2.4GHz Wireless Settings**.

	Channel Width: Channel: SSID Broadcast:	Auto 1 - 2.412GHZ 2 - 2.417GHZ 3 - 2.422GHZ 4 - 2.427GHZ 5 - 2.432GHZ		
2.4 GHz Wireless Settings	Network Mode: Network Name (SSID): Channel Width: Channel: SSID Broadcast:	6 - 2.437GHZ 7 - 2.442GHZ 8 - 2.447GHZ 9 - 2.452GHZ 10 - 2.457GHZ 11 - 2.462GHZ Auto	▼ ↓ Disabled	
		Save	e Settings Cancel Changes	

What channels are listed?

- j. Select the Channel number that was provided by the instructor.
- k. Click Save Settings > Continue, then close the browser.

Step 6: Connecting the Computer to the Wireless Network

- a. Unplug the Ethernet cable from the computer.
- b. View wireless networks associated with the wireless adapter configured for the computer by following the path:

Start > Control Panel > Network and Sharing Center > Connect to a network

	All Control Basel Remy, Network and Sharing Center
Control Panel Home	View your basic network information and set up connections
Manage wireless networks	See full map
Change adapter settings	STUDENT01 Internet
settings	(This computer)
	View your active networks Connect to a network You are currently not connected to any networks.
	Change your networking settings
	Set up a new connection or network Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.
	Connect to a network
	Choose homegroup and sharing options
See also	Access files and printers located on other network computers, or change sharing settings.
HomeGroup	Troubleshoot problems
Internet Options	Diagnose and repair network problems, or get troubleshooting information.
Windows Firewall	

A list of available wireless networks is displayed.



Open Network and Sharing Center

What wireless network(s) are available?

c. Choose **Cisco#**, where # is the number assigned by the instructor, make sure **Connect automatically** is selected, and then click the **Connect** button.



d. When the **Set Network Location** window opens, select **Public network > Close**.

Step 7: Hiding the SSID

- a. Open a browser. Type the IP address of your default gateway in the URL field, and then press Enter.
- b. The **Windows Security** window opens. Type the password provided by the instructor in the **Password**: field.

Windows Security	/
The server 192. requires a user	168.1.254 at Wireless-N Broadband Router name and password.
Warning: This sent in an insec connection).	server is requesting that your username and password be cure manner (basic authentication without a secure
	User name
	OK Cancel

c. The Setup screen opens. Navigate to **Basic Wireless Settings**. Select **Disable** for the 2.4 GHz SSID broadcast.

2.4 GHz Wireless Settings	Network Mode: Network Name (SSID):	Mixed Cisco1	
	Channel Width:	20 MHz Only	
	Channel:	6 - 2.437GHZ 🔻	
	SSID Broadcast:	Enabled Oisabled	
			The second state of the se
		Save Settings Cancel Changes	

d. Click Save Settings > Continue.

Why would you disable SSID broadcast?

- e. Close all open windows.
- f. View wireless networks associated with the wireless adapter configured to the computer by following the path:

Start > Control Panel > Network and Sharing Center > Connect to a network



Open Network and Sharing Center

What wireless network(s) are available?

- g. Because the wireless router is not broadcasting the SSID, the wireless network name does not appear in the wireless networks list detected by **Windows**. To connect **Windows** to a wireless network that does not broadcast its SSID, the SSID you must know the wireless network's SSID.
- h. Go back to **Network and Sharing Center**. If **Network and Sharing Center** is no longer open, open it again.

i. Click Manage wireless networks.



j. When the **Manage Wireless Networks** window opens, double click **Cisco#**, where # is the number assigned to you.

