



TRABAJO FINAL

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Presentado A:

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INTRODUCCIÓN

Identificar y solucionar problemas de configuración de los distintos equipos de redes, mediante el uso apropiado e los comandos aprendidos durante el curso, comandos como uso de comandos ping, traceroute, show ip route, entre otros.

El trabajo que nos sugiere la entrega final, es un tema bastante interesante ya que nos lleva a un nivel más avanzado y la exigencia para el mismo nos requiere mayor enfoque y conocimientos, los cuales con la práctica y la destreza adquirida con la realización de los trabajos anteriores hemos podemos y estamos en la capacidad de desarrollar.

Con las prácticas que no nos siguiere la guía estamos adquiriendo herramientas básicas muy importantes, ya que en la carrera como ingenieros de sistemas se podrán presentar problemas similares y estaremos en capacidad de dar solución, o ser de gran ayuda cundo sea requerido.

OBJETIVOS

- Manejar el programa Packet Tracer verificando las herramientas principales en procesos de conectividad simulados.
- configurar e interconectar entre sí cada uno de los dispositivos que forman parte de los lineamientos establecidos para el direccionamiento IP, protocolos de enrutamiento y demás aspectos que forman parte de la topología de red.
- Configurar el direccionamiento IP con la topología de red para cada uno de los dispositivos
- Configurar el protocolo de enrutamiento OSPFv2, con parámetros ya definidos previamente.
- Visualizar tablas de enrutamiento y routers conectados por OSPFv2.
- Configurar VLANs, Puertos troncales, puertos de acceso, encapsulamiento, Inter-VLAN Routing y Seguridad en los Switches.

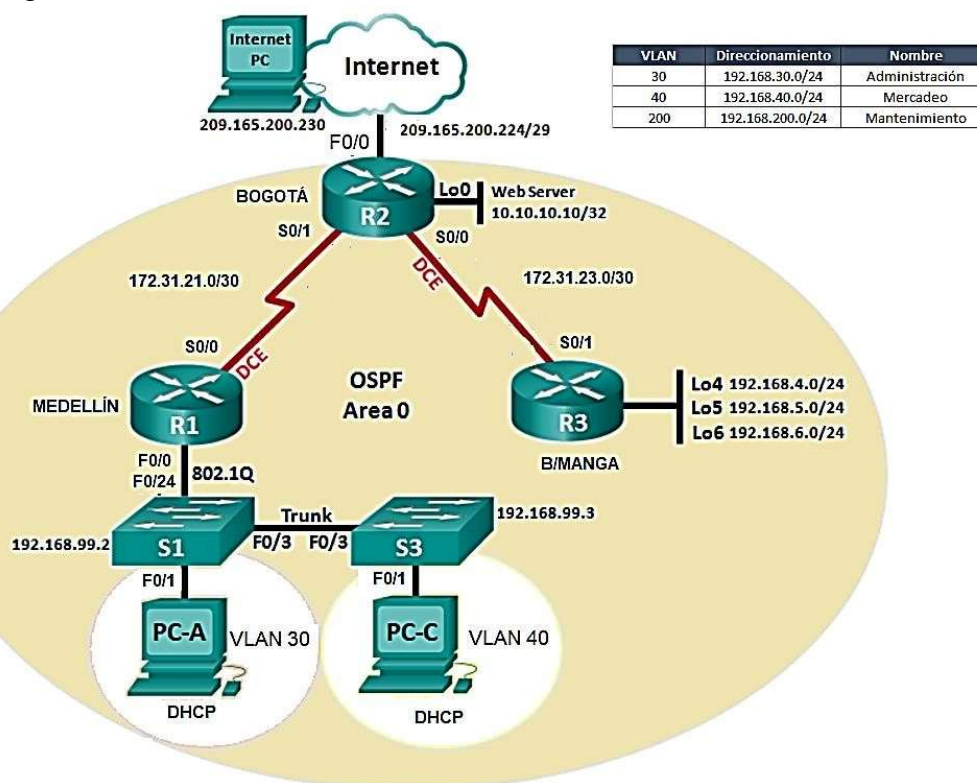
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Descripción del escenario propuesto para la prueba de habilidades

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.

