DIPLOMADO DE PROFUNDIZACIÓN CISCO

DISEÑO E IMPLEMENTACIÓN DE SOLUCIONES INTEGRADAS LAN / WAN

TRABAJO INDIVIDUAL

EVALUACIÓN – PRUEBA DE HABILIDADES PRÁCTICAS CCNA

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PROGRAMA DE INGENIERÍA DE SISTEMAS

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TABLA DE CONTENIDO

1. RESUMEN

El diplomado de profundización cisco diseño e implementación de soluciones integradas lan / wan se ha implementado como opción de grado para Ingeniería de sistemas la cual profundiza en redes e implementación, se manejaron todas las herramientas en Cisco y su plataforma se manejaron los módulos Introducción a las redes y Principios básicos de routing y switching. En los dos casos que trabajaremos aplicaremos los conocimientos adquiridos y los aplicaremos en el desarrollo de los mismos.

2. ABSTRACT

The diploma of deepening cisco design and implementation of integrated solutions lan / wan has been implemented as a degree option for Systems Engineering which deepens in networks and implementation, all tools were handled in Cisco and its platform modules were introduced Introduction to the networks and basic principles of routing and switching. In the two cases that we will work, we will apply the knowledge acquired and apply them in their development.

3. INTRODUCCIÓN

Este trabajo es denominado Evaluación Prueba de habilidades prácticas CCNA y este pertenece al Diplomado de profundización cisco diseño e implementación de soluciones integradas LAN / WAN en este trabajo se dará solución a dos escenarios planteados y aquí se pondrá a prueba las habilidades adquiridas a través de todo el curso y se abordaran las técnicas para solucionar los problemas relacionados con el Networking.

Tales como las configuraciones básicas de routers, servidores, switchs, routing, Vlans, configuración OSPF, DHCP, NAT, Configuración y verificación ACL, seguridad de todos los dispositivos.

4. OBJETIVOS

4.1 Objetivo General

Implementar todos los conocimientos adquiridos en el curso, practicas, teorías y la experiencia que ha adquirido el futuro Ingeniero de Sistemas de la Universidad Nacional Abierta y a Distancia y así identificar y aplicar una solución a los casos propuestos para esta prueba de habilidades.

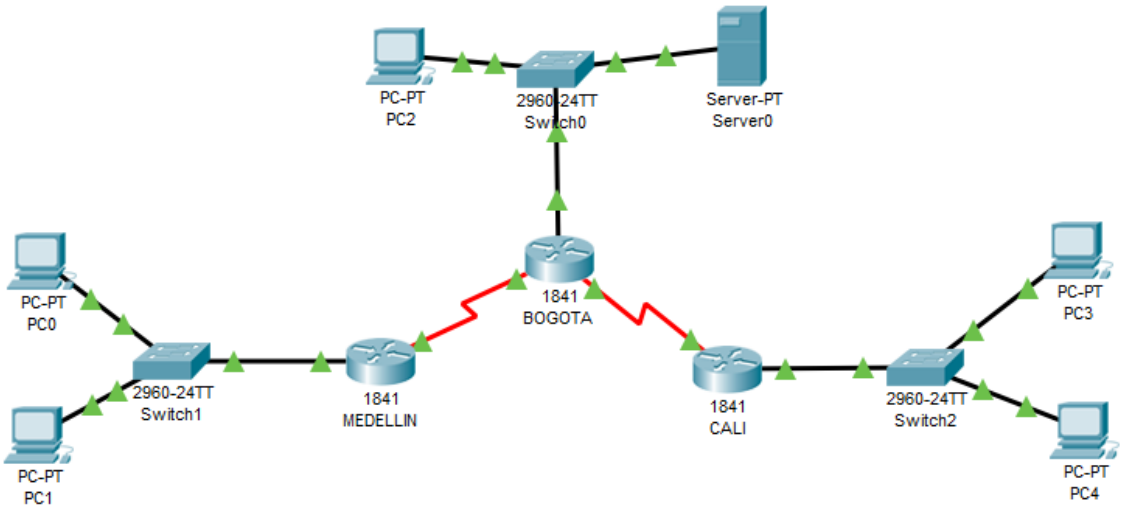
4.2 Objetivos Específicos

- Cumplir con los objetivos específicos y aplicar los conocimientos adquiridos y las habilidades para solucionar los problemas de Networking.
- Identificar que dispositivos utilizar para la construcción de una topología de red
- Realizar configuración básica a dispositivos de comunicación como Routers, Switch, Servidores
- Determinar la configuración necesaria para la implementación de OPSFv2, protocolo dinámico de Routing

5. DESARROLLO DE LA ACTIVIDAD

5.1 Escenario 1

Una empresa posee sucursales distribuidas en las ciudades de Bogotá, Medellín y Cali en donde el estudiante será el administrador de la red, el cual deberá configurar e interconectar entre sí cada uno de los dispositivos que forman parte del escenario, acorde con los lineamientos establecidos para el direccionamiento IP, protocolos de enrutamiento y demás aspectos que forman parte de la topología de red.



	R1	R2	R3
Nombre de Host	**MEDELLIN**	**BOGOTA**	**CALI**
Dirección de Ip en interfaz Serial 0/0	192.168.1.99	192.168.1.98	192.168.1.131
Dirección de Ip en interfaz Serial 0/1		192.168.1.130	
Dirección de Ip en interfaz FA 0/0	192.168.1.33	192.168.1.1	192.168.1.65
Protocolo de enrutamiento	**Eigrp**	**Eigrp**	**Eigrp**
Sistema Autónomo	200	200	200
Afirmaciones de red	192.168.1.0	192.168.1.0	192.168.1.0

Como trabajo inicial se realizó lo siguiente:

Se configuraron las contraseñas y asignación de hostname a cada dispositivo acorde a la topología, así mismo se configuro el banner motd para tener un mensaje inicial cada vez que se conecte por consola al equipo.

