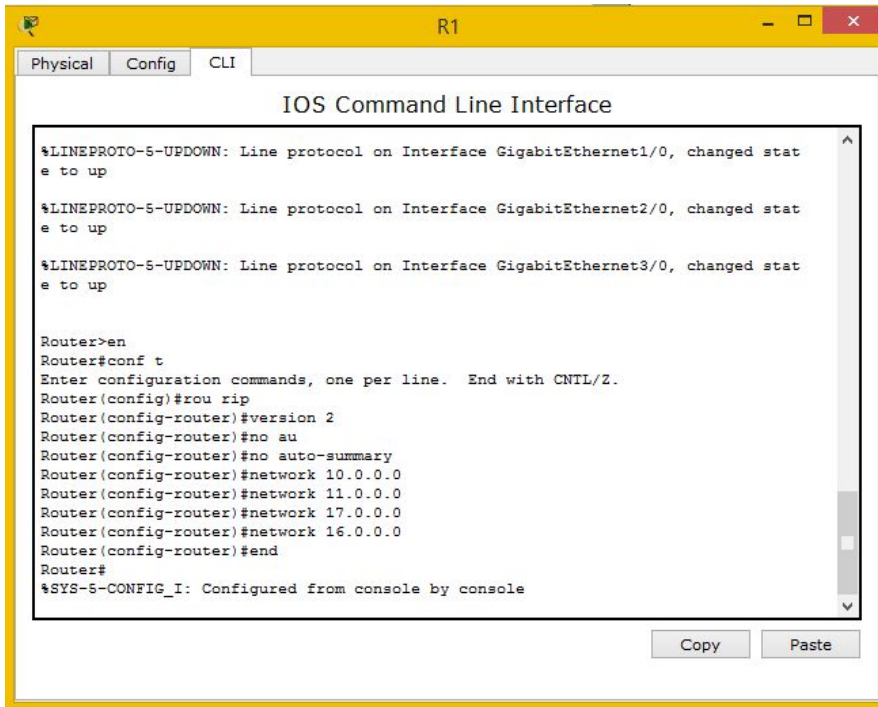


PROYECTO REDES AVANZADAS

CREACIÓN RED RIP:

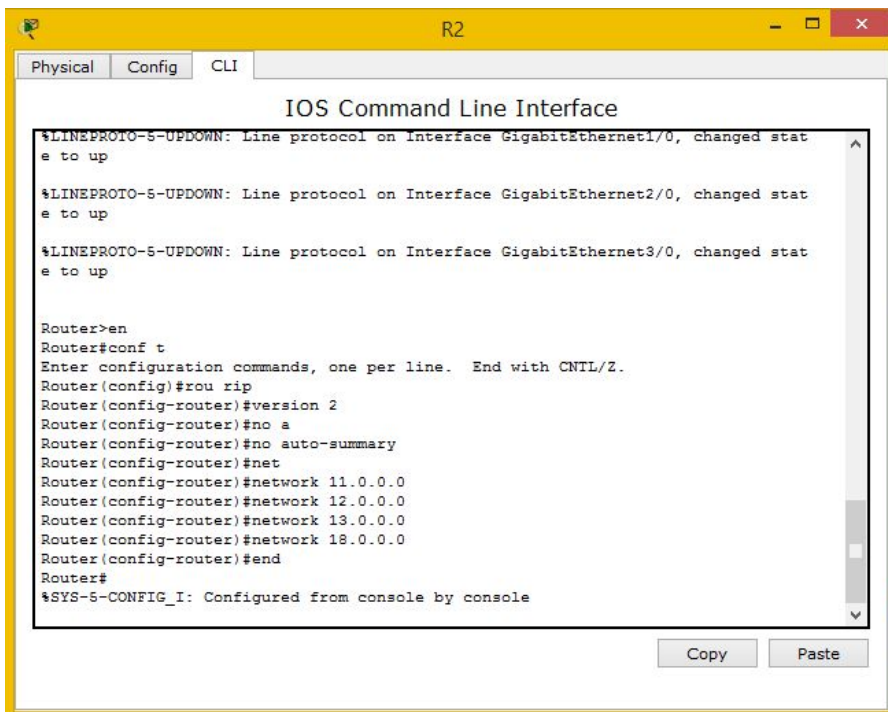
Para la creación de la red, se entra a la configuración del RIP con **router rip**, luego se le asigna la versión 2 y se le añaden las redes con el comando **network IPred**

R1:



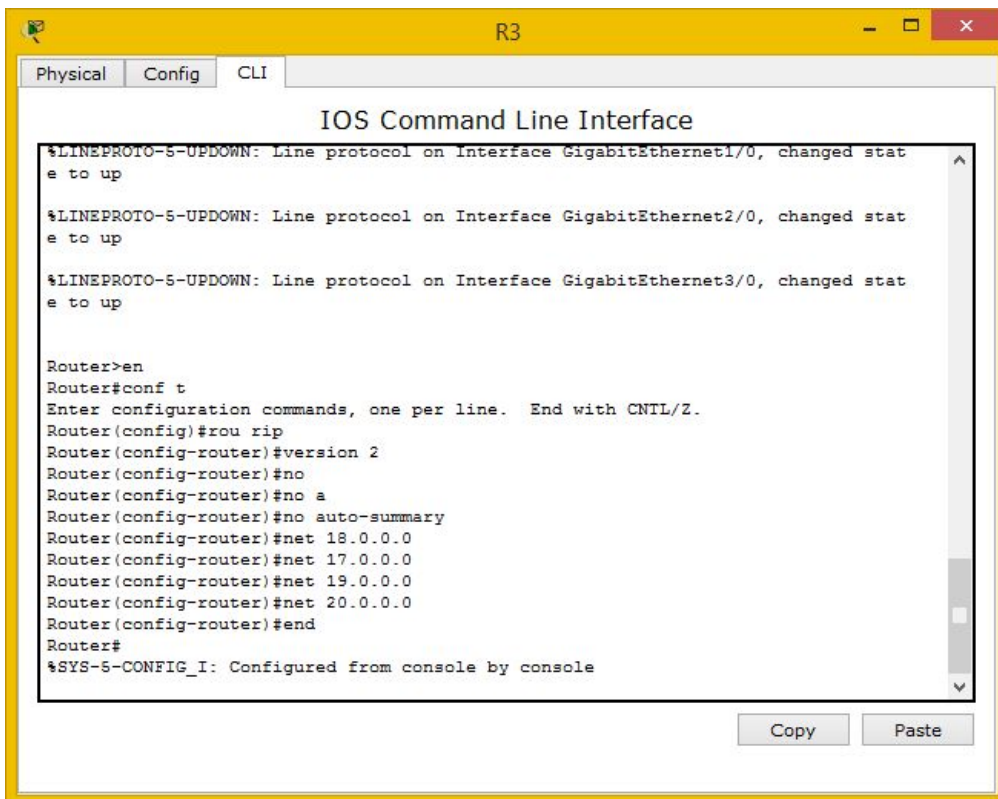
```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 10.0.0.0
Router(config-router)#network 11.0.0.0
Router(config-router)#network 17.0.0.0
Router(config-router)#network 16.0.0.0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

R2:

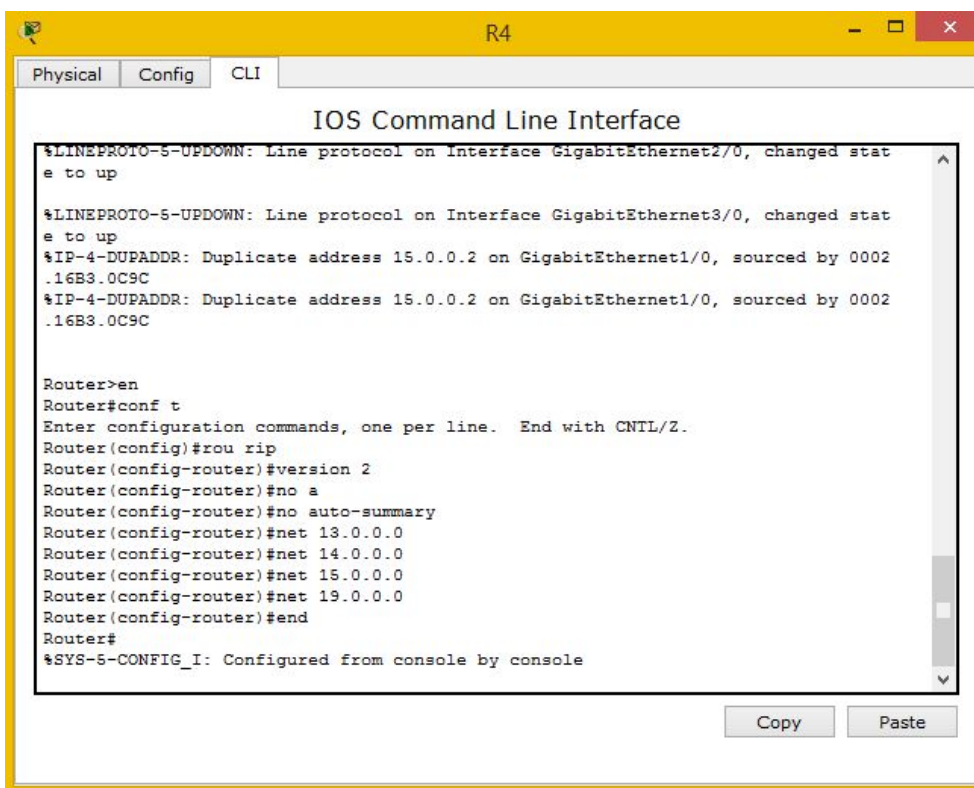


