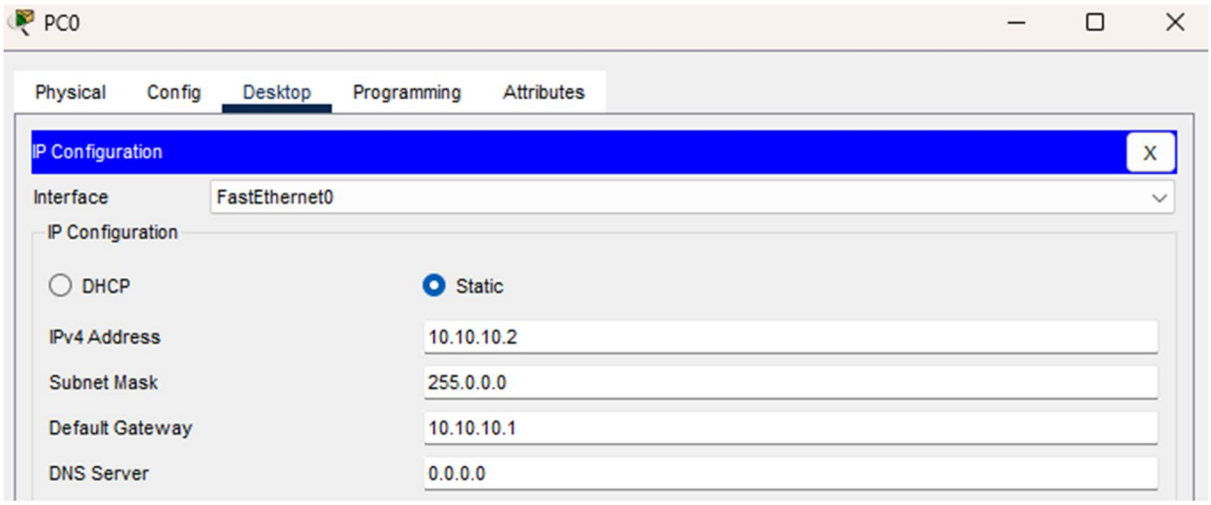
Implementation :-

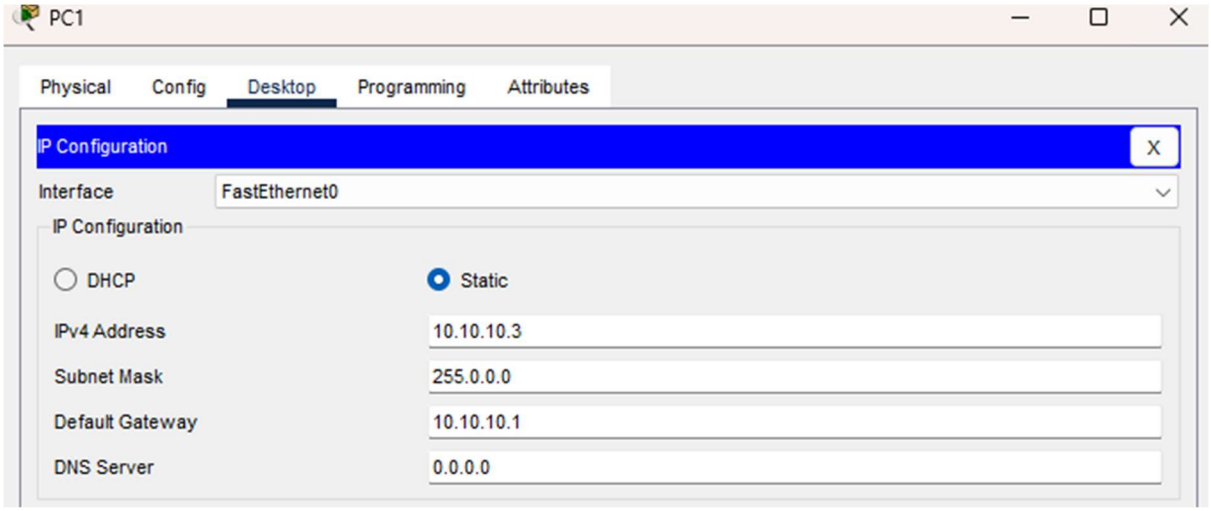
We configure the above network using the following IP addresses :-

Host	Interface	IP address	Network Address	Wildcard Mask
Router0	G0/0	10.10.10.1	10.0.0.0	0.255.255.255
	S0/1/0	40.40.40.1	40.0.0.0	0.255.255.255
Router1	G0/0	20.20.20.1	20.0.0.0	0.255.255.255
	S0/1/0	40.40.40.2	40.0.0.0	0.255.255.255
	S0/1/1	50.50.50.1	50.0.0.0	0.255.255.255
Router2	G0/0	30.30.30.1	30.0.0.0	0.255.255.255
	S0/1/0	50.50.50.2	50.0.0.0	0.255.255.255
PC0	FastEthernet0	10.10.10.2	10.0.0.0	0.255.255.255
PC1	FastEthernet0	10.10.10.3	10.0.0.0	0.255.255.255
PC2	FastEthernet0	10.10.10.4	10.0.0.0	0.255.255.255
PC3	FastEthernet0	20.20.20.2	20.0.0.0	0.255.255.255
PC4	FastEthernet0	20.20.20.3	20.0.0.0	0.255.255.255
PC5	FastEthernet0	20.20.20.4	20.0.0.0	0.255.255.255
PC6	FastEthernet0	30.30.30.2	30.0.0.0	0.255.255.255
PC7	FastEthernet0	30.30.30.3	30.0.0.0	0.255.255.255
PC8	FastEthernet0	30.30.30.4	30.0.0.0	0.255.255.255

