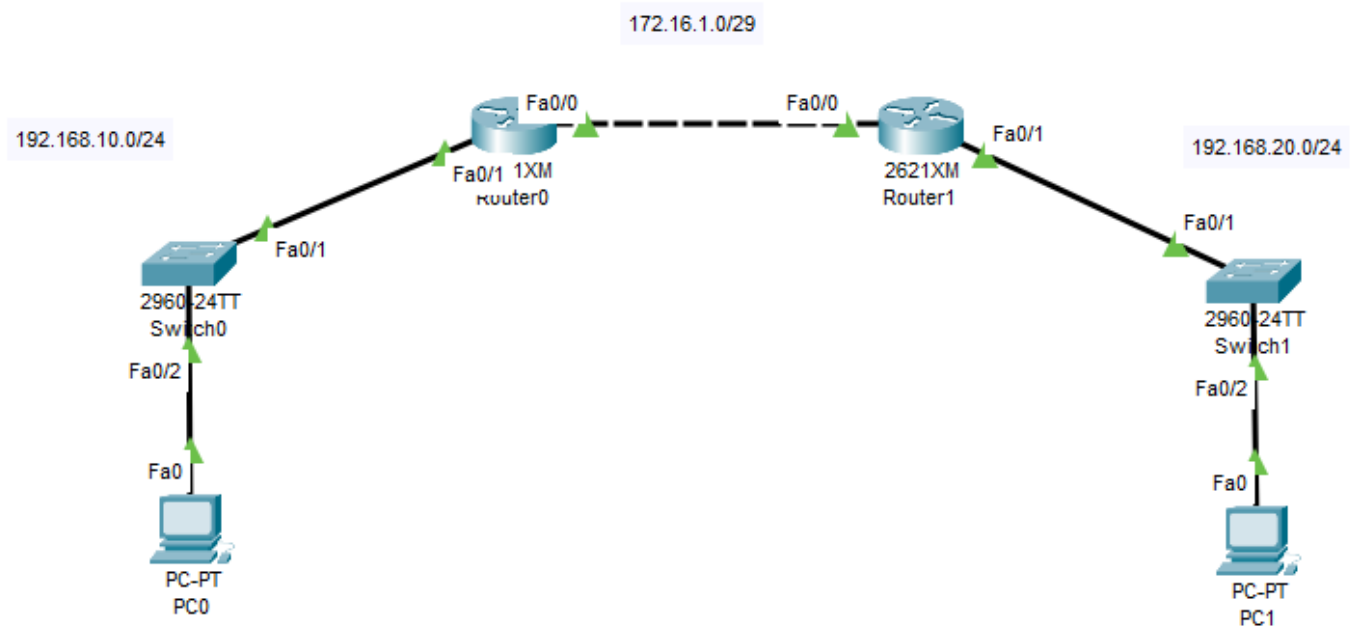
Cisco IOS Router Static Route

Network Topology



Router0 Configuration Commands

```
Router0>enable
Router0#configure terminal
Router0(config)# interface fastEthernet 0/0
Router0(config-if)#ip address 172.16.1.1 255.255.255.248
Router0(config-if)#no shutdown
Router0(config-if)#interface fastEthernet 0/1
Router0(config-if)#ip address 192.168.10.1 255.255.255.0
Router0(config-if)#no shutdown
Router0(config-if)#exit
Router0(config)#ip route 192.168.20.0 255.255.255.0 172.16.1.2
Router0(config)#exit
```

Router0#show ip interface brief

```
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        172.16.1.1      YES manual up                    up
FastEthernet0/1        192.168.10.1    YES manual up                    up
```

Router0#show ip route

```
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.16.0.0/29 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, FastEthernet0/0
C    192.168.10.0/24 is directly connected, FastEthernet0/1
S    192.168.20.0/24 [1/0] via 172.16.1.2
```

Router1 Configuration Commands

Router1>enable
Router1#configure terminal
Router1(config)# interface fastEthernet 0/0
Router1(config-if)#ip address 172.16.1.2 255.255.255.248
Router1(config-if)#no shutdown
Router1(config-if)#interface fastEthernet 0/1
Router1(config-if)#ip address 192.168.20.1 255.255.255.0
Router1(config-if)#no shutdown
Router1(config-if)#exit
Router1(config)#ip route 192.168.10.0 255.255.255.0 172.16.1.1
Router1(config)#exit
Router1#show ip interface brief

```
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        172.16.1.2      YES manual up                    up
FastEthernet0/1        192.168.20.1    YES manual up                    up
```

Router1#show ip route

```
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     172.16.0.0/29 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, FastEthernet0/0
S    192.168.10.0/24 [1/0] via 172.16.1.1
C    192.168.20.0/24 is directly connected, FastEthernet0/1
```

Switch0 Configuration Commands

Switch0>enable
Switch0#configure terminal
Switch0(config)#int vlan1
Switch0(config-if)#ip address 192.168.10.2 255.255.255.0
Switch0(config-if)#ip default-gateway 192.168.10.1
Switch0(config-if)#no shutdown
Switch0(config-if)# exit
Switch0(config)#show interface vlan 1

```
Vlan1 is up, line protocol is up
  Hardware is CPU Interface, address is 0001.4228.66d1 (bia 0001.4228.66d1)
  Internet address is 192.168.10.2/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     1682 packets input, 530955 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicast)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     563859 packets output, 0 bytes, 0 underruns
