

**Repeater:** Repeaters are network devices operating at physical layer of the OSI model that amplify or regenerate an incoming signal before retransmitting it. They are incorporated in networks to expand its coverage area. They are also known as signal boosters.

- **Wired Repeaters** – They are used in wired LANs.
- **Wireless Repeaters** – They are used in wireless LANs and cellular networks.

**Disadvantages:**

- Repeaters cannot connect dissimilar networks.
- They cannot differentiate between actual signal and noise.
- They cannot reduce network traffic or congestion.

**Hub:** A hub is a multi-port repeater. A hub connects multiple wires coming from different branches, for example, the connector in star topology which connects different stations. Hubs cannot filter data, so data packets are sent to all connected devices

**Active Hub:** They have a power supply for regenerating, and amplifying the signals. When a port sends weak signaled data

**Passive Hub:** Passive hubs are simply used to connect signals from different network cables as they do not have any computerized element. They simply connect the wires of different devices in the star topology. Passive hubs do not do any processing or signal regeneration and that's why do not require electricity the most they can do is they can copy or repeat the signal

**Switch:** They manage data traffic efficiently by directing data only to the devices that need it, enhancing network performance. Switches operate at the data link layer (Layer 2) of the OSI model, making decisions based on MAC addresses.

**Unmanaged switches:** They're designed to be plug and play;

**Managed switches:** are designed to deliver the most comprehensive set of features to provide the best application experience, the highest levels of security, the most precise control and management of the network, and the greatest scalability

**A bridge:** in a computer network is a device used to connect multiple LANs together with a larger Local Area Network (LAN). The mechanism of network aggregation is known as bridging.

A device which is responsible for channeling the data that is coming into the various input ports to a particular output port which will further take the data to the desired destination.	A device which is responsible for dividing a single network into various network segments.
A switch can have a lot of ports.	A bridge can have 2 or 4 ports only.

The switching method in case of a switch can thus be store, forward, fragment free or cut through.	The switching method in case of a bridge is store and forward.
The task of error checking is performed by a switch.	A bridge cannot perform the error checking.
A switch has buffers.	A bridge may not have a buffer.

**Router:** A router is an electronic device that interconnects two or more computer networks, and selectively interchanges packets of data between them. Each data packet contains address information that a router can use to determine if the source and destination are on the same network, or if the data packet must be transferred from one network to another. Where multiple routers are used in a large collection of interconnected networks, the routers exchange information about target system addresses,