

Instituto Tecnológico de Salina Cruz

Fundamentos de Redes

Semestre Enero – Julio 2015

Reporte de Práctica

Practica nº 1

Unidad 3

**Nombre:** Jesus Alberto Alvarez Camera

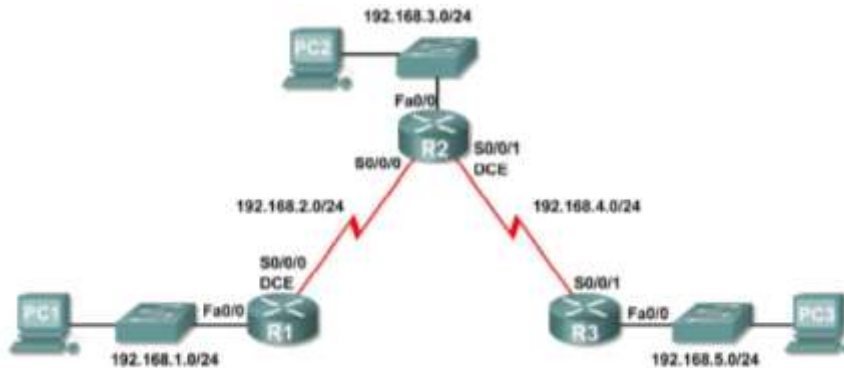
**Fecha:** 16 de Abril del 2015

**Objetivo:**

Conocer los comandos básicos de un router Cisco y configurar rutas estáticas para los mismos

**Instrucciones:**

Realice, La tabla de direccionamiento, la configuración inicial Y verifique las conexiones entre las PC's. Agregar al menos 5 pcs por subred



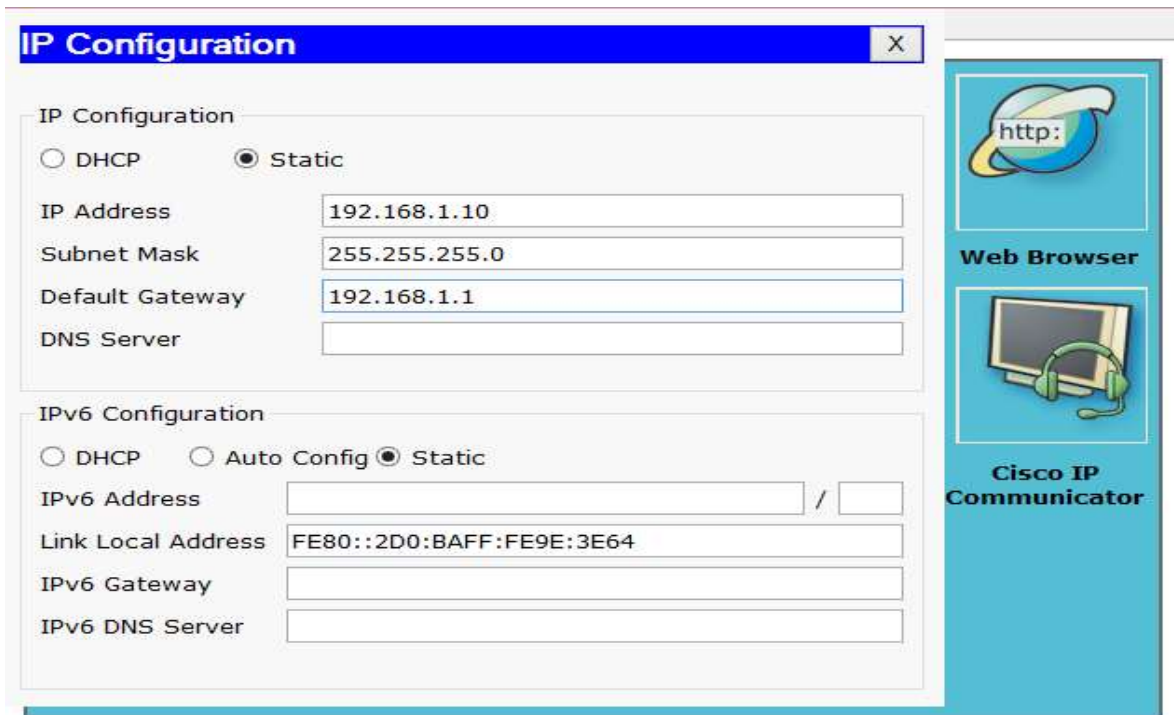
| Dispositivo | Interfaz     | Dirección IP | Mascara de subred | Gateway      |
|-------------|--------------|--------------|-------------------|--------------|
| usb         | Fa0/0        | 192.168.1.1  | 255.255.255.0     | No aplicable |
|             | S2/0         | 192.168.2.1  | 255.255.255.0     |              |
| oro         | Fa0/0        | 192.168.3.1  | 255.255.255.0     | No aplicable |
|             | S2/0         | 192.168.2.2  | 255.255.255.0     |              |
|             | S3/0         | 192.168.4.1  | 255.255.255.0     |              |
| paza        | Fa0/0        | 192.168.5.1  | 255.255.255.0     | No aplicable |
|             | S2/0         | 192.168.4.2  | 255.255.255.0     |              |
| PC1         | No aplicable | 192.168.1.10 | 255.255.255.0     | 192.168.1.1  |
| PC2         | No aplicable | 192.168.1.11 | 255.255.255.0     | 192.168.1.1  |
| PC3         | No aplicable | 192.168.1.12 | 255.255.255.0     | 192.168.1.1  |
| PC4         | No aplicable | 192.168.1.13 | 255.255.255.0     | 192.168.1.1  |
| PC5         | No aplicable | 192.168.1.14 | 255.255.255.0     | 192.168.1.1  |
| PC6         | No aplicable | 192.168.3.10 | 255.255.255.0     | 192.168.3.1  |
| PC7         | No aplicable | 192.168.3.11 | 255.255.255.0     | 192.168.3.1  |
| PC8         | No aplicable | 192.168.3.12 | 255.255.255.0     | 192.168.3.1  |
| PC9         | No aplicable | 192.168.3.13 | 255.255.255.0     | 192.168.3.1  |
| PC10        | No aplicable | 192.168.3.14 | 255.255.255.0     | 192.168.3.1  |
| PC11        | No aplicable | 192.168.5.10 | 255.255.255.0     | 192.168.5.1  |
| PC12        | No aplicable | 192.168.5.11 | 255.255.255.0     | 192.168.5.1  |
| PC13        | No aplicable | 192.168.5.12 | 255.255.255.0     | 192.168.5.1  |
| PC14        | No aplicable | 192.168.5.13 | 255.255.255.0     | 192.168.5.1  |

|      |              |              |               |             |
|------|--------------|--------------|---------------|-------------|
| PC15 | No aplicable | 192.168.5.14 | 255.255.255.0 | 192.168.5.1 |
|------|--------------|--------------|---------------|-------------|

