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Lab-3

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

① Add and Connect the 2 PC's and Router from the end device. Set the IP address of 2 PC's as 10.0.0.1 and 20.0.0.1. This indicate they belong to different networks. Set the gateway of 1st PC as 10.0.0.2 and 2nd PC 20.0.0.2 and connect them to the router

② Configure the router settings to connect the 2 PC's of different network by using commands steps below

On the CLI :-

```
Router > enable
Router # config terminal
Router (config) # interface fastEthernet 0/0
Router (config-if) # ip address 10.0.0.2 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit
Router (config) # interface fastEthernet 1/0
Router (config-if) # ip address 20.0.0.2 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit
Router (config) # exit
Router #
```

③ Send a Simple PDU from PC0 to PC1 with ip address 10.0.0.1 to 20.0.0.1 And Use ping command to verify the packets send and received. The packets will be

transmitted through the Routers

(4) Similarly, connect two more PC's and Router. Config the Router following the above mentioned steps Now, Add another generic Router to connect these two existing routers. Configure the 3rd Router following the same steps as above

(5) Now In command prompt from PC0

ping 30.0.0.1

the response will be destination host unreachable.

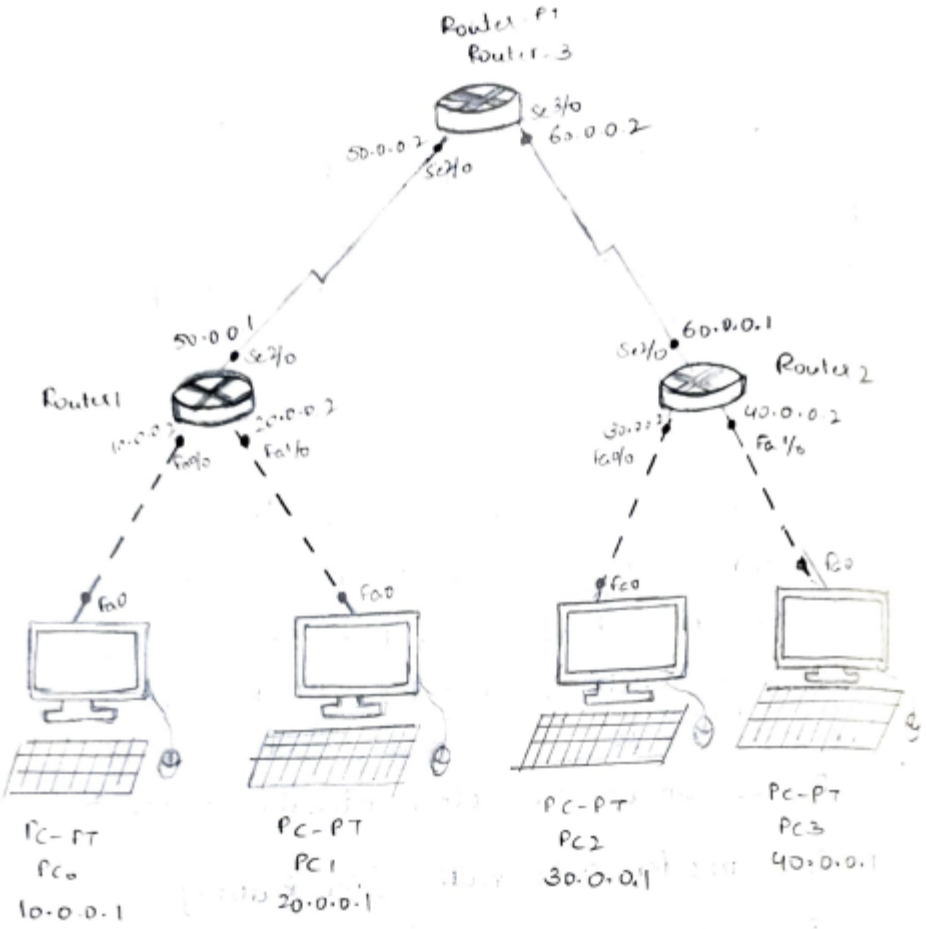
Although, everything seems to be connected. Each Router will have information only about network that are directly connected to the Router. We can check using cmd show ip route. Hence we use Static routing and teach the Router about the other networks in the topology