Router Bogota

Router>enable
Router#conf
Router#configure ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname BOGOTA
BOGOTA(config)#enable secret cisco
BOGOTA(config)#line con 0
BOGOTA(config-line)#password cisco
BOGOTA(config-line)#login
BOGOTA(config-line)#line vty 0 4
BOGOTA(config-line)#password cisco
BOGOTA(config-line)#login
BOGOTA(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"
BOGOTA(config)#service password-encryption
BOGOTA(config)#

Router Medellin

MEDELLIN#
MEDELLIN#conf
MEDELLIN#configure ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname MEDELLIN
MEDELLIN(config)#enable secret cisco
MEDELLIN(config)#line con 0
MEDELLIN(config-line)#password cisco
MEDELLIN(config-line)#login
MEDELLIN(config-line)#line vty 0 4
MEDELLIN(config-line)#password cisco
MEDELLIN(config-line)#login
MEDELLIN(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"
MEDELLIN(config)#service password-encryption
MEDELLIN(config)#

Router Cali

Router>enable

Router#conf

Router#configure ter

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#hostname CALI

CALI(config)#enable secret cisco

CALI(config)#line con 0

CALI(config-line)#password cisco

CALI(config-line)#login

CALI(config-line)#line vty 0 4

CALI(config-line)#password cisco

CALI(config-line)#login

CALI(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"

CALI(config)#service password-encryption

CALI(config)#

5.1.1 Parte 1: Asignación de direcciones IP

Router Medellin

MEDELLIN(config)#interf

MEDELLIN(config)#interface s0/0/0

MEDELLIN(config-if)#ip address 192.168.1.99 255.255.255.224

MEDELLIN(config-if)#no shut

MEDELLIN(config-if)#no shutdown

MEDELLIN(config-if)#

Dirección ip fast ethernet 0/0

MEDELLIN(config)#inter

MEDELLIN(config)#interface f

MEDELLIN(config)#interface fastEthernet 0/0

MEDELLIN(config-if)#ip address 192.168.1.33 255.255.255.224

MEDELLIN(config-if)#no shut

MEDELLIN(config-if)#no shutdown

Router Bogota

interface s0/0/0

Password:

BOGOTA#conf

BOGOTA#configure ter

BOGOTA#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

BOGOTA(config)#inter

BOGOTA(config)#interface s0/0/0

BOGOTA(config-if)#ip address 192.168.1.98 255.255.255.224

BOGOTA(config-if)#no shut

BOGOTA(config-if)#no shutdown

interface s0/0/1

BOGOTA#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

BOGOTA(config)#inter

BOGOTA(config)#interface s0/0/1

BOGOTA(config-if)#ip address 192.168.1.130 255.255.255.224

BOGOTA(config-if)#no sh

BOGOTA(config-if)#no shutdown

Dirección ip fast ethernet 0/0

BOGOTA(config)#inter

BOGOTA(config)#interfa

BOGOTA(config)#interface fas

BOGOTA(config)#interface fastEthernet 0/0

BOGOTA(config-if)#ip address 192.168.1.1 255.255.255.224

BOGOTA(config-if)#no sh

BOGOTA(config-if)#no shutdown

Router Cali

CALI#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

CALI(config)#inter
CALI(config)#interface s0/0/0
CALI(config-if)#ip address 192.168.1.131 255.255.255.224
CALI(config-if)#no shu
CALI(config-if)#no shutdown

Dirección ip fast ethernet 0/0

CALI#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
CALI(config)#interface fas
CALI(config)#interface fastEthernet 0/0
CALI(config-if)#ip address 192.168.1.65 255.255.255.224
CALI(config-if)#no shut
CALI(config-if)#no shutdown

5.1.2 Configurar direcciones Ips de los Switch`s y la seguridad de todos los switch`s.

Switch de medellin

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S1
S1(config)#enable secret cisco
S1(config)#line con 0
S1(config-line)#password cisco
S1(config-line)#login
S1(config-line)#line vty 0 4
S1(config-line)#password cisco
S1(config-line)#login
S1(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"
S1(config)#service password-encryption
S1(config)#

Dirección ip Vlan 1 medellin

S1#conf

S1#configure ter

S1#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

S1(config)#int vlan 1

S1(config-if)#ip address 192.168.1.34 255.255.255.224

S1(config-if)#no sh

S1(config-if)#no shutdown

Switch de bogota

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname S2

S2(config)#enable secret cisco

S2(config)#line con 0

S2(config-line)#password cisco

S2(config-line)#login

S2(config-line)#line vty 0 4

S2(config-line)#password cisco

S2(config-line)#login

S2(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"

S2(config)#service password-encryption

S2(config)#end

Direccion Ip vlan switch bogota

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#int vlan 1

Switch(config-if)#ip address 192.168.1.10 255.255.255.224

Switch(config-if)#no shu

Switch(config-if)#no shutdown

Switch(config-if)#end

Switch de cali

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname S3

S3(config)#enable secret cisco

S3(config)#line con 0

S3(config-line)#password cisco

S3(config-line)#login

S3(config-line)#line vty 0 4

S3(config-line)#password cisco

S3(config-line)#login

S3(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"

S3(config)#service password-encryption

S3(config)#

Direccion Ip vlan switch Cali

S3(config)#int vlan 1

S3(config-if)#ip address 192.168.1.66 255.255.255.224

S3(config-if)#no shut

S3(config-if)#no shutdown

5.1.3 Configurar el direccionamiento de los routers

BOGOTA(config)# debug ip routing

BOGOTA(config)# ip route 192.168.1.32 255.255.255.224 192.168.1.99

BOGOTA(config)# ip route 192.168.1.64 255.255.255.224 192.168.1.131

BOGOTA(config)# ip route 0.0.0.0 0.0.0.0

Mostrar la tabla de enrutamiento

```
     192.168.1.0/27 is subnetted, 5 subnets
C       192.168.1.0 is directly connected, FastEthernet0/0
S       192.168.1.32 [1/0] via 192.168.1.99
S       192.168.1.64 [1/0] via 192.168.1.131
C       192.168.1.96 is directly connected, Serial0/0/0
C       192.168.1.128 is directly connected, Serial0/0/1

BOGOTA#
```

MEDELLIN(config)# debug ip routing

MEDELLIN(config-if)# ip route 0.0.0.0 0.0.0.0 192.168.1.98

MEDELLIN(config-if)# exit

Mostrar la tabla de enrutamiento

```
     192.168.1.0/27 is subnetted, 2 subnets
C       192.168.1.32 is directly connected, FastEthernet0/0
C       192.168.1.96 is directly connected, Serial0/0/0
S*   0.0.0.0/0 [1/0] via 192.168.1.98
```

