

Prueba de Habilidades Cisco Network Academy

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Resumen

Esta prueba de habilidades de Cisco Networking Academy, nos plantea la descripción de un escenario propuesto donde nosotros como estudiantes o administradores de red debemos configurar, interconectar y dar puesta en marcha a cada uno de los dispositivos que hacen parte de este escenario, establecer enrutamientos, asignar direcciones IP, establecer servidores web, crear servidores DHCP y demás configuraciones de dispositivos tanto en routers como en switches y host de trabajo. La prueba nos habla de interconectar tres ciudades sucursales como lo son Bogotá, Medellín y Bucaramanga, de tal manera que se comuniquen entre si en cada uno de los departamentos asignados como lo son Departamento de Administración, Mercadeo y Mantenimiento.

Todas esta conexiones y configuraciones la haremos a través de herramientas virtuales o simuladas como lo es el programa Packet Tracer, que nos permitirán hacer estas configuraciones como si fueran en equipos reales, poniendo a prueba nuestros conocimientos adquiridos a través de este curso.

Palabras claves: Enrutamiento, Protocolos, Routers, Switches, Host, Servidores, Dhcp, Administradores, Red, Dispositivos.

Abstract

This test of skills of Cisco Networking Academy, raises the description of a proposed scenario where we as students or network administrators must configure, interconnect and start up each of the devices that are part of this scenario, establish routings, assign IP addresses, establish web servers, create DHCP servers and other device configurations in routers, switches and work hosts. The test speaks of interconnecting three branch cities such as Bogotá, Medellín and Bucaramanga, in such a way that they communicate with each other in each of the assigned departments such as the Administration, Marketing and Maintenance Department.

All these connections and configurations will be made through virtual or simulated tools such as the Packet Tracer program, which will allow us to make these configurations as if they were real equipment, testing our knowledge acquired through this course.

Keywords: Routing, Protocols, Routers, Switches, Host, Servers, Dhcp, Administrators, Network, Devices.

