0-9 A-F protocal.

DHCP → LAB

Ping 127.0.0.1

≠ Decimal

IPv4 → 32 Bits → 4 Bytes → 4 octal

IPv6 → 128 Bits → 16 Byte → 16 octal

↘ Hexa decimal

IPV4

IP Address ------ Testing ↑ loopback Address

↓ Private SSV

IPv4 ↓ ↑ 127 → Specific Purpose

IPv6 local host Reserve

→ IANA → internet Assigned Nomber Authority

| CLASSES | RANGE | USAGE | BITS 1 2 3 4 |
|---|---|---|---|
| A | 1-126 | UNicast & Broadcast Communication | 0 |
| B | 128-191 | | 10 |
| C | 192-223 | | 110 |
| D | 224-239 | Multicast | 1110 |
| E | 240-255 | Reasearch Purpose R&D | 1111 |

0-9 → 10

8 8 8 8

10.170.200.235

Dot

1-255 10.170.200.235 → CLASS A

171.0.0.1 → CLASS B

192.168.0.1 → CLASS C

Minimum VALUE → 0 MAX. VALUE → 255

| BIT VALUE | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 | |
|---|---|---|---|---|---|---|---|---|---|
| BITS | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | |
| Binary BASE ← | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | = 0 |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | = 255 |
| | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | = 10 |
| | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | = 170 |
| | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | = 200 |
| | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | = 235 |

(0) If First Bit of any IP is 0 so it will be a CLASS (A) IP

0.00001010.10101010.11001000.11101011

(1) (0) → if First Bit of IP is (1) and 2ND Bit of IP is (0) so it will be a CLASS (B) IP

10.10111.00000000.00000000.00000001

if First 2BiTs is (1) and 3rd BiT is (0) so it will Be a CLASS (C) IP

(1)(0)(1)000000.10101000.00000000.00000001

224.0.0.1 → CLASS D

(1)(1)(1)00000.00000000.00000000.00000001

(1) (0)

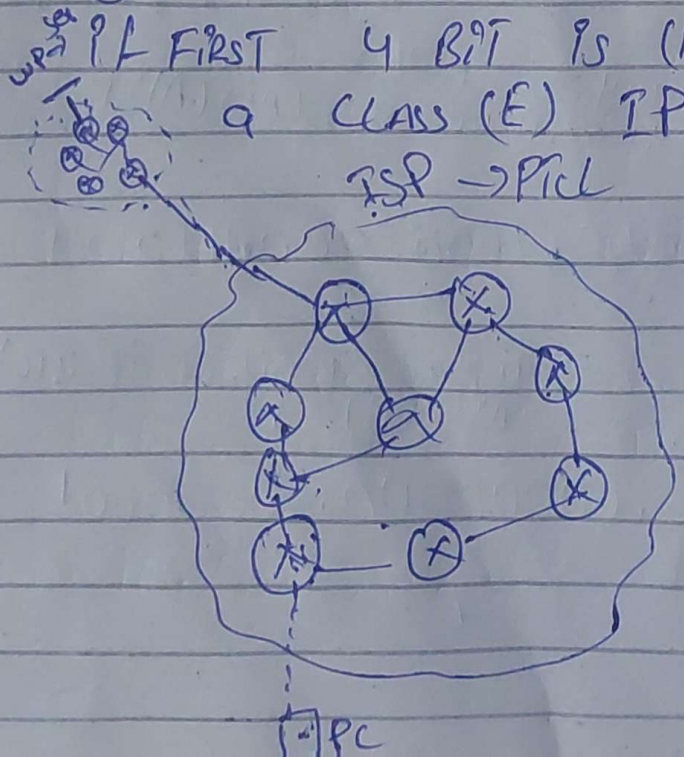
if FiRST 3BiTs is (1) and 4 BiT is (0) so it will be a CLASS (E) IP

240.0.8.1 → CLASS E

(1)(1)(1)(1)0000.00000000.00001000.00000001

(1)

if FIRST 4 BiT is (1) so it will Be a CLASS (E) IP




ISP → internet services Provider

SP → Service Provider

| CLASSES | Network/Host Portion | Default Mask |
|---|---|---|
| A | 8/24 | 255.0.0.0 |
| B | 16/16 | 255.255.0.0 |
| C | 24/8 | 255.255.255.0 |
| D | — | — |
| E | — | — |

NETWORK Portion:-

NETWORK Portion is used by router For the Routing PURPOSE

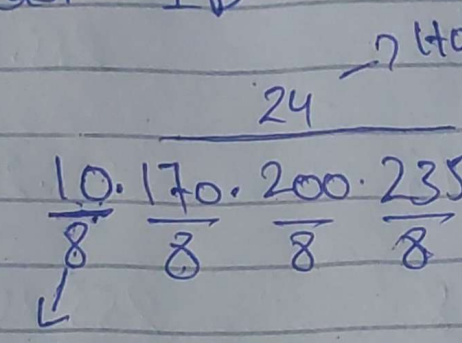
Router:

Route → Router → Routing

Host Portion:

The host Portion is used to Assigned a IP's to End User

1) NETWORK ID
2) Broadcast ID




FORMULA For the N.ID:

NETWORK BITS as it is and Host Bits should be off (0)

N.ID → 10.0.0.0 → N.ID

NETWORK ID:

Network ID is used By Router For Routing purpose

FORMULA FOR the B.ID:

NETWORK Bits as it is and Host Bits will be ON (1)

B.ID 10.255.255.255 → B.ID

# Assignment

20.100.150.61

N.ID → 20.0.0.0
B.ID → 20.255.255.255.

Check Range IPv4 ← 20.100.150.61 → Decimal

00010100.01100100.10010110.00111011 → Binary