COC2

SET-UP COMPUTER NETWORK

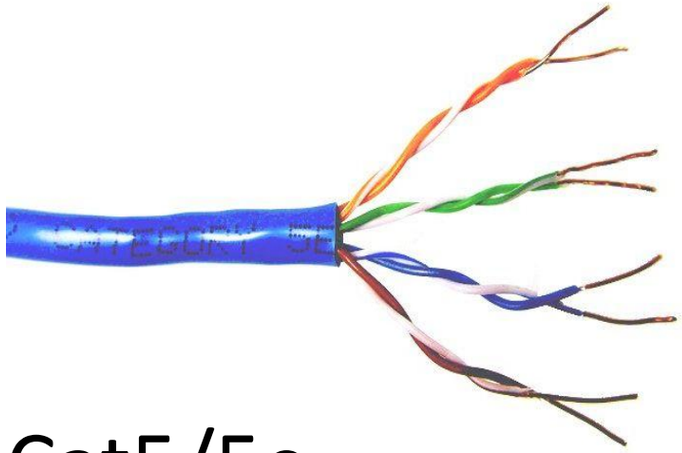
Computer Network

- Consist of two or more computers connected together through communication media to share information & resources.
  - Communication Media
    - ✓UTP Cable
    - ✓RJ45
    - ✓Network Hub
    - ✓Patch Panel
    - ✓Router

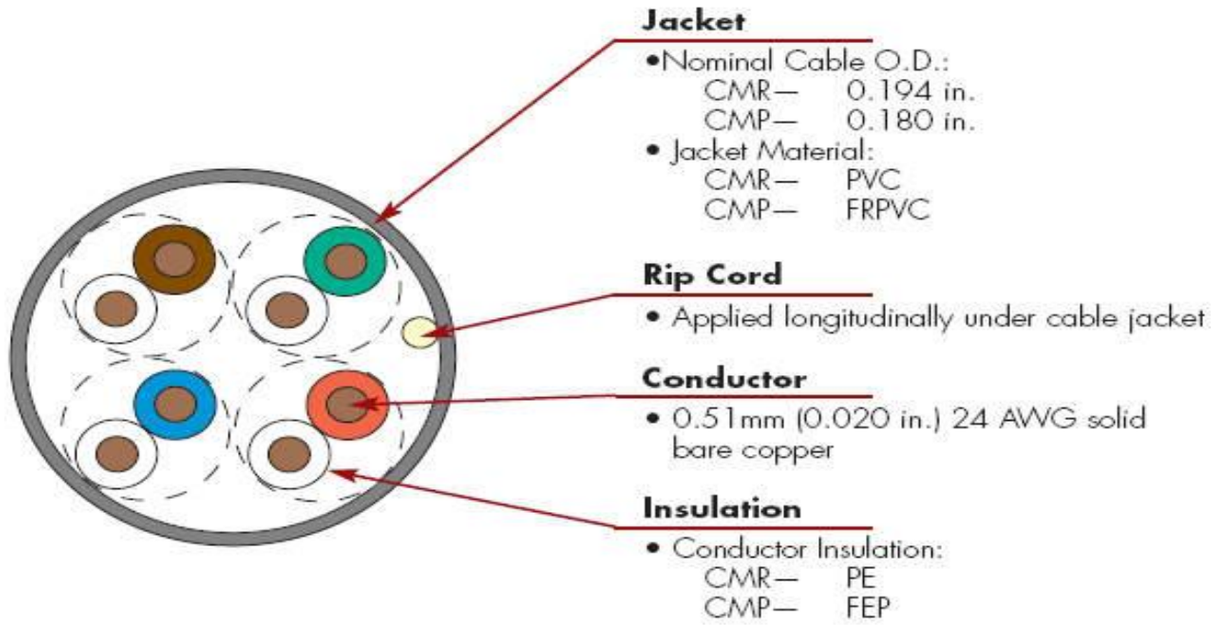
Communication Media

— **UTP Cable**

Unshielded Twisted Pair



Cat5/5e

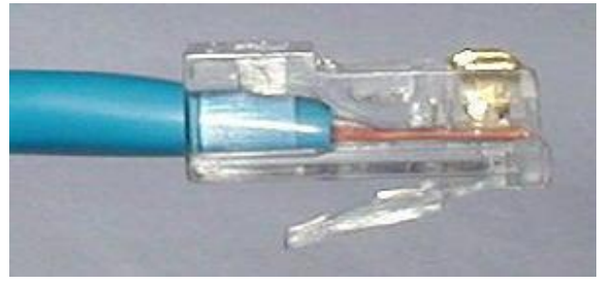


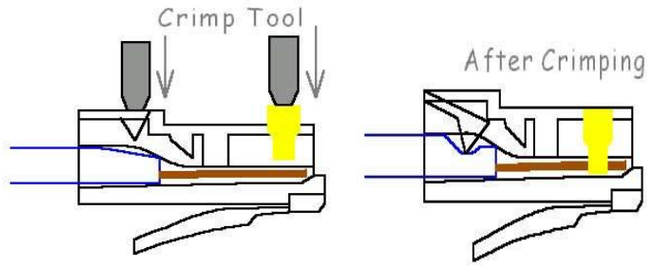
Communication Media

— RJ45

Registered Jack #45

Modular connectors were originally used in the Registration Interface system, mandated by the Federal Communications Commission(FCC) in 1976 in which they became known as registered jacks. The registered jack specifications define the wiring patterns of the jacks, not the physical dimensions or geometry of the connectors of either gender. Instead, these latter aspects are covered by ISO standard 8877, first used in ISDN systems. TIA/EIA-568 is a standard for data circuits wired on modular connectors.





Communication Media

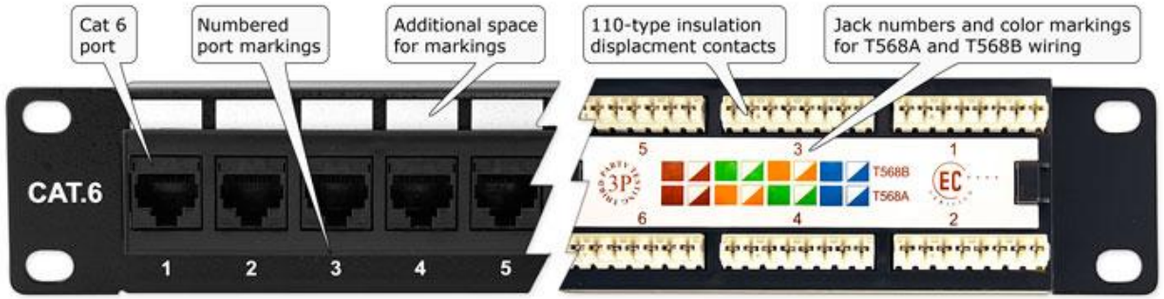
—Network Hub/Switch

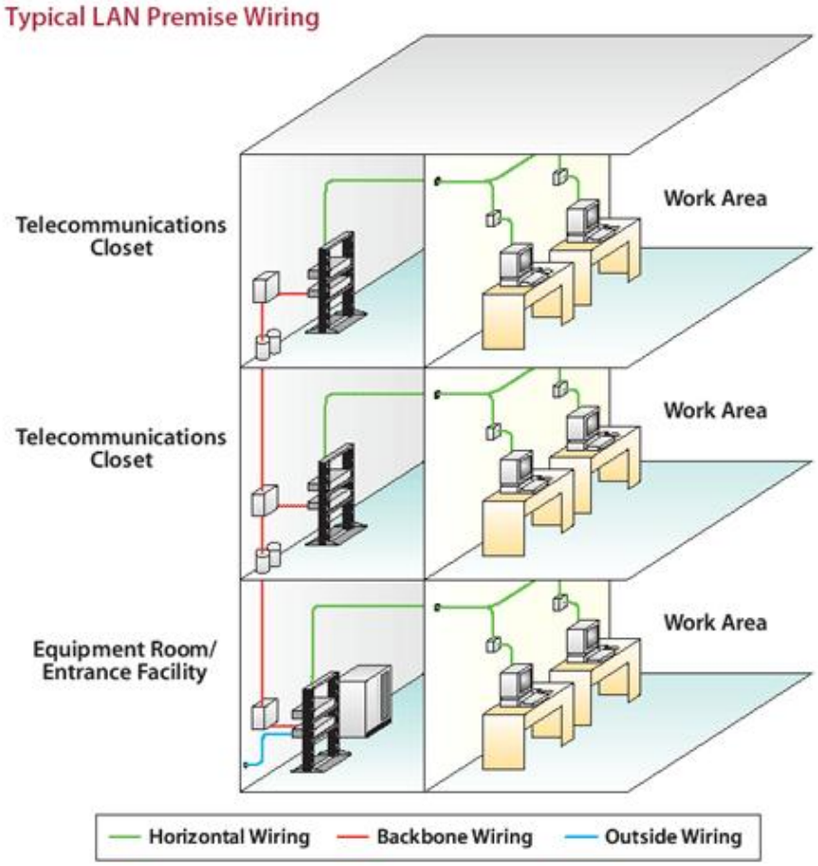
A network switch (also called switching hub, bridging hub, officially MAC bridge) is a computer networking device that connects devices together on a computer network, by using packet switching to receive, process and forward data to the destination device. Unlike less advanced network hubs, a network switch forwards data only to one or multiple devices that need to receive it, rather than broadcasting the same data out of each of its ports.

Communication Media

—**Patch Panel** (Power over Ethernet)

A patch panel, patch bay, patch field or jack field is a device or unit featuring a number of jacks, usually of the same or similar type, for the use of connecting and routing circuits for monitoring, interconnecting, and testing circuits in a convenient, flexible manner. aka Bridge of a network.





Communication Media

—Router

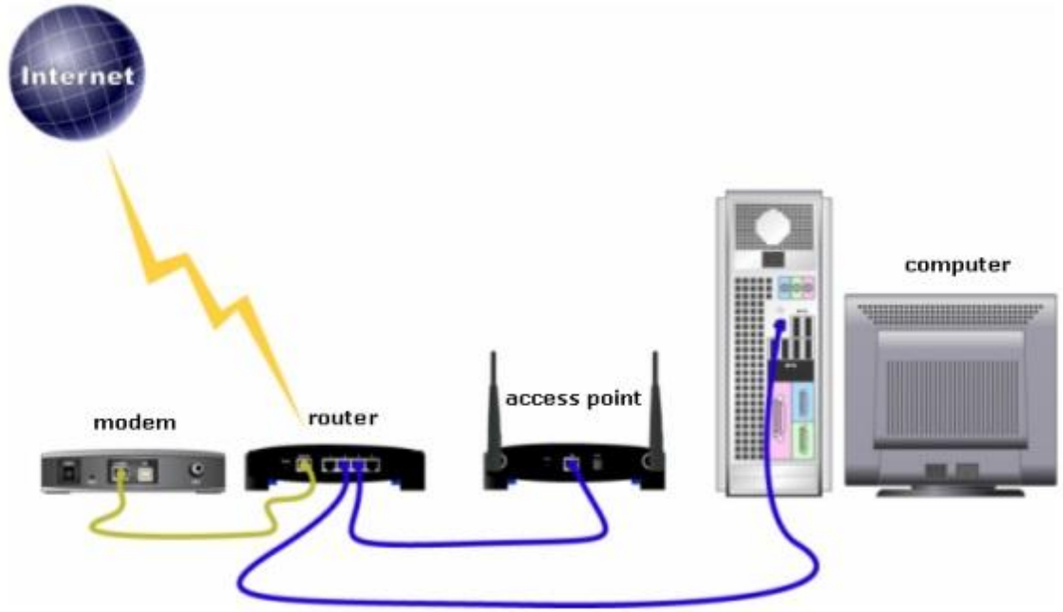
Used to DHCP Server

- ADSL

  Transmit IP Address to Server (Computer)

