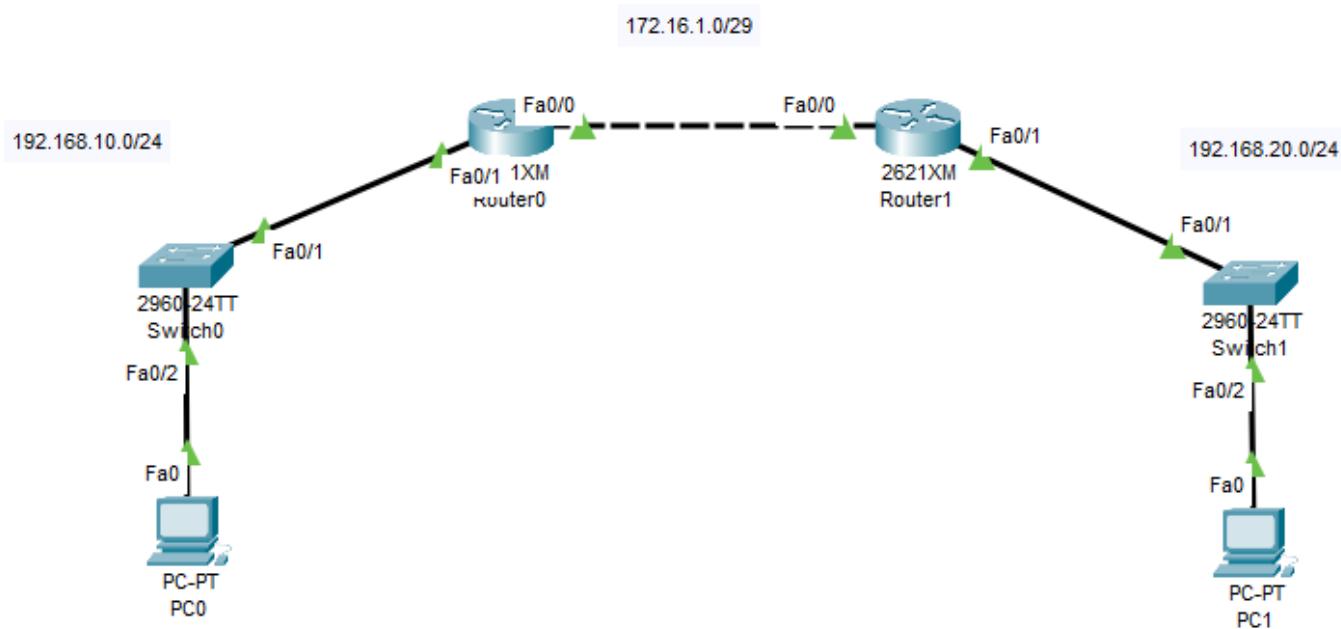


Cisco IOS Router Static Route

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

The screenshot shows the WinBox configuration interface for a device named 'PC0'. The window has a tab bar at the top with 'Physical', 'Config' (which is selected), 'Desktop', 'Programming', and 'Attributes'. On the left, there's a sidebar with a tree view containing 'GLOBAL', 'Settings', 'Algorithm Settings', 'INTERFACE', 'FastEthernet0', and 'Bluetooth'. The main panel shows 'Global Settings' for 'PC0' using 'FastEthernet0'. Under 'Gateway/DNS IPv4', the 'Static' radio button is selected, with 'Default Gateway' set to '192.168.10.1'. There's also a field for 'DNS Server'. Under 'Gateway/DNS IPv6', the 'Static' radio button is selected, with fields for 'Default Gateway' and 'DNS Server' both empty.