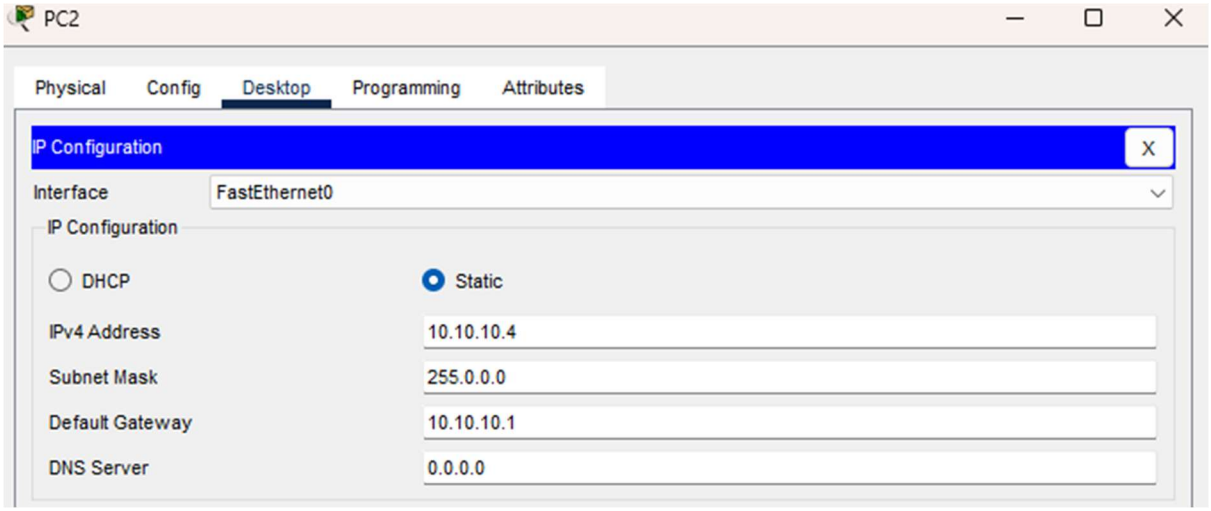
- **Configuring PC0:**



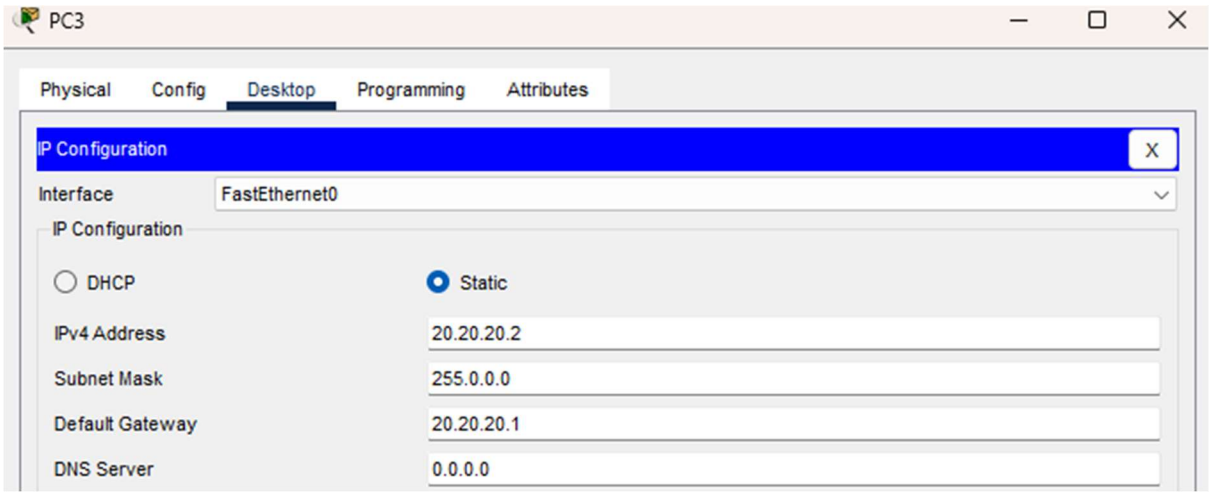
- **Configuring PC1:**



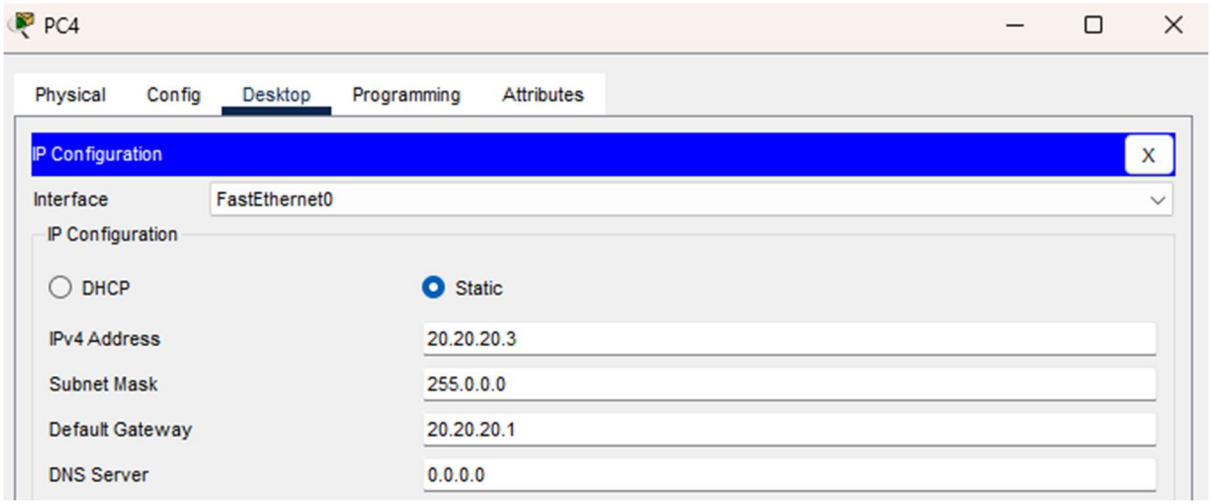
- **Configuring PC2:**



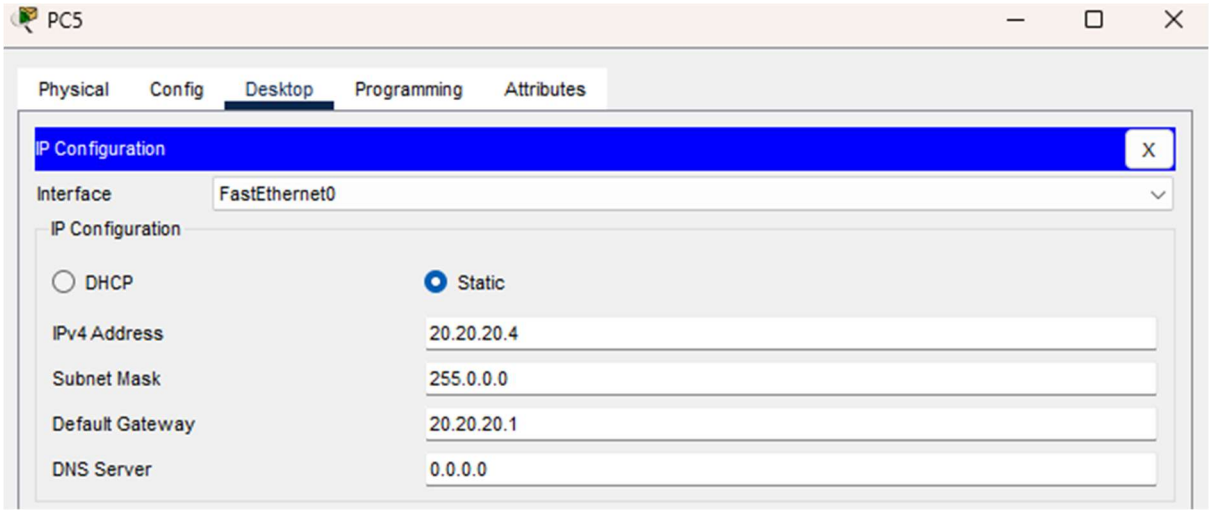
- **Configuring PC3:**



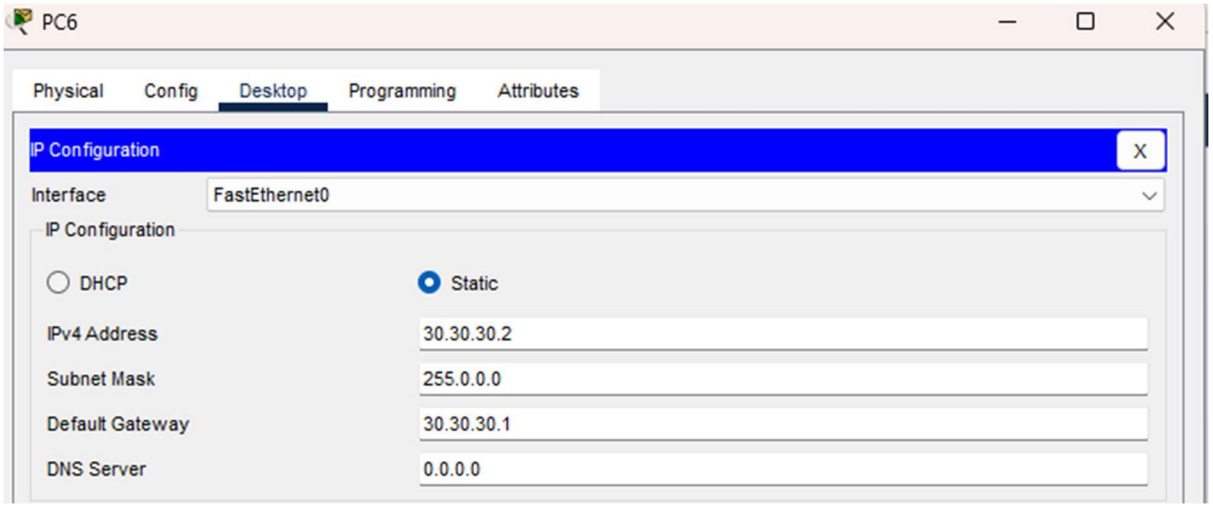
- **Configuring PC4:**



