

ACTIVIDAD 2.2.13.POINT TO POINT SINGLE ÁREA OSPFV2 CONFIGURATION

Memoria Técnica

Ignacio Andrade Salazar

7 A IELC

CONTENIDO

- 1. Antecedentes
 - 1.1. Objetivo
 - 1.2. Alcance
 - 1.3. Descripción técnica de la solución
- 2. Esquema General
- 3. Script CTC
- 4. Pruebas

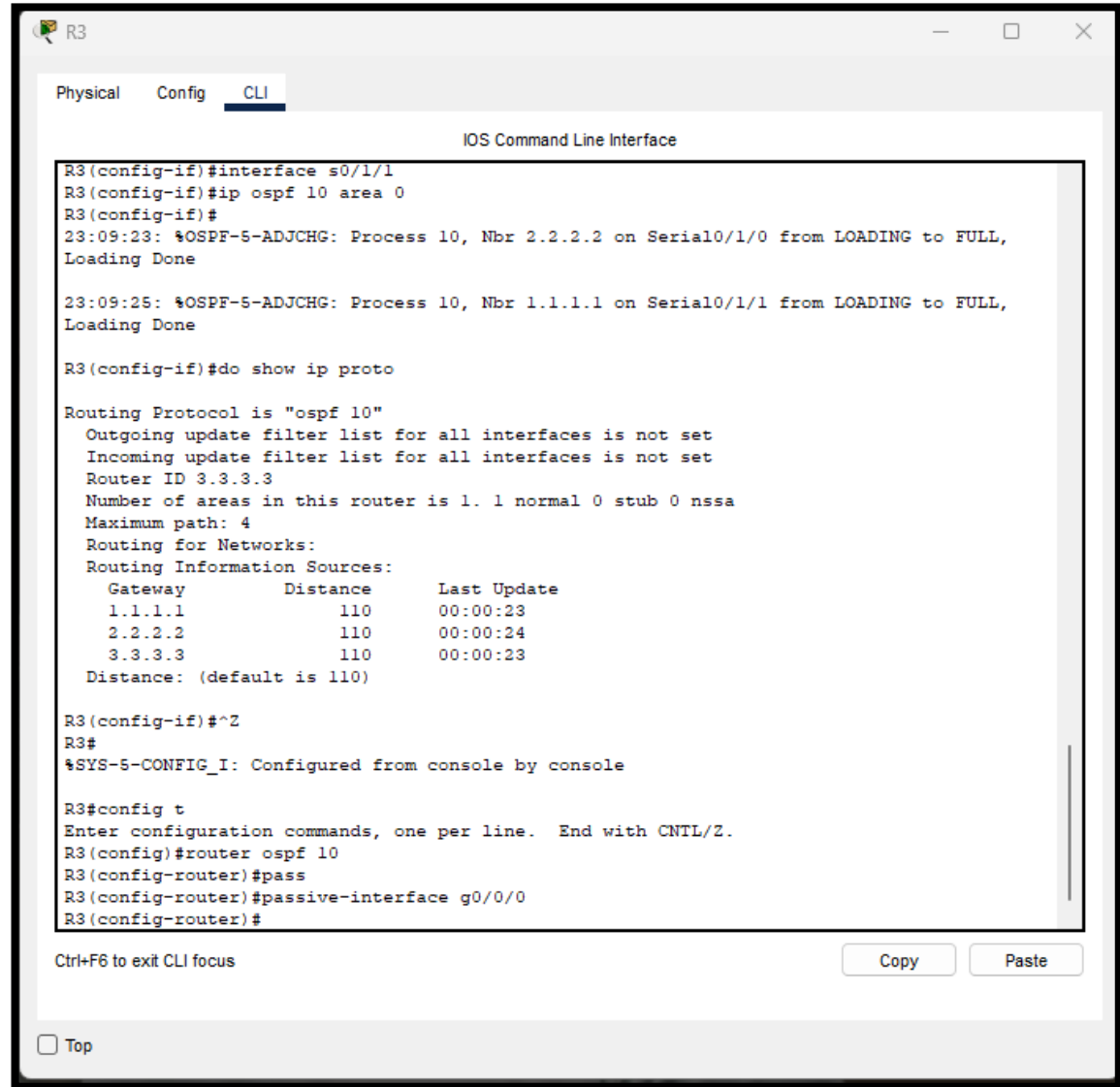
I. ANTECEDENTES

- **I.1. Objetivos**
 - Part 1: Configurar ID de router.
 - Parte 2: Configurar redes para el enrutamiento OSPF.
 - Parte 3: Configure las Interfaces Pasivas.
 - Parte 4: Verifique la configuración OSPF.
- **I.2. Alcance**
 - En esta actividad, activará el enrutamiento OSPF mediante instrucciones de red y máscaras comodín, configurará el enrutamiento OSPF en interfaces y utilizará máscaras cuádruple cero de instrucciones de red. Además, configurará identificadores de router explícitos e interfaces pasivas.

2. DESCRIPCIÓN TÉCNICA DE LA SOLUCIÓN

Parte 1: Configurar ID del router.

PASO 1: CONFIGURAR ID DEL ROUTER.



R3

Physical Config CLI

IOS Command Line Interface

```
R3(config-if)#interface s0/1/1
R3(config-if)#ip ospf 10 area 0
R3(config-if)#
23:09:23: %OSPF-5-ADJCHG: Process 10, Nbr 2.2.2.2 on Serial0/1/0 from LOADING to FULL, Loading Done

23:09:25: %OSPF-5-ADJCHG: Process 10, Nbr 1.1.1.1 on Serial0/1/1 from LOADING to FULL, Loading Done

R3(config-if)#do show ip proto

Routing Protocol is "ospf 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 3.3.3.3
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
  Routing Information Sources:
    Gateway         Distance      Last Update
    1.1.1.1           110          00:00:23
    2.2.2.2           110          00:00:24
    3.3.3.3           110          00:00:23
  Distance: (default is 110)

R3(config-if)#^Z
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#router ospf 10
R3(config-router)#pass
R3(config-router)#passive-interface g0/0/0
R3(config-router)#
```

