

DATE : 17-OCTOBER-2024

LAB- 2B

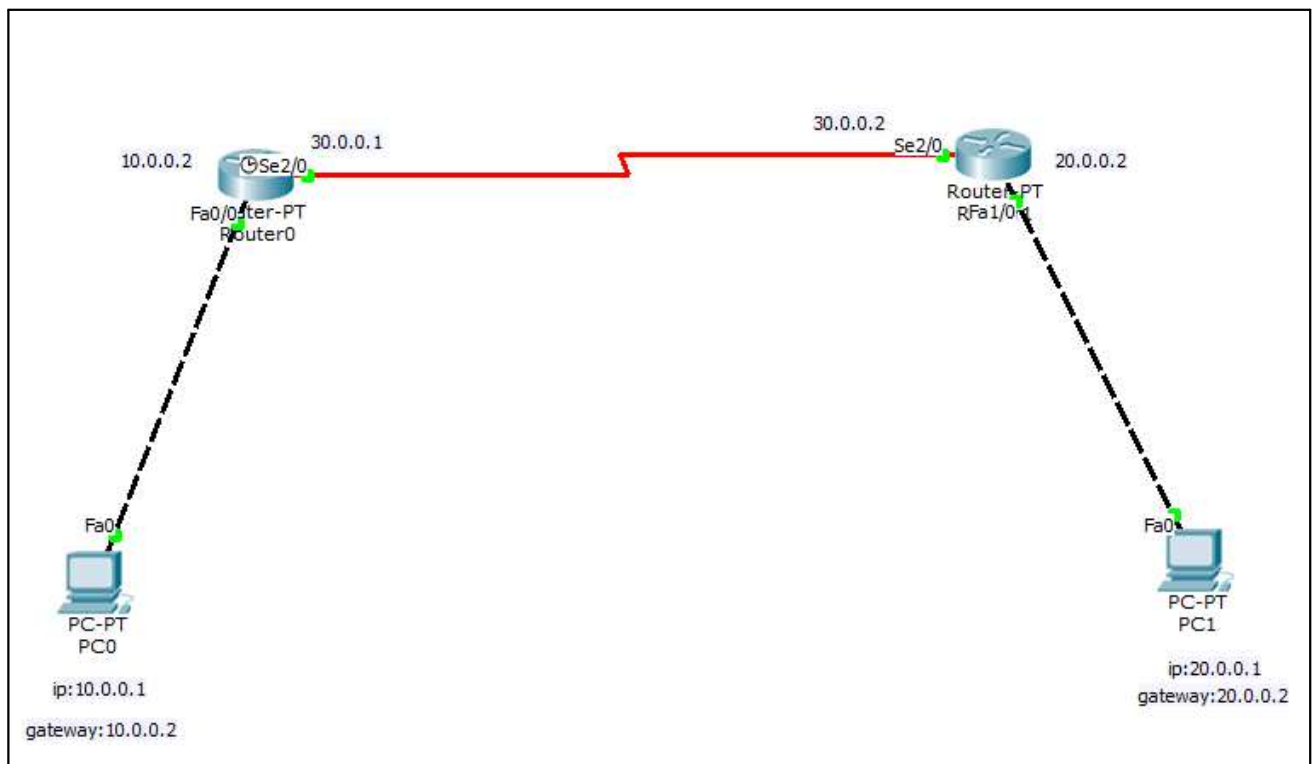
Question:

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, we have a router (Router0) with two interfaces:

- **Router0 Interface Fa0/0:**
 - IP address: **10.0.0.1**
 - Connected to PC0

- **Router0 Interface Fa1/0:**
 - IP address: **20.0.0.1**
 - Connected to PC1

We also have two PCs:

- **PC0:**
 - IP address: **10.0.0.10**
 - Default gateway: **10.0.0.1**
 - Connected to the **Fa0/0** interface of Router0
 - Belongs to the **10.0.0.0** network
- **PC1:**
 - IP address: **20.0.0.10**
 - Default gateway: **20.0.0.1**
 - Connected to the **Fa1/0** interface of Router0
 - Belongs to the **20.0.0.0** network

The router (Router0) is used to route traffic between the two different networks (10.0.0.0/24 and 20.0.0.0/24).

