

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:** 14 de Mayo del 2015

**Objetivos:**

- Detectar y describir las limitaciones de RIPv1.
- Aplicar los comandos de configuración básica del protocolo de información de enrutamiento versión 2 (RIPv2) y evaluar las actualizaciones de enrutamiento classless RIPv2.
- Analizar el resultado del router para ver si RIPv2 proporciona soporte para VLSM y CIDR.
- Identificar los comandos de verificación RIPv2 y los problemas de RIPv2 comunes.
- Configurar, verificar y resolver problemas de RIPv2 en laboratorios prácticos..

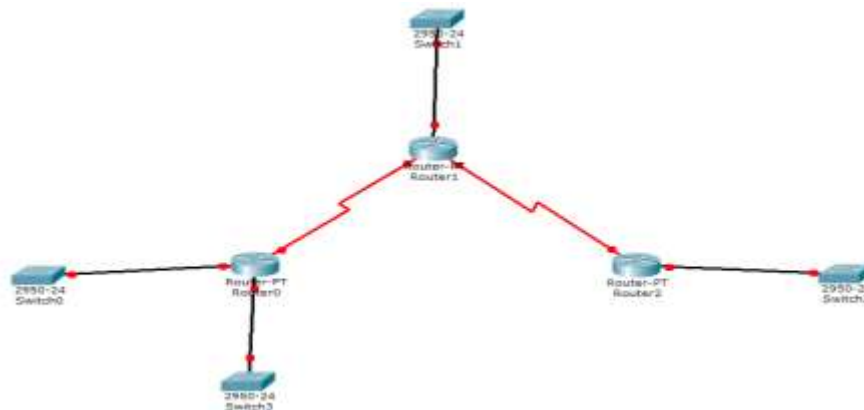
**Instrucciones:**

- 1.- Realizar la tabla de ruteo.
- 2.- Realizar configuraciones iniciales.
- 3.- Identificar comandos a utilizar.
- 4.- Realizar configuraciones de RIP.

**Materiales:**

- Computadoras.
- Cisco Packet Tracert.
- Silla.

**Escenario:**



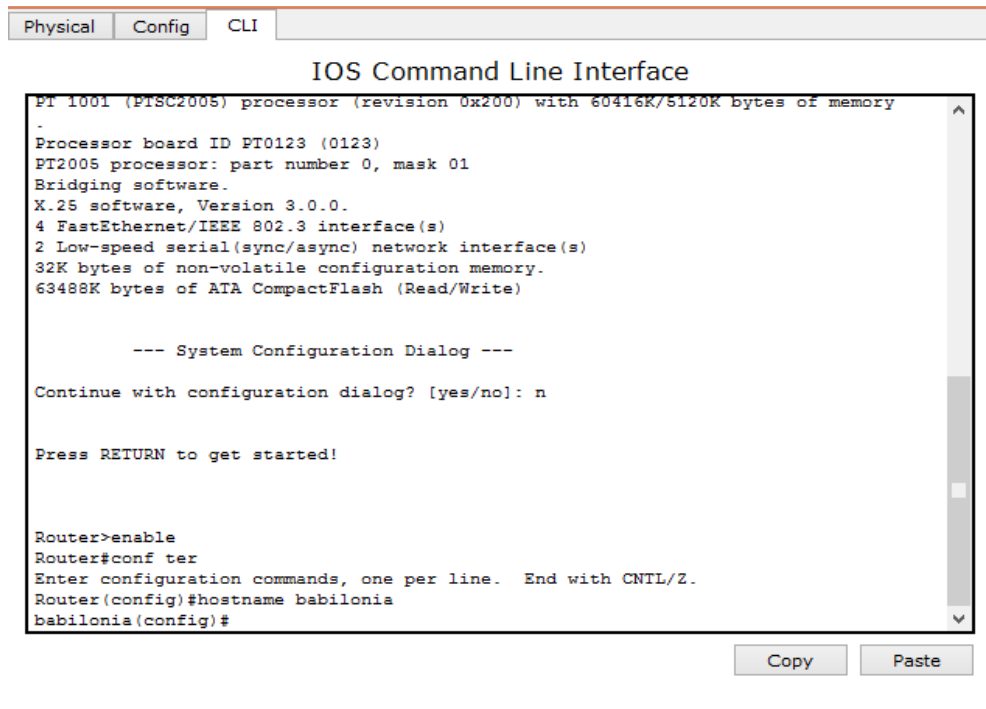
## Tabla de enrutamiento.

