

Lab Practical #05:

Implement the concept of VLAN.

Practical Assignment #05:

1. What is VLAN? Working of VLAN, Advantages of VLAN.

Virtual Local Area Networks or A VLAN is a switched network that is logically segmented by functions, project teams, or applications without regard to the physical location of users.

❖ **Working :**

- Virtual Local Area Networks (VLANs) separate an existing physical network multiple logical networks. Thus, each VLAN creates its own broadcast domain. Communication between two VLANs can only occur through a router that is connected to both. VLANs work as though they are created using independent switches.
- A VLAN is created by adding a tag, or header, to each Ethernet frame. This tag tells the network which VLAN the frame should be sent to. Devices in different VLANs can't see each other's traffic unless connected to a router configured to allow it.

❖ **Advantages :**

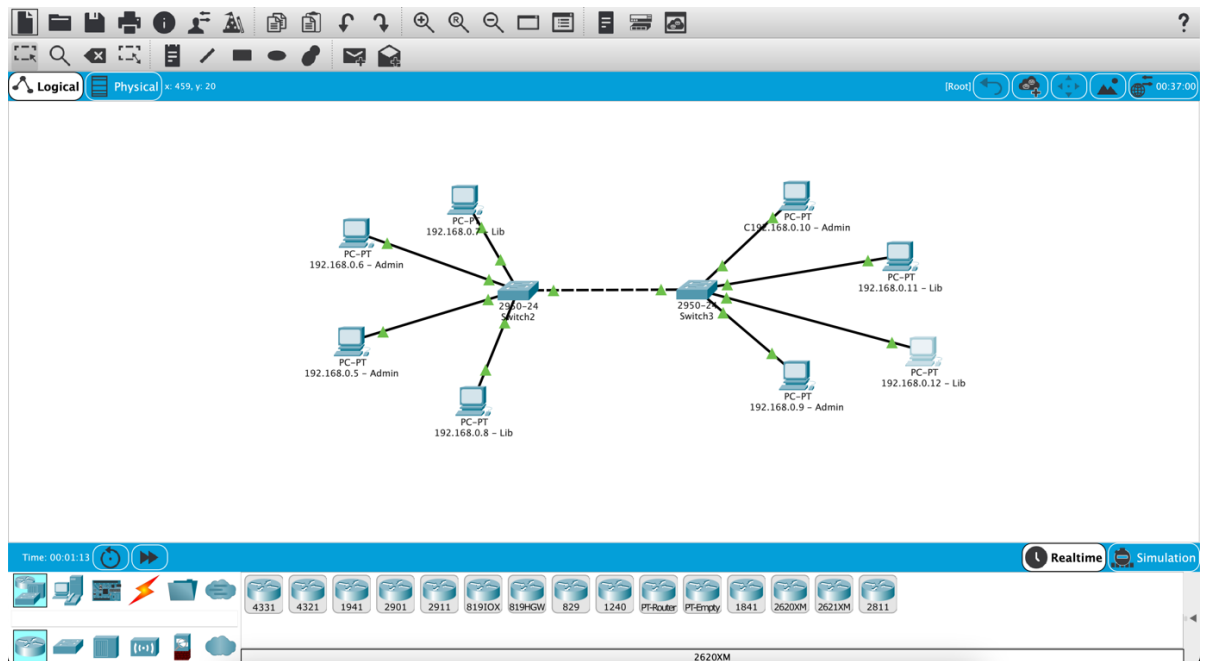
- It solves a broadcast problem.
- You can make a logical grouping of devices by function rather than location.
- You can logically segment networks based on departments, project teams, or functions.
- VLANs provide increased performance.
- Users may work on sensitive information that must not be viewed by other users.
- VLAN removes the physical boundary.
- It lets you easily segment your network.
- It helps you to enhance network security.
- You can keep hosts separated by VLAN.
- You do not require additional hardware and cabling, which helps you to save costs.
- It has operational advantages because of changing the IP subnet of the user is in software.
- It reduces the number of devices for particular network topology.
- VLAN makes managing physical devices less complex.

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2. Implement the concept of VLAN.

Example of Admin & Library :



192.168.0.5 - Admin

Physical Config Desktop Programming Attributes

Command Prompt [X]

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.10

Pinging 192.168.0.10 with 32 bytes of data:

Reply from 192.168.0.10: bytes=32 time=1ms TTL=128
Reply from 192.168.0.10: bytes=32 time<1ms TTL=128
Reply from 192.168.0.10: bytes=32 time<1ms TTL=128
Reply from 192.168.0.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

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