Configuration Procedure:

Step 1: Configure Router Interfaces

1. Open the router configuration in Packet Tracer.
2. Configure Interface Fa0/0 (Connected to PC0's network):

PC0:

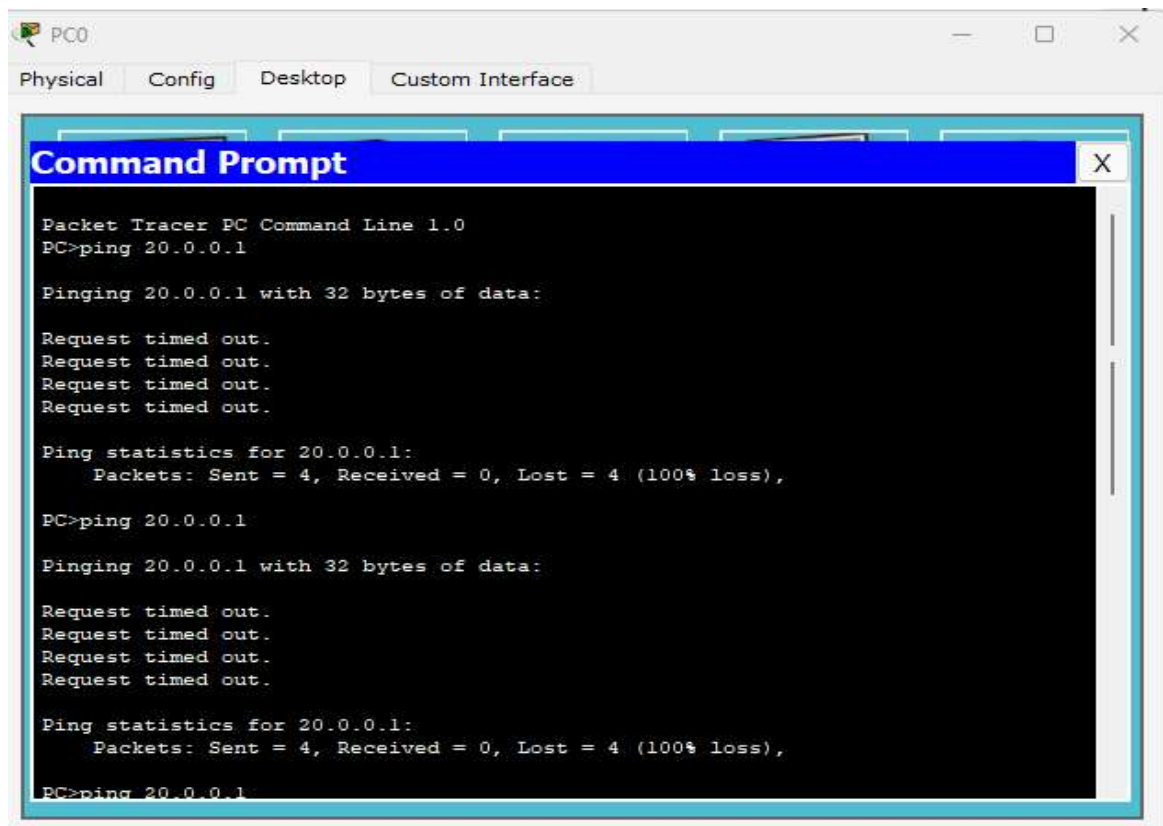
```
Router> enable
Router# configure terminal
Router(config)# interface fa0/0
Router(config-if)# ip address 10.0.0.1 255.0.0.0
Router(config-if)# no shutdown
Router(config-if)# exit
```

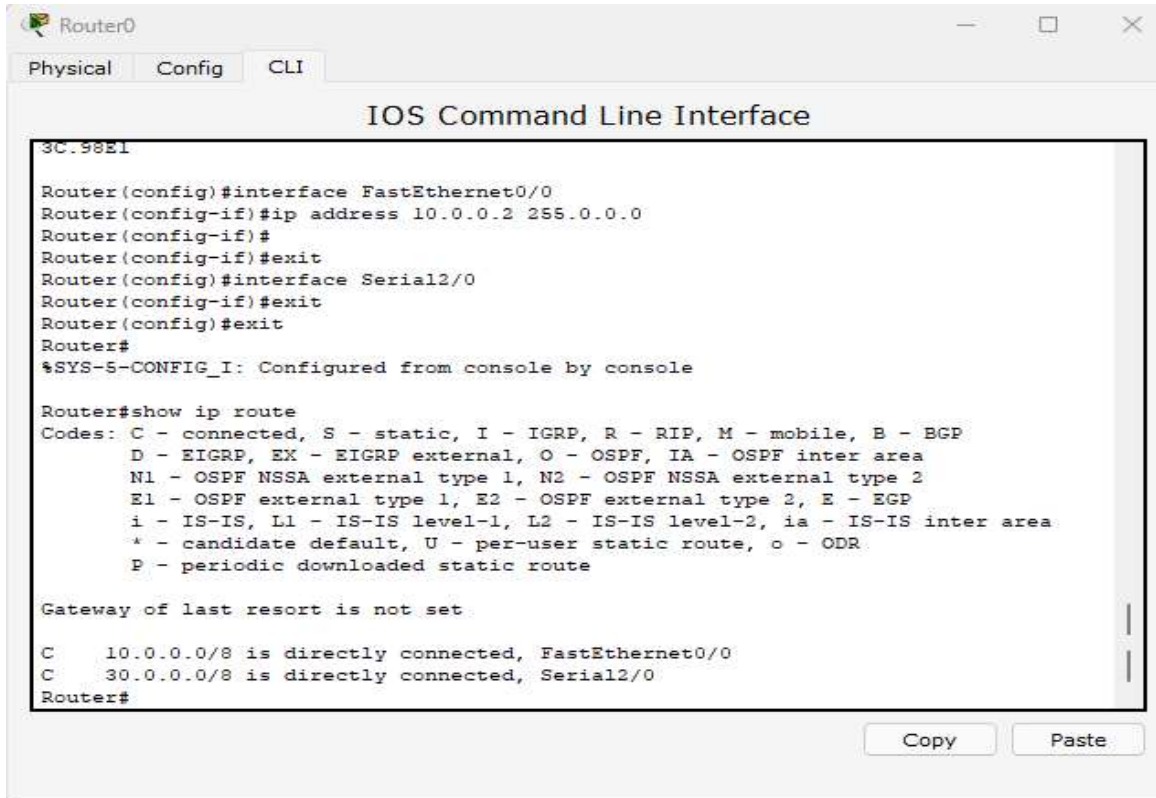
PC1 : Configure Interface Fa1/0 (Connected to PC1's network):

```
Router> enable
Router# configure terminal
Router(config)# interface fa1/0
Router(config-if)# ip address 20.0.0.1 255.0.0.0
Router(config-if)# no shutdown
Router(config-if)# exit
```

Test Connectivity

- Test from PC0:
 1. Open the Command Prompt on PC0 (Desktop > Command Prompt).
 2. Ping PC1's gateway (20.0.0.1): PC>ping 20.0.0.1