Dispositivo	Interfaz	Dirección IP	Mascara de subred	Gateway
	Fa0/0	172.30.3.1	255.255.0.0	
<b>babilonia</b>	Fa1/0	192.30.9.6	255.255.0.0	No aplicable
	S2/0	209.5.2.228	255.255.255.0	
	Fa0/0	10.9.0.11	255.0.0.0	
<b>escuela</b>	S2/0	209.14.200.02	255.255.255.0	No aplicable
	S3/0	219.15.200.23	255.255.255.0	
	Fa0/0	17.30.100.1	255.255.0.0	No aplicable
<b>telefono</b>	S2/0	219.165.6.2	255.255.255.0	

A continuación se realizaran las configuraciones principales

Router “babilonia”

Cambio de nombre.



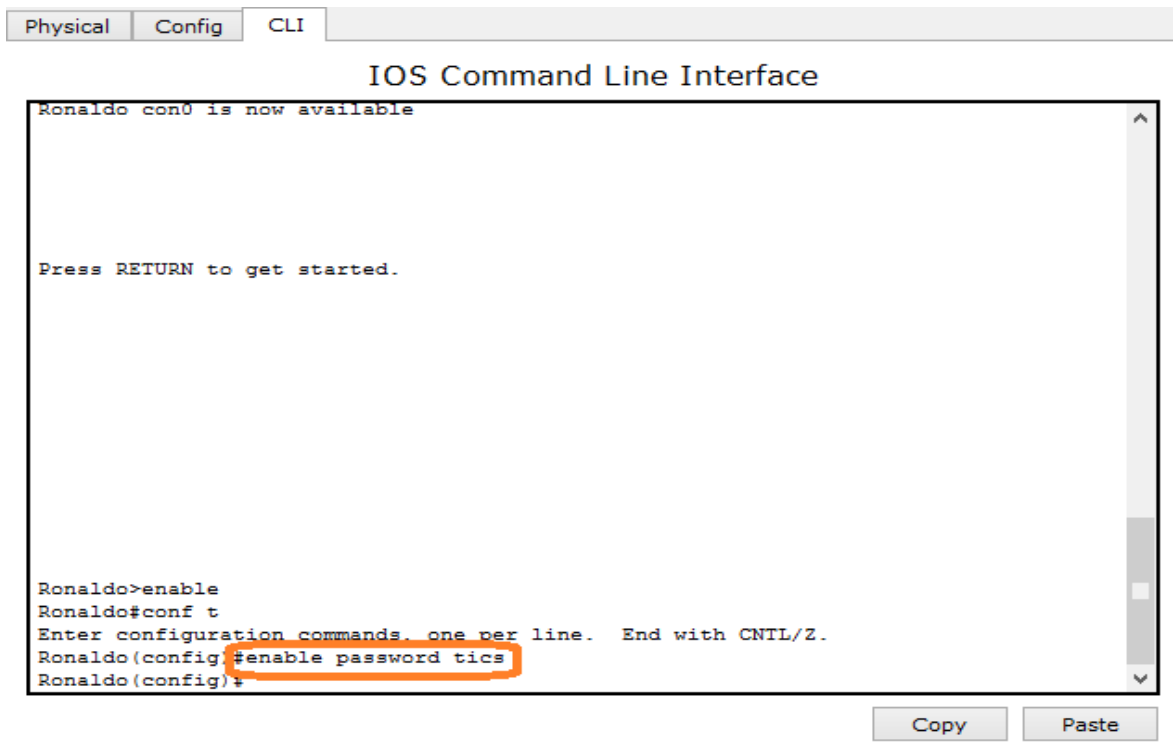
```
Physical Config CLI
IOS Command Line Interface
PT 1001 (PT8C2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed 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 babilonia
babilonia(config)#
```

## Asignación de una contraseña.



The screenshot shows the IOS Command Line Interface with tabs for Physical, Config, and CLI. The main window displays the following text:

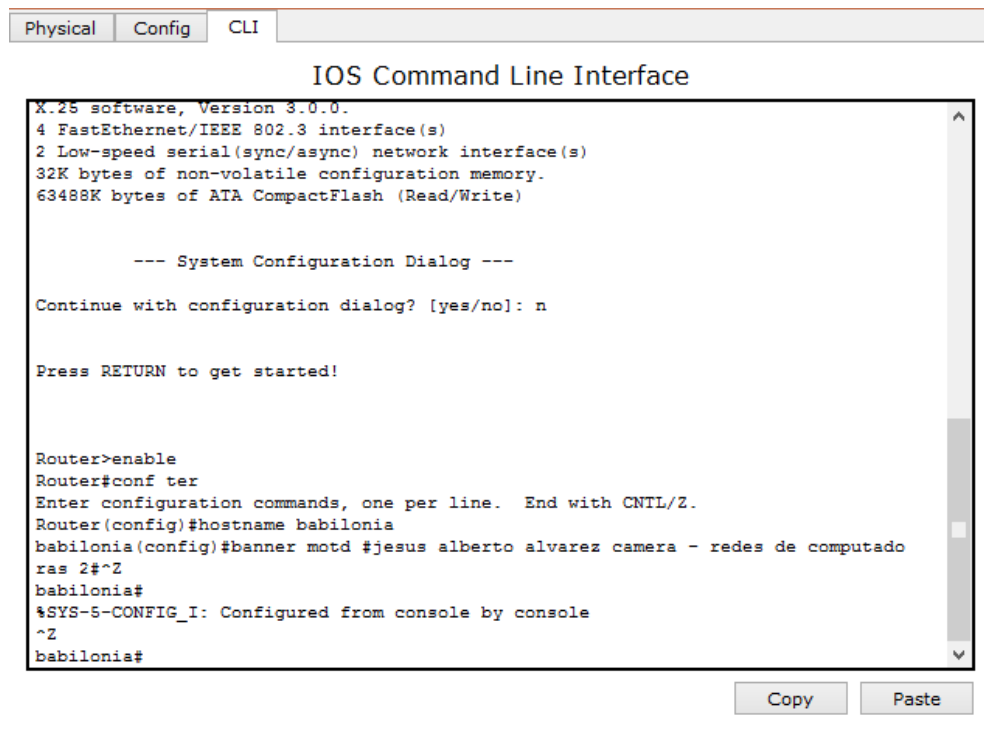
```
Ronaldo con0 is now available

Press RETURN to get started.

Ronaldo>enable
Ronaldo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ronaldo(config)#enable password tics
Ronaldo(config)#
```

The command `#enable password tics` is highlighted with an orange box. Below the terminal window are 'Copy' and 'Paste' buttons.

## Configuración del banner



The screenshot shows the IOS Command Line Interface with tabs for Physical, Config, and CLI. The main window displays the following text:

```
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 babelonia
babelonia(config)#banner motd #jesus alberto alvarez camera - redes de computado
ras 2#^Z
babelonia#
%SYS-5-CONFIG_I: Configured from console by console
^Z
babelonia#
```

The configuration commands `#hostname babelonia` and `#banner motd #jesus alberto alvarez camera - redes de computado ras 2#^Z` are visible. Below the terminal window are 'Copy' and 'Paste' buttons.

## Router "escuela"

Cambio de nombre.

```
Physical Config CLI
IOS Command Line Interface
PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
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 escuela
escuela(config)#
```

Copy Paste

Asignación de la contraseña.

```
Physical Config CLI
IOS Command Line Interface

Press RETURN to get started!

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Casillas
Casillas(config)#exit
Casillas#
%SYS-5-CONFIG_I: Configured from console by console

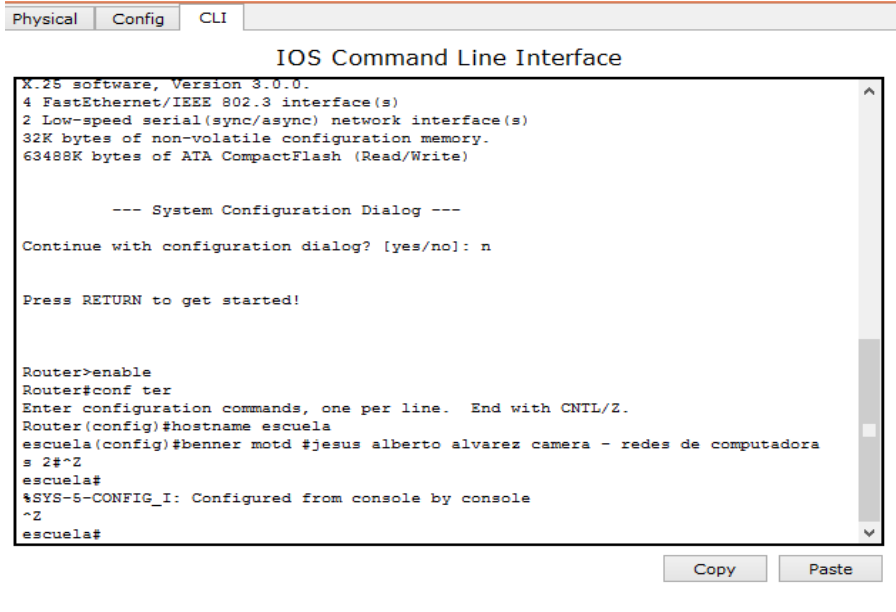
Casillas#enable password azul
^
% Invalid input detected at '^' marker.

Casillas#conf t
^
% Invalid input detected at '^' marker.

Casillas#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Casillas(config)#enable password azul
Casillas(config)#
```