CALI(config)# debug ip routing

CALI(config-if)# ip route 0.0.0.0 0.0.0.0 192.168.1.130

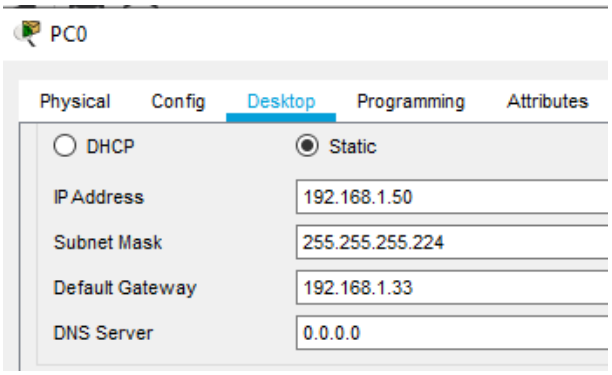
CALI(config-if)# exit

Mostrar la tabla de enrutamiento

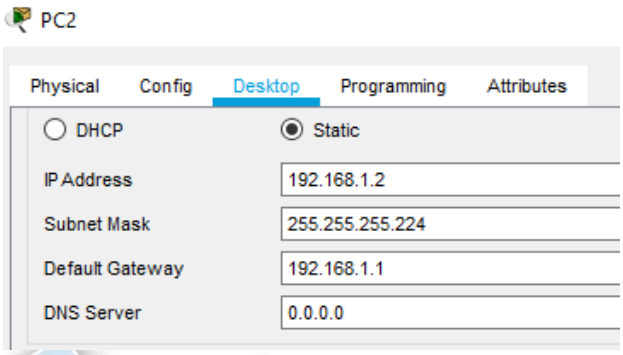
```
     192.168.1.0/27 is subnetted, 2 subnets
C       192.168.1.64 is directly connected, FastEthernet0/0
C       192.168.1.128 is directly connected, Serial0/0/0
S*   0.0.0.0/0 [1/0] via 192.168.1.130

CALI#
```

5.1.4 Asignación de direcciones Ip`s a los equipos y servidores

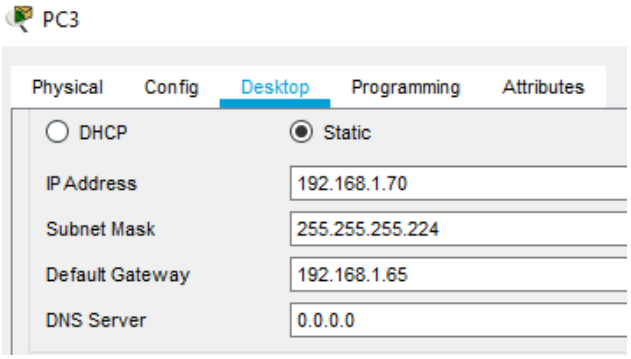
Equipo subred Medellin



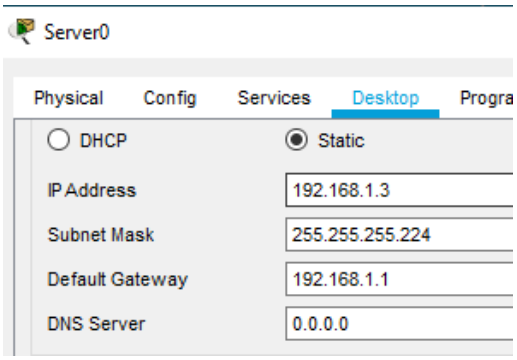
Equipo subred Bogota



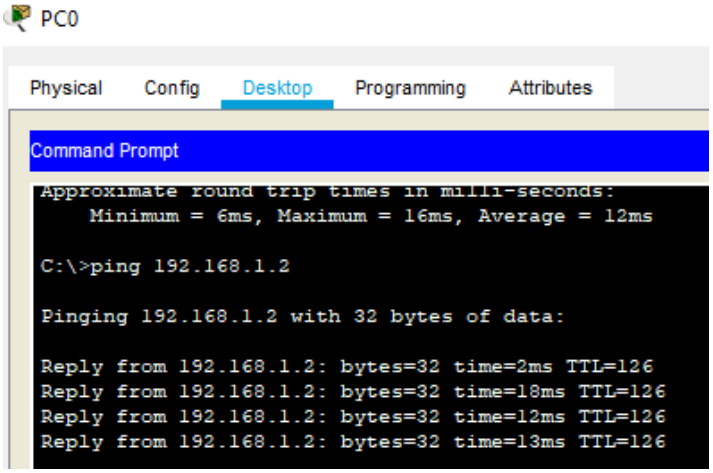
Equipo subred Cali



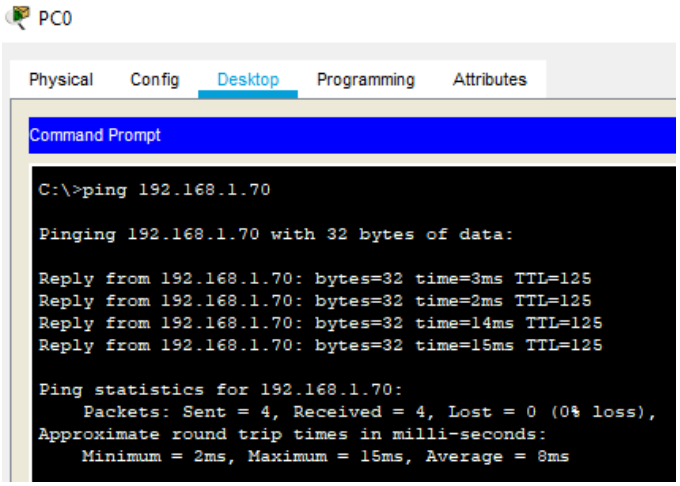
Servidor Subred Bogota



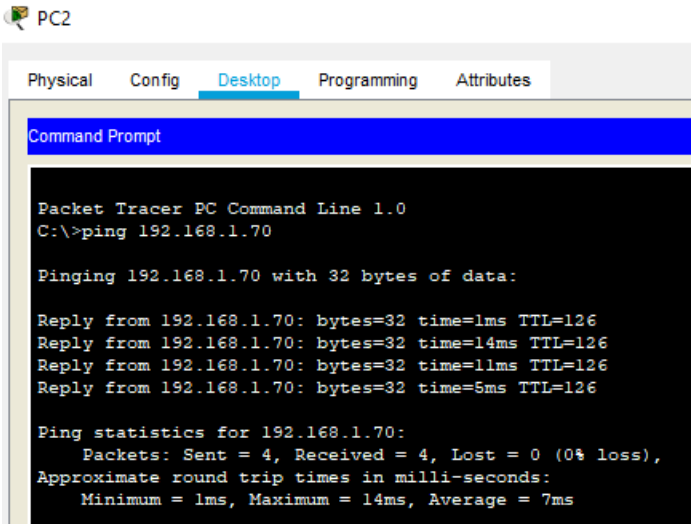
5.1.5 REALIZAR UN DIAGNÓSTICO PARA COMPROBAR QUE CADA UNO DE LOS PUNTOS DE LA RED



