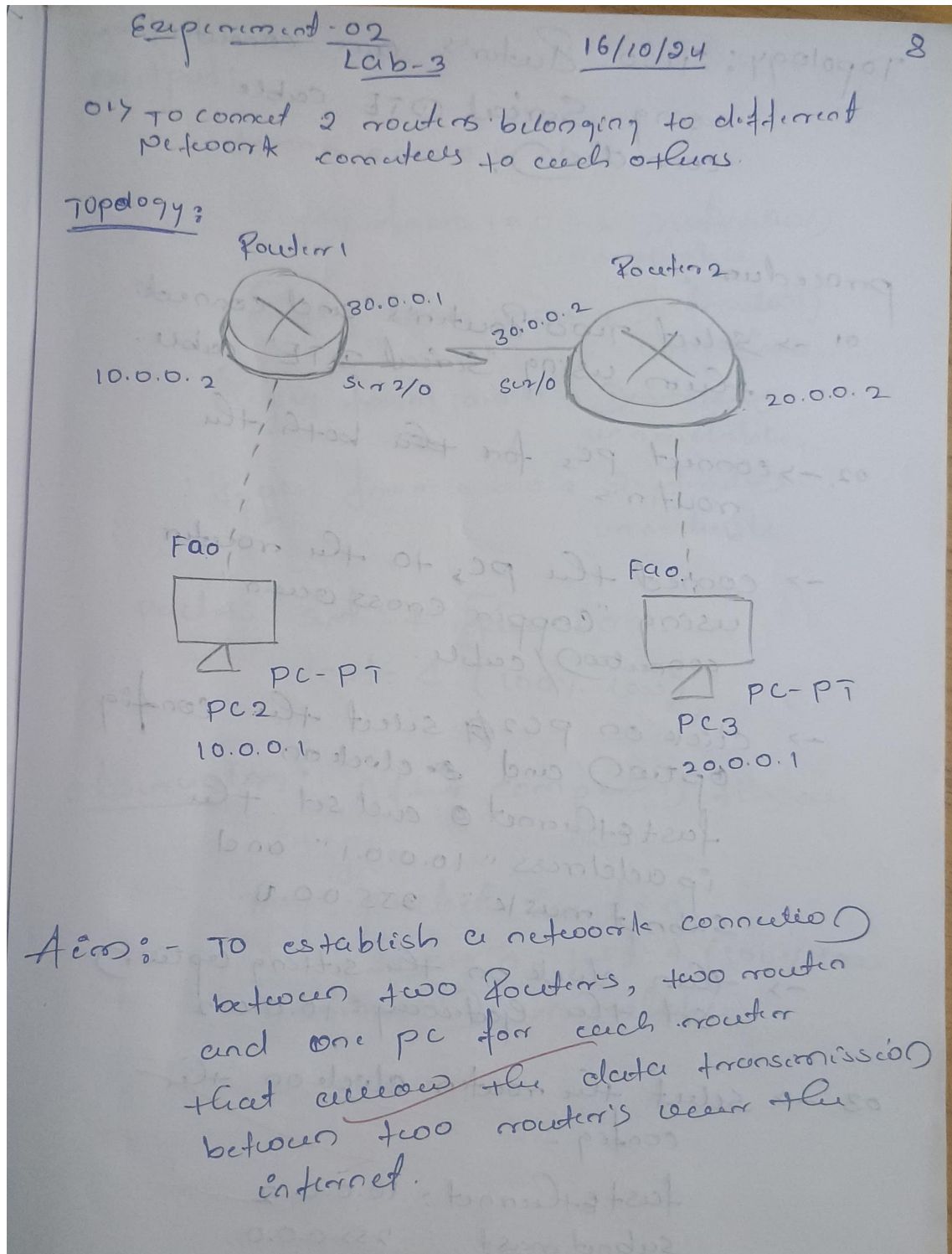


16/10/2024

Week-3(Experiment 2b and 3a)

Observation Book:



Topology: Two Routers are connected using Serial DTE cable connection.