Ctrl+F6 to exit CLI focus

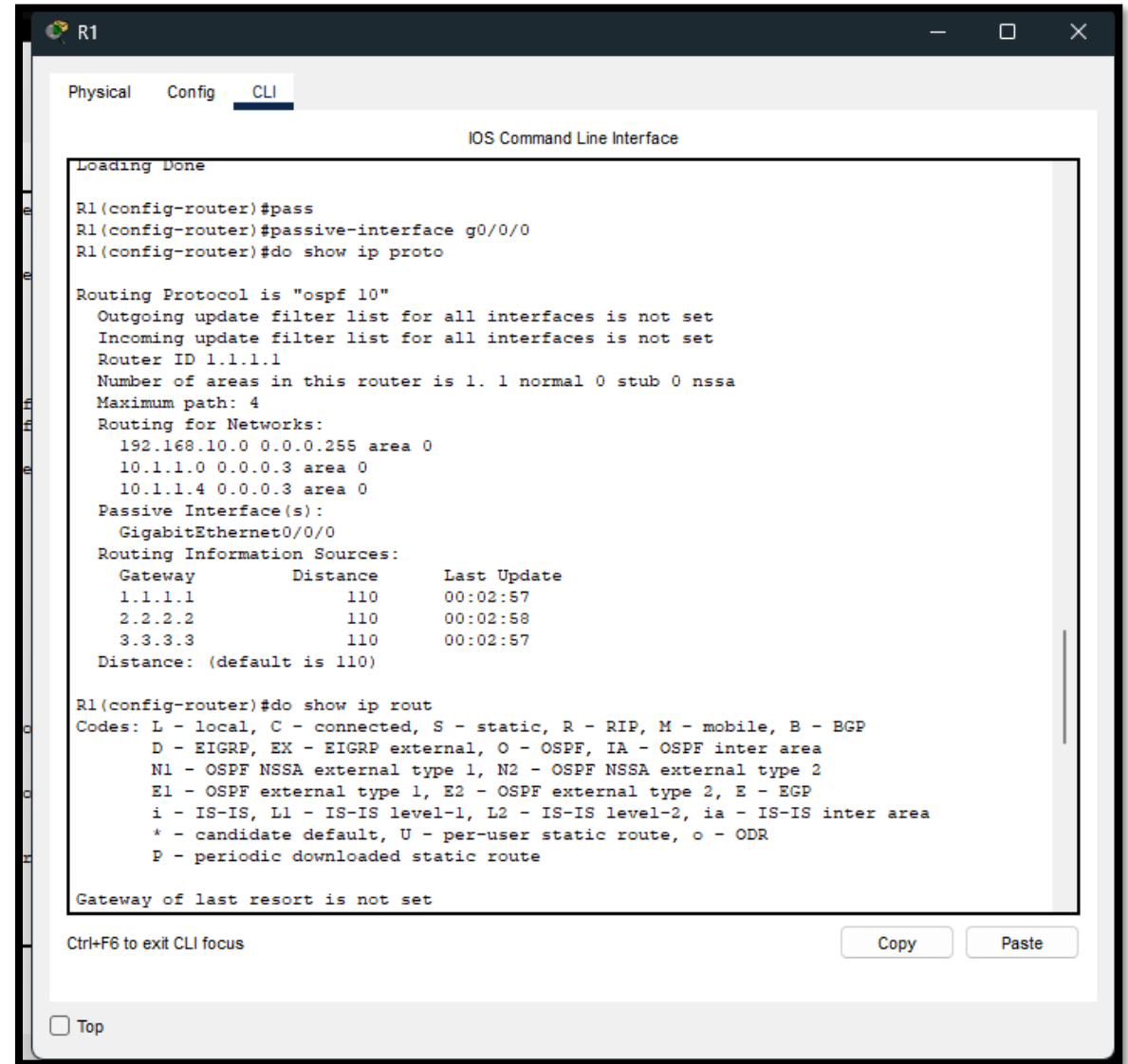
Copy Paste

☐ Top

2. DESCRIPCIÓN TÉCNICA DE LA SOLUCIÓN

Parte 2: Configurar redes para enrutamiento OSPF

**PASO 1: CONFIGURAR
REDES PARA
ENRUTAMIENTO OSPF
MEDIANTE COMANDOS
DE RED Y MÁSCARAS
COMODÍN.**



The screenshot shows a Cisco IOS Command Line Interface (CLI) window for router R1. The window has tabs for 'Physical', 'Config', and 'CLI', with 'CLI' being the active tab. The title bar indicates 'R1' and standard window controls. The main area displays the following text:

```
Loading Done

R1(config-router)#pass
R1(config-router)#passive-interface g0/0/0
R1(config-router)#do show ip proto

Routing Protocol is "ospf 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 1.1.1.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    192.168.10.0 0.0.0.255 area 0
    10.1.1.0 0.0.0.3 area 0
    10.1.1.4 0.0.0.3 area 0
  Passive Interface(s):
    GigabitEthernet0/0/0
  Routing Information Sources:
    Gateway         Distance      Last Update
    1.1.1.1           110          00:02:57
    2.2.2.2           110          00:02:58
    3.3.3.3           110          00:02:57
  Distance: (default is 110)

R1(config-router)#do show ip rout
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
```

At the bottom of the CLI window, there is a status bar with the text 'Ctrl+F6 to exit CLI focus' on the left, and two buttons labeled 'Copy' and 'Paste' on the right. Below the status bar is a checkbox labeled 'Top'.