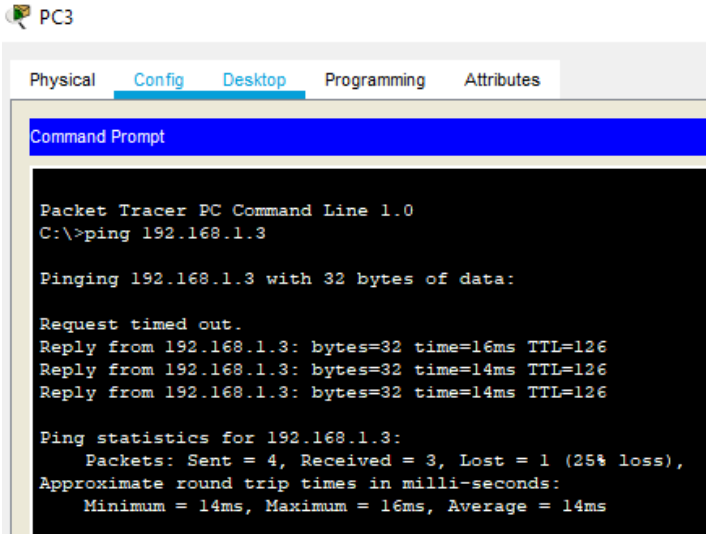
Ping entre el PC0 de la subred Medellin al PC2 de la subred Boogota



Ping entre el PC0 de la subred Medellin al PC3 de la subred Cali



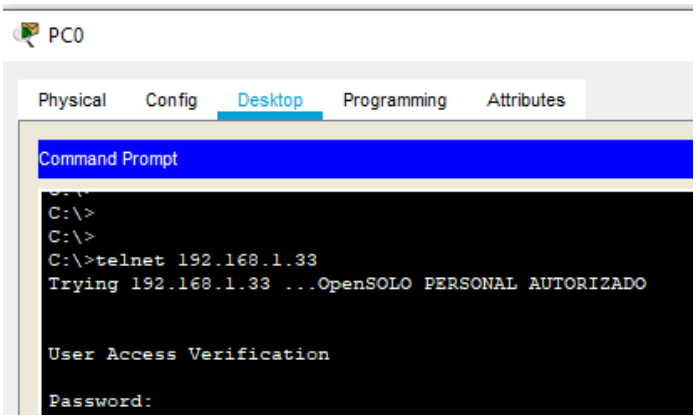
Ping entre el PC2 de la subred Bogota al PC3 de la subred Cali



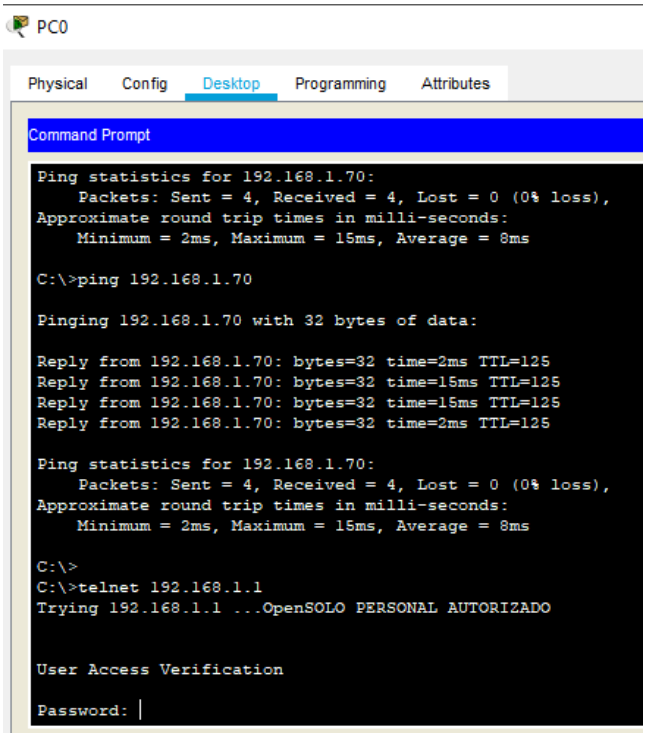
Ping entre el PC3 de la subred Cali al Servidor de la subred Bogota

Los router debe estar habilitado para establecer conexiones Telnet

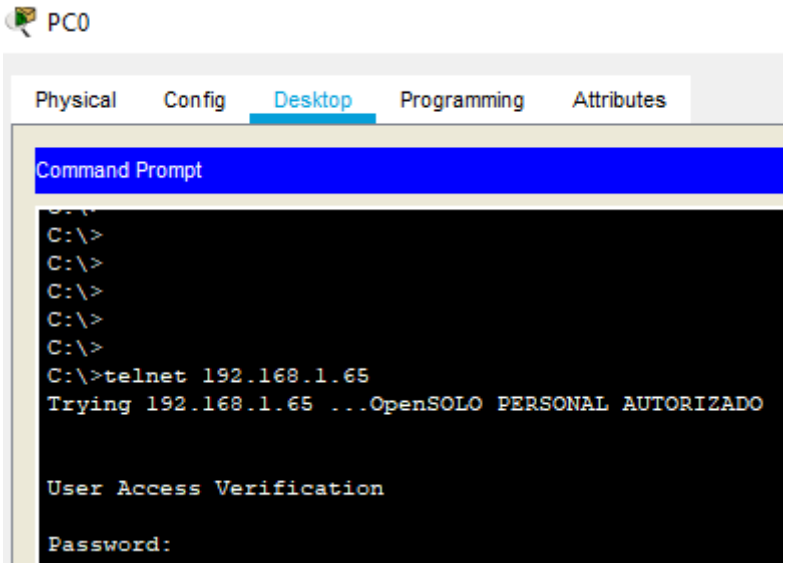
Se realizo el TELNET desde el PC0 de la subred Medellin, cali y bogota



