



Instituto Tecnológico de Salina Cruz

Fundamentos de Redes

Semestre enero – julio 2015

Reporte de Practica

Alumno: Eduardo Salazar Irrizari

Practica nº 3

Unidad 2

Objetivo:

Identificar el enrutamiento estático y dinámico, además de aplicar el enrutamiento estático a una red WAN.

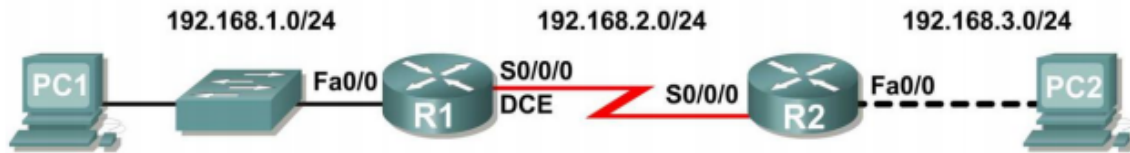
Instrucciones:

- 1.- Cambiar de nombre a los dispositivos.
- 2.- configurar banner a ambos router's.
- 3.- levantar los puertos fa0 a ambos routers.
- 4.- levantar los seriales de ambos routers.
6. Comprobar conexiones por medio de ping.

Materiales:

- 1.- computadora.
- 2.- Packet tracert.

## Diagrama de topología



## Tabla de direccionamiento

Dispositivo	Interfaz	Dirección IP	Máscara de subred	Gateway por defecto
R1	Fa0/0	192.168.1.1	255.255.255.0	No aplicable
	S0/0/0	192.168.2.1	255.255.255.0	No aplicable
R2	Fa0/0	192.168.3.1	255.255.255.0	No aplicable
	S0/0/0	192.168.2.2	255.255.255.0	No aplicable
PC1	No aplicable	192.168.1.10	255.255.255.0	192.168.1.1
PC2	No aplicable	192.168.3.10	255.255.255.0	192.168.3.1

- a) Realizar configuración básica en los routers
  - i. Cambio de nombre

### Router 1

The screenshot shows the CLI interface of Router0. The window title is "Router0". The interface is in "CLI" mode. The text displayed is as follows:

```

IOS Command Line Interface

Processor board ID F10123 (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)

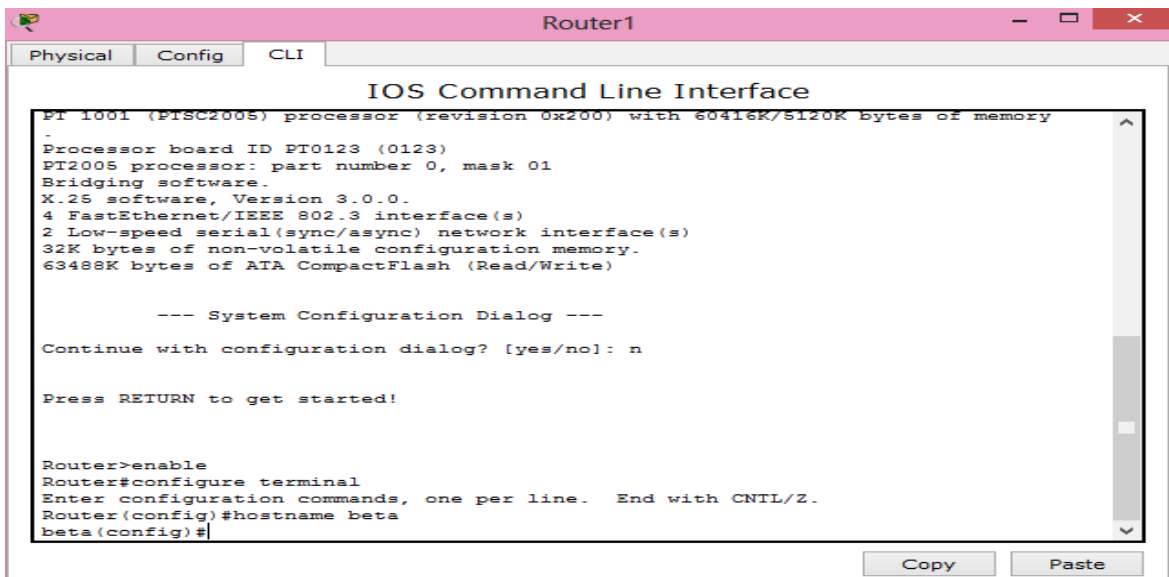
--- System Configuration Dialog ---
Continue with configuration dialog? [yes/no]:
% Please answer 'yes' or 'no'.
Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

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

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

## Router 2.



The screenshot shows the IOS Command Line Interface for Router1. The window title is "Router1" and it has tabs for "Physical", "Config", and "CLI". The main content area displays 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

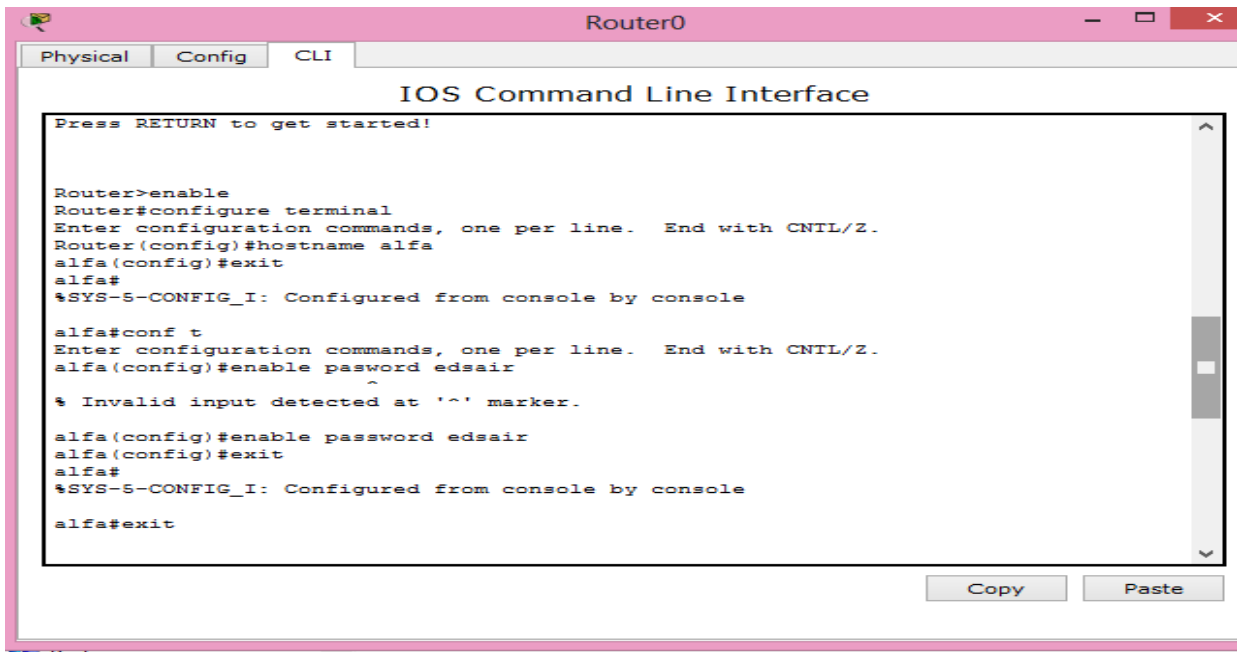
Press RETURN to get started!

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

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

## ii. Password

## Router 1.



The screenshot shows the IOS Command Line Interface for Router0. The window title is "Router0" and it has tabs for "Physical", "Config", and "CLI". The main content area displays the following text:

```
Press RETURN to get started!

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

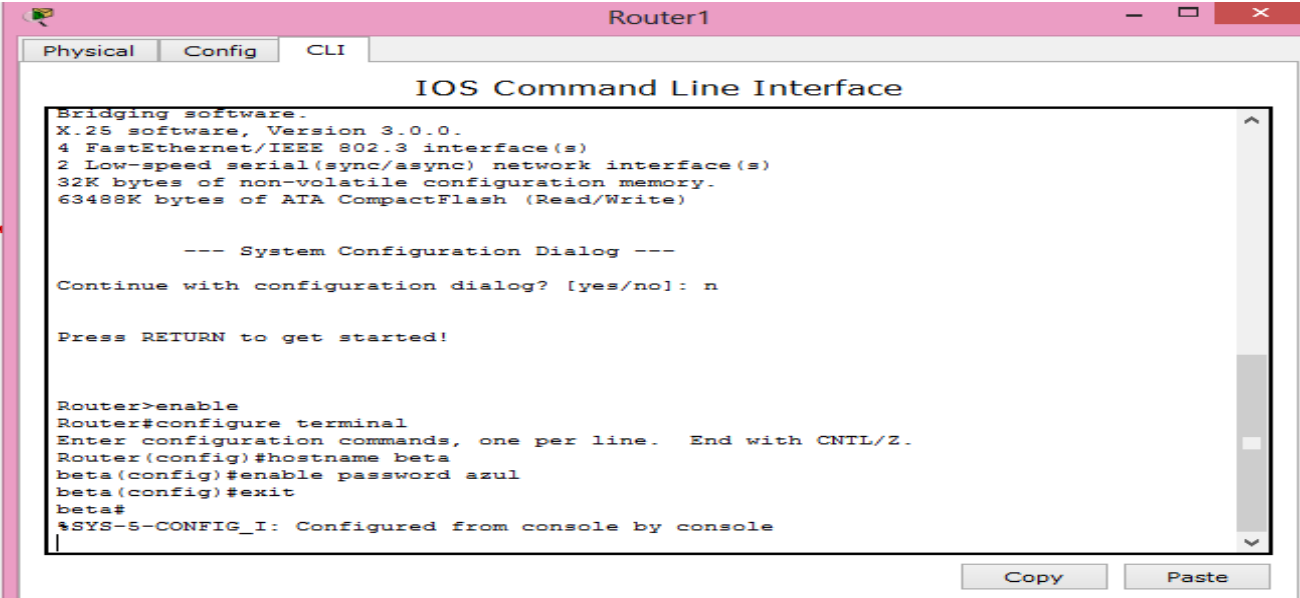
alfa#conf t
Enter configuration commands, one per line. End with CNTL/Z.
alfa(config)#enable password edsair
^
% Invalid input detected at '^' marker.

alfa(config)#enable password edsair
alfa(config)#exit
alfa#
%SYS-5-CONFIG_I: Configured from console by console

alfa#exit
```

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

## Router 2



The screenshot shows the CLI of Router1. The window title is "Router1". The tabs are "Physical", "Config", and "CLI". The main area is titled "IOS Command Line Interface". The text in the terminal is as follows:

```
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

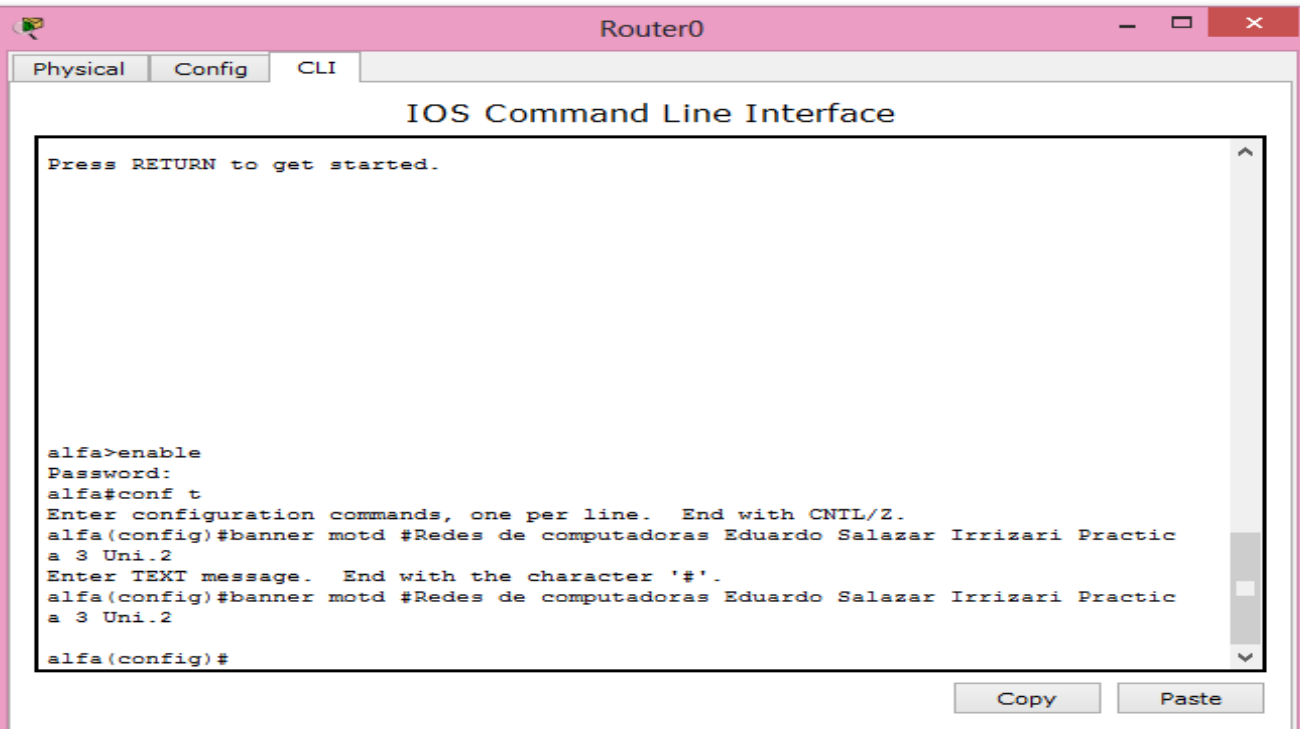
Press RETURN to get started!

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

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

### iii. Banner.

## Router 1.



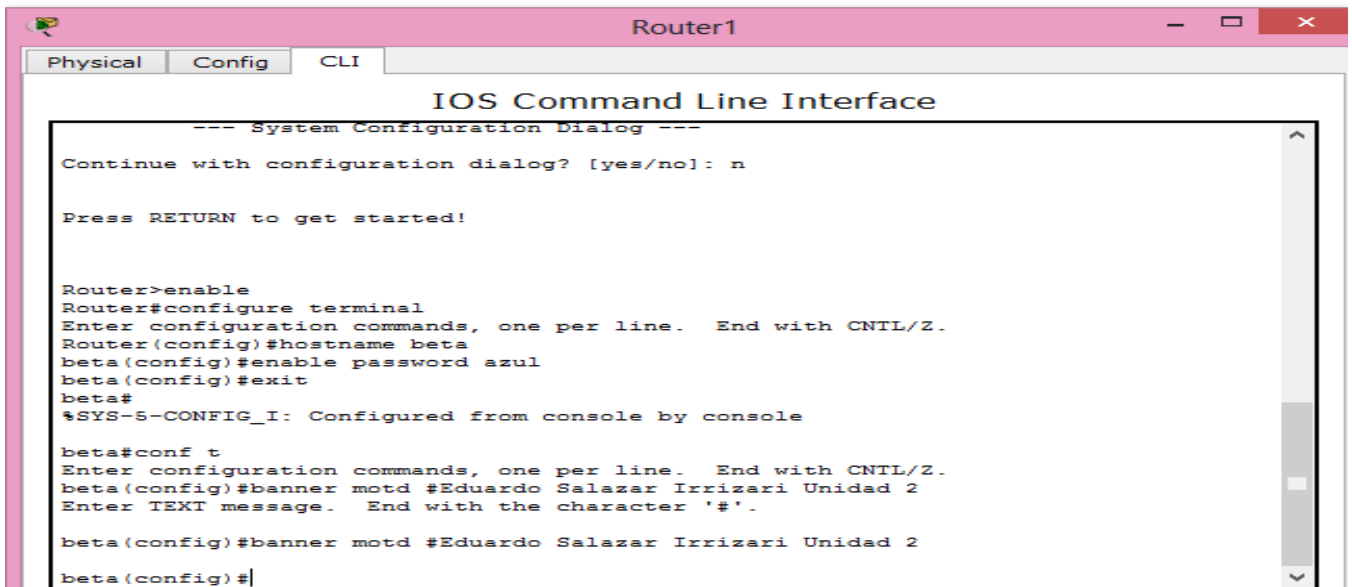
The screenshot shows the CLI of Router0. The window title is "Router0". The tabs are "Physical", "Config", and "CLI". The main area is titled "IOS Command Line Interface". The text in the terminal is as follows:

```
Press RETURN to get started.

alfa>enable
Password:
alfa#conf t
Enter configuration commands, one per line. End with CNTL/Z.
alfa(config)#banner motd #Redes de computadoras Eduardo Salazar Irrizari Practic
a 3 Uni.2
Enter TEXT message. End with the character '#'.
alfa(config)#banner motd #Redes de computadoras Eduardo Salazar Irrizari Practic
a 3 Uni.2
alfa(config)#
```

