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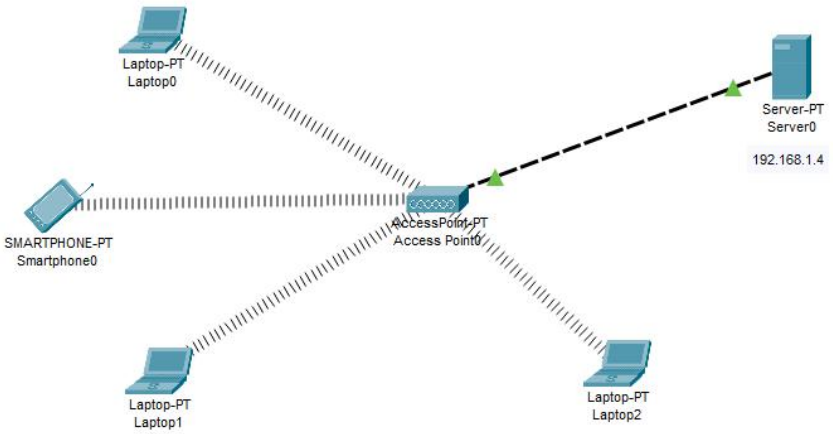
Roll No : 20P-0750

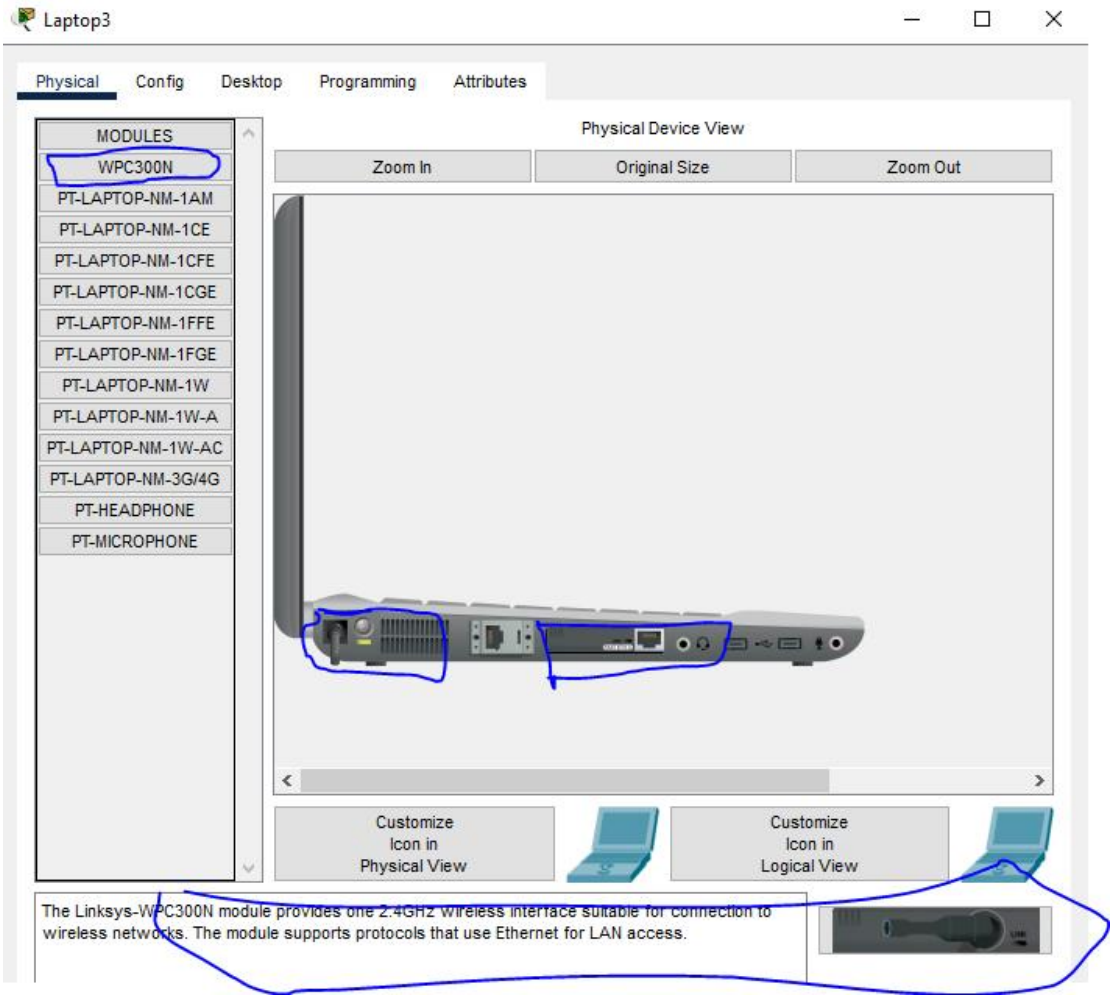
Lab Task : 09

Task 1: WLAN Configuration on Packet Tracer



Place Wireless Interface Card to Laptops:

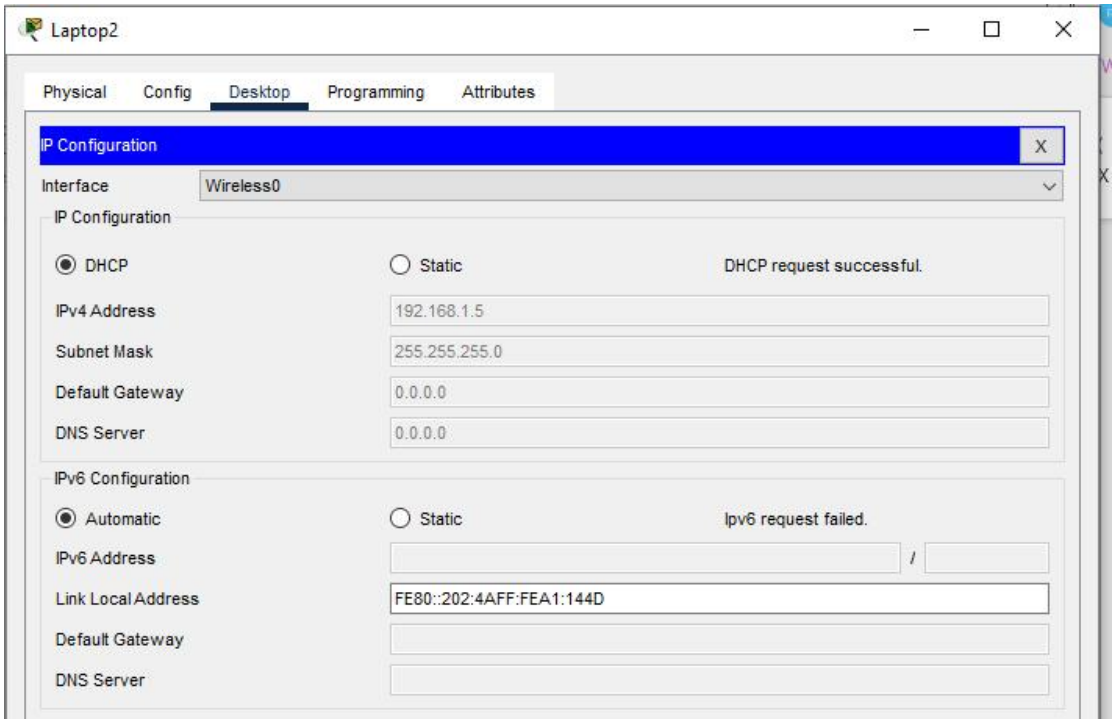
By default laptops has classic Ethernet card. To involve in a wireless network, we should have wireless interface card. So, in each laptop, we should turn off the laptop, remove the classical Ethernet, instead of it we place Wireless Interface Card (WPC300N). Then, we power on the laptop again.



After this process each laptop connects to the wireless Access Point in Packet Tracer. Smartphone devices in Packet Tracer connects to Access Points (AP) by default. So, there is nothing to do on them.

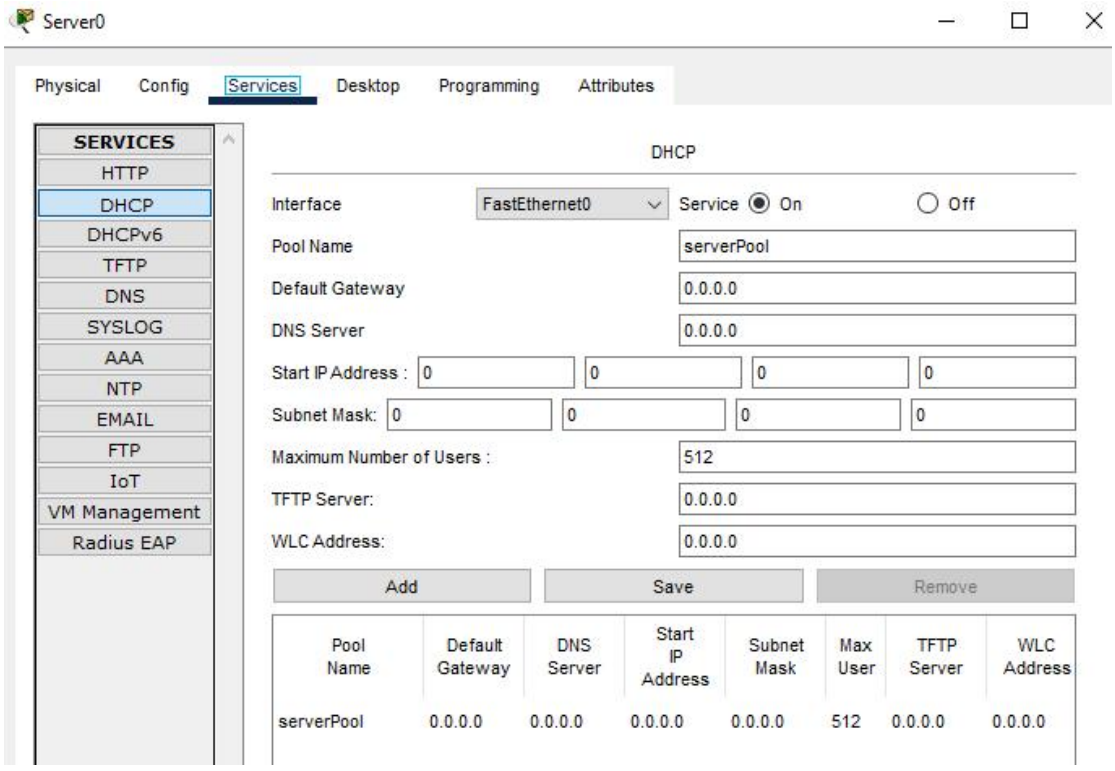
IP Check on WLAN Devices:

We will check the IP addresses of the laptops.

