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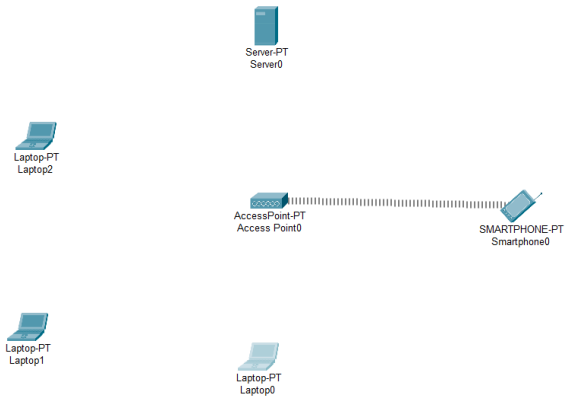
Section : BCS-5A

Lab Task 7

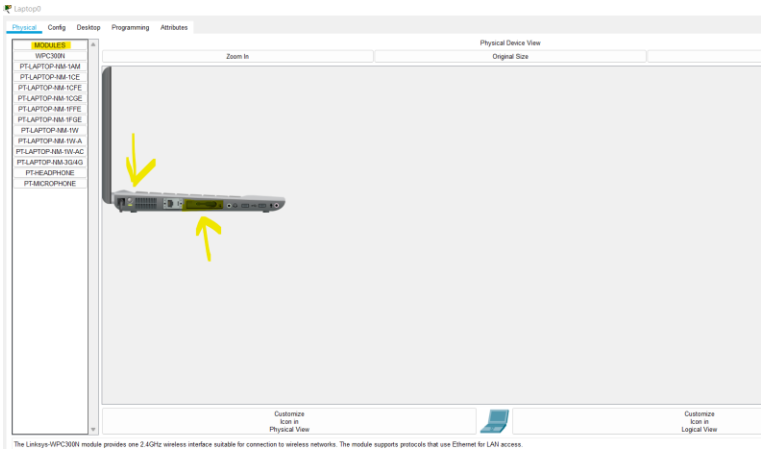
Task1: WLAN Configuration on Packet Tracer

Step1: Create this Topology in packet tracer.

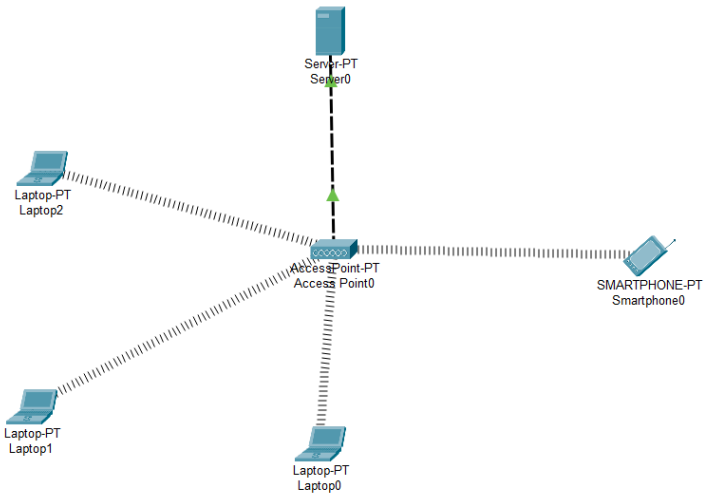


Step2: Laptops has ethernet card. To involve a wireless network, we should have a wireless interface card. So, turn off the laptop and remove the ethernet card and plug in the wireless interface card. We will place Wireless Interface Card (WPC300N).

Turn off the PC -> Remove the Ethernet card -> Plug WPC300N -> On the PC



Do It for all the Laptops.

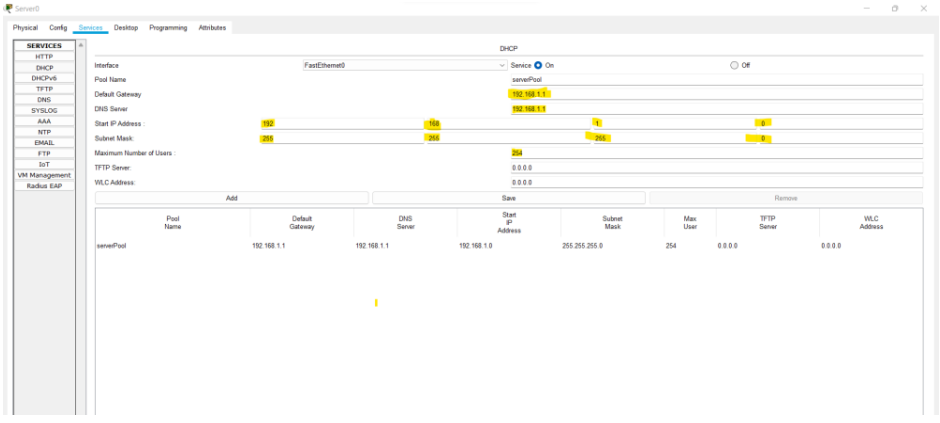


We have APIPA (Automatic Private IP Addressing). These addresses are from the block “169.254.x.x/25”. Simple, when we say this type of IP address in a device, we can say that it has no IP address.

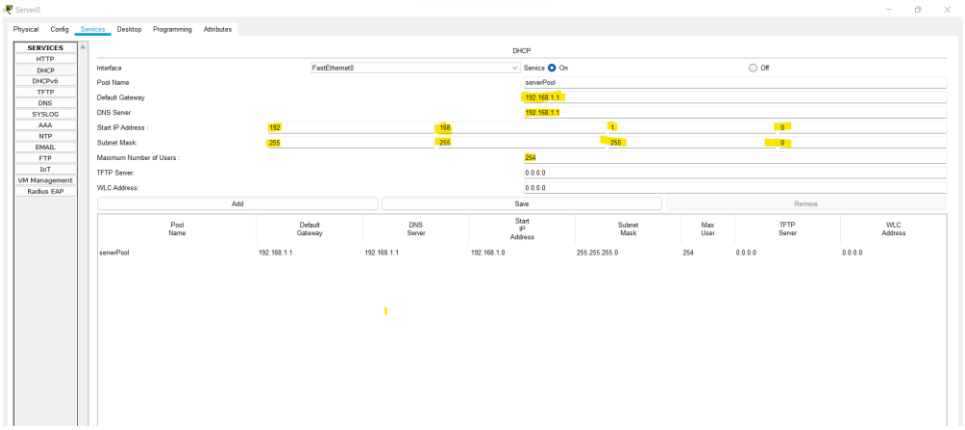
Step3: DHCP Server Configuration

Go into the **Desktop -> IP Configuration of the Server**. Then assign IP address to the Server. IP Address = 192.168.1.1

Then Go into the **Services -> DHCP -> On DHCP -> Add pool into that with following values.**



Now Go To any Laptop IP Configuration and select DHCP in the IP configuration. The IP will be assigned successfully.

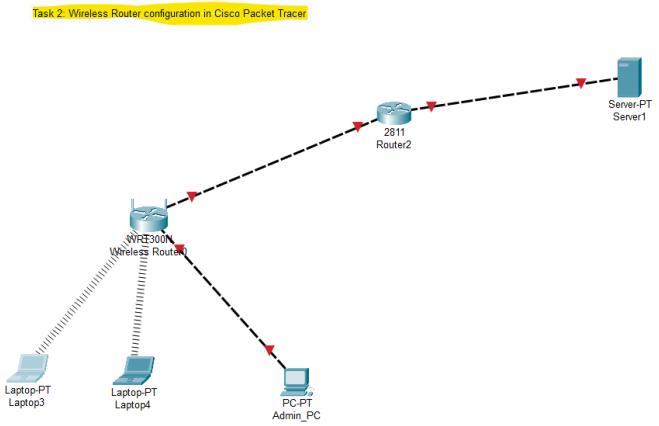


Task 2: Wireless Router configuration in Cisco Packet Tracer

In this task we will perform

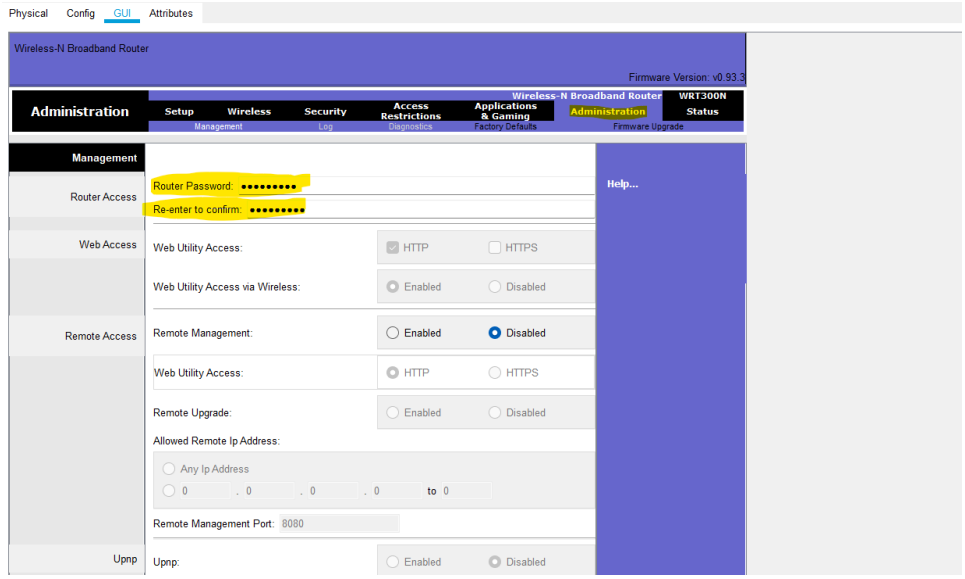
1. Wireless LAN administration.
2. Wireless LAN network setup.
3. Securing a wireless network with WPA and WEP security features.
4. Setting up internet connectivity on the wireless router.

