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Configuring default route to the Router

Lab 4 (12 October 2020)

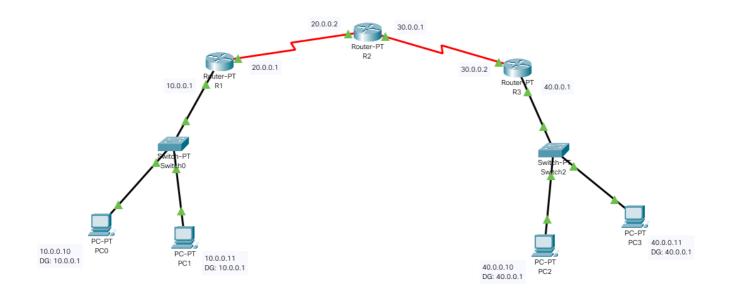
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Procedure

- 1. A toplogy was created using three PT Routers, two Switch-PTs and two PC's connected to each switch
- 2. Default gateways and unique ip addresses were configured for each PC and router.
- 3. Static routes were configured from routers R1, R2, and R3
- 4. Pinging PC2 from PC0 gave, which are on networks 10.0.0.0 and 40.0.0.0 respectively, gave sucessful ping responses. Similarly, PC3 was pinged from PC1
- 5. ip routes for each router was viewed using the command: show ip route
- 6. Static ip route was configured for router 1 using CLI commands: ip route destination_network subnet_mask next_hop_address
- 7. Default ip route was configured for router 0 and router 2 using CLI commands: ip 0.0.0.0 0.0.0.0 next_hop_address

Screenshots

Topology



Router R1 default route

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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 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>

Router R2 static routes

```
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 20.0.0.1
```

- 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 30.0.0.2

Router>

Router>

Router R3 default route

```
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 30.0.0.1 to network 0.0.0.0

C 30.0.0.0/8 is directly connected, Serial3/0

C 40.0.0.0/8 is directly connected, FastEthernet0/0

S* 0.0.0.0/0 [1/0] via 30.0.0.1
```

Ping test PC2 from PC0

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```
C:\>ping 40.0.0.10

Pinging 40.0.0.10 with 32 bytes of data:

Request timed out.

Reply from 40.0.0.10: bytes=32 time=2ms TTL=125

Reply from 40.0.0.10: bytes=32 time=2ms TTL=125

Reply from 40.0.0.10: bytes=32 time=2ms TTL=125

Ping statistics for 40.0.0.10:

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

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 2ms, Average = 2ms

C:\>
```

Ping test PC3 from PC1

```
C:\>ping 40.0.0.11

Pinging 40.0.0.11 with 32 bytes of data:

Request timed out.

Reply from 40.0.0.11: bytes=32 time=3ms TTL=125

Reply from 40.0.0.11: bytes=32 time=4ms TTL=125

Reply from 40.0.0.11: bytes=32 time=4ms TTL=125

Ping statistics for 40.0.0.11:

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

Approximate round trip times in milli-seconds:

Minimum = 3ms, Maximum = 4ms, Average = 3ms

C:\>
```