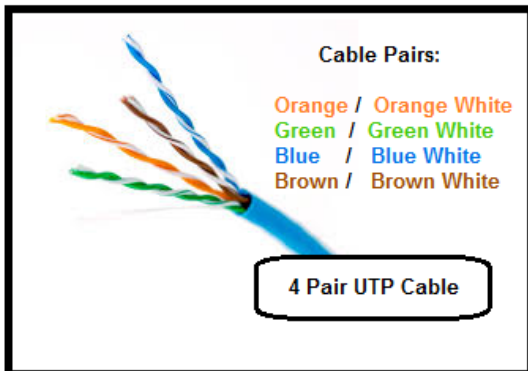


UTP Cable Color Coding

In the Un-Shielded Twisted Pair (UTP) cable, digital signal protection comes from the twists in the wire. The more twists per inch, the farther the digital signal can supposedly travel without interference. For example, categories 5 and 6 have many more twists per inch than category 3 UTP has. The Twists are given to the wire to reduce the Cross talk or interference to electrical signals.

There are 4 twisted pairs with four different colored wires. Each colored wire is twisted with white wire with a strip of same color on it. For example, an Orange color twisted pair would a one wire of Orange color and one of while color with a strip of orange color on it.

Only Two pairs are used with cable numbers 1, 2, 3, and 6 for Tx and Rx signals. You would notice Tx+/Tx- and Rx+/Rx- terms in this blog while reading. + and - terms are the voltages. 10BaseT uses two different voltages i.e. +2.5V and -2.5V.

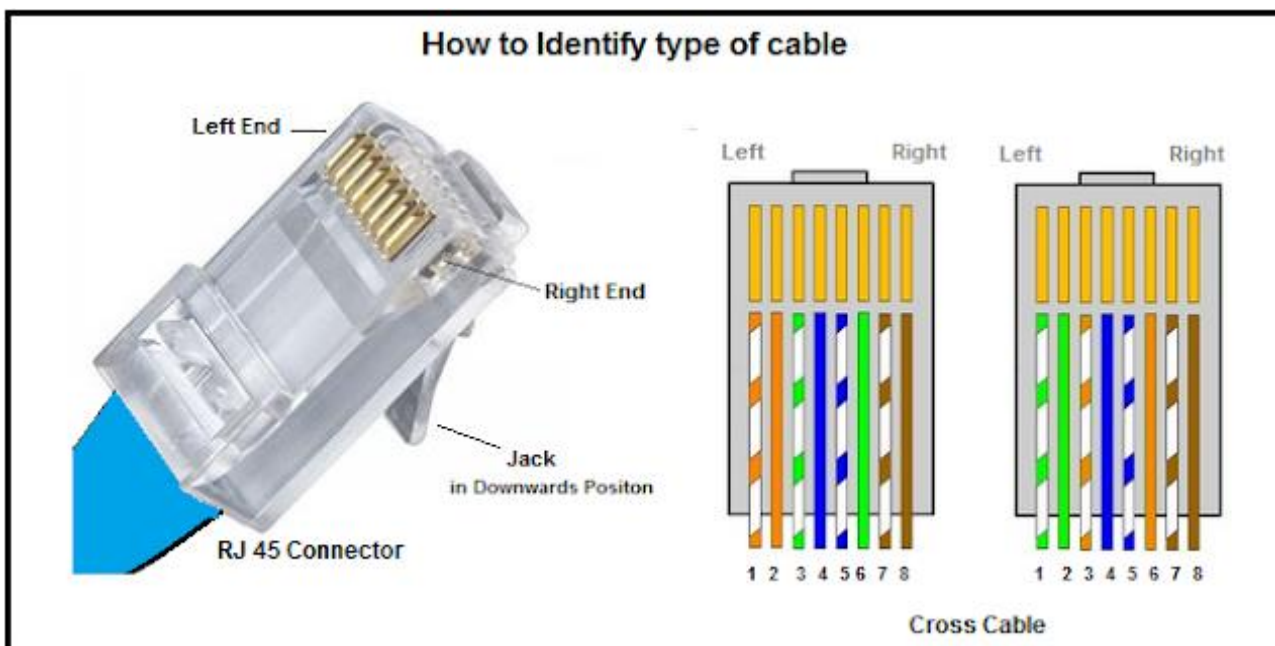


There are 3 types of cables

- Straight
- Cross
- Rollover or Console
-

Identifying the Cable type

Hold both ends/RJ-45connectors of cable with their Jack in downward position. Now start matching the color coding from left pin of connector towards right. Below is example to identify a cross cable.