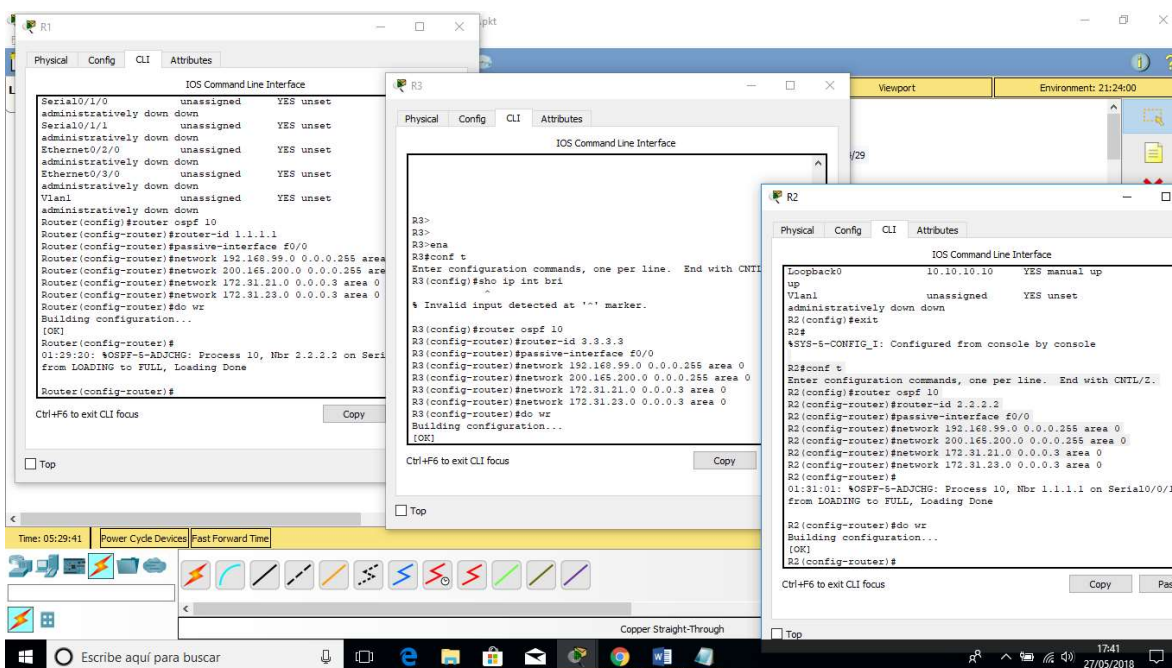
Topologías de red

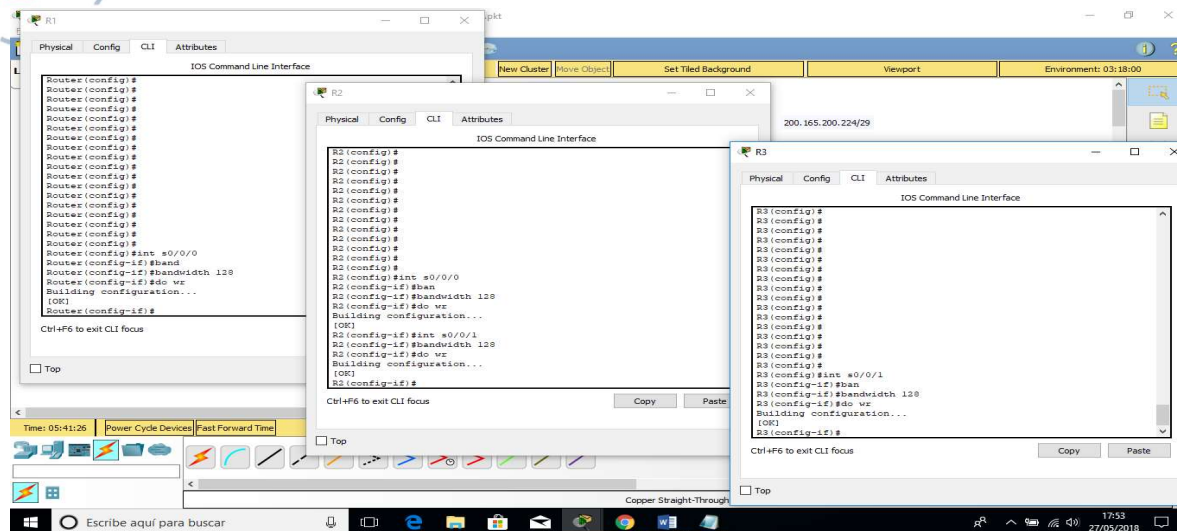


2. Configurar el protocolo de enrutamiento OSPFv2 bajo los siguientes criterios:

OSPFv2 area 0

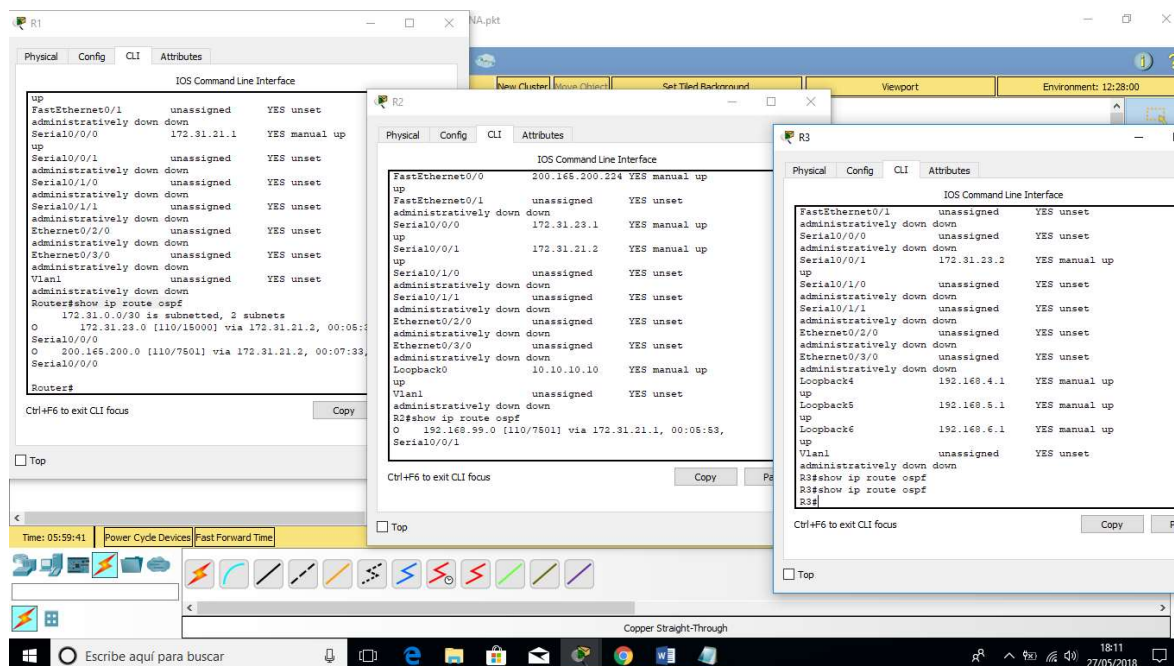
Configuration Item or Task	Spe
Router ID R1	1.1.1.1
Router ID R2	2.2.2.2
Router ID R3	3.3.3.3
Configurar todas las interfaces LAN como pasivas	HECHO
Establecer el ancho de banda para enlaces seriales en	128 Kb/s
Ajustar el costo en la métrica de S0/0 a	7500





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.

The screenshot displays three overlapping windows showing the IOS Command Line Interface (CLI) for routers R1, R2, and R3. Each window shows the output of the 'show ip route' command, detailing OSPF configurations and routing tables.

R1 CLI Output:

```

IOS Command Line Interface
172.31.0.0/30 is subnetted, 2 subnets
C 172.31.21.0 is directly connected, Serial0/0/0
O 172.31.23.0 [110/15000] via 172.31.21.2, Serial0/0/0
C 192.168.99.0/24 is directly connected, FastEthernet0/0/0
O 200.168.200.0/24 [110/7501] via 172.31.21.2, Serial0/0/0
Router#show ip route 172.31.23.0
Routing entry for 172.31.23.0/30
Known via "ospf 10", distance 110, metric 15000,
Last update from 172.31.21.2 on Serial0/0/0, 00:00:00
Routing Descriptor Blocks:
* 172.31.21.2, from 2.2.2.2, 00:14:23 ago, via
Route metric is 15000, traffic share count is 1
Router#show ip route 192.168.99.0
Routing entry for 192.168.99.0/24
Known via "connected", distance 0, metric 0 (connected, via interface)
Routing Descriptor Blocks:
* directly connected, via FastEthernet0/0/0
Route metric is 0, traffic share count is 1
Router#
Ctrl+F6 to exit CLI focus
    
```

R2 CLI Output:

```

IOS Command Line Interface
172.31.0.0/30 is subnetted, 2 subnets
C 172.31.21.0 is directly connected, Serial0/0/1
C 172.31.23.0 is directly connected, Serial0/0/0
O 192.168.99.0/24 [110/7501] via 172.31.21.1, 00:10:50, Serial0/0/1
C 200.168.200.0/24 is directly connected, FastEthernet0/0
R2#show ip rou 172.31.21.0
Routing entry for 172.31.21.0/30
Known via "connected", distance 0, metric 0 (connected, via interface)
Routing Descriptor Blocks:
* directly connected, via Serial0/0/1
Route metric is 0, traffic share count is 1
R2#show ip rou 192.168.99.0
Routing entry for 192.168.99.0/24
Known via "ospf 10", distance 110, metric 7501, type intra area
Last update from 172.31.21.1 on Serial0/0/1, 00:11:59 ago
Routing Descriptor Blocks:
* 172.31.21.1, from 1.1.1.1, 00:11:59 ago, via Serial0/0/1
Route metric is 7501, traffic share count is 1
R2#
Ctrl+F6 to exit CLI focus
    
```

R3 CLI Output:

```

IOS Command Line Interface
Gateway of last resort is not set
172.31.0.0/24 is subnetted, 1 subnets
C 172.31.23.0 is directly connected, Serial0/0/1
C 192.168.4.0/24 is directly connected, Loopback4
C 192.168.5.0/24 is directly connected, Loopback5
C 192.168.6.0/24 is directly connected, Loopback6
R3#show ip route 172.31.0.0
Routing entry for 172.31.0.0/24, 1 known subnets
Attached (1 connections)
C 172.31.23.0 is directly connected, Serial0/0/1
R3#show ip route 192.168.99.0
Network not in table
R3#show ip route 172.31.23.0
Routing entry for 172.31.23.0/24
Known via "connected", distance 0, metric 0 (connected, via interface)
Routing Descriptor Blocks:
* directly connected, via Serial0/0/1
Route metric is 0, traffic share count is 1
R3#
Ctrl+F6 to exit CLI focus
    
```

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

```

S1#
Physical: Config CLI Attributes
IOS Command Line Interface
!
interface FastEthernet0/20
ip address 192.168.99.3 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/21
encapsulation dot1Q 20
ip address 192.168.99.4 255.255.255.0
!
interface FastEthernet0/22
encapsulation dot1Q 21
ip address 192.168.99.5 255.255.255.0
!
interface FastEthernet0/23
encapsulation dot1Q 200
ip address 192.168.200.1 255.255.255.0
!
interface GigabitEthernet0/1
duplex auto
speed auto
!
interface GigabitEthernet0/24
duplex auto
speed auto
!
interface GigabitEthernet0/25
duplex auto
speed auto
!
interface GigabitEthernet0/26
duplex auto
speed auto
!
interface GigabitEthernet0/27
duplex auto
speed auto
!
interface GigabitEthernet0/28
duplex auto
speed auto
!
interface GigabitEthernet0/29
duplex auto
speed auto
!
interface GigabitEthernet0/30
duplex auto
speed auto
!
interface GigabitEthernet0/31
duplex auto
speed auto
!
!
end
S1#
  
```

The screenshot displays the Cisco Packet Tracer interface with two configuration windows open for switches S1 and S3.

