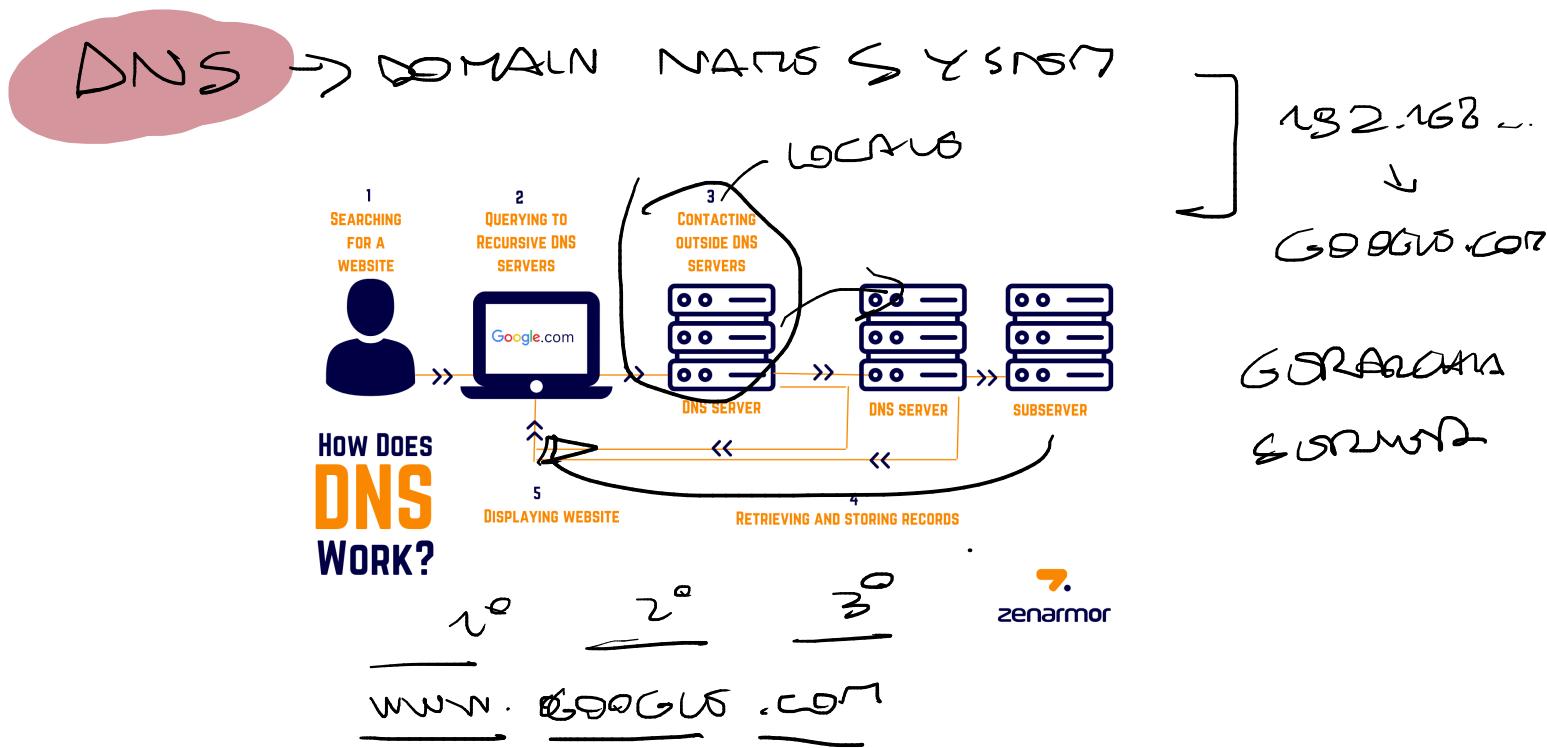
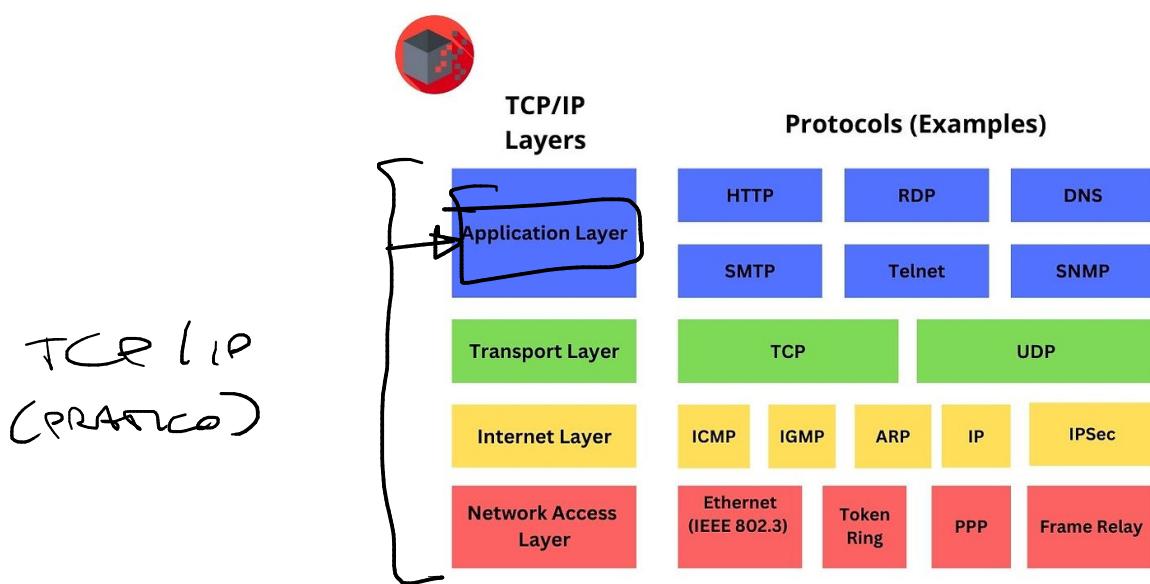