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

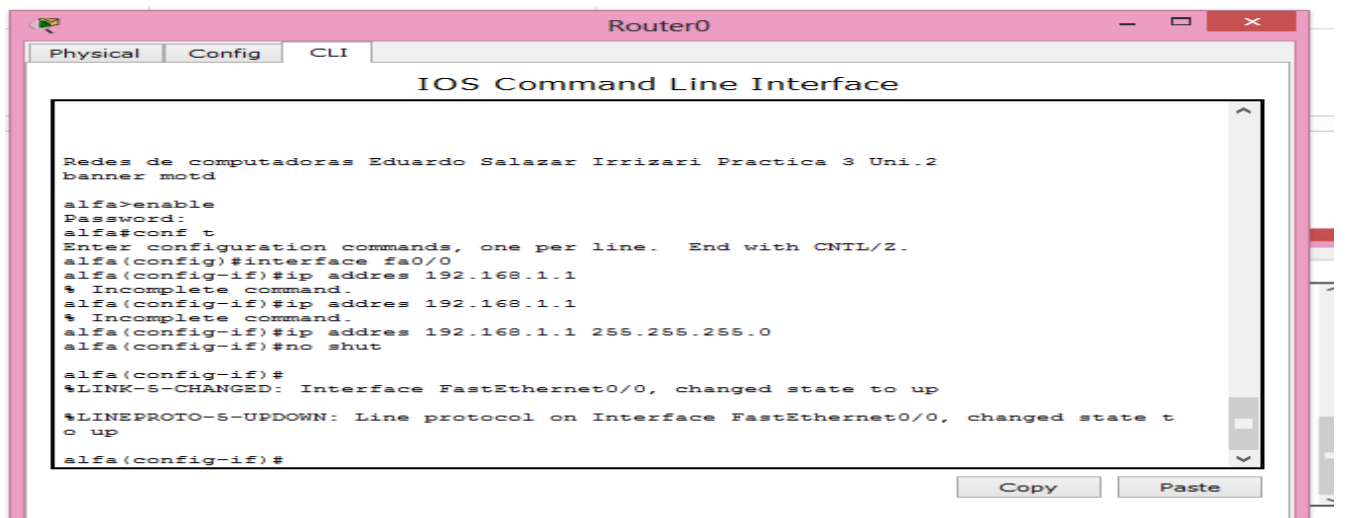
Router 2.



```
Router1
Physical Config CLI
IOS Command Line Interface
--- 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 beta
beta(config)#enable password azul
beta(config)#exit
beta#
%SYS-5-CONFIG_I: Configured from console by console
beta#conf t
Enter configuration commands, one per line. End with CNTL/Z.
beta(config)#banner motd #Eduardo Salazar Irrizari Unidad 2
Enter TEXT message. End with the character '#'.
beta(config)#banner motd #Eduardo Salazar Irrizari Unidad 2
beta(config)#
```

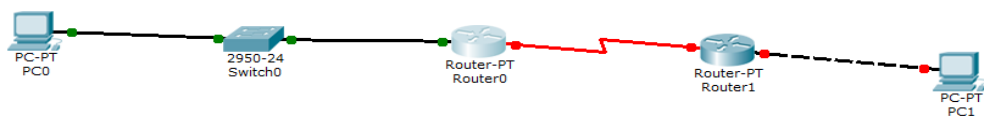
Pasamos a levantar los puertos.

Para este caso es el router 1.

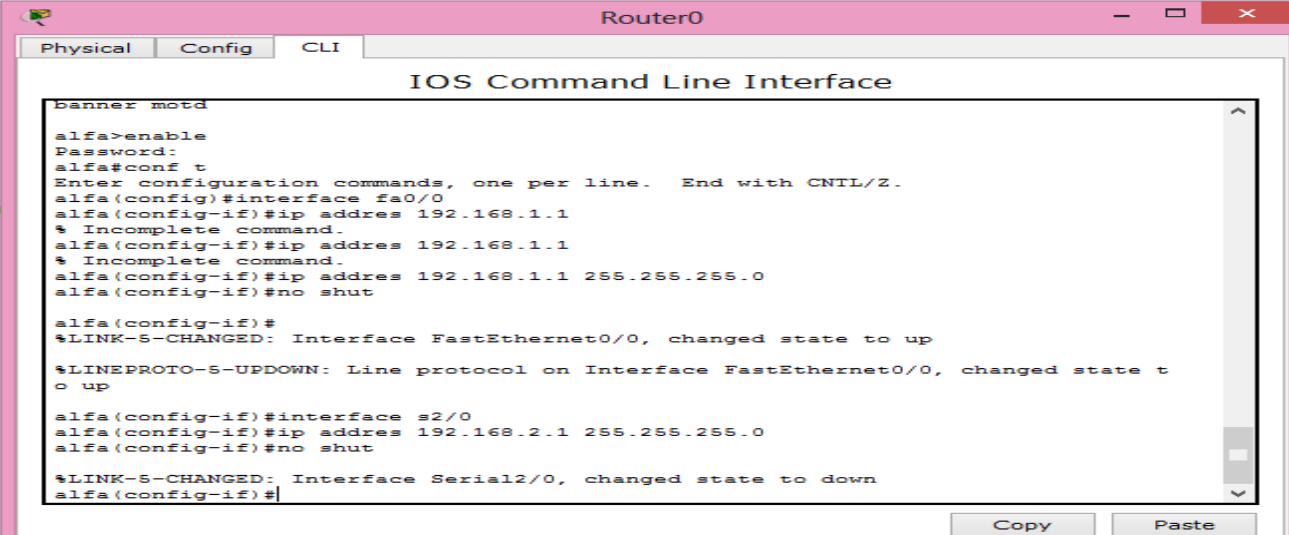


```
Router0
Physical Config CLI
IOS Command Line Interface
Redes de computadoras Eduardo Salazar Irrizari Practica 3 Uni.2
banner motd
alfa>enable
Password:
alfa#conf t
Enter configuration commands, one per line. End with CNTL/Z.
alfa(config)#interface fa0/0
alfa(config-if)#ip address 192.168.1.1
% Incomplete command.
alfa(config-if)#ip address 192.168.1.1
% Incomplete command.
alfa(config-if)#ip address 192.168.1.1 255.255.255.0
alfa(config-if)#no shut
alfa(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
alfa(config-if)#
```

Como podemos observar se conectan.

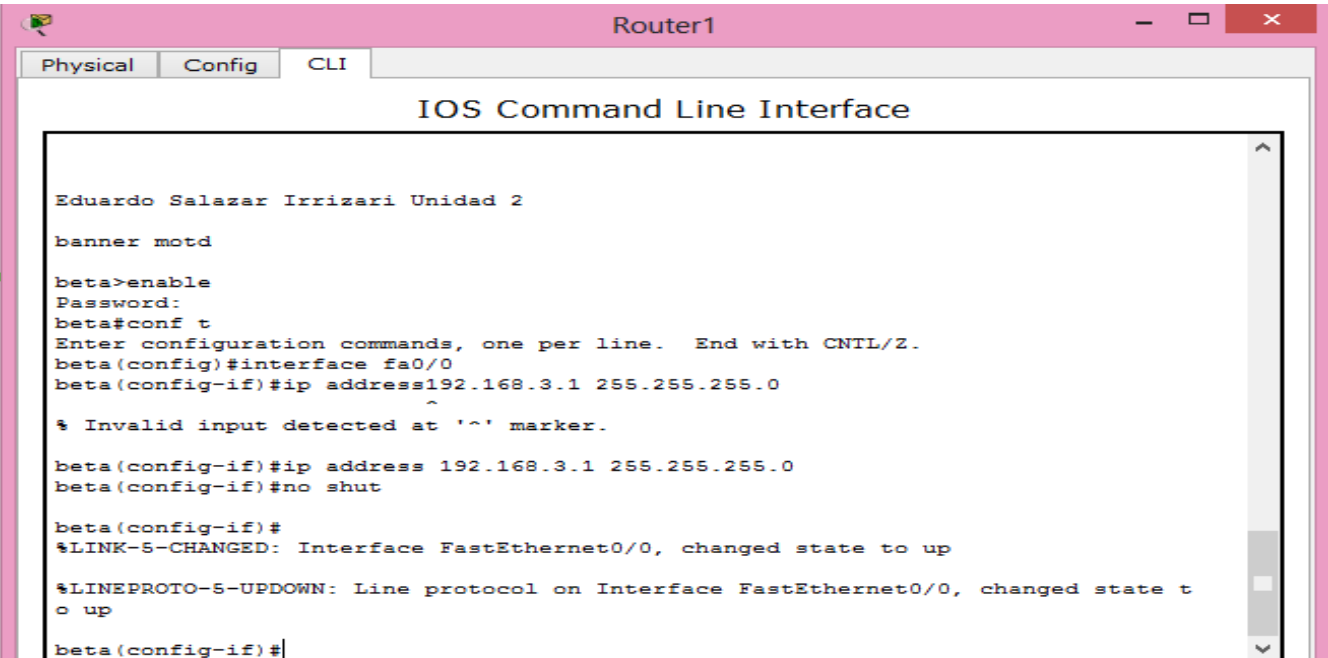


Ahora procedemos a levantar el serial 2/0.



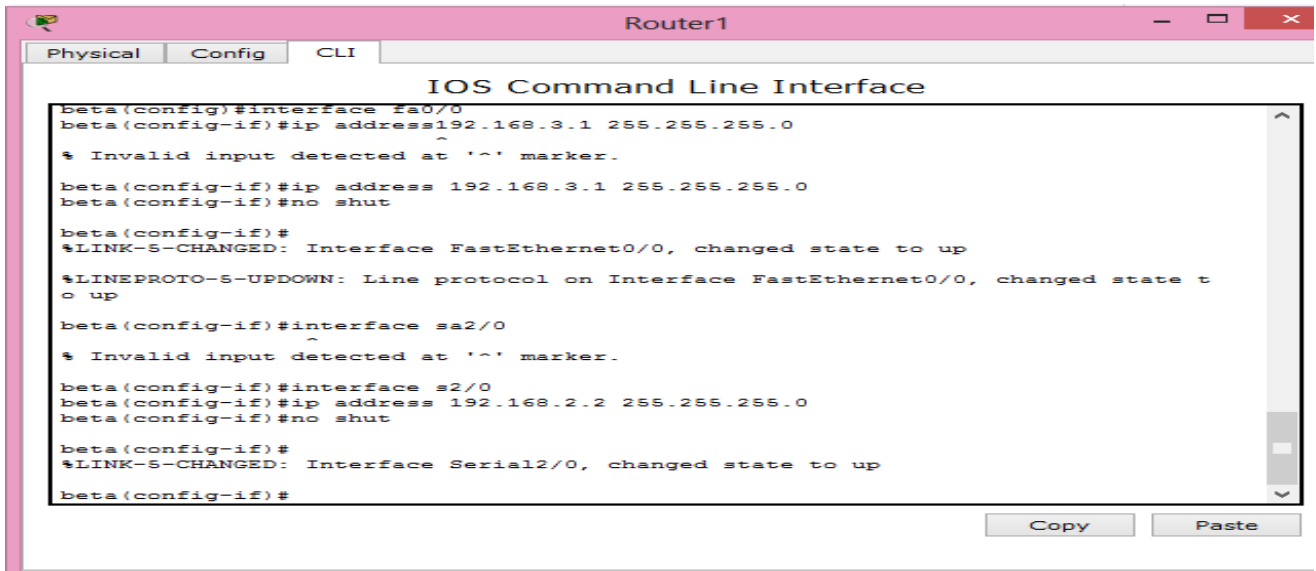
```
Router0
Physical Config CLI
IOS Command Line Interface
banner motd
alfa>enable
Password:
alfa#conf t
Enter configuration commands, one per line. End with CNTL/Z.
alfa(config)#interface fa0/0
alfa(config-if)#ip address 192.168.1.1
% Incomplete command.
alfa(config-if)#ip address 192.168.1.1
% Incomplete command.
alfa(config-if)#ip address 192.168.1.1 255.255.255.0
alfa(config-if)#no shut
alfa(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
alfa(config-if)#interface s2/0
alfa(config-if)#ip address 192.168.2.1 255.255.255.0
alfa(config-if)#no shut
%LINK-S-CHANGED: Interface Serial2/0, changed state to down
alfa(config-if)#
```

Después de que se haya hecho todo eso hay que realizar lo mismo al segundo router.



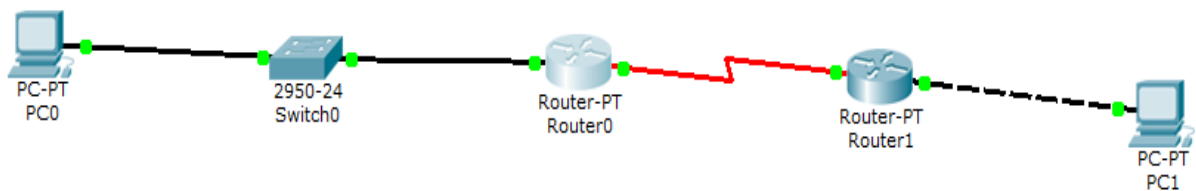
```
Router1
Physical Config CLI
IOS Command Line Interface
Eduardo Salazar Irrizari Unidad 2
banner motd
beta>enable
Password:
beta#conf t
Enter configuration commands, one per line. End with CNTL/Z.
beta(config)#interface fa0/0
beta(config-if)#ip address192.168.3.1 255.255.255.0
^
% Invalid input detected at '^' marker.
beta(config-if)#ip address 192.168.3.1 255.255.255.0
beta(config-if)#no shut
beta(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
beta(config-if)#
```

De esto sigue el serial.