The screenshot shows a Cisco Router CLI window titled "Router0" with tabs for "Physical", "Config", and "CLI". The main window displays the "IOS Command Line Interface". The command history shows the following sequence of commands and their outputs:

```

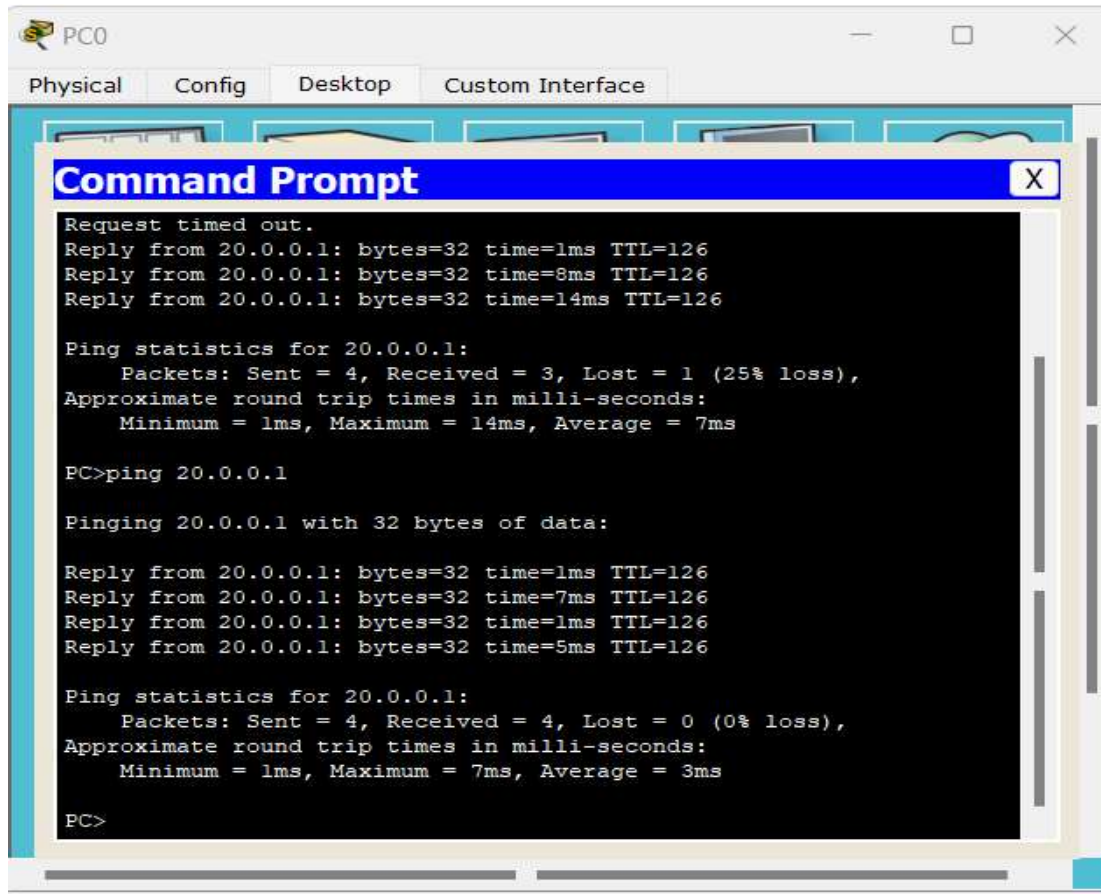
3C.98E1
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

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    30.0.0.0/8 is directly connected, Serial2/0
Router#
  
```

At the bottom of the window, there are "Copy" and "Paste" buttons.



The screenshot shows a Packet Tracer window for PC0. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The Command Prompt shows the results of a ping command to 20.0.0.1. The first ping attempt shows a 'Request timed out.' followed by three successful replies. The second ping attempt shows four successful replies. The statistics for the first ping show a 25% loss, while the statistics for the second ping show 0% loss.

```
PC0
Physical Config Desktop Custom Interface

Command Prompt
Request timed out.
Reply from 20.0.0.1: bytes=32 time=1ms TTL=126
Reply from 20.0.0.1: bytes=32 time=8ms TTL=126
Reply from 20.0.0.1: bytes=32 time=14ms TTL=126

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 14ms, Average = 7ms

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=126
Reply from 20.0.0.1: bytes=32 time=7ms TTL=126
Reply from 20.0.0.1: bytes=32 time=1ms TTL=126
Reply from 20.0.0.1: bytes=32 time=5ms TTL=126

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 7ms, Average = 3ms

PC>
```

OBSERVATION:

If the setup is incorrect or routing is not properly configured, you may see one of the following:

- Request Timed Out: The destination is not reachable within the expected time.
- Destination Unreachable: A routing issue prevents the packet from reaching its destination.