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TE SEM V
CN PRACTICAL_EXP NO. 01
EXP 01 : Study of RJ45 and CAT6 Cabling and connection using crimping tool.

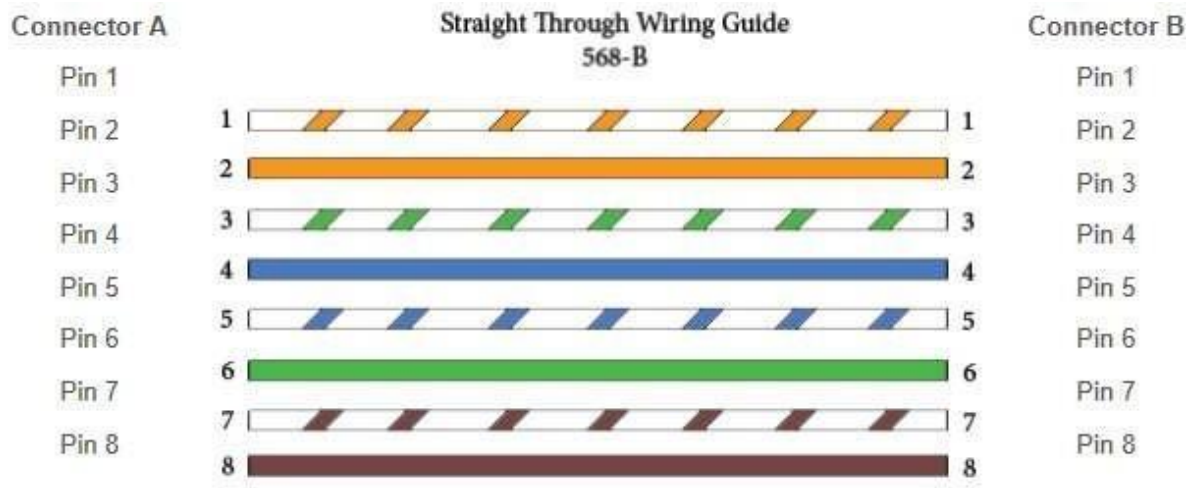
CN_Practical_01 - Crimping of Twisted-Pair Cable with RJ45connector for Straight-Through, Cross-Over,

Computer Network (University of Mumbai)

AIM: Crimping of Twisted-Pair Cable with RJ45connector for Straight-Through, Cross-Over,

Straight-Through Wired Cables

Straight-Through refers to cables that have the pin assignments on each end of the cable. In other words, Pin 1 connector A goes to Pin 1 on connector B, Pin 2 to Pin 2 etc. Straight-Through wired cables are most commonly used to connect a host to client. When we talk about cat5e patch cables, the Straight-Through wired cat5e patch cable is used to connect computers, printers and other network client devices to the router switch or hub (the host device in this instance).



If we want to connect two different types of device then we can use straight-through cables.
For example:

> Connecting a router to a hub
> Connecting a computer to a switch/router
> Connecting a modem to a router

Crossover Wired Cables

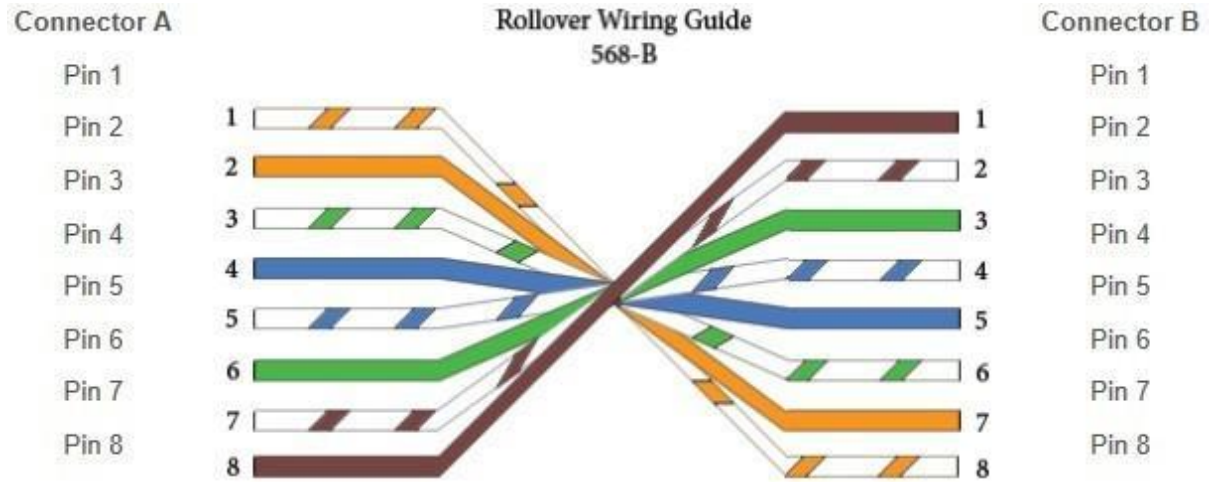
Crossover wired cables (commonly called crossover cables) are very much like Straight-Through cables with the exception that TX and RX lines are crossed they are at opposite positions on either end of the cable. Using the 568-B standard as an example below you will see that Pin 1 on connector A goes to Pin 3 on connector B. Pin 2 on connector A goes to Pin 6 on connector B etc. Crossover cables are most commonly used to connect two hosts directly. Examples would be connecting a computer directly to another computer, connecting a switch directly to another switch, or connecting a router to a router.

If we want to connect two same types of device then we can use crossover cables.
For example:

> Connecting a computer to a computer
> Connecting a router to a router
> Connecting a switch to a switch
> Connecting a hub to a hub

Rollover Wired Cables

Rollover wired cables most commonly called rollover cables, have opposite Pin assignments on each end of the cable or in other words it is "rolled over". Pin 1 of connector A would be connected to Pin 8 of connector B. Pin 2 of connector A would be connected to Pin 7 of connector B and so on. Rollover cables, sometimes referred to as Yost cables are most commonly used to connect to a devices console port to make programming changes to the device. Unlike crossover and straight-wired cables, rollover cables are not intended to carry data but instead create an interface with the device.



This cables are used to connect computer to router's console port. It is also called as console cable or yost cable

Ethernet Cable Type

In computer networks, Cat-5, Cat-5e, and Cat-6 cables are mostly used. UTP cables are connected by RJ45 connectors.

Cable Type and Speed CAT 3
16Mbps
CAT 5 100Mbps 1000Mbps (4 pairs)
CAT 5E 1000Mbps
CAT 6 Up to 400MHz for super-fast broadband applications
Cat 7 cabling is also known as Class F.

We will use “Cat 6” cables for now.

Materials to choose :

A crimping Tool :

A Ethernet Cable :

A RJ45 Plug/Jack :

Setting Up before Crimping :

1. Take your LAN Cable and strip the outer cover be carefully in doing this or else the internal wire will be damage.

2. There will be 4 pair of twisted wire.

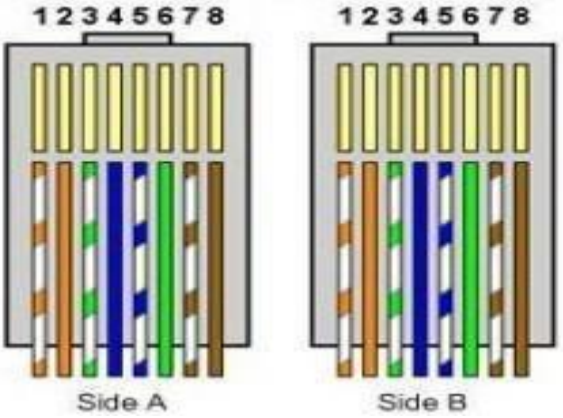
3. Unwind the twist cable and make it straight and cut the edge of wire.

Crimping a Straight through cable :

Arrange all wire in the below manner and cut the edge, be careful in doing so. Both end of cable must have same sequence of coloured

Both End of wire arrangement in cable is same.

Pin ID	Side A	Side B
1	Orange-white	Orange-white
2	Orange	Orange
3	Green-white	Green-white
4	Blue	Blue
5	Blue-white	Blue-white
6	Green	Green
7	Brown-white	Brown-white
8	Brown	Brown



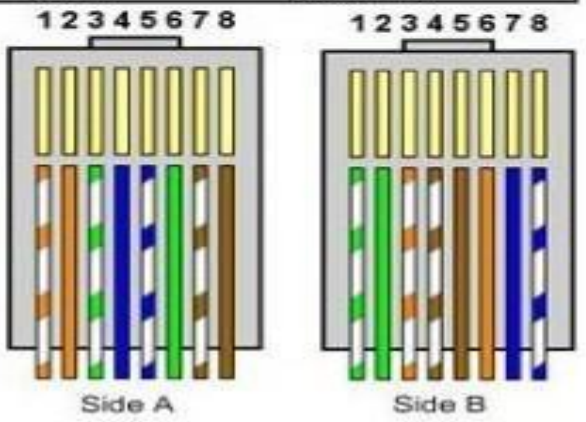
wire.

Now insert the cable into jack and then crimp the cable using crimping tool
So now we crimped one side of the cable. So we can repeat the step for another side of cable.

Crimping a Crossover cable:

Both End of wire arrangement in cable is different.

Pin ID	side A	side B
1	Orange-white	green-white
2	Orange	green
3	green-white	orange-white
4	blue	brown-white
5	blue-white	Brown
6	green	orange
7	brown-white	Blue
8	brown	blue-white



Now insert the cable into jack and then crimp the cable using crimping tool
So now we crimped one side of the cable.so we can repeat the step for another side of cable.

Now cable is ready to use, you can test your cable using “LAN Cable Tester” too.