procedure:-

01. → Select Two Routers and connect them using "Serial DTE" cable.
02. → connect PC_s for ~~the~~ both the routers.
 - connect the PC_s to the router using "Copper Cross over" connection/cable.
 - click on PC2 ~~and~~ select the config option and ~~click on~~ fastethernet and set the ip address "10.0.0.1" and subnet mask "255.0.0.0".
 - then click on the setting option set the Gateway = 10.0.0.2
03. → select the router click on the config -
 - fastethernet : 10.0.0.2
 - subnet mask : 255.0.0.0.
 - Serial 2/0 : 30.0.0.2
255.0.0.0.

output:

\$ping 20.0.0.1

Reply from 10.0.0.2: Destination
unreachable

Reply from 10.0.0.2: Destination
unreachable

Reply from 10.0.0.2: Destination
unreachable

Reply from 10.0.0.2: Destination
unreachable

packets: sent = 4, Received = 0,
lost = 4 (100% loss).

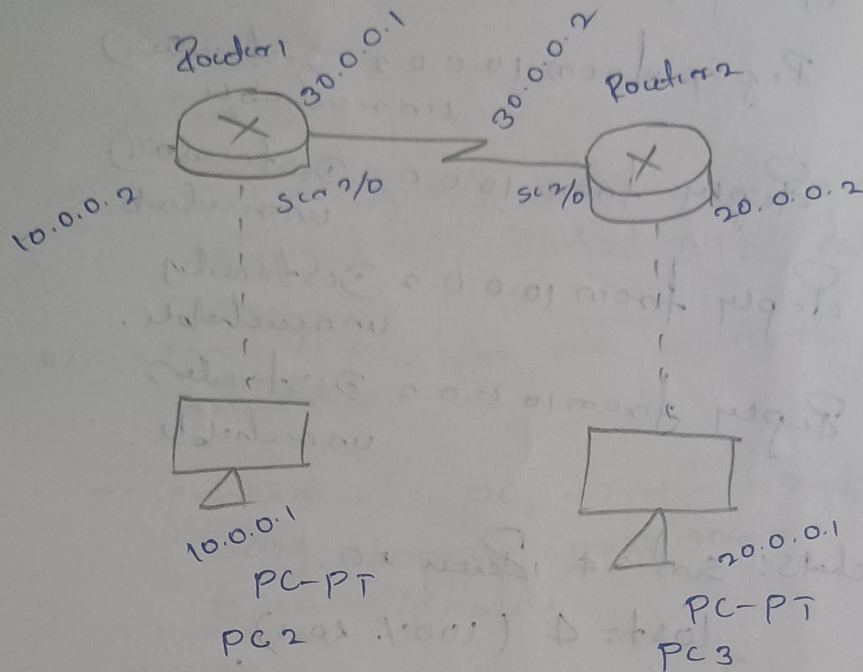
observations: After completion of these
steps,

msg: packets: sent = 4,

~~Received~~ 0, lost = 4 (100% loss).

~~Destination~~ unreachable.

Experiment - 3.



Aim :- Successfully connected two network using two router.

Topology :- Two Router's are connected using Serial DTE cable connection

procedure:

1. select Router and click on CLI option.

- Exit

- ip route ip address subnet mask
next network ip address

- ip route 10.0.0.1 255.0.0.0 30.0.0.2
(Router 1)
- ip route 20.0.0.1 255.0.0.0 30.0.0.1
(Router 2).

Observation: - successfully connected two network.

\$ ping 20.0.0.1

~~ping~~

output: ping 20.0.0.1

ping 20.0.0.1 with 32 bytes of data.

Reply from 20.0.0.1: bytes

\$ show ip route.

