Laporan Konfigurasi VLAN di PNETLab

# 1. Topologi Perangkat

- Router: Mikrotik RouterOS v7.13  
- Switch: Cisco Layer 2 Enterprise  
- Client: PC/VPC (Virtual PC)  
- Koneksi:  
 - PC1 & PC2 → VLAN 10  
 - PC3 & PC4 → VLAN 20  
 - PC5 & PC6 → VLAN 30  
 - Switch → Router via trunk port

# 2. Konfigurasi Switch Cisco Layer 2

Masuk ke mode konfigurasi:

enable  
configure terminal

Membuat VLAN:

vlan 10  
name VLAN10  
  
vlan 20  
name VLAN20  
  
vlan 30  
name VLAN30

Set interface ke mode akses sesuai VLAN:

interface range ethernet0/0 - 0/2  
switchport mode access  
switchport access vlan 10  
  
interface range ethernet0/3 , ethernet1/0  
switchport mode access  
switchport access vlan 20  
  
interface range ethernet1/1 - 1/2  
switchport mode access  
switchport access vlan 30

Set interface trunk (koneksi ke router):

interface ethernet0/1  
switchport trunk encapsulation dot1q  
switchport trunk allowed vlan 10,20,30  
switchport mode trunk

Simpan konfigurasi:

end  
write memory

# 3. Konfigurasi Router Mikrotik (RouterOS v7.13)

Buat interface VLAN di atas ether2 (trunk port ke switch):

/interface vlan  
add interface=ether2 name=vlan10 vlan-id=10  
add interface=ether2 name=vlan20 vlan-id=20  
add interface=ether2 name=vlan30 vlan-id=30

Tambahkan IP address ke masing-masing VLAN:

/ip address  
add address=10.10.10.1/24 interface=vlan10  
add address=20.20.20.1/24 interface=vlan20  
add address=30.30.30.1/24 interface=vlan30

Setup DHCP server untuk setiap VLAN:

/ip dhcp-server  
setup  
# Pilih interface: vlan10  
  
/ip dhcp-server  
setup  
# Pilih interface: vlan20  
  
/ip dhcp-server  
setup  
# Pilih interface: vlan30

# 4. Uji Koneksi dari VPC

Di masing-masing VPC:

ip dhcp

Lakukan ping ke gateway VLAN masing-masing:

ping 10.10.10.1  
ping 20.20.20.1  
ping 30.30.30.1

# 5. Catatan Tambahan

- Pastikan ether2 di Mikrotik tersambung ke port trunk switch (e0/1).  
- DHCP setup di Mikrotik akan otomatis membuat IP pool dan gateway sesuai input Anda.

## Tabel 1: Pembagian VLAN dan Perangkat

|  |  |  |
| --- | --- | --- |
| Nama Perangkat | Interface Switch | VLAN |
| PC1 | Ethernet0/0 | 10 |
| PC2 | Ethernet0/2 | 10 |
| PC3 | Ethernet0/3 | 20 |
| PC4 | Ethernet1/0 | 20 |
| PC5 | Ethernet1/1 | 30 |
| PC6 | Ethernet1/2 | 30 |

## Tabel 2: Hasil Penerimaan IP DHCP oleh PC

|  |  |  |
| --- | --- | --- |
| Nama PC | VLAN | IP Address DHCP |
| PC1 | 10 | 10.10.10.2 |
| PC2 | 10 | 10.10.10.3 |
| PC3 | 20 | 20.20.20.2 |
| PC4 | 20 | 20.20.20.3 |
| PC5 | 30 | 30.30.30.2 |
| PC6 | 30 | 30.30.30.3 |