

24/7/24

## Practical 2

Aim:

Study of different types of Network Cables

Cable type	Category	Maximum Data Transmission	Advantages Disadvantages	App Use
UTP	Category 3	10 bps	<u>Advantages</u> - cheaper in cost	10-Base-T Ethernet
	Category 5	Up to 100 mbps	- Easy to install as they have 8 wires	Fast Ethernet Gigabit Ethernet
	Category 5e	1 Gbps	<u>Disadvantages</u> - More prone to (EMI) Electromagnetic interference and noise	
STP	Category 6, 6a	10 Gbps	<u>Advantages</u> - Shielded - Faster than UTP - Less susceptible to noise	Gigabit Ethernet 10Gb Ethernet Used in data centers
SSTP	Category 7	10 Gbps	<u>Disadvantages</u> - Expensive - Greater installation effort	Gigabit Ethernet to 40 Gb Ethernet



coaxial  
cable

RG-6  
RG-59  
RG-11

10-100mbps

High bandwidth  
Less loss  
bandwidth  
Versatile

Speed of  
signal is  
fast  
Tolerance  
networks  
High speed  
Internet  
connections

Disadvantages

- Limited data
- Loss
- Size is bulky

Fibre  
optics  
cable

single mode  
multi  
mode

100Gbps

Advantages

High speed  
High security  
long distance

Maximum  
distance  
of fibre  
around  
100  
meters

Disadvantages

- Expensive
- Requires  
skilled  
installers

b) Make your own Ethernet (cross-over cable/straight cable)

Tools and Parts needed:

Ethernet cabling, CAT5e is certified for Gigabit support, but CAT5 cabling works as well just over shorter distances

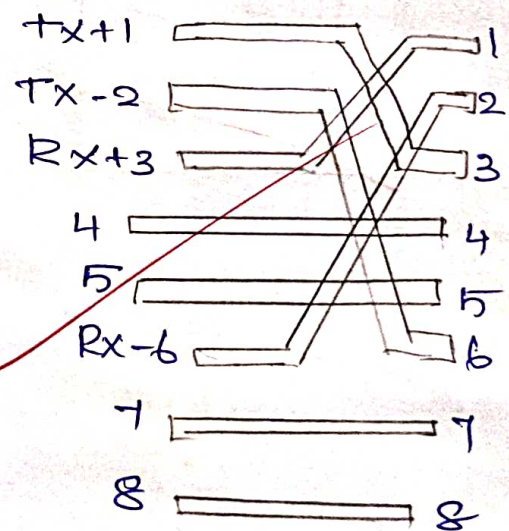
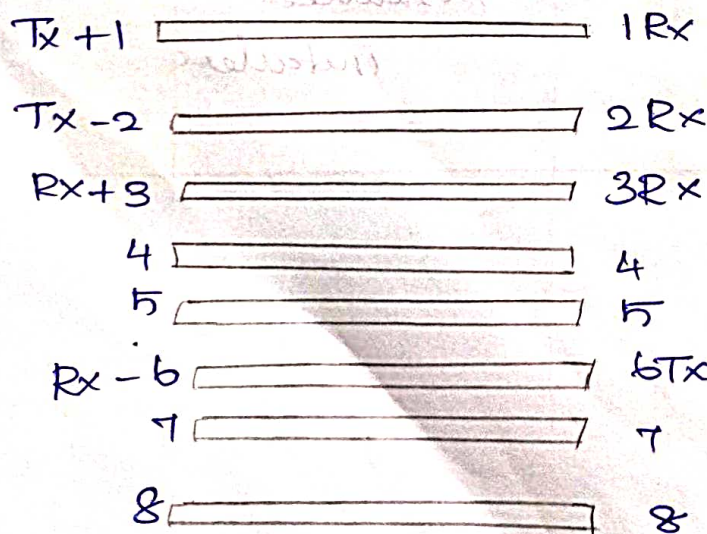
A crimping tool. This is an all-in-one networking tool shaped to push down the pins in the plug and strip and cut the shielding off the cables

Two RJ45 plugs

optional two plug shields

straight thru cable

X-over cable





Observation:-

1) Cross cable - connected for same device  
~~2~~ Straight cable - connected for different device

2) Cross cable

~~4) &~~

3) Straight cable

5) Underfanging Involves arranging wires

Challenges: correct wire arrangement

Shipping without damage

Output: Successful cable enable network.

Result

Thus the different types of network cable is studied.

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