18|12|2024 Experiment 11

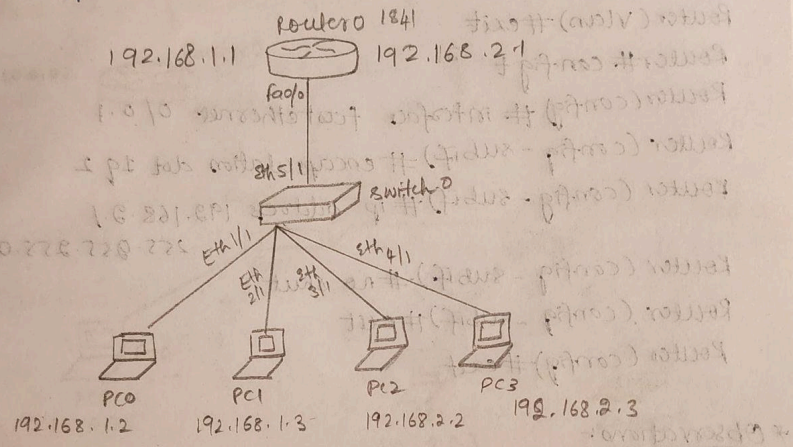
Observation Book:

18|12|2024 exp-11

Question: To construct VLAN and enable PC communi-cate among a VLAN.

Aim: Construct VLAN and enable PC's communication among a VLAN.

Topology:



Procedure:

1. Configure as shown in the topology.
2. Choose the 1841 router
3. set the IP addresses of PC's, router and switch together configure.
4. In the switch, go to config tab and select VLAN Database
5. set the VLAN number and VLAN name. Select the interface .i.e. fastethernet 5/1 and make it trunk. VLAN trunking allows switches to forward frame from different VLAN over a single link called trunk.

6. This is done by adding an additional header information called 'tag' to the ethernet frame.

7. Look into the interfaces of the switches with 2 NEW VLAN systems

Config tab of router select VLAN DATABASE - enter number and name of VLAN created

```
Router(vlan)#exit
Router#config t
Router(config)#interface fastethernet 0/0.1
Router(config-subif)#encapsulation dot1q 2
Router(config-subif)#ip address 192.168.2.1
                                255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#exit
```

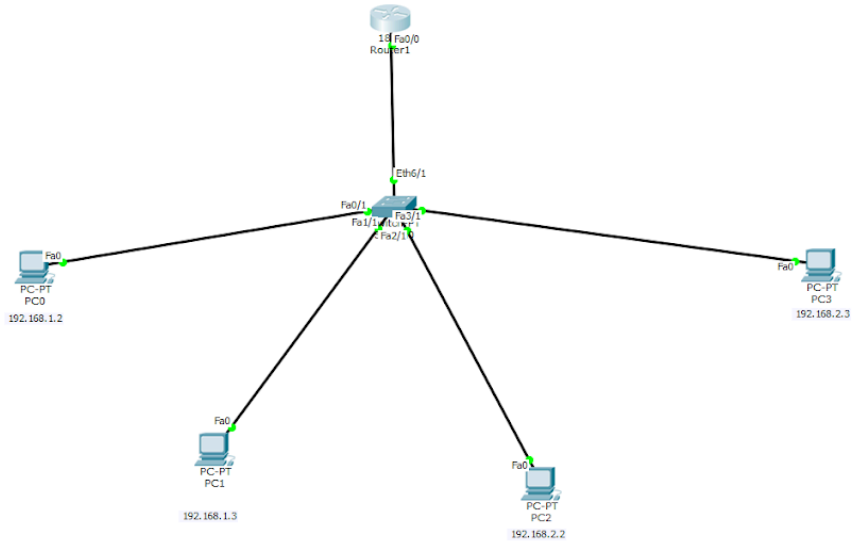
* Observations:

A VLAN segments a network into virtual groups

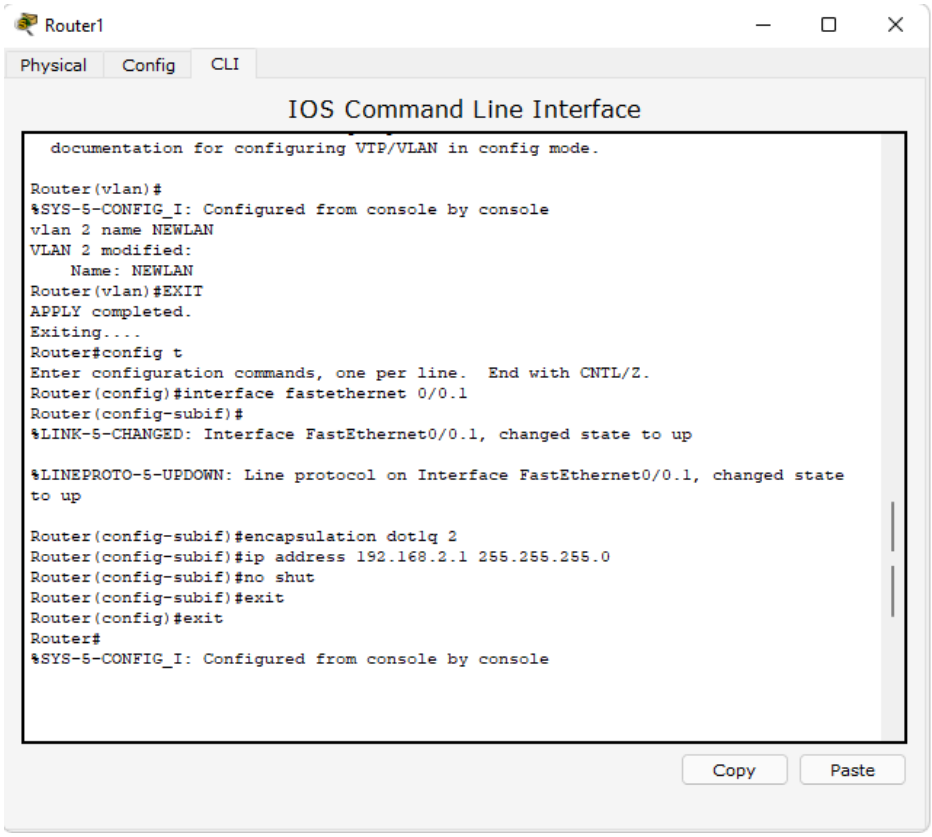
It enhances security & reduces broadcast traffic.

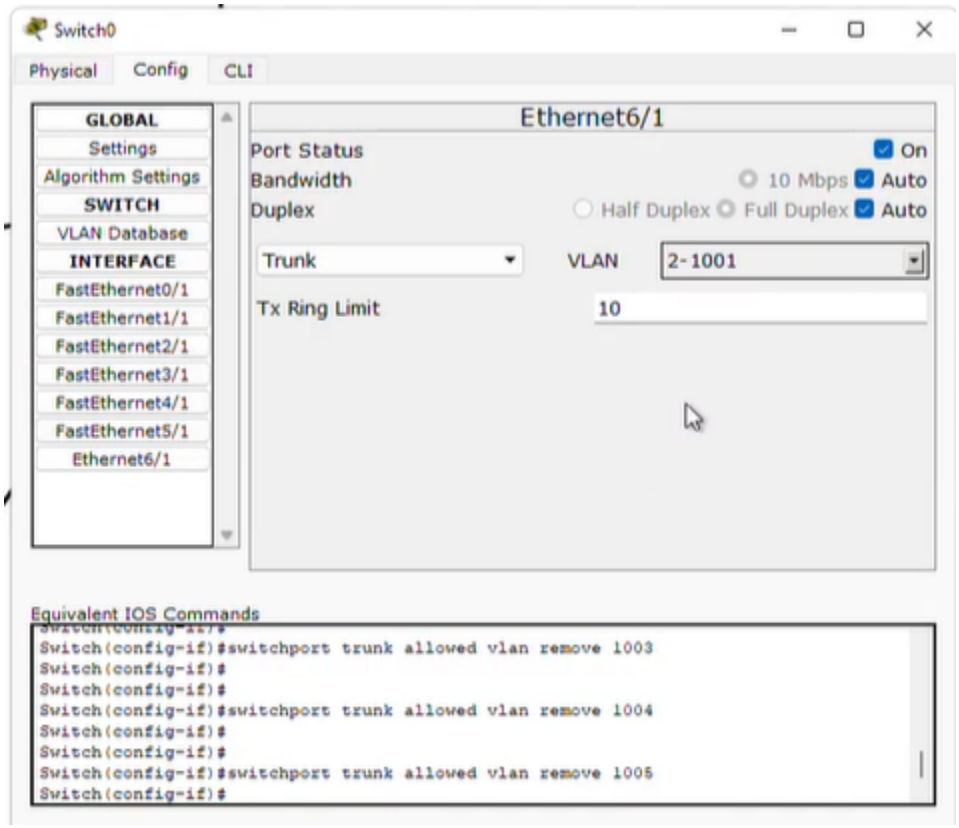
On pinging over the VLAN, the PCs are able to communicate.

