

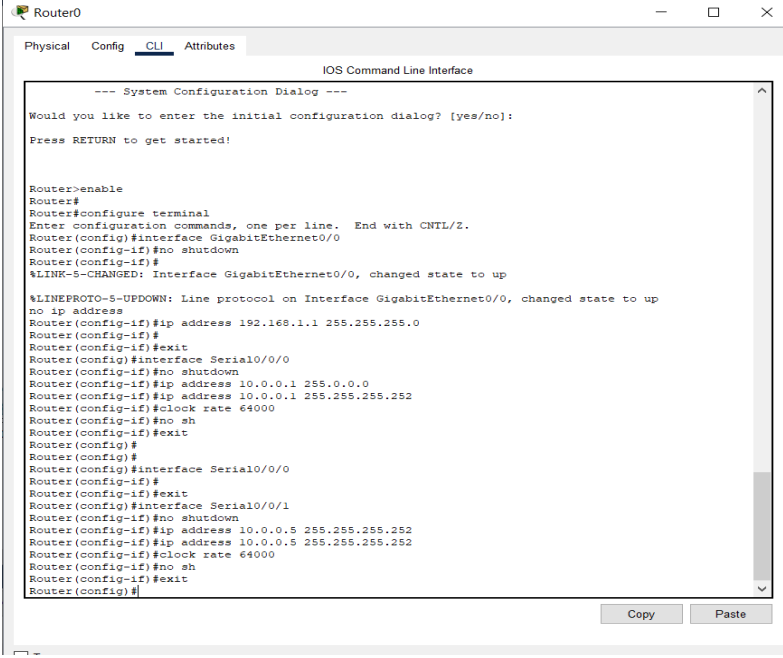
Configurar routers con RIP y OSPF

Wuke Zhang

1-ASIR

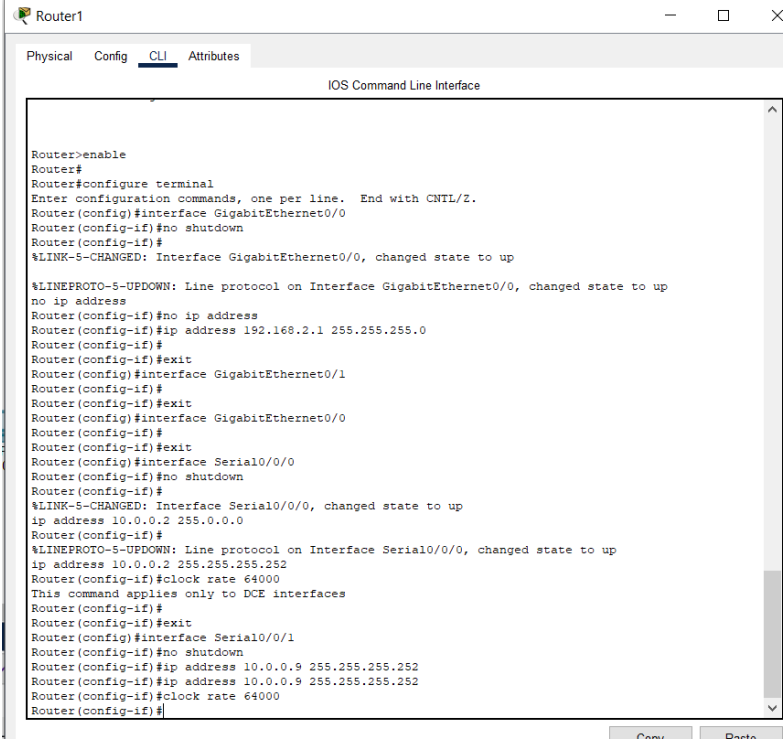
Ejercicio de Configuración de un Router con RIP en Cisco Packet Tracer

Configurar Interfaces en los Routers: Repite estos pasos para cada router, ajustando las direcciones IP según corresponda.



