

Data Communications Laboratory

Managing IP Routing

Student ID:

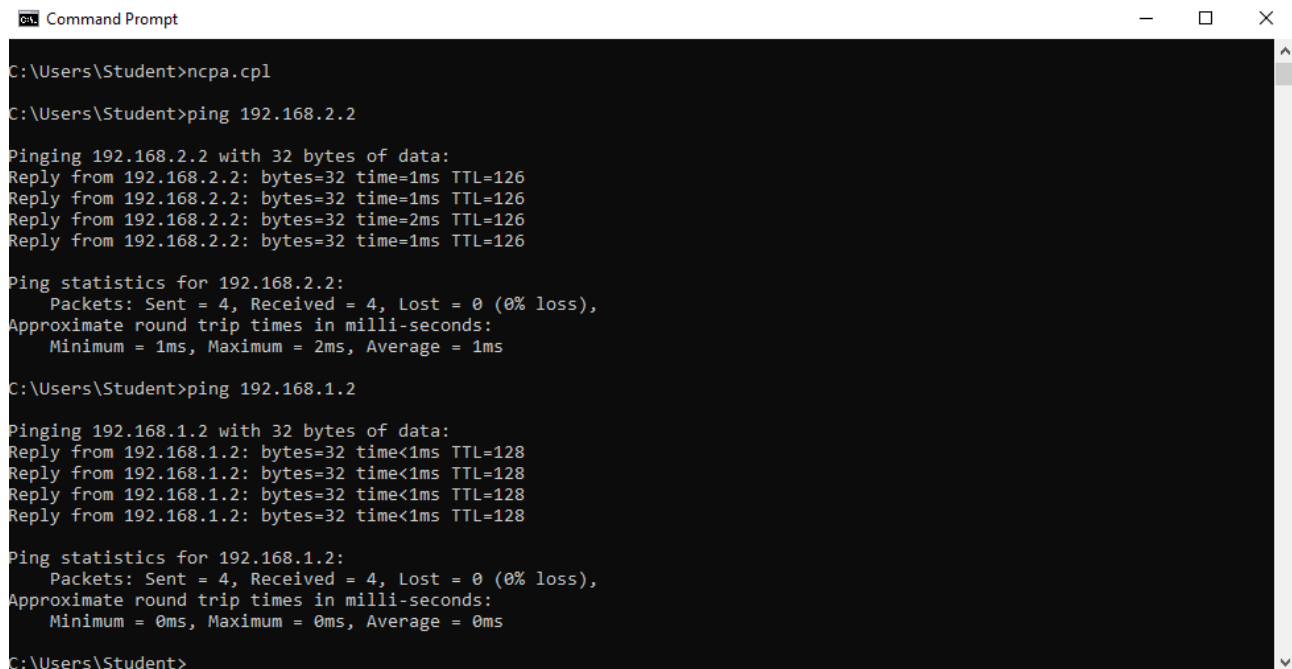
Student Name:

Step 11: Attempt to ping.

Now attempt to ping the hosts attached to the routers. Was the ping successful?

Note: You may have to wait 30 or so seconds after completing the previous step for this to work. If you have waited and are still not successful, try to troubleshoot the problem, otherwise reach out to your lab demonstrator for help.

ANS: Yes the ping was successful



```
Command Prompt

C:\Users\Student>ncpa.cpl

C:\Users\Student>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:
Reply from 192.168.2.2: bytes=32 time=1ms TTL=126
Reply from 192.168.2.2: bytes=32 time=1ms TTL=126
Reply from 192.168.2.2: bytes=32 time=2ms TTL=126
Reply from 192.168.2.2: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\Users\Student>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Student>
```

TTL stands for Time to live

When I send ping to router 2 it goes through two routers hence why the smaller TTL of 126

Step 12: Ensure that RIP is up and running.

```
router1> show ip route
Codes: L - local, 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, H - NHRP, l - LISP
        a - application route
        + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

    192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0/0
R       192.168.2.0/24 [120/1] via 192.168.3.2, 00:00:10, GigabitEthernet0/0/1
    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/0/1
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0/1
router1>
```

Can you tell from this output which routes are part of the network between the two PCs?

ANS: 192.168.1.0/24

192.168.2.0/24

192.168.3.0.24

Are there any other routes that are not part of this network?

ANS: There are no routes that are not a part of this network

Step 13: View information on IP routing timers and advertised networks

```
router1> show ip route
Codes: L - local, 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
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R       192.168.2.0/24 [120/1] via 192.168.3.2, 00:00:10, GigabitEthernet0/0/1
       192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/0/1
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0/1
router1>show ip protocol
*** IP Routing is NSF aware ***

Routing Protocol is "application"
  Sending updates every 0 seconds
  Invalid after 0 seconds, hold down 0, flushed after 0
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Maximum path: 32
  Routing for Networks:
  Routing Information Sources:
    Gateway         Distance         Last Update
  Distance: <default is 4>

Routing Protocol is "rip"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Sending updates every 30 seconds, next due in 21 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Redistributing: rip
  Default version control: send version 1, receive any version
  Interface         Send Recv Triggered RIP Key-chain
  GigabitEthernet0/0/0      1      1 2      No      none
  GigabitEthernet0/0/1      1      1 2      No      none
  Automatic network summarization is in effect
  Maximum path: 4
  Routing for Networks:
    192.168.1.0
    192.168.3.0
  Routing Information Sources:
    Gateway         Distance         Last Update
    192.168.3.2      120             00:00:10
  Distance: <default is 120>
```

Observations

Which routing protocol is listed?

ANS: "application"

What version of RIP updates are being sent and received?

ANS: version 1

What is the update time?

ANS: 30 seconds

What is the timeout time?

ANS: 180 seconds

What is the suppress time?

ANS: 180 seconds

What is the garbage-collect time?

ANS: 240 seconds

Step 15: Disable RIP on one router.

Now attempt to ping the hosts attached to the routers. Was the ping successful?

ANS: The ping was unsuccessful after disabling the RIP on one router

Step 16: Ensure RIP is not active.

Record your observations:

ANS: My computer doesn't show router rip, however the other computer shows router rip

Step 17: Ensure there is no RIP entry in the routing table.

Record your observations. Note that the output should not contain any IP route.

ANS:

```
router1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
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    192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/0/1
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0/1
router1#
```

Step 18: Re-enable RIP.

Now attempt to ping the hosts attached to the routers. Was the ping successful?

ANS:After re enabling RIP the ping was not successful

Step 19: View the current configuration.

Are there any observations you can make that may explain why or why not the last ping worked?

ANS:

After reenabling the RIP protocol did not appear

Step 21: View the current configuration again

Are there any new observations you can make about the section titled “router rip”?

ANS:

Now attempt to ping the hosts attached to the routers. Was the ping successful?

ANS:

Step 23: Confirm that RIP is disabled on both routers.

How can you tell that RIP has been disabled?

ANS:

Now attempt to ping the hosts attached to the routers. Was the ping successful?

ANS:

Step 25: Verify the static route has been added.

Record the corresponding line for the newly added static route

ANS:

What is the destination network address and the next hop address?

ANS:

Step 26: Verify connectivity between the networks.

Now attempt to ping the hosts attached to the routers. Was the ping successful?

ANS: