

TROUBLESHOOTING

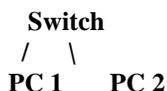
If the **Ethernet light** is **not on** when the PC is connected to the switch by cable, please refer to this FAQ: [What can I do if the Ethernet LED indicators on the Unmanaged Switch are off?](#)

The reasons for this problem might be: some special settings in the router itself or the switch might not be working properly.

Let's troubleshoot the problem **one step by one step**:

Step 1 Do the following test first:

- 1) Connect two PCs to the switch by cable (also disconnect the PCs and the switch from anything else)----set up static IP Address for both PCs in the same local network, one as 192.168.0.2 and one as 192.168.0.3 for example(refer to FAQ 14 as to how to set up static ip address: <https://www.tp-link.com/us/article/?faqid=14>)



- 2) **Disable or uninstall anti-virus software and firewall** in both PCs in case the software will interrupt our next step troubleshooting and this is just for this test; later you can enable or re-install them back----then start to **ping PC2 from PC1**(if you don't know how to do this, please **google search** ' how to ping my computer/pc'). For how to use ping command please refer to: www.tp-link.com/en/article/?faqid=425

Ping result analysis:

1)If the ping result is "**Request timed out**" or '**Destination Unreachable**' etc, **please skip step 2 and contact support@tp-link.com** for further assistance.

```
C:\Documents and Settings\Administrator>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

2)A successful ping will result in a response of "**Reply from**" followed by the IP address, then **please go to step 2**.(you shall ping PC2's IP address, not 8.8.8.8, the picture below is just an example for 'successful ping result')

```
Reply from 8.8.8.8: bytes=32 time=40ms TTL=44
Reply from 8.8.8.8: bytes=32 time=39ms TTL=44
Reply from 8.8.8.8: bytes=32 time=39ms TTL=44
Reply from 8.8.8.8: bytes=32 time=39ms TTL=44

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 39ms, Maximum = 40ms, Average = 39ms
```

Step 2 Connect PC1 to the switch by cable and set up a **static IP address in the same local network with router and PC2**----then disable or uninstall the anti-virus software and firewall in both PCs -----try to ping PC2 from PC1.

PC1-----Switch-----(LAN port)Router(LAN port)-----PC 2

