Ip adressing

★ IPV4

⇒ 32 bit address

⇒ Exaple: 255.142.64.31

⇒ Has a hierarchical structure to enable routing.

- → Network position
  - → Identify a specific network.
  - → Routers maintain routing table that contains the network.
  - → Looks at destination of Ip address and match to network address.
- → Host position
  - → Identifys a specific end point on a network.

★ Special address

① Directed broadcast address

- → Host sends data to all the device on a specific network.
- → Binary 1s in the entire host position of the address.

② Local broadcast address

- → Used to communicate with all devices on the local network.
- → Address are all binary 1s.
  255.255.255.255
- → This is used by host when requesting IP address from a DHCP server.

(Dynamic host configuration protocol)

③ Local loopback address

→ Lets a system to send a message to itself for testing.

(127.0.0.1) {Anything in 127 range is a loopback address}

::1 → IPV6 loopback address.

★ Private address space

- → 10.0.0.0/8
- → 172.16.0.0/12
- → 172.168.0.0/16

⇒ These address are not routable on the internet.

⇒ For getting on internet these privet address need to be NATed.

→ Network address translation

⇒ ISP block traffic from these private address.

★ IPV4 Link local address

⇒ If pc is configured for DHCP and no server is available then

→ PC automatically chose IP address in range 169.254.0.0/16'

⇒ This address range is non-routable.

★ Subnet mask

⇒ Used to determine network and host portion.