*Yengkong
Sayaovong*

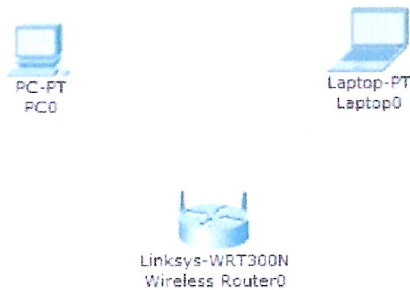# IFT 259: Introduction to Internet Networking

Lab 22
Wireless Networking

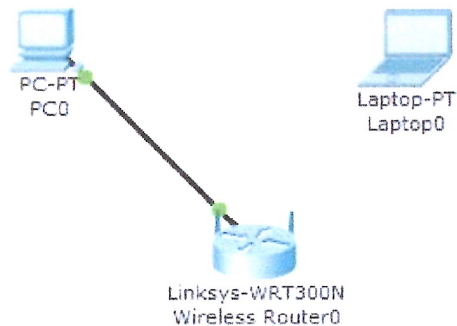**After you complete each step, put an 'x' in the completed box**

Packet Tracer: Configure Linksys Router

Objective: Configure a Linksys wireless router, allowing remote access to wireless clients and connectivity with WPA security.

1. Setup the following topology

2. Connect PC0 to the Wireless Router via the Ethernet ports

3. After the connection turns green, check the IP address settings. DHCP will automatically be enabled and there should be IP configuration details. If not, check DHCP for address.

4. Ping the default gateway of the router.

Completed ☒

5. To access the Linksys GUI Interface, open the web browser on the PC and type in the default gateway address in the URL field.

   Enter admin as the default username and password to access the Linksys router.
   (admin in both boxes)

6. Configure the router for Internet connectivity (Internet facing interface) even though there will be no Internet connectivity. For the Internet connection type, choose Static IP and enter the following static IP information.
   - Internet IP Address: 198.133.219.1
   - SM: 255.255.255.0
   - DG: 198.133.219.254
   - DNS 1: 198.133.219.10

Physical | Config | GUI

LINKSYS
A Division of Cisco Systems, Inc.

Firmware Version: v0.93.3

Wireless-N Broadband Router | WRT300N

| Setup | Setup | Wireless | Security | Access Restrictions | Applications & Gaming | Administration | Status |

Basic Setup | DDNS | MAC Address Clone | Advanced Routing

Internet Setup

Internet Connection type

Static IP

Help...

Internet IP Address:	0	. 0	. 0	. 0
Subnet Mask:	0	. 0	. 0	. 0
Default Gateway:	0	. 0	. 0	. 0
DNS 1:	0	. 0	. 0	. 0
DNS 2 (Optional):	0	. 0	. 0	. 0
DNS 3 (Optional):	0	. 0	. 0	. 0

7. Configure the inside network parameters. Scroll down to the network setup and enter the following information
   - IP Address: 172.31.1.1
   - SM: 255.255.255.224
   - Staring IP Address: 100 (leave as it is)
   - Maximum number of users: 25

8. Save the settings and close out of Linksys router

Completed ☒

9. Return to the command prompt of Host-A. Enter the command ipconfig /release to release the IP address and then ipconfig /renew to get a new IP address

```
Command Prompt

Packet Tracer PC Command Line 1.0
PC>ipconfig /release

IP Address.......................: 0.0.0.0
Subnet Mask......................: 0.0.0.0
Default Gateway..................: 0.0.0.0
DNS Server.......................: 0.0.0.0

PC>ipconfig /renew

IP Address.......................: 172.31.1.2
Subnet Mask......................: 255.255.255.224
Default Gateway..................: 172.31.1.1
DNS Server.......................: 198.133.219.10

PC>
```

Completed ☒

10. Configure wireless connectivity for wireless devices

   - Set the network mode for Wireless-N Only.
   - Change the SSID to MyHomeNetwork
   - For best performance in a network using Wireless-N, set the radio band to Wide-40MHz.
   - Click Save Settings

Wireless	Setup	Wireless	Security	Access Restrictions	Applications & Gaming
	Basic Wireless Settings	Wireless Security		Wireless MAC Filter	

Basic Wireless Settings

Network Mode:	Wireless-N Only ▾
Network Name (SSID):	MyHomeNetwork
Radio Band:	Wide - 40MHz Channe ▾
Wide Channel:	3 ▾
Standard Channel:	1 - 2.412GHz ▾
SSID Broadcast:	● Enabled ○ Disabled
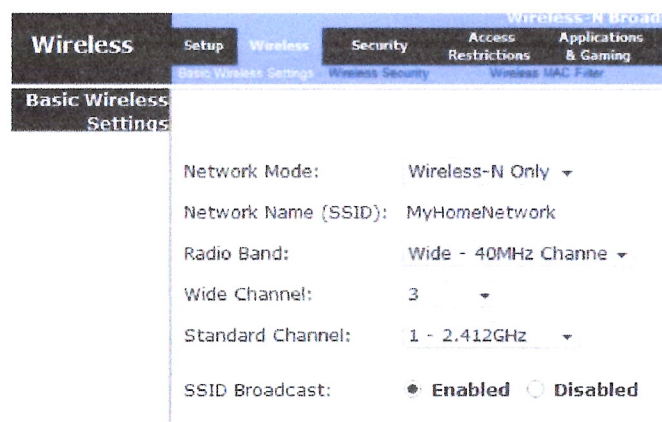
Completed ☒

