

INSTITUTO TÉCNOLOGICO DE SALINA CRUZ

REDES DE COMPUTADORA

SEMESTRE FEBRERO-AGOSTO 2015

REPORTE DE PRÁCTICAS

PRACTICA N°: 2

UNIDAD: 4

FECHA: 11 DE MAYO DE 2015

NOMBRE: EDUARDO SALAZAR IRRIZARI

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:

- 1.- Computadoras.
- 2.- Cisco Packet Tracer.
- 3.- Silla.

Escenario.



Tabla de enrutamiento.

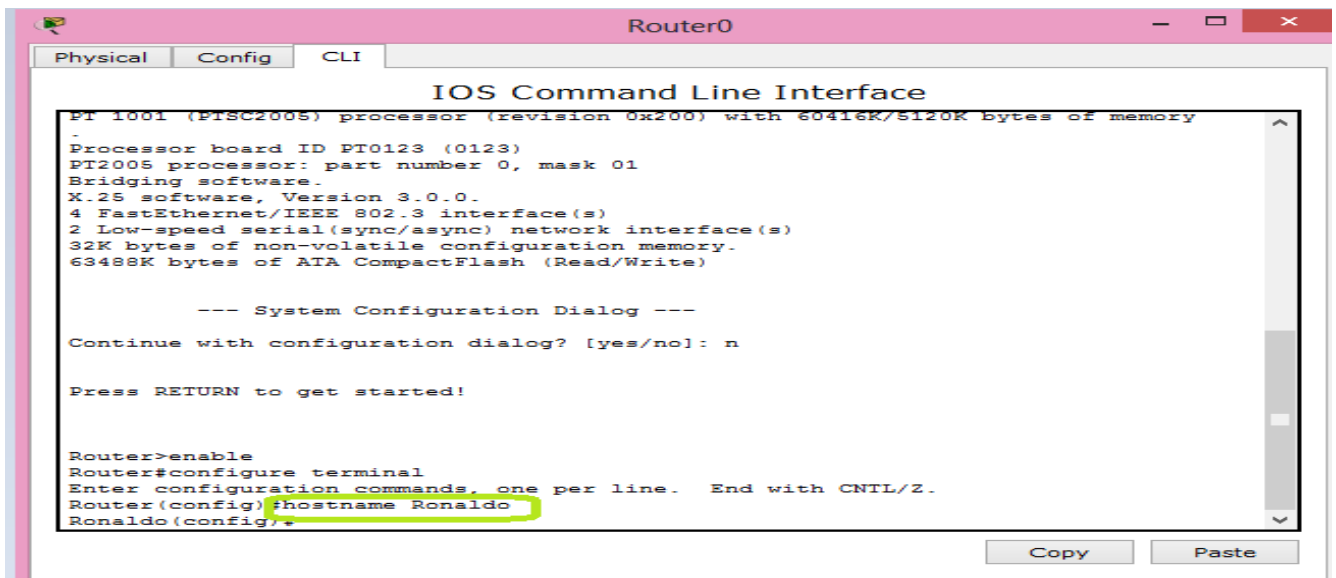
Dispositivo	Interfaz	Dirección IP	Mascara de subred	Gateway
Ronaldo (R1)	Fa0/0	172.30.1.1	255.255.0.0	No aplicable
	Fa1/0	192.30.0.1	255.255.0.0	
	S2/0	209.165.200.228	255.255.255.0	
Casillas (R2)	Fa0/0	10.1.0.1	255.0.0.0	No aplicable
	S2/0	209.165.200.229	255.255.255.0	
	S3/0	219.165.200.232	255.255.255.0	
Pirlo (R3)	Fa0/0	172.30.100.1	255.255.0.0	No aplicable
	S2/0	219.165.200.233	255.255.255.0	

CONFIGURACIÓN INICIAL.

En este apartado es donde nosotros realizaremos configuraciones tales como: cambio de nombre, asignación de un password y asignación de un banner a cada uno de los routers.

R1 (Ronaldo).

Cambio de nombre.



The screenshot shows the Router0 CLI interface. The title bar reads "Router0". The tabs are "Physical", "Config", and "CLI". The main window title is "IOS Command Line Interface". The terminal output shows the following text:

```
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)

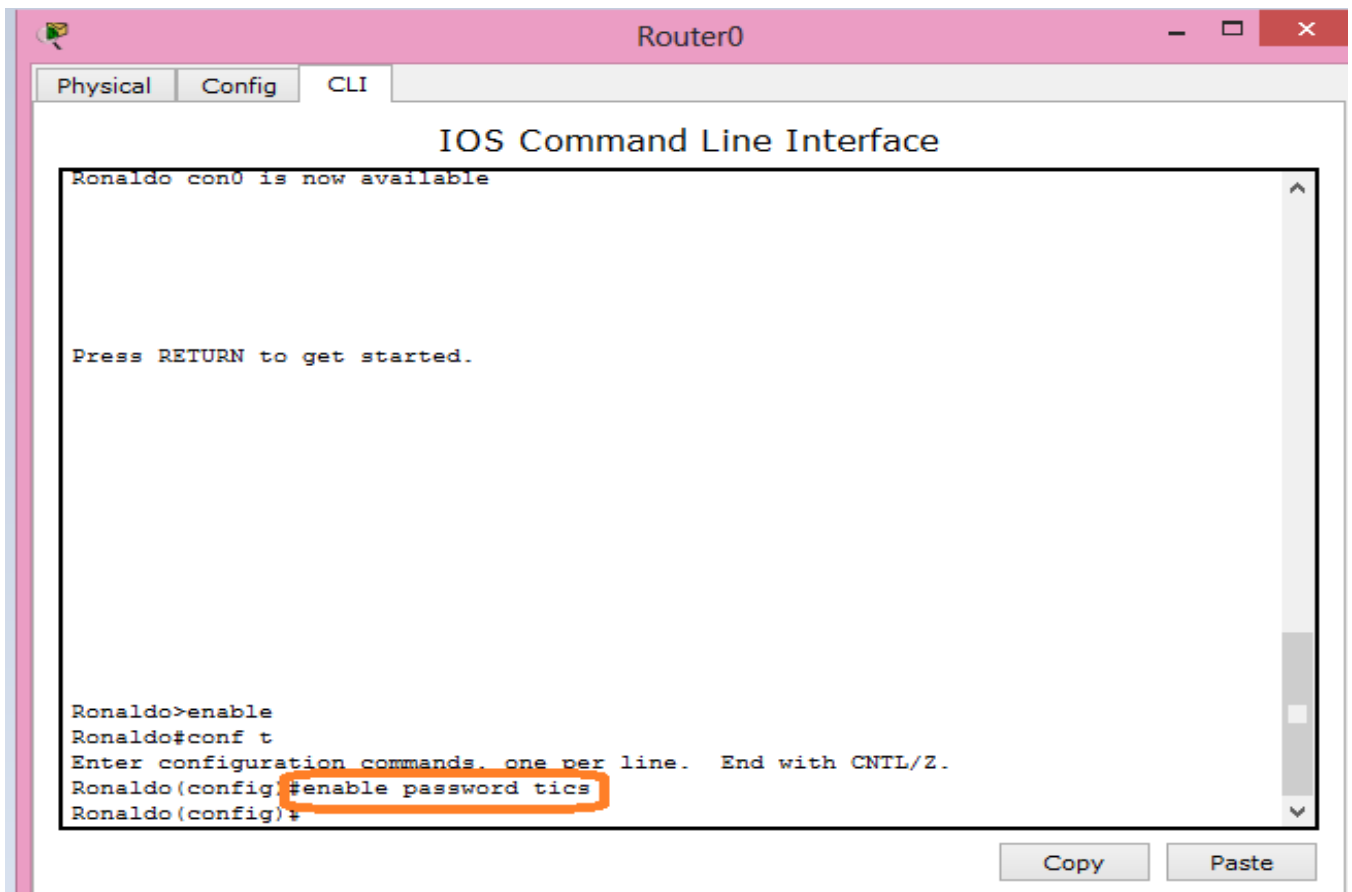
--- System Configuration Dialog ---
Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Ronaldo
Ronaldo(config)#
```

The command `hostname Ronaldo` is highlighted with a yellow box. At the bottom right, there are "Copy" and "Paste" buttons.

Asignación de una contraseña.



The screenshot shows the Router0 CLI interface. The title bar reads "Router0". The tabs are "Physical", "Config", and "CLI". The main window title is "IOS Command Line Interface". The terminal output shows the following text:

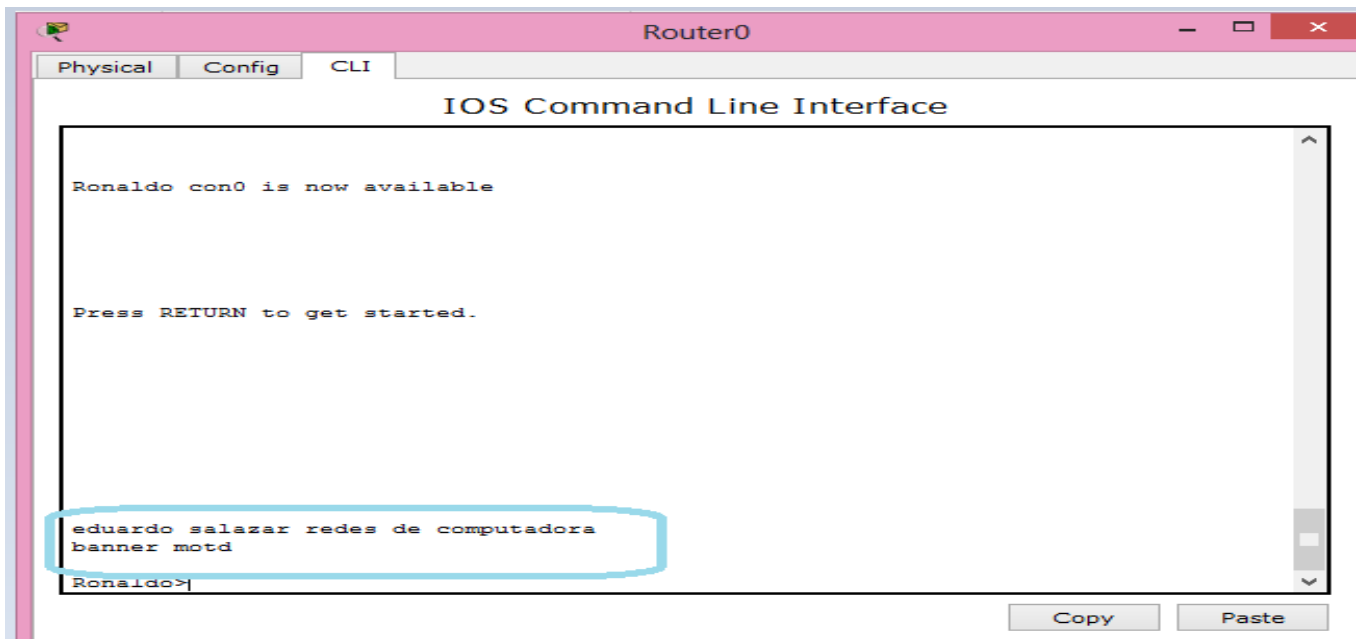
```
Ronaldo con0 is now available

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. At the bottom right, there are "Copy" and "Paste" buttons.

Asignación de un banner.



The screenshot shows the CLI of Router0. The prompt is 'Ronaldo>'. The user has entered the command 'banner motd' followed by a new line containing 'eduardo salazar redes de computadora'. The text 'eduardo salazar redes de computadora' is highlighted with a blue box. Below the input area, there are 'Copy' and 'Paste' buttons.

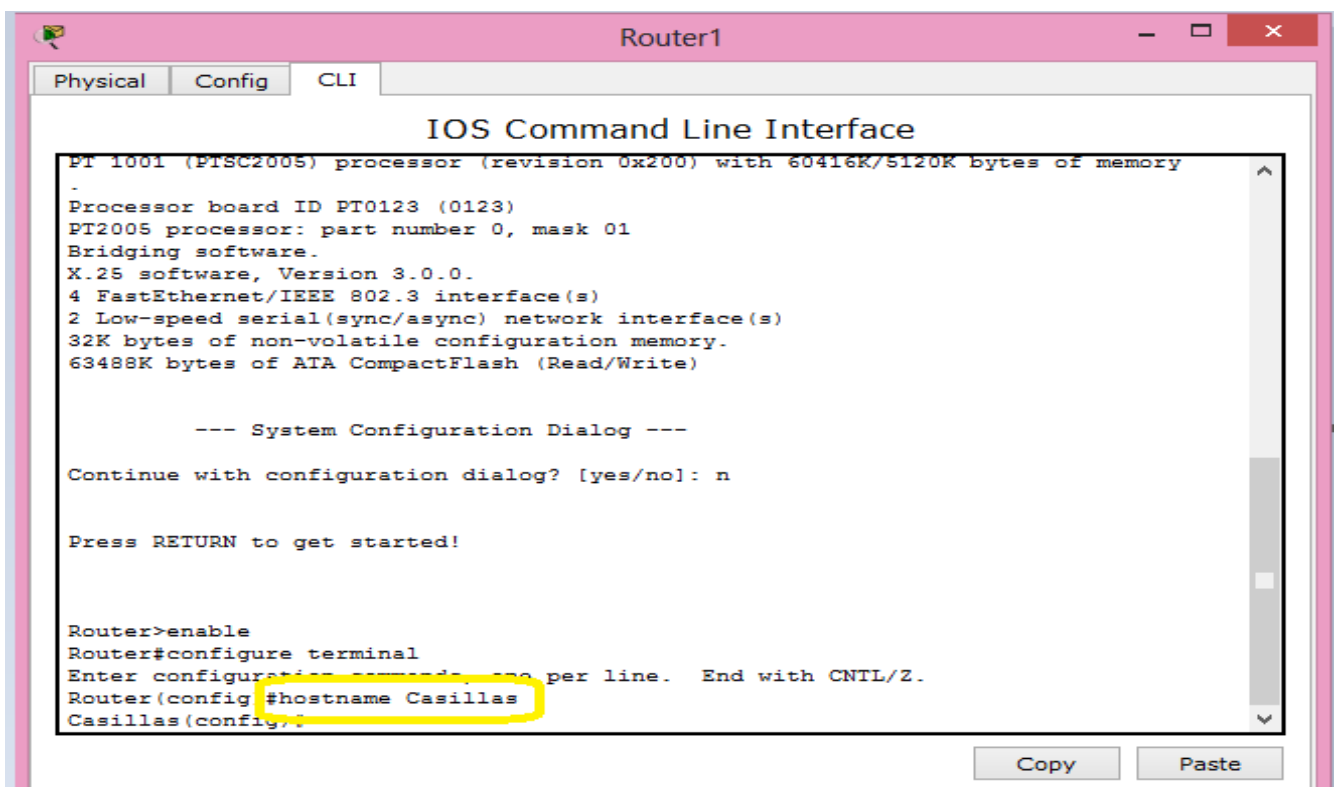
```
Ronaldo con0 is now available

Press RETURN to get started.

