Networking Essentials

LESSON 5

Network Cables & Standards

MUHAMMAD CHAW

Lesson of the Day

- 1.What are Network Cable Standards.
- 2.The need for the Understand of Network Cabling
- 3.Twisted Pair Cabling Types.
- 4.What are the uses of Straight Cables?
- 5.Straight through Cabling Color Coding.
- 6.The use of Crossover Cable ?
- 7.Crossover Cabling Color Coding.
- 8. The use of Rollover Cable.
- 9.Rollover Color Coding.

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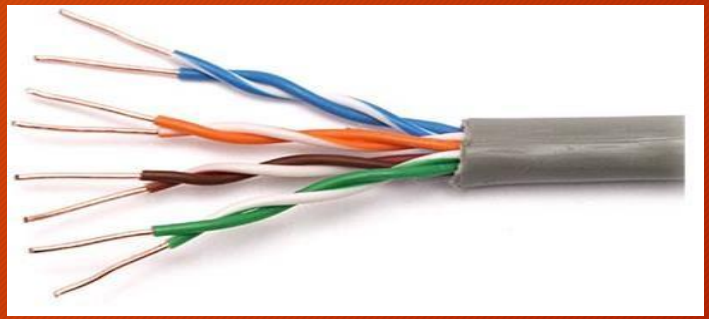
Network Cabling

❑Why do we need to Understand Network Cabling?.

- ❑Network cables being a primary medium used in the connection and transfer of data between Nodes on a network (i.e Computers, Routers, Switches and storage area Networks).
- There present different types of Communication cables, and the appropriate type to be use depends on device, structure and topology of the overall Network architecture.
- The most commonly used types of network cables are the “Twisted pair Cables”.

Twisted Pair Cabling Types

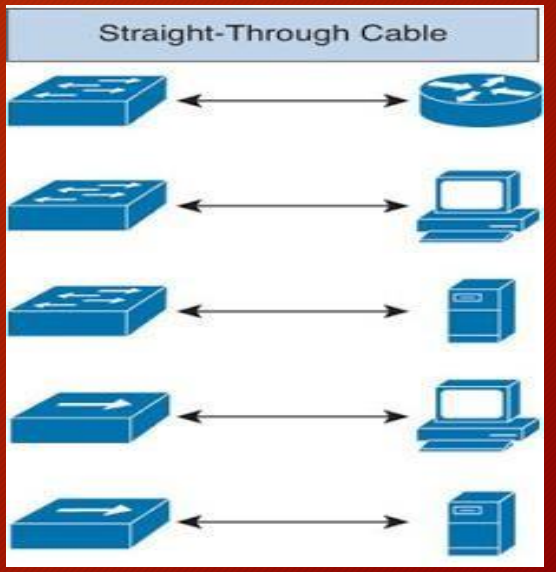
- Straight Through Cable
- Crossover Cable
- Rollover Cable



Device	HUB	Switch	Router	Workstation
HUB	Crossover	Crossover	Straight Through	Straight Through
Switch	Crossover	Crossover	Straight Through	Straight Through
Router	Straight Through	Straight Through	Crossover	Crossover
Workstation	Straight Through	Straight Through	Crossover	Crossover

