

Instituto Tecnológico de Salina Cruz

Fundamentos de Redes

Semestre Enero – Julio 2015

Reporte de Práctica

Practica nº 1

Unidad 4

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Fecha: 12 de Mayo del 2015

Objetivo:

- Describir las funciones, las características y el funcionamiento del protocolo RIPv1.

Instrucciones:

- 1.- Crear la tabla de enrutamiento.
- 2.- Realizar las configuraciones iniciales a los routers.
- 3.- Realizar configuraciones para usar RIP.
- 4.- Verificar el funcionamiento de RIP.

Materiales:

Programa de simulacion Packet Tracer

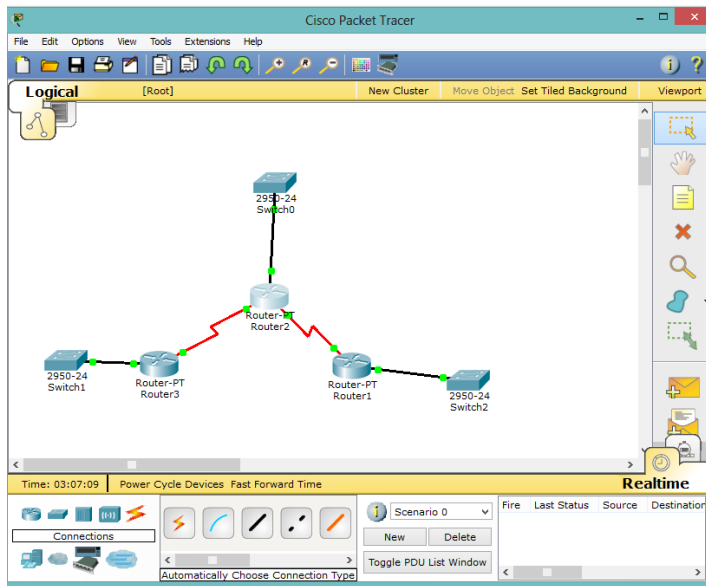


Tabla de enrutamiento.

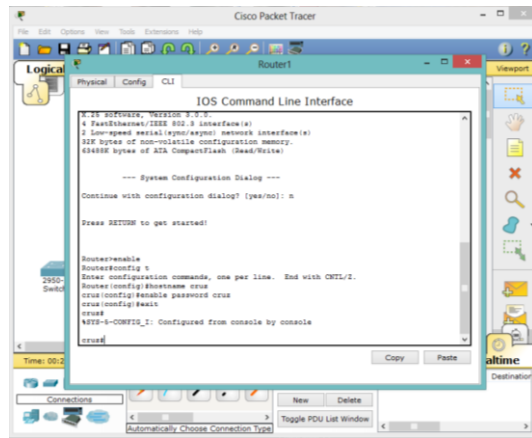
Dispositivo	Interfaz	Dirección IP	Mascara de subred	Gateway
cruz (R1)	Fa0/0	192.168.1.1	255.255.255.0	No aplicable
	S2/0	192.168.2.1	255.255.255.0	
	S3/0	192.168.6.1	255.255.255.0	
flor (R2)	Fa0/0	192.168.3.1	255.255.255.0	No aplicable
	S2/0	192.168.2.2	255.255.255.0	
	S3/0	192.168.4.1	255.255.255.0	
jenni (R3)	Fa0/0	192.168.5.1	255.255.255.0	No aplicable
	S2/0	192.168.4.2	255.255.255.0	
	S3/0	192.168.6.2	255.255.255.0	

CONFIGURACIÓN INICIAL

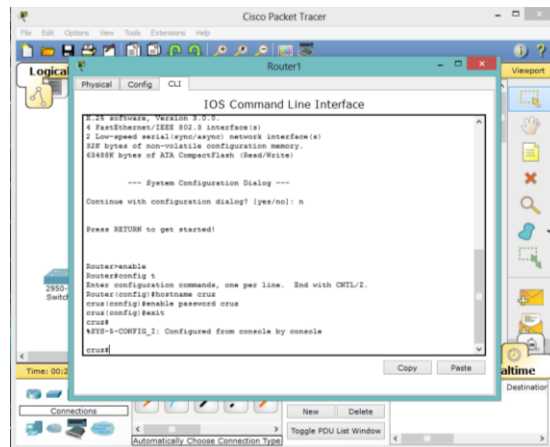
En este paso es en donde se lleva a cabo el levantamiento de puertos hará poder interconectar los diferentes dispositivos.

R1 (cruz).

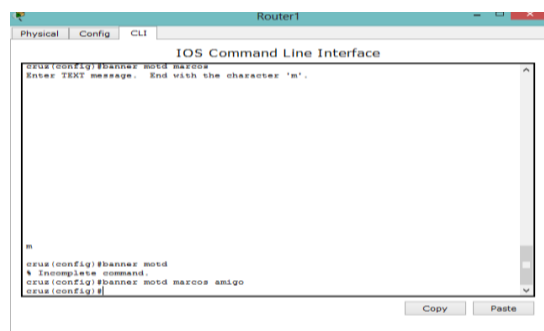
Cambio de nombre.



Posteriormente se le asigna una contraseña.

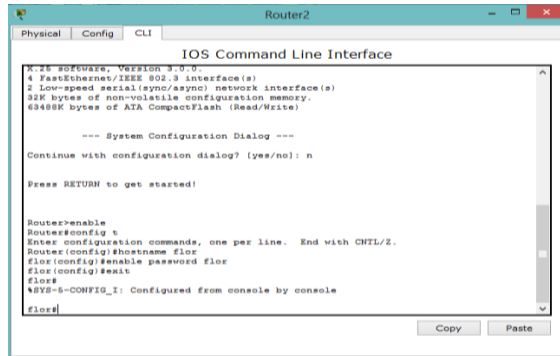


De ahí se le asigna un banner.

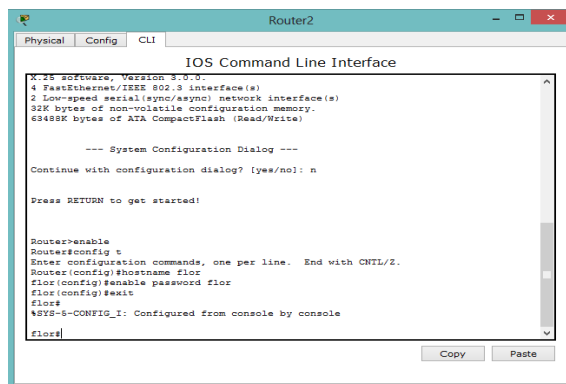


R2 (flor).

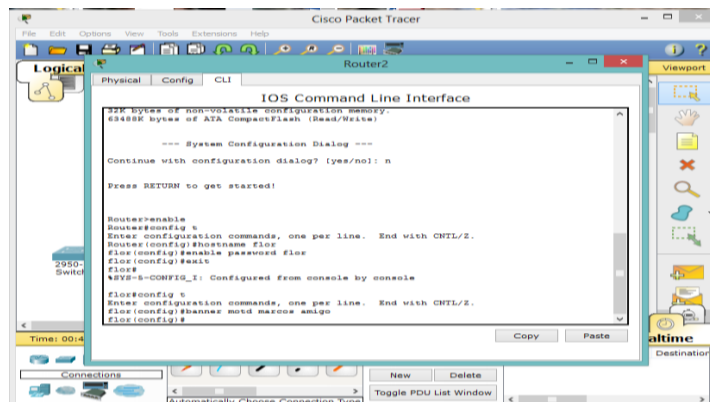
Cambio de nombre.



Posteriormente se le asigna una contraseña.