eduardo salazar redes de computadora
banner motd
Ronaldo>
```

R2 (Casillas).

Cambio de nombre.



The screenshot shows the CLI of Router1. The prompt is 'Router>'. The user has entered 'enable' to enter privileged mode. Then, the user has entered 'configure terminal' to enter configuration mode. The prompt is now 'Router(config)#'. The user has entered 'hostname Casillas', which is highlighted with a yellow box. The prompt is now 'Casillas(config)#'. Below the input area, there are 'Copy' and 'Paste' buttons.

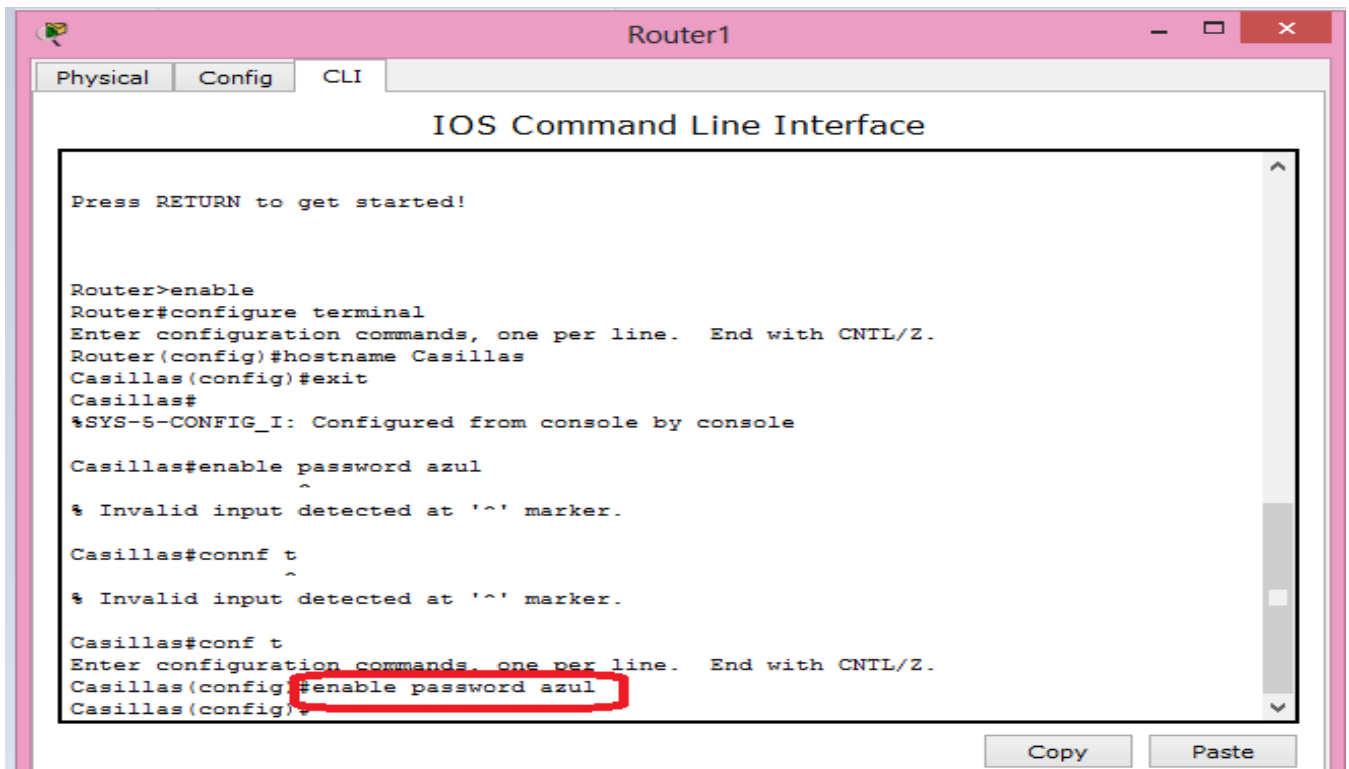
```
PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K 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#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Casillas
Casillas(config)#
```

Asignación de la contraseña.



The screenshot shows the Router1 CLI interface. The user has entered the following commands: Router>enable, Router#configure terminal, Router(config)#hostname Casillas, Casillas(config)#exit, Casillas#, Casillas#enable password azul, and Casillas(config)#enable password azul. The last command is highlighted with a red box. The interface also shows error messages for invalid input markers and a 'Copy' button at the bottom right.

```
Router1
Physical Config CLI
IOS Command Line Interface

Press RETURN to get started!

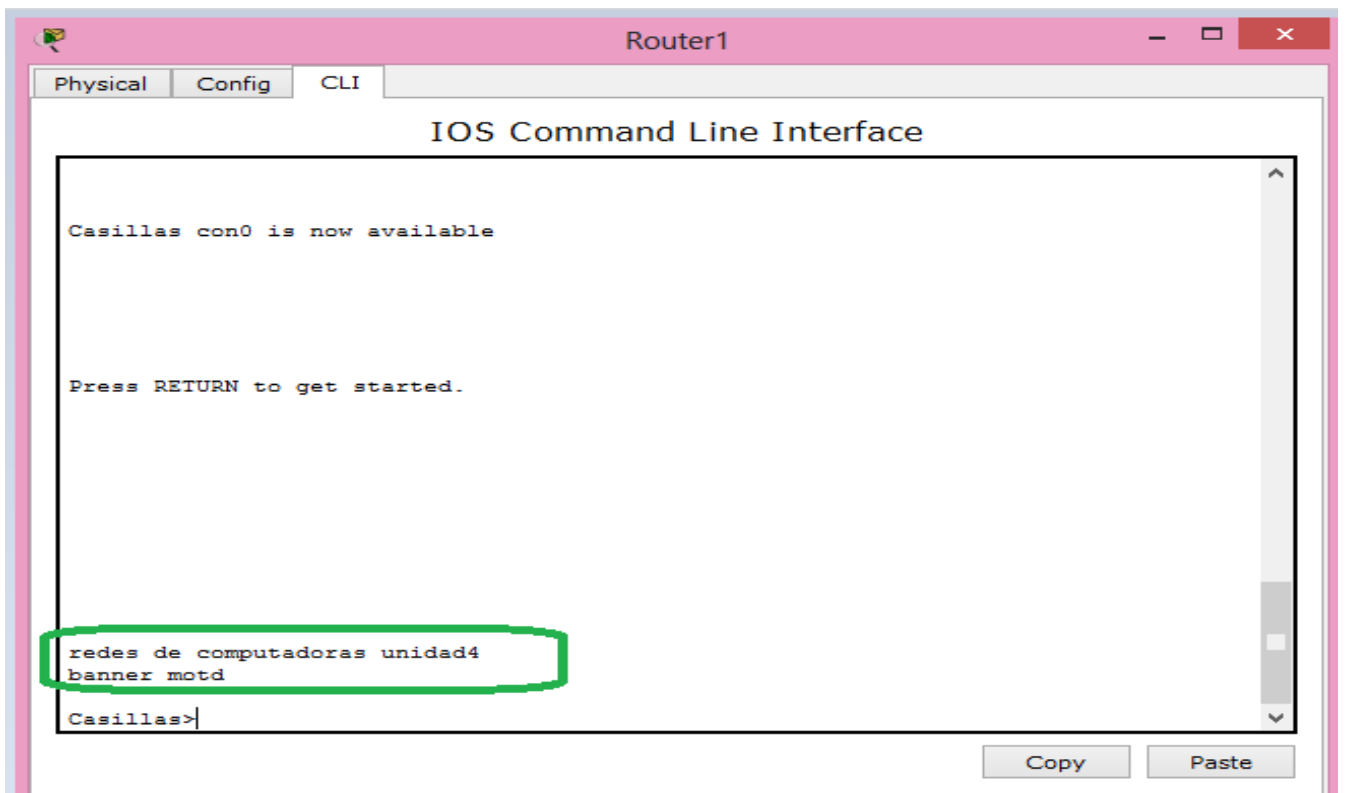
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Casillas
Casillas(config)#exit
Casillas#
%SYS-5-CONFIG_I: Configured from console by console

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)#
```

Configuración del banner.



The screenshot shows the Router1 CLI interface. The user has entered the following commands: Casillas con0 is now available, Press RETURN to get started., redes de computadoras unidad4, and banner motd. The last two lines are highlighted with a green box. The interface also shows a 'Copy' button at the bottom right.

```
Router1
Physical Config CLI
IOS Command Line Interface

Casillas con0 is now available

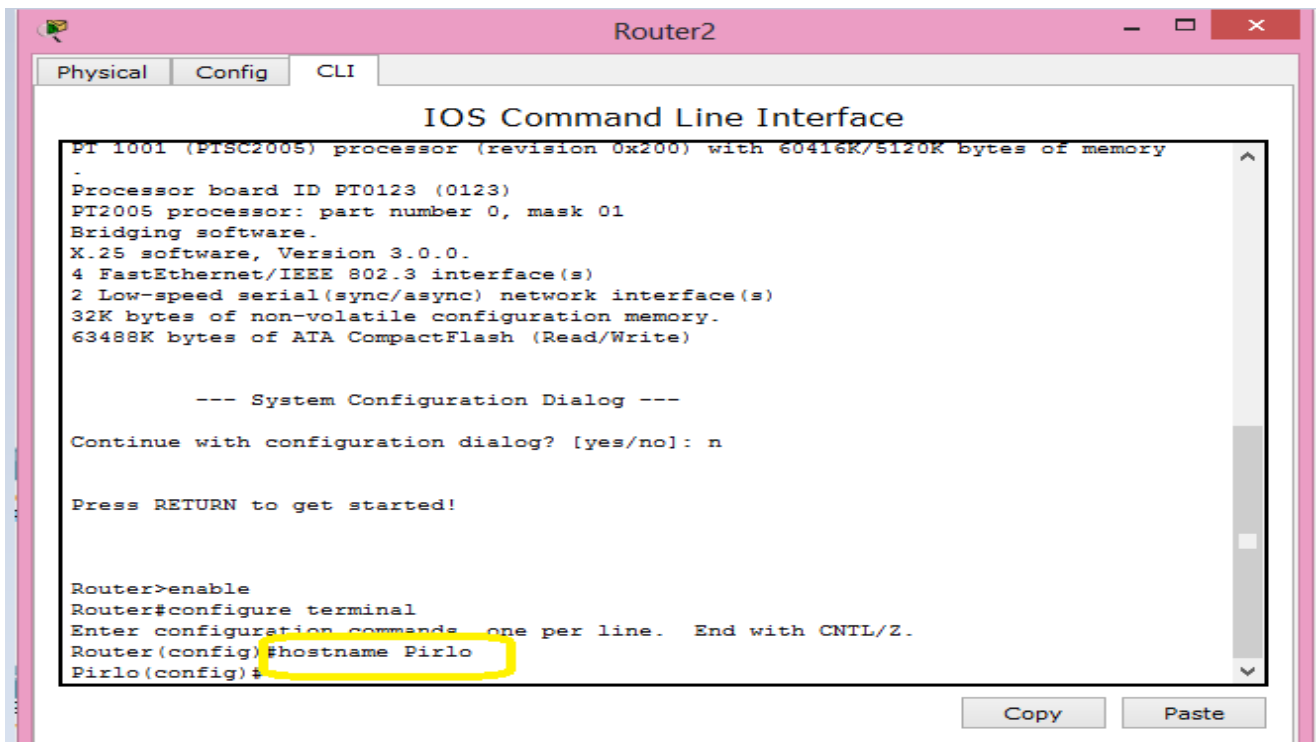
Press RETURN to get started.

redes de computadoras unidad4
banner motd

Casillas>
```

R3 (Pirlo).

Cambio de nombre.



```
Router2
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)

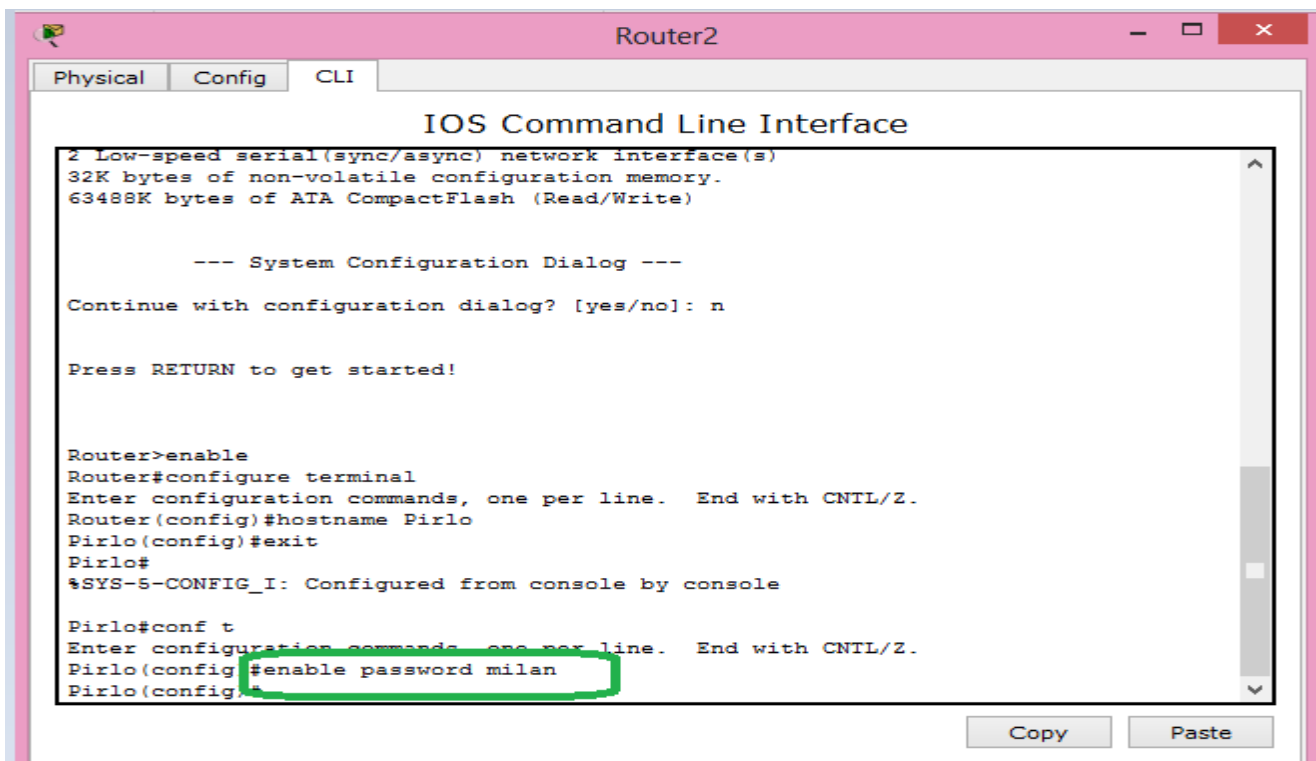
--- System Configuration Dialog ---
Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname Pirlo
Pirlo(config)#
```

Copy Paste

Configuración de la contraseña.