Copy Paste

## Configuración del banner.



The screenshot shows the IOS Command Line Interface with the following text:

```
Physical Config CLI
IOS Command Line Interface
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

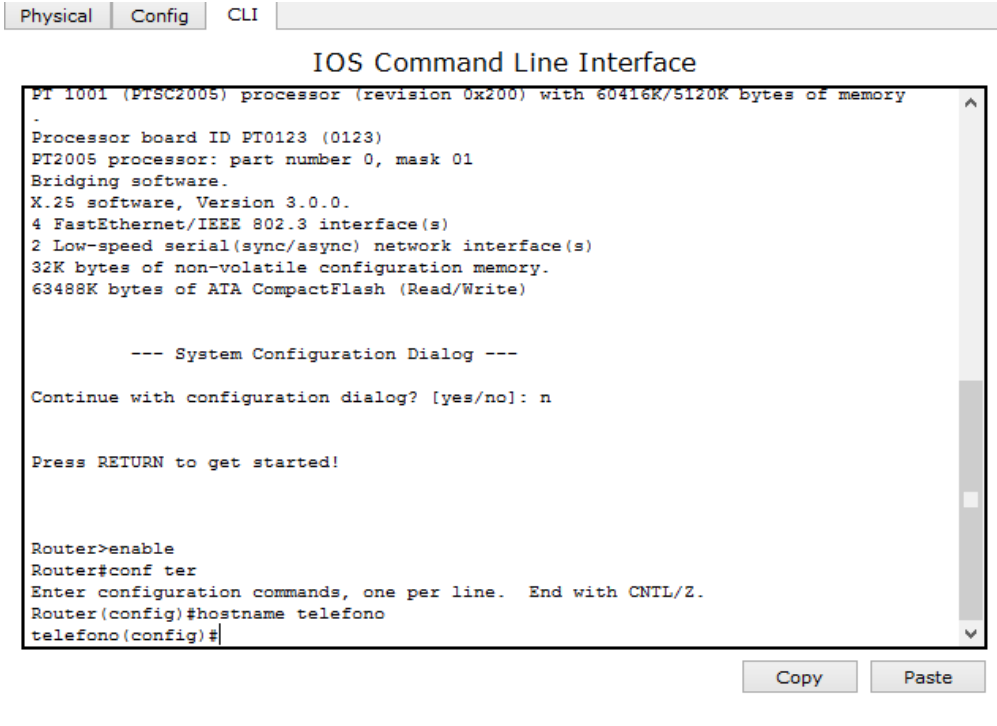
Press RETURN to get started!

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

Buttons: Copy Paste

## Router “teléfono”

### Cambio de nombre.



The screenshot shows the IOS Command Line Interface with the following text:

```
Physical Config CLI
IOS Command Line Interface
PT 1001 (PT8C2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
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 telefono
telefono(config)#
```

Buttons: Copy Paste

## Configuración de la contraseña.

```
Physical Config CLI
IOS Command Line Interface
3 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#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Pixlo
Pixlo(config)#exit
Pixlo#
%SYS-5-CONFIG_I: Configured from console by console

Pixlo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Pixlo(config)#enable password milan
Pixlo(config)#
```

Copy Paste

## Configuración del banner.

```
Physical Config CLI
IOS Command Line Interface
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 telefono
telefono(config)#banner motd #jesus alberto alvarez camera - redes de computador
as 2#^Z
telefono#
%SYS-5-CONFIG_I: Configured from console by console
^Z
telefono#
```

Copy Paste

Una vez hechas las configuraciones principales se procede a levantar los puertos como se muestra a continuación.

## Router 1

### Levantamiento del Puerto fa0/0.

```
Physical | Config | CLI | IOS Command Line Interface

Ronaldo@salazar-edms-de-computadores
Ronaldo#enable
Ronaldo#configure terminal
Ronaldo(config)#interface Fa0/0
Ronaldo(config-if)#ip address 172.30.1.1 255.255.0.0
Ronaldo(config-if)#no shut

Ronaldo(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
Ronaldo(config-if)#
```

### Levantamiento del Puerto fa1/0.