**Materiales:**

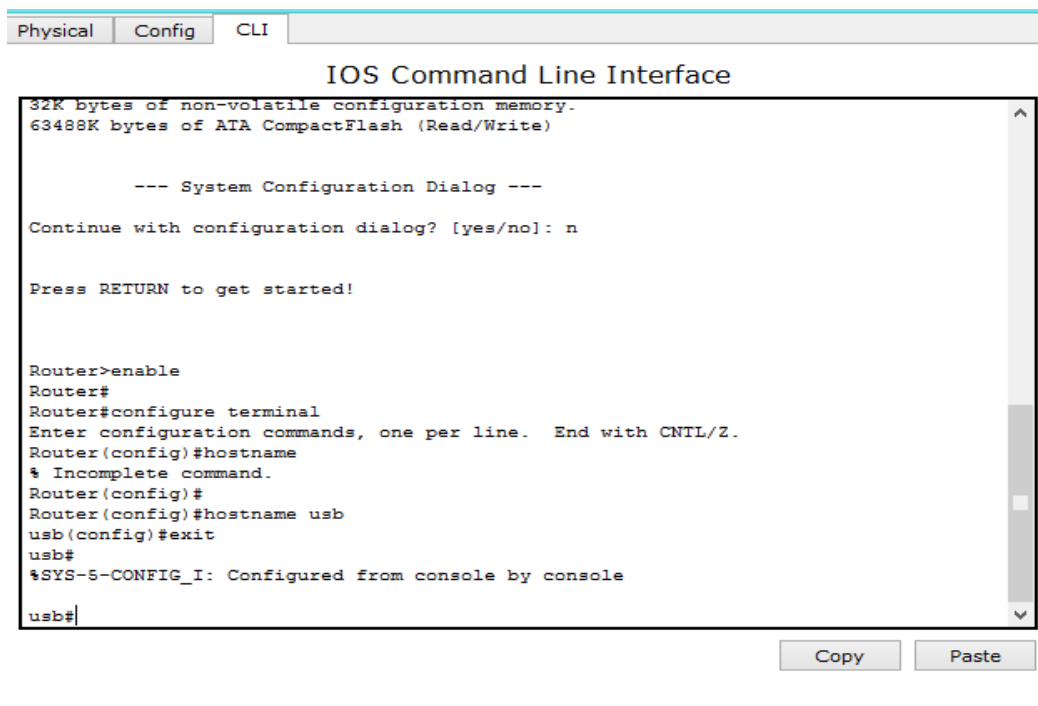
Programa de simulacion Packet Tracer

Como primer paso, se configura la dirección ip, y la máscara de subred de las pc's iniciando con la pc1 de la siguiente manera.



A continuación se iniciara en la configuración primaria de un router el cual se cambiara el nombre a los mismos.

El primer router se llamara USB



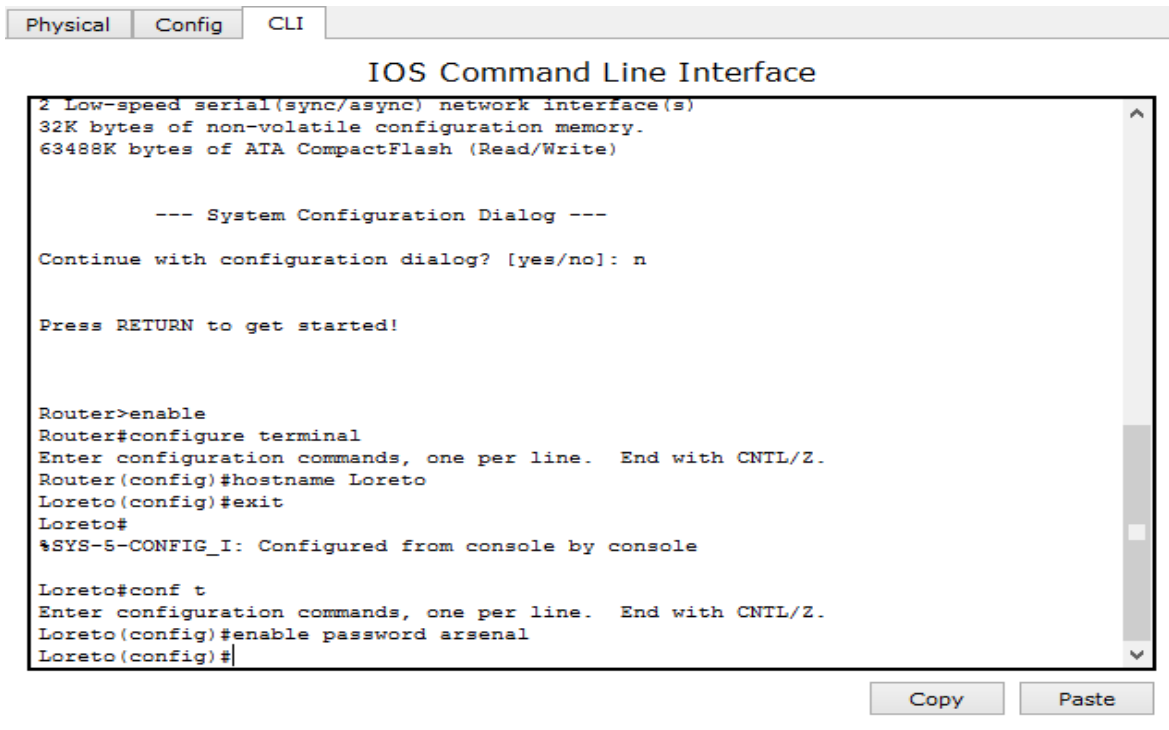
```
Physical Config CLI
IOS Command Line Interface
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)

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

Press RETURN to get started!

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

Se le asignara una contraseña



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 terminal password 'arsenal'.

```
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

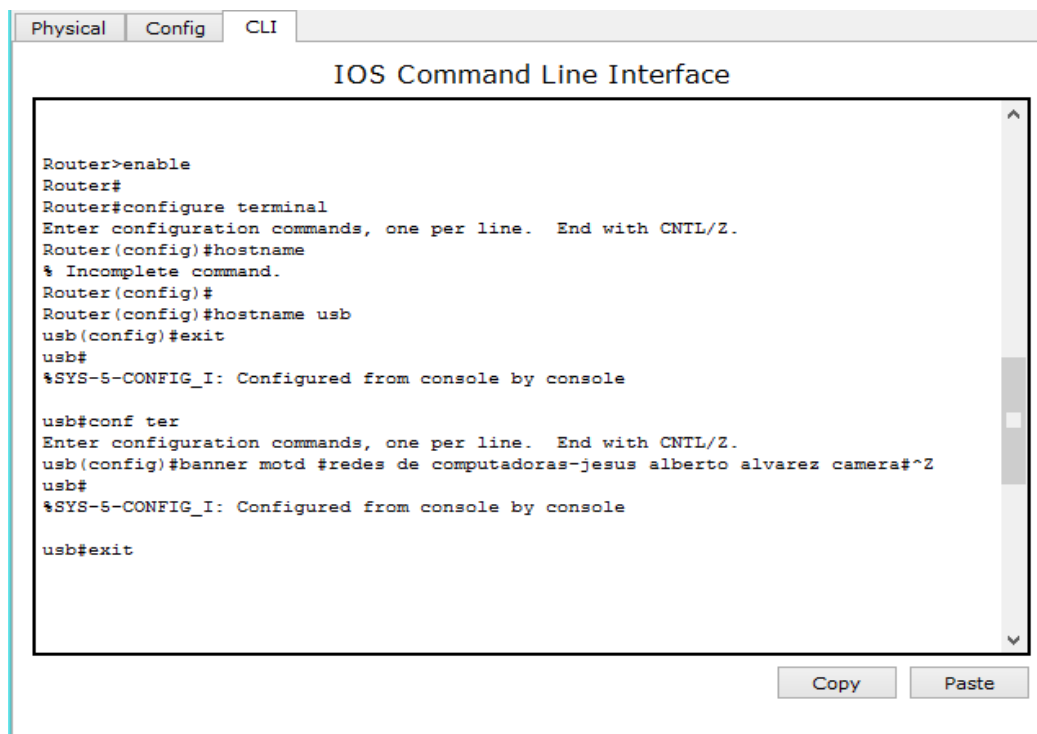
Press RETURN to get started!