```
Router2
Physical Config CLI
IOS Command Line Interface
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

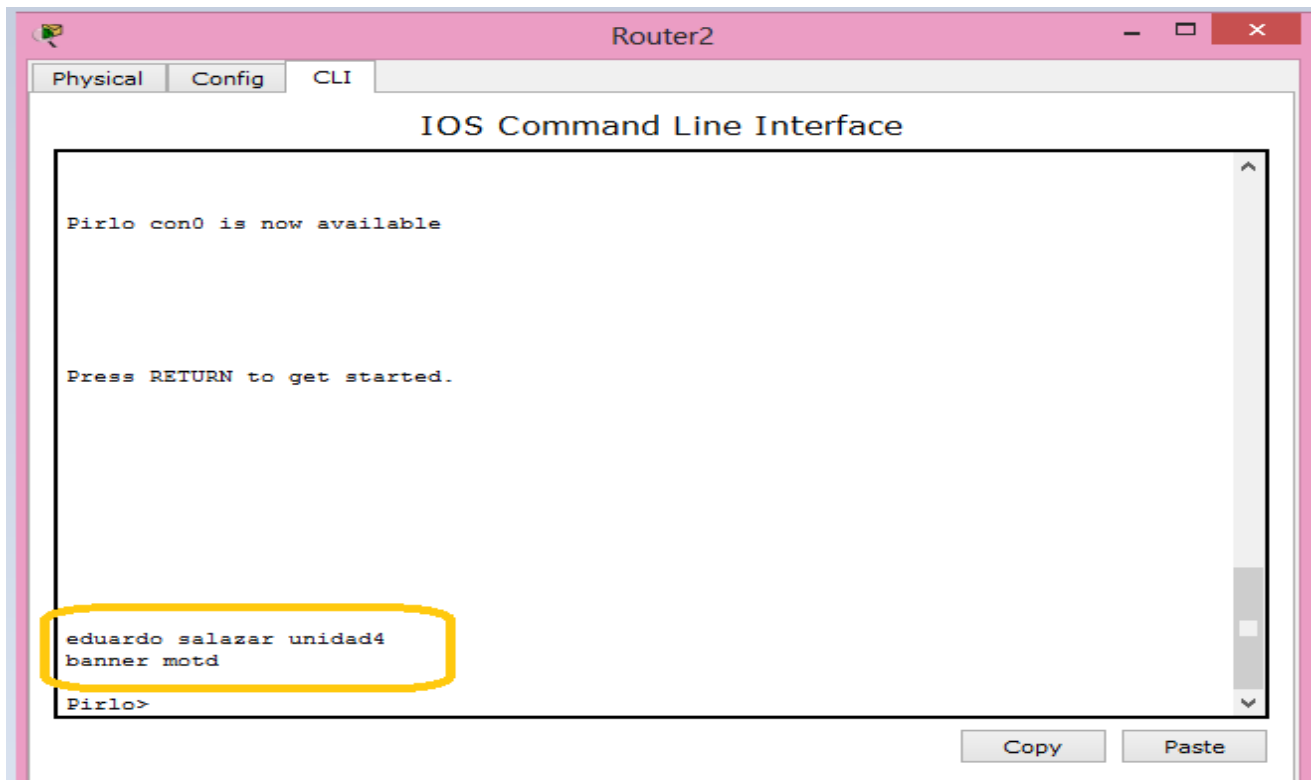
Press RETURN to get started!

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

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

Copy Paste

Asignación de un banner.



The screenshot shows the CLI interface of Router2. The window title is "Router2". The tabs are "Physical", "Config", and "CLI". The main area is titled "IOS Command Line Interface". The output shows a banner message: "Pirlo con0 is now available". Below it, it says "Press RETURN to get started." At the bottom, the prompt is "Pirlo>". A yellow box highlights the configuration commands: "eduardo salazar unidad4" and "banner motd".

```
Pirlo con0 is now available

Press RETURN to get started.

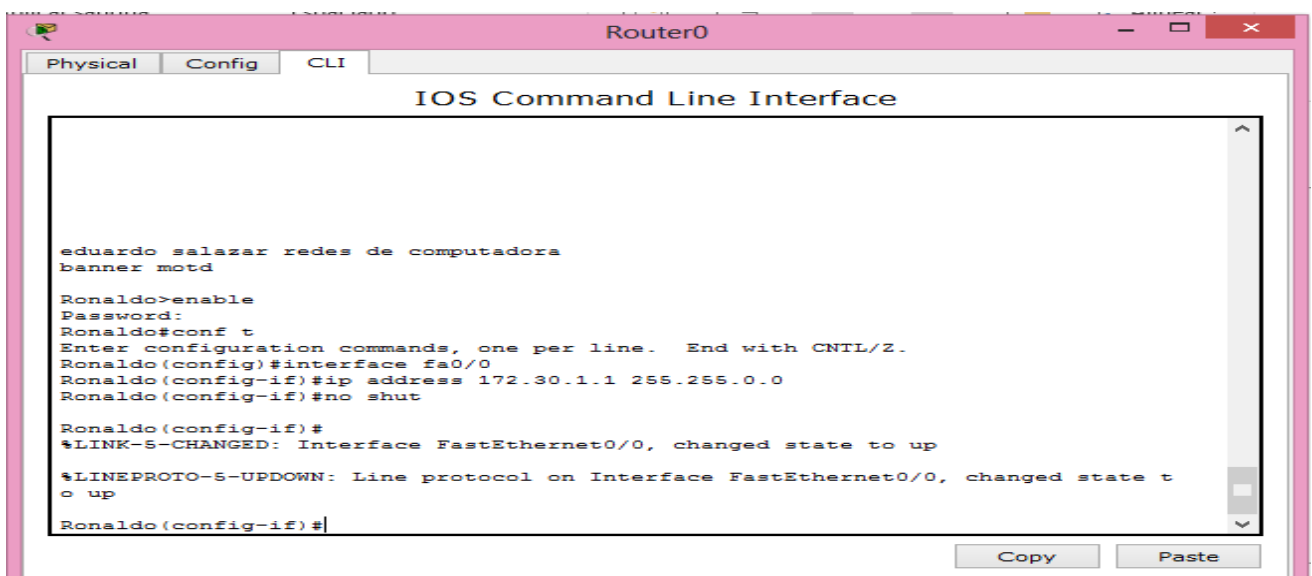
eduardo salazar unidad4
banner motd

Pirlo>
```

Después de todas estas configuraciones pasamos al levantamiento o habilitación de puertos, tanto de Fa como seriales, esto con el fin de que se pueda llevar a cabo las conexiones.

Ronaldo (R1).

Puerto fa0/0.



The screenshot shows the CLI interface of Router0. The window title is "Router0". The tabs are "Physical", "Config", and "CLI". The main area is titled "IOS Command Line Interface". The output shows the configuration of the fa0/0 interface. The banner message is "eduardo salazar redes de computadora". The configuration commands are: "enable", "conf t", "interface fa0/0", "ip address 172.30.1.1 255.255.0.0", and "no shut". The output shows the interface state changing to up.

```
eduardo salazar redes de computadora
banner motd

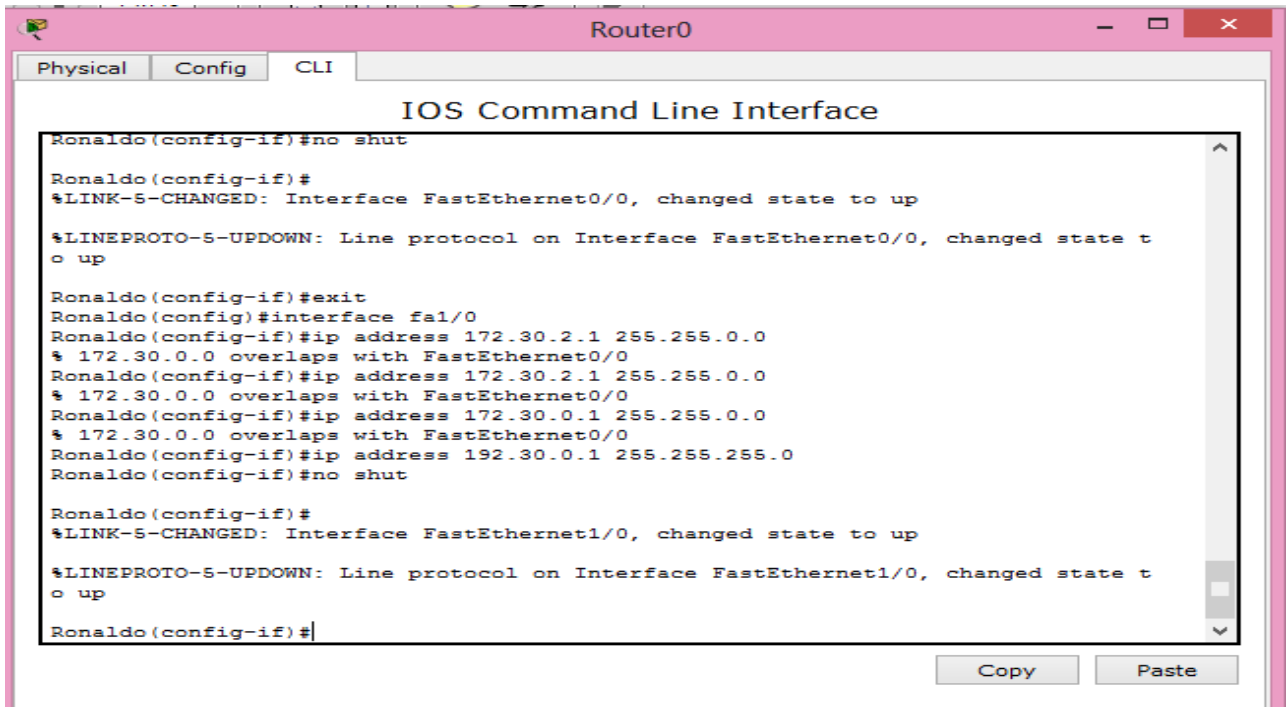
Ronaldo>enable
Password:
Ronaldo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ronaldo(config)#interface fa0/0
Ronaldo(config-if)#ip address 172.30.1.1 255.255.0.0
Ronaldo(config-if)#no shut

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

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

Ronaldo(config-if)#
```

Puerto fa1/0.

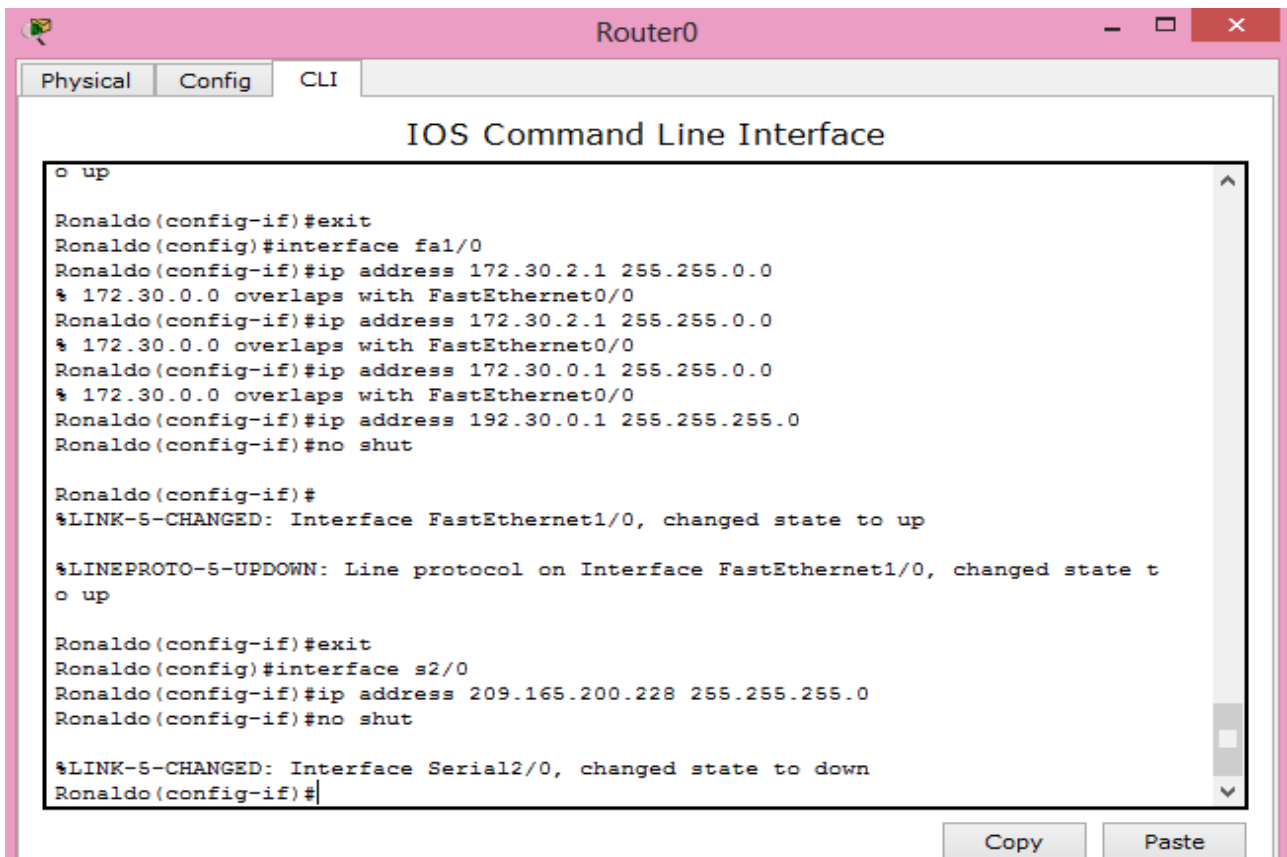


The screenshot shows the Router0 CLI interface with the following text:

```
Router0
Physical Config CLI
IOS Command Line Interface
Ronaldo(config-if)#no shut
Ronaldo(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
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-5-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
Ronaldo(config-if)#|
```

Buttons: Copy Paste

Serial 2/0.



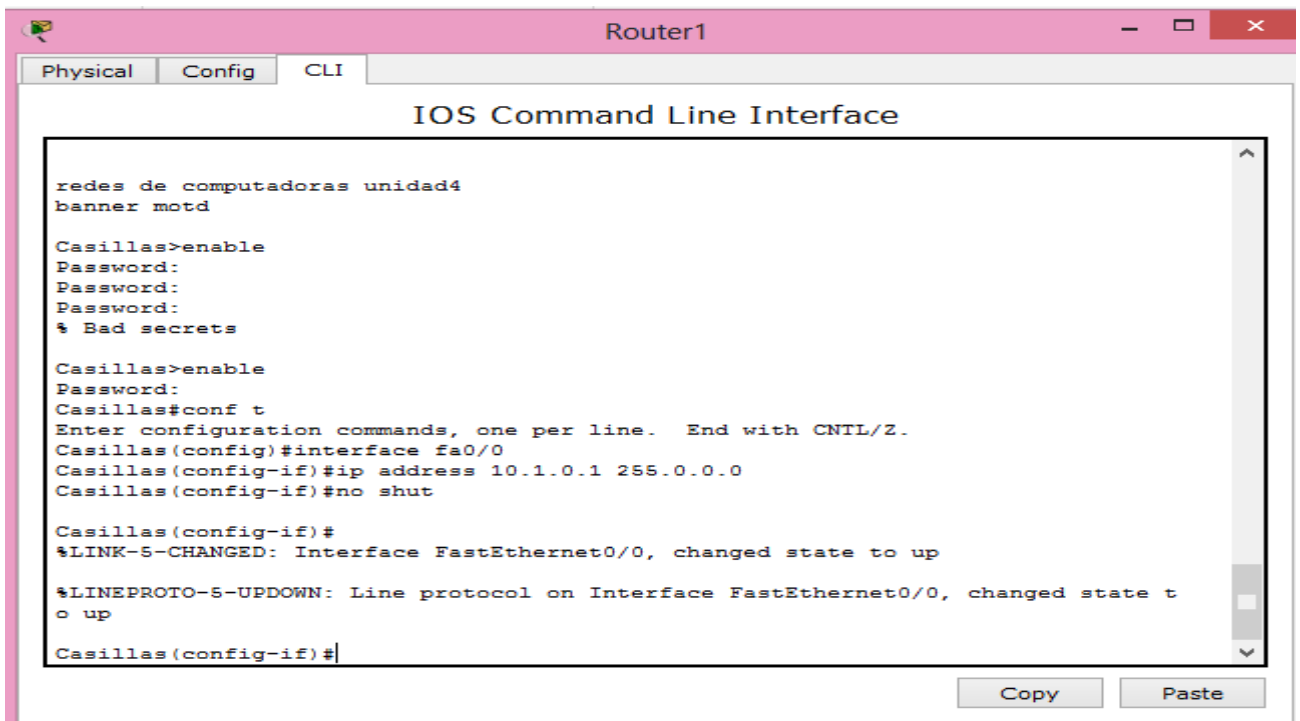
The screenshot shows the Router0 CLI interface with the following text:

```
Router0
Physical Config CLI
IOS Command Line Interface
o 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-5-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-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-5-CHANGED: Interface Serial2/0, changed state to down
Ronaldo(config-if)#|
```

Buttons: Copy Paste

Casillas (R2).

