

2- IP address

set of rules to follow to have a proper communication.

The internet which is a place where everyone is connected is completely built based on *TCP/IP* protocol.

TCP/IP is a Standard protocol used between computers and network devices for communication each device in a network should be assigned with an address called an *IP address*.

I.P addresses

I.P v4

- i.p V4 is a 32 bit address in binary
- divided into 4 octants with dots.
- for our convenience, we are going to convert actual binary format to decimal format.

class	range
A	0-127
B	128-191
C	192-223
D	224-239
E	240-255

Network and Host Portions

IP address is divided into Network and Host Portion

Host : a specific device in the network

Network : set of devices

Subnet-mask

Subnet Mask differentiates Network portion and Host Portion.

1 represents network

0 represents hosts

Class	N/H	IP
Class A	<i>N.H.H.H</i>	255.0.0.0
Class B	<i>N.N.H.H</i>	255.255.0.0

Class	N/H	IP
Class C	N.N.N.H	255.255.255.0

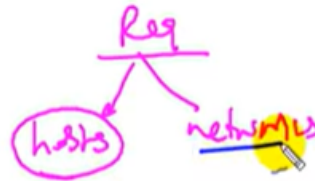
FLSM & VLSM

FLSM & VLSM

Gateway to highly rewarding Cisco

Subnetting can be performing in two ways.

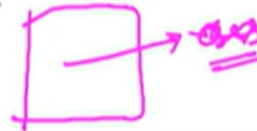
- **FLSM** (Fixed Length Subnet Mask)
- **VLSM** (Variable Length subnet mask)



Subnetting can be done based on requirement.

- Requirement of Hosts? $2^h - 2 \geq \text{requirement}$
- Requirement of Networks? $2^n \geq \text{requirement}$

- **H** = host bits , **N** = Network Bits



What we do in Subnetting

- Converting Host bits into Network Bits (reducing number of host bits)
 - i.e. Converting 0's into 1's