Router medellin



Router Bogota

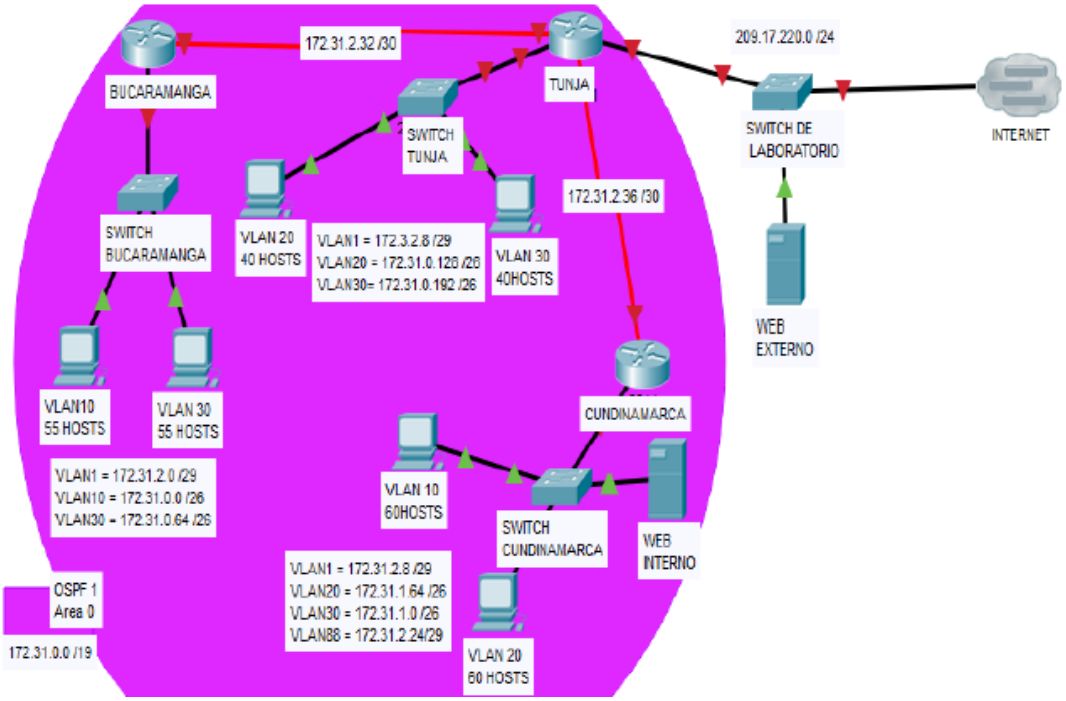


Router Cali

	ORIGEN	DESTINO	RESULTADO
TELNET	Router Medellín	Router Cali	ok
	WS1	Router Bogota	ok
	Servidor	Router Cali	ok
	Servidor	Router Medellín	ok
TELNET	LAN Router Medellín	Router Cali	ok
	LAN Router Cali	Router Cali	ok
	LAN Router Medellín	Router Medellín	ok
	LAN Router Cali	Router Medellín	ok
PING	LAN Router Cali	WS1	no
	LAN Router Medellín	WS1	no
	LAN Router Medellín	LAN Router Cali	ok
PING	LAN Router Cali	Servidor	no
	LAN Router Medellín	Servidor	no
	Servidor	LAN Router Medellín	ok
	Servidor	LAN Router Cali	ok
	Router Cali	LAN Router Medellín	ok
	Router Medellín	LAN Router Cali	ok

5.2 Escenario 2

Una empresa tiene la conexión a internet en una red Ethernet, lo cual deben adaptarlo para facilitar que sus routers y las redes que incluyen puedan, por esa vía, conectarse a internet, pero empleando las direcciones de la red LAN original.



Dispositivo	Interfaz	Dirección Ip	Mascara	Gateway
R Tunja	F0/0	172.31.2.1	255.255.255.0	
	F0/1	219.17.220.1	255.255.255.0	
	S0/0/0	172.31.3.1	255.255.255.0	
	S0/1/0	172.31.4.1	255.255.255.0	
R Bucaramanga	F0/0	172.31.2.2	255.255.255.0	
	S0/0/0	172.31.5.1	255.255.255.0	
R Cundinamarca	F0/0	172.31.2.3	255.255.255.0	
	S0/0/0	172.31.6.1	255.255.255.0	
S1 Tunja	Vlan1	172.31.7.1	255.255.255.0	
	Vlan10	172.31.8.1	255.255.255.0	
	Vlan30	172.31.10.1	255.255.255.0	
S2	Vlan1	172.31.7.1	255.255.255.0	
	Vlan20	172.31.9.1	255.255.255.0	

Bucaramana	Vlan30	172.31.10.1	255.255.255.0	
S3 Cundinamarca	Vlan1	172.31.7.1	255.255.255.0	
	Vlan20	172.31.9.1	255.255.255.0	
	Vlan30	172.31.10.1	255.255.255.0	
	Vlan88	172.31.11.1	255.255.255.0	
PC0	Vlan10	172.31.8.10	255.255.255.0	
PC1	Vlan30	172.31.10.10	255.255.255.0	
PC2	Vlan20	172.31.9.10	255.255.255.0	
PC3	Vlan30	172.31.10.11	255.255.255.0	
PC4	Vlan10	172.31.8.11	255.255.255.0	
PC5	Vlan20	172.31.9.11	255.255.255.0	
ServerInterno	Cundinam	172.31.2.5	255.255.255.0	
ServerExterno	Tunja	172.31.2.10	255.255.255.0	

5.2.1 Configuración direcciones Ip de los router

Router Bucaramanga

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#interfa vlan 1

Switch(config-if)#ip address 172.31.2.40 255.255.255.0

Switch(config-if)#no shu

Switch(config-if)#no shutdown

Switch(config-if)#interfa vlan 10

Switch(config-if)#ip address 172.31.2.50 255.255.255.0

Switch(config-if)#no shut

Switch(config-if)#no shutdown

Switch(config-if)#interfa vlan 30

Switch(config-if)#ip address 172.31.2.70 255.255.255.0

Switch(config-if)#no shut

Switch(config-if)#no shutdown

Router Tunja

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#inter
Router(config)#interface fas
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 172.3.2.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#no shutdown
Router(config-if)#exit

Router(config)#interface fastEthernet 0/1
Router(config-if)#ip address 219.17.220.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#no shutdown
Router(config-if)#exit

Router(config)#interface s0/0/0
Router(config-if)#ip address 172.31.3.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#no shutdown
Router(config-if)#exit

Router(config)#interface s0/1/0
Router(config-if)#ip address 172.31.4.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#no shutdown
```

Router Cundinamarca

