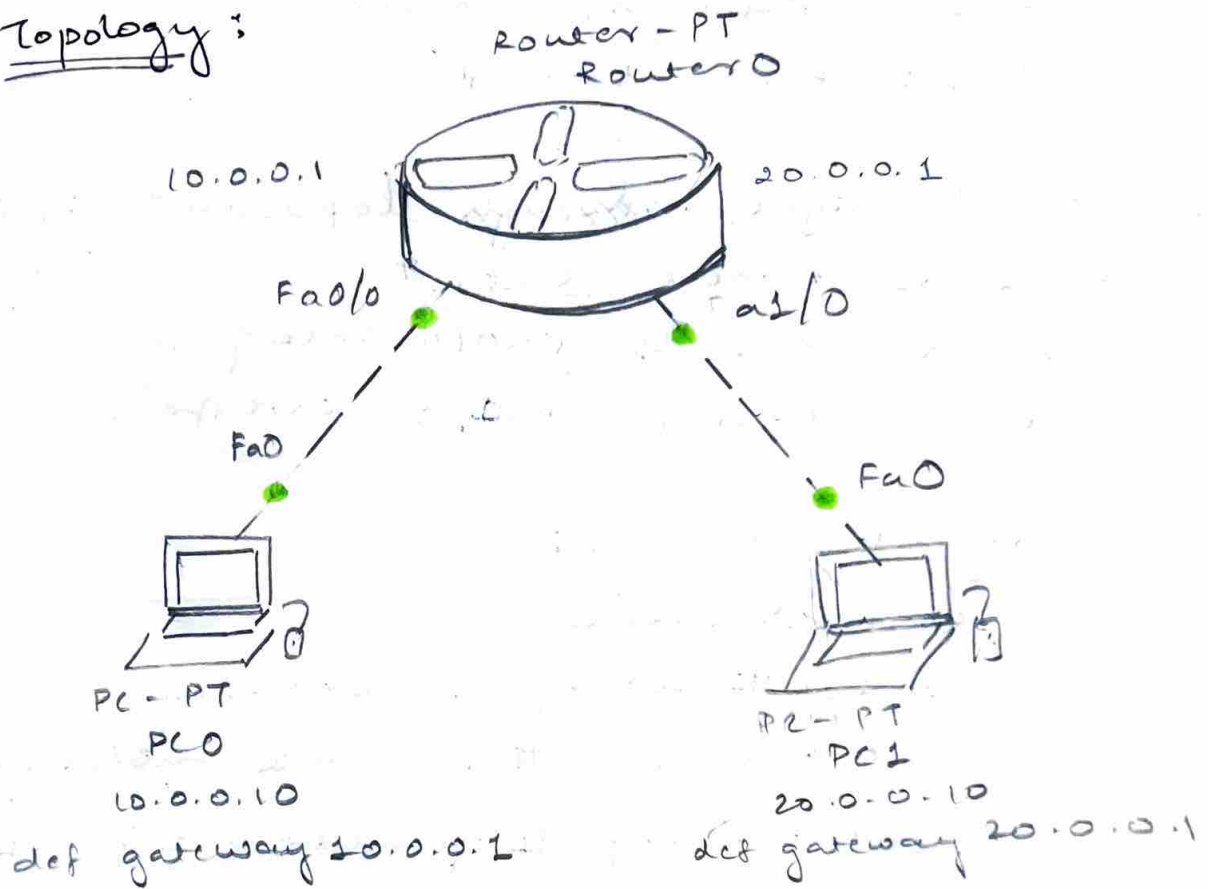


Experiment - 2A

2) Aim: To connect two PC's on two different networks using a router

Topology:



1. PC0 : connected to routers interface Fa0/0 using a cross-over cable
IP: address : 10.0.0.10
Default Gateway : 10.0.0.1

2. PC1 : connected to the router's interface Fa1/0 using a cross-over cable
IP: address : 20.0.0.10
Default Gateway : 20.0.0.1

3. Router : Interface Fa0/0 connected to PC0
Interface Fa1/0 connected to PC1
IP address of Fa0/0 : 10.0.0.1
IP address of Fa1/0 : 20.0.0.1

Procedure:

Open Cisco Packet Tracer and drag the following components onto the workspace

1) Router: Place one router

2) PCs: Place two PCs

2) use (straight) ~~through~~ copper-straight-through to connect device

PC0 → Router's Fa0/0 interface

PC1 → Router's Fa1/0 interface

3) config the Router:

Terminal.

```
Router> enable
```

```
Router# configure terminal
```

```
Router(config)# interface fastethernet 0/0
```

```
Router(config)# ip address 10.0.0.1  
255.0.0.0
```

```
Router(config-if)# no shutdown
```

```
Router(config)# interface fa  
fastethernet 1/0
```

```
Router(config-if)# ip address  
20.0.0.1 255.0.0.0
```

```
Router(config-if)# no shutdown
```

4. configure the PC's:

For PC0: click on PC0 and set IP address to 10.0.0.1, subnet mask 255.0.0.0 and default gateway to 10.0.0.1

For PC1: click on PC1 and set IP address to 20.0.0.1, subnet mask 255.0.0.0 and default gateway to 20.0.0.1

5. test connectivity:

open command prompt on PC0 to PC1

• use ping command

>> ping 10.0.0.10

Observation:

1. If the configurations and cabling are correct, you will receive successful ping replies between the two PC's.

In router click and go to CLI

CLI

Router> show ip route

Codes: C - connected

Gateway of last resort is not set

C 10.0.0.0/8 is directly connected, FastEthernet0/0

C 20.0.0.0/8 is directly connected, FastEthernet1/0

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 - ~~user~~ per-user static route

O - ODR

P - periodic downloaded
static route

CMD

PC > PING 10.0.0.10.