Switch S1 Configuration:

```

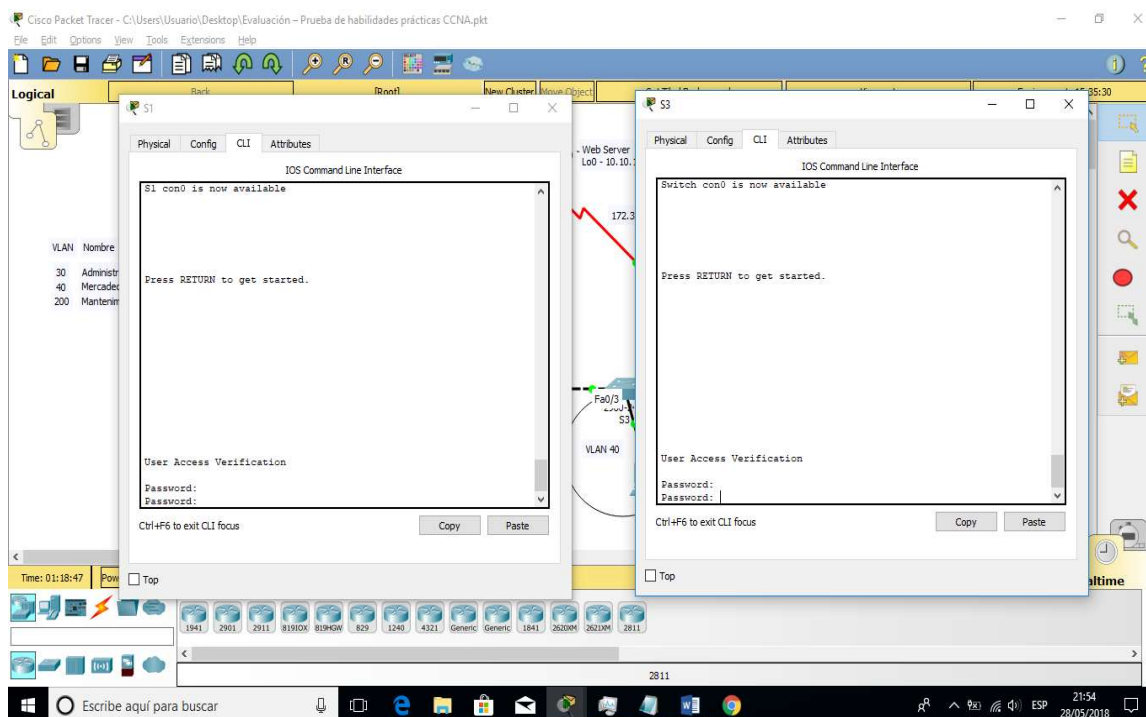
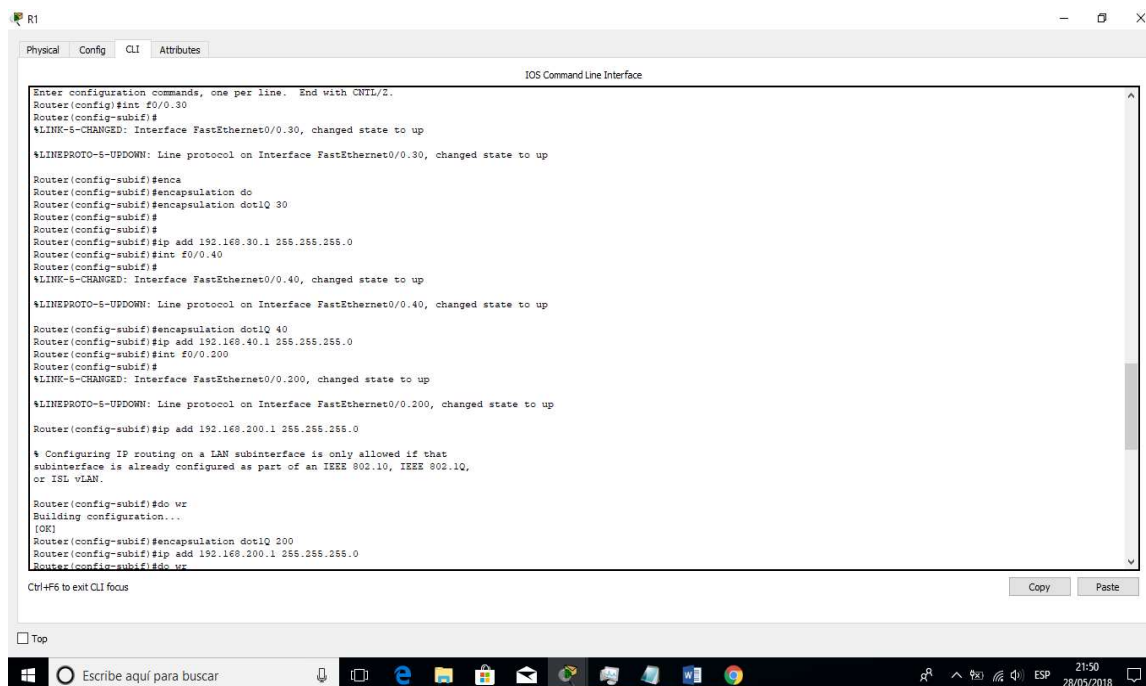
IOS Command Line Interface
!
interface Vlan200
mac-address 0040.5864.7503
ip address 192.168.200.1 255.255.255.0
!
line con 0
password cisco
login
!
line vty 0 4
password cisco
login
line vty 5 15
login
!
end
S1(config)#
  
