PRUEBA DE HABILIDADES PRÁCTICAS

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CURSO:

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INTRODUCCION

En el presente trabajo de habilidades se utilizara los protocolos de routing dinámico configuración de servers DHCP, Network Address Translation (NAT), Listas de Control de Acceso (ACL), también se configuran los servidores DHCP, protocolo de difusión que trabaja de forma predeterminada.

Es de mucha importancia la buena administración de las redes, y aplicarlas de la mejor manera para optimizar las comunicaciones, en nuestro caso en la aplicación de Packet Tracer.

OBJETIVOS

Se desarrollara las prácticas, mediante los dos casos propuestos como actividad final del curso diploma de Cisco.

Verificar las conexiones mediante el uso de comandos ping, traceroute, show ip route.

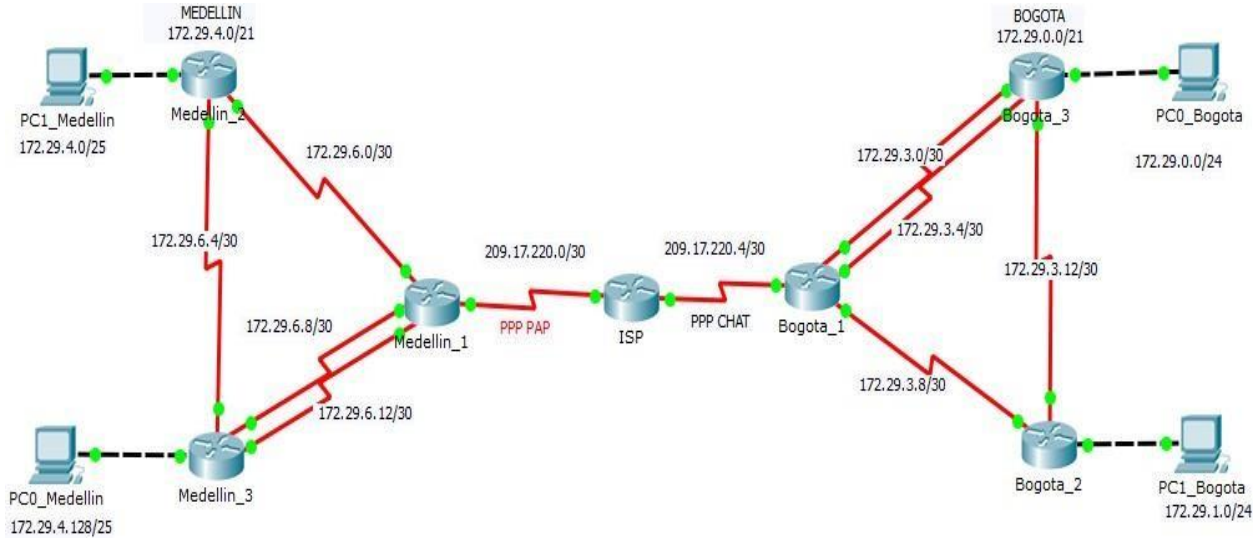
Desarrollar el informe con evidencias y pantallazos que especifique la aplicación y solución práctica solicitada en cada uno de los escenarios

Generar los archivos en el Packet Tracer al igual que el trabajo en formato pdf con lo solicitado.

Escenario 1

Una empresa posee sucursales distribuidas en las ciudades de Bogotá y Medellín, 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.

TOPOLOGIA DE RED



PARTE 1. CONFIGURACION DE ENRUTAMIENTO

TABLA DE ROUTER BOGOTA

ROUTER	INTERFAZ	IP	ROUTER VECINO	INTERFAZ R_VECINO
gota_1	RIAL0/0/1	2.29.3.9/30	gota_2	RIAL0/0/1
gota_1	RIAL0/0/0	2.29.3.1/30	gota_3	RIAL0/0/1
gota_1	RIAL0/1/0	2.29.3.5/30	gota_3	RIAL0/1/0
gota_2	RIAL0/0/1	2.29.3.10/30	gota_1	RIAL0/0/1
gota_2	RIAL0/0/0	2.29.3.13/30	gota_3	RIAL0/0/0
gota_2	g0/0	2.29.1.1/24		
gota_3	RIAL0/0/0	2.29.3.14/30	gota_2	RIAL0/0/0
gota_3	RIAL0/0/1	2.29.3.2/30	gota_1	RIAL0/0/0
gota_3	RIAL0/1/0	2.29.3.6/30	gota_1	RIAL0/1/0
gota_3	g0/0	2.29.0.1/24		

TABLA LAN ROUTER BOGOTA

ROUTER	INTERFAZ	IP	GATEWAY
gota_2	g0/0	2.29.1.1/24	
1_Bogota	stEtherneto	CP	2.29.1.1
gota_3	g0/0	2.29.0.1/24	
0_Bogota	stEtherneto	CP	2.29.0.1

TABLA DE ROUTER MEDELLIN

ROUTER	INTERFAZ	IP	ROUTER VECINO	INTERFAZ R_VECINO
Medellin_1	RIAL0/0/1	2.29.6.1/30	**edellin_2**	RIAL0/0/1
Medellin_1	RIAL0/0/0	2.29.6.13/30	**edellin_3**	RIAL0/0/1
Medellin_1	RIAL0/1/0	2.29.6.9/30	**edellin_3**	RIAL0/1/0
Medellin_2	RIAL0/0/1	2.29.6.2/30	**edellin_1**	RIAL0/0/1
Medellin_2	RIAL0/0/0	2.29.6.5/30	**edellin_3**	RIAL0/0/0
Medellin_2	g0/0	2.29.4.1/25		
Medellin_3	RIAL0/0/0	2.29.6.6/30	**edellin_2**	RIAL0/0/0
Medellin_3	RIAL0/0/1	2.29.6.14/30	**edellin_1**	RIAL0/0/0
Medellin_3	RIAL0/1/0	2.29.6.10/30	**edellin_1**	RIAL0/1/0
Medellin_3	g0/0	2.29.4.129/25		

TABLA LAN ROUTER MEDELLIN

ROUTER	INTERFAZ	IP	GATEWAY
edellin_2	g0/0	2.29.4.1/25	
1_ Medellin	stEtherneto	CP	2.29.4.1
edellin_3	g0/0	2.29.4.129/25	
0_ Medellin	stEtherneto	CP	2.29.4.129

CONTRASEÑAS

CONSOLA: CLASE
LINEAS VTY: CLASE
ENABLE: CISCO

Parte 2 **TABLAS DE ENRUTAMIENTO, PROPAGACION DE RIP**

BOGOTA_1

```
router rip
 version 2
 passive-interface Serial0/1/1
 network 172.29.0.0
 network 209.17.220.0
 default-information originate
 no auto-summary
ip route 0.0.0.0 0.0.0.0 209.17.220.5
```

```
Bogota_1#SH 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 209.17.220.5 to network 0.0.0.0

     172.29.0.0/16 is variably subnetted, 9 subnets, 3 masks
R       172.29.0.0/24 [120/1] via 172.29.3.2, 00:00:20, Serial0/0/0
                      [120/1] via 172.29.3.6, 00:00:20, Serial0/1/0
R       172.29.1.0/24 [120/1] via 172.29.3.10, 00:00:07, Serial0/0/1
C       172.29.3.0/30 is directly connected, Serial0/0/0
L       172.29.3.1/32 is directly connected, Serial0/0/0
C       172.29.3.4/30 is directly connected, Serial0/1/0
L       172.29.3.5/32 is directly connected, Serial0/1/0
C       172.29.3.8/30 is directly connected, Serial0/0/1
L       172.29.3.9/32 is directly connected, Serial0/0/1
R       172.29.3.12/30 [120/1] via 172.29.3.10, 00:00:07, Serial0/0/1
                       [120/1] via 172.29.3.2, 00:00:20, Serial0/0/0
                       [120/1] via 172.29.3.6, 00:00:20, Serial0/1/0
     209.17.220.0/24 is variably subnetted, 3 subnets, 2 masks
C       209.17.220.4/30 is directly connected, Serial0/1/1
C       209.17.220.5/32 is directly connected, Serial0/1/1
L       209.17.220.6/32 is directly connected, Serial0/1/1
S*   0.0.0.0/0 [1/0] via 209.17.220.5
Bogota_1#
```

BOGOTA_2

```
router rip
 version 2
 passive-interface GigabitEthernet0/0
 network 172.29.0.0
 no auto-summary


Bogota_2#
Bogota_2#SH 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 172.29.3.9 to network 0.0.0.0

     172.29.0.0/16 is variably subnetted, 9 subnets, 3 masks
R       172.29.0.0/24 [120/1] via 172.29.3.14, 00:00:26, Serial0/0/0
C       172.29.1.0/24 is directly connected, GigabitEthernet0/0
L       172.29.1.1/32 is directly connected, GigabitEthernet0/0
R       172.29.3.0/30 [120/1] via 172.29.3.9, 00:00:14, Serial0/0/1
                      [120/1] via 172.29.3.14, 00:00:26, Serial0/0/0
R       172.29.3.4/30 [120/1] via 172.29.3.9, 00:00:14, Serial0/0/1
                      [120/1] via 172.29.3.14, 00:00:26, Serial0/0/0
C       172.29.3.8/30 is directly connected, Serial0/0/1
L       172.29.3.10/32 is directly connected, Serial0/0/1
C       172.29.3.12/30 is directly connected, Serial0/0/0
L       172.29.3.13/32 is directly connected, Serial0/0/0
R*   0.0.0.0/0 [120/1] via 172.29.3.9, 00:00:14, Serial0/0/1
Bogota 2#
```

BOGOTA_3

```
router rip
 version 2
 passive-interface GigabitEthernet0/0
 network 172.29.0.0
 no auto-summary
!
Bogota_3#
Bogota_3#SH 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 172.29.3.1 to network 0.0.0.0

     172.29.0.0/16 is variably subnetted, 10 subnets, 3 masks
C       172.29.0.0/24 is directly connected, GigabitEthernet0/0
L       172.29.0.1/32 is directly connected, GigabitEthernet0/0
R       172.29.1.0/24 [120/1] via 172.29.3.13, 00:00:19, Serial0/0/0
C       172.29.3.0/30 is directly connected, Serial0/0/1
L       172.29.3.2/32 is directly connected, Serial0/0/1
C       172.29.3.4/30 is directly connected, Serial0/1/0
L       172.29.3.6/32 is directly connected, Serial0/1/0
R       172.29.3.8/30 [120/1] via 172.29.3.1, 00:00:24, Serial0/0/1
                      [120/1] via 172.29.3.5, 00:00:24, Serial0/1/0
                      [120/1] via 172.29.3.13, 00:00:19, Serial0/0/0
C       172.29.3.12/30 is directly connected, Serial0/0/0
L       172.29.3.14/32 is directly connected, Serial0/0/0
R*   0.0.0.0/0 [120/1] via 172.29.3.1, 00:00:24, Serial0/0/1
               [120/1] via 172.29.3.5, 00:00:24, Serial0/1/0
Bogota_3#
```

ISP

```
ip classless
ip route 172.29.0.0 255.255.252.0 Serial0/0/1
ip route 172.29.4.0 255.255.252.0 Serial0/0/0
'
R_ISP#
R_ISP#SH IP ROU
R_ISP#SH 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

     172.29.0.0/22 is subnetted, 2 subnets
S       172.29.0.0/22 is directly connected, Serial0/0/1
S       172.29.4.0/22 is directly connected, Serial0/0/0
     209.17.220.0/24 is variably subnetted, 6 subnets, 2 masks
C       209.17.220.0/30 is directly connected, Serial0/0/0
L       209.17.220.1/32 is directly connected, Serial0/0/0
C       209.17.220.2/32 is directly connected, Serial0/0/0
C       209.17.220.4/30 is directly connected, Serial0/0/1
L       209.17.220.5/32 is directly connected, Serial0/0/1
C       209.17.220.6/32 is directly connected, Serial0/0/1
R_ISP#
```

MEDELLIN_1

```
router rip
 version 2
 passive-interface Serial0/1/1
 network 172.29.0.0
 network 209.17.220.0
 default-information originate
 no auto-summary
ip route 0.0.0.0 0.0.0.0 209.17.220.1
!
```

```
Medellin_1#SH 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 209.17.220.1 to network 0.0.0.0

     172.29.0.0/16 is variably subnetted, 9 subnets, 3 masks
R       172.29.4.0/25 [120/1] via 172.29.6.2, 00:00:07, Serial0/0/1
R       172.29.4.128/25 [120/1] via 172.29.6.10, 00:00:08, Serial0/1/0
                        [120/1] via 172.29.6.14, 00:00:08, Serial0/0/0
C       172.29.6.0/30 is directly connected, Serial0/0/1
L       172.29.6.1/32 is directly connected, Serial0/0/1
R       172.29.6.4/30 [120/1] via 172.29.6.2, 00:00:07, Serial0/0/1
                      [120/1] via 172.29.6.10, 00:00:08, Serial0/1/0
                      [120/1] via 172.29.6.14, 00:00:08, Serial0/0/0
C       172.29.6.8/30 is directly connected, Serial0/1/0
L       172.29.6.9/32 is directly connected, Serial0/1/0
C       172.29.6.12/30 is directly connected, Serial0/0/0
L       172.29.6.13/32 is directly connected, Serial0/0/0
     209.17.220.0/24 is variably subnetted, 3 subnets, 2 masks
C       209.17.220.0/30 is directly connected, Serial0/1/1
C       209.17.220.1/32 is directly connected, Serial0/1/1
L       209.17.220.2/32 is directly connected, Serial0/1/1
S*   0.0.0.0/0 [1/0] via 209.17.220.1
Medellin_1#
```