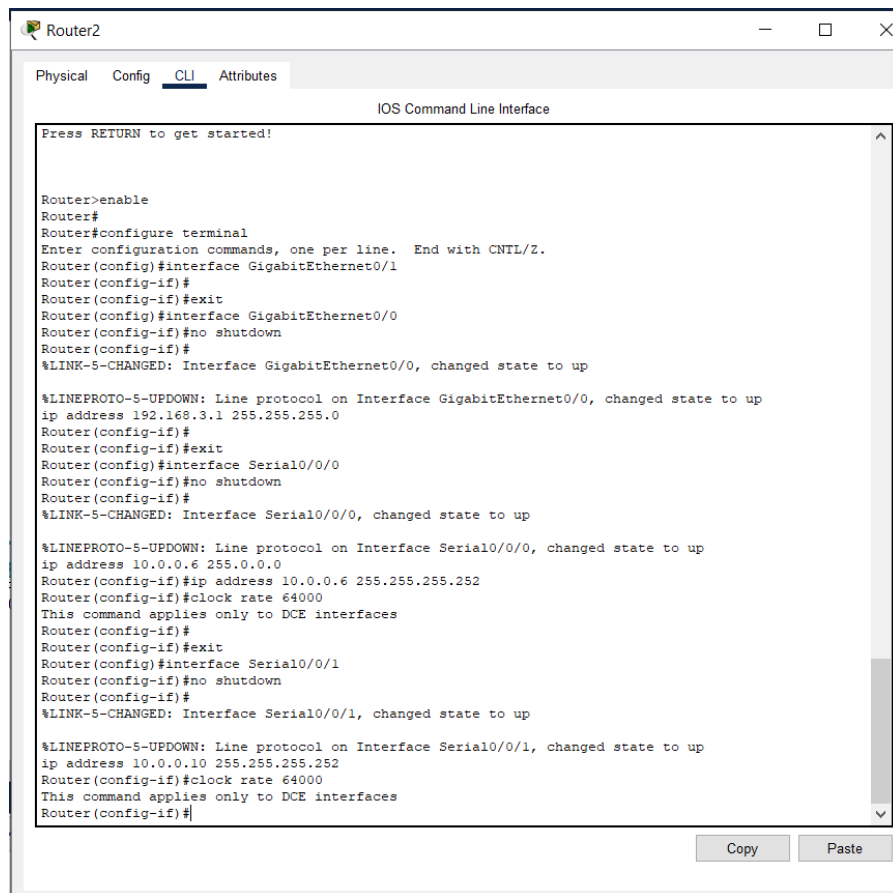
The screenshot shows the CLI window for Router0. The configuration process starts with 'enable' to enter privileged mode, followed by 'configure terminal' to enter global configuration mode. The user enters 'interface GigabitEthernet0/0', followed by 'no shutdown' and 'ip address 192.168.1.1 255.255.255.0'. Then, they enter 'interface Serial0/0/0', followed by 'no shutdown', 'ip address 10.0.0.1 255.0.0.0', and 'clock rate 64000'. Finally, they enter 'interface Serial0/0/1', followed by 'no shutdown', 'ip address 10.0.0.5 255.255.255.252', and 'clock rate 64000'. The configuration ends with 'exit' and 'end'.

```
Router0>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
no ip address
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#no shutdown
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#clock rate 64000
Router(config-if)#no sh
Router(config-if)#exit
Router(config)#
Router(config)#interface Serial0/0/1
Router(config-if)#no shutdown
Router(config-if)#ip address 10.0.0.5 255.255.255.252
Router(config-if)#clock rate 64000
Router(config-if)#no sh
Router(config-if)#exit
Router(config)#
```



The screenshot shows the CLI window for Router1. The configuration process starts with 'enable' to enter privileged mode, followed by 'configure terminal' to enter global configuration mode. The user enters 'interface GigabitEthernet0/0', followed by 'no shutdown' and 'ip address 192.168.2.1 255.255.255.0'. Then, they enter 'interface GigabitEthernet0/1', followed by 'no shutdown' and 'ip address 10.0.0.2 255.0.0.0'. Next, they enter 'interface Serial0/0/0', followed by 'no shutdown', 'ip address 10.0.0.2 255.255.255.252', and 'clock rate 64000'. Finally, they enter 'interface Serial0/0/1', followed by 'no shutdown', 'ip address 10.0.0.9 255.255.255.252', and 'clock rate 64000'. The configuration ends with 'exit' and 'end'.

```
Router1>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
no ip address
Router(config-if)#no ip address
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#no shutdown
Router(config-if)#
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
ip address 10.0.0.2 255.0.0.0
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
ip address 10.0.0.2 255.255.255.252
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/1
Router(config-if)#no shutdown
Router(config-if)#ip address 10.0.0.9 255.255.255.252
Router(config-if)#ip address 10.0.0.9 255.255.255.252
Router(config-if)#clock rate 64000
Router(config-if)#
Router(config-if)#
```



