

Types of network media



There is many media type. I will choose three type of media. They are -

- The primary type of twisted pair cables
- The primary type of coaxial cables
- The primary type of fiber optic cables

Network media is the actual path over which an electrical signal travels as it moves from one component to another. I want to explain the common types of network media, including twisted-pair cable, coaxial cable, fiber-optic cable.

Twisted Pair Cable

Twisted pair cable is can use for telephone communication and can cable ethernet networks. A pair of wires that can transmit data. When electronic signal through a wire, that create small magnetic field around a wire. When place two wire together, the magnetic fields are opposite of each other. So, two magnetic fields are disappear. They can distory any magnetic fields outside. There are two type of twisted pair cable, unshielded twisted pair (UTP)and shielded twisted pair (STP).

UTP Cable

UTP cable is used for various networks. This cable include eight copper wires covered by an insulating material. UTP cable canceling effective of electromagnetic interference (EMI) and radio frequency interference (RFI).

UTP cable is install using the Registered jack (RJ 45) connector. The RJ-45 has eight wire connector. UTP cable is used to connect local-area network(LAN).

Advantages of UTP cable

UTP cable has many advantages. The cable size is small (approximately 0.43 cm) and easy to install. This cable price is less than other type of network cable. UTP has no wiring ducts as other network cable. It can be most important to consider when installation a network in a building.

Disadvantages of UTP cable

Twisted pair cable has also disadvantages. However, UTP cable is more avoid electrical noise and interference than other network cables. UTP cable transmit short signal than coaxial cable and fiber optic cable.

Coaxial cable

Coaxial cable is made of outer hollow conductor and inner wire made of two conducting element. The center of a cable is made of copper wire. Copper wire has surrounding by flexible insulation. Metallic foil is coted over the insulating called second layer. Second layer is reduce the amount of outside interference. Coaxial cable is support 10 to 100 mbps of transfer rate.

Coaxial cable is little expensive than UTP cable. However, coaxial cable can cheaper in physical bus topology. Coaxial cable can cabled long distant than UTP cable. Twisted pair cable can run 100 meters(328 feets). Using coxial cable, distance is 500 meters(1640 feets).

Fiber optic cable

Fiber optic cable can carry more data in longer distance with light signal than electrinic signal carry coxial cable. Fiber optic cable can run 100km(60 miles) without amplifying the light signal. Fiber optical can be used medium for telecommunication and networking because it is more flexible than other

cable. Light transmission through the fiber due to reflection within the material.

Advantages of fiber optic cable

- Can run long distance in lower cost
- Can carry more data
- No sparks
- Cable weight is light
- Strong to electronic interference

Disadvantages of fiber optic cable

Disadvantages of fiber optic cable is cost and durability. That cable is more expensive than the other cable.

Network Topology

Star Topology

This topology is common type of topology used in home and office. At the star topology, central connection called hub which is computer hub or switch. The best advantage is – something fault in cable, only one computer can get bad affected and not entire network.

Advantages of star topology

- Star topology is simple in function and easy to manage
- In star topology, problems can be easily located and easy to troubleshoot
- The Star Topology is very simple in format so it is very easy to expand on the Star Topology.

Star Topology Disadvantages

- In star topology, entire network is fully depend on hub or switch
- If there is many nodes, cable is long to connect and network can be slow down

Mesh topology

In mesh topology to complete, all the nodes are connected to each other. On the network through hops, every node is connect to other nedes. Some nodes are connect to single hops and some nodes are connect with more than one hops. Mesh topology include the concept of route. Unlike other topology, message can send several path from source to destination.