**PASO 2: CONFIGURE LAS
REDES PARA EL
ENRUTAMIENTO OSPF
MEDIANTE DIRECCIONES
IP DE INTERFAZ Y
MÁSCARAS CUÁDRUPLE
CERO.**

```
R2
Physical Config CLI
IOS Command Line Interface

Interface      IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0/0  192.168.20.1    YES manual up          up
GigabitEthernet0/0/1  unassigned      YES unset  administratively down down
Serial0/1/0         10.1.1.2        YES manual up          up
Serial0/1/1         10.1.1.9        YES manual up          up
Vlan1             unassigned      YES unset  administratively down down

R2(config-router)#network 192.168.20.1 0.0.0.0 area 0
R2(config-router)#network 10.1.1.2 0.0.0.0 area 0
R2(config-router)#network 10.1.1.9 0.0.0.0 area 0
23:06:33: %OSPF-5-ADJCHG: Process 10, Nbr 1.1.1.1 on Serial0/1/0 from LOADING to FULL, Loading Done

R2(config-router)#do show ip protoco

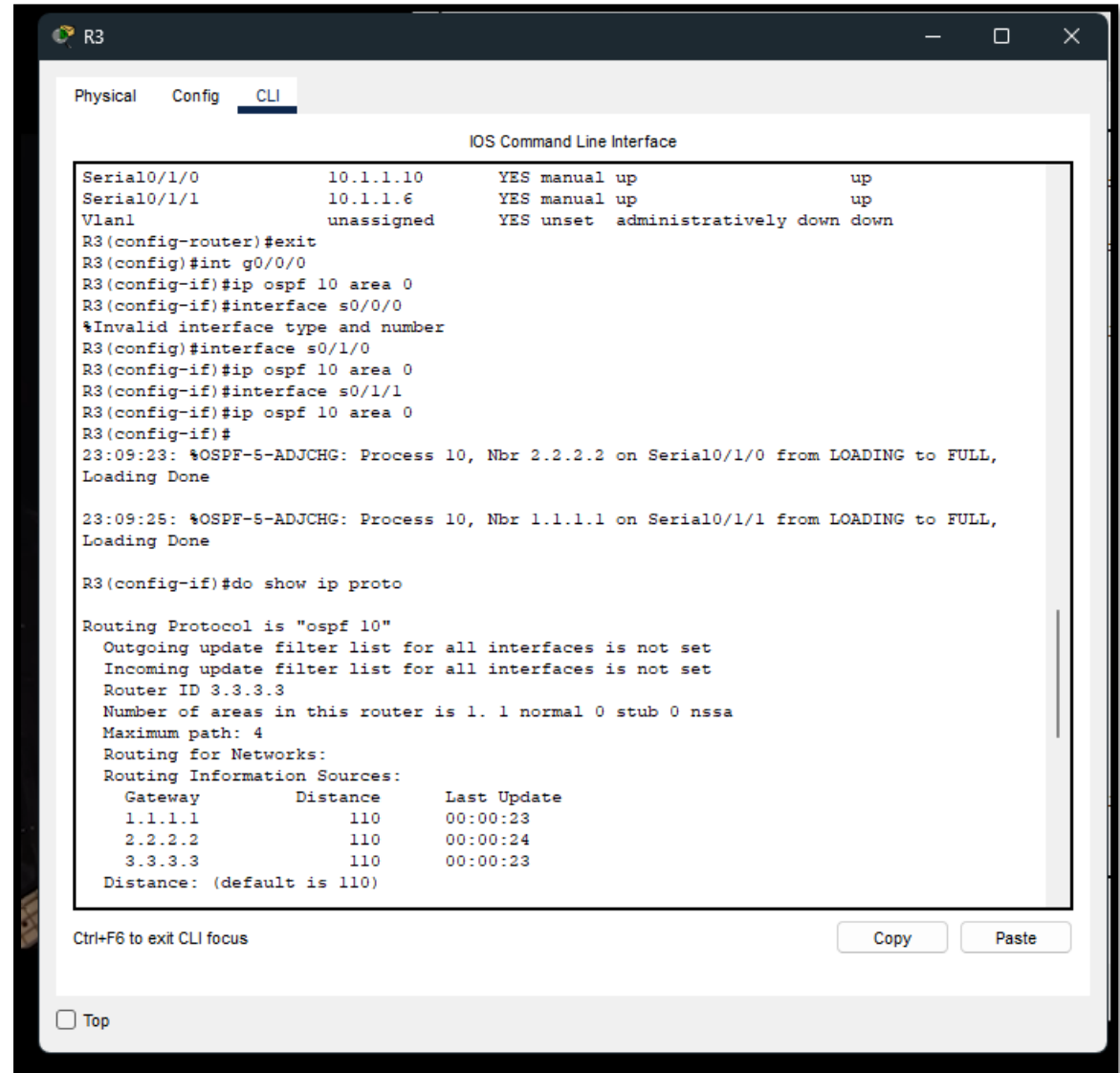
Routing Protocol is "ospf 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 2.2.2.2
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    192.168.20.1 0.0.0.0 area 0
    10.1.1.2 0.0.0.0 area 0
    10.1.1.9 0.0.0.0 area 0
  Routing Information Sources:
    Gateway         Distance      Last Update
    1.1.1.1          110          00:00:33
    2.2.2.2          110          00:00:33
  Distance: (default is 110)

R2(config-router)#
23:09:23: %OSPF-5-ADJCHG: Process 10, Nbr 3.3.3.3 on Serial0/1/1 from LOADING to FULL, Loading Done

R2(config-router)#pas

Ctrl+F6 to exit CLI focus
Copy Paste
Top
```


