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Course Name: Computer Networks LAB

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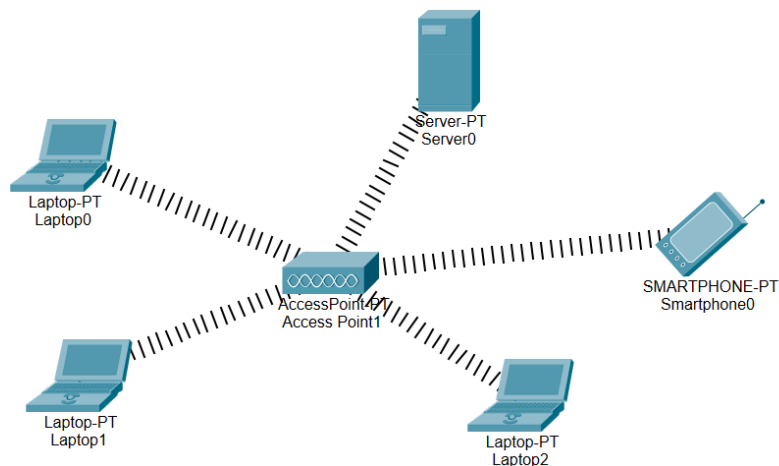
Submitted on : 10/11/2022

LAB 07

TASK 1:

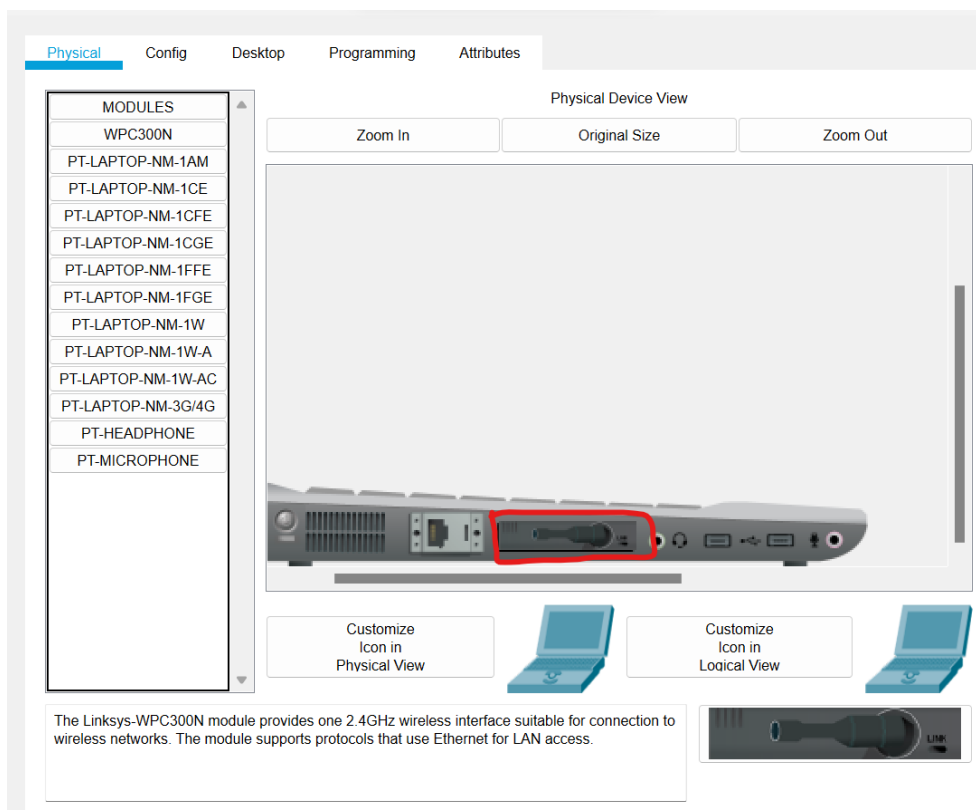
Step 1:

Build a network topology.



Step 02:

We will power off laptop remove classical ethernet card and will add Wireless Interface Card (WPC300N).



Step 03:

We will configure our DHCP server.