Puerto fa0/0.



```
Router1
Physical Config CLI
IOS Command Line Interface

redes de computadoras unidad4
banner motd

Casillas>enable
Password:
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

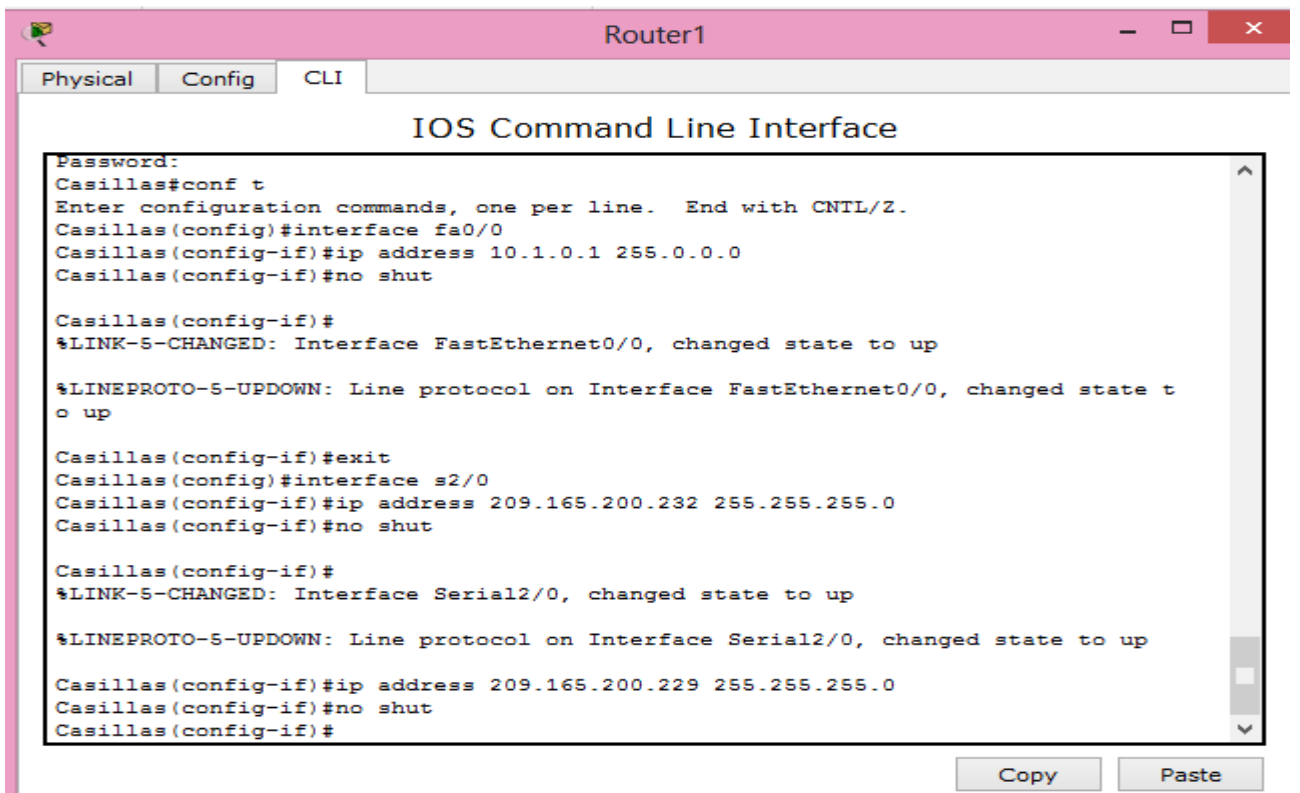
Casillas(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

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

Casillas(config-if)#
```

Copy Paste

Serial 2/0.



```
Router1
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

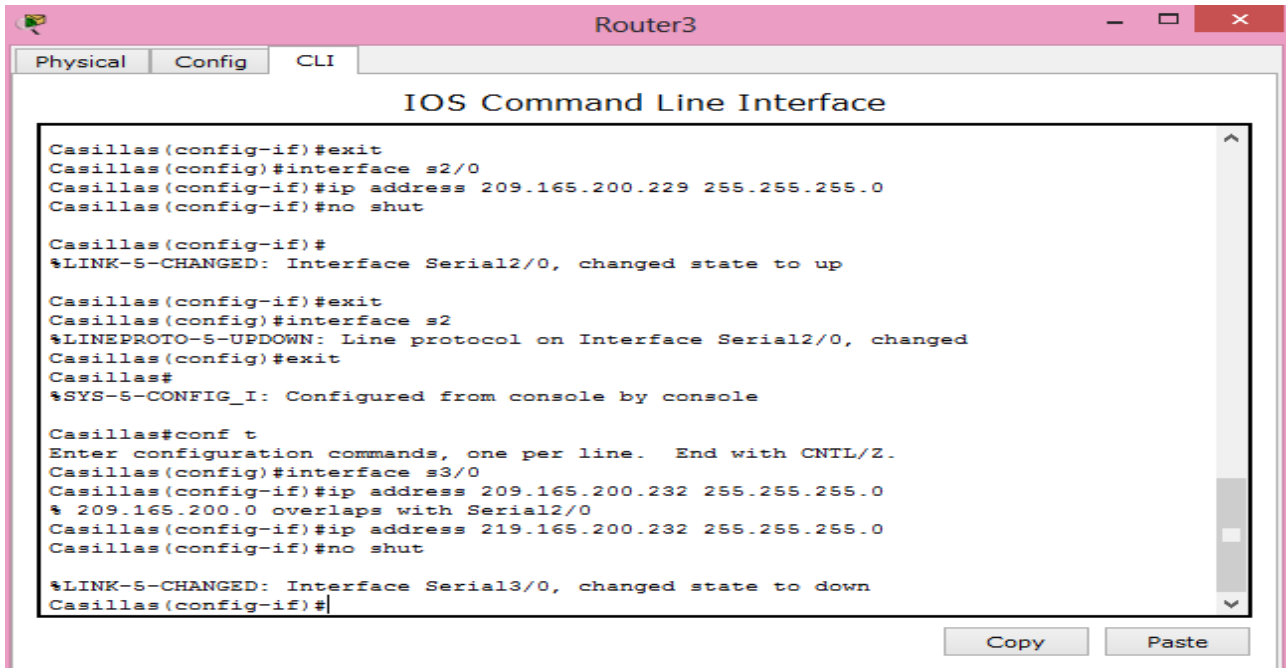
Casillas(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%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)#
```

Copy Paste

Serial 3/0.



The screenshot shows the CLI of Router3. The user is in the configuration mode for interface s2/0. They have entered the following commands: `exit`, `interface s2/0`, `ip address 209.165.200.229 255.255.255.0`, and `no shut`. The system has responded with `%LINK-5-CHANGED: Interface Serial2/0, changed state to up`. Then, the user enters `exit` and `interface s2`. The system responds with `%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed`. The user then enters `exit` and `exit`. The system responds with `%SYS-5-CONFIG_I: Configured from console by console`. The user then enters `conf t`. The system prompts for configuration commands. The user enters `interface s3/0`, `ip address 209.165.200.232 255.255.255.0`, `ip address 219.165.200.232 255.255.255.0`, and `no shut`. The system responds with `%LINK-5-CHANGED: Interface Serial3/0, changed state to down`. The user then enters `exit`.

```
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

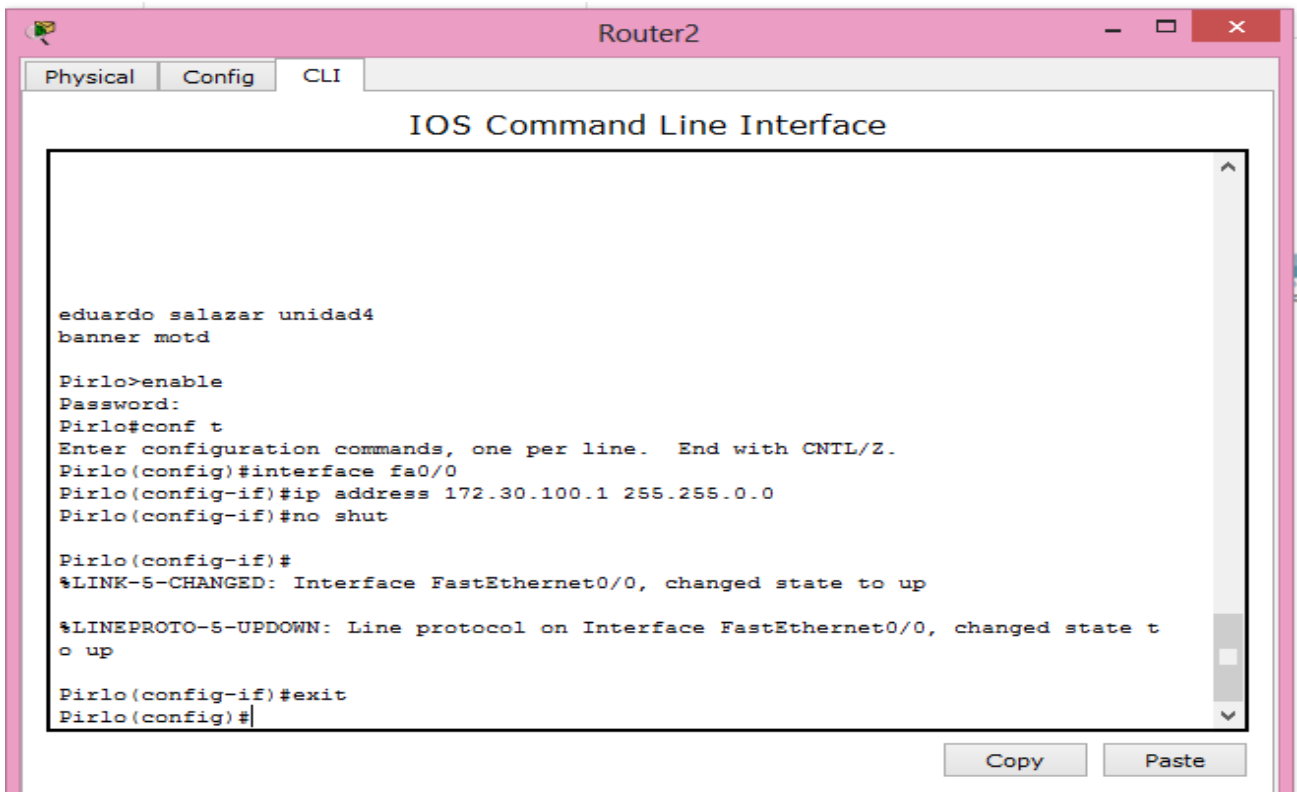
Casillas(config-if)#exit
Casillas(config)#interface s2
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed
Casillas(config)#exit
Casillas#
%SYS-5-CONFIG_I: Configured from console by console

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)#
```

Pirlo (R3).

Puerto fa0/0.



The screenshot shows the CLI of Router2. The user is in the configuration mode for interface fa0/0. They have entered the following commands: `enable`, `banner motd`, `enable`, `conf t`, `interface fa0/0`, `ip address 172.30.100.1 255.255.0.0`, and `no shut`. The system has responded with `%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up` and `%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up`. The user then enters `exit`.

```
eduardo salazar unidad4
banner motd

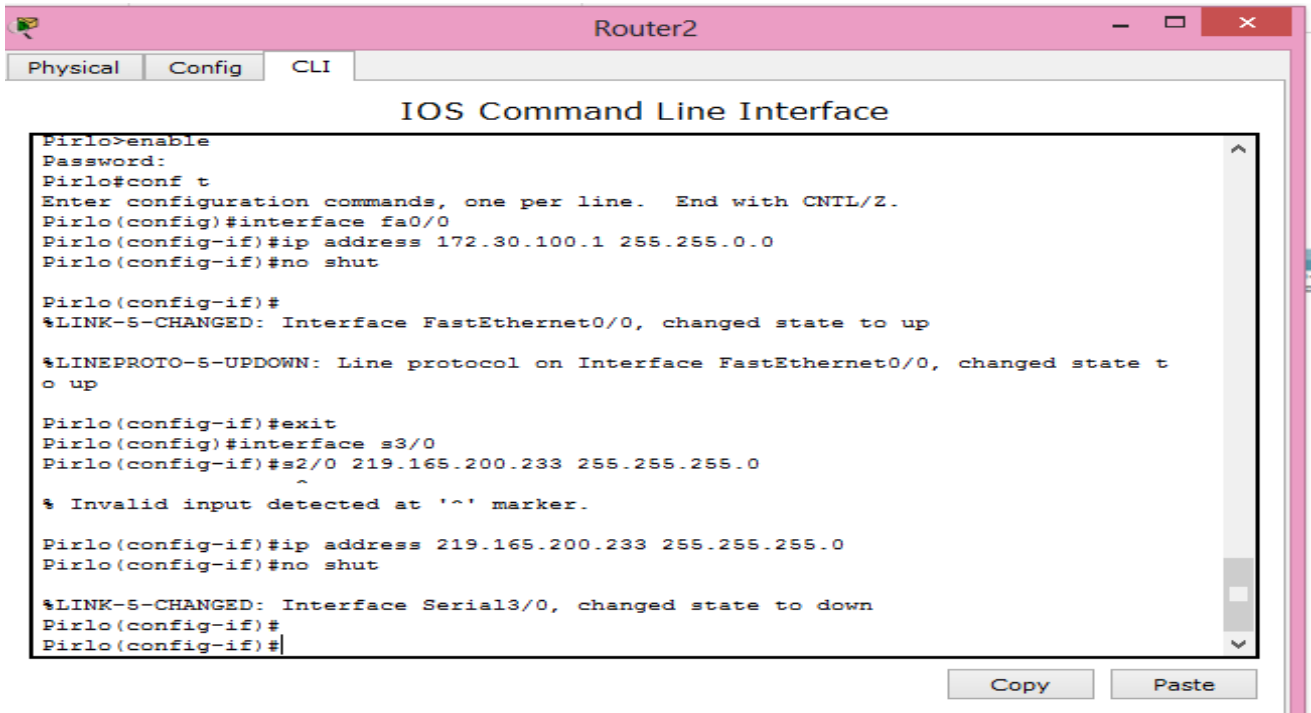
Pirlo>enable
Password:
Pirlo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Pirlo(config)#interface fa0/0
Pirlo(config-if)#ip address 172.30.100.1 255.255.0.0
Pirlo(config-if)#no shut

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

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

Pirlo(config-if)#exit
Pirlo(config)#
```

Serial 2/0.