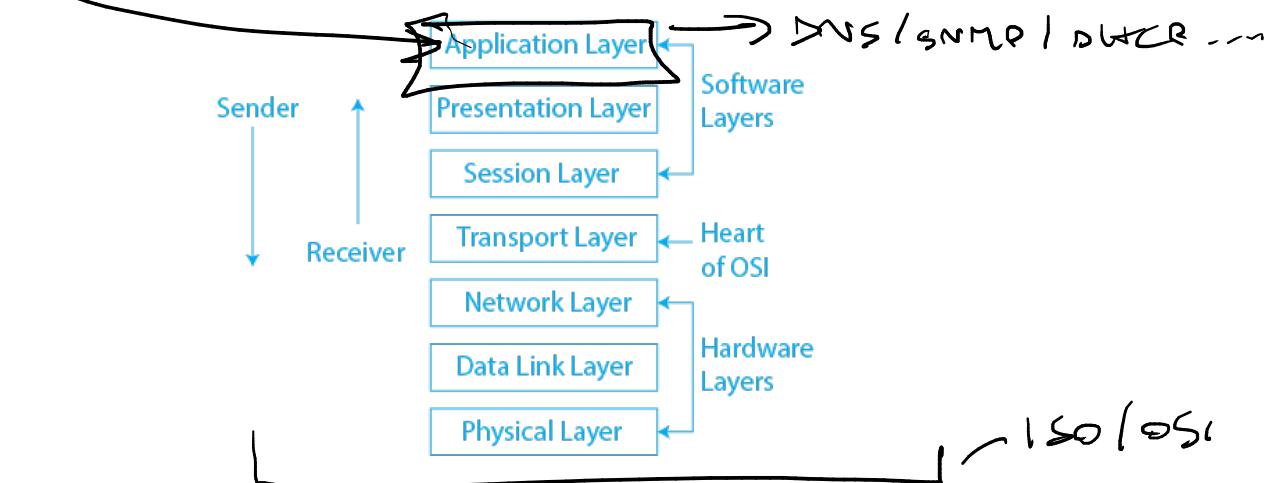


COMPITO SCRITTO in classe di SISTEMI su foglio protocollo sui seguenti argomenti:

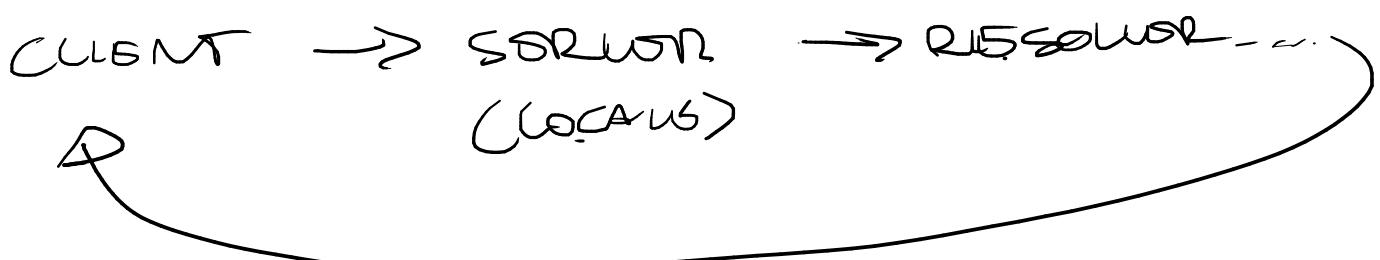
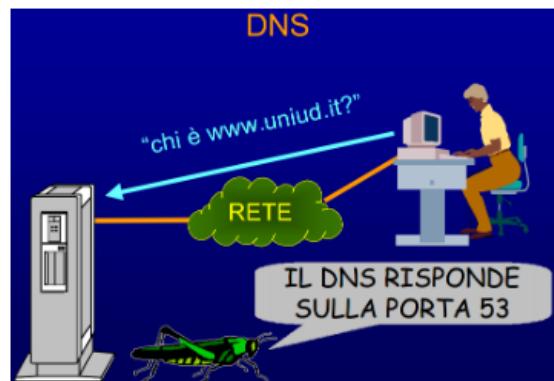
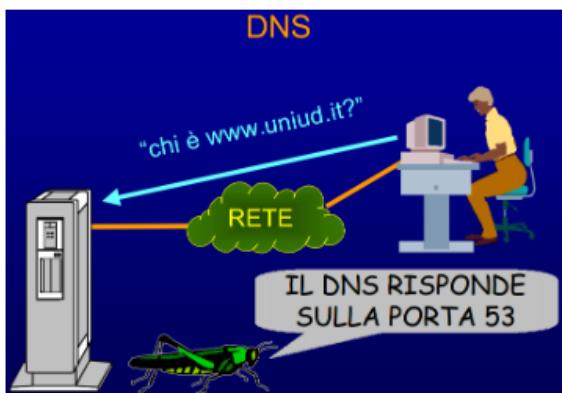
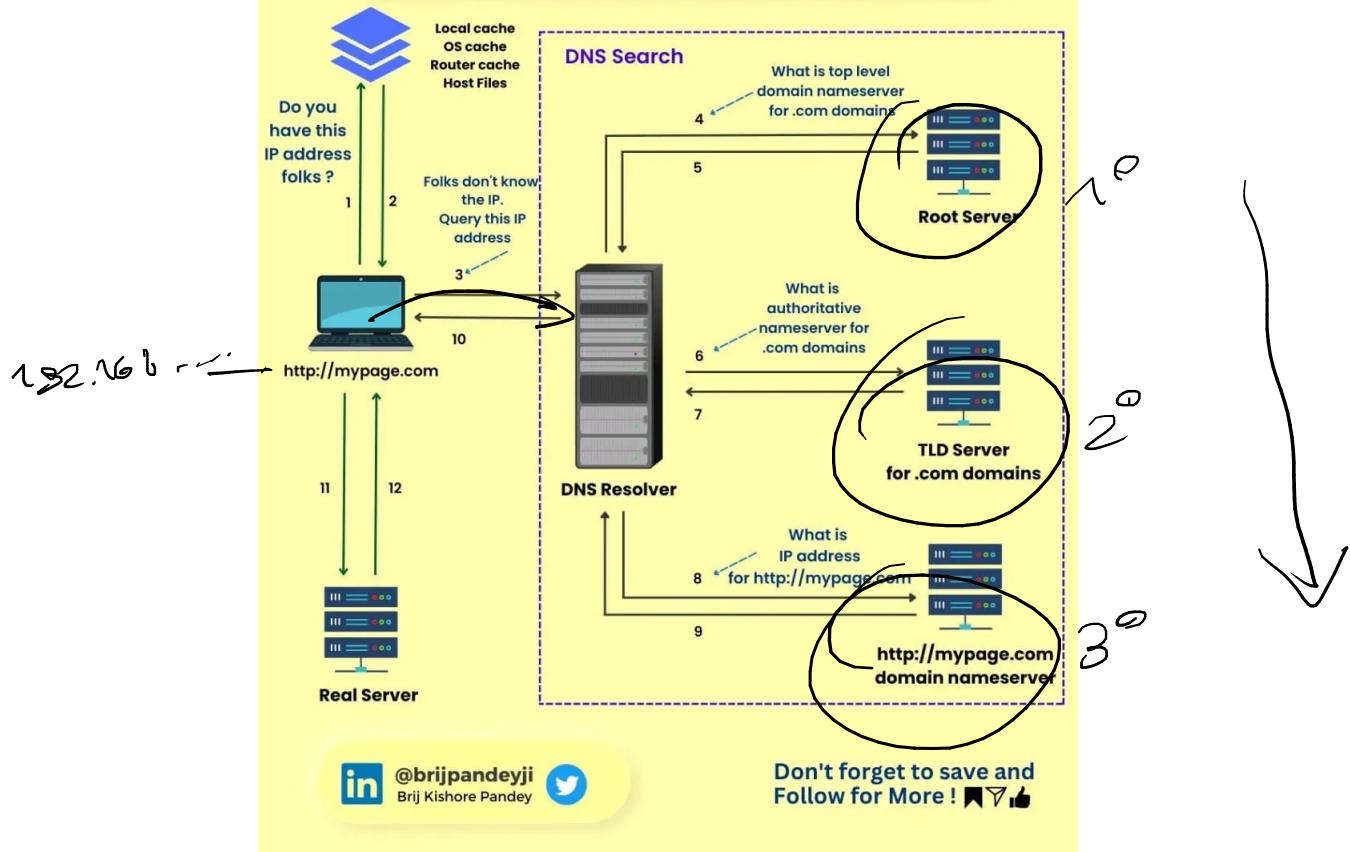
Modello OSI. Livelli applicazioni, livelli dati.

Livello 7 - applicazioni:

protocolli, applicazioni, DNS, SNMP, Posta elettronica, DHCP, FTP, WWW, HTTP.



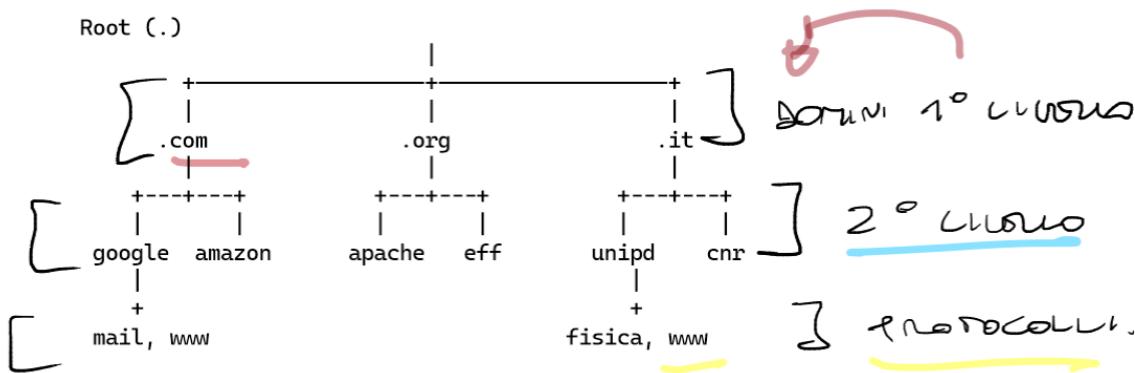
# HOW DNS WORKS



Lo spazio dei nomi DNS è uno spazio gerarchico.

host.subdomain3.subdomain2.subdomain1.topleveldomain

PC / www-Google-.com  
 3° 2° 1°



Un esempio di **resource record** (relativo a un host) è:

$\{ \text{fisica.unipd.it} \ 86400 \ \text{IN} \ \text{A} \ 151.100.17.110 \} \rightarrow \text{IND. corrispondenza}$

dove:

fisica.unipd.it

86400

IN

A

151.100.17.110

**domain\_name:**

**time\_to\_live:**

**class:**

**type:**

**value:**

nome simbolico.

la quantità di tempo (in secondi) trascorsa la quale il record viene tolto dalla cache.

classe del record (Internet in questo caso).

tipo del record (Address in questo caso).

indirizzo IP numerico.

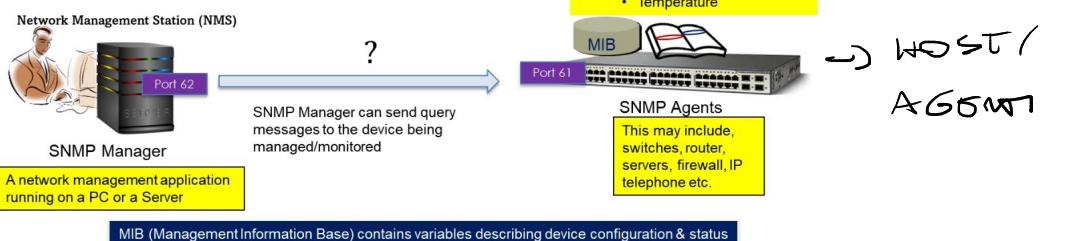
- **SNMP**  $\rightarrow$  SIMPLE NETWORK MANAGEMENT protocol

## SNMP Simple Network Management Protocol

An application layer protocol used for management and monitoring of devices on network

SNMP is used to monitor network performance and to troubleshoot issues

SNMP provides a framework consisting of the following components



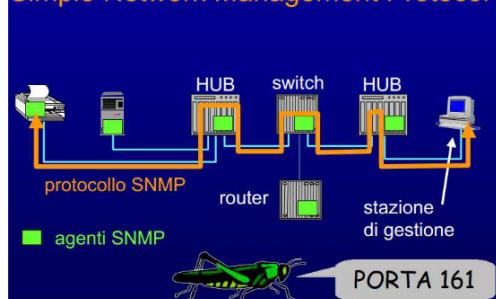
componenti

- AGENTI  $\rightarrow$  INSTALLATI SU HOST DA GESTIRE  
MANAGER  $\rightarrow$  CONTROLLANO GLI AGENTI

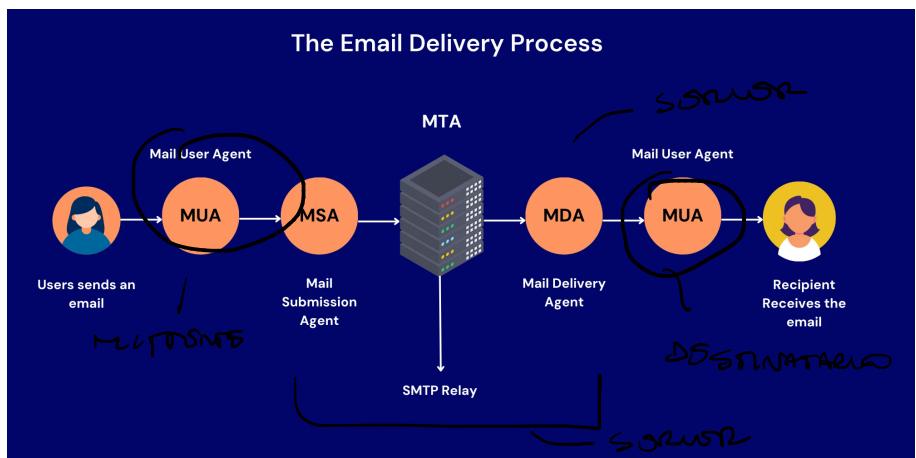
### SNMP Simple Network Management Protocol

- Consente la gestione di nodi della rete attraverso la rete stessa
- Consente attività diverse
  - configurazione di apparecchiature
  - statistiche sul traffico
  - segnalazione di guasti

### SNMP Simple Network Management Protocol

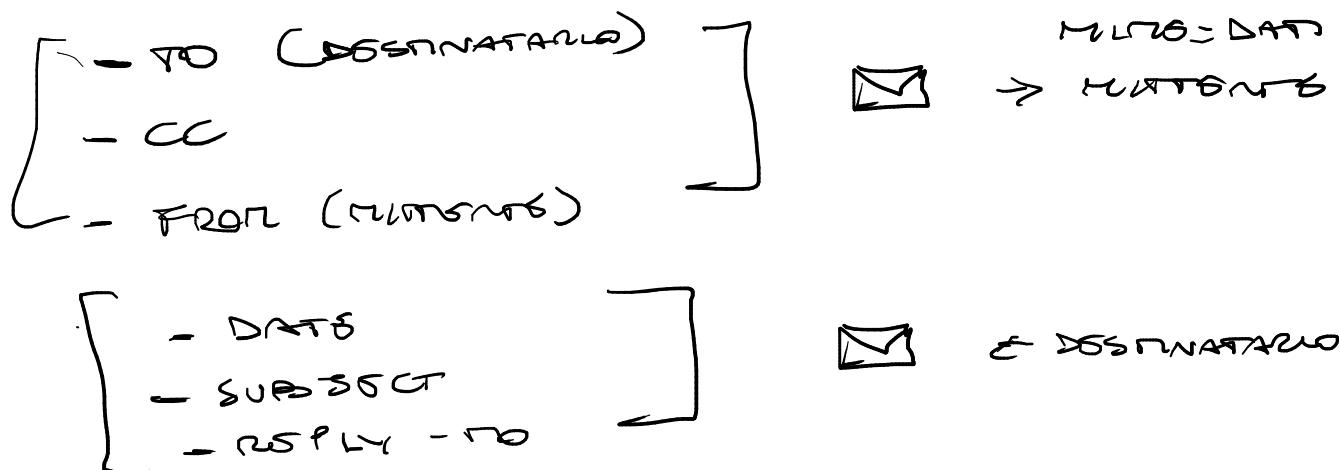


POSTA ELETTRONICA → MA = MAIL AGENT



- MAIL USER AGENT = USUARIALE POSTA (OUTLOOK)
- MAIL TRANSFER AGENT = SERVER INTRANET
- MAIL DELIVERY AGENT = SERVER FINALE

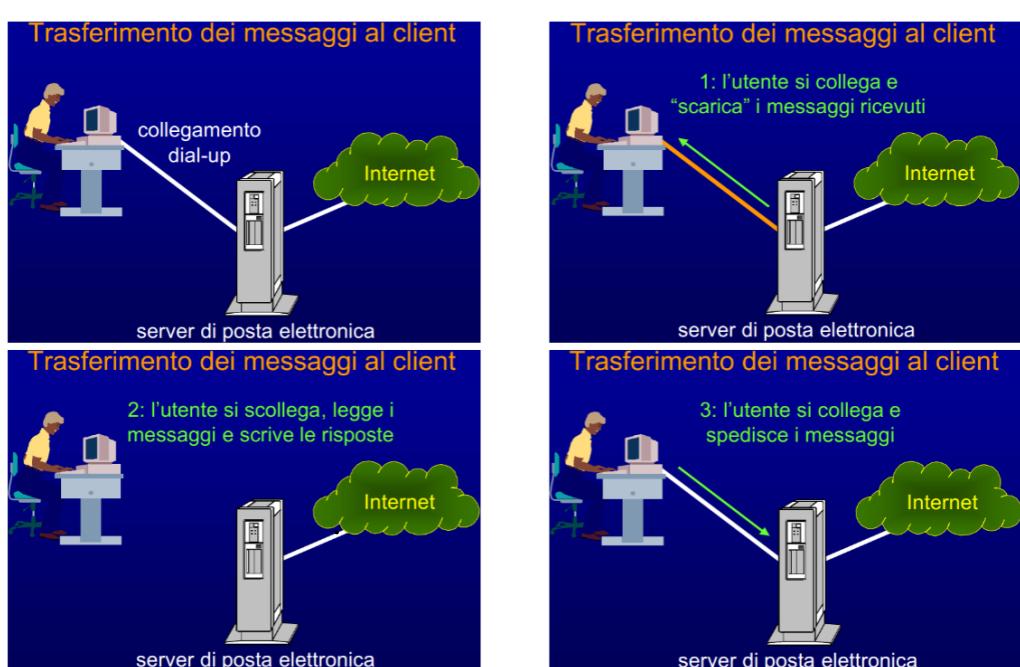
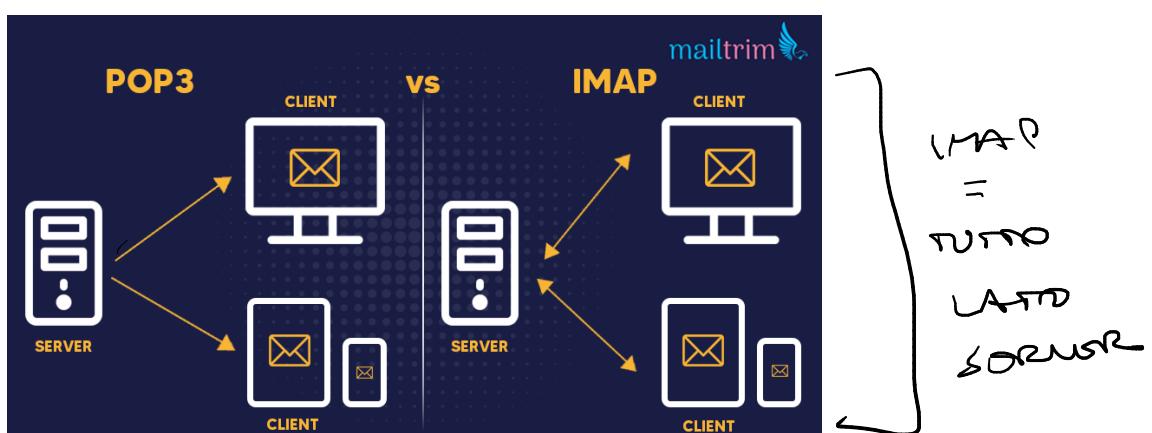
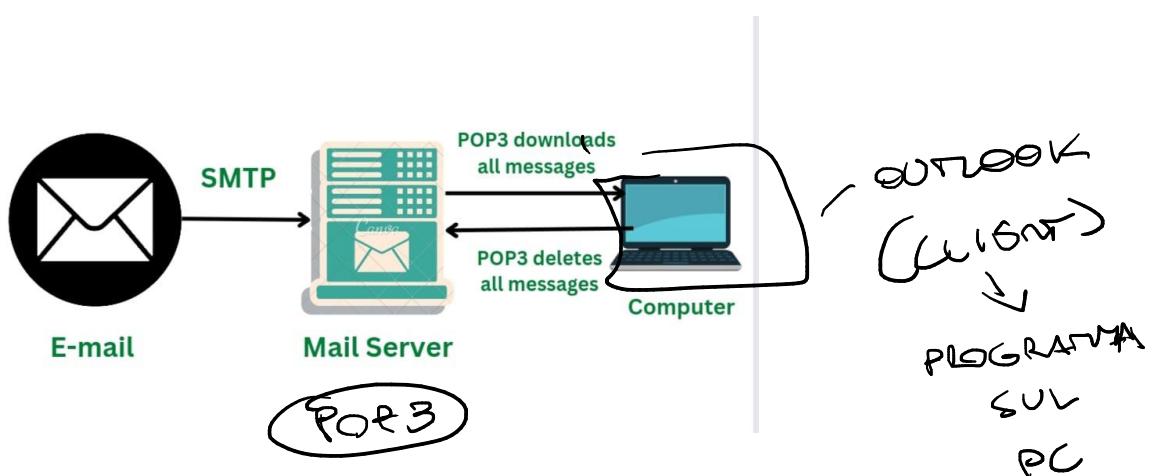
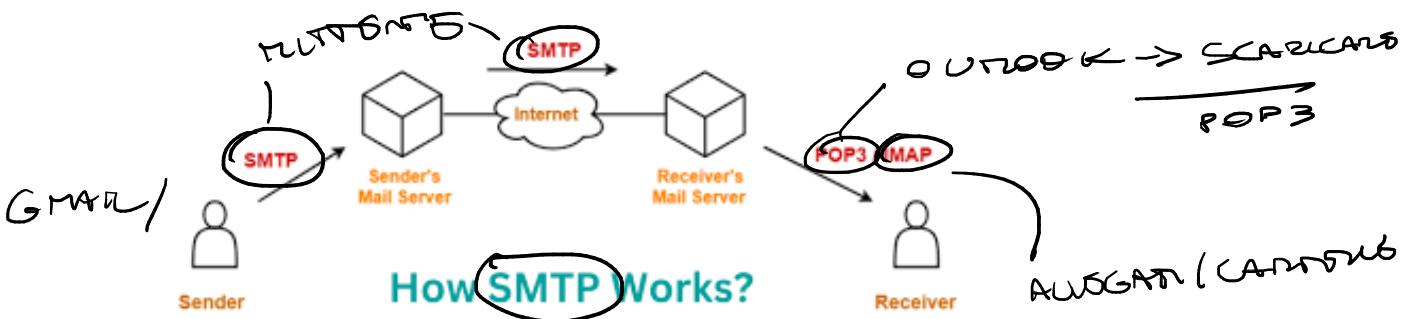
POSTA ELETTRONICA → STRUTTURA STANDARD



NOME @ PROVIDER → MARIO @ GMAIL.COM  
LIGI @ LIBERO.IT

3 PROTOCOLLI MAIL

- SMTP = IN SEND (LOCAL)
- POP / 3 = SCARICA LA POSTA SUL SERVER (LOCAL)
- IMAP = ALLEGATI DINAMICI / CARRELLO COTAS... (SERVER)



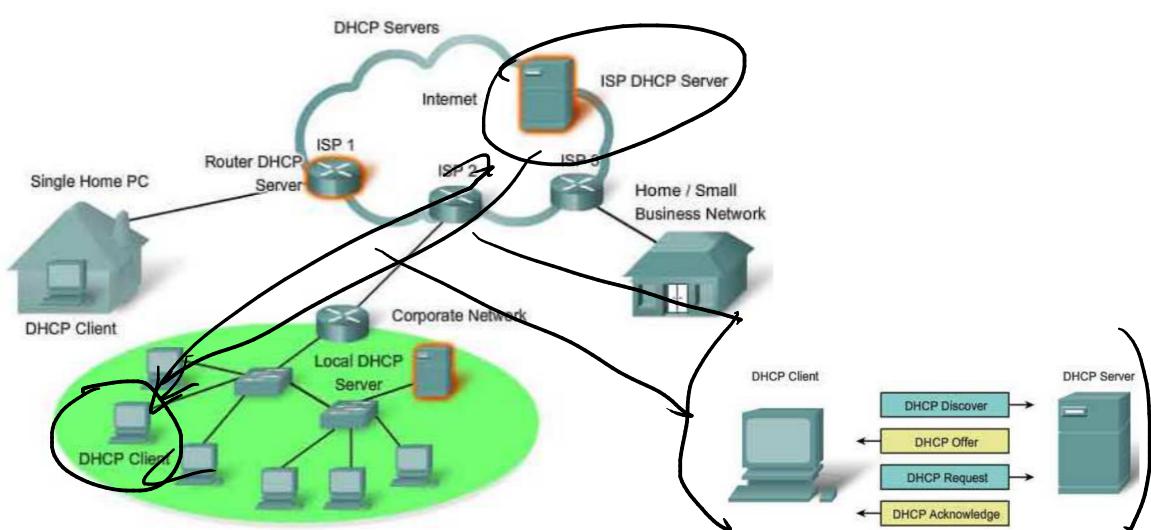
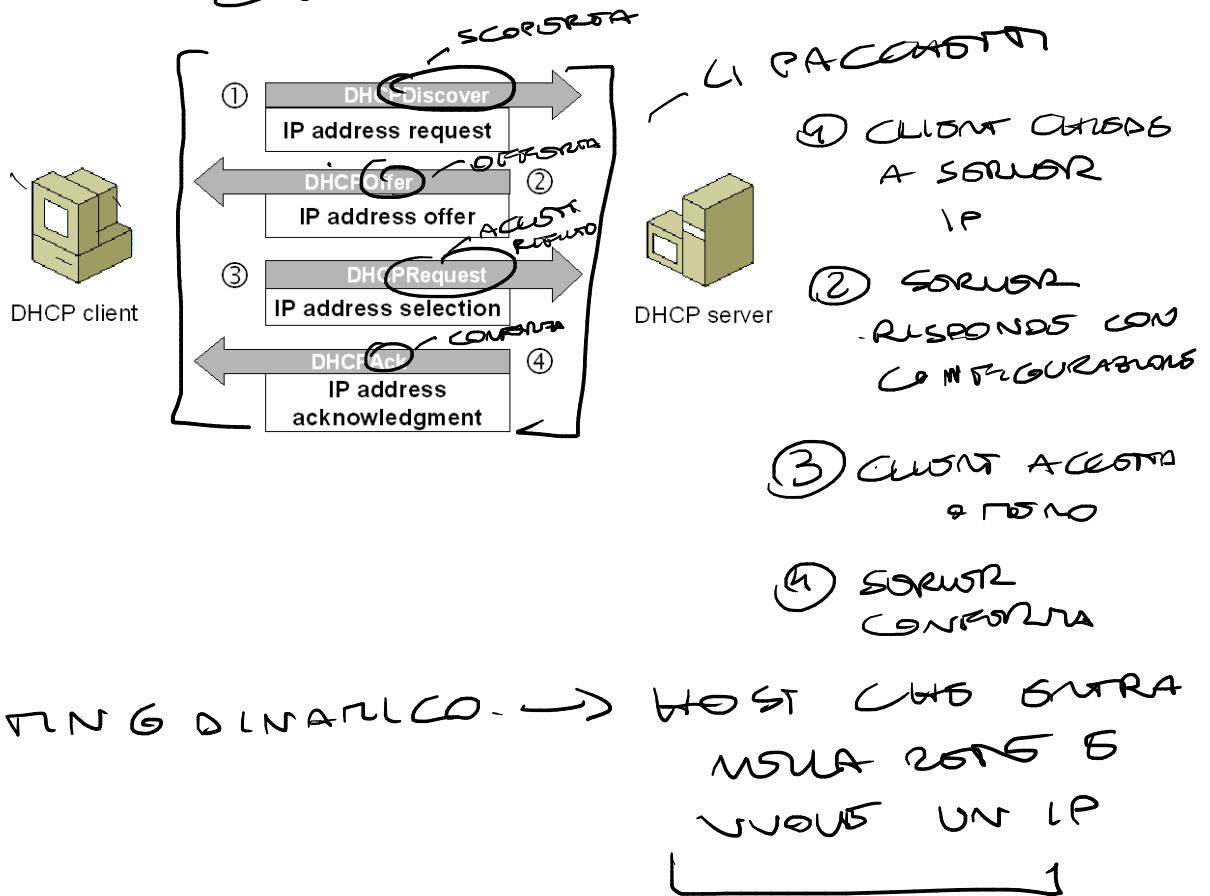
D G N I  
C O S A  
C H E S S A  
D A T O

DNS → MX = MAIL SERVER FOR MAIL

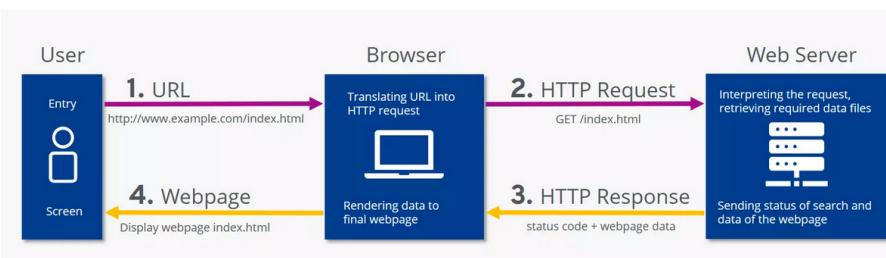
EXCHANGES (MAIL)

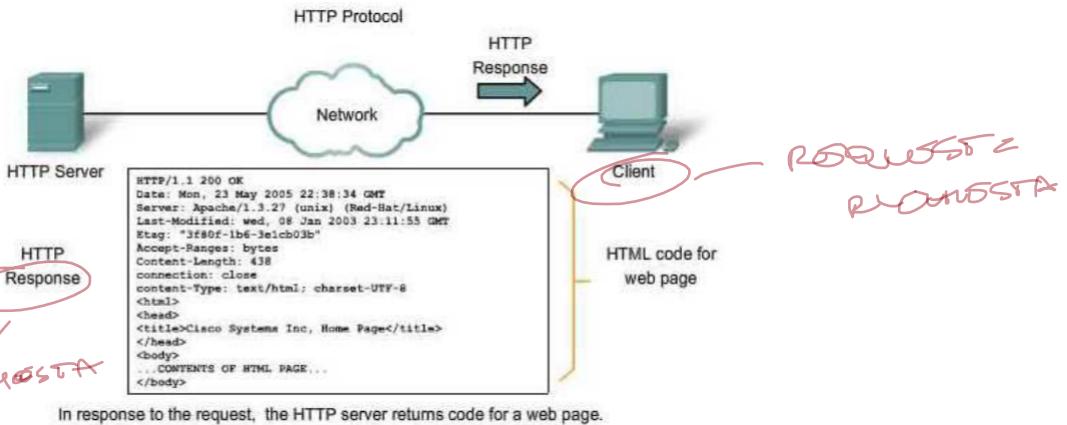
DHCP

→ DYNAMIC HOST  
CONFIGURATION PROTOCOL



HTTP → HYPERTEXT TRANSFER PROTOCOL  
LINK





Differenze tra...

**GET**

Indicato per pochi parametri

Solo parametri testuali

Possibilità di inserire un URL con parametri opportuni all'interno di una pagina HTML

es.

**POST**

Indicato per grandi quantità di dati

Dati in qualsiasi formato (testi, immagini, video)

Solo in risposta ad una form

HTTP / HTTPS (S)  
nesso in chiaro sicura  
→ GET = RICHIESTA  
→ POST = MANDARE DATI CRIPTATI  
→ PUT = MODIFICA

...<A HREF="http://www.altavista.com/cgi-bin/search?query=complexity>Ricerca Altavista sulla complessità</A> ...

URL(I) = IDENTIFICATION

→ URL  
LOCATOR

WWW = WORLD WIDE WEB  
LINK  
OVERLOAD

FTP = FILE TRANSFER PROTOCOL  
→ TRASFERIMENTO FILE



CLIENT → PRIMA CONNESSIONE = PORTA 21 (WRITING)

SERVIZIO → SECONDA CONNESSIONE = PORTA 20 (TRASFERIMENTO)

