**Parcial 2**

**Presentado por:**

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**Facultad de Ingeniería**

**Departamento de Ingeniería de Sistemas e Industrial**

**2025-1**

Parte 1

Router\_ISP

enable

configure terminal

! Interface serial hacia Border

interface Serial0/0/0

ip address 200.1.1.1 255.255.255.252

clock rate 64000

no shutdown

exit

! Ruta estática de retorno a LAN interna

ip route 192.168.0.0 255.255.255.0 200.1.1.2

exit

write memory

Swich\_core

enable

configure terminal

! 1) Enlace al ISP

interface Serial0/0/0

ip address 200.1.1.2 255.255.255.252

no shutdown

exit

! 2) Router-on-a-stick para VLANs internas

interface FastEthernet0/1

no shutdown

exit

interface FastEthernet0/1.10

encapsulation dot1Q 10

ip address 192.168.0.1 255.255.255.224 ! /27 Ventas

no shutdown

exit

interface FastEthernet0/1.20

encapsulation dot1Q 20

ip address 192.168.0.33 255.255.255.240 ! /28 Ingeniería

no shutdown

exit

interface FastEthernet0/1.30

encapsulation dot1Q 30

ip address 192.168.0.49 255.255.255.248 ! /29 Administración

no shutdown

exit

! 3) Enlace a la DMZ (subinterfaz native VLAN 100)

interface FastEthernet0/2

no shutdown

exit

interface FastEthernet0/2.100

encapsulation dot1Q 100 native

ip address 10.0.0.1 255.255.255.252 ! /30 DMZ

no shutdown

exit

! 4) NAT Overload para LAN interna

access-list 1 permit 192.168.0.0 0.0.0.255

ip nat inside source list 1 interface Serial0/0/0 overload

interface Serial0/0/0

ip nat outside

exit

interface FastEthernet0/1

ip nat inside

exit

interface FastEthernet0/2.100

ip nat inside

exit

! 5) DHCP Server para clientes LAN

ip dhcp excluded-address 192.168.0.1 192.168.0.10

ip dhcp pool CLIENTES

network 192.168.0.64 255.255.255.240 ! /28

default-router 192.168.0.65

dns-server 8.8.8.8

lease 1

! 6) Ruta por defecto a ISP

ip route 0.0.0.0 0.0.0.0 200.1.1.1

exit

write memory

Switch\_DMZ

enable

configure terminal

! Todo en VLAN 1 (DMZ “privada” no trunk)

interface FastEthernet0/1

switchport mode access

exit

interface FastEthernet0/2

switchport mode access

exit

exit

write memory

Host

Configure cada uno para DHCP, o asigna estático dentro de su VLAN:

Ventas PC → DHCP (obtendrá 192.168.0.65–.78)

Ingeniería PC → DHCP

Administración PC → DHCP

Verificaciones

show ip interface brief

show ip route (routers)

show ip nat translations (Router\_Border)

show ip dhcp binding (Router\_Border)

show vlan brief (Switch\_Core)

Desde cada pc

ping 192.168.0.1 # gateway VLAN

ping 8.8.8.8 # Internet

ping 10.0.0.2 # Server Web (DMZ)

tracert 200.1.1.1 # traza hasta ISP

| **Subred** | **Hosts req.** | **Prefijo** | **Rango IP** |
| --- | --- | --- | --- |
| Ventas | 25 | /27 | 192.168.0.0 – 192.168.0.31 |
| Ingeniería | 10 | /28 | 192.168.0.32 – 192.168.0.47 |
| Administración | 6 | /29 | 192.168.0.48 – 192.168.0.55 |
| Router–DMZ | 2 | /30 | 10.0.0.0 – 10.0.0.3 |
| DHCP pool | — | /28 | 192.168.0.64 – .79 |
| Internet P2P | 2 | /30 | 200.1.1.0 – 200.1.1.3 |

