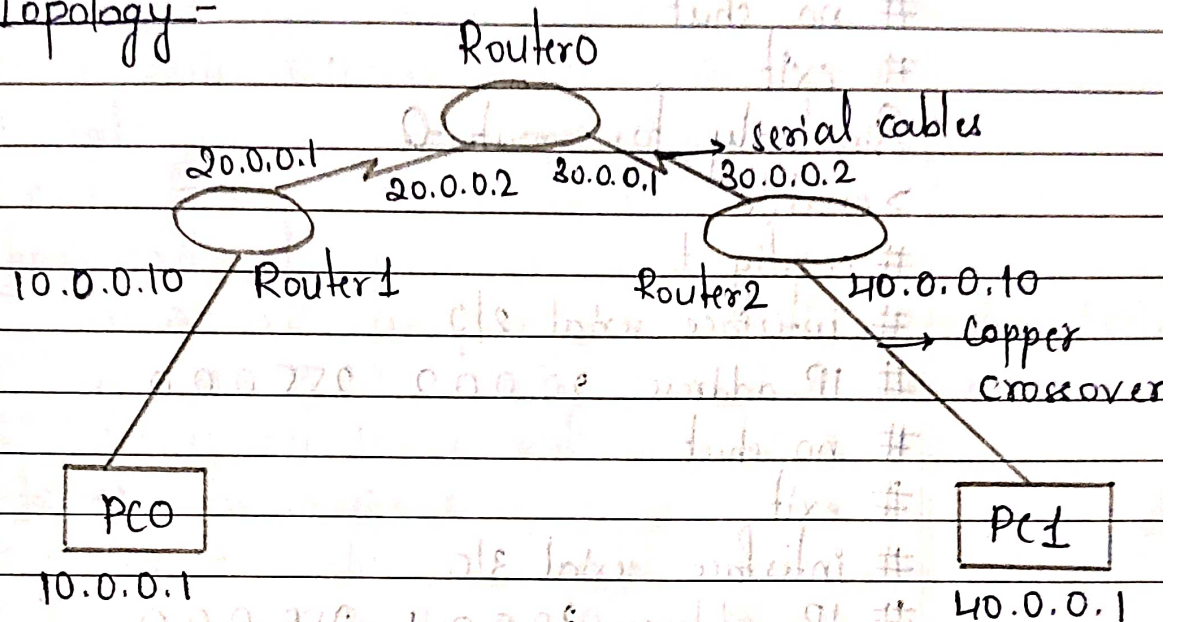


14/7/23

Aim - Configure default and static route for a connection of routers.

Topology -



Procedure -

- 1) Select 3 generic routers and two PC's as end devices. Connect the PCs to different routers with copper cross over and connect both the routers to main router with serial cables.
- 2) Set the IP addresses of PC and gateways.
- 3) Set the gateway addresses in all the routers taking interface as fastethernet for the PCs and serial for routers.
- 4) Connect the PCs to the interfaces.
- 5) config-steps -

>enable (router 1)

config t

interface fastethernet 0/0

IP address 10.0.0.10 255.0.0.0

no shut

```
# exit
# interface serial 2/0
# IP address 20.0.0.1 255.0.0.0
# no shut
# exit
```

Similarly for router-0

```
> enable
# config t
# interface serial 2/0
# IP address 20.0.0.2 255.0.0.0
# no shut
# exit
# interface serial 3/0
# IP address 30.0.0.1 255.0.0.0
# no shut
# exit
```

For router-2

```
> enable
# config t
# interface fastethernet 0/0
# IP address 40.0.0.10 255.0.0.0
# no shut
# exit
# interface serial 2/0
# IP address 30.0.0.2 255.0.0.0
# no shut
# exit
```

6) We need to set IP routes for all routes via routers.