MEDELLIN_2

```
router rip
 version 2
 passive-interface GigabitEthernet0/0
 network 172.29.0.0
 no auto-summary
!
---------_-.--- -- -----
Medellin_2#SH 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 172.29.6.1 to network 0.0.0.0

     172.29.0.0/16 is variably subnetted, 9 subnets, 3 masks
C       172.29.4.0/25 is directly connected, GigabitEthernet0/0
L       172.29.4.1/32 is directly connected, GigabitEthernet0/0
R       172.29.4.128/25 [120/1] via 172.29.6.6, 00:00:18, Serial0/0/0
C       172.29.6.0/30 is directly connected, Serial0/0/1
L       172.29.6.2/32 is directly connected, Serial0/0/1
C       172.29.6.4/30 is directly connected, Serial0/0/0
L       172.29.6.5/32 is directly connected, Serial0/0/0
R       172.29.6.8/30 [120/1] via 172.29.6.1, 00:00:22, Serial0/0/1
                      [120/1] via 172.29.6.6, 00:00:18, Serial0/0/0
R       172.29.6.12/30 [120/1] via 172.29.6.6, 00:00:18, Serial0/0/0
                       [120/1] via 172.29.6.1, 00:00:22, Serial0/0/1
R*   0.0.0.0/0 [120/1] via 172.29.6.1, 00:00:22, Serial0/0/1
Medellin_2#
```

MEDELLIN_3

```
router rip
 version 2
 passive-interface GigabitEthernet0/0
 network 172.29.0.0
 no auto-summary
```

```
Medellin_1#
Medellin_1#SH 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 172.29.6.9 to network 0.0.0.0

     172.29.0.0/16 is variably subnetted, 10 subnets, 3 masks
R       172.29.4.0/25 [120/1] via 172.29.6.5, 00:00:02, Serial0/0/0
C       172.29.4.128/25 is directly connected, GigabitEthernet0/0
L       172.29.4.129/32 is directly connected, GigabitEthernet0/0
R       172.29.6.0/30 [120/1] via 172.29.6.9, 00:00:14, Serial0/1/0
                      [120/1] via 172.29.6.5, 00:00:02, Serial0/0/0
                      [120/1] via 172.29.6.13, 00:00:14, Serial0/0/1
C       172.29.6.4/30 is directly connected, Serial0/0/0
L       172.29.6.6/32 is directly connected, Serial0/0/0
C       172.29.6.8/30 is directly connected, Serial0/1/0
L       172.29.6.10/32 is directly connected, Serial0/1/0
C       172.29.6.12/30 is directly connected, Serial0/0/1
L       172.29.6.14/32 is directly connected, Serial0/0/1
R*   0.0.0.0/0 [120/1] via 172.29.6.9, 00:00:14, Serial0/1/0
               [120/1] via 172.29.6.13, 00:00:14, Serial0/0/1
Medellin_1#
```

PARTE 5. ENCAPSULAMIENTO Y AUTENTUCACION PPP

BOGOTA – ISP

BOGOTA_1

```
username R_ISP password 7 0802657D2A36
!
interface Serial0/1/1
 ip address 209.17.220.6 255.255.255.252
 encapsulation ppp
 ppp authentication chap
 ip nat outside
 clock rate 2000000
!
```

ISP

```
username Bogota_1 password 7 0802657D2A36
username MEDELLIN password 7 0802657D2A36
!
interface Serial0/0/0
 ip address 209.17.220.1 255.255.255.252
 encapsulation ppp
 ppp authentication pap
 clock rate 64000
!
interface Serial0/0/1
 ip address 209.17.220.5 255.255.255.252
 encapsulation ppp
 ppp authentication chap
 clock rate 64000
```

MEDELLIN_1

```
!
interface Serial0/1/1
 ip address 209.17.220.2 255.255.255.252
 encapsulation ppp
 ppp pap sent-username MEDELLIN password 0 CISCO
 ip nat outside
 clock rate 2000000
!
```

PARTE 6. CONFIGURACION DE PAT

BOGOTA_1

```
ip nat inside source list 1 interface Serial0/1/1 overload
ip classless
ip route 0.0.0.0 0.0.0.0 Serial0/1/1
!
ip flow-export version 9
!
!
access-list 1 permit 172.29.0.0 0.0.1.255
access-list 2 deny 172.29.6.0 0.0.0.15
access-list 2 permit any
```

PING 172.29.1.2 A 172.29.4.2

TABLA DE NAT

```
Bogota_1#SH IP NAT TRAnslations
Pro  Inside global     Inside local       Outside local      Outside global
icmp 209.17.220.6:1    172.29.1.2:1       172.29.4.2:1       172.29.4.2:1
icmp 209.17.220.6:2    172.29.1.2:2       172.29.4.2:2       172.29.4.2:2
icmp 209.17.220.6:3    172.29.1.2:3       172.29.4.2:3       172.29.4.2:3
icmp 209.17.220.6:4    172.29.1.2:4       172.29.4.2:4       172.29.4.2:4

Bogota_1#
```

MEDELLIN_1

```
ip nat inside source list 1 interface Serial0/1/1 overload
ip classless
ip route 0.0.0.0 0.0.0.0 209.17.220.1
!
ip flow-export version 9
!
!
access-list 1 permit 172.29.4.0 0.0.0.255
access-list 2 deny 172.29.3.0 0.0.0.15
access-list 2 permit any
```

PING 172.29.4.130 A 172.29.1.2

```
Medellin_1#SH IP NAT TRAnslations
Pro  Inside global     Inside local       Outside local      Outside global
icmp 209.17.220.2:1    172.29.4.130:1     172.29.1.2:1       172.29.1.2:1
icmp 209.17.220.2:2    172.29.4.130:2     172.29.1.2:2       172.29.1.2:2
icmp 209.17.220.2:3    172.29.4.130:3     172.29.1.2:3       172.29.1.2:3
icmp 209.17.220.2:4    172.29.4.130:4     172.29.1.2:4       172.29.1.2:4

Medellin_1#
```

PARTE 7. CONFIGURACION DEL SERVICIO

DHCP BOGOTA_2

```
.
ip dhcp excluded-address 172.29.1.1
ip dhcp excluded-address 172.29.0.1
!
ip dhcp pool LAN_BOGOTA2
 network 172.29.1.0 255.255.255.0
 default-router 172.29.1.1
 dns-server 8.8.4.4
ip dhcp pool LAN_BOGOTA3
 network 172.29.0.0 255.255.255.0
 default-router 172.29.0.1
 dns-server 8.8.4.4
!
```

IP-HELPER G0/0 BOGOTA_3

```
interface GigabitEthernet0/0
 ip address 172.29.0.1 255.255.255.0
 ip helper-address 172.29.3.13
 duplex auto
 speed auto
!
```

MEDELLIN_2

```
!
ip dhcp excluded-address 172.29.4.1
ip dhcp excluded-address 172.29.4.129
!
ip dhcp pool LAN_MEDELLIN2
 network 172.29.4.0 255.255.255.128
 default-router 172.29.4.1
 dns-server 8.8.4.4
ip dhcp pool LAN_MEDELLIN3
 network 172.29.4.128 255.255.255.128
 default-router 172.29.4.129
 dns-server 8.8.4.4
!
```