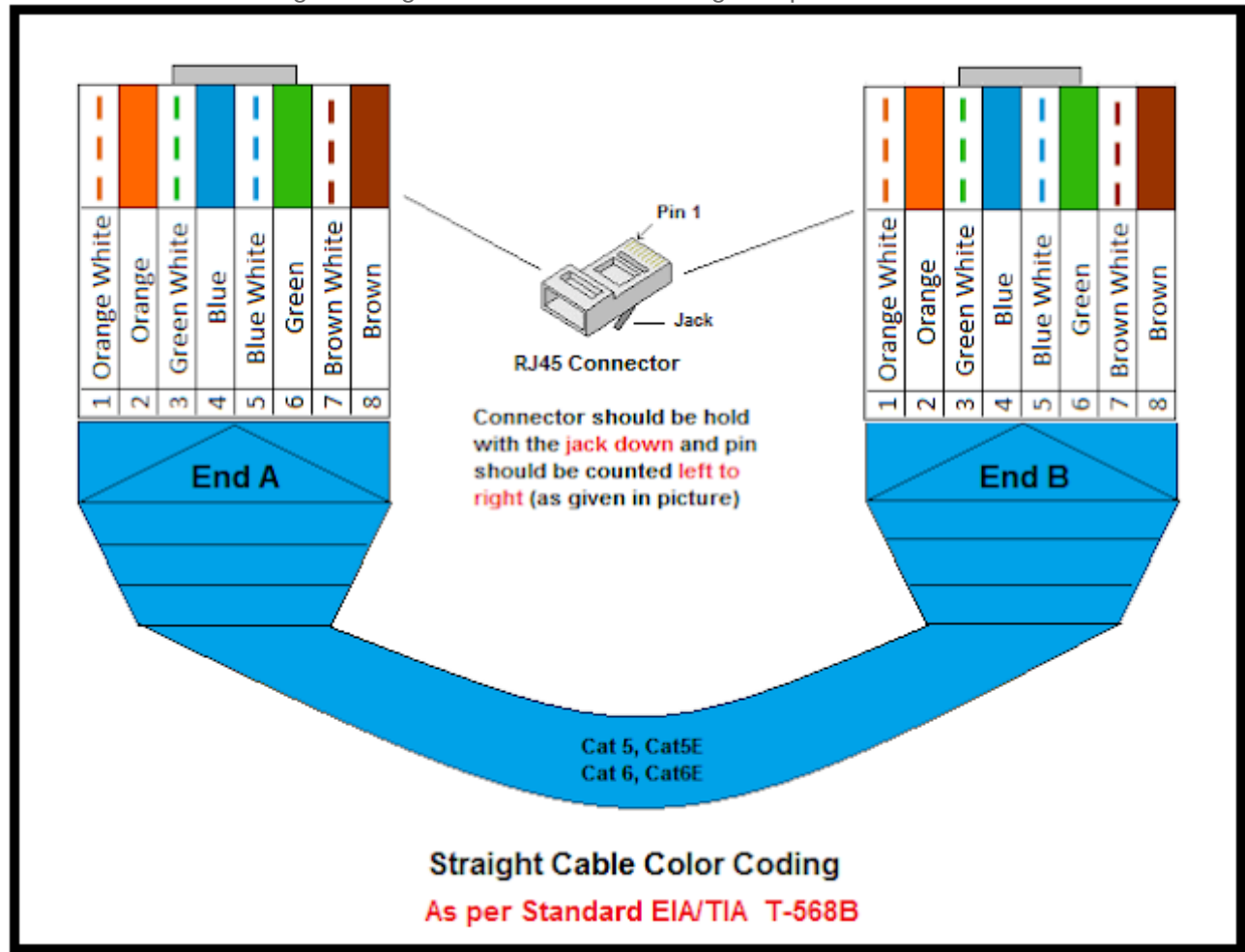


Straight Cable

It is used to connect devices having different function. For example:

- Connecting a router to a hub or switch.
- Connecting a server to a hub or switch.
- Connecting workstations to a hub or switch.

Below is the color coding of Straight cable. The color coding is kept same on both ends.



Left	1	Tx+				Rx+	1	Left
	2	Tx-				Rx-	2	
	3	Rx+				Tx+	3	
	4						4	
	5						5	
	6	Rx-				Tx-	6	
	7						7	
Right	8						8	Right

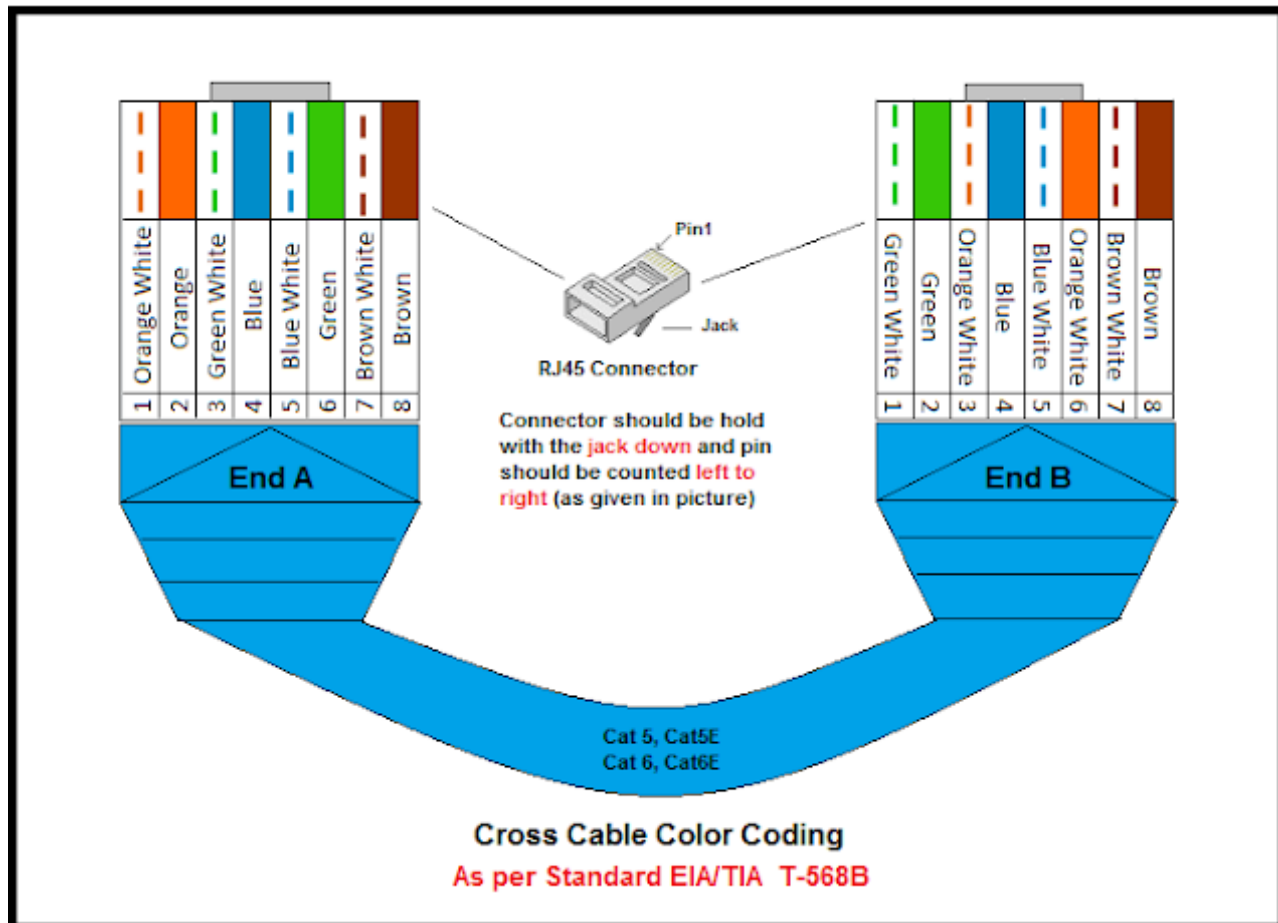
Straight Cable

Cross Cable

It is used to connect devices having same functions or roles. For example:

- Connecting uplinks between switches.
- Connecting hubs to switches.
- Connecting a hub to another hub.
- Connecting PC to PC
- Connecting PC to a Router
- Connecting 2 routers together without a hub or a switch.

Below is the color coding for a Cross cable. The only difference with respect to straight cable is that 1st and 3rd // 2nd and 6th numbered cables are swapped on the 2nd end of the cable.

