



VLAN Creation

Switch(config)# vlan 100 Switch(config-vlan)# name Engineering

Access Port Configuration

	Switch(config-if)#	switchport r	mode access
	<pre>Switch(config-if)#</pre>	switchport r	nonegotiate
	<pre>Switch(config-if)#</pre>	switchport a	access vlan 100
ı	<pre>Switch(config-if)#</pre>	switchport v	voice vlan 150

Trunk Port Configuration

<pre>Switch(config-if)#</pre>	switchport mode trunk	switchport	
<pre>Switch(config-if)#</pre>	switchport trunk encapsulation dot1q	switchport	
<pre>Switch(config-if)#</pre>	switchport trunk allowed vlan 10,20-30	switchport)
<pre>Switch(config-if)#</pre>	switchport trunk native vlan 10	switchport	

SVI Configuration

Switch(config)# interface vlan100
Switch(config-if)# ip address 192.168.100.1 255.255.255.0

VLAN Trunking Protocol (VTP)

Domain

Common to all switches participating in VTP

Server Mode

Generates and propagates VTP advertisements to clients; default mode on unconfigured switches

Client Mode

Receives and forwards advertisements from servers; VLANs cannot be manually configured on switches in client mode

Transparent Mode

Forwards advertisements but does not participate in VTP; VLANs must be configured manually

Pruning

VLANs not having any access ports on an end switch are removed from the trunk to reduce flooded traffic

VTP Configuration

		<pre>mode {server client transparent}</pre>
Switch(config)#	vtp	domain <name></name>
Switch(config)#	vtp	password <passsword></passsword>
		version {1 2}
Switch(config)#	vtp	pruning

Trunk Types				
	ISL			
Header Size	4 bytes	26 bytes		
Trailer Size	N/A	4 bytes		
Standard	IEEE	Cisco		
Maximum VLANs	4094	1000		

VLAN Numbers						
0	Reserved	1004	fdnet			
1	default	1005	trnet			
1002	fddi-default	1006-4094	Extended			
1003	tr	4095	Reserved			

Terminology

Trunking

Carrying multiple VLANs over the same physical connection

Native VLAN

By default, frames in this VLAN are untagged when sent across a trunk

Access VLAN

The VLAN to which an access port is assigned

Voice VLAN

If configured, enables minimal trunking to support voice traffic in addition to data traffic on an access port

Dynamic Trunking Protocol (DTP)

Can be used to automatically establish trunks between capable ports (insecure)

Switched Virtual Interface (SVI)

A virtual interface which provides a routed gateway into and out of a VLAN

Switch Port Modes

trunk

Forms an unconditional trunk

dynamic desirable

Attempts to negotiate a trunk with the far end

dynamic auto

Forms a trunk only if requested by the far end

access

Will never form a trunk

Troubleshooting

show vlan

show interface [status | switchport]

show interface trunk

show vtp status

show vtp password

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