Exp£4 :- Configuring default route to the router

Purpose of ping – to check if destination is alive or not

Configuring default route to router:
A particular network will not know how where to when other network
it is not connected.

0.0.0.0 → any network
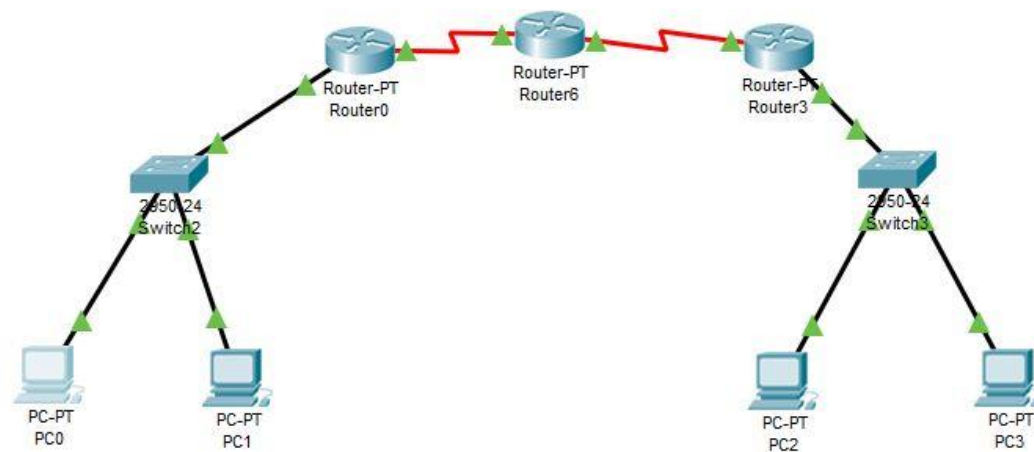
By default gateway we can allow any network

Experiment:

1) A topology was created using three Router-PT, two Switch P-T & two PC's connected to each switch using copper straight-through connections & serial DCE connections

2) Default gateways & unique ip address were configured for each PC.

3) IP address was configured for each interface using CLI

4) Pinging PC 2 from PC0 gave destination host unreachable

5) ip routes for each router was viewed using the command: show ip route

6) Static ip route was configured for router1 using CLI commands: ip route destination_network subnet mask next_hop_address

7) Default ip route was configured for router 0 & router 2 using CLI commands: ip 0.0.0.0 0.0.0.0 next hop addr

Learning outcomes

1) Creating a topology with multiple routers & switches.

2) Configuring default gateway & ip address

3) Configuring ip address for the interface

4) Pinging gives destination host unreachable if the device networks are not directly connected

5) Configuring static ip route to a router

6) Configuring default ip route to a router ensuring that the packet passes through the default route when no other route is available for an IP dest address

7) On configuring the default ip router, pinging gives the required response

8) Simulation of sending a simple PDU from source to destination shows the route taken by the ICMP packet