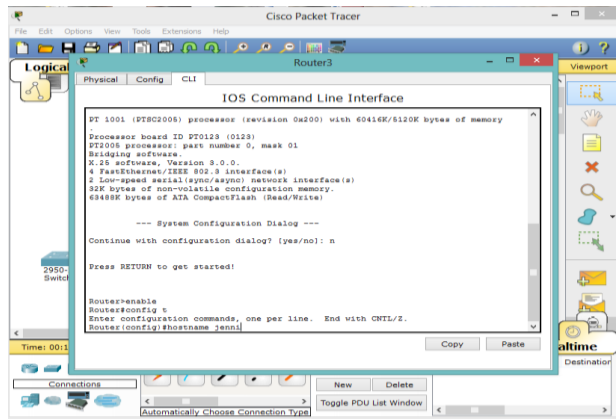


De ahí se le asigna un banner.

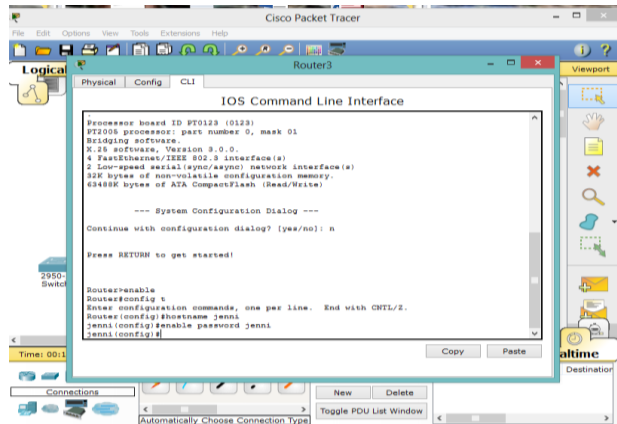


R3 (jenni).

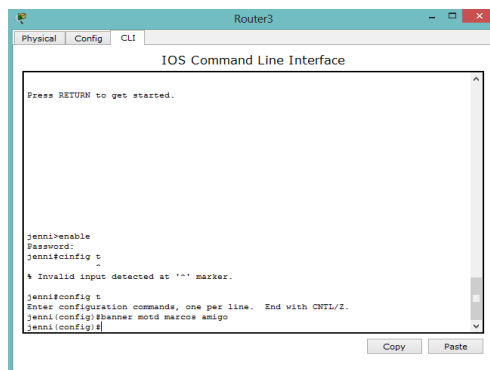
Cambio de nombre.



Posteriormente se le asigna una contraseña.

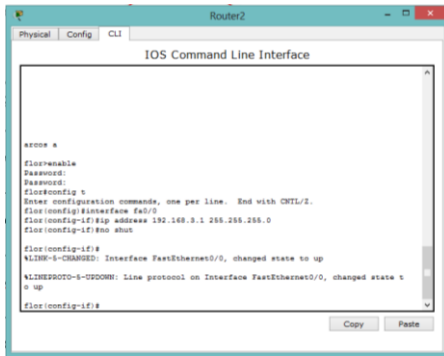


De ahí se le asigna un banner.



R2 (flor).

Puerto fa0/0.

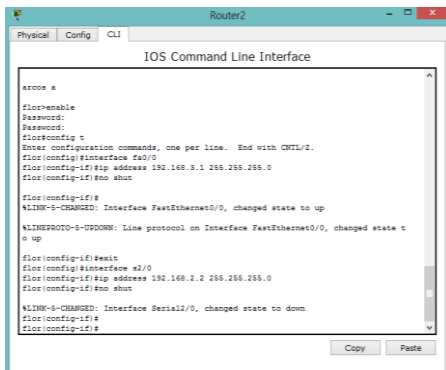


```
Router2
Physical Config CLI
IOS Command Line Interface

arce@r2
flor@enable
Password:
flor@config t
Enter configuration commands, one per line. End with CTRL/Z.
flor(config)#interface fa0/0
flor(config-if)#ip address 192.168.3.1 255.255.255.0
flor(config-if)#no shut

flor(config-if)#
%LINK-3-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-3-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
flor(config-if)#
```

