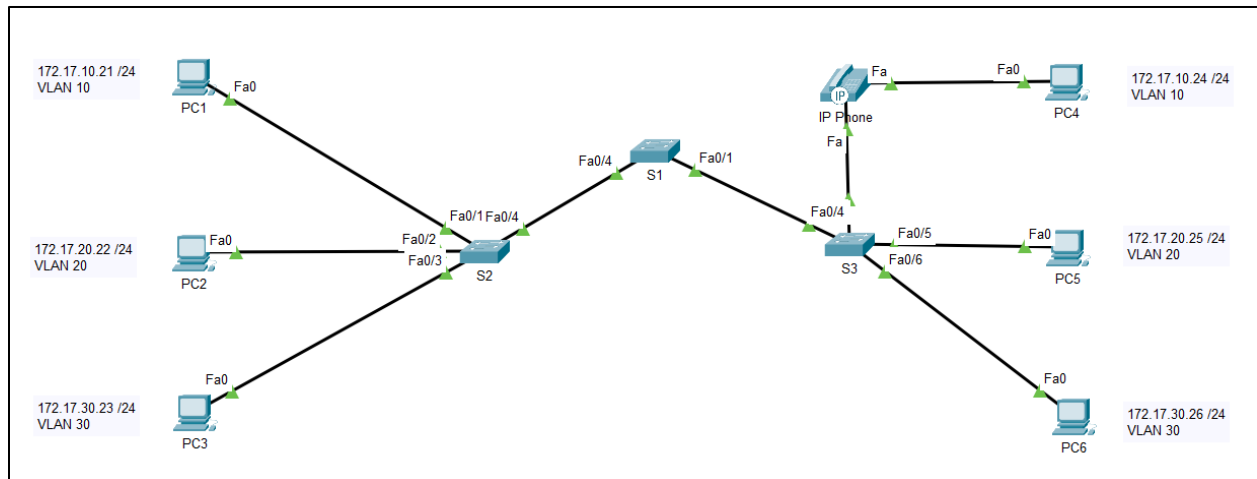


Lab 7: VLAN



Device	Interface	IP Address	Subnet Mask	VLAN
PC1	Fa0	172.17.10.21	255.255.255.0	10
PC2	Fa0	172.17.20.22	255.255.255.0	20
PC3	Fa0	172.17.30.23	255.255.255.0	30
PC4	Fa0	172.17.10.24	255.255.255.0	10
PC5	Fa0	172.17.20.25	255.255.255.0	20
PC6	Fa0	172.17.30.26	255.255.255.0	30

Requirements:

- Part 1: Verify the Default VLAN Configuration
- Part 2: Configure VLANs
- Part 3: Assign VLANs to Ports

Part 1: View the Default VLAN Configuration







Step 1: Display the current VLANs in S1.

```
S1#show vlan brief







VLAN Name                Status    Ports
----
1    default                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                           Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                           Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                           Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                           Gig0/1, Gig0/2
1002 fddi-default          active
1003 token-ring-default    active
1004 fddinet-default        active
1005 trnet-default          active
S1#
```

Step 2: Verify connectivity between PCs on the same network.

- PC1 can ping PC4.
- PC2 can ping PC5.
- PC3 can ping PC6.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC1	PC4	ICMP		0.000	N	0	(edit)	
	Successful	PC2	PC5	ICMP		0.000	N	1	(edit)	
	Successful	PC3	PC6	ICMP		0.000	N	2	(edit)	

Pings to hosts on other networks fail.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Failed	PC1	PC6	ICMP		0.000	N	0	(edit)	
	Failed	PC2	PC4	ICMP		0.000	N	1	(edit)	
	Failed	PC3	PC5	ICMP		0.000	N	2	(edit)	

Part 2: Configure VLANs

Step 1: Create and name VLANs on S1.

- VLAN 10: Faculty/Staff.
- VLAN 20: Students.
- VLAN 30: Guest (Default).
- VLAN 99: Management & Native.
- VLAN 150: VOICE.

```
S1(config)#vlan 10
S1(config-vlan)#name Faculty/Staff
S1(config-vlan)#vlan 20
S1(config-vlan)#name Students
S1(config-vlan)#vlan 30
S1(config-vlan)#name Guest (Default)
S1(config-vlan)#vlan 99
S1(config-vlan)#name Management&Native
S1(config-vlan)#vlan 150
S1(config-vlan)#name VOICE
S1(config-vlan)#exit
S1(config)#
```

Step 2: Create the VLANs on S2.

```
S2(config)#vlan 10
S2(config-vlan)#name Faculty/Staff
S2(config-vlan)#vlan 20
S2(config-vlan)#name Students
S2(config-vlan)#vlan 30
S2(config-vlan)#name Guest (Default)
S2(config-vlan)#vlan 99
S2(config-vlan)#name Management&Native
S2(config-vlan)#vlan 150
S2(config-vlan)#name VOICE
S2(config-vlan)#exit
S2(config)#
```

Step 3: Create the VLANs on S3.

```
S3(config)#vlan 10
S3(config-vlan)#name Faculty/Staff
S3(config-vlan)#vlan 20
S3(config-vlan)#name Students
S3(config-vlan)#vlan 30
S3(config-vlan)#name Guest(Default)
S3(config-vlan)#vlan 99
S3(config-vlan)#name Management&Native
S3(config-vlan)#vlan 150
S3(config-vlan)#name VOICE
S3(config-vlan)#exit
S3(config)#
```

Step 4: Verify Creation of VLANs.

S1

```
S1#show vlan brief

VLAN Name                Status    Ports
-----
1    default                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                           Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                           Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                           Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                           Gig0/1, Gig0/2
10   Faculty/Staff           active
20   Students               active
30   Guest(Default)         active
99   Management&Native       active
150  VOICE                   active
1002 fddi-default          active
1003 token-ring-default     active
1004 fddinet-default        active
1005 trnet-default          active
S1#
```

S2

```
S2#show vlan brief

VLAN Name                Status    Ports
-----
1    default                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                           Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                           Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                           Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                           Gig0/1, Gig0/2
10   Faculty/Staff           active
20   Students               active
30   Guest(Default)         active
99   Management&Native       active
150  VOICE                   active
1002 fddi-default          active
1003 token-ring-default     active
1004 fddinet-default        active
1005 trnet-default          active
S2#
```

S3

```
S3#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
10	Faculty/Staff	active	
20	Students	active	
30	Guest(Default)	active	
99	Management&Native	active	
150	VOICE	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

S3#

Part 3: Assign VLANs to Ports

S1

```
S1(config)#interface Fa0/4
S1(config-if)#switchport trunk native vlan 99
S1(config-if)#switchport mode trunk

S1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

S1(config-if)#switchport non
S1(config-if)#switchport nonegotiate
S1(config-if)#exit
S1(config)#interface Fa0/1
S1(config-if)#switchport trunk native vlan 99
S1(config-if)#switchport mode trunk

S1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

S1(config-if)#switchport nonegotiate
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/4 (99), with S2
FastEthernet0/4 (1).

S1(config-if)#exit
S1(config)#exit
S1#
```

S2

```

S2(config)#interface Fa0/1
S2(config-if)#switchport mode access
S2(config-if)# switchport access vlan 10
S2(config-if)#exit
S2(config)#interface Fa0/2
S2(config-if)#switchport mode access
S2(config-if)# switchport access vlan 20
S2(config-if)#exit
S2(config)#interface Fa0/3
S2(config-if)#switchport mode access
S2(config-if)# switchport access vlan 30
S2(config-if)#exit
S2(config)#exit
S2#

S2(config)#interface Fa0/4
S2(config-if)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/4 (1), with S1
FastEthernet0/4 (99).

S2(config-if)#switchport mode trunk

S2(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%SPANTREE-2-RECV_PVID_ERR: Received BPDU with inconsistent peer vlan id 99 on FastEthernet0/4
VLAN1.

%SPANTREE-2-BLOCK_PVID_LOCAL: Blocking FastEthernet0/4 on VLAN0001. Inconsistent local vlan.

S2(config-if)#switchport trunk native vlan 99
^
% Invalid input detected at '^' marker.

S2(config-if)#switchport trunk native vlan 99

```

S3

```

S3(config)#interface Fa0/4
S3(config-if)#switchport mode access
S3(config-if)#switchport access vlan 10
S3(config-if)#exit
S3(config)#interface Fa0/5
S3(config-if)#switchport mode access
S3(config-if)#switchport access vlan 20
S3(config-if)#exit
S3(config)#interface Fa0/6
S3(config-if)#switchport mode access
S3(config-if)#switchport access vlan 30
S3(config-if)#exit
S3(config)#exit

S3(config)#interface Fa0/1
S3(config-if)#switchport trunk native vlan 99
S3(config-if)#switchport mode trunk

```

Verifying VLAN port assignment.

S2

```
S2#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
10	Faculty/Staff	active	Fa0/1
20	Students	active	Fa0/2
30	Guest(Default)	active	Fa0/3
99	Management&Native	active	
150	VOICE	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
S2#
```







S3

```
S3#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/2, Fa0/3, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
10	Faculty/Staff	active	Fa0/4
20	Students	active	Fa0/5
30	Guest(Default)	active	Fa0/6
99	Management&Native	active	
150	VOICE	active	Fa0/4
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
S3#
```

Verifying Connectivity between PCs

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC1	PC4	ICMP		0.000	N	0	(edit)	
	Successful	PC2	PC5	ICMP		0.000	N	1	(edit)	
	Successful	PC3	PC6	ICMP		0.000	N	2	(edit)	