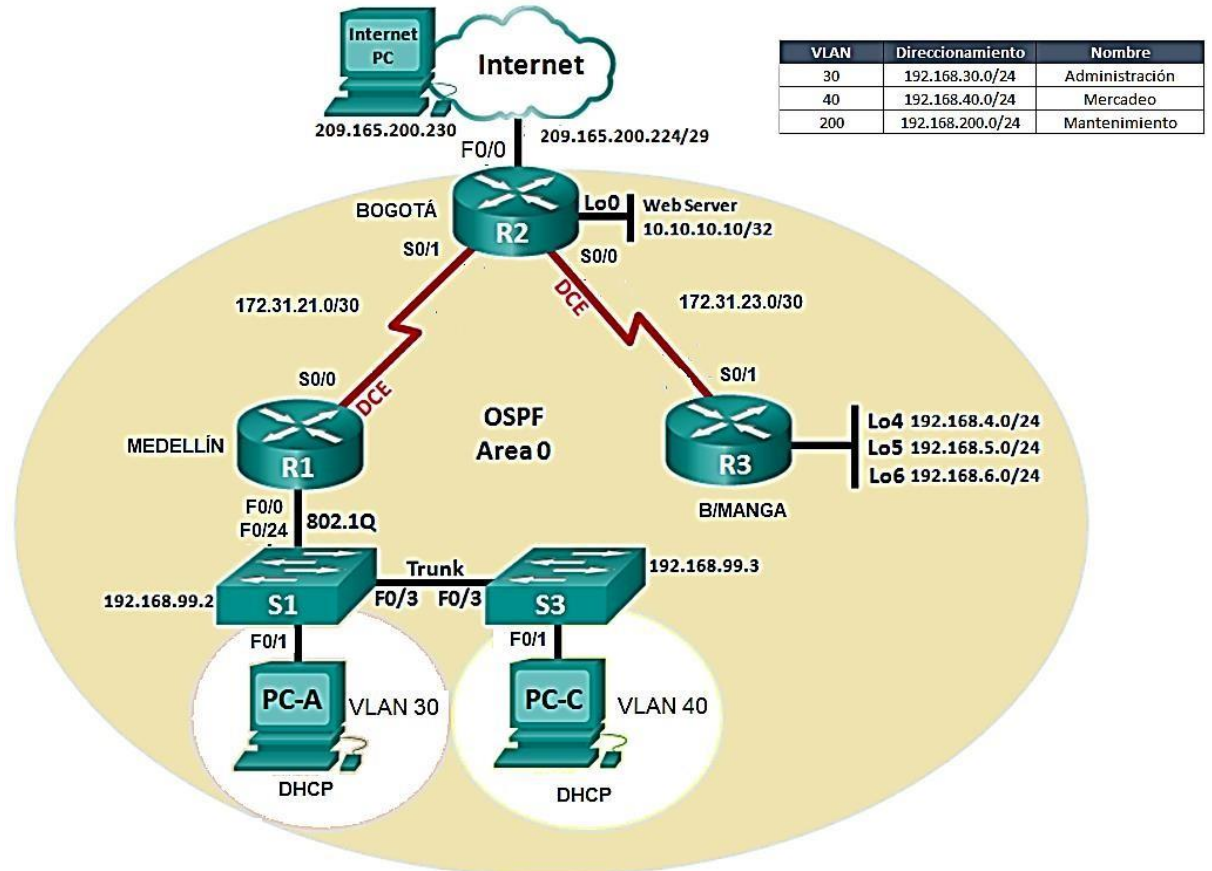
Introducción

Este trabajo nos brinda la oportunidad de poner en práctica todos los conocimientos adquiridos a través de la plataforma de Netacad de Cisco Network Academy. Poniendo a prueba nuestra capacidad de análisis, ingenio y de administradores de red capaces de resolver escenarios propuestos, capaces de configurar e interconectar todos y cada uno de los dispositivos, con la capacidad de hacer enrutamientos, configurar router y switches, establecer servidores Web y DHCP, estableciendo todos los protocolos de seguridad necesarios para el buen funcionamiento y puesta en marcha del mismo.

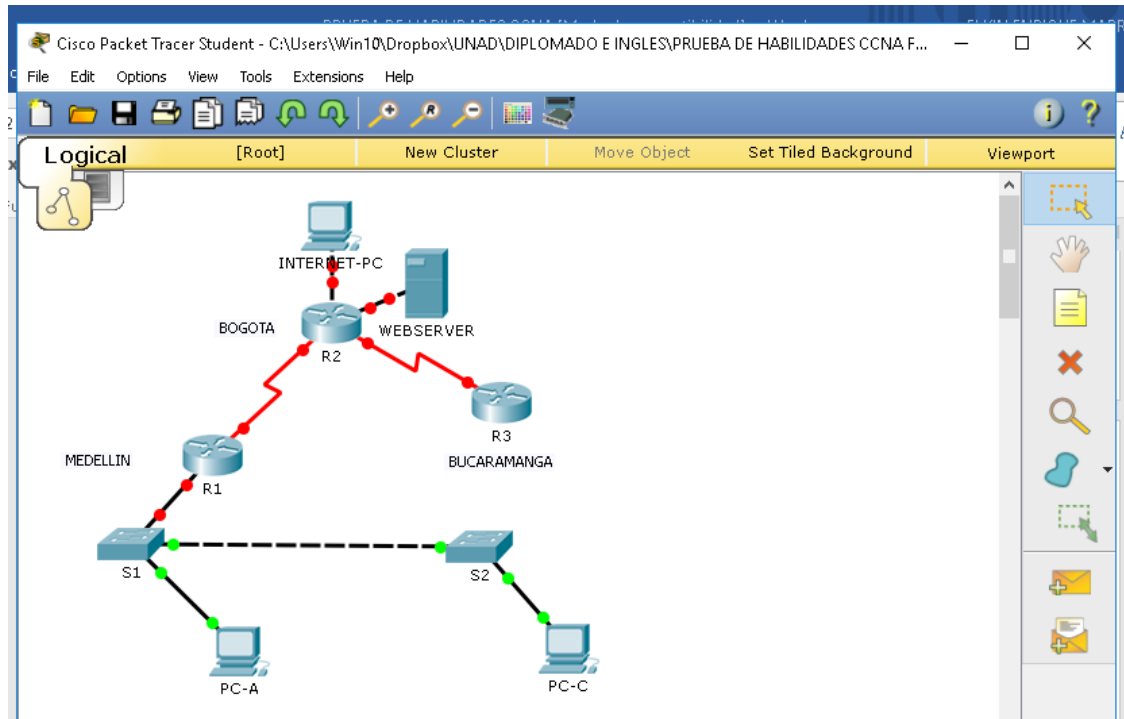
Descripción del escenario propuesto para la prueba de habilidades

Escenario: Una empresa de Tecnología posee tres sucursales distribuidas en las ciudades de Bogotá, Medellín y Bucaramanga, 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.

