

LAB WEEK 2

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

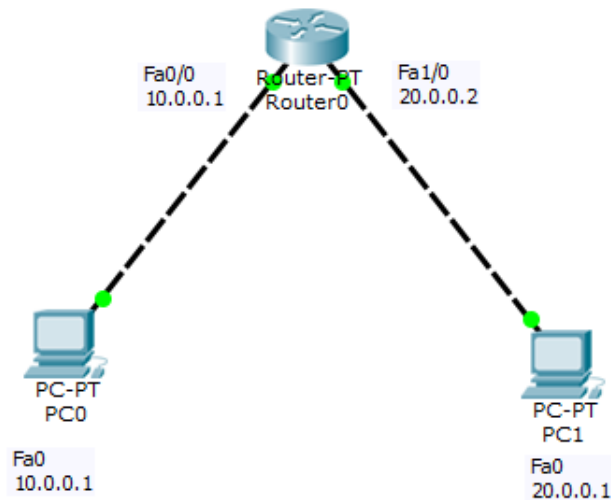


Figure 1: Topology

```
Command Prompt
X

Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=0ms TTL=255
Reply from 10.0.0.2: bytes=32 time=0ms TTL=255
Reply from 10.0.0.2: bytes=32 time=0ms TTL=255
Reply from 10.0.0.2: bytes=32 time=0ms TTL=255

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```

Figure 2: ping command output

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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

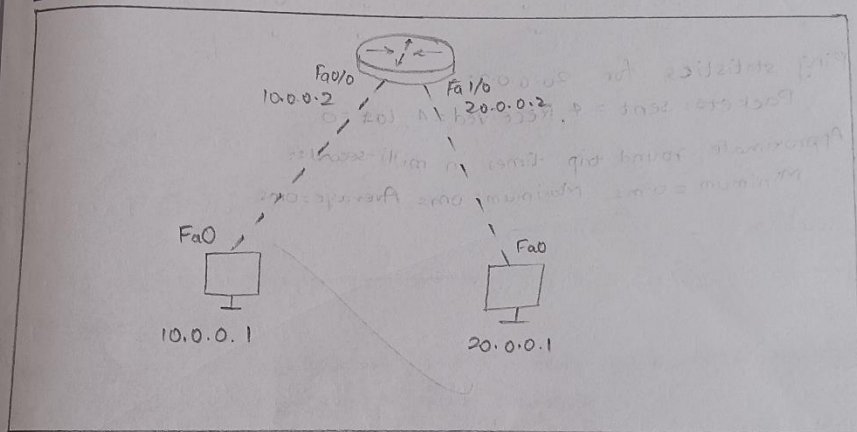
Router(config-if)# exit

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

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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

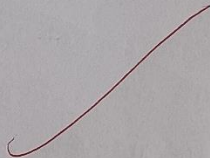
^ ^ ^ ^ ^
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Ping statistics for 20.0.0.2:

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

Approximate round trip times in milliseconds:

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



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

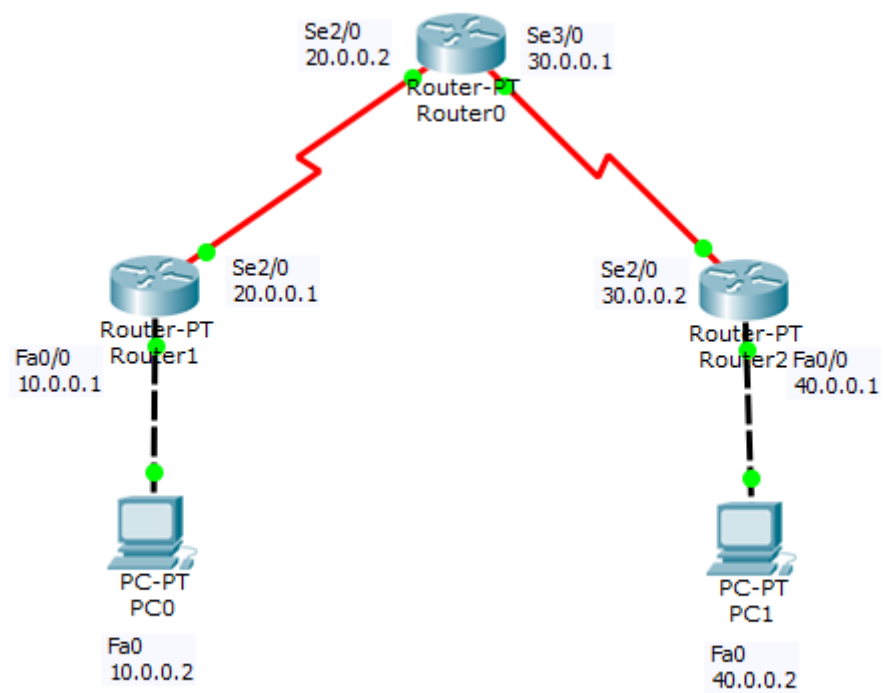


Figure 3: Topology

Command Prompt

```
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=1ms 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 = 1ms, Average = 0ms

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=0ms 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=0ms 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 = 0ms, Average = 0ms

PC>ping 30.0.0.1

Pinging 30.0.0.1 with 32 bytes of data:

Reply from 30.0.0.1: bytes=32 time=4ms TTL=254
Reply from 30.0.0.1: bytes=32 time=1ms TTL=254
Reply from 30.0.0.1: bytes=32 time=4ms TTL=254
Reply from 30.0.0.1: bytes=32 time=3ms TTL=254

Ping statistics for 30.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 4ms, Average = 3ms

PC>ping 40.0.0.2

Pinging 40.0.0.2 with 32 bytes of data:

Request timed out.
Reply from 40.0.0.2: bytes=32 time=6ms TTL=125
Reply from 40.0.0.2: bytes=32 time=4ms TTL=125
Reply from 40.0.0.2: bytes=32 time=4ms TTL=125

Ping statistics for 40.0.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 6ms, Average = 4ms

PC>
```

Figure 4: Output of PC 10.0.0.2

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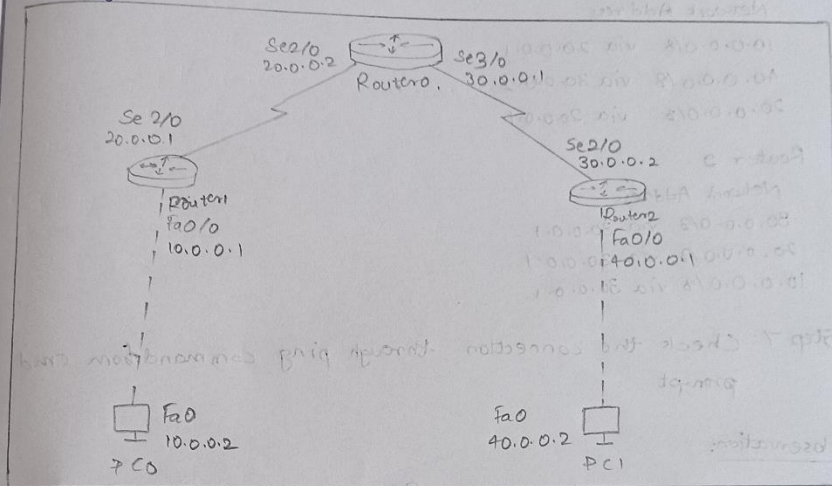
To demonstrate the configuration of default routes to the router

• Commands:

#show ip route

#ip route <destination network> <subnet mask> <next hop add>

*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

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Ping statistics for 40.0.0.2:

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

Approximate round trip times in milliseconds

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

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