Course 4 Week 2

Basics of IP Addressing.

IP Addressing: The Basics of Binary.

Binary Systems.

→ Human Beings think in terms of 10 based (decimal) numbering.

→ Computers only know if the power is on (1) or off (0)

→ Computers they don't know any other state..

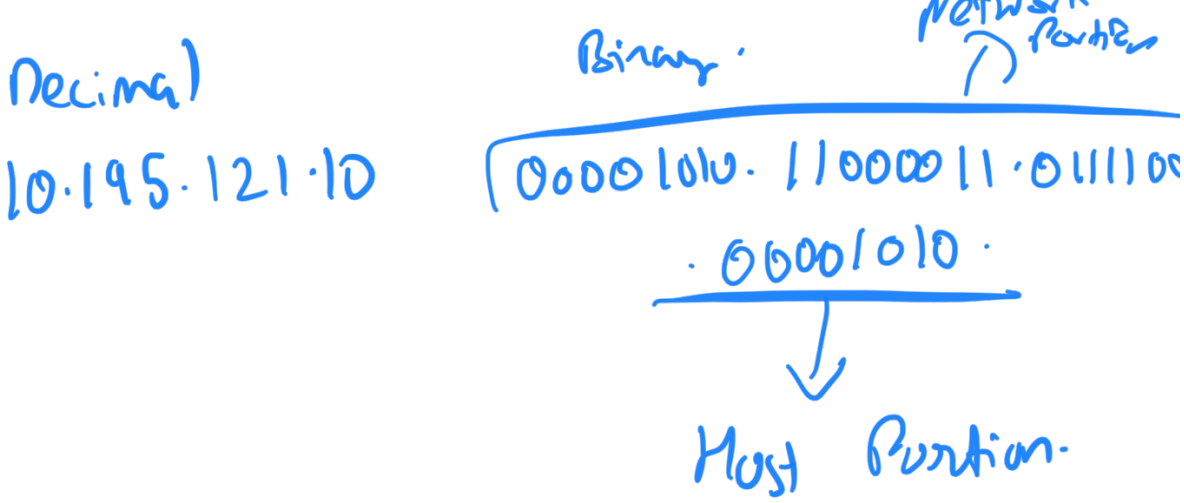
IP address structure & network classes

IP Protocol

IPv4 is a 32-bit address in four octets.

From 0.0.0.0 to 255.255.255.255

IPv4 has 4,294,967,296 possible addresses in its address space.



Network Mask

→ The subnet Mask is an assignment of bits used by a host or router to determine how the network and subnetwork information is partitioned from the host information in a corresponding IP

address.

IPv6 <- 128 bit length.

↳ uses 8 hexadecimal values.

separated by colon.

Addressing schema's.

Unicast → Sends info to one system sending data to intended address.

Broadcast → Sends information to all systems on network.

Multicast → Sends information to a selected group of systems

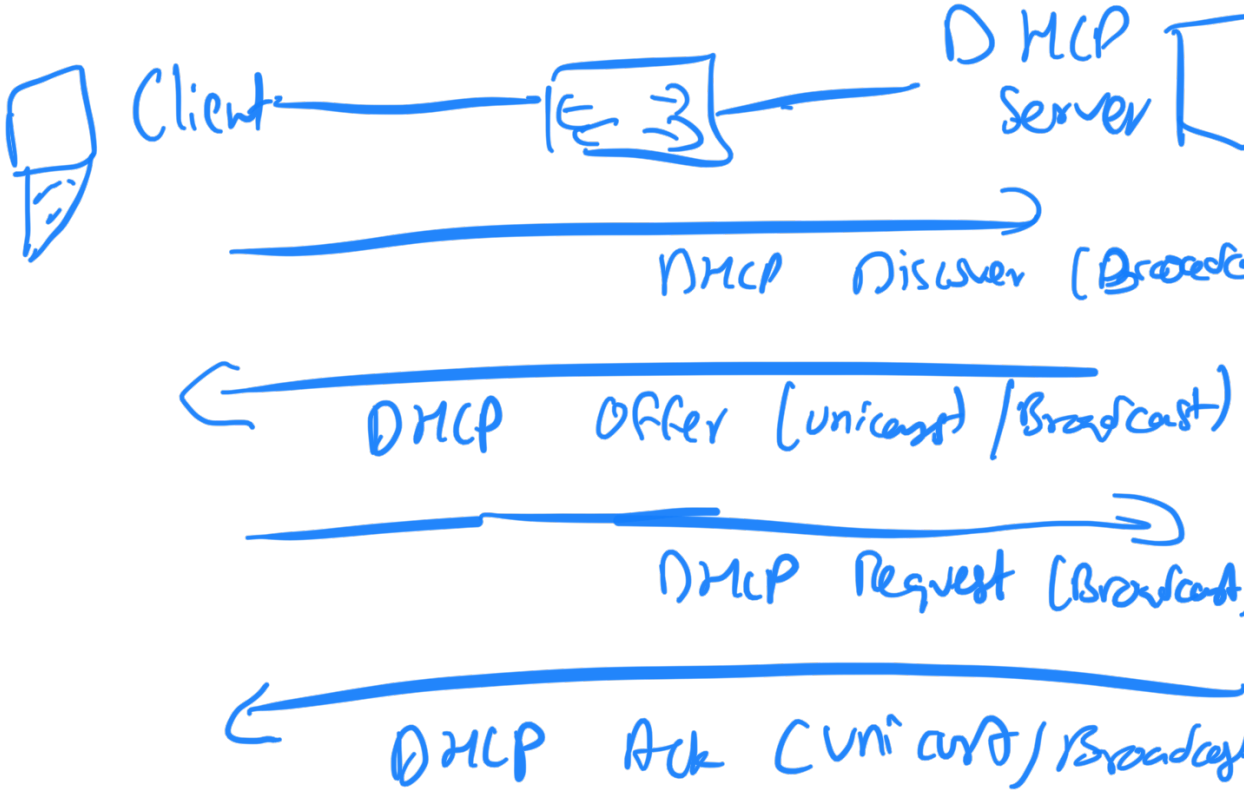
TCP/UDP → Transport Layer Protocol.

TCP/IP layer 5. Application

Layer Overview.

DNS & DHCP.

Dynamic Host Configuration Protocol



Syslog → standard message logging.
Allows for separation of the software that generates messages.

Used for:

- User management
  - → Security Auditing
  - → Analysis, and debugging Messages

Used to convey event notification messages.

Firewall, IDS, IPS...

A next-generation Firewall is part of the third generation of firewall technology.

- → Deep packet inspection
- → IPS
- → TLS/SSL encrypted traffic Inspection, website filtering.