Pinging 10.0.0.10 with 32 bytes of data:

Reply from 10.0.0.10 bytes=32 time=5ms
TTL=128

Reply from 10.0.0.10 bytes=32 time=2ms
TTL=128

Reply from 10.0.0.10 bytes = 32

time = 2ms TTL = 128

Reply from 10.0.0.10 bytes = 32

time = 2ms TTL = 128.

ping statistics for 10.0.0.10:

packets: sent = 4, Received = 4,

loss = 0 (0% loss),

Approximate round trip times in
milli-seconds:

Minimum = 2ms, Maximum = 5ms,

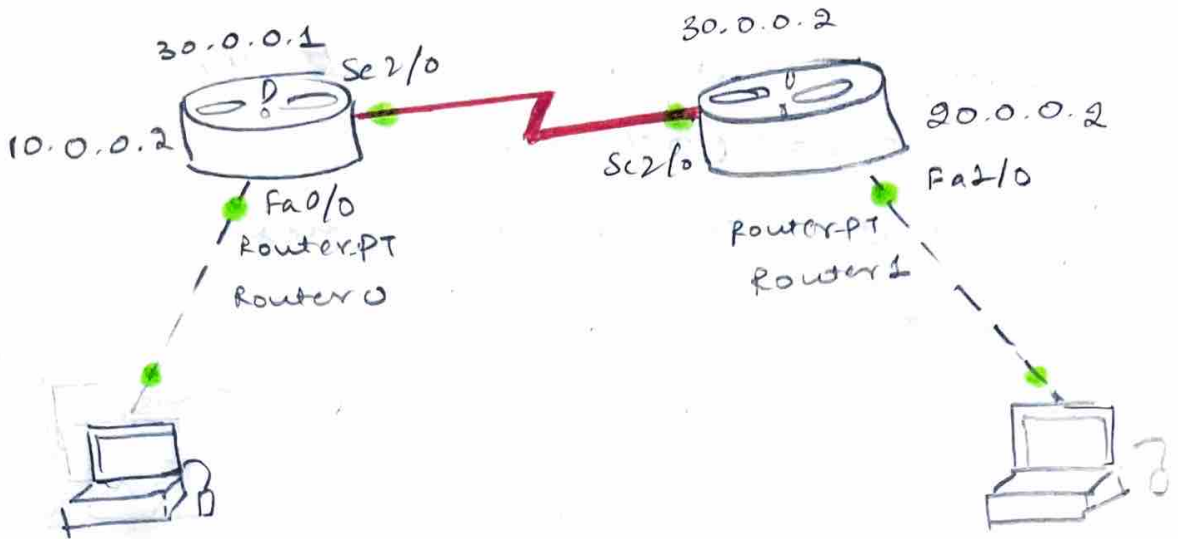
Average = 2ms.

N
9/10/24

Experiment - 2B.

Aim: To connect two PC's on two networks via two routers.

Topology:



PC0 (10.0.0.1)

- IP address: 10.0.0.1
- gateway 10.0.0.2
- connected to Router 0 via Fa0/0
- subnet mask: 255.0.0.0

Router 0

- Interface Fa0/0: 10.0.0.2
- Interface S2/0: 30.0.0.1
- connected to Router 1 via Serial Interface S2/0
- Subnet mask: 255.0.0.0

Router 1:

- Interface S2/0: 30.0.0.2
- Interface Fa1/0: 20.0.0.2
- connected to PC1 via Fa0/0

PC1 (20.0.0.1)

- IP address: 20.0.0.1
- gateway: 20.0.0.2
- connected to Router 1 via Fa0/0

connectivity:

PC0 and PC1 are on different subnets and cannot directly communicate without the help of the routers.

Router0 and Router1 are connected via a serial link on the 30.0.0.0 providing a WAN link between the two local area Networks.

Procedure:

1) configure all the network according to the topology

2) connect using copper cross-over the PC0 and Router0 and also between PC1 and Router1.

connect the two Routers with the help of serial DCE.

3) configure the Router: [same for Router0 & 1]

command prompt:

```
Router>enable
```

```
Router # config terminal
```

```
Router (config) # interface fastEthernet 0/0
```

```
Router (config) # ip address 10.0.0.1  
255.0.0.0
```

```
Router (config-if) # no shut
```

```
Router (config) # interface serial 2/0
```

```
Router (config) ip address 30.0.0.1  
255.0.0.0
```

```
Router (config) # no shut
```

exit

AP - November 2019

Observation:

If the configuration and cabling are correct, you will receive successful ping replies between the two PC's

show ip route:
c 10.0.0.0/8 is directly connected FastEthernet0/0
c 30.0.0.0/8 is connected Serial2/0

output:

ping 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data.

Request timed out

Request timed out

Request timed out

Request timed out.

Ping statistics for 20.0.0.1:

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

PC> Ping 20.0.0.1

pinging 20.0.0.1 bytes (32) bytes of data:

Reply from 20.0.0.1 : bytes = 32 time = 6ms
TTL = 126

Reply from 20.0.0.1 : bytes = 32 time = 2ms
TTL = 126

Reply from 20.0.0.1 : bytes = 32 time = 3ms
TTL = 126

Reply from 20.0.0.1 : bytes = 32
time = 3ms TTL = 126

Ping statistics for 20.0.0.1:

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