The screenshot shows a window titled "Router2" with tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The interface shows the following commands and their outputs:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface GigabitEthernet0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
ip address 192.168.3.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
ip address 10.0.0.6 255.0.0.0
Router(config-if)#ip address 10.0.0.6 255.255.255.252
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/1
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up
ip address 10.0.0.10 255.255.255.252
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces
Router(config-if)#
```

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

Configurar RIP en los Routers:

1.Verificar la Configuración:

odo de imagen

Physical Config CLI Attributes

IOS Command Line Interface

```
Router(config)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up

Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.168.1.0
Router(config-router)#network 10.0.0.0
Router(config-router)#exit
Router(config)#do write
Building configuration...
[OK]
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show ip route
Codes: L - local, C - connected, S - static, 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

    10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C       10.0.0.0/30 is directly connected, Serial0/0/0
L       10.0.0.1/32 is directly connected, Serial0/0/0
C       10.0.0.4/30 is directly connected, Serial0/0/1
L       10.0.0.5/32 is directly connected, Serial0/0/1
       192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0

Router#
```

Copy Paste

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router(config-if)#ip address 10.0.0.9 255.255.255.252
Router(config-if)#clock rate 64000
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up

Router(config-if)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.168.2.0
Router(config-router)#network 10.0.0.0
Router(config-router)#exit
Router(config)#do write
Building configuration...
[OK]
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show ip route
Codes: L - local, C - connected, S - static, 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

    10.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
C       10.0.0.0/30 is directly connected, Serial0/0/0
L       10.0.0.2/32 is directly connected, Serial0/0/0
R       10.0.0.4/30 [120/1] via 10.0.0.1, 00:00:22, Serial0/0/0
C       10.0.0.8/30 is directly connected, Serial0/0/1
L       10.0.0.9/32 is directly connected, Serial0/0/1
R       192.168.1.0/24 [120/1] via 10.0.0.1, 00:00:22, Serial0/0/0
       192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/24 is directly connected, GigabitEthernet0/0
L       192.168.2.1/32 is directly connected, GigabitEthernet0/0

Router#
```