IP-HELPER G0/0 MEDELLIN_3

```
interface GigabitEthernet0/0
 ip address 172.29.4.129 255.255.255.128
 ip helper-address 172.29.6.5
 duplex auto
 speed auto
!
```

CODIGOS Escenario 1

--**SW2**

```
enable
conf t
vlan
100
name LAPTOPS
exit
vlan 200
name DESTOPS
exit
end
wr
show vlan

enabl
e conf
t
int range fa0/2-3
switchport mode access
switchport access vlan
100 int range fa0/4-5
switchport mode access
switchport access vlan
200 exit
end
```

--**SW3**

```
enabl
e conf
t vlan
1 exit
int range fa0/1-24
switchport mode access
switchport access vlan
1 exit
end
wr
show vlan

conf t
int range fa0/6-23
```

shutdown
end
wr

--SW3

enabl
e conf
t
int range fa0/6-23
shutdown
exit

int f0/1

switchport mode trunk
end
wr

--SW2

conf t

int range fa0/6-
24 shutdown
exit
en
d
wr

conf t
int
f0/1
switchport mode trunk
end
wr

--R1

enabl
e conf
t
int s0/0/0

ip add 200.123.211.2 255.255.255.0

exit

int S0/1/0

ip add 10.0.0.1 255.255.255.252

exit

int S0/1/1

ip add 10.0.0.5 255.255.255.252

end
wr

--R2

enable

Conf t

int f0/0.100
encapsulation dot1Q
100
ip add 192.168.20.1 255.255.255.0

exit

int f0/0.200
encapsulation dot1Q
200
ip add 192.168.21.1 255.255.255.0

exit

int s0/0/0

ip add 10.0.0.2 255.255.255.252

exit

int s0/0/1

ip add 10.0.0.9 255.255.255.252

exit
en
d
wr

--**R3**

enabl
e conf
t int
f0/0
ip add 192.168.30.1 255.255.255.0

exit

ipv6 unicast-
routing int s0/0/0
ip add 10.0.0.6 255.255.255.0

int s0/0/1

ip add 10.0.0.10 255.255.255.0

exit
end
wr

--R1

enabl
e conf
t
int s0/1/1

ip nat inside
exit
int s0/1/0

ip nat inside
exit
int s0/0/0

ip nat outside
exit
ip nat pool INSIDE-DEVS 200.123.211.2 200.123.211.128 netmask 255.255.255.0

access-list 1 permit 192.168.0.0 0.0.255.255

access-list 1 permit 10.0.0.0 0.255.255.255

ip nat inside source list 1 interface s0/0/0 overload

ip nat inside source static tcp 192.168.30.6 80 200.123.211.1 80
exit
end

--R1

enable
conf t
router
rip
version
2
network 10.0.0.0
exit
end
wr
show ip nat translations

show ip nat statistics

--R2

enabl
e conf
t
ip dhcp excluded-address 10.0.0.2
10.0.0.9 ip dhcp pool INSIDE-DEVS
network 192.168.20.1 255.255.255.0

network 192.168.21.1 255.255.255.0

default-router 192.168.1.1

dns-server 0.0.0.0
exit
end

--R2

enabl
e conf
t
int vlan 100

ip add 192.168.20.1 255.255.255.0

exit

int vlan 200

ip add 192.168.21.1 255.255.255.0

exit
en
d
wr

--R3

enabl
e conf
t
ipv6 unicast-
routing int f0/0

ipv6 enable

ip address 192.168.30.1 255.255.255.0

ipv6 address 2001:db8:130::9C0:80F:301/64
no shut

--R1

enable
conf t
router
rip
version
2
network 10.0.0.0

network 10.0.0.4

do show ip route connected
end
wr

--R2

enable
conf t
router
rip
version
2
network 10.0.0.0

network 10.0.0.8

do show ip route connected
end
wr

--R3

enable
conf t
router
rip

version 2

network 10.0.0.0

network 10.0.0.8

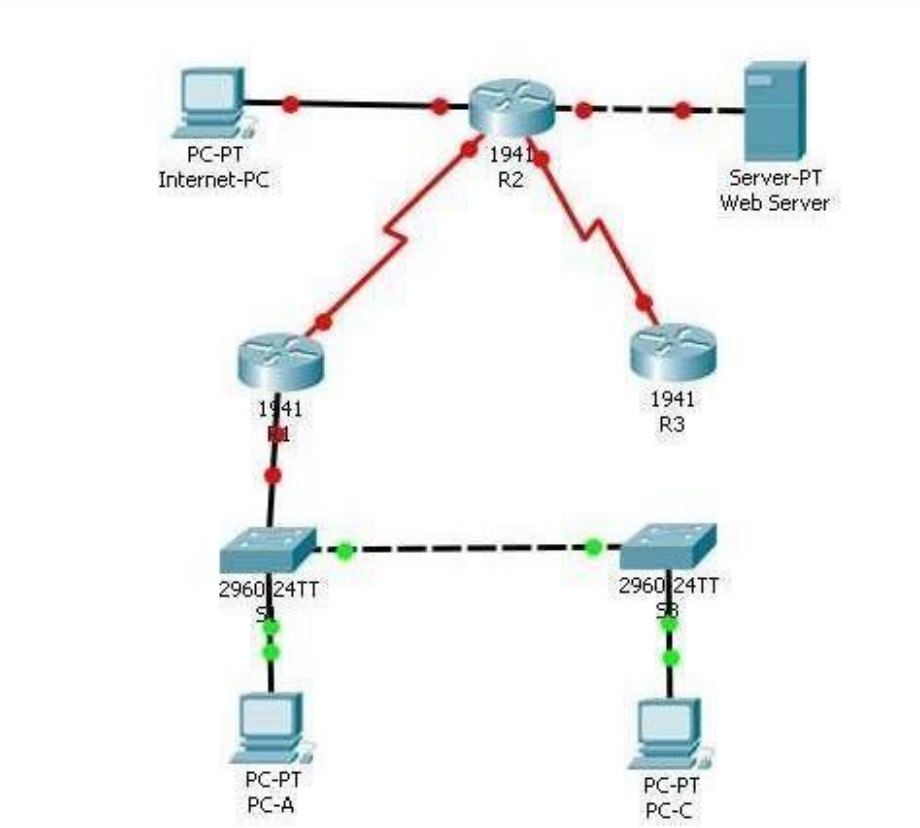
do show ip route connected
end
wr

show ip route

ESCENARIO 2

Una empresa de Tecnología posee tres sucursales distribuidas en las ciudades de Miami, Bogotá y Buenos Aires, 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.

