

Instituto Tecnológico de Salina Cruz

Fundamentos de Redes

Semestre Enero – Julio 2015

Reporte de Práctica

Práctica nº 1

Unidad 4

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**Fecha:** 14 de Mayo del 2015

**Objetivos:**

- Describir las funciones, las características y el funcionamiento del protocolo RIPv1.
- Configurar un dispositivo para usar RIPv1.
- Verificar el funcionamiento adecuado de RIPv1.
- Describir cómo RIPv1 realiza la sumarización automática.
- Configurar, verificar y resolver problemas de las rutas por defecto que se propagan en una red enrutada mediante la implementación de RIPv1.
- Usar las técnicas recomendadas para resolver problemas relacionados con RIPv1.

**Instrucciones:**

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

**Materiales:**

- Computadoras.
- Cisco Packet Tracer.
- Silla.

**Escenario:**



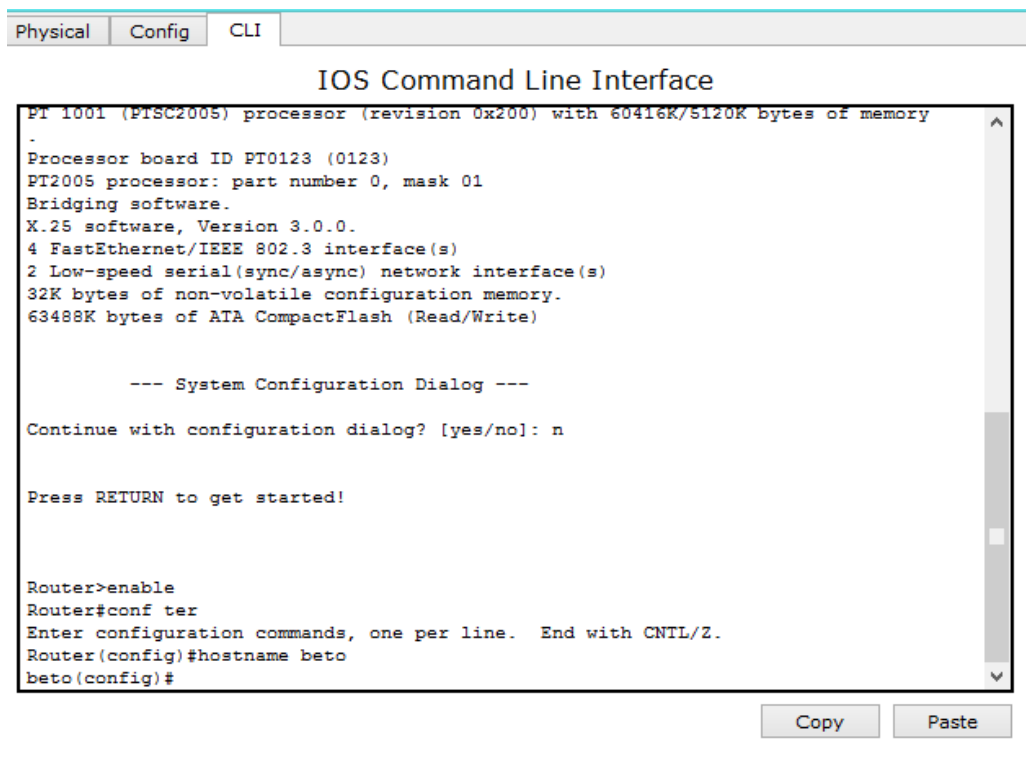
## Tabla de enrutamiento:

Dispositivo	Interfaz	Dirección IP	Mascara de subred	Gateway
	Fa0/0	192.168.1.5	255.255.255.0	
<b>beto</b>	S2/0	192.168.2.6	255.255.255.0	No aplicable
	S3/0	192.168.6.7	255.255.255.0	
	Fa0/0	192.168.3.8	255.255.255.0	
<b>camera</b>	S2/0	192.168.2.2	255.255.255.0	No aplicable
	S3/0	192.168.4.4	255.255.255.0	
	Fa0/0	192.168.5.2	255.255.255.0	
<b>tribal</b>	S2/0	192.168.4.4	255.255.255.0	No aplicable
	S3/0	192.168.6.9	255.255.255.0	

A continuación se llevara a cabo la configuración inicial de nuestros routers, como son el cambio de nombre, la contraseña y un banner.

Router “beto”

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)