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

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

Copy Paste

Asignando un mensaje del banner.



The screenshot shows the IOS Command Line Interface with tabs for Physical, Config, and CLI. The terminal output shows the configuration of a banner message on the console.

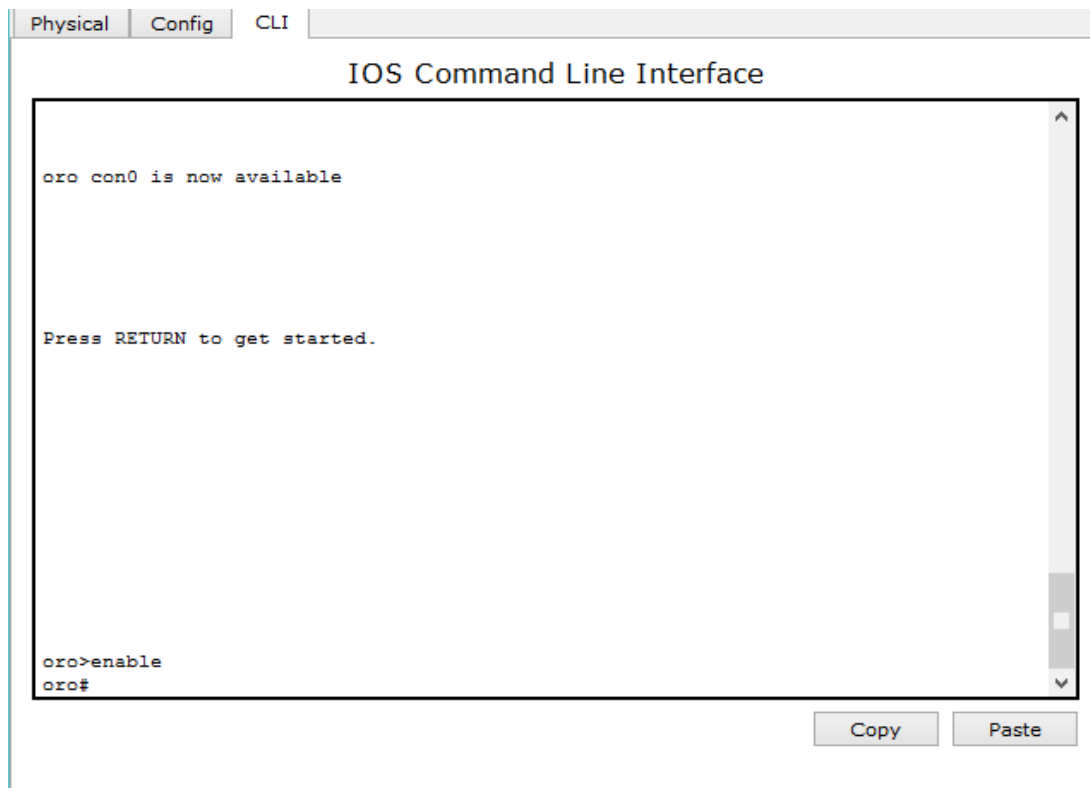
```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname
% Incomplete command.
Router(config)#
Router(config)#hostname usb
usb(config)#exit
usb#
%SYS-5-CONFIG_I: Configured from console by console

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

usb#exit
```

Copy Paste

## Cambiando el nombre del router 2 ORO



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

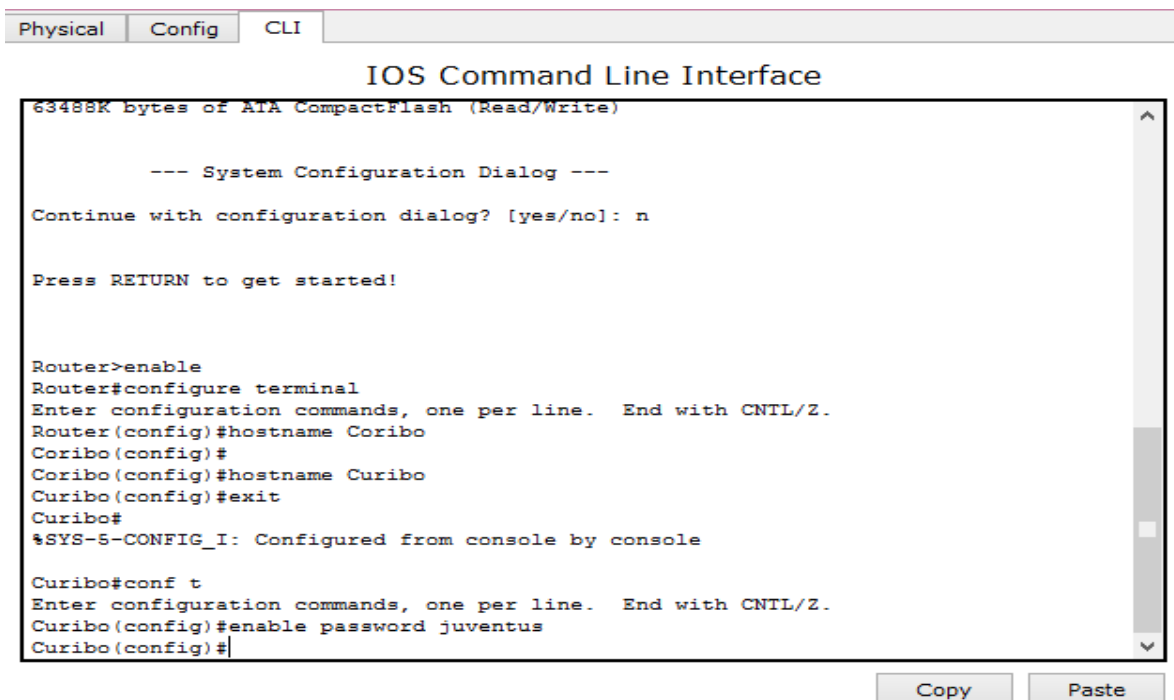
```
oro con0 is now available

Press RETURN to get started.

oro>enable
oro#
```

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

Como paso siguiente se le asigna una contraseña al router 2.



