



Carrera: Ing. Sistemas de información

Materia: Redes de datos

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Alumna:



Apellido y Nombre	legajo
Enriquez, Sylvina	-----

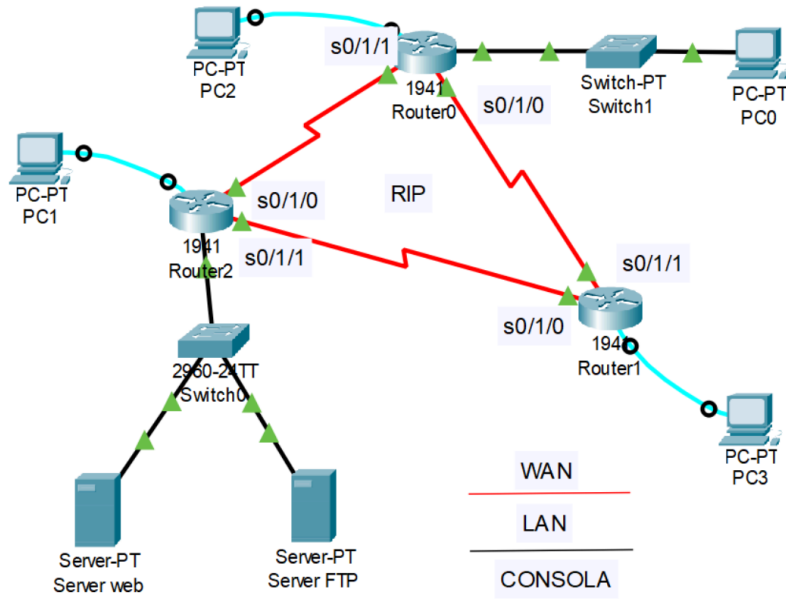
Curso: 2025

CONSIGNA TRABAJO PRÁCTICO 5

Enrutamiento RIP

Tema: Enrutamiento RIP.

1. Dado el siguiente diagrama de red:



- Implementar la topología.
- Configurar, lógicamente, el diagrama tomando direccionamiento IP clase B en los routers.
- Elegir redes clase C para las LAN.
- Establecer enrutamiento RIP entre los routers.

Ejemplo de configuración:

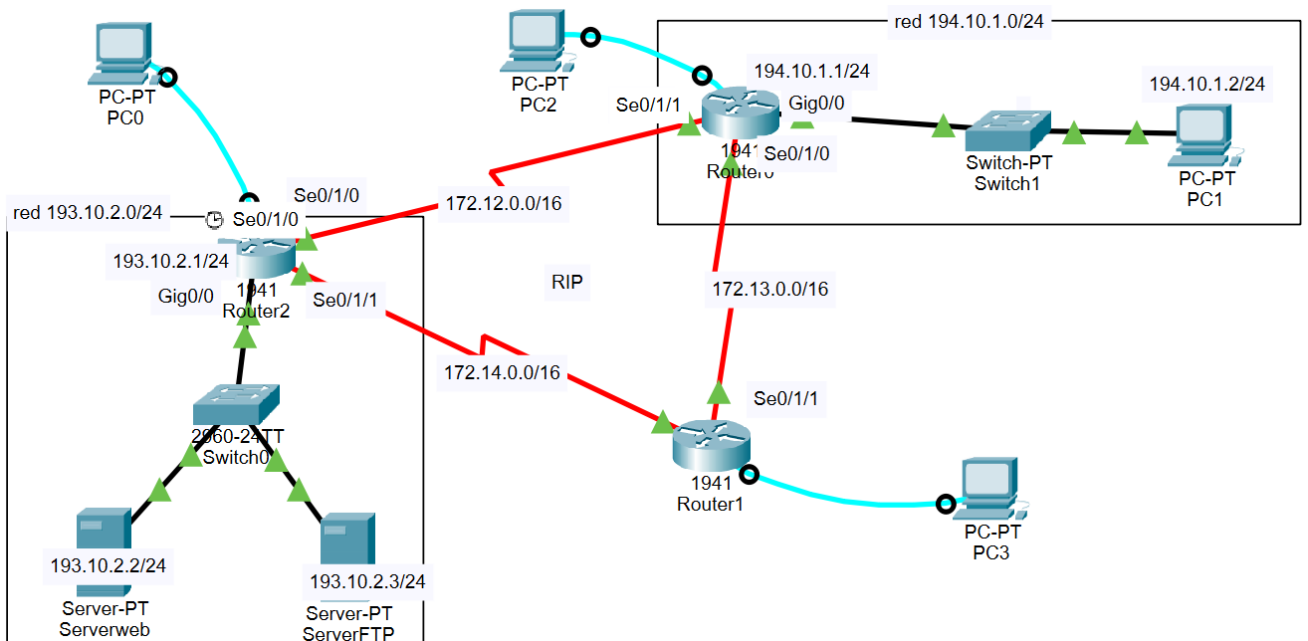
```
R1(config)# router rip
```

```
R1(config-router)# network 172.16.0.0
```

- Documentar la comunicación entre la PC y los servidores
- Documentar la tabla de enrutamiento de los Routers.
- Adjuntar el archivo .pkt

Desarrollo del trabajo práctico 5

1. Dado el diagrama de red:
 - Implementar la topología.



- Configurar, lógicamente, el diagrama tomando direccionamiento IP clase B en los routers.