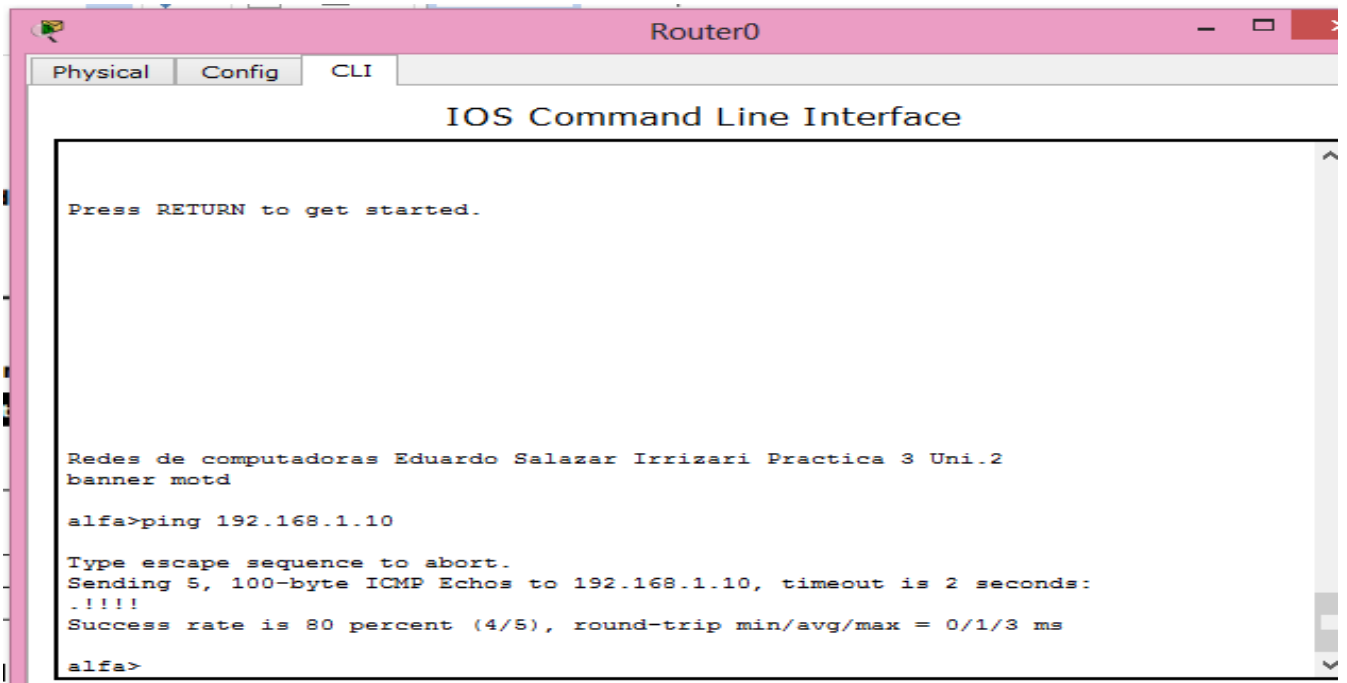
```
Router1
Physical Config CLI
IOS Command Line Interface
beta(config)#interface fa0/0
beta(config-if)#ip address 192.168.3.1 255.255.255.0
% Invalid input detected at '^' marker.
beta(config-if)#ip address 192.168.3.1 255.255.255.0
beta(config-if)#no shut
beta(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
beta(config-if)#interface s2/0
% Invalid input detected at '^' marker.
beta(config-if)#interface s2/0
beta(config-if)#ip address 192.168.2.2 255.255.255.0
beta(config-if)#no shut
beta(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
beta(config-if)#
```

Podemos comprobar que ya hay conexión.



- b) Verificar y probar las configuraciones mediante los comandos show, ping y traceroute. • Crear un archivo de configuración de inicio. • Recargar un archivo de configuración de inicio.

Ping a la maquina 1 del router1.



```
Router0
Physical Config CLI
IOS Command Line Interface

Press RETURN to get started.

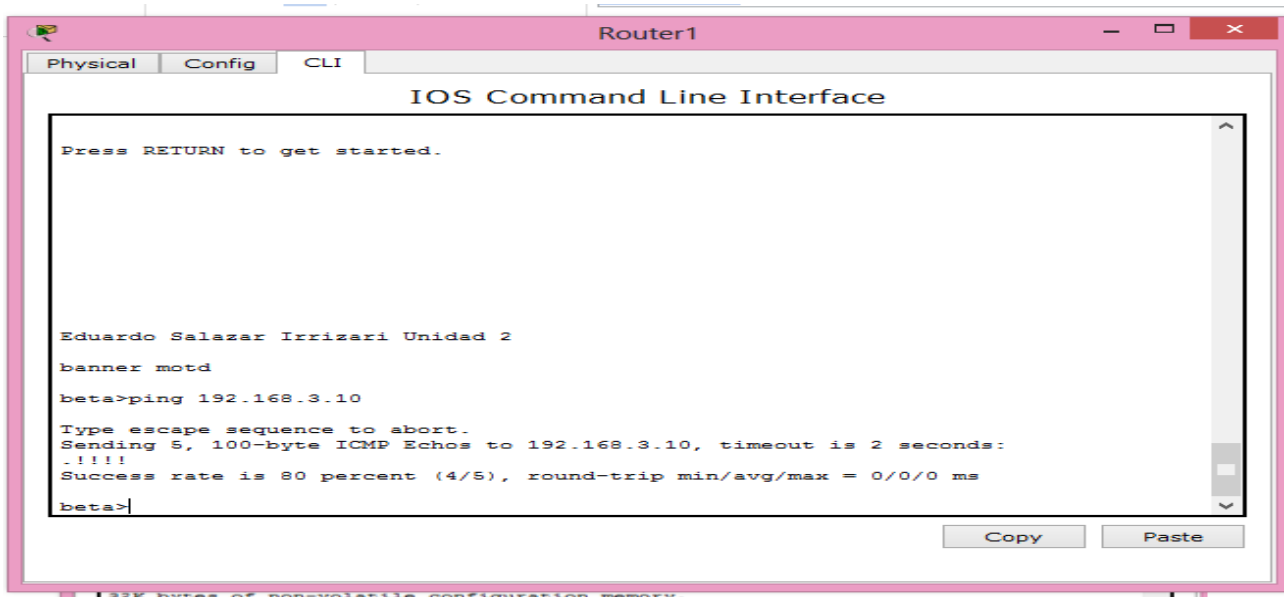
Redes de computadoras Eduardo Salazar Irrizari Practica 3 Uni.2
banner motd

alfa>ping 192.168.1.10

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.10, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/1/3 ms

alfa>
```

