

PRIMER PARCIAL PRÁCTICO



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UNIVERSIDAD DISTRITAL FRANCISCO JOSÉ DE CALDAS

INGENIERÍA DE SISTEMAS

REDES DE COMUNICACIONES III

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Enunciado

1. Configuración de VLAN (2,0 Puntos)

1. Asignar y definir esquema direccionamiento VLSM para VLAN según necesidad.
2. Definir enlaces troncales y de acceso, defina puertos según sea el caso.
3. Definir enrutamiento VLAN dot1Q.
4. Definir dominio server y cliente.
5. Definir VLAN Voz para comunicación en Paiba.

2. Configuración Servicios Server FTP-DNS-HTTP (0,5 puntos)

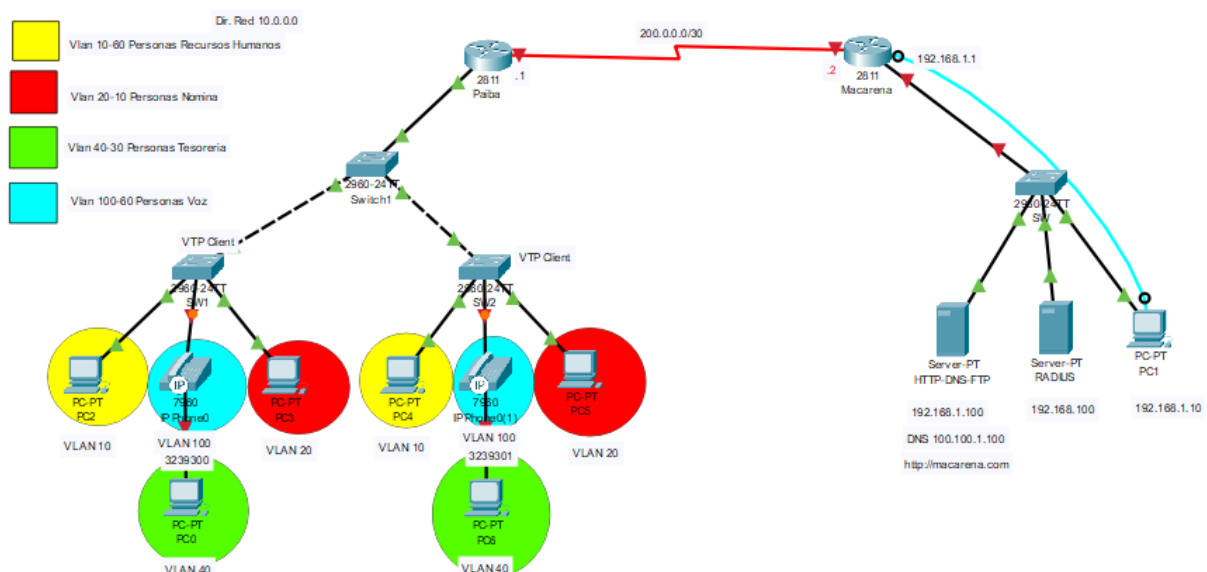
1. Configuración server servicios.
2. Acceso WEB y FTP desde cualquier parte de Red mediante DNS.

3. Configuración de AAA Server RADIUS / SSH (0,5 Punto)

1. Configurar el acceso por SSH.
2. Defina la entrada de transporte para que las líneas VTY permitan solo conexiones SSH en Macarena.
3. Genere una clave criptográfica RSA de 1024
4. Configuración autenticación AAA Radius en Server para ingreso local y remoto.

Solución

Topología Packet Tracer



Direccionamiento VLSM VLAN

VLAN	Nombre	PERSONAS	NETWORK	PREFIJO	MASCARA	GATEWAY
10	RECURSOS-HUMANOS	60	10.0.0.0	26	255.255.255.192	10.0.0.1
100	VOZ	60	10.0.0.64	26	255.255.255.192	10.0.0.65
40	TESORERIA	30	10.0.0.128	27	255.255.255.224	10.0.0.129
20	NOMINA	10	10.0.0.160	28	255.255.255.240	10.0.0.161

Configuración Router Paiba

enable

configure terminal

hostname PAIBA

interface Serial 0/0/0

ip address 200.1.0.1 255.255.255.252

no shutdown

router ospf 10

network 200.1.0.0 0.0.0.3 area 0

network 10.0.0.0 0.0.0.63 area 0

network 10.0.0.64 0.0.0.63 area 0

network 10.0.0.128 0.0.0.31 area 0

network 10.0.0.160 0.0.0.15 area 0

ip dhcp pool RECURSOS-HUMANOS

network 10.0.0.0 255.255.255.192

dns-server 100.100.1.200

default-router 10.0.0.1

ip dhcp pool VOZ

network 10.0.0.64 255.255.255.192

default-router 10.0.0.65

dns-server 100.100.1.200

```
option 150 ip 10.0.0.65

ip dhcp pool TESORERIA

network 10.0.0.128 255.255.255.224

default-router 10.0.0.129

dns-server 100.100.1.200

ip dhcp pool NOMINA

network 10.0.0.160 255.255.255.240

default-router 10.0.0.161

dns-server 100.100.1.200
```

```
interface FastEthernet0/0.10

encapsulation dot1Q 10

ip address 10.0.0.1 255.255.255.192
```

```
interface FastEthernet0/0.20

encapsulation dot1Q 20

ip address 10.0.0.161 255.255.255.240
```

```
interface FastEthernet0/0.40

encapsulation dot1Q 40

ip address 10.0.0.129 255.255.255.224
```

```
interface FastEthernet0/0.100

encapsulation dot1Q 100

ip address 10.0.0.65 255.255.255.192
```

```
interface FastEthernet0/0

no shutdown
```

```
telephony-service

max-ephones 2

max-dn 2

ip source-address 10.0.0.65 port 2000
```

auto assign 1 to 2

ephone-dn 1

number 3239300

ephone-dn 2

number 3239301

end

write memory

Configuración Switch central paib

enable

configure terminal

hostname SW-CENTRAL-PAIBA

vtp domain sistemas

vtp mode server

vlan 10

name RECURSOS-HUMANOS

interface vlan 10

vlan 20

name NOMINA

interface vlan 20

vlan 40

name TESORERIA

interface vlan 40

```
vlan 100
name VOZ
interface vlan 100

interface range GigabitEthernet 0/1, FastEthernet 0/23-24
switchport mode trunk

switchport trunk allowed vlan 10,20,40,100
end

write memory
```

Configuración Switch1 paiba

```
enable
configure terminal
hostname SW1-PAIBA
vtp domain sistemas
vtp mode client
interface FastEthernet 0/24
switchport mode trunk
switchport trunk allowed vlan 10,20,40,100
interface FastEthernet 0/1
switchport mode access
switchport access vlan 10
interface FastEthernet 0/2
switchport mode access
switchport access vlan 40
mls qos trust cos
switchport voice vlan 100
```

```
interface FastEthernet 0/3  
  
switchport mode access  
  
switchport access vlan 20  
  
end
```

```
write memory
```

Configuración Switch2 paiba

```
enable  
  
configure terminal  
  
hostname SW2-PAIBA  
  
vtp domain sistemas  
  
vtp mode client  
  
interface FastEthernet 0/24  
  
switchport mode trunk  
  
switchport trunk allowed vlan 10,20,40,100  
  
interface FastEthernet 0/1  
  
switchport mode access  
  
switchport access vlan 10  
  
interface FastEthernet 0/2  
  
switchport mode access  
  
switchport access vlan 40  
  
mls qos trust cos  
  
switchport voice vlan 100  
  
interface FastEthernet 0/3  
  
switchport mode access  
  
switchport access vlan 20  
  
end  
  
  
write memory
```

Configuración Router macarena

enable

configure terminal

hostname MACARENA

ip domain-name macarena.com

crypto key generate rsa general-keys modulus 1024

router ospf 10

network 200.1.0.0 0.0.0.3 area 0

network 192.168.1.0 0.0.0.255 area 0

ip nat pool natpool1 100.100.1.1 100.100.1.255 netmask 255.255.255.0

ip access-list extended NATPOOL_ACL

10 permit ip 192.168.1.0 0.0.0.255 any

ip nat inside source list NATPOOL_ACL pool natpool1

interface Serial 0/0/0

ip nat outside

ip address 200.1.0.2 255.255.255.252

no shutdown

interface g0/0

ip nat inside

ip address 192.168.1.1 255.255.255.0

no shutdown

line console 0

password cisco

login

exit

line vty 0 4

password class

login

exit

enable secret redes

username Admin password p4ssw0rd

aaa new-model

aaa authentication login default group radius local

radius server host

address ipv4 192.168.1.100

key p4ssw0rd

line console 0

login authentication default

end

write memory

Configuración Server RADIUS

The screenshot displays the Mikrotik WinBox RADIUS configuration interface. On the left, a sidebar lists various services, with 'AAA' currently selected. The main configuration area is titled 'AAA' and is divided into three primary sections:

- Service:** Features a toggle for 'On' (selected) and 'Off', and a 'Radius Port' field set to '1645'.
- Network Configuration:** Includes input fields for 'Client Name' and 'Client IP', a 'ServerType' dropdown menu (set to 'Radius'), and a 'Key' field. Below these is a table with one entry:

	Client Name	Client IP	Server Type	Key	
1	MACARENA	192.168.1.1	Radius	p4ssw0rd	<div>Add</div> <div>Save</div> <div>Remove</div>
- User Setup:** Includes input fields for 'Username' and 'Password'. Below these is a table with one entry:

	Username	Password	
1	Admin	p4ssw0rd	<div>Add</div> <div>Save</div> <div>Remove</div>

Verificación RADIUS línea consola

```
User Access Verification
```

```
Username: Admin
```

```
Password:
```

```
Press RETURN to get started!
```

```
MACARENA>enable
```

```
Password:
```

```
MACARENA#
```

Verificación RADIUS por líneas vty

```
SSH Client X
Trying 192.168.1.1 ...Open

User Access Verification

Username: Admin
Password:
MACARENA>enable
Password:
MACARENA#
```