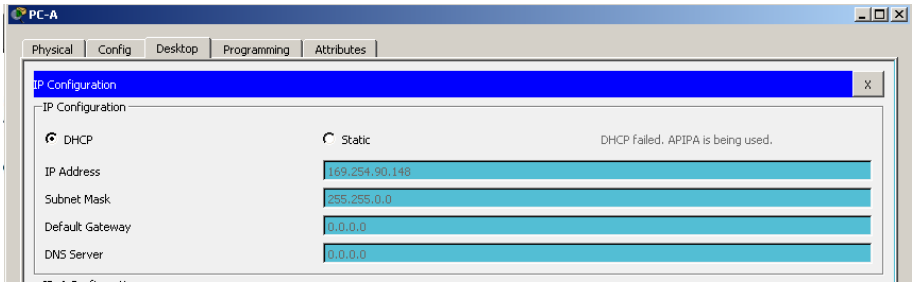
Desarrollo Del Ejercicio

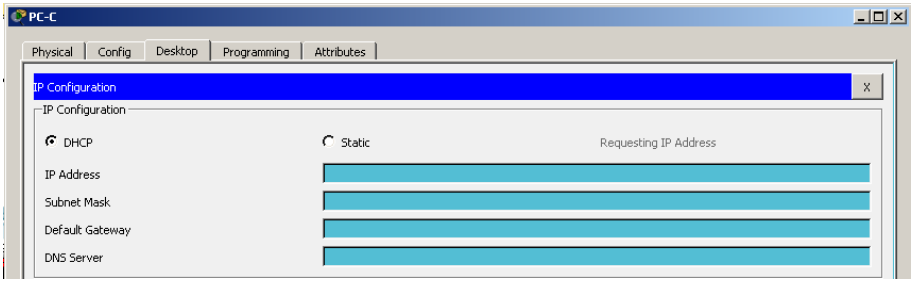


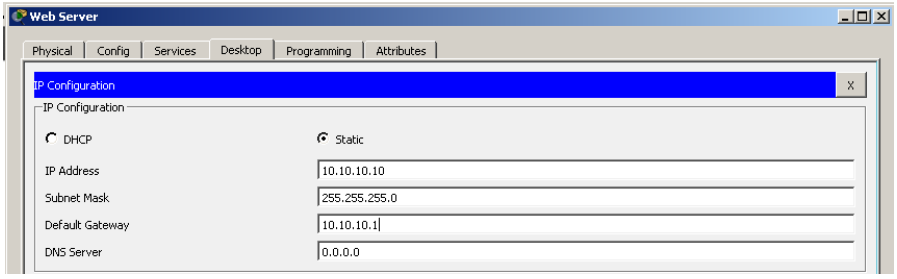
1. Configurar el direccionamiento IP acorde con la topología de red para cada uno de los dispositivos que forman parte del escenario

NOTA: Si inserta a la topología un servidor ya que el Router (R2) no soporta el servicio http.

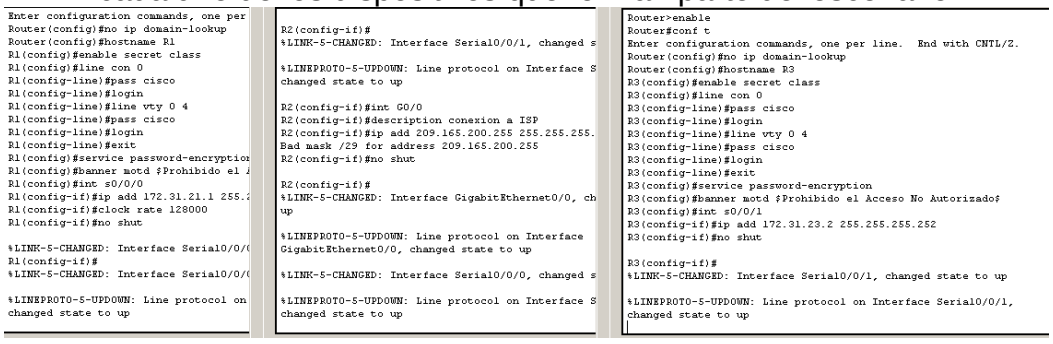
Se procede a realizar la configuración IP de los PC







- Configurar el direccionamiento IP acorde con la topología de red para cada uno de los dispositivos que forman parte del escenario



- Configuración de Interfaces Loockback 4, 5, y 6 en el Router 3

```
R3>enable
Password:
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#int lo4
R3(config-if)#ip add 192.168.4.1 255.255.255.0
R3(config-if)#no shut
R3(config-if)#int lo5
R3(config-if)#ip add 192.168.5.1 255.255.255.0
R3(config-if)#no shut
R3(config-if)#int lo6
R3(config-if)#ip add 192.168.6.1 255.255.255.0
R3(config-if)#
```

- Se realiza configuración de los dispositivos S1-S3

```
S1>en
Password:
S1#enable
S1#conf t
Enter configuration commands, one per line.
S1(config)#no ip domain-lookup
S1(config)#hostname S1
S1(config)#enable secret class
S1(config)#line con 0
S1(config-line)#pass cisco
S1(config-line)#login
S1(config-line)#line vty 0 4
S1(config-line)#pass cisco
S1(config-line)#login
S1(config-line)#exit
S1(config)#service password-encryption
S1(config)#banner motd $Prohibido el Acceso
S1(config)#exit
S1#copy running-config startup-config
%SYS-5-CONFIG_I: Configured from console by

Destination filename [startup-config]?
Building configuration...
[OK]
S1#
```

```
S3>enable
Password:
S3#enable
S3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
S3(config)#no ip domain-lookup
S3(config)#hostname S3
S3(config)#enable secret class
S3(config)#line con 0
S3(config-line)#pass cisco
S3(config-line)#login
S3(config-line)#line vty 0 4
S3(config-line)#pass cisco
S3(config-line)#login
S3(config-line)#exit
S3(config)#service password-encryption
S3(config)#banner motd $Prohibido el Acceso No Autorizado$
S3(config)#exit
S3#copy running-config startup-config
%SYS-5-CONFIG_I: Configured from console by console

Destination filename [startup-config]?
Building configuration...
[OK]
S3#
```

2. Configurar el protocolo de enrutamiento OSPFv2 bajo los siguientes criterios:

OSPFv2 area 0

Configuration Item or Task	Specification
Router ID R1	1.1.1.1
Router ID R2	5.5.5.5
Router ID R3	8.8.8.8
Configurar todas las interfaces LAN como pasivas	
Establecer el ancho de banda para enlaces seriales en	256 Kb/s
Ajustar el costo en la métrica de S0/0 a	9500

Verificar información de OSPF

Visualizar tablas de enrutamiento y routers conectados por OSPFv2

Visualizar lista resumida de interfaces por OSPF en donde se ilustre el costo de cada interface

Visualizar el OSPF Process ID, Router ID, Address summarizations, Routing Networks, and passive interfaces configuradas en cada router.

```
Enter configuration commands, one per line.
R1(config)#router ospf 1
R1(config-router)#router-id 1.1.1.1
R1(config-router)#network 172.31.21.0 0.0.0.
R1(config-router)#network 192.168.30.0 0.0.0
R1(config-router)#network 192.168.40.0 0.0.0
R1(config-router)#network 192.168.30.0 0.0.0
R1(config-router)#network 192.168.40.0 0.0.0
R1(config-router)#network 192.168.200.0 0.0.
R1(config-router)#passive-interface g0/1.30
%Invalid interface type and number
R1(config-router)#passive-interface g0/1.40
%Invalid interface type and number
R1(config-router)#passive-interface g0/1.200
%Invalid interface type and number
R1(config-router)#auto-cost reference-bandwi
R1(config-router)#exit
R1(config)#int s0/0/0
R1(config-if)#bandwidth 256
R1(config-if)#ip ospf cost 9500
R1(config-if)#exitReload or use "clear ip os
for this to take effect


R1(config)#
```

```
Password:

R2>enable
Password:
R2#enable
R2#conf t
Enter configuration commands, one pe
R2(config)#router ospf 1
R2(config-router)#router-id 5.5.5.5
R2(config-router)#network 172.31.21.
R2(config-router)#network 172.31.23.
R2(config-router)#network 10.10.10.
R2(config-router)#passive-interface
R2(config-router)#auto-cost referen
% OSPF: Reference bandwidth is chan
        Please ensure reference ban
all routers.
R2(config-router)#exit
R2(config)#int s0/0/0
R2(config-if)#bandwidth 256
R2(config-if)#int s0/0/1
R2(config-if)#bandwidth 256
R2(config-if)#ip ospf cost 9500
R2(config-if)#exit
R2(config)#
```

```
R3(config)#ip ospf cost 9500
                        ^
% Invalid input detected at '^' marker.

R3(config)#exit
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#enable
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#router ospf 1
R3(config-router)#router-id 8.8.8.8
R3(config-router)#network 172.31.23.0 0.0.0.3 area 0
R3(config-router)#network 192.168.4.0 0.0.3.255 area 0
R3(config-router)#passive-interface lo4
R3(config-router)#passive-interface lo5
R3(config-router)#passive-interface lo6
R3(config-router)#auto-cost reference-bandwidth 9500
R3(config-router)#exit
R3(config)#int s0/0/1
R3(config-if)#bandwidth 256
R3(config-if)#ip ospf cost 9500
R3(config-if)#exit
R3(config)#
```

```
R2#show ip ospf interface

Serial0/0/0 is up, line protocol is up
  Internet address is 172.31.21.2/30, Area 0
  Process ID 1, Router ID 5.5.5.5, Network Type POINT-TO-POINT,
Cost: 6152
  Transmit Delay is 1 sec, State POINT-TO-POINT, Priority 0
  No designated router on this network
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40,
Retransmit 5
    Hello due in 00:00:04
  Index 1/1, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Suppress hello for 0 neighbor(s)
Serial0/0/1 is up, line protocol is up
  Internet address is 172.31.23.1/30, Area 0
  Process ID 1, Router ID 5.5.5.5, Network Type POINT-TO-POINT,
Cost: 9500
  Transmit Delay is 1 sec, State POINT-TO-POINT, Priority 0
  No designated router on this network
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40,
```

3. Configurar VLANs, Puertos troncales, puertos de acceso, encapsulamiento, Inter-VLAN Routing y Seguridad en los Switches acorde a la topología de red establecida.

   Configuración VLAN 30 y 40 en el S1, S2 Y S3

```
Enter configuration commands, one per
Router(config)#no ip domain-lookup
Router(config)#hostname R1
R1(config)#enable secret class
R1(config)#line con 0
R1(config-line)#pass cisco
R1(config-line)#login
R1(config-line)#line vty 0 4
R1(config-line)#pass cisco
R1(config-line)#login
R1(config-line)#exit
R1(config)#service password-encryptio
R1(config)#banner motd $Prohibido el
R1(config)#int s0/0/0
R1(config-if)#ip add 172.31.21.1 255.
R1(config-if)#clock rate 128000
R1(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/0/
R1(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/

%LINEPROTO-5-UPDOWN: Line protocol on
changed state to up
```

```
R2(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed s

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

R2(config-if)#int G0/0
R2(config-if)#description conexion a ISP
R2(config-if)#ip add 209.165.200.255 255.255.255.
Bad mask /29 for address 209.165.200.255
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, ch
up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0, changed state to up

%LINK-5-CHANGED: Interface Serial0/0/0, changed s

%LINEPROTO-5-UPDOWN: Line protocol on Interface S
changed state to up
```

```
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#no ip domain-lookup
Router(config)#hostname R3
R3(config)#enable secret class
R3(config)#line con 0
R3(config-line)#pass cisco
R3(config-line)#login
R3(config-line)#line vty 0 4
R3(config-line)#pass cisco
R3(config-line)#login
R3(config-line)#exit
R3(config)#service password-encryption
R3(config)#banner motd $Prohibido el Acceso No Autorizado$
R3(config)#int s0/0/1
R3(config-if)#ip add 172.31.23.2 255.255.255.252
R3(config-if)#no shut

R3(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
```

4. En el Switch 3 deshabilitar DNS lookup, se procede a realizar la configuración del dispositivo

```
Switch>
Switch>enable
Switch#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#no ip domain-lookup
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

5. Asignar direcciones IP a los Switches acorde a los lineamientos.

6. Desactivar todas las interfaces que no sean utilizadas en el esquema de red. Por lo tanto se desactivan las interfaces en el R1, R2 Y R3

```
R1>enable
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#interface f0/0
R1(config-if)#interface f0/1
R1(config-if)#shutdown
R1(config-if)#interface s0/0/1
R1(config-if)#shutdown
R1(config-if)#
```

```
R2>enable
R2#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#interface f0/1
R2(config-if)#shutdown
R2(config-if)#
```

```
R3>enable
R3#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#interface f0/0
R3(config-if)#shutdown
R3(config-if)#interface f0/1
R3(config-if)#shutdown
R3(config-if)#interface s0/0/0
R3(config-if)#shutdown
R3(config-if)#
```

7. Implement DHCP and NAT for IPv4, se procede a realizer la configuración DHCP y NAT Router 1

```
R1>enable
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip dhcp excluded-address 192.168.30.1 192.168.30.30
R1(config)#ip dhcp pool ADMINISTRACION
R1(dhcp-config)#network 192.168.30.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.30.1
R1(dhcp-config)#dns-server 10.10.10.11
R1(dhcp-config)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#enable
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip dhcp excluded-address 192.168.40.1 192.168.40.30
R1(config)#ip dhcp pool MERCADEO
R1(dhcp-config)#network 192.168.40.0 255.255.255.0
R1(dhcp-config)#default-router 192.168.40.1
R1(dhcp-config)#dns-server 10.10.10.11
R1(dhcp-config)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console
```

8. Configurar R1 como servidor DHCP para las VLANs 30 y 40.

   El dispositivo R1, se configura como Servidor DHCPde las VLANs 30 y 40

```
R1>show ip dhcp binding
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
192.168.30.31    0004.9AE7.0B77          --                      Automatic
192.168.40.31    0001.431C.D225          --                      Automatic
```

9. Reservar las primeras 30 direcciones IP de las VLAN 30 y 40 para configuraciones estáticas.

Configurar DHCP pool para VLAN 30	Name: ADMINISTRACION DNS-Server: 10.10.10.11 Domain-Name: ccna-unad.com Establecer default gateway.
Configurar DHCP pool para VLAN 40	Name: MERCADEO DNS-Server: 10.10.10.11 Domain-Name: ccna-unad.com Establecer default gateway.

```
R1(config)#ip dhcp excluded-address 192.168.30.1 192.168.30.30
R1(config)#ip dhcp excluded-address 192.168.40.1 192.168.40.30
R1(config)#ip dhcp pool administracion
R1(dhcp-config)#dns-server 10.10.10.11
R1(dhcp-config)#default-router 192.168.30.1
R1(dhcp-config)#network 192.168.30.0 255.255.255.0
R1(dhcp-config)#ip dhcp pool mercadeo
R1(dhcp-config)#dns-server 10.10.10.11
R1(dhcp-config)#default-router 192.168.40.1
R1(dhcp-config)#network 192.168.40.0 255.255.255.0
R1(dhcp-config)#
```

10. Configurar NAT en R2 para permitir que los host puedan salir a internet, se procede a realizar la configuración.

```
R2>en
Password:
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#user webuser privilege 15 secret cisco12345
R2(config)#ip http server
                ^
% Invalid input detected at '^' marker.

R2(config)#ip http authentication local
                ^
% Invalid input detected at '^' marker.

R2(config)#ip nat inside source static 10.10.10.10 209.165.200.229
R2(config)#int f0/0
R2(config-if)#ip nat outside
R2(config-if)#int f0/1
R2(config-if)#ip nat inside
R2(config-if)#end
R2#
%SYS-5-CONFIG_I: Configured from console by console
```

11. Configurar al menos dos listas de acceso de tipo estándar a su criterio en para restringir o permitir tráfico desde R1 o R3 hacia R2.

```
R2(config)#ip nat inside source static 10.10.10.10 209.165.200.229
R2(config)#int f0/0
R2(config-if)#ip nat outside
R2(config-if)#int f0/1
R2(config-if)#ip nat inside
R2(config-if)#exit
R2(config)#acc
R2(config)#access-list 1 permit 192.168.30.0 0.0.0.255
R2(config)#access-list 1 permit 192.168.40.0 0.0.0.255
R2(config)#ip nat pool INTERNET 209.165.200.225 209.165.200.228
netmask 255.255.255.248
R2(config)#ip nat inside source list 1 pool INTERNET
R2(config)#ip acc
R2(config)#ip access-list sta
R2(config)#ip access-list standard ADMIN_S
R2(config-std-nacl)#permit host 172.31.21.1
R2(config-std-nacl)#exit
R2(config)#line vty 0 4
R2(config-line)#acc
R2(config-line)#acce
R2(config-line)#access-class ADMIN_S in
```

12. Configurar al menos dos listas de acceso de tipo extendido o nombradas a su criterio en para restringir o permitir tráfico desde R1 o R3 hacia R2. Se configuran las listas de acceso en el R2

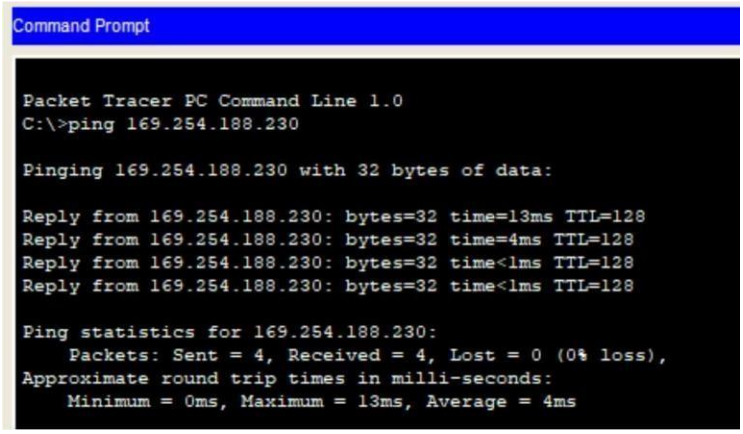
```
R2(config)#ip nat inside source static 10.10.10.10 209.165.200.229
R2(config)#int f0/0
R2(config-if)#ip nat outside
R2(config-if)#int f0/1
R2(config-if)#ip nat inside
R2(config-if)#end
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#access-list 1 permit 192.168.30.0 0.0.0.255
R2(config)#access-list 1 permit 192.168.40.0 0.0.0.255
R2(config)#access-list 1 permit 192.168.4.0 0.0.3.255
R2(config)#ip nat pool INTERNET 209.165.200.225 209.165.200.228 netmask 255.255.255.248
R2(config)#ip nat inside source list 1 pool INTERNET
R2(config)#
```

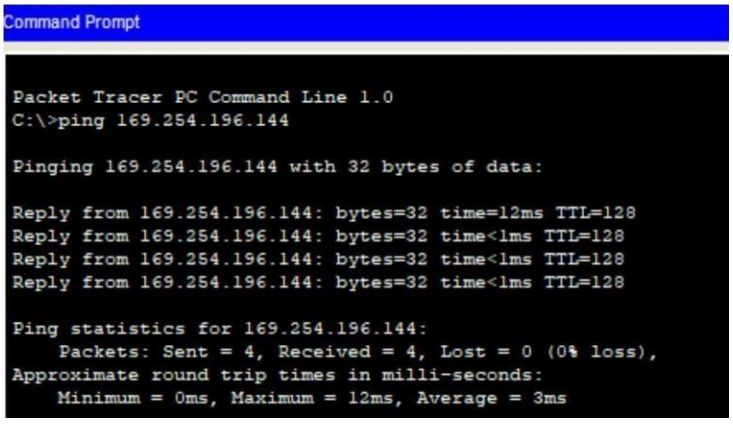
```
R2(config)#ip access-list sta
R2(config)#ip access-list standard ADMIN_S
R2(config-std-nacl)#permit host 172.31.21.1
R2(config-std-nacl)#exit
R2(config)#line vty 0 4
R2(config-line)#acc
R2(config-line)#acce
R2(config-line)#access-class ADMIN_S in
R2(config-line)#exit
R2(config)#access
R2(config)#access-list 101 permit tcp any host 209.165.200.229 eq www
R2(config)#access-list 101 permit icmp any any echo-reply
R2(config)#int f0/0
R2(config-if)#ip access
R2(config-if)#ip access-group 101 in
R2(config-if)#int s0/0/0
R2(config-if)#ip access
R2(config-if)#ip access-group 101 out
R2(config-if)#ip access
R2(config-if)#ip access-group 101 out
R2(config-if)#int s0/0/1
R2(config-if)#ip access-group 101 out
R2(config-if)#int f0/1
R2(config-if)#ip access-group 101 out
```

13. Verificar procesos de comunicación y redireccionamiento de tráfico en los routers mediante el uso de Ping y Traceroute.

Evidencia del comando ping en la comunicación con los routers, desde el PC-A



Evidencia del comando ping en la comunicación con los routers desde el PC-C



Evidencia de comunicación Web Server

Escenario 2 CODIGO

--R1

