

Redes de ordenadores

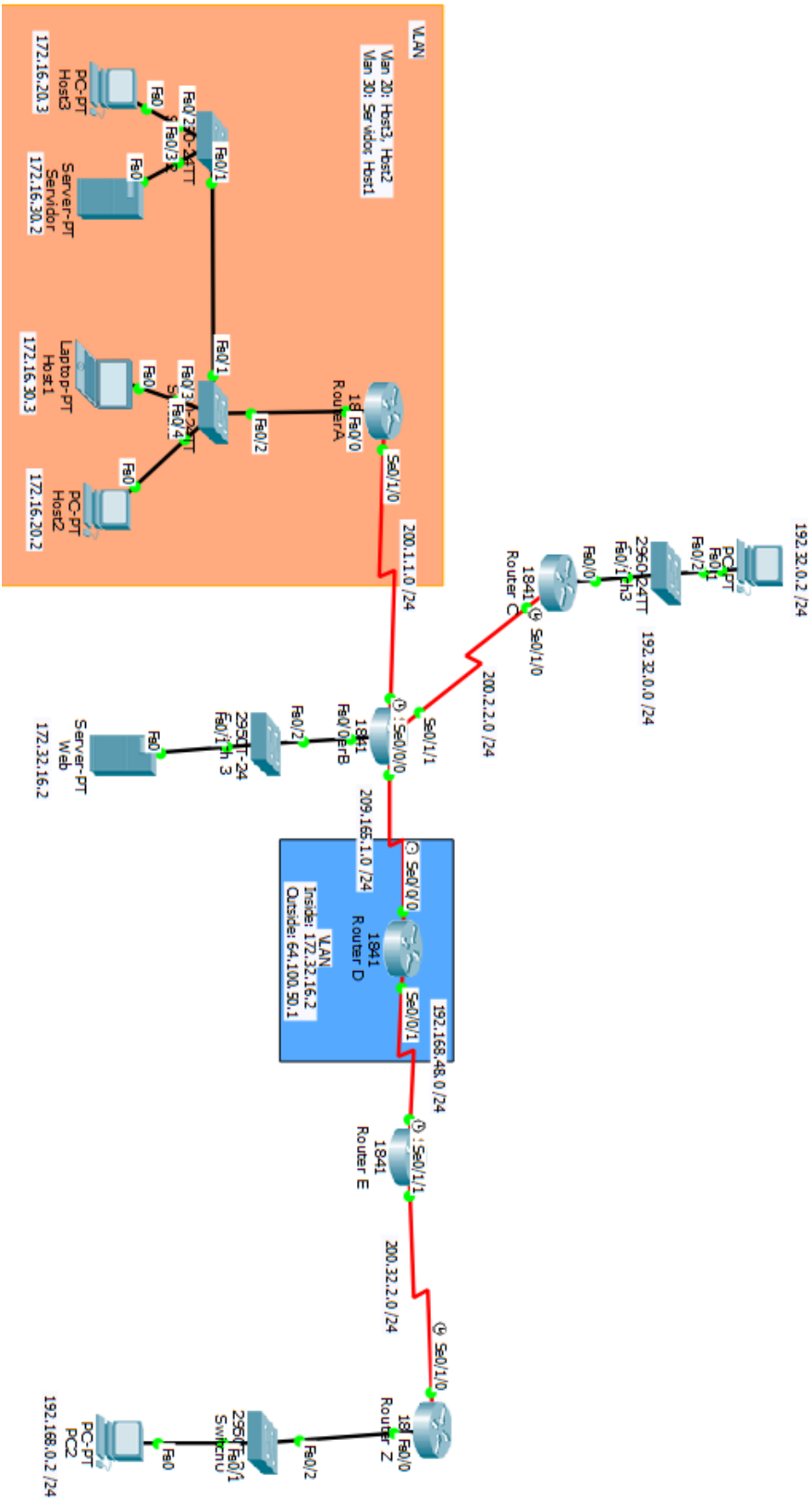
Proyecto de prácticas. Cisco packet tracer.



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1. Topología de la red:



Dispositivo	VLAN	Direccion IP	Mascara de subred	Gateway
Host 1	30	172.16.30.3	255.255.0.0	209.165.128.128
Host 2	20	172.16.20.2	255.255.0.0	209.165.128.128
Host 3	20	172.16.20.3	255.255.0.0	209.165.128.128
PC 1	-	192.32.0.2	255.255.255.0	192.32.0.1
PC 2	-	192.168.0.2	255.255.255.0	192.168.32.1
Servidor	30	172.16.30.2	255.255.0.0	209.165.128.128
Web	-	172.32.16.2	255.255.0.0	172.32.16.1

Dispositivo	VLAN 20	VLAN 30	VLAN 1	Enlace troncal
Switch 1	Fa0/4	Fa0/3	Resto	Fa0/1, Fa0/2
Switch 2	Fa0/2	Fa0/3	Resto	Fa0/1
Switch 3	-	-	Todas	-
Switch 4	-	-	Todas	-
Switch 5	-	-	Todas	-

Dispositivo	Interfaz	Interfaz	Interfaz	Interfaz	NAT inside	NAT outside
Router A	Fa0/0 209.165.128.128	Se0/1/0 200.1.1.1	-	-	-	-
Router B	Fa0/0 172.32.16.1	Se0/0/0 209.165.1.1	Se0/1/0 200.1.1.2	Se0/1/1 200.2.2.1	-	-
Router C	Fa0/0 192.32.0.1	Se0/1/0 200.2.2.2	-	-	-	-
Router D	-	Se0/0/0 209.165.1.2	Se0/0/1 192.168.48.1	-	172.32.16.2	64.100.50.1
Router E	-	Se0/1/0 192.168.48.2	Se0/1/1 200.32.2.1	-	-	-
Router F	Fa0/0 192.168.32.1	Se0/1/0 200.32.2.2	-	-	-	-

2. Configuración de los dispositivos

a. Switch1:

```
Switch#show running-config
Building configuration...

Current configuration : 1245 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Switch
!
!
!
!
```

```
spanning-tree mode pvst
!
interface FastEthernet0/1
switchport mode trunk
!
interface FastEthernet0/2
switchport mode trunk
!
interface FastEthernet0/3
switchport access vlan 30
switchport mode access
!
interface FastEthernet0/4
switchport access vlan 20
switchport mode access
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
ip address 172.16.1.2 255.255.255.0
shutdown
!
ip default-gateway 172.16.1.1
!
!
```

```
!  
!  
line con 0  
!  
line vty 0 4  
login  
line vty 5 15  
login  
!  
!  
End
```

b. Switch2

```
Switch#show running-config  
Building configuration...  
  
Current configuration : 1222 bytes  
!  
version 12.2  
no service timestamps log datetime msec  
no service timestamps debug datetime msec  
no service password-encryption  
!  
hostname Switch  
!  
!  
!  
!  
spanning-tree mode pvst  
!  
interface FastEthernet0/1  
switchport mode trunk  
!  
interface FastEthernet0/2  
switchport access vlan 20  
switchport mode access  
!  
interface FastEthernet0/3  
switchport access vlan 30  
switchport mode access  
!  
interface FastEthernet0/4  
!  
interface FastEthernet0/5  
!  
interface FastEthernet0/6  
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
!  
interface FastEthernet0/12  
!  
interface FastEthernet0/13  
!  
interface FastEthernet0/14  
!  
interface FastEthernet0/15
```

```

!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
ip address 172.16.1.3 255.255.255.0
shutdown
!
ip default-gateway 172.16.1.1
!
!
!
!
line con 0
!
line vty 0 4
login
line vty 5 15
login
!
!
End

```

c. **switch 3**

```

Switch#show running-config
Building configuration...

Current configuration : 1043 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Switch
!
!
!
!
!
spanning-tree mode pvst
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!

```

```
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
!
!
!
line con 0
!
line vty 0 4
login
line vty 5 15
login
!
!
End
```

d. **Switch 4**

```
Switch#show running-config
Building configuration...
```

```
Current configuration : 1039 bytes
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Switch
!
!
!
spanning-tree mode pvst
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
```



```

!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
!
!
!
line con 0
!
line vty 0 4
login
line vty 5 15
login
!
!
End

```

e. **Switch 5**

```

Switch#show running-config
Building configuration...

Current configuration : 1039 bytes
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Switch
!
!
!
spanning-tree mode pvst
!
interface FastEthernet0/1
!
interface FastEthernet0/2
!
interface FastEthernet0/3
!
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!

```

```

interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
!
!
!
line con 0
!
line vty 0 4
login
line vty 5 15
login
!
!
End

```

f. **Router A**

```

Router#show running-config
Building configuration...

Current configuration : 1271 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!

```

```

!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
ip address 209.165.128.128 255.0.0.0
ip nat inside
duplex auto
speed auto
!
interface FastEthernet0/0.1
encapsulation dot1Q 1 native
ip address 172.16.1.1 255.255.255.0
!
interface FastEthernet0/0.20
encapsulation dot1Q 20
ip address 172.16.20.1 255.255.255.0
!
interface FastEthernet0/0.30
encapsulation dot1Q 30
ip address 172.16.30.1 255.255.255.0
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/1/0
ip address 200.1.1.1 255.255.255.0
ip nat outside
!
interface Serial0/1/1
no ip address
ip nat inside
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 172.16.0.0
network 200.1.1.0
!
ip nat pool NAT-POOL1 172.16.16.1 172.16.16.15 netmask 0.0.0.0
ip nat inside source static 209.165.128.128 172.16.16.1
ip nat inside source static 209.165.128.128 10.1.1.2
ip classless
!
ip flow-export version 9
!

