Instituto Tecnológico de Salina Cruz

Fundamentos de Redes

Semestre Enero – Julio 2015

Reporte de Practica

Practica n° 3

Unidad 4

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Objetivos:

Se plantea el enfoque en los conceptos protocolos de enrutamiento vector distancia, RIP, VLSM, CIDR y RIPver.2, se inicia con la configuración básica de RIP, direccionamiento con clase y sin clase, VLSM y actividad de resumen de rutas, terminando con configuración de ripV2.

Instrucciones:

1.- Realizar la tabla de ruteo.

2.- Realizar configuraciones iniciales.

3.- Identificar comandos a utilizar.

4.- Realizar configuraciones de RIPv2.

Materiales:

- Computadoras.
- Cisco Packet Tracert.
- Silla.

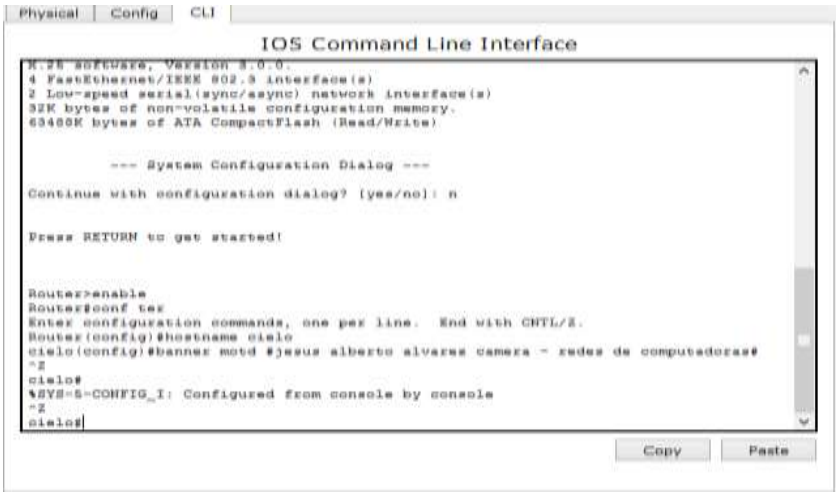
Escenario:

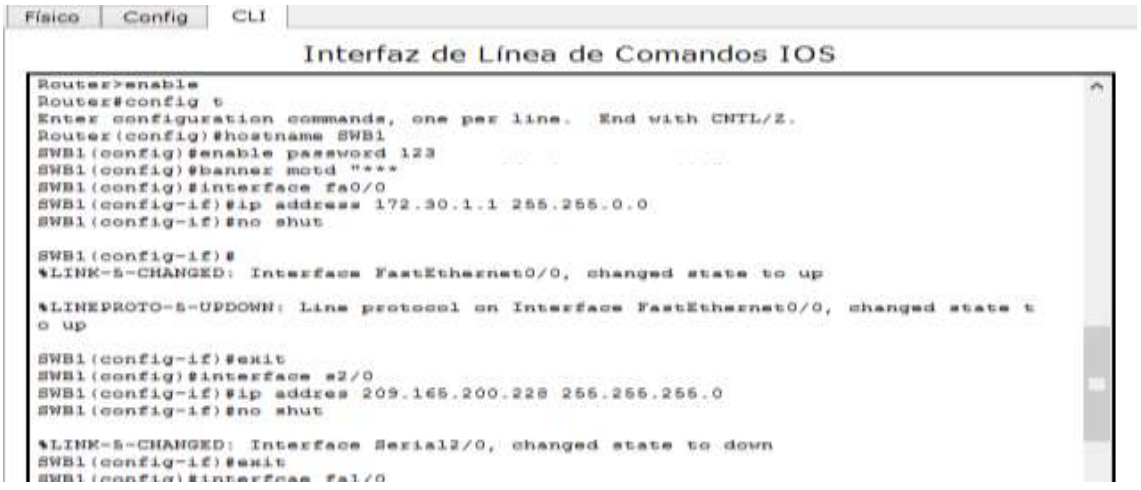
Tabla de ruteo

	INTERFAZ	DIRECCION IP	MASCARA DE SUBRED	GATEWAY POR DEFECTO
mar	fa0/0	172.30.1.7	255.255.0.0	n/a
	Fa1/0	172.31.4.8	255.255.0.0	n/a
	S2/0	209.165.200.330	255.255.255.0	n/a
cielo	Fa0/0	10.1.0.4	255.0.0.0	n/a
	S2/0	300.2 65.23.229	255.255.255.0	n/a
	S3/0	197.100.200.233	255.255.255.0	n/a
tierra	Fa0/0	145.30.10.1	255.255.0.0	n/a
	S2/0	209.165.98.23	255.255.255.0	n/a

Como parte principal se le asigna a cada router un nombre, contraseña y un banner y las direcciones ip como se muestra a continuación.

Router 1





```
SWB1(config)#interface fa1/0
SWB1(config-if)#ip address 172.31.1.1 255.255.0.0
SWB1(config-if)#no shut

SWB1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state t
o up
exit
SWB1(config)#
```

```
SWB1>show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol

FastEthernet0/0        172.30.1.1      YES manual up                    up

FastEthernet1/0        172.31.1.1      YES manual up                    up

Serial2/0              209.165.200.228 YES manual down                  down

Serial3/0              unassigned      YES unset  administratively down down

FastEthernet4/0        unassigned      YES unset  administratively down down

FastEthernet5/0        unassigned      YES unset  administratively down down
SWB1>
```

Router 2

Physical | Config | CLI

IOS Command Line Interface

```
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)


         --- System Configuration Dialog ---

Continue with configuration dialog? [yes/no]: n


Press RETURN to get started!



Router>enable
Router#conf ter
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname mar
mar(config)#banner motd #jesus alberto alvarez camera - redes 2#^Z
mar#
%SYS-5-CONFIG_I: Configured from console by console
^Z
mar#
```

