

data
0ms TTL=128
TTL=128
TTL=128
TTL=128

0 (0% loss)
milliseconds
age 20ms

Type
dynamic

address
sa -
wo
of

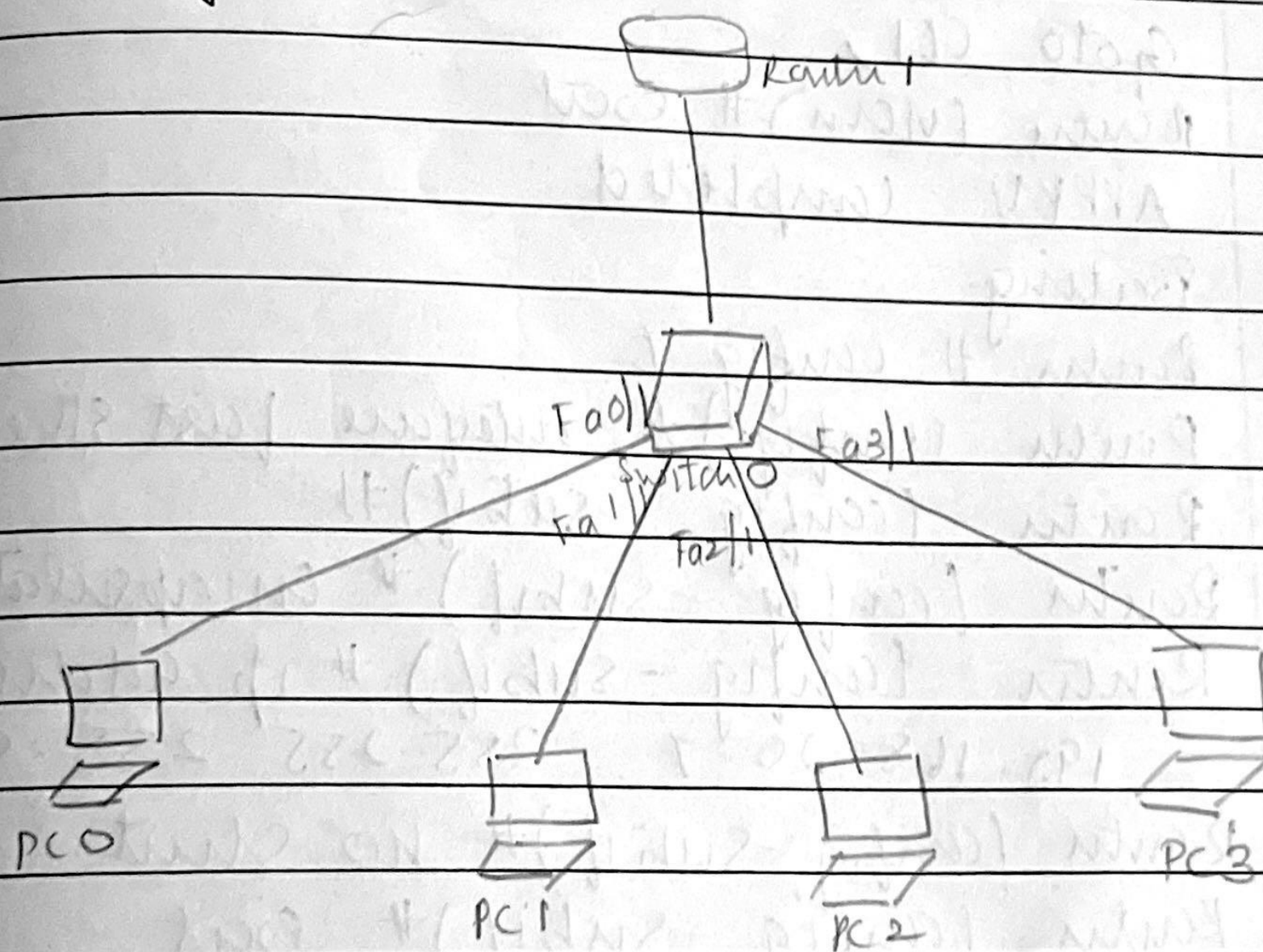
A C
net
t

ion

sum

9. Create a VLAN and make the PCs communicate among a VLAN.

Topology:



Procedure:

- 1) In the switch, go to Config tab and select VLAN database.
- 2) Give any VLAN number say 2 here. Include any name. Say Add.
- 3) Select the interface i.e. fastEthernet 4/1 and make it the trunk. VLAN trunking allows switches to forwards frames from different VLANs over a single link called trunk.
- 4) This is done by adding an additional header information called tag to the Ethernet frame. The process of adding this small header is called VLAN tagging.

