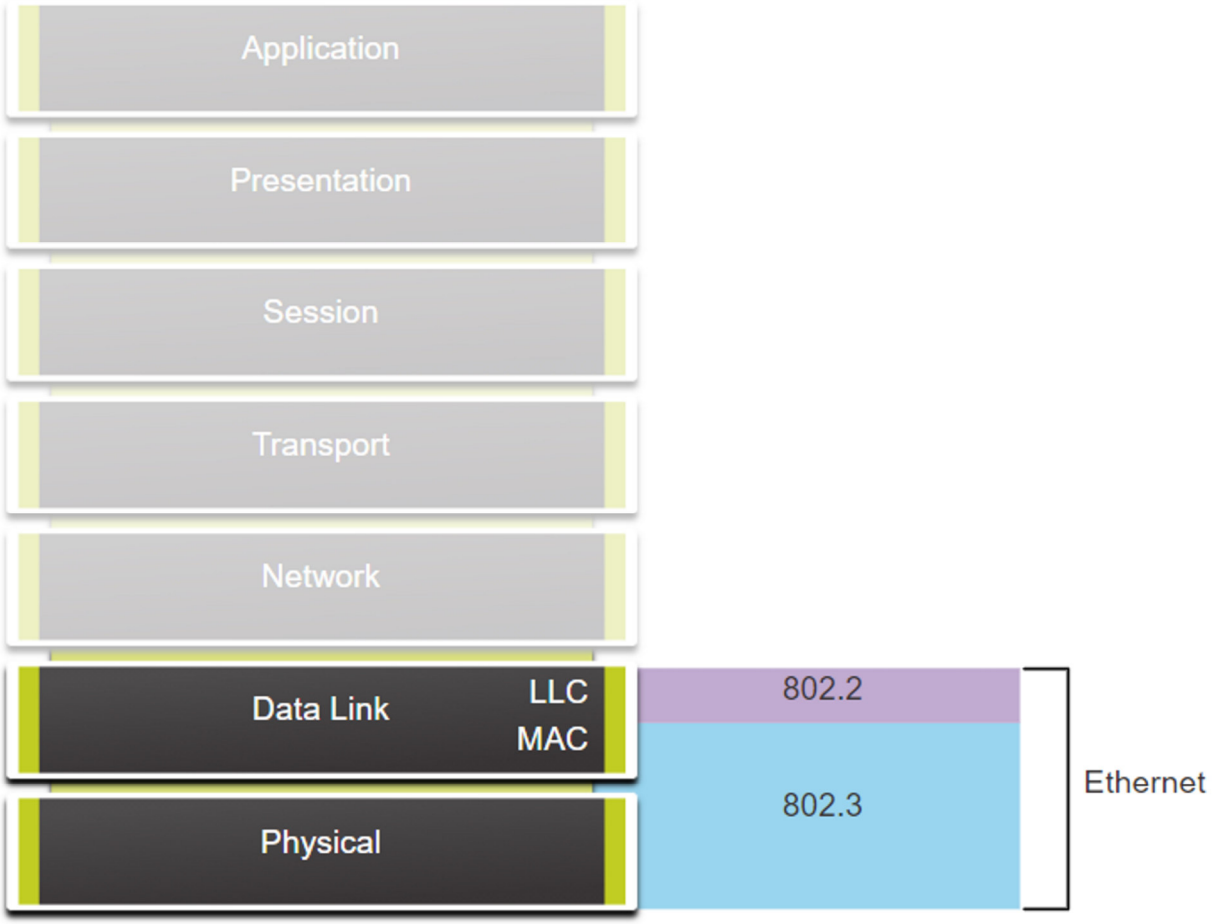