Los números de IP elegidas para los routers figuran en la imagen anterior:

- Entre Router0 y Router1: 172.13.0.0/16
- Entre Router1 y Router2: 172.14.0.0/16
- Entre Router2 y Router0: 172.12.0.0/16
- Elegir redes clase C para las LAN.
 - Con el Router2: 193.10.2.0/24
 - Con el Router0: 194.10.1.0/24

- Establecer enrutamiento RIP entre los routers.

Ejemplo de configuración:

```
R1(config)# router rip
```

```
R1(config-router)# network 172.16.0.0
```

a. Documentar la comunicación entre la PC y los servidores.

PC con Serverweb

The diagram shows a network topology with three routers and two switches. Router1 (194.10.1.1/24) is connected to Router2 (193.10.2.1/24) via their Serial interfaces (Se0/1/1 and Se0/1/0). Router2 is connected to Switch0 (2060-24TT) via GigabitEthernet0/0. Switch0 is connected to Serverweb (193.10.2.2/24) and ServerFTP (193.10.2.3/24). Router1 is also connected to PC2 (194.10.1.2/24) via GigabitEthernet0/0 and to PC1 (194.10.1.1/24) via Serial0/1/1. A red line indicates the path from PC1 to Serverweb.

```

C:\>ping 193.10.2.2

Pinging 193.10.2.2 with 32 bytes of data:

Reply from 193.10.2.2: bytes=32 time=19ms TTL=126
Reply from 193.10.2.2: bytes=32 time=21ms TTL=126
Reply from 193.10.2.2: bytes=32 time=19ms TTL=126
Reply from 193.10.2.2: bytes=32 time=20ms TTL=126

Ping statistics for 193.10.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 19ms, Maximum = 21ms, Average = 19ms
    
```

PC con ServerFTP

The diagram is identical to the one above, showing the network topology. A red line indicates the path from PC1 to ServerFTP.

```

C:\>ping 193.10.2.3

Pinging 193.10.2.3 with 32 bytes of data:

Reply from 193.10.2.3: bytes=32 time=27ms TTL=126
Reply from 193.10.2.3: bytes=32 time=23ms TTL=126
Reply from 193.10.2.3: bytes=32 time=18ms TTL=126
Reply from 193.10.2.3: bytes=32 time=28ms TTL=126

Ping statistics for 193.10.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 18ms, Maximum = 28ms, Average = 24ms
    
```

b. Documentar la tabla de enrutamiento de los Routers.

Router0

```

Router0>enable
Router0#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

172.12.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.12.0.0/16 is directly connected, Serial0/1/1
L       172.12.0.2/32 is directly connected, Serial0/1/1
L       172.13.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.13.0.0/16 is directly connected, Serial0/1/0
L       172.13.0.1/32 is directly connected, Serial0/1/0
R       172.14.0.0/16 [120/1] via 172.13.0.2, 00:00:07, Serial0/1/0
         [120/1] via 172.12.0.1, 00:00:04, Serial0/1/1
R       193.10.2.0/24 [120/1] via 172.12.0.1, 00:00:04, Serial0/1/1
C       194.10.1.0/24 is variably subnetted, 2 subnets, 2 masks
L       194.10.1.0/24 is directly connected, GigabitEthernet0/0
L       194.10.1.1/32 is directly connected, GigabitEthernet0/0

Router0#
    
```

Router1

```

Router1>enable
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, 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

R       172.12.0.0/16 [120/1] via 172.13.0.1, 00:00:16, Serial0/1/1
         [120/1] via 172.14.0.2, 00:00:01, Serial0/1/0
L       172.13.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.13.0.0/16 is directly connected, Serial0/1/1
L       172.13.0.2/32 is directly connected, Serial0/1/1
L       172.14.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.14.0.0/16 is directly connected, Serial0/1/0
L       172.14.0.1/32 is directly connected, Serial0/1/0
R       193.10.2.0/24 [120/1] via 172.14.0.2, 00:00:01, Serial0/1/0
R       194.10.1.0/24 [120/1] via 172.13.0.1, 00:00:16, Serial0/1/1

Router1#
    
```

Router2

```

Router2>enable
Router2#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

 172.12.0.0/16 is variably subnetted, 2 subnets, 2 masks
 C   172.12.0.0/16 is directly connected, Serial0/1/0
 L   172.12.0.1/32 is directly connected, Serial0/1/0
 R   172.13.0.0/16 [120/1] via 172.12.0.2, 00:00:14, Serial0/1/0
     [120/1] via 172.14.0.1, 00:00:06, Serial0/1/1
 172.14.0.0/16 is variably subnetted, 2 subnets, 2 masks
 C   172.14.0.0/16 is directly connected, Serial0/1/1
 L   172.14.0.2/32 is directly connected, Serial0/1/1
 193.10.2.0/24 is variably subnetted, 2 subnets, 2 masks
 C   193.10.2.0/24 is directly connected, GigabitEthernet0/0
 L   193.10.2.1/32 is directly connected, GigabitEthernet0/0
 R   194.10.1.0/24 [120/1] via 172.12.0.2, 00:00:14, Serial0/1/0
  
```

c. Adjuntar el archivo .pkt

Nombre del archivo: **TP5 – RIP – Enriquez.pkt**

Conclusiones

Con este trabajo de laboratorio pude experimentar el problema (y su solución) de no poder conectar dos router por no tener la tarjeta serial necesaria. Luego de su colocación, pude realizar la conexión.

Además, pude aprovechar la ocasión para volcar los conocimientos sobre el protocolo RIP aprendido en la clase teórica.