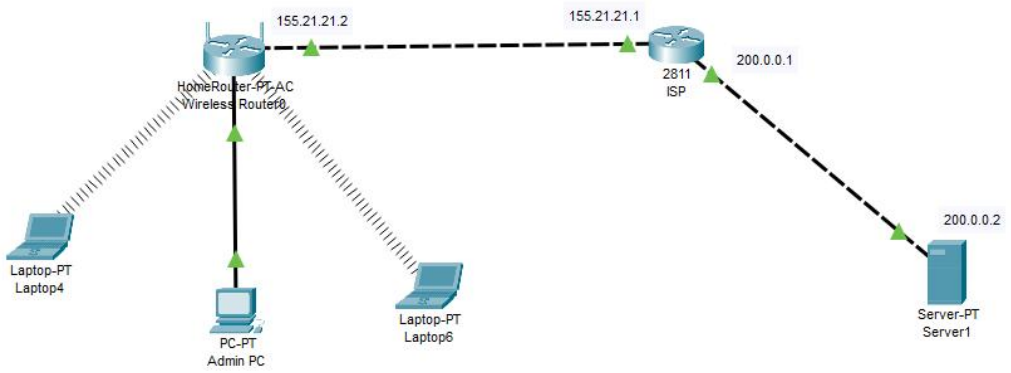


DHCP Server Configuration:

We will configure our DHCP Server in the WLAN. This server will give IP addresses to our devices who are connected to the Access Point.



Task 2: Wireless Router configuration in Cisco Packet Tracer

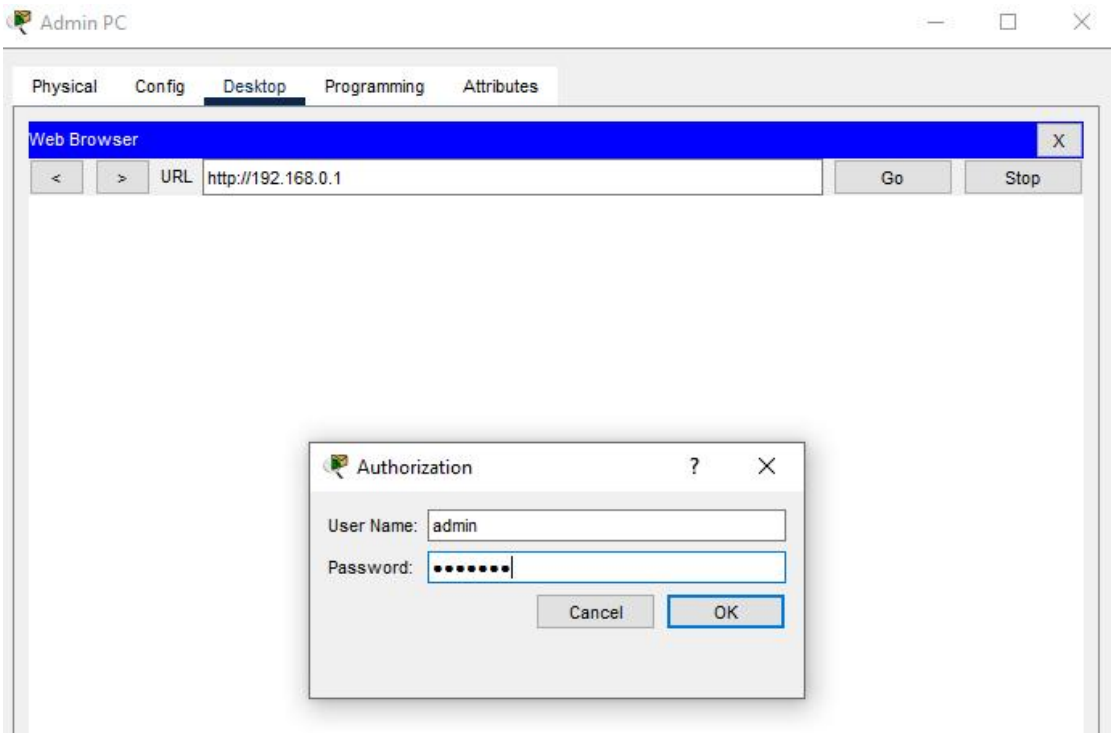


In our network set up, we have two laptops and a PC which should connect to a LAN provided by one wireless router. The PC is used by the network Admin and connects to the LAN via an Ethernet port of wireless router. The laptops should connect to the same LAN by wireless means, and for this reason we'll install wireless adapters on them. Still, we'll need to connect the LAN to the internet via an ISP router.