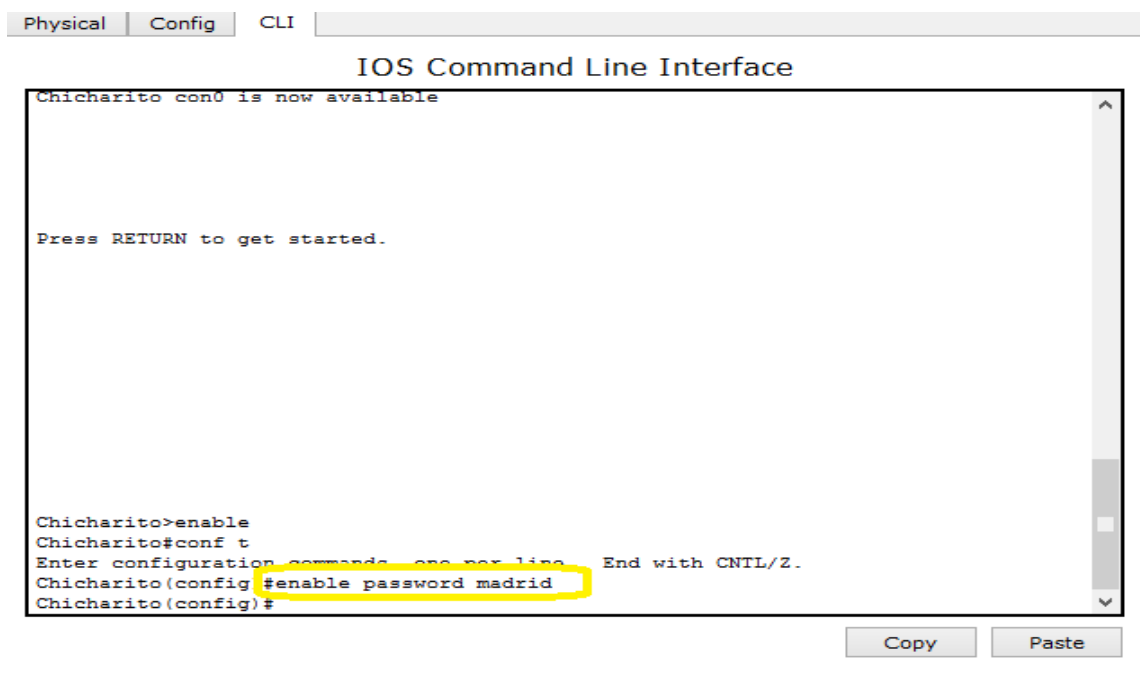
--- System Configuration Dialog ---
Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname beto
beto(config)#
```

Copy Paste

## Configuración de contraseña:



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

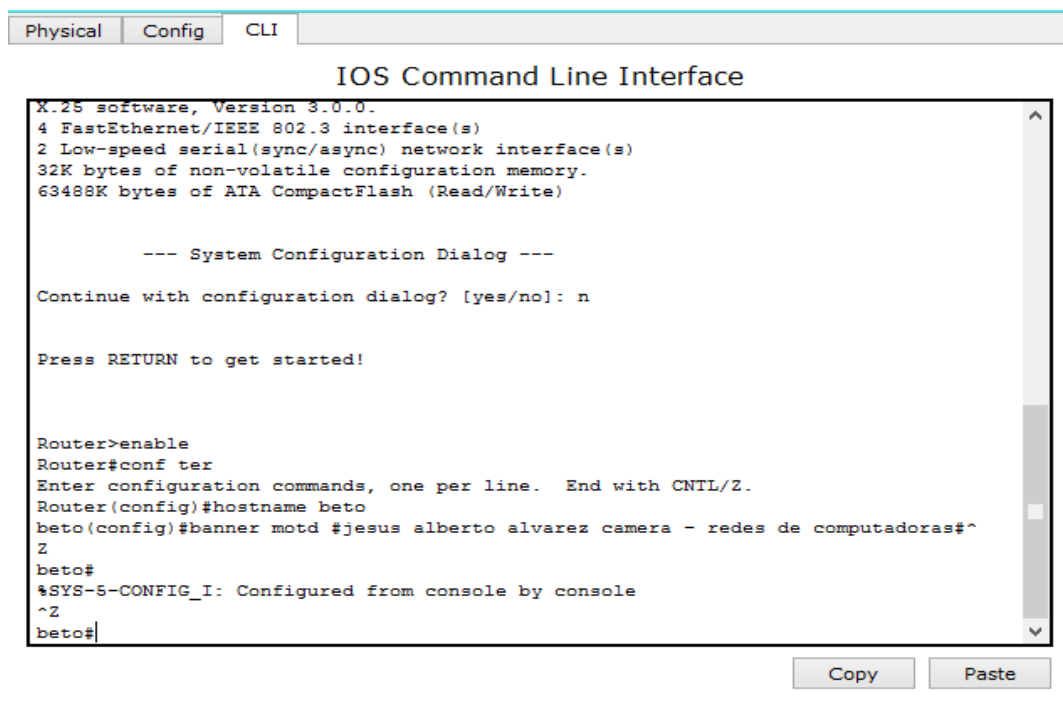
```
Chicharito con0 is now available

Press RETURN to get started.

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

Below the terminal window are two buttons: Copy and Paste.