The screenshot shows the CLI interface of Router2. The user has entered the following commands:

```
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-S-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-S-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Pirlo(config-if)#exit
Pirlo(config)#interface s3/0
Pirlo(config-if)#s2/0 219.165.200.233 255.255.255.0
^
% Invalid input detected at '^' marker.

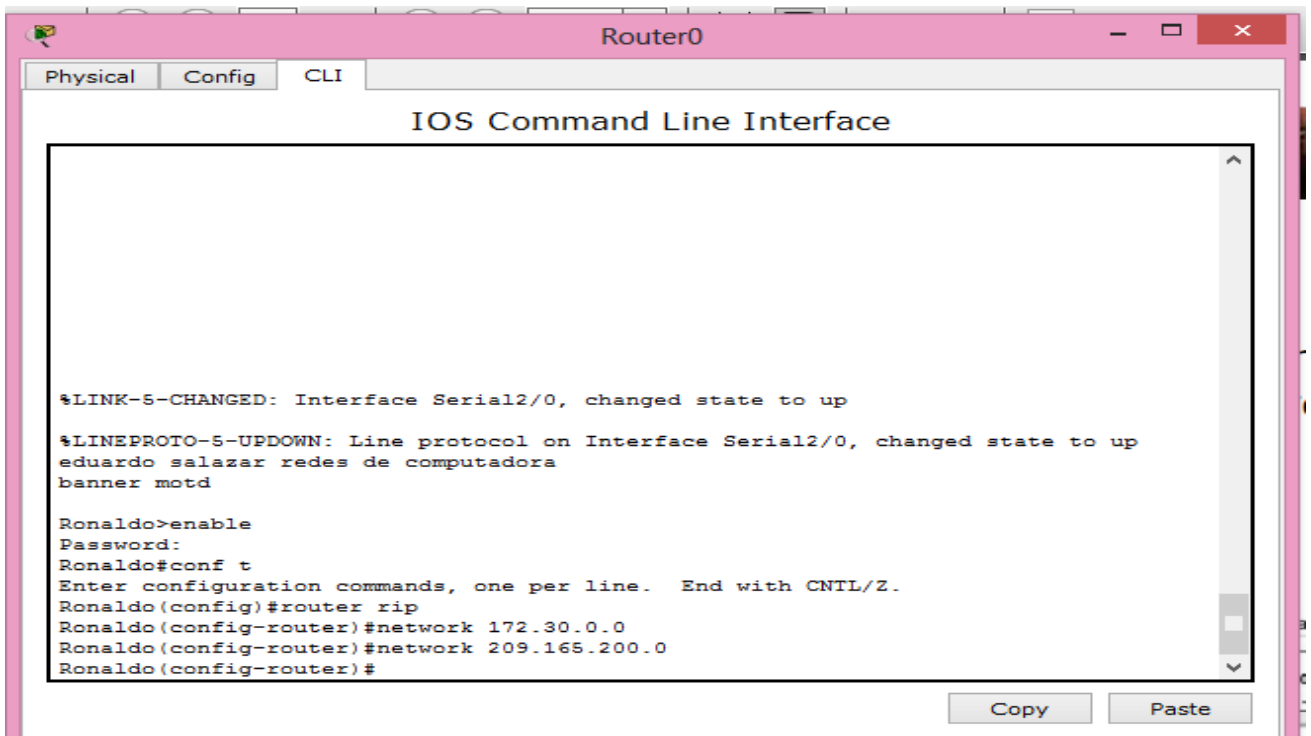
Pirlo(config-if)#ip address 219.165.200.233 255.255.255.0
Pirlo(config-if)#no shut

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

Buttons for Copy and Paste are visible at the bottom right of the terminal window.

Posteriormente pasamos a la redistribución de rutas.

R1.



The screenshot shows the CLI interface of Router0. The user has entered the following commands:

```
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 209.165.200.0
Ronaldo(config-router)#
```

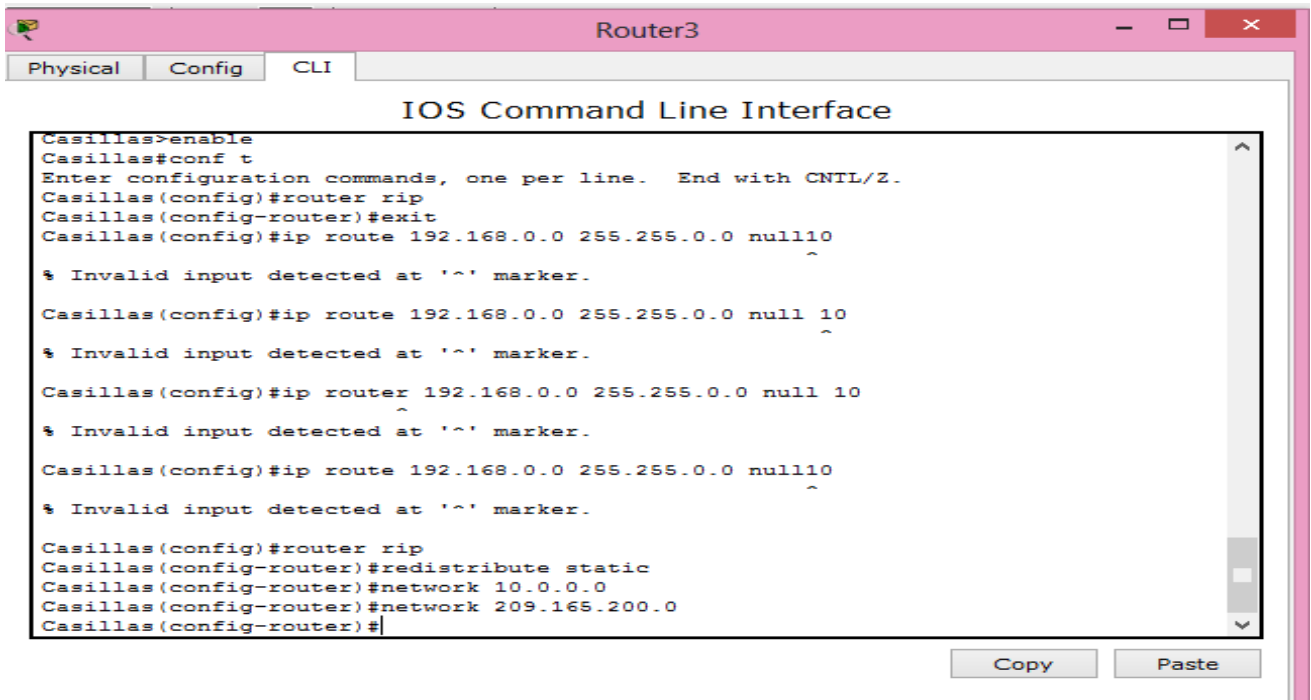
Output messages from the previous configuration steps are visible at the top of the terminal:

```
%LINK-S-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-S-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
eduardo salazar redes de computadora
banner motd
```

Buttons for Copy and Paste are visible at the bottom right of the terminal window.

R2.

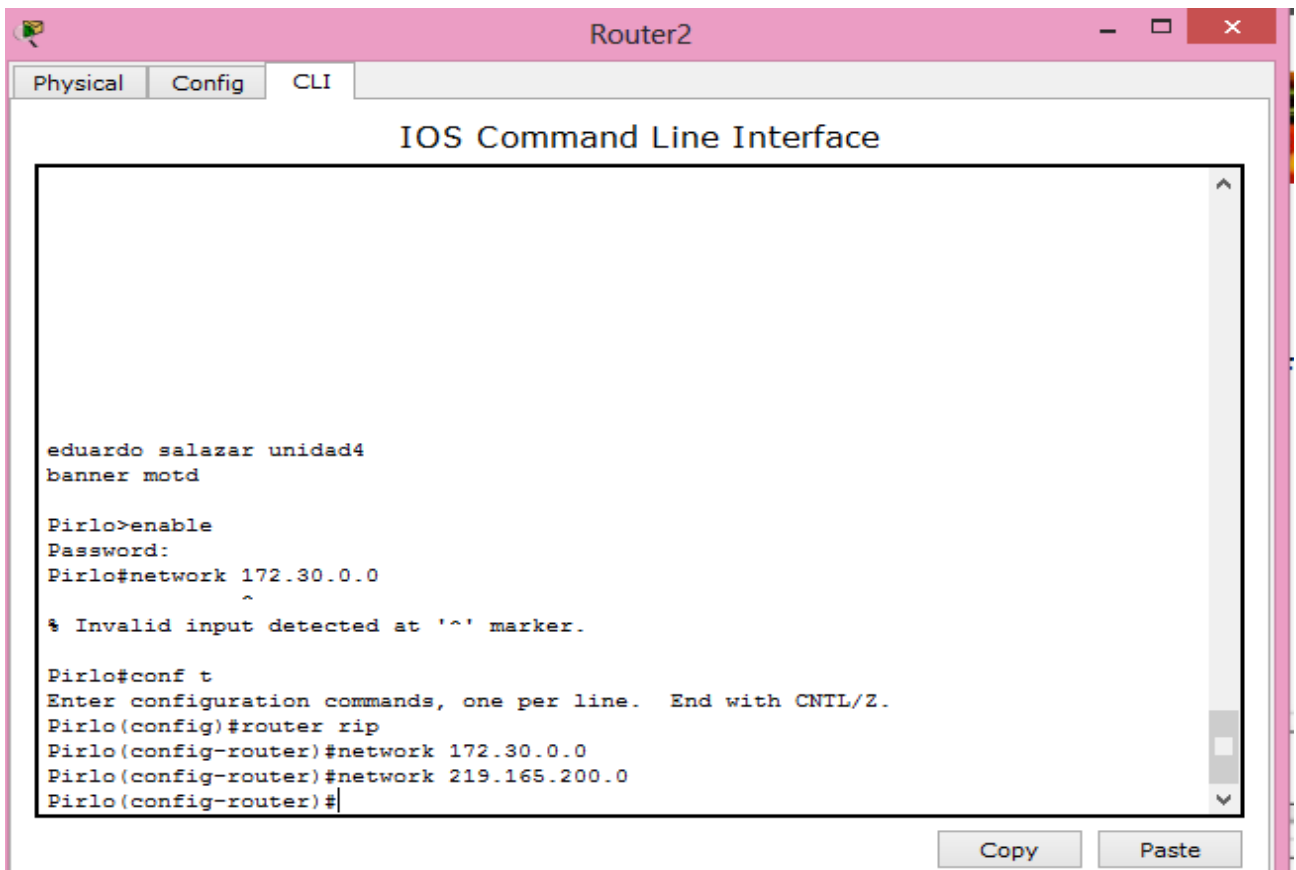


The screenshot shows the CLI of Router3. The user enters the following commands:

```
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)#
```

Buttons for Copy and Paste are visible at the bottom right.

R3.



The screenshot shows the CLI of Router2. The user enters the following commands:

```
eduardo salazar unidad4
banner motd

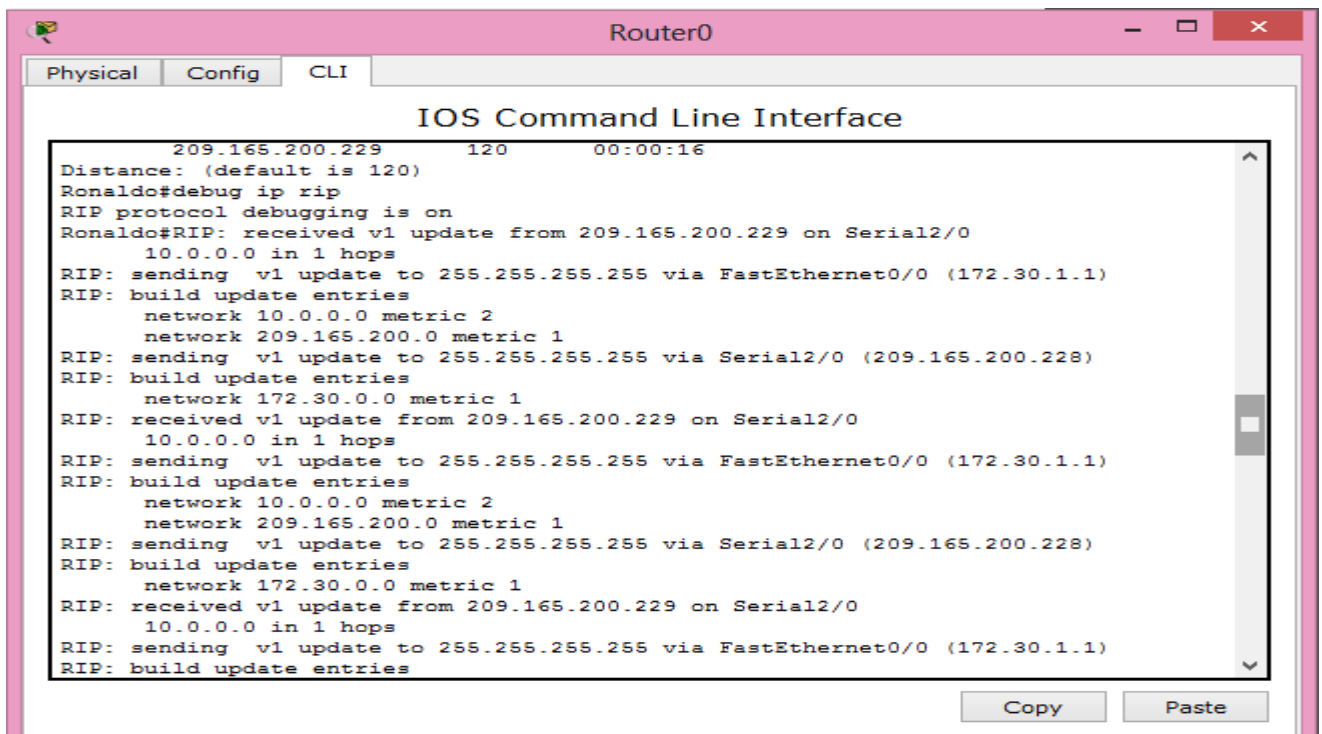
Pirlo>enable
Password:
Pirlo#network 172.30.0.0
% Invalid input detected at '^' marker.

