Addressing mechanism

Addressing mechanism

- **To transfer data in a n/w 3 addressing mechanisms required.**

    1. **port address/port number (works in transport layer)**
    2. **Ip address/logical address (works in Internet layer)**
    3. **Physical Address / MAC address /Hardware Address / ethernet Address**

Port number

The task of the transport protocol is to provide an end-to-end communication service to applications residing on different hosts (or sometimes on the same host). In order to do this, the transport layer requires a method of differentiating the applications on a host. In TCP and UDP, this differentiation is provided by a 16-bit port number.

the range of port number is 0-65535

port number

the range of port number

0-1023 → well known / privileged/ services

1024-49151 → registered port number

49152 – 65535 → ephemeral port /dynamic /private/partial/short-lived

Ip address

ip address used to get logical existence of a system.

ip address contains n/w address and host address.

ip address belongs to system.

ip address can be divided into public ip, private ip, static ip, dynamic ip.

ip address 2 types

1.ipv4 address

2. ipv6 address

Ipv4 address

ipv4 divided into 2 types

1. classful ip
2. classless ip

classful ip divided into 5 classes

1. class A
2. class B
3. class C
4. class D
5. class E

classfull ip

ipv4 size is 4 bytes and represented in dotted decimal string notation

classfull ip representation

___ . ___ . ___ . ___

classless ip representaion

___ . ___ . ___ . ___ / number

Classful ip

the ranges of classful ip

1. **class A → 1-126**
2. **class B → 128-191**
3. **class C → 192-223**
4. **class D → 224-239**
5. **class E → 240-255**

Note: 127 network used as loop back address

Classfull ip

ip address = n/w address + host address

class A = n/w + host + host + host (8 n/w and 24 host bits)

class B = n/w + n/w + host + host (16 n/w and 16 host bits)

class C = n/w + n/w + n/w + host (24 n/w and 8 host bits)

class D = multicasting

class E = future reference

Ipv6 address

ipv6 addresses are 128 bits in length and written as a string of hexadecimal digits

this ip called as next generation ip.

representation :-

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___