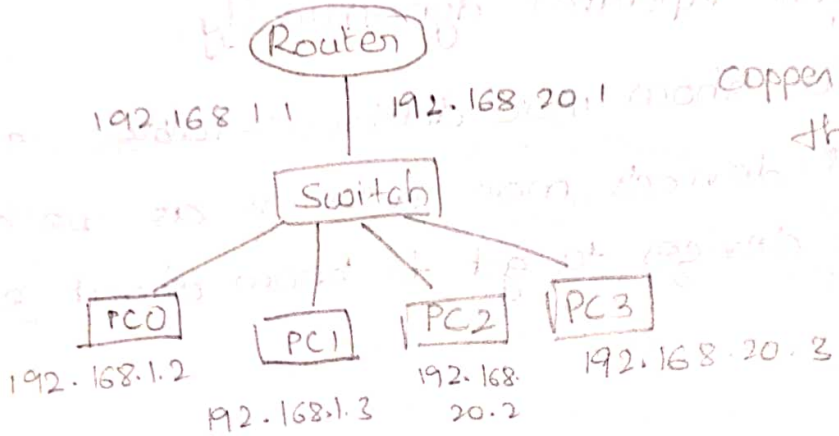
Lab - 8

Aim :- to construct a VLAN and make the PC's communicate among a VLAN

Topology:



Procedure:

1) Set up the topology as shown above, use 1891 router
2) Add an extra router-port to the switch as its needed
3) Use copper straight through wire. Set the IP address & gateway
4) In switch → config → VLAN Database, give any VLAN numbers, here 20, and VLAN name, here → VLAN
5) select add select the interface (here - ge 4/1) (nearest to the switch from router) and make it trunk.

6) Look into fe 2/1 and 3/1 and change VLAN1 to 20: VLAN

7) In router, select VLAN Database, enter the number and name of the VLAN created

In CLI of router

Router (vlan) # exit

Apply completed

Exiting

Router # config t

Router (config) # interface fastethernet 0/0

Router (config-if) # ip address 192.168.1.1 255.255.255.0

Router (config-if) # no shut

Router (config) # interface fastethernet 0/0.1

Router (config subif) # encapsulation dot1q 20

Router (config -subif) # ip address 192.168.20.1 255.255.255.0

Router (config-subif) # no shut

Router (config-subif) # exit

Result

(in PC0)