```

```

!
!
no cdp run
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
!
end

```

a. **Router B**

```
Router#show running-config
Building configuration...

Current configuration : 1078 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface FastEthernet0/0
ip address 172.32.16.1 255.255.255.0
ip nat inside
duplex auto
speed auto
```

```

!
interface FastEthernet0/1
no ip address
ip nat outside
duplex auto
speed auto
!
interface Serial0/0/0
ip address 209.165.1.1 255.255.255.0
ip nat outside
!
interface Serial0/0/1
no ip address
clock rate 2000000
!
interface Serial0/1/0
ip address 200.1.1.2 255.255.255.0
ip nat outside
clock rate 2000000
!
interface Serial0/1/1
ip address 200.2.2.1 255.255.255.0
ip nat outside
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 172.32.0.0
network 200.1.1.0
network 200.2.2.0
!
ip nat inside source static 172.16.16.2 64.100.50.1
ip classless
ip route 192.168.32.0 255.255.255.0 209.165.1.2
!
ip flow-export version 9
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
!
End

```

b. Router C

```

Router#show running-config
Building configuration...

Current configuration : 1078 bytes
!
version 12.4
no service timestamps log datetime msec

```

```
no service timestamps debug datetime msec  
no service password-encryption  
!  
hostname Router  
!  
!  
!  
!  
!  
!  
!  
!  
!  
ip cef  
no ipv6 cef  
!  
!  
!  
!  
!  
!  
!  
!  
!  
! spanning-tree mode pvst  
!  
!  
!  
!  
!  
interface FastEthernet0/0  
ip address 172.32.16.1 255.255.255.0  
ip nat inside  
duplex auto  
speed auto  
!  
interface FastEthernet0/1  
no ip address  
ip nat outside  
duplex auto  
speed auto  
!  
interface Serial0/0/0  
ip address 209.165.1.1 255.255.255.0  
ip nat outside  
!  
interface Serial0/0/1  
no ip address  
clock rate 2000000  
!  
interface Serial0/1/0  
ip address 200.1.1.2 255.255.255.0  
ip nat outside  
clock rate 2000000  
!  
interface Serial0/1/1  
ip address 200.2.2.1 255.255.255.0  
ip nat outside  
!  
interface Vlan1  
no ip address  
shutdown  
!  
router rip
```



```

!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/0/0
ip address 209.165.1.2 255.255.255.0
ip nat inside
clock rate 2000000
!
interface Serial0/0/1
ip address 192.168.48.1 255.255.255.0
ip nat outside
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 192.168.48.0
network 209.165.1.0
!
ip nat inside source static 172.32.16.2 64.100.50.1
ip classless
ip route 172.0.0.0 255.0.0.0 209.165.1.1
!
ip flow-export version 9
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
!
End

```

d. Router E

```

Router#show running-config
Building configuration...

Current configuration : 815 bytes
!
version 12.4
no service timestamps log datetime msec

```



```
no service timestamps debug datetime msec
no service password-encryption
!
hostname Router
!
!
!
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
shutdown
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/1/0
ip address 192.168.48.2 255.255.255.0
clock rate 2000000
!
interface Serial0/1/1
ip address 200.32.2.1 255.255.255.0
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 192.168.48.0
network 200.32.2.0
!
ip classless
ip route 64.100.50.1 255.255.255.255 192.168.48.1
!
ip flow-export version 9
!
!
```

```
!  
!  
!  
!  
!  
line con 0  
!  
line aux 0  
!  
line vty 0 4  
login  
!  
!  
!  
End
```

e. **Router F**

```
Router#show running-config  
Building configuration...  
  
Current configuration : 823 bytes  
!  
version 12.4  
no service timestamps log datetime msec  
no service timestamps debug datetime msec  
no service password-encryption  
!  
hostname Router  
!  
!  
!  
!  
!  
!  
!  
no ip cef  
no ipv6 cef  
!  
!  
!  
!  
!  
!  
!  
!  
!  
!  
spanning-tree mode pvst  
!  
!  
!  
!  
!  
interface FastEthernet0/0  
ip address 192.168.32.1 255.255.255.0  
duplex auto  
speed auto  
!  
interface FastEthernet0/1  
no ip address  
duplex auto
```

```
speed auto
!
interface Serial0/1/0
ip address 200.32.2.2 255.255.255.0
clock rate 2000000
!
interface Serial0/1/1
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
router rip
version 2
network 192.168.32.0
network 200.32.2.0
!
ip classless
ip route 64.100.50.1 255.255.255.255 200.32.2.1
!
ip flow-export version 9
!
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login
!
!
!
end
```