Step1: Create this topology first.



Step2: Wireless Router Administration.

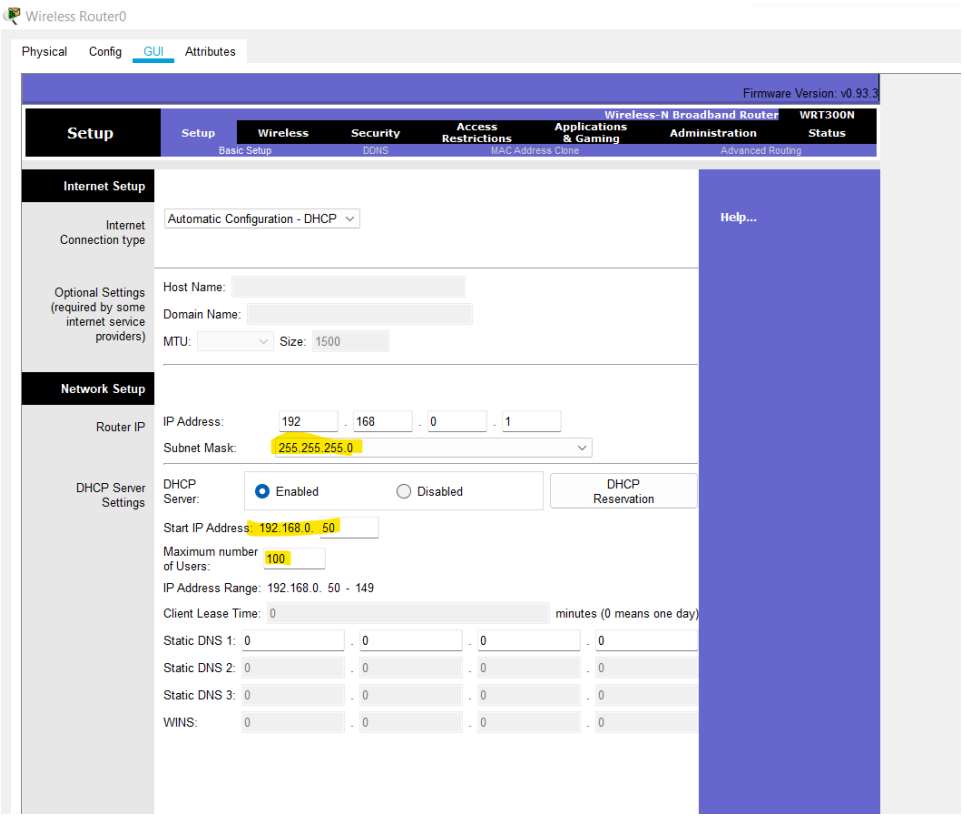
Go Into the Wireless Router -> Select GUI -> Administration. Change the password. The admin username and password are important, as only a network admin(or a user with admin rights) is able to log into the router and manage its settings.



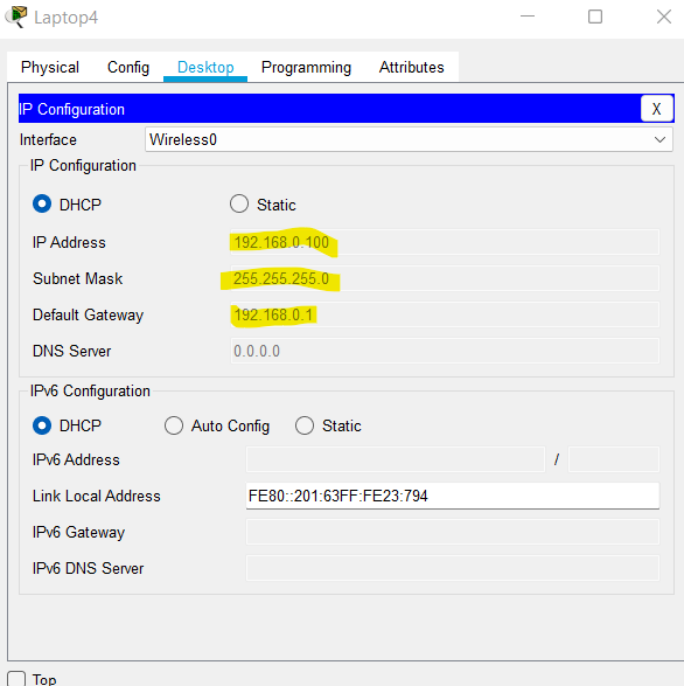
Step3: LAN Setup and Internet Setup

Go Into the network setup of the wireless router.