## 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 tex
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname beto
beto(config)#banner motd #jesus alberto alvarez camera - redes de computadoras#^
Z
beto#
%SYS-5-CONFIG_I: Configured from console by console
^Z
beto#
```

Below the terminal window are two buttons: Copy and Paste.

## Router "camera"

Cambio de nombre:

```
Physical Config CLI
IOS Command Line Interface
PT 1001 (PTSC2005) processor (revision 0x200) with 80416K/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 t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname camera
camera(config)#
```

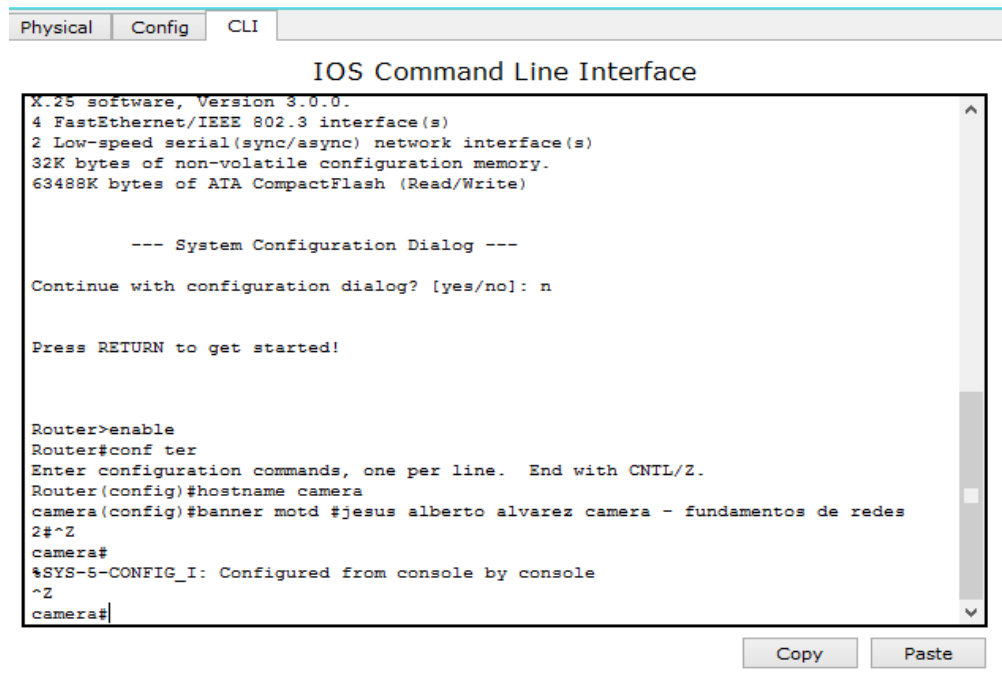
Configuracion de contraseña:

```
Physical Config CLI
IOS Command Line Interface
Ramos con0 is now available

Press RETURN to get started.

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

Colocacion del banner:



The screenshot shows the IOS Command Line Interface with tabs for Physical, Config, and CLI. The terminal output displays system information, a configuration dialog, and the configuration of a banner on the 'camera' interface. The banner text is 'jesus alberto alvarez camera - fundamentos de redes'. The configuration is completed with the '^Z' command.

```
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

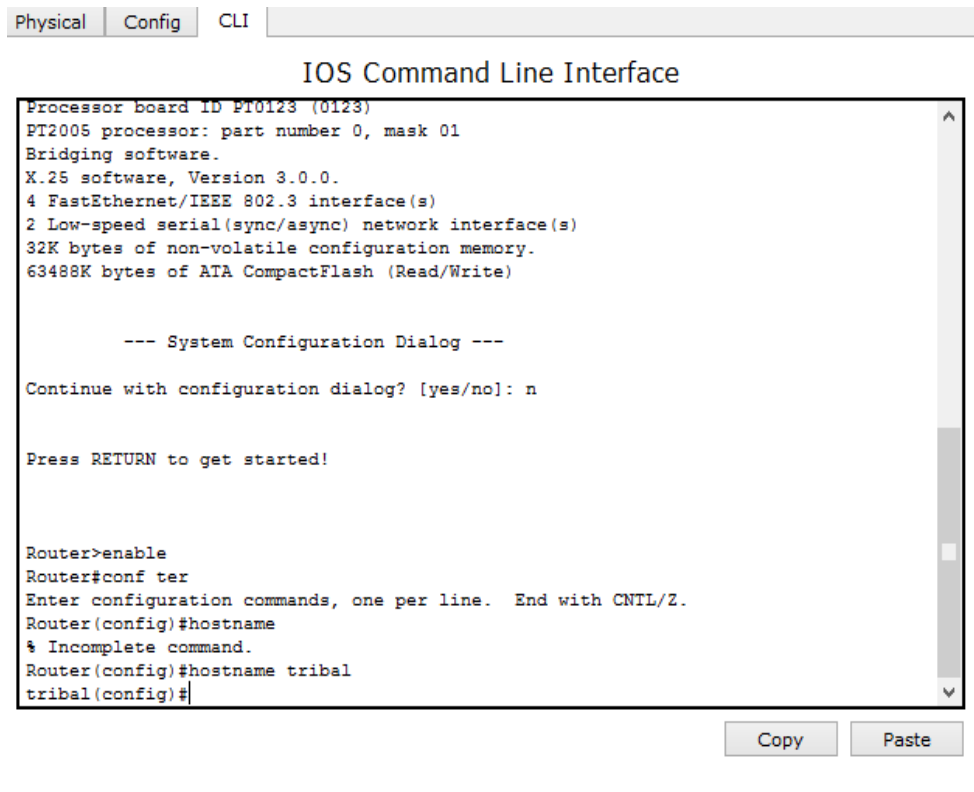
Press RETURN to get started!

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

Copy Paste

Router "tribal"

Cambio de nombre:



The screenshot shows the IOS Command Line Interface with tabs for Physical, Config, and CLI. The terminal output displays system information, a configuration dialog, and the change of the router's hostname from 'camera' to 'tribal'. The configuration is completed with the '^Z' command.