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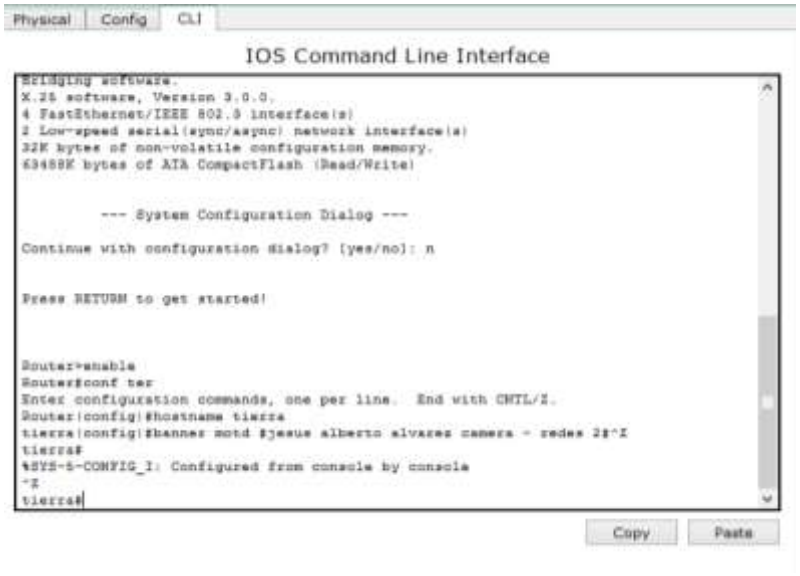
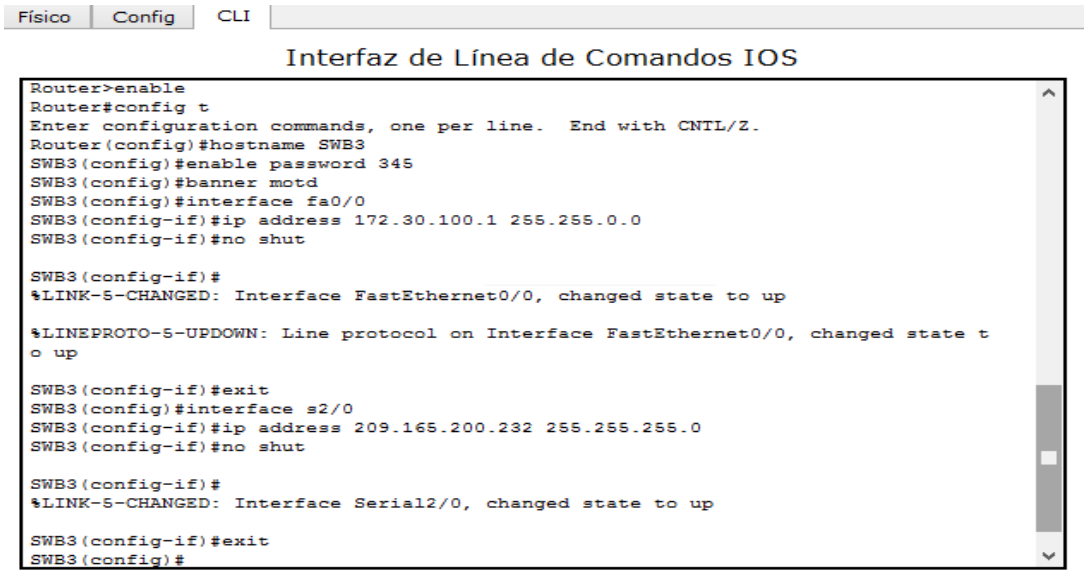
```
SWB2(config)#interface fa0/0
SWB2(config-if)#ip address 10.1.0.1 255.0.0.0
SWB2(config-if)#no shut

SWB2(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state t
o up

SWB2(config-if)#exit
SWB2(config)#interface s2/0
SWB2(config-if)#ip address 209.165.200.229 255.255.255.0
SWB2(config-if)#no shut

SWB2(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

SWB2(config-if)#exit
SWB2(config)#interface s3/0
SWB2(config-if)#ip address 209.166.200.233 255.255.255.0
SWB2(config-if)#no shut
```

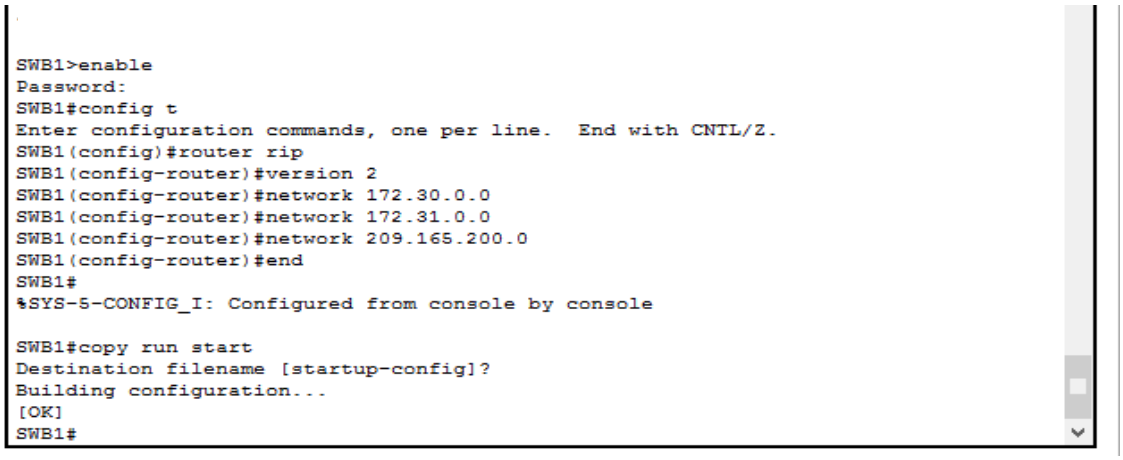
Router 3





A continuación se realiza la Configuración de protocolo RIPv2.