Topología de red



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



Configuraciones de equipos, router y switches.

Host Internet-pc

```
PC>IPCONFIG

FastEthernet0 Connection:(default port)

Link-local IPv6 Address.....: FE80::20A:F3FF:FE74:42A0
IP Address.....: 209.165.200.230
Subnet Mask.....: 255.255.255.248
Default Gateway.....: 209.165.200.226
```

Host Webserver

```
SERVER>IPCONFIG

FastEthernet0 Connection: (default port)

    Link-local IPv6 Address . . . . . : FE80::205:5EFF:FE95:4476
    IP Address. . . . . : 10.10.10.10
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.10.10.1
```

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

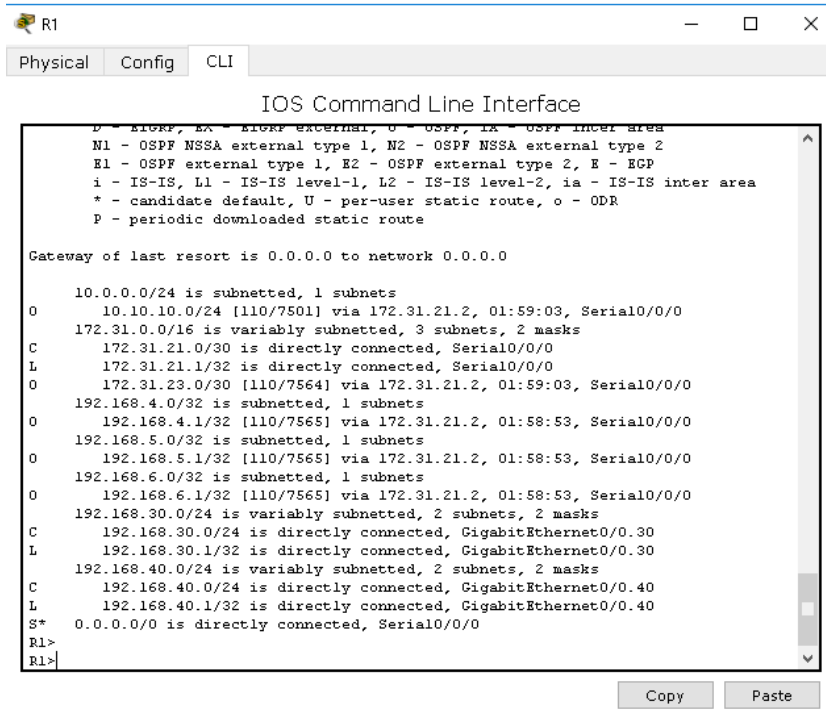
OSPFv2 area 0

| Configuration Item or Task | Specification |
|-------------------------------------------------------|---------------|
| Router ID R1 | 1.1.1.1 |
| Router ID R2 | 2.2.2.2 |
| Router ID R3 | 3.3.3.3 |
| Configurar todas las interfaces LAN como pasivas | |
| Establecer el ancho de banda para enlaces seriales en | 128 Kb/s |
| Ajustar el costo en la métrica de S0/0 a | 7500 |

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.

Enrutamiento en Router 1



```
R1
Physical Config CLI
IOS Command Line Interface
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 0.0.0.0 to network 0.0.0.0

10.0.0.0/24 is subnetted, 1 subnets
O 10.10.10.0/24 [110/7501] via 172.31.21.2, 01:59:03, Serial0/0/0
C 172.31.0.0/16 is variably subnetted, 3 subnets, 2 masks
C 172.31.21.0/30 is directly connected, Serial0/0/0
L 172.31.21.1/32 is directly connected, Serial0/0/0
O 172.31.23.0/30 [110/7564] via 172.31.21.2, 01:59:03, Serial0/0/0
O 192.168.4.0/32 is subnetted, 1 subnets
O 192.168.4.1/32 [110/7565] via 172.31.21.2, 01:58:53, Serial0/0/0
O 192.168.5.0/32 is subnetted, 1 subnets
O 192.168.5.1/32 [110/7565] via 172.31.21.2, 01:58:53, Serial0/0/0
O 192.168.6.0/32 is subnetted, 1 subnets
O 192.168.6.1/32 [110/7565] via 172.31.21.2, 01:58:53, Serial0/0/0
O 192.168.30.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.30.0/24 is directly connected, GigabitEthernet0/0.30
L 192.168.30.1/32 is directly connected, GigabitEthernet0/0.30
C 192.168.40.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.40.0/24 is directly connected, GigabitEthernet0/0.40
L 192.168.40.1/32 is directly connected, GigabitEthernet0/0.40
S* 0.0.0.0/0 is directly connected, Serial0/0/0
R1>
R1>
```