PASO 3: CONFIGURAR EL ENRUTAMIENTO OSPF EN LAS INTERFACES DEL ROUTER



The screenshot shows a Cisco IOS Command Line Interface (CLI) window for router R3. The window has tabs for Physical, Config, and CLI, with the CLI tab selected. The CLI shows the configuration of OSPF on interfaces Serial0/1/0 and Serial0/1/1. The configuration includes setting the IP address, enabling OSPF, and configuring the interface. The output shows the OSPF process is running and the interfaces are up. The router ID is 3.3.3.3. The output also shows the Routing Information Sources table.

```
R3
Physical Config CLI
IOS Command Line Interface

Serial0/1/0      10.1.1.10      YES manual up      up
Serial0/1/1      10.1.1.6       YES manual up      up
Vlan1            unassigned     YES unset  administratively down down
R3(config-router)#exit
R3(config)#int g0/0/0
R3(config-if)#ip ospf 10 area 0
R3(config-if)#interface s0/0/0
%Invalid interface type and number
R3(config)#interface s0/1/0
R3(config-if)#ip ospf 10 area 0
R3(config-if)#interface s0/1/1
R3(config-if)#ip ospf 10 area 0
R3(config-if)#
23:09:23: %OSPF-5-ADJCHG: Process 10, Nbr 2.2.2.2 on Serial0/1/0 from LOADING to FULL, Loading Done
23:09:25: %OSPF-5-ADJCHG: Process 10, Nbr 1.1.1.1 on Serial0/1/1 from LOADING to FULL, Loading Done

R3(config-if)#do show ip proto

Routing Protocol is "ospf 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 3.3.3.3
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
  Routing Information Sources:
    Gateway         Distance      Last Update
    1.1.1.1          110          00:00:23
    2.2.2.2          110          00:00:24
    3.3.3.3          110          00:00:23
  Distance: (default is 110)
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

2. DESCRIPCIÓN TÉCNICA DE LA SOLUCIÓN

**Parte 3: configure las interfaces
Pasivas**

```
R1
Physical Config CLI
IOS Command Line Interface
GigabitEthernet0/0/0
Routing Information Sources:
  Gateway      Distance      Last Update
  1.1.1.1       110           00:02:57
  2.2.2.2       110           00:02:58
  3.3.3.3       110           00:02:57
Distance: (default is 110)

R1(config-router)#do show ip rout
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    10.1.1.0/30 is directly connected, Serial0/1/0
L    10.1.1.1/32 is directly connected, Serial0/1/0
C    10.1.1.4/30 is directly connected, Serial0/1/1
L    10.1.1.5/32 is directly connected, Serial0/1/1
O    10.1.1.8/30 [110/128] via 10.1.1.2, 00:03:11, Serial0/1/0
    [110/128] via 10.1.1.6, 00:03:11, Serial0/1/1
192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.10.0/24 is directly connected, GigabitEthernet0/0/0
L    192.168.10.1/32 is directly connected, GigabitEthernet0/0/0
O    192.168.20.0/24 [110/65] via 10.1.1.2, 00:06:03, Serial0/1/0
O    192.168.30.0/24 [110/65] via 10.1.1.6, 00:03:11, Serial0/1/1