```
Physical | Config | CLI | IOS Command Line Interface

Ronaldo(config-if)#no shut
Ronaldo(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
Ronaldo(config-if)#exit
Ronaldo(config)#interface fa1/0
Ronaldo(config-if)#ip address 172.30.2.1 255.255.0.0
% 172.30.0.0 overlaps with FastEthernet0/0
Ronaldo(config-if)#ip address 172.30.2.1 255.255.0.0
% 172.30.0.0 overlaps with FastEthernet0/0
Ronaldo(config-if)#ip address 172.30.0.1 255.255.0.0
% 172.30.0.0 overlaps with FastEthernet0/0
Ronaldo(config-if)#ip address 192.30.0.1 255.255.255.0
Ronaldo(config-if)#no shut

Ronaldo(config-if)#
%LINK-3-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-3-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
Ronaldo(config-if)#
```

### Serial 2/0.

```
Physical | Config | CLI | IOS Command Line Interface

% up
Ronaldo(config-if)#exit
Ronaldo(config)#interface fa1/0
Ronaldo(config-if)#ip address 172.30.2.1 255.255.0.0
% 172.30.0.0 overlaps with FastEthernet0/0
Ronaldo(config-if)#ip address 172.30.2.1 255.255.0.0
% 172.30.0.0 overlaps with FastEthernet0/0
Ronaldo(config-if)#ip address 172.30.0.1 255.255.0.0
% 172.30.0.0 overlaps with FastEthernet0/0
Ronaldo(config-if)#ip address 192.30.0.1 255.255.255.0
Ronaldo(config-if)#no shut

Ronaldo(config-if)#
%LINK-3-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-3-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
Ronaldo(config-if)#exit
Ronaldo(config)#interface s2/0
Ronaldo(config-if)#ip address 209.165.200.228 255.255.255.0
Ronaldo(config-if)#no shut

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

## Router 2

Levantamiento del Puerto fa0/0.

```
Physical Config CLI
IOS Command Line Interface

redes de computadoras unidad4
banner motd

Casillas#enable
Password:
Password:
% Bad secrets

Casillas#enable
Password:
Casillas#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Casillas(config)#interface fa0/0
Casillas(config-if)#ip address 10.1.0.1 255.0.0.0
Casillas(config-if)#no shut

Casillas(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Casillas(config-if)#
```

Levantamiento del puerto 2/0.

```
Physical Config CLI
IOS Command Line Interface

Password:
Casillas#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Casillas(config)#interface fa0/0
Casillas(config-if)#ip address 10.1.0.1 255.0.0.0
Casillas(config-if)#no shut

Casillas(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Casillas(config-if)#exit
Casillas(config)#interface s2/0
Casillas(config-if)#ip address 209.165.200.232 255.255.255.0
Casillas(config-if)#no shut

Casillas(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

Casillas(config-if)#ip address 209.165.200.229 255.255.255.0
Casillas(config-if)#no shut
Casillas(config-if)#
```

Levantamiento del Serial 3/0.

```
Physical Config CLI
IOS Command Line Interface

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

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

Casillas(config-if)#exit
Casillas(config)#interface s3/0
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed
Casillas(config)#exit
Casillas#
%SYS-5-CONFIG_I: Configured from console by console

Casillas#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Casillas(config)#interface s3/0
Casillas(config-if)#ip address 209.165.200.232 255.255.255.0
% 209.165.200.0 overlaps with Serial2/0
Casillas(config-if)#ip address 219.165.200.232 255.255.255.0
Casillas(config-if)#no shut

%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Casillas(config-if)#
```

### Router 3

Levantamiento del Puerto fa0/0.

```
Physical | Config | CLI
IOS Command Line Interface

eduardo salazar unidad4
banner motd

Pirlo>enable
Password:
Pirlo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Pirlo(config)#interface fa0/0
Pirlo(config-if)#ip address 172.30.100.1 255.255.0.0
Pirlo(config-if)#no shut

Pirlo(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Pirlo(config-if)#exit
Pirlo(config)#
```

Copy Paste

Levantamiento del Serial 2/0.

```
Physical | Config | CLI
IOS Command Line Interface

Pirlo>enable
Password:
Pirlo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Pirlo(config)#interface fa0/0
Pirlo(config-if)#ip address 172.30.100.1 255.255.0.0
Pirlo(config-if)#no shut

Pirlo(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Pirlo(config-if)#exit
Pirlo(config)#interface s2/0
Pirlo(config-if)#ip address 219.188.200.233 255.255.255.0
Pirlo(config-if)#no shut

% Invalid input detected at '^' marker.
Pirlo(config-if)#ip address 219.188.200.233 255.255.255.0
Pirlo(config-if)#no shut

Pirlo(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Pirlo(config-if)#
```

Copy Paste

A continuación se realiza la redistribución de rutas.