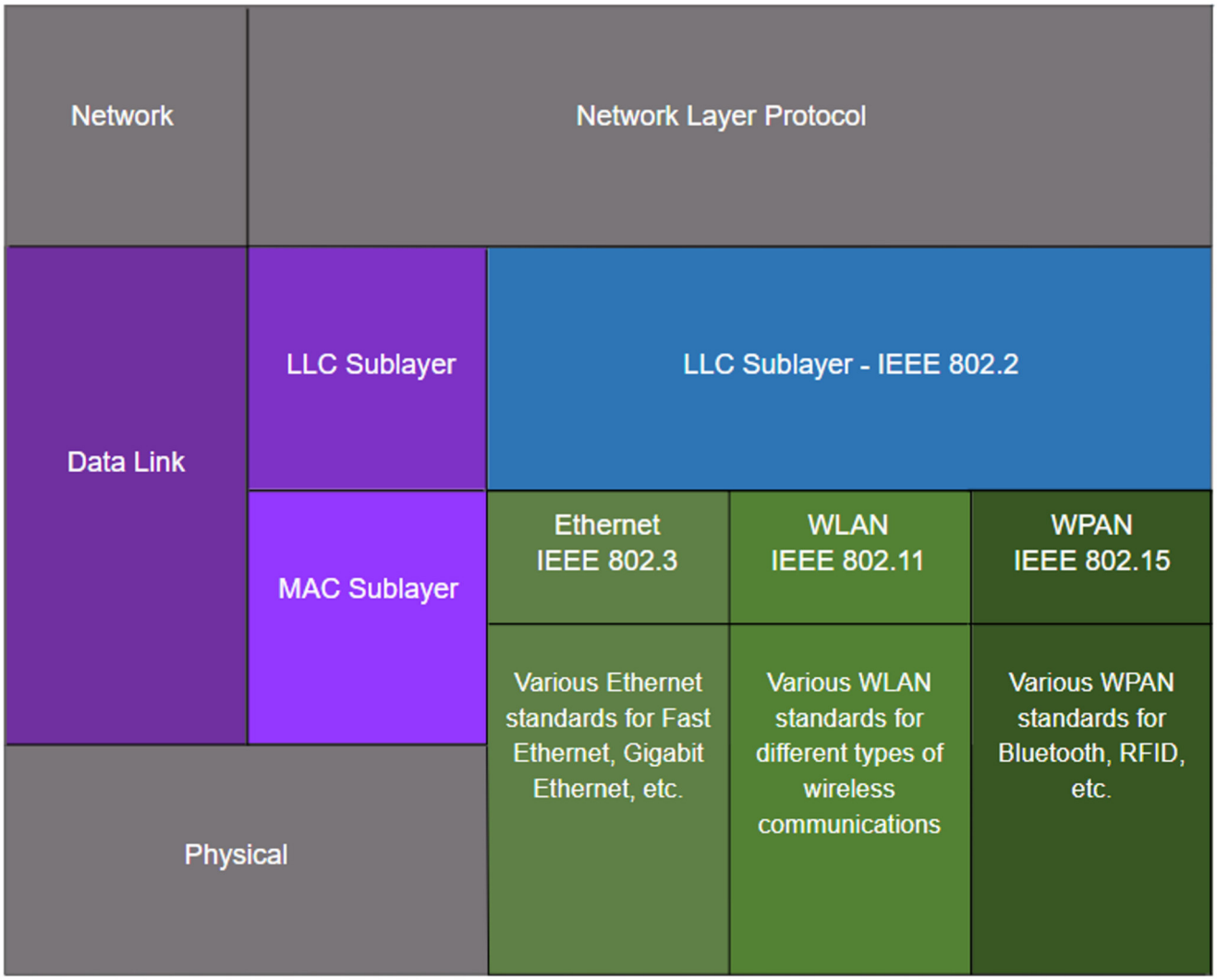
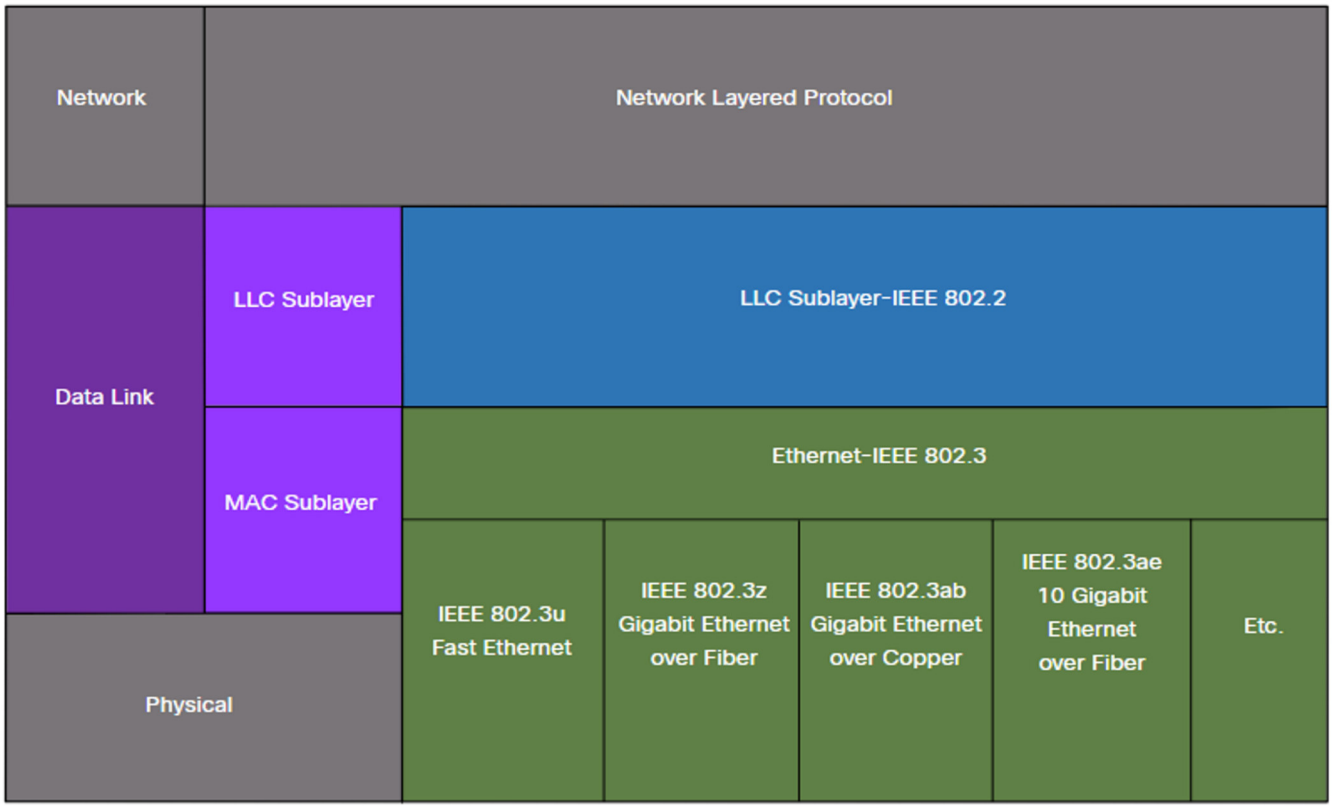
