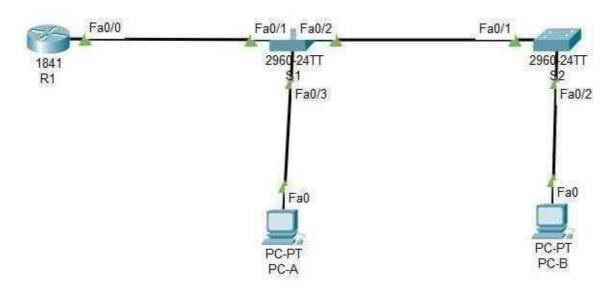
Practical :7

Aim: Configuring Inter-VLAN Routing(On Packet Tracer).



# **Addressing Table**

Device	Interfaces	<b>IPAddress</b>	Subnet Mask	<b>Default Gateway</b>
R1	F0/0.10	192.168.10.1	255.255.255.0	N/A
	F0/0.20	192.168.20.1	255.255.255.0	
	F0/0.30	192.168.30.1	255.255.255.0	
	F0/0.1000	N/A	N/A	
S1	VLAN 10	192.168.10.11	255.255.255.0	192.168.10.1
S2	VLAN 10	192.168.10.12	255.255.255.0	192.168.10.1
PC-A	NIC	192.168.20.3	255.255.255.0	192.168.20.1
PC-B	NIC	192.168.30.3	255.255.255.0	192.168.30.1

## **VLAN Table**

VLAN	Name	Interface Assigned
10	Management	S1: VLAN 10
		S2: VLAN 10
20	Sales	S1: F0/3
30	Operations	S2: F0/2
999	Parking-Lot	S1: F0/4-24, G0/1-2
		S2: F0/3-24, G0/1-2
1000	Native	N/A

#### Assgining switch 1 for VLAN

Switch>en

Switch#conf t

Switch(config)#hostname S1

S1(config)#vlan 10

S1(config-vlan)#name Management

S1(config-vlan)#exit

S1(config)#vlan 20

S1(config-vlan)#name Sales

S1(config-vlan)#exit

S1(config)#vlan 30

S1(config-vlan)#name Opeartions

S1(config-vlan)#exit

S1(config)#vlan 999

S1(config-vlan)#name Parking-Lot

S1(config-vlan)#exit

S1(config)#vlan 1000

S1(config-vlan)#name Native

S1(config-vlan)#exit

S1(config)#end

#### **Check VLAN on S1**

VLAN Name	Status Po	orts
1 default	active F	a0/1, Fa0/2, Fa0/3,
Fa0/4		
12.55.0425	F	a0/5, Fa0/€, Fa0/7,
Fa0/8	020	MORNERS SERVICES
naccariana en	E	a0/9, Fa0/10,
Fa0/11, Fa0/12	_	
	0 E V	a0/13, Fa0/14,
Fa0/15, Fa0/16	-	5/15 B 5/15
F-0/10 F-0/20	2.	a0/17, Fa0/18,
Fa0/19, Fa0/20	: T-	-0 (21 E-0 (22
Fa0/23, Fa0/24	@ <b>Z</b> 3	a0/21, Fa0/22,
180/23, 180/24	C	ig0/1, Gig0/2
10 Management	active	igo/i, Gigo/a
20 Sales	active	
30 Opeartions	active	
999 Parking-Lot	active	
1000 Native	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	

### Configure S1 for VLAN 10

S1#conf t

S1(config)#int vlan 10

ip add 192.168.10.11 255.255.255.0

S1(config-if)#exit

S1(config)#ip default-gateway 192.168.10.1

S1(config)#int vlan 10

S1(config-if)#no shut

S1(config-if)#exit

S1(config)#end

S1#conf t

S1(config)#int range f0/4-24, g0/1-2

S1(config-if-range)#switchport mode access

S1(config-if-range)#switchport access vlan 999

S1(config-if-range)#shutdown

#### **OUTPUT:**

%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to administratively down

VLAN	Name	Status	Ports
L	default	active	Fa0/1, Fa0/2, Fa0/3
10	Management	active	
20	Sales	active	
30	Opeartions	active	
999	Parking-Lot	active	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
1000	Native	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005 S1#	trnet-default	active	

### Assign switch 2 for VLAN

Switch>en

Switch#conf t

Switch(config)#hostname S2

S2(config)#vlan 10

S2(config-vlan)#name Management

S2(config-vlan)#exit

S2(config)#vlan 20

S2(config-vlan)#name sales

S2(config-vlan)#exit

S2(config)#vlan 30

S2(config-vlan)#name Operations

S2(config-vlan)#exit

S2(config)#vlan 999

S2(config-vlan)#name Parking-Lot

S2(config-vlan)#exit

S2(config)#vlan 1000

S2(config-vlan)#name Native

S2(config-vlan)#exit

S2(config)#end

#### Check VLAN on S2

	S24900000	ZV-0023-00		
VLAN	Name	Status	Ports	
1	default	active	Fa0/1, Fa0/2, Fa0/3,	
Fa0/		accive	140/1, 140/2, 140/3,	
rau/	3		Fa0/5, Fa0/6, Fa0/7,	
Fa0/	8		220,5, 220,0, 220,0,	
-05/	*		Fa0/9, Fa0/10,	
Fa0/	11, Fa0/12		ಪ್ರದಾಗಕ್ಕಿನ ಕೊಂಡುಗಾಗಿಕೆ ನಿನ್ನಾಗಿಕ	
3033/69			Fa0/13, Fa0/14,	
Fa0/	15. Fa0/16		76 At 76 70	
	The state of the s		Fa0/17, Fa0/18,	
Fa0/.	19, Fa0/20		This electron of the construction of the const	
	581 - 341 - 541 -		Fa0/21, Fa0/22,	
Fa0/	23, Fa0/24		2/01 gre 2/01 gre	
			Gig0/1, Gig0/2	
10	Management	active		
20	sales	active		
	Operations	active		
ADMINISTRATION OF THE PARTY OF	Parking-Lot	active		
	Native	active		
	fddi-default	active		
	token-ring-default	active		
	fddinet-default	active		
1005	trnet-default	active		

