LAB WEEK 2

i) To demonstrate configuration of IP addresses to the Routers and explore ping command.

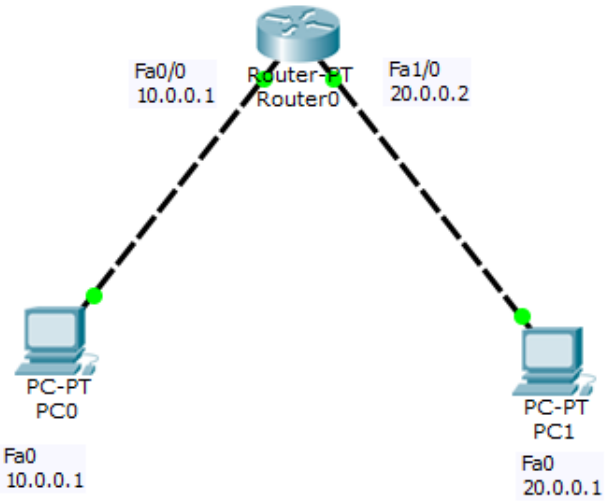


Figure 1: Topology

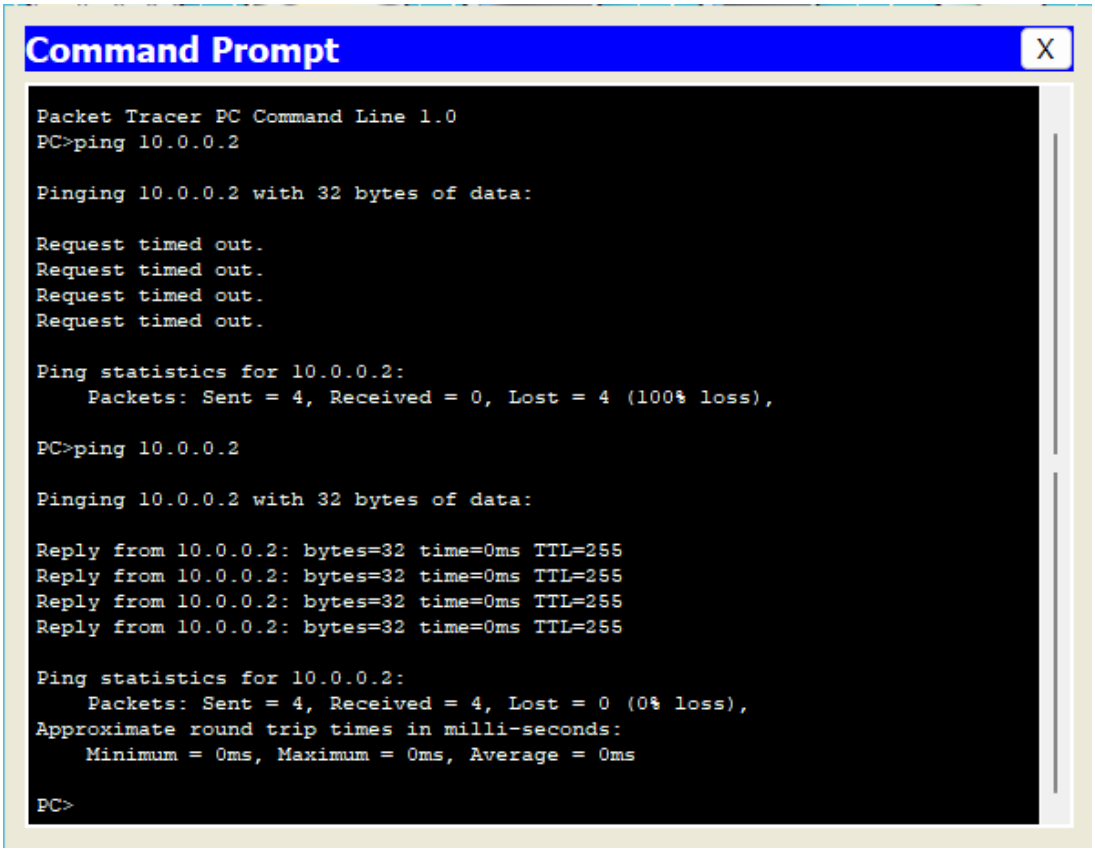


Figure 2: ping command output

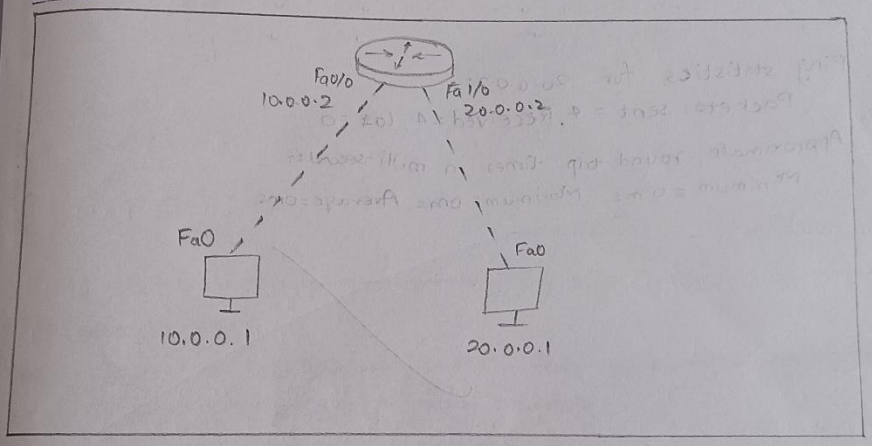
8/10/24

To demonstrate configuration of Ip addresses to the Routers and explore ping command.

Commands

```
Router>enable
Router#config t
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface fastethernet1/0
Router(config-if)#ip address 20.0.0.3 255.0.0.0
Router(config-if)#no shutdown
```

*Topology



*Steps for configuration:

Step 1: Select 2 "Generic PC-PT" from the end devices and 1 "Generic Router-PT" from Routers.

Step 2: Connect the PCs to the Router using "Automatically chosen Type" cable.

Step 3: Set the Ip addresses as "10.0.0.1" and "20.0.0.1" to the PCs.

Step 4: Go to Router and select CLI, enter the commands.

Step 5: Go to the PCs and enter the ip addresses used in Router as the default gateway.

Step 6: Check the connection through ping command from cmd prompt or send a simple PDU packet.

Observation:

The cmd prompt of 10.0.0.1 PC before the default gateway was assigned.

PC> ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

Request timed out

The cmd prompt of 10.0.0.1 PC after the default gateway assigned.

PC> ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

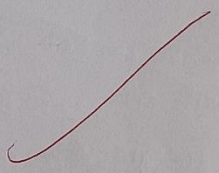
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.2:

Packets: sent = 4, Received = 4, Lost = 0

Approximate round trip times in milli-seconds:

Minimum = 0 ms, Maximum = 0ms, Average = 0ms



i) To demonstrate configuration of default routes to the Router.

