

Data Communication and Computer Networks

EEE314

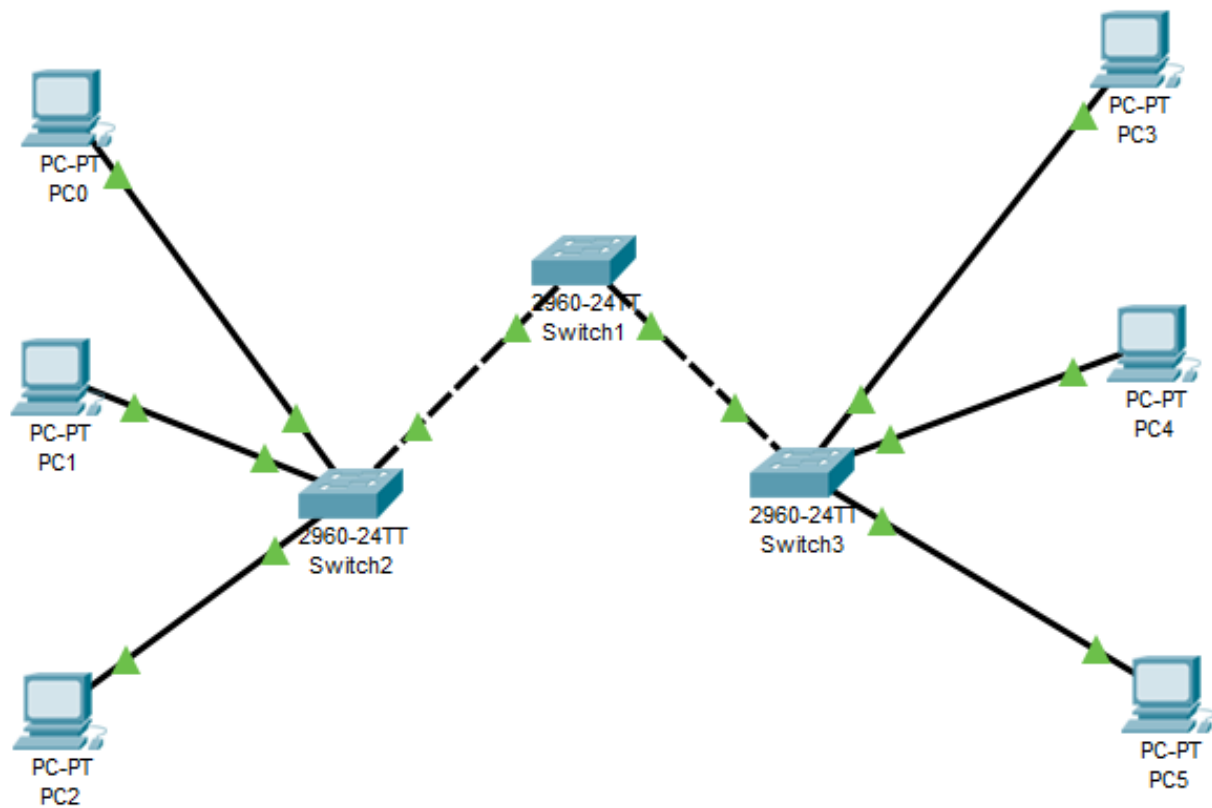
Lab # 08





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Lab #08 VLAN Configuration



In-Lab Task





Packet from VLAN10 to VLAN10

PDU List Window						
Fire	Last Status	Source	Destination	Type	Color	Time(sec)
	Successful	PC0	PC3	ICMP		0.000



Packet from VLAN10 to VLAN20

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Failed	PC0	PC4	ICMP		0.000	N



Packet from VLAN10 to VLAN30

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Failed	PC0	PC5	ICMP		0.000	N



Packet from VLAN20 to VLAN10

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Failed	PC1	PC3	ICMP		0.000	N



Packet from VLAN20 to VLAN20

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Successful	PC1	PC4	ICMP		0.000	N



Packet from VLAN20 to VLAN30

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Failed	PC1	PC5	ICMP		0.000	N



Packet from VLAN30 to VLAN10

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Failed	PC2	PC3	ICMP		0.000	N

Packet from VLAN30 to VLAN20

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Failed	PC2	PC4	ICMP		0.000	N

Packet from VLAN30 to VLAN30

PDU List Window							
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Successful	PC2	PC5	ICMP		0.000	N

Home Task

➤ Switch 1:

show running-config:

```
Switch#show running-config
Building configuration...
```

```
Current configuration : 1444 bytes
```

```
!
```

```
version 12.2
```

```
no service timestamps log datetime msec
```

```
no service timestamps debug datetime msec
```

```
no service password-encryption
```

```
!
```

```
hostname Switch
```

```
!
```

```
!
```

```
!
```

```
!
```

```
!
```

```
spanning-tree mode pvst
```

```
spanning-tree extend system-id
```

```
!
```

```
interface FastEthernet0/1
```

```
switchport trunk native vlan 99
```

```
switchport mode trunk
```

```
!
```

```
interface FastEthernet0/2
```

```
switchport trunk native vlan 99
```

```
switchport mode trunk
```

```
!
```

```
interface FastEthernet0/3
```

```
switchport trunk native vlan 99
```

```
switchport mode trunk
```

```
!
```

Lab#08 VLAN Configuration

```
interface FastEthernet0/4
switchport trunk native vlan 99
switchport mode trunk
!
interface FastEthernet0/5
switchport trunk native vlan 99
switchport mode trunk
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
```

Lab#08 VLAN Configuration

```
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
interface Vlan99
mac-address 000c.8559.4201
ip address 172.17.99.11 255.255.255.0
!
!
!
!
line con 0
!
line vty 0 4
login
line vty 5 15
login
!
!
!
!
End
```


➤ Switch 2:

show running-config:

Switch#show running-config
Building configuration...

Current configuration : 1957 bytes

!

version 12.2

no service timestamps log datetime msec

no service timestamps debug datetime msec

no service password-encryption

!

hostname Switch

!

!

!

!

!

spanning-tree mode pvst

spanning-tree extend system-id

!

interface FastEthernet0/1

switchport trunk native vlan 99

switchport mode trunk

!

interface FastEthernet0/2

switchport trunk native vlan 99

switchport mode trunk

!

interface FastEthernet0/3

switchport trunk native vlan 99

switchport mode trunk

!

interface FastEthernet0/4

switchport trunk native vlan 99

switchport mode trunk

!

interface FastEthernet0/5

switchport trunk native vlan 99

switchport mode trunk

!

Lab#08 VLAN Configuration

```
interface FastEthernet0/6
switchport access vlan 30
!
interface FastEthernet0/7
switchport access vlan 30
!
interface FastEthernet0/8
switchport access vlan 30
!
interface FastEthernet0/9
switchport access vlan 30
!
interface FastEthernet0/10
switchport access vlan 30
!
interface FastEthernet0/11
switchport access vlan 10
!
interface FastEthernet0/12
switchport access vlan 10
!
interface FastEthernet0/13
switchport access vlan 10
!
interface FastEthernet0/14
switchport access vlan 10
!
interface FastEthernet0/15
switchport access vlan 10
!
interface FastEthernet0/16
switchport access vlan 10
!
interface FastEthernet0/17
switchport access vlan 10
!
interface FastEthernet0/18
switchport access vlan 20
!
interface FastEthernet0/19
switchport access vlan 20
!
interface FastEthernet0/20
switchport access vlan 20
!
interface FastEthernet0/21
```

Lab#08 VLAN Configuration

```
switchport access vlan 20
!
interface FastEthernet0/22
switchport access vlan 20
!
interface FastEthernet0/23
switchport access vlan 20
!
interface FastEthernet0/24
switchport access vlan 20
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
interface Vlan99
mac-address 0007.ece1.0b01
ip address 172.17.99.12 255.255.255.0
!
!
!
!
line con 0
!
line vty 0 4
login
line vty 5 15
login
!
!
!
!
End
```

➤ Switch 3:

Show running-config:

```
Switch#show running-config
Building configuration...
```

```
Current configuration : 1957 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Switch
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
switchport trunk native vlan 99
switchport mode trunk
!
interface FastEthernet0/2
switchport trunk native vlan 99
switchport mode trunk
!
interface FastEthernet0/3
switchport trunk native vlan 99
switchport mode trunk
!
interface FastEthernet0/4
switchport trunk native vlan 99
switchport mode trunk
```

Lab#08 VLAN Configuration

```
!  
interface FastEthernet0/5  
switchport trunk native vlan 99  
switchport mode trunk  
!  
interface FastEthernet0/6  
switchport access vlan 30  
!  
interface FastEthernet0/7  
switchport access vlan 30  
!  
interface FastEthernet0/8  
switchport access vlan 30  
!  
interface FastEthernet0/9  
switchport access vlan 30  
!  
interface FastEthernet0/10  
switchport access vlan 30  
!  
interface FastEthernet0/11  
switchport access vlan 10  
!  
interface FastEthernet0/12  
switchport access vlan 10  
!  
interface FastEthernet0/13  
switchport access vlan 10  
!  
interface FastEthernet0/14  
switchport access vlan 10  
!  
interface FastEthernet0/15  
switchport access vlan 10  
!  
interface FastEthernet0/16  
switchport access vlan 10  
!  
interface FastEthernet0/17  
switchport access vlan 10  
!  
interface FastEthernet0/18  
switchport access vlan 20  
!  
interface FastEthernet0/19  
switchport access vlan 20
```

Lab#08 VLAN Configuration

```
!  
interface FastEthernet0/20  
switchport access vlan 20  
!  
interface FastEthernet0/21  
switchport access vlan 20  
!  
interface FastEthernet0/22  
switchport access vlan 20  
!  
interface FastEthernet0/23  
switchport access vlan 20  
!  
interface FastEthernet0/24  
switchport access vlan 20  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1  
no ip address  
shutdown  
!  
interface Vlan99  
mac-address 000b.bea6.d701  
ip address 172.17.99.13 255.255.255.0  
!  
!  
!  
!  
line con 0  
!  
line vty 0 4  
login  
line vty 5 15  
login  
!  
!  
!  
!  
end
```

Critical Analysis / Conclusion

In this lab we learnt about Virtual Local Area Network (VLAN) configuration. It is a group of logically connected devices that function exactly like a Local Area Network (LAN), each VLAN acts as a subgroup of switchports.

Moreover, we implemented this on a topology given to us and successfully sent Packet between PC's connected to same VLAN's and we were unable to send packets between PC's connected to different VLAN's

Lab Assessment		
Pre Lab	/5	/25
Performance	/5	
Results	/5	
Viva	/5	
Critical Analysis	/5	
Instructor Signature and Comments		