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enable

configure terminal

hostname R-Corporativo

exit

show ip interface brief

configure terminal

interface ethernet 0/0/0

description Conexion a SVI\_VLAN\_2

ip address 10.0.0.1 255.0.0.0

no shutdown

exit

interface ethernet 0/1/0

description Conexion SVI\_VLAN\_3

ip address 20.0.0.1 255.0.0.0

no shutdown

exit

interface ethernet 0/2/0

description Conexion a SVI\_VLAN\_4

ip address 30.0.0.1 255.0.0.0

no shutdown

exit

interface ethernet 0/3/0

description Conexion a SVI\_VLAN\_5

ip address 70.0.0.1 255.0.0.0

no shutdown

exit

exit

configure terminal

enable secret cisco123

line vty 0 15

password cisco123

login

exit

banner motd $ROUTER CORPORATIVO$

exit

wr

enable

configure terminal

hostname SW-LAN\_A

enable secret cisco123

line vty 0 15

password cisco123

login

exit

banner motd $EQUIPOS EDIFICIO$

vlan 2

name INGENIERIA

exit

vlan 3

name SOPORTE

exit

vlan 4

name VENTAS

exit

vlan 5

name MANAGEMENT

exit

vlan 700

name NATIVA

exit

interface fastEthernet 0/1

description Conexion a INGENIERIA\_PC

switchport mode access

switchport access vlan 2

show vlan

interface fastEthernet 1/1

description Conexion a SOPORTE\_PC

switchport mode access

switchport access vlan 3

interface fastEthernet 2/1

description Conexion Servidor\_Ventas

switchport mode access

switchport access vlan 4

no shutdown

exit

interface fastEthernet 4/1

description Conexion a SW-LAN\_B

switchport mode trunk

switchport trunk native vlan 700

switchport trunk allowed vlan 2,3,4,5,700

configure terminal

ip address 255.0.0.0

ip default-gateway 70.0.0.1

exit

enable

configure terminal

hostname SW-LAN\_B

enable secret cisco123

line vty 0 15

password cisco123

login

exit

banner motd $EQUIPO CORPORATIVO CONCENTRACION LAN EDIFICIO-B$

exit

show ip interface brief

configure terminal

interface fastEthernet 0/1

description Conexion SERVIDOR\_TICKETS

switchport mode access

configure terminal

vlan 2

name INGENIERIA

exit

vlan 3

name SOPORTE

exit

vlan 4

name VENTAS

exit

vlan 5

name MANAGEMENT

exit

vlan 700

name NATIVA

exit

configure terminal

interface fastEthernet 0/1

switchport mode access

switchport access vlan 3

exit

interface fastEthernet 1/1

description Conexion VENTAS\_PC

switchport mode access

switchport access vlan 4

no shutdown

exit

interface fastEthernet 2/1

description Conexion SERVIDOR\_DISEO\_ING

switchport mode access

switchport access vlan 2

no shutdown

exit

show ip interface brief

interface fastEthernet 5/1

description Conexion a SW-LAN\_A

switchport mode trunk

switchport trunk native vlan 700

switchport trunk allowed vlan 2,3,4,5,700

no shutdown

configure terminal

interface vlan 5

description Conexion MANAGEMENT SW-LAN\_B

ip address 70.0.0.3 255.0.0.0

no shutdown

exit

ip default-gateway 70.0.0.1

exit

wr

configure terminal

interface fastEthernet 8/1

description Router\_Ventas

switchport mode access

switchport access vlan 4

no shutdown

exit

interface fastEthernet 7/1

description Conexion Router\_Soporte

switchport mode access

switchport access vlan 3

no shutdown

exit

interface fastEthernet 9/1

description Conexion Router\_MANAGEMENT

switchport mode access

switchport access vlan 5

no shutdown

exit

wr

interface fastEthernet 6/1

description Conexion Router\_Ingenieria

switchport mode access

switch access vlan 2

no shutdown

exit

ipv6 address *ipv6-address/prefix-length. ip version 6*