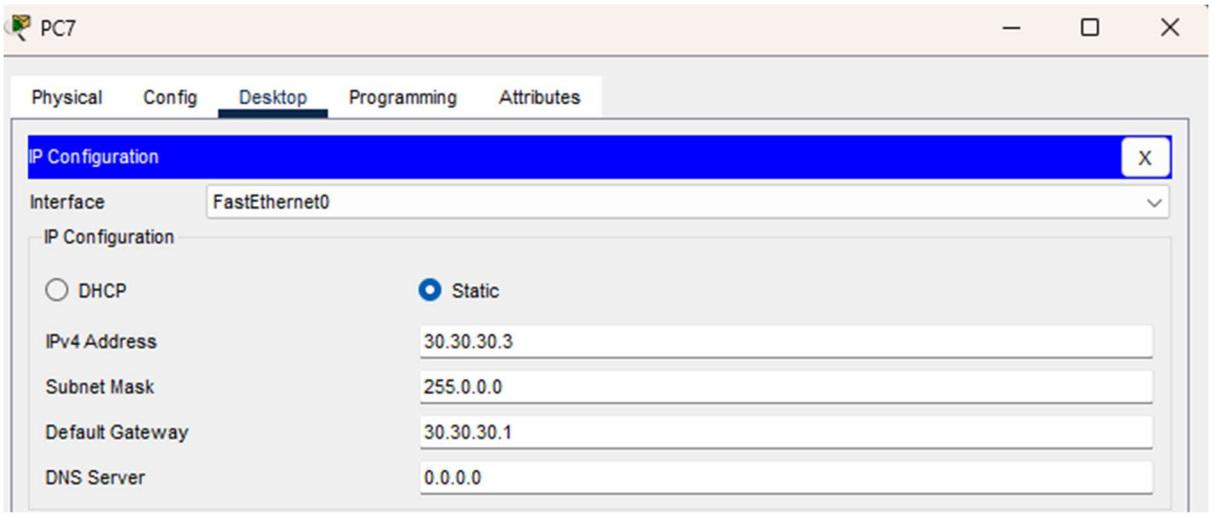
- **Configuring PC5:**



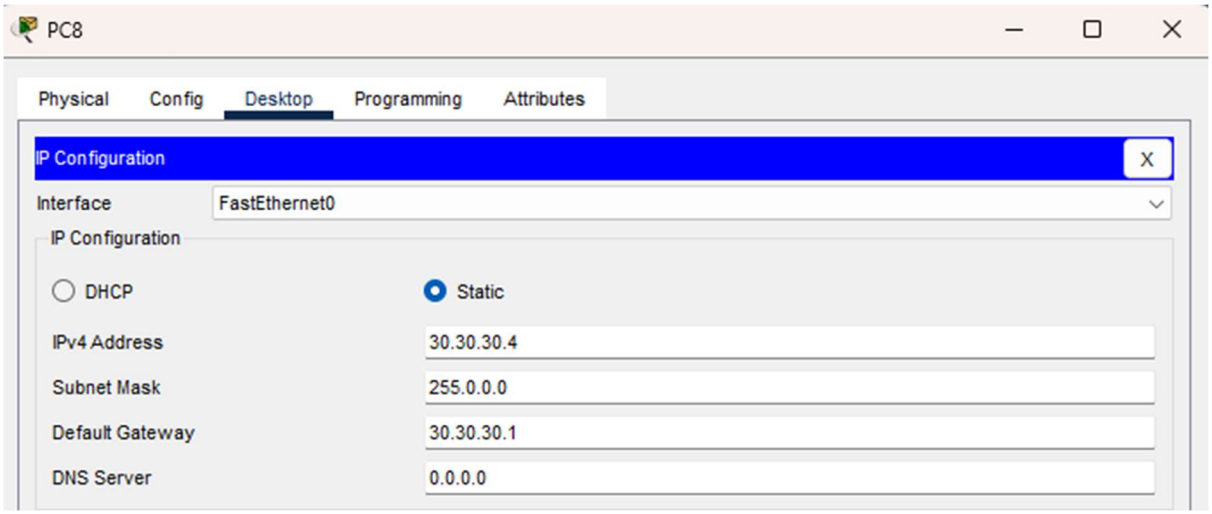
- **Configuring PC6:**



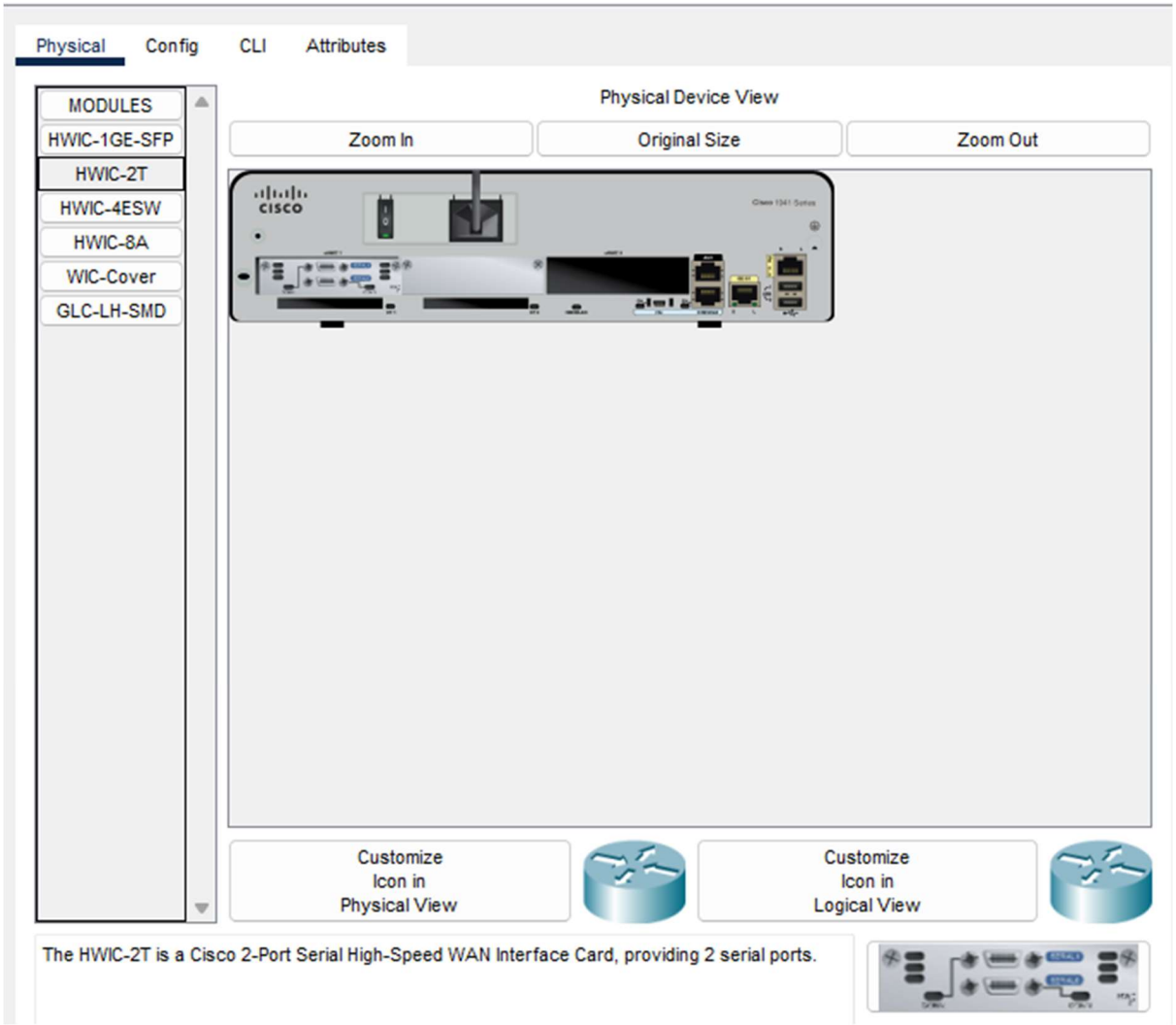
- **Configuring PC7:**