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)#
```

Buttons for Copy and Paste are visible at the bottom right.

Verificación y prueba de la conectividad.

R1 (Ronaldo).

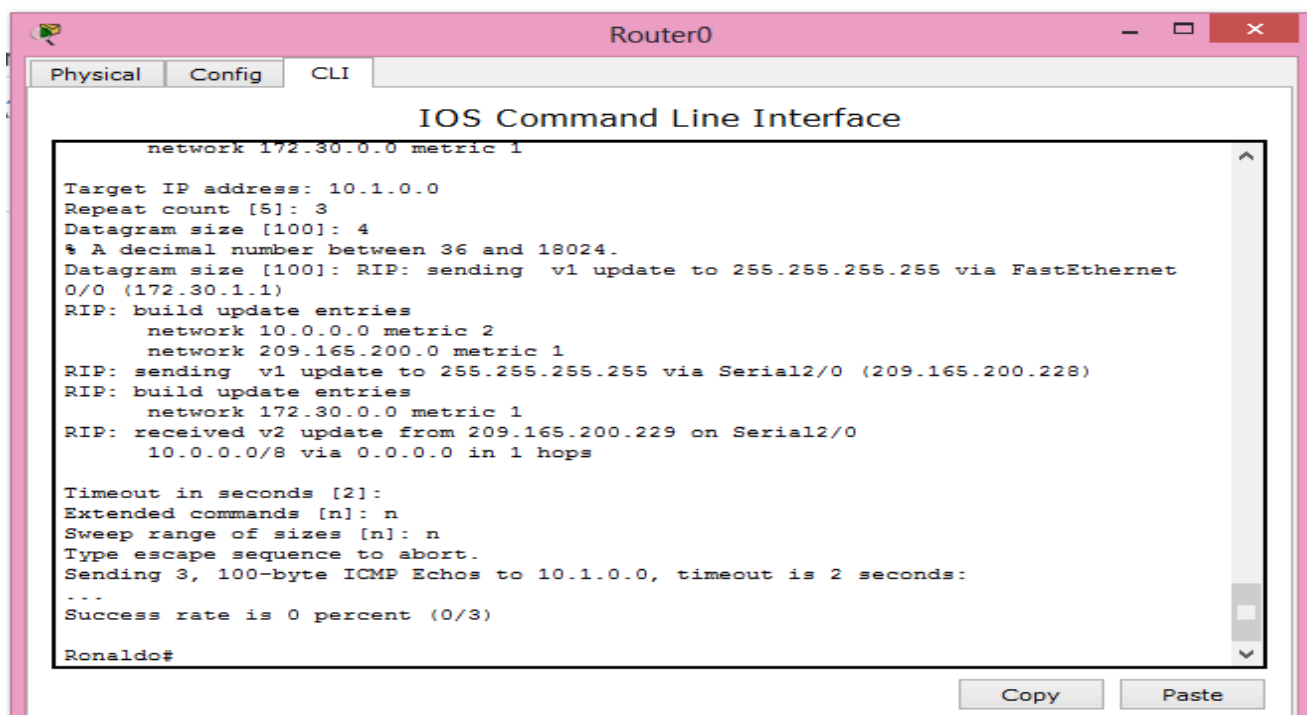


The screenshot shows the CLI of Router0 with the 'CLI' tab selected. The title bar reads 'Router0'. The main window title is 'IOS Command Line Interface'. The terminal output shows the following sequence of events:

```
209.165.200.229 120 00:00:16
Distance: (default is 120)
Ronaldo#debug ip rip
RIP protocol debugging is on
Ronaldo#RIP: received v1 update from 209.165.200.229 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 (209.165.200.228)
RIP: build update entries
  network 172.30.0.0 metric 1
RIP: received v1 update from 209.165.200.229 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 (209.165.200.228)
RIP: build update entries
  network 172.30.0.0 metric 1
RIP: received v1 update from 209.165.200.229 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
```

At the bottom right of the terminal window, there are 'Copy' and 'Paste' buttons.

Ping.



The screenshot shows the CLI of Router0 with the 'CLI' tab selected. The title bar reads 'Router0'. The main window title is 'IOS Command Line Interface'. The terminal output shows the following sequence of events:

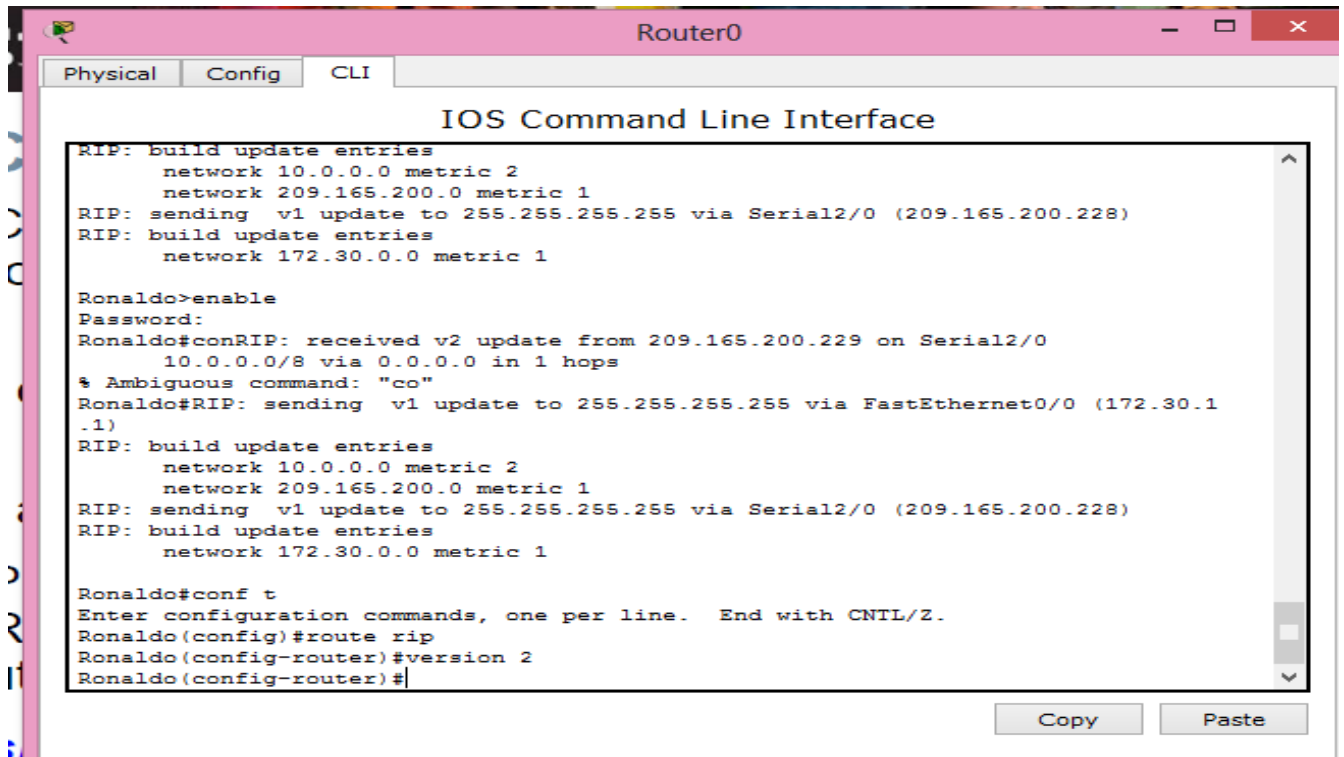
```
network 172.30.0.0 metric 1
Target IP address: 10.1.0.0
Repeat count [5]: 3
Datagram size [100]: 4
% A decimal number between 36 and 18024.
Datagram size [100]: RIP: sending v1 update to 255.255.255.255 via FastEthernet
0/0 (172.30.1.1)
RIP: build update entries
  network 10.0.0.0 metric 2
  network 209.165.200.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (209.165.200.228)
RIP: build update entries
  network 172.30.0.0 metric 1
RIP: received v2 update from 209.165.200.229 on Serial2/0
  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#
```

At the bottom right of the terminal window, there are 'Copy' and 'Paste' buttons.

Habilitación y verificación de RIPv2.

R1.



The screenshot shows the CLI of Router0. The window title is "Router0" and the tabs are "Physical", "Config", and "CLI". The main area is titled "IOS Command Line Interface". The terminal output shows the following sequence of commands and responses:

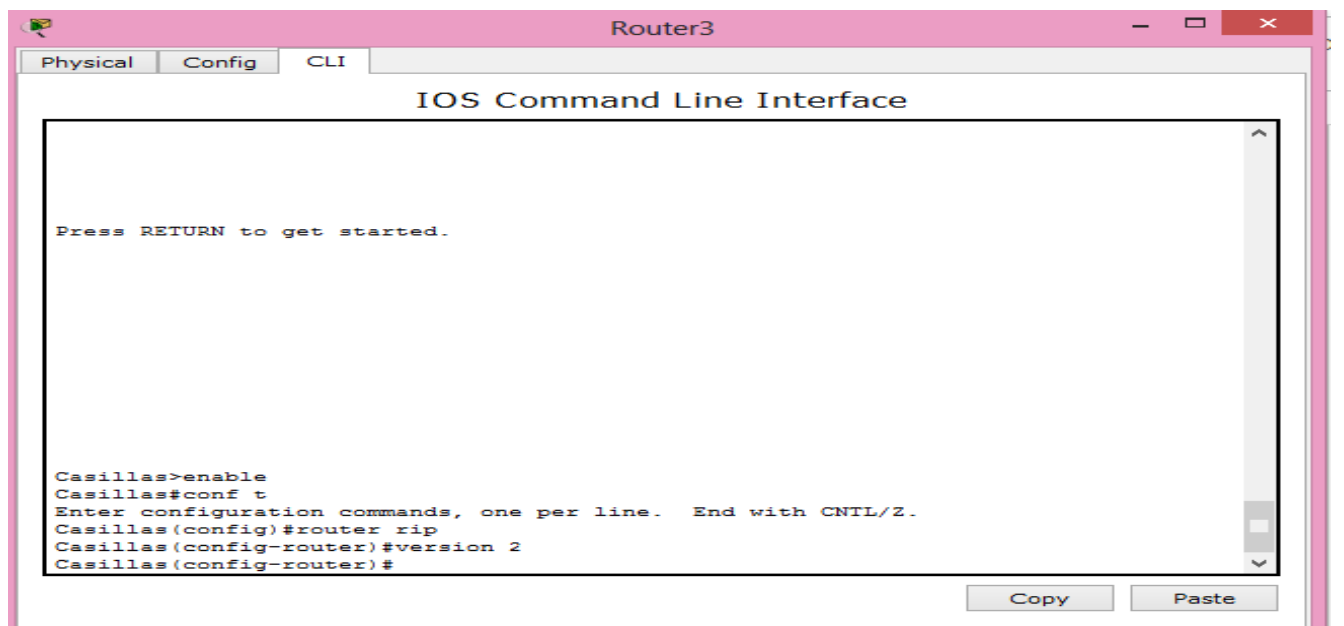
```
RIP: build update entries
  network 10.0.0.0 metric 2
  network 209.165.200.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial12/0 (209.165.200.228)
RIP: build update entries
  network 172.30.0.0 metric 1

Ronaldo>enable
Password:
Ronaldo#conRIP: received v2 update from 209.165.200.229 on Serial2/0
  10.0.0.0/8 via 0.0.0.0 in 1 hops
% Ambiguous command: "co"
Ronaldo#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 Serial12/0 (209.165.200.228)
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)#route rip
Ronaldo(config-router)#version 2
Ronaldo(config-router)#
```

At the bottom right of the terminal window, there are "Copy" and "Paste" buttons.

R2.



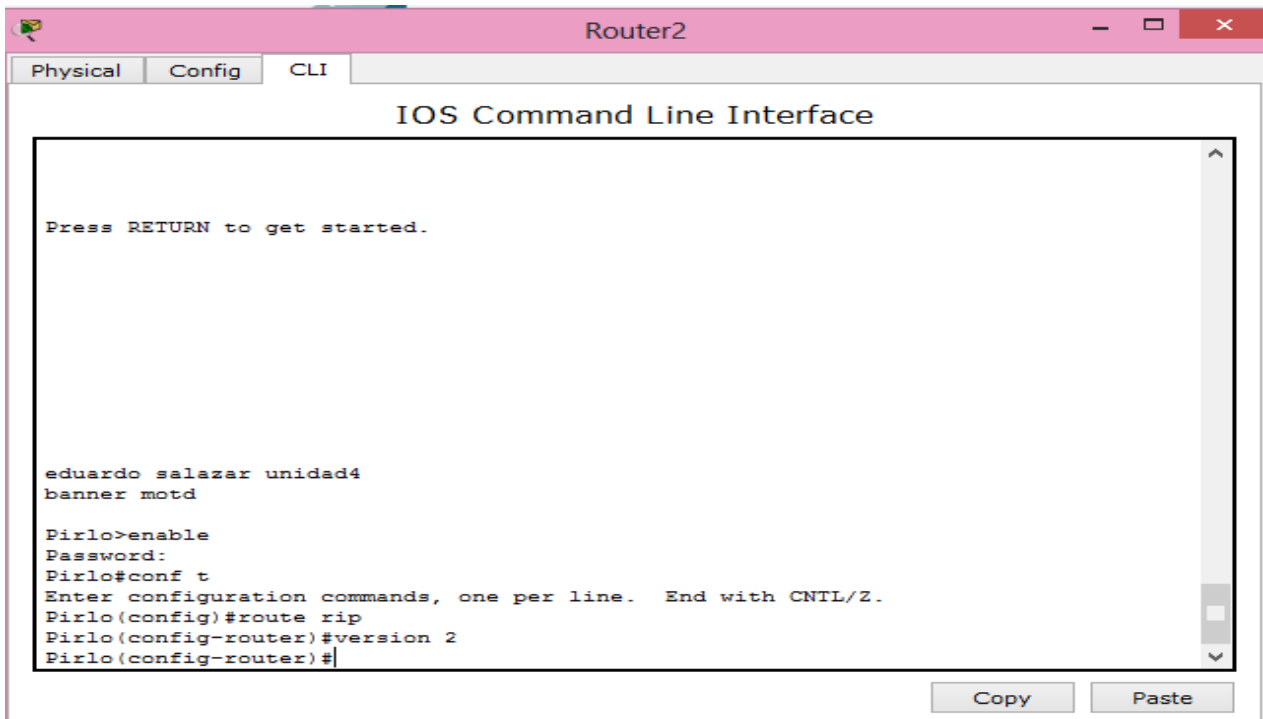
The screenshot shows the CLI of Router3. The window title is "Router3" and the tabs are "Physical", "Config", and "CLI". The main area is titled "IOS Command Line Interface". The terminal output shows the following sequence of commands and responses:

```
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)#
```

At the bottom right of the terminal window, there are "Copy" and "Paste" buttons.

R3.



```
Router2
Physical Config CLI
IOS Command Line Interface

Press RETURN to get started.

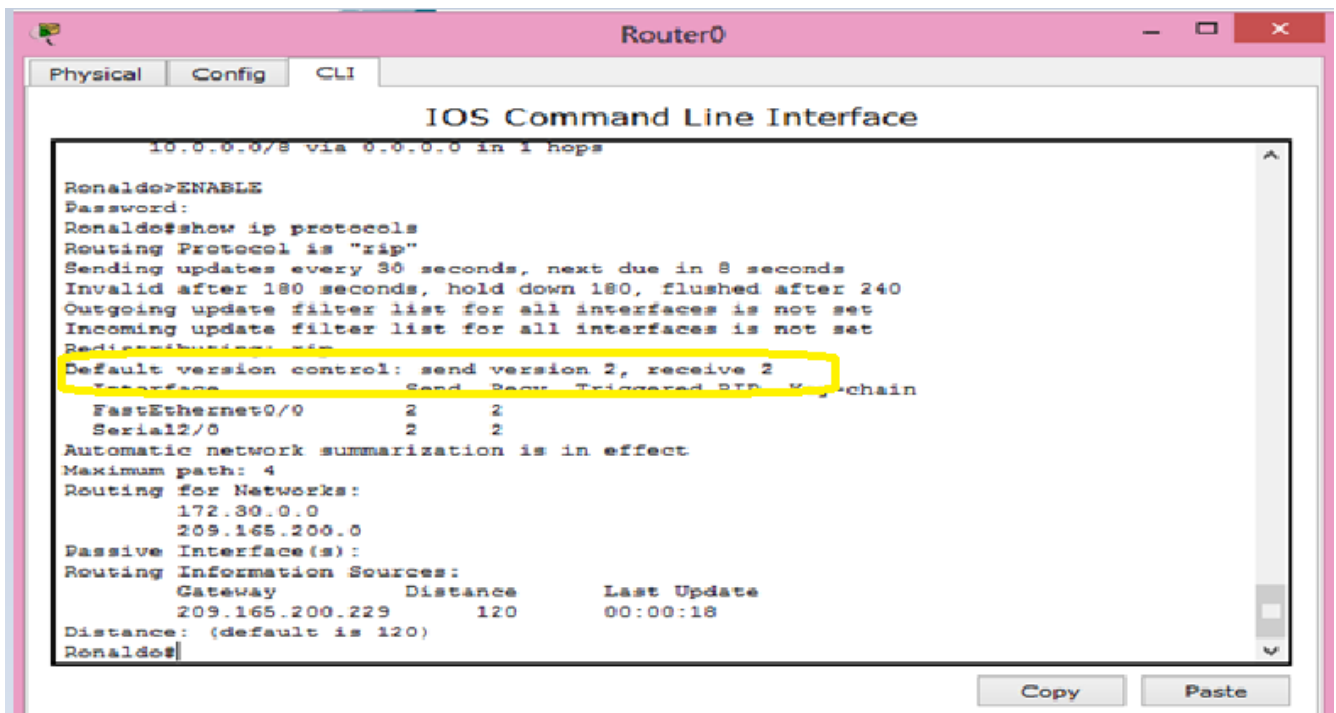
eduardo salazar unidad4
banner motd

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

Copy Paste

Para verificar que RIPv2 esté configurado, utilice el comando show ip protocols.