```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#no auto-summary
Router(config-router)#network 11.0.0.0
Router(config-router)#network 12.0.0.0
Router(config-router)#network 13.0.0.0
Router(config-router)#network 18.0.0.0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

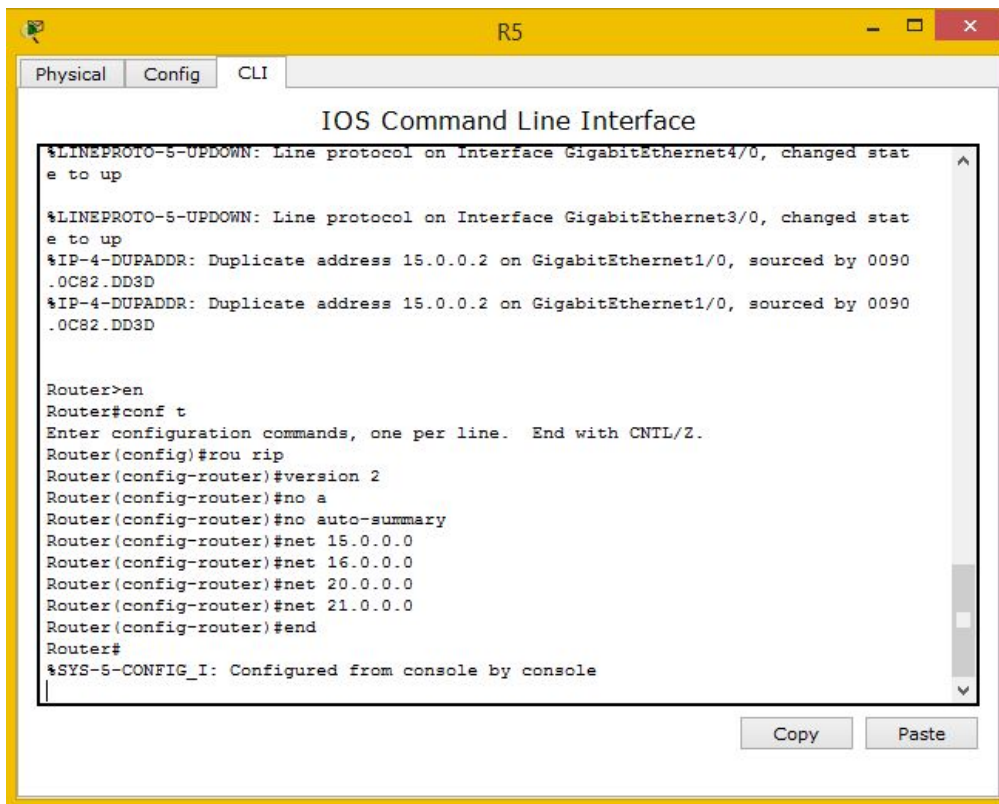
R3:



R4:



R5:



The screenshot shows a window titled 'R5' with tabs for 'Physical', 'Config', and 'CLI'. The 'CLI' tab is active, displaying the 'IOS Command Line Interface'. The terminal output shows several system messages at the top, followed by configuration commands and their execution. The messages include line protocol status changes and duplicate address warnings. The configuration commands include enabling user EXEC mode, entering configuration mode, enabling RIP version 2, disabling auto-summary, and defining four networks. The terminal ends with a confirmation message from the system.

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet4/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet3/0, changed state to up
%IP-4-DUPADDR: Duplicate address 15.0.0.2 on GigabitEthernet1/0, sourced by 0090.0C82.DD3D
%IP-4-DUPADDR: Duplicate address 15.0.0.2 on GigabitEthernet1/0, sourced by 0090.0C82.DD3D

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#rou rip
Router(config-router)#version 2
Router(config-router)#no a
Router(config-router)#no auto-summary
Router(config-router)#net 15.0.0.0
Router(config-router)#net 16.0.0.0
Router(config-router)#net 20.0.0.0
Router(config-router)#net 21.0.0.0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Copy Paste

CREACIÓN DHCP SERVIDOR:

Para la creación del DHCP en el servidor, nos dirigimos a la pestaña DHCP y realizamos la configuración:

DHCP

Physical Config Desktop Custom Interface

GLOBAL

Settings

Algorithm Settings

SERVICES

HTTP

DHCP

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

FIREWALL

IPv6 FIREWALL

INTERFACE

FastEthernet0

DHCP

Service ☐ On ☒ Off

Pool Name: server10 **SE ASIGNA NOMBRE**

Default Gateway: 10.0.0.1 **LA GATEWAY DE LAS COMPUTADORAS**

DNS Server: 100.0.0.2 **EL SERVIDOR QUE USAREMOS**

Start IP Address: **RANGO INICIAL Y MASCARA** 10 0 0 10

Subnet Mask: 255 255 255 0

Maximum number of Users: 20 **NUMERO MAX DE USUARIOS**

TFTP Server: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max Number	TFTP Server
serverPool	0.0.0.0	0.0.0.0	12.0.0.0	255.255.255.0	512	0.0.0.0
server10	10.0.0.1	100.0.0.2	10.0.0.10	255.255.255.0	20	0.0.0.0

CREACIÓN HTTPS:

www.umss.edu

Physical Config Desktop Custom Interface

GLOBAL

Settings

Algorithm Settings

SERVICES

HTTP

DHCP

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

FIREWALL

IPv6 FIREWALL

INTERFACE

FastEthernet0

HTTP

ENCENDER

HTTP ☒ On ☐ Off

HTTPS ☒ On ☐ Off

File Name: index.html

```
<html>
<center><font size='+2' color='blue'>Cisco Packet
Tracer</font></center>
<hr>UNIVERSIDAD MAYOR DE SAN SIMON.
</html>
```

MODIFICAR PAGINA

Page: 1/3 < > + X

Como muestra la imagen, para el http solo es necesario poner el código html e iniciarlo.

