

# Computer Network

[https://www.youtube.com/watch?v=vv4y\\_uOneC0](https://www.youtube.com/watch?v=vv4y_uOneC0)

## APPLICATION LAYER

The application layer is used by **end-user software such** as web browsers and email clients. It provides protocols that allow software to send and receive information and present meaningful data to users.

protocols:

1. Telnet
2. FTP
3. TFTP
4. NFS: It stands for a network file system. It allows remote hosts to mount file systems over a network and interact with those file systems as though they are mounted locally.
5. SMTP
6. LPD: It stands for Line Printer Daemon. It is designed for printer sharing,
7. SNMP: It stands for Simple Network Management Protocol. It gathers data by polling the devices on the network from a management station at fixed or random intervals, requiring them to disclose certain information
8. DHCP: It stands for Dynamic Host Configuration Protocol (DHCP). It gives IP addresses to hosts.

## Presentation Layer

The presentation layer is **responsible for presenting the data to the application layer**. This may include some form of format or character translation.

This guarantees a common representation of the data while in transi

The layer is also responsible for data encryption/decryption and for compression and decompression.

SSL protocol

- Multipurpose Internet Mail Extensions
- File Transfer Protocol
- Network News Transfer Protocol
- Apple Filing Protocol (AFP)
- Independent Computing Architecture (ICA), the Citrix system core protocol
- Lightweight Presentation Protocol (LPP)
- NetWare Core Protocol (NCP)
- Network Data Representation (NDR)
- Telnet (a remote terminal access protocol)
- Tox Protocol
- eXternal Data Representation (XDR)
- 25 Packet Assembler/Disassembler Protocol (PAD)

## SESSION LAYER

The Session Layer is the 5th layer in the Open System Interconnection (OSI) model. This layer allows users on different machines to establish active communications sessions between them. It is responsible for establishing, maintaining, synchronizing, terminating sessions between end-user applications. In Session Layer, streams of data are received and further marked, which is then resynchronized properly, so that the ends of the messages are not cut initially and further data loss is avoided. This layer basically establishes a connection between the session entities. This layer handles and manipulates data which it receives from the Session Layer as well as from the Presentation Layer.

### 1. Point-to-Point Tunneling Protocol (PPTP)

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3. Remote Procedure Call Protocol (RPCP)
4. Sockets Direct Protocol (SDP)
5. AppleTalk Data Stream Protocol (ADSP)
6. Real-time Transport Control Protocol (RTCP)

## Transport Layer

- Error control
- Sequence control
- Loss control
- Duplication control
- End-to-end delivery
- Addressing
- Reliable delivery
- Flow control
- Multiplexing

TCP = for connection data transfer data can not lose ex: email, message

UDP= for connection less data transfer data can lose ex: live streaming

## Network Layer

packets data ip address

The network layer is **the third level (Layer 3) of the** Open Systems Interconnection Model (OSI Model) and the layer that provides data routing paths for network communication.

Logical connection setup, data forwarding, routing and delivery error reporting are the network layer's primary responsibilities.

1. ARP stands for Address Resolution Protocol.
2. RARP stands for **Reverse Address Resolution Protocol**.
3. ICMP stands for Internet Control Message Protocol.
4. IGMP stands for **Internet Group Message Protocol**.

## DataLink Layer

The data link layer takes the data bits and “frames,” and **creates packets of the data to guarantee reliable transmission**. The main functions of data link layer include **framing, error detection and correction, acknowledgement, flow control**, ensuring well-defined reliable service interface to the network layer, encapsulating packets from network layer to frames, etc.

mac address .

Protocols:

Synchronous Data Link Protocol (SDLC)

High-Level Data Link Protocol (HDLC) –

Serial Line Interface Protocol (SLIP) –

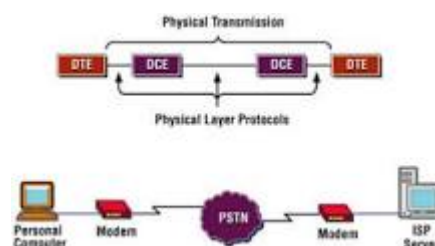
Point to Point Protocol (PPP) –

Link Control Protocol (LCP) –

Link Access Procedure (LAP) –

Network Control Protocol (NCP) –

## Physical Layer



The physical layer is the lowest layer of the OSI model. This layer controls the way unstructured, raw, bit -stream data is sent and received over a physical medium. This layer is composed of the **electrical, optical, and physical components of the network**

- Digital Subscriber Line.
- Integrated Services Digital Network.
- Infrared Data Association.
- Universal Serial Bus (USB.)
- Bluetooth.
- Controller Area Network.
- Ethernet

## **Network Devices**

Above is the link.