The screenshot shows the 'Services' tab in a network configuration tool. On the left, a sidebar lists various services: HTTP, DHCP, DHCPv6, TFTP, DNS, SYSLOG, AAA, NTP, EMAIL, FTP, IoT, VM Management, and Radius EAP. The 'DHCP' service is selected. The main area is titled 'DHCP' and contains the following configuration fields:

- Interface: FastEthernet0
- Service: ☒ On, ☐ Off
- Pool Name: serverPool
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0
- Start IP Address: 172.16.0.0
- Subnet Mask: 255.255.0.0
- Maximum Number of Users: 512
- TFTP Server: 0.0.0.0
- WLC Address: 0.0.0.0

Below these fields are 'Add', 'Save', and 'Remove' buttons. At the bottom, a table lists the configured DHCP pools:

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
lpcisco	172.16.0.1	172.16.0.1	172.16.0.5	255.255.0.0	512	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	172.16.0.0	255.255.0.0	512	0.0.0.0	0.0.0.0

Step 04:

We will assign dynamic ip to our laptop from DHCP server through access point.

The screenshot shows the 'Desktop' tab in the same network configuration tool. The 'IP Configuration' window is open for the 'Wireless0' interface. It displays two sections: 'IP Configuration' and 'IPv6 Configuration'.

IP Configuration:

- Interface: Wireless0
- IP Configuration: ☒ DHCP, ☐ Static
- DHCP request successful.
- IP Address: 172.16.0.2
- Subnet Mask: 255.255.0.0
- Default Gateway: 0.0.0.0
- DNS Server: 172.16.0.1

IPv6 Configuration:

- IPv6 Configuration: ☒ DHCP, ☐ Auto Config, ☐ Static
- DHCPv6 request failed.
- IPv6 Address: [Empty field] / [Empty field]
- Link Local Address: FE80::202:16FF:FE79:BA03
- IPv6 Gateway: [Empty field]
- IPv6 DNS Server: [Empty field]

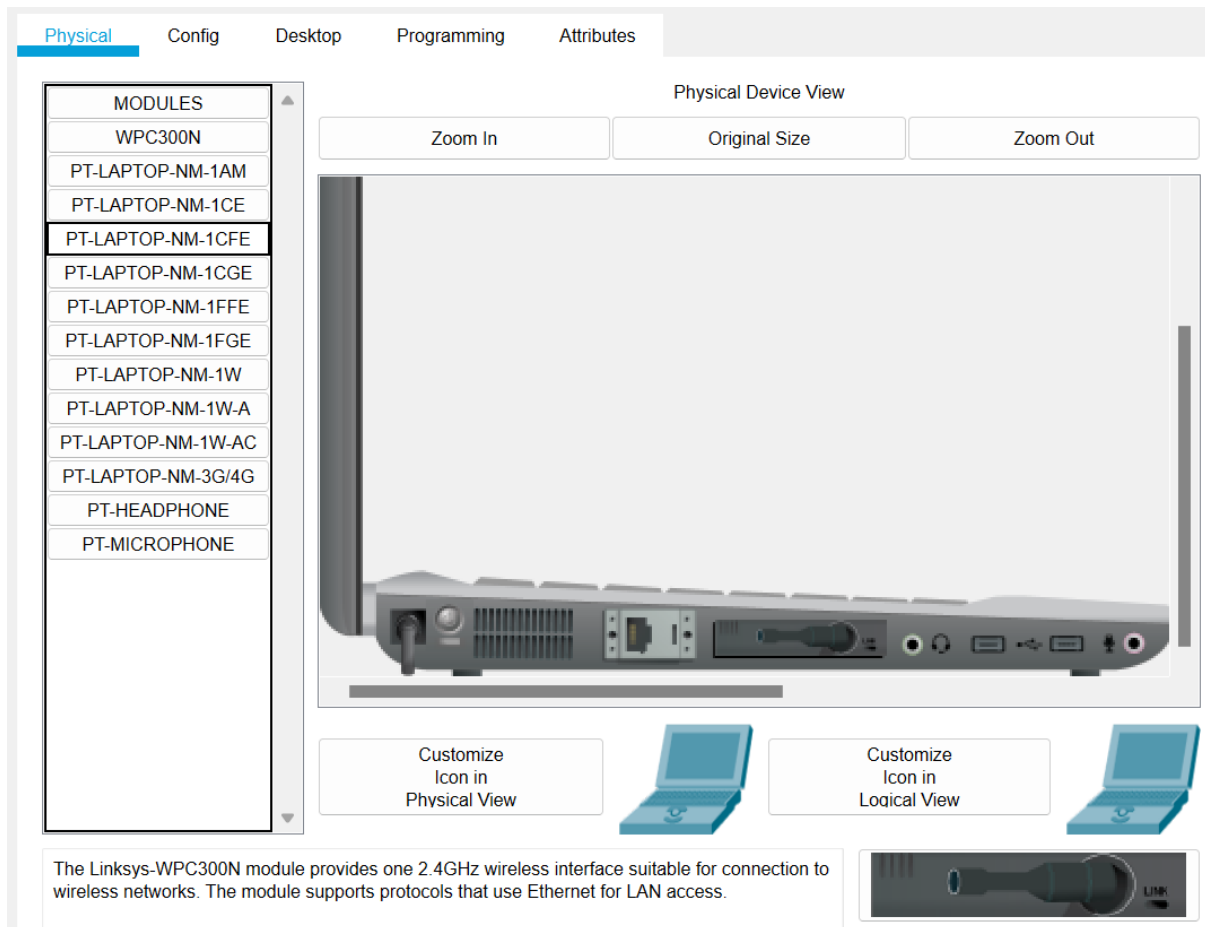
TASK 2:

Step 1:

Build a network topology.

Step 02:

We will power off laptops remove classical ethernet card and will add Wireless Interface Card (WPC300N).

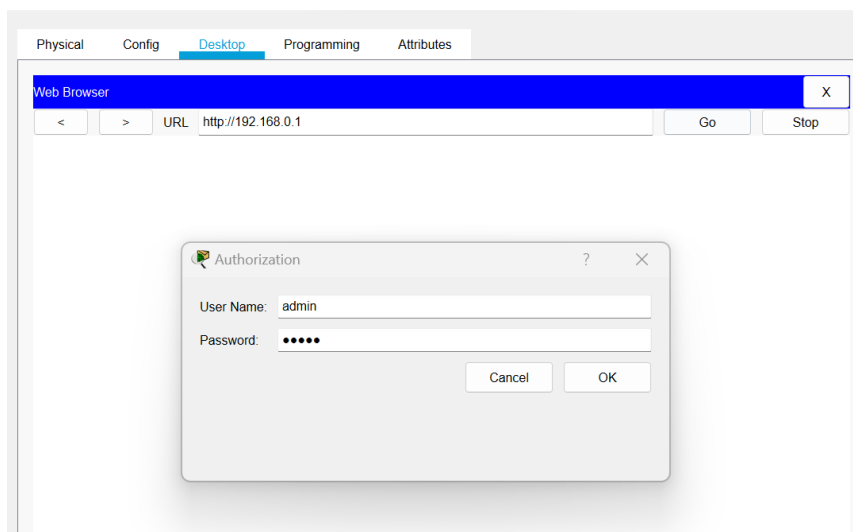


Step 03:

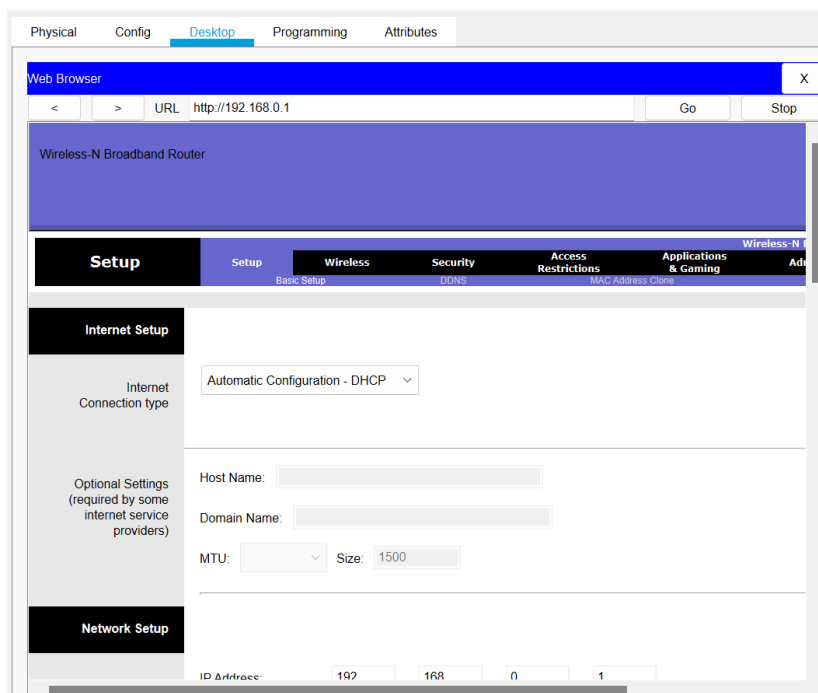
Now we will configure our wireless router. We can do it by two ways.