For router-1 & router-2, we do default

routing and for router-0, static routing is done.

for router-1

```
# config t
```

```
# ip route 0.0.0.0 0.0.0.0 20.0.0.2
```

```
# no shut
```

```
# exit
```

```
show ip rout
```

C 10.0.0.0/8 is directly connected, FastEthernet 0/0

C 20.0.0.0/8 is directly connected, Serial 2/0

S* 0.0.0.0/0 [1/0] via 20.0.0.2

Similarly for router-2

```
# config t
```

```
# ip route 0.0.0.0 0.0.0.0 30.0.0.1
```

```
# exit
```

```
show ip rout
```

for router-0 (Static routing)

```
# config t
```

```
# ip route 10.0.0.0 255.0.0.0 20.0.0.0
```

```
# ip route 40.0.0.0 255.0.0.0 30.0.0.0
```

```
# exit
```

```
show ip rout
```

S 10.0.0.0/8 [1/0] via 20.0.0.0

C 20.0.0.0/8 is directly connected, Serial 2/0

C 30.0.0.0/8 is directly connected, Serial 3/0

S 40.0.0.0/8 [1/0] via 30.0.0.0

7) Now, we ping 10.0.0.1 from the command prompt of 40.0.0.1

Result -

PC> ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Request timed out

Reply from 10.0.0.1: bytes=32 time=6 ms TTL=125

Reply from 10.0.0.1: bytes=32 time=2 ms TTL=125

Reply from 10.0.0.1: bytes=32 time=12 ms TTL=125

Ping statistics for 10.0.0.1:

Packets: Sent=4, Received=3, Lost=1

Approximate round trip time in milliseconds:

Minimum=2 ms, Maximum=12 ms, Average=6 ms

12
12/7/23
10/10

Command Prompt



Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 40.0.0.10: Destination host unreachable.
Reply from 40.0.0.10: Destination host unreachable.
Reply from 40.0.0.10: Destination host unreachable.
Reply from 40.0.0.10: Destination host unreachable.

Ping statistics for 10.0.0.1:

Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Request timed out.
Reply from 10.0.0.1: bytes=32 time=6ms TTL=125
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=12ms TTL=125