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

```
63488K bytes of ATA CompactFlash (Read/Write)

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

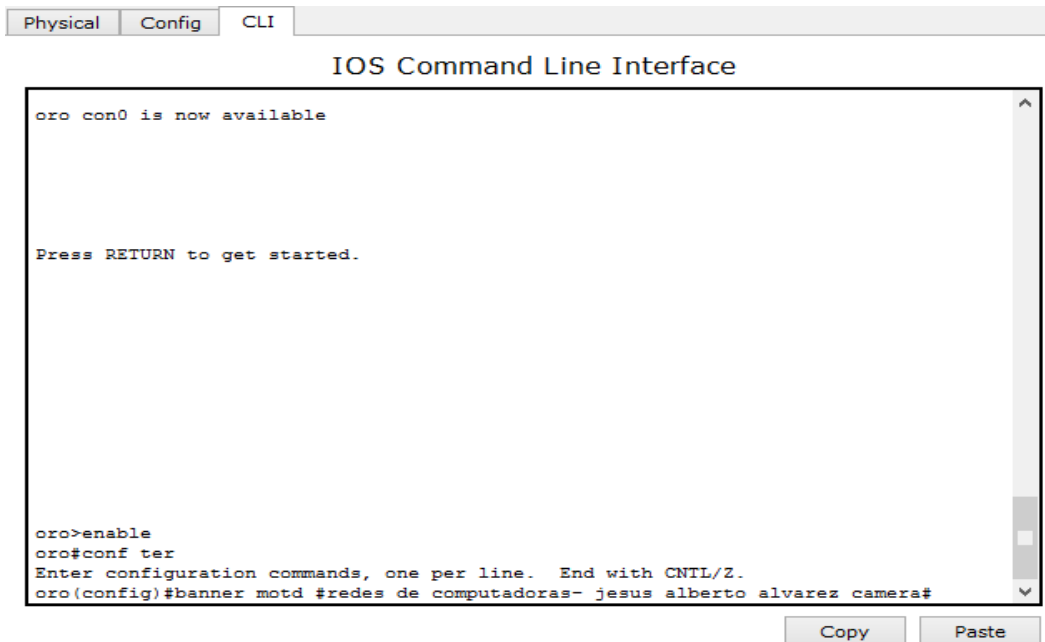
Press RETURN to get started!

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

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

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

Mensaje del banner.



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

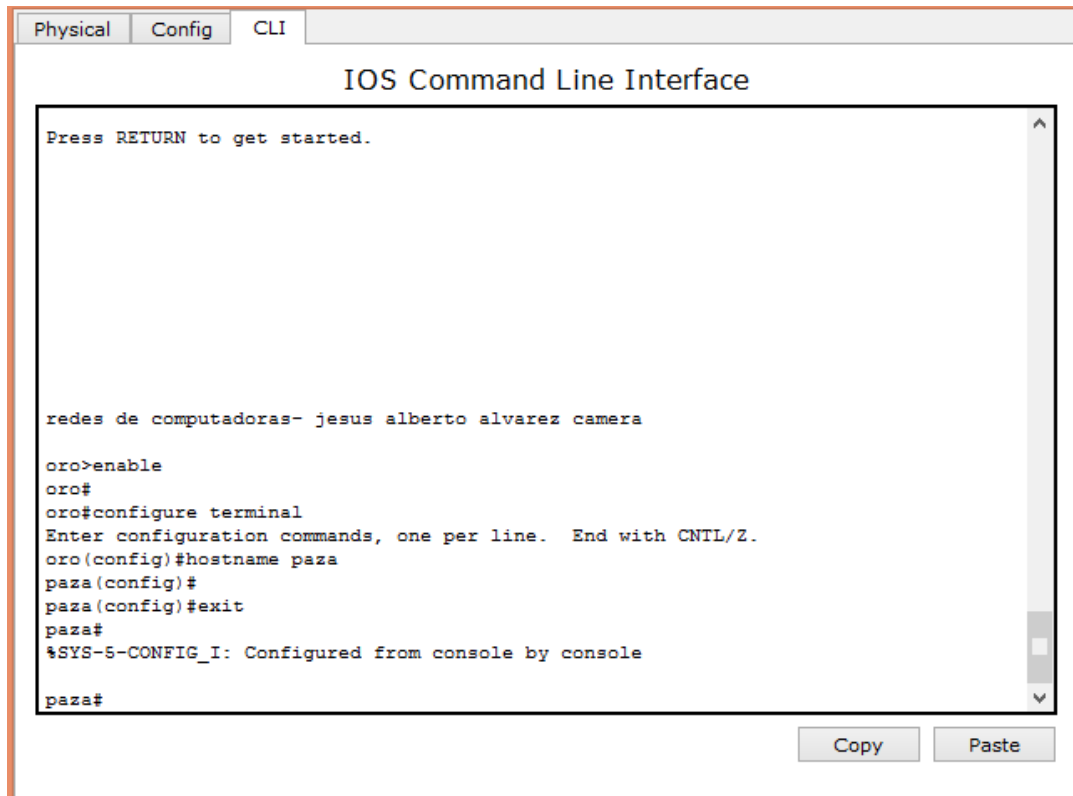
```
oro con0 is now available

Press RETURN to get started.

oro>enable
oro#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
oro(config)#banner motd #redes de computadoras- jesus alberto alvarez camera#
```

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

A continuación se realizan las configuraciones para el router 3, primero asignándole un nombre.



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

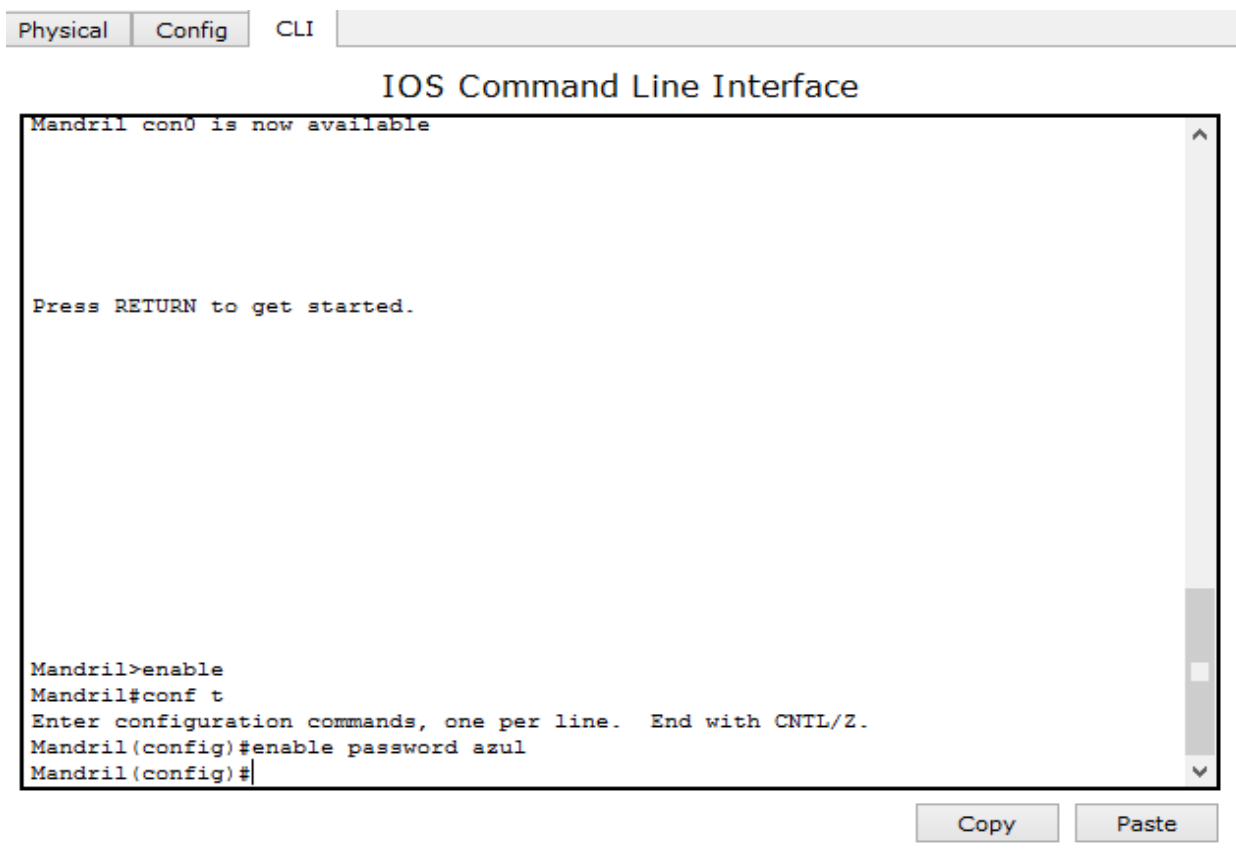
```
Press RETURN to get started.