Wireless LAN configuration

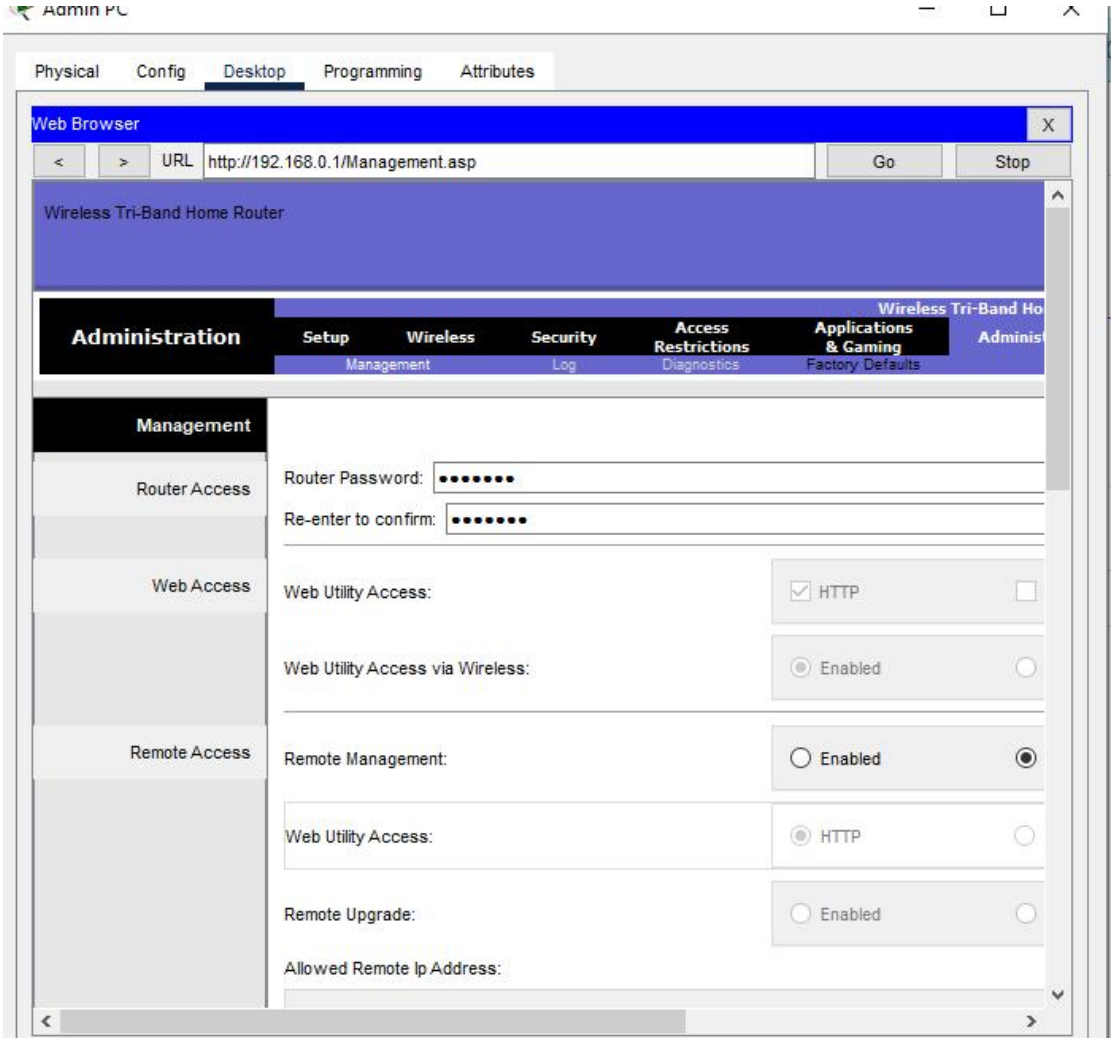
For configuration on the wireless router, we'll use its GUI(Graphical User Interface) which we an access either by:
• Clicking the Wireless Router icon then GUI tab, or
• Using a browser in a PC or laptop in the LAN.

Let's use the PC to access the router GUI.
We'll access the router from the PC or the laptops using the router's LAN interface. The LAN
interface is simply the default gateway of the LAN.
So now, on the ADMIN PC browser, type the IP address of the LAN interface of the wireless router.(192.168.0.1 by default), then hit Go.
A login prompt appears. Provide the username (admin) and password (admin) to be allowed into the GUI of the router.You can always change these settings later.



Wireless Router Administration

We'll begin with Administration in the GUI. Here we'll simply change the router's username and password.



LAN Setup and Internet Setup

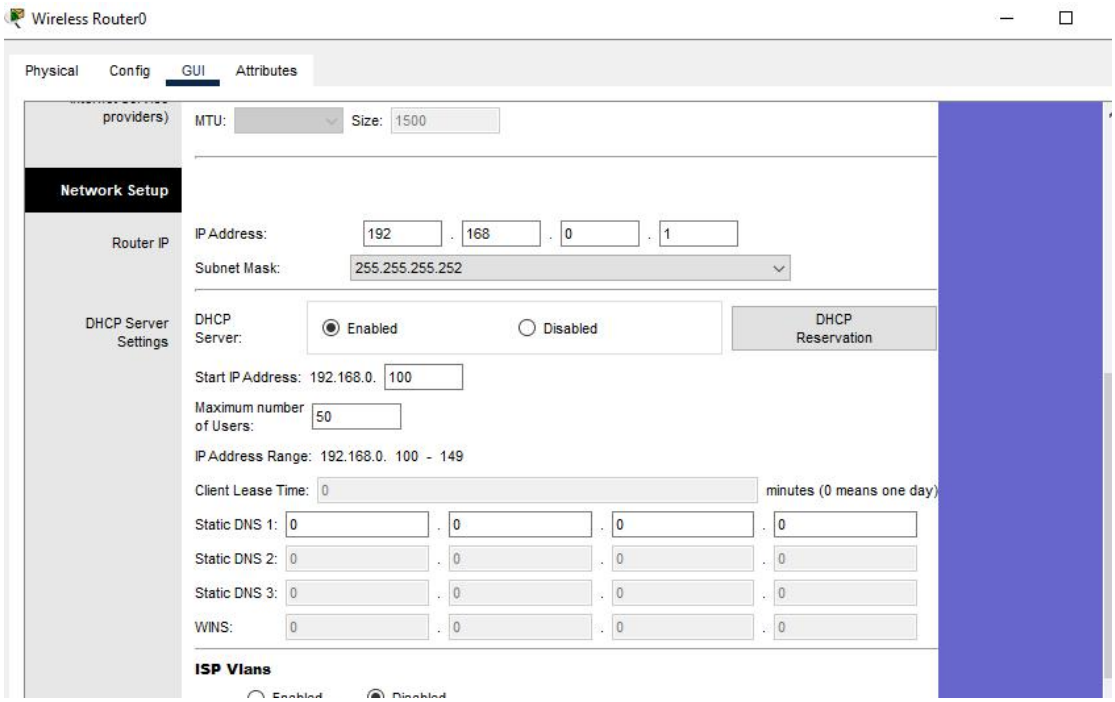
To configure addresses for the LAN and internet connectivity, we'll use Setup tab.

Network Setup

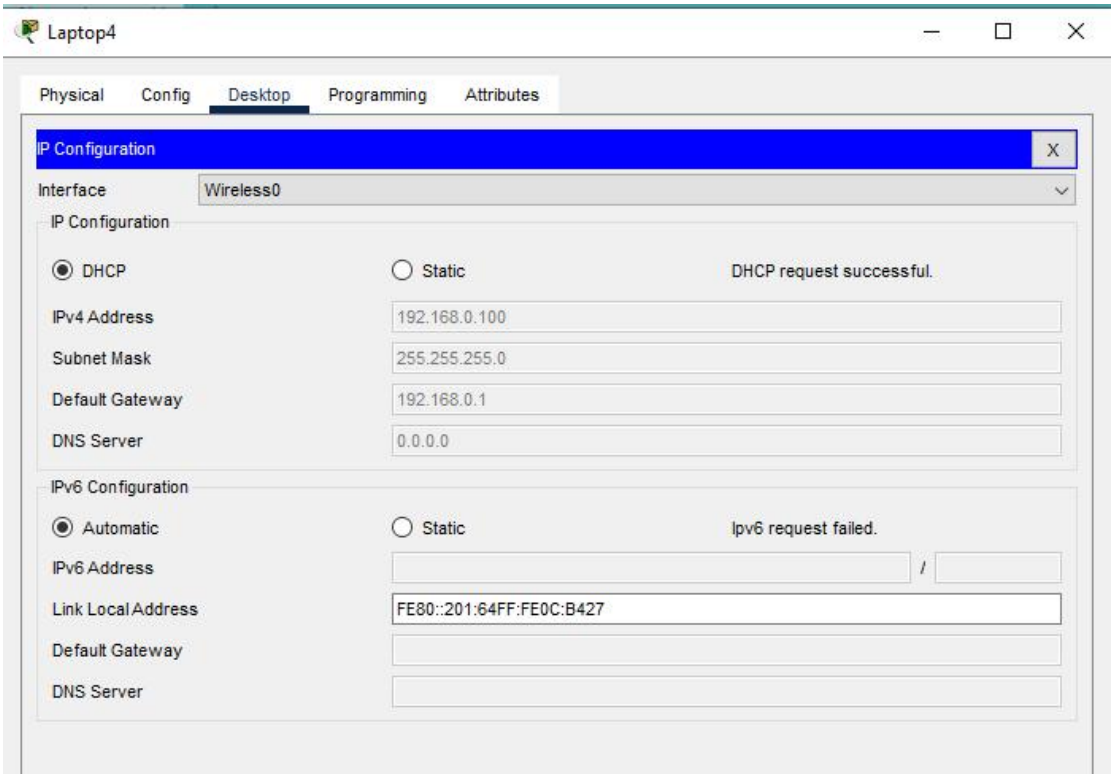
Network setup means LAN setup. Already, we have a PC and three laptops in the LAN.We'll assign the them IP addresses either statically or dynamically (using a DHCP pool set up in the wireless router).

Now, going the DHCP way:
• Ensure DHCP is checked.
• Leave the IP address as 192.168.0.1 (This is the default LAN gateway address).