Enrutamiento en Router 2



```
R2
Physical Config CLI
IOS Command Line Interface
D - EIGRP, EX - EIGRP EXTERNAL, O - OSPF, IA - OSPF INTER AREA
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route

Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 10.10.10.0/24 is directly connected, GigabitEthernet0/1
L 10.10.10.1/32 is directly connected, GigabitEthernet0/1
C 172.31.0.0/16 is variably subnetted, 4 subnets, 2 masks
C 172.31.21.0/30 is directly connected, Serial0/0/0
L 172.31.21.2/32 is directly connected, Serial0/0/0
C 172.31.23.0/30 is directly connected, Serial0/0/1
L 172.31.23.1/32 is directly connected, Serial0/0/1
O 192.168.4.0/32 is subnetted, 1 subnets
O 192.168.4.1/32 [110/65] via 172.31.23.2, 02:00:35, Serial0/0/1
O 192.168.5.0/32 is subnetted, 1 subnets
O 192.168.5.1/32 [110/65] via 172.31.23.2, 02:00:35, Serial0/0/1
O 192.168.6.0/32 is subnetted, 1 subnets
O 192.168.6.1/32 [110/65] via 172.31.23.2, 02:00:35, Serial0/0/1
O 192.168.30.0/24 [110/7501] via 172.31.21.1, 01:21:48, Serial0/0/0
O 192.168.40.0/24 [110/7501] via 172.31.21.1, 01:06:47, Serial0/0/0
C 209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks
C 209.165.200.224/29 is directly connected, GigabitEthernet0/0
L 209.165.200.226/32 is directly connected, GigabitEthernet0/0
R2>
R2>
```


Enrutamiento en Router 3

```
R3
Physical Config CLI
IOS Command Line Interface
Codes: L - local, C - connected, S - static, R - RIP, N - 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 0.0.0.0 to network 0.0.0.0

  10.0.0.0/24 is subnetted, 1 subnets
O    10.10.10.0/24 [110/7501] via 172.31.23.1, 02:01:42, Serial0/0/1
  172.31.0.0/16 is variably subnetted, 3 subnets, 2 masks
O    172.31.21.0/30 [110/15000] via 172.31.23.1, 02:01:42, Serial0/0/1
C    172.31.23.0/30 is directly connected, Serial0/0/1
L    172.31.23.2/32 is directly connected, Serial0/0/1
C    192.168.4.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.4.0/24 is directly connected, Loopback4
L    192.168.4.1/32 is directly connected, Loopback4
C    192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.5.0/24 is directly connected, Loopback5
L    192.168.5.1/32 is directly connected, Loopback5
C    192.168.6.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.6.0/24 is directly connected, Loopback6
L    192.168.6.1/32 is directly connected, Loopback6
O    192.168.30.0/24 [110/15001] via 172.31.23.1, 01:23:04, Serial0/0/1
O    192.168.40.0/24 [110/15001] via 172.31.23.1, 01:08:04, Serial0/0/1
S*   0.0.0.0/0 is directly connected, Serial0/0/1
R3>
R3>
```

Router conectados por OSPF

```
R1>show ip ospf database
      OSPF Router with ID (1.1.1.1) (Process ID 1)

      Router Link States (Area 0)

Link ID      ADV Router    Age         Seq#         Checksum Link count
1.1.1.1      1.1.1.1       703        0x8000001c  0x0098b5 4
2.2.2.2      2.2.2.2       300        0x80000021  0x003da4 5
3.3.3.3      3.3.3.3       298        0x8000001b  0x00a251 5
R1>
```

R1

Physical Config CLI

IOS Command Line Interface

```
R1>show ip protocols
% Invalid input detected at '^' marker.

R1>
R1>show ip protocols

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 1.1.1.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    172.31.21.0 0.0.0.3 area 0
    192.168.99.0 0.0.0.255 area 0
    192.168.30.0 0.0.0.255 area 0
    192.168.40.0 0.0.0.255 area 0
  Passive Interface(s):
    GigabitEthernet0/0
    GigabitEthernet0/30
    GigabitEthernet0/40
  Routing Information Sources:
    Gateway         Distance      Last Update
    1.1.1.1          110          00:21:15
    2.2.2.2          110          00:14:32
    3.3.3.3          110          00:14:30
  Distance: (default is 110)
```

R1

Physical Config CLI

IOS Command Line Interface

```
Passive Interface(s):
  GigabitEthernet0/0
  GigabitEthernet0/30
  GigabitEthernet0/40
Routing Information Sources:
  Gateway         Distance      Last Update
  1.1.1.1          110          00:21:15
  2.2.2.2          110          00:14:32
  3.3.3.3          110          00:14:30
  Distance: (default is 110)

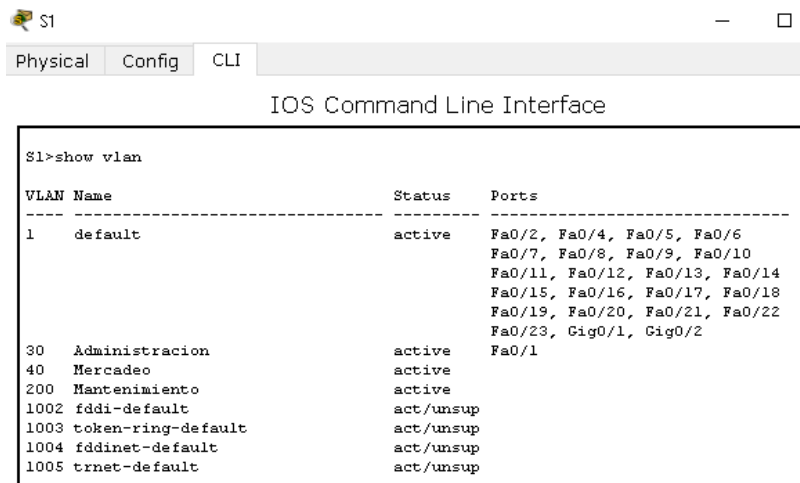
R1>show ip ospf interface serial 0/0/0

Serial0/0/0 is up, line protocol is up
  Internet address is 172.31.21.1/30, Area 0
  Process ID 1, Router ID 1.1.1.1, Network Type POINT-TO-POINT, Cost: 7500
  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
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 2.2.2.2
  Suppress hello for 0 neighbor(s)

R1>
```