```
Router>enable
Router#conf
Router#configure ter
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
```

Router(config)#inter
Router(config)#interface fas
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 172.31.2.3 255.255.255.0
Router(config-if)#no shut
Router(config-if)#no shutdown
Router(config-if)#exit

Router(config)#inter
Router(config)#interface s0/0/0
Router(config-if)#ip address 172.31.6.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#

5.2.2 Seguridad de los switchs

Switch Bucaramanga

Switch>enable
Switch#conf
Switch#configure ter
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#enable secret cisco
Switch(config)#line con 0
Switch(config-line)#password cisco
Switch(config-line)#login
Switch(config-line)#line vty 0 4
Switch(config-line)#password cisco
Switch(config-line)#login
Switch(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"
Switch(config)#service password-enc
Switch(config)#service password-encryption

Switch(config)#exit

Switch Tunja

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#enable secret cisco

Switch(config)#line con 0

Switch(config-line)#password cisco

Switch(config-line)#login

Switch(config-line)#line vty 0 4

Switch(config-line)#password cisco

Switch(config-line)#login

Switch(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"

Switch(config)#service password-en

Switch(config)#service password-encryption

Switch(config)#exit

Switch Cundinamarca

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#enable secret cisco

Switch(config)#line con 0

Switch(config-line)#password cisco

Switch(config-line)#login

Switch(config-line)#line vty 0 4

Switch(config-line)#password cisco

Switch(config-line)#login

Switch(config-line)#banner motd "SOLO PERSONAL AUTORIZADO"

Switch(config)#service password-en

Switch(config)#service password-encryption

Switch(config)#exit

Vlan swtch Cundinamarca

Switch(config)#inter vlan 1

Switch(config-if)#ip address 172.31.7.1 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#no shutdown

Switch(config-if)#inter vlan 20
Switch(config-if)#ip addr 172.31.9.1 255.255.255.0
Switch(config-if)#no sh
Switch(config-if)#no shutdown

Switch(config-if)#inte vlan 30
Switch(config-if)#ip addres 172.31.10.1 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#no shutdown

Switch(config-if)#inter vlan 88
Switch(config-if)#ip addres 172.31.11.1 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#no shutdown
Switch(config-if)#

Vlan switch tunja

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#inter vlan 1
Switch(config-if)#ip addr 172.31.7.1 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#no shutdown
Switch(config-if)#exit

Switch(config)#inter vlan 10
Switch(config-if)#ip addr 172.31.8.1 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#no shutdown
Switch(config-if)#exit

Switch(config)#inter vlan 30
Switch(config-if)#ip addr 172.31.10.1 255.255.255.0
Switch(config-if)#no sht
Switch(config-if)#no sh
Switch(config-if)#no shutdown
Switch(config-if)#exit
Switch(config)

Vlan switch Bucaramanga

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#inte vlan 1
Switch(config-if)#ip addres 172.31.7.1 255.255.0.0
Switch(config-if)#no shut
Switch(config-if)#no shutdown
Switch(config-if)#exit

Switch(config)#inter vlan 20
Switch(config-if)#ip addres 172.31.9.1 255.255.0.0
Switch(config-if)#no shut
Switch(config-if)#no shutdown
Switch(config-if)#exit

Switch(config)#inter vlan30
Switch(config-if)#ip address 172.31.10.1 255.255.0.0
Switch(config-if)#no shut
Switch(config-if)#no sh
Switch(config-if)#no shutdown

5.2.3 Configurar Vlan a puertos de los Switch`s

Switch Tunja

Switch(config)#inter
Switch(config)#interface fas

Switch(config)#interface fastEthernet 0/1
Switch(config-if)#switchport access vlan 20
% Access VLAN does not exist. Creating vlan 20
Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan20, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan20, changed state to up

Switch(config)#inter fastEthernet 0/2
Switch(config-if)#swit
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 30
% Access VLAN does not exist. Creating vlan 30
Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan30, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30, changed state to up
Switch(config-if)#

Switch Cundinamarca

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#inter fas 0/2
Switch(config-if)#swit
Switch(config-if)#swit
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
% Access VLAN does not exist. Creating vlan 20
Switch(config-if)#

Switch(config)#inter fas 0/3
Switch(config-if)#swit
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10

% Access VLAN does not exist. Creating vlan 10

