33. Line Configuration

Physical layer – Responsible for transmitting bits over a medium.

Services provided by the Physical layer are –

1. Physical Characteristics.
2. Representation of bits – encoding.
3. Data rate – transmission rate.
4. Synchronization of bits.
5. Line Configuration.
6. Physical Topology – bus, ring star, mesh

In a network, two nodes are connected via a communication link.

The communication link can be Wired or Wireless in nature.

For Visualization purpose, the links are imagined as the points between two nodes.

For communication to happen, the devices should be connected to the same link on the same time.

This is called as Line Configuration. The communication process is basically the Line configuration.

Types of Line configuration –

1. Point-to-Point Connection.
2. Multipoint Connection.
3. Point-to-Point Communication -

In p2p communication, there is a dedicated server for communication between 2 end points.

The entire communication link is for the transmission of only 2 dedicated end points.

For example – if 100 mbps is the speed solely for transferring data, 100 mbps is the speed provided for the activity to be performed.

Workstation -------- link------- Workstation

Mainframe ----------link ---------- Workstation

Workstation ---------- Antenna/satellite-------link------ Antenna/satellite-------- Workstation

1. Multipoint Communication –

In multiple communication, two or more devices share a single link for data transmission or communication.

It is also called as Multidrop configuration or Broadcast connection.

Since n number of devices share the link, the transmission capacity gets divided by n as well.

Multipoint connection can be spatial or temporal. It is explained below…

1. Spatial multi-point communication –

In spatial, n number of nodes are connected to the main frame and the transmission capacity is divided upon the number of devices in the line communication.

Here, when the data is transmitted by 2 nodes simultaneously, data collision may occur which increases the chances of data being unusable.

Spatial multipoint communication is most often used when there is a broadcasting of data packets.

1. Temporal multi-point communication –

In temporal, each nodes or devices have their turns to send the data to prevent data collision.