Guía de Laboratorio - Semana 1 (Resuelto)

Este documento resuelve la guía de laboratorio usando la red 192.168.33.128/25. Se explica paso a paso con lenguaje sencillo, como para un estudiante de 16 años.

1. Análisis inicial

La red base es 192.168.33.128/25, que tiene 128 direcciones (126 útiles). Debemos dividirla (subneteo VLSM) en 6 subredes: BR1 LAN, BR2 LAN, IoT, CCTV, HVAC y un enlace entre BR1 y BR2.

2. Subredes calculadas (VLSM)

Descripción	Hosts	Red/CIDR	Primera IP usable	Broadcast
BR1 LAN	62	192.168.33.128/26	192.168.33.129	192.168.33.191
BR2 LAN	30	192.168.33.192/27	192.168.33.193	192.168.33.223
BR2 IoT LAN	14	192.168.33.224/28	192.168.33.225	192.168.33.239
BR2 CCTV LAN	6	192.168.33.240/29	192.168.33.241	192.168.33.247
BR2 HVAC LAN	2	192.168.33.252/30	192.168.33.253	192.168.33.255
Enlace BR1-BR2	2	192.168.33.248/30	192.168.33.249-250	192.168.33.251

3. Direcciones de interfaces

Dispositivo	Interfaz	IP	Máscara
BR1	G0/0/0	192.168.33.249	255.255.255.252
BR1	G0/0/1	192.168.33.129	255.255.255.192
BR2	G0/0/0	192.168.33.250	255.255.255.252
BR2	G0/0/1	192.168.33.193	255.255.255.224

4. Configuración de BR1

```
enable
configure terminal
hostname BR1
no ip domain-lookup
enable secret class
service password-encryption
line con 0
password cisco
login
exit
line vty 0 4
password cisco
login
```

```
exit
banner motd $ Unauthorized Access is Prohibited $
!
interface GigabitEthernet0/0/0
ip address 192.168.33.249 255.255.255.252
no shutdown
!
interface GigabitEthernet0/0/1
ip address 192.168.33.129 255.255.255.192
no shutdown
!
ip route 192.168.33.192 255.255.255.224 192.168.33.250
ip route 192.168.33.224 255.255.255.240 192.168.33.250
ip route 192.168.33.240 255.255.255.248 192.168.33.250
ip route 192.168.33.252 255.255.255.252 192.168.33.250
end
copy running-config startup-config
```

5. Configuración de BR2

```
enable
configure terminal
hostname BR2
no ip domain-lookup
enable secret class
service password-encryption
line con 0
password cisco
login
exit
line vty 0 4
password cisco
login
exit
banner motd $ Unauthorized Access is Prohibited $
!
interface GigabitEthernet0/0/0
ip address 192.168.33.250 255.255.255.252
no shutdown
!
interface GigabitEthernet0/0/1
ip address 192.168.33.193 255.255.255.224
no shutdown
!
ip route 0.0.0.0 0.0.0.0 192.168.33.249
end
copy running-config startup-config
```

6. Verificación y pruebas

- `show ip route`: verificar rutas estáticas y por defecto.
- `ping` entre 192.168.33.249 y 192.168.33.250 para probar el enlace.

- `ping` entre hosts de BR1 y BR2 LANs para verificar conectividad.
- Probar `shutdown` en interfaz y luego `no shutdown` para comprobar el enlace.