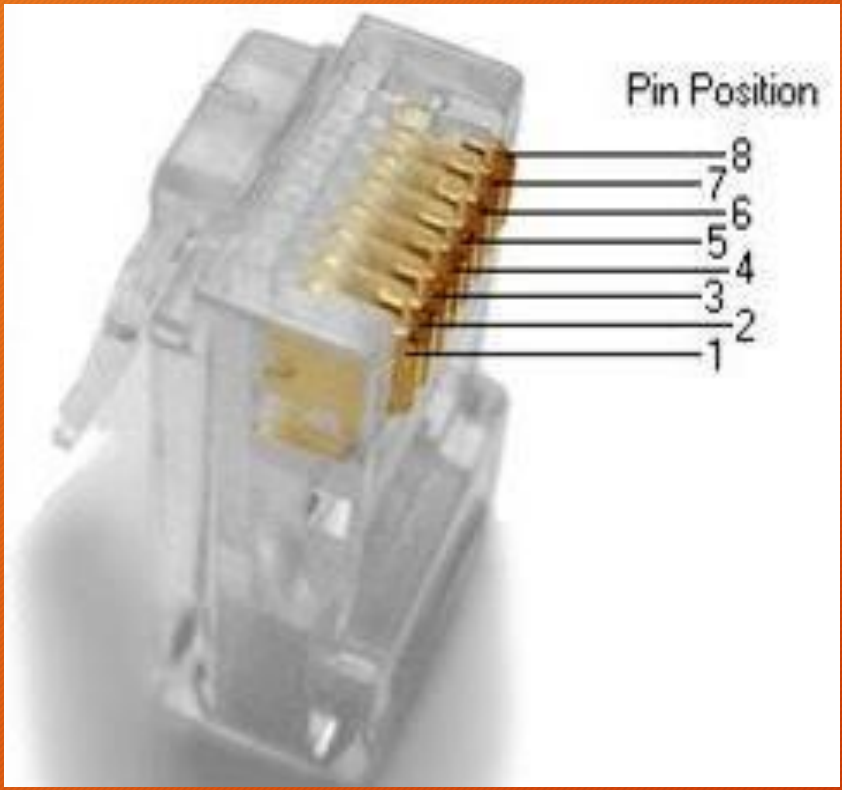
Straight Through Cable Use

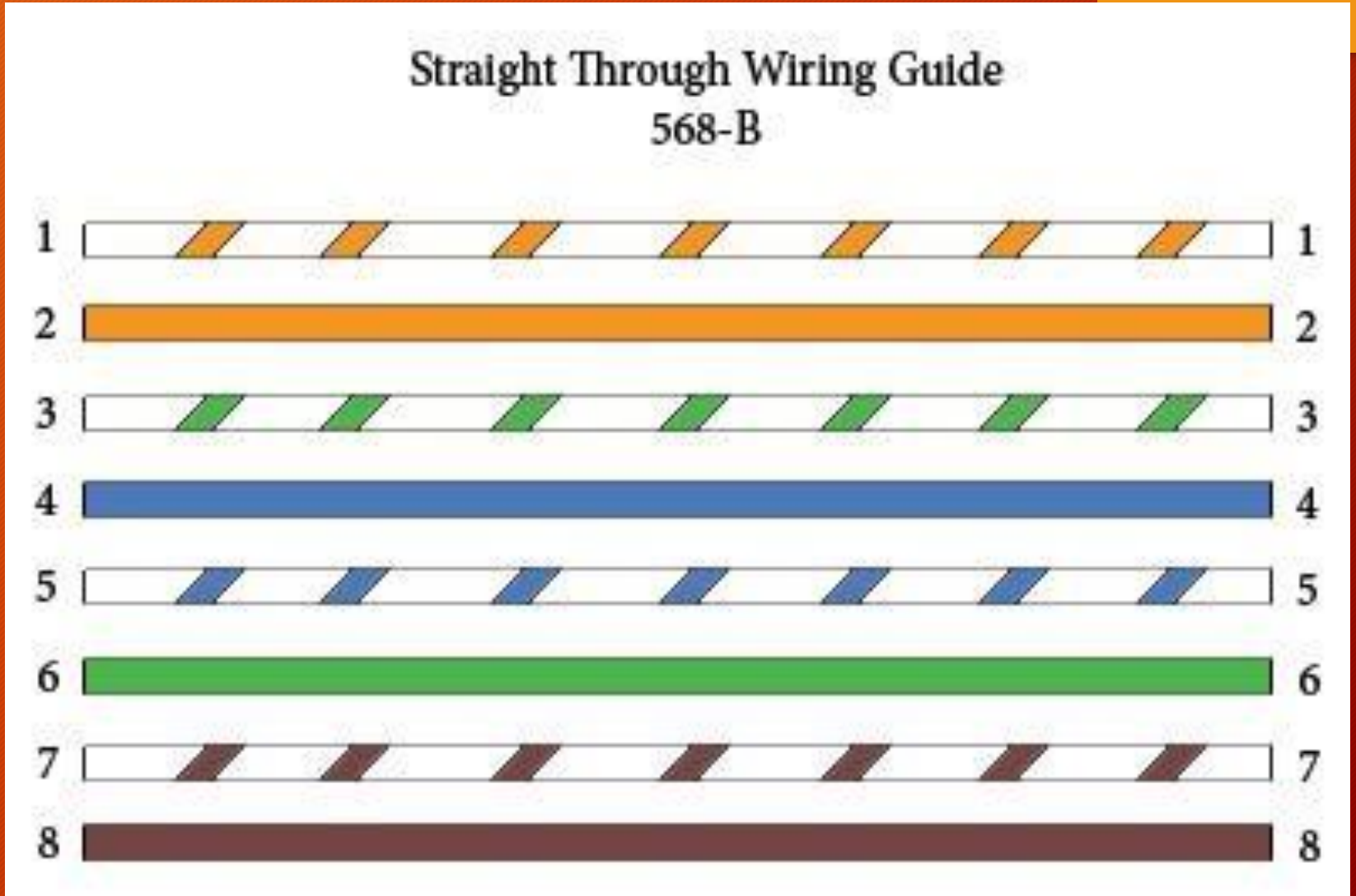
- ❑Usually straight cables are used to connect different types of networking devices.
- ▪1) Connect a computer or PC to a Switch/HUB's normal port.
- ▪2) Connect a computer or PC to a cable/DSL Modem's LAN port.
- ▪3) Connect a Router's WAN port to a cable/DSL Modem's LAN port.
- ▪If you need to check how straight cable looks like, it's easy.
- ▪▫Both sides (side A and side B) of cable have wire arrangement with same color.