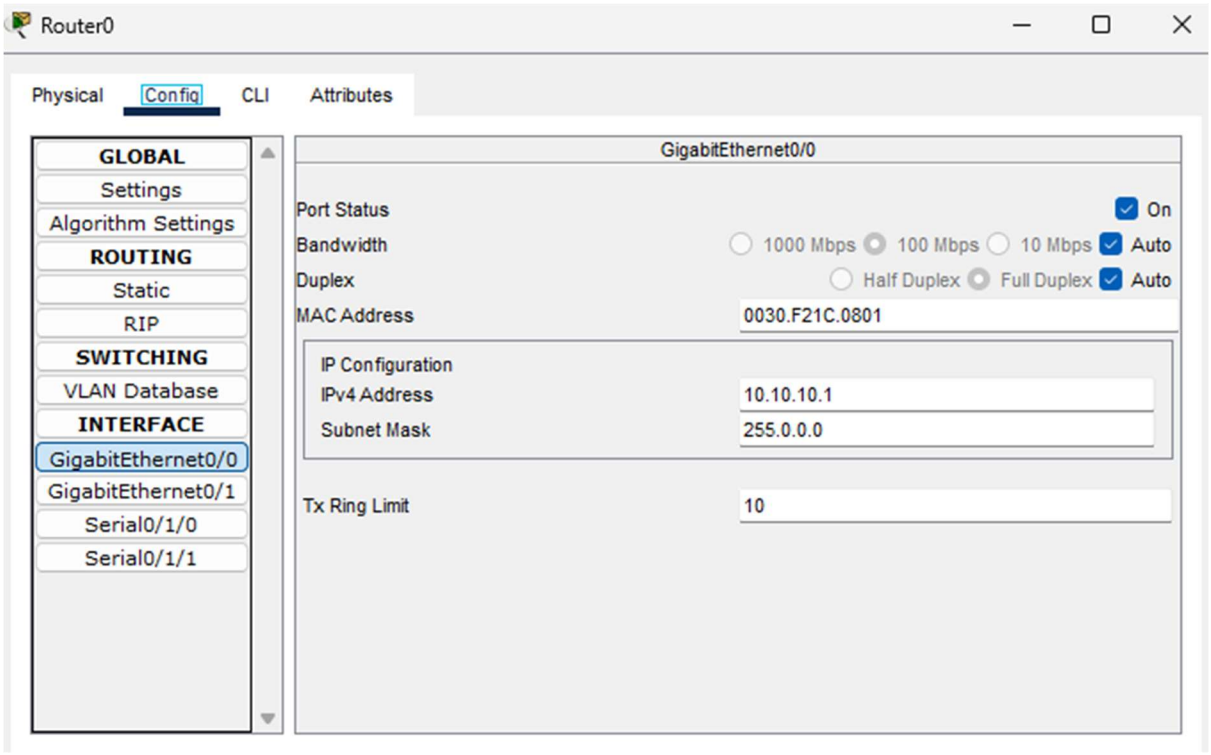
- **Configuring PC8:**



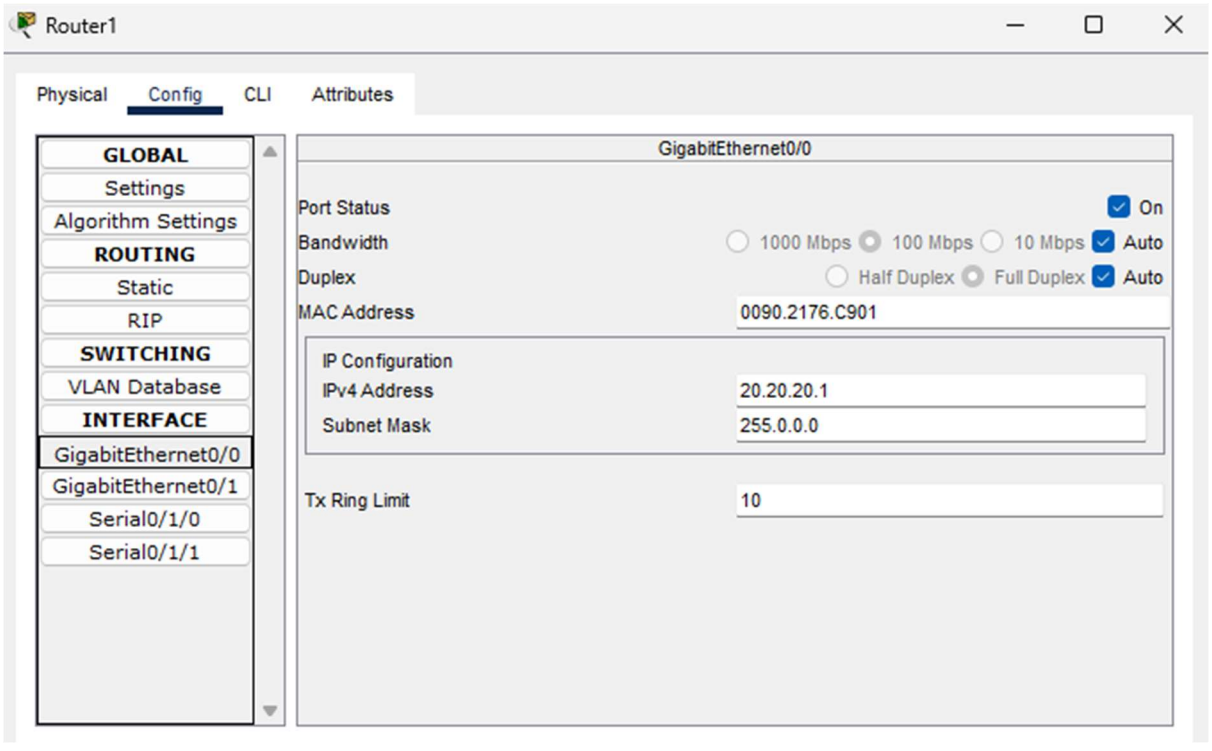
- **Set Serial Interface (HWIC-2T Port) For All Routers:-**