```

Switch S3 Configuration:

```

IOS Command Line Interface
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
!
!
line con 0
password cisco
login
!
line vty 0 4
password cisco
login
line vty 5 15
login
!
end
S3(config)#
  
```

The network diagram in the background shows a topology with a Web Server (Loopback 10.10.10.1), a PC, and a switch (S3) connected to a switch (S1) via a Copper Straight-Through cable. S1 is connected to S3 via a GigabitEthernet link (Fa0/3 on S1, Fa0/2 on S3). S1 has VLANs 20, 21, and 200. S3 has VLAN 40.



Physical Config CLI Attributes

IOS Command Line Interface

```

hostname Switch
!
!
!
!
!
!
spanning-tree mode pvs
spanning-tree extend system-id
!
interface FastEthernet0/1
switchport access vlan 40
!
interface FastEthernet0/2
!
interface FastEthernet0/3
switchport mode trunk
!
interface FastEthernet0/4
switchport access vlan 40
switchport mode access
!
interface FastEthernet0/5
switchport access vlan 40
switchport mode access
!
interface FastEthernet0/6
switchport access vlan 40
switchport mode access
!
interface FastEthernet0/7
switchport access vlan 40
switchport mode access
!
interface FastEthernet0/8
switchport access vlan 40
switchport mode access
!
interface FastEthernet0/9
!
interface FastEthernet0/5
--More--
    
```

Ctrl+F6 to exit CLI focus

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Top

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21:59 28/05/2018

Physical Config CLI Attributes

IOS Command Line Interface

```

S1#show int f0/24 switchport
Name: Fa0/24
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk private VLANs: none
Operational private-vlan: none
Trunking VLANs Enabled: All
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL
Protected: false

S1#show int f0/3 switchport
Name: Fa0/3
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk encapsulation: dot1q
    
```

Ctrl+F6 to exit CLI focus

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Top

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4. En el Switch 3 deshabilitar DNS lookup

Cisco Packet Tracer - C:\Users\Usuario\Desktop\Evaluación - Prueba de habilidades prácticas CCNA.plt

Logical

VLAN	Nombre	IPs
30	Administración	192.168.30.0/24
40	Mercadeo	192.168.40.0/24
200	Mantenimiento	192.168.200.0/24

```

S3#
S3#
S3#
S3#
S3#
S3#
S3#show run | include domain-lookup
S3#no ip domain-lookup
S3#
* Invalid input detected at '^' marker.

S3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
S3(config)#no ip domain-lookup
S3(config)#do vq
Building configuration...
[OK]
S3(config)#exit
S3#
%SYS-5-CONFIG_I: Configured from console by console
show run | include domain-lookup
no ip domain-lookup
S3#
Ctrl+F6 to exit CLI focus
    
```

Time: 07:40:52 Power Cycle Devices Fast Forward Time

Realtime

Copper Straight-Through

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

S1

```

* Invalid input detected at '^' marker.

S1#show ip int vlan 1
Vlan1 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
Helper address is not set
Directed broadcast forwarding is disabled
Outgoing access list is not set
Inbound access list is not set
Proxy ARP is enabled
Local Proxy ARP is disabled
Security level is default
Split horizon is enabled
ICMP redirects are always sent
ICMP unreachable are always sent
ICMP mask replies are never sent
IP fast switching is disabled
IP fast switching on the same interface is disabled
IP multicast fast switching is disabled
IP multicast distributed fast switching is disabled
IP route-cache flags are None
Router Discovery is disabled
IP output packet accounting is disabled
IP access violation accounting is disabled
TCP/IP header compression is disabled
RTT/IP header compression is disabled
Probe proxy name replies are disabled
Policy routing is disabled
Network address translation is disabled
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
RPF Policy Mapping is disabled

Ctrl+F6 to exit CLI focus
    
```

S3

```

Switch#
Switch#show ip int vlan 1
Vlan1 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
Helper address is not set
Directed broadcast forwarding is disabled
Outgoing access list is not set
Inbound access list is not set
Proxy ARP is enabled
Local Proxy ARP is disabled
Security level is default
Split horizon is enabled
ICMP redirects are always sent
ICMP unreachable are always sent
ICMP mask replies are never sent
IP fast switching is disabled
IP fast switching on the same interface is disabled
IP Null turbo vector
IP multicast fast switching is disabled
IP multicast distributed fast switching is disabled
IP route-cache flags are None
Router Discovery is disabled
IP output packet accounting is disabled
IP access violation accounting is disabled
TCP/IP header compression is disabled
RTT/IP header compression is disabled
Probe proxy name replies are disabled
Policy routing is disabled
Network address translation is disabled
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
RPF Policy Mapping is disabled

Switch#
Ctrl+F6 to exit CLI focus
    
```