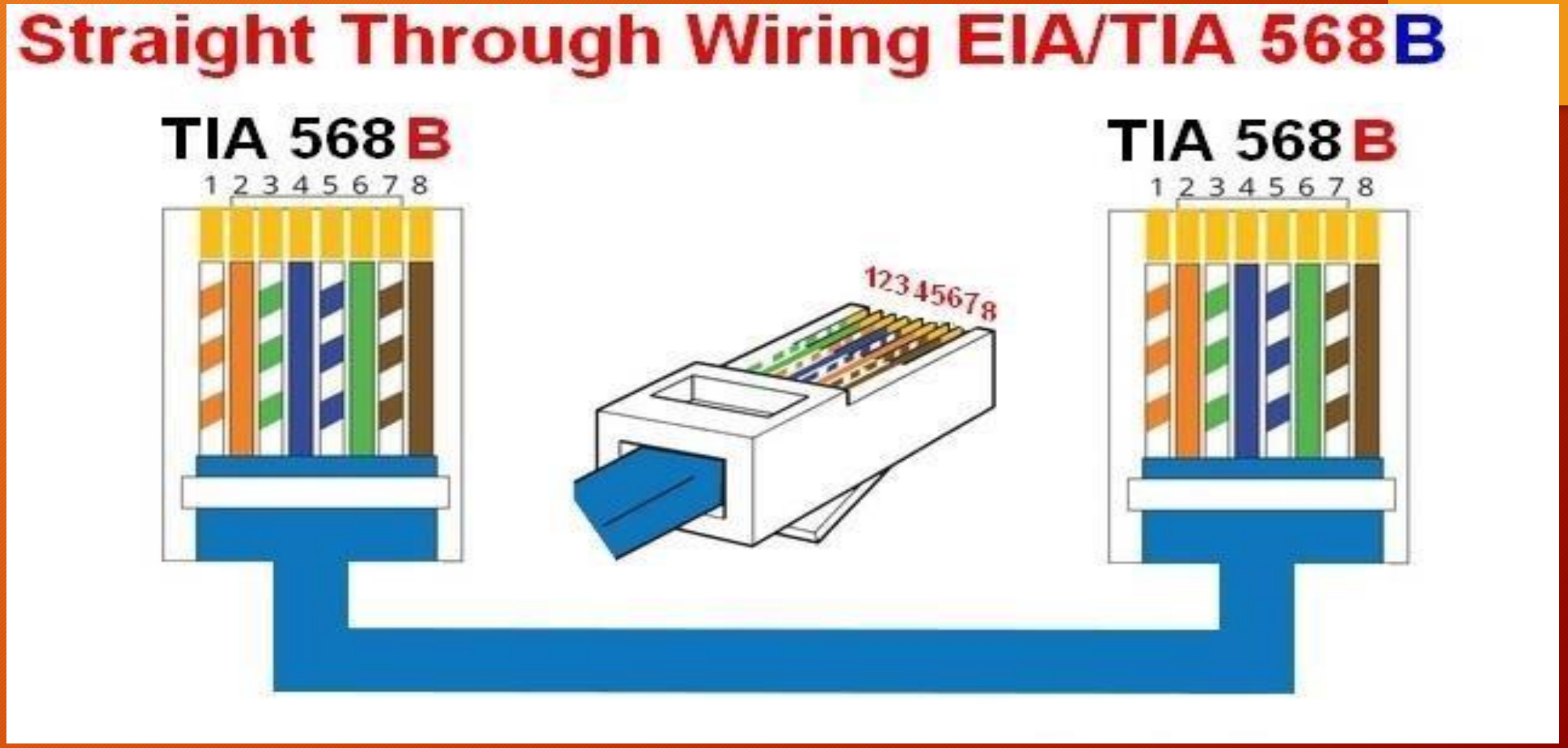
- ❑Straight-through cables connect the following devices:
- ▪Switch to Router
- ▪Switch to workstation or Server
- ▪Hub to Workstation or Server

Straight Through Cable Example





Straight Cable Example

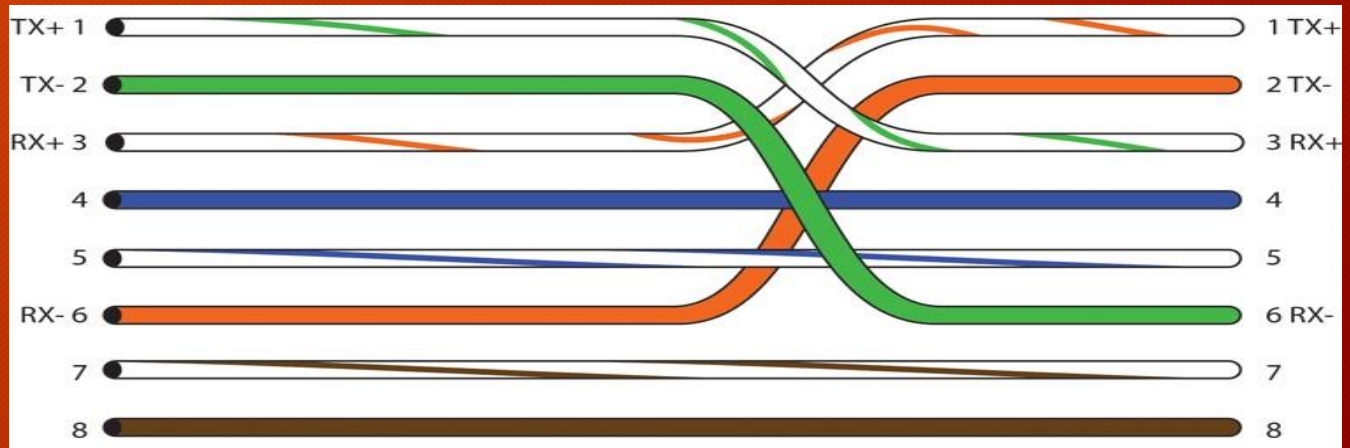


Crossover Cable

- Crossover cable connects same type of networking Devices.
  - 1) Connects two computers directly.
  - 2) Connects a router's LAN port to a switch/hub's normal port.