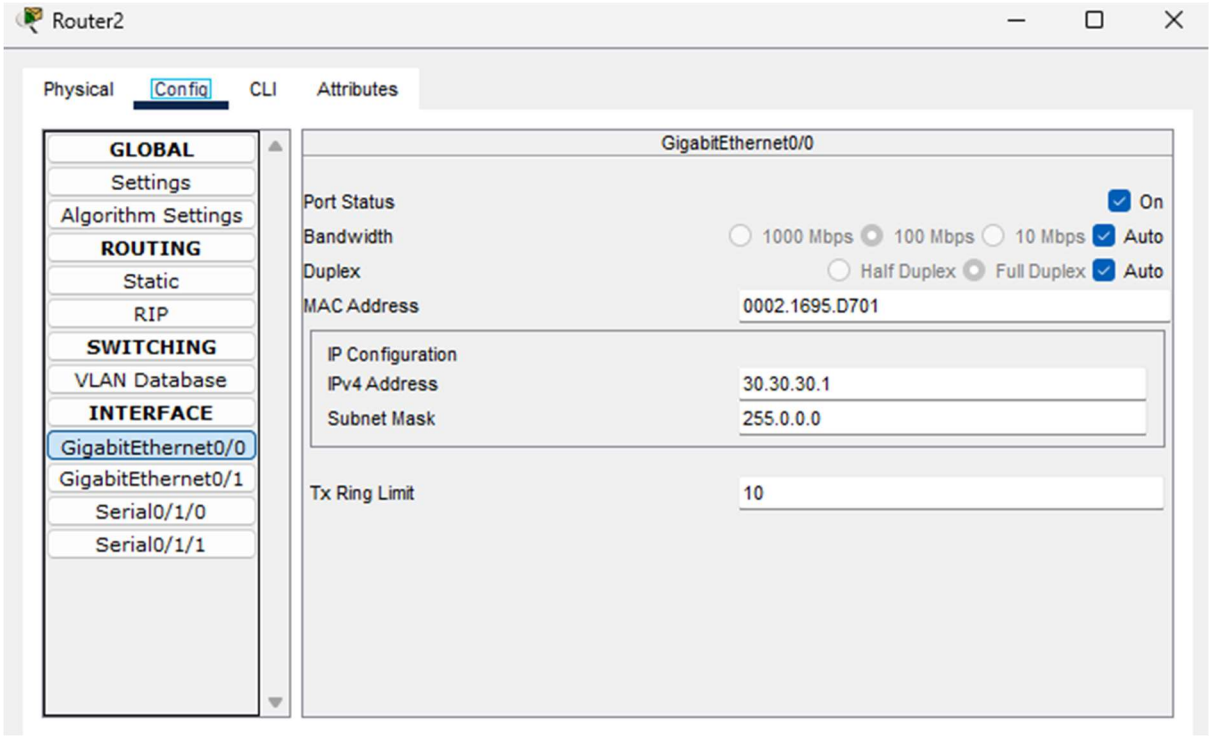
- **Router0 Configuration With PC0,PC1,PC2:**



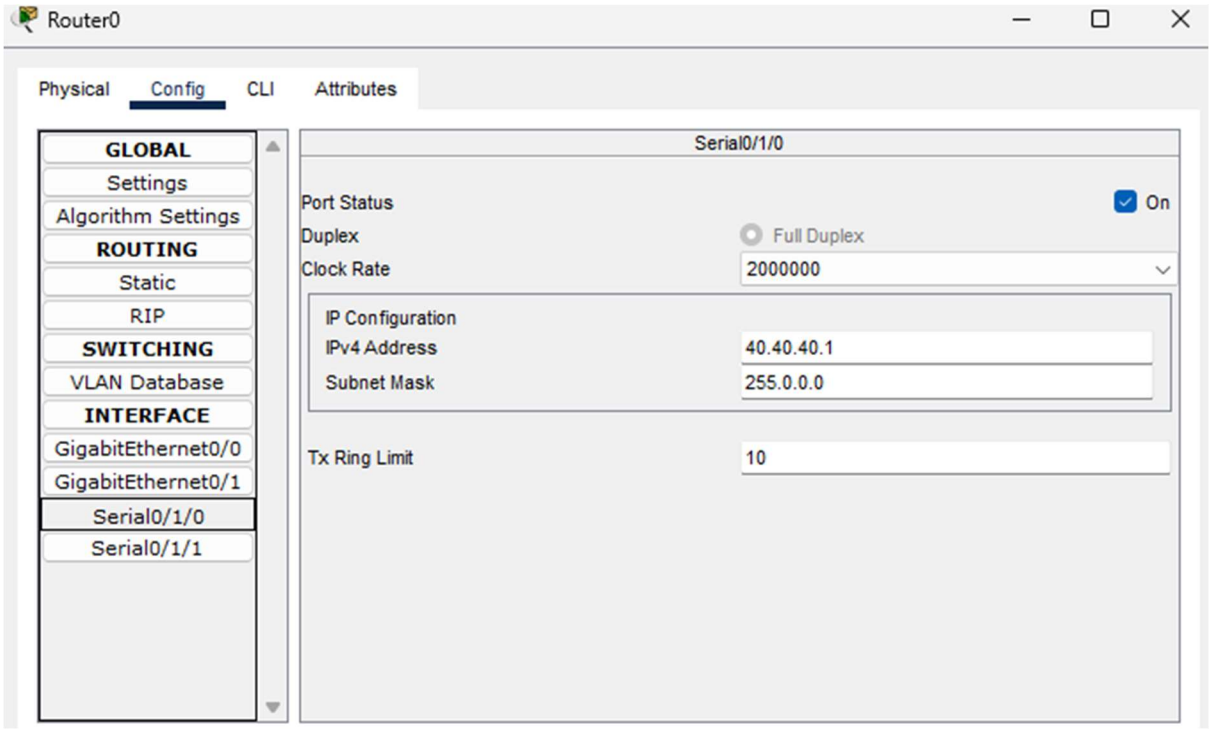
- **Router1 Configuration With PC3,PC4,PC5:**



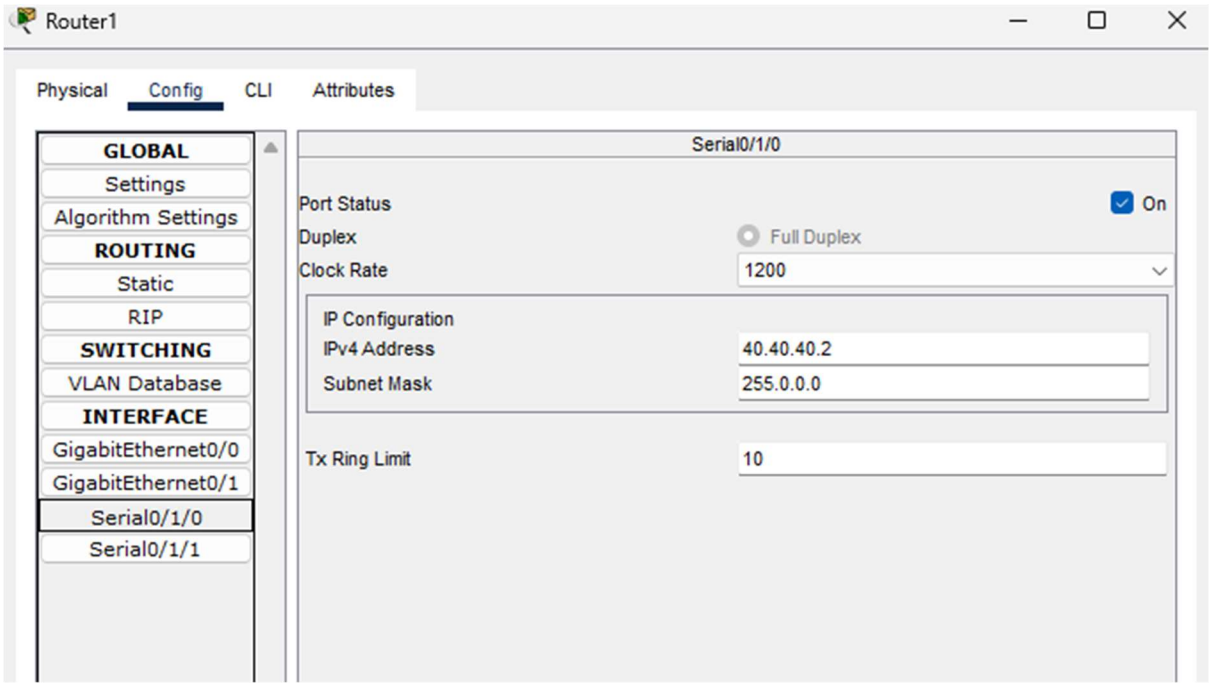
- **Router2 Configuration With PC6,PC7,PC8:**



