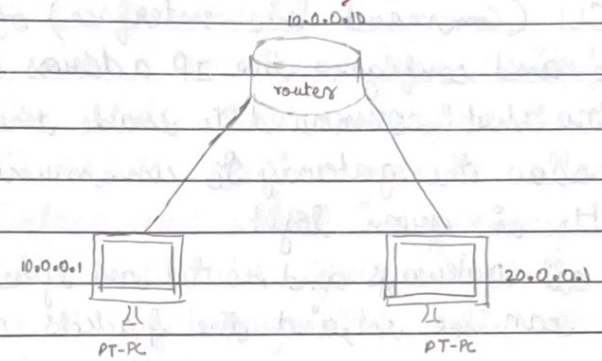
Bafna Gold
Year: 22-~~June~~-23

EXPERIMENT-3

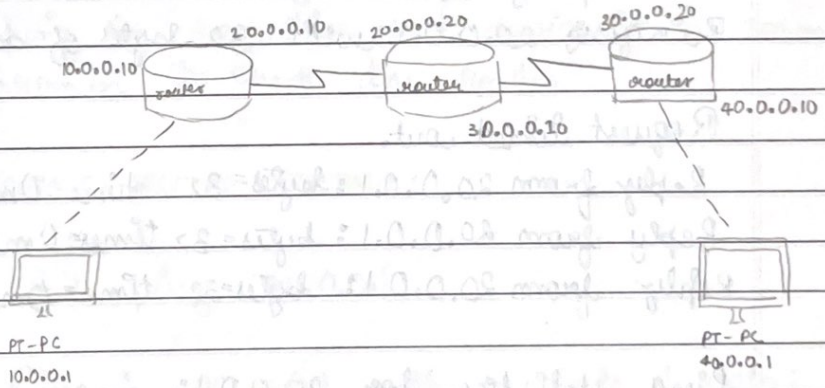
AIM: ~~Configure default route, Static route To the Router.~~ To create a network with multiple routers and two pieces.

Topology

single router



multiple routers.



Procedure for single router

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- Place 2 PC-PT & 1 router-PT onto the logical interface.
- Connect them with appropriate cable. Use copper crossover to connect PC-PT to router
- Type the IP address & Gateway to the devices in config.
- In CLI (Command line interface) of each device and configure the IP address as well as "no shut" command to enable the interface and allow the gateway to communicate which results in green light.
- Once all gateways and routes are green, the route can be set, and the packets can be from one PC-PT to another.

OUTPUT:

```
PC> ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.1:
    Packets: Sent=4, Recvie=3, Lost=1 (25% loss)
Approximate round trip times in milli-seconds:
    Minimum=0ms, Maximum=0ms, Average=0ms
```

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Procedure for multiple routers

1. Place 2 PC-PT and 3 router-PT's onto the logical interface
   - Connect them with appropriate cable. Use copper Crossover to connect PC-PT to routers and the serial DCE to connect the routers.
   - Type the IP address & Gateway to all the devices in config.
   - In CLI (command line interface) of each device and configure the IP address as well as "no shut" command to enable the interface and allow the gateway to communicate which results in green light.
   - Once all Gateways and router are green, the route can be set in each route to configure the unknown network ID's which will help in routing the packets. This can be easily monitored or checked using the "show ip route" command.
   - Ping the respective end device in the command prompt to check the routes.

OUTPUT BEFORE ROUTING:

PC> ping 40.0.0.1

Pinging 40.0.0.1 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.

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Ping statistics for 40.0.0.1:
Packets: Sent 4, Recieved 0, Lost = 4 (100% loss).

AFTER ROUTING:

PC > Ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes = 32 time = 16ms TTL = 125
Reply from 40.0.0.1: bytes = 32 time = 2ms TTL = 125
Reply from 40.0.0.1: bytes = 32 time = 12ms TTL = 125
Reply from 40.0.0.1: bytes = 32 time = 23ms TTL = 125

show IP route

Ping statistics for 40.0.0.1
Packets: Sent = 4, Recived = 4, Lost = 0 (0% loss),
Approximate routed trip times in milli-seconds:
Minimum = 2ms, Maximum = 23ms, Average = 13ms

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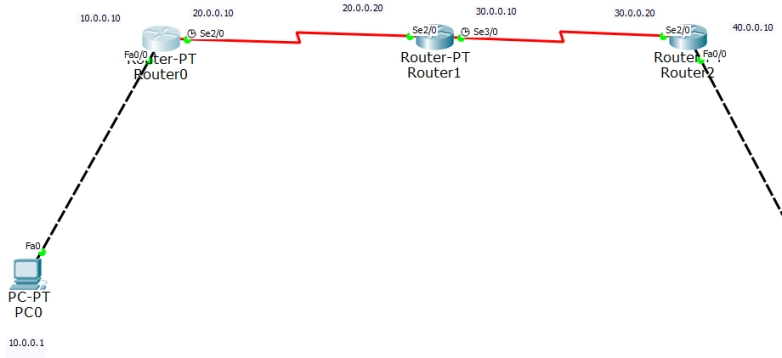
File Edit Options View Tools Extensions Help

Logical | [Root] | New Cluster | Move Object | Set Tiled Background | Viewport



Time: 00:28:37 | Power Cycle Devices | Fast Forward Time | Realtime

Connections

Automatically Choose Connection Type

Scenario 0 | New | Delete | Toggle PDU List Window

Fire | Last Statu | Sourc | Destinatic | Type | Colo | Time(s | Period | Num | Edit | Delete

Command Prompt

```
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1

Pinging 40.0.0.1 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 40.0.0.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

```
Router(config)#ip route 10.0.0.0 255.0.0.0 20.0.0.10
Router(config)#ip route 40.0.0.0 255.0.0.0 30.0.0.20
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

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

S    10.0.0.0/8 [1/0] via 20.0.0.10
C    20.0.0.0/8 is directly connected, Serial2/0
C    30.0.0.0/8 is directly connected, Serial3/0
S    40.0.0.0/8 [1/0] via 30.0.0.20
Router#
```

```
Router(config)#ip route 20.0.0.0 255.0.0.0 30.0.0.10
Router(config)#ip route 10.0.0.0 255.0.0.0 30.0.0.10
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
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
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Gateway of last resort is not set

S    10.0.0.0/8 [1/0] via 30.0.0.10
S    20.0.0.0/8 [1/0] via 30.0.0.10
C    30.0.0.0/8 is directly connected, Serial2/0
C    40.0.0.0/8 is directly connected, FastEthernet0/0
Router#
```

```
Router(config)#ip route 30.0.0.0 255.0.0.0 20.0.0.20
Router(config)#ip route 40.0.0.0 255.0.0.0 20.0.0.20
Router(config)#show ip route
                ^
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

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
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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, Serial2/0
S    30.0.0.0/8 [1/0] via 20.0.0.20
S    40.0.0.0/8 [1/0] via 20.0.0.20
Router#
```

```
PC>ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes=32 time=16ms TTL=125
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Reply from 40.0.0.1: bytes=32 time=23ms TTL=125

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