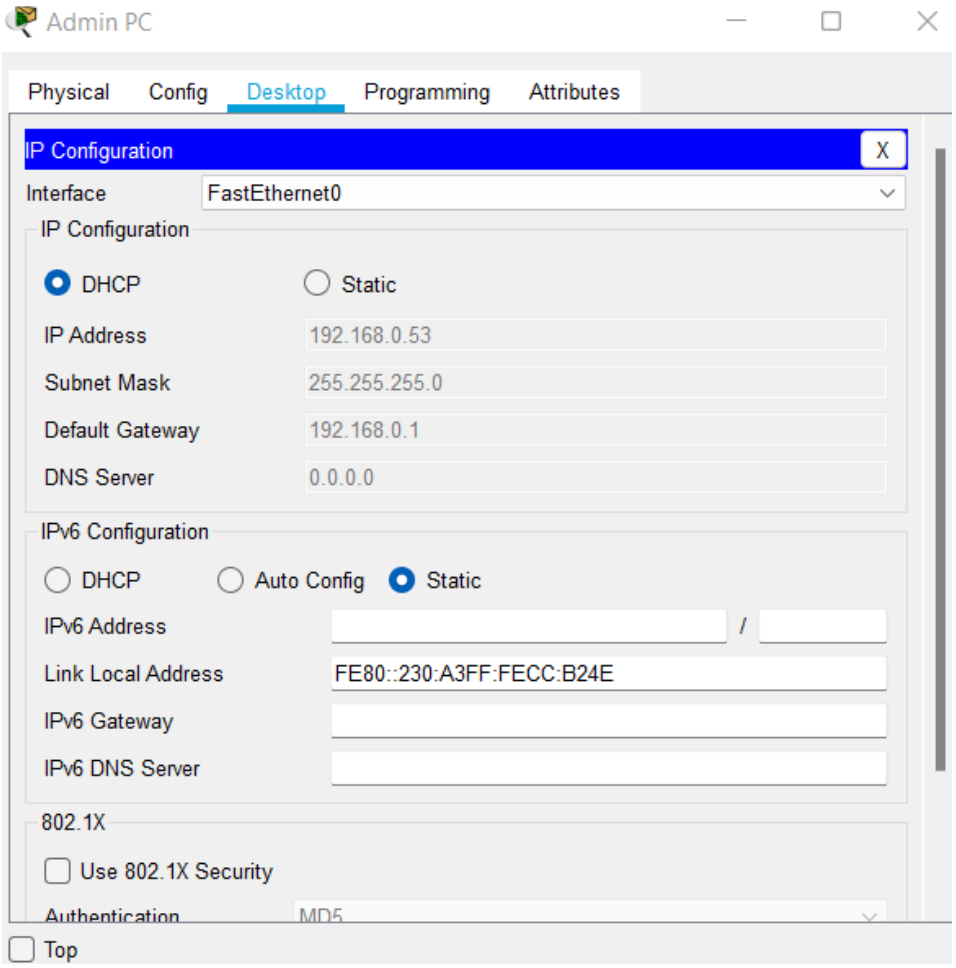
- Ensure DHCP is checked.
- Leave the IP address as 192.168.0.1.
- Set a start address of 192.168.0.50 and set maximum users to 100
- Leave the DNS server entry.
- Scroll down and Save settings.



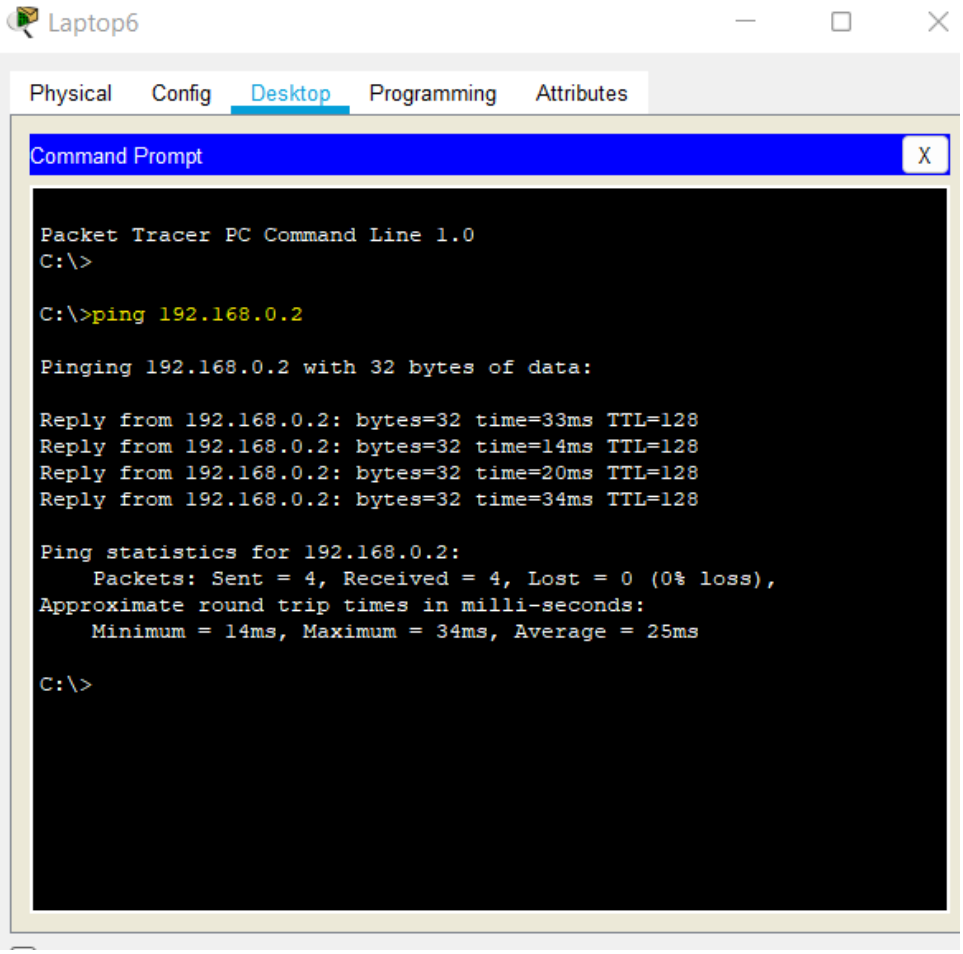
Now enable **DHCP IP Configuration.** Check if the IP is assigned successfully or not.



