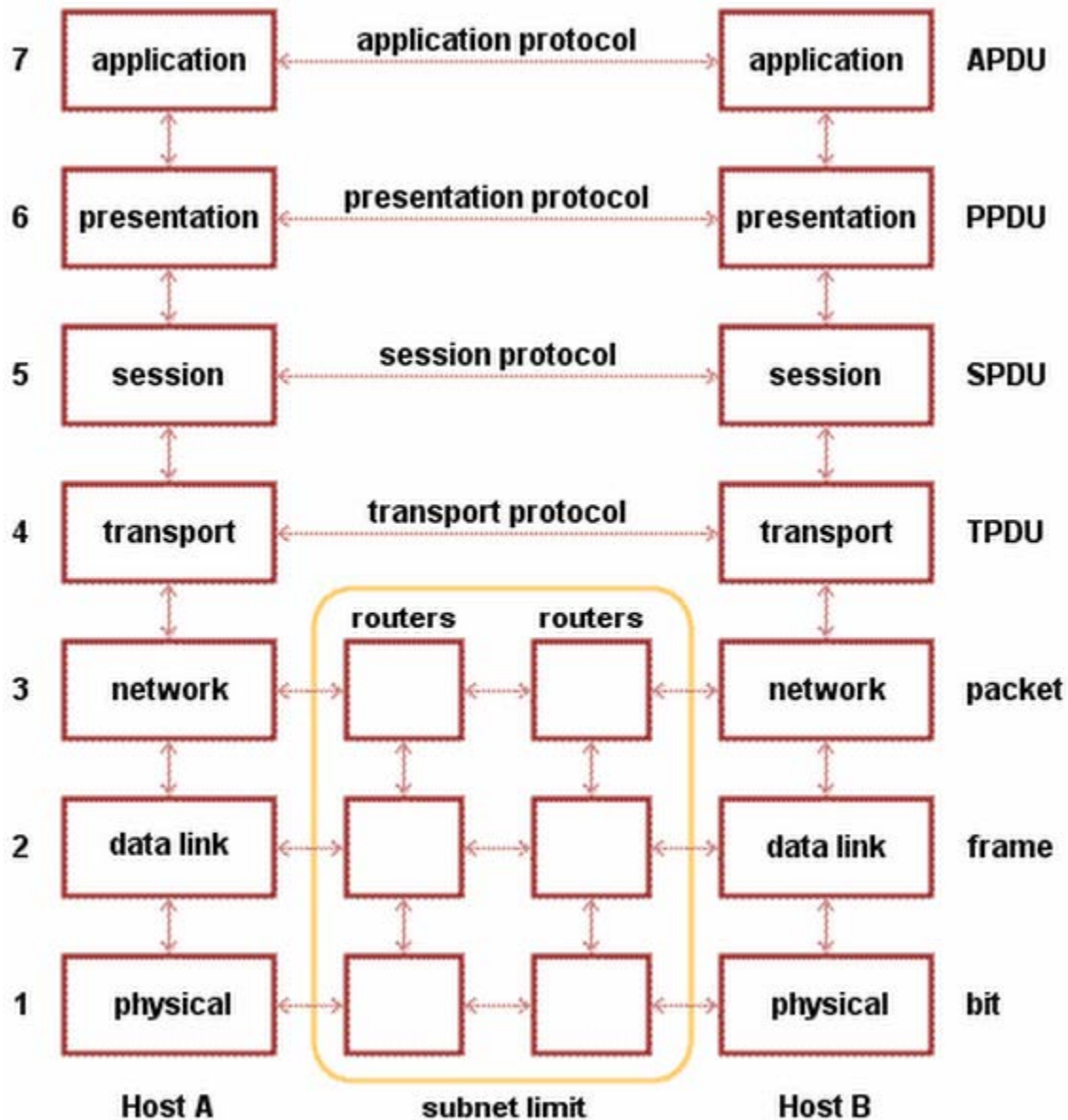


OSI MODEL



OSI model was designed by the International Organization for Standardization to provide a framework on which to build a suite of open system protocols. The vision was that this set of protocol would be used to develop an international network that would not be dependent on proprietary systems. It is used for data network design, operation specification, and troubleshooting. Open Systems Interconnection (OSI) is a standard reference model for communication between two end users in a network. The model is

used in developing products and understanding networks. It has seven layers which are as follows:-

7. Application Layer

6. Presentation Layer

5. Session Layer

4. Transport Layer

3. Network Layer

2. Data Link Layer

1. Physical Layer

OSI Model

7. Application layer:- It is the top most layer of OSI model. It provides the interface to user processes for communication and data transfer in a network. It provides standardized services such as virtual terminal, file and job transfer operations.

Protocols:- It use many protocol few of which are as follows:-

- ☐ **Domain name service protocol (DNS):-** DNS is used to resolve internet names to IP addresses.
- ☐ **Hypertext transfer protocol (HTTP):-** HTTP is used to transfer files that make up the web pages of the www.
- ☐ **Simple mail transfer protocol (SMTP):-** SMTP is used for the transfer of email messages and attachment.
- ☐ **File transfer protocol (FTP):-** FTP is used for interactive file transfer between systems.

6. Presentation Layer:- This layer, usually part of an operating system, that converts incoming and outgoing data from one presentation format to another (for example, from a text stream into a popup window with the newly arrived text). It is sometimes called the syntax layer. Key functions of the presentation layer are as follows:

1. Masks the differences of data formats between dissimilar systems.
2. Specifies architecture-independent data transfer format.
3. Encodes and decodes data; Encrypts and decrypts data; Compresses and decompresses data

5. Session Layer:- This layer sets up, coordinates, and terminates conversations, exchanges, and dialogs between the applications at each end. It deals with session and connection coordination. Key functions of the session layer are as follows:

1. Controls establishment and termination of logic links between users.
2. Manages user sessions and dialogues.
3. Reports upper layer errors

4. Transport Layer:- This layer manages the end-to-end control (for example, determining whether all packets have arrived) and error-checking. It ensures complete data transfer. Key functions of the transport layer are as follows:

1. Manages end-to-end message delivery in network.
2. Provides reliable and sequential packet delivery through error recovery and flow control mechanisms.
3. Provides connectionless oriented packet delivery.

3. Network Layer:- This layer handles the routing of the data (sending it in the right direction to the right destination on outgoing transmissions and receiving incoming transmissions at the packet level). The network layer does routing and forwarding. Its key functions are-

1. Determines how data are transferred between network devices
2. Routes packets according to unique network device addresses.
3. Provides flow and congestion control to prevent network resource depletion.

2. Data link layer: - This layer provides synchronization for the physical level and does bit-stuffing for strings of 1's in excess of 5. It furnishes transmission protocol knowledge and management. Key functions of Data Link Layer are-

1. Defines procedures for operating the communication links.
2. Frames packets.
3. Detects and corrects packets transmit errors.

1. Physical Layer:- This layer conveys the bit stream through the network at the electrical and mechanical level. It provides the hardware means of sending and receiving data on a carrier. Key functions of Physical layer are:

1. Defines physical means of sending data over network devices.
2. Interfaces between network medium and devices
3. Defines optical, electrical and mechanical characteristics

Source : <http://advancedinternettechnologies.wordpress.com/osi-tcpip/>