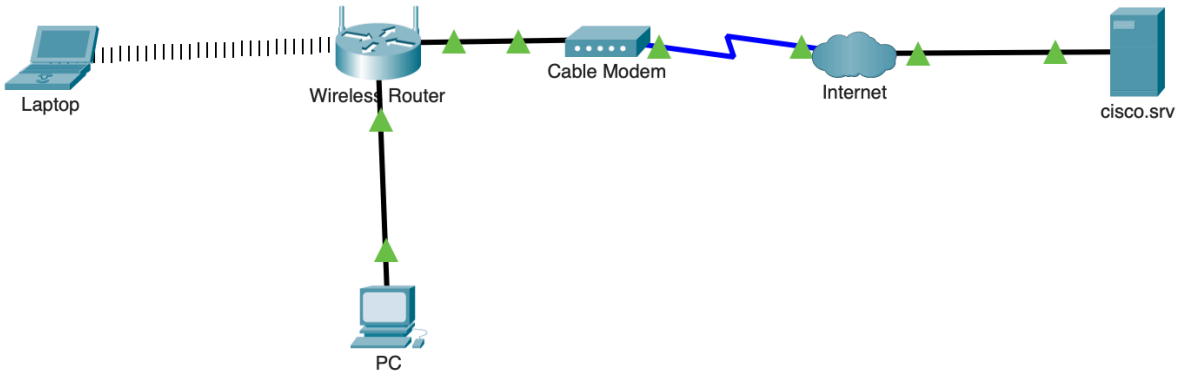
2/23/25

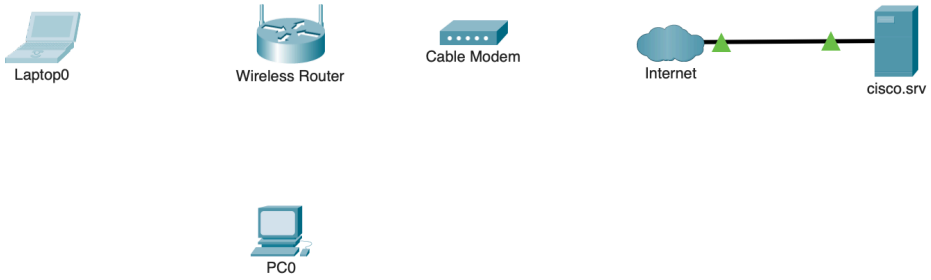
In order to learn get a hands on experience with working with Networks, I was lucky enough to be directed towards Cisco Packet Tracer, and was able to build my own, very simple, home network.

After downloading the version of Cisco Packet Tracer that aligned with my OS, I began the course that they offered which taught me step by step how to build my own simple network. The final product can be seen below.

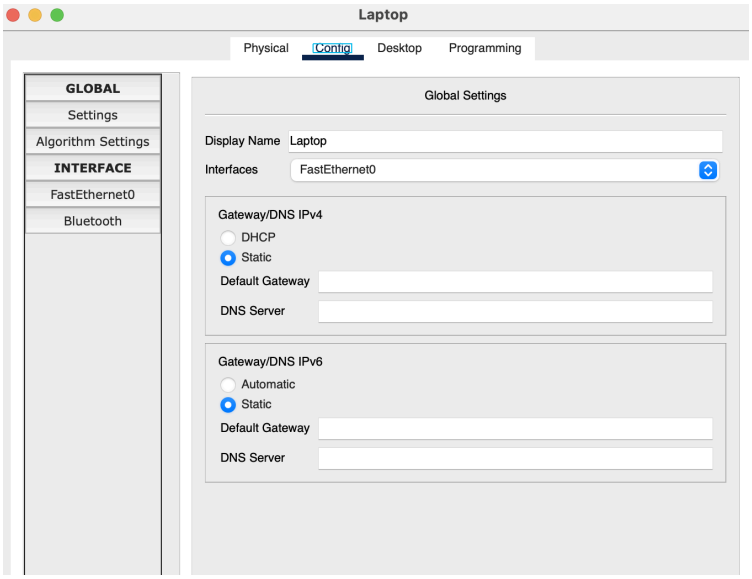


<u>Step 1: Add devices to the network</u>
Initially, the prompt I was given looked like this:

So, I decided to add a laptop, a PC, and a cable modem, as pictured below.



I decided to go into the configurations of each device and remove the “0” from their name in order to make it look cleaner. Below is how it looked for the Laptop.

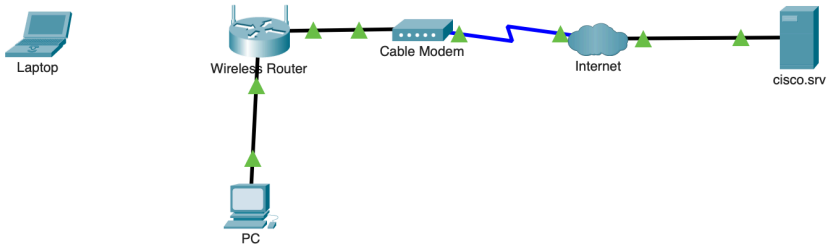


Step 2: Add physical cabling to the devices

I used a copper straight-through cable to connect the PC to the Wireless Router. I decided to use this specific cable because routers usually have ethernet LAN ports, which are compatible with straight-through cables. I connected it to the “Ethernet0” port on the PC and the “Ethernet1” port of the router.

Next I connected another copper straight-through cable from the router to the cable modem. I connected the router’s internet port to the “Port 1” interface of the modem. I used the same straight-through cable because since they are different types of devices. Also, since the router’s WAN(Internet) port is designed to receive this signal via a straight-through cable to properly establish connection.

Lastly, I connected the cable modem to the internet cloud via a Coaxial cable. I chose a coaxial cable because they transmit radio frequency signals, they have a thick shielding layer that protects against electromagnetic interference and signal degradation over long disntaces, and they support high bandwidth.



Step 3: Configuring the End Devices and verifying connection

For this step, I went into the IP configurations of the PC to ensure the DHCP was turned on. This is smart from a security perspective because if they IP configuration were left as static, than an attacker could just manually assign themselves an IP address and gain access to the network. Then to ensure that the PC was connected, I went to the CLI and entered “ipconfig /all” in order to verify it was connected, which it was.

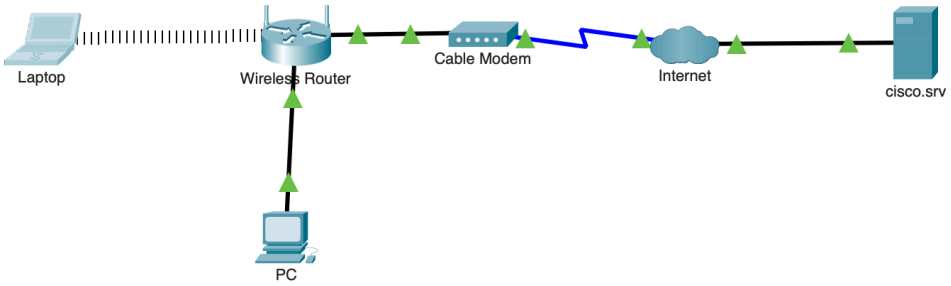
Next, in order to confirm the laptop was able to connect wirelessly, I need to remove the Ethernet Copper Module and replace it with a Wireless WPC300N module.

- First, I turned the laptop off
- Then, I remove the Ethernet Copper Module on the side of the laptop, and replace it with the WPC300N.
- Now, I can turn the laptop back on.

Next, I can go into the Laptop and access the Connect tab, select the home network and connect to that.

To confirm it works, all you have to do is open up the internet explorer this laptop has enter in a website.

And what you are left with, is a functioning network!


Laptop
Wireless Router
Cable Modem
Internet
cisco.srv
PC