```
Physical Config CLI
IOS Command Line Interface
Processor board ID FT0123 (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
% Incomplete command.
Router(config)#hostname tribal
tribal(config)#
```

Copy Paste

## Configuracion de contraseña:

```
Physical Config CLI
IOS Command Line Interface
Messi con0 is now available

Press RETURN to get started.

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

Copy Paste

## Colocacion del banner:

```
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!

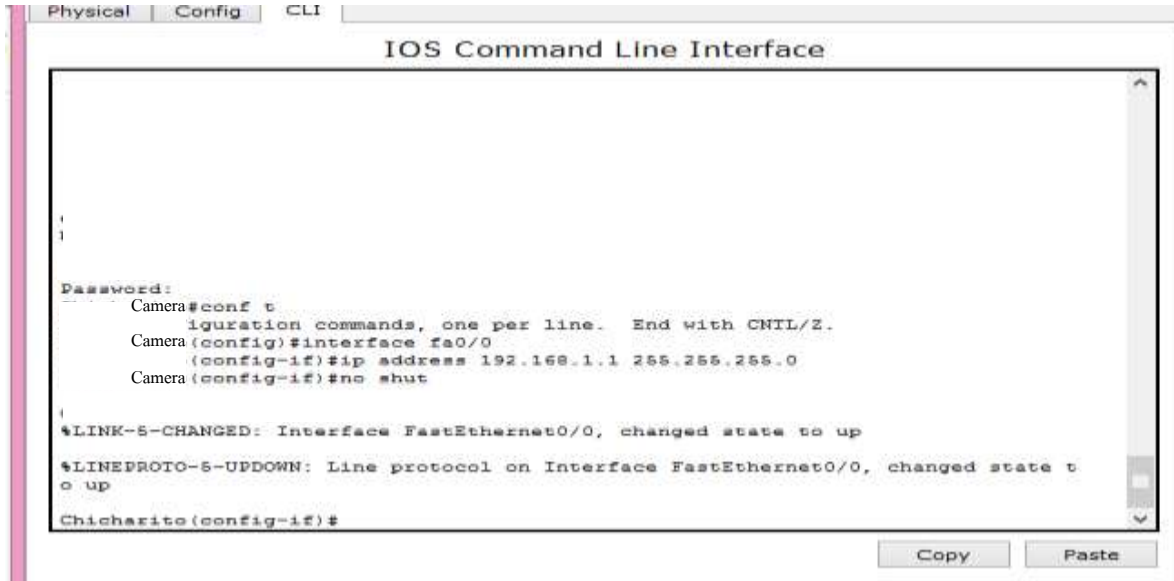
Router>enable
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname
% Incomplete command.
Router(config)#hostname tribal
tribal(config)#banner motd #jesus alberto alvarez camera - redes de computadoras
2#^Z
tribal#
%SYS-5-CONFIG_I: Configured from console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

Copy Paste

A continuacion se proceden a levantar los puertos fastethernet y seriales.

Router camera:

Puertos fa0/0



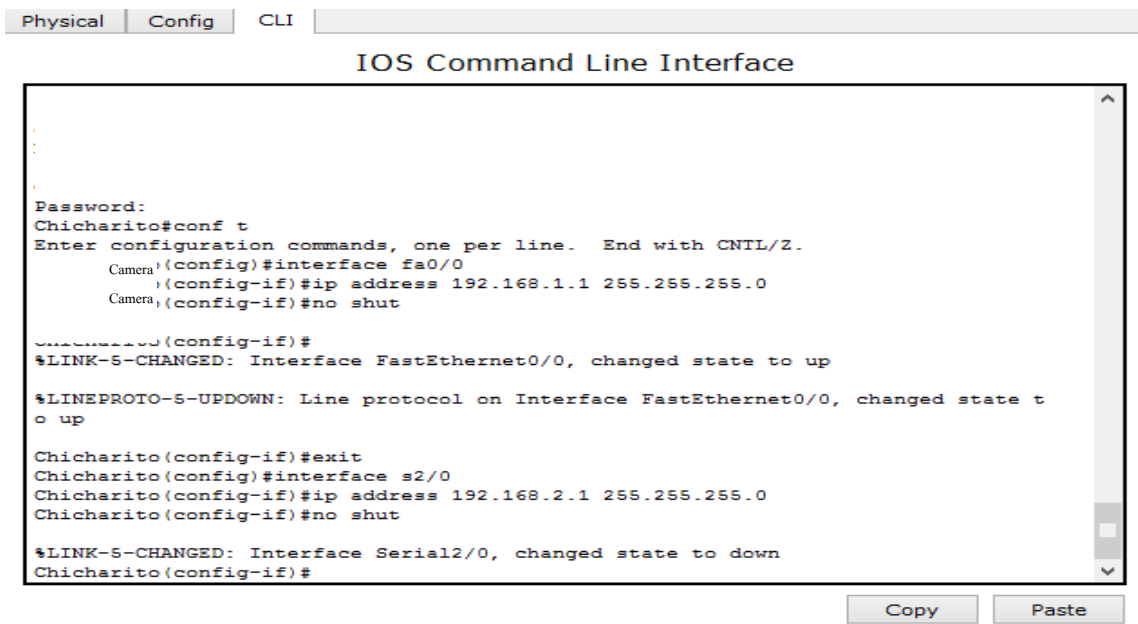
```
Physical | Config | CLI
IOS Command Line Interface

:
:
:
Password:
Camera#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Camera (config)#interface fa0/0
Camera (config-if)#ip address 192.168.1.1 255.255.255.0
Camera (config-if)#no shut

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

Copy Paste

Serial s2/0



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

:
:
:
Password:
Chicharito#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Camera (config)#interface fa0/0
Camera (config-if)#ip address 192.168.1.1 255.255.255.0
Camera (config-if)#no shut

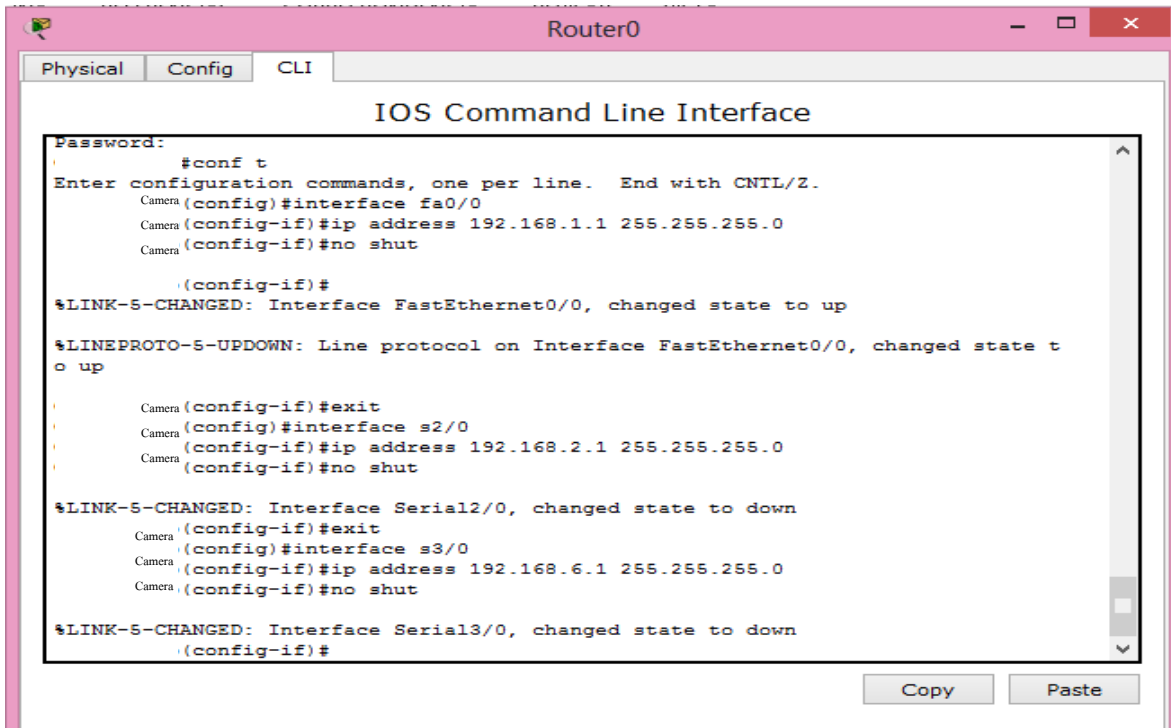
Chicharito(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Chicharito(config-if)#exit
Chicharito(config)#interface s2/0
Chicharito(config-if)#ip address 192.168.2.1 255.255.255.0
Chicharito(config-if)#no shut

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

Copy Paste

## Serial3/0



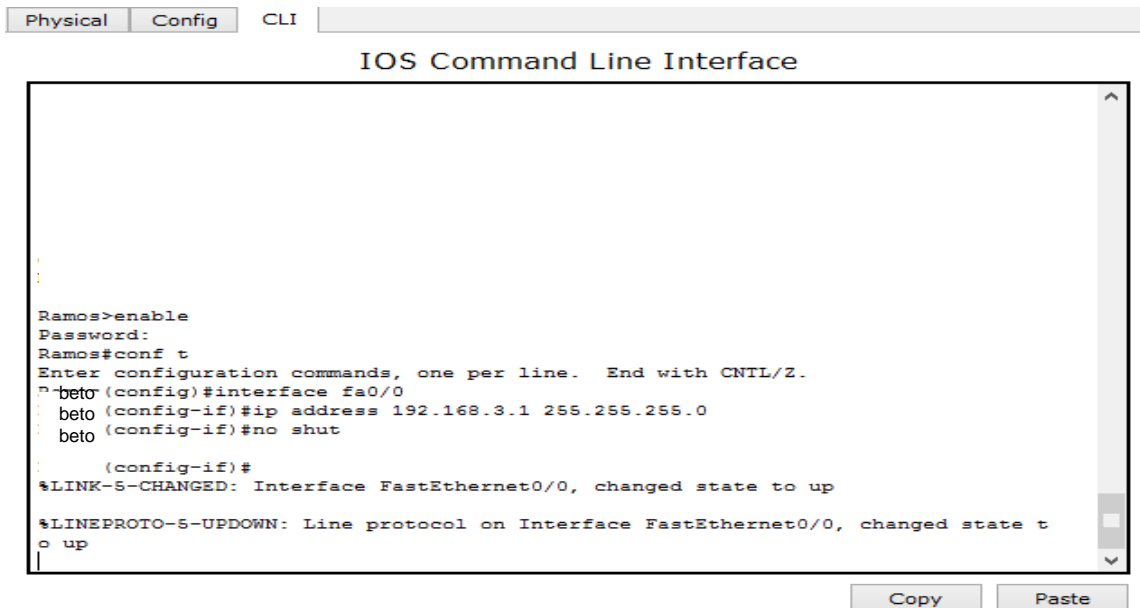
The screenshot shows the CLI of Router0. The user has entered the following commands in configuration mode:

```
Router0
Physical Config CLI
IOS Command Line Interface
Password:
: #conf t
: Enter configuration commands, one per line. End with CNTL/Z.
Camera (config)#interface fa0/0
Camera (config-if)#ip address 192.168.1.1 255.255.255.0
Camera (config-if)#no shut
:
: (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
:
: Camera (config-if)#exit
: Camera (config)#interface s2/0
: Camera (config-if)#ip address 192.168.2.1 255.255.255.0
: Camera (config-if)#no shut
:
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
: Camera (config-if)#exit
: Camera (config)#interface s3/0
: Camera (config-if)#ip address 192.168.6.1 255.255.255.0
: Camera (config-if)#no shut
:
%LINK-5-CHANGED: Interface Serial3/0, changed state to down
: (config-if)#
```

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

## Router "beto"

### Levantamiento del puerto fa0/0



The screenshot shows the CLI of Router "beto". The user has entered the following commands in configuration mode:

```
Ramos>enable
Password:
Ramos#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ramos (config)#interface fa0/0
Ramos (config-if)#ip address 192.168.3.1 255.255.255.0
Ramos (config-if)#no shut
:
: (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
```

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

## Serial 2/0

Physical Config CLI

### IOS Command Line Interface

```
Ramos>enable
Password:
Ramos#conf t
Enter configuration commands, one per line. End with CNTL/Z.
- beto(config)#interface fa0/0
  beto(config-if)#ip address 192.168.3.1 255.255.255.0
  beto(config-if)#no shut

  (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

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

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

Copy Paste

## Serial3/0

Physical Config CLI

### IOS Command Line Interface

```
Ramos(config-if)#ip address 192.168.3.1 255.255.255.0
  (config-if)#no shut

  (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

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

  (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

  beto(config-if)#exit
  beto(config)#interface s3/0
  beto(config-if)#ip address 192.168.4.1 255.255.255.0
  (config-if)#no shut

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

Copy Paste

## Router "tribal"

### Puerto fa/0

```
Physical Config CLI
IOS Command Line Interface

redes de computadoras tics
banner motd

: beto>enable
Password:
Messi#conf t
Enter configuration commands, one per line. End with CNTL/Z.
: beto(config)#interface fa0/0
: beto(config-if)#ip address 192.168.5.1 255.255.255.0
: beto(config-if)#no shut

:
: (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
Messi(config-if)#
```