Switch Bucaramanga

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#inter fas 0/2

Switch(config-if)#swit

Switch(config-if)#switchport mode access

Switch(config-if)#switchport access vlan 10

% Access VLAN does not exist. Creating vlan 10

Switch(config-if)#exit

Switch(config)#inter fas 0/3

Switch(config-if)#switchport mode access

Switch(config-if)#switchport access vlan 30

% Access VLAN does not exist. Creating vlan 30

Switch(config-if)#

%LINK-5-CHANGED: Interface Vlan30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30, changed state to up

Switch(config-if)#exit

5.2.4 Configuracion del web server deberá tener NAT estático

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#ip nat inside source 172.31.2.10 219.17.220.2

Router(config)#ip nat inside source static 172.31.2.10 219.17.220.2

Router(config)#inter fas

Router(config)#inter fastEthernet 0/1

Router(config-if)#ip nat inside

Router(config-if)#inter serial 0/0/0

Router(config-if)#ip nat outside

Router(config-if)#

NAT con sobrecarga es la siguiente bucaramanga

Router(config)#access-list 10 permit 172.31.2.0 0.0.0.0
Router(config)#ip nat inside source list 10 interface serial 0/0/0 overload
Router(config)#interfa fas
Router(config)#interfa fastEthernet 0/0
Router(config-if)#ip nat inside
Router(config-if)#inter
Router(config-if)#inter ser
Router(config-if)#interface serial 0/0/0
Router(config-if)#ip nat outside
Router(config-if)#

NAT con sobrecarga es la siguiente cundinamarca

Router(config)#access-list 10 permit 172.31.2.0 0.0.0.0
Router(config)#ip nat inside source list 10 interface serial 0/1/0
Router(config)#ip nat inside source list 10 interface serial 0/1/0 overload
Router(config)#inte
Router(config)#interface fas
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip nat inside
Router(config-if)#interface serial 0/1/0
Router(config-if)#ip nat outside
Router(config-if)#

5.2.5 SEGURIDAD AAA PARA ROUTERS

Router bucaramanga

Router>enable
Router#conf
Router#configure ter
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#aaa new-model
Router(config)#username root secret cisco

Router(config)#aaa aute
Router(config)#aaa auth
Router(config)#aaa authentication login default local

Router(config)#aaa authentication login default enable
Router(config)#enable secret cisco
Router(config)#aaa authentication login consola local
Router(config)#line console 0
Router(config-line)#login authentication consola
Router(config)#aaa authentication login vty line
Router(config)#line vty 0 4
Router(config-line)#password cisco
Router(config-line)#login authentication vty
AAA: Warning authentication list vty is not defined for LOGIN
Router(config-line)#end
Router#exit

Router Tunja

Router>enable
Router#conf
Router#configure ter
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#aaa new-model
Router(config)#username root secret cisco
Router(config)#aaa aute
Router(config)#aaa auth
Router(config)#aaa authentication login default local

Router(config)#aaa authentication login default enable
Router(config)#enable secret cisco
Router(config)#aaa authentication login consola local
Router(config)#line console 0
Router(config-line)#login authentication consola

Router(config)#aaa authentication login vty line
Router(config)#line vty 0 4
Router(config-line)#password cisco
Router(config-line)#login authentication vty
AAA: Warning authentication list vty is not defined for LOGIN
Router(config-line)#end
Router#exit

Router Cundinamarca

Router>enable
Router#conf
Router#configure ter
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#aaa new-model
Router(config)#username root secret cisco
Router(config)#aaa aute
Router(config)#aaa auth
Router(config)#aaa authentication login default local

Router(config)#aaa authentication login default enable
Router(config)#enable secret cisco
Router(config)#aaa authentication login consola local
Router(config)#line console 0
Router(config-line)#login authentication consola
Router(config)#aaa authentication login vty line
Router(config)#line vty 0 4
Router(config-line)#password cisco
Router(config-line)#login authentication vty
Router(config-line)#end
Router#exit

Dhcp Para Routers

Router bucaramanga

Router(config)#ip dhcp pool red1

Router(dhcp-config)#network 172.31.5.0 255.255.255.0

Router(dhcp-config)#default-router 172.31.5.1

Router(dhcp-config)#dns-server 172.31.5.100

Router(dhcp-config)#exit

Router Cundinamarca

Router(config)#ip dhcp pool red2

Router(dhcp-config)#network 172.31.6.0 255.255.255.0

Router(dhcp-config)#defau

Router(dhcp-config)#default-router 172.31.6.1

Router(dhcp-config)#dns

Router(dhcp-config)#dns-server 172.31.6.100

Router(dhcp-config)#exit

5.2.6 Configuracion de vlans en los router para encapsulation