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

Vlan Swich 1



S1

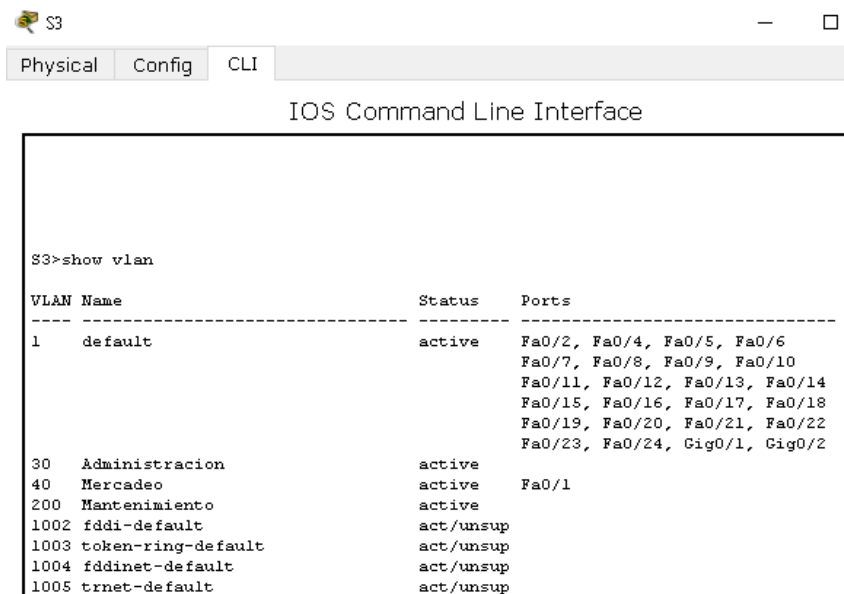
Physical Config CLI

IOS Command Line Interface

```
S1>show vlan
```

| VLAN Name | Status | Ports |
|-------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 default | active | Fa0/2, Fa0/4, Fa0/5, Fa0/6 Fa0/7, Fa0/8, Fa0/9, Fa0/10 Fa0/11, Fa0/12, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20, Fa0/21, Fa0/22 Fa0/23, Gig0/1, Gig0/2 |
| 30 Administracion | active | Fa0/1 |
| 40 Mercadeo | active | |
| 200 Mantenimiento | active | |
| 1002 fddi-default | act/unsup | |
| 1003 token-ring-default | act/unsup | |
| 1004 fddinet-default | act/unsup | |
| 1005 trnet-default | act/unsup | |

Vlan S3



S3

Physical Config CLI

IOS Command Line Interface

```
S3>show vlan
```

| VLAN Name | Status | Ports |
|-------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 default | active | Fa0/2, Fa0/4, Fa0/5, Fa0/6 Fa0/7, Fa0/8, Fa0/9, Fa0/10 Fa0/11, Fa0/12, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20, Fa0/21, Fa0/22 Fa0/23, Fa0/24, Gig0/1, Gig0/2 |
| 30 Administracion | active | |
| 40 Mercadeo | active | Fa0/1 |
| 200 Mantenimiento | active | |
| 1002 fddi-default | act/unsup | |
| 1003 token-ring-default | act/unsup | |
| 1004 fddinet-default | act/unsup | |
| 1005 trnet-default | act/unsup | |

4. En el Switch 3 deshabilitar DNS lookup

```
S3(config)#no ip domain-lookup|
```

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

```
S1>show ip int
Vlan1 is administratively down, line protocol is down
  Internet protocol processing disabled
Vlan200 is up, line protocol is up
  Internet address is 192.168.99.2/24
  Broadcast address is 255.255.255.255
  Address determined by setup command
  MTU is 1500 bytes
```

```
S3>
S3>show ip int
Vlan1 is administratively down, line protocol is down
  Internet protocol processing disabled
Vlan200 is up, line protocol is up
  Internet address is 192.168.99.3/24
  Broadcast address is 255.255.255.255
  Address determined by setup command
  MTU is 1500 bytes
```

- Desactivar todas las interfaces que no sean utilizadas en el esquema de red.

Pantallazo de redes desactivadas

| Port | Link | VLAN | IP Address | MAC Address |
|------------------------------------------------------------------------|------|------|-----------------|----------------|
| FastEthernet0/1 | Up | 30 | -- | 0090.21C3.1801 |
| FastEthernet0/2 | Down | 1 | -- | 0090.21C3.1802 |
| FastEthernet0/3 | Up | -- | -- | 0090.21C3.1803 |
| FastEthernet0/4 | Down | 1 | -- | 0090.21C3.1804 |
| FastEthernet0/5 | Down | 1 | -- | 0090.21C3.1805 |
| FastEthernet0/6 | Down | 1 | -- | 0090.21C3.1806 |
| FastEthernet0/7 | Down | 1 | -- | 0090.21C3.1807 |
| FastEthernet0/8 | Down | 1 | -- | 0090.21C3.1808 |
| FastEthernet0/9 | Down | 1 | -- | 0090.21C3.1809 |
| FastEthernet0/10 | Down | 1 | -- | 0090.21C3.180A |
| FastEthernet0/11 | Down | 1 | -- | 0090.21C3.180B |
| FastEthernet0/12 | Down | 1 | -- | 0090.21C3.180C |
| FastEthernet0/13 | Down | 1 | -- | 0090.21C3.180D |
| FastEthernet0/14 | Down | 1 | -- | 0090.21C3.180E |
| FastEthernet0/15 | Down | 1 | -- | 0090.21C3.180F |
| FastEthernet0/16 | Down | 1 | -- | 0090.21C3.1810 |
| FastEthernet0/17 | Down | 1 | -- | 0090.21C3.1811 |
| FastEthernet0/18 | Down | 1 | -- | 0090.21C3.1812 |
| FastEthernet0/19 | Down | 1 | -- | 0090.21C3.1813 |
| FastEthernet0/20 | Down | 1 | -- | 0090.21C3.1814 |
| FastEthernet0/21 | Down | 1 | -- | 0090.21C3.1815 |
| FastEthernet0/22 | Down | 1 | -- | 0090.21C3.1816 |
| FastEthernet0/23 | Down | 1 | -- | 0090.21C3.1817 |
| FastEthernet0/24 | Up | -- | -- | 0090.21C3.1818 |
| GigabitEthernet0/1 | Down | 1 | -- | 0090.21C3.1819 |
| GigabitEthernet0/2 | Down | 1 | -- | 0090.21C3.181A |
| Vlan1 | Down | 1 | <not set> | 0001.C976.BC5D |
| Vlan200 | Up | 200 | 192.168.99.2/24 | 0001.C976.BC5D |
| Hostname: S1 | | | | |
| Physical Location: Intercity, Home City, Corporate Office, Main Wiring | | | | |