     0 output errors, 23 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

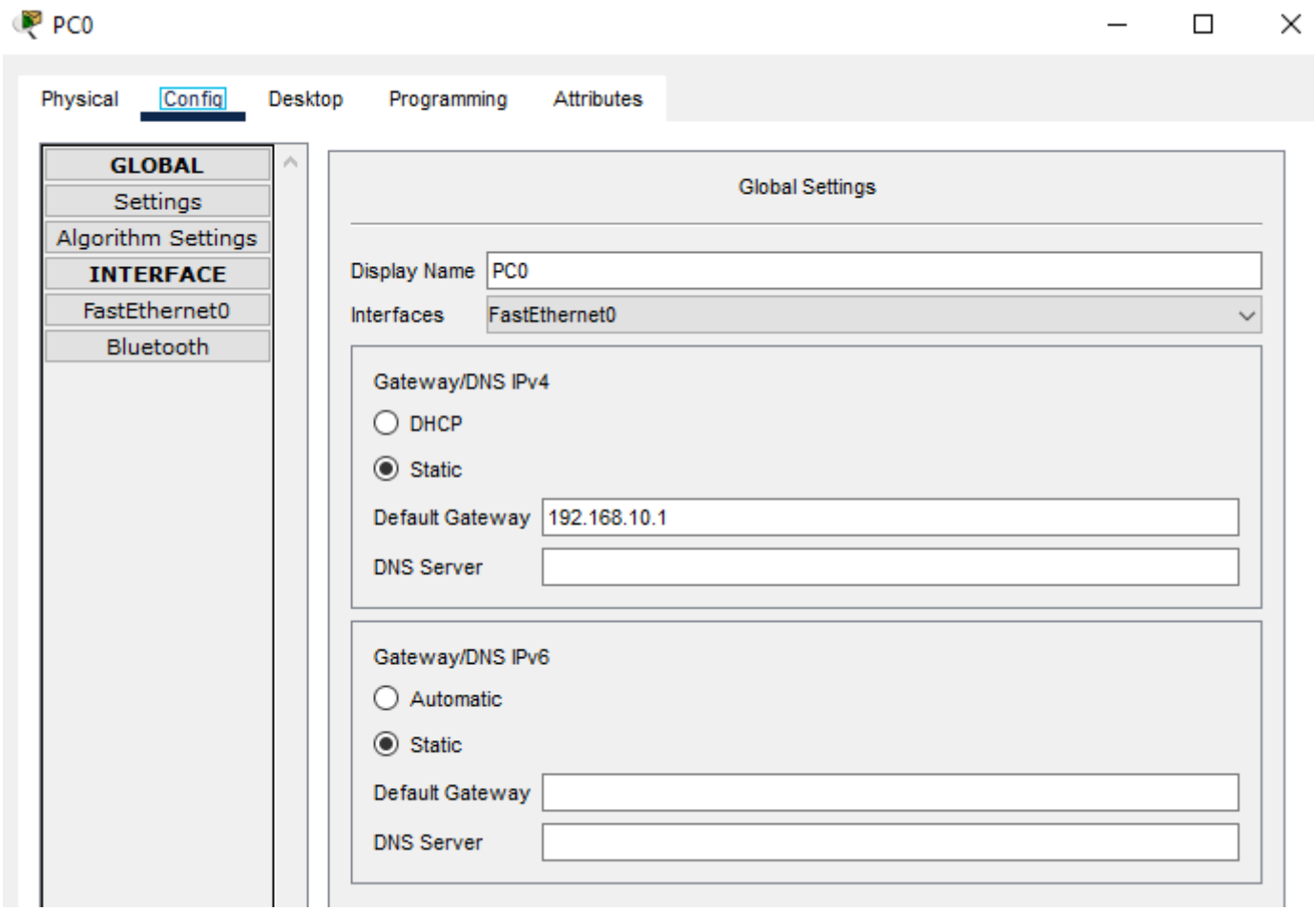
Switch1 Configuration Commands

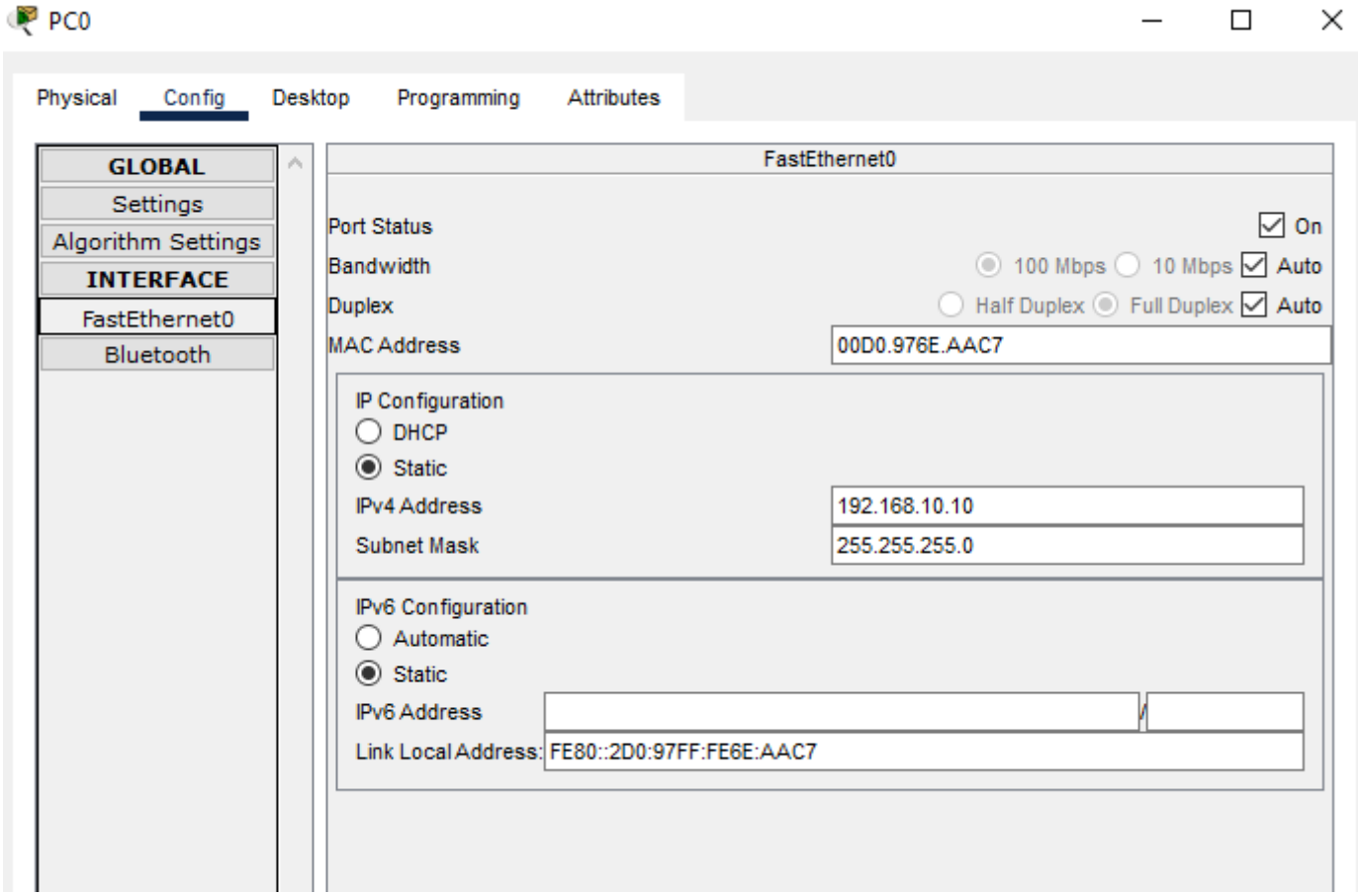
Switch1>enable
Switch1#configure terminal
Switch1(config)#int vlan1
Switch1(config-if)#ip address 192.168.20.2 255.255.255.0
Switch1(config-if)#ip default-gateway 192.168.20.1
Switch1(config-if)#no shutdown
Switch1(config-if)# exit

Switch1(config)#show interface vlan 1

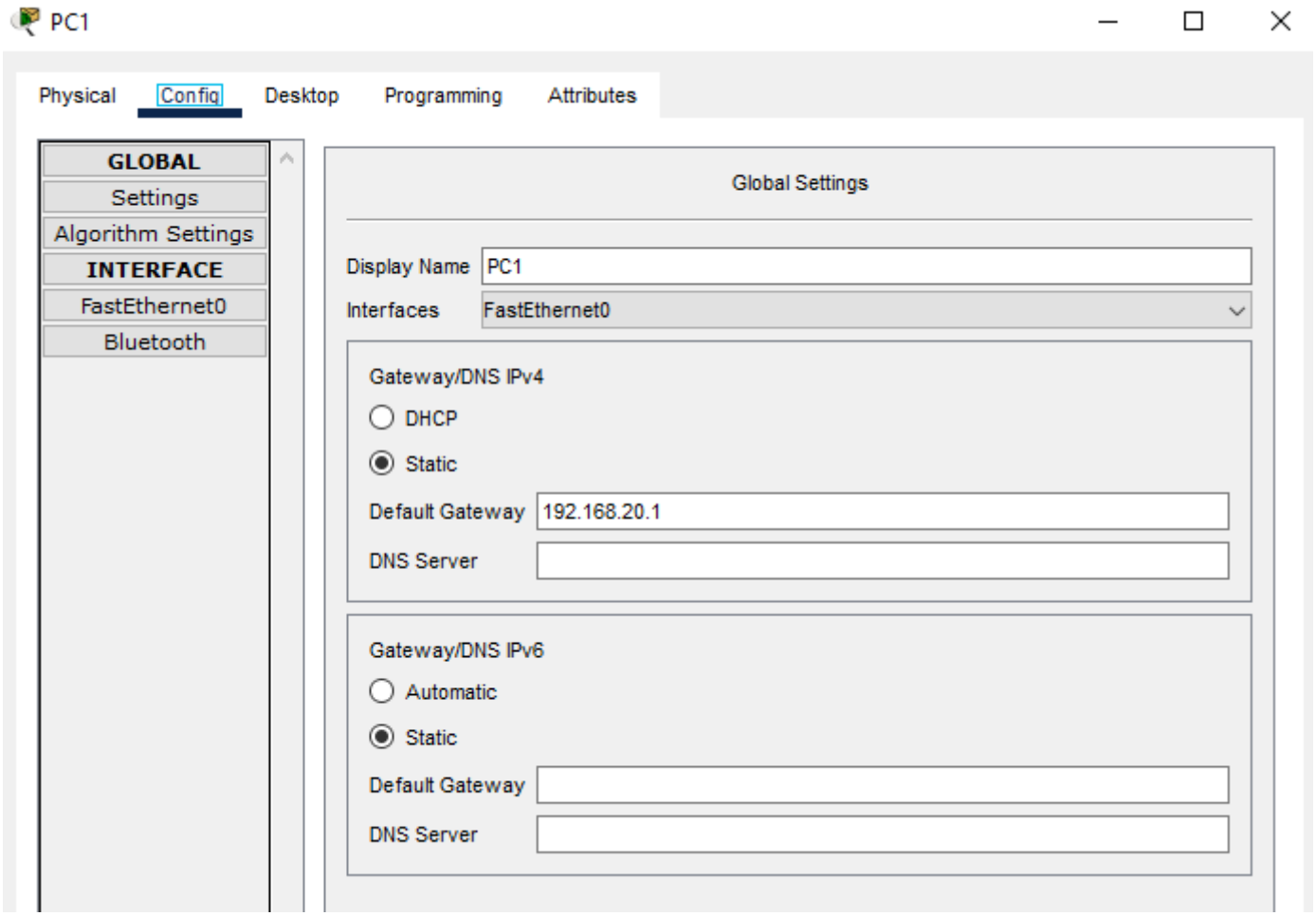
```
Vlan1 is up, line protocol is up
  Hardware is CPU Interface, address is 0090.2bc7.2ad8 (bia 0090.2bc7.2ad8)