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 00D0.976E.AAC7

IP Configuration DHCP Static

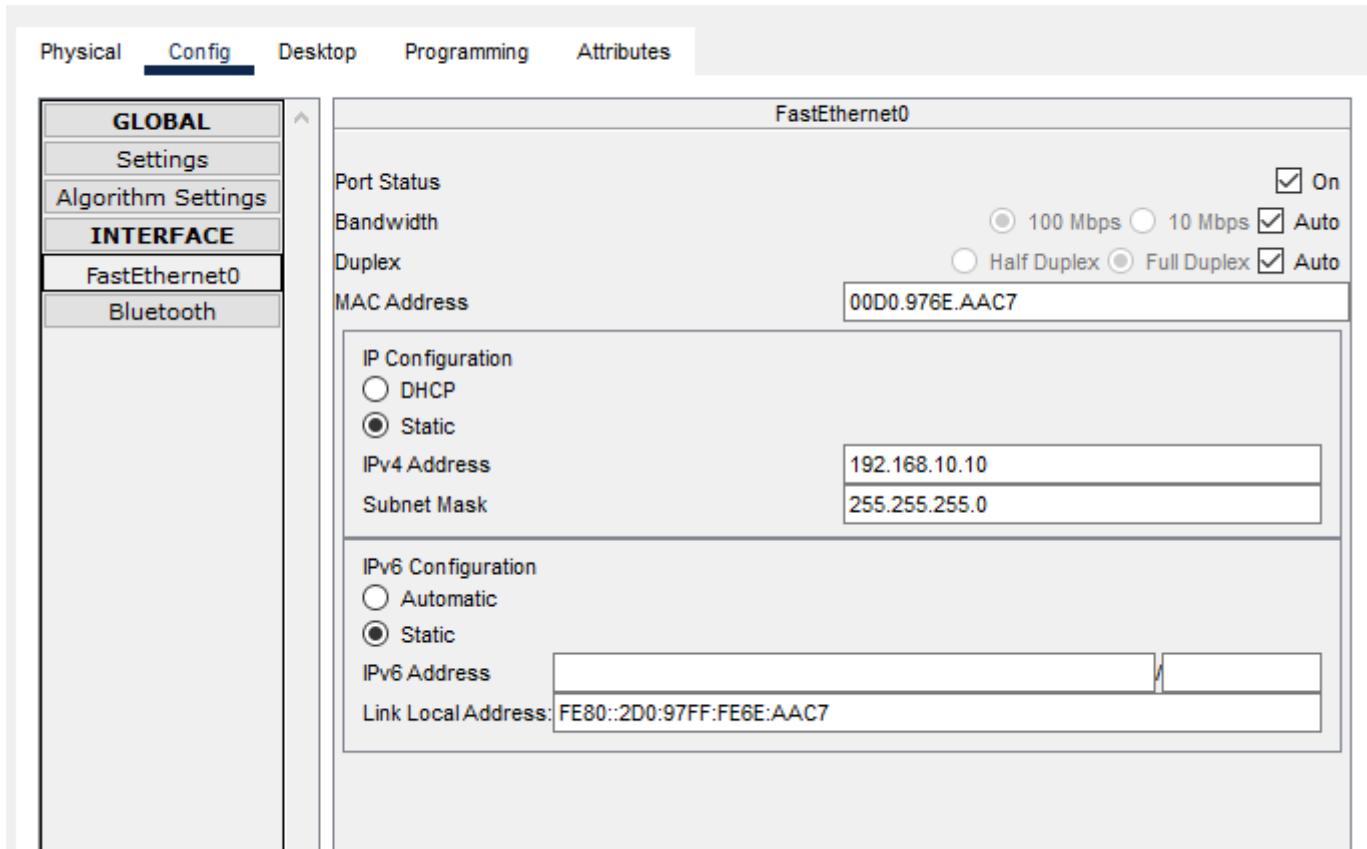
IPv4 Address 192.168.10.10

Subnet Mask 255.255.255.0

IPv6 Configuration Automatic Static

IPv6 Address

Link Local Address: FE80::2D0:97FF:FE6E:AAC7



PC1 Configuration

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:

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

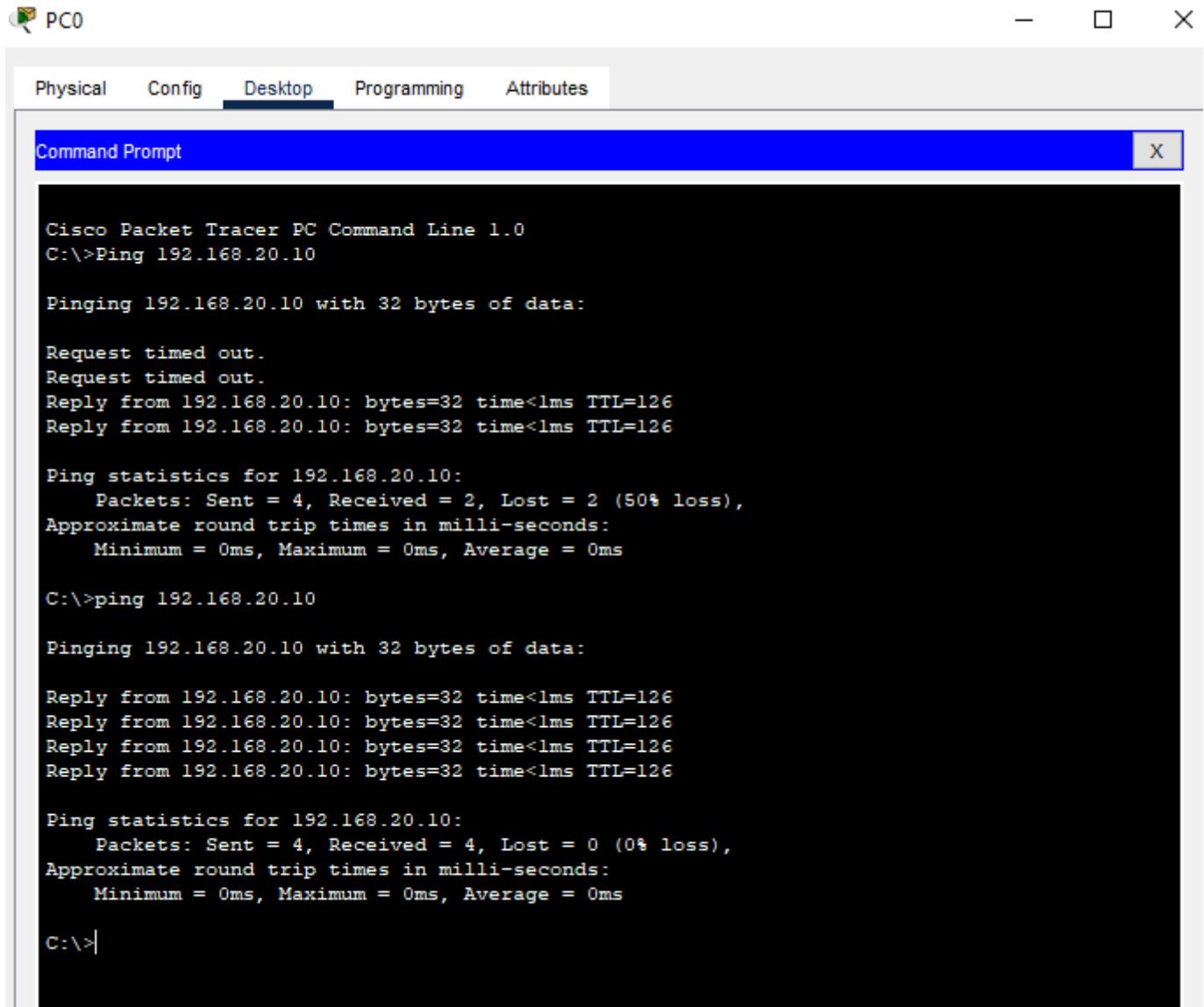
IPv6 Configuration

Automatic
 Static

IPv6 Address:

Link Local Address: FE80::250:FFF:FE05:C7C2

Test Connectivity via Static Route



The screenshot shows a Cisco Packet Tracer interface titled "PC0". The "Desktop" tab is selected in the top navigation bar. A "Command Prompt" window is open, displaying the output of a ping command. The output shows two failed pings ("Request timed out.") and two successful pings ("Reply from 192.168.20.10: bytes=32 time<1ms TTL=126"). It then provides ping statistics for both attempts, showing 50% loss and 0ms average round trip times. A second ping command is issued, resulting in four successful replies from the same host. The final ping statistics show 0% loss and 0ms average round trip times. The command prompt ends with a C:\> prompt.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>Ping 192.168.20.10

Pinging 192.168.20.10 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.20.10: bytes=32 time<1ms TTL=126
Reply from 192.168.20.10: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.20.10:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.20.10

Pinging 192.168.20.10 with 32 bytes of data:

Reply from 192.168.20.10: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.20.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.10

Pinging 192.168.10.10 with 32 bytes of data:

Reply from 192.168.10.10: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.10.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

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