Design a LAN network using a Single Switch.

Objectives:

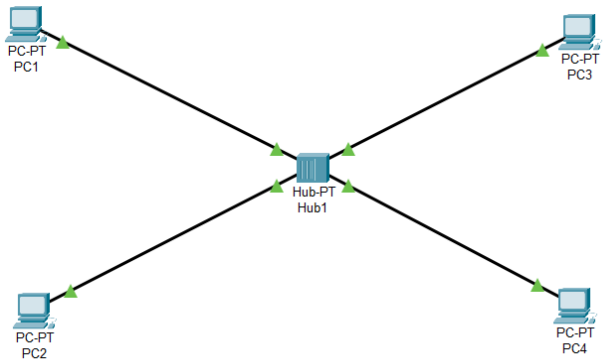
1. Design a LAN using a hub with four PCs.

2. Verify the connectivity.

3. Find the subnet masks of the hosts.

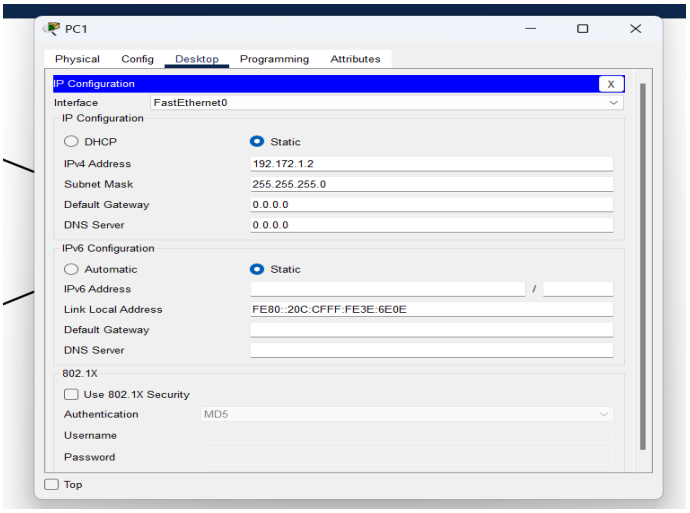
1.

After starting the cisco package tracker we design a LAN using a hub with 4 PCs.

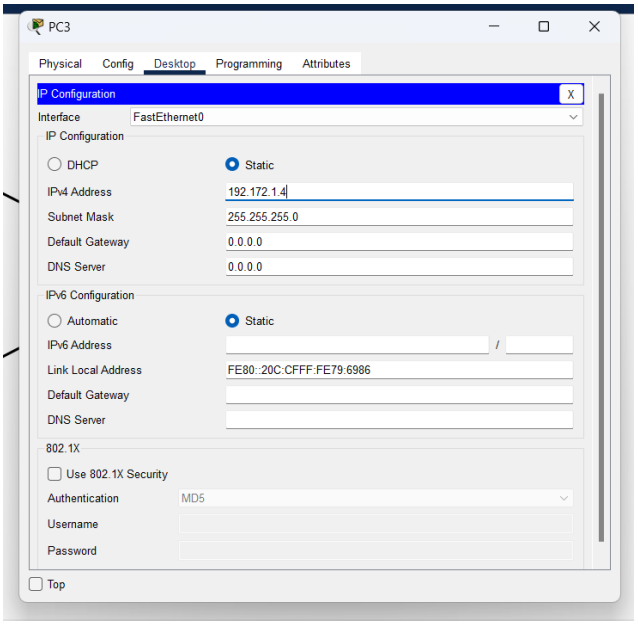


Then we assign IP Addresses to all 4 PCs.

