**RIPv2**

**Part 2: Configure and Verify RIPv2 Routing**

1. **Configure RIPv2 routing**

On R1, configure RIPv2 as the routing protocol and advertise the appropriate networks.

R1# **config t**

R1(config)# **router rip**

R1(config-router)# **version 2**

R1(config-router)# **passive-interface g0/1**

R1(config-router)# **network 172.30.0.0**

R1(config-router)# **network 10.0.0.0**

The **passive-interface** command stops routing updates out the specified interface. This process prevents unnecessary routing traffic on the LAN. However, the network that the specified interface belongs to is still advertised in routing updates that are sent out across other interfaces.

* + 1. Configure RIPv2 on R3 and use the **network** statement to add appropriate networks and prevent routing updates on the LAN interface.
    2. Configure RIPv2 on R2. Do not advertise the 209.165.201.0 network.

**Note**: It is not necessary to make the G0/0 interface passive on R2 because the network associated with this interface is not being advertised.

1. **Examine current state of network**

R2# **show ip interface brief**

Verify that RIPv2 is running on the routers.

You can use the **debug ip rip**, **show ip protocols**, and **show run** commands to confirm that RIPv2 is running. The **show ip protocols** command output for R1 is shown below.

R1# **show ip protocols**

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 7 seconds

Invalid after 180 seconds, hold down 180, flushed after 240

Redistributing: rip

Default version control: send version 2, receive 2

Interface Send Recv Triggered RIP Key-chain

Serial0/0/0 2 2

Examine the automatic summarization of routes.

The LANs connected to R1 and R3 are composed of discontiguous networks. R2 displays two equal-cost paths to the 172.30.0.0/16 network in the routing table. R2 displays only the major classful network address of 172.30.0.0 and does not display any of the subnets for this network.

R2# **show ip route**

R1# **show ip route**

R3# **show ip route**

1. **Disable automatic summarization**

The **no auto-summary** command is used to turn off automatic summarization in RIPv2. Disable auto summarization on all routers. The routers will no longer summarize routes at major classful network boundaries. R1 is shown here as an example.

R1(config)# **router rip**

R1(config-router)# **no auto-summary**

Issue the **clear ip route \*** command to clear the routing table.

R1(config-router)# **end**

R1# **clear ip route \***

1. **Config and redistribute a default route for Internet access**

From R2, create a static route to network 0.0.0.0 0.0.0.0, using the **ip route** command. This forwards any unknown destination address traffic to the R2 G0/0 toward PC-B, simulating the Internet by setting a Gateway of Last Resort on the R2 router.

R2(config)# **ip route 0.0.0.0 0.0.0.0 209.165.201.2**

R2 will advertise a route to the other routers if the **default-information originate** command is added to its RIP configuration.

R2(config)# **router rip**

R2(config-router)# **default-information originate**

1. **Verify the routing config**
2. **Verify connectivity**