DC Lab 3

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Part 1: Topology Configuration

Setting Default Gateway

PC1

```
PC1> ip 192.168.1.10/24
Checking for duplicate address...
PC1 : 192.168.1.10 255.255.255.0
```

PC2

```
PC2> ip 192.168.1.20/24
Checking for duplicate address...
PC1 : 192.168.1.20 255.255.255.0
```

PC3

```
PC3> ip 200.0.0.1/24
Checking for duplicate address...
PC1 : 200.0.0.1 255.255.255.0
```

After that, enter "write" and "show ip interface brief" in the command line for R1, R2, and R3.

R1

```
R1#
*Mar  1 00:17:43.931: %SYS-5-CONFIG_I: Configured from console by console
R1#write
Building configuration...
[OK]
R1#show ip interface brief
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            192.168.1.254   YES manual up                    up
FastEthernet0/1            10.0.0.1        YES manual up                    up
R1#write
Building configuration...
[OK]
R1#
```

R2

```
R2#
*Mar  1 00:17:10.047: %SYS-5-CONFIG_I: Configured from console by console
R2#write
Building configuration...
[OK]
R2#show ip interface brief
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            10.0.0.2        YES manual up                    up
FastEthernet0/1            10.0.2.1        YES manual up                    up
R2#write
Building configuration...
[OK]
R2#
```

R3

```
R3#
*Mar  1 00:23:26.715: %SYS-5-CONFIG_I: Configured from console by console
R3#write
Building configuration...
[OK]
R3#show ip interface brief
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            10.0.2.2        YES manual up                    up
FastEthernet0/1            200.0.0.254     YES manual up                    up
R3#write
Building configuration...
[OK]
R3#
```

PINGS

```
PC1> ping 192.168.1.20
84 bytes from 192.168.1.20 icmp_seq=1 ttl=64 time=0.320 ms
84 bytes from 192.168.1.20 icmp_seq=2 ttl=64 time=0.755 ms
84 bytes from 192.168.1.20 icmp_seq=3 ttl=64 time=0.718 ms
84 bytes from 192.168.1.20 icmp_seq=4 ttl=64 time=0.552 ms
84 bytes from 192.168.1.20 icmp_seq=5 ttl=64 time=1.010 ms

PC1>
```

Part 2: Static Routing

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip route 10.0.2.0 255.255.255.0 10.0.0.2
R1(config)#
```

PC1 Ping

```
PC1> ping 10.0.0.2/24
10.0.0.2 icmp_seq=1 timeout
10.0.0.2 icmp_seq=2 timeout
10.0.0.2 icmp_seq=3 timeout
10.0.0.2 icmp_seq=4 timeout
10.0.0.2 icmp_seq=5 timeout
```

R2 config

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#ip route 192.168.1.0 255.255.255.0 10.0.0.1
R2(config)#
```

New PC 1 ping

```
PC1> ping 10.0.0.2/24
84 bytes from 10.0.0.2 icmp_seq=1 ttl=254 time=24.739 ms
84 bytes from 10.0.0.2 icmp_seq=2 ttl=254 time=21.767 ms
84 bytes from 10.0.0.2 icmp_seq=3 ttl=254 time=13.709 ms
84 bytes from 10.0.0.2 icmp_seq=4 ttl=254 time=22.044 ms
84 bytes from 10.0.0.2 icmp_seq=5 ttl=254 time=15.928 ms

PC1>
```

R1

```
R1(config)#ip route 10.0.2.0 255.255.255.0 10.0.0.2
R1(config)#ip route 0.0.0.0 0.0.0.0 10.0.0.2
R1(config)#
R1#
*Mar  1 00:44:19.395: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip route
Codes: C - connected, S - static, 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
       i - IS-IS, su - IS-IS summary, 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 10.0.0.2 to network 0.0.0.0

     10.0.0.0/24 is subnetted, 2 subnets
S       10.0.2.0 [1/0] via 10.0.0.2
C       10.0.0.0 is directly connected, FastEthernet0/1
C    192.168.1.0/24 is directly connected, FastEthernet0/0
S*   0.0.0.0/0 [1/0] via 10.0.0.2
R1#
```