Copy Paste

### Serial2/0

```
Physical Config CLI
IOS Command Line Interface

redes de computadoras tics
banner motd

Messi>enable
Password:
Messi#conf t
Enter configuration commands, one per line. End with CNTL/Z.
: beto (config)#interface fa0/0
: beto (config-if)#ip address 192.168.5.1 255.255.255.0
: beto (config-if)#no shut

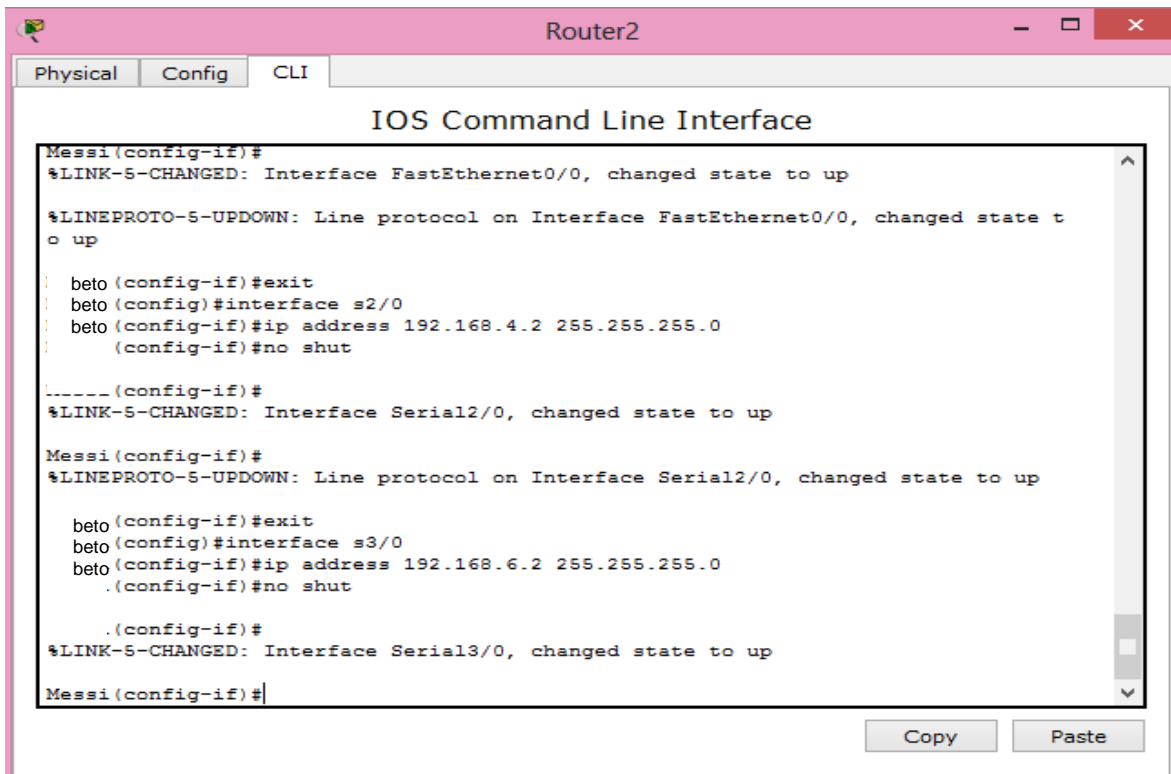
:
: (config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

: beto (config-if)#exit
: beto (config)#interface s2/0
: beto (config-if)#ip address 192.168.4.2 255.255.255.0
: beto (config-if)#no shut

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

Copy Paste

## Serial3/0



The screenshot shows the CLI of Router2. The user 'Messi' is in configuration mode. The output shows that interfaces FastEthernet0/0, Serial2/0, and Serial3/0 have been configured and are now up. The configuration for Serial3/0 includes the IP address 192.168.6.2 with a 255.255.255.0 mask.

```
Messi(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

betto (config-if)#exit
betto (config)#interface s2/0
betto (config-if)#ip address 192.168.4.2 255.255.255.0
betto (config-if)#no shut

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

Messi(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

betto (config-if)#exit
betto (config)#interface s3/0
betto (config-if)#ip address 192.168.6.2 255.255.255.0
betto (config-if)#no shut

betto (config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

Messi(config-if)#
```

Como siguiente paso, veremos las configuraciones que tiene cada router gracias al comando show ip route como a continuación.

## Router beto



The screenshot shows the CLI of Router beto. The user 'Chieharito' has entered the command 'show ip route'. The output shows the routing table for Router beto, which includes three directly connected routes: 192.168.1.0/24 on FastEthernet0/0, 192.168.2.0/24 on Serial2/0, and 192.168.6.0/24 on Serial3/0.

```
Chieharito#enable
Password:
Chieharito#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
C    192.168.6.0/24 is directly connected, Serial3/0
Chieharito#
```

## Router camera

Physical Config CLI

### IOS Command Line Interface

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

camera(config-if)#EXIT
camera(config)#
camera(config)#EXIT
!
#
%SYS-5-CONFIG_I: Configured from console by console

camera#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
Ramos#
```

Copy Paste

## Router "tribal"

Physical Config CLI

### IOS Command Line Interface

```
redes de computadores tics
banner motd

tribal>enable
Password:
#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    192.168.5.0/24 is directly connected, FastEthernet0/0
C    192.168.6.0/24 is directly connected, Serial3/0
Hessie#
```

Copy Paste

A continuación se examinarán los protocolos que utilizan los routes con los siguientes comandos

## Router 1

```
Physical Config CLI
IOS Command Line Interface

eduardo salazar redes de computadoras
banner motd

Chicharito>enale
Translating "enale"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer address

Chicharito>enable
Password:
Chicharito#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Chicharito(config)#router ?
  bgp   Border Gateway Protocol (BGP)
  eigrp Enhanced Interior Gateway Routing Protocol (EIGRP)
  ospf  Open Shortest Path First (OSPF)
  rip   Routing Information Protocol (RIP)
Chicharito(config)#router
```

Copy Paste

```
Physical Config CLI
IOS Command Line Interface

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
eduardo salazar redes de computadoras
banner motd

Chicharito>enable
Password:
Chicharito#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Chicharito(config)#router ?
  bgp   Border Gateway Protocol (BGP)
  eigrp Enhanced Interior Gateway Routing Protocol (EIGRP)
  ospf  Open Shortest Path First (OSPF)
  rip   Routing Information Protocol (RIP)
Chicharito(config)#router
% Incomplete command.
Chicharito(config)#router rip
Chicharito(config-router)#network 192.168.1.1
Chicharito(config-router)#network 192.168.2.1
Chicharito(config-router)#network 192.168.4.1
Chicharito(config-router)#exit
Chicharito(config)#exit
Chicharito#
%SYS-5-CONFIG_I: Configured from console by console
Chicharito#
```