Router 1



Router 2

```
SWB2>enable
Password:
SWB2#config t
Enter configuration commands, one per line.  End with CNTL/Z.
SWB2(config)#router rip
SWB2(config-router)#version 2
SWB2(config-router)#network 10.0.0.0
SWB2(config-router)#network 209.165.200.0
SWB2(config-router)#network 209.166.200.0
SWB2(config-router)#end
SWB2#
%SYS-5-CONFIG_I: Configured from console by console

SWB2#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
SWB2#
```

Router 3

```
SWB3>enable
Password:
SWB3#config t
Enter configuration commands, one per line.  End with CNTL/Z.
SWB3(config)#router rip
SWB3(config-router)#version 2
SWB3(config-router)#network 172.30.0.0
SWB3(config-router)#network 209.165.200.0
SWB3(config-router)#end
SWB3#
%SYS-5-CONFIG_I: Configured from console by console

SWB3#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
SWB3#
```

Una vez hecho lo anterior, se procede a la Verificación del protocolo configurado de la siguiente manera.

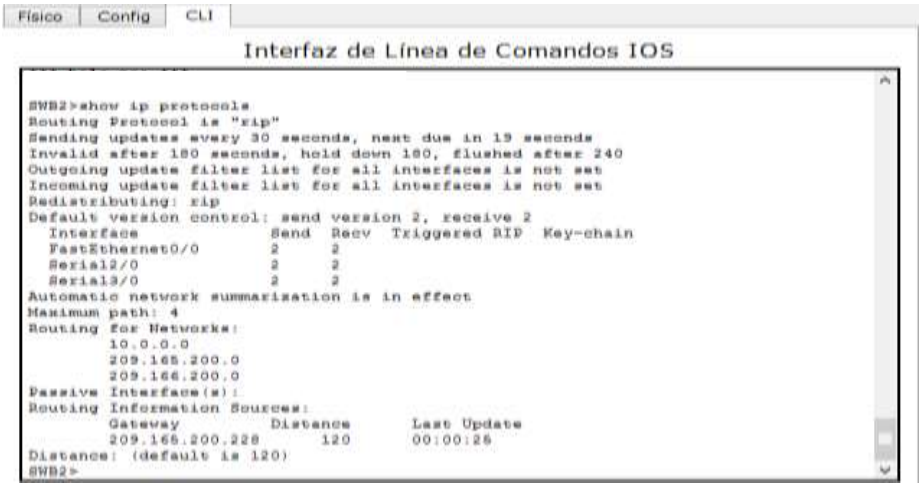
Router 1

Físico | Config | CLI

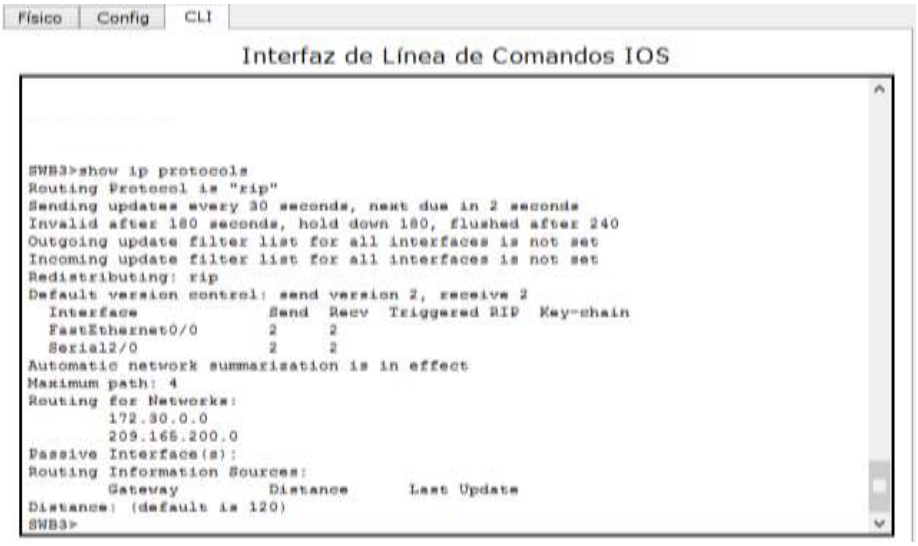
Interfaz de Línea de Comandos IOS

```
SWB1>show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 4 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 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  FastEthernet0/0       2     2
  Serial2/0             2     2
  FastEthernet1/0       2     2
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
        172.30.0.0
        172.31.0.0
        209.165.200.0
Passive Interface(s):
Routing Information Sources:
        Gateway         Distance      Last Update
        209.165.200.229      120      00:00:26
Distance: (default is 120)
SWB1>
```

Router 2



Router 3



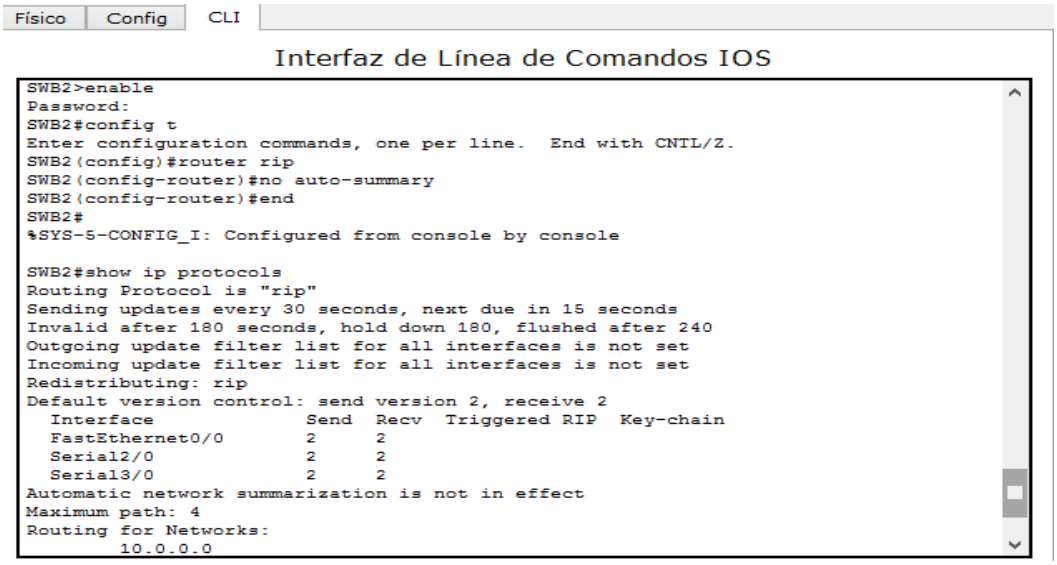
Como siguiente paso se mostraran las ip conectadas al router y para eso haremos uso del comando “show ip route”.

```
SWB1>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

R    10.0.0.0/8 [120/1] via 209.165.200.229, 00:00:19, Serial2/0
C    172.30.0.0/16 is directly connected, FastEthernet0/0
C    172.31.0.0/16 is directly connected, FastEthernet1/0
C    209.165.200.0/24 is directly connected, Serial2/0
R    209.166.200.0/24 [120/1] via 209.165.200.229, 00:00:19, Serial2/0
SWB1>
```