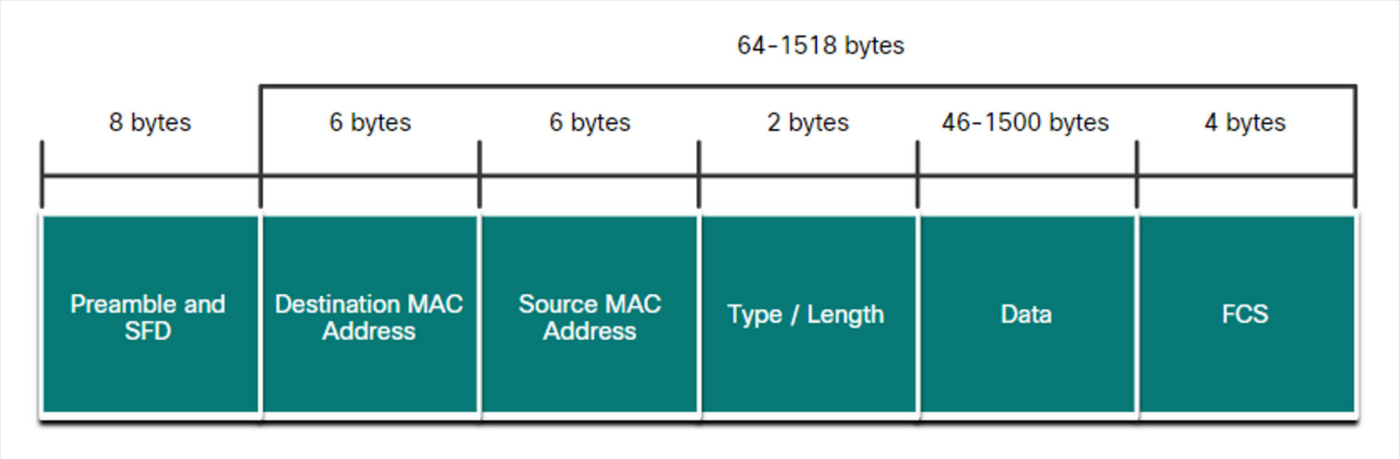
Frame


Application
Presentation
Session
Transport
Network
Data Link
LLC
MAC
Physical
802.2
802.3
Ethernet


Network
Network Layer Protocol
Data Link
LLC Sublayer
LLC Sublayer - IEEE 802.2
MAC Sublayer
Ethernet
IEEE 802.3
WLAN
IEEE 802.11
WPAN
IEEE 802.15
Various Ethernet standards for Fast Ethernet, Gigabit Ethernet, etc.
Various WLAN standards for different types of wireless communications
Various WPAN standards for Bluetooth, RFID, etc.
Physical


Network
Network Layered Protocol
Data Link
LLC Sublayer
LLC Sublayer-IEEE 802.2
MAC Sublayer
Ethernet-IEEE 802.3
IEEE 802.3u Fast Ethernet
IEEE 802.3z Gigabit Ethernet over Fiber
IEEE 802.3ab Gigabit Ethernet over Copper
IEEE 802.3ae 10 Gigabit Ethernet over Fiber
Etc.
Physical

Ethernet Frame Fields



Ethernet Frame Fields Detail

Field	Description
Preamble and Start Frame Delimiter Fields	The Preamble (7 bytes) and Start Frame Delimiter (SFD), also called the Start of Frame (1 byte), fields are used for synchronization between the sending and receiving devices. These first eight bytes of the frame are used to get the attention of the receiving nodes. Essentially, the first few bytes tell the receivers to get ready to receive a new frame.
Destination MAC Address Field	This 6-byte field is the identifier for the intended recipient. As you will recall, this address is used by Layer 2 to assist devices in determining if a frame is addressed to them. The address in the frame is compared to the MAC address in the device. If there is a match, the device accepts the frame. Can be a unicast, multicast or broadcast address.
Source MAC Address Field	This 6-byte field identifies the originating NIC or interface of the frame.
Type / Length	This 2-byte field identifies the upper layer protocol encapsulated in the Ethernet frame. Common values are, in hexadecimal, 0x800 for IPv4, 0x86DD for IPv6 and 0x806 for ARP. **Note**: You may also see this field referred to as EtherType, Type, or Length.
Data Field	This field (46 - 1500 bytes) contains the encapsulated data from a higher layer, which is a generic Layer 3 PDU, or more commonly, an IPv4 packet. All frames must be at least 64 bytes long. If a small packet is encapsulated, additional bits called a pad are used to increase the size of the frame to this minimum size.
Frame Check Sequence Field	The Frame Check Sequence (FCS) field (4 bytes) is used to detect errors in a frame. It uses a cyclic redundancy check (CRC). The sending device includes the results of a CRC in the FCS field of the frame. The receiving device receives the frame and generates a CRC to look for errors. If the calculations match, no error occurred. Calculations that do not match are an indication that the data has changed; therefore, the frame is dropped. A change in the data could be the result of a disruption of the electrical signals that represent the bits.

Table caption

Aus <https://contenthub.netacad.com/itn/7.1.4>