```
enabl
e conf
t
no ip domain-
lookup hostname
R1 enable secret
class line con 0
pass cisco
login
line vty 0
4       pass
cisco
login
exit
service password-encryption
banner motd $Prohibido el Acceso No
Autorizado$ int s0/0/0
ip add 172.31.21.1 255.255.255.252
clock rate 128000
no shut
```

--R2

```
enabl
e conf
t
no ip domain-
lookup hostname
R2 enable secret
class line con 0
pass cisco
login
line vty 0
4       pass
cisco
login
exit
service password-encryption
banner motd $Prohibido el Acceso No
Autorizado$ int s0/0/0
ip add 172.31.21.2 255.255.255.252
no shut
int
s0/0/1
ip add 172.31.23.1 255.255.255.252
no shut
```

int
G0/0
description conexion a ISP
ip add 209.165.200.255 255.255.255.248
no shut

--**R3**
enabl
e conf
t
no ip domain-
lookup hostname
R3 enable secret
class line con 0
pass cisco
login
line vty 0
4 pass
cisco
login
exit
service password-encryption
banner motd $Prohibido el Acceso No
Autorizado$ int s0/0/1
ip add 172.31.23.2 255.255.255.252
no
shut int
lo4
ip add 192.168.4.1 255.255.255.0
no
shut int
lo5
ip add 192.168.5.1 255.255.255.0
no
shut int
lo6
ip add 192.168.6.1 255.255.255.0

--S1
enabl
e conf
t
no ip domain-
lookup hostname
S1 enable secret
class line con 0
pass cisco
login
line vty 0
4 pass
cisco
login
exit
service password-encryption
banner motd $Prohibido el Acceso No
Autorizado$ exit
copy running-config startup-config

--**S3**
enabl
e conf
t
no ip domain-
lookup hostname
S3 enable secret
class line con 0
pass
cisco
login

line vty 0
4 pass
cisco
login
exit
service password-encryption
banner motd $Prohibido el Acceso No
Autorizado$ exit
copy running-config startup-config

--R1
enabl
e conf
t
router ospf 1
router-id 1.1.1.1
network 172.31.21.0 0.0.0.3 area 0

network 192.168.30.0 0.0.0.3 area 0
network 192.168.40.0 0.0.0.3 area 0
network 192.168.30.0 0.0.0.255 area 0
network 192.168.40.0 0.0.0.255 area 0
network 192.168.200.0 0.0.0.255 area
0 passive-interface g0/1.30
passive-interface g0/1.40
passive-interface
g0/1.200
auto-cost reference-bandwidth 9500
exit
int s0/0/0
bandwidth 256
ip ospf cost 9500
exit

--R2
enabl
e conf
t
router ospf 1
router-id 5.5.5.5
network 172.31.21.0 0.0.0.3 area 0
network 172.31.23.0 0.0.0.3 area 0
network 10.10.10.10 0.0.0.255 area
0 passive-interface g0/1
auto-cost reference-bandwidth 9500
exit
int s0/0/0
bandwidth 256
int s0/0/1
bandwidth 256
ip ospf cost
9500 exit

--R3
enabl
e conf
t
router ospf 1
router-id 8.8.8.8
network 172.31.23.0 0.0.0.3 area 0

network 192.168.4.0 0.0.3.255 area
0 passive-interface lo4
passive-interface
lo5 passive-
interface lo6
auto-cost reference-bandwidth 9500
exit
int s0/0/1
bandwidth 256
ip ospf cost
9500 exit

--S1
conf t
vlan 30
name Administracion
vlan 40
name Mercadeo
vlan 200
name Mantenimiento
exit

int vlan 200
ip add 192.168.99.2 255.255.255.0
no
shut
exit
ip default-gateway 192.168.99.1
int f0/3

switchport mode trunk
switchport trunk native vlan 1
int f0/24
switchport mode trunk
switchport trunk native vlan 1

int range fa0/2, fa0/4-23, g0/1-2
switch mode access
int fa0/1
switch mode access
switch access vlan 30
int range fa0/2, fa0/4-23, g0/1-2
shutdown

--S3
conf t
vlan 30
name Administracion
vlan 40
name Mercadeo
vlan 200
name Mantenimiento
exit
int vlan 200
ip add 192.168.99.3 255.255.255.0
no
shut
exit

ip default-gateway 192.168.99.1

--R1
conf t
int g0/1.30
encapsulatio dot1q
30
ip add 192.168.30.1 255.255.255.0
int g0/1.40
encapsulatio dot1q
40
ip add 192.168.40.1 255.255.255.0
int g0/1.200
encapsulatio dot1q
200
ip add 192.168.200.1 255.255.255.0
exit
En el Switch 3 deshabilitar DNS lookup

--S3
enabl
e conf
t
no ip domain-lookup
Asignar direcciones IP a los Switches acorde a los lineamientos.

--S1
enabl
e conf
t
ip add 192.168.99.2 255.255.255.0

no
shut
exit

--**S3**
enabl
e conf
t
ip add 192.168.99.3 255.255.255.0
no
shut
exit
ip default-gateway 192.168.99.1

--S1
int range fa0/2, fa0/4-23, g0/1-2
shutdown

--S3
int range fa0/2, fa0/4-24, g0/1-2
shutdown

mplement DHCP and NAT for IPv4
Configurar R1 como servidor DHCP para las VLANs 30 y 40.

--R1
conf t
ip dhcp excluded-address 192.168.30.1 192.168.30.30
ip dhcp excluded-address 192.168.40.1 192.168.40.30

ip dhcp pool
administracion dns-server
10.10.10.11
default-router 192.168.30.1
network 192.168.30.0 255.255.255.0
ip dhcp pool
mercadeo dns-server
10.10.10.11
default-router 192.168.40.1
network 192.168.40.0 255.255.255.0

--R2
conf t
ip http server
ip http authentication local
ip nat inside source static 10.10.10.10
209.165.200.229 int S0/0/0

ip nat outside
int S0/0/1
ip nat inside

--R2
conf t
access-list 1 permit 192.168.30.0 0.0.0.255
access-list 1 permit 192.168.40.0 0.0.0.255
access-list 1 permit 192.168.4.0 0.0.3.255
ip nat pool Internet 209.165.200.225 209.165.200.229 netmask 255.255.255.248 ip nat inside source list 1 pool Internet

--R2
conf t
ip access-list standard ADMIN_S permit host 172.31.21.1
exit
line vty 0 4
access-class ADMIN_S in

--R2
access-list 101 permit tcp any host 209.165.200.229 eq www access-list 101 permit icmp any any echo-reply int g0/0
ip access-group 101
in int s0/0/0
ip access-group 101 out
int s0/0/1
ip access-group 101 out
int g0/1
ip access-group 101 out

CONCLUSIONES

Se amplió los conocimientos y las habilidades que permiten la configuración de los dispositivos que se usan en la elaboración del presente proyecto.

Se hizo la aplicación en el Packet Tracer de redes para una posible aplicación en una red real.

Se desarrolló con la ayuda de las practicas la configuración de equipos de red Cisco, como pc, Routers y Switches.

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