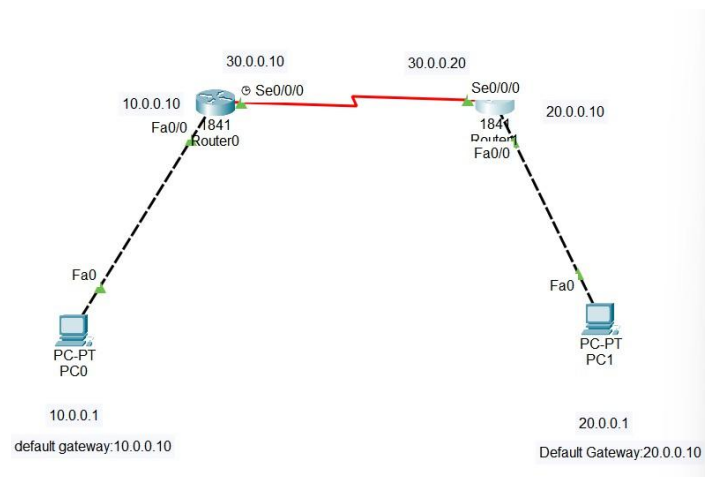
C: 30.0.0.0/8 is directly connected,
Serial 2/0.

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

S: 20.0.0.0/8 [1/0] via 30.0.0.2.



Topology:



Output:(Before Static Routing)

```
Router0
Physical Config CLI Attributes
IOS Command Line Interface

Press RETURN to get started.

Router>enable
Router#show ip route
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 not set

C    10.0.0.0/8 is directly connected, FastEthernet0/0
C    30.0.0.0/8 is directly connected, Serial0/0/0

PC0
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.10

Pinging 10.0.0.10 with 32 bytes of data:

Reply from 10.0.0.10: bytes=32 time<1ms TTL=255
Reply from 10.0.0.10: bytes=32 time<1ms TTL=255
Reply from 10.0.0.10: bytes=32 time<1ms TTL=255
Reply from 10.0.0.10: bytes=32 time<1ms TTL=255

Ping statistics for 10.0.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 30.0.0.20

Pinging 30.0.0.20 with 32 bytes of data:

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

Ping statistics for 30.0.0.20:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

(After Static Routing)

The image shows two windows from a network simulation. The top window is the 'Router0' CLI, and the bottom window is the 'PC1' Command Prompt.

Router0 CLI:

```
IOS Command Line Interface
NI - 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, I1 - IS-IS level-1, I2 - 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 not set
C 10.0.0.0/8 is directly connected, FastEthernet0/0
C 30.0.0.0/8 is directly connected, Serial0/0/0

Router#enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip route 20.0.0.0 255.0.0.0 30.0.0.20
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
enable
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        NI - 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, I1 - IS-IS level-1, I2 - 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 not set
C 10.0.0.0/8 is directly connected, FastEthernet0/0
S 20.0.0.0/8 [1/0] via 30.0.0.20
C 30.0.0.0/8 is directly connected, Serial0/0/0
Router#
```

PC1 Command Prompt:

```
C:\>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=17ms TTL=126
Reply from 10.0.0.1: bytes=32 time=1ms TTL=126
Reply from 10.0.0.1: bytes=32 time=1ms TTL=126
Reply from 10.0.0.1: bytes=32 time=15ms TTL=126

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 17ms, Average = 8ms

C:\>ping 10.0.0.10
Invalid Command.

C:\>ping 10.0.0.10

Pinging 10.0.0.10 with 32 bytes of data:

Reply from 10.0.0.10: bytes=32 time=14ms TTL=254
Reply from 10.0.0.10: bytes=32 time=1ms TTL=254
Reply from 10.0.0.10: bytes=32 time=17ms TTL=254
Reply from 10.0.0.10: bytes=32 time=18ms TTL=254

Ping statistics for 10.0.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 18ms, Average = 12ms

C:\>ping 30.0.0.20

Pinging 30.0.0.20 with 32 bytes of data:

Reply from 30.0.0.20: bytes=32 time<1ms TTL=255
Reply from 30.0.0.20: bytes=32 time<1ms TTL=255
Reply from 30.0.0.20: bytes=32 time<1ms TTL=255
Reply from 30.0.0.20: bytes=32 time<1ms TTL=255

Ping statistics for 30.0.0.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```