  Internet address is 192.168.20.2/24
  MTU 1500 bytes, BW 100000 Kbit, DLY 1000000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 21:40:21, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     1682 packets input, 530955 bytes, 0 no buffer
     Received 0 broadcasts (0 IP multicast)
     0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     563859 packets output, 0 bytes, 0 underruns
     0 output errors, 23 interface resets
     0 output buffer failures, 0 output buffers swapped out
```

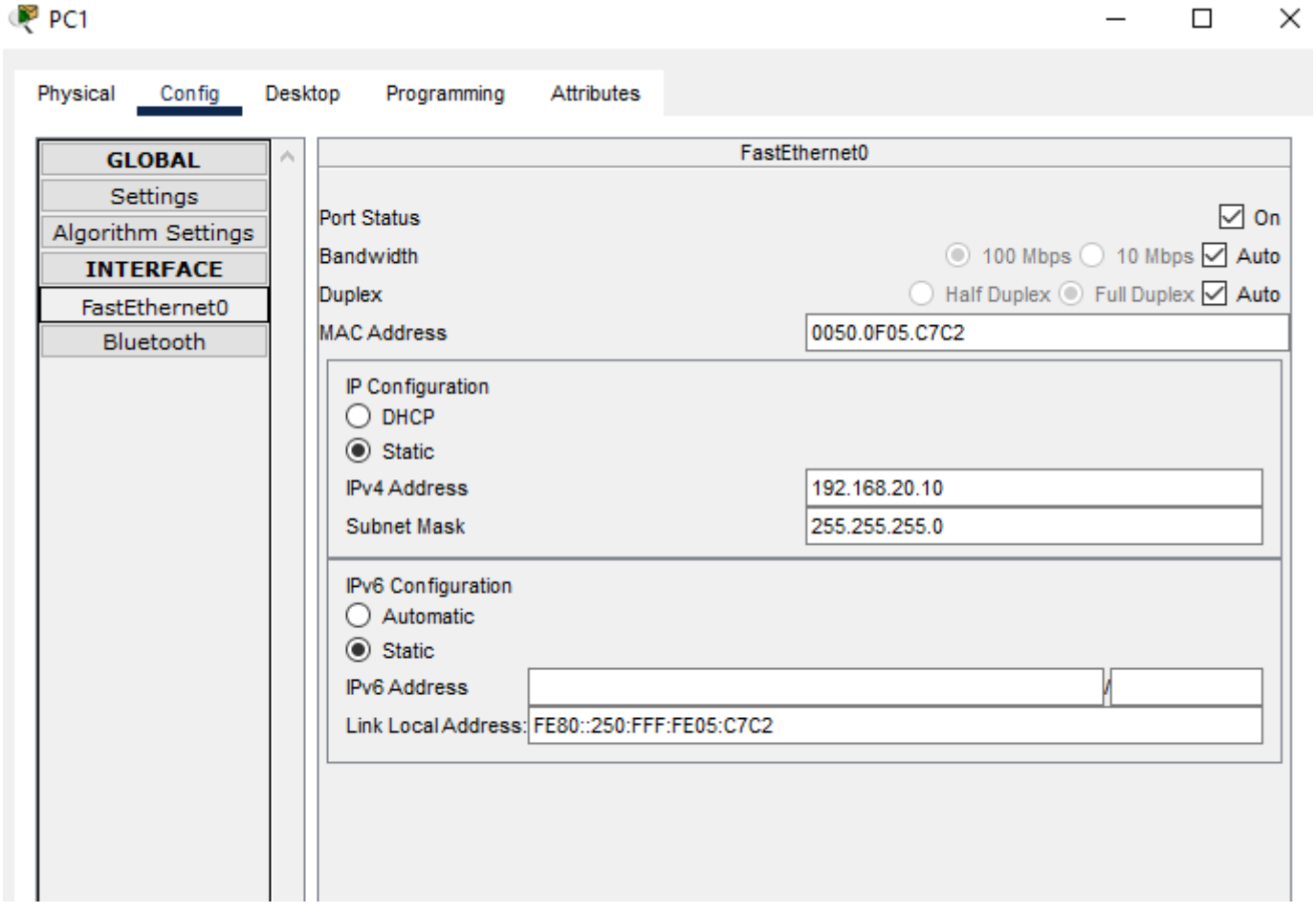
PC0 Configuration



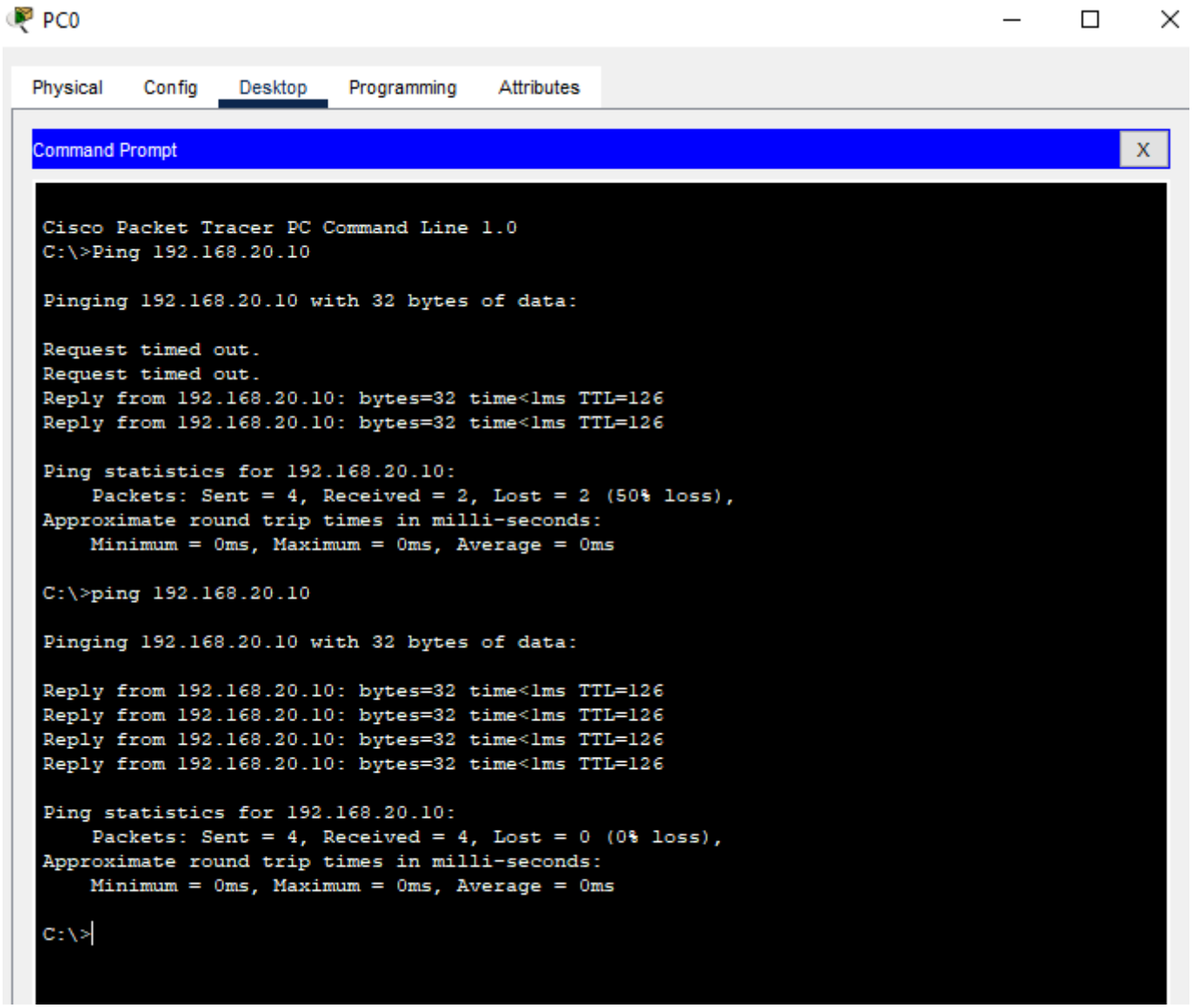


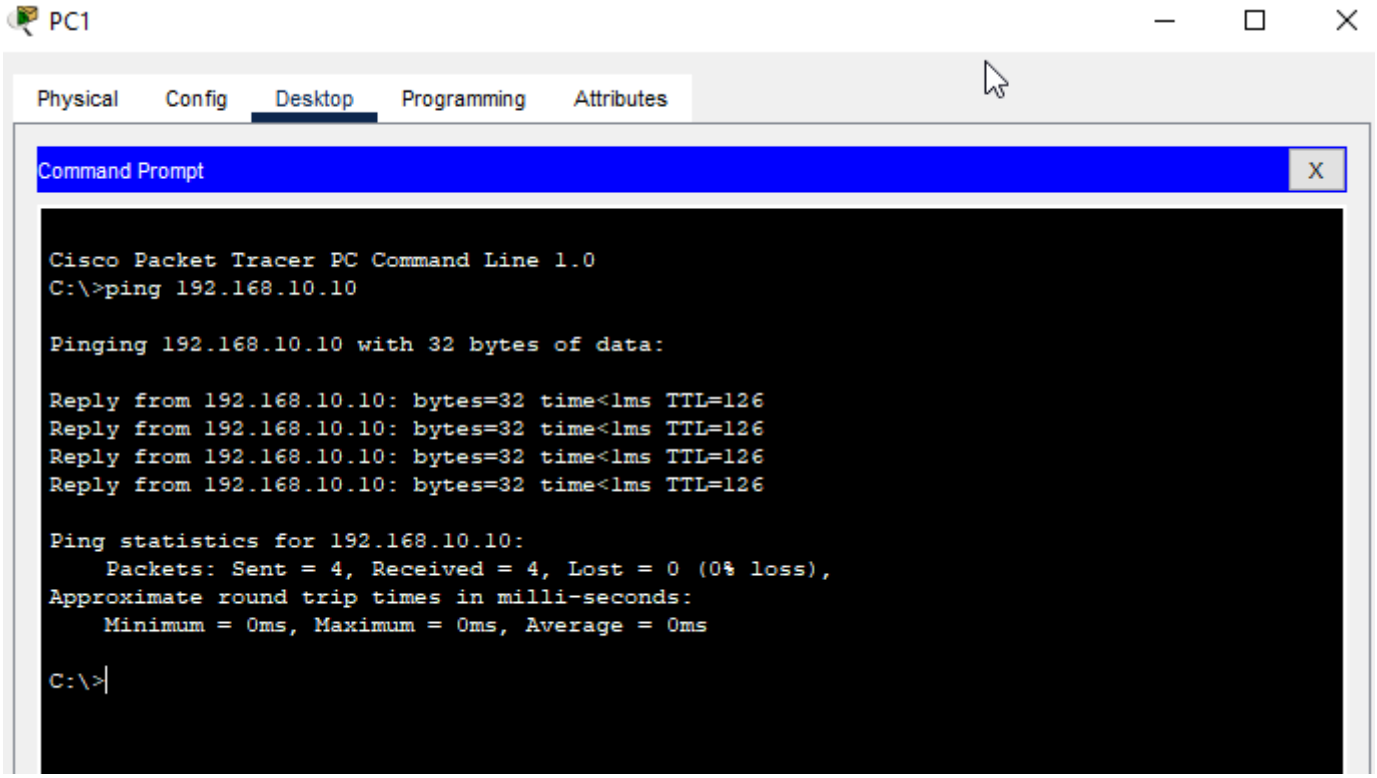
PC1 Configuration


PC1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
PC1
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.20.1
DNS Server
Gateway/DNS IPv6
Automatic
Static
Default Gateway
DNS Server


PC1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0050.0F05.C7C2
IP Configuration
DHCP
Static
IPv4 Address
192.168.20.10
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address:
FE80::250:FFF:FE05:C7C2

Test Connectivity via Static Route





Cisco Packet Tracer File

net9 static routing.pkt

Revision #3
Created 24 December 2022 20:34:31 by Glen Taylor
Updated 24 January 2023 22:41:53 by Glen Taylor