#### Configure S2 for VLAN 10

S2#conf t

S2(config-if)#ip add 192.168.10.12 255.255.255.0

S2(config-if)#int vlan 10

S2(config-if)#no shut

S2(config-if)#exit

S2(config)#int range f0/3-24,g0/1-2

S2(config-if-range)#switchport mode access

S2(config-if-range)#switchport access vlan 999

S2(config-if-range)#shutdown

#### **OUTPUT:**

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to administratively down

VLAN	Name	Status	Ports
		700000000000000000000000000000000000000	
•	default	0.229002	F-0/1 F-0/0
200			Fa0/1, Fa0/2
	Management	active	
	sales	active	
	Operations	active	
	Parking-Lot	active	Fa0/3, Fa0/4, Fa0/5,
Fa0/	€		
			Fa0/7, Fa0/8, Fa0/9,
Fa0/	10		
			Fa0/11, Fa0/12,
Fa0/	13, Fa0/14		CHSHOLARAND CHSHOLARANSW
			Fa0/15, Fa0/16,
Fa0/	17, Fa0/18		
			Fa0/19, Fa0/20,
Fa0/	21, Fa0/22		
			Fa0/23, Fa0/24,
Gig0	/1, Gig0/2		
1000	Native	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
	trnet-default	active	

# Assign vlan 20 to f0/3on S1

S1>en

S1#conft

S1(config-if)#switchport mode access

S1(config-if)#switchport access vlan 20

S1(config-if)#exit

S1(config)#end

S1#

VLAN	Name	Status	Ports
100	default	active	Fa0/1, Fa0/2
	Management	active	
20	Sales	active	Fa0/3
30	Opeartions	active	
999	Parking-Lot	active	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
1000	Native	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	
S1#			
714			

## Assign VLAN 30 to f0/2 on S2

S2#en

S2#conft

Enter configuration commands, one per line. End with CNTL/Z. S2(config)#int f0/2

S2(config-if)#switchport mode access

S2(config-if)#switchport access vlan 30

S2(config-if)#exit

S2(config)#end

S2#

TET-70.37	Name	Status	Ports	
VLMIN	Name	Status	POILS	
1	default	active	Fa0/1	
10	Management	active		
20	sales	active		
30	Operations	active	Fa0/2	
999	Parking-Lot	active	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		estecularios estreculos/4	
Cranson	WW. Happanestropa		Fa0/23, Fa0/24,	
Section of the	/1, Gig0/2	C+18.90500000		
55666	Native	active		
293333	fddi-default	active		
	token-ring-default	active		ı
70,500	fddinet-default	active		
1005 S2#	trnet-default	active		

#### S1 to S2 connection and vice-versa

S1#en S1#conft

Enter configuration commands, one per line. End with CNTL/Z. S1(config)#int

f0/2

S1(config-if)#switchport mode trunk

S1(config-if)#switchport trunk allowed vlan 10,20,30,1000

S1(config-if)#exit

S1(config)#end

#### **OUTPUT:**

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down

S2#conf t

S2(config)#int f0/1

S2(config-if)#switchport mode trunk

S2(config-if)#switchport trunk Native vlan 1000

S2(config-if)#switchport trunk allowed vlan 10,20,30,1000

S2(config-if)#exit

S2(config)#end

#### Configure R1

Router>en

Router#conf t

Router(config)#int f0/0.10

Router(config-subif)#description vlan 10

Router(config-subif)#encapsulation dot1q 10

Router(config-subif)#ip add 192.168.10.1 255.255.255.0

Router(config-subif)#exit

Router(config)#int f0/0.20

Router(config-subif)#description vlan 20

Router(config-subif)#encapsulation dot1q 20

Router(config-subif)#ip add 192.168.20.1 255.255.255.0

Router(config-subif)#exit

Router(config)#int f0/0.30

Router(config-subif)#description vlan 30

Router(config-subif)#ip add 192.168.30.1 255.255.255.0

Router(config-subif)#exit

Router(config)#int f0/0.1000

Router(config-subif)#description NATIVE

Router(config-subif)#encapsulation dot1q 1000 native

Router(config-subif)#exit

Router(config)#int f0/0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config-if)#end

Router(config-if)# %LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up %LINK-5-CHANGED: Interface FastEthernet0/0.10, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.10, changed state to up %LINK-5-CHANGED: Interface FastEthernet0/0.20, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.20, changed state to up %LINK-5-CHANGED: Interface FastEthernet0/0.30, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.30, changed state to up %LINK-5-CHANGED: Interface FastEthernet0/0.1000, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,1000, changed state to up

Router#sh ip int br				
Interface	IP-Address	OK? Method	Status	
Protocol				0.0
FastEthernet0/0	unassigned	YES unset	up	
up	ONE SAME STATE OF STATE OF			
FastEthernet0/0.10	192.168.10.1	YES manual	up	
up				
FastEthernet0/0.20	192.168.20.1	YES manual	up	
up				
FastEthernet0/0.30	unassigned	YES unset	up	
up				
FastEthernet0/0.1000	unassigned	YES unset	up	
up				
FastEthernet0/1	unassigned	YES unset	administratively	
down down				
Vlan1	unassigned	YES unset	administratively	
down down				200
Router#				~