- Implement DHCP and NAT for IPv4
- Configurar R1 como servidor DHCP para las VLANs 30 y 40.
- Reservar las primeras 30 direcciones IP de las VLAN 30 y 40 para configuraciones estáticas.

```

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

```

| | |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 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 192.168.40.1 192.168.40.30
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

```

10. Configurar NAT en R2 para permitir que los host puedan salir a internet

```
R2>show ip nat translations
Pro Inside global      Inside local      Outside local      Outside global
--- 209.165.200.224     10.10.10.10      ---               ---
--- 209.165.200.229     10.10.10.10      ---               ---
tcp 209.165.200.229:80 10.10.10.10:80   209.165.200.230:1025 209.165.200.230:1025
n>
```

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.

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.

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

Verificando listas.

Acceder de PC-A a INTERNET PC y es OK

```
PC>ping 209.165.200.230
Pinging 209.165.200.230 with 32 bytes of data:
Reply from 209.165.200.230: bytes=32 time=1ms TTL=126
Reply from 209.165.200.230: bytes=32 time=1ms TTL=126
Reply from 209.165.200.230: bytes=32 time=1ms TTL=126
Reply from 209.165.200.230: bytes=32 time=10ms TTL=126
Ping statistics for 209.165.200.230:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 10ms, Average = 3ms
```

Pero de Internet-PC a PC-A - Falla

```
PC>ping 192.168.30.31

Pinging 192.168.30.31 with 32 bytes of data:

Reply from 209.165.200.226: Destination host unreachable.
Reply from 209.165.200.226: Destination host unreachable.
Reply from 209.165.200.226: Destination host unreachable.
Reply from 209.165.200.226: Destination host unreachable.

Ping statistics for 192.168.30.31:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Verificando comunicación de PC-A a PC-B y Webserver.

```
PC>ping 192.168.40.31

Pinging 192.168.40.31 with 32 bytes of data:

Reply from 192.168.40.31: bytes=32 time=12ms TTL=127
Reply from 192.168.40.31: bytes=32 time=2ms TTL=127
Reply from 192.168.40.31: bytes=32 time=1ms TTL=127
Reply from 192.168.40.31: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.40.31:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 3ms
```

```
PC>PING 10.10.10.10

Pinging 10.10.10.10 with 32 bytes of data:

Request timed out.
Reply from 10.10.10.10: bytes=32 time=4ms TTL=126
Reply from 10.10.10.10: bytes=32 time=11ms TTL=126
Reply from 10.10.10.10: bytes=32 time=11ms TTL=126

Ping statistics for 10.10.10.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 11ms, Average = 8ms
```


Conclusiones

Al finalizar este trabajo o prueba de habilidades, he podido implementar y poner a prueba todos los conocimientos adquiridos a lo largo de este curso, pude demostrar mis destrezas a la hora de configurar los router y switches desde la IOS de cada terminal, por lo cual se demuestra que la mejor forma de aprender es en la práctica cotidiana que se van presentando situaciones, pero que con el ingenio y los conocimientos adquiridos hemos podido solucionar.

No ha sido una prueba fácil, pues tenía sus inconvenientes y en algunos casos se tenía que analizar muy bien la situación para poder dar enrutamiento y conectividad, así también como restringir y dar los permisos necesarios en la aplicación de la seguridad necesaria contra el robo de información.

En definitiva, en este trabajo se muestra un paso a paso de toda la configuración realizada en cada dispositivo y en cada punto se explica a través de un pantallazo la configuración de la misma para un mejor entendimiento, por último utilizamos el comando ping para verificar la conectividad entre cada uno de los dispositivos de red y demostrar la puesta en marcha de la misma.

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