- Access Point

  To extend the range of wireless connection



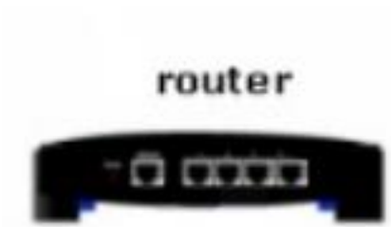
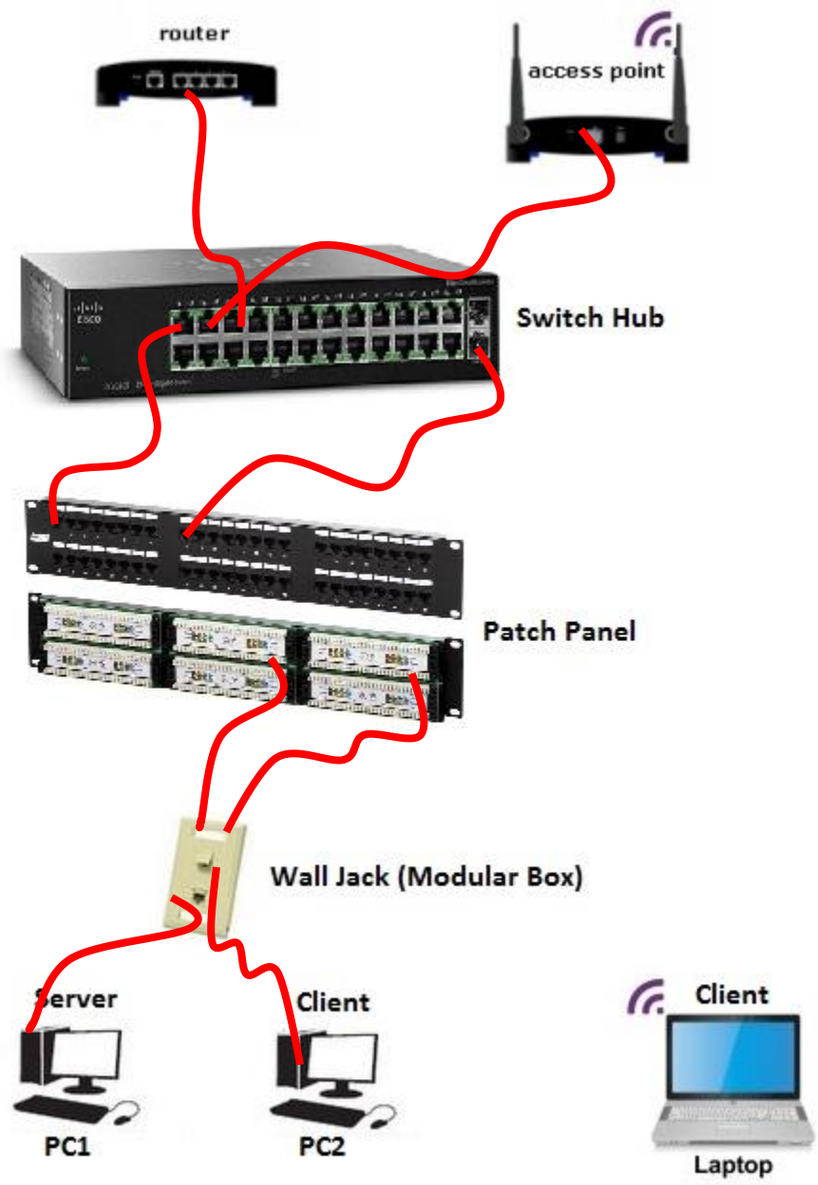
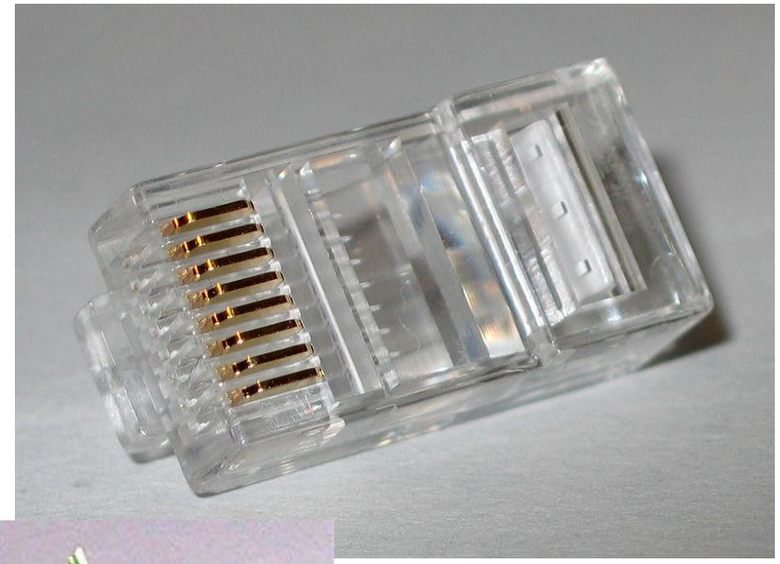
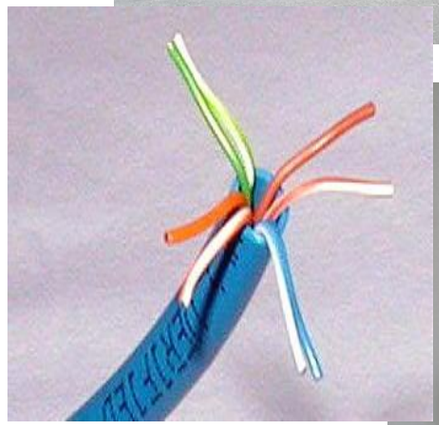


Diagram of Network on (TESDA-CSS)