Note: The wireless router is currently configured to not broadcast the wireless network SSID. The reason why it appears in this list is that the **Cisco#** network was added to this computer before.

~~~			
🕒 🔾 🗢 📶 🕨 Control Panel	<ul> <li>Network and Internet</li> <li>Manage</li> </ul>	Wireless Networks 👻 🍫	Search Ma 🔎
Manage wireless netw Windows tries to connect to t	orks that use (Wireless Netw hese networks in the order listed belo	ork Connection) w.	
Add Remove Move down	Adapter properties Profile types	Network and Sharing Center	0
Networks you can view, modify, a	nd reorder (3)		
Cisco2	Security: Unsecured	Type: Any supporter	d
BlackBear	Security: WPA2-Persona	I Type: Any supporter	d
FNTC-2011	Security: WPA2-Persona	I Type: Any supporter	d
Cisco2 Profile name Security type	: Cisco2 Radio typ : Unsecured Mod	e: Any supported e: Automatically connect	

k. Select the check box Connect even if the network is not broadcasting its name (SSID), then click OK.

Cisco2 Wirele	ss Networ	k Properties				
Connection	Security					
Name:		Cisco2				
SSID:		Cisco2				
Network ty	pe:	Access point				
Network av	ailability:	All users				
Connec	t automati	cally when this network is in range				
Connec	t to a more	e preferred network if available				
Connec	t even if t	ne network is not broadcasting its name (SSID)				
Copy this network profile to a USB flash drive						
		OK Cancel				

I. View wireless networks associated with the wireless adapter configured for the computer.

Wireless Network Connection	
BlackBear	all.
Cisco2	20

What wireless network(s) are available?

## Step 8: Adding Security to the Wireless Network

a. Connect to **Cisco#**, where # is the number assigned by the instructor and log into the router using a web browser.

b. Click the Wireless tab and then select Wireless Security.

Wireless	Setup	Wireless	Security	Access	Applications & Gaming	Administration	Status
	Basic Wireless S	iettings	Wireless Security	/ I Gu	iest Access	Wireless MAC Filter	
5 GHz Wireless Security							
	Security Mode:	D	isabled		•	<u>Help</u>	
2.4 GHz Wireless Security							
	Security Mode:	D	isabled				
	WP		VPA2/WPA Mixed Mode				
			PA2 Personal PA Personal PA2/WPA Enterprise PA2 Enterprise PA Enterprise /EP	e Mixed Mod	e ncel Change	5	

- c. In the Security Mode drop-down box, for the 2.4GHz Wireless Security, select WPA2 Personal.
- d. Type **ITEv6.0!** for the Passphrase and click **Save Settings > Continue**.

Setup Wi	ireless	Security	Access Policy	Applications Garning	& Admini	stration	Status
Basic Wireless Settin	igs	Wireless Security	Gu	est Access	Wireless	MAC Filter	
Security Mode:	Die	sabled		•		<u>Help</u>	
Security Mode:	W	PA2 Personal		•			
Passnhrase	ΠΕ	v6.0!	1		_		
i usopinuse.							
		Save Se	ttinos a	Cancel Char	iges		
	Setup W Basic Wreless Settin Security Mode: Passphrase:	Setup     Wireless       Basic Wreless Settings     1       Security Mode:     Dr       Security Mode:     W       Passphrase:     ITE	Setup     Wireless     Security       Basic Wireless Settings     j     Wireless Security       Security Mode:     Disabled       Security Mode:     WPA2 Personal       Passphrase:     ITEv6.0!	Setup     Wireless     Security     Access Policy       Basic Wreless Settings           Wireless Security           Gu       Security Mode:     Disabled	Setup     Wireless     Security     Access Policy     Applications Gaming       Basic Wreless Settings           Wreless Security           Guest Access       Security Mode:     Disabled     •       Security Mode:     WPA2 Personal     •       Passphrase:     ITEv6.0!	Setup     Wireless     Security     Access Policy     Applications & Gaming     Admini       Basic Wreless Settings           Wreless Security           Guest Access           Wireless       Security Mode:     Disabled     •     •     •     •     •       Security Mode:     WPA2 Personal     •     •     •     •       Passphrase:     ITEv6.0!     •     •     •     •	Setup     Wireless     Security     Access Policy     Applications & Gaming     Administration       Basic Wreless Settings           Wreless Security           Guest Access           Wreless MAC Filer       Security Mode:     Disabled     •           Help       Security Mode:     WPA2 Personal     •       Passphrase:     ITEv6.0!     •     Cancel Changes

You should have lost connection to the wireless router. Why did that happen?

# **Step 9: Connecting the Computer to a Secure Wireless Network**

- a. View wireless networks associated with the wireless adapter configured to the computer.
- b. Choose **Cisco#**, where # is the number assigned by the instructor, make sure **Connect automatically** is selected, and then click the **Connect** button.

c. When the Connect to a Network window opens, type ITEv6.0! for the Security key, and then click OK.



# Step 10:Cleaning Up

- a. Connect the computer to one of the **Ethernet** ports on the wireless router with an Ethernet patch cable.
- b. Return configurations by restoring to factory default or using the following settings:

Router Address Information:

- o IP address 192.168.1.1
- o Subnet mask 255.255.255.0
- Router name Linksys

DHCP Server Setting Information:

- Start IP address 192.168.1.100
- o Maximum number of users 50
- Static DNS 1 (optional): 0.0.0.0 or leave it blank

#### SSID Values:

- o Network Name (SSID): Linksys
- o SSID Broadcast: Disabled

Channel number:

o Channel: Auto

#### Router Access:

o Router Password: admin

#### Wireless Security:

- o Security Mode: Disable
- c. Close the browser and logoff the computer.