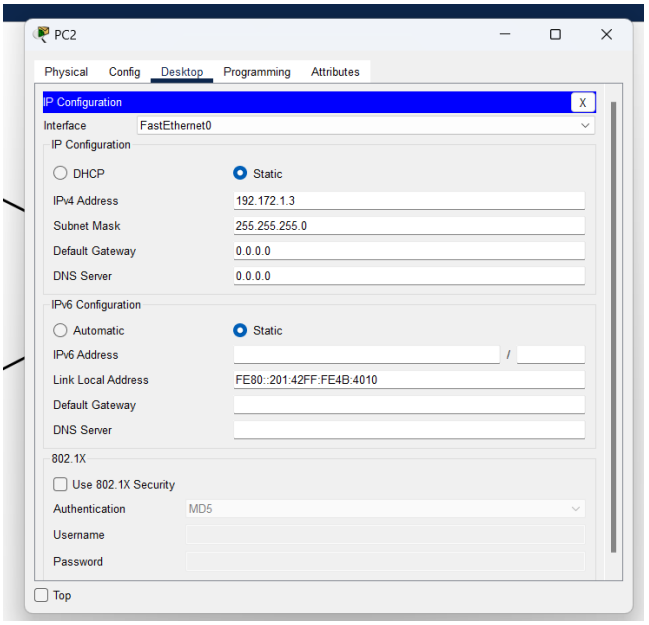
PC1



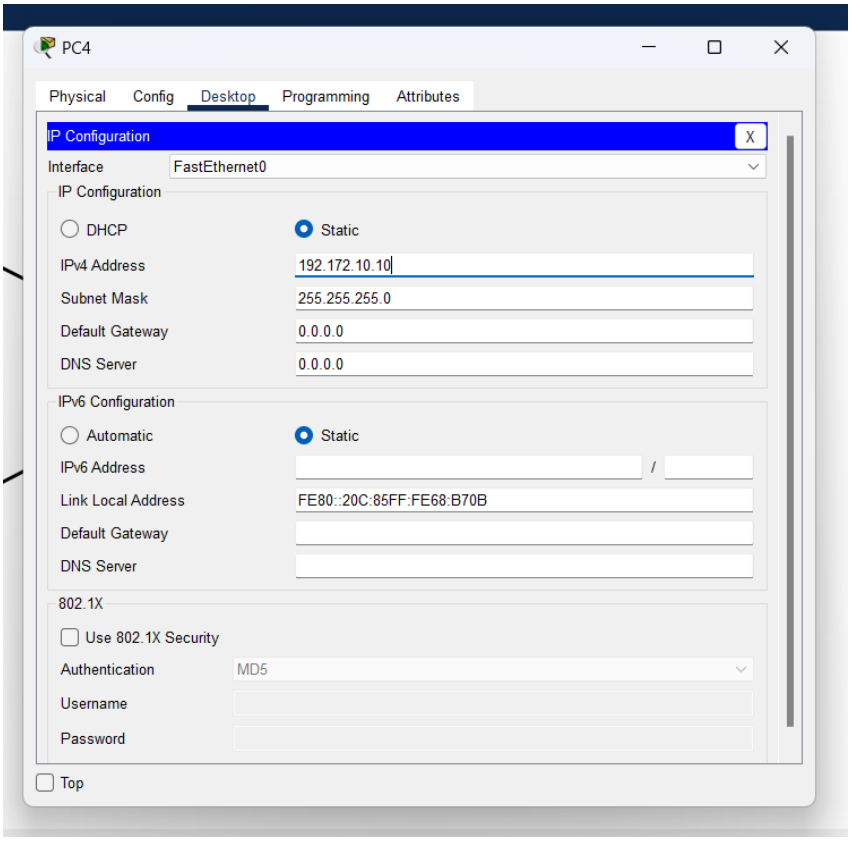
PC2



PC3



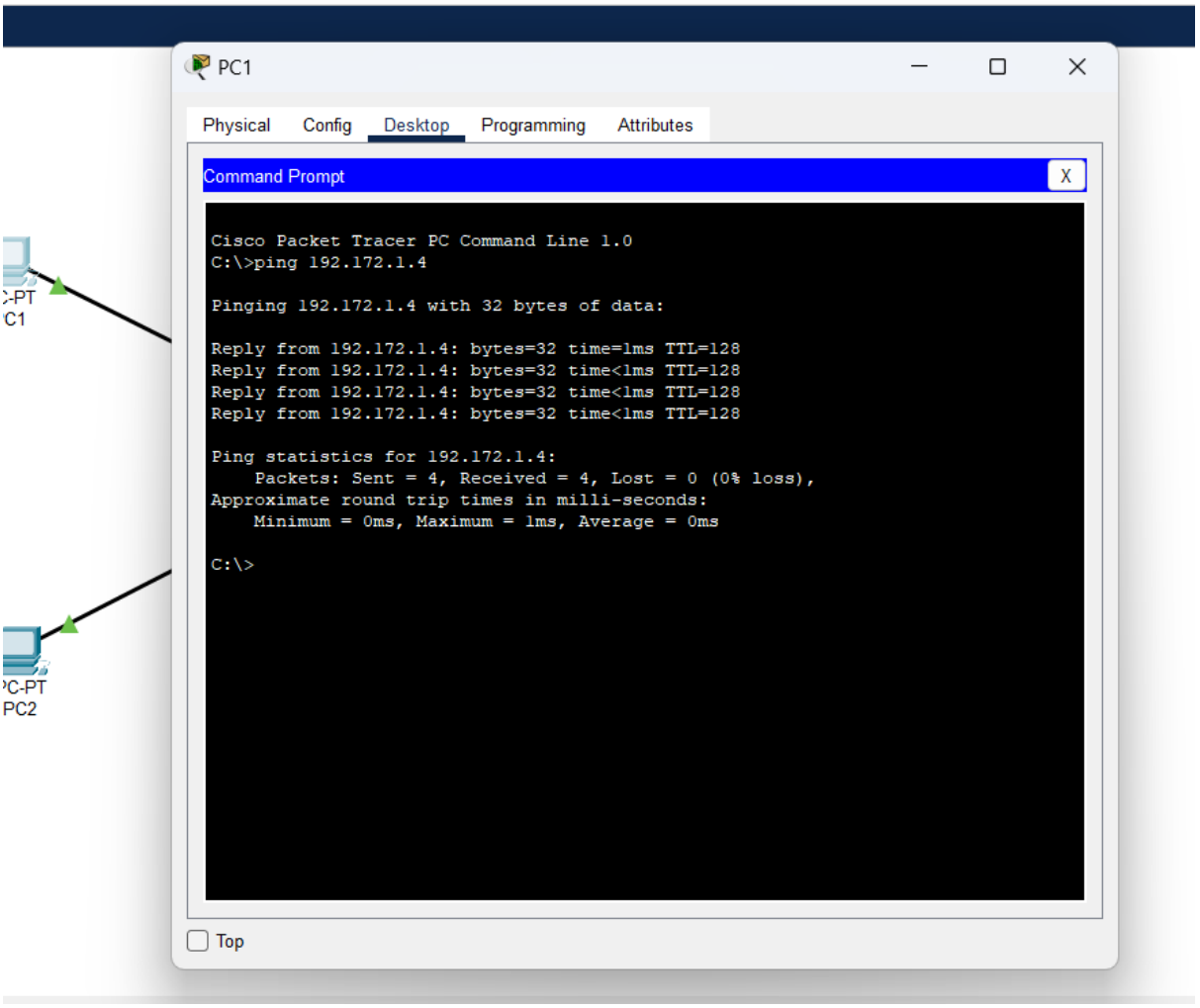
PC4



We have created the network and assigned the IP Addresses now we need to verify the connectivity.

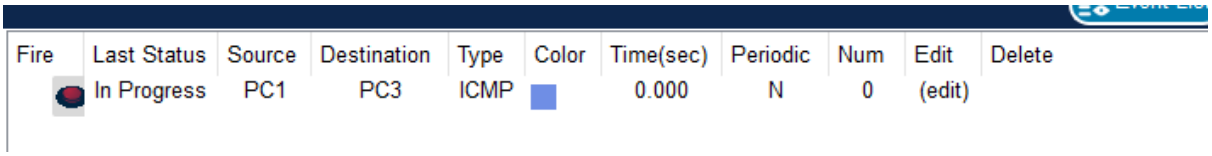
2. Verification

For this we try sending packets from PC1 to PC3 so we openits command prompt and use ping command.

