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Configuring RIPv2

Отчет по лабораторной работе № 2
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Part 1: Configure RIPv2

Step 1: Configure RIPv2 on R1.

a. Use the appropriate command to create a default route on **R1** for all Internet traffic to exit the network through S0/0/1.

b. Enter RIP protocol configuration mode.

c. Use version 2 of the RIP protocol and disable the summarization of networks.

d. Configure RIP for the networks that connect to **R1**.

e. Configure the LAN port that contains no routers so that it does not send out any routing information.

f. Advertise the default route configured in step 1a with other RIP routers.

g. Save the configuration.

```
R1>ena
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip route 0.0.0.0 0.0.0.0 Se0/0/1

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

R1(config-router)#no auto-summary

R1(config-router)#network 192.168.1.0
R1(config-router)#network 192.168.2.0
R1(config-router)#

R1(config-router)#passive-interface GigabitEthernet 0/0

R1(config-router)#default-information originate
```

Данная команда заставляет маршрутизатор объявлять о стандартном маршруте в своих объявлениях

Step 2: Configure RIPv2 on R2.

a. Enter RIP protocol configuration mode.

b. Use version 2 of the RIP protocol and disable the summarization of networks.

c. Configure RIP for the networks directly connected to **R2**.

d. Configure the interface that contains no routers so that it does not send out routing information.

e. Save the configuration.

```
R2>ena
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#no auto-summary
R2(config-router)#network 192.168.4.0
R2(config-router)#network 192.168.3.0
R2(config-router)#network 192.168.2.0
R2(config-router)#passive-interface GigabitEthernet 0/0
```

Step 3: Configure RIPv2 on R3

Repeat Step 2 on R3.

```
R3(config)#router rip
R3(config-router)#version 2
R3(config-router)#no auto-summary
R3(config-router)#network 192.168.4.0

R3(config-router)#network 192.168.5.0
R3(config-router)#passive-interface GigabitEthernet 0/0
```

Part 2: Verify Configurations

Step 1: View routing tables of R1, R2, and R3.

a. Use the appropriate command to show the routing table of **R1**. RIP (R) now appears with connected (C) and local (L) routes in the routing table. All networks have an entry. You also see a default route listed.

b. View the routing tables for **R2** and **R3**. Notice that each router has a full listing of all the 192.168.x.0 networks and a default route.

```
R1(config)#do sh 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 0.0.0.0 to network 0.0.0.0

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0
     192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, Serial0/0/0
L       192.168.2.1/32 is directly connected, Serial0/0/0
R    192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:26, Serial0/0/0
R    192.168.4.0/24 [120/1] via 192.168.2.2, 00:00:26, Serial0/0/0
R    192.168.5.0/24 [120/2] via 192.168.2.2, 00:00:26, Serial0/0/0
     209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks
C       209.165.200.224/30 is directly connected, Serial0/0/1
L       209.165.200.225/32 is directly connected, Serial0/0/1
S*   0.0.0.0/0 is directly connected, Serial0/0/1
```

```
R2#sh 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 192.168.2.1 to network 0.0.0.0

R    192.168.1.0/24 [120/1] via 192.168.2.1, 00:00:09, Serial0/0/0
     192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, Serial0/0/0
L       192.168.2.2/32 is directly connected, Serial0/0/0
     192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/0
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0
     192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.4.0/24 is directly connected, Serial0/0/1
L       192.168.4.2/32 is directly connected, Serial0/0/1
R    192.168.5.0/24 [120/1] via 192.168.4.1, 00:00:26, Serial0/0/1
R*   0.0.0.0/0 [120/1] via 192.168.2.1, 00:00:09, Serial0/0/0
```

```
R3#sh 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 192.168.4.2 to network 0.0.0.0

R    192.168.1.0/24 [120/2] via 192.168.4.2, 00:00:01, Serial0/0/1
R    192.168.2.0/24 [120/1] via 192.168.4.2, 00:00:01, Serial0/0/1
R    192.168.3.0/24 [120/1] via 192.168.4.2, 00:00:01, Serial0/0/1
     192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.4.0/24 is directly connected, Serial0/0/1
L       192.168.4.1/32 is directly connected, Serial0/0/1
     192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.5.0/24 is directly connected, GigabitEthernet0/0
L       192.168.5.1/32 is directly connected, GigabitEthernet0/0
R*   0.0.0.0/0 [120/2] via 192.168.4.2, 00:00:01, Serial0/0/1
```

Step 2: Verify full connectivity to all destinations.

Every device should now be able to ping every other device inside the network. In addition, all devices should be able to ping the **Web Server**.

```
C:\>ping 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126
Reply from 192.168.3.10: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\>ping 192.168.5.10

Pinging 192.168.5.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.5.10: bytes=32 time=2ms TTL=125
Reply from 192.168.5.10: bytes=32 time=2ms TTL=125
Reply from 192.168.5.10: bytes=32 time=2ms TTL=125

Ping statistics for 192.168.5.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 2ms, Average = 2ms
```