PC> ping 192.168.20.3

pinging 192.168.20.3 with 32 bytes of data

Reply from 192.168.20.3: bytes = 32 time = 1ms TTL = 128

Reply from 192.168.20.3: bytes = 32 time = 1ms TTL = 128

Reply from 192.168.20.3: bytes = 32 time = 0ms TTL = 128

Reply from 192.168.20.3: bytes = 32 time = 0ms TTL = 128

Ping statics for 192.168.20.3

Packet: sent = 4, Received = 4, Lost = 0

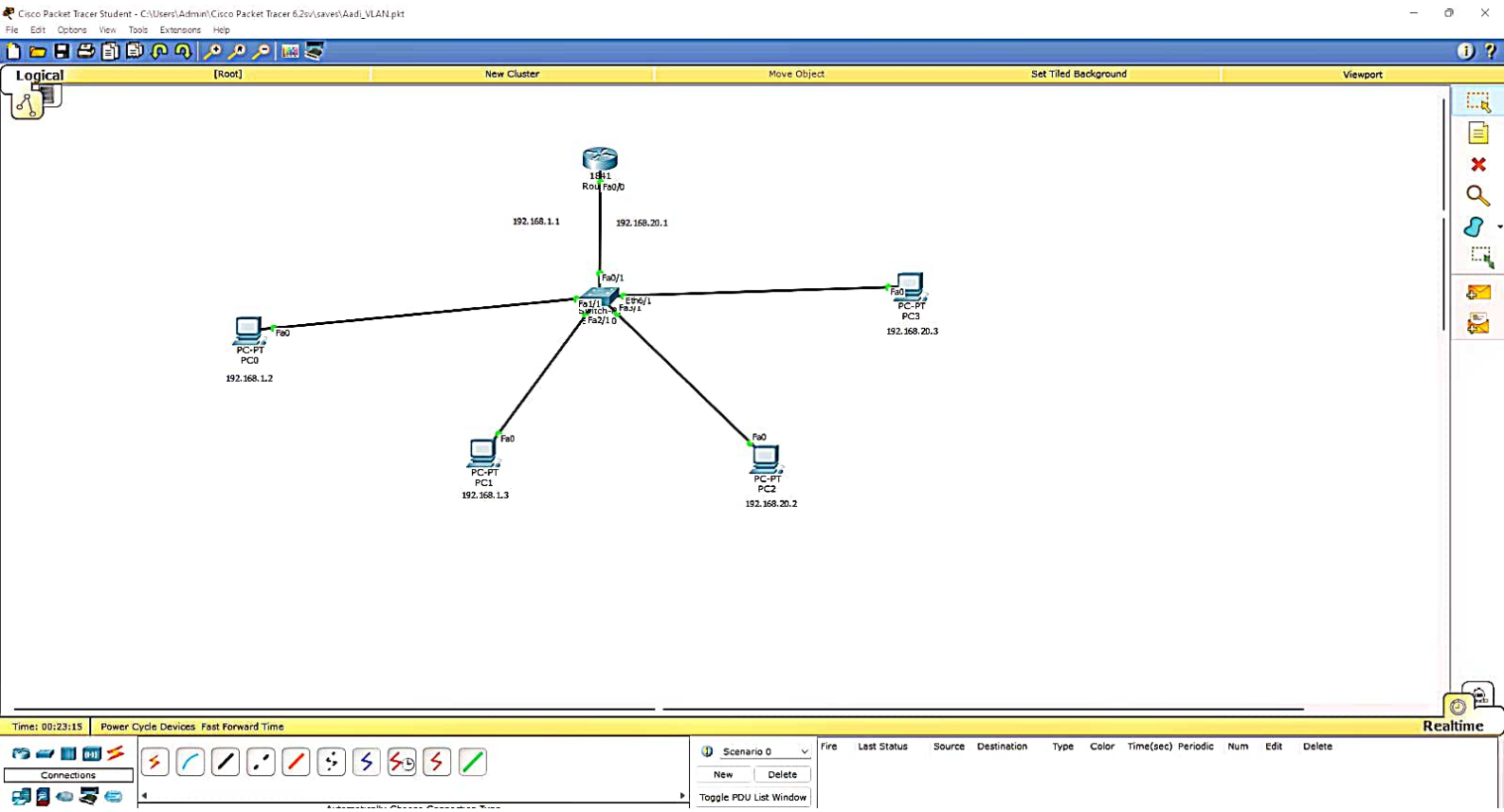
Approximate round trip time in milliseconds