(6) The Steps for Static routing [For Router1]

```
Router # config t
Router (config) # ip route 30.0.0.0 255.0.0.0 90.0.0.2
Router (config) # ip route 40.0.0.0 255.0.0.0 50.0.0.2
Router (config) # ip route 60.0.0.0 255.0.0.0 50.0.0.2
Router (config) # exit
Router #
```

(7) Now, if we view all the networks connected to a router: Router # show ip route we get

```
C   10.0.0.0/8 [ is directly connected, FastEthernet 0/0
C   20.0.0.0/8 is directly connected, FastEthernet 1/0
S   30.0.0.0/8 [ ] via 50.0.0.2
S   40.0.0.0/8 [ ] via 50.0.0.2
C   50.0.0.0/8 is directly connected, Serial 2/0
S   60.0.0.0/8 [ ] via 50.0.0.2
```



Output:

for Destination host unreachable:

```
ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 30.0.0.2: Destination host unreachable.
Reply from 30.0.0.2: Destination host unreachable
Reply from 30.0.0.2: Destination host unreachable
Reply from 30.0.0.2: Destination host unreachable

Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss)
```

For Reply:

ping 80.0.0.1

pinging 80.0.0.1 with 32 bytes of data:

Reply from 80.0.0.1: bytes=32 time=7ms TTL=125

Reply from 80.0.0.1: bytes=32 time=11ms TTL=125

Reply from 80.0.0.1: bytes=32 time=2ms TTL=125

Reply from 80.0.0.1: bytes=32 time=4ms TTL=125

Ping statistics for 80.0.0.1:

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

Approximate round trip times in milli-Seconds:

Minimum=2ms, Maximum=11ms, Average=6ms

good.