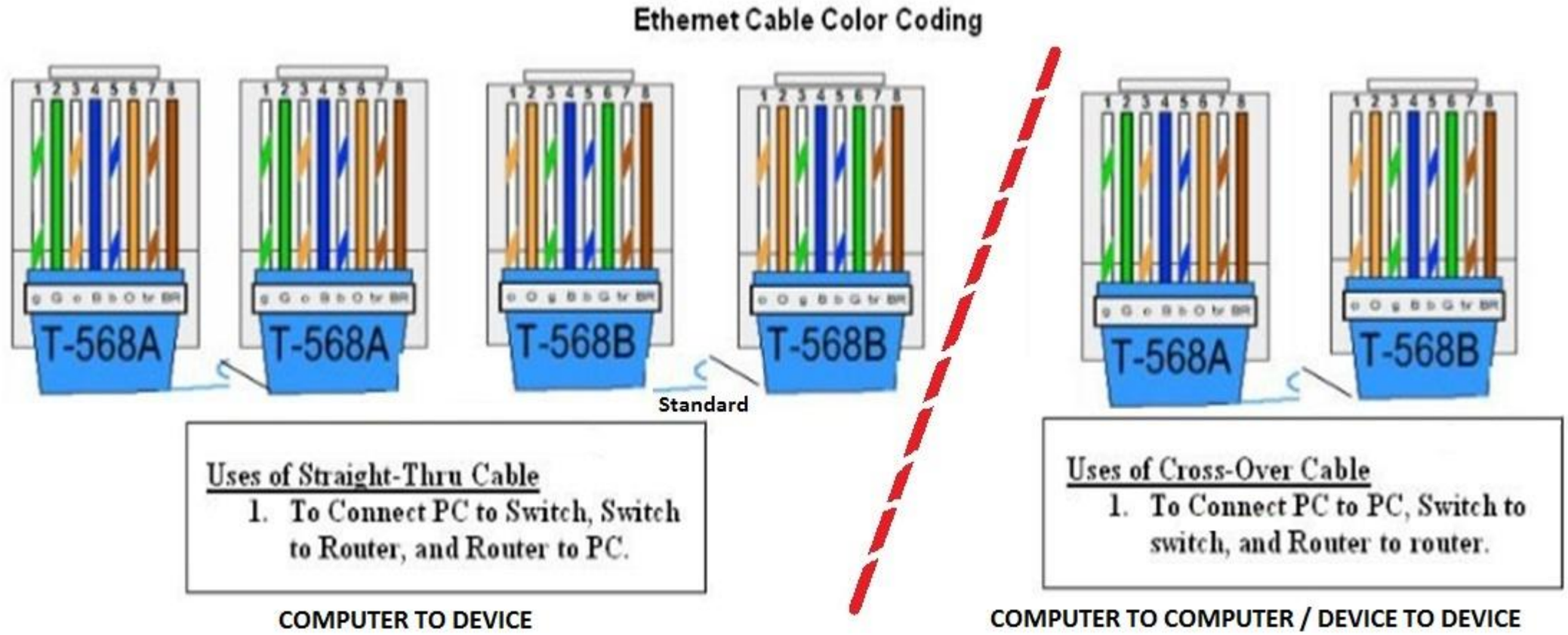


NETWORKING TOOLS NEEDED





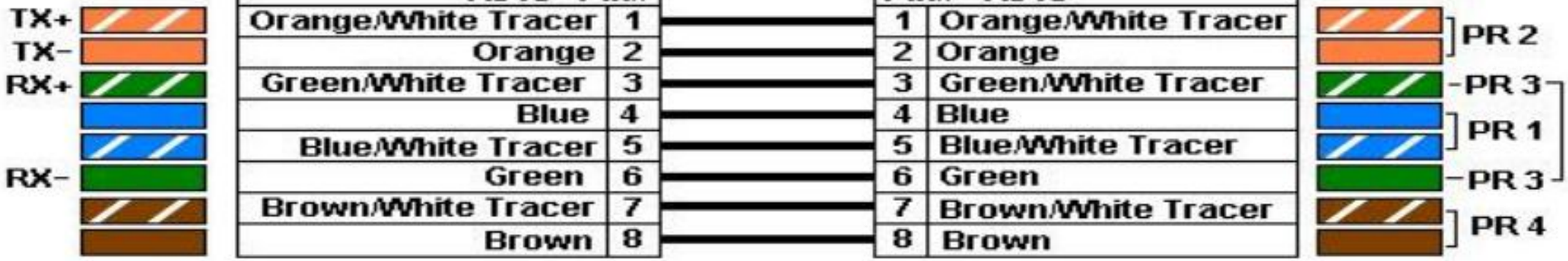
UTP Cable (Color Coding) for RJ45



UTP Cable (Color Coding) for RJ45

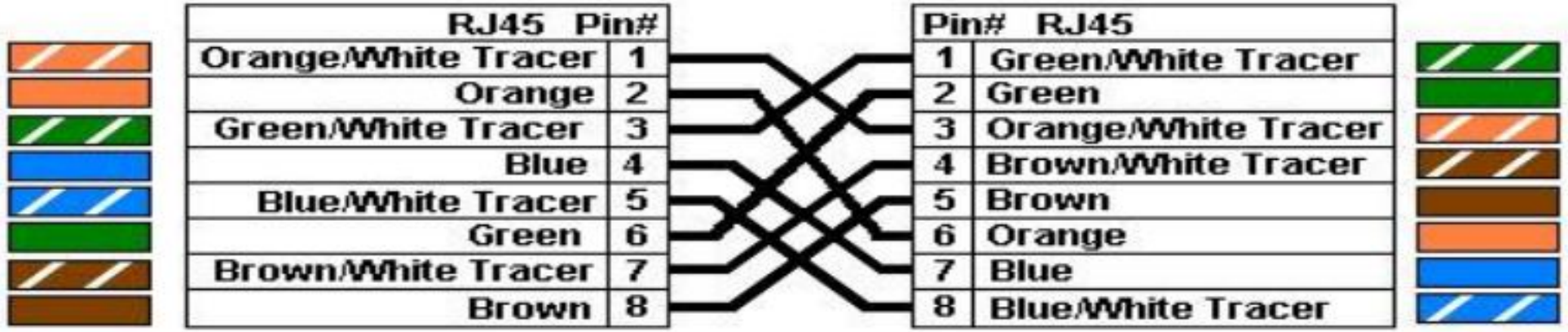
Color Standard
EIA/TIA T568B

Ethernet Patch Cable

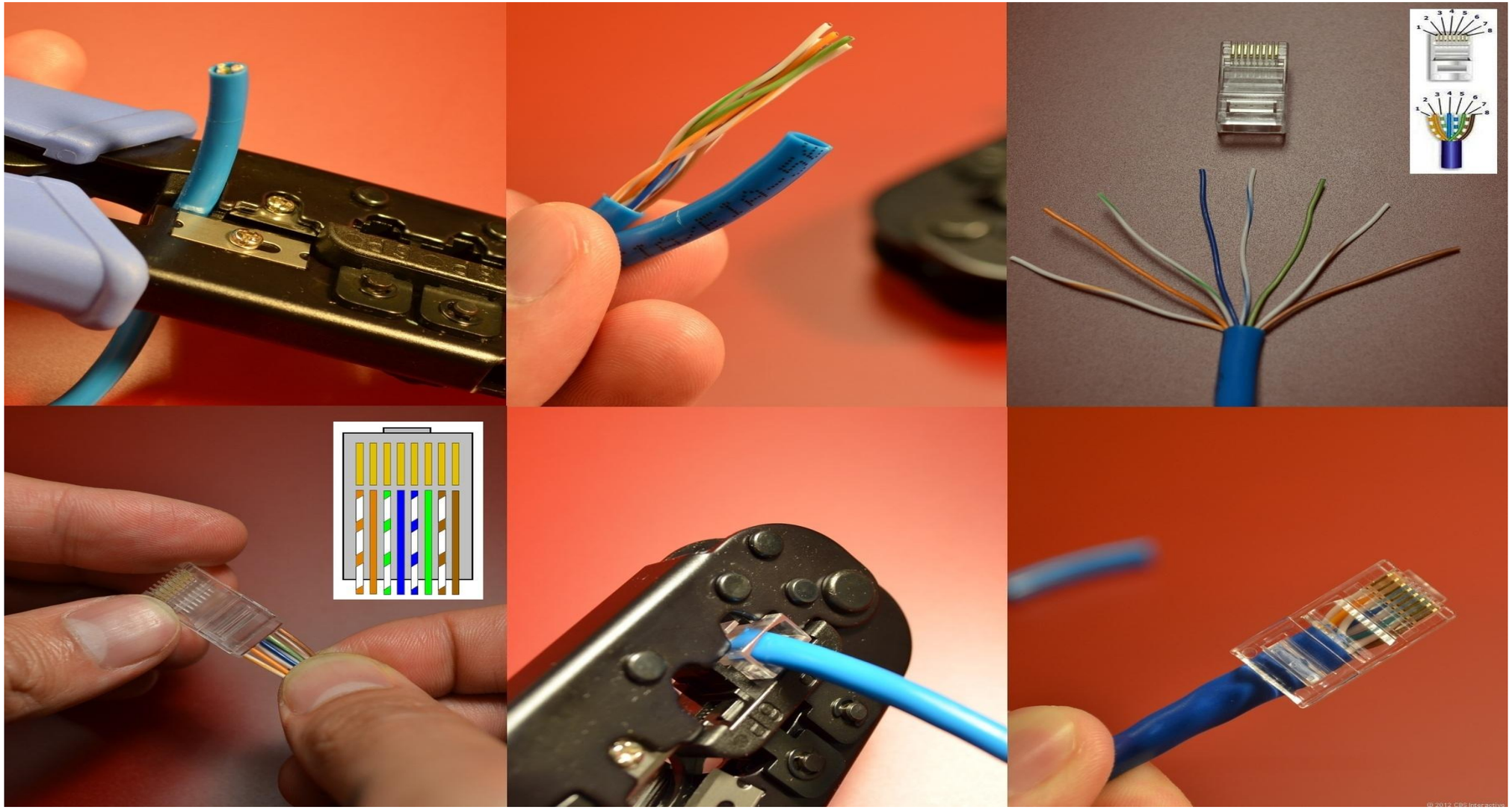


Color Standard
EIA/TIA T568B

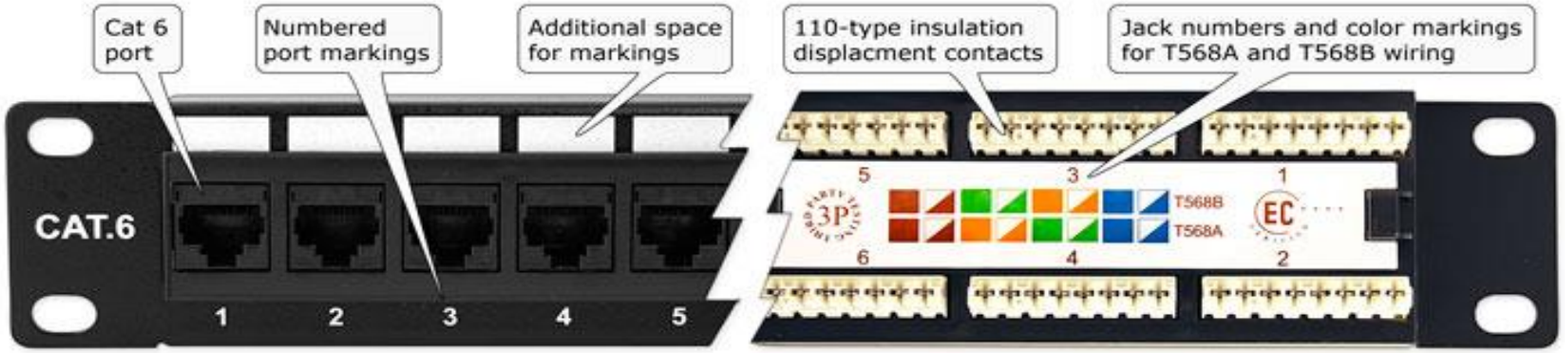
Ethernet Crossover Cable

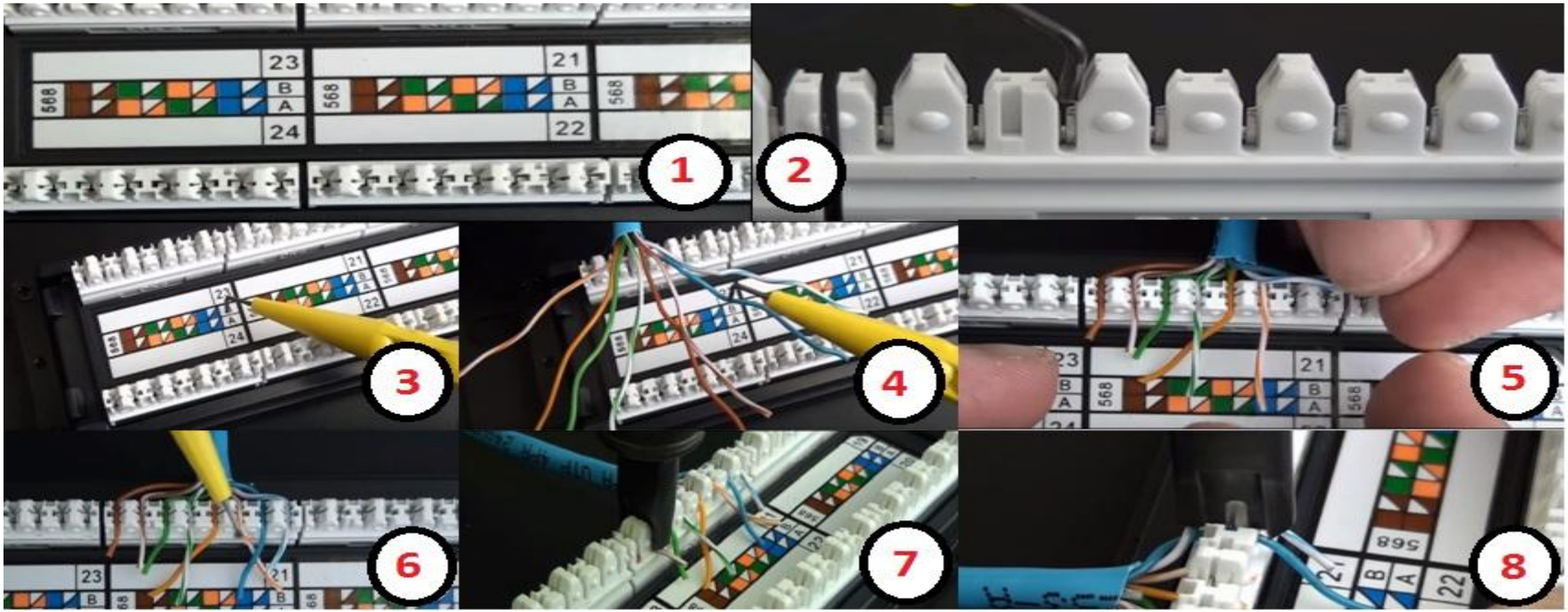


UTP Cable (Color Coding) for RJ45

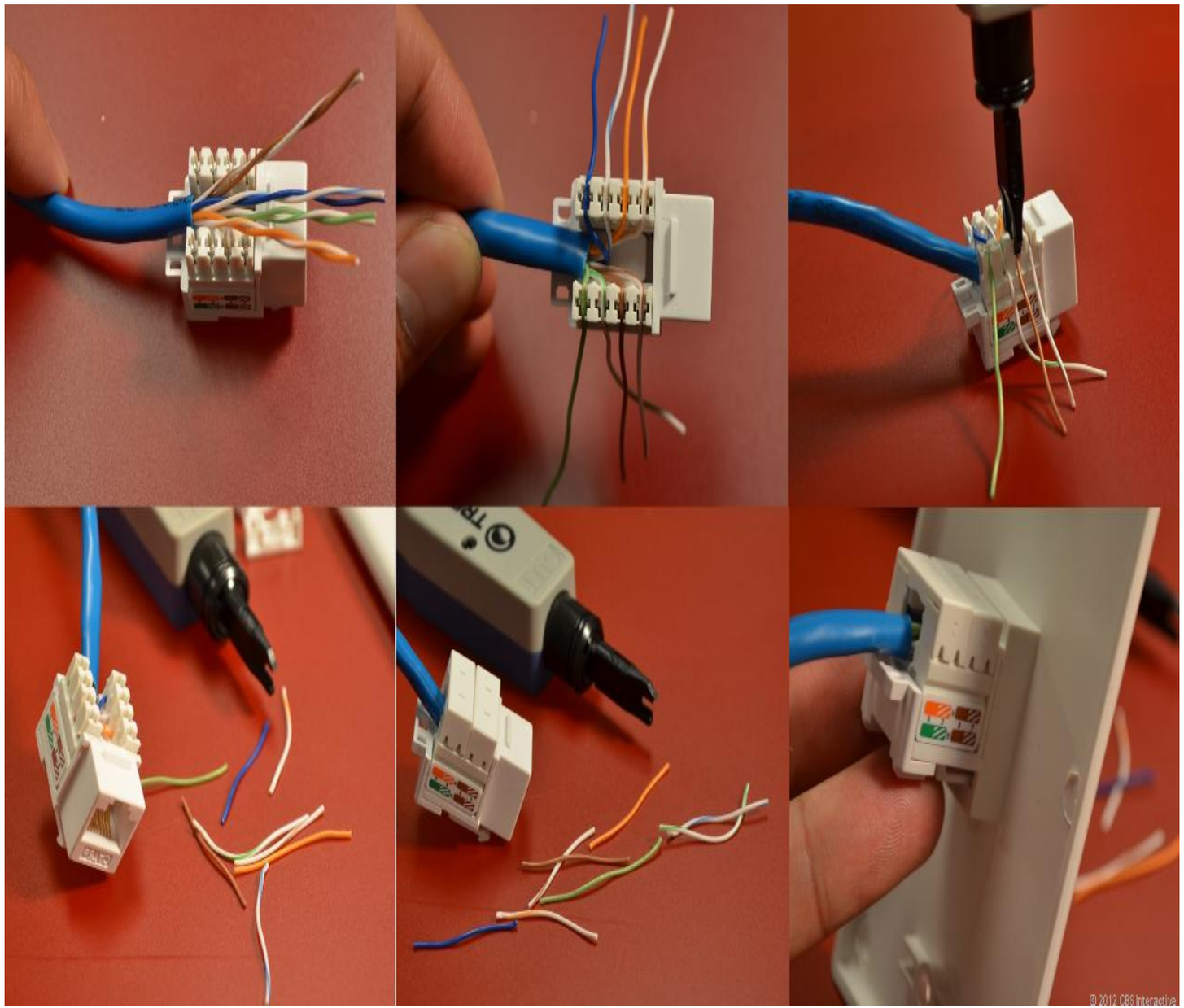


UTP Cable (Color Coding) for Patch Panel



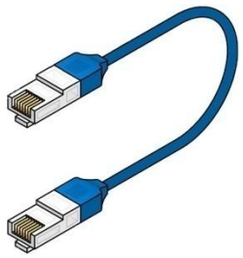


UTP Cable (Color Coding) for Patch (Modular Box)

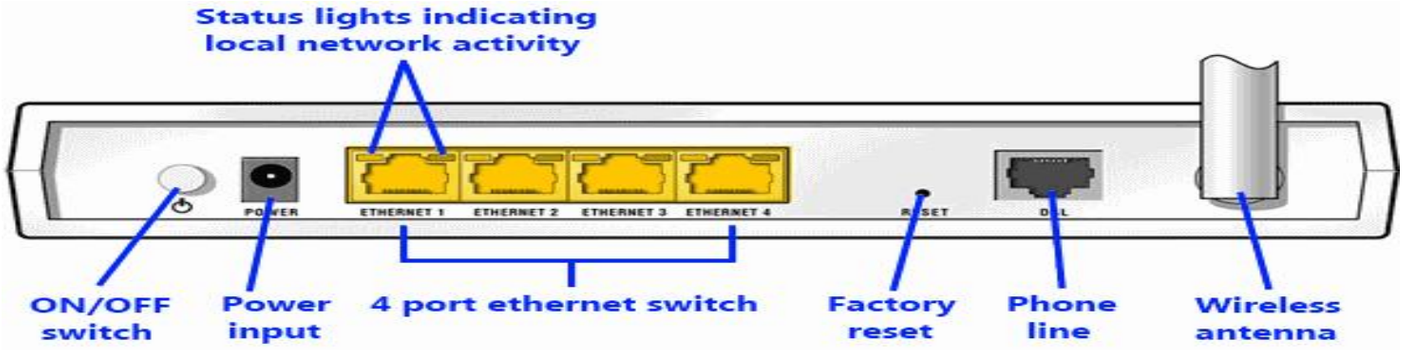


Testing UTP Cable

(Patch Panel to Modular Box)



Configuration ROUTER and Access Point



Note: Reset the device into Factory Setting by pressing the “Factory reset” button in 5 to 10sec.

- the indicator is when the lights(LED) are flash all together or “Turn On” the device is ready or reset.

Check the connection:

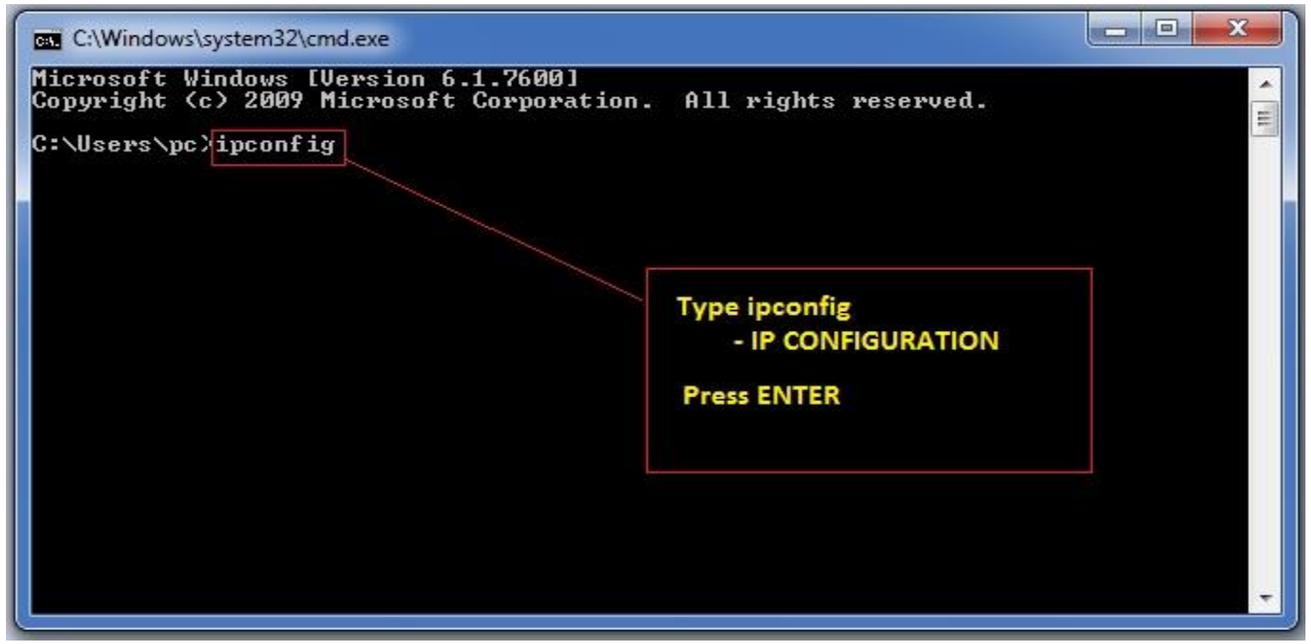
- ✓ On the desktop of your Computer
  - ➢ *Network tray – next – open Network Sha*ring
- ✓ On the Start Menu – Control Panel – Network & Internet