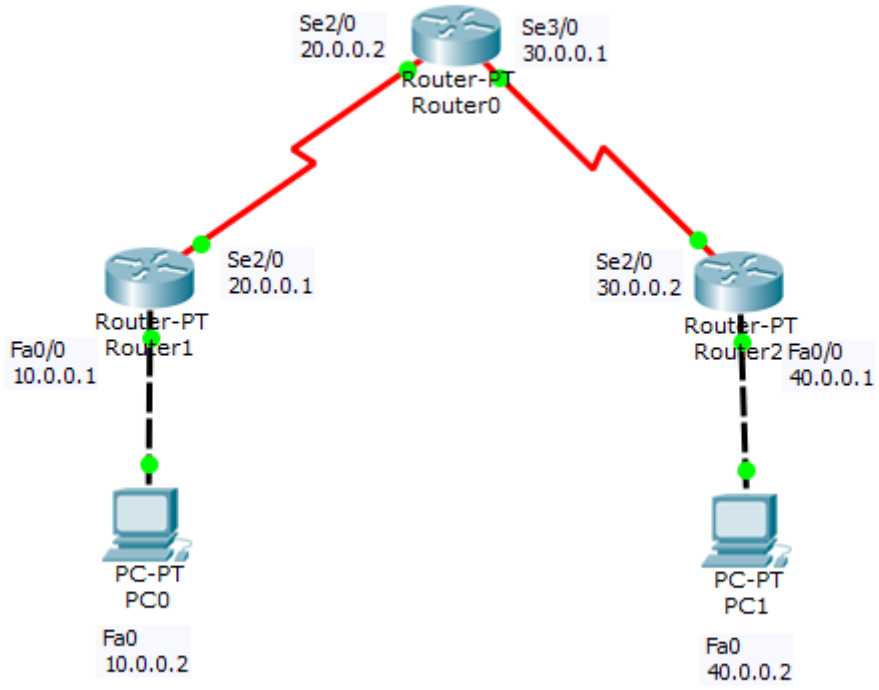


Figure 3: Topology

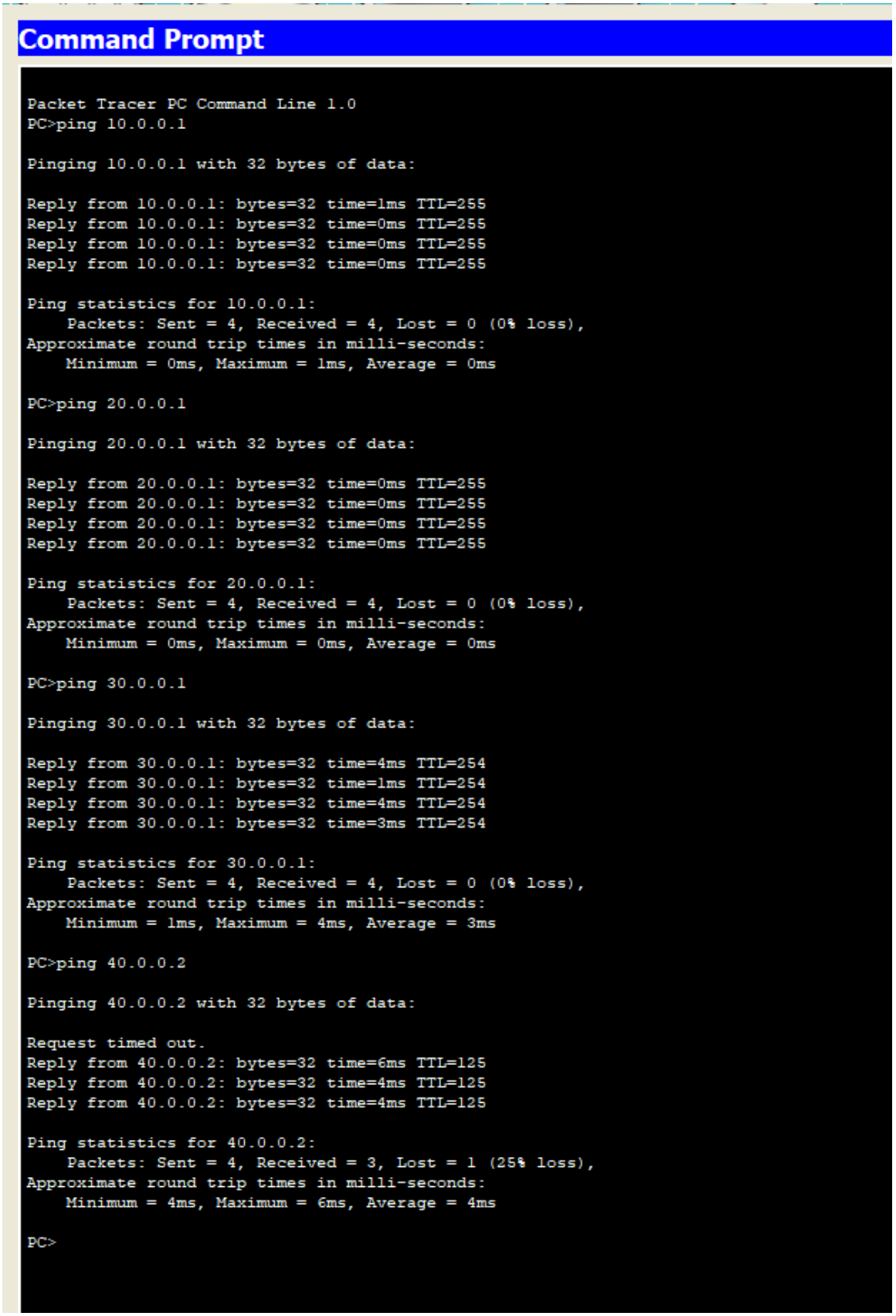


Figure 4: Output of PC 10.0.0.2

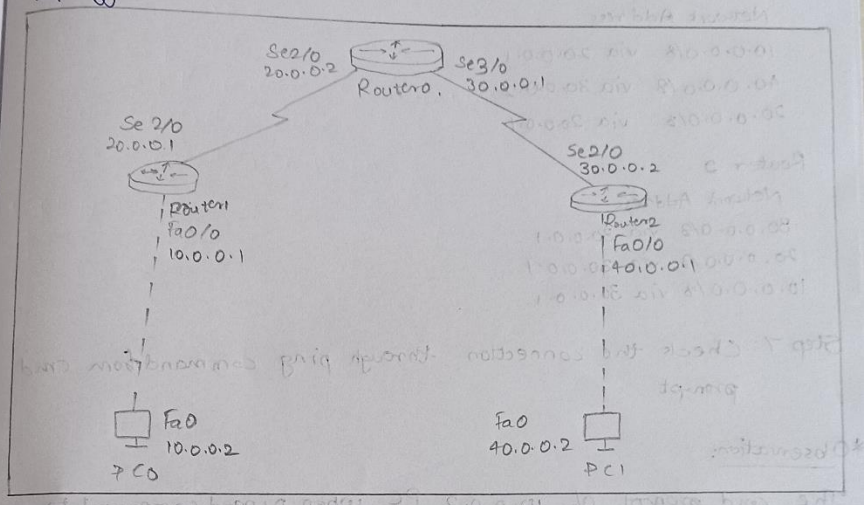
15/10/24

To demonstrate the configuration of default routes to the router

- Commands:

#show ip route
#ip route <destination network> <subnet mask> <next hop addr>

* Topology:



* Configuration steps:

Step 1: Select 2 PCs "Generic PC-PT" from the end devices and 3 "Generic Router-PT" from Routers.

Step 2: Connect the PCs and the routers to each other using "Automatically chosen type" cable.

Step 3: Set the Ip addresses "10.0.0.2" and "40.0.0.2" to the PCs respectively.

Step 4: Go to the routers and select CLI, enter the commands

Step 5: PC 0

Ip address: 10.0.0.2
Subnet Mask: 255.0.0.0
Default gateway: 10.0.0.1

PC1

Ip address: 40.0.0.2
Subnet Mask: 255.0.0.0
Default gateway: 40.0.0.1

show ip route

Step 6:

Router 1

Network Address

20.0.0.0/8 via 20.0.0.2

30.0.0.0/8 via 20.0.0.2

40.0.0.0/8 via 20.0.0.2

Router 0

Network Address

10.0.0.0/8 via 20.0.0.1

40.0.0.0/8 via 30.0.0.2

20.0.0.0/8 via 20.0.0.1

Router 2

Network Address

30.0.0.0/8 via 30.0.0.1

20.0.0.0/8 via 30.0.0.1

10.0.0.0/8 via 30.0.0.1

Step 7: Check the connection through ping command from cmd prompt

*Observation:

The cmd prompt of 10.0.0.2 PC when pinged command to 40.0.0.2 PC

PC>ping 40.0.0.2

Pinging 40.0.0.2 with 32 bytes of data:

Reply from 40.0.0.2: bytes=32 time=2ms TTL=125

Ping statistics for 40.0.0.2:

Packets: Sent=4, Received=4, Lost=0 (0% Loss)

Approximate round trip times in milli-seconds

Minimum=2ms, Maximum=9ms, Average=4ms

15/04/24