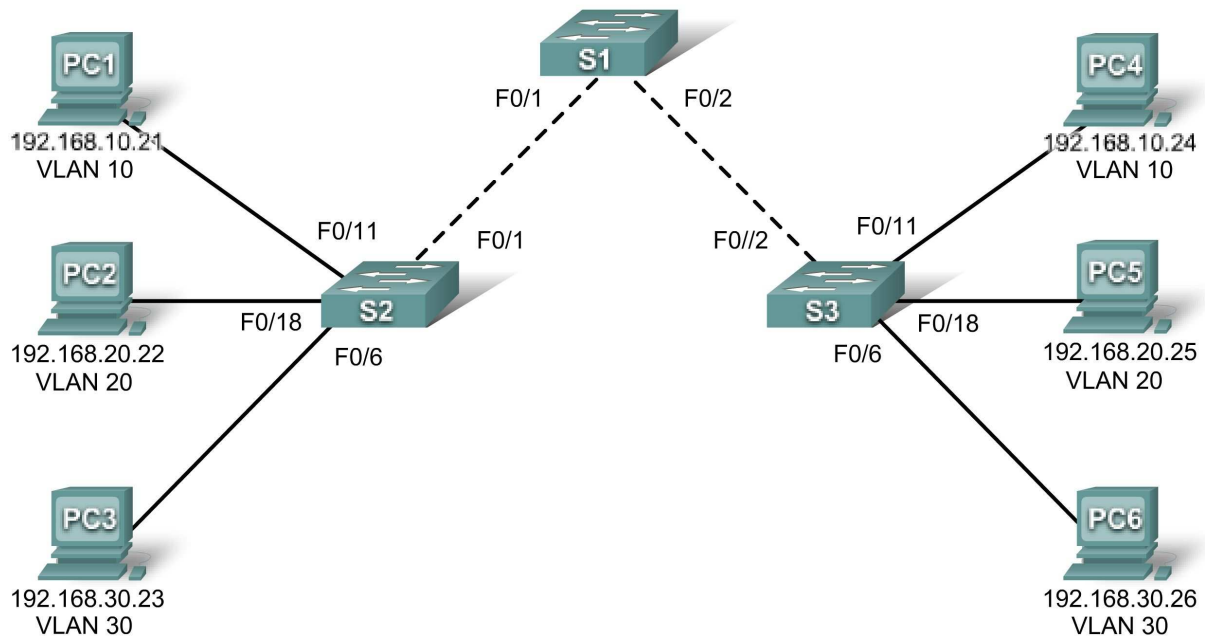


Lab 3.5.3: Troubleshooting VLAN Configurations

Topology Diagram



Addressing Table

Device (Hostname)	Interface	IP Address	Subnet Mask	Default Gateway
S1	VLAN 56	192.168.56.11	255.255.255.0	N/A
S2	VLAN 56	192.168.56.12	255.255.255.0	N/A
S3	VLAN 56	192.168.56.13	255.255.255.0	N/A
PC1	NIC	192.168.10.21	255.255.255.0	192.168.10.1
PC2	NIC	192.168.20.22	255.255.255.0	192.168.20.1
PC3	NIC	192.168.30.23	255.255.255.0	192.168.30.1
PC4	NIC	192.168.10.24	255.255.255.0	192.168.10.1
PC5	NIC	192.168.20.25	255.255.255.0	192.168.20.1
PC6	NIC	192.168.30.26	255.255.255.0	192.168.30.1

Initial Port Assignments (Switches 2 and 3)

Ports	Assignment	Network
Fa0/1 – 0/5	802.1q Trunks (Native VLAN 56)	192.168.56.0 /24
Fa0/6 – 0/10	VLAN 30 – Guest (Default)	192.168.30.0 /24
Fa0/11 – 0/17	VLAN 10 – Faculty/Staff	192.168.10.0 /24
Fa0/18 – 0/24	VLAN 20 – Students	192.168.20.0 /24

Learning Objective

Practice basic VLAN troubleshooting skills.

Scenario

In this lab, you will practice troubleshooting a misconfigured VLAN environment. Load or have your instructor load the configurations below into your lab gear. Your objective is to locate and correct any and all errors in the configurations and establish end-to-end connectivity. Your final configuration should match the topology diagram and addressing table. All passwords are set to **cisco**, except the enable secret password, which is set to **class**.

Task 1: Prepare the Network

Step 1: Cable a network that is similar to the one in the topology diagram.

Step 2: Clear any existing configurations on the switches, and initialize all ports in the shutdown state.

Step 3: Import the configurations below.

Switch 1

```
hostname S1
no ip domain-lookup
enable secret class
!
!
interface range FastEthernet0/1-5
 switchport mode trunk
!
interface range FastEthernet0/6-24
 shutdown
!
interface Vlan1
 no ip address
 no ip route-cache
!
interface Vlan56
 ip address 192.168.56.11 255.255.255.0
 no ip route-cache
!
line con 0
 logging synchronous
line vty 0 4
 no login
line vty 5 15
 password cisco
 login
!
end
```

Switch 2

```
hostname S2
no ip domain-lookup
enable secret class
!
vlan 10,20,30,56
```

```
!  
interface FastEthernet0/1-5  
  switchport trunk native vlan 56  
  switchport mode access  
!  
interface range FastEthernet0/6-10  
  switchport access vlan 30  
  switchport mode access  
!  
interface range FastEthernet0/11-17  
  switchport access vlan 10  
  switchport mode access  
!  
interface range FastEthernet0/18-24  
  switchport access vlan 20  
  switchport mode access  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1  
  ip address 192.168.56.12 255.255.255.0  
  no ip route-cache  
  shutdown  
!  
line con 0  
  password cisco  
  login  
line vty 0 4  
  password cisco  
  login  
line vty 5 15  
  password cisco  
  login  
!  
end
```

Switch 3

```
hostname S3  
no ip domain-lookup  
enable secret cisco  
!  
vlan 10,20,30  
!  
interface range FastEthernet0/1-5  
  switchport trunk native vlan 56  
  switchport mode trunk  
!  
interface range FastEthernet0/6-10  
  switchport mode access  
!  
interface range FastEthernet0/11-17  
  switchport mode access  
!  
interface range FastEthernet0/18-24
```

```
    switchport mode access
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
  no ip address
  no ip route-cache
  shutdown
!
interface Vlan56
  no ip route-cache
!
line con 0
  password cisco
  login
line vty 0 4
  password cisco
  login
line vty 5 15
  password cisco
  login
!
end
```

Task 2: Troubleshoot and Repair the VLAN Configuration

Task 3: Document the Switch Configurations

On each switch, capture the running configuration to a text file and save for future reference:

Task 4: Clean Up

Erase the configurations and reload the switches. Disconnect and store the cabling. For PC hosts that are normally connected to other networks (such as the school LAN or to the Internet), reconnect the appropriate cabling and restore the TCP/IP settings.