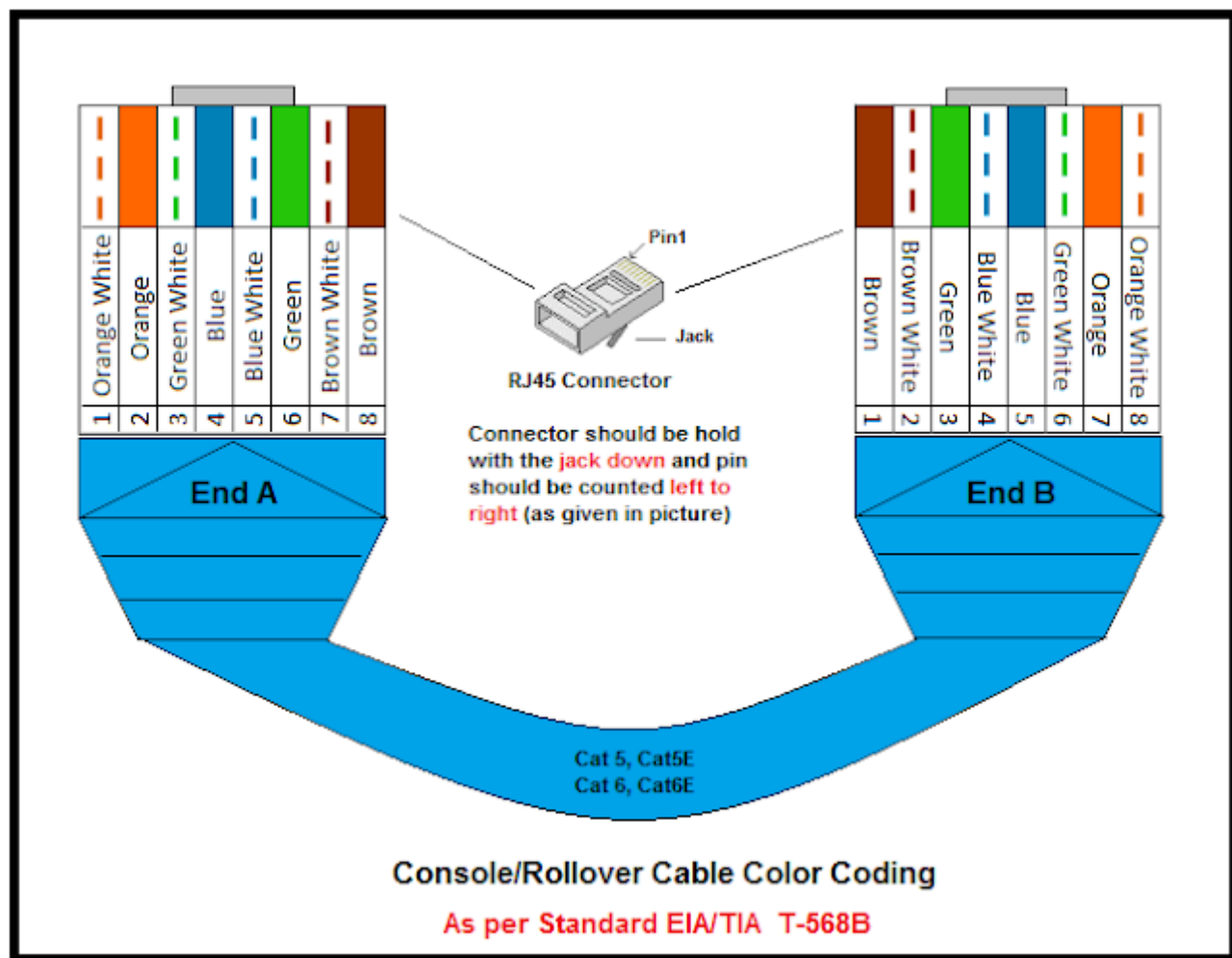


Left	1	Tx+			Rx+	1	Left
	2	Tx-			Rx-	2	
	3	Rx+			Tx+	3	
	4					4	
	5					5	
	6	Rx-			Tx-	6	
	7					7	
Right	8					8	Right

Cross Cable

Console or Rollover cable

It is used for device configuration. For example you have bought a new router and what to configure it with initial config. You need a console cable for same. One end of console cable is connected to console port of the router or a switch and other end would be connected to NIC port of your laptop or PC. Below is the color coding of Console cable. The color coding of both ends are totally reversed.



Bron: <https://www.networkurge.com/2017/10/utp-cable-color-coding.html>