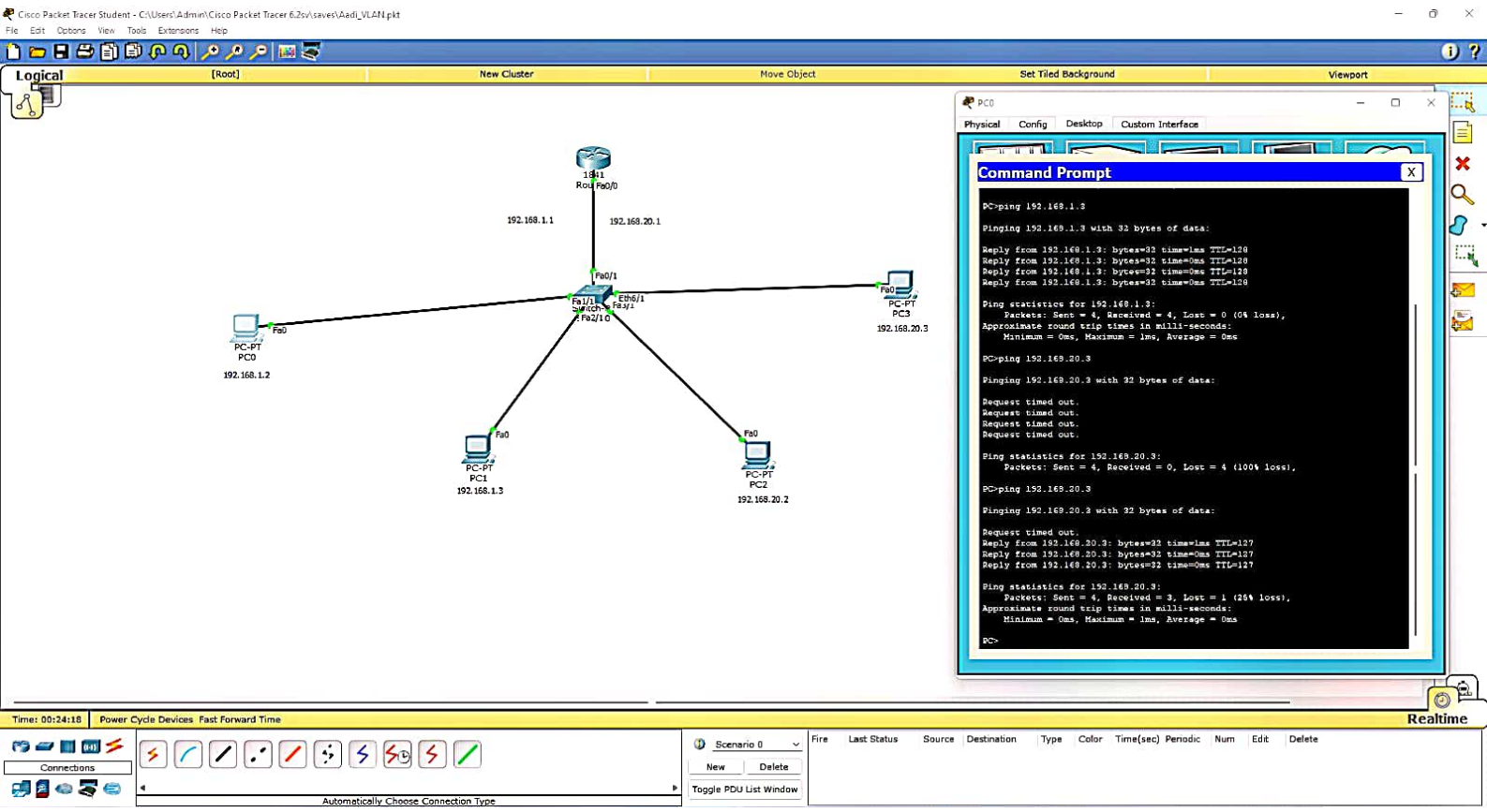
Minimum = 0 ms, Maximum = 1 ms, Average = 0ms