CREACIÓN DNS:

DNS

Physical Config Desktop Custom Interface

GLOBAL

Settings

Algorithm Settings

SERVICES

HTTP

DHCP

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

FIREWALL

IPv6 FIREWALL

INTERFACE

FastEthernet0

DNS Service ☒ On ☐ Off

Resource Records

Name Type

Address

Add Save Remove

No.	Name	Type	Details
1	www.tigo.bo	A Record	29.0.0.2
2	www.umss.edu	A Record	14.0.0.2

DNS Cache

Solo se tiene que agregar el nombre con el que se va a acceder y la dirección IP del elemento a observar. También es importante asignar bien la dirección IP donde está el DNS, tanto en el servidor mismo.

Gateway/DNS

☐ DHCP

☒ Static

Gateway

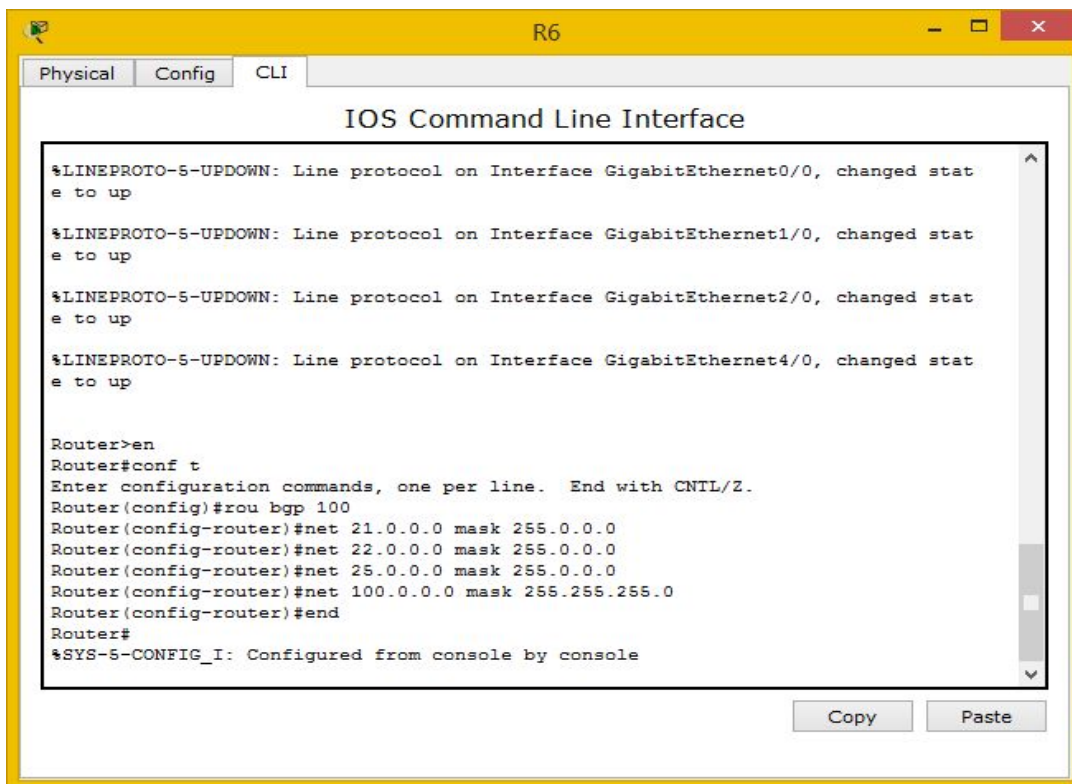
DNS Server

CREACIÓN RED BGP:

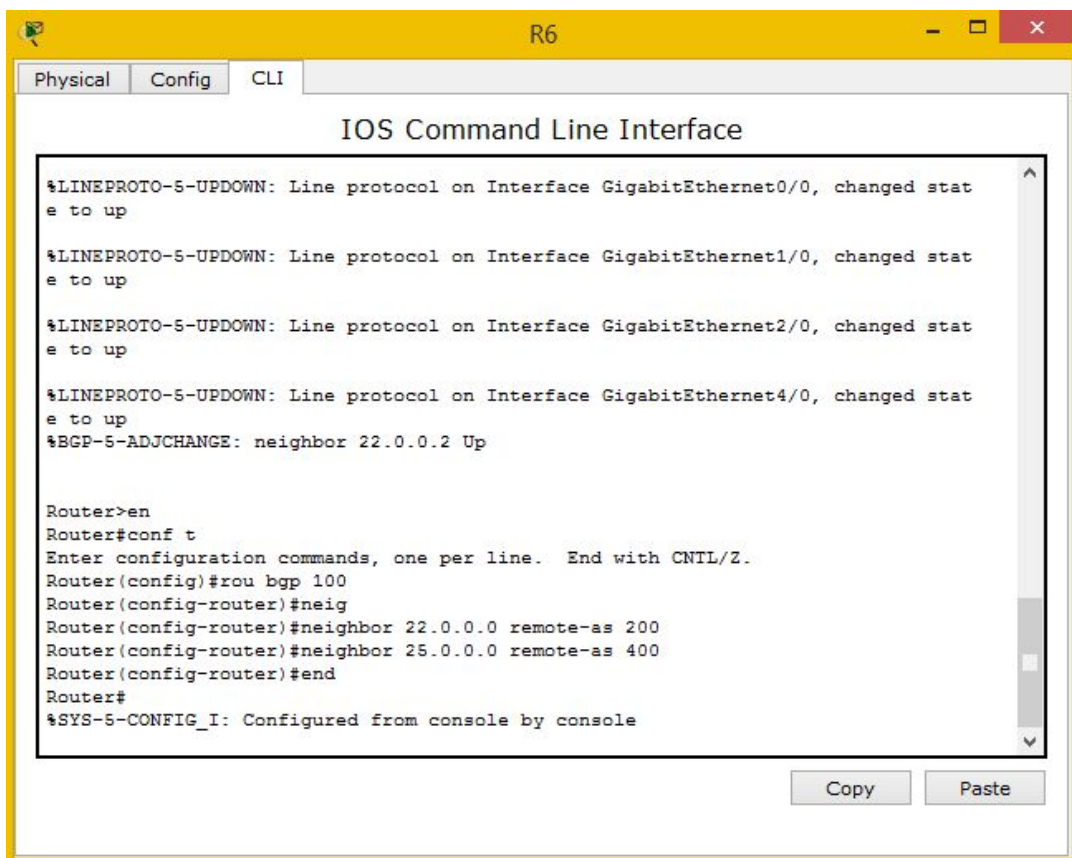
Para configurar BGP se entra a la configuración del BGP con **router bgp**, luego se le asignan las redes con **network ip mask mask** y después se le muestra sus vecinos con **neighbor ip remote-as Numero sistema autónomo**

