

To construct a VLAN and make the PC's communicate among a VLAN.

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Aim → To construct a VLAN and make the PC's communicate among a VLAN.

Topology →

Router 1

192.168.1.1 | 192.168.2.1

PC0 PC1 PC2 PC3

192.168.1.2 192.168.1.3 192.168.2.2 192.168.2.3

Steps →

1. To create a new VLAN, we use a class C type addresses.
2. Create a topology as seen below.
Choose the 1841 router.
3. In the Switch go to config tab and select VLAN database.
4. Give any VLAN number say 2 here include any name. Say add!
5. Select the interface is fastethernet 4/1 [near switch from router] and make it trunk.
6. VLAN trunking allows switches to forward frames from diff VLAN's over a single link called trunk.
7. 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.
8. Look into the interfaces of the switches with the 2 new VLAN systems.

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This makes the Switch understand NEWVLAN

Next the router is to understand the NEWVLAN

9. Config tab of router Select VLAN Database enter the number and name of the VLAN created.

Go to CLI, run the following

config t

interface fast ethernet 0/0.1

encapsulation dot1q 2

ip address 192.168.2.1 255.255.255.0

no shut

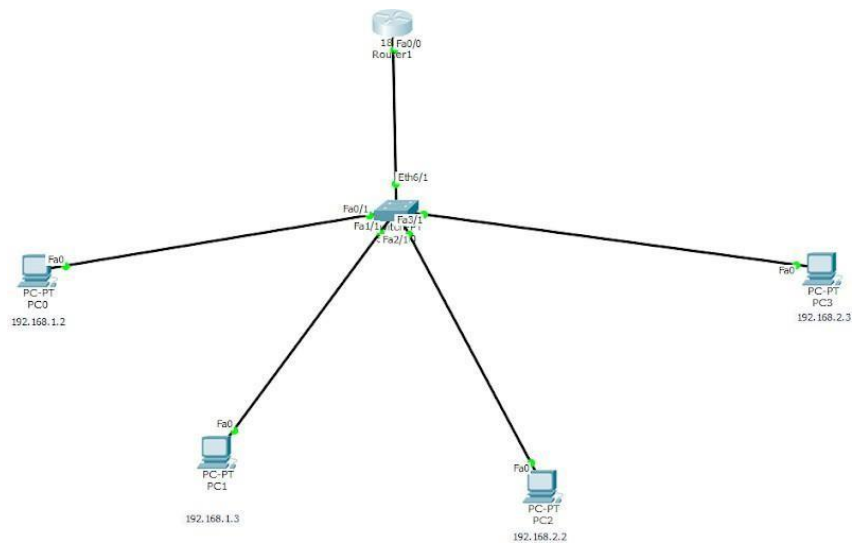
exit

Observation →

1. VLAN are used to logically segment a network devices in the same VLAN to communicate directly while isolating traffic from others VLAN's
2. Switches must be configured to create VLAN's assign VLAN IDs & allocate ports to specific VLAN's

At this
03/01/25

TOPLOGY:



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-S-CHANGED: Interface FastEthernet0/0.1, changed state to up

%LINEPROTO-S-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
```

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

Tx Ring Limit

Equivalent IOS Commands

```
Switch(config)#
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)#
```

Router0

Physical Config CLI

GLOBAL

- Settings
- Algorithm Settings
- ROUTING**
 - Static
 - RIP
 - SWITCHING**
 - VLAN Database
 - INTERFACE**
 - FastEthernet0/0
 - FastEthernet0/1

VLAN Configuration

VLAN Number

VLAN Name

| VLAN No | VLAN Name |
|---------|--------------------|
| 1 | default |
| 2 | NEWLAN |
| 1002 | fddi-default |
| 1003 | token-ring-default |
| 1004 | fddinet-default |
| 1005 | trnet-default |

Equivalent IOS Commands

```
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)#
Router(vlan)#
```

```
%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
```