### Router 1

```
Physical | Config | CLI
IOS Command Line Interface

%LINK-5-CHANGED: Interface Serial12/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial12/0, changed state to up
eduardo salazar redes de computadora
banner motd

Ronaldo>enable
Password:
Ronaldo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ronaldo(config)#router rip
Ronaldo(config-router)#network 172.30.0.0
Ronaldo(config-router)#network 209.145.200.0
Ronaldo(config-router)#
```

Copy Paste

## Router 2

```
Physical Config CLI
IOS Command Line Interface
Casillas>enable
Casillas#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Casillas(config)#router rip
Casillas(config-router)#exit
Casillas(config)#ip route 192.168.0.0 255.255.0.0 null10
% Invalid input detected at '^' marker.
Casillas(config)#ip route 192.168.0.0 255.255.0.0 null 10
% Invalid input detected at '^' marker.
Casillas(config)#ip router 192.168.0.0 255.255.0.0 null 10
% Invalid input detected at '^' marker.
Casillas(config)#ip route 192.168.0.0 255.255.0.0 null10
% Invalid input detected at '^' marker.
Casillas(config)#router rip
Casillas(config-router)#redistribute static
Casillas(config-router)#network 10.0.0.0
Casillas(config-router)#network 209.165.200.0
Casillas(config-router)#
```

## Router 3

```
Physical Config CLI
IOS Command Line Interface
eduardo@salazar-unidad4
banner motd

Pirlo>enable
Password:
Pirlo#network 172.30.0.0
% Invalid input detected at '^' marker.
Pirlo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Pirlo(config)#router rip
Pirlo(config-router)#network 172.30.0.0
Pirlo(config-router)#network 219.165.200.0
Pirlo(config-router)#
```

Como siguiente paso se realiza la verificación y prueba de la conectividad.

## Router 1

```
Physical Config CLI
IOS Command Line Interface
209.165.200.225 120 00:00:10
Distance: (default is 120):
Ronaldo#debug ip rip
RIP protocol debugging is on
Ronaldo#RIP: received v1 update from 209.165.200.225 on Serial2/0
10.0.0.0 in 1 hops
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (172.30.1.1)
RIP: build update entries
network 10.0.0.0 metric 2
network 209.165.200.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (209.165.200.225)
RIP: build update entries
network 172.30.0.0 metric 1
RIP: received v1 update from 209.165.200.225 on Serial2/0
10.0.0.0 in 1 hops
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (172.30.1.1)
RIP: build update entries
network 10.0.0.0 metric 2
network 209.165.200.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (209.165.200.225)
RIP: build update entries
network 172.30.0.0 metric 1
RIP: received v1 update from 209.165.200.225 on Serial2/0
10.0.0.0 in 1 hops
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (172.30.1.1)
RIP: build update entries
```

## Realización del ping

```
Physical | Config | CLI | IOS Command Line Interface
-----|-----|-----|-----
network 172.30.0.0 metric 1
Target IP address: 10.1.0.0
Repeat count [5]: 3
Datagram size [100]: 4
% A decimal number between 26 and 1024.
Datagram size [100]: RIP: sending v1 update to 255.255.255.255 via FastEthernet
0/0 (172.30.1.1)
RIP: build update entries
network 10.0.0.0 metric 2
network 209.165.200.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial12/0 (209.165.200.229)
RIP: build update entries
network 172.30.0.0 metric 1
RIP: received v2 update from 209.165.200.229 on Serial12/0
10.0.0.0/8 via 0.0.0.0 in 1 hops

Timeout in seconds [2]:
Extended commands [n]: n
Sweep range of sizes [n]: n
Type escape sequence to abort.
Sending 3, 100-byte ICMP Echos to 10.1.0.0, timeout is 2 seconds:
...
Success rate is 0 percent (0/3)
Ronaldo#
```

Como siguiente paso se realiza la Habilitación y verificación de RIPv2.