R6:

Asignación de redes y de sistema autónomo:

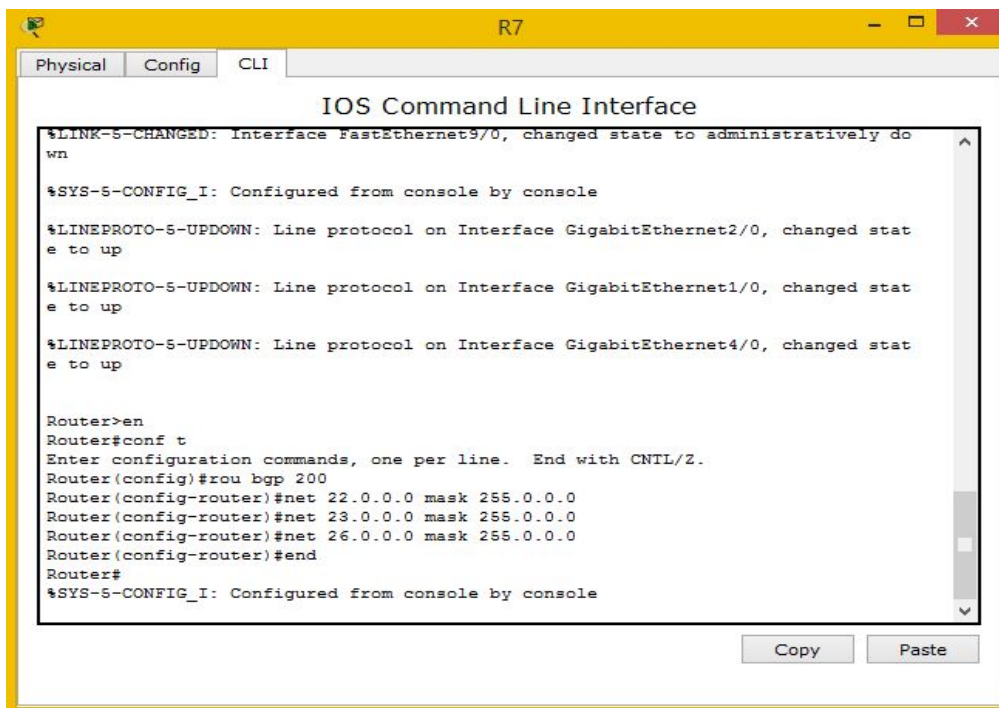


Asignación de vecinos:

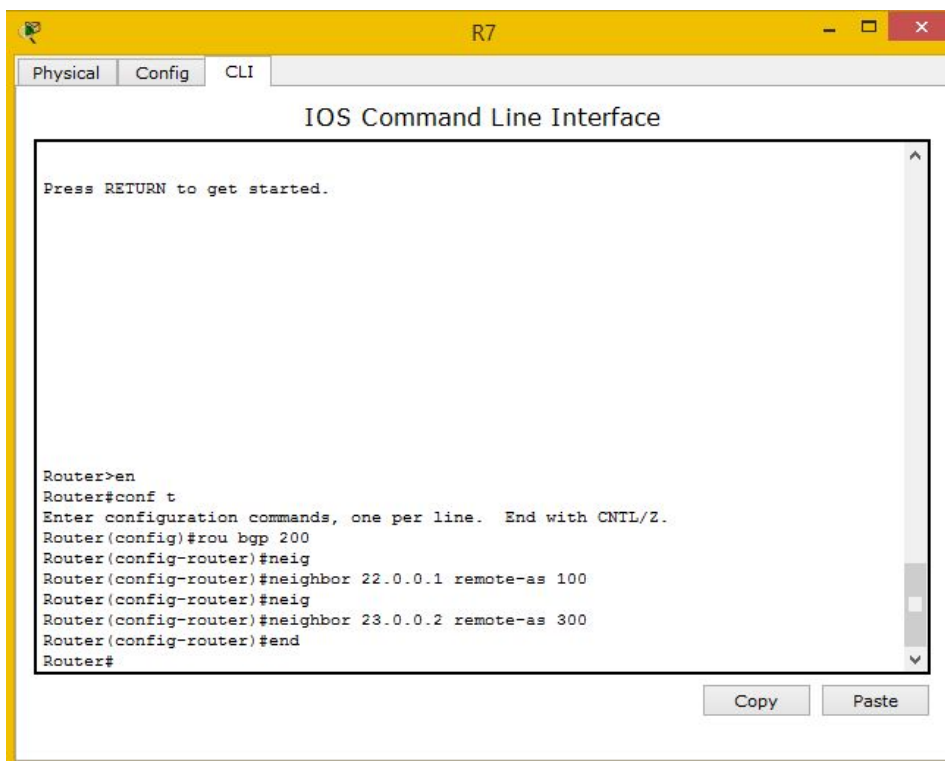


R7:

Asignación de redes y de sistema autónomo:

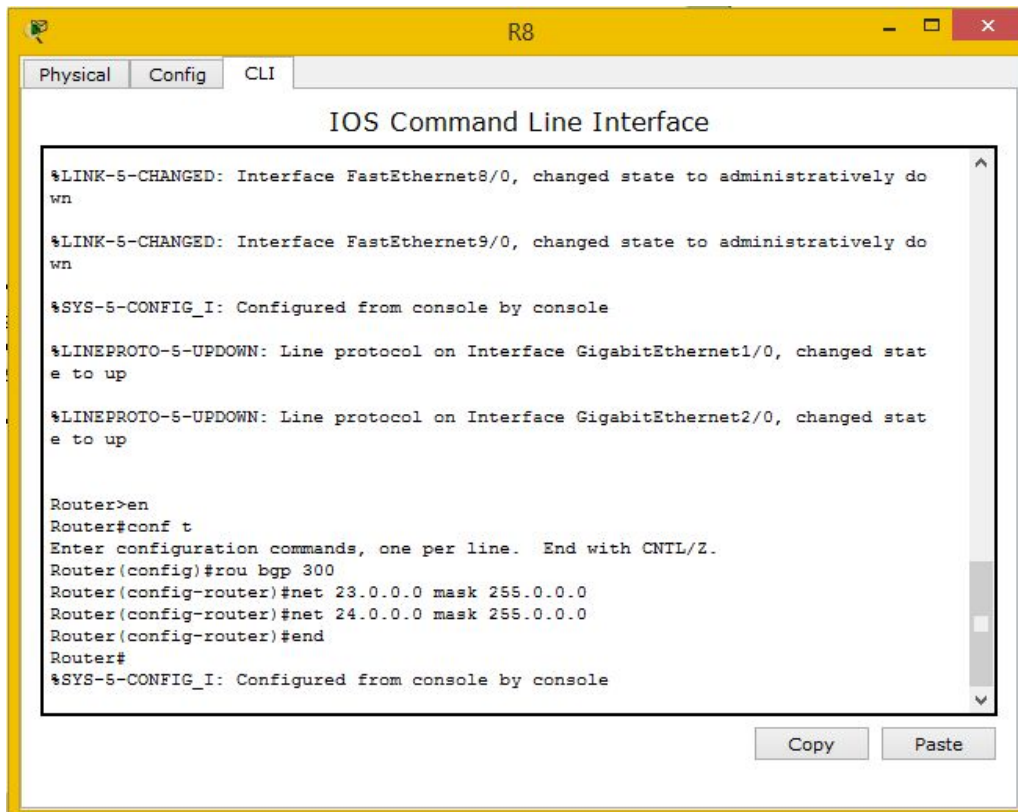


Asignación de vecinos:

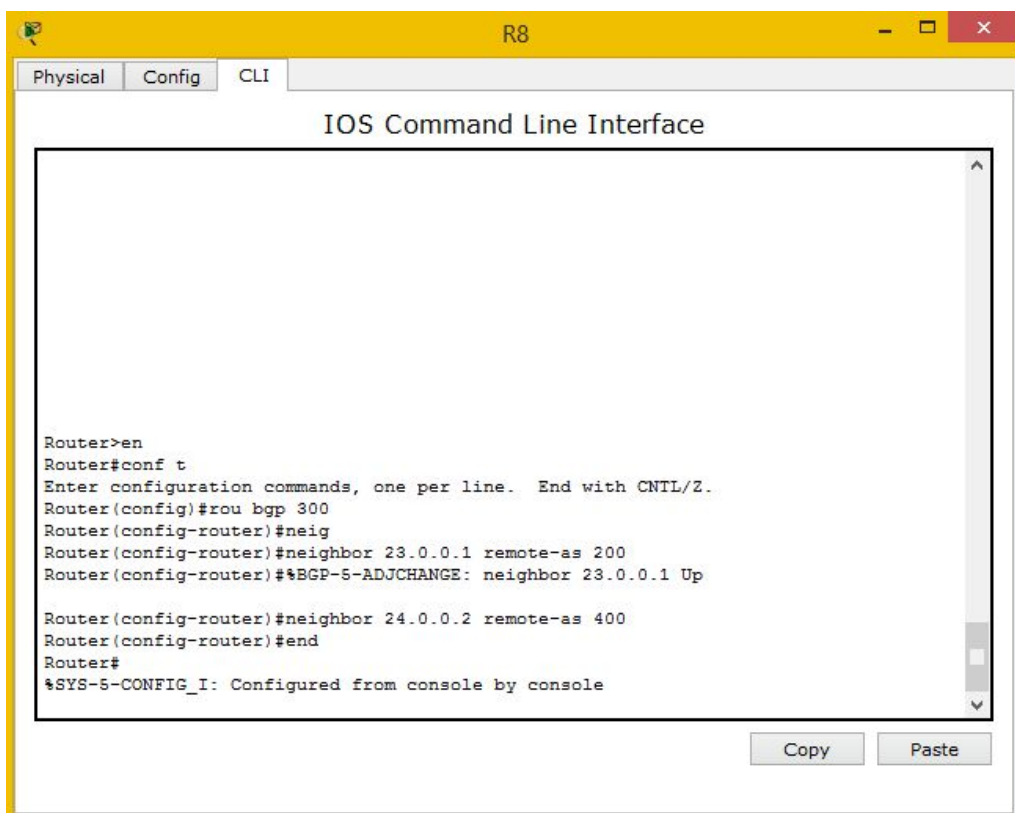


R8:

Asignación de redes y de sistema autónomo:

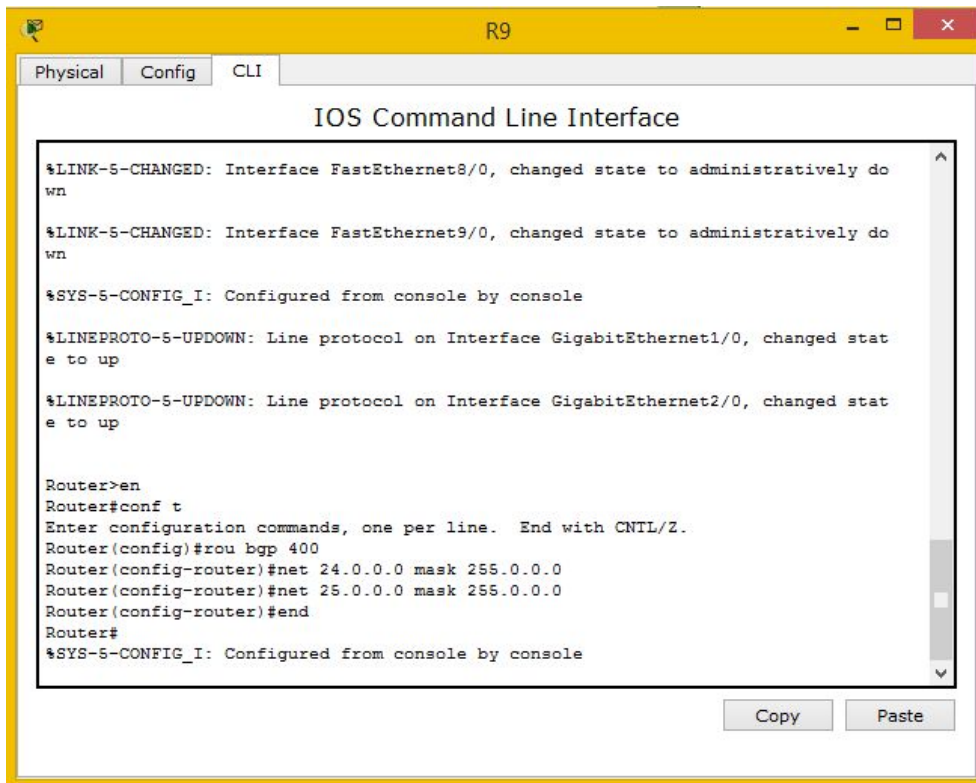


Asignación de vecinos:

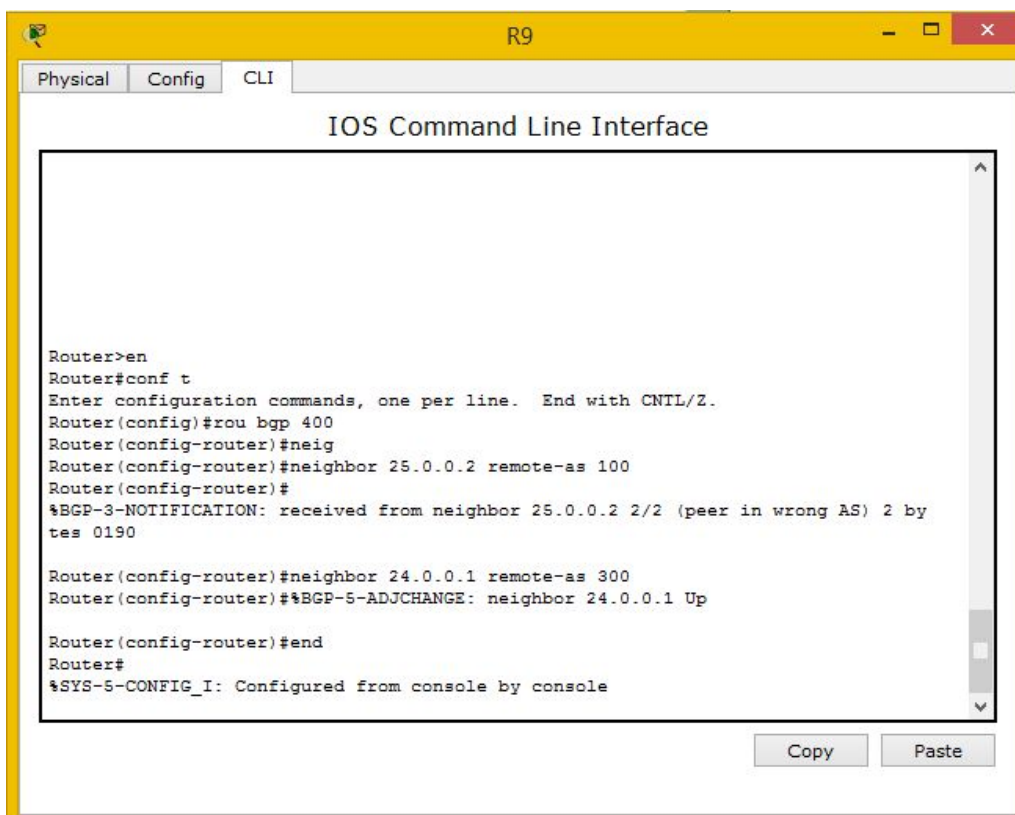


R9:

Asignación de redes y de sistema autónomo:



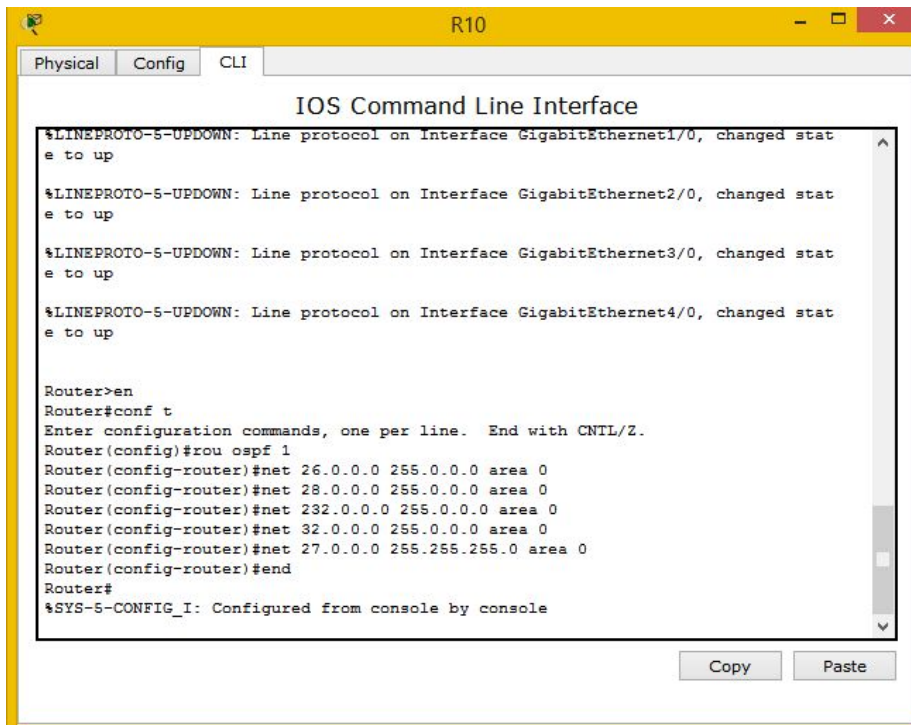
Asignación de vecinos:



CREACION RED OSPF:

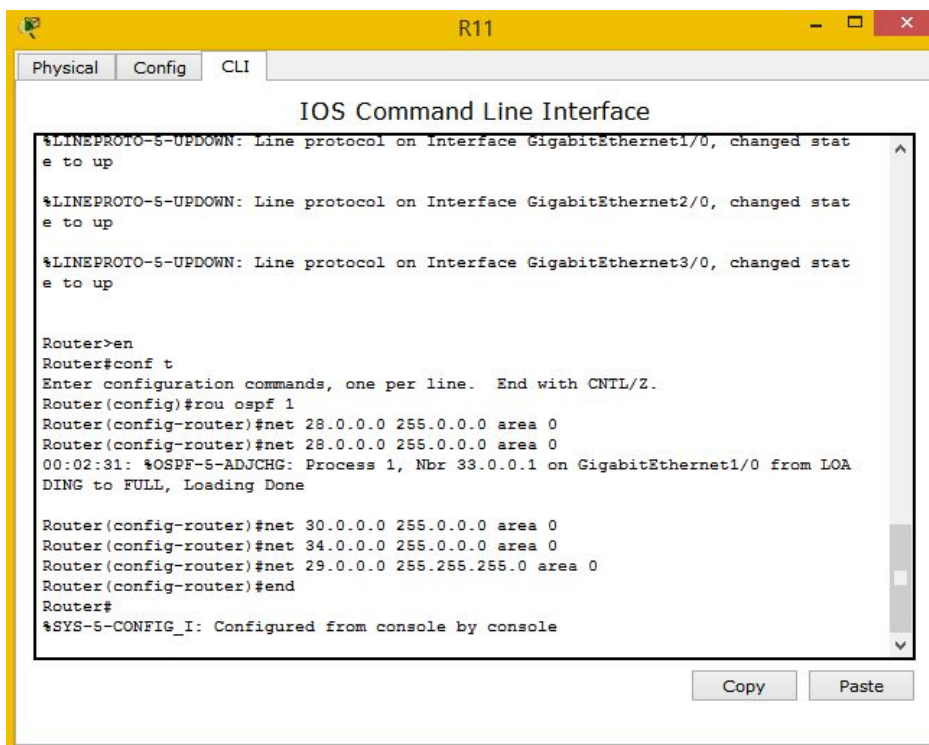
Para crear una red OSPF, primero se entra a la configuración de OSPF con el comando **router ospf 1**, luego se procede a agregar las redes que tiene acceso con el comando **network ip mask area**.

R10

A screenshot of the R10 router's IOS Command Line Interface. The window has tabs for Physical, Config, and CLI. The CLI tab is active, showing a scrollable text area with the following text: Four messages indicating line protocol changes on interfaces GigabitEthernet1/0, 2/0, 3/0, and 4/0. Then, the user enters 'en' and 'conf t'. The prompt changes to 'Router(config)#'. The user enters 'router ospf 1'. The prompt changes to 'Router(config-router)#'. The user enters five 'network' commands for different IP ranges in area 0. Finally, the user enters 'end'. The prompt returns to 'Router#'. A system message at the bottom indicates the configuration was applied from the console.