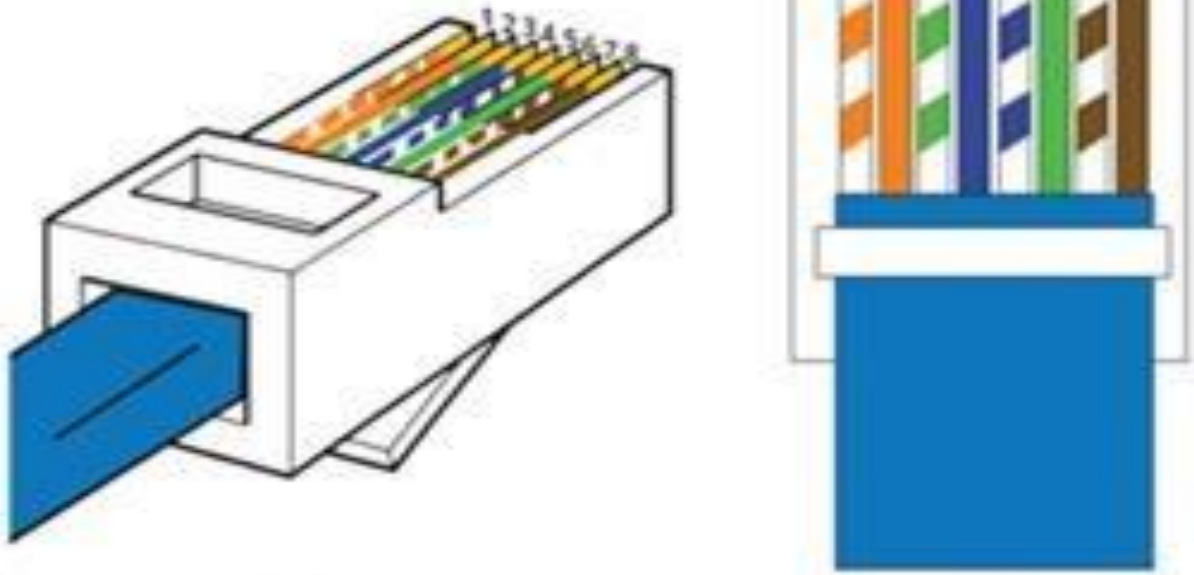
(Normally used for expanding network)

  - 3) Connect two switches/hubs by using normal port in both switches/hubs.
- Crossover cables connect the following devices:
  - Workstation to workstation (PC to PC)
  - Switch to Switch
  - Switch to HUB
  - HUB to HUB
  - Router to Router