R1.



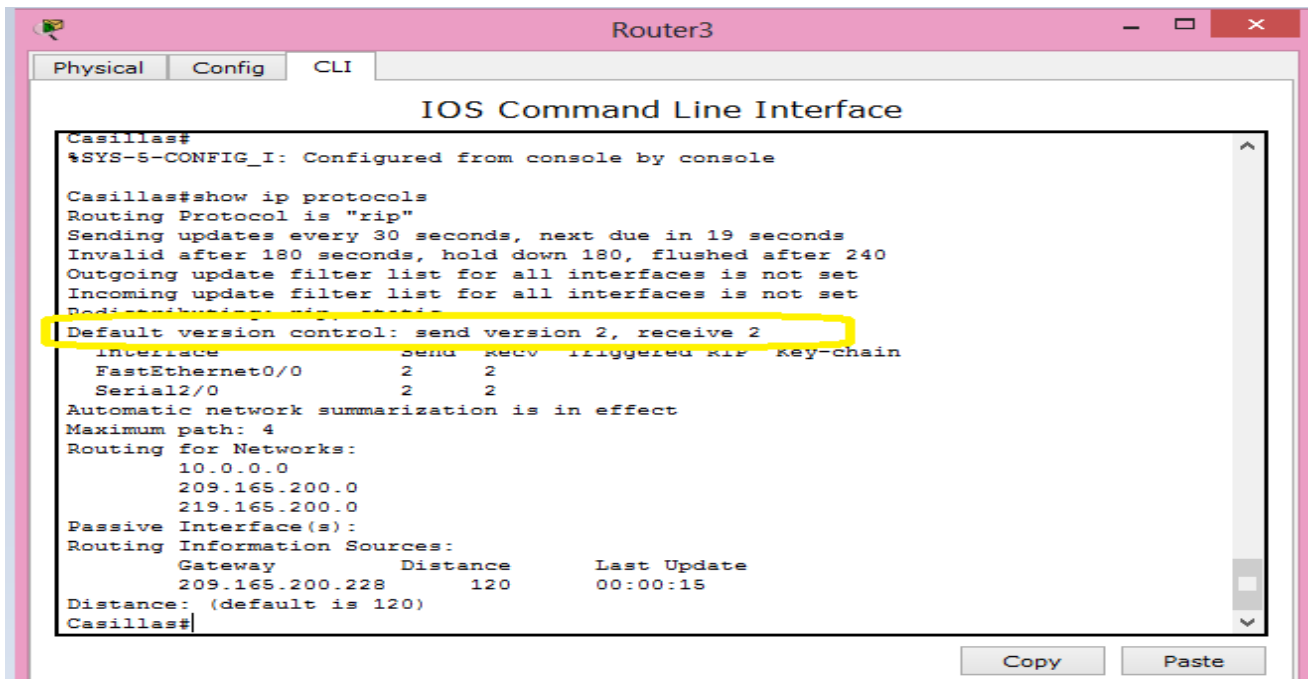
```
Router0
Physical Config CLI
IOS Command Line Interface

10.0.0.0/8 via 0.0.0.0 in 1 hops

Ronaldo>ENABLE
Password:
Ronaldo#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
Redistributing: rip
Default version control: send version 2, receive 2
Interface          Send Recv Triggered RIP V-chain
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)
Ronaldo#
```

Copy Paste

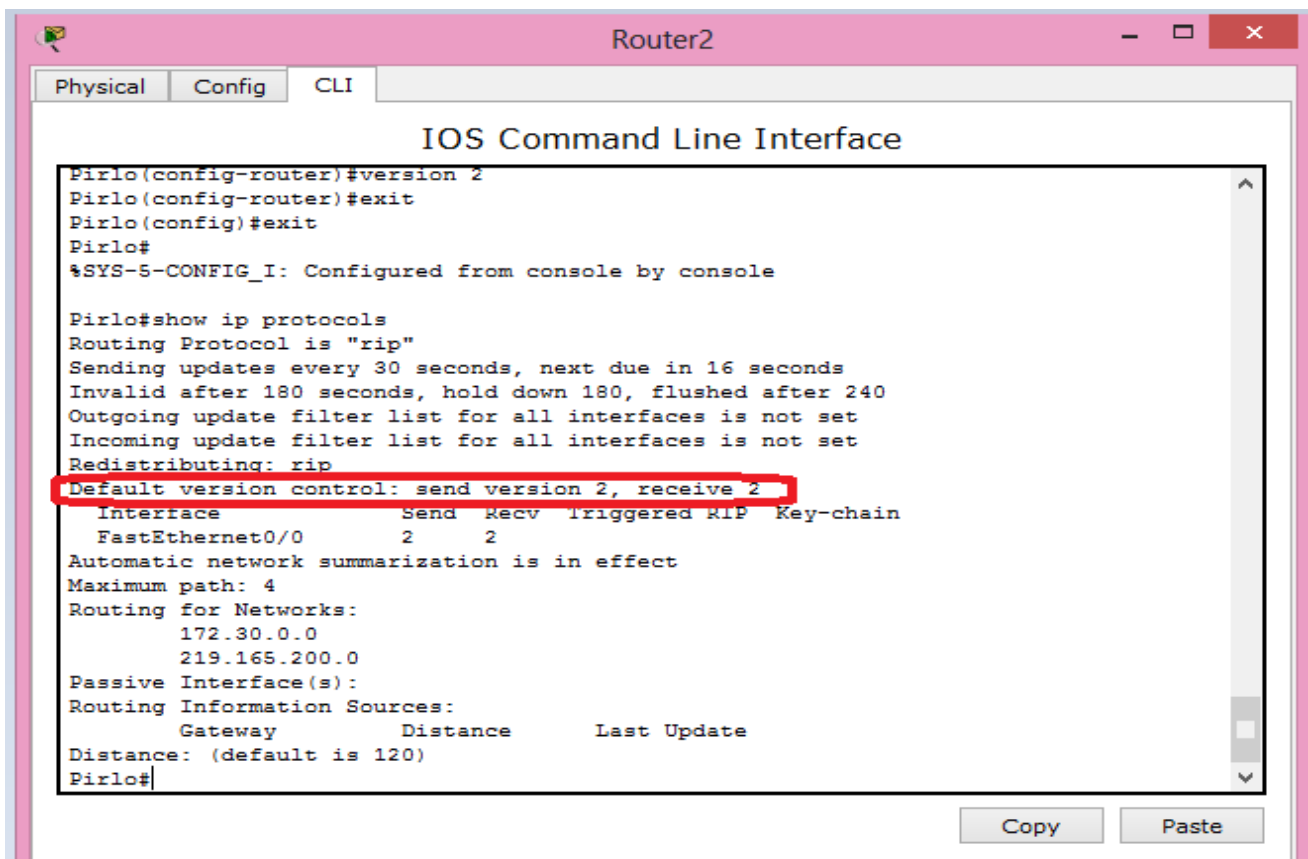
R2.



The screenshot shows the CLI of Router3. The user has entered the command 'show ip protocols'. The output shows that the routing protocol is 'rip' and that the default version control is set to 'send version 2, receive 2'. This line is highlighted in yellow. Below this, a table shows the configuration for interfaces FastEthernet0/0 and Serial2/0, both with 'Send' and 'Recv' values of 2. The output also includes information about automatic network summarization, maximum path, routing for networks, and routing information sources.

```
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 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  
Redistributing: rip, static  
Default version control: send version 2, receive 2  
  Interface          Send  Recv  Triggered RIP  Key-chain  
  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  
  219.165.200.0  
Passive Interface(s):  
Routing Information Sources:  
  Gateway         Distance      Last Update  
  209.165.200.228  120          00:00:15  
Distance: (default is 120)  
Casillas#
```

R3.

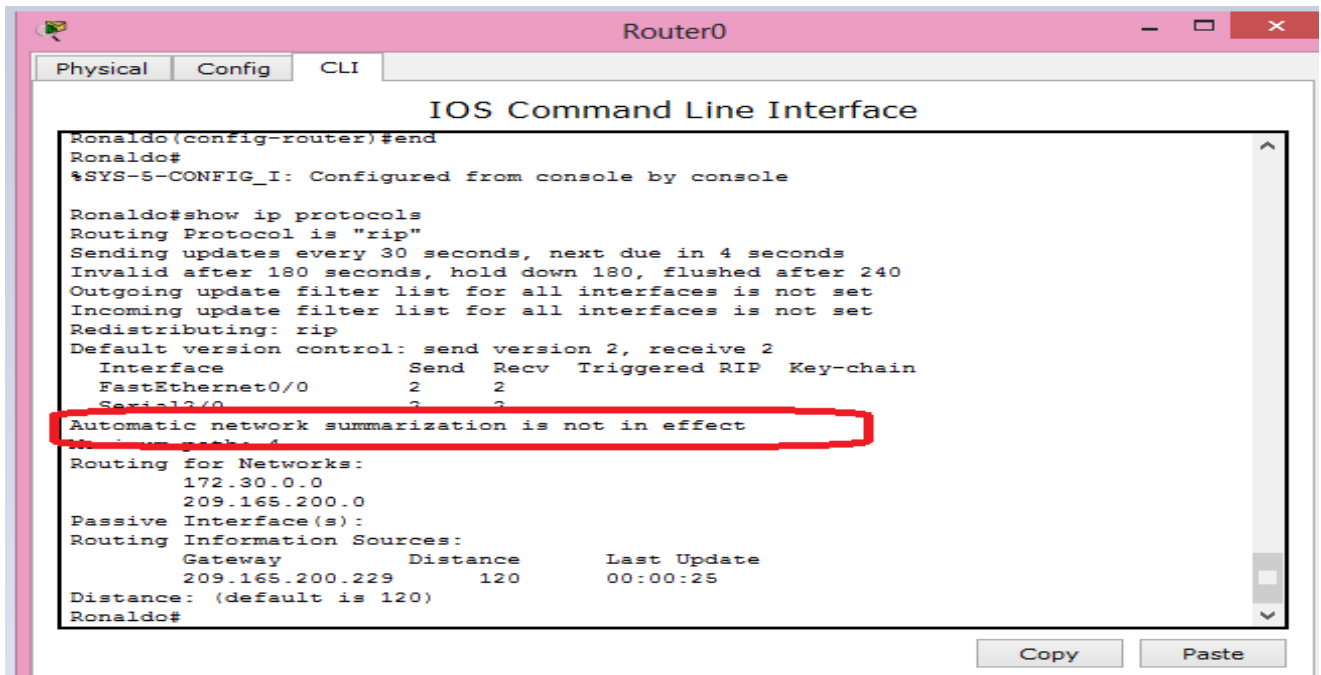


The screenshot shows the CLI of Router2. The user has entered the command 'version 2' in configuration mode, then 'exit' to return to user mode, and finally 'show ip protocols'. The output shows that the routing protocol is 'rip' and that the default version control is set to 'send version 2, receive 2'. This line is highlighted in red. Below this, a table shows the configuration for interface FastEthernet0/0, with 'Send' and 'Recv' values of 2. The output also includes information about automatic network summarization, maximum path, routing for networks, and routing information sources.

```
Pirlo(config-router)#version 2  
Pirlo(config-router)#exit  
Pirlo(config)#exit  
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 16 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)  
Pirlo#
```

Inhabilitación de sumarización automática en RIPv2.

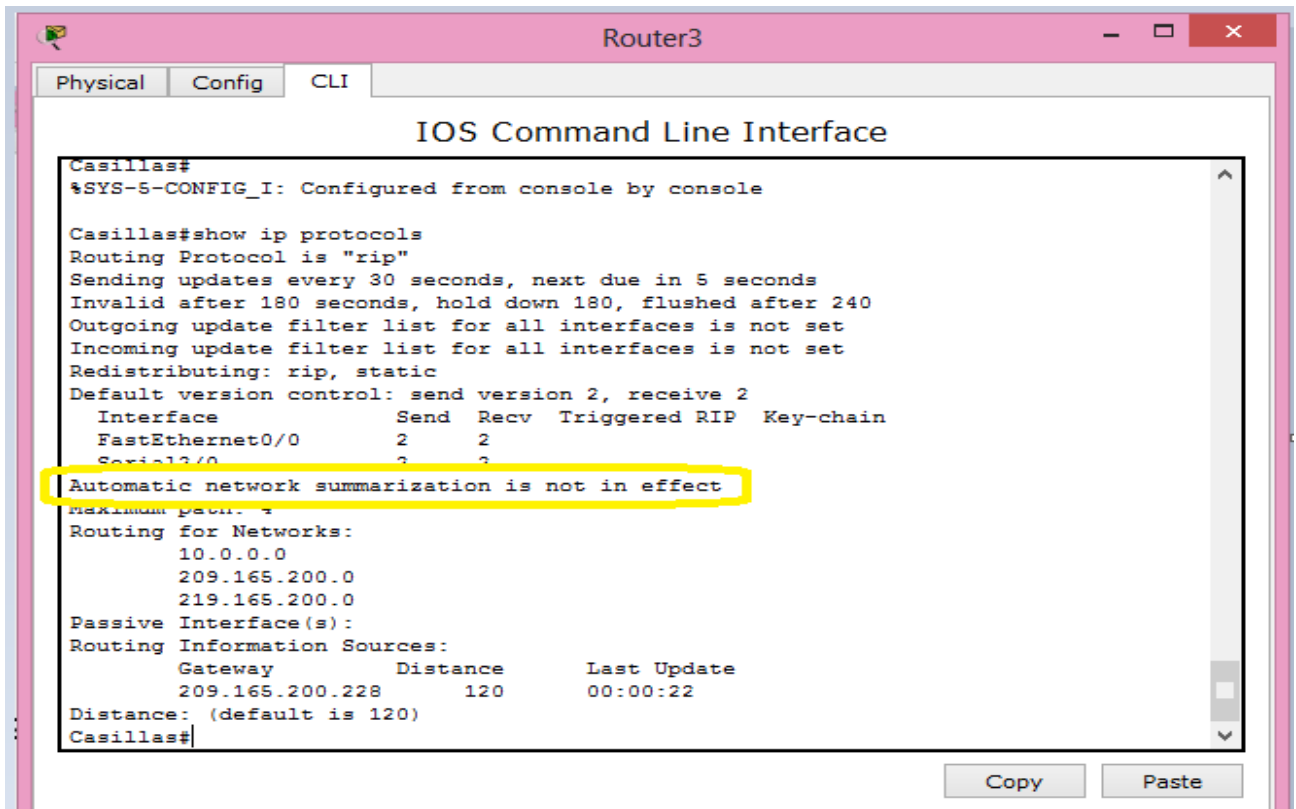
R1.



```
Ronald0(config-router)#end
Ronald0#
%SYS-5-CONFIG_I: Configured from console by console

Ronald0#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
Serial1/0            2      2
Automatic network summarization is not in effect
Maximum paths: 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           00:00:25
Distance: (default is 120)
Ronald0#
```