R1(config-router)#

Ctrl+F6 to exit CLI focus
Copy Paste
Top
```

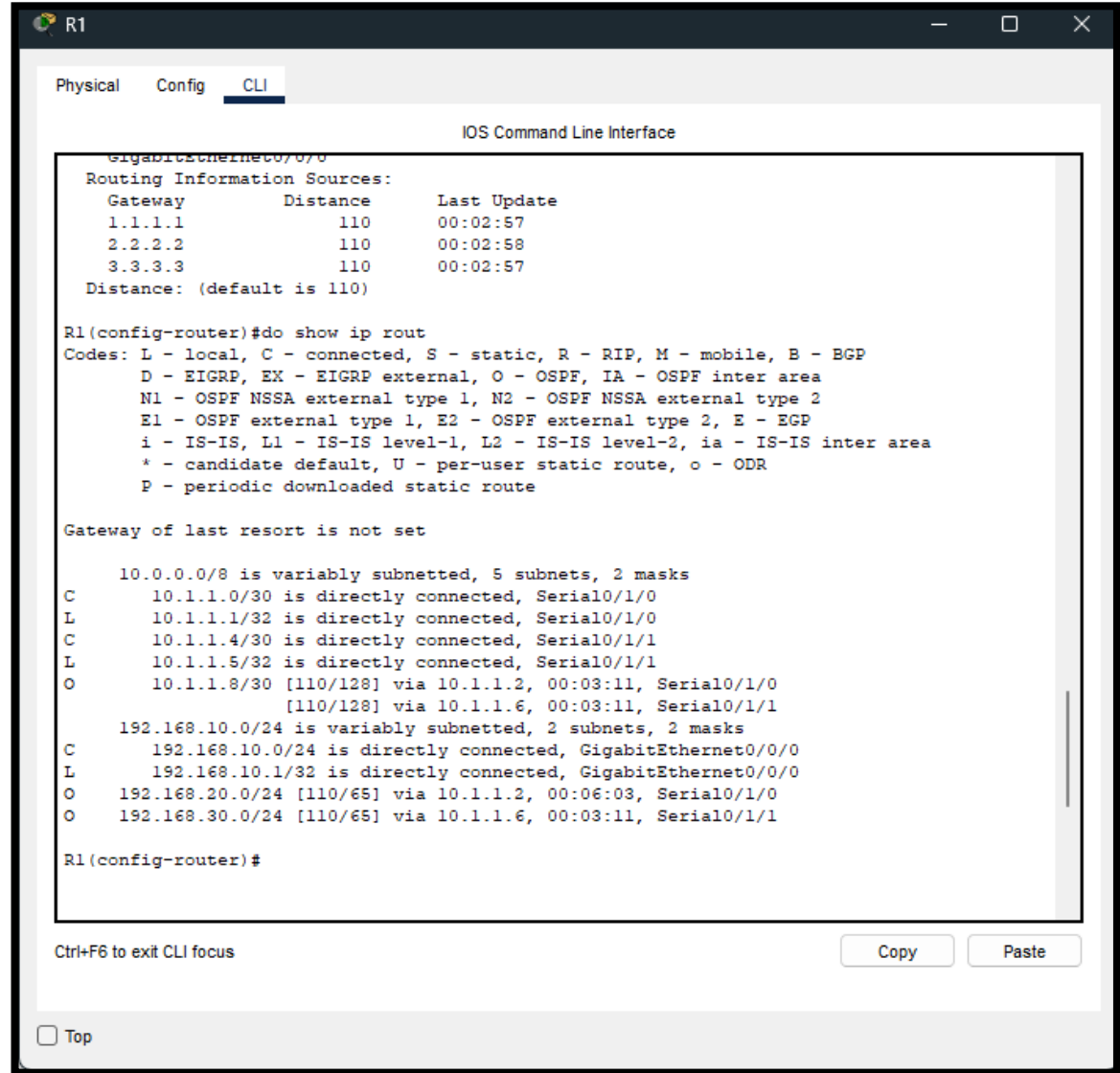
```
R1(config-router)#pass
R1(config-router)#passive-interface g0/0/0
R1(config-router)#do show ip proto

Routing Protocol is "ospf 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 1.1.1.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    192.168.10.0 0.0.0.255 area 0
    10.1.1.0 0.0.0.3 area 0
    10.1.1.4 0.0.0.3 area 0
  Passive Interface(s):
    GigabitEthernet0/0/0
  Routing Information Sources:
    Gateway      Distance      Last Update
    1.1.1.1       110           00:02:57
    2.2.2.2       110           00:02:58
    3.3.3.3       110           00:02:57
  Distance: (default is 110)