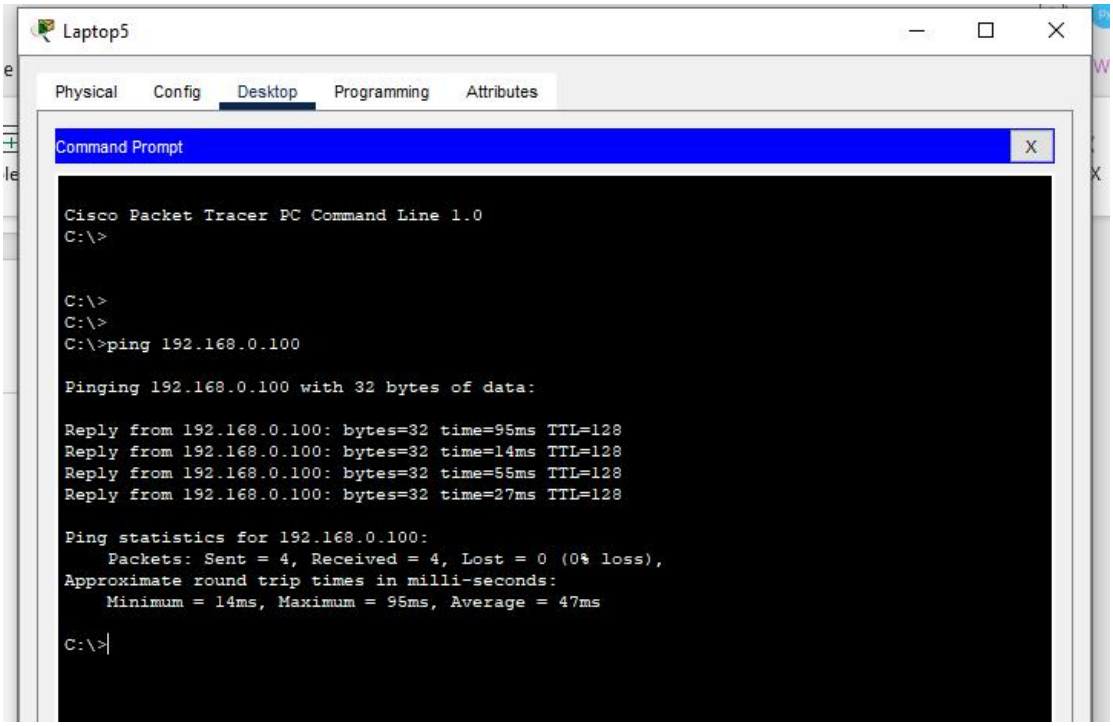
• Set a start address of 192.168.0.50 and set maximum users to 100 (or any number of users you want)
• You can leave the DNS server entry as it is (0.0.0.0) or specify the address of a DNS server of your choice.
• Scroll down and Save settings.



let’s enable DHCP on each PC for dynamic configuration. Go to the IP configuration tab for each PC and enable DHCP. Each PC should automatically obtain an IP address from the router.

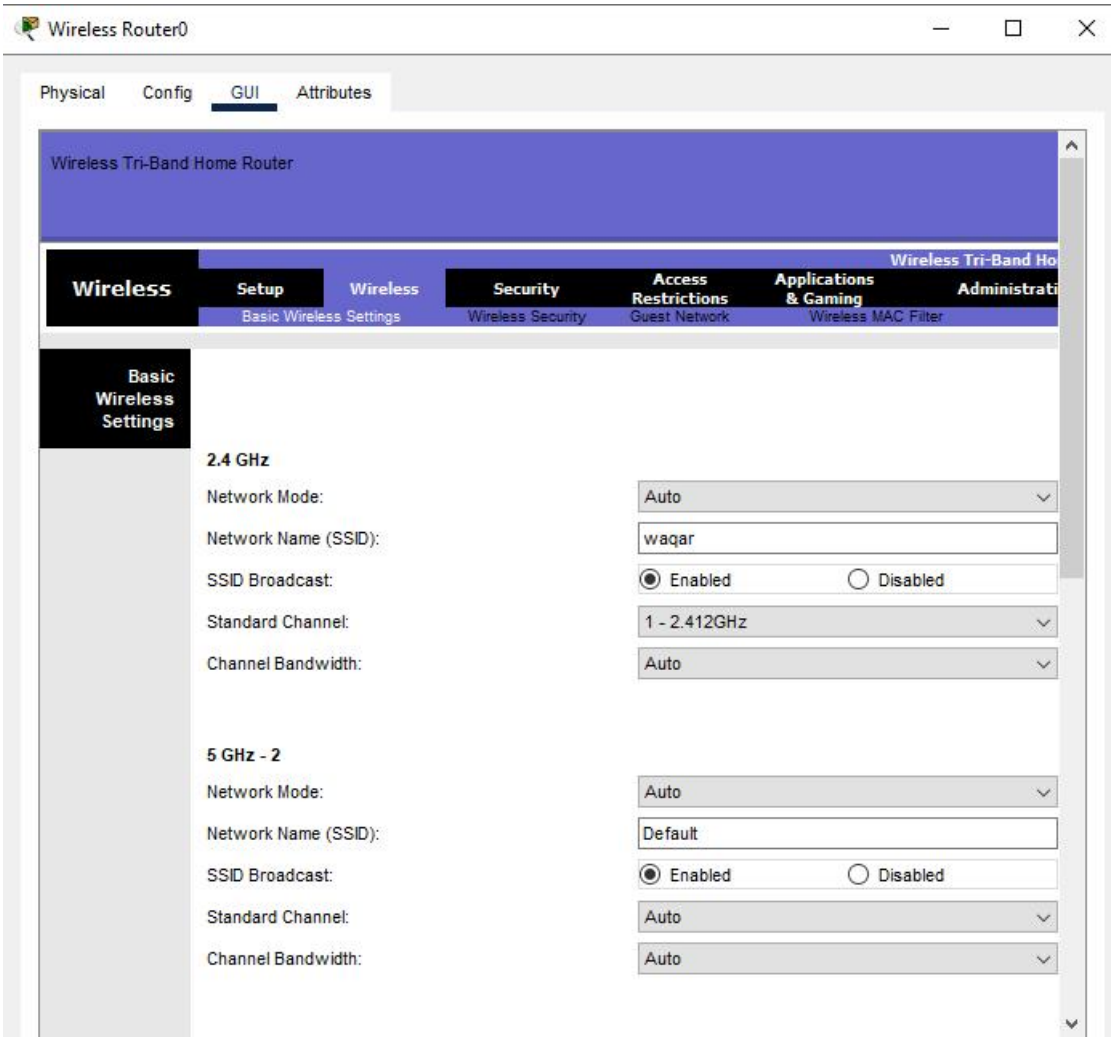


Now let's test our wireless LAN.
Ping PC2 from PC1. Ping should succeed.