- 1) through directly clicking GUI of wireless router
- 2) Using a browser in a PC or laptop in the LAN.

First, we will do it by using browser in PC or laptop.



After giving default user name (admin) and password (admin) we can access the GUI of the router.



Step 04:

We'll begin with Administration in the GUI. we will click on the Administration tab and set a new password for administrative access and save settings.

The screenshot shows the 'Administration' tab selected in the top navigation bar. The left sidebar has 'Management' selected. The main content area is titled 'Router Access' and contains fields for 'Router Password' and 'Re-enter to confirm', both masked with dots. Below these are sections for 'Web Access' and 'Remote Access'. Under 'Web Access', there is a checkbox for 'Web Utility Access' (checked) and a radio button for 'Web Utility Access via Wireless' (set to 'Enabled'). Under 'Remote Access', there is a radio button for 'Remote Management' (set to 'Enabled').

After this we will do LAN Setup and Internet Setup.

The screenshot shows the 'Setup' tab selected in the top navigation bar. The left sidebar has 'Internet Setup' and 'Network Setup' selected. The main content area is titled 'Internet Setup' and contains a dropdown menu for 'Internet Connection type' set to 'Automatic Configuration - DHCP'. Below this are fields for 'Host Name', 'Domain Name', and 'MTU' (set to 1500). Under 'Network Setup', there is a section for 'Router IP' with fields for 'IP Address' (192.168.0.1) and 'Subnet Mask' (255.255.255.0). A 'Help...' button is visible on the right side of the page.

IP Configuration

X

Interface

Wireless0



IP Configuration

☒ DHCP

☐ Static

DHCP request successful.

IP Address

192.168.0.101

Subnet Mask

255.255.255.0

Default Gateway

192.168.0.1

DNS Server

0.0.0.0

IPv6 Configuration

☒ DHCP

☐ Auto Config

☐ Static

DHCPv6 request failed.

IPv6 Address

/

Link Local Address

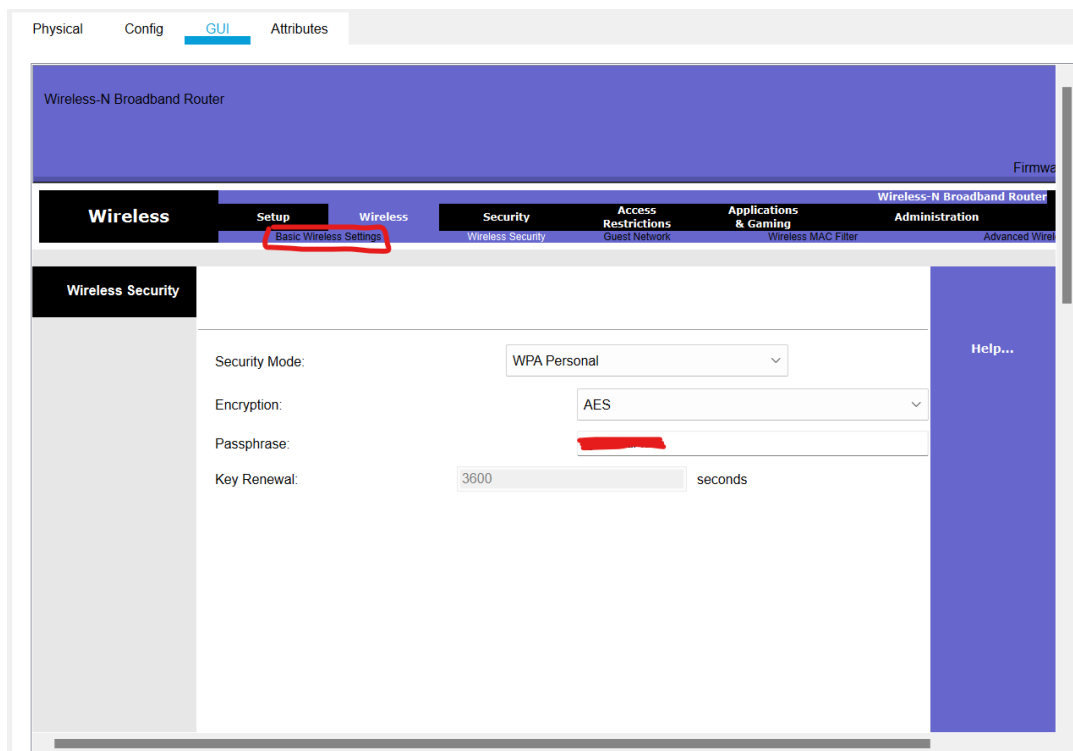
FE80::230:F2FF:FED8:884A

IPv6 Gateway

IPv6 DNS Server

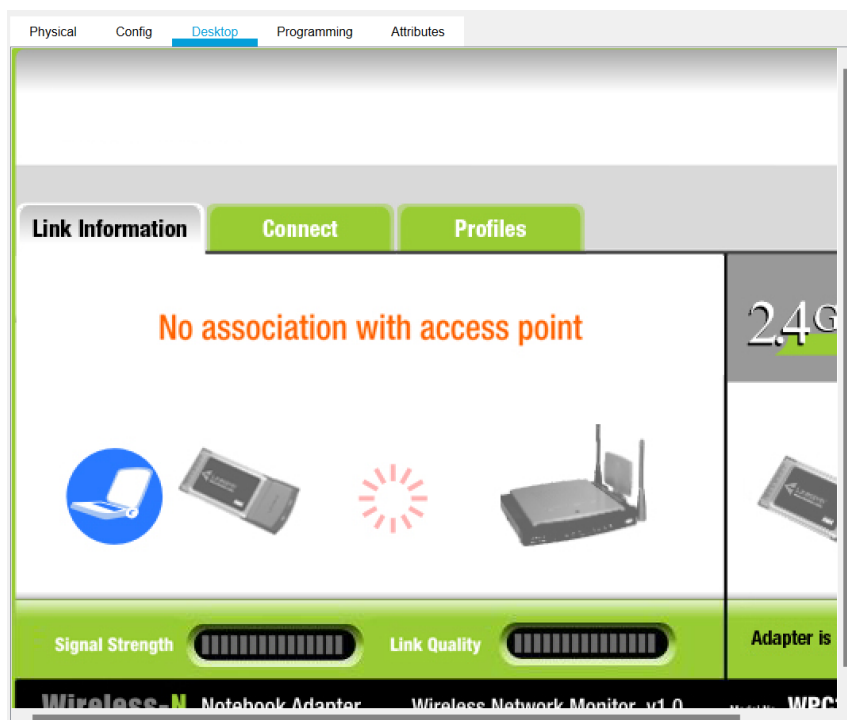
Step 05:

Adding security for wireless LAN access



Then we will check it that whether its working or not

We go to PC or laptop and then its desktop and wireless and we will give our pass key which we have set in our router for wireless.



Physical

Config

Desktop

Programming

Attributes

WPA-Personal Needed for Connection

This wireless network has WPA-Personal, also known 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

@mmaar123

Please enter a Pre-shared Key that is 8 to 63 characters in length.

Cancel

Connect

Wireless-N Notebook Adapter Wireless Network Monitor v1.0 WPC

Physical

Config

Desktop

Programming

Attributes

Link Information


Connect

Profiles

More Information

Infrastructure Mode

You have successfully connected to the access point



Signal Strength

Link Quality

Adapter is

Wireless-N Notebook Adapter Wireless Network Monitor v1.0 WPC

Step 06: Internet Setup

```
Router(config)#in fa0/0
Router(config-if)#ip add 155.21.21.1 255.255.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

Router(config-if)#int fa0/1
Router(config-if)#ip add 1
      ^
% Invalid input detected at '^' marker.

Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#ip add 1
      ^
% Invalid input detected at '^' marker.

Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 200.0.0.1 255.255.255.0
Router(config-if)#ip address 200.0.0.1 255.255.255.0
Router(config-if)#ip address 200.0.0.1 255.255.255.0
Router(config-if)#
Router(config-if)#ip add 1

Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#ip dhcp pool mypool
Router(dhcp-config)#net 155.21.0.0 255.255.0.0
Router(dhcp-config)#default-router 155.21.21.1
Router(dhcp-config)#dns-server 0.0.0.0
Router(dhcp-config)#
```

We will finally check It by pinging with other device