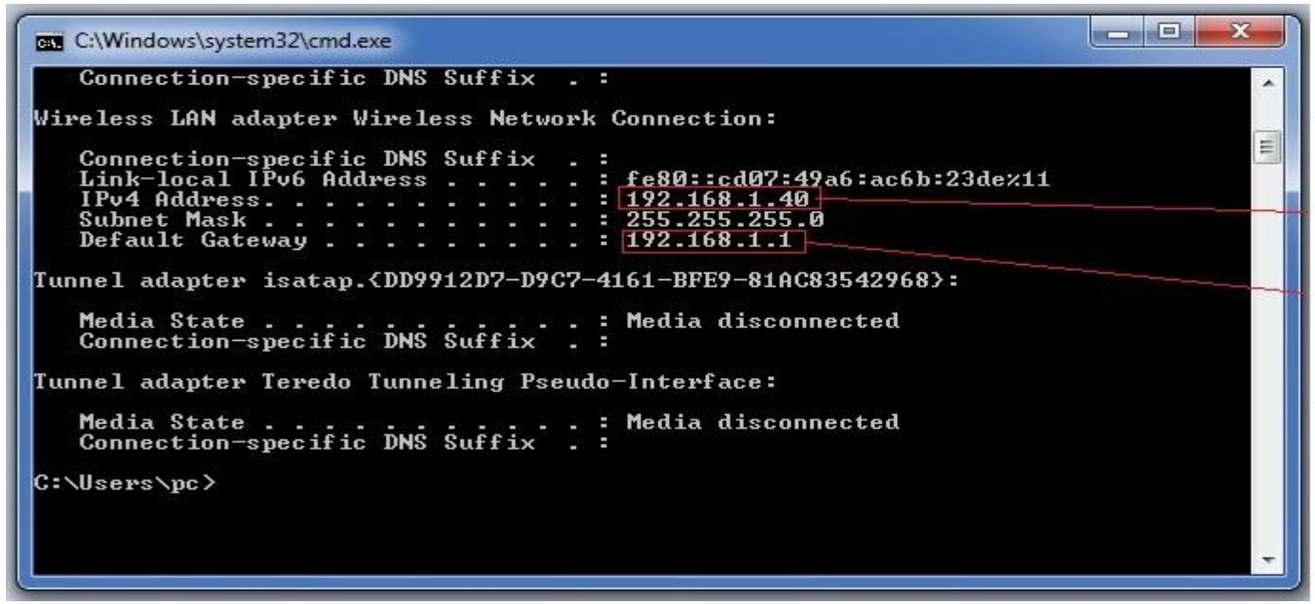
— Network and Sharing Center – Change adapter setting – Local Area Connection(LAC)

Note: Check if your device (Router/ AP) connected

- ❖ Go to LAC – for IP ADDRESS Checking given by the ROUTER
- ❖ Go to Start – search bar – type RUN (to enter DOS or Command Prompt) – inside the DOS - type IPCONFIG or ipconfig

Configuration ROUTER and Access Point

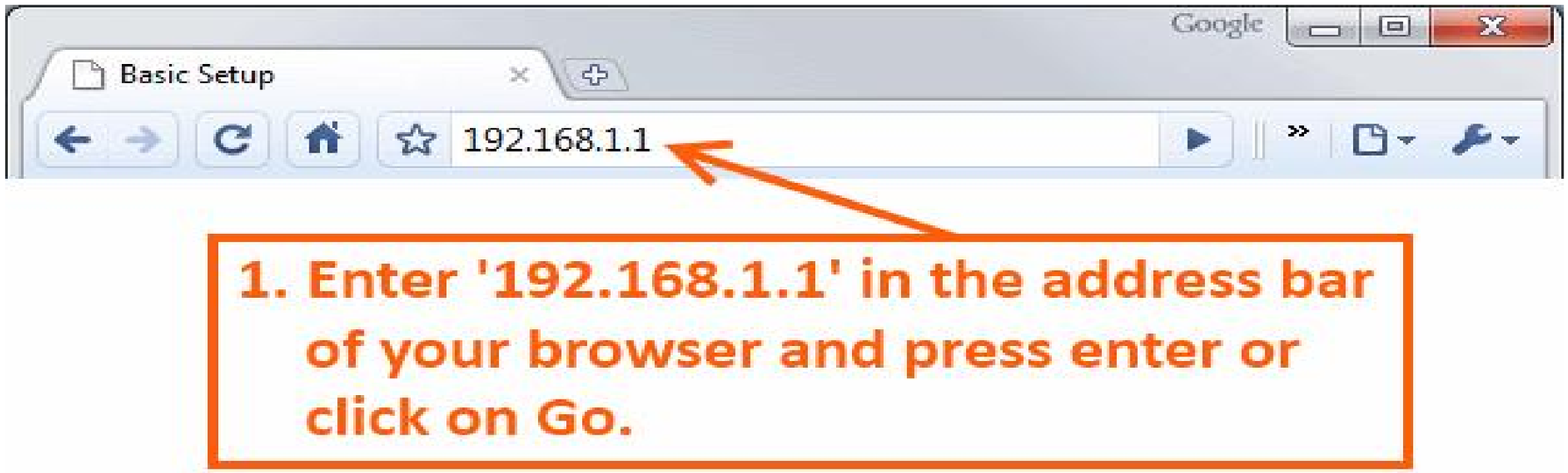




Configuration ROUTER and Access Point

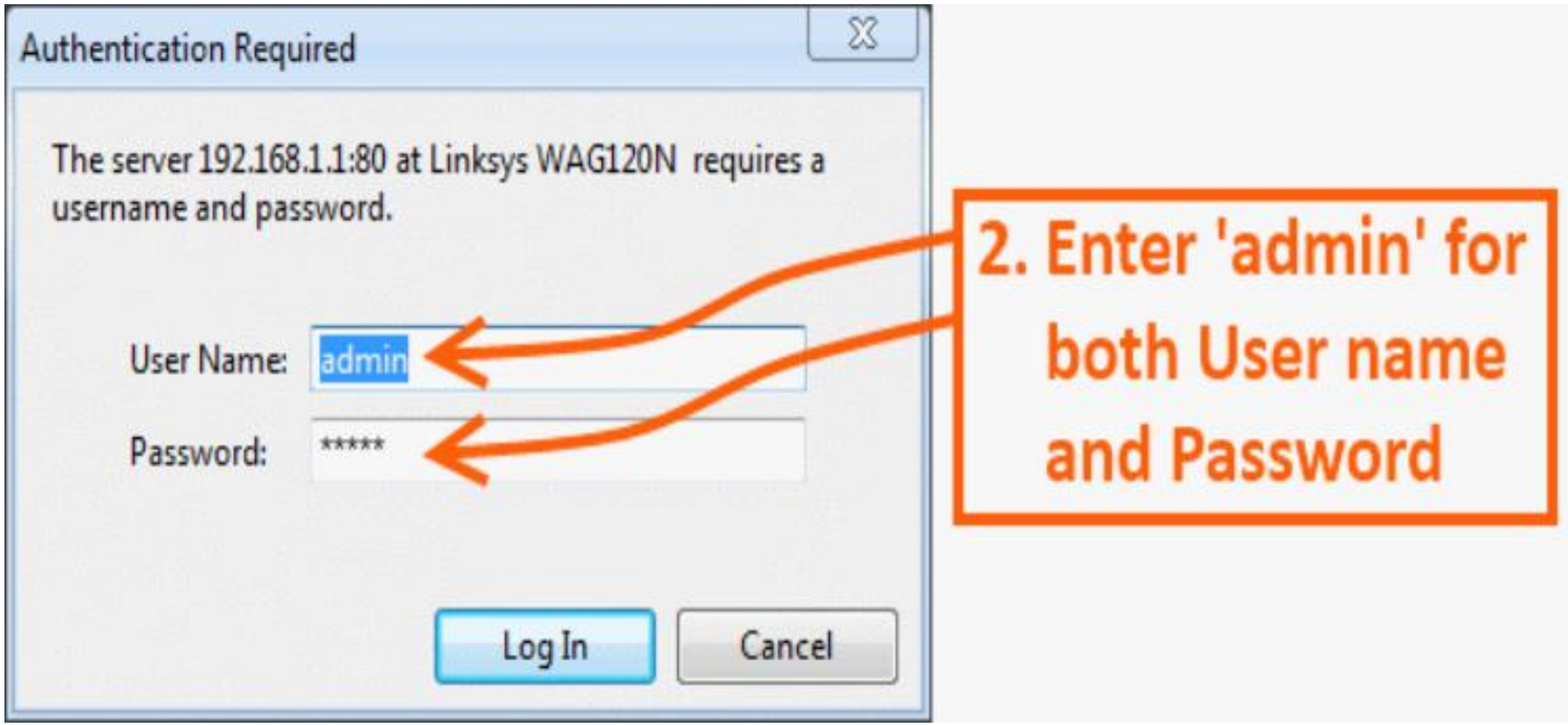
STEP 1: Log into the router from your computer

- You will need to have a working network card or port with a computer attached in order to connect to the ADSL router. These instructions assume the default router setup. This guide assumes that you have set up all the physical connections as per the welcome note, found inside the router's box or at the back of device.
- Open a browser (Internet Explorer, Mozilla Firefox , Google Chrome etc.) and type the brand of the router e.g. http:// tplinkmodem or type http://192.168.1.1 in the address bar



Configuration ROUTER and Access Point

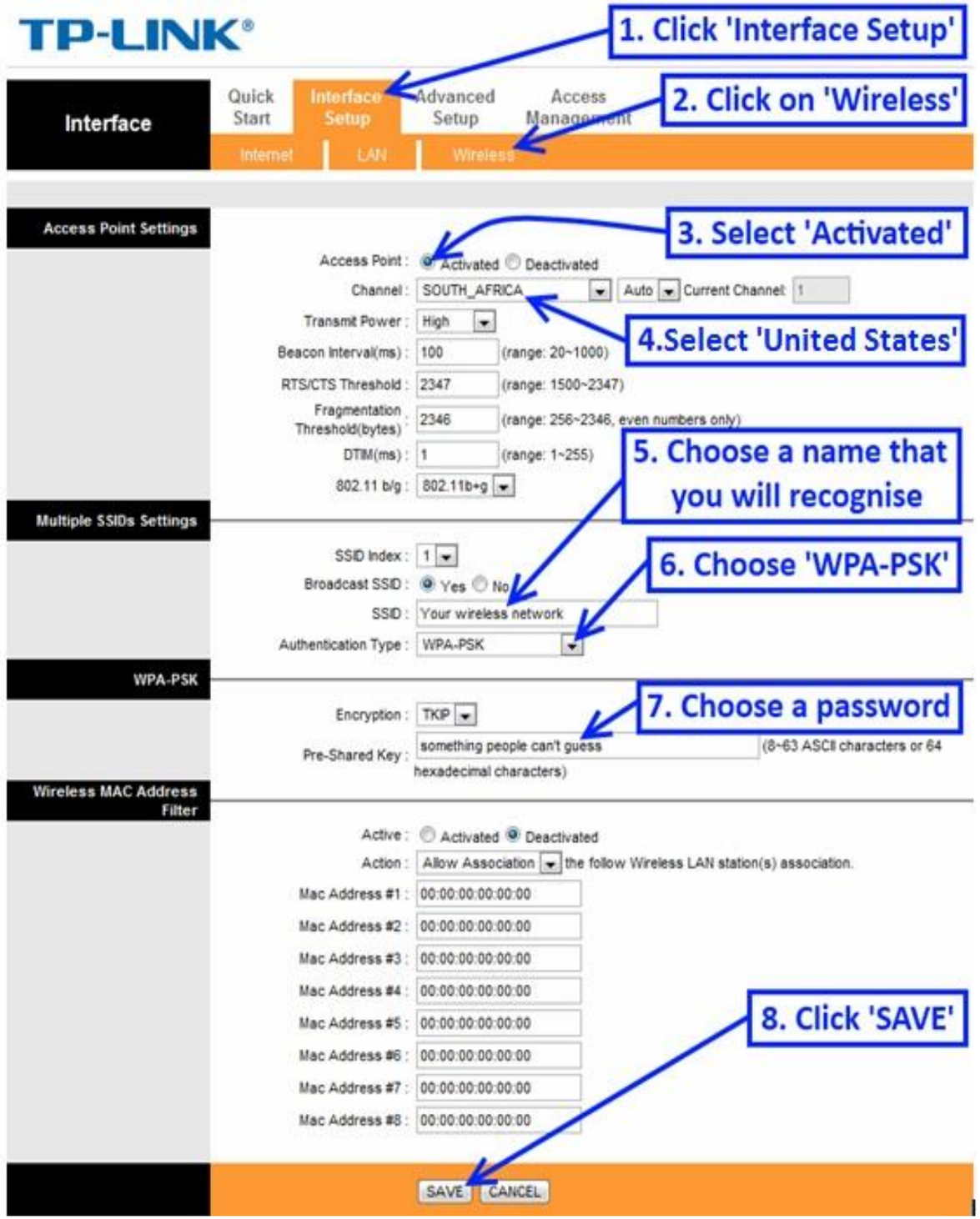
- The browser should ask you for username and password, use username: admin and password: admin (these are the default for Linksys routers, refer to your manual if they don't work)



Configuration ROUTER and Access Point

STEP 2: Configure Local Wireless Settings

- The wireless access point is deactivated by default. To activate it securely follow the steps outlined below.
- Click on *Interface Setup*.
- Click on *Wireless*.
- Select ***Activated***.
- From the *Channel* dropdown select **United States**.
- **Choose a name** for your wireless access point and enter it next to *SSID*.
- From the *Authentification Type* dropdown select **WPA-PSK**.
- **Choose a password** that is not easily guessable of at least 8 characters and enter it next to *Pre-Shared Key*.
- Click ***SAVE*** to save the new wireless settings.

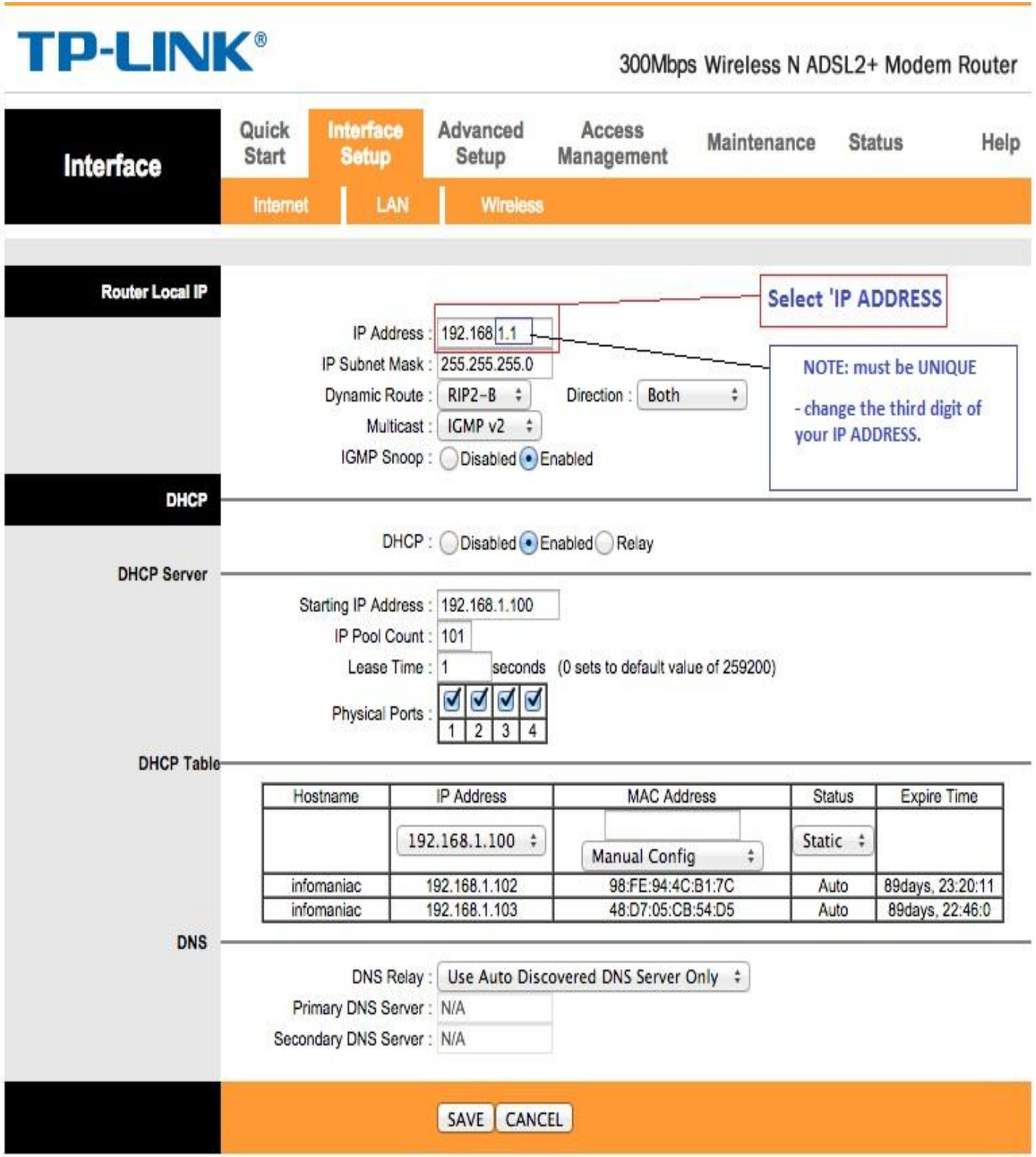


Configuration ROUTER and Access Point

STEP 3: Configure Local Area Network(LAN) Settings

- The LAN is deactivated by default. To activate it securely follow the steps outlined below.
- Click on *Interface Setup*.
- Click on *LAN*.
- **Choose and change** for your LAN IP ADDRESS and enter it next to *IP ADDRESS*.

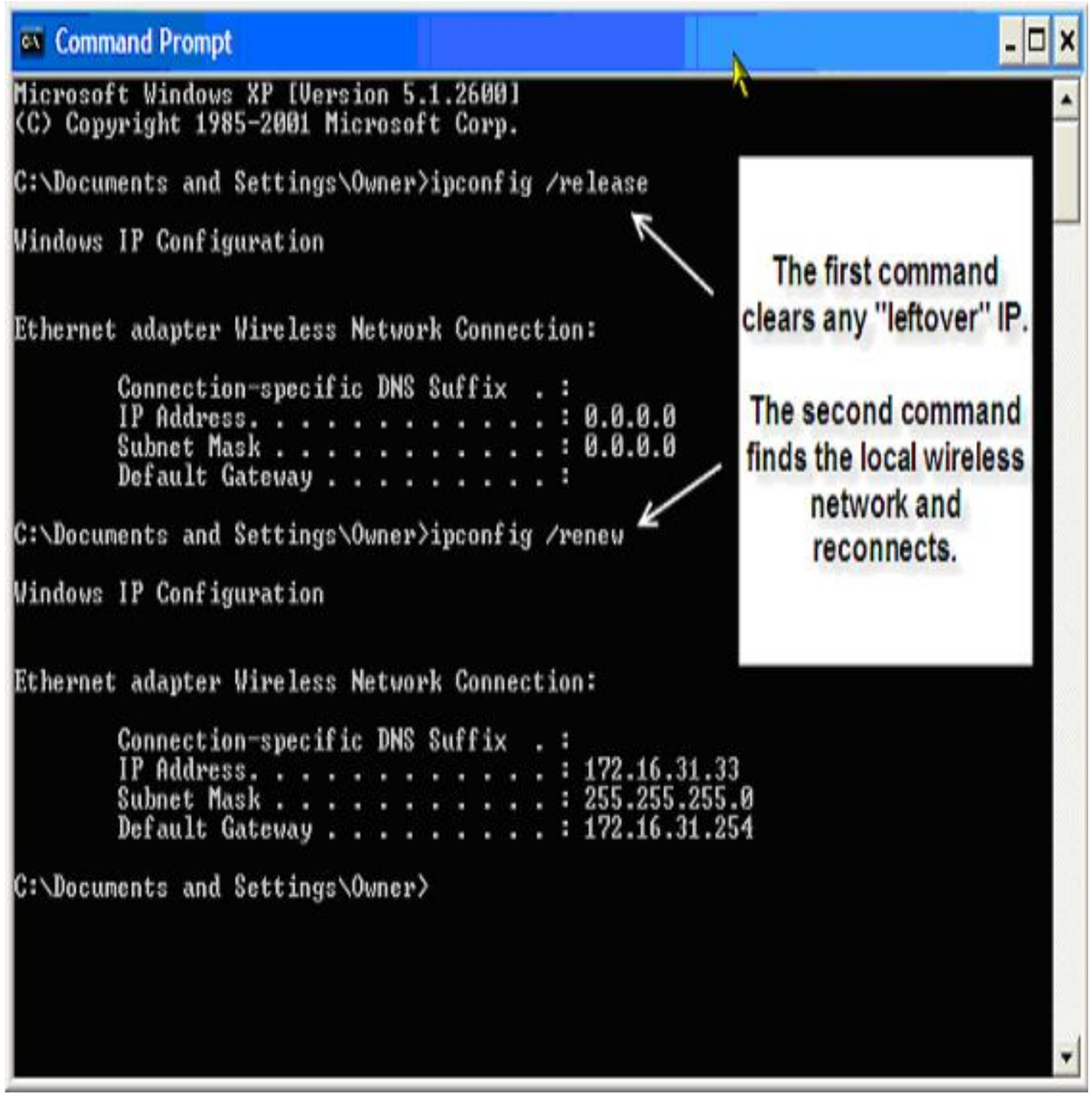
  NOTE: You must change only the third(3rd) digit of your IP (192.168.__.1)
- Click ***SAVE*** to save the new LAN settings.



Configuration ROUTER and Access Point

STEP 4: Configure Local Area Network(LAN) Settings

- The LAN is deactivated by default. To activate it securely follow the steps outlined below.
- Click on *START MENU*.
- TYPE *cmd* to enter the DOS.
- Type ipconfig /release
  - Then wait
- On the *Graphical Interface*
  - Click on NETWORK – Network and Sharing Center – Change adapter setting – Right Click - Local Area Connection(LAC) – Click on Disable then Enable.
- Type ipconfig /renew
  - Then wait again for the new **IP ADDRESS**.



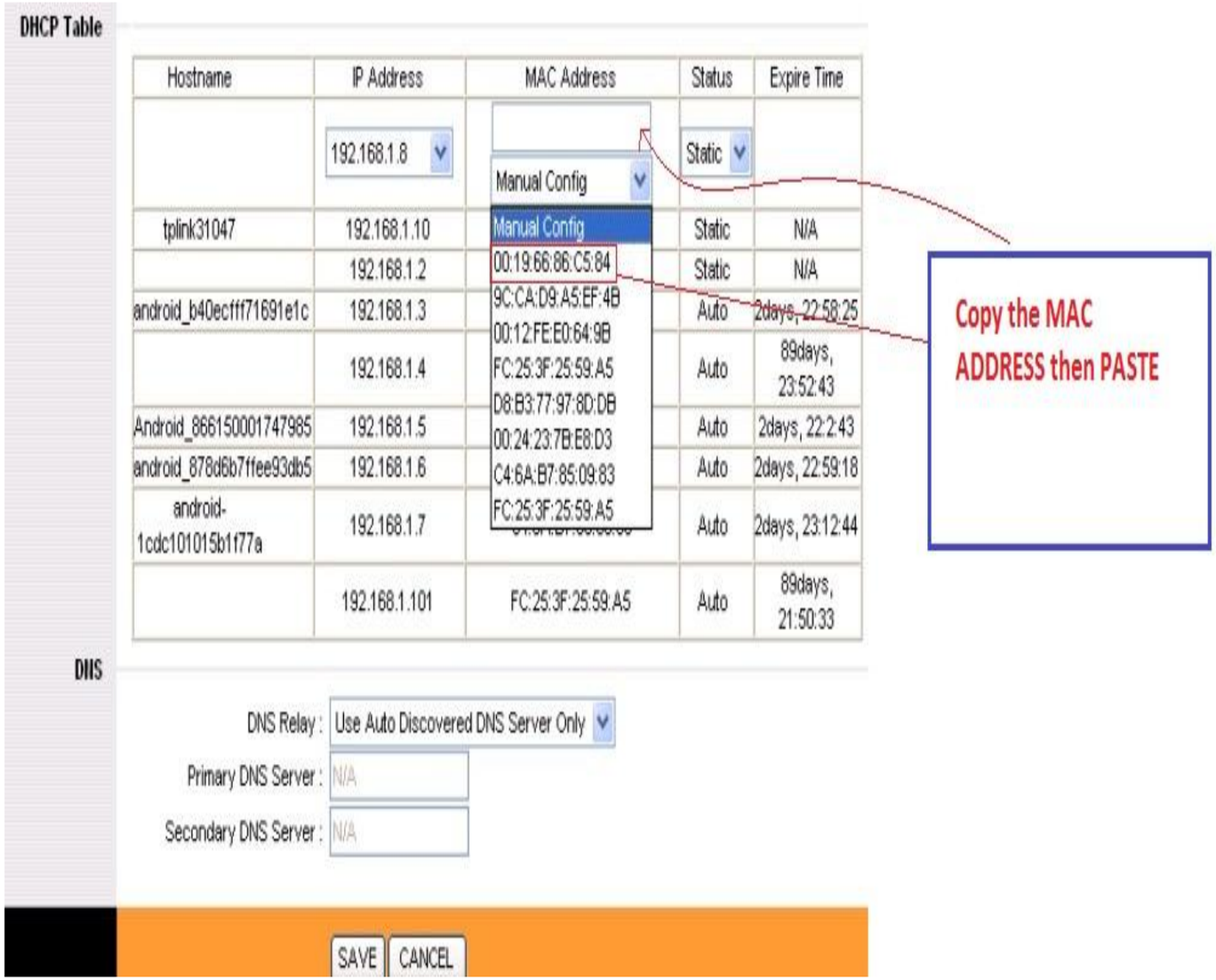
Configuration ROUTER and Access Point

STEP 5: Configure Local Area Network(LAN) Settings

- The MAC ADDRESS
- On the DHCP Table
- Highlight then COPY and PASTE the MAC ADDRESS
- Click ***SAVE*** to save the new LAN settings.

NOTE: For the Documentation write down all the IP ADDRESS you change and especially the new IP ADDRESS.

