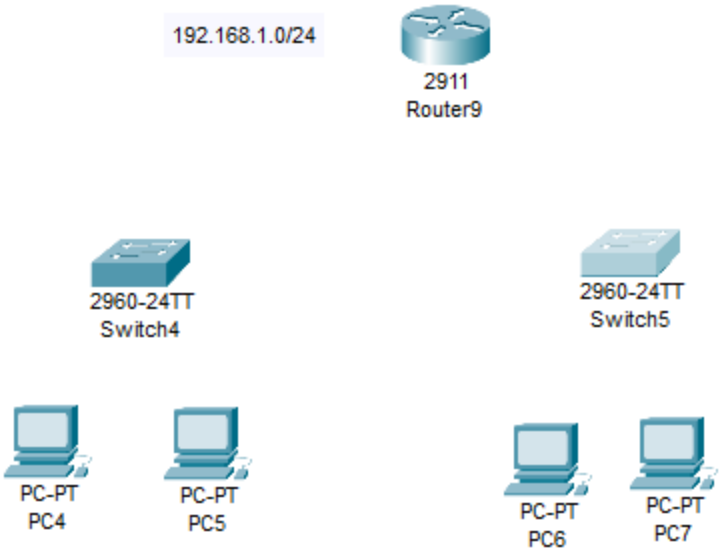
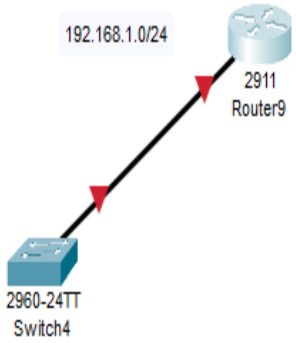
Day 5 (Speed and Duplex)




Here we have a simple connection of two switches and a router, each router would have 2 end nodes (pc). We will assign an ip of 192.168.1.0/24 and .254 for the router.

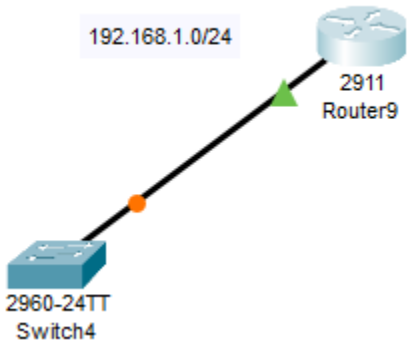



```
Router(config-if)#speed ?
  10     Force 10 Mbps operation
  100    Force 100 Mbps operation
  1000   Force 1000 Mbps operation
  auto   Enable AUTO speed configuration
Router(config-if)#speed
```

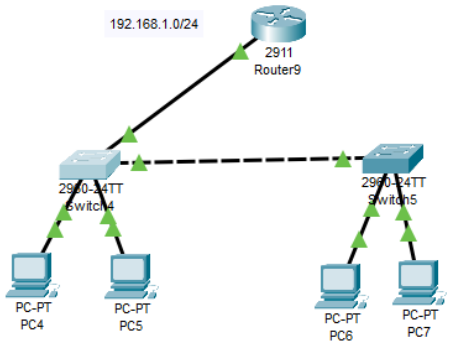
Here I have connected the switch on the router on the interface G0/0 and used the command interface then Speed ?. We can also see the options of bits per second we can use reaching up until one gigabits per second.

```
Router(config-if)#duplex ?
  auto  Enable AUTO duplex configuration
  full  Force full duplex operation
  half  Force half-duplex operation
Router(config-if)#duplex
```

Here we can also see the options for the duplex type, this could be used to manually configure the negotiation between the devices used. But in real case scenario most network have it on Auto since configuring it manually may cause collision between miss typed speed and duplex.




Here we successfully made it go up, and assigned the IP address. The speed is set to Auto and the same goes to the duplex type.

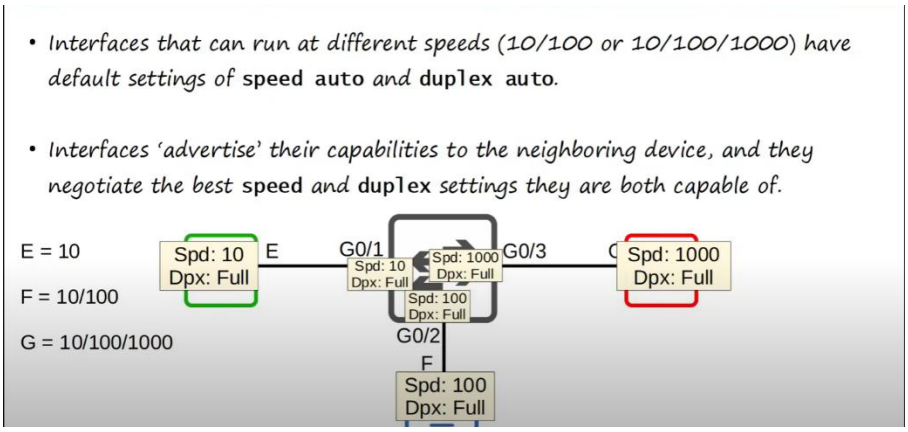



Here we connected the rest of the devices. From her on we can manually change the speed of transmission of each PC's.

```
Switch(config)#int f0/3
Switch(config-if)#speed ?
  10    Force 10 Mbps operation
  100   Force 100 Mbps operation
  auto  Enable AUTO speed configuration
Switch(config-if)#speed 10
Switch(config-if)#duplex ?
  auto  Enable AUTO duplex configuration
  full  Force full duplex operation
  half  Force half-duplex operation
Switch(config-if)#duplex auto
Switch(config-if)#exit
```

In this figure we used interface f0/3 and changed its speed to operate in 10mbps and kept the autonegotiation to automatic.

```
Switch#show int status
Port      Name               Status       Vlan       Duplex  Speed Type
Fa0/1                        connected    1          auto    auto  10/100BaseTX
Fa0/2                        connected    1          auto    auto  10/100BaseTX
Fa0/3                        connected    1          auto    a-10  10/100BaseTX
```




here autonegotiation actually automatically checks for the speed and determines the duplex type, since speed varies it automatically use the lowest speed possible i.e 10 for Ethernet interface up to 1000 for gigabit ethernet interface. This creates their own collision areas.