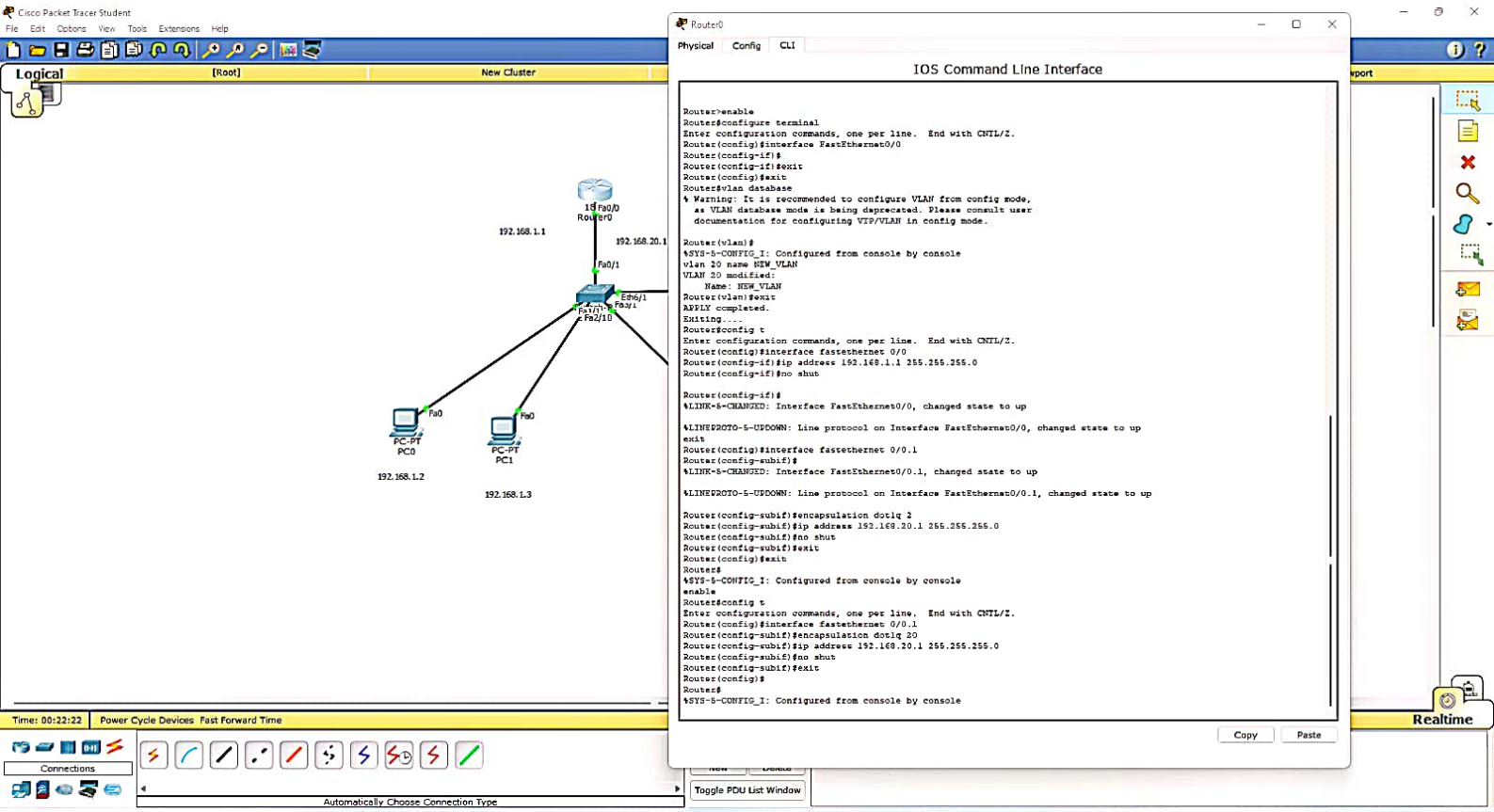
Observation

* VLAN - Virtual local area network is any broadcast domain that is partitioned and isolated in a completed network at the data link layer

* It is a virtualised connection that converts multiple devices and network nodes from different LANs into one local/


Cisco Packet Tracer Student - C:\Users\Admin\Cisco Packet Tracer 6.2sv\saves\Aadi_VLAN.pkt
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
Rou
Fa0/0
192.168.1.1
192.168.20.1
Fa0/1
Fa1/1
Fa2/1
Fa0
PC-PT
PC0
192.168.1.2
Fa0
PC-PT
PC1
192.168.1.3
Fa0
PC-PT
PC2
192.168.20.2
Fa0
PC-PT
PC3
192.168.20.3
Time: 00:23:15
Power Cycle Devices Fast Forward Time
Realtime
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Cisco Packet Tracer Student - C:\Users\Admin\Cisco Packet Tracer 6.2sv\saves\Aadi_VLAN.pkt
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
Fa0/0
192.168.1.1
192.168.20.1
Fa0/1
Fa1/1
Eth6/1
Fa3/1
Fa2/10
PC-PT
PC0
Fa0
192.168.1.2
PC-PT
PC1
Fa0
192.168.1.3
PC-PT
PC2
Fa0
192.168.20.2
PC-PT
PC3
Fa0
192.168.20.3
PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
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=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
Reply from 192.168.1.3: bytes=32 time=0ms TTL=128
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>ping 192.168.20.3
Pinging 192.168.20.3 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.20.3:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
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=1ms TTL=127
Reply from 192.168.20.3: bytes=32 time=0ms TTL=127
Reply from 192.168.20.3: bytes=32 time=0ms TTL=127
Ping statistics for 192.168.20.3:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>
Time: 00:24:18
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Router0
Physical
Config
CLI
IOS Command Line Interface
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#exit
Router#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.
Router(vlan)#
%SYS-5-CONFIG_I: Configured from console by console
vlan 20 name NEW_VLAN
VLAN 20 modified:
Name: NEW_VLAN
Router(vlan)#exit
APPLY completed.
Exiting....
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shut
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
exit
Router(config)#interface fastethernet 0/0.1
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.1, changed state to up
Router(config-subif)#encapsulation dot1q 2
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet 0/0.1
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#
Router#
%SYS-5-CONFIG_I: Configured from console by console
Copy
Paste
192.168.1.1
192.168.20.1
Fa0/0
Fa0/1
Eth6/1
Fa3/1
Fa2/10
Fa0
PC-PT
PC0
PC1
192.168.1.2
192.168.1.3
Time: 00:22:22
Power Cycle Devices Fast Forward Time
Realtime
Connections
Automatically Choose Connection Type
Toggle PDU List Window