### Router 1

```
Physical | Config | CLI | IOS Command Line Interface
-----|-----|-----|-----
RIP: build update entries
network 10.0.0.0 metric 2
network 209.165.200.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial12/0 (209.165.200.229)
RIP: build update entries
network 172.30.0.0 metric 1

Ronaldo>enable
Password:
Ronaldo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ronaldo(config)#router rip
Ronaldo(config-router)#version 2
Ronaldo(config-router)#

RIP: build update entries
network 10.0.0.0 metric 2
network 209.165.200.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial12/0 (209.165.200.229)
RIP: build update entries
network 172.30.0.0 metric 1

Ronaldo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ronaldo(config)#router rip
Ronaldo(config-router)#version 2
Ronaldo(config-router)#
```

### Router 2

```
Physical | Config | CLI | IOS Command Line Interface
-----|-----|-----|-----
Press RETURN to get started.

Casillas#enable
Casillas#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Casillas(config)#router rip
Casillas(config-router)#version 2
Casillas(config-router)#
```

### Router 3.

```
Physical | Config | CLI
IOS Command Line Interface

Press RETURN to get started.

eduardo@swlaber-ubuntu:~$
banner motd

R1>enable
Password:
R1>conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1>(config-router)#version 2
R1>(config-router)#
```

A continuación se realiza la comprobación que RIPv2 esté configurado, utilizando el siguiente comando show ip protocols.

### Router 1

```
Physical | Config | CLI
IOS Command Line Interface

10.0.0.0/8 via 0.0.0.0 in 1 hops

Ronald@>ENABLE
Password:
Ronald@>show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 8 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

Default version control: send version 2, receive 2

  FastEthernet0/0      2      2
  Serial2/0           2      2
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
  172.30.0.0
  209.165.200.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
  209.165.200.229  120          00:00:18
Distance: (default is 120)
Ronald@>
```

### Router 2

```
Physical | Config | CLI
IOS Command Line Interface

Casilla@>
4SVS-2-CONFIG_1: Configured from console by console
Casilla@>show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 19 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

Default version control: send version 2, receive 2

  FastEthernet0/0      2      2
  Serial2/0           2      2
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
  10.0.0.0
  209.165.200.0
  219.145.200.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
  209.165.200.229  120          00:00:18
Distance: (default is 120)
Casilla@>
```

### Router 3.

```
Physical | Config | CLI
IOS Command Line Interface
Eirio(config-router)#version 2
Eirio(config-router)#exit
Eirio(config)#exit
Eirio#
%SYS-5-CONFIG_I: Configured from console by console

Eirio#show ip protocols
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 14 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
  -----
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
  172.30.0.0
  219.165.200.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
Distance: (default is 120)
Eirio#
```

A continuación se muestra la Inhabilitación de sumarización automática en RIPv2.

### Router 1

```
Physical | Config | CLI
IOS Command Line Interface
Ronaldos(config-router)#no
Ronaldos#
%SYS-5-CONFIG_I: Configured from console by console

Ronaldos#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
  -----
Automatic network summarization is not in effect
Routing for Networks:
  172.30.0.0
  209.165.200.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
  209.165.200.229  120           00:00:25
Distance: (default is 120)
Ronaldos#
```

### Router 2.

```
Physical | Config | CLI
IOS Command Line Interface
Casillas#
%SYS-5-CONFIG_I: Configured from console by console

Casillas#show ip protocols
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 5 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, static
  Default version control: send version 2, receive 2
     Interface          Send Recv Triggered RIP Key-chain
  FastEthernet0/0      2      2
  -----
Automatic network summarization is not in effect
Routing for Networks:
  10.0.0.0
  209.165.200.0
  219.165.200.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
  209.165.200.229  120           00:00:22
Distance: (default is 120)
Casillas#
```

### Router 3.

```
Physical | Config | CLI | IOS Command Line Interface
Pirlo(config)#router rip
Pirlo(config-router)#no auto-summary
Pirlo(config-router)#end
Pirlo#
%SYS-5-CONFIG_I: Configured from console by console

Pirlo#show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 21 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
Automatic network summarization is not in effect

Routing for Networks:
 172.30.0.0
 209.165.200.0
Passive Interface(s):
Routing Information Sources:
 Gateway         Distance      Last Update
Distance: (default is 120)
Pirlo#
```

Como parte final para verificar que las subredes se envían y se reciben, se utilizan los siguientes comandos: show ip route y debug ip rip.

### Router 1

```
Physical | Config | CLI | IOS Command Line Interface
Password:
Ronaldc#show ipRIP: 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
 209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
RIP: sending v2 update to 224.0.0.9 via Serial12/0 (209.165.200.229)
RIP: build update entries
 172.30.0.0/16 via 0.0.0.0, metric 1, tag 0
Ronaldc#showRIP: received v2 update from 209.165.200.229 on Serial12/0
Ronaldc#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, 00:00:04, Serial12/0
C    172.30.0.0/16 is directly connected, FastEthernet0/0
C    192.30.0.0/24 is directly connected, FastEthernet1/0
C    209.165.200.0/24 is directly connected, Serial12/0
Ronaldc#
```

```
Physical | Config | CLI | IOS Command Line Interface
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
 209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
RIP: sending v2 update to 224.0.0.9 via Serial12/0 (209.165.200.229)
RIP: build update entries
 172.30.0.0/16 via 0.0.0.0, metric 1, tag 0
RIP: received v2 update from 209.165.200.229 on Serial12/0
RIP: 10.0.0.0/8 via 0.0.0.0 in 1 hops
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
 209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
RIP: sending v2 update to 224.0.0.9 via Serial12/0 (209.165.200.229)
RIP: build update entries
 172.30.0.0/16 via 0.0.0.0, metric 1, tag 0
RIP: received v2 update from 209.165.200.229 on Serial12/0
 10.0.0.0/8 via 0.0.0.0 in 1 hops
```

## Router 2.

```
Physical | Config | CLI | IOS Command Line Interface

Casillas>enable
Casillas#conf t
Enter configuration commands, one per line. End with CHTL/Z.
Casillas(config)#router rip
Casillas(config-router)#exit
Casillas(config)#
Casillas(config)#exit
Casillas#
%SYS-5-CONFIG_I: Configured from console by console

Casillas#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    10.0.0.0/8 is directly connected, FastEthernet0/0
R    172.30.0.0/16 [120/1] via 209.165.200.228, 00:00:04, Serial2/0
C    209.165.200.0/24 is directly connected, Serial2/0
Casillas#
```

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```
Physical | Config | CLI | IOS Command Line Interface

C    209.165.200.0/24 is directly connected, Serial2/0
Casillas#debug ip rip
RIP protocol debugging is on
Casillas#RIP: sending v2 update to 224.0.0.9 via FastEthernet0/0 (10.1.0.1)
RIP: build update entries
      172.30.0.0/16 via 0.0.0.0, metric 2, tag 0
      209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
RIP: sending v2 update to 224.0.0.9 via Serial2/0 (209.165.200.228)
RIP: build update entries
      10.0.0.0/8 via 0.0.0.0, metric 1, tag 0
RIP: received v2 update from 209.165.200.228 on Serial2/0
      172.30.0.0/16 via 0.0.0.0 in 1 hops
RIP: sending v2 update to 224.0.0.9 via FastEthernet0/0 (10.1.0.1)
RIP: build update entries
      172.30.0.0/16 via 0.0.0.0, metric 2, tag 0
      209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
RIP: sending v2 update to 224.0.0.9 via Serial2/0 (209.165.200.228)
RIP: build update entries
      10.0.0.0/8 via 0.0.0.0, metric 1, tag 0
RIP: received v2 update from 209.165.200.228 on Serial2/0
      172.30.0.0/16 via 0.0.0.0 in 1 hops
RIP: sending v2 update to 224.0.0.9 via FastEthernet0/0 (10.1.0.1)
RIP: build update entries
      172.30.0.0/16 via 0.0.0.0, metric 2, tag 0
      209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
RIP: sending v2 update to 224.0.0.9 via Serial2/0 (209.165.200.228)
Casillas#
```

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## Router 3.

```
Physical | Config | CLI | IOS Command Line Interface

Default version control: send version 2, receive 2
Interface          Send Recv Triggered RIP Key-chain
FastEthernet0/0    2      2
Automatic network summarization is not in effect
Maximum path: 4
Routing for Networks:
  172.30.0.0
  209.165.200.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
Distance: (default is 120)
Pirlos#
Pirlos#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    172.30.0.0/16 is directly connected, FastEthernet0/0
Pirlos#
```

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## **CONCLUSIÓN**

En esta práctica se volvieron a considerar las configuraciones principales de un router como son el cambio de contraseña, de nombre y a colocar un banner de bienvenida.

Esta práctica fue desarrollada para mostrar los comandos de un router cisco, lo cual se manejaron dos protocolos de enrutamiento, que son el RIP y el RIPv2, se mostró su funcionamiento y se utilizaron comandos para saber si las subredes se envían y se reciben.