1. What is CIDR ?

1. CIDR stands for Classless Inter-Domain Routing. It is an IP address assigning method that improves the efficiency of address distribution.
2. It is also known as supernetting that replaces the older system based on classes A, B, and C networks.
3. By using a single CIDR IP address many unique IP addresses can be designated. CIDR IP address is the same as the normal IP address except that it ends with a slash followed by a number.
4. For example, CIDR notation may look like: 192.168.129.23/17 -- with 17 being the number of bits in the address. IPv4 addresses allow a maximum of 32 bits.
5. The same CIDR notation can be applied to IPv6 addresses. The only difference would be that IPv6 addresses can contain up to 128 bits.

2. Purpose of CIDR ?

- It is an IP address assigning method that improves the efficiency of address distribution.
- CIDR enables routes to reach network traffic destination much quicker

IPV4 address classes

Class A - Public & Private IP Address Range

Class A addresses are for networks with large number of total hosts.

- If the value is in the range 1 to 127, the address belongs to class A.
- Public IP Range: 1.0.0.0 to 127.0.0.0
- Number of Hosts per Network: 16,777,214
- Private IP Range: 10.0.0.0 to 10.255.255.255

Class B - Public & Private IP Address Range

IP address belonging to class B are assigned to the networks that ranges from medium-sized to large-sized networks.

- If the value is in the range 128 to 191, the address belongs to class B

- Public IP Range: 128.0.0.0 to 191.255.0.0
- Number of Hosts per Network: 65,534
- Private IP Range: 172.16.0.0 to 172.31.255.255

Class C- Public & Private IP Address Range

Class C addresses are used in small local area networks (LANs)

- If the value is in the range 192 to 223, the address belongs to class C.
- Public IP Range: 192.0.0.0 to 223.255.255.0
- Number of Hosts per Network: 254
- Private IP Range: 192.168.0.0 to 192.168.255.255

Class D- Public & Private IP Address Range

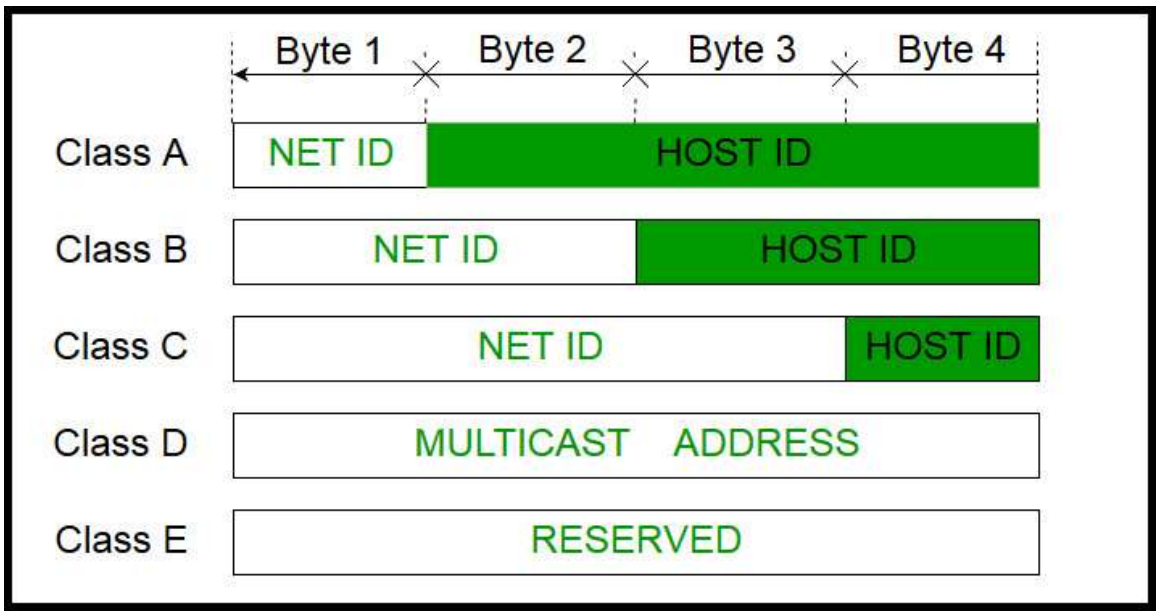
Class D IP addresses are not allocated to hosts and are used for multicasting. Multicasting allows a single host to send a single stream of data to thousands of hosts across the Internet at the same time.

- If the value is in the range 224 to 239, the address belongs to class D.
- Range: 224.0.0.0 to 239.255.255.255
- Number of Hosts per Network: Multicasting

Class E- Public & Private IP Address Range

Class E IP addresses are not allocated to hosts and are not available for general use. These are reserved for research purposes.

- If the value is in the range 240 to 255, the address belongs to class E
- Range: 240.0.0.0 to 255.255.255.255
- Number of Hosts per Network: Research/Reserved/Experimental


Byte 1
Byte 2
Byte 3
Byte 4
Class A
NET ID
HOST ID
Class B
NET ID
HOST ID
Class C
NET ID
HOST ID
Class D
MULTICAST ADDRESS
Class E
RESERVED