Ping del router 2 a la maquina 2.



```
Router1
Physical Config CLI
IOS Command Line Interface

Press RETURN to get started.

Eduardo Salazar Irrizari Unided 2
banner motd

beta>ping 192.168.3.10

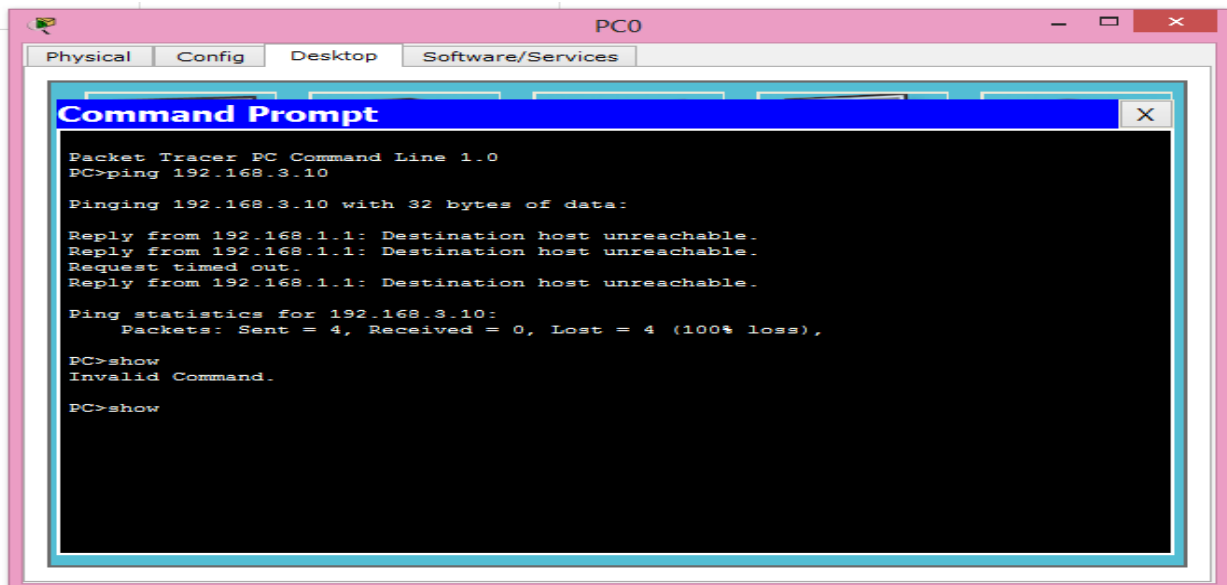
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.3.10, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms

beta>
```

Copy Paste

132K bytes of non-volatile configuration memory.

Después damos ping de la maquina 1 al 2.



The screenshot shows a Windows PC window titled "PCO" with tabs for "Physical", "Config", "Desktop", and "Software/Services". A "Command Prompt" window is open, displaying the following text:

```
Packet Tracer PC Command Line 1.0
PC>ping 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

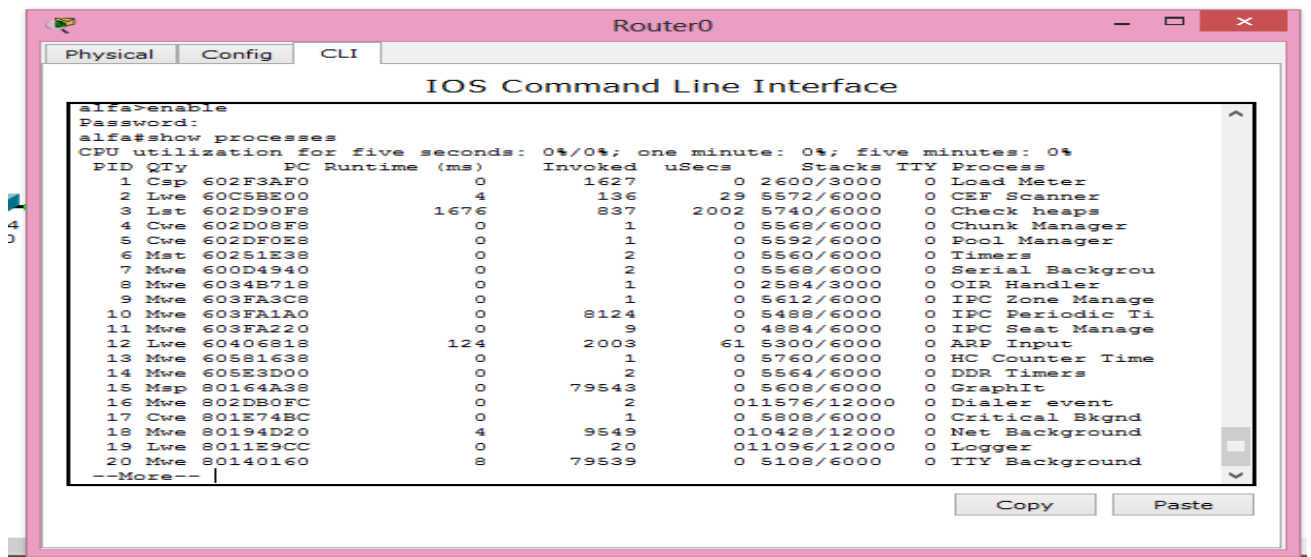
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Request timed out.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

PC>show
Invalid Command.

PC>show
```

Utilizando el comando show processes nos muestra esto.