redes de computadoras- jesus alberto alvarez camera

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

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

## Asignando una contraseña al router



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

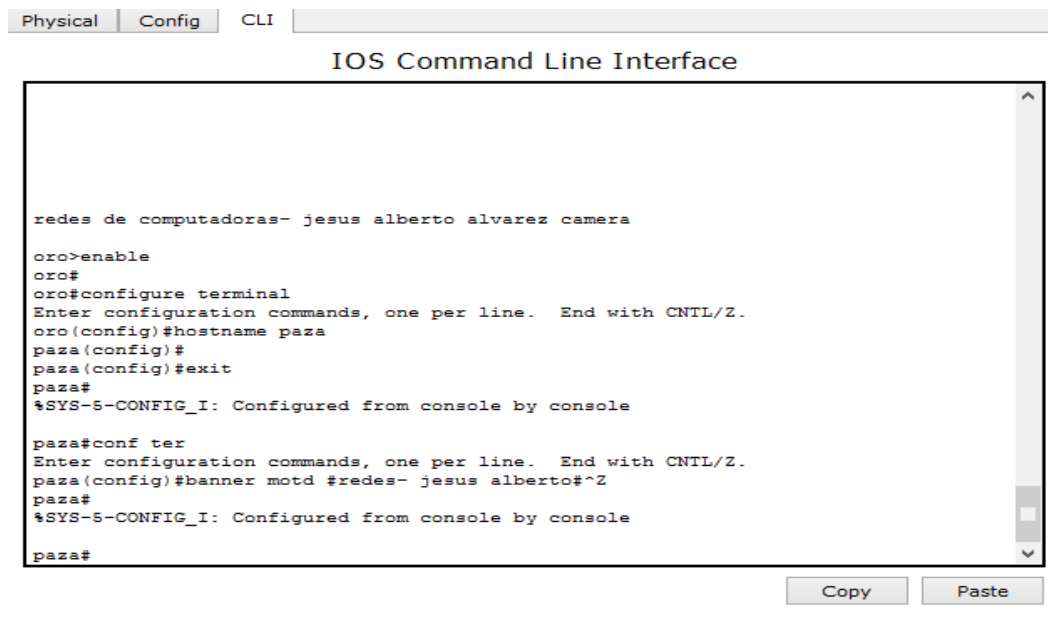
```
Mandril con0 is now available

Press RETURN to get started.

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

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

## Agregando un mensaje en el banner.



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

```
redes de computadoras- jesus alberto alvarez camera

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

paza#conf ter
Enter configuration commands, one per line.  End with CNTL/Z.
paza(config)#banner motd #redes- jesus alberto#^Z
paza#
%SYS-5-CONFIG_I: Configured from console by console

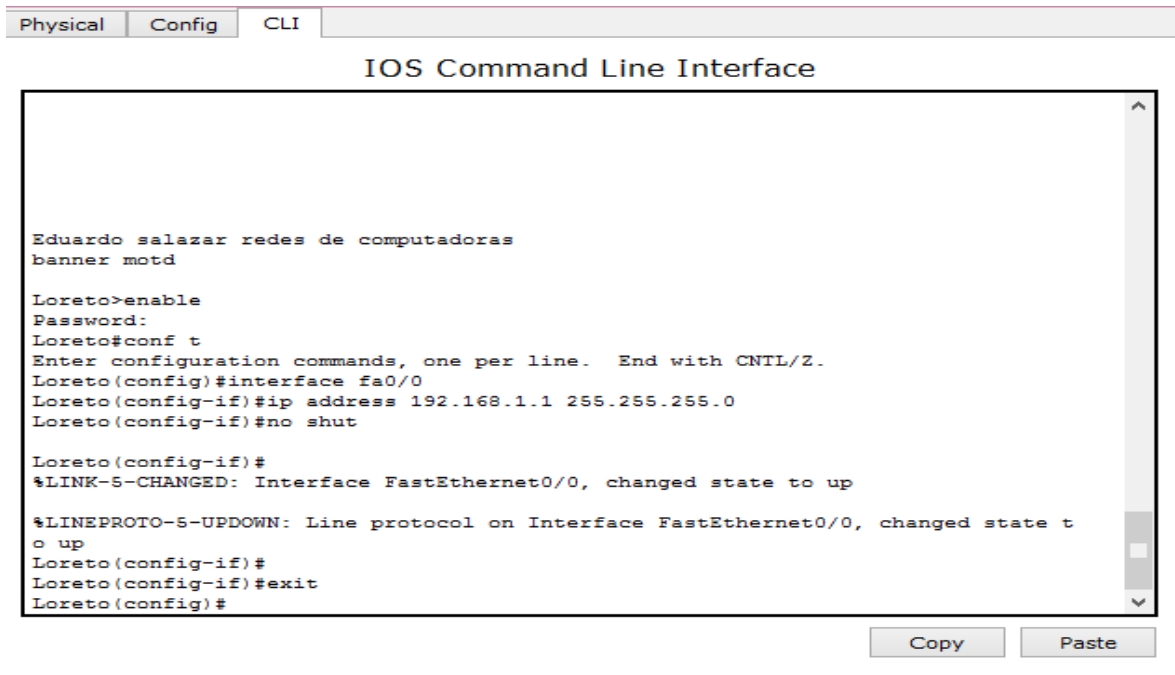
paza#
```

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

A continuación se procede a levantar los fa0/0, y los seriales para cada router, como se muestra a continuación

### Para el router 1

Puerto fa0/0.



The screenshot shows the IOS Command Line Interface for Router 1. The interface has tabs for Physical, Config, and CLI. The CLI tab is active, and the terminal window displays the following commands and output:

```
Eduardo salazar redes de computadoras
banner motd

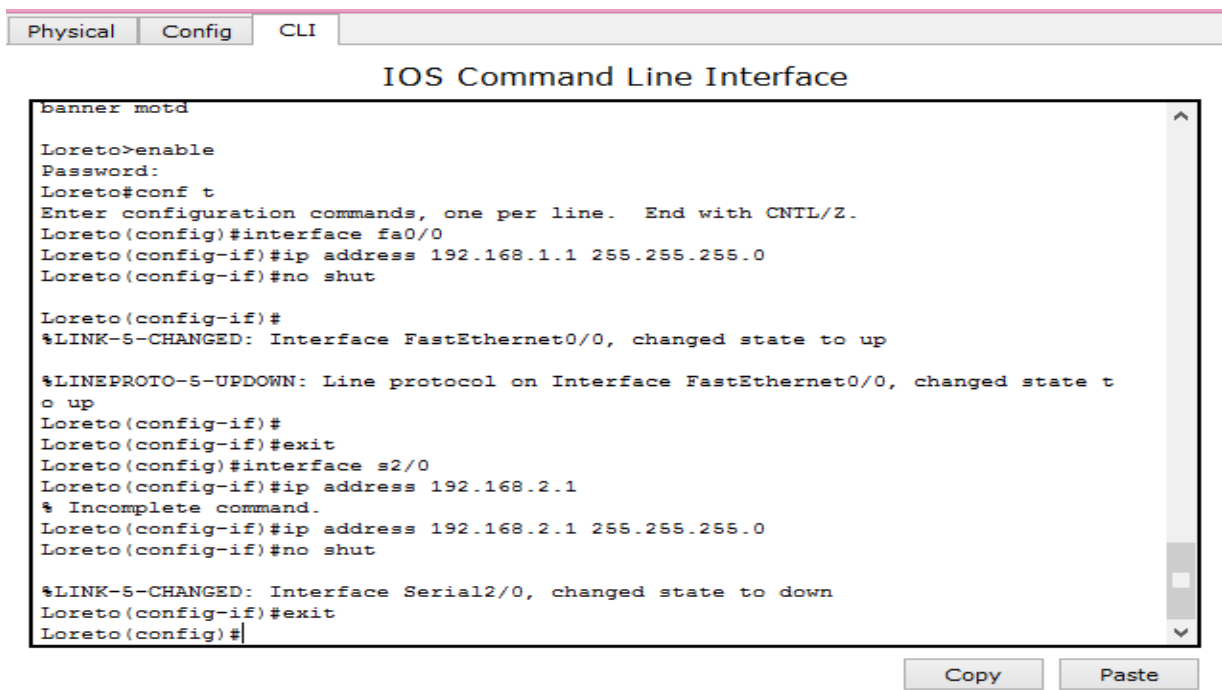
Loreto>enable
Password:
Loreto#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Loreto(config)#interface fa0/0
Loreto(config-if)#ip address 192.168.1.1 255.255.255.0
Loreto(config-if)#no shut