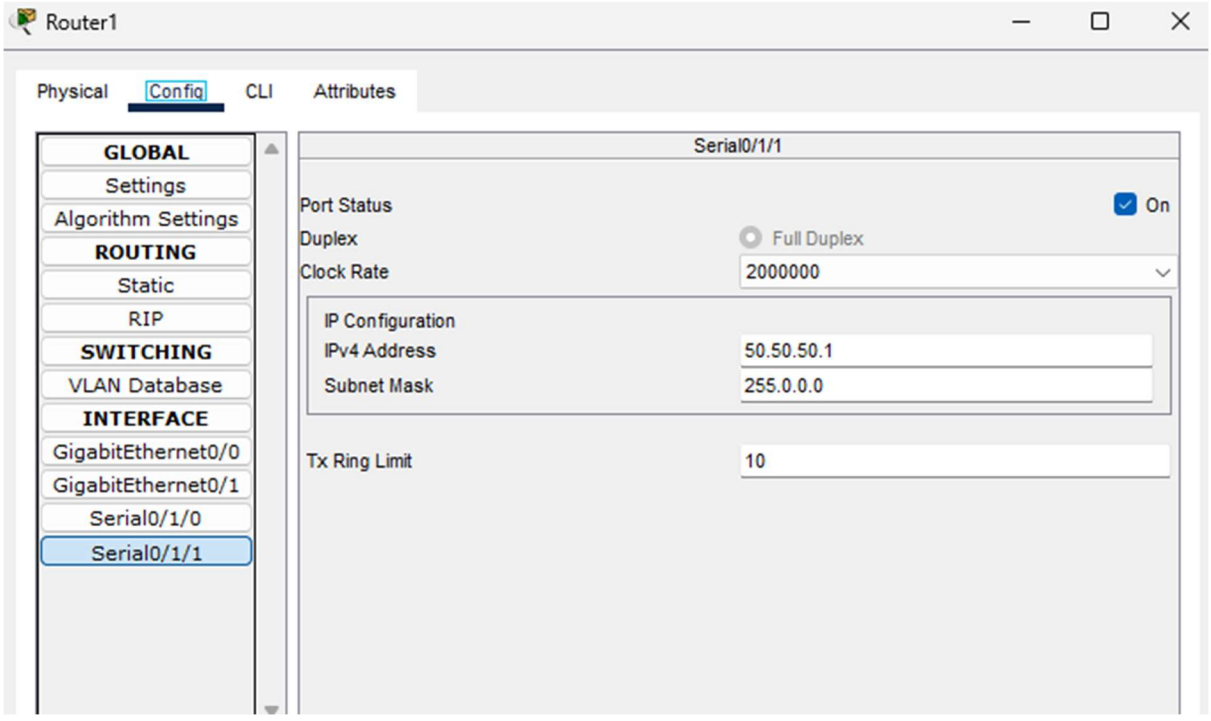
- **Router0 Configuration With Router1:**



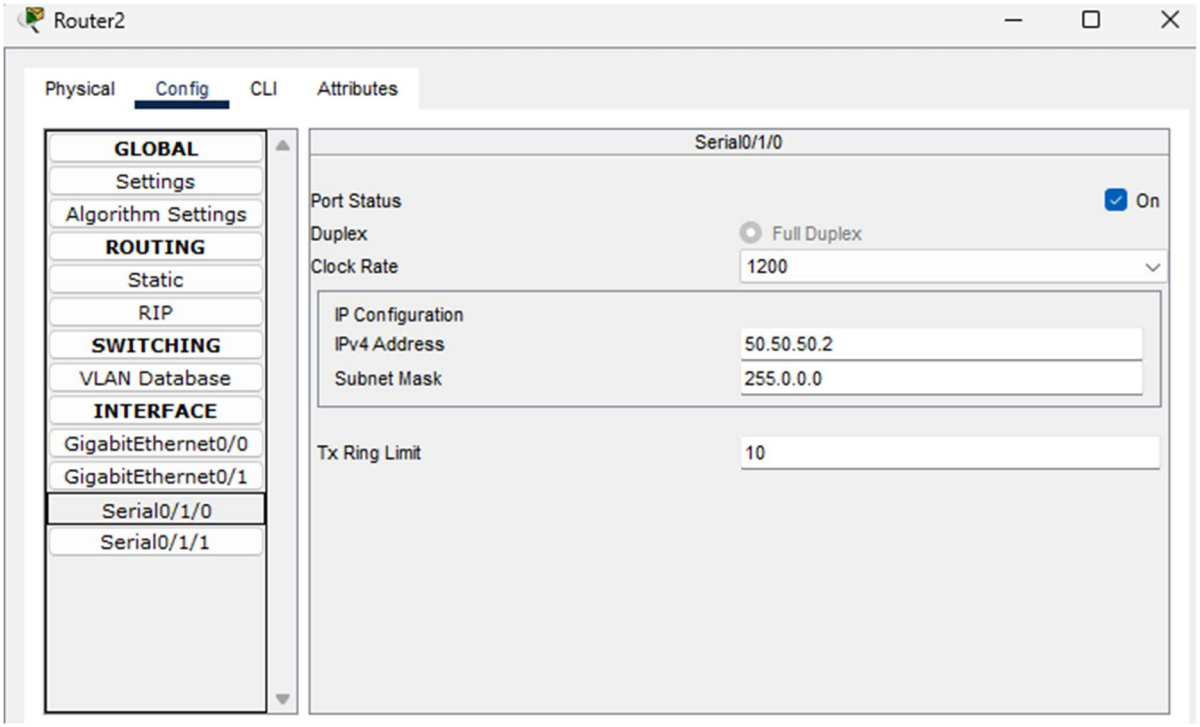
- **Router1 Configuration With Router0:**