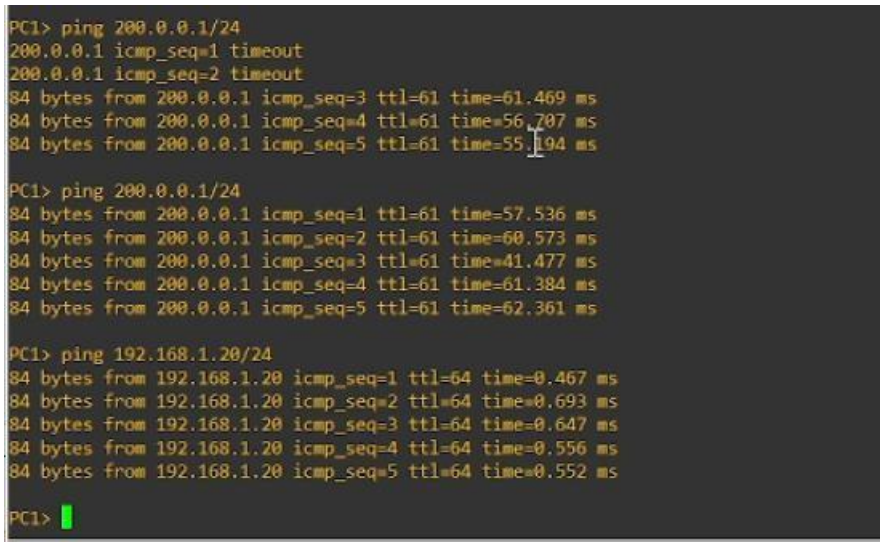
R2

```
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#ip route 192.168.1.0 255.255.255.0 10.0.0.1
R2(config)#ip route 200.0.0.0 255.255.255.0 10.0.2.2
R2(config)#
R2#
*Mar  1 00:50:13.279: %SYS-5-CONFIG_I: Configured from console by console
R2#show ip route
Codes: C - connected, S - static, 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
       i - IS-IS, su - IS-IS summary, 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    200.0.0.0/24 [1/0] via 10.0.2.2
     10.0.0.0/24 is subnetted, 2 subnets
C       10.0.2.0 is directly connected, FastEthernet0/1
C       10.0.0.0 is directly connected, FastEthernet0/0
S    192.168.1.0/24 [1/0] via 10.0.0.1
R2#
```

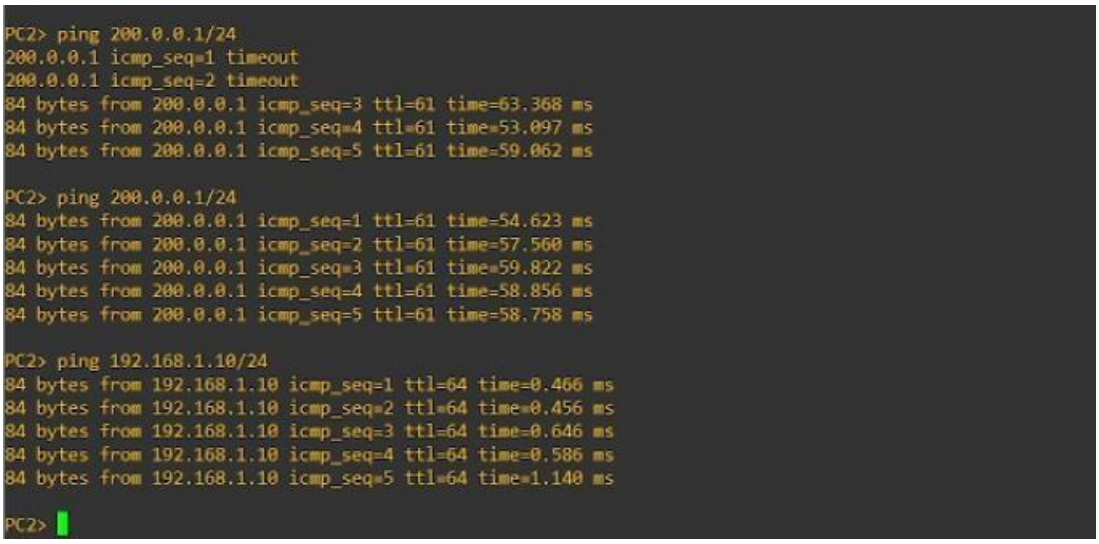
R3

```
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#ip route 0.0.0.0 0.0.0.0 10.0.2.1
R3(config)#ip route 10.0.0.0 255.255.0.0 10.0.2.1
R3(config)#
R3#
*Mar  1 00:54:22.939: %SYS-5-CONFIG_I: Configured from console by console
R3#show ip route
Codes: C - connected, S - static, 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
       i - IS-IS, su - IS-IS summary, 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 10.0.2.1 to network 0.0.0.0

C    200.0.0.0/24 is directly connected, FastEthernet0/1
     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.0.2.0/24 is directly connected, FastEthernet0/0
S       10.0.0.0/16 [1/0] via 10.0.2.1
S*   0.0.0.0/0 [1/0] via 10.0.2.1
R3#
```