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

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

Serial2/0.



The screenshot shows the IOS Command Line Interface for Router 1. The interface has tabs for Physical, Config, and CLI. The CLI tab is active, and the terminal window displays the following commands and output:

```
banner motd

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

Loreto(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
Loreto(config-if)#
Loreto(config-if)#exit
Loreto(config)#interface s2/0
Loreto(config-if)#ip address 192.168.2.1
% Incomplete command.
Loreto(config-if)#ip address 192.168.2.1 255.255.255.0
Loreto(config-if)#no shut

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

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

## Configurando puertos, del router 2

Puerto fa0/0.

```
Physical Config CLI
IOS Command Line Interface

redes de computadora unidad3
banner motd

Curibo>enable
Password:
Curibo#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Curibo(config)#interface fa0/0
Curibo(config-if)#ip address 192.168.2.1 255.255.255.0
Curibo(config-if)#no shut

Curibo(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

Curibo(config-if)#
```

Copy Paste

Serial2/0.

```
Physical Config CLI
IOS Command Line Interface

Curibo(config)#interface fa0/0
Curibo(config-if)#ip address 192.168.2.1 255.255.255.0
Curibo(config-if)#no shut

Curibo(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

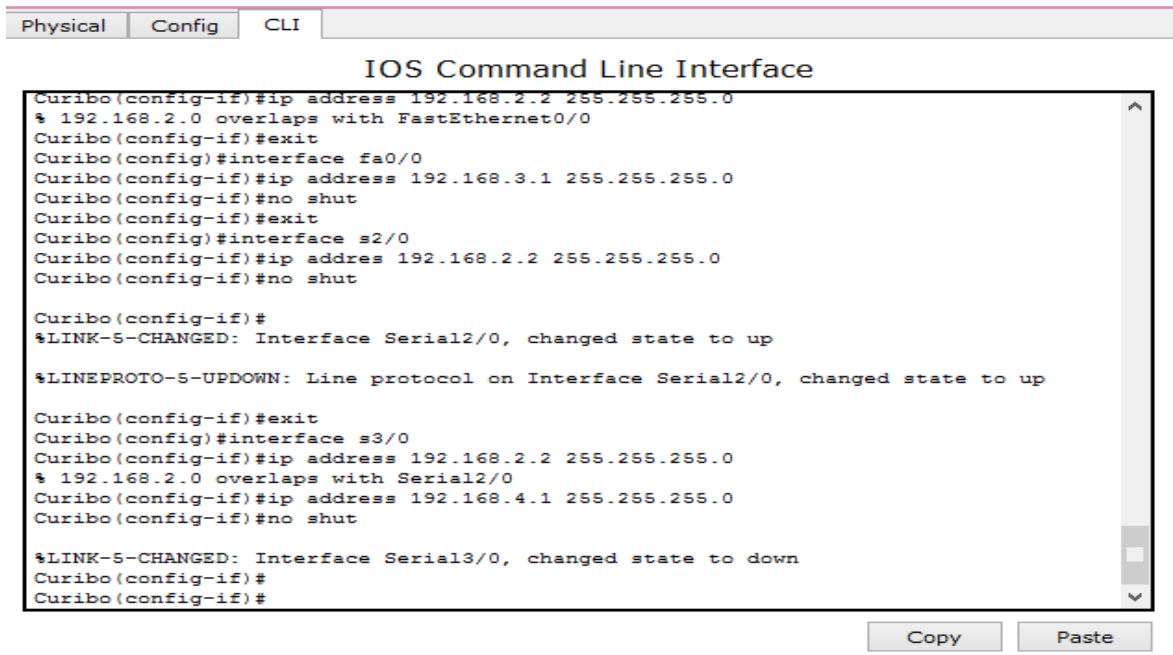
Curibo(config-if)#exit
Curibo(config)#interface s2/0
Curibo(config-if)#ip address 192.168.2.2 255.255.255.0
% 192.168.2.0 overlaps with FastEthernet0/0
Curibo(config-if)#exit
Curibo(config)#interface fa0/0
Curibo(config-if)#ip address 192.168.3.1 255.255.255.0
Curibo(config-if)#no shut
Curibo(config-if)#exit
Curibo(config)#interface s2/0
Curibo(config-if)#ip address 192.168.2.2 255.255.255.0
Curibo(config-if)#no shut

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

Copy Paste

A continuación se levantarán 2 puertos, para permitir la conexión entre dos Routers a un tercero.

Serial3/0.



```
Physical Config CLI
IOS Command Line Interface
Curibo(config-if)#ip address 192.168.2.2 255.255.255.0
% 192.168.2.0 overlaps with FastEthernet0/0
Curibo(config-if)#exit
Curibo(config)#interface fa0/0
Curibo(config-if)#ip address 192.168.3.1 255.255.255.0
Curibo(config-if)#no shut
Curibo(config-if)#exit
Curibo(config)#interface s2/0
Curibo(config-if)#ip address 192.168.2.2 255.255.255.0
Curibo(config-if)#no shut

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

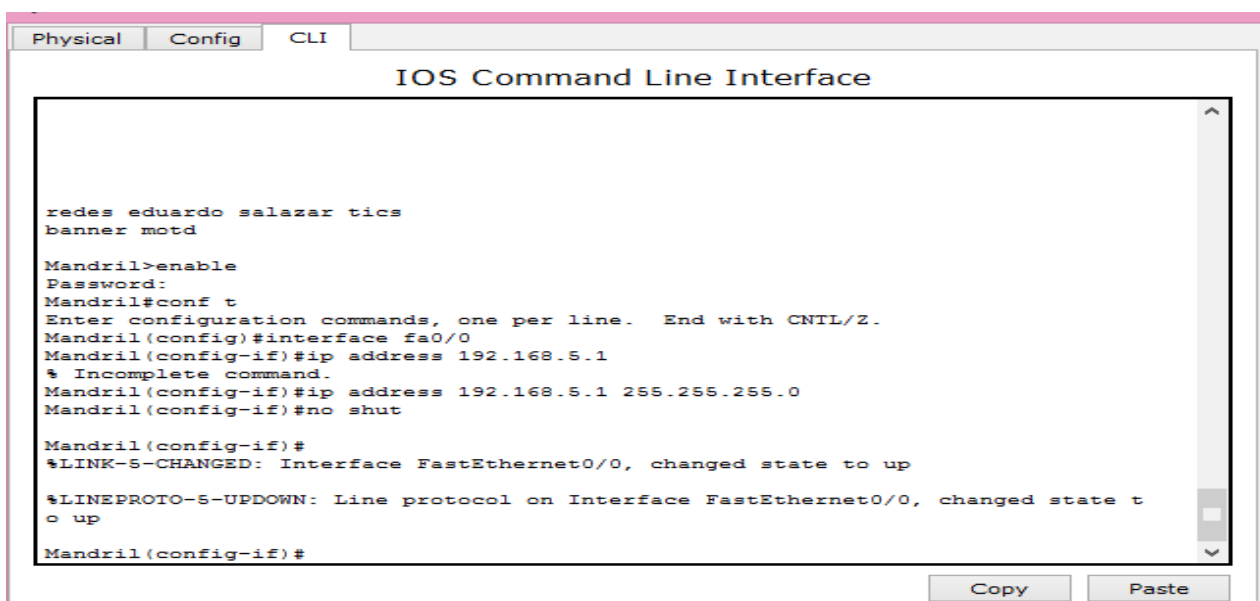
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Curibo(config-if)#exit
Curibo(config)#interface s3/0
Curibo(config-if)#ip address 192.168.2.2 255.255.255.0
% 192.168.2.0 overlaps with Serial2/0
Curibo(config-if)#ip address 192.168.4.1 255.255.255.0
Curibo(config-if)#no shut

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

Configurando puertos para el router 3

Puerto fa0/0.



```
Physical Config CLI
IOS Command Line Interface

redes eduardo salazar tics
banner motd

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

Mandrill(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

Mandrill(config-if)#
```

Serial2/0.

```
Physical  Config  CLI
IOS Command Line Interface
Mandrill>enable
Password:
Mandrill#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Mandrill(config)#interface fa0/0
Mandrill(config-if)#ip address 192.168.5.1
% Incomplete command.
Mandrill(config-if)#ip address 192.168.5.1 255.255.255.0
Mandrill(config-if)#no shut

Mandrill(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

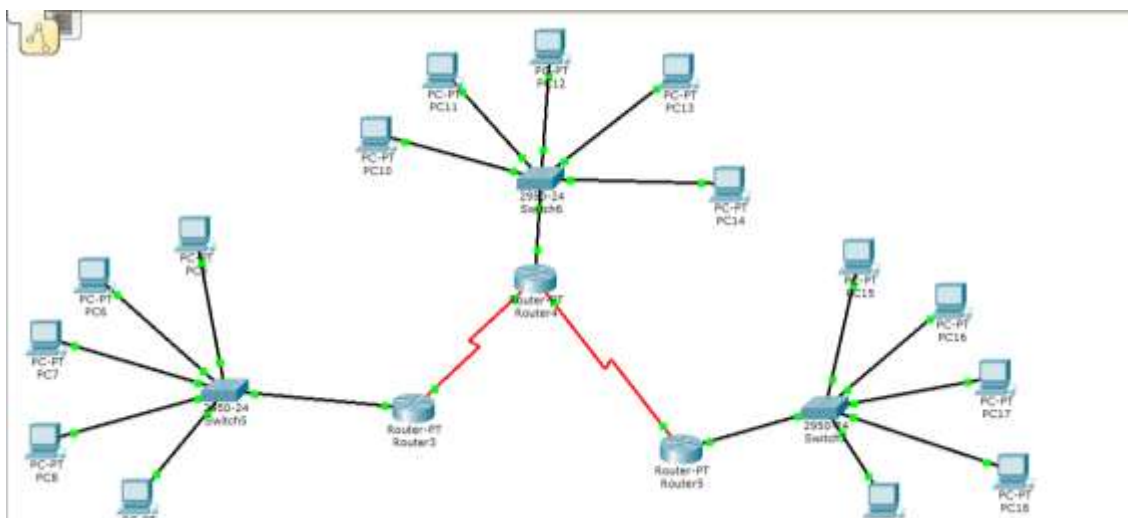
Mandrill(config-if)#exit
Mandrill(config)#interface s2/0
Mandrill(config-if)#ip address 192.168.4.2 255.255.255.0
Mandrill(config-if)#no shut

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

Mandrill(config-if)#
```

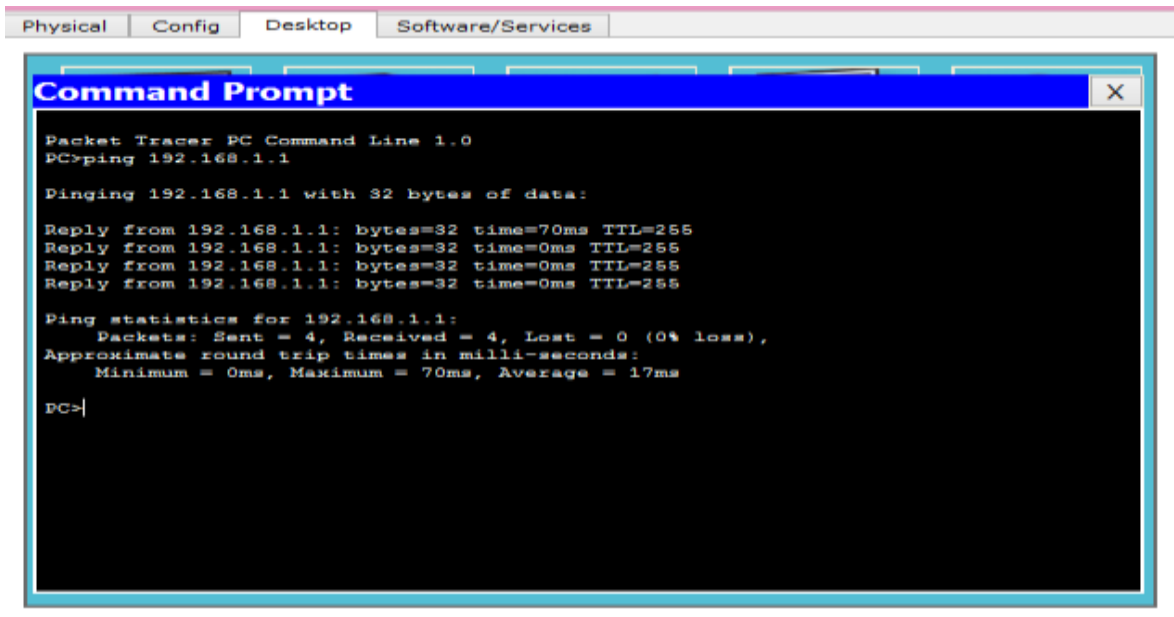
Copy Paste

Una vez levantados los puertos seriales y los fast Ethernet los dispositivos estarán interconectados.



A continuación se procede a comprobar la interconexión entre computadoras, dando ping a cada una de ella de la siguiente

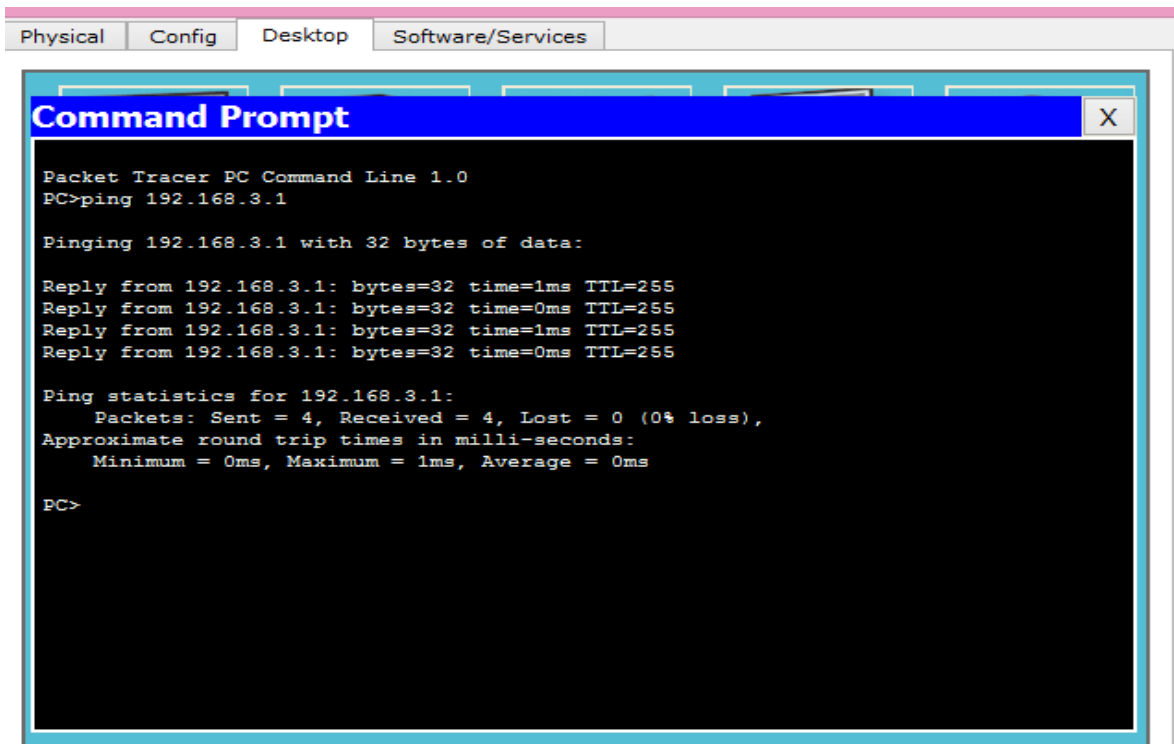
PC1 a USB



The screenshot shows a Packet Tracer PC Command Line window with the following text:

```
Physical | Config | Desktop | Software/Services  
  
Command Prompt  
Packet Tracer PC Command Line 1.0  
PC>ping 192.168.1.1  
  
Pinging 192.168.1.1 with 32 bytes of data:  
  
Reply from 192.168.1.1: bytes=32 time=70ms TTL=255  
Reply from 192.168.1.1: bytes=32 time=0ms TTL=255  
Reply from 192.168.1.1: bytes=32 time=0ms TTL=255  
Reply from 192.168.1.1: bytes=32 time=0ms TTL=255  
  
Ping statistics for 192.168.1.1:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 70ms, Average = 17ms  
  
PC>|
```

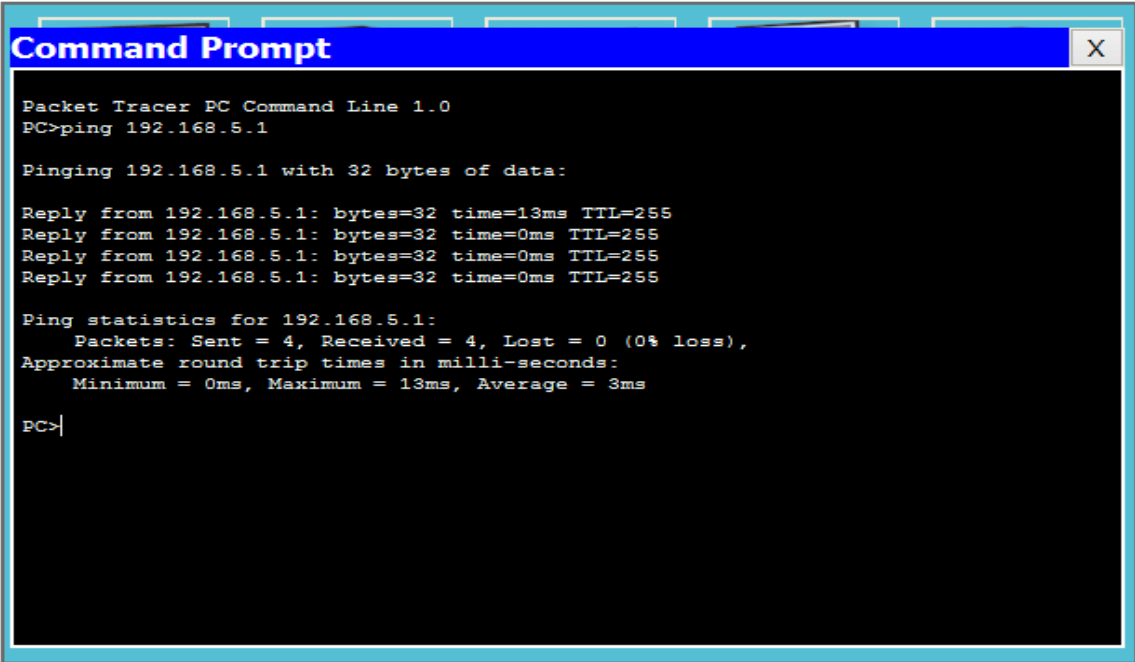
Ping de la PC4 a oro.



The screenshot shows a Packet Tracer PC Command Line window with the following text:

```
Physical | Config | Desktop | Software/Services  
  
Command Prompt  
Packet Tracer PC Command Line 1.0  
PC>ping 192.168.3.1  
  
Pinging 192.168.3.1 with 32 bytes of data:  
  
Reply from 192.168.3.1: bytes=32 time=1ms TTL=255  
Reply from 192.168.3.1: bytes=32 time=0ms TTL=255  
Reply from 192.168.3.1: bytes=32 time=1ms TTL=255  
Reply from 192.168.3.1: bytes=32 time=0ms TTL=255  
  
Ping statistics for 192.168.3.1:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 1ms, Average = 0ms  
  
PC>
```

## Ping de la PC7 a paza



The screenshot shows a Packet Tracer PC Command Line window with a blue title bar and a black background. The window title is "Command Prompt" with a close button (X) on the right. The text inside the window shows the execution of a ping command to 192.168.5.1. The output indicates that the ping was successful, with 4 packets sent and 4 received, resulting in 0% loss. The round trip times are shown as 13ms, 0ms, 0ms, and 0ms for the four packets respectively. The statistics section shows a minimum of 0ms, a maximum of 13ms, and an average of 3ms.

```
Packet Tracer PC Command Line 1.0
PC>ping 192.168.5.1

Pinging 192.168.5.1 with 32 bytes of data:

Reply from 192.168.5.1: bytes=32 time=13ms TTL=255
Reply from 192.168.5.1: bytes=32 time=0ms TTL=255
Reply from 192.168.5.1: bytes=32 time=0ms TTL=255
Reply from 192.168.5.1: bytes=32 time=0ms TTL=255

Ping statistics for 192.168.5.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 3ms

PC>|
```

## **Conclusión**

Durante el desarrollo de esta práctica, se pudo observar las configuraciones principales de un router cisco, las cuales constan de cambio de nombre, asignar una contraseña, y poner un mensaje en el banner del mismo. Una vez hecho esto se procede a levantar los puertos seriales y los fast Ethernet de cada puerto del router para lograr una interconexión y como punto final hacer un Ping para mostrar la conectividad entre ellos.