If Ip is not assigning to Admin PC make sure you used cross over cable. After that correct IP will be assigned successfully.

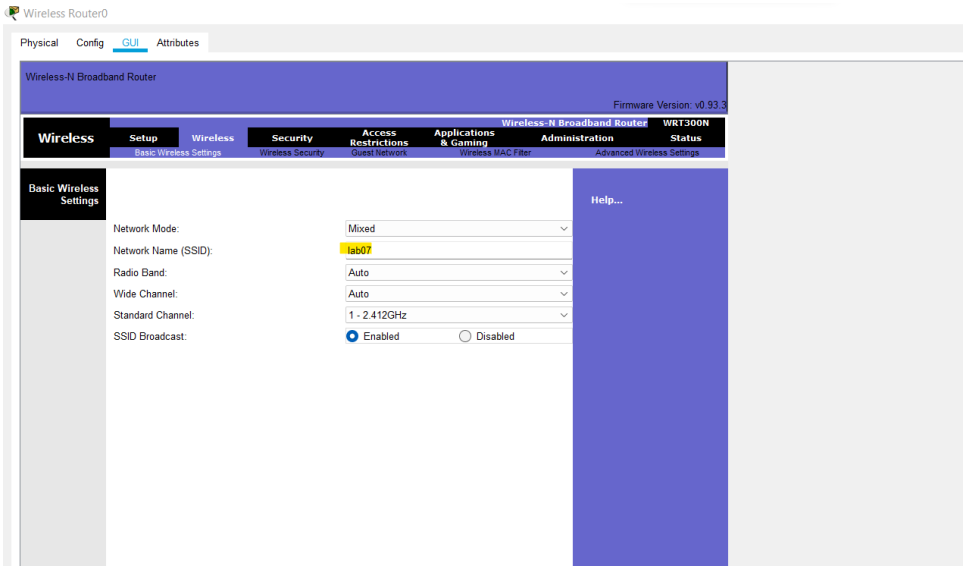


Ping PC2 from PC1. Ping should succeed

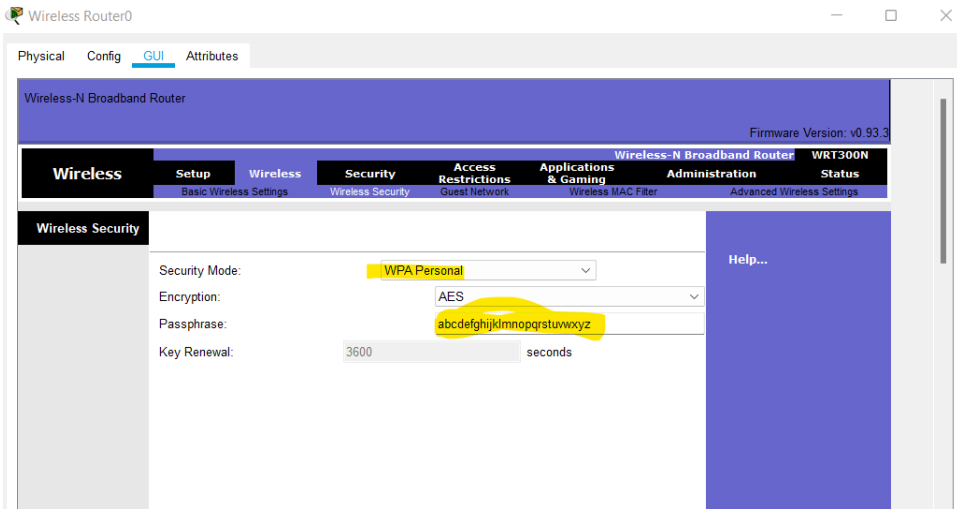


Step4: Adding security for wireless LAN access

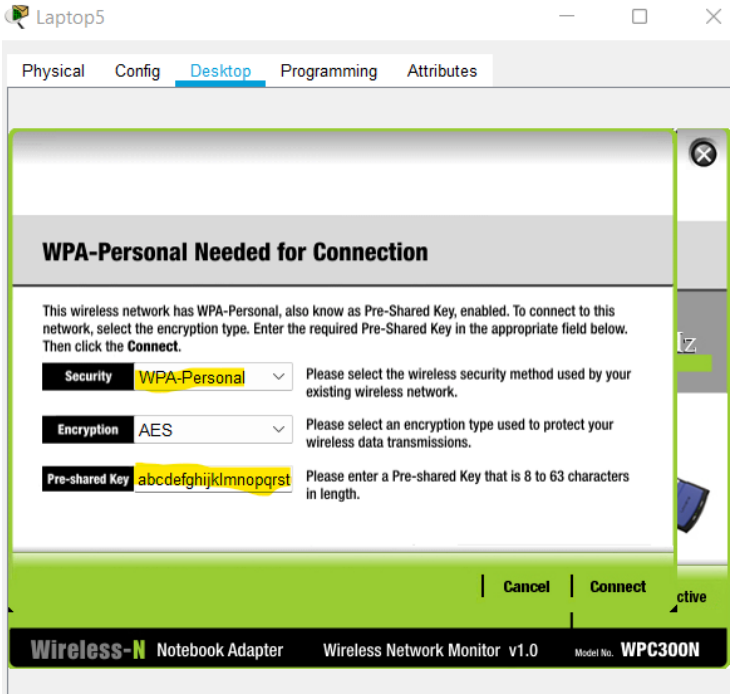
There is no security we have added. Any device can connect to this router without need of any password. To add security go into the wireless router **GUI -> Wireless. Under the Basic Wireless Settings sub tab, change the default wireless SSID to any name of your choice. I have named mine 'myLAN'. After this, don't forget to Save settings.**



Now go under the wireless tab you will see wireless security change the security mode to WPA personal, then set passphrase field to a password of your choice. Scroll down and save.



Now laptop will be disconnected from router. To connect them again. Go to the **Desktop->PC Wireless. Then click** on connect and you will see the lab07 in available networks. Click on connect and then provide the passphrase that you just entered in previous step.