Escribe aquí para buscar

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S1(config)#Interface vlan 1

S1(config)#Ip address 192.168.99.2 255.255.255.0

S1(config)#no shutdown

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

The screenshot shows a Cisco IOS Command Line Interface window for device S1. The user has entered the command `S1(config-if-range)#shut` to shut down interfaces FastEthernet0/4 through FastEthernet0/23. The output shows 20 lines of status messages, each indicating that a specific interface has been changed to an administratively down state. A system message at the bottom right states: "No se pueden instalar las actualizaciones. Seleccione este mensaje para corregir." The Windows taskbar is visible at the bottom, showing the search bar and various application icons.

```

Enter configuration commands, one per line. End with CNTL/Z.
S1(config)#int r f0/4-23
S1(config-if-range)#shut
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/13, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/14, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/17, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down
%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down
Ctrl+H6 to exit CLI focus
  
```

S1(config)#Interface range f0/4-23

S1(config)#shutdown

7. Implement DHCP and NAT for IPv4

```

R2
Physical Config CLI Attributes
interface Ethernet0/2/0
no ip address
duplex auto
speed auto
shutdown
!
interface Ethernet0/3/0
no ip address
duplex auto
speed auto
shutdown
!
interface Vlan1
no ip address
shutdown
!
router ospf 10
router-id 2.2.2.2
log-adjacency-changes
passive-interface FastEthernet0/0
network 192.168.99.0 0.0.0.255 area 0
network 200.165.200.0 0.0.0.255 area 0
network 172.31.21.0 0.0.0.3 area 0
network 172.31.23.0 0.0.0.3 area 0
!
ip nat inside source static 192.168.99.1 200.165.200.224
ip classless
!
ip flow-export version 9
!
!
access-list 10 permit any
access-list 101 deny icmp any any
access-list 101 permit ip any any
access-list 102 permit ip any any
access-list 102 deny icmp any any
!
!
Ctrl+F6 to exit CLI focus

```

ip nat pool RANGOPUBLICO 200.165.200.224 200.165.200.230 netmask 255.255.255.248

access-list 1 permit 192.168.0.0 0.0.0.255

ip nat inside source list 1 pool RANGOPUBLICO

interface FastEthernet0/0

ip nat inside

exit

interface FastEthernet0/1

ip nat outside

service dhcp

ip dhcp excluded-address 192.168.40.1

ip dhcp excluded-address 192.168.30.1

```
ip dhcp excluded-address 192.168.200.1
(config)#ip dhcp pool LAN
(DHCP-config)#network 192.168.0.0 255.255.255.0
(DHCP-config)#default-router 192.168.99.1
(DHCP-config)#dns-server 10.10.10.11
```

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

```

R1
Physical Config CLI Attributes
IOS Command Line Interface
1
ip dhcp excluded-address 192.168.99.1
ip dhcp excluded-address 192.168.99.1
ip dhcp excluded-address 192.168.200.1
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 excluded-address 192.168.200.1 192.168.200.25
1
ip dhcp pool vlan30
network 192.168.30.0 255.255.255.0
default-router 192.168.30.1
dns-server 10.10.10.11
ip dhcp pool vlan40
network 192.168.40.0 255.255.255.0
default-router 192.168.40.1
dns-server 10.10.10.11
ip dhcp pool vlan200
network 192.168.200.0 255.255.255.0
default-router 192.168.200.1
dns-server 10.10.10.11
1
1
no ip ospf
no ip ospf out
1
1
1
1
1
1
1
1
1
1
spanning-tree mode pvt
Ctrl+F to set CLI focus
Copy Paste

```

```
R1(config)#ip dhcp pool vlan30
R1(dhcp-config)#network 192.168.30.0 255.255.255.0
R1(dhcp-config)#defau
R1(dhcp-config)#default-router 192.168.30.1
R1(dhcp-config)#dns-server 10.10.10.11
R1(dhcp-config)#ip dhcp pool vlan40
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
```


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
Physical Config CLI Attributes
IOS Command Line Interface

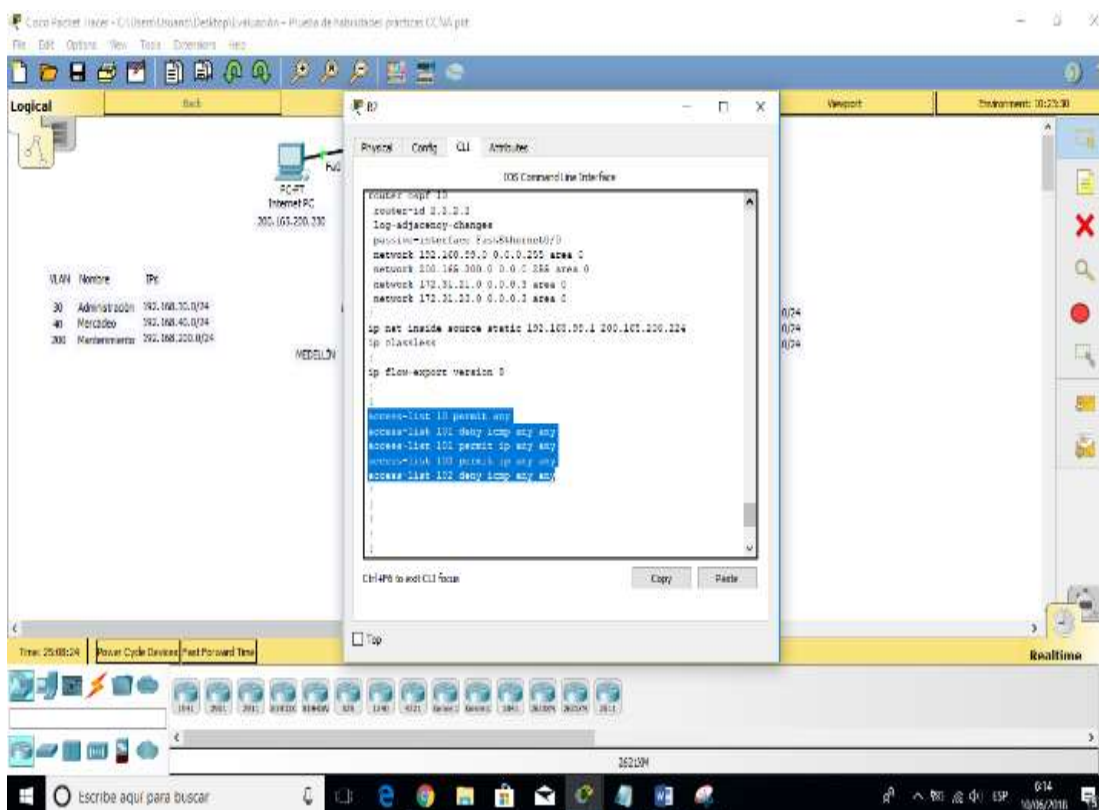
Router(config)#ip dhcp pool 7
DHCP pool name
Router(config)#ip dhcp pool vlan30
Router(dhcp-config)#network 192.168.30.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.30.1
Router(dhcp-config)#dns-server 0.0.0.0
Router(dhcp-config)#ip dhcp pool vlan40
Router(dhcp-config)#network 192.168.40.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.40.1
Router(dhcp-config)#dns-server 0.0.0.0
Router(dhcp-config)#ip dhcp pool vlan200
Router(dhcp-config)#network 192.168.200.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.200.1
Router(dhcp-config)#dns-server 0.0.0.0
Router(dhcp-config)#do wr
Building configuration...
[OK]
Router(dhcp-config)#exit
Router(config)#ip dhcp excluded-address ?
A.B.C.D. Low ID address
Router(config)#ip dhcp excluded-address 192.168.30.1 192.168.30.30
Router(config)#no ip dhcp excluded-address 192.168.30.1 192.168.30.30
Router(config)#ip dhcp excluded-address 192.168.40.1 192.168.40.30
Router(config)#ip dhcp excluded-address 192.168.200.1 192.168.200.30
Router(config)#do wr
Building configuration...
[OK]
Router(config)#ip dhcp pool vlan30
Router(dhcp-config)#dns-server 10.10.10.11
Router(dhcp-config)#ip dhcp pool vlan40
Router(dhcp-config)#dns-server 10.10.10.11
Router(dhcp-config)#ip dhcp pool vlan200
Router(dhcp-config)#dns-server 10.10.10.11
Router(dhcp-config)#do wr
Building configuration...
[OK]
Router(dhcp-config)#
Ctrl+F6 to exit CLI focus
Copy Paste
  
```

```

S3
Physical Config CLI Attributes
IOS Command Line Interface

Switch(config)#int e 20/4-3
Switch(config-if-range)#shu
% Invalid input detected at ... marker.
Switch(config-if-range)#shu
%LINK-6-CHANGED: Interface FastEthernet0/4, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/5, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/6, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/7, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/8, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/9, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/10, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/11, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/12, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/13, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/14, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/15, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/16, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/17, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/18, changed state to administratively down
%LINK-6-CHANGED: Interface FastEthernet0/19, changed state to administratively down
Ctrl+F6 to exit CLI focus
Copy Paste
  
```


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.



router#configure terminal

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

router(config)#access-list 101 deny icmp any any

router(config)#access-list 101 permit 172.31.21.0

router(config)#^Z

router#show access-list

Extended IP access list 101

deny icmp any any

permit 172.31.21.0

router#

Cisco Packet Tracer - C:\Users\Usuario\Desktop\Funcion\Prueba de habilidades prácticas CCNA\pkt

File Edit Options View Tools Expressions Help

Logical PC-A Environment: 22:38:00

Physical Config Desktop Programming Attributes

IP Configuration

DHCP Static DHCP required on interface.

IP Address: 192.168.20.31
 Subnet Mask: 255.255.255.0
 Default Gateway: 192.168.20.1
 DNS Server: 10.10.10.11

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: _____
 Link Local Address: FE80::8F0:8F0:8F0:123B
 IPv6 Gateway: _____
 IPv6 DNS Server: _____

Time: 02:20:29 Power Cycle Devices Fast Forward

Realtime

2811

Escribe aquí para buscar

22:36 24/05/2018

Cisco

File Edit

Logical

```

R1#
R1#
R1#
R1#
R1#
R1#show ip prot

Routing Protocol is "ospf 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 1.1.1.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    192.168.99.0 0.0.0.255 area 0
    200.165.200.0 0.0.0.255 area 0
    172.31.21.0 0.0.0.3 area 0
    172.31.23.0 0.0.0.3 area 0
  Passive Interface(s):
    FastEthernet0/0
  Routing Information Sources:
    Gateway         Distance      Last Update
    1.1.1.1          110          00:01:14
    2.2.2.2          110          00:01:14
  Distance: (default is 110)

R1#
    
```

Ctrl+F6 to exit CLI focus

Copy Paste

Time: 25:38:41 Power Cycle Devices Fast Forward Time

Realtime

26210M

Escribe aquí para buscar

6:44 10/06/2018

CONFIGURACIONES ROUTERS

R2#show runn

Building configuration...

Current configuration : 1615 bytes

```

!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R2
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
spanning-tree mode pvst
!