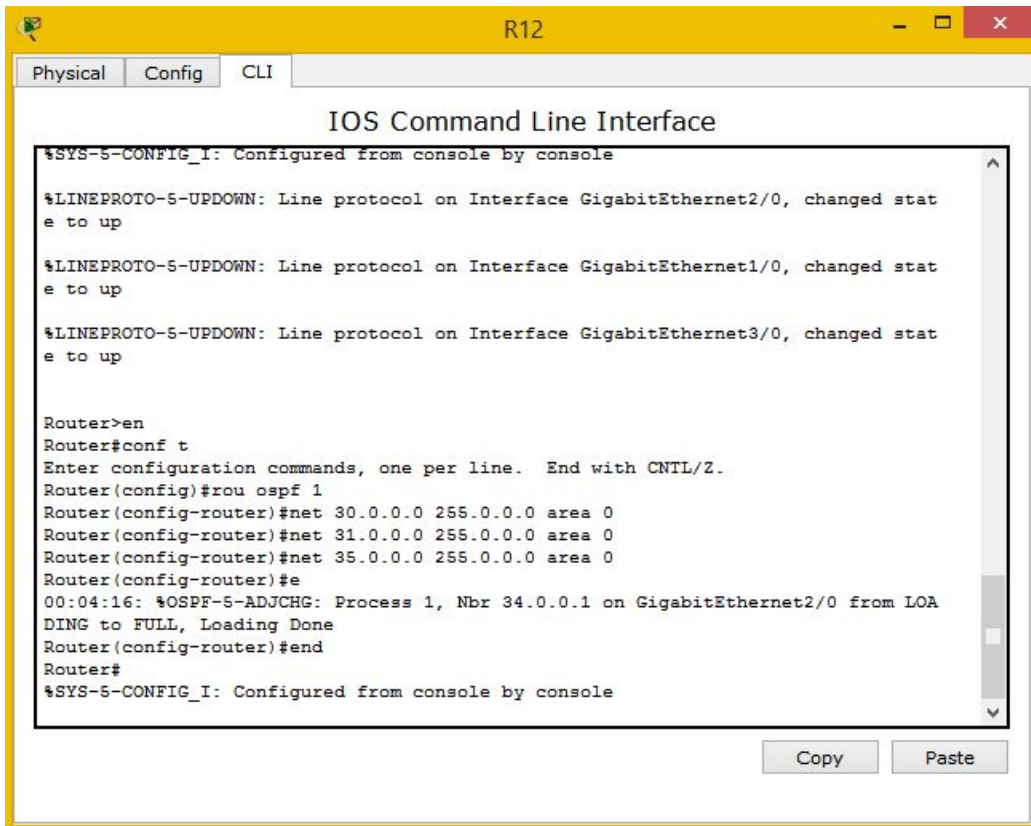
```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#net 26.0.0.0 255.0.0.0 area 0
Router(config-router)#net 28.0.0.0 255.0.0.0 area 0
Router(config-router)#net 232.0.0.0 255.0.0.0 area 0
Router(config-router)#net 32.0.0.0 255.0.0.0 area 0
Router(config-router)#net 27.0.0.0 255.255.255.0 area 0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

R11

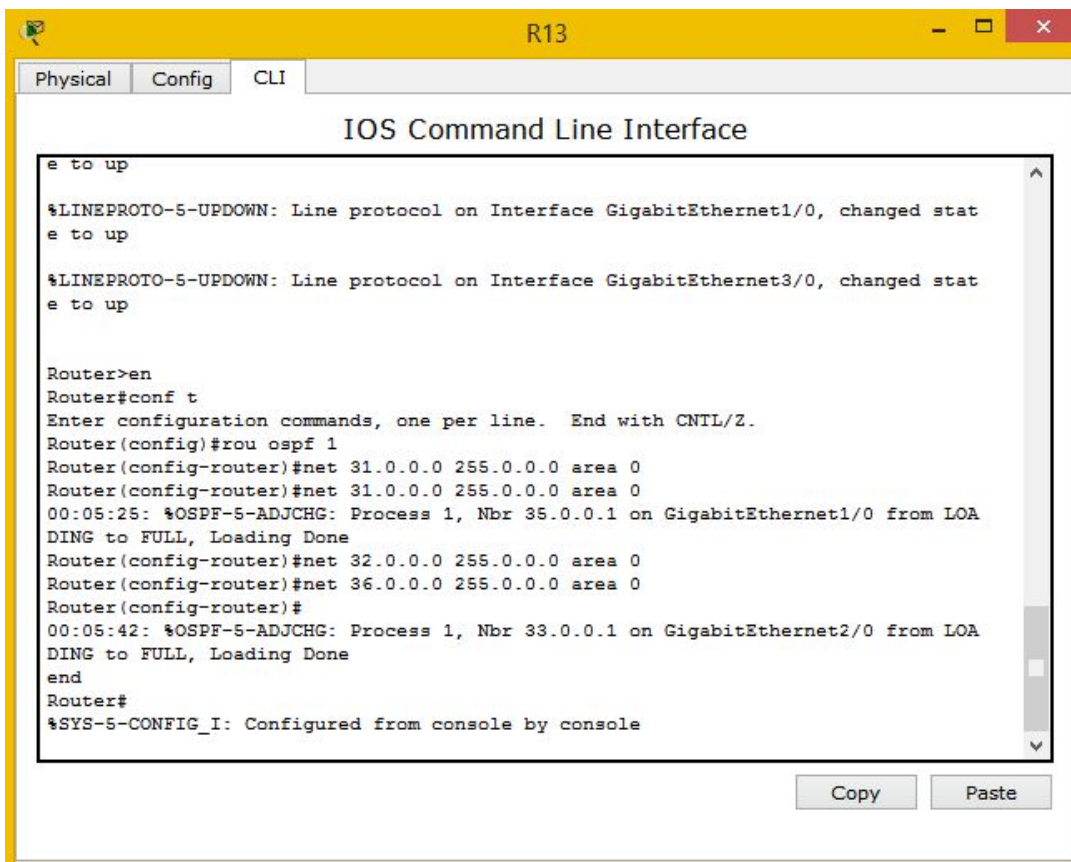
A screenshot of the R11 router's IOS Command Line Interface. The window has tabs for Physical, Config, and CLI. The CLI tab is active, showing a scrollable text area with the following text: Four messages indicating line protocol changes on interfaces GigabitEthernet1/0, 2/0, 3/0, and 4/0. Then, the user enters 'en' and 'conf t'. The prompt changes to 'Router(config)#'. The user enters 'router ospf 1'. The prompt changes to 'Router(config-router)#'. The user enters two 'network' commands for 28.0.0.0/24 and 28.0.0.0/25 in area 0. Then, a log message appears: '00:02:31: %OSPF-5-ADJCHG: Process 1, Nbr 33.0.0.1 on GigabitEthernet1/0 from LOADING to FULL, Loading Done'. The user then enters three more 'network' commands for 30.0.0.0/24, 34.0.0.0/24, and 29.0.0.0/24 in area 0. Finally, the user enters 'end'. The prompt returns to 'Router#'. A system message at the bottom indicates the configuration was applied from the console.

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#net 28.0.0.0 255.0.0.0 area 0
Router(config-router)#net 28.0.0.0 255.0.0.0 area 0
00:02:31: %OSPF-5-ADJCHG: Process 1, Nbr 33.0.0.1 on GigabitEthernet1/0 from LOADING to FULL, Loading Done
Router(config-router)#net 30.0.0.0 255.0.0.0 area 0
Router(config-router)#net 34.0.0.0 255.0.0.0 area 0
Router(config-router)#net 29.0.0.0 255.255.255.0 area 0
Router(config-router)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

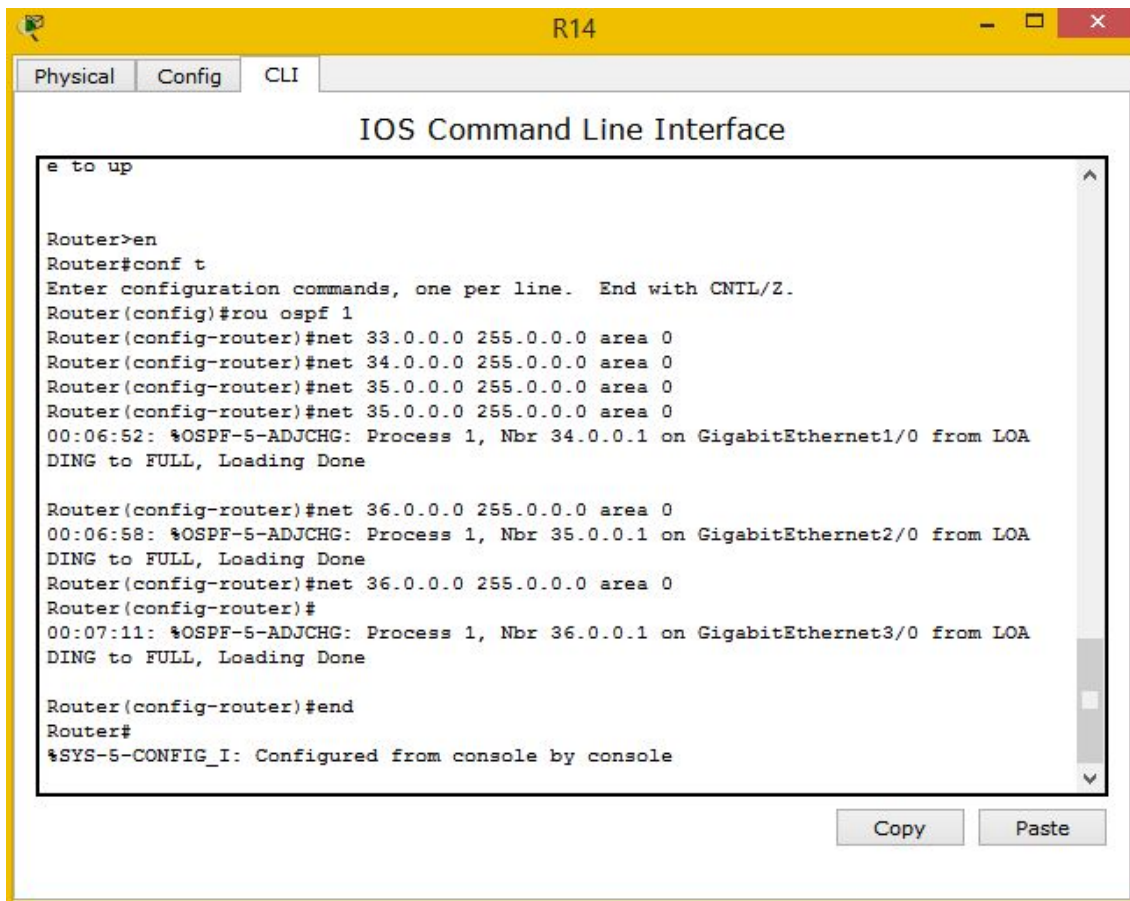
R12



R13



R14



CONEXIÓN RIP BGP:

Para esto, agregamos al **R6** el protocolo de RIP, una vez hecho esto, le asignamos el comando **default originate**, esta sería toda la configuración en RIP.