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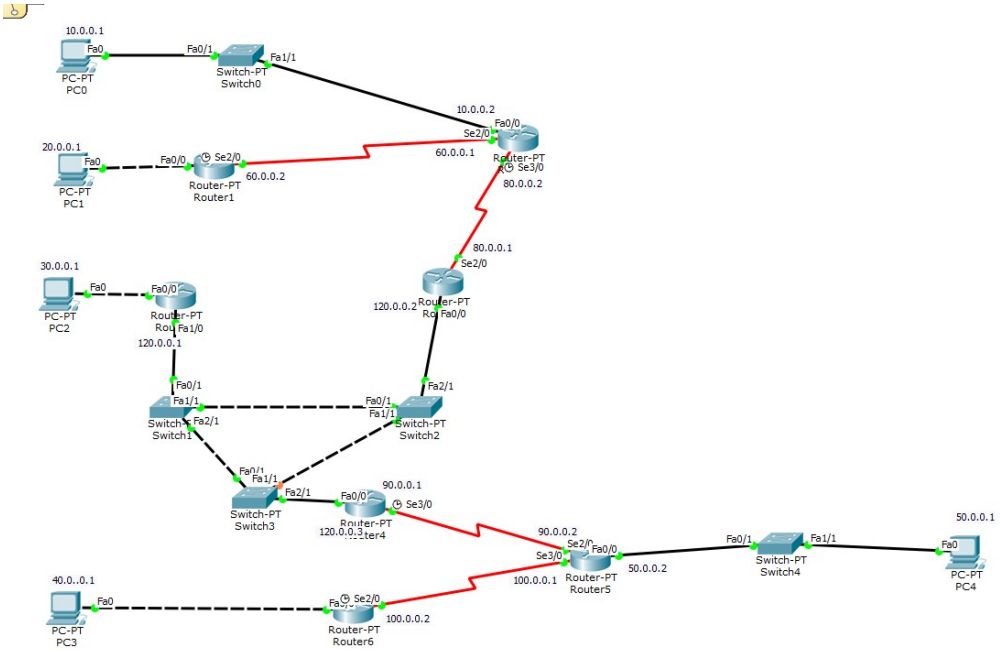
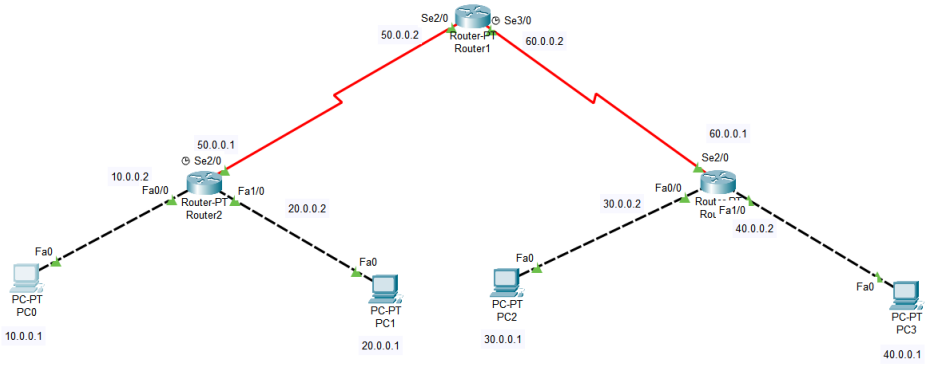
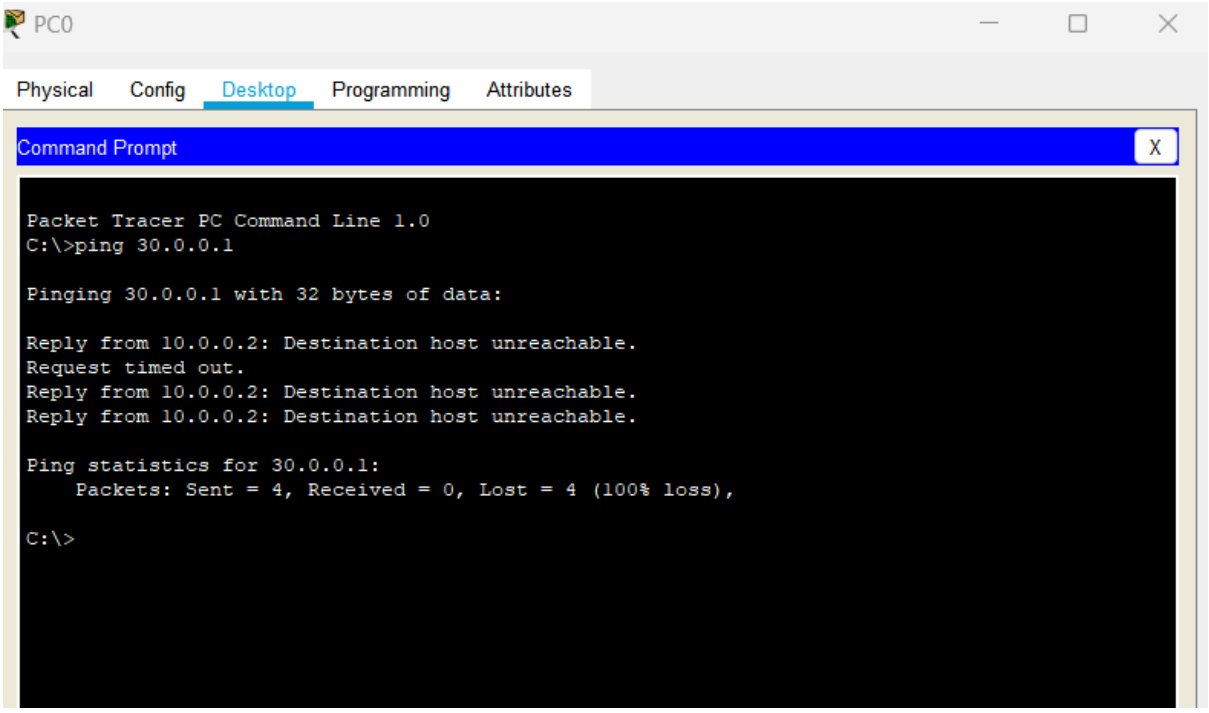


TOPOLOGY for 3 routers



OUTPUT




```
C:\>ping 30.0.0.1

Pinging 30.0.0.1 with 32 bytes of data:

Reply from 30.0.0.1: bytes=32 time=11ms TTL=125
Reply from 30.0.0.1: bytes=32 time=2ms TTL=125
Reply from 30.0.0.1: bytes=32 time=24ms TTL=125
Reply from 30.0.0.1: bytes=32 time=2ms TTL=125

Ping statistics for 30.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 24ms, Average = 9ms
```