  - Repeat this to:
    - COMPUTER 2
    - ACCESS POINT



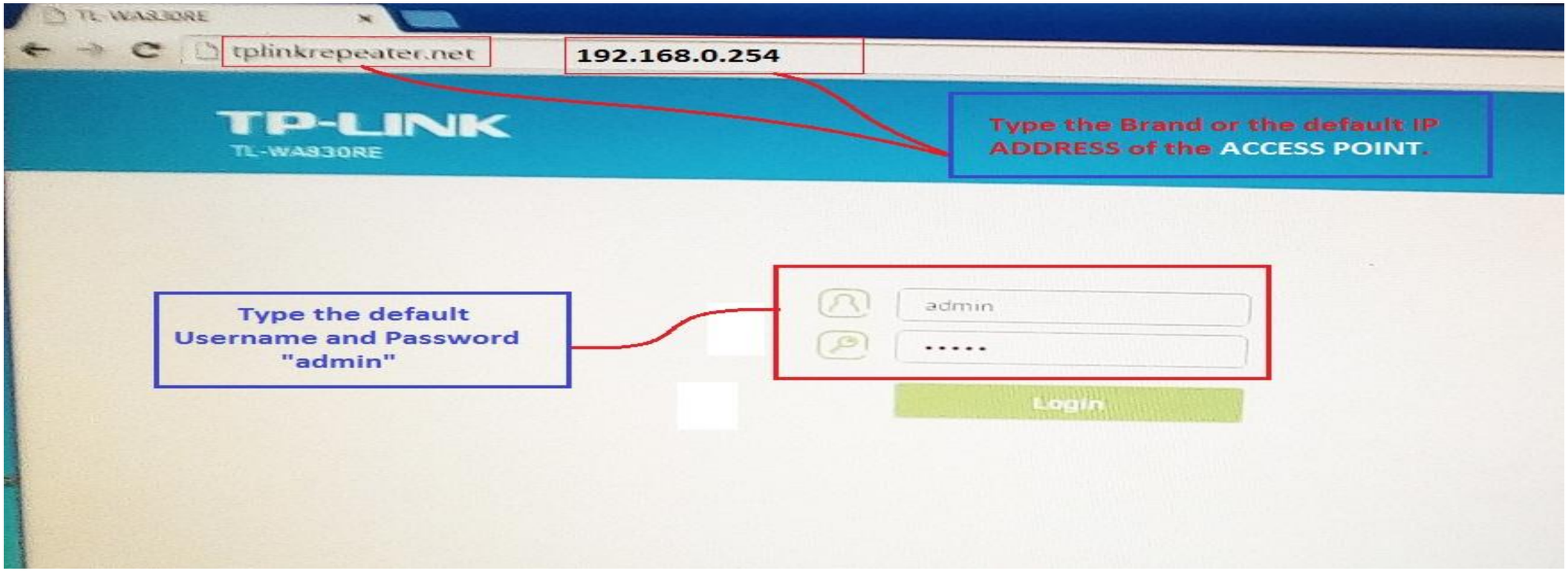
Configuration ROUTER and **Access Point**

Note:

- ✓ Reset the device into Factory Setting by pressing the “Factory reset” button in 5 to 10sec.
  - the indicator is when the lights(LED) are flash all together or “Turn On” the device is ready or reset.
- ✓ Before the resetting ***ACCESS POINT*** make sure the ROUTER is disconnected and TURN OFF.

STEP 1: Log into the ACCESS POINT (AP) from your computer

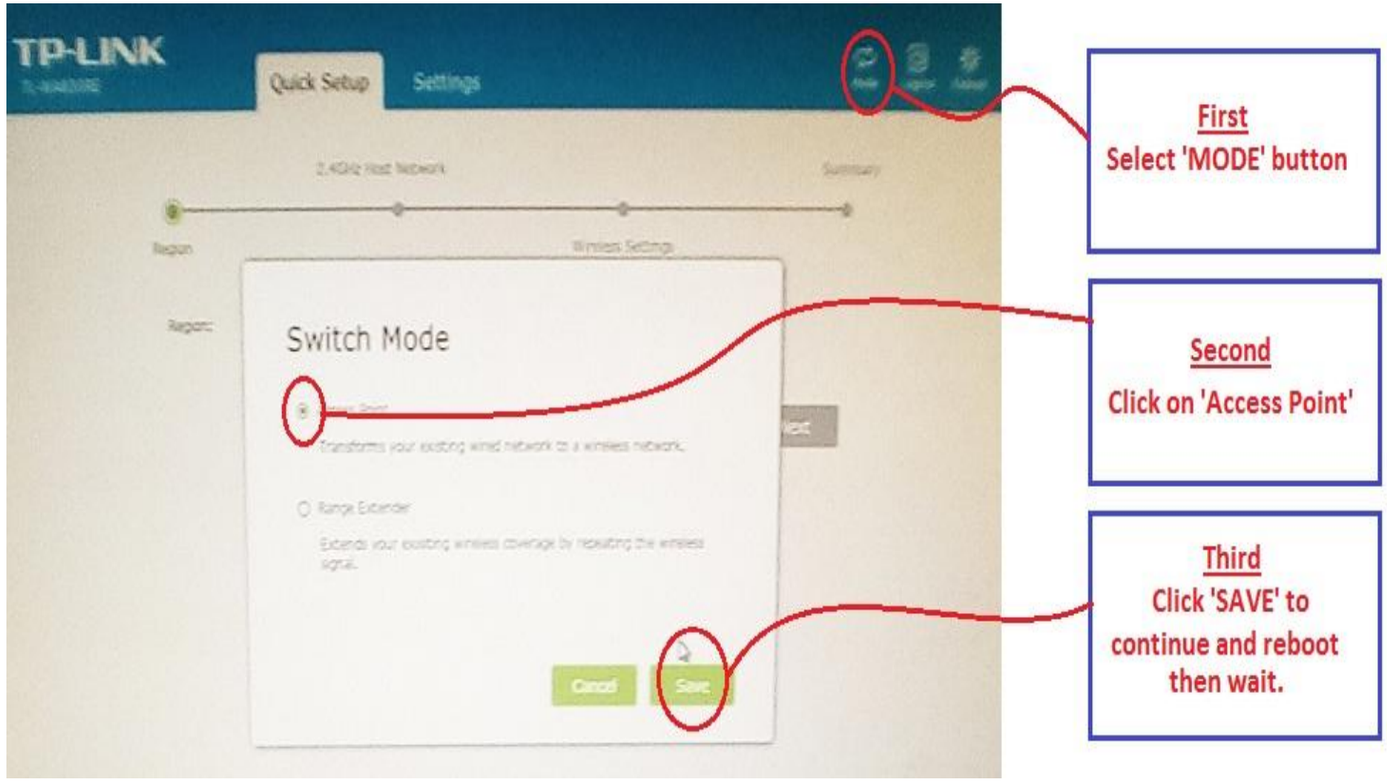
- You will need to have a working network card or port with a computer attached in order to connect to the ACCESS POINT. These instructions assume the default AP setup. This guide assumes that you have set up all the physical connections as per the welcome note, found inside the router's box or at the back of device.
- Open a browser (Internet Explorer, Mozilla Firefox , Google Chrome etc.) and type the brand of the router e.g. http:// tplinkmodem or type http://192.168.0.254 in the address bar



Configuration ROUTER and **Access Point**

Step 2:

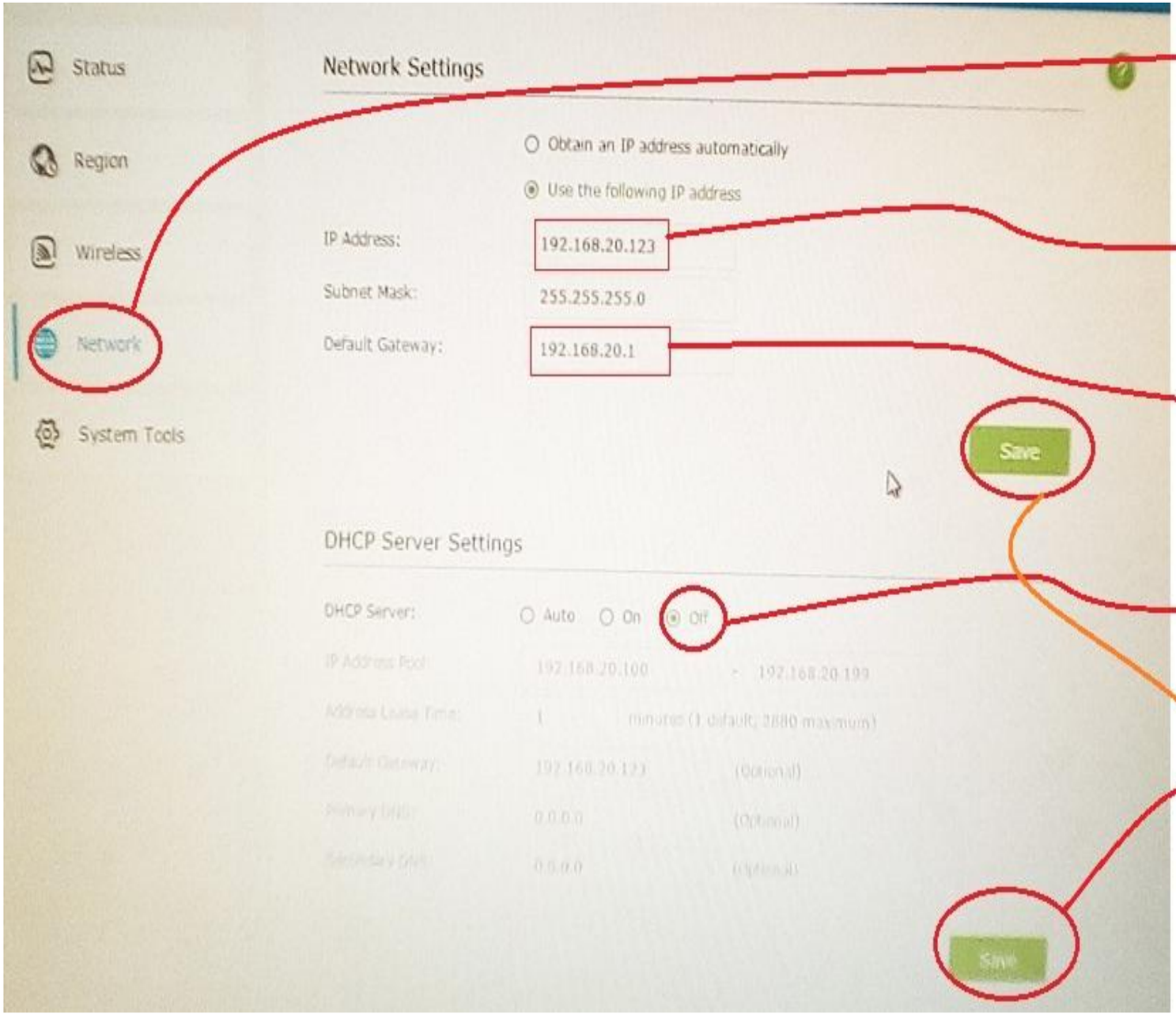
- Click on Mode Button
- On switch mode, click on Access Point button.
- Click SAVE to save and to continue then wait for reboot.



Configuration ROUTER and **Access Point**

Step 3:
- Click on Settings
- next click on wireless settings
- Enter a new device name then add a "_AP" at the end of choosen name to easy determine.
- Go to dropdown arrow then choose "WPA/WPA2"
- Choose simple Password
- Save

Configuration ROUTER and **Access Point**



1. Select 'Network Settings'

2. Change the 3rd digit of the IP ADDRESS of AP (Same at Router) e.g. (192.168.__.101)

3. Enter or type the Router IP Address you've done.

4. On the DHCP Server Settings, set in 'OFF' settings the DHCP Server.

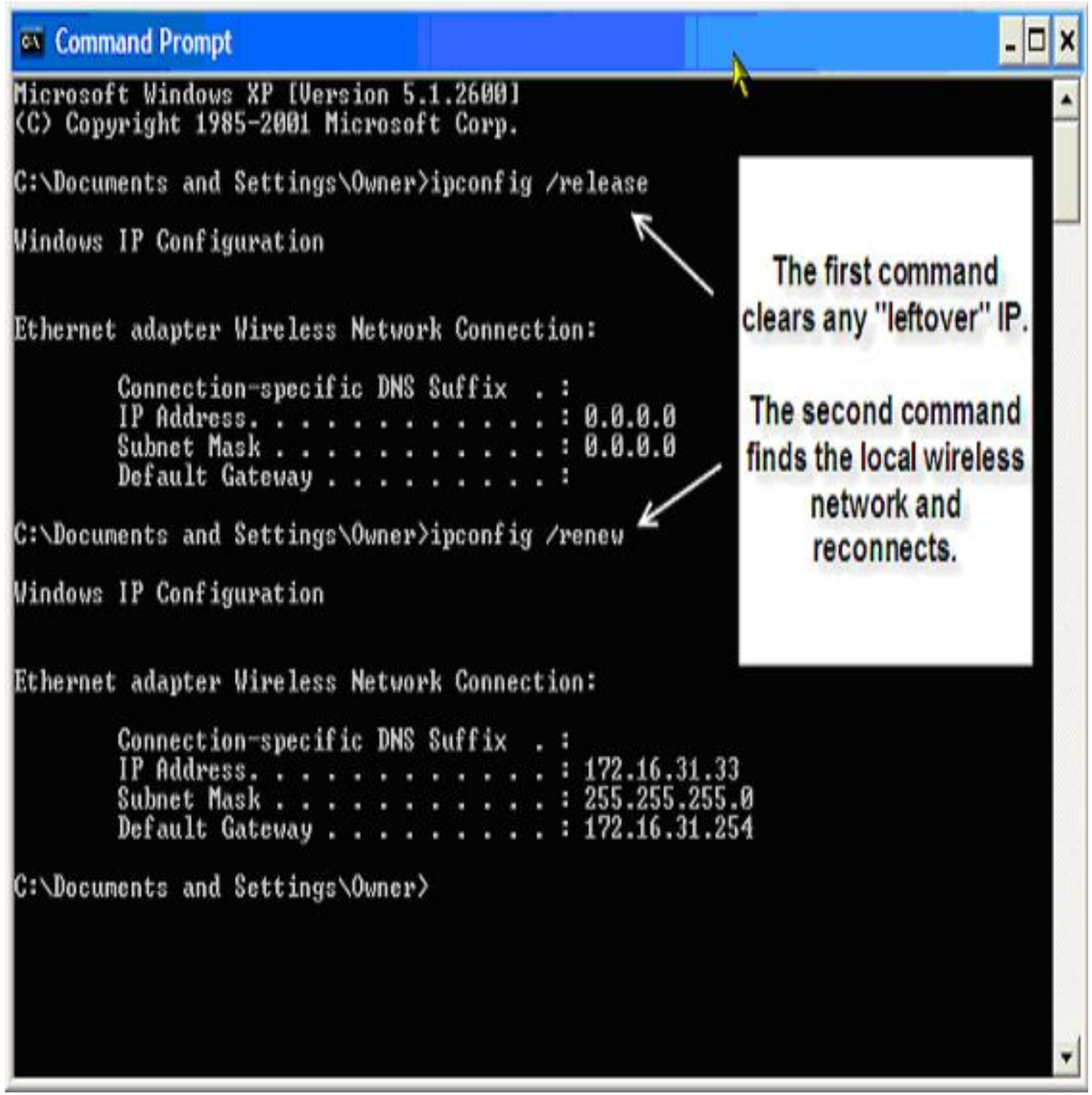
5. Save first the DHCP Server before you save the Netwok Settings.