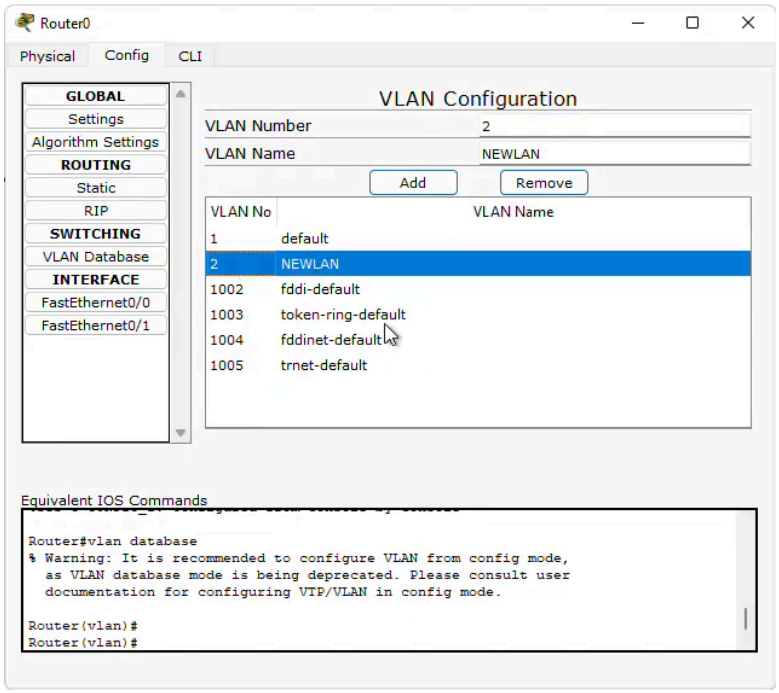
Topology:

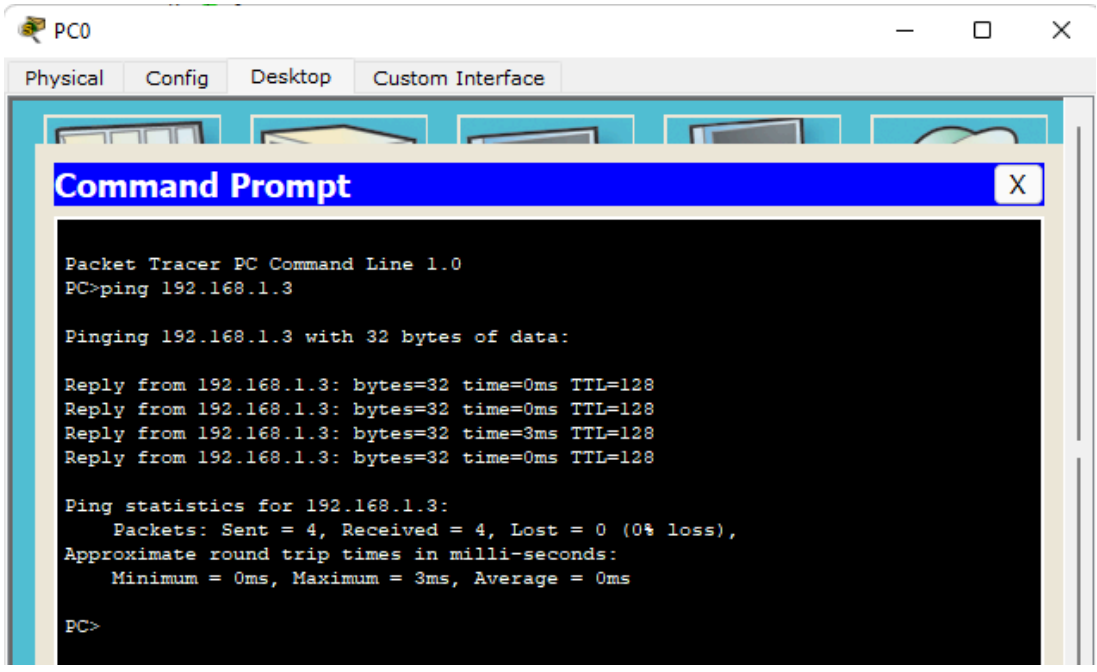


Output:


Router1
Physical
Config
CLI
IOS Command Line Interface
documentation for configuring VTP/VLAN in config mode.
Router(vlan)#
%SYS-5-CONFIG_I: Configured from console by console
vlan 2 name NEWLAN
VLAN 2 modified:
Name: NEWLAN
Router(vlan)#EXIT
APPLY completed.
Exiting....
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet 0/0.1
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 192.168.2.1 255.255.255.0
Router(config-subif)#no shut
Router(config-subif)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Copy
Paste


Switch0
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
SWITCH
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet1/1
FastEthernet2/1
FastEthernet3/1
FastEthernet4/1
FastEthernet5/1
Ethernet6/1
Ethernet6/1
Port Status
On
Bandwidth
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
Trunk
VLAN
2-1001
Tx Ring Limit
10
Equivalent IOS Commands
Switch(config-if)#switchport trunk allowed vlan remove 1003
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport trunk allowed vlan remove 1004
Switch(config-if)#
Switch(config-if)#
Switch(config-if)#switchport trunk allowed vlan remove 1005
Switch(config-if)#




```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to
up
exit
Router(config)#
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 2 name NEWLAN
VLAN 2 modified:
    Name: NEWLAN
Router(vlan)#EXIT
```