The laptop will be connected to wireless router successfully.

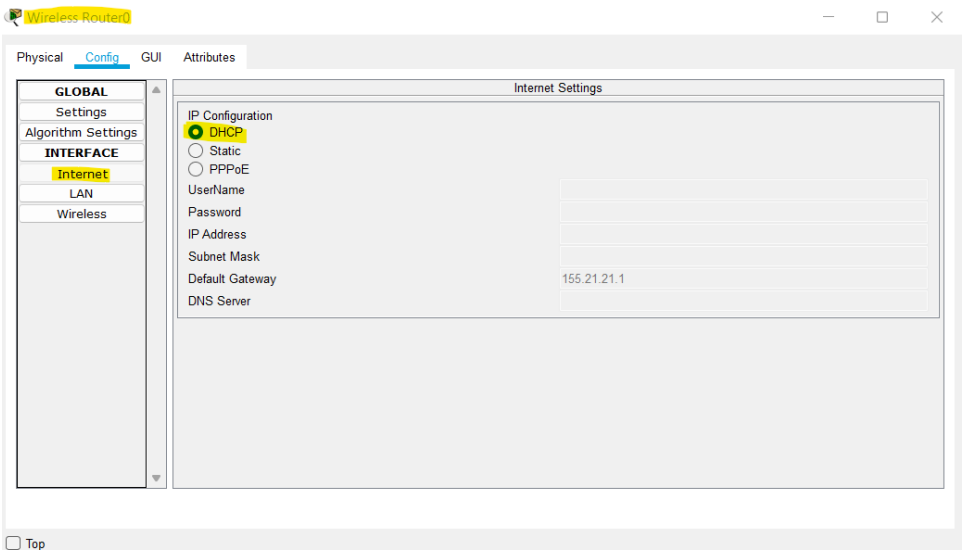
Internet Setup:

Issue the following commands in the wireless router **CLI**.

```
Router>enable
Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int FastEther
Router(config)#int FastEthernet 0/0
Router(config-if)#ip add 155.21.21.0
% Incomplete command.
Router(config-if)#ip add 155.21.21.0 255.255.255.0
Bad mask /24 for address 155.21.21.0
Router(config-if)#no shutdown

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#int Fa
Router(config-if)#int FastE
Router(config-if)#int FastEthernet 0/1
Router(config-if)#ip add 200.0.0.1 255.255.255.0
Router(config-if)#no shutdown

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
Router(dhcp-config)#dns-server 0.0.0.0
Router(dhcp-config)#
```

Ctrl+F6 to exit CLI focus

Now make the internet interface a DHCP client by enabling DHCP on it.