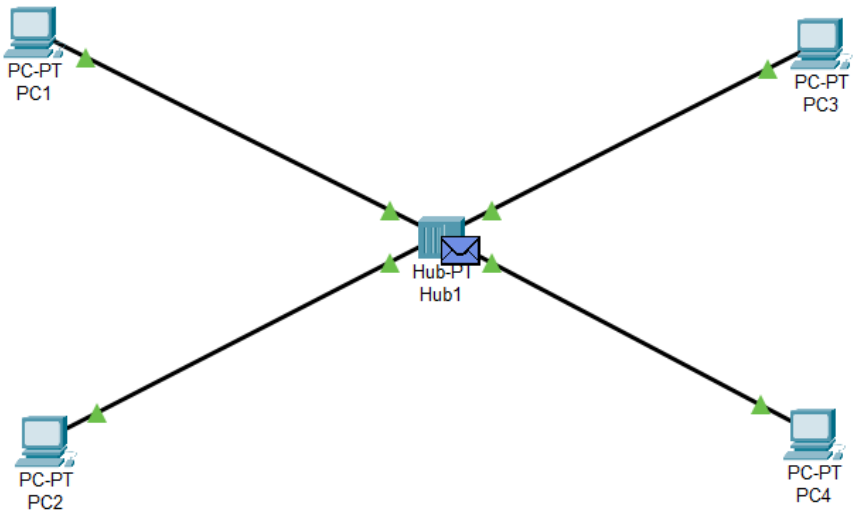


We see that package sent = 4 , received = 4 and lost = 0
So this means the message was sent and received properly.

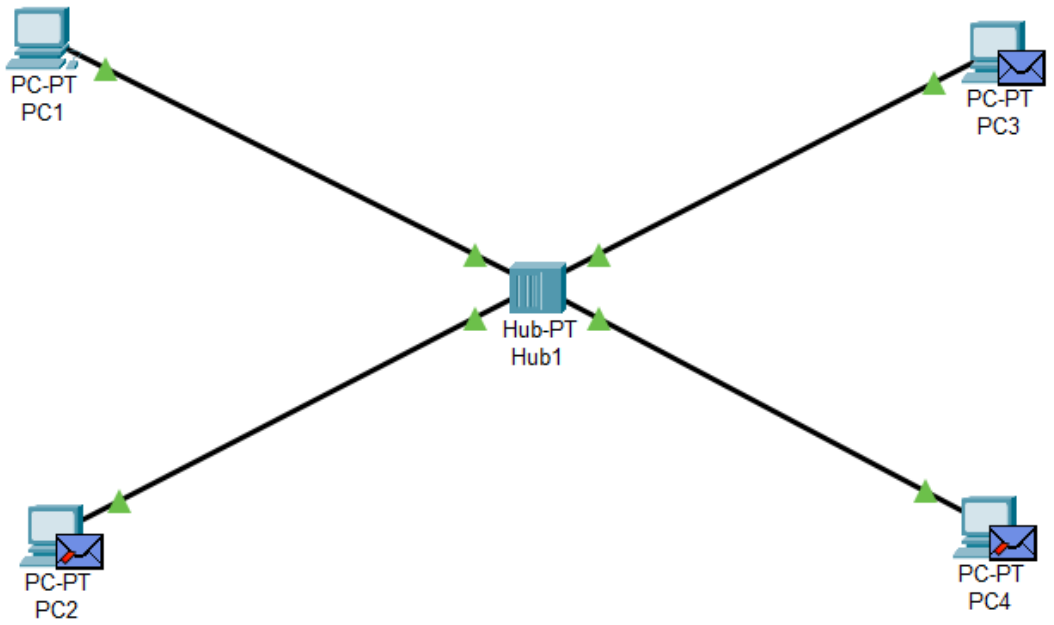
Now we start the simulation with message sent from PC1 to PC3.