Serial2/0.



```
Router2
Physical Config CLI
IOS Command Line Interface

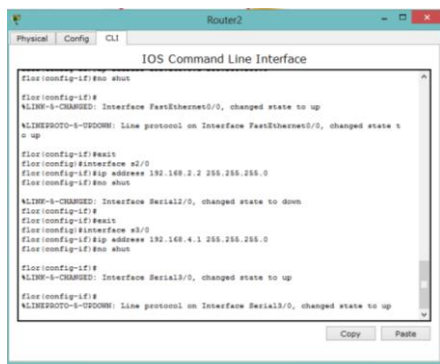
arce@r2
flor@enable
Password:
flor@config t
Enter configuration commands, one per line. End with CTRL/Z.
flor(config)#interface fa0/0
flor(config-if)#ip address 192.168.3.1 255.255.255.0
flor(config-if)#no shut

flor(config-if)#
%LINK-3-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-3-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

flor(config-if)#exit
flor(config)#interface s2/0
flor(config-if)#ip address 192.168.2.2 255.255.255.0
flor(config-if)#no shut

flor(config-if)#
%LINK-3-CHANGED: Interface Serial2/0, changed state to down
flor(config-if)#
```

Serial3/0.



```
Router2
Physical Config CLI
IOS Command Line Interface

flor(config-if)#no shut

flor(config-if)#
%LINK-3-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-3-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

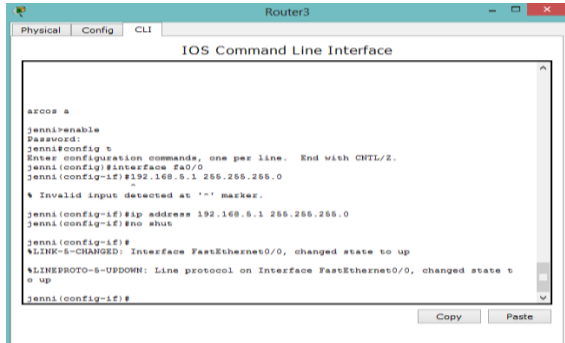
flor(config-if)#exit
flor(config)#interface s2/0
flor(config-if)#ip address 192.168.2.2 255.255.255.0
flor(config-if)#no shut

flor(config-if)#
%LINK-3-CHANGED: Interface Serial2/0, changed state to down
flor(config-if)#exit
flor(config)#interface s3/0
flor(config-if)#ip address 192.168.4.1 255.255.255.0
flor(config-if)#no shut

flor(config-if)#
%LINK-3-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-3-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
flor(config-if)#
```

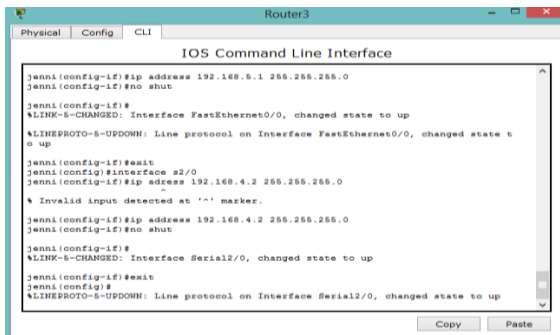
R3 (jenni).

Puerto fa0/0.



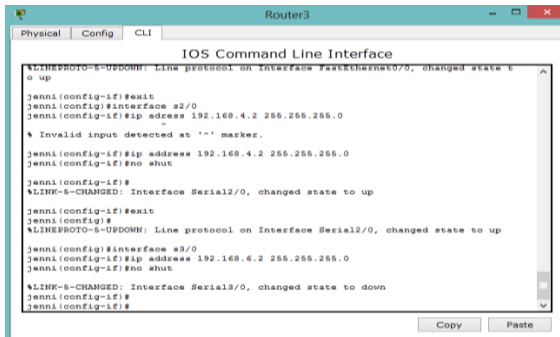
```
Router3
Physical Config CLI
IOS Command Line Interface
aroon@
jenni#enable
Password:
jenni#config t
Enter configuration commands, one per line. End with CTRL/Z.
jenni(config)#interface fa0/0
jenni(config-if)#192.168.5.1 255.255.255.0
^
% Invalid input detected at '^' marker.
jenni(config-if)#ip address 192.168.5.1 255.255.255.0
jenni(config-if)#no shut
jenni(config-if)#
%LINK-6-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state t
o up
jenni(config-if)#
```

Serial2/0.



```
Router3
Physical Config CLI
IOS Command Line Interface
jenni(config-if)#ip address 192.168.5.1 255.255.255.0
jenni(config-if)#no shut
jenni(config-if)#
%LINK-6-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state t
o up
jenni(config-if)#exit
jenni(config)#interface s2/0
jenni(config-if)#ip address 192.168.4.2 255.255.255.0
^
% Invalid input detected at '^' marker.
jenni(config-if)#ip address 192.168.4.2 255.255.255.0
jenni(config-if)#no shut
jenni(config-if)#
%LINK-6-CHANGED: Interface Serial2/0, changed state to up
jenni(config-if)#exit
jenni(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
```

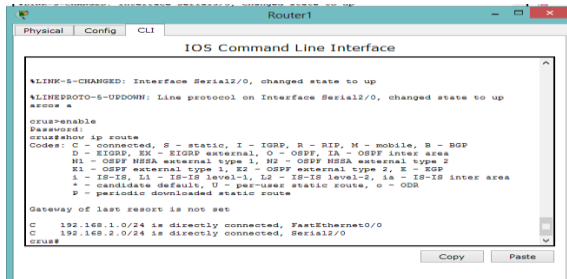
Serial3/0.



```
Router3
Physical Config CLI
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state t
o up
jenni(config-if)#exit
jenni(config)#interface s2/0
jenni(config-if)#ip address 192.168.4.2 255.255.255.0
^
% Invalid input detected at '^' marker.
jenni(config-if)#ip address 192.168.4.2 255.255.255.0
jenni(config-if)#no shut
jenni(config-if)#
%LINK-6-CHANGED: Interface Serial2/0, changed state to up
jenni(config-if)#exit
jenni(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
jenni(config)#interface s3/0
jenni(config-if)#ip address 192.168.6.2 255.255.255.0
jenni(config-if)#no shut
jenni(config-if)#
%LINK-6-CHANGED: Interface Serial3/0, changed state to down
jenni(config-if)#
```

Después de eso necesitamos saber las conexiones que tienen cada router, esto mediante el comando show ip route.

R1



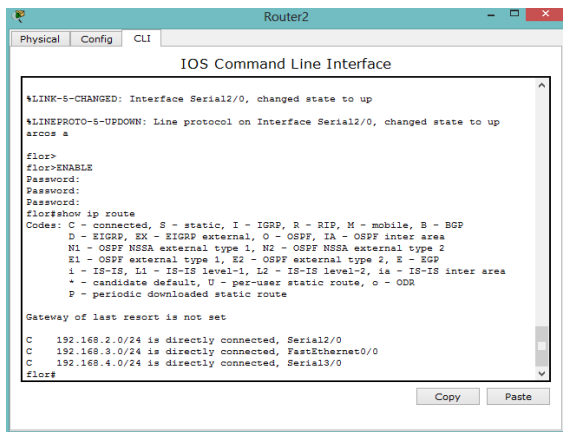
```
Router1
IOS Command Line Interface

%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
arcs@ #
arcs#enable
Password:
arcs#show ip route
Codes: C - connected, S - static, I - IGRP, 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

C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, Serial2/0
arcs#
```

R2



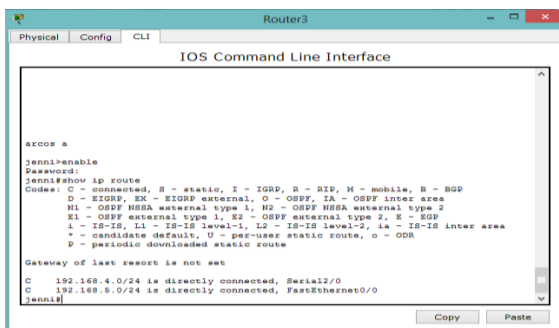
```
Router2
IOS Command Line Interface

%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
fior>
fior>enable
Password:
fior>show ip route
Codes: C - connected, S - static, I - IGRP, 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

C    192.168.2.0/24 is directly connected, Serial2/0
C    192.168.3.0/24 is directly connected, FastEthernet0/0
C    192.168.4.0/24 is directly connected, Serial3/0
fior#
```

R3



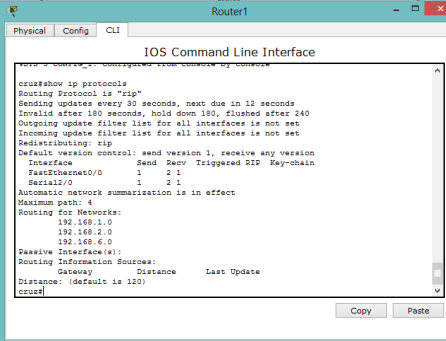
```
Router3
IOS Command Line Interface

arcs@ #
arcs#enable
Password:
arcs#show ip route
Codes: C - connected, S - static, I - IGRP, 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

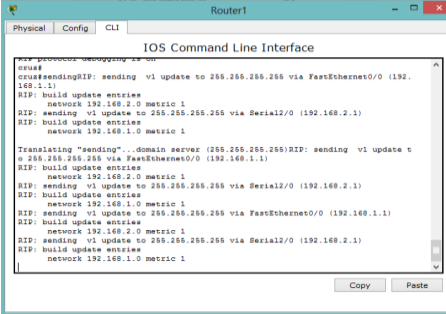
Gateway of last resort is not set

C    192.168.4.0/24 is directly connected, Serial2/0
C    192.168.1.0/24 is directly connected, FastEthernet0/0
arcs#
```

Para terminar es necesario examinar los protocolos que están implementados a cada uno de los routers.



```
Router1
Physical Config CLI
IOS Command Line Interface
cruz#show ip protocols
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 12 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Redistributing: rip
    Default version control: send version 1, receive any version
  Interface Send Recv Triggered RIP Key-chain
  FastEthernet0/0 1 2 1
  Serial2/0 1 2 1
Automatic network summarization is in effect
Maximum paths: 4
Routing for Networks:
  192.168.1.0
  192.168.2.0
  192.168.6.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
Distance: (default is 120)
cruz#
```



```
Router1
Physical Config CLI
IOS Command Line Interface
cruz#debug ip rip
cruz#
cruz#sendinIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (192.168.1.1)
RIP: build update entries
  network 192.168.2.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (192.168.2.1)
RIP: build update entries
  network 192.168.1.0 metric 1
Translating "sending"...domain server (255.255.255.255)RIP: sending v1 update t
o 255.255.255.255 via FastEthernet0/0 (192.168.1.1)
RIP: build update entries
  network 192.168.2.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (192.168.2.1)
RIP: build update entries
  network 192.168.1.0 metric 1
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (192.168.1.1)
RIP: build update entries
  network 192.168.2.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (192.168.2.1)
RIP: build update entries
  network 192.168.1.0 metric 1
cruz#
```

Conclusión

En esta práctica pude conocer más a fondo lo que es el protocolo RIP, ya que ahora en adelante estaremos trabajando con este protocolo, más que nada pude apreciar la forma de configuración que se tiene, además de que pude visualizar que mediante el debug ip rip nos muestra las métricas y las formas de envío de paquetes esto mediante broadcast y se actualiza cada 30 segundos.