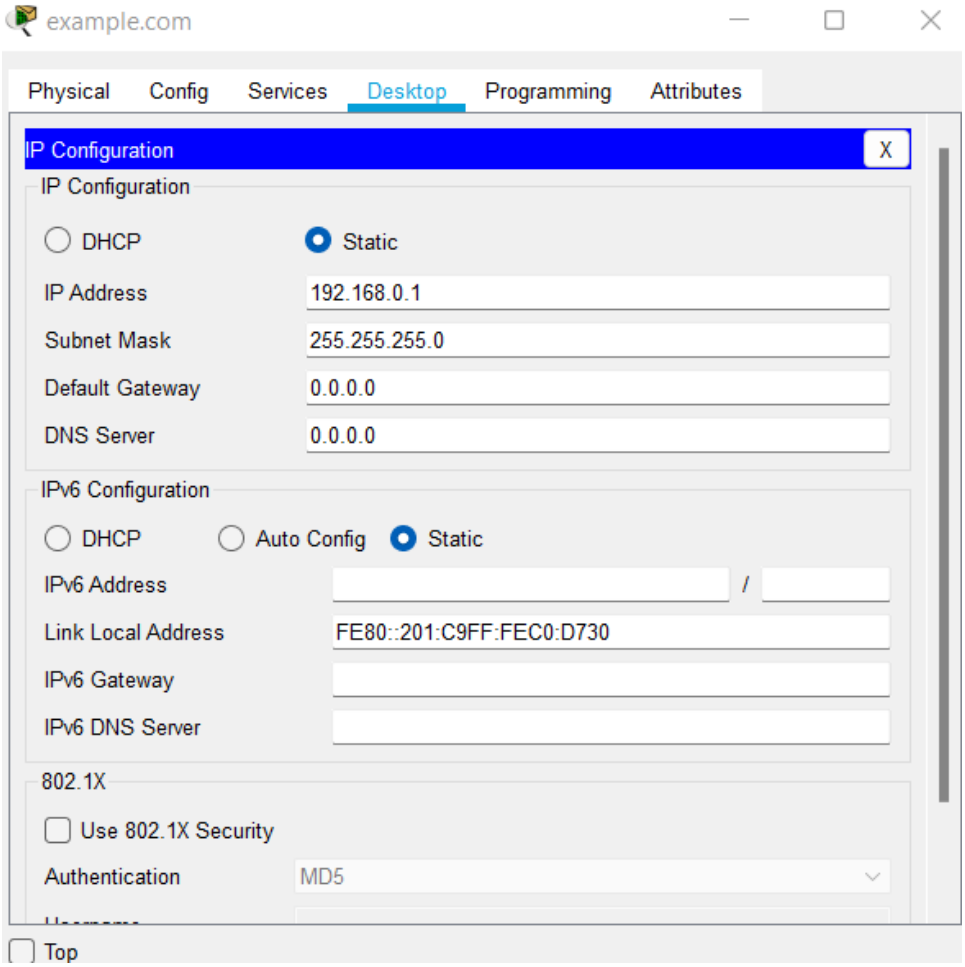
To verify DHCP configuration, click on the wireless router icon, then go to Config tab. Pick DHCP. The interface is now configured with an IP address from the pool set in the ISP router.

Next,we have to configure static or dynamic routes in the ISP router for the devices in the wireless LAN to gain access the internet server:

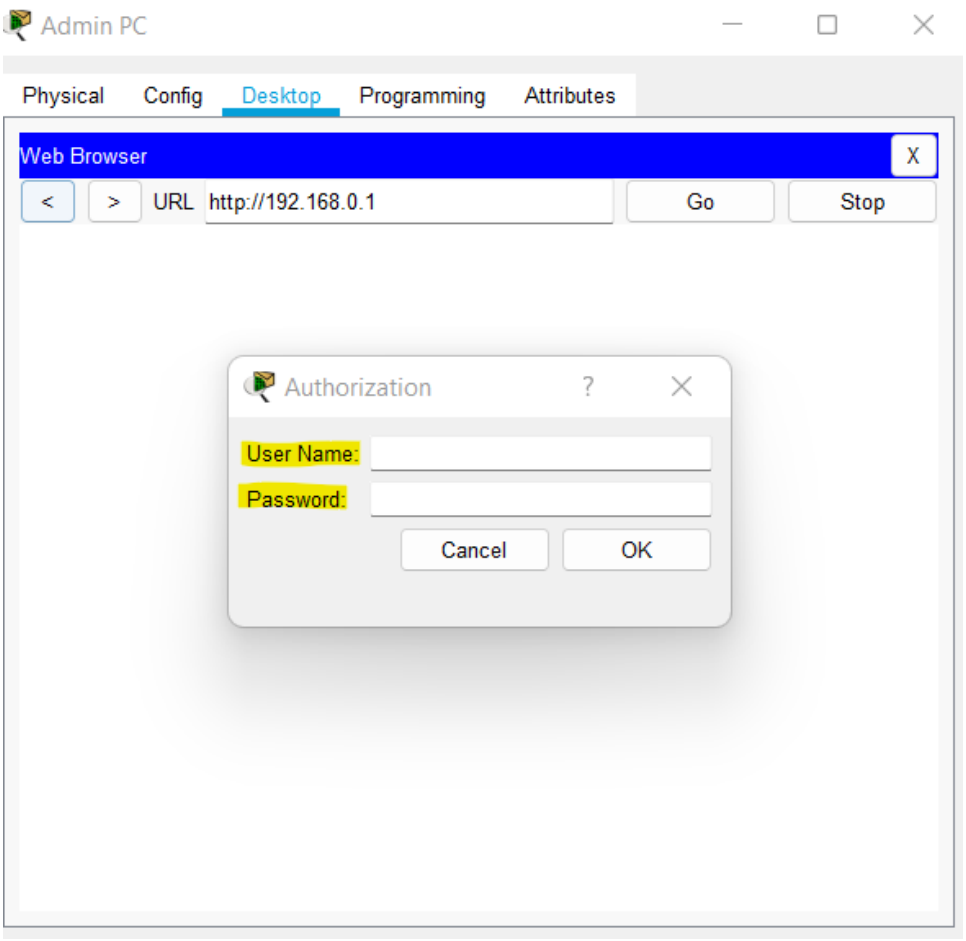
Here is a static route:

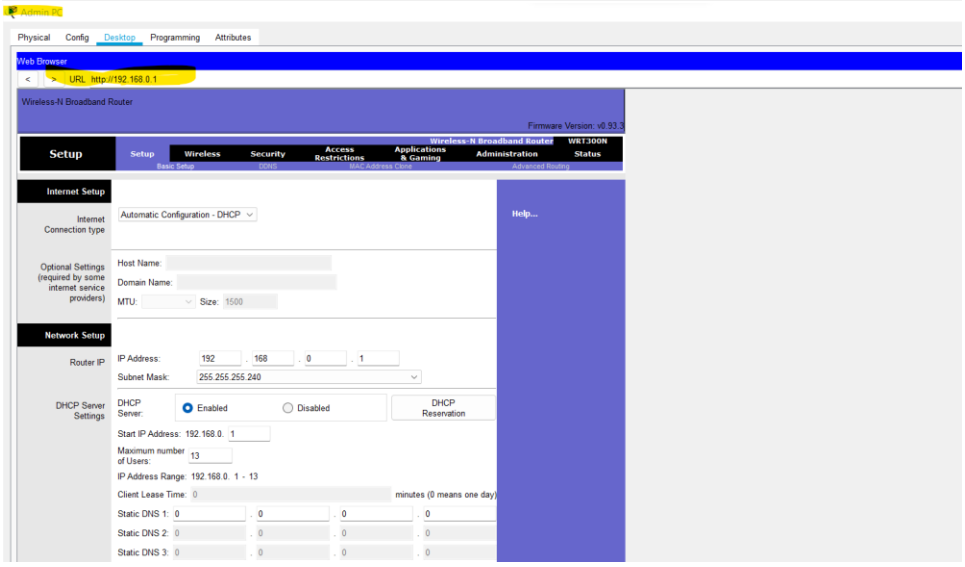
=> ISP_ROUTER(config)#ip route 192.168.0.0 255.255.255.0 fa0/0

Lastly, assign an IP address to the internet server (if you hadn't done so), then try to reach the server from a host in the LAN.



Let's access the server through the Admin PC. Open the web browser and type the IP address of the server in the search bar. Provide the password that you have added in the authenticaion of the access router. For me the username = admin and password = admin. Because I have not changed the username and password.


Admin PC
Physical
Config
Desktop
Programming
Attributes
Web Browser
X
<
>
URL
http://192.168.0.1
Go
Stop
Authorization
?
User Name:
Password:
Cancel
OK


Admin PC
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL http://192.168.0.1
Wireless-N Broadband Router
Firmware Version: v0.93.3
Setup
Wireless
Security
Access Restrictions
Applications & Gaming
Administration
Status
Internet Setup
Internet Connection type
Automatic Configuration - DHCP
Optional Settings (required by some internet service providers)
Host Name:
Domain Name:
MTU:
Size:
1500
Network Setup
Router IP
IP Address:
192 . 168 . 0 . 1
Subnet Mask:
255.255.255.240
DHCP Server Settings
DHCP Server:
Enabled
Disabled
DHCP Reservation
Start IP Address: 192.168.0. 1
Maximum number of Users:
13
IP Address Range: 192.168.0. 1 - 13
Client Lease Time:
0
minutes (0 means one day)
Static DNS 1:
Static DNS 2:
Static DNS 3:
Help...

You can ping the server from Laptop1. Ping should succeed. The ip address of the server is “192.168.0 1”. Open the command prompt of the Laptop 0 and issue the following command.

=> ping 192.168.0.1