# Configuring Basic RIPv2
CIT 167
Lab 5

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Part 1: Build the Network and Configure Basic Device Settings

I did as the Lab specified, I placed three 1941 routers, making sure to turn them off and add on the Serial ports, turning them back on when finished. I then placed two 2960 switches, and then three end user PCs as instructed.

) Cable The Network I ran the cabling between as shown in the diagram, connecting the correct portsand interfaces.

PC-PT
PCB

1941
R2

1941
R1

1941
R3

2960-24TT
S1

2960-24TT
S3

PC-PT
PC-A

PC-PT
PC-C
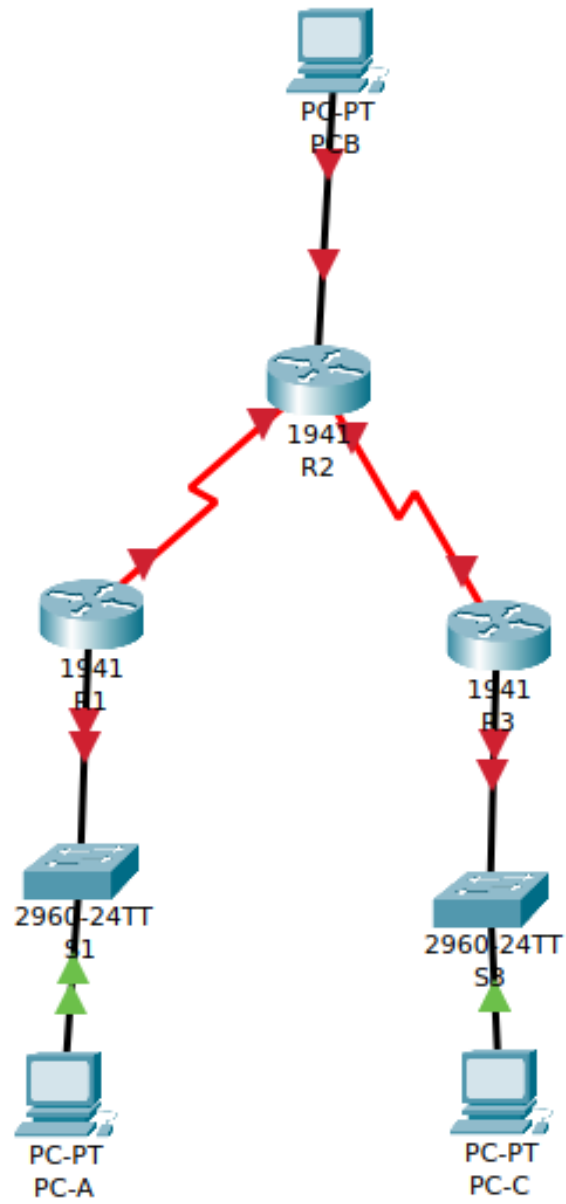
) **Initialize the Router and Switch and Configure basic settings for**

each I configured each of the routers and then their serial interfaces, i then configured the switches **) Configure PC IP Addressing** I went to the desktop of each pc and set it up according to the addressing table

