

Practical Network

Third Class

L.4

Mohanad Ali



How to wire

Cut the cable into suitable length and repeat the below steps for the other side.

Please be sure what kind of the cable you are wiring.



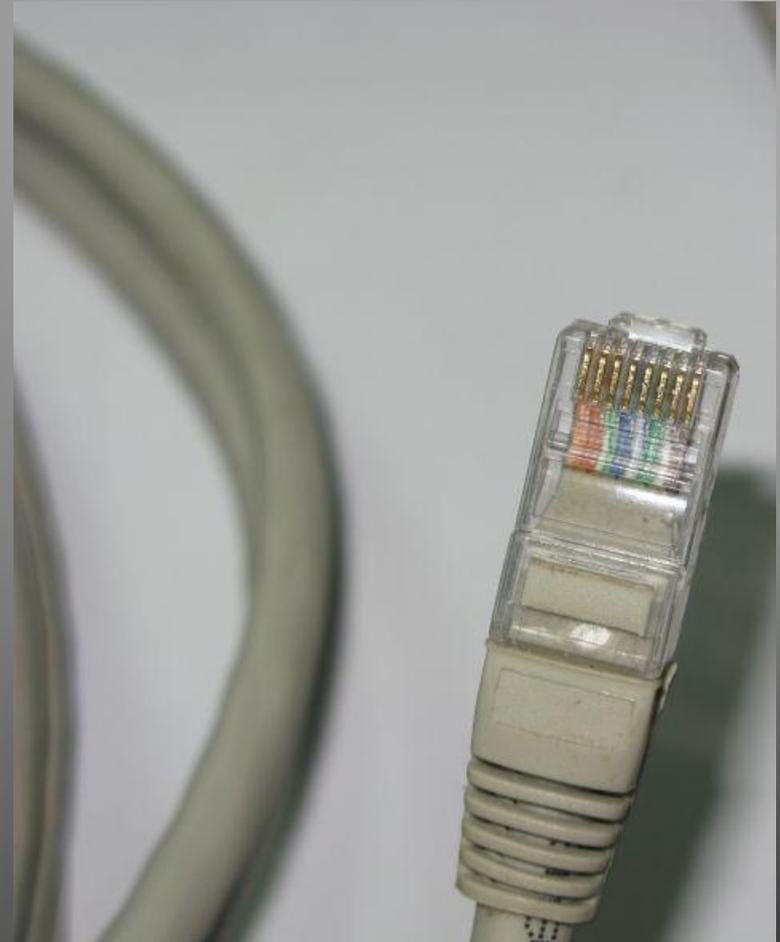
Straight Through



Crossover

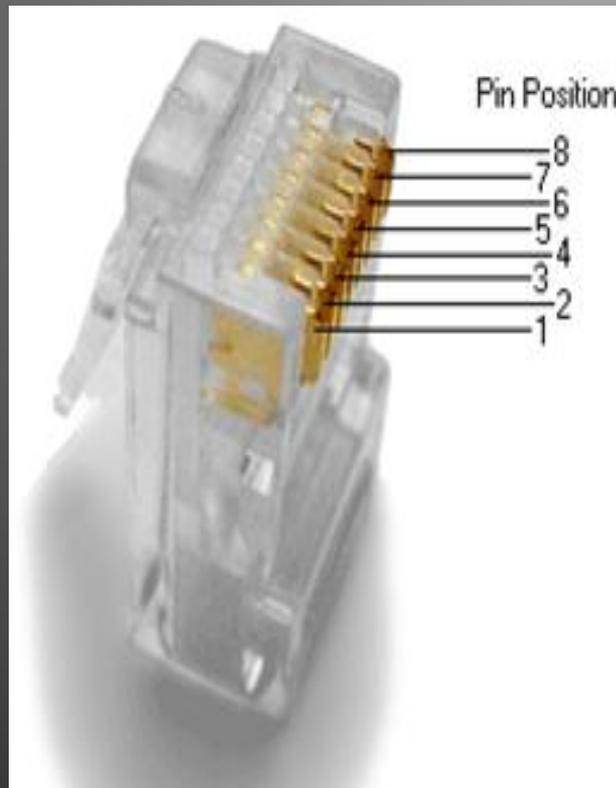
Ethernet Cable

- ▶ The name, Ethernet Cable, always refers to the following category:
 - Category 5
 - Category 5e
 - Category 6
 - Or more than those categories.



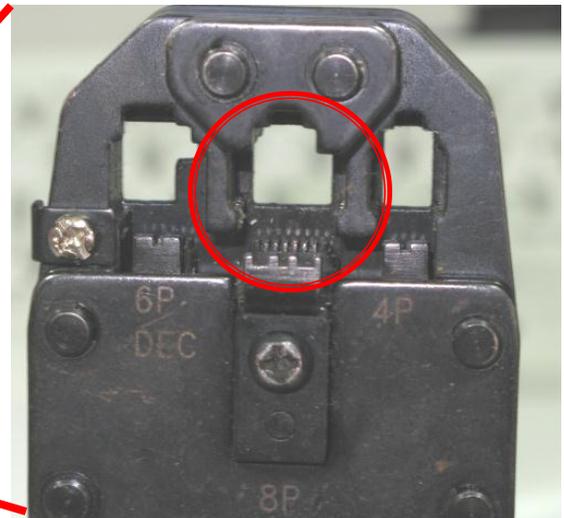
Ethernet Cable

- ▶ It is composed of 4-pair twist wirings.
 - Orange
 - Green
 - Blue
 - Brown



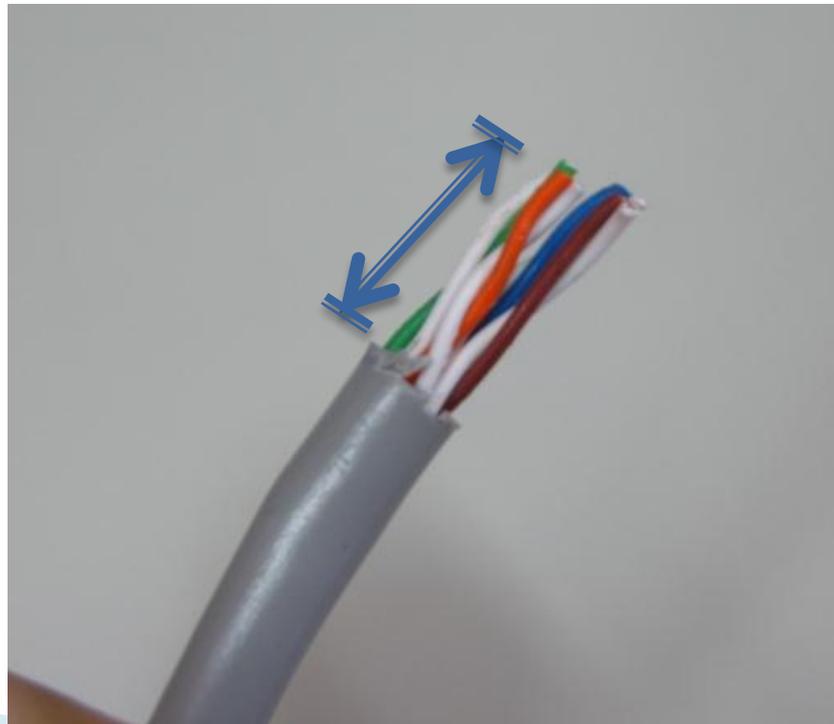
How to wire

- ▶ Prepare the materials and tools.
 - Cable & RJ-45 plugs
 - Scissors
 - Crimping tool



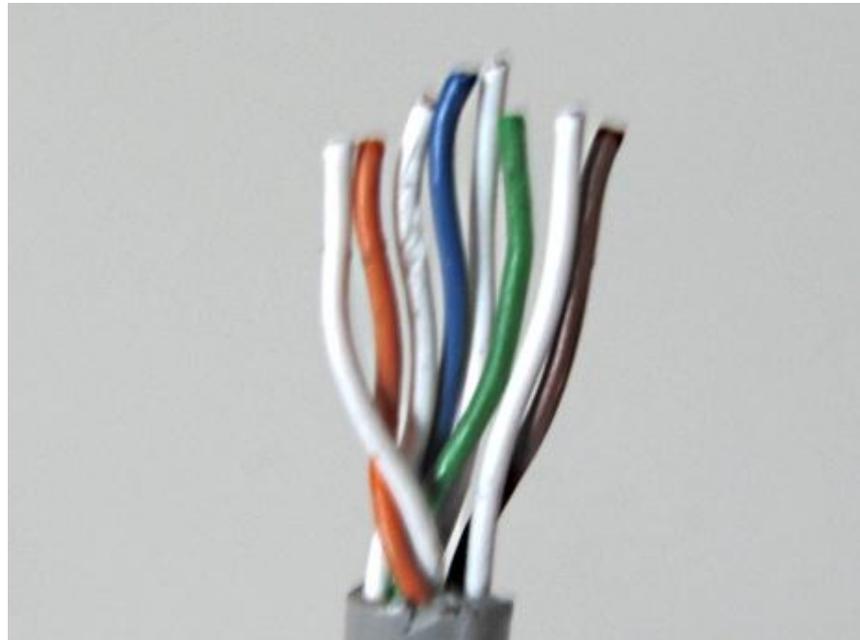
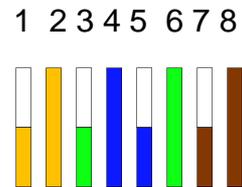
How to wire

- ▶ Strip off suitable length of the cable sheath.
 - About 2–2.5 cm
 - You can mark the position first.



How to wire

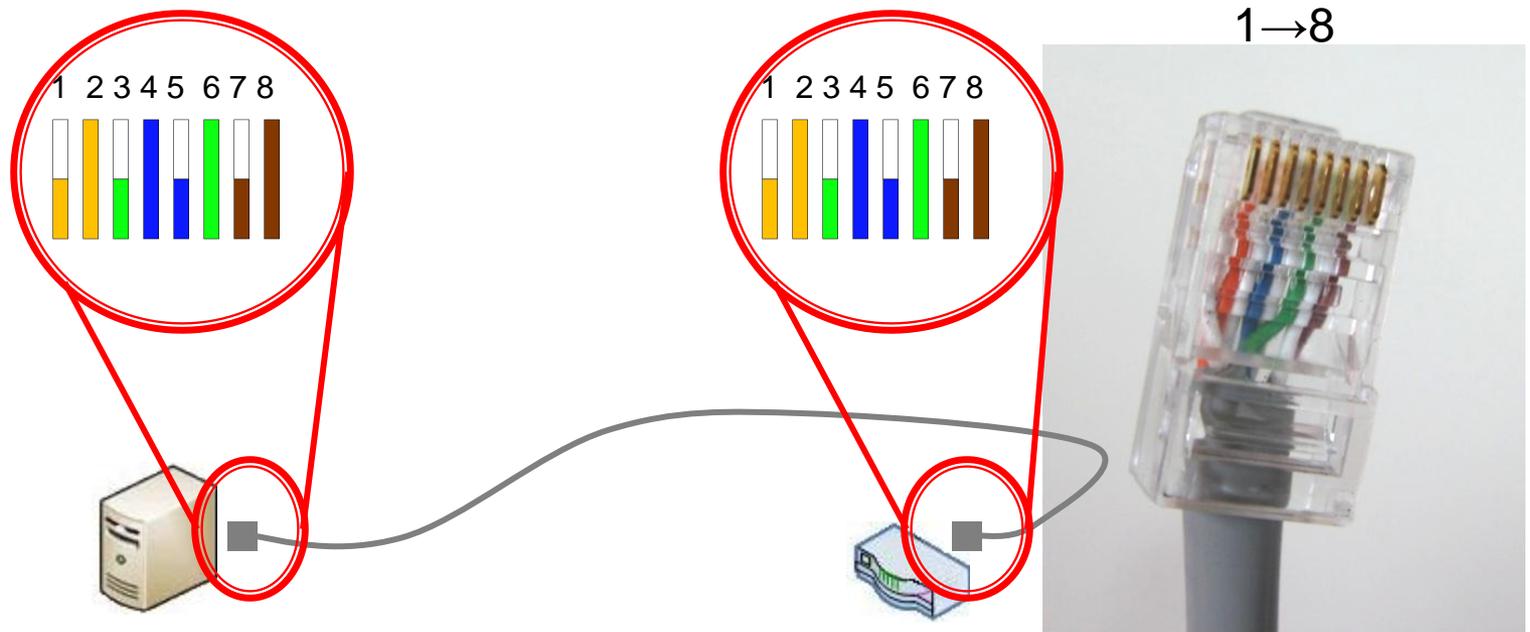
- ▶ Align the colored wires according to the specific order.



How to wire

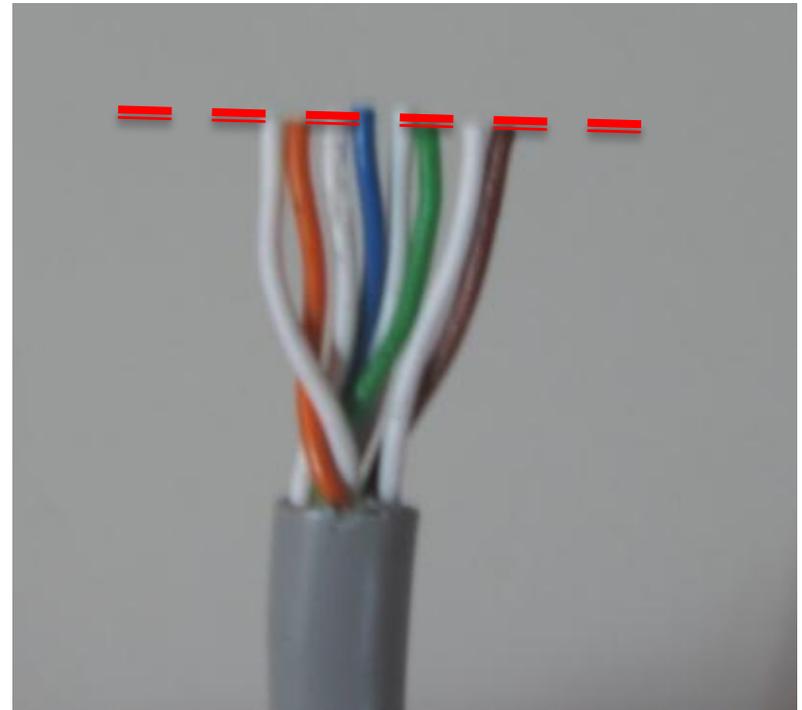
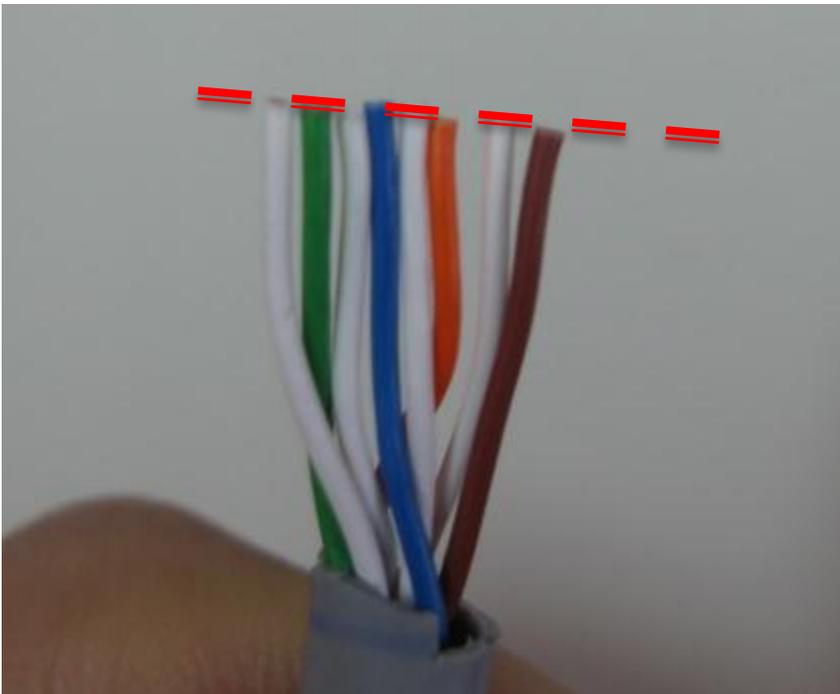
▶ Straight Through

- All order of the wirings is the same as the other side.



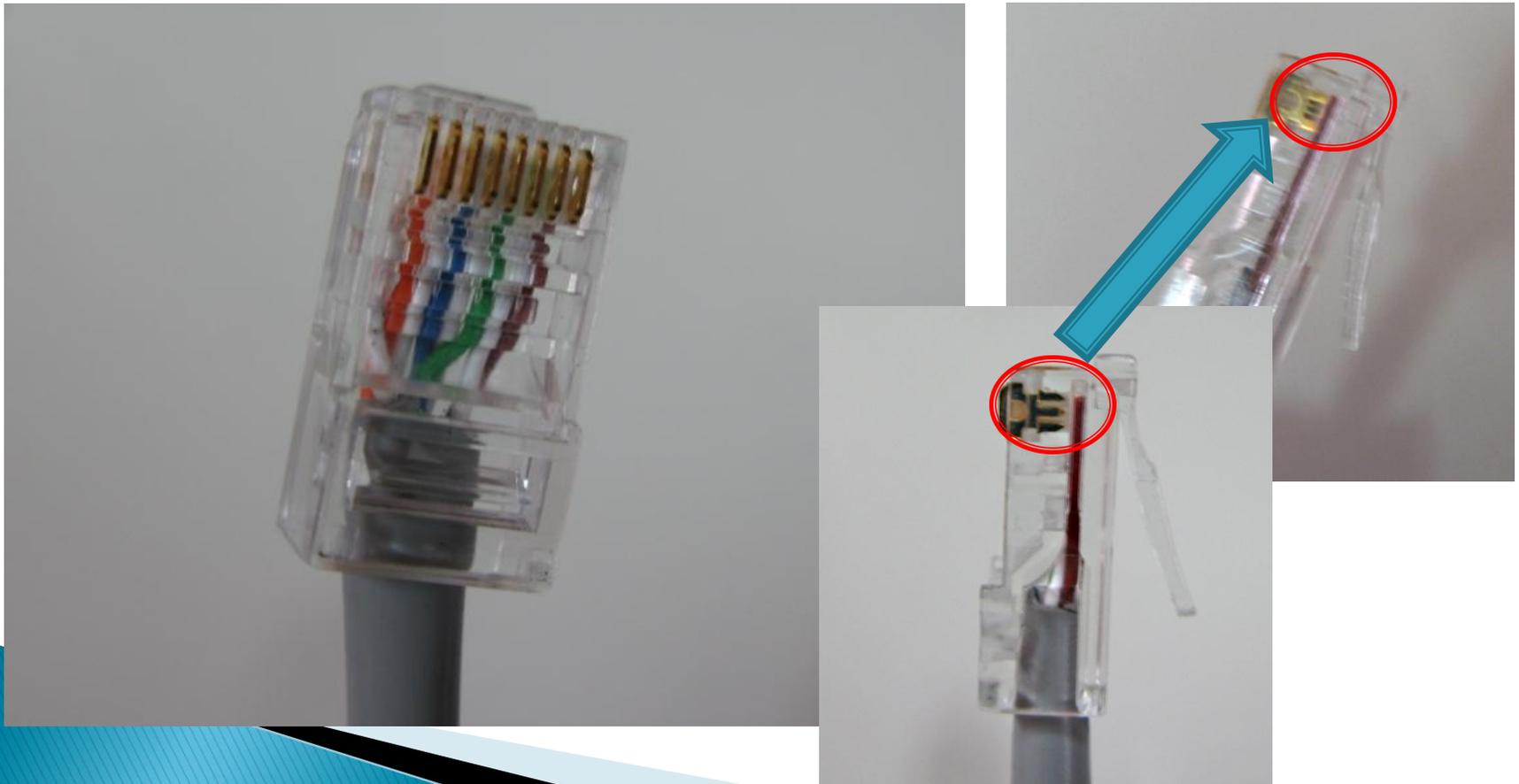
How to wire

- ▶ Trim all the wires to the same length.



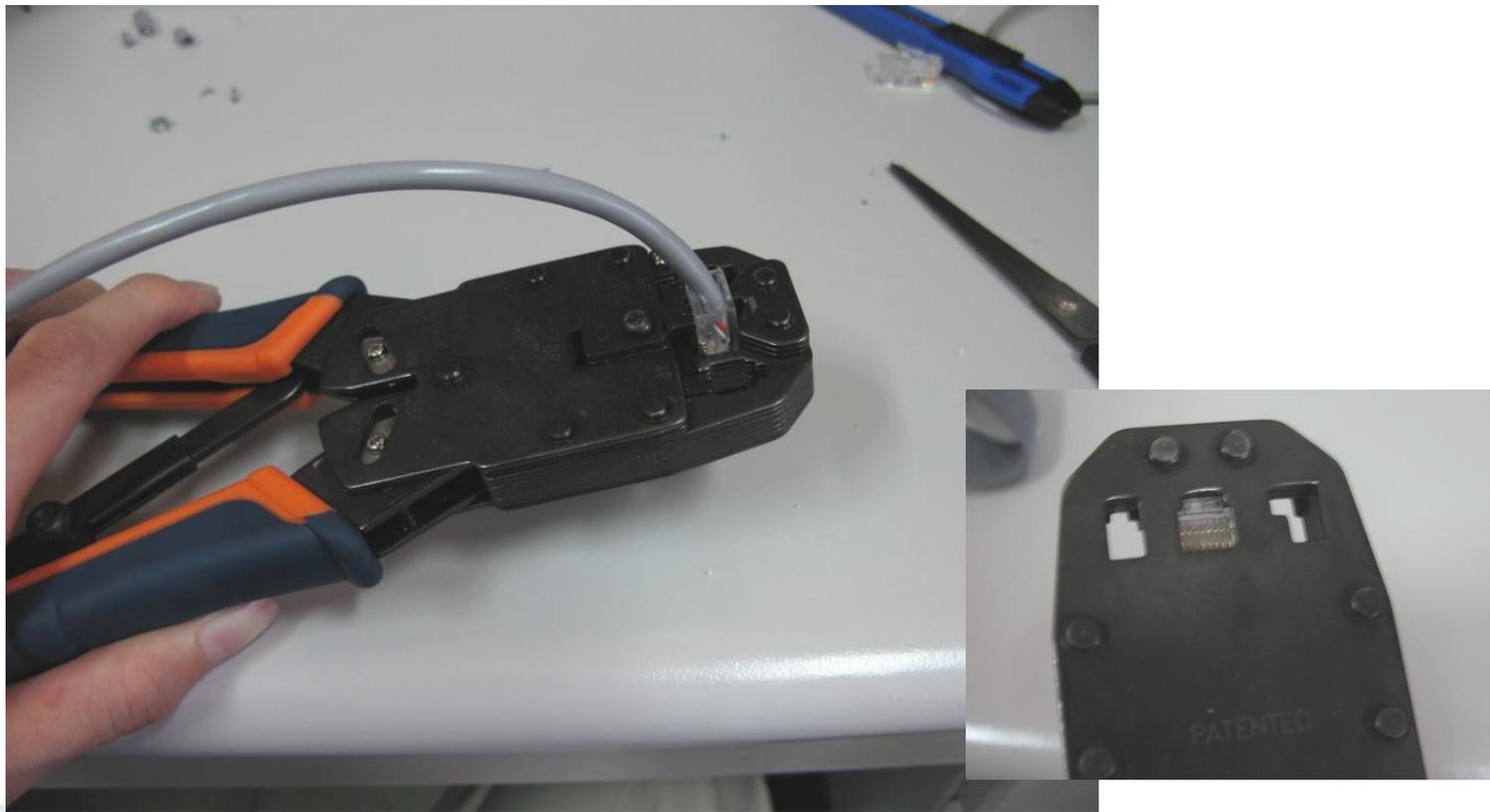
How to wire

- ▶ Insert the wires into the RJ45 plug.



How to wire

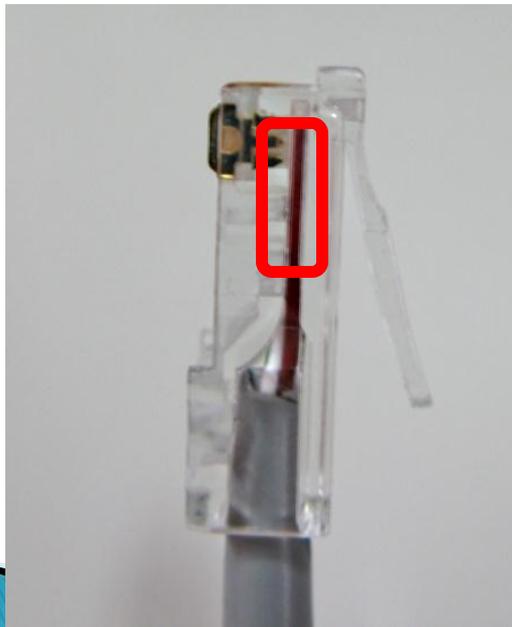
- ▶ Crimp the RJ45 plug with the crimping tool.



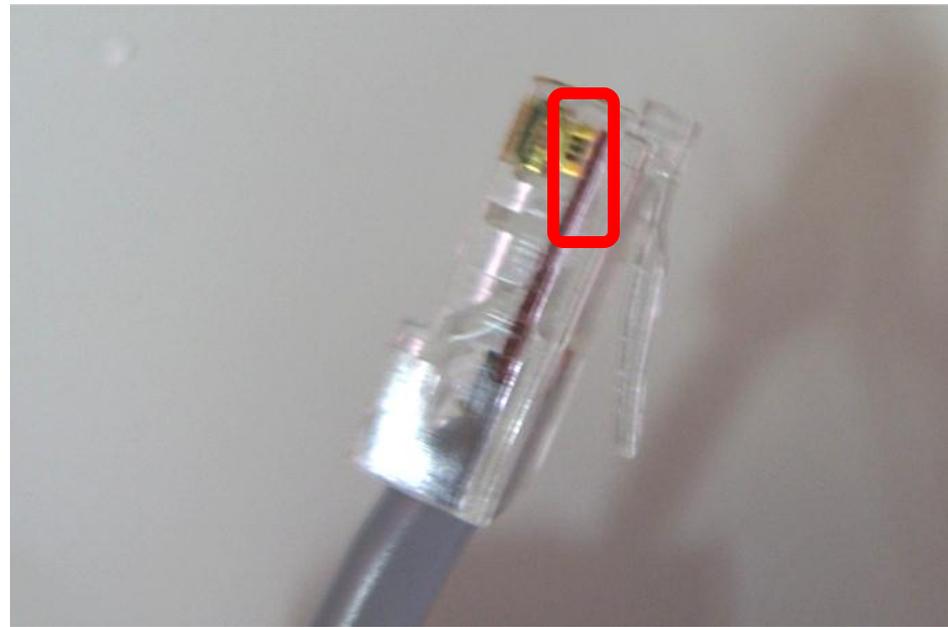
How to wire

- ▶ Verify the order of the wires is correct and all the wires are correctly making good contact with the metal contacts in the RJ45 plug.

Incorrect



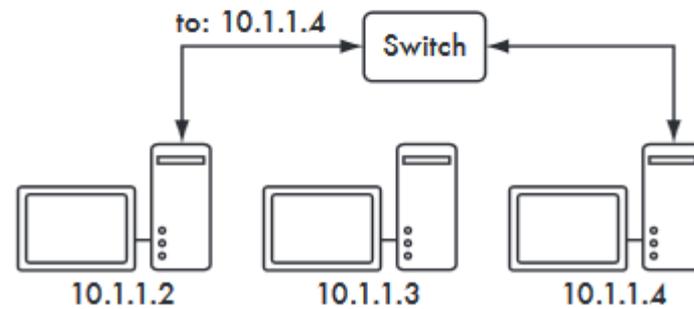
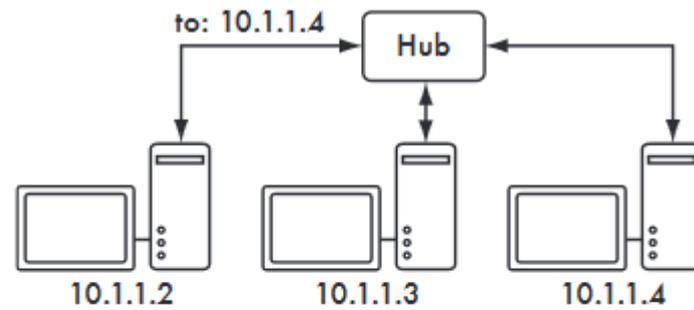
Correct

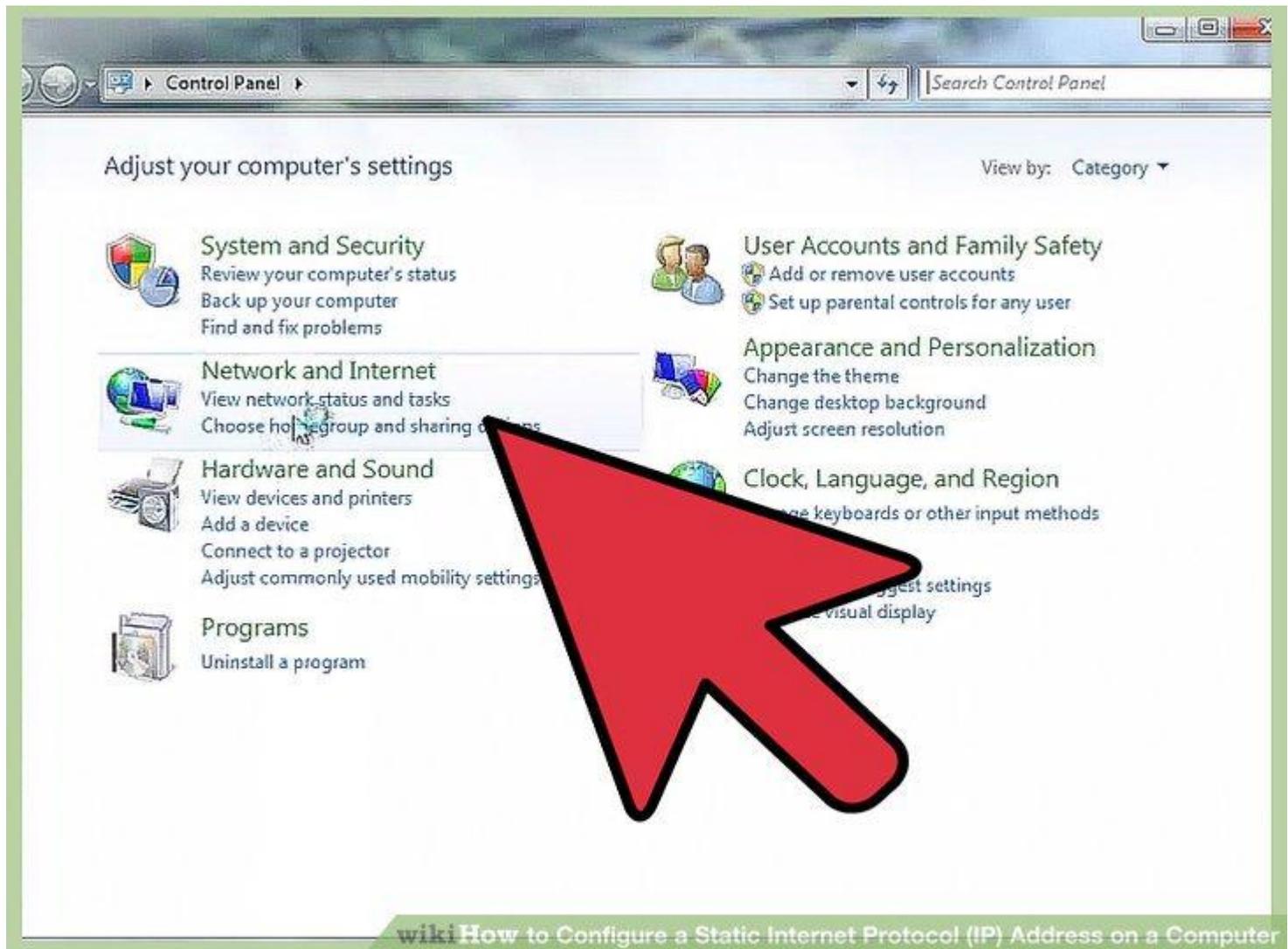


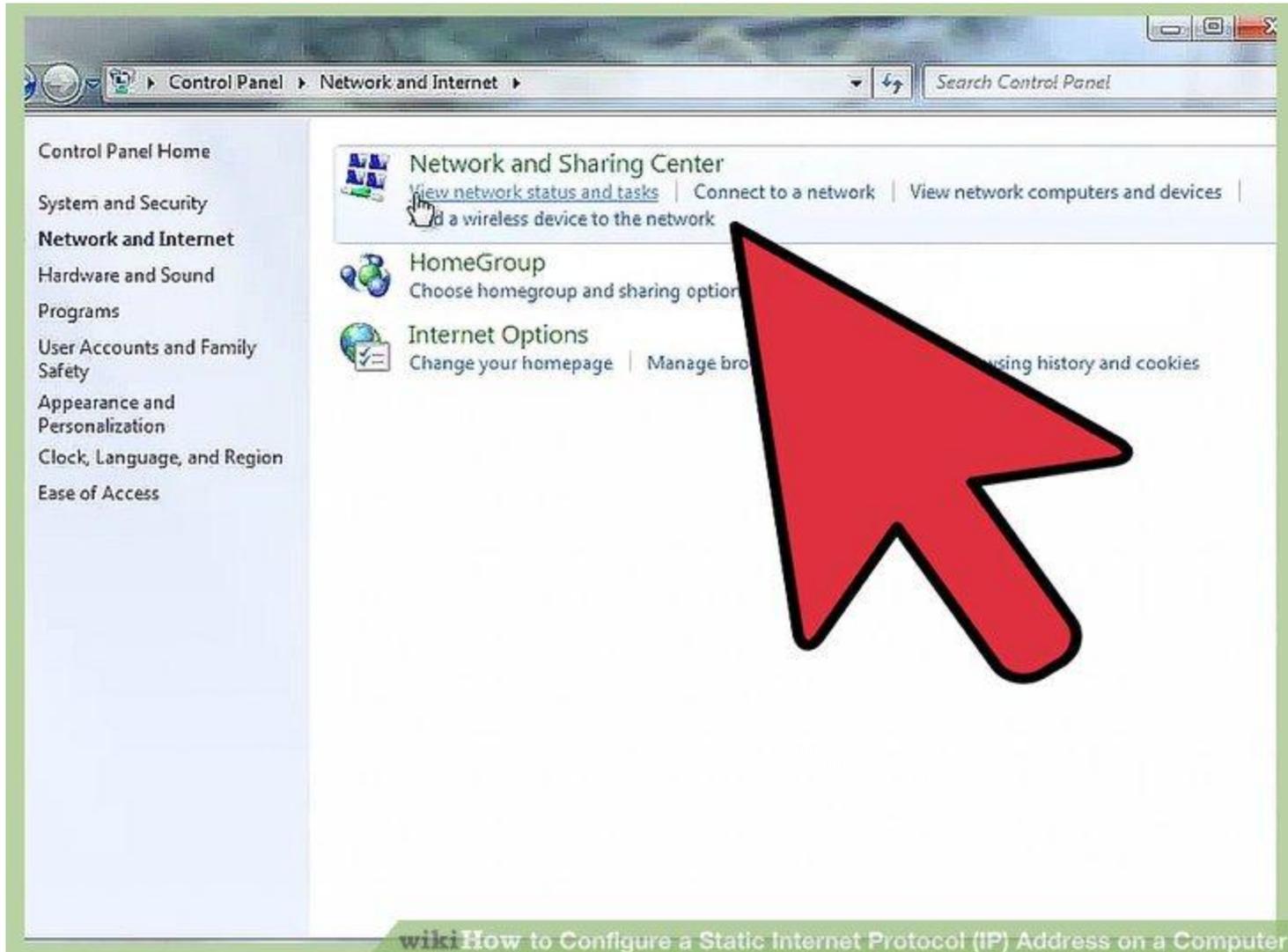
How to configure a static internet protocol(IP) address on a computer

All computers, just like houses, need to have an address on both the local network, and on the internet. Most operating systems come with a service to automatically assign this. But sometimes we want to specify the address of a specific computer, or troubleshoot a connection. Start with Steps below for specific instructions on how to configure a static IP address.

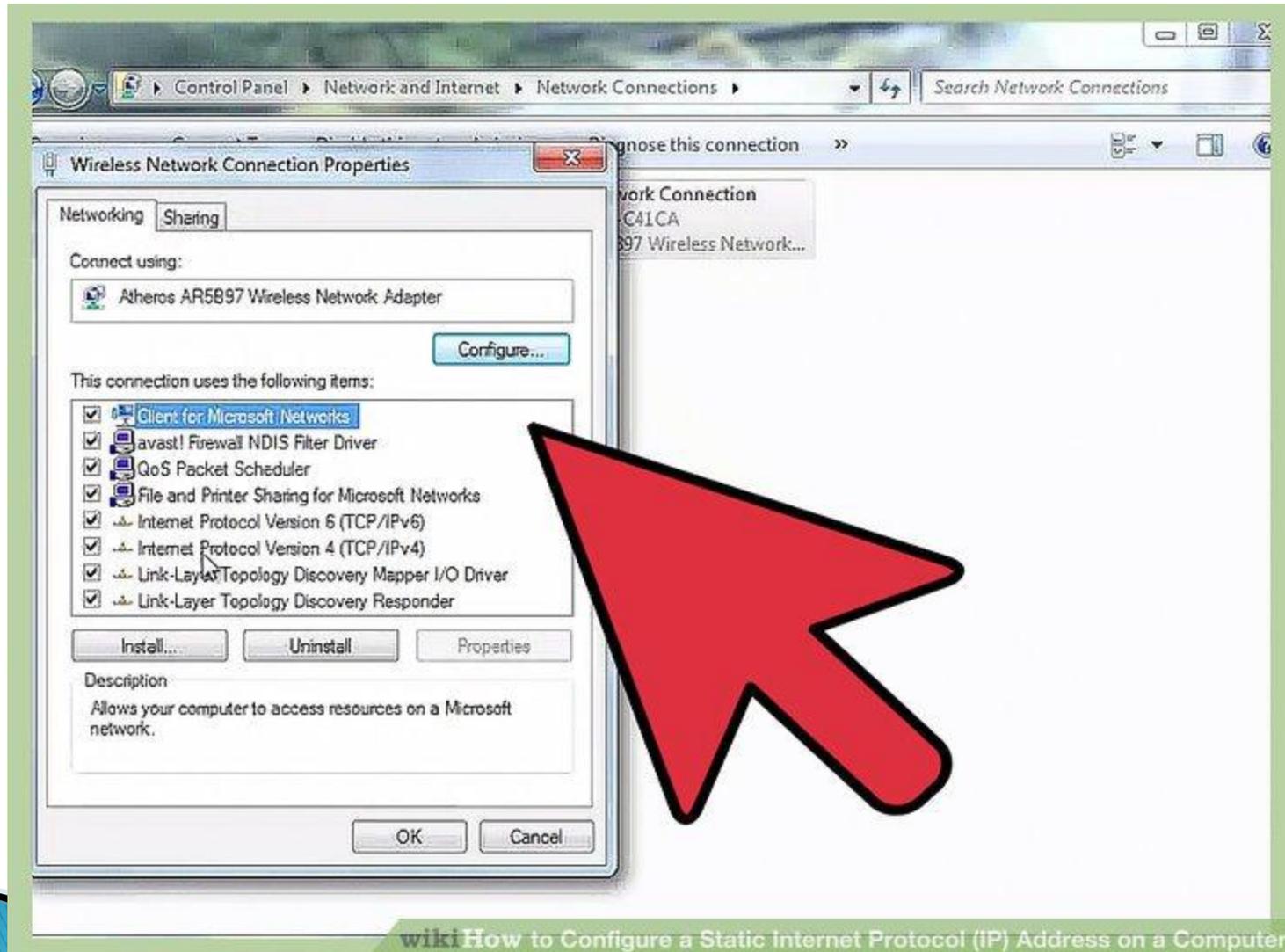
EXAMPLE IP ADDRESS

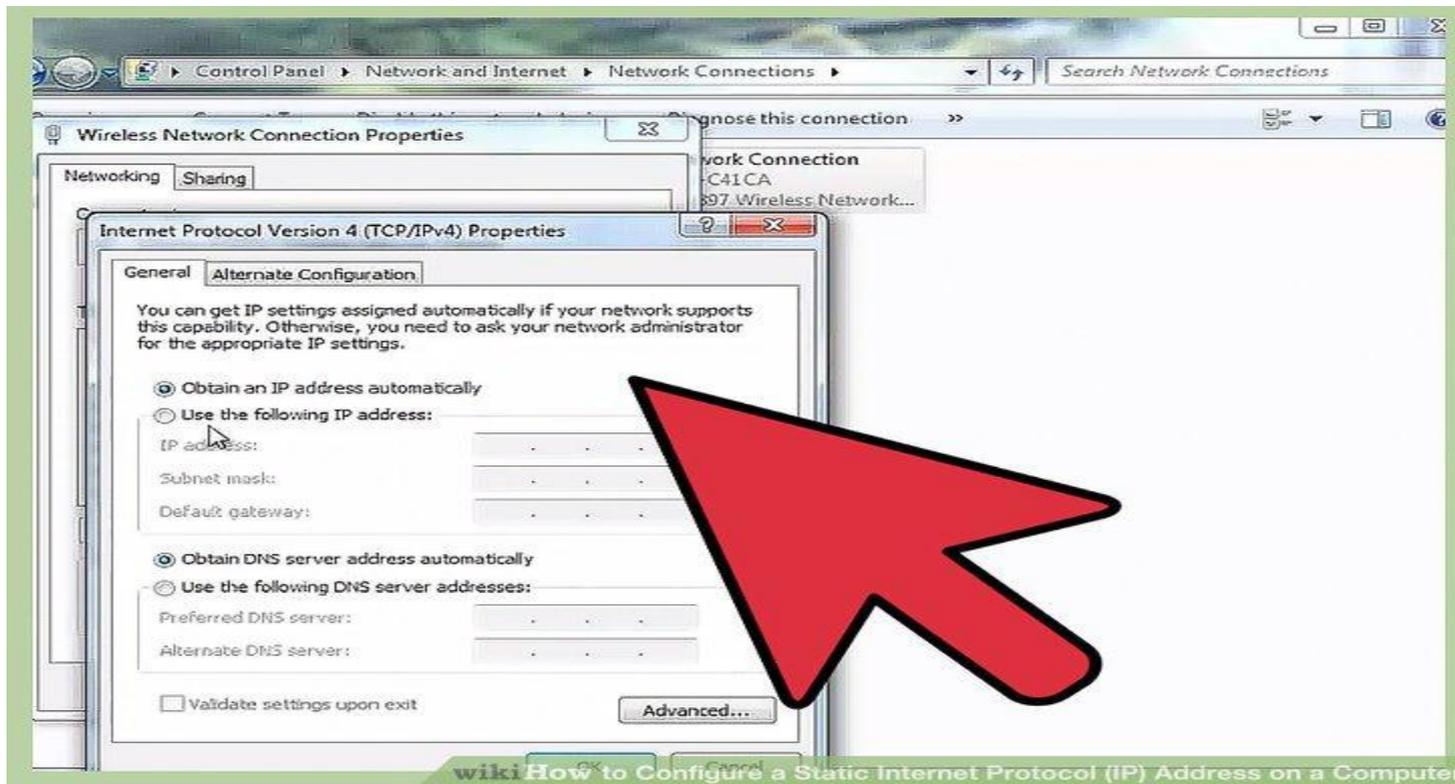






Select Internet protocol version 4(TCP/IPv4). Next select Use the following IP address.





wikiHow to Configure a Static Internet Protocol (IP) Address on a Computer

Testing TCP/IP connectivity with PING

Align the colored wires according to the specific order. Ping is a utility included with all current versions of windows and can be used to test the connectivity between computers on the LAN, and the Internet. It does so by sending tiny packets (called ECHO_REQUEST) packets to the target machine, who will reply back with ECHO_REPLY packets, so that the pinging machine can determine the "distance" (in time)to the target machine. For exact technical details/ settings of the Ping utility please refer to Microsoft documentation

From the Cmd line type:

```
C:\ ping x.x.x.x -t
```

If the ping is successful then you have established that TCP/IP communication is working correctly between the two machines. You should see:

```
Reply from x.x.x.x: bytes=32 time<10ms TTL=128
```

Failed ping tests

- ▶ If a ping test fails, you see error warnings similar to one of the following instead of the ping test results shown above:
- ▶ Request timed out
- ▶ Destination host unreachable
- ▶ Transmit failed, error code #

Reference

- ▶ Wikipedia

http://en.wikipedia.org/wiki/Category_5_cable

- ▶ Cat5e Cable

<http://www.cat5ecable.co.uk/>

- ▶ How to wire Ethernet Cables

http://www.ertyu.org/steven_nikkel/ethernetcables.html