CN - 5th Aug - SND

System → 127.0.0.1

IP Addressing

↳ Internet Protocol → 32 bits

↓

4 octates with 8 bits

↳ 2^{32} combinations

Type:

① Static IP ② Dynamic IP

↓ fixed (costly) (manual configuration)

↳ DHCP (provides)

↓ Dynamic Host Configure Protocol.

IP Addressing Types

↳ Classful Addressing

↳ Classless Addressing (Classless interdomain routing) (CIDR)

● Classful Addressing:

Class A → 8 bits | 24 bits (Host) (0 - 127) → 2^7

Class B → 16 bits (N) | 16 bits (H) (128 - 191) → 2^6

Class C → 24 bits (N) | 8 bits (H) (192 - 223) → 2^5

Class D (224 - 239) → 2^4

Class E (248 - 255) → 2^4

▶ Class A:

Network: 0 _ _ _ _ _ _ _ (8)

fixed

↳ 2^7 combinations (-2) (incase of Class A only)

Host: $2^{24} - 2$

first ip → identification | last ip → broadcasting [$2^N - 2$]

Class B:

Network: 1 0 _ _ _ _ _ _ _ _ _ _ _ _ _ _ (14)

fixed 10

↳ 2^{14} combinations

Host: $2^{16} - 2$

Class C : 110 → fixed 3

Net = 2^{21}
Host = $2^8 - 2$

Class-A
↳ 255.0.0.0 (default) → NASA, Pentagon

Class B
↳ 255.255.0.0 (default) → Private Sectors (banking)

Class C
255.255.255.0 (default)
↳ Us (UBM, IEM)

255
−248
7

Class D → Multicast

Class E → Research Purpose

Int
inted

► Class D → 1110 (fixed)

Net =
↳ 2^{28}

Host → $2^{28} - 2$

{ internet
{ Internet

Intranet
↳ limited based
like floor - 1
floor - 2

► If a class B network on the internet has a subnet mask of 255.255.248.0
What is the maximum no. of host per subnet?

7 6

→

2 | 248
2 | 124
2 | 62
2 | 31 0
2 | 15 0
7 0

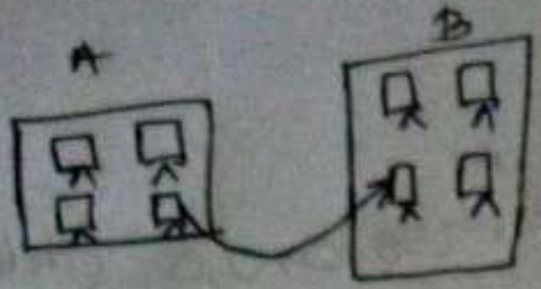
248
↳ 11111000 . 0000 0000
↳3 ↳8 = 11

$2^{11} - 2$

• Casting:
Streaming the data to the network.

↳ (i) Unicast
(ii) Broadcast → Limited / Directed
(iii) Multicast

i) Unicast:



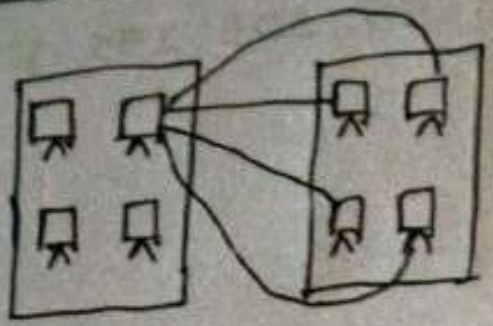
ii) Broadcast:

Limited →

Limited Broadcast → all bits will be 1

↳ 255.255.255.255

Directed →



Directed

↳ to 10.5.4.3

↳ 10.255.255.255

iii) Multicast: