

Link layer

Lecture 2

“Network” in inter-networking

- From IP perspective - all link layer
- 2 types of link layer
 - Point to point
 - Shared medium

Frame: link layer packet

- Link layer address
- Network layer protocol identifier
- Data
- Frame check sequence (FCS)

Shared medium

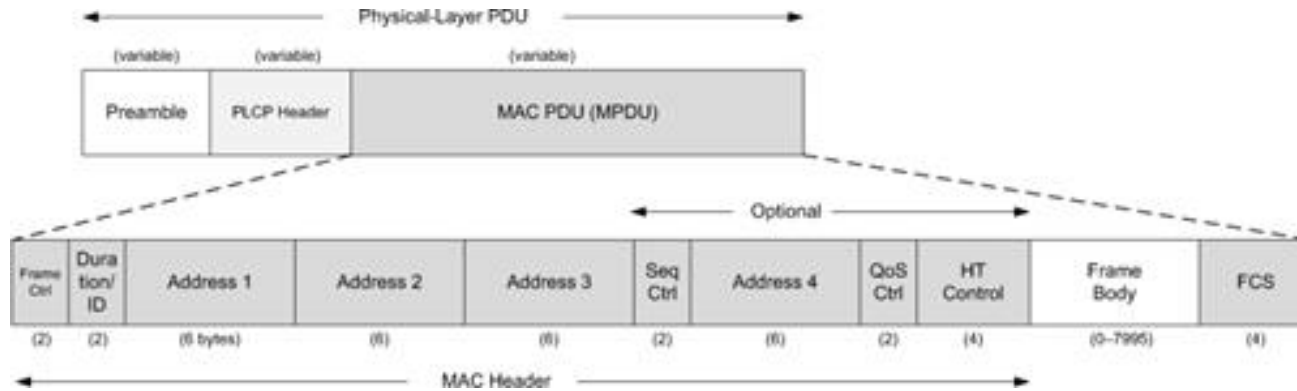
- Ethernet
- Wi-Fi

Point to point

- Point-to-Point Protocol (PPP)
- For serial links

Wi-Fi

- IEEE 802.11

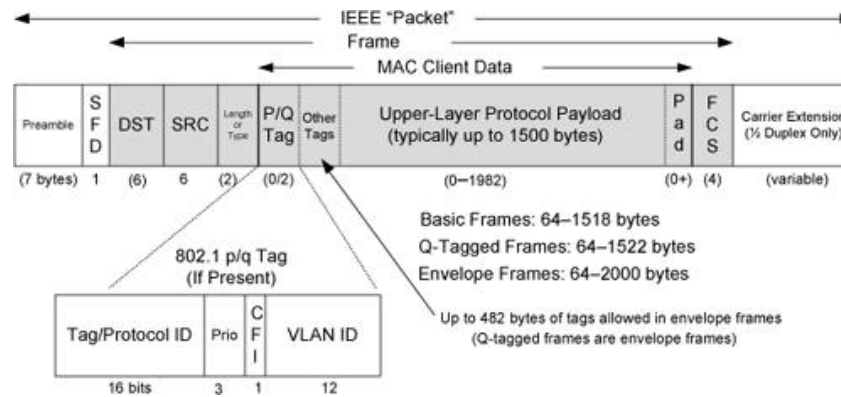


출처:

"<http://www.technicalhowto.com/Networking/tcpip/link-layer.html>"

Ethernet

- Slightly different from IEEE 802.3



출처:

"<http://www.technicalhowto.com/Networking/tcpip/link-layer.html>"

Interface

- Link layer
 - Network Interface Card (NIC)
 - Device driver in kernel
- From IP perspective – represented as “Interface”

MTU

- Maximum transmission unit: size of "Data" field in frame
- Technology-specific
 - E.g. Ethernet → 1500B
- Determines IP data gram size on the link
- Path MTU = $\min(\text{MTUs})$ of a given path

To be an IP link

- Encapsulation
- ARP
 - For shared medium only
- Management Information Base (MIB)

Loopback

- Special interface
 - Logical
- Local inter-process communication (IPC)

Tunneling

- GRE
- PPTP (Microsoft proprietary)
- L2TP