⊙ Static

172.30.10.3

255.255.255.0

172.30.10.1

0.0.0.0

⊙ Static

209.165.201.2

255.255.255.0

209.165.201.1

0.0.0.0

⊙ Static

172.30.30.3

255.255.255.0

172.30.30.1

0.0.0.0

) Test Connectivity to test connectivity i went to the command prompt on each of the PCs and pinged their routers

```
C:\>ping 172.30.10.1

Pinging 172.30.10.1 with 32 bytes of data:

Reply from 172.30.10.1: bytes=32 time=1ms TTL=255
Reply from 172.30.10.1: bytes=32 time<1ms TTL=255
Reply from 172.30.10.1: bytes=32 time=2ms TTL=255
Reply from 172.30.10.1: bytes=32 time=1ms TTL=255

Ping statistics for 172.30.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 1ms
```

```
Packet Tracer PC Command Line 1.0
C:\>ping 172.30.30.1

Pinging 172.30.30.1 with 32 bytes of data:

Reply from 172.30.30.1: bytes=32 time=1ms TTL=255
Reply from 172.30.30.1: bytes=32 time<1ms TTL=255
Reply from 172.30.30.1: bytes=32 time<1ms TTL=255
Reply from 172.30.30.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.30.30.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
Packet Tracer PC Command Line 1.0
C:\>ping 209.165.201.1

Pinging 209.165.201.1 with 32 bytes of data:

Reply from 209.165.201.1: bytes=32 time=1ms TTL=255
Reply from 209.165.201.1: bytes=32 time<1ms TTL=255
Reply from 209.165.201.1: bytes=32 time<1ms TTL=255
Reply from 209.165.201.1: bytes=32 time<1ms TTL=255

Ping statistics for 209.165.201.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Part 2: Configure and Verify RIPv2 Routing

) **Confiugure RIPv2 routing** I ran the commands for setting up router rip
version two on each router

```
R1#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, 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

     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/0/0
L       10.1.1.1/32 is directly connected, Serial0/0/0
     172.30.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.30.10.0/24 is directly connected, GigabitEthernet0/1
L       172.30.10.1/32 is directly connected, GigabitEthernet0/1

R1#
```

) Examine the current state of the network I ran show ip interface brief
from router 2

```
R2#show ip interface brief
Interface          IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0 209.165.201.1   YES manual up                    up
GigabitEthernet0/1 unassigned      YES unset  administratively down down
Serial0/0/0        10.1.1.2        YES manual up                    up
Serial0/0/1        10.2.2.2        YES manual up                    up
Vlan1              unassigned      YES unset  administratively down down
R2#
```

) Disable automatic summarization I ran No auto-summary from each of
the routers, cleared the ip routing tables **) Configure and redistribute a
default route for internet access** i went to r2 set the default route and then
gave the command to distribute the table amongst the network

) Verify the routing configuration I went to r1 and typed show ip route to
verify the network configurations

```
R1#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, 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 10.1.1.2 to network 0.0.0.0

     10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/0/0
L       10.1.1.1/32 is directly connected, Serial0/0/0
R       10.2.2.0/30 [120/1] via 10.1.1.2, 00:00:25, Serial0/0/0
     172.30.0.0/16 is variably subnetted, 3 subnets, 2 masks
C       172.30.10.0/24 is directly connected, GigabitEthernet0/1
L       172.30.10.1/32 is directly connected, GigabitEthernet0/1
R       172.30.30.0/24 [120/2] via 10.1.1.2, 00:00:25, Serial0/0/0
R*   0.0.0.0/0 [120/1] via 10.1.1.2, 00:00:25, Serial0/0/0

R1#
```

) Verify Connectivity

```
C:\>ping 209.165.201.2

Pinging 209.165.201.2 with 32 bytes of data:

Reply from 209.165.201.2: bytes=32 time=2ms TTL=126
Reply from 209.165.201.2: bytes=32 time=1ms TTL=126
Reply from 209.165.201.2: bytes=32 time=1ms TTL=126
Reply from 209.165.201.2: bytes=32 time=1ms TTL=126

Ping statistics for 209.165.201.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>
```

[success1]

```
C:\>ping 172.30.30.3

Pinging 172.30.30.3 with 32 bytes of data:

Reply from 172.30.30.3: bytes=32 time=2ms TTL=125
Reply from 172.30.30.3: bytes=32 time=2ms TTL=125
Reply from 172.30.30.3: bytes=32 time=5ms TTL=125
Reply from 172.30.30.3: bytes=32 time=2ms TTL=125

Ping statistics for 172.30.30.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 5ms, Average = 2ms
```

[success2]

Part 3: Reflection

) **Why would you turn off auto-summary?** Route summarization reduces the amount of routing information in the routing tables. If you are using RIP Version 2, you can turn off automatic summarization by specifying no auto-summary. Disable automatic summarization if you must perform routing between disconnected subnets. When automatic summarization is off, subnets are advertised.

) **How did R1 and R3 learn the pathway to the internet?** they are using rip routing updates from the router default config. RIPv2 multicasts the entire routing table to all adjacent routers at the address