

DATE : 9-OCTOBER-2024

LAB- 2

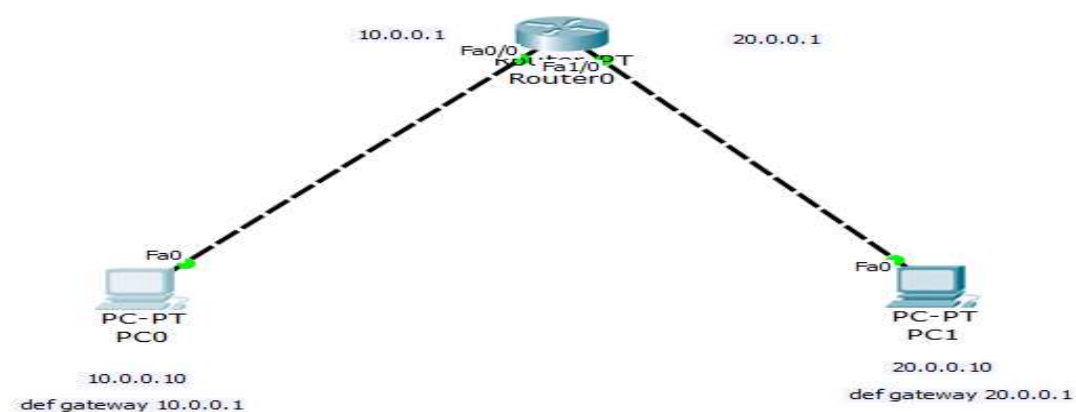
Question:

Configure IP address to routers in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply

Aim:

To connect Two PC's on different networks using a router

Topology:



Topology Description:

In the network topology shown in the image, we have:

- **Router (Router0)** with two interfaces:
 - Interface **Fa0/0**: IP address 10.0.0.1
 - Interface **Fa1/0**: IP address 20.0.0.1
- **PC0** connected to **Fa0/0** of the router:
 - IP address 10.0.0.10
 - Default gateway: 10.0.0.1
- **PC1** connected to **Fa1/0** of the router:
 - IP address 20.0.0.10
 - Default gateway: 20.0.0.1

The two PCs are on different networks:

- PC0 is on the 10.0.0.0 network.
- PC1 is on the 20.0.0.0 network.

The router is used to route traffic between the two networks.

Configuration Procedure:

Step 1: Configure Router Interfaces

1. Open the router configuration.
2. Configure the interfaces:

For **Fa0/0** (connected to PC0's network):

```
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
```

For **Fa1/0** (connected to PC1's network):

```
Router(config)#interface fastethernet1/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
```