!
!
interface Loopback0
ip address 10.10.10.10 255.255.255.255
!
interface FastEthernet0/0
ip address 200.165.200.224 255.255.255.0
ip nat inside
duplex auto
speed auto
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/0/0
bandwidth 128
ip address 172.31.23.1 255.255.255.252
ip ospf cost 7500
clock rate 2000000
!
interface Serial0/0/1
bandwidth 128
ip address 172.31.21.2 255.255.255.252
ip ospf cost 7500
!
interface Serial0/1/0
no ip address
clock rate 2000000
shutdown
!
interface Serial0/1/1
no ip address
clock rate 2000000
shutdown
!
interface Ethernet0/2/0
no ip address
duplex auto
speed auto

```

```

!
interface Ethernet0/3/0
no ip address
duplex auto
speed auto
shutdown
!
interface Vlan1
no ip address
shutdown
!
router ospf 10
router-id 2.2.2.2
log-adjacency-changes
passive-interface FastEthernet0/0
network 192.168.99.0 0.0.0.255 area 0
network 200.165.200.0 0.0.0.255 area 0
network 172.31.21.0 0.0.0.3 area 0
network 172.31.23.0 0.0.0.3 area 0
!
ip nat inside source static 192.168.99.1 200.165.200.224
ip classless
!
ip flow-export version 9
!
!
access-list 10 permit any
access-list 101 deny icmp any any
access-list 101 permit ip any any
access-list 102 permit ip any any
access-list 102 deny icmp any any
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
!
end

```

R2#

```

-----
R1#show run
Building configuration...

```

Current configuration : 2267 bytes

```

!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname R1
!
!
!
!
ip dhcp excluded-address 192.168.40.1
ip dhcp excluded-address 192.168.30.1
ip dhcp excluded-address 192.168.200.1
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 excluded-address 192.168.200.1 192.168.200.30
```

```
!
ip dhcp pool vlan30
network 192.168.30.0 255.255.255.0
default-router 192.168.30.1
dns-server 10.10.10.11
ip dhcp pool vlan40
network 192.168.40.0 255.255.255.0
default-router 192.168.40.1
dns-server 10.10.10.11
ip dhcp pool vlan200
network 192.168.200.0 255.255.255.0
default-router 192.168.200.1
dns-server 10.10.10.11
```

```
!
!
!
no ip cef
no ipv6 cef
```

```
!
!
!
!
!
spanning-tree mode puvst
```

```
!
!
!
!
!
interface FastEthernet0/0
ip address 192.168.99.1 255.255.255.0
ip nat outside
duplex auto
speed auto
!
interface FastEthernet0/0.30
encapsulation dot1Q 30
ip address 192.168.30.1 255.255.255.0
!
interface FastEthernet0/0.40
encapsulation dot1Q 40
ip address 192.168.40.1 255.255.255.0
!
interface FastEthernet0/0.200
encapsulation dot1Q 200
ip address 192.168.200.1 255.255.255.0
!
```

```
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
```

```
interface Serial0/0/0
bandwidth 128
ip address 172.31.21.1 255.255.255.252
ip ospf cost 7500
clock rate 2000000
!
```

```
interface Serial0/0/1
no ip address
ip ospf cost 7500
clock rate 2000000
shutdown
!
```

```
interface Serial0/1/0
no ip address
clock rate 2000000
```



```

!
interface Serial0/1/1
no ip address
clock rate 2000000
shutdown
!
interface Ethernet0/2/0
no ip address
duplex auto
speed auto
shutdown
!
interface Ethernet0/3/0
no ip address
duplex auto
speed auto
shutdown
!
interface Vlan1
no ip address
shutdown
!
router ospf 10
router-id 1.1.1.1
log-adjacency-changes
passive-interface FastEthernet0/0
network 192.168.99.0 0.0.0.255 area 0
network 200.165.200.0 0.0.0.255 area 0
network 172.31.21.0 0.0.0.3 area 0
network 172.31.23.0 0.0.0.3 area 0
!
ip nat inside source static 192.168.99.1 200.165.200.224
ip classless
!
ip flow-export version 9
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
!
end

```

R1#

CONCLUSIONES

- En Packet Tracer es un programa de cisco que permite simular el funcionamiento de la red y experimentar diferentes tipos de situaciones.
- Para el montaje de una red es necesario realizar el diseño requerido para planear los recursos y elementos que se necesitaran.
- Ethernet identifica las características de cableado y señalización de nivel físico y los formatos de tramas de datos del modelo OSI en su capa de enlace.
- Los protocolos permiten que se manejen las normas, reglas y pautas de forma universal que permite tener una unidad tecnológica en la conectividad de las redes.
- Para la buena conectividad de red se requiere tanto de los equipos pasivos (conectores, medios d transmisión, canalización, etc) y activos (Switch, router, firewall, servidores, etc)

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