

VLANs Cheat Sheet for Cisco Beginners

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This is a generic cheat sheet and not for a specific use case.

What are VLANs?

Virtual LANs (VLANs) logically separate devices on the same physical switch into different broadcast domains. Each VLAN acts like a separate network.

VLAN Types

Access VLAN

- **Purpose:** Assigns a single VLAN to a switch port
- **Use:** Connect end devices (PCs, printers, servers)
- **Traffic:** Untagged frames

Voice VLAN

- **Purpose:** Separate voice traffic from data traffic
- **Use:** IP phones with built-in switch
- **Traffic:** Voice VLAN tagged, data VLAN untagged

Trunk VLAN

- **Purpose:** Carries multiple VLANs between switches
- **Use:** Switch-to-switch connections
- **Traffic:** Tagged frames (except native VLAN)

Native VLAN

- **Purpose:** Default VLAN for untagged traffic on trunk links
- **Use:** Management and untagged frames
- **Traffic:** Untagged frames on trunk ports

Basic VLAN Configuration

Create VLANs

```
Switch(config)# vlan 10
Switch(config-vlan)# name Sales
Switch(config-vlan)# exit

Switch(config)# vlan 20
Switch(config-vlan)# name Marketing
```

Configure Access Port

```
Switch(config)# interface fastethernet0/1
Switch(config-if)# switchport mode access
Switch(config-if)# switchport access vlan 10
```

Configure Voice VLAN

```
Switch(config)# interface fastethernet0/2
Switch(config-if)# switchport mode access
Switch(config-if)# switchport access vlan 10
Switch(config-if)# switchport voice vlan 100
```

Configure Trunk Port

```
Switch(config)# interface gigabitethernet0/1
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport trunk allowed vlan 10,20,100
```

Set Native VLAN

```
Switch(config-if)# switchport trunk native vlan 99
```

Essential Show Commands

View VLANs

```
Switch# show vlan brief
Switch# show vlan
```

View Interface Status

```
Switch# show interfaces status
Switch# show interfaces trunk
```

View Specific VLAN

```
Switch# show vlan id 10
```

Quick Examples

Basic Setup

```
! Create VLANs
vlan 10
 name Data
vlan 20
 name Voice
vlan 99
 name Management

! Access port for PC
interface fa0/1
 switchport mode access
 switchport access vlan 10

! Voice port for IP phone
interface fa0/2
 switchport mode access
 switchport access vlan 10
 switchport voice vlan 20

! Trunk port to another switch
interface gi0/1
 switchport mode trunk
 switchport trunk native vlan 99
 switchport trunk allowed vlan 10,20
```

Key Points

- **VLAN 1** = Default VLAN (cannot be deleted)
- **Access ports** = One VLAN only
- **Trunk ports** = Multiple VLANs
- **Native VLAN** = Untagged on trunks (default VLAN 1)
- **Voice VLANs** = Special case for IP phones

Remember: Devices in different VLANs cannot communicate without a router or Layer 3 switch!