R1(config-router)#do show ip rout
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
```

PASO I: CONFIGURE LAS INTERFACES PASIVAS

VERIFICAR LA CONFIGURACIÓN DE OSPF



The screenshot shows a Cisco IOS Command Line Interface (CLI) window for a router named R1. The window has three tabs: Physical, Config, and CLI, with the CLI tab selected. The title bar of the window says "R1". The main content area displays the output of the command "show ip route" in a structured format. At the top, it lists "Routing Information Sources" with a table of gateways, distances, and last update times. Below this, it shows the "Gateway of last resort is not set". Then, it lists the OSPF network 10.0.0.0/8 and its subnets, followed by the OSPF network 192.168.10.0/24 and its subnets. The output is color-coded: green for connected networks, blue for OSPF networks, and red for OSPF subnets. The CLI prompt "R1(config-router)#" is visible at the bottom of the main content area. At the bottom of the window, there is a status bar with the text "Ctrl+F6 to exit CLI focus" and two buttons: "Copy" and "Paste". A "Top" button is also present in the bottom left corner.

```
gigabitEthernet0/0/0
Routing Information Sources:
  Gateway         Distance      Last Update
  1.1.1.1          110           00:02:57
  2.2.2.2          110           00:02:58
  3.3.3.3          110           00:02:57
Distance: (default is 110)

R1(config-router)#do show ip rout
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    10.1.1.0/30 is directly connected, Serial0/1/0
L    10.1.1.1/32 is directly connected, Serial0/1/0
C    10.1.1.4/30 is directly connected, Serial0/1/1
L    10.1.1.5/32 is directly connected, Serial0/1/1
O    10.1.1.8/30 [110/128] via 10.1.1.2, 00:03:11, Serial0/1/0
      [110/128] via 10.1.1.6, 00:03:11, Serial0/1/1
  192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.10.0/24 is directly connected, GigabitEthernet0/0/0
L    192.168.10.1/32 is directly connected, GigabitEthernet0/0/0
O    192.168.20.0/24 [110/65] via 10.1.1.2, 00:06:03, Serial0/1/0
O    192.168.30.0/24 [110/65] via 10.1.1.6, 00:03:11, Serial0/1/1

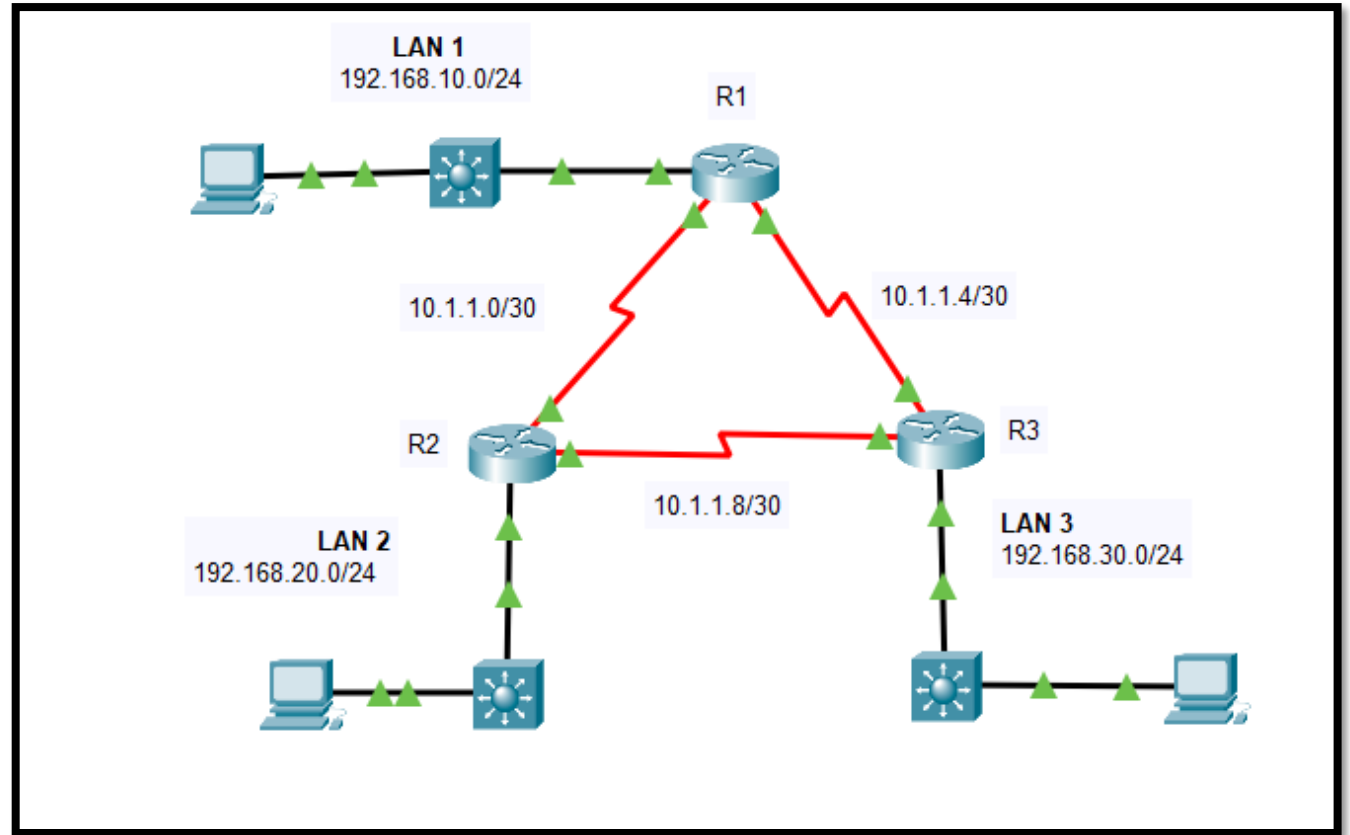
R1(config-router)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