Ping 1 to Pc2 and Pc3



Ping PC2 to Pc1 and Pc3



Pc3 ping 1 and 2

```
PC3> ping 192.168.1.10/24
84 bytes from 192.168.1.10 icmp_seq=1 ttl=61 time=57.580 ms
84 bytes from 192.168.1.10 icmp_seq=2 ttl=61 time=54.773 ms
84 bytes from 192.168.1.10 icmp_seq=3 ttl=61 time=56.679 ms
84 bytes from 192.168.1.10 icmp_seq=4 ttl=61 time=53.029 ms
84 bytes from 192.168.1.10 icmp_seq=5 ttl=61 time=57.276 ms

PC3> ping 192.168.1.20/24
192.168.1.20 icmp_seq=1 timeout
192.168.1.20 icmp_seq=2 timeout
84 bytes from 192.168.1.20 icmp_seq=3 ttl=61 time=65.240 ms
84 bytes from 192.168.1.20 icmp_seq=4 ttl=61 time=58.239 ms
84 bytes from 192.168.1.20 icmp_seq=5 ttl=61 time=58.967 ms

PC3> ping 192.168.1.20/24
84 bytes from 192.168.1.20 icmp_seq=1 ttl=61 time=60.906 ms
84 bytes from 192.168.1.20 icmp_seq=2 ttl=61 time=57.329 ms
84 bytes from 192.168.1.20 icmp_seq=3 ttl=61 time=57.415 ms
84 bytes from 192.168.1.20 icmp_seq=4 ttl=61 time=61.716 ms
84 bytes from 192.168.1.20 icmp_seq=5 ttl=61 time=63.234 ms

PC3>
```

PART 3 – RIP

R1

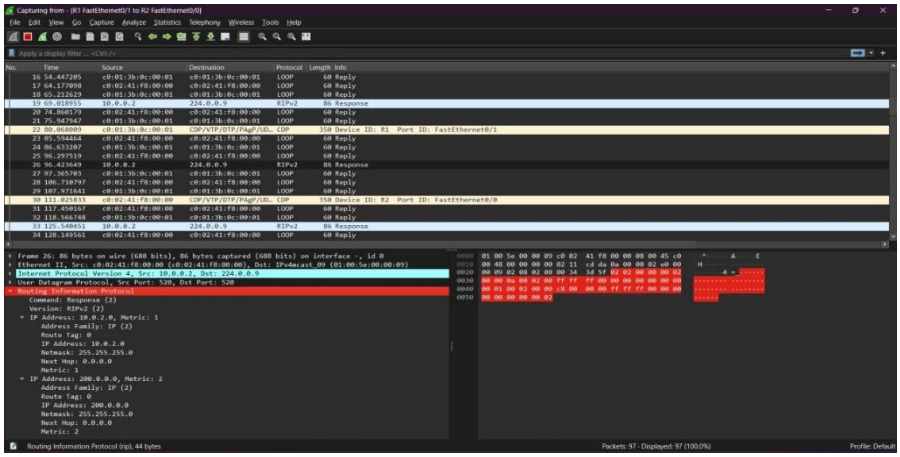
```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#router RIP
R1(config-router)#version 2
R1(config-router)#network 192.168.1.0
R1(config-router)#network 10.0.0.0
R1(config-router)#
```

R2

```
R2(config)#router RIP
R2(config-router)#version 2
R2(config-router)#network 10.0.0.0
R2(config-router)#network 10.0.2.0
R2(config-router)#
```

R3

```
R3(config)#router RIP
R3(config-router)#version 2
R3(config-router)#network 10.0.2.0
R3(config-router)#network 200.0.0.0
R3(config-router)#
```



```
R1#show ip route
Codes: C - connected, S - static, 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
       i - IS-IS, su - IS-IS summary, 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

     10.0.0.0/24 is subnetted, 1 subnets
C       10.0.0.0 is directly connected, FastEthernet0/1
C    192.168.1.0/24 is directly connected, FastEthernet0/0
R1#
```

```
R2#show ip route
Codes: C - connected, S - static, 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
       i - IS-IS, su - IS-IS summary, 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

R    200.0.0.0/24 [120/1] via 10.0.2.2, 00:00:03, FastEthernet0/1
     10.0.0.0/24 is subnetted, 2 subnets
C       10.0.2.0 is directly connected, FastEthernet0/1
C       10.0.0.0 is directly connected, FastEthernet0/0
R2#
```

```
R3#show ip route
Codes: C - connected, S - static, 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
       i - IS-IS, su - IS-IS summary, 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    200.0.0.0/24 is directly connected, FastEthernet0/1
     10.0.0.0/24 is subnetted, 2 subnets
C       10.0.2.0 is directly connected, FastEthernet0/0
R       10.0.0.0 [120/1] via 10.0.2.1, 00:00:10, FastEthernet0/0
R3#
```