6. Click 'SAVE' to save the new Network Settings.

Configuration ROUTER and Access Point

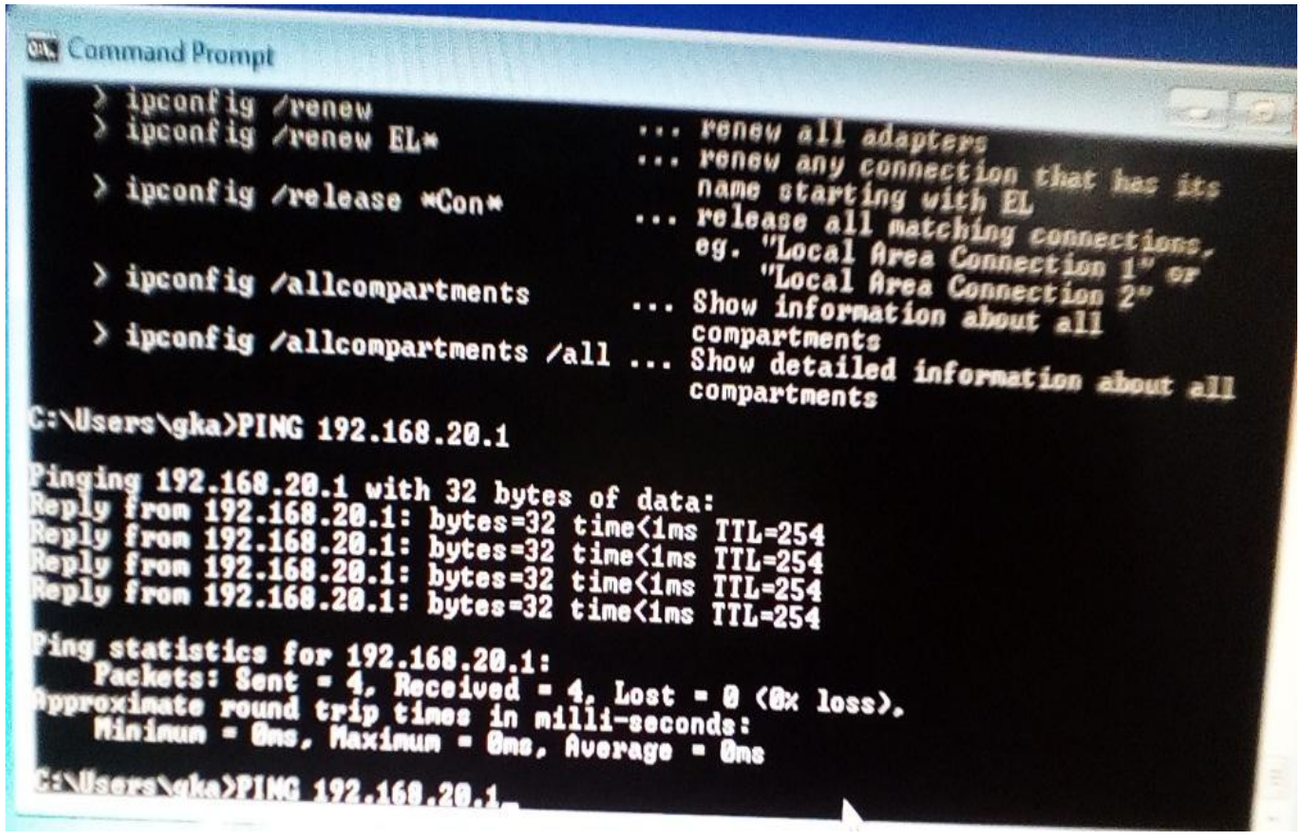
STEP 5: Configure Local Area Network(LAN) Settings

- The LAN is deactivated by default. To activate it securely follow the steps outlined below.
- Click on *START MENU*.
- TYPE *cmd* to enter the DOS.
- Type ipconfig /release
  - Then wait
- On the *Graphical Interface*
  - Click on NETWORK – Network and Sharing Center – Change adapter setting – Right Click - Local Area Connection(LAC) – Click on Disable then Enable.
- Type ipconfig /renew
  - Then wait again for the new **IP ADDRESS**.



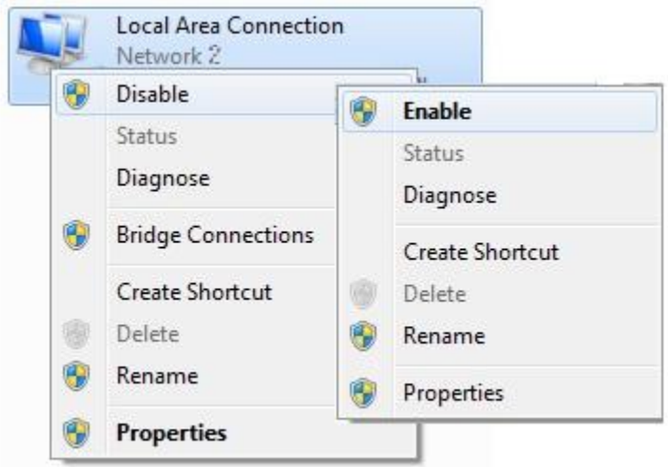
Configuration ROUTER and **Access Point**

THEN CONNECT all cable (*Cross-Over Cable*) into access point and router to the Switch Hub, then access them synchronized on the browser and at the DOS, type ***ping*** (then enter *the IP Address* of Router and Access Point) must connected to each other. LASTLY Access them both to the browser.



On the *Graphical Interface*

Click on NETWORK – Network and Sharing Center – Change adapter setting – Right Click - Local Area Connection(LAC) – Click on Disable then Enable.



Configuration ROUTER and **Access Point**

Connect the LAPTOP on the ACCESS POINT

NOTE: *Check all MAC Address, must in* ***STATIC*** *mode***.**

At the CENTRAL DEVICE or SERVER

Go to Command Prompt

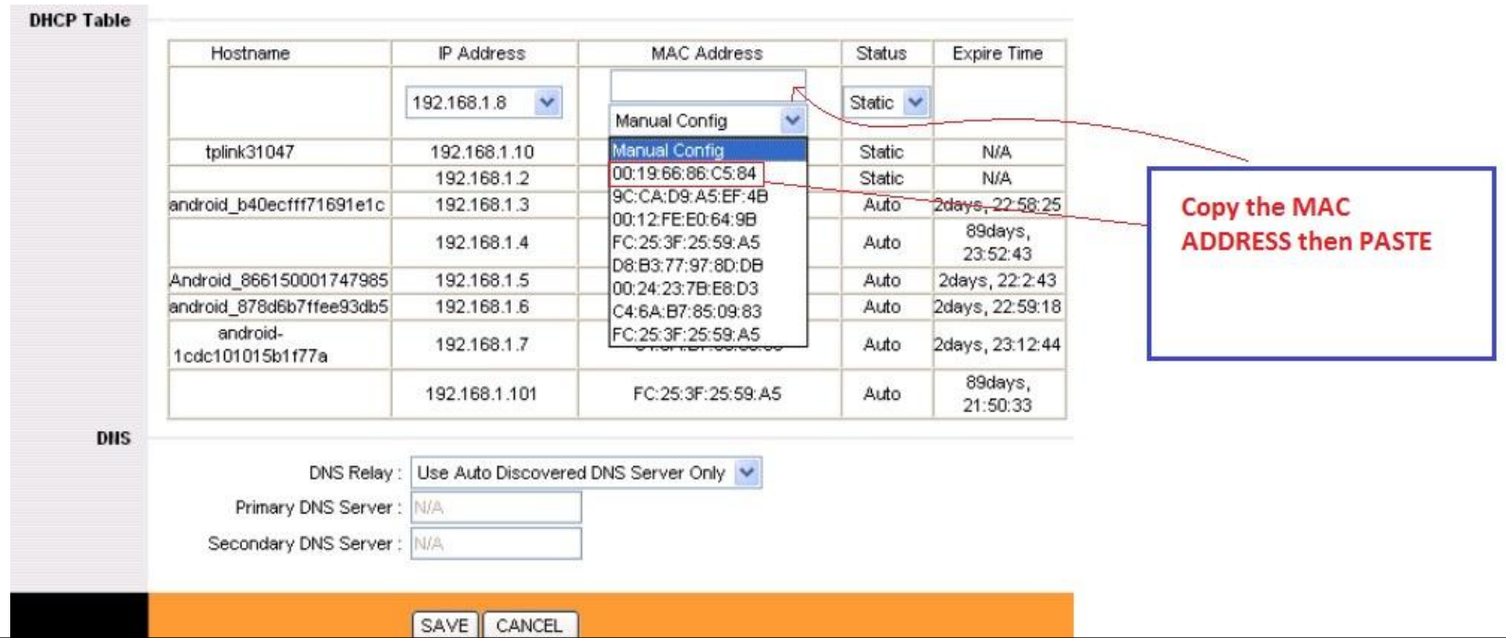
- Type CMD
- Type getmac

  Look for the MAC ADDRESS of all device and follow the procedure below.

- The MAC ADDRESS
- On the DHCP Table
- Highlight then COPY and PASTE the MAC ADDRESS
- Click ***SAVE*** to save the new LAN settings.

NOTE: For the Documentation write down all the IP ADDRESS you change and especially the new IP ADDRESS.

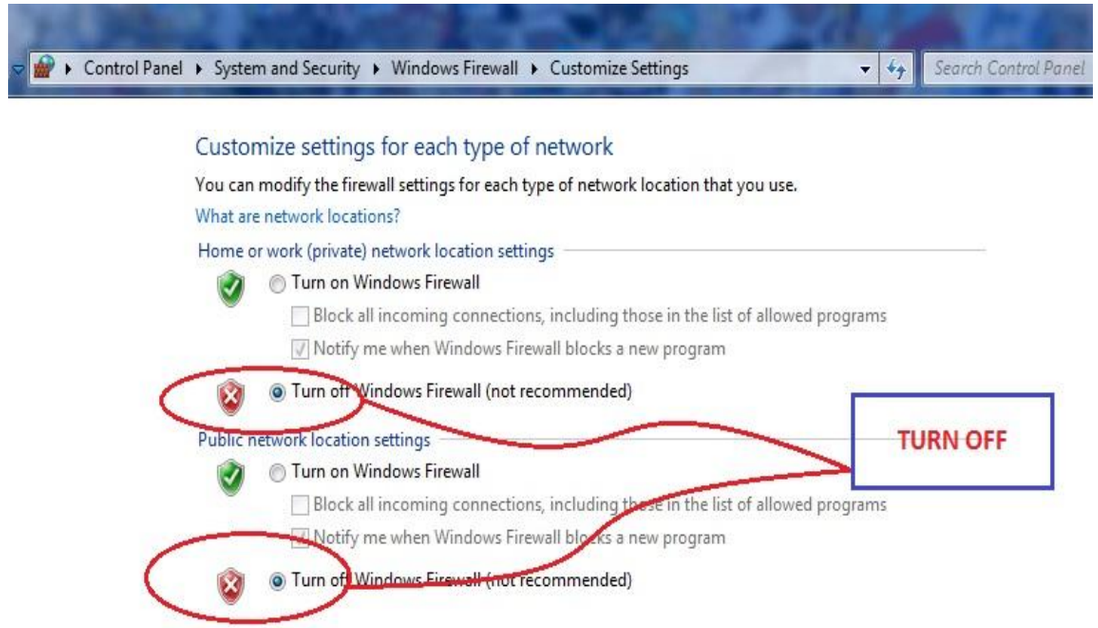
- Repeat this to:
  - COMPUTER (SERVER, CLIENT_PC and CLIENT_LAPTOP)
  - ACCESS POINT