The screenshot shows a "Router0" window with tabs for "Physical", "Config", and "CLI". The "IOS Command Line Interface" is active, displaying the following text:

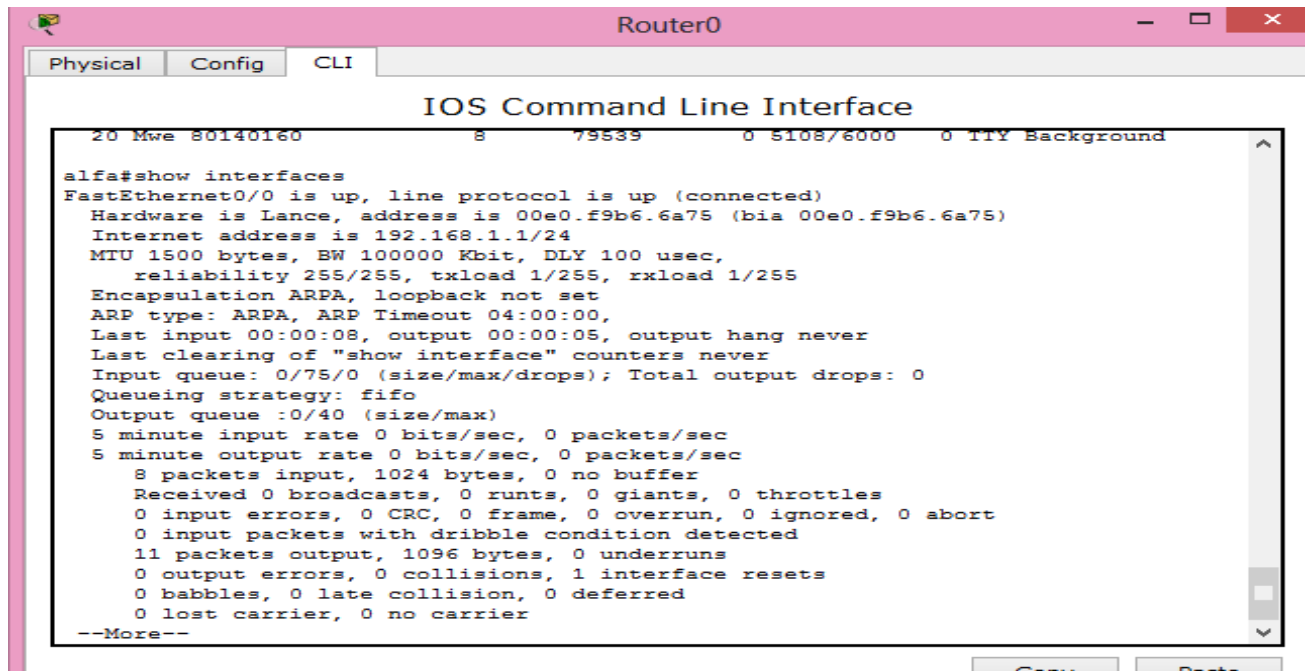
```
alfa>enable
Password:
alfa#show processes
CPU utilization for five seconds: 0%/0%; one minute: 0%; five minutes: 0%

```

PID	Qty	PC	Runtime (ms)	Invoked	uSecs	Stacks	TTY	Process
1	Csp	602F3AF0	0	1627	0	2600/3000	0	Load Meter
2	Lwe	60C5BE00	4	136	29	5572/6000	0	CEF Scanner
3	Lst	602D90F8	1676	837	2002	5740/6000	0	Check heaps
4	Cwe	602D09F8	0	1	0	5568/6000	0	Chunk Manager
5	Cwe	602DF0E8	0	1	0	5592/6000	0	Pool Manager
6	Mst	60251E38	0	2	0	5560/6000	0	Timers
7	Mwe	600D4940	0	2	0	5568/6000	0	Serial Backgrou
8	Mwe	6034B718	0	1	0	2584/3000	0	OIR Handler
9	Mwe	603FA3C8	0	1	0	5612/6000	0	IPC Zone Manage
10	Mwe	603FA1A0	0	8124	0	5488/6000	0	IPC Periodic Ti
11	Mwe	603FA220	0	9	0	4884/6000	0	IPC Seat Manage
12	Lwe	60406818	124	2003	61	5300/6000	0	ARP Input
13	Mwe	60581638	0	1	0	5760/6000	0	HC Counter Time
14	Mwe	605E3D00	0	2	0	5564/6000	0	DDR Timers
15	Msp	80164A38	0	79543	0	5608/6000	0	GraphIt
16	Mwe	802DB0FC	0	2	0	11576/12000	0	Dialer event
17	Cwe	801E74BC	0	1	0	5808/6000	0	Critical Bkgn
18	Mwe	80194D20	4	9549	0	10428/12000	0	Net Background
19	Lwe	8011E9CC	0	20	0	11096/12000	0	Logger
20	Mwe	80140160	8	79539	0	5108/6000	0	TTY Background

--More--

Después show interfaces.



```
Router0
Physical Config CLI
IOS Command Line Interface
20 Mwe 80140160      8      79539      0 5108/6000      0 TTY Background
alfa#show interfaces
FastEthernet0/0 is up, line protocol is up (connected)
Hardware is Lance, address is 00e0.f9b6.6a75 (bia 00e0.f9b6.6a75)
Internet address is 192.168.1.1/24
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
ARP type: ARPA, ARP Timeout 04:00:00,
Last input 00:00:08, output 00:00:05, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops: 0
Queueing strategy: fifo
Output queue :0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 8 packets input, 1024 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 0 input packets with dribble condition detected
11 packets output, 1096 bytes, 0 underruns
 0 output errors, 0 collisions, 1 interface resets
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier
--More--
```

## CONCLUSIÓN

En esta práctica pude captar como es que un administrador de red debe levantar puertos para establecer las conexiones, pero en esta ocasión se hizo por medio de comandos, era necesario establecer las direcciones a cada uno de los dispositivos. Estos puertos son Fast/Ethernet y seriales (s2/0/, aunque hay que tener en cuenta que solo se levantaron estos puertos, porque los router cuentan con otros puertos.