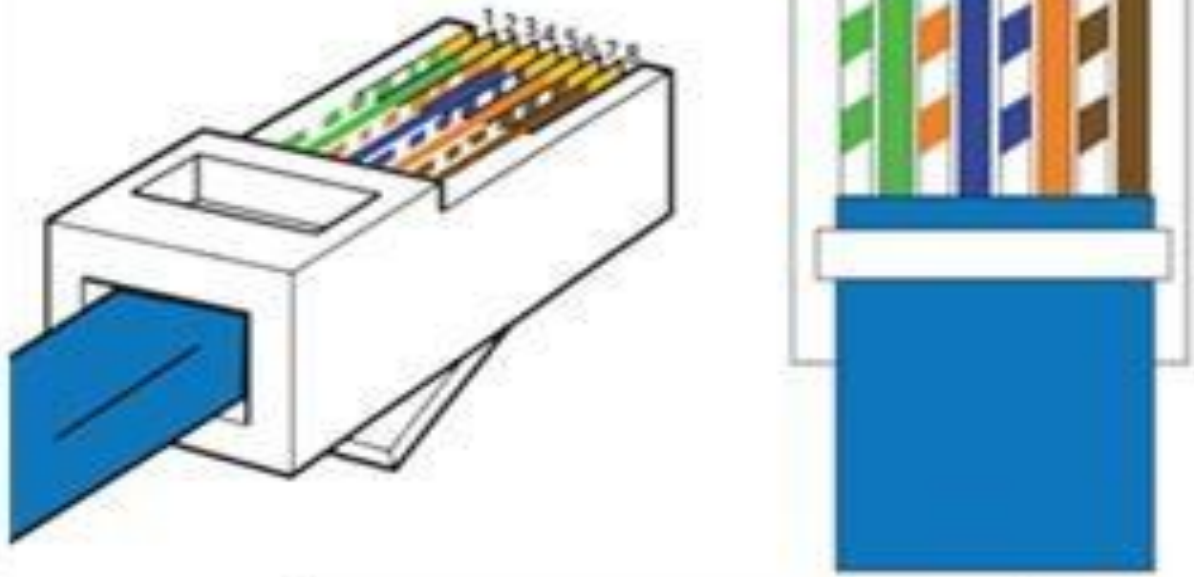
Cross Cable Example

RJ45 Pinout
A



1. White Orange	5. White Blue
2. Orange	6. Green
3. White Green	7. White Brown
4. Blue	8. Brown

RJ45 Pinout
B

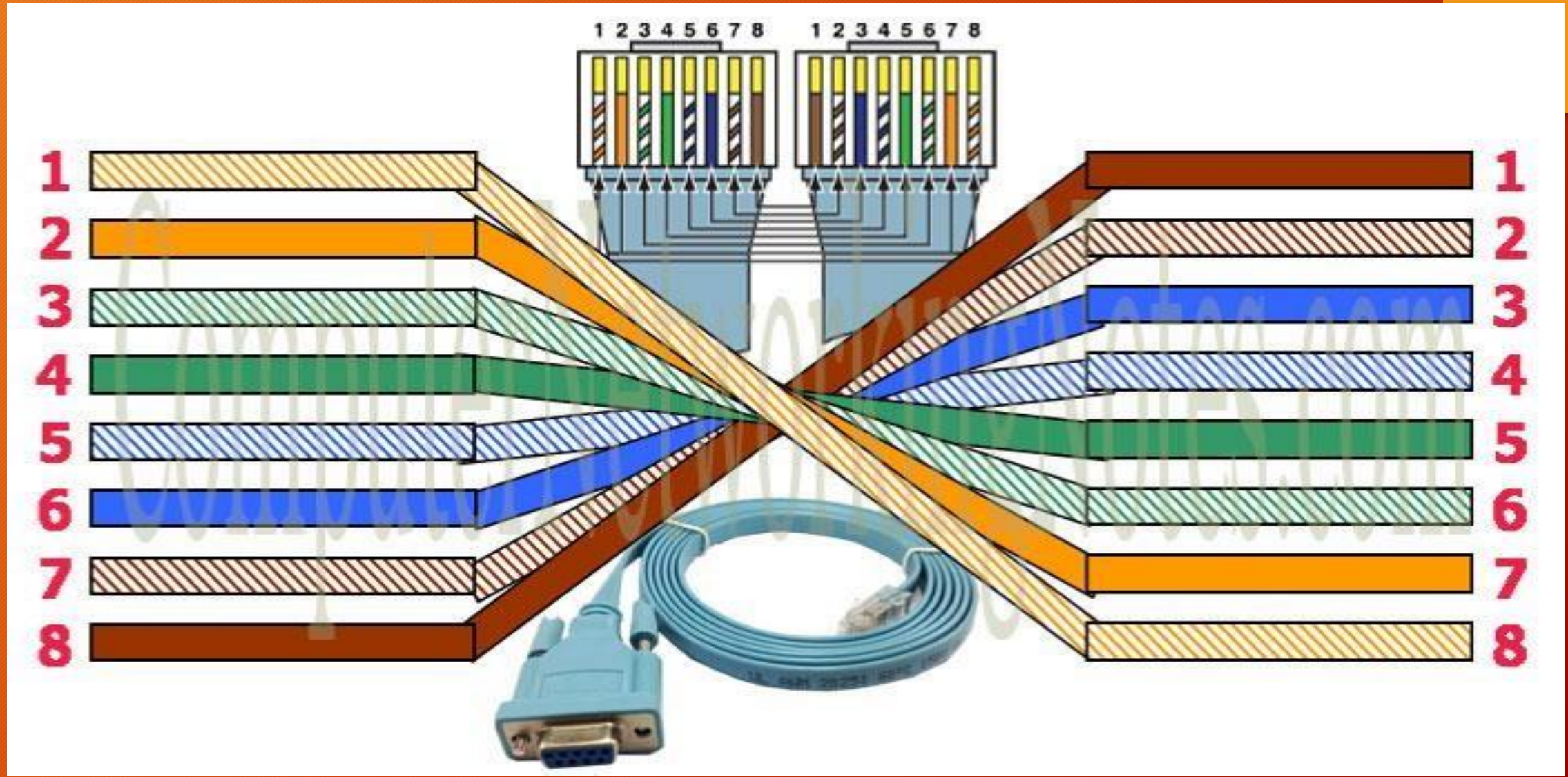


1. White Green	5. White Blue
2. Green	6. Orange
3. White Orange	7. White Brown
4. Blue	8. Brown

Rollover Cable

- Rollover cable is a cable with a serial comm port connection at one end, and an RJ45 connector at the other end.
- ▪Rollover connects the serial comm port of a PC to the console port of a Router.
- ▪Rollover cable is only used for Routers & Switches Configurations, not for data Transfer in the Network.

Rollover Cable Example



Any Questions

NEXT MODULE