```
Router(config)#rou rip
Router(config-router)#vet
Router(config-router)#version 2
Router(config-router)#defa
Router(config-router)#default-information ori
Router(config-router)#default-information originate
```

En BGP usamos el comando **redistribute connected** para que mande todas sus redes.

```
Router(config)#rou bgp 100
Router(config-router)#redis
Router(config-router)#redistribute cone
Router(config-router)#redistribute conn
Router(config-router)#redistribute connected
```


Luego procedemos a asignarle todas las redes que queramos que se vean de RIP.

```
Router(config-router)#network 16.0.0.0 mask 255.0.0.0
Router(config-router)#network 11.0.0.0 mask 255.0.0.0
Router(config-router)#network 13.0.0.0 mask 255.0.0.0
Router(config-router)#network 15.0.0.0 mask 255.0.0.0
Router(config-router)#network 17.0.0.0 mask 255.0.0.0
Router(config-router)#network 18.0.0.0 mask 255.0.0.0
Router(config-router)#network 19.0.0.0 mask 255.0.0.0
Router(config-router)#network 20.0.0.0 mask 255.0.0.0
Router(config-router)#network 21.0.0.0 mask 255.0.0.0
Router(config-router)#network 10.0.0.0 mask 255.255.255.0
Router(config-router)#network 14.0.0.0 mask 255.255.255.0
Router(config-router)#network 12.0.0.0 mask 255.255.255.0
```

Una vez hecho esto, ya se mandan las direcciones por BGP y RIP.

CONEXIÓN OSPF BGP:

Empezamos agregando una conexión OSPF en R7

```
Router(config)#router ospf 1
Router(config-router)#net
Router(config-router)#network 26.0.0.0 255.0.0.0 area 0
Router(config-router)#
00:11:10: %OSPF-5-ADJCHG: Process 1, Nbr 33.0.0.1 on GigabitEthernet4/0 from LOA
DING to FULL, Loading Done
```

Luego le decimos al OSPF de R7 que redistribuye todas las subnets del BGP y que sea el origen

```
Router(config-router)#redis
Router(config-router)#redistribute BGP 200 sbne
Router(config-router)#redistribute BGP 200 sub
Router(config-router)#redistribute BGP 200 subnets
Router(config-router)#defa
Router(config-router)#default-information ori
Router(config-router)#default-information originate
```

Posteriormente pasamos a BGP para que distribuya la subnets de OSPF.

```
Router(config)#router bgp 200
Router(config-router)#redis
Router(config-router)#redistribute os
Router(config-router)#redistribute ospf 1
```

Al final solo le agregamos las redes OSPF en BGP

```
Router(config-router)#network 27.0.0.0 mask 255.255.255.0
Router(config-router)#network 29.0.0.0 mask 255.255.255.0
Router(config-router)#network 26.0.0.0 mask 255.0.0.0
Router(config-router)#network 28.0.0.0 mask 255.0.0.0
Router(config-router)#network 30.0.0.0 mask 255.0.0.0
Router(config-router)#network 31.0.0.0 mask 255.0.0.0
Router(config-router)#network 32.0.0.0 mask 255.0.0.0
Router(config-router)#network 33.0.0.0 mask 255.0.0.0
Router(config-router)#network 34.0.0.0 mask 255.0.0.0
Router(config-router)#network 35.0.0.0 mask 255.0.0.0
Router(config-router)#network 36.0.0.0 mask 255.0.0.0
```


CREACION DHCP ROUTER:

Empezamos por asignar un nombre al pool del **R12**

```
Router(config)#ip dh  
Router(config)#ip dhcp pool server27
```

Luego le asignamos una red para que obtengas sus IPs y le asignamos su router de salida

```
Router(dhcp-config)#network 27.0.0.0 255.255.255.0  
Router(dhcp-config)#set de  
Router(dhcp-config)#de  
Router(dhcp-config)#default-router 31.0.0.1
```

Luego excluimos las IPs que no queremos que se les asignen

```
Router(config)#ip dhcp excluded-address 27.0.0.1
```

Y se le asigna el servicio DNS

```
Router(dhcp-config)#dns-server 100.0.0.2
```

Y al final le decimos al puerto asignado de **R10** a las computadoras que les ayude a encontrar el router asignado.

```
Router(config)#interface gigabitEthernet 0/0  
Router(config-if)#ip help  
Router(config-if)#ip helper-address 31.0.0.1
```