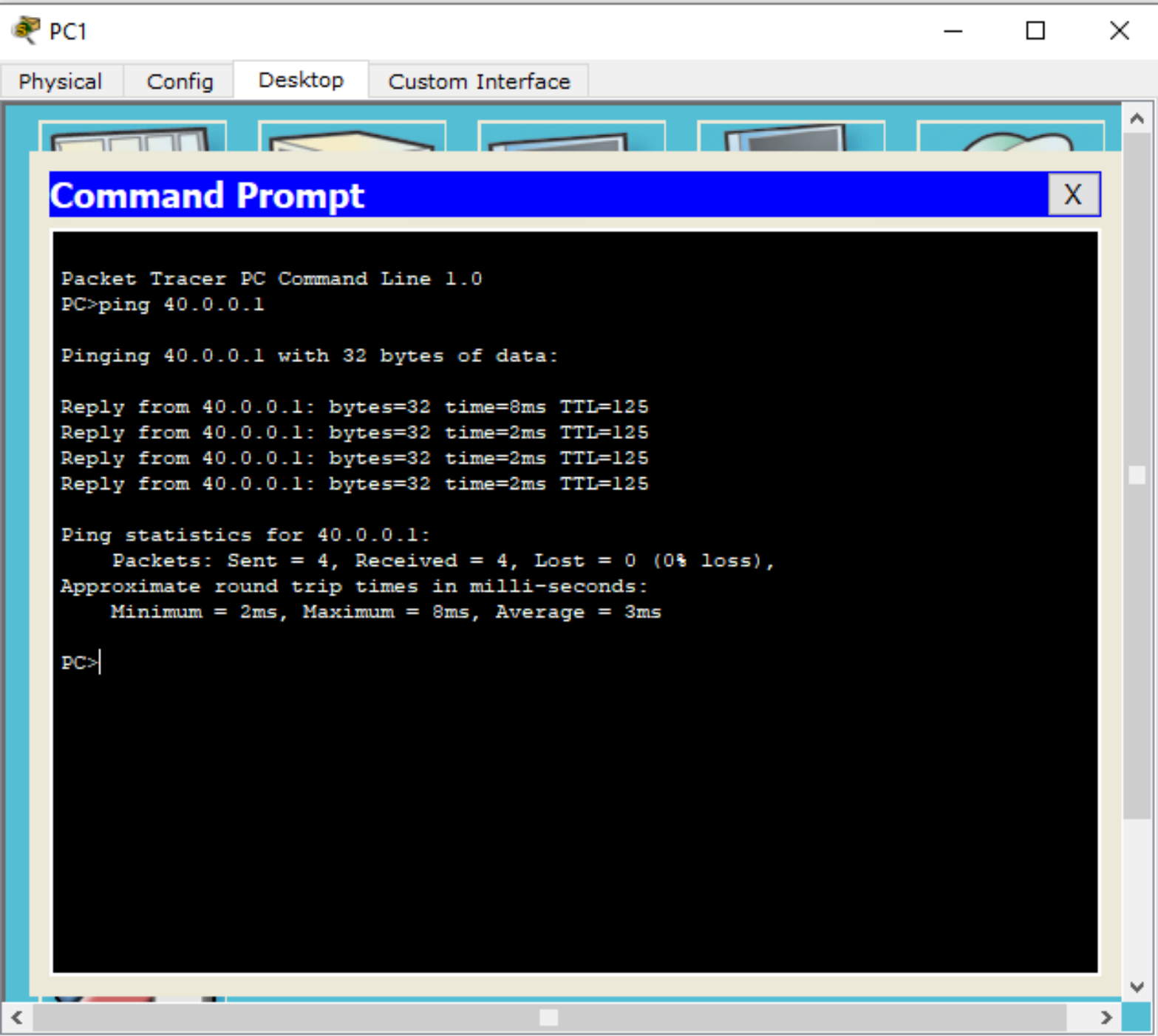
Ping statistics for 10.0.0.1:

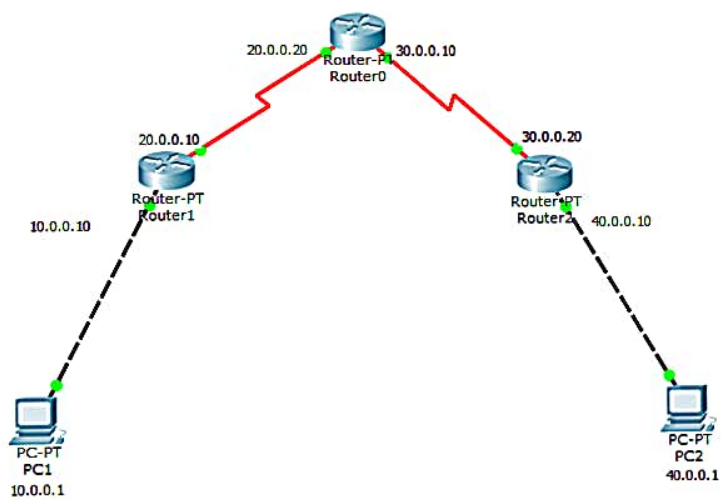
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 12ms, Average = 6ms

PC>





Router2

Physical Config CLI

IOS Command Line Interface

```
Router#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 0.0.0.0 0.0.0.0 20.0.0.2
Router(config)#no shut

% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show ip rout
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 20.0.0.2 to network 0.0.0.0

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    20.0.0.0/8 is directly connected, Serial2/0
S*   0.0.0.0/0 [1/0] via 20.0.0.2
Router#
```

Copy Paste

Time: 00:21:55 Power Cycle Devices Fast Forward Time

Connections

Toggle PDU List Window

Automatically Choose Connection Type

Realtime

Destination Type Color Time(sec) Periodic Num

Activate Windows
Go to Settings to activate Windows.

23°C Partly sunny 09:36 13-07-2023