Different types of Network Cables

EX - 02
24/07/2024

Aim: Study of different types of Network cables.

a) understand difference types of network cable.

Different type of cables used in networking are:
1. Unshielded Twisted Pair (UTD) Cable
2. Shielded Twisted Pair (STP) Cable
3. coaxial cable
4. Fibre Optic cable.

cable type	category	maximum Data Transmission	Advantages/ Disadvantages	Application / Use
UTP	category 3	10 bps	Advantages: Cheaper in cost Easy to install as they have a smaller overall diameter Disadvantages: more prone to (EMI) Electromagnetic interference and noise	10Base-T Ethernet Fast Ethernet Gigabit Ethernet Fast Ethernet Gigabit Ethernet
	category 5	Up to 100 mbps		
	category 5e	1Gbps		
STP	category 6/ 6a	10Gbps	Advantages: Shielded Faster than UTP Less susceptible to noise and interference	Gigabit Ethernet, 10G Ethernet (55 m) widely used in data centres

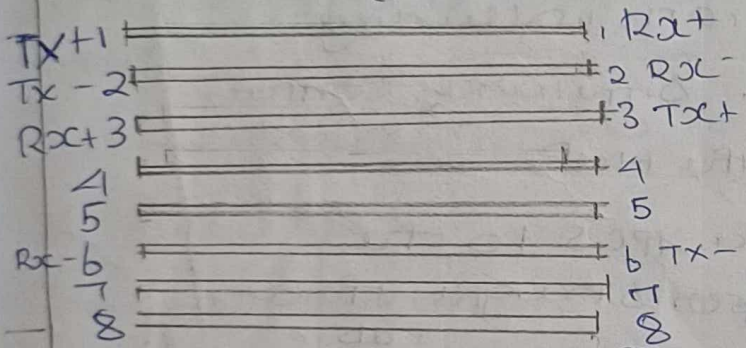
Cable type	Category	maximum Data Transmission	Advantages/ Disadvantages	Application / use
SSTP	Category7	10Gbps	Disadvantages Expensive Greater Installation effort	Gigabit Ethernet, 10G Ethernet (100m)
coaxial cable	RG-6 RG-59 RG-11	10-100mbps	Advantage High bandwidth Immune to interference Low loss bandwidth versatile Disadvantage limited distance cost Size is bulky	Speed of signal is 500m Television network high speed internet connection
Fibre optics cable	Single mode multi mode	100Gbps	Advantages High speed High bandwidth High Security Long Distance Disadvantage Expensive Required Skilled installation	maximum distance of Fibre optics cable is around 100metre

2. b) make your own ethernet cross-over cable / straight - cable

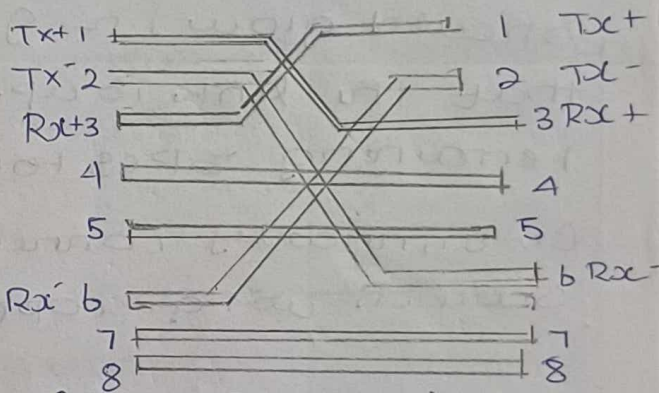
Roots and parts needed

- Ethernet cabling CAT6e is certified for gigabit support, but cat5 cabling works as well just over shorter distances.
- a crimping tool. This is an all in one networking tool shaped to push down the pins in the plug and strip and cut the shielding off the cable.
- Two RJ45 plugs
- optional two plug shields

Straight-two cable



X-over cable



Question & Answer

1. cross cable - connected for both the devices
   straight cable - connected for different devices
2. cross cable
3. straight cable
5. Understanding - ~~Practices~~ arranging order

Involves

challenges: correct ~~pin~~ wire arrangement

Output: successful cables enable network connection.

Result: Thus the different types of network cable is studied.