Config Tab of router select VLAN Database
Enter the number and name of the VLAN
created

Goto CLI,
Router (VLAN) # exit
APPLY completed.

Prating.

Router # config t

Router (config) # interface fast ethernet 0/0

Router (config-subif) #

Router (config-subif) # encapsulation dot1q

Router (config-subif) # ip address

192.168.20.7 255.255.255.0

Router (config-subif) # no shut

Router (config-subif) # exit

Router (config) # exit

Ping message from PC to another VLAN PC.

Ping Output:

Packet Tracer PC Command line 1.0

PC > Ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Request timed out.

Reply from 192.168.20.3: bytes=32 time=0ms

Reply from 192.168.20.3: TTL=127

Reply from 192.168.20.3: bytes=32 time=0ms

Reply from 192.168.20.3: TTL=127

Reply from 192.168.20.3: bytes=32 time=0ms

TTL=127.

Pinging statistics for 192.168.20.3:

Packets: 3

[25] 10

Approximate

Minimum

Average

Observation

→ We can

4 another

the same

other has

VLANs, as

switches

→ There

instead

address

→ Enter

tool to

that has

4 ports

17/8/2023

Date / /
Page
Database
of the Vlan

Packets: Sent = 4, Received = 3, Lost = 1
(25% loss)

Approximate send trip time in milliseconds
Minimum = 0ms, Maximum = 5ms,
Average = 1ms

Observation:

→ We can have one device on one VLAN
& another on another VLAN connected to
the same switch. They will only hear
other broadcast traffic from within their
VLANs, as if they were connected to two
switches.

→ These VLANs don't use IP addresses
instead deal with subnets / class type
addresses

→ Inter-VLAN routing gives a flexible
tool to logically subdivide their networks
that has potential to enhance security
& performance.

AD
17/8/2023

Logical[Root]New ClusterMove ObjectSet Tiled BackgroundViewport

192.168.1.1
Fa0/0/er0

Fa0/5
Fa0/24
Switch0

Fa0
PC-PT
PC0

Fa0
PC-PT
PC1

Fa0
PC-PT
PC2

Fa0
PC-PT
PC3

PC3

PhysicalConfigDesktopCustom Interface

Command Prompt

Packet Tracer PC Command Line 1.0
PC>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time=1ms TTL=127
Reply from 192.168.1.3: bytes=32 time=0ms TTL=127
Reply from 192.168.1.3: bytes=32 time=0ms TTL=127
Reply from 192.168.1.3: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.1.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>

Time: 01:02:10Power Cycle DevicesFast Forward Time

Scenario 0NewDelete

FireLast StatusSourceDestinationTypeColorTime(se)PeriodicNumEditDelete

SuccessfulPC1PC3ICMP0.000N0(edit)(delete)

SuccessfulPC2PC0ICMP0.000N1(edit)(delete)

Connections

Realtime

Logical[Root]New ClusterMove ObjectSet Tiled BackgroundViewport

192.1
Fa0/0/er0

Fa0/5
Fa0/24
Switch0

Fa0
PC-PT
PC0

Fa0
PC-PT
PC1

Fa0
PC-PT
PC2

Fa0
PC-PT
PC3

Simulation Panel

Event List

Vis.	Time(sec)	Last Devi	At Devi	Type	Info
	0.000	--	PC1	ICMP	
	0.001	PC1	Switch0	ICMP	
	0.001	PC2	Switch0	ICMP	
	0.001	--	PC1	ICMP	
	0.002	PC1	Switch0	ICMP	
	0.002	Switch0	Router0	ICMP	
	0.002	--	Switch0	ICMP	

Reset Simulation☒ Constant DelayCaptured to: 0.002 s

Play Controls

BackAuto Capture / PlayCapture / Forward

Event List Filters - Visible Events

ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DT, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPv2, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP

Edit FiltersShow All/None