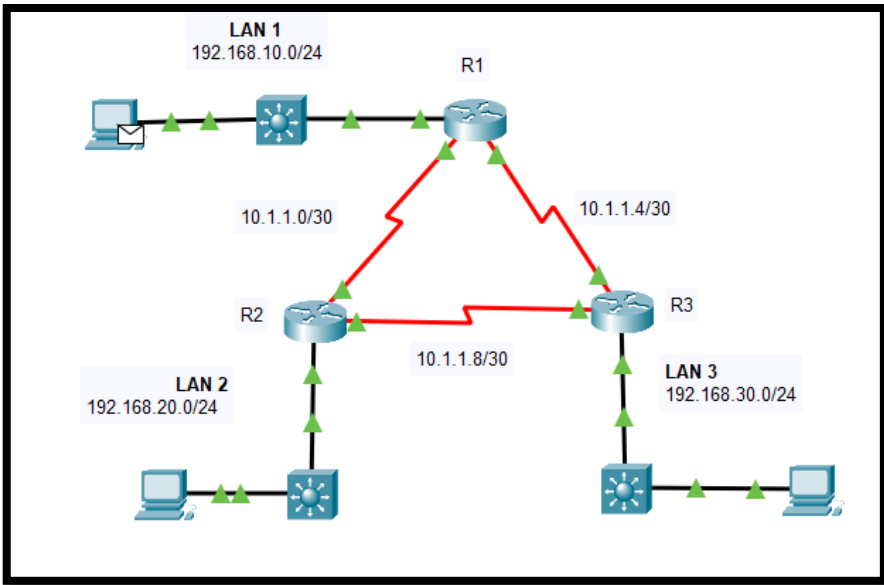
☐ Top

3.ESQUEMA GENERAL



4.SCRIPT CTC

Dispositivo	Interfaz	Dirección IP	Máscara de subred
R1	G0/0/0	192.168.10.1	/24
	S0/1/0	10.1.1.1	/30
	/1/1	10.1.1.5	/30
R2	G0/0/0	192.168.20.1	/24
	S0/1/0	10.1.1.2	/30
	/1/1	10.1.1.9	/30
R3	G0/0/0	192.168.30.1	/24
	S0/1/0	10.1.1.10	/30
	/1/1	10.1.1.6	/30
PC1	NIC	192.168.10.10	/24
PC2	NIC	192.168.20.10	/24
PC3	NIC	192.168.30.10	/24



Realtime Simulation										
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
●	Successful	PC0	Test Host 2	ICMP	Blue	0.000	N	0	(edit)	(delete)
●	Successful	PC0	Test Host 2	ICMP	Light Blue	0.000	N	1	(edit)	(delete)
●	Successful	PC0	Test Host 2	ICMP	Dark Green	0.000	N	2	(edit)	(delete)

5. PRUEBAS