Network topology

IOS Command Line Interface

```
                                                    
state to up


Router>configure terminal
              ^
% Invalid input detected at '^' marker.

Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#0.0.0.0 0.0.0.0 20.0.0.2
             ^
% Invalid input detected at '^' marker.

Router(config)#ip route 0.0.0.0 0.0.0.0 20.0.0.2
Router(config)#




Router con0 is now available
```
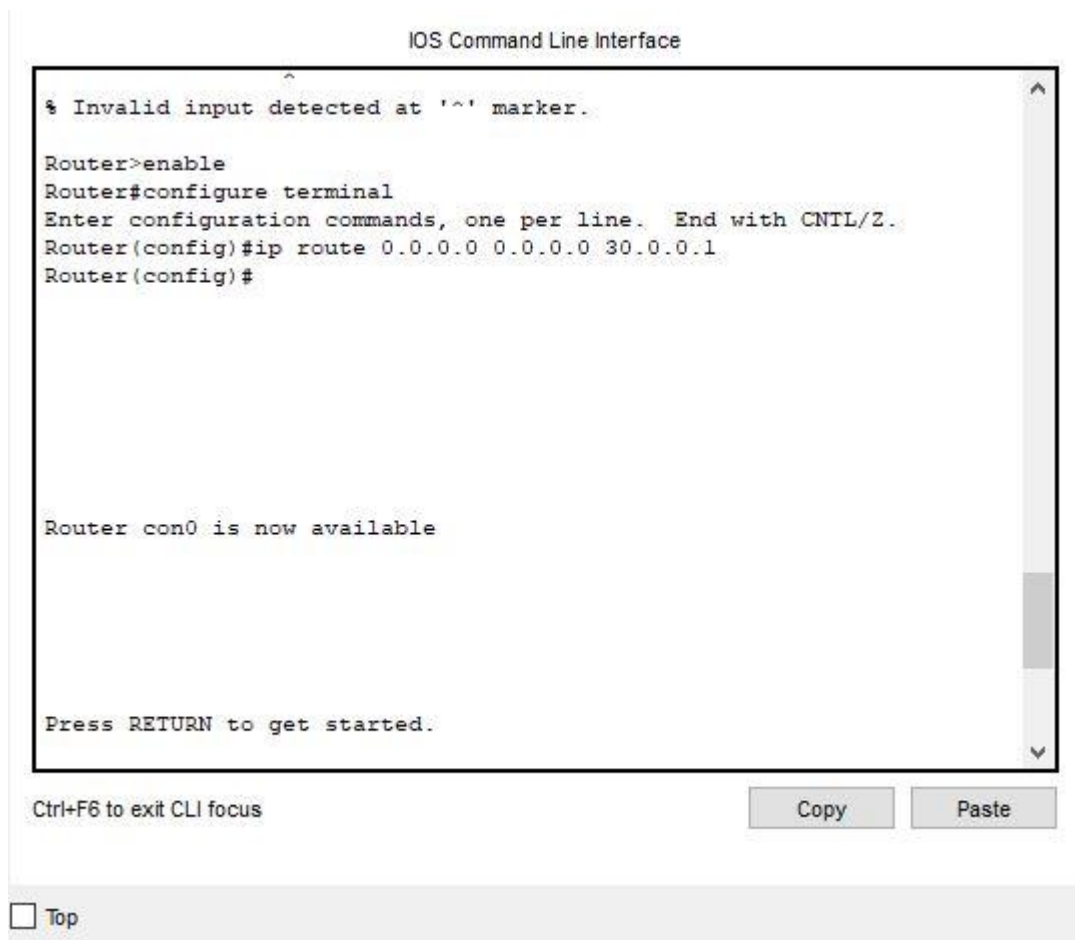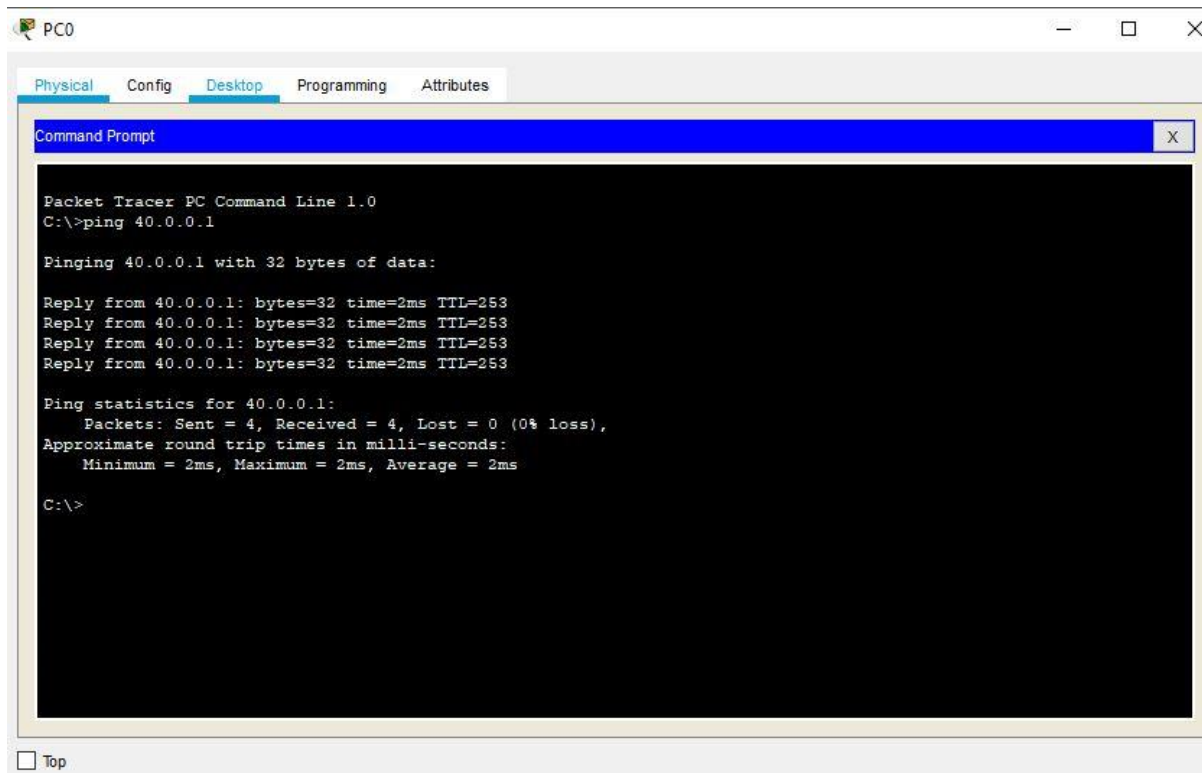
Ctrl+F6 to exit CLI focus   Copy   Paste

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```
^
% Invalid input detected at '^' marker.

Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 30.0.0.1
Router(config)#




Router con0 is now available




Press RETURN to get started.
```

Ctrl+F6 to exit CLI focus   Copy   Paste

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Configuring default gateway to the router

PC0   —   ☐   ✕

Physical   Config   Desktop   Programming   Attributes

Command Prompt   X

```
Packet Tracer PC Command Line 1.0
C:\>ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes=32 time=2ms TTL=253
Reply from 40.0.0.1: bytes=32 time=2ms TTL=253
Reply from 40.0.0.1: bytes=32 time=2ms TTL=253
Reply from 40.0.0.1: bytes=32 time=2ms TTL=253

Ping statistics for 40.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 2ms, Average = 2ms

C:\>
```

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Ping responses