- **Router1 Configuration With Router2:**



- **Router2 Configuration With Router1:**



- **<u>Configuring Router0 for OSPF (using the CLI mode)</u>**

Router(config)#
Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 20.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 30.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 40.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 50.0.0.0 255. 255. 255.255 area 0
Router(config-router)#exit

- **<u>Configuring Router1 for OSPF (using the CLI mode)</u>**

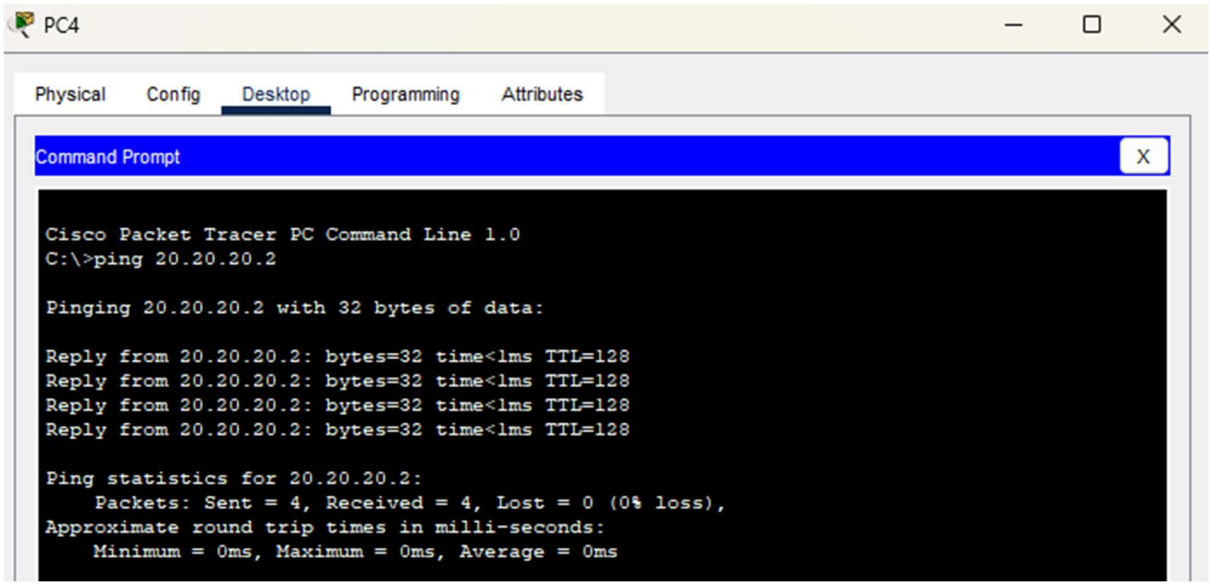
Router(config)#
Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 20.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 30.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 40.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 50.0.0.0 255. 255. 255.255 area 0
Router(config-router)#exit

- **<u>Configuring Router2 for OSPF (using the CLI mode)</u>**

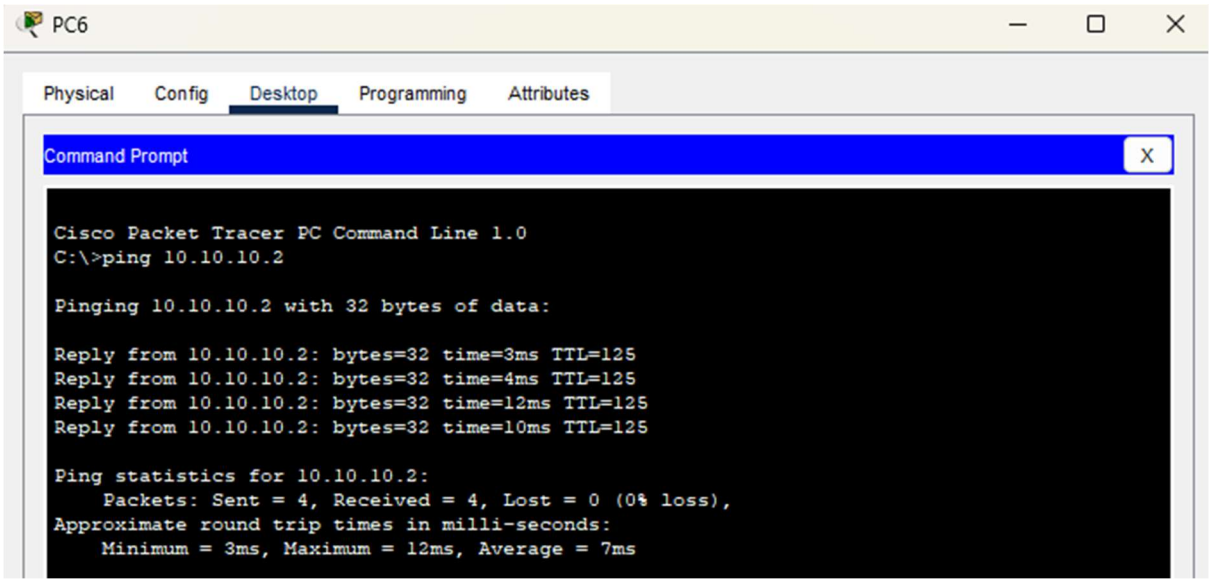
Router(config)#
Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 20.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 30.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 40.0.0.0 255. 255. 255.255 area 0
Router(config-router)# network 50.0.0.0 255. 255. 255.255 area 0
Router(config-router)#exit

- **Checking the connectivity by using the ping command**

i) Pinging PC3 (IP address 20.20.20.2) from PC4



ii) Pinging PC0 (IP address 10.10.10.2) from PC6



Result:-

Hence the OSPF has been studied and verified through the given network.