Router2

Physical Config CLI Attributes

IOS Command Line Interface

```

$LINK-5-CHANGED: Interface Serial0/0/1, changed state to up

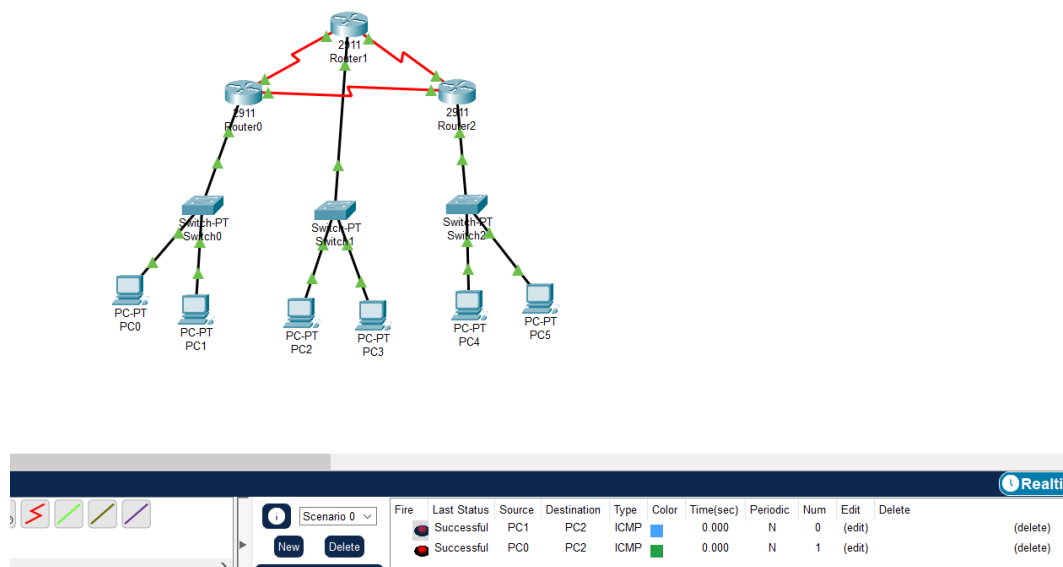
$LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up
ip address 10.0.0.10 255.255.255.252
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.168.3.0
Router(config-router)#network 10.0.0.0
Router(config-router)#exit
Router(config)#do wr
Building configuration...
[OK]
Router(config)#exit
Router#
$SYS-5-CONFIG I: Configured from console by console
show ip route
Codes: L - local, C - connected, S - static, 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

    10.0.0.0/8 is variably subnetted, 5 subnets, 2 masks
R       10.0.0.0/30 [120/1] via 10.0.0.9, 00:00:10, Serial0/0/1
         [120/1] via 10.0.0.5, 00:00:10, Serial0/0/0
C       10.0.0.4/30 is directly connected, Serial0/0/0
L       10.0.0.6/32 is directly connected, Serial0/0/0
C       10.0.0.8/30 is directly connected, Serial0/0/1
L       10.0.0.10/32 is directly connected, Serial0/0/1
R       192.168.1.0/24 [120/1] via 10.0.0.5, 00:00:10, Serial0/0/0
R       192.168.2.0/24 [120/1] via 10.0.0.9, 00:00:10, Serial0/0/1
192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/0
L       192.168.3.1/32 is directly connected, GigabitEthernet0/0
--More--

```

Verificar Conectividad:

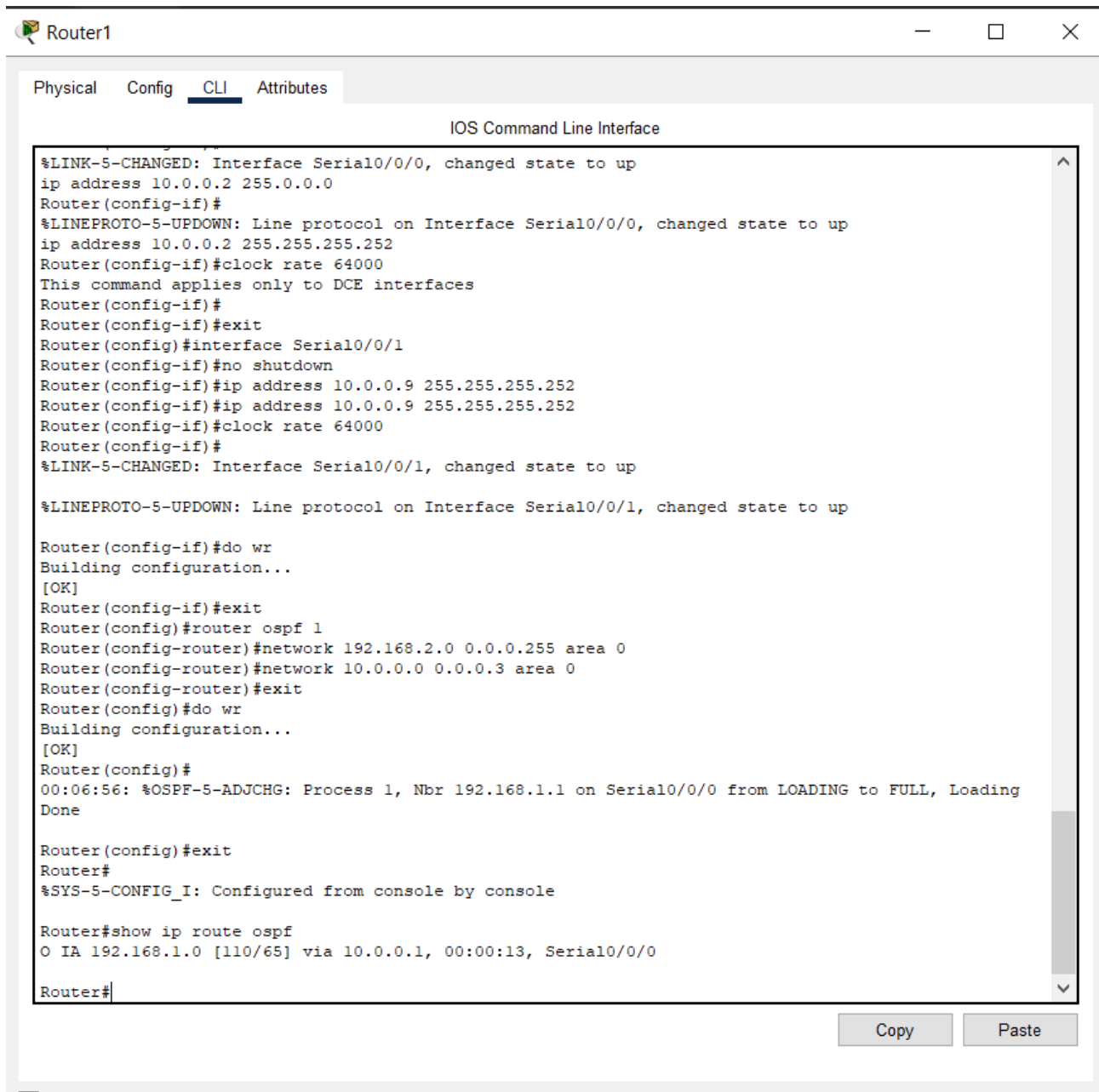


Pasos para Configurar OSPF

Configurar Interfaces en los Routers: Repite estos pasos para cada router, ajustando las direcciones IP según corresponda (igual que en el ejercicio anterior).

1. Configurar OSPF en los Routers:

2. Verificar la Configuración:



The screenshot shows a Cisco Router CLI window titled "Router1". The window has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" selected. The main area displays the "IOS Command Line Interface" with the following commands and output:

```
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
ip address 10.0.0.2 255.0.0.0
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
ip address 10.0.0.2 255.255.255.252
Router(config-if)#clock rate 64000
This command applies only to DCE interfaces
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/1
Router(config-if)#no shutdown
Router(config-if)#ip address 10.0.0.9 255.255.255.252
Router(config-if)#ip address 10.0.0.9 255.255.255.252
Router(config-if)#clock rate 64000
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up

Router(config-if)#do wr
Building configuration...
[OK]
Router(config-if)#exit
Router(config)#router ospf 1
Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#network 10.0.0.0 0.0.0.3 area 0
Router(config-router)#exit
Router(config)#do wr
Building configuration...
[OK]
Router(config)#
00:06:56: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.1.1 on Serial0/0/0 from LOADING to FULL, Loading
Done

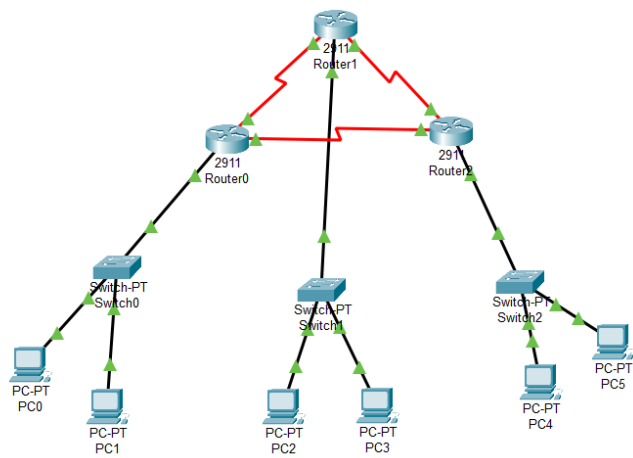
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show ip route ospf
O IA 192.168.1.0 [110/65] via 10.0.0.1, 00:00:13, Serial0/0/0

Router#
```

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

Verificar Conectividad:



Scenario 0 New Delete

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC2	ICMP		0.000	N	0	(edit)	(delete)

Realtime