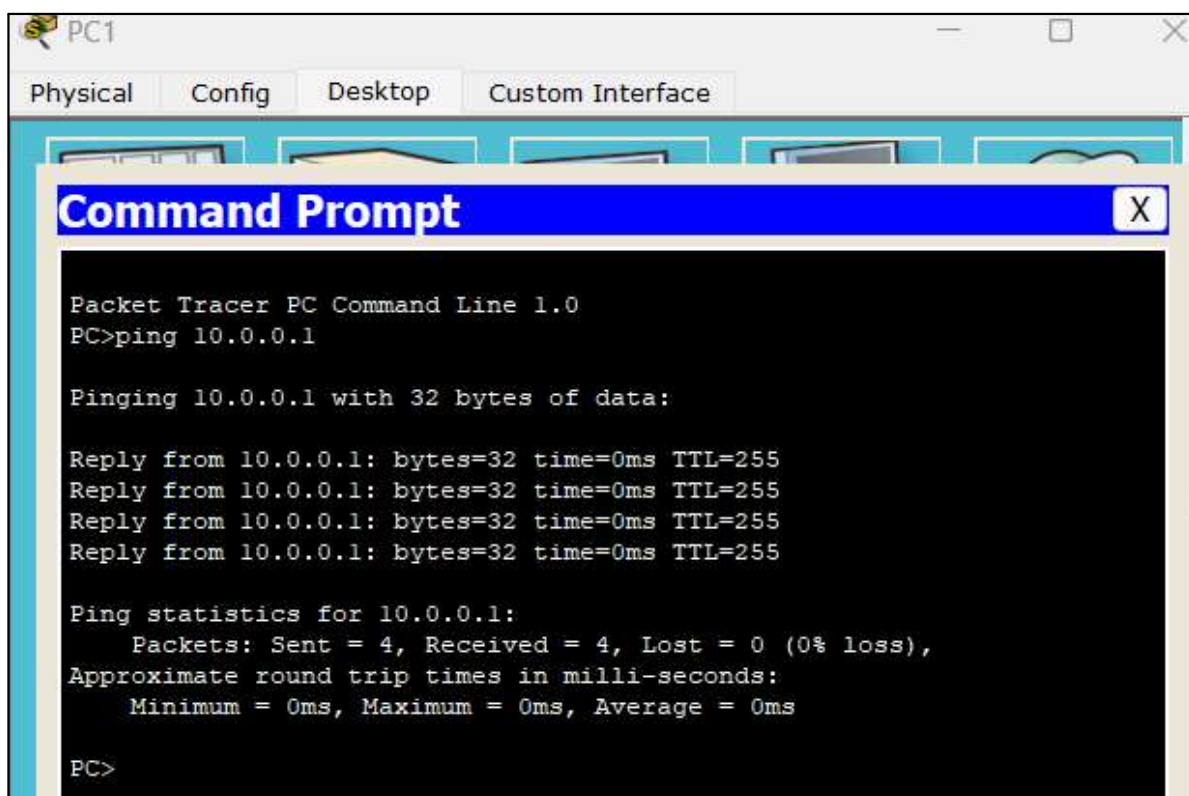
Step 3: Test Connectivity

On **PC0**, open the command prompt and ping **PC1**: `ping 20.0.0.1`

1. You should receive replies if the routing is configured correctly.

On **PC1**, open the command prompt and ping **PC0**: `ping 10.0.0.1`

2. Similarly, you should receive replies.



The screenshot shows the Packet Tracer interface for PC1. The 'Config' tab is selected. A 'Command Prompt' window is open, displaying the following text:

```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=0ms TTL=255
Reply from 10.0.0.1: bytes=32 time=0ms TTL=255
Reply from 10.0.0.1: bytes=32 time=0ms TTL=255
Reply from 10.0.0.1: bytes=32 time=0ms TTL=255

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```

```
PC>ping 20.0.0.1

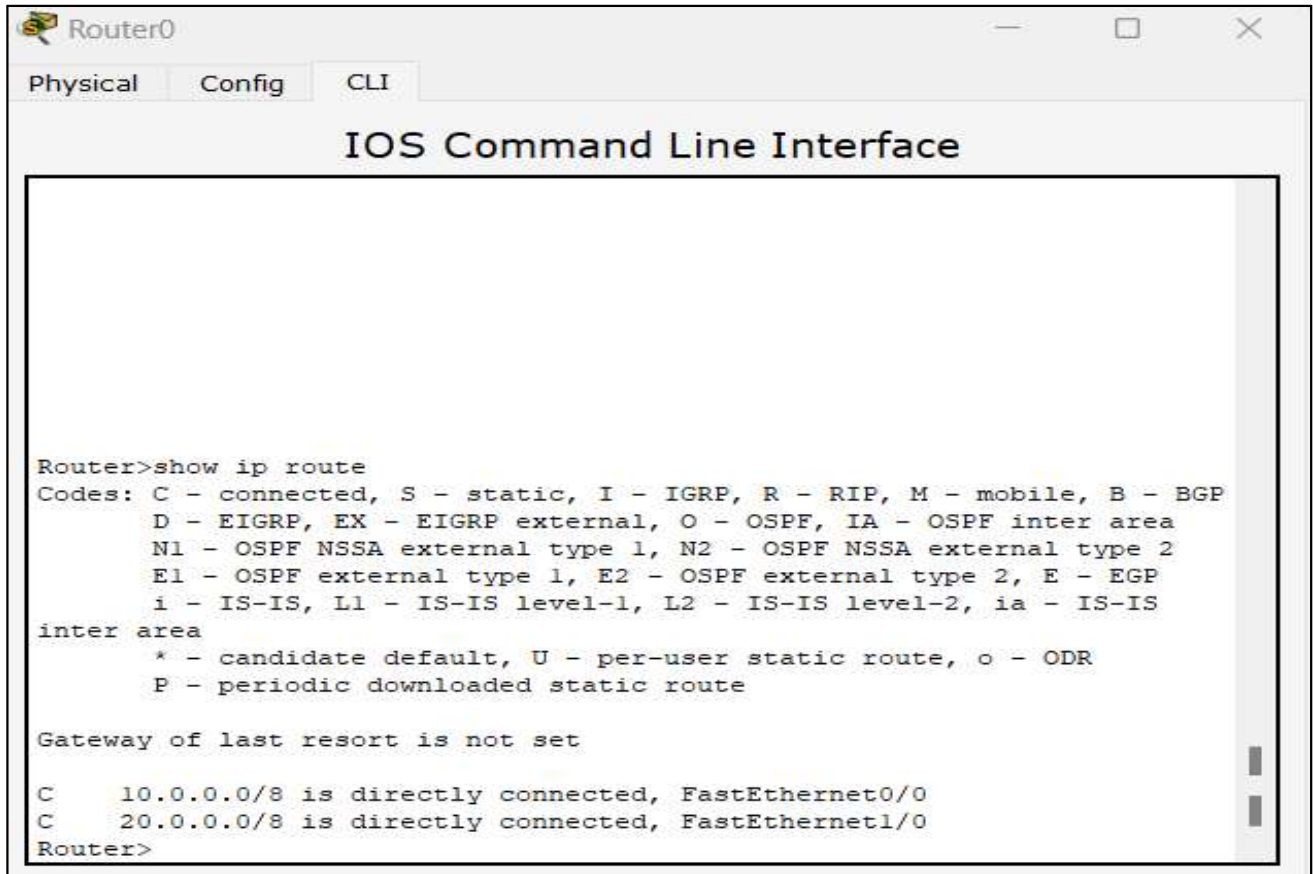
Pinging 20.0.0.1 with 32 bytes of data:

Reply from 20.0.0.1: bytes=32 time=1ms TTL=255
Reply from 20.0.0.1: bytes=32 time=0ms TTL=255
Reply from 20.0.0.1: bytes=32 time=0ms TTL=255
Reply from 20.0.0.1: bytes=32 time=5ms TTL=255

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms
```

Observation:

- **Ping Test:** The **ping** command should result in successful replies, indicating that both PCs are able to communicate with each other through the router.
- **Routing Function:** The router is functioning properly, routing packets between the **10.0.0.0** and **20.0.0.0** networks.



```
Router0
Physical Config CLI
IOS Command Line Interface

Router>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

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    20.0.0.0/8 is directly connected, FastEthernet1/0
Router>
```