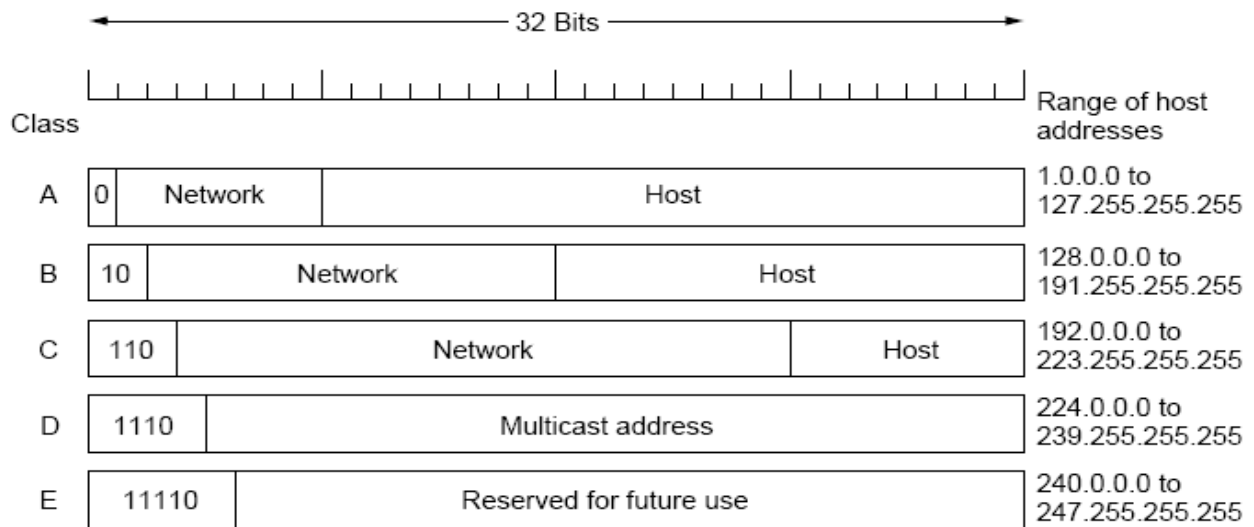


IP Address Classes:

- There also exists some special purpose IP address.
- The class based addressing is also known as the classful model.
 - ❖ Different network classes represent different networks to host ratio.
 - ❖ Lend themselves to different network configurations.

IP Address Format:



Class A Address:

They are very large in size used by big service providers.

- Network bits: 7 bits
 - ❖ No. of networks = $2^7 - 1 = 127$ (One is left for some special purpose.)
- Host bits: 24
 - ❖ No. of hosts = $2^{24} - 2 = 16777214$ (All zeros and all ones are left for some other purposes.)
- Address range: 0.0.0.0 to 127.255.255.255



Class B Address:

Smaller than A & larger than C.

- Network bit: 14
 - ❖ No. of Networks = $2^{14} - 1 = 16383$
- Host bits: 16
 - ❖ – No. of Hosts = $2^{16} - 2 = 65534$
- Address range: 128.0.0.0 to 191.255.255.255



Class C Address:

- Network bit: 21
 - ❖ No. of Networks = $2^{21} - 1 = 2097151$
- Host bits: 8
 - ❖ No. of Hosts = $2^8 - 2 = 254$
- Address range: 192.0.0.0 to 223.255.255.255

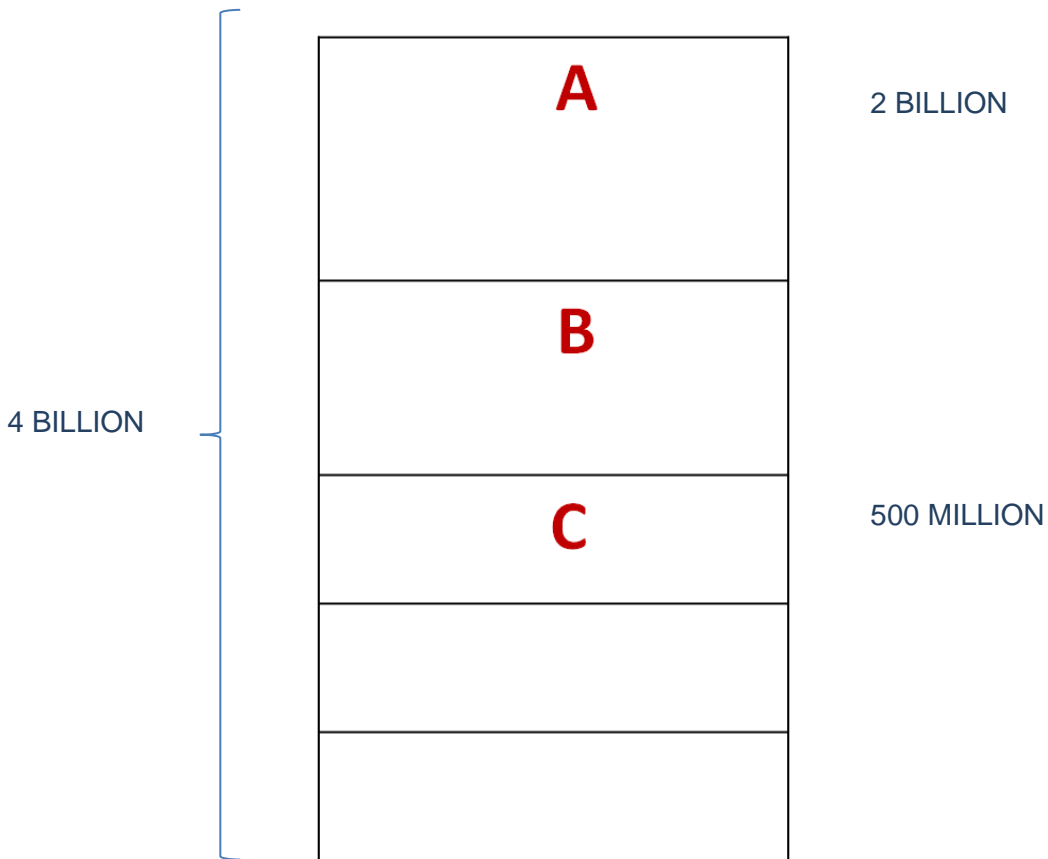


Class D Address:

- Address range – 224.0.0.0 to 239.255.255.255



Address Distribution:



Special purpose IP Address:

- Reserved for private use
 - ❖ 10.x.x.x (Class A)
 - ❖ 172.16.x.x – 172.31.x.x (Class B)
 - ❖ 192.168.x.x (Class C)
- Loopback/Local Address (To check the connectivity of two process running on one machine.)
 - ❖ 127.0.0.0 - 127.255.255.255
- Default network
 - ❖ 0.0.0.0
- Limited broadcast
 - ❖ 255.255.255.255

❑ E.g. 118.255.255.255

QUESTIONS:

1. Change the following IP addresses from binary notation to dotted decimal notation.
11000100, 10001111, 0011000, 10000001
2. Find the error if any in the following IP address: -
144.15.256.7.
3. Find the Class of the following IP address: - 227.15.75.111
3. Given the network address 135.75.0.0. Find the Class, the network ID, and the range of the addresses?
4. Given the network address 216.12.20.0, Find the Class, the network ID, and the range of addresses?
5. What does the following IP address signify?
144.16.255.255