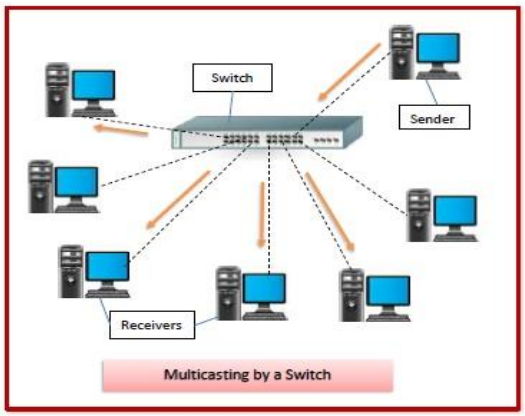
Switches:

Switches are networking devices operating at layer 2 or a data link layer of the OSI model. They connect devices in a network and use packet switching to send, receive or forward data packets or data frames over the network.

A switch has many ports, into which computers are plugged. When a data frame arrives at any network switch port, it examines the destination address, performs necessary checks, and sends the frame to the corresponding device(s). It supports unicast, multicast as well as broadcast communications.



Networking Cables:

Networking cables are a type of networking hardware used to connect a network device to one or more other network devices or to connect two or more devices to a single computer or network device.

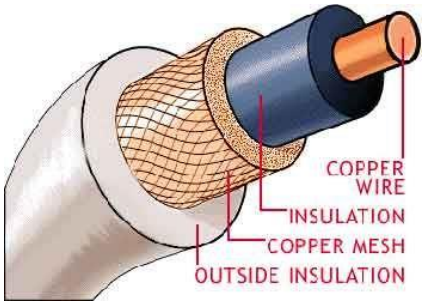
Network cables act as a medium through which information and data travel from one network device to another. The type of cable used for a network depends on the network's topology, size, and procedure. The different types of network cables act as the supporting basis of the network infrastructure.

Selecting the correct type of network and ethernet cabling can affect many different business functions because enterprise network admins utilize new technologies. The type of network cable used in network infrastructure is one of the most vital aspects of networking across various industries.

Types of Cables:

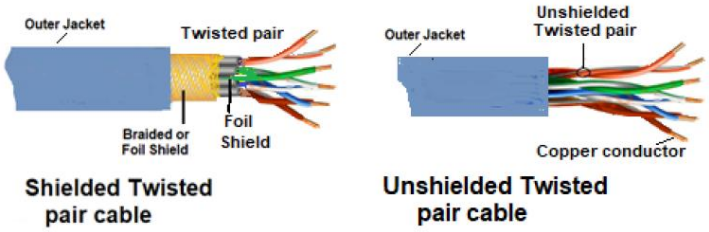
1. Coaxial Cables:

A coaxial cable is used to carry high-frequency electrical signals with low losses. It uses 10Base2 and 10Base5 Ethernet variants. It has a copper conductor in the middle that is surrounded by a dielectric insulator usually made of PVC or Teflon. The dielectric insulator is surrounded by a braided conducting metallic shield which reduces EMI (Electromagnetic Interference) of the metal and outside interference; finally, the metallic shield is covered by a plastic covering called a sheath usually made of PVC or some other fire-resistant plastic material. Its maximum transmission speed is 10 Mbps. It is usually used in telephone systems, cable TV, etc.



2. Twisted Pair Cable:

Twisted pair is a copper wire cable in which two insulated copper wires are twisted around each other to reduce interference or crosstalk. It uses 10BASE-T, 100BASE-T, and some other newer ethernet variants. It uses RJ-45 connectors.



3. Fiber Optics:

Fiber optic cables use optical fibres which are made of glass cores surrounded by several layers of cladding material usually made of PVC or Teflon, it transmits data in the form of light signals due to which there are no interference issues in fiber optics. Fiber optics can transmit signals over a very long distance as compared to twisted pairs or coaxial cables. It uses 10BaseF, 100BaseFX, 100BaseBX, 100BaseSX, 1000BaseFx, 1000BaseSX, and 1000BaseBx ethernet variants. Hence, it is capable of carrying information at a great speed.