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STUDY OF DIFFERENT TYPES OF NETWORK CABLES AND CRIMPING OF CABLE WITH RJ45 CONNECTOR

AIM:

To study the types of network cables and crimping of cable with RJ45 connector.

STUDY OF NETWORK CABLES:

There are many types of cables used in networking .They are:

1.Unshielded Twisted Pair(UTP) cable.

2.Shielded Twisted Pair(STP) cable.

3.Coaxial Cable.

4.Fibre Optic Cable.

UTP:

category	Max data transmission	Application /use
category3	10bps	ethernet
category 5	Up to 100Mbps	Fast ethernet

Category	Max Data transmission	application/use
Category 6,6	10Gbps	Widely used in data centers.
Category 7	10Gbps	10G ethernet

COAXIAL CABLE:

category	Max Data transmission	application/use
RG-6 RG-59 RG-11	10-100 Mbps	Television network

FIBRE OPTIC CABLE:

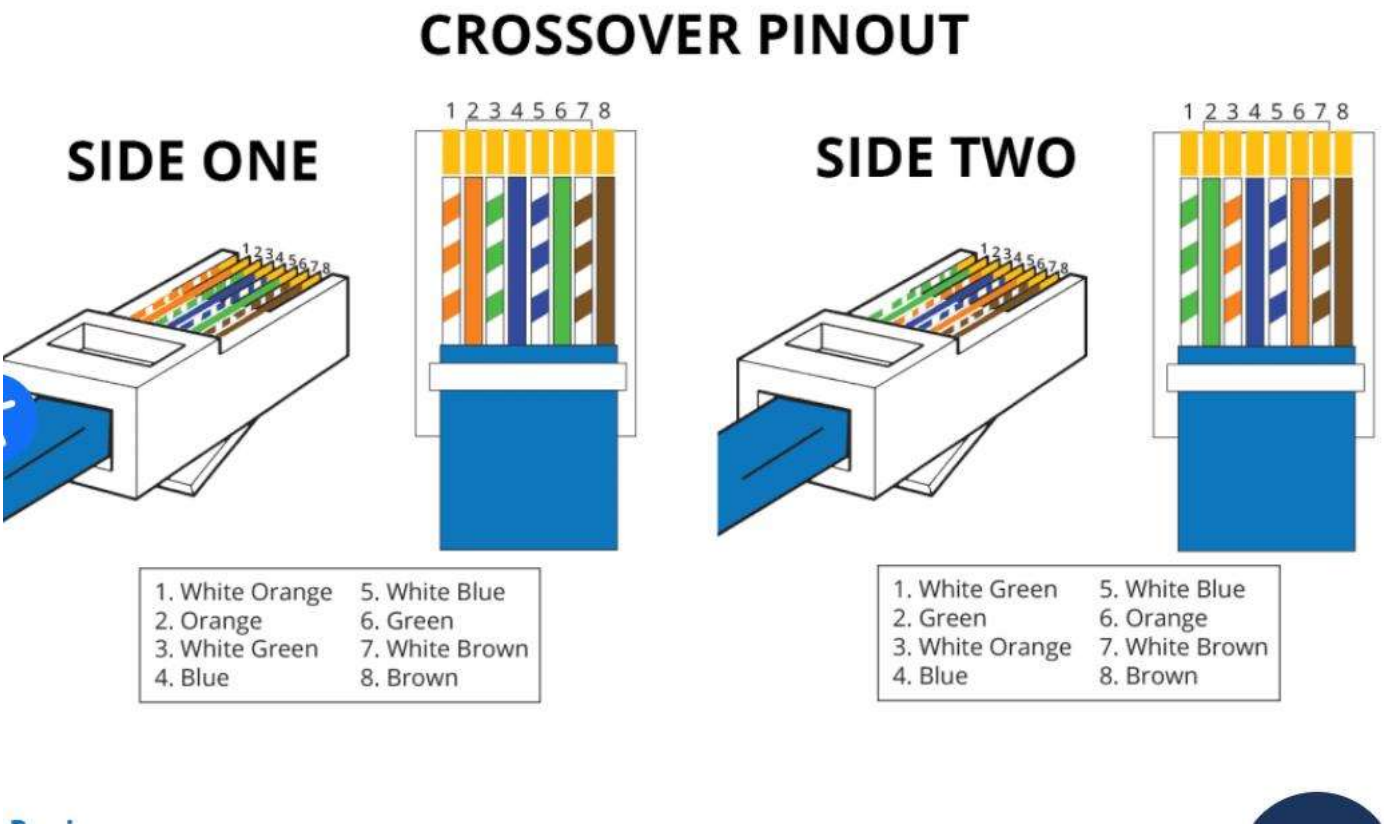
category	Max Data transmission	application/use
Single mode Multi mode	100 Gbps	Maximum distance of fibre optic cable is around 100 meters.

CRIMPING OF CABLE WITH RJ45 CONNECTOR:

RESOURCES:

RJ45,CAT cables,crimping tool,and Internet connection.

It is a cable which is used to connect ALL HMI and engineer station through a switch to communicated each other.It is used to download the any modification and which is made in graphics in engineering station.RJ45 cable also used for communicate the printer with computer.There are four pairs of wires in an ethernet cable, and an ethernet connector(8P8C) has eight pin slots.



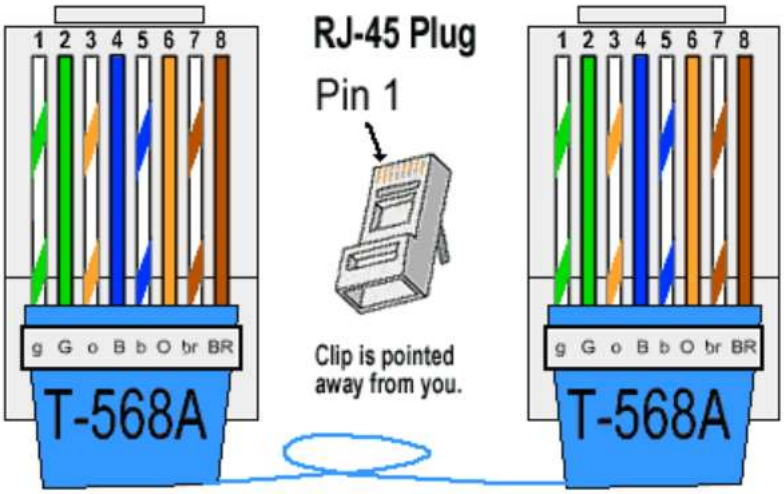
There are two kinds of ethernet cables :

1.Straight Through

2.Cross over cable

STRAIGHT THROUGH:

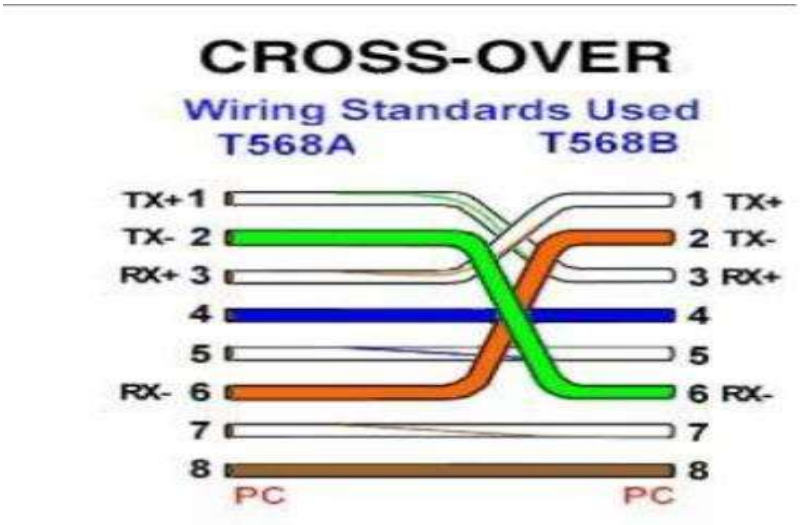
It is the standard cables used for almost all purposes and are often called “patch cables”.It is highly recommended for duplicate the color order as shown on the left.Note how the green pair is not side-by-side as are all the other pairs.This configuration allows for longer wire runs.



CROSS OVER CABLES:

The purpose of cross over cable is to directly connect one computer to another without going through a router,switch or hub.

A cross over RJ45 cable directly connects two similar devices without needing router or switch. The wiring involves swapping certain pairs of wires.This cross over allows the transmit(TX) and receive(RX) signals to cross,enabling proper communication between devices.Crossover cables are particularly usefulfor connecting older devices that lack auto-sensing capabilities.



CRIMPING TOOL:

HOW TO USE:

First,you will need to strip the length of wire that you want to crimp.

Then,attach the connector.For crimping tools with interchangeable dies,you will need to select the right die head for the connector by matching wire guage ratings.

Finally,apply pressure,take out the newly crimped connector,and give a few tugs to make sure you have a solid and secure connection.

RESULT:

Thus,the different types of network cables have been studied and crimping of cable with RJ45 connector have also been studied.