Then we see the first message is sent to the hub then to PC3

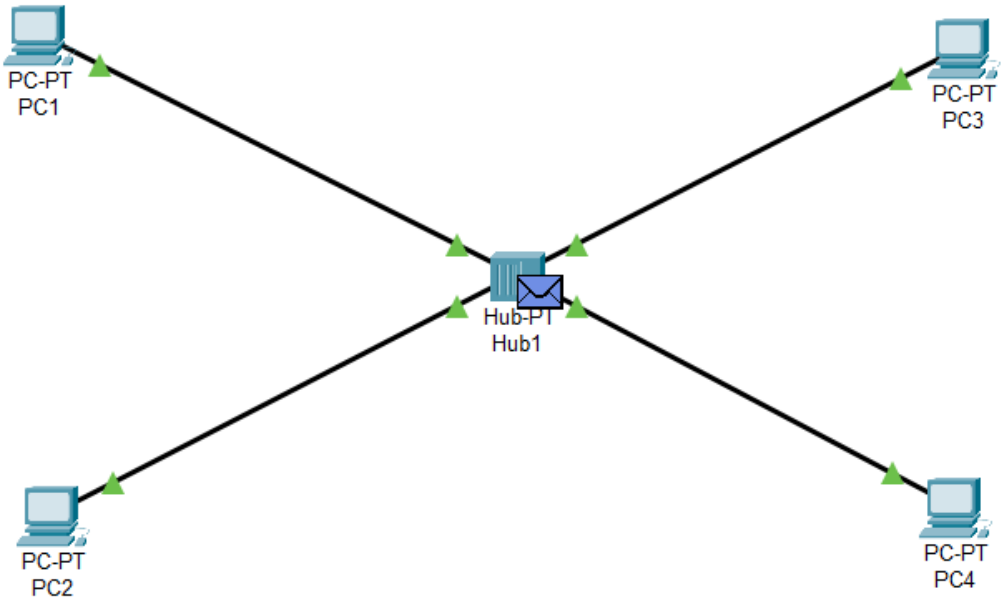


Then

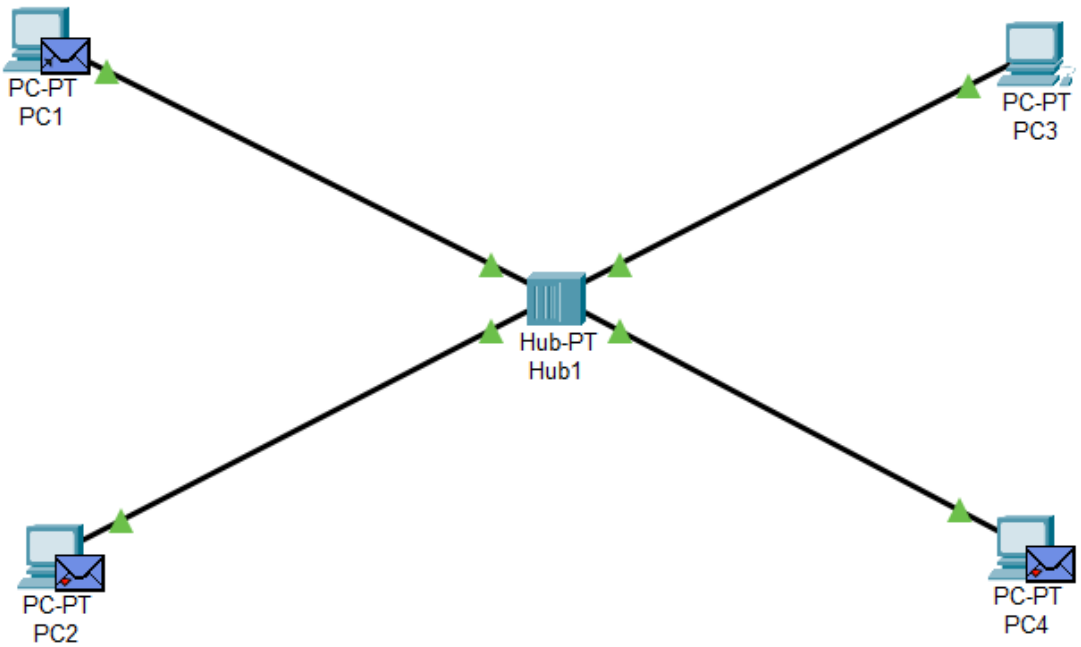


We see that message is sent to PC3 but because it is a hub it also sents it to PC2 and PC4 to which we did not intend to send. That's why it shows red cross over there.

