IP types:

Type	Bits	Example
IPv4	32	192.168.15.63
IPv6	128	0912:9LK1:5782:3412:M304:AD03:85N4:2212

CIDR notation:

= Classless Inter-Domain Routing

- Precises the network part of an IPv4 address

CIDR

Example: 192.168.15.63 /16

- Out of 32 bits of this IPv4
  - 16 are used for network
  - 16 are used for hosts

Private IP address range:

10.0.0.0 – 10.255.255.255

172.16.0.0 – 172.31.255.255

192.168.0.0 – 192.168.255.255

OSI model

= Open Systems Interconnection

1) Physical
2) Data Link
3) Network
4) Transport
5) Session
6) Presentation
7) Application

Conceptual model used to describe the communication with 7 layers

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IP claves:

Class	Subnet mark	Note
A	255.0.0.0	Most IP addresses available
B	255.255.0.0	
C	255.255.255.0	Available by default
D	255.255.255.255	
E	Undefined	

Note: the F class doesn't exist

TCP	UDP
- not a datagram protocol	- datagram protocol
- no broadcasting support	- broadcasting support
- slower than UDP	- faster than TCP
- advanced error-checking	- basic/no error checking
- delivery guaranteed	- delivery not guaranteed
- connection oriented (handshake needed)	- no handshake needed
- data sequencing (packages arrive in order)	- no data sequencing

TCP and UDP are 2 main protocols used at transport layer of OSI. (= 2 ways of transferring packages) TCP is slower and more secure. UDP is faster, but less secure and more error-prone.

Domain name system:

- Translates internet domain names and host names into IP addresses

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DHCP

= Dynamic Host Configuration Protocol

- Mechanism that automates IP configuration, IP address, subnet mask, default gateway and DNS information.

- Supports both IPv4 and IPv6

- Uses UDP at transport layer level

Ping

= utility to test the reachability of a host on an IP network.

- Ping uses ICMP echo requests/replies (= Internet Control Message Protocol, used to send error messages/operational information)

- To test your network, you would ping 127.0.0.1 IP address (= local host address)
