

## VLAN CONFIGURATION

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Switch# configure terminal

! Create VLANs

Switch(config)# vlan 10

Switch(config-vlan)# name Marketing

Switch(config-vlan)# exit

Switch(config)# vlan 20

Switch(config-vlan)# name Sales

Switch(config-vlan)# exit

Switch(config)# vlan 30

Switch(config-vlan)# name IT

Switch(config-vlan)# exit

! Assign VLANs to ports

Switch(config)# interface gigabitEthernet 0/1

Switch(config-if)# switchport mode access

Switch(config-if)# switchport access vlan 10

Switch(config-if)# exit

Switch(config)# interface gigabitEthernet 0/2

Switch(config-if)# switchport mode access

Switch(config-if)# switchport access vlan 20

Switch(config-if)# exit

Switch(config)# interface gigabitEthernet 0/3

Switch(config-if)# switchport mode access

Switch(config-if)# switchport access vlan 30

Switch(config-if)# exit

! Configure trunk port

Switch(config)# interface gigabitEthernet 0/24

Switch(config-if)# switchport mode trunk

Switch(config-if)# switchport trunk encapsulation dot1q

Switch(config-if)# switchport trunk native vlan 1

Switch(config-if)# switchport trunk allowed vlan 10,20,30

Switch(config-if)# exit

Switch(config)# end

## Intervlan configuration

=====

Router# configure terminal

```
! Subinterface for VLAN 10
Router(config)# interface gigabitEthernet 0/0.10
Router(config-subif)# encapsulation dot1q 10
Router(config-subif)# ip address 192.168.10.1 255.255.255.0
Router(config-subif)# exit
```

```
! Subinterface for VLAN 20
Router(config)# interface gigabitEthernet 0/0.20
Router(config-subif)# encapsulation dot1q 20
Router(config-subif)# ip address 192.168.20.1 255.255.255.0
Router(config-subif)# exit
```

```
! Subinterface for VLAN 30
Router(config)# interface gigabitEthernet 0/0.30
Router(config-subif)# encapsulation dot1q 30
Router(config-subif)# ip address 192.168.30.1 255.255.255.0
Router(config-subif)# exit
```

```
Router(config)# end
```

Switch Configuration Example:

Assuming the switch port connected to the router is GigabitEthernet0/24:

```
Switch# configure terminal
Switch(config)# interface gigabitEthernet 0/24
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport trunk encapsulation dot1q
Switch(config-if)# switchport trunk allowed vlan 10,20,30
Switch(config-if)# exit
Switch(config)# end
```

### Inter-VLAN Routing on a Layer 3 Switch

```
Switch# configure terminal
```

```
! Enable IP routing
Switch(config)# ip routing
```

```
! SVI for VLAN 10
Switch(config)# interface vlan 10
Switch(config-if)# ip address 192.168.10.1 255.255.255.0
Switch(config-if)# no shutdown
Switch(config-if)# exit
```

```
! SVI for VLAN 20
Switch(config)# interface vlan 20
Switch(config-if)# ip address 192.168.20.1 255.255.255.0
Switch(config-if)# no shutdown
Switch(config-if)# exit
```

```
! SVI for VLAN 30
```

```
Switch(config)# interface vlan 30
Switch(config-if)# ip address 192.168.30.1 255.255.255.0
Switch(config-if)# no shutdown
Switch(config-if)# exit
```

```
Switch(config)# end
```

### Verifying Configuration

Check VLANs and IP Interfaces:

```
Switch# show vlan brief
```

```
Switch# show ip interface brief
```

### Check Routing Table:

```
Switch# show ip route
```