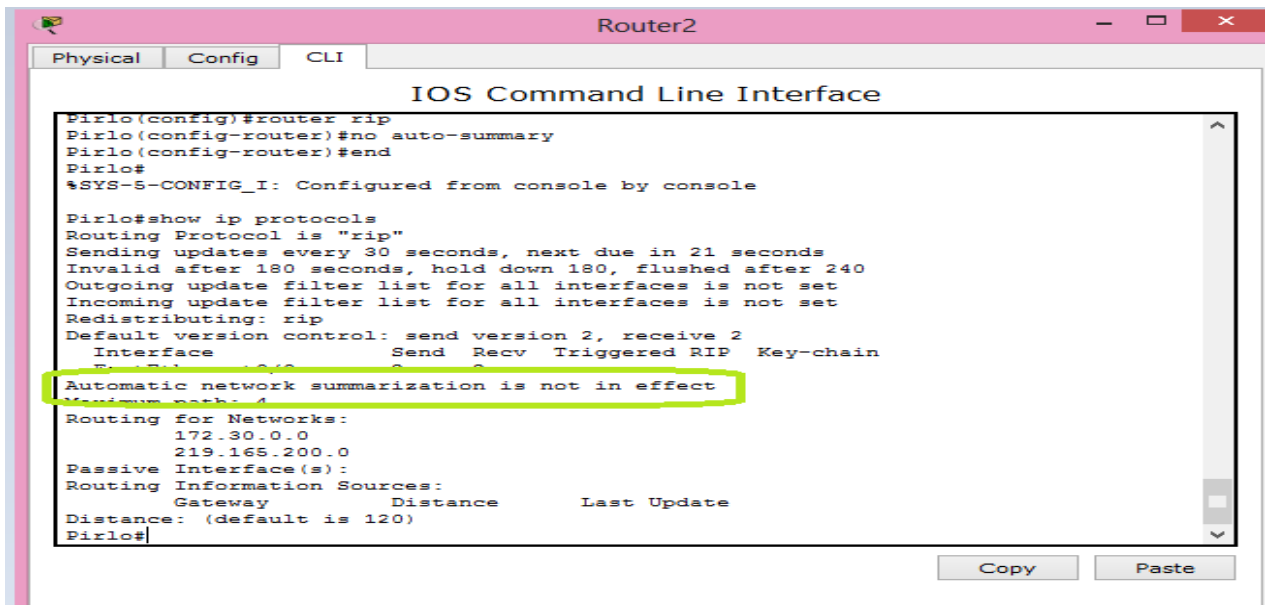
R2.



```
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
Serial1/0            2      2
Automatic network summarization is not in effect
Maximum paths: 4
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
209.165.200.228  120           00:00:22
Distance: (default is 120)
Casillas#
```

R3.



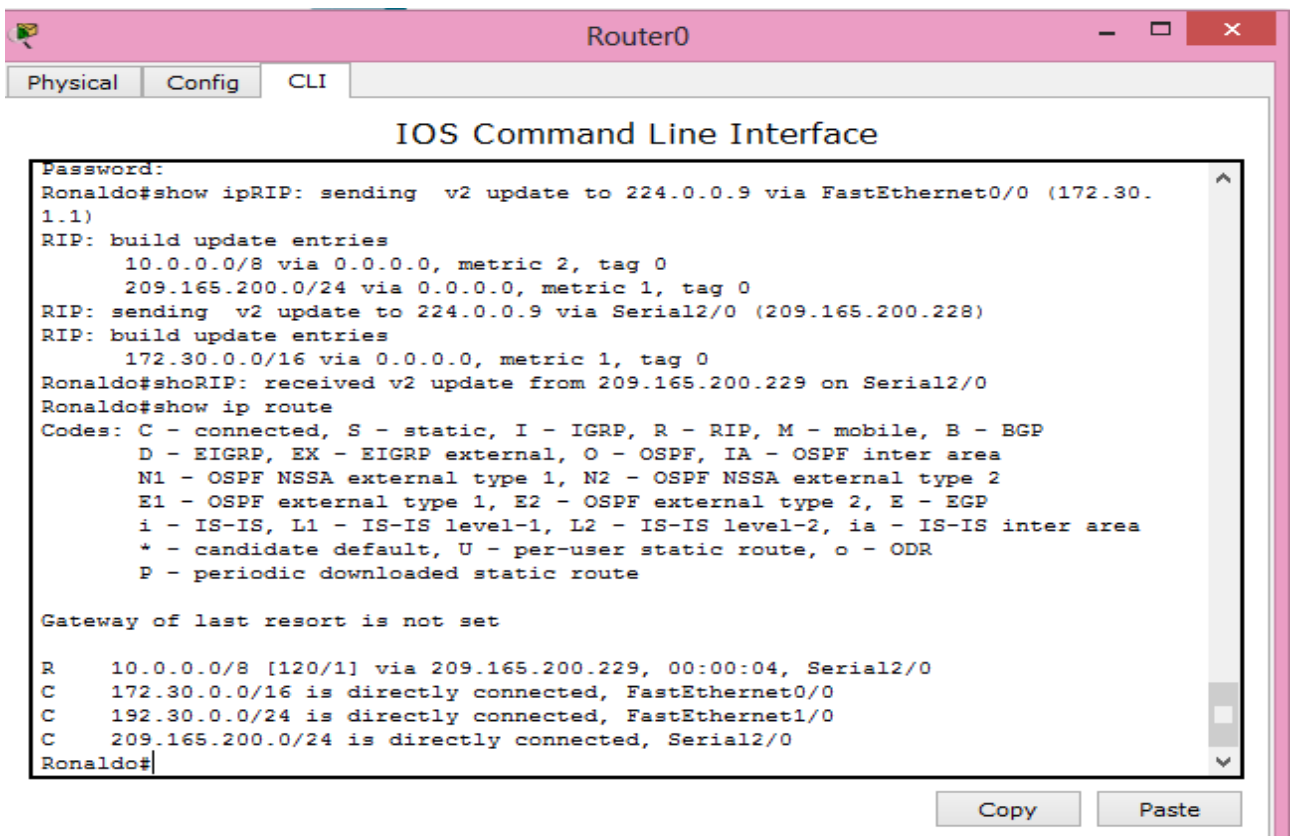
The screenshot shows the CLI of Router2. The user has entered the following commands: `Pirlo(config)#router rip`, `Pirlo(config-router)#no auto-summary`, and `Pirlo(config-router)#end`. The output of `show ip protocols` is displayed, with the line `Automatic network summarization is not in effect` highlighted in yellow. The output also shows the routing protocol is RIP, sending updates every 30 seconds, and lists the routing for networks 172.30.0.0 and 219.165.200.0.

```
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
FastEthernet0/0          0      0
FastEthernet1/0          0      0
Serial2/0                 0      0
Automatic network summarization is not 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)
Pirlo#
```

Para verificar que las superredes se envían y se reciben, utilice los siguientes comandos: `show ip route` y `debug ip rip`.

R1.



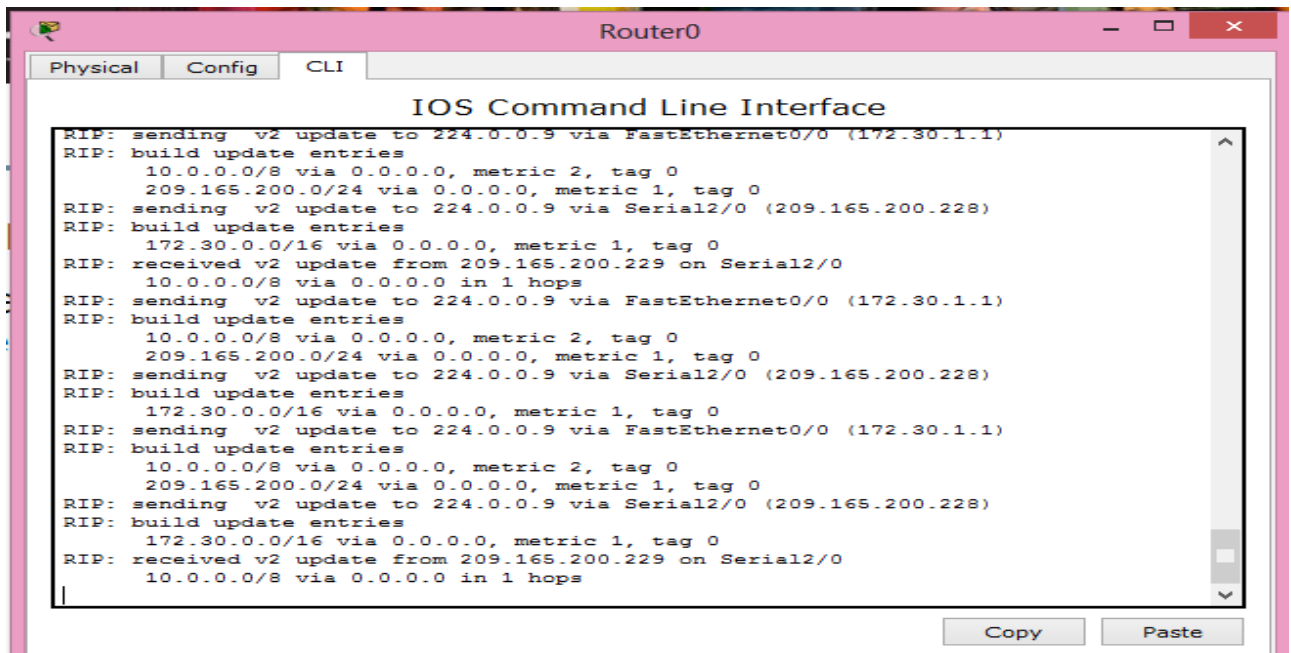
The screenshot shows the CLI of Router0. The user has entered the following commands: `Ronaldo#show ip rip` and `Ronaldo#show ip route`. The output of `show ip rip` shows the router sending v2 updates to 224.0.0.9 via FastEthernet0/0 and receiving v2 updates from 209.165.200.229 on Serial2/0. The output of `show ip route` shows the routing table with entries for 10.0.0.0/8, 172.30.0.0/16, and 209.165.200.0/24.

```

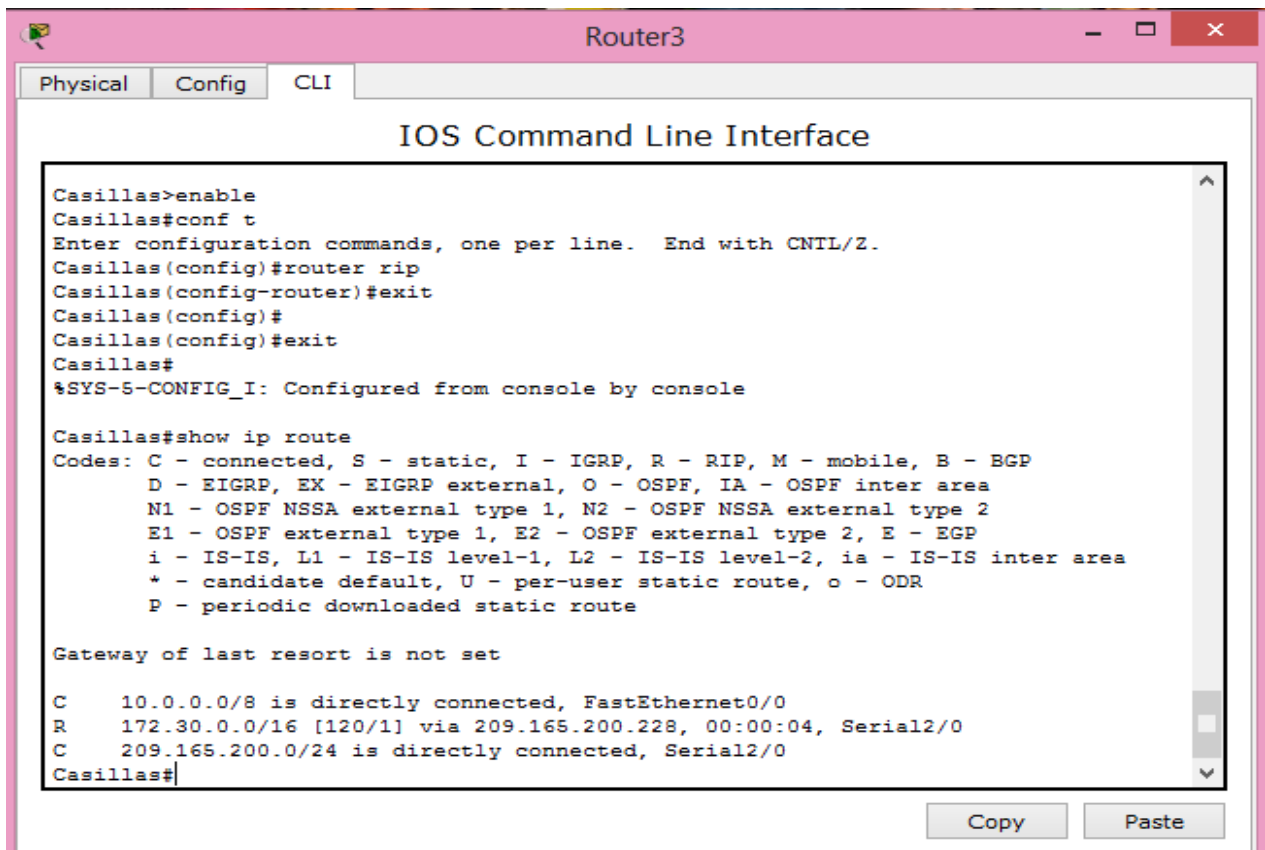
Password:
Ronaldo#show ip rip: sending v2 update to 224.0.0.9 via FastEthernet0/0 (172.30.1.1)
RIP: build update entries
 10.0.0.0/8 via 0.0.0.0, metric 2, tag 0
209.165.200.0/24 via 0.0.0.0, metric 1, tag 0
RIP: sending v2 update to 224.0.0.9 via Serial2/0 (209.165.200.228)
RIP: build update entries
 172.30.0.0/16 via 0.0.0.0, metric 1, tag 0
Ronaldo#shoRIP: received v2 update from 209.165.200.229 on Serial2/0
Ronaldo#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, Serial2/0
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, Serial2/0
Ronaldo#
```



R2.



Router3

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 (209.165.200.229)
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 (209.165.200.229)
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 (209.165.200.229)
```

Copy Paste

R3.

Router2

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
    219.165.200.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
Distance: (default is 120)
Pirlo#
Pirlo#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
Pirlo#
```

Copy Paste

CONCLUSIÓN

En esta práctica seguimos desarrollando el protocolo rip, pero en este caso utilizamos 2 versiones del protocolo la versión 1 y la versión 2. Más que nada en la versión 1 no proporciona soporte para subredes contiguas, tampoco soporta VLSM, no envía máscara de subred durante las actualizaciones, además que las actualizaciones se realizan por medio de broadcast y que es de classful.

En la versión 2 las actualizaciones se hacen por medio de multicast, cuando se le da debug ip rip nos aparece la próxima dirección de salto, y cabe mencionar que es la mejora de la versión 1, en este caso la autenticación es opcional.

Por ultimo podemos deducir que dependiendo del tipo de redes que tengamos vamos a ocupar este protocolo y con la versión que queramos, ya que ambas utilizan temporizadores que evitan bucles de enrutamiento, de igual forma el uso de horizonte dividido con actualizaciones inversas, además de uso updates disparos y por ultimo decimos que no importando la versión toma como máximo salto de 15 y si esta se pasa se toma como destino inalcanzable.