Subnets vs VLANS

VLAN — Virtual Local Area Network.

Logical division of same physical network — same switch

— Broadcast domain.
(Definition)

A group of hosts under one broadcast

— VLAN creates broadcast domain

Switch — 20 ports

different ports to different VLANs

— All these VLANs are seperate from each other

2 kinds of ports
1) Access port
2) Trunk port

Access ports

Switch — 20 ports
{ VLAN 1 — 1—10 }
{ VLAN 2 — 11—20 }

one port belongs to one VLAN

5 port — VLAN 1
19 — VLAN 2

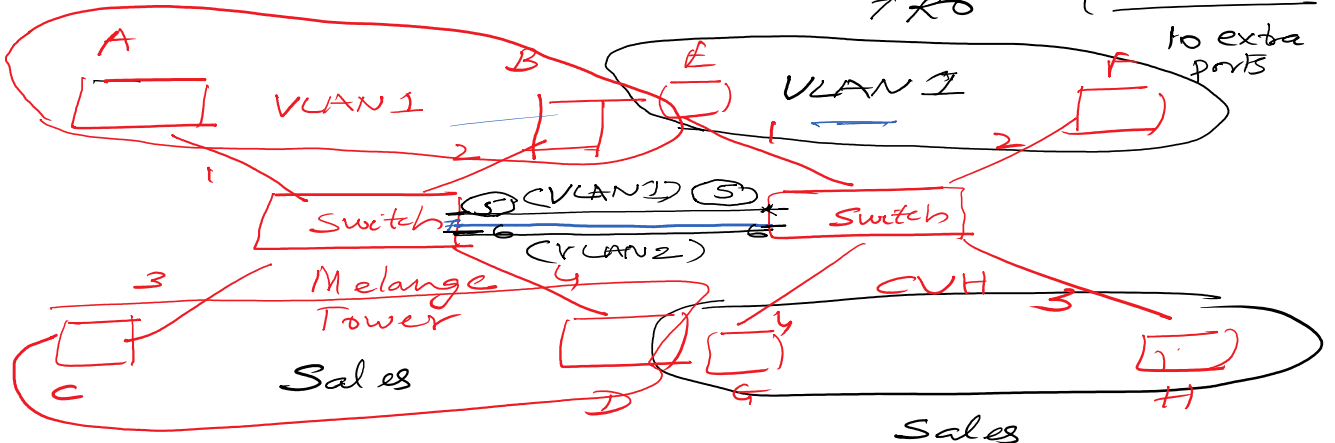one port belongs to only one VLAN

Access ports

Trunk port

TRO

{ VLAN 1 — 1, 2, 5
  VLAN 2 — 3, 4, 6 }
TRO

10 VLANS

to extra ports

VLAN 1

VLAN 1

Switch   (5) (VLAN1) (5)   Switch
         6 (VLAN2) 6

Melange Tower

Sales

CVH

Sales

Trunk port — 7 — (Trunk port multiple VLAN traffic)
Port 7 belongs to both VLAN 1 and 2
VLANTag ═══   VLAN tag — 1   VLAN Tag — 2

Trunking protocol
— 801.9 protocol

Packet — Port 7 is being
used by multiple VLANS

Differentiate the traffic?
By using VLAN tags

Trunk port — shared by different VLANS

VLAN 1 — 1, 2, 7 ⎫ 1, 2, 3, 4 — Access ports   ⬆
VLAN 2 — 3, 4, 7 ⎬   7 — Trunk ports (Switches)

(L2) VLAN — Same physical Network — (L2 layer)

Subnet — What is a Subnet?
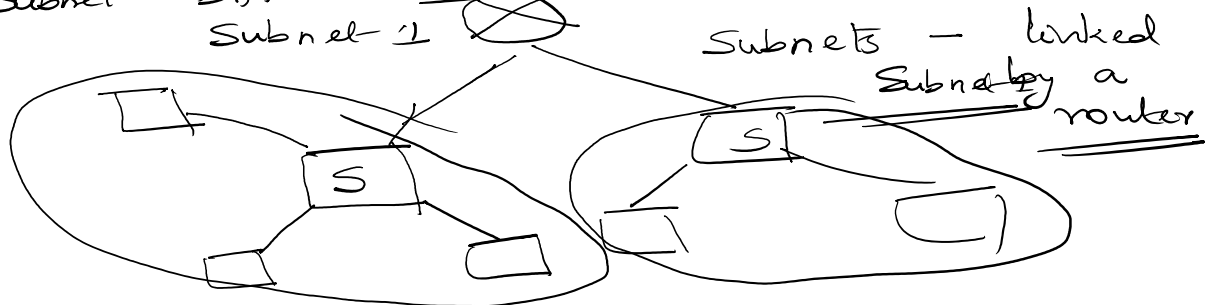VLAN — Link layer (L2) — Switches

Subnet — Logical division of an IP address
                                    Space

— Isolation of networks.
— {Using Routers?
— IP address division —
    Range of IP addresses —
                    Divide

VLAN — Same physical
            Network
Subnet — Different Network
    Subnet 1 ⊗

Subnets — linked
    Subnet by a
              router

Logical division of IP address Space
        — Network layer
        — L3

VLAN — Simple configuration
    (Few simple steps) VLAN — L2 (Switches)
                            Don't require the use

VLAN   (Few simple steps) VLAN — L2 (Switches)

Routers   Subnets — Routers   Don't require the use
                                        of routers
              { Subnets are harder } (Any routers are not
                to create and   needed)
                    manage

Q/A

1) What's the use of Subnets?
    — Dividing and isolating networks
      VLAN — Same use

2) which layer/ concept is VLAN?
        device — L2 — Switches

3) which are easy to create — VLANS

4)   VLANS — Swithes   Subnets use Routers
              ↓   ↓
        Same physical networks   Different physical Network
                                    (Seperate)