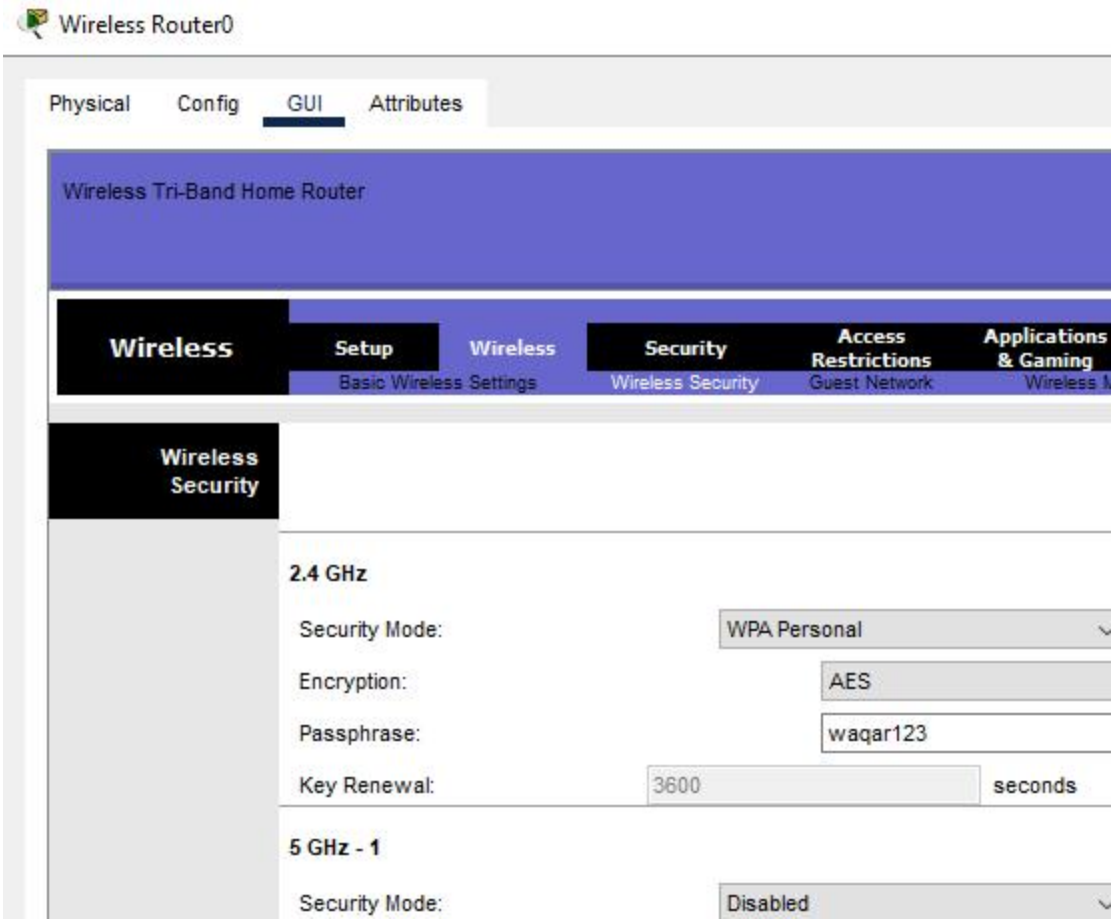


Adding security for wireless LAN access:

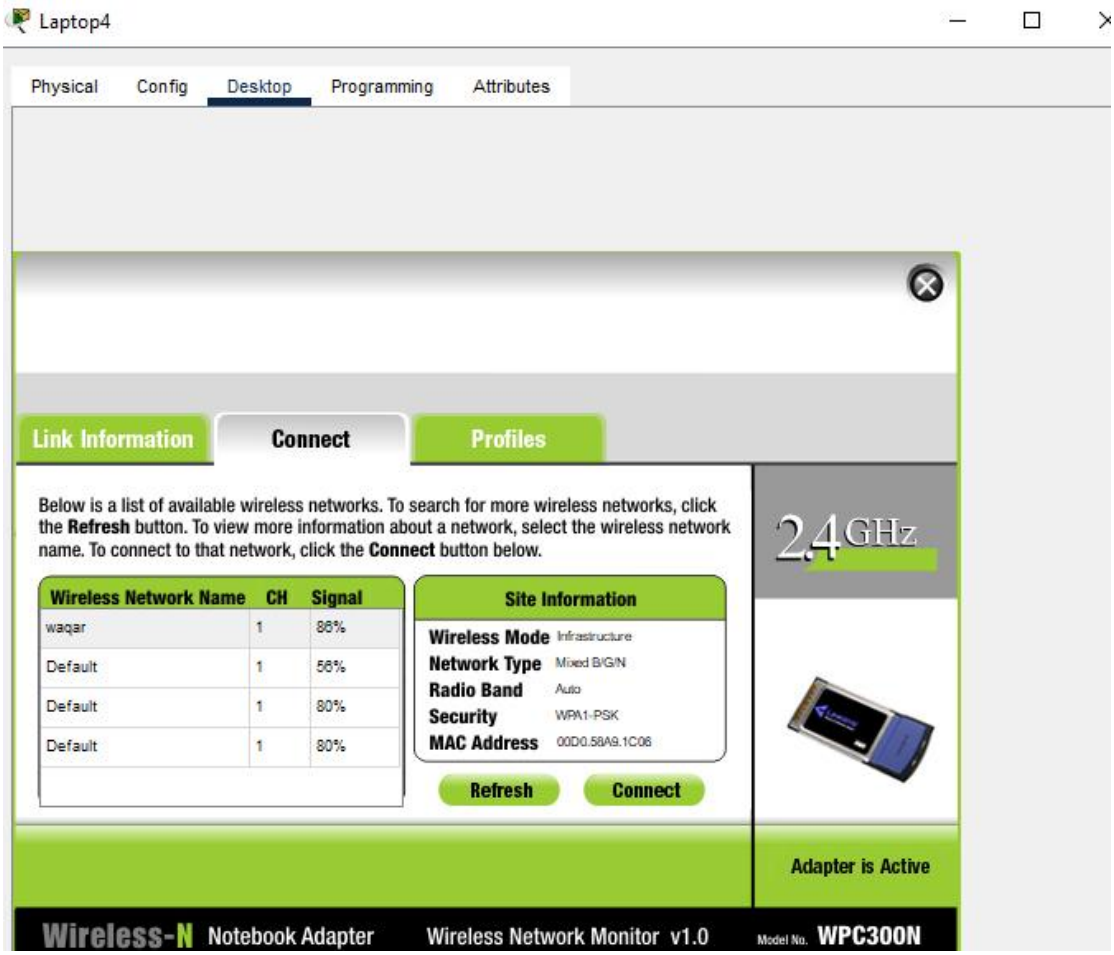
Access the GUI of wireless router (either by clicking on Router icon or from Admin PC browser), then click on Wireless tab. Under the Basic Wireless Settings sub tab, change the default wireless SSID to any name of your choice. I have named mine ‘waqar‘. After this, don’t forget to Save settings.



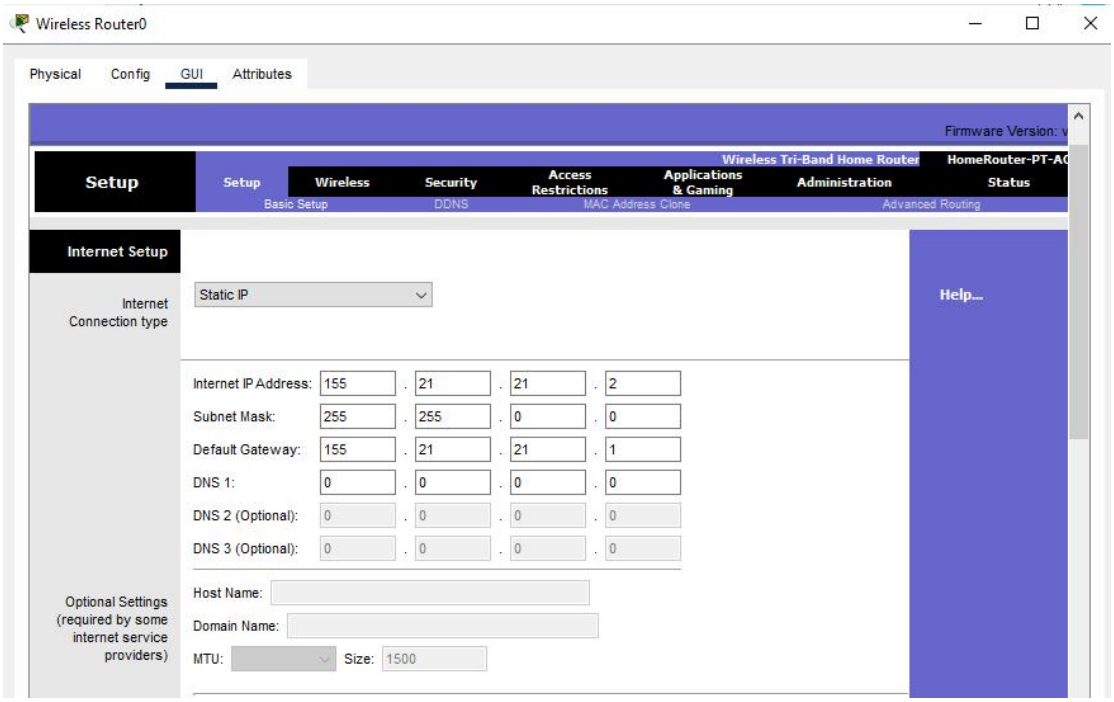
In the Wireless tab, under the Wireless security sub tab, change security mode to WPA personal , then set passphrase field to a password of your choice. Scroll down and Save settings



The LAN network is now secured for wireless access. To test whether its really protected, click Laptop1->Desktop->Wireless.
A new window appears that shows the now secured wireless network. Click connect. You can now see the name of the wireless network.



Internet setup



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:

```
Router#
Router#config
Configuring from terminal, memory, or network [terminal]? terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 192.168.0.0 255.255.255.0 155.21.21.2
Router(config)#
```

Lastly, assign an IP address to the internet server then try to reach the server from a host in the LAN.
For example, you can ping the server from Laptop4. Ping should succeed.