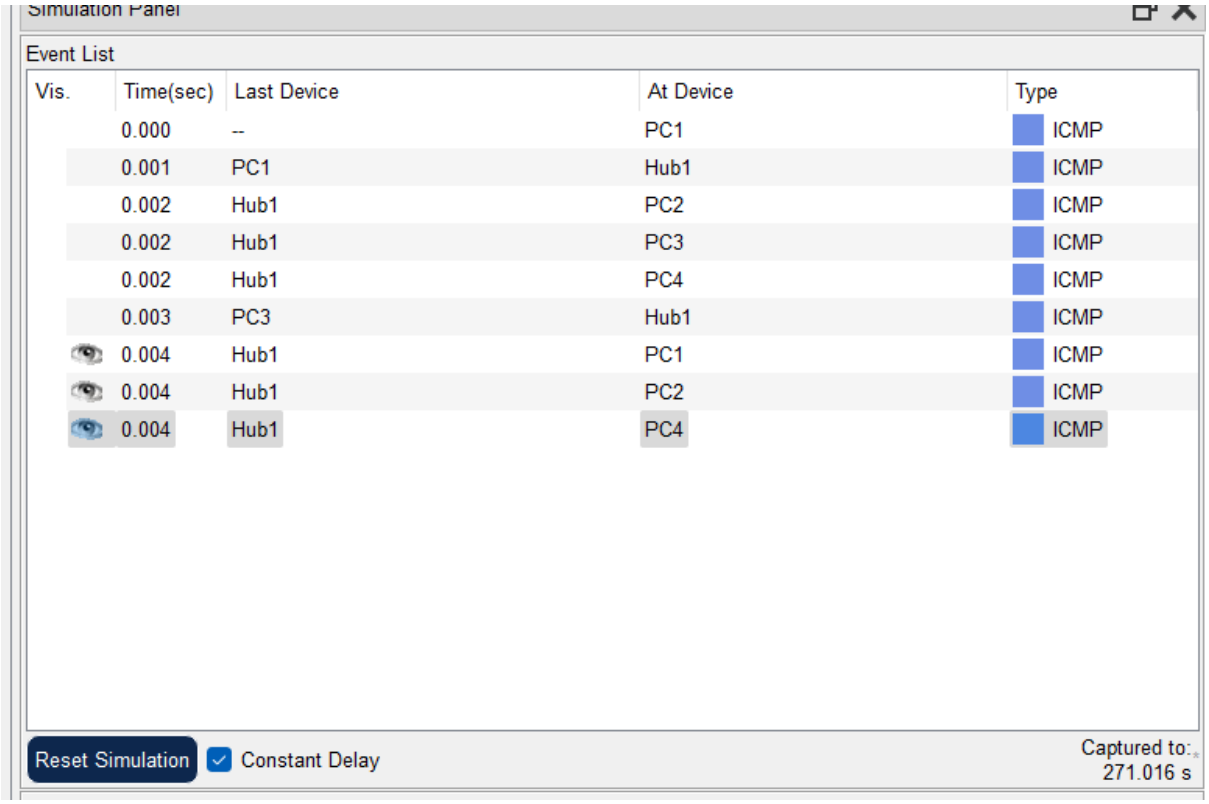
Now PC3 will reply and same thing will happen again and we will again see that PC2 and PC4 are discarding the message because it was not intended for them.



Then

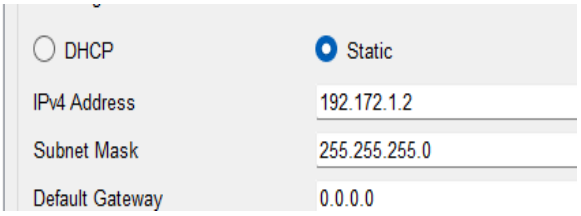


SIMULATION

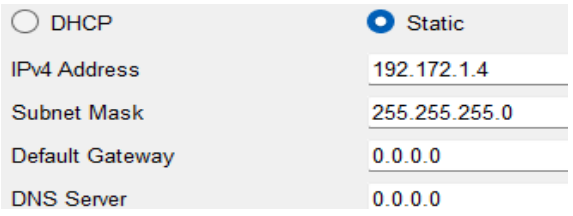


3. subnet masks of the hosts.

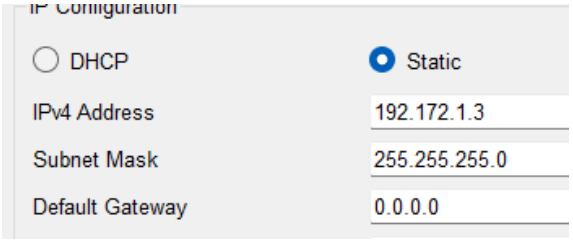
PC1



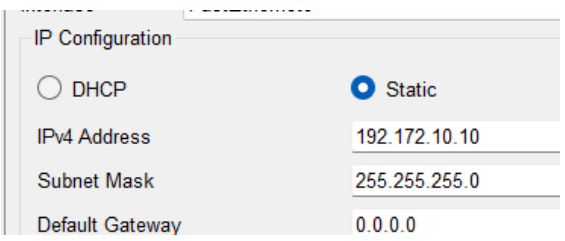
PC3



PC2



PC4



Addressing Table:

Device	Interface	IP Address	Subnet Mask
PC1	NIC	192.172.1.2	255.255.255.0
PC2	NIC	192.172.1.3	255.255.255.0
PC3	NIC	192.172.1.4	255.255.255.0
PC4	NIC	192.172.10.10	255.255.255.0