

THE SEVEN LAYERS OF THE OSI MODEL

LAYER 7	FUNCTION
APPLICATION PDU	The application layer is the interface to the user, file transfers, email and application layer protocols work at this layer, it is also the first part of packet creation. At this point and down through the next two layers the data is known as a <i>PDU</i> or <i>protocol data unit</i> . PDU – PROTOCOL DATA UNIT

LAYER 6	FUNCTION
PRESENTATION PDU	The presentation layer is responsible for three things, data presentation, data compression and data encryption. Data presentation is achieved by converting ASCII code (<i>American Standard Code for Information Interchange</i>) into EBCDIC (<i>Extended Binary Coded Decimal Interchange Code</i>). This way almost any computer or system will be able to read and understand the code. This layer also compresses, encrypts and formats the data. Presentation, compression and encryption.

ASCII – AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE

EBCDIC – EXTENDED BINARY CODED DECIMAL INTERCHANGE CODE

LAYER 5	FUNCTION
SESSION PDU	As it implies, it has a degree of control over a network session, it establishes, maintains and also terminates communication between computers or devices on network. This layer also takes care of synchronising and regulating the flow of data, it controls the transmission of data.

LAYER 2	FUNCTION
DATA LINK FRAMES	The data link layer is responsible for the formation and transmission of data, it formats the data into frames to be sent to the next layer. It synchronises and controls the flow of data, it provides error control and also prepares the data to be placed on the wire. The data link layer use two sublayers, the LLC (<i>Logical Link Control</i>) and the MAC (<i>Media Access Control</i> .)
LLC (802.2) FRAMES	Logical Link Control (LLC) is the top part of the data link layer and talks directly to the network layer. It provides error control and flow control and identifies the protocols are to be used. It provides SAPs (Service Access Points) that operate between the MAC sublayer and the network layer.
MAC (802.1) FRAMES	Media Access Control (MAC) defines how frames are placed on the wire or transmission media. Being the lower part of the data link layer, it resides below the LLC and talks directly to the physical layer, it is basically responsible for putting data on the wire and is responsible for the physical MAC addresses of each NIC.

LAYER 1	FUNCTION
PHYSICAL BITS	Defines the media by which signals (ones and zeros) or bits can travel, it may be copper wire where they travel as electrical pulses, or fibre-optic (glass fibre- light pulses) or radio waves for wireless transmissions. This layer defines the topology of a network including all its cables and connectors, repeaters and hubs. This includes modems and NIC's and is where digital signals become analog and vice versa. It is this layer that is responsible for placing the bits on the wire, it communicates directly with the MAC sublayer of the data link layer where frames are converted into bits ready for transmission.