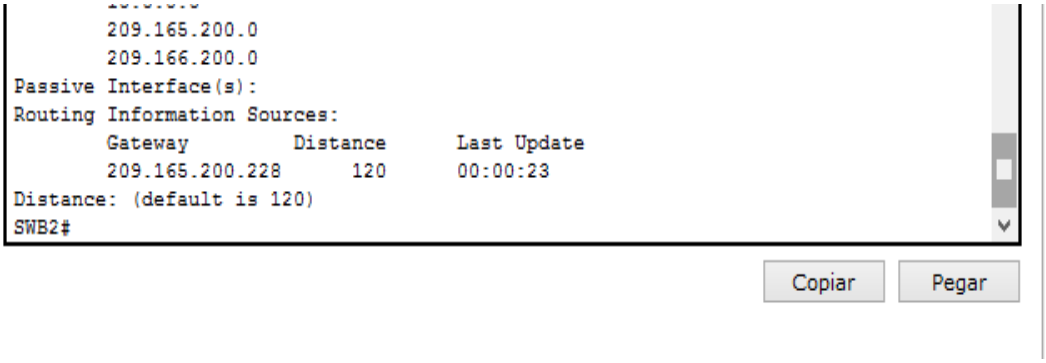
A continuación se verificara la información que envía RIPv2 usaremos, con lo cual usaremos el siguiente comando “debug ip rip”.


```
SWB1>
SWB1>debug ip rip
          ^
% Invalid input detected at '^' marker.

SWB1>enable
Password:
SWB1#debug ip rip
RIP protocol debugging is on
SWB1#RIP: sending  v2 update to 224.0.0.9 via FastEthernet0/0 (172.30.1.1)
RIP: build update entries
      10.0.0.0/8 via 0.0.0.0, metric 2, tag 0
      172.31.0.0/16 via 0.0.0.0, metric 1, tag 0
      209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
      209.166.200.0/24 via 0.0.0.0, metric 2, tag 0
RIP: sending  v2 update to 224.0.0.9 via Serial2/0 (209.165.200.228)
RIP: build update entries
      172.30.0.0/16 via 0.0.0.0, metric 1, tag 0
      172.31.0.0/16 via 0.0.0.0, metric 1, tag 0
RIP: sending  v2 update to 224.0.0.9 via FastEthernet1/0 (172.31.1.1)
RIP: build update entries
      10.0.0.0/8 via 0.0.0.0, metric 2, tag 0
      172.30.0.0/16 via 0.0.0.0, metric 1, tag 0
      209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
      209.166.200.0/24 via 0.0.0.0, metric 2, tag 0
```

Y solo Para realizar la inhabilitación de sumarizacion automática solo usaremos el siguiente comando “no auto-sumary”.




```
SWB2>enable
Password:
SWB2#config t
Enter configuration commands, one per line.  End with CNTL/Z.
SWB2(config)#router rip
SWB2(config-router)#no auto-summary
SWB2(config-router)#end
SWB2#
%SYS-5-CONFIG_I: Configured from console by console

SWB2#show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 15 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 2, receive 2
  Interface             Send  Recv  Triggered RIP  Key-chain
  FastEthernet0/0       2     2
  Serial2/0             2     2
  Serial3/0             2     2
Automatic network summarization is not in effect
Maximum path: 4
Routing for Networks:
        10.0.0.0
```



```
        209.165.200.0
        209.166.200.0
Passive Interface(s):
Routing Information Sources:
        Gateway         Distance      Last Update
        209.165.200.228      120      00:00:23
Distance: (default is 120)
SWB2#
```

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Conclusión

En esta práctica se utilizaron las principales configuraciones de un router cisco, como son el cambio de nombre, asignación de una contraseña y la colocación de un banner, es decir un mensaje de bienvenida al usar la configuración del router, también se pudo realizar la configuración del protocolo ripv2 y seguido de esto se comprobó si las configuraciones fueron guardadas exitosamente. En esta práctica de igual forma se pudieron observar las IP interconectadas a los Routers gracias a los comandos de cisco, de igual manera se verifica la información que envía el protocolo ripv2.