11. Configure wireless security so that clients must authenticate to connect to the wireless network

- Click the Wireless Security option under the Wireless tab.
- Set the Security Mode to WPA2 Personal.
- Leave the encryption mode to AES and set the passphrase to mysecret.
- Click Save Settings

Completed ☒

12. Configure Laptop to access the wireless network.

13. Click Laptop and click Desktop > PC Wireless. The window that opens in the client Linksys GUI. You may need to add a wireless module to the laptop.
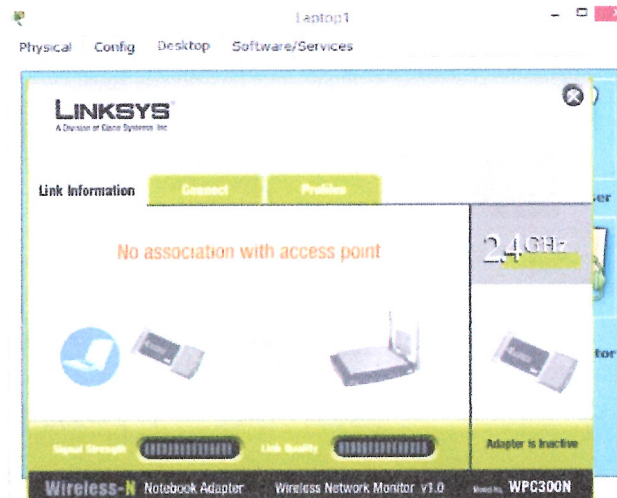
Completed ☒

14. Click the Connect tab and click Refresh, if necessary. You should see MyHomeNetwork listed under Wireless Network Name.

Link Information	Connect	Profiles

Below is a list of available wireless networks. To search for more wireless networks, click the **Refresh** button. To view more information about a network, select the wireless network name. To connect to that network, click the **Connect** button below.

Wireless Network Name	CH	Signal
MyHomeNetwork	1	100%

Site Information

Wireless Mode	Infrastructure
Network Type	Wireless-N
Radio Band	40MHz
Security	WPA1-PSK
MAC Address	000B.BE37.CE06

Refresh   Connect

15. Click MyHomeNetwork and click Connect.

LINKSYS
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WPA-Personal Needed for Connection

This wireless network has WPA-Personal, also know as Pre-Shared Key, enabled. To connect to this network, select the encryption type. Enter the required Pre-Shared Key in the appropriate field below. Then click the **Connect**.

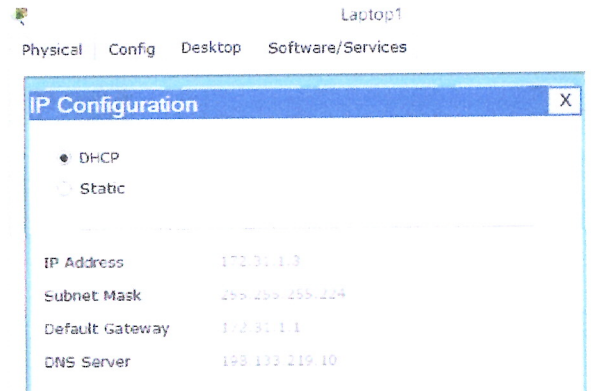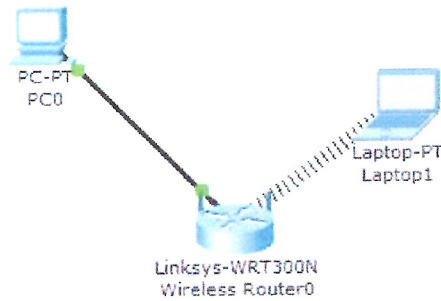| Security	WPA-Personal	▼	Please select the wireless security method used by your existing wireless network.
Encryption	AES	▼	Please select an encryption type used to protect your wireless data transmissions.
Pre-shared Key			Please enter a Pre-shared Key that is 8 to 69 characters in length.

Cancel | Connect

16. The Pre-shared Key is the password you configured earlier i.e. mysecret. Enter the password and click Connect.

Security	WPA-Personal	▼
Encryption	AES	▼
Pre-shared Key	mysecret	

Completed ☒

17. Close the Linksys GUI and click Command Prompt. Enter the command ipconfig to verify Laptop received IP addressing.

Laptop1

Physical | Config | Desktop | Software/Services

IP Configuration   X

- DHCP
- Static

IP Address   172.31.1.3
Subnet Mask   255.255.255.224
Default Gateway   172.31.1.1
DNS Server   193.133.219.10

PC-PT
PC0

Laptop-PT
Laptop1

Linksys-WRT300N
Wireless Router0

18. Verify connectivity between Laptop and Host-A.
    - Ping the Linksys router from the Laptop.
    - Ping Host-A from the Laptop.

Completed ☒