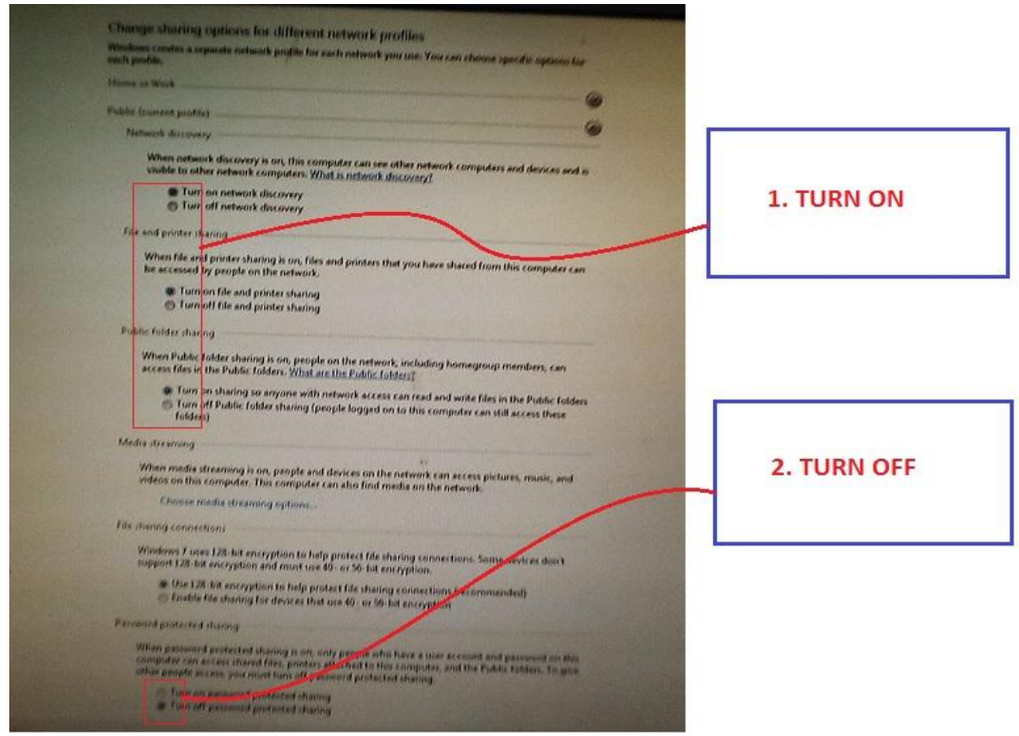


CONNECT ALL DEVICE (SERVER, CLIENT_PC & CLIENT_LAPTOP)

- See all in one Network:
  - Look for the "***UNIQUE***" IP ADDRESS (192.168.__.__)
  - Look for Default Gateway "***SAME***"
  - Look for Computer Name "***UNIQUE***"
  - Look for Workgroup Name "***SAME***"
- See all Firewall:
  - ➢ Set all firewall into "***OFF MODE***"
- See all Sharing Option:

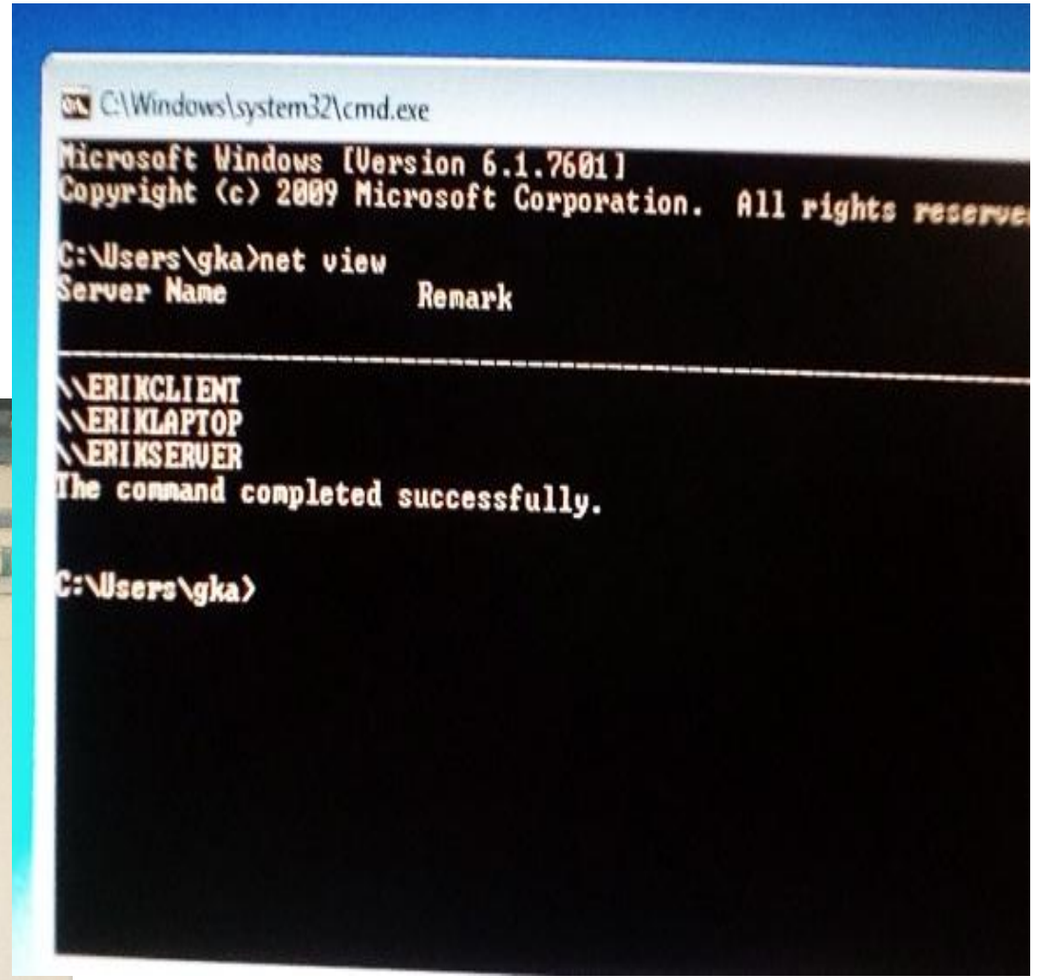
  Steps:
  - ✓ Network – Network and Sharing Center – Advance Sharing Settings – Network Discovery
  - ❑ Network Discovery **- Turn ON**
  - ❑ File Sharing **- Turn ON**
  - ❑ For the Password **- Turn OFF**

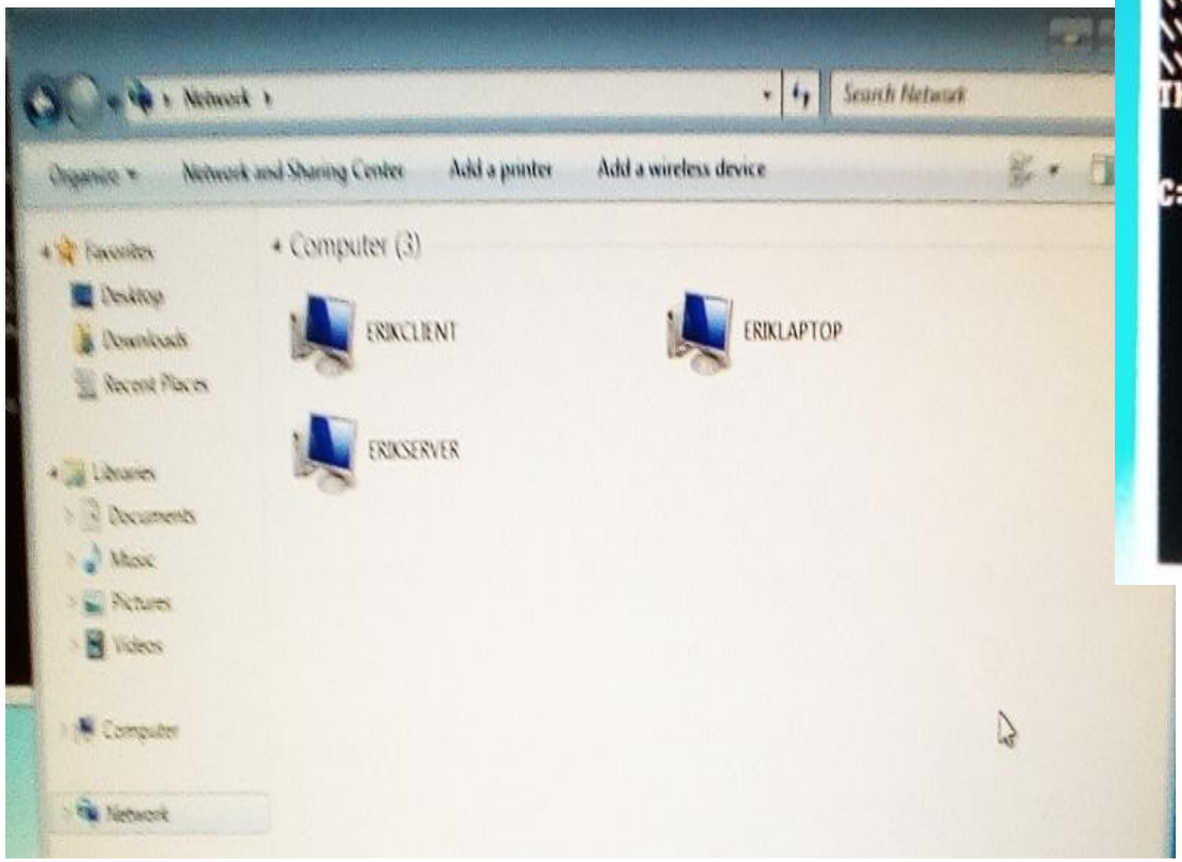




CONNECT ALL DEVICE (SERVER, CLIENT_PC & CLIENT_LAPTOP)

- To view all and check if all are connected:
  - ✓ CMD – Type ***net view*** – look for the three device.
  - ✓ ***Graphical*** – look for the three device.





CONNECT ALL DEVICE (SERVER, CLIENT_PC & CLIENT_LAPTOP)

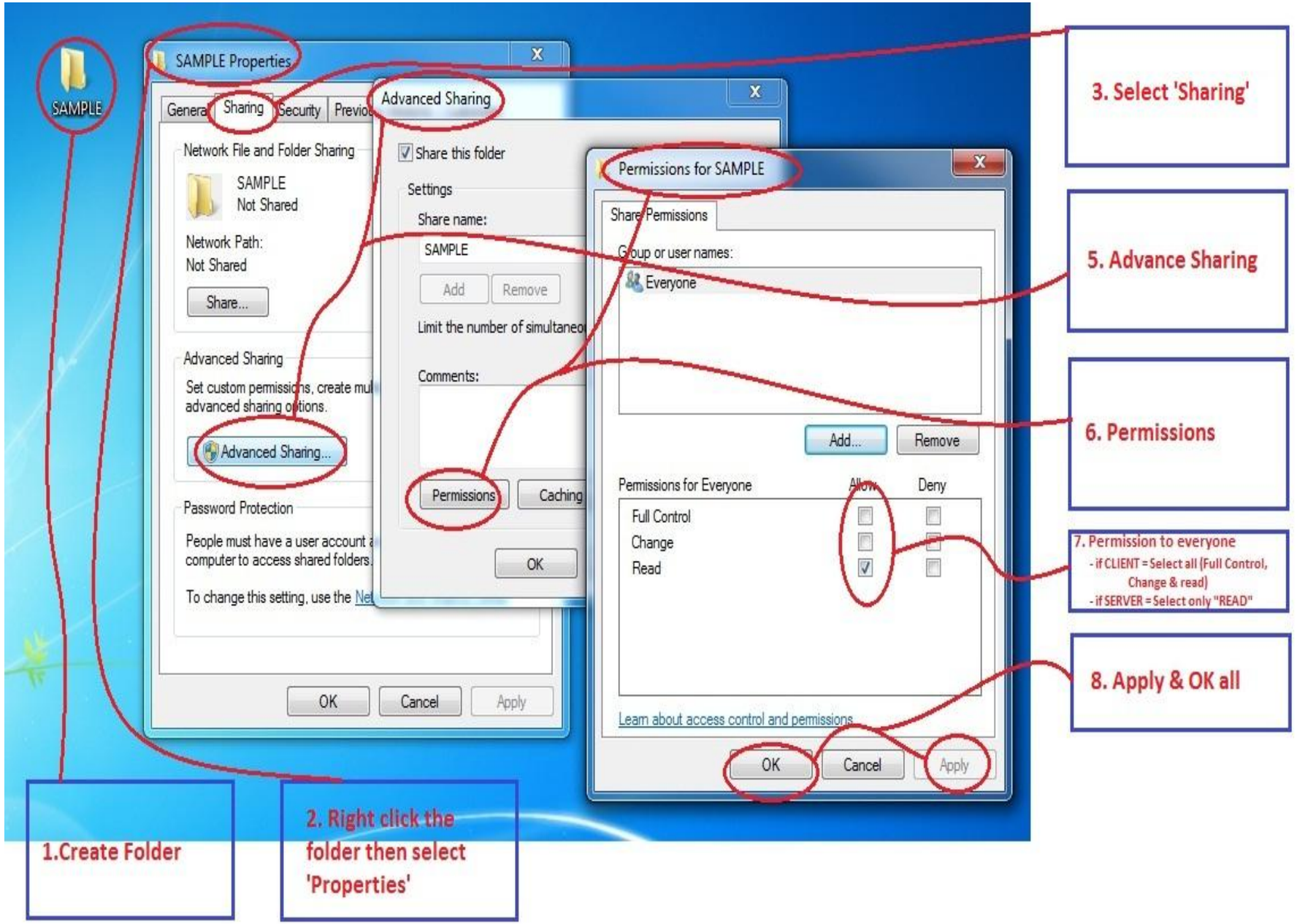
File Sharing (Peer – to – peer)

Note:

SERVER =
can share/send

=
can delete
CLIENT = read/view only

Folder – Properties – Sharing – Share (Advance Setting – Permission)



CONNECT ALL DEVICE (SERVER, CLIENT_PC & CLIENT_LAPTOP)

File Sharing (Peer – to – peer)

Note:

SERVER =
can share/send

=
can delete

CLIENT = read/view only

Folder – Properties – Sharing – Share (Advance Setting – Permission)