

# CIDR

## VPC

### CIDR:- Classless inter domain routing

⇒ CIDR is an Ip address allocation method that Improves data routing Efficiency on the . internet

⇒ Every machine/ server and end-user device that connects to the internet. it has a . unique number, called an Ip address, associated with it

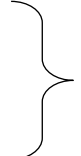
### Ipv4

#### Example:-1

10.0.0.0/24 → 32-24=8 →  $2^8=256$  ( In this network 256 ips present )

#### Starting with

10.0.0.0  
10.0.0.1  
10.0.0.255




256 Ip's

#### Example:-2

10.0.0.0/26 → 32-24=8  $2^6 = 64$

#### Starting with

10.0.0.0.  
10.0.0.1  
10.0.0.64

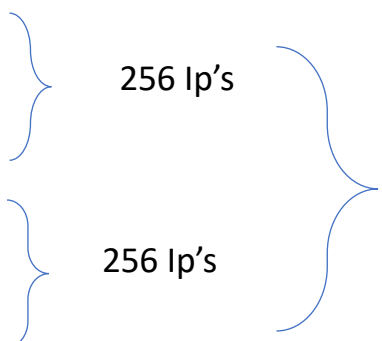


64 Ip's

#### Example:- 3

10.0.0.0/23 → 32-23=9 →  $2^9=512$

10.0.0.0  
10.0.0.1  
10.0.0.255



256 Ip's

256 Ip's

512 Ip's

## IPv4 is a 32-bit address

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8.8.8.8      each bitt has 8 because we use 32



bit

$$8+8=16+16+16=32$$

### Types of numbers:-

Binary :-                      0,1

octal number:-              1,2,3,4,5,6,7

Decimal numbers:-        1,2,3,4,5,6,7,8,9

**Note:** In pv4 we will give up to 256 Ip's    only in one bit

## IPv6 address → 128-bit address

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### Types of number

Hexadecimal format

0, 1, 2, 3,4,5,6,7,8,9,a,b,c,d,e,f

$$16+16 +16 +16 +16 +16 +16 +16 =128$$

what is private Ip address

→if user in internal communication network

# IMP

→ In AWS 1<sup>st</sup> 4<sup>th</sup> and last 1 Ip's Total = 5 reserved for Aws

Ex: in VPC1 → SN1 , SN2 ==> 10.0.0.0/24 = 512

SN1 → 10.0.0.0/25 = 128

10.0.0.0

10.0.0.1

10.0.0.2

10.0.0.3

10.00.127

These five are reserved for AWS

SN2 → 10.0.0.0/25 = 128

192.168.0.0

192.168.0.1

192.168.0.2

192.168.0.3

19.168.0.127

These five are reserved for AWS

In Each subnet AWS  
Reserves

*we can't use these five Ips for our use*