Router bucaramanga

Rointer fas 0/1inter fas 0/1.1

Router(config-subif)#enc

Router(config-subif)#encapsulation dot1 1 native

Router(config-subif)#ip addre 172.31.7.1 255.255.255.0

Router(config-subif)#no shut

Router(config-subif)#no shutdown

Router(cip addencapsulatiointer fas 0/1.1interip addencapsulation dot1 1 nativeencapsulatip addre 172.31.7.1 255.255.255.0ip addre 172.31.9.1 255.255.255.0

Router(config-subif)#no shut

Router(config-subif)#nip addre 172encapsulatiip addre 172encapinter fas 0/1.20interip addre 172encapsulation dot1 20encapsulatip addre 172.31.9.1 255.255.255.0ip addre 172.31.10.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#no shutdown

Router tunja

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#inter fas 0/0.1
Router(config-subif)#encap
Router(config-subif)#encapsulation dot1q 1 native
Router(config-subif)#ip addres 172.31.7.1 255.255.255.0
Router(config-subif)#exit
Router(config)#inter fas 0/0.20
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.20, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.20, changed state to up

Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip addres 172.31.9.1 255.255.255.0
Router(config-subif)#exit
Router(config)#inter fas 0/0.30
Router(config-subif)#enca
Router(config-subif)#encapsulation dot1q 30
Router(config-subif)#ip addres 172.31.10.1 255.255.255.0
Router(config-subif)#exit

Router Cundinamarca

Router(config-subif)#encap
Router(config-subif)#encapsulation dot1q 1 native

Router(config-subif)#ip addres 172.31.7.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#no shutdown
Router(config-subif)#exit
Router(config)#inter fas 0/0.20
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.20, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.20, changed state to up

Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip addres 172.31.9.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#no shutdown
Router(config-subif)#inter fas 0/0.30
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.30, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.30, changed state to up

Router(config-subif)#encapsulation dot1q 30
Router(config-subif)#ip addres 172.31.10.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#no shutdown
Router(config-subif)#exit
Router(config)#inter fas 0/0.88
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.88, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.88, changed state to up

Router(config-subif)#encapsulation dot1q 88
Router(config-subif)#ip addres 172.31.11.1 255.255.255.0
Router(config-subif)#no shut

Router(config-subif)#no shutdown
Router(config-subif)#exit

Copia de seguridad de router

Router#copy runn
Router#copy running-config tftp
Address or name of remote host []? 172.31.2.5
Destination filename [Router-confg]? backup

Writing running-config.....
% opening tftp://172.31.2.5/backup (ok-874/16000 bytes)
Router#

Listas de acceso

Router Tunja

Router(config)#access-list 105 deny ip 172.31.2.0 255.255.255.0 172.31.2.72 0.0.0.0
Router(config)#access-list 106 deny ip 172.31.2.0 255.255.255.0 172.31.2.72 0.0.0.0
Router(config)#

Router Cundinamarca

Router(config)#access-list 107 permit ip 219.17.220.1 255.255.255.0 172.31.6.1 255.255.255.0
Router(config)#access-list 108 deny ip 172.31.2.1 255.255.255.0 172.31.6.1 0.0.0.0

Ospf

Router bucaramanga

Router(config)#router ospf 1
Router(config-router)#netw
Router(config-router)#network 172.31.0.0 0.0.0.255
% Incomplete command.
Router(config-router)#network 172.31.0.0 0.0.0.255 area 0
Router(config-router)#net

Router(config-router)#network 172.31.5.1 0.0.0.3 area 0

Router tunja

Router(config)#router ospf 1

Router(config-router)#net

Router(config-router)#network 172.31.0.0 0.0.0.255

% Incomplete command.

Router(config-router)#network 172.31.0.0 0.0.0.255 area 0

Router(config-router)#netwo

Router(config-router)#network 172.31.4.0 0.0.0.255 area 0

Router(config-router)#exit

Router cundinamarca

Router(config)#router ospf 1

Router(config-router)#net

Router(config-router)#network 172.31.0.0 0.0.0.255

% Incomplete command.

Router(config-router)#network 172.31.0.0 0.0.0.255 area 0

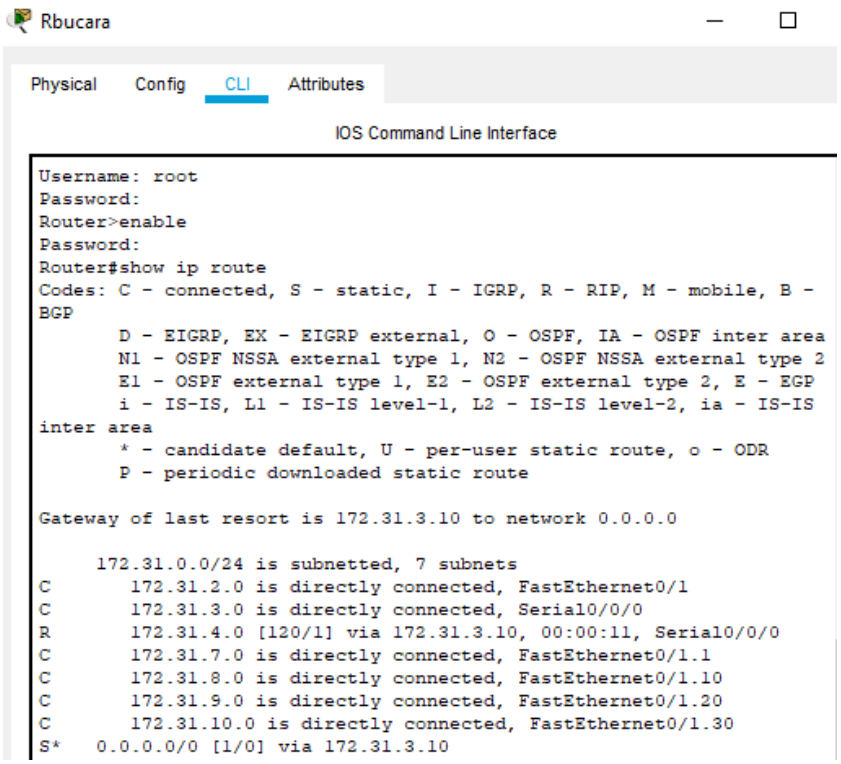
Router(config-router)#net

Router(config-router)#network 172.31.6.0 0.0.0.255 area 0

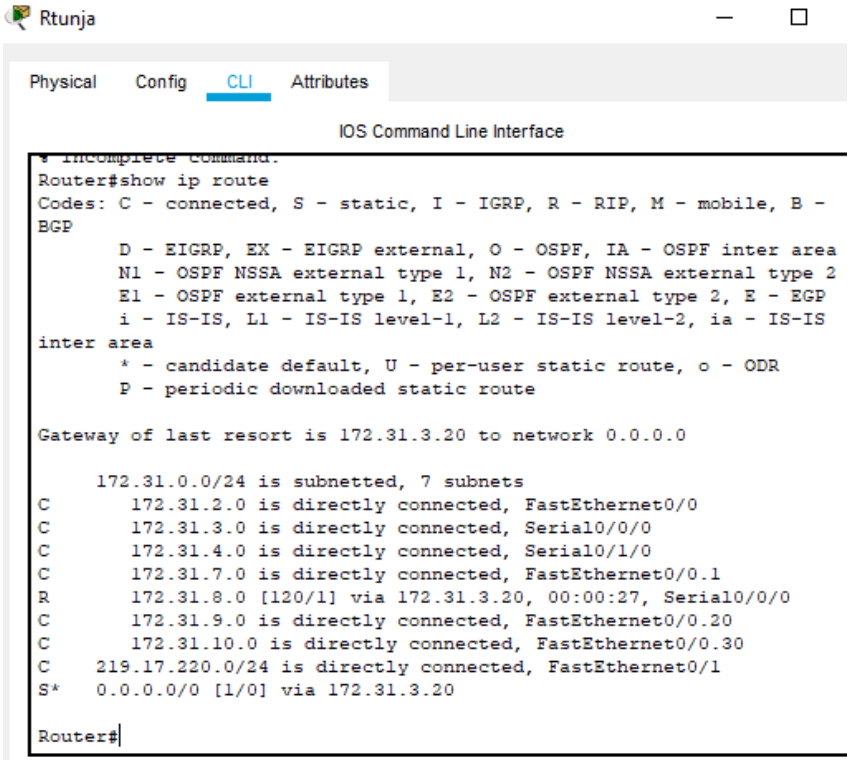
Router(config-router)#exit

Routing en los routers

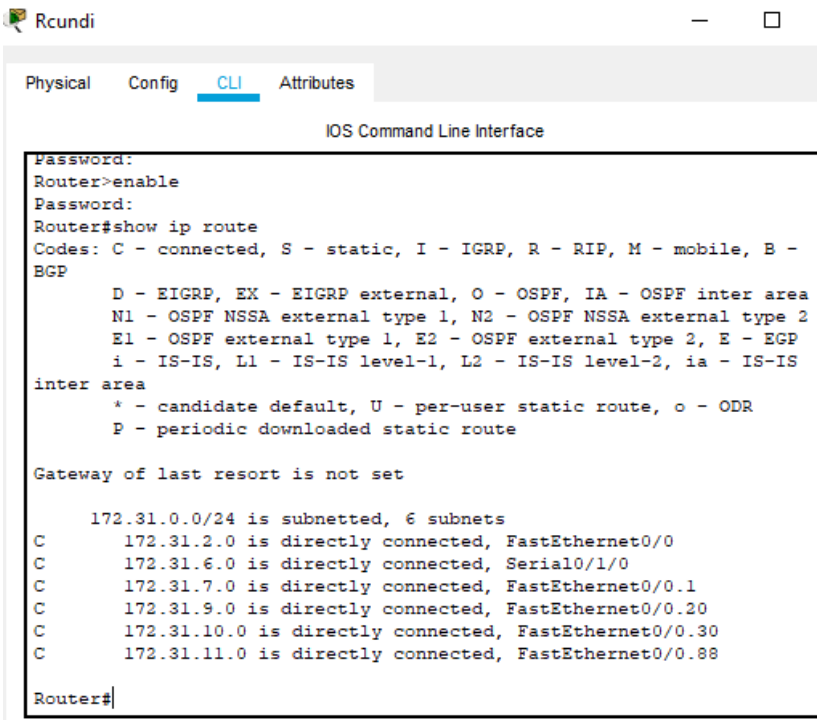
Router bucaramanga



Router tunja



Router Cundinamarca



Enlace para ver los archivos Packet Tracer (versión 7.2.2.0418)

https://drive.google.com/drive/folders/1leYgxscYdZQOoMRz5nTmAot8xEXCabWt?usp=sharing

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