Copy Paste

A continuación para resolver los problemas de enrutamiento se utilizaran los siguientes comandos

Physical Config CLI

### IOS Command Line Interface

```
C 192.168.1.0/24 is directly connected, FastEthernet0/0
C 192.168.2.0/24 is directly connected, Serial2/0
C 192.168.6.0/24 is directly connected, Serial3/0
Chicharito#show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 25 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
Serial3/0            1      2  1
Automatic network summarization is in effect
Maximum path: 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)
Chicharito#
```

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Y como parte final introducimos el codigo debug ip route

```
Physical Config CLI
IOS Command Line Interface

          Gateway           Distance      Last Update
Distance: (default is 120)
Chicharito#debug ip rip
RIP protocol debugging is on
Chicharito#RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (192.1
68.1.1)
RIP: build update entries
  network 192.168.1.0 metric 1
  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
  network 192.168.2.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0 (192.168.6.1)
RIP: build update entries
  network 192.168.1.0 metric 1
  network 192.168.2.0 metric 1
Chicharito#
Chicharito#show ip protocolsRIP: sending v1 update to 255.255.255.255 via FastE
thernet0/0 (192.168.1.1)
RIP: build update entries
  network 192.168.1.0 metric 1
  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
  network 192.168.2.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0 (192.168.6.1)
RIP: build update entries
  network 192.168.1.0 metric 1
  network 192.168.2.0 metric 1
Chicharito#RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (192.1
68.1.1)
RIP: build update entries
  network 192.168.1.0 metric 1
  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
  network 192.168.2.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0 (192.168.6.1)
RIP: build update entries
  network 192.168.1.0 metric 1
```

## Router 2

Physical Config CLI

### IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
eduardo salazar tics redes
banner motd

Ramos>enable
Password:
Password:
Ramos#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Ramos(config)#router ?
  bgp      Border Gateway Protocol (BGP)
  eigrp    Enhanced Interior Gateway Routing Protocol (EIGRP)
  ospf     Open Shortest Path First (OSPF)
  rip      Routing Information Protocol (RIP)
Ramos(config)#router rip
Ramos(config-router)#network 192.168.3.1
Ramos(config-router)#network 192.168.2.2
Ramos(config-router)#network 192.168.4.1
Ramos(config-router)#
```

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## Para comprobar errores

Physical Config CLI

### IOS Command Line Interface

```
C 192.168.4.0/24 is directly connected, Serial3/0
R 192.168.6.0/24 [120/1] via 192.168.2.1, 00:00:22, Serial2/0
Ramos#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 1, receive any version
Interface          Send Recv Triggered RIP Key-chain
FastEthernet0/0    1      2      1
Serial2/0          1      2      1
Serial3/0          1      2      1
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
  192.168.2.0
  192.168.3.0
  192.168.4.0
Passive Interface(s):
Routing Information Sources:
  Gateway         Distance      Last Update
  192.168.2.1     120          00:00:06
Distance: (default is 120)
Ramos#
```

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## Código debug ip route

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

router#
192.168.2.1      120      00:00:00
Distance: (default is 120)
Rama#debug ip rip
RIP protocol debugging is on
Rama#RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (192.168.2.1)
RIP: build update entries
  network 192.168.1.0 metric 2
  network 192.168.2.0 metric 1
  network 192.168.4.0 metric 1
  network 192.168.6.0 metric 2
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (192.168.2.2)
RIP: build update entries
  network 192.168.3.0 metric 1
  network 192.168.4.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0 (192.168.4.1)
RIP: build update entries
  network 192.168.1.0 metric 2
  network 192.168.2.0 metric 1
  network 192.168.3.0 metric 1
  network 192.168.4.0 metric 2
RIP: received v1 update from 192.168.2.1 on Serial2/0
  192.168.1.0 in 1 hops
  192.168.4.0 in 1 hops
RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (192.168.2.1)
RIP: build update entries
  network 192.168.1.0 metric 2
  network 192.168.2.0 metric 1
  network 192.168.4.0 metric 1
  network 192.168.6.0 metric 2
RIP: sending v1 update to 255.255.255.255 via Serial2/0 (192.168.2.2)
RIP: build update entries
  network 192.168.3.0 metric 1
  network 192.168.4.0 metric 1
RIP: sending v1 update to 255.255.255.255 via Serial3/0 (192.168.4.1)
RIP: build update entries
  network 192.168.1.0 metric 2
  network 192.168.2.0 metric 1
  network 192.168.3.0 metric 1
  network 192.168.4.0 metric 2
RIP: received v1 update from 192.168.2.1 on Serial2/0
  192.168.1.0 in 1 hops
  192.168.4.0 in 1 hops
```

Estos pasos realizarlos con el tercer router.

## **Conclusión**

En esta práctica se realizaron las configuraciones principales de un router así como es el cambio de nombre, establecimiento de una contraseña y se le asignó un banner. Una vez hechas estas configuraciones se procede a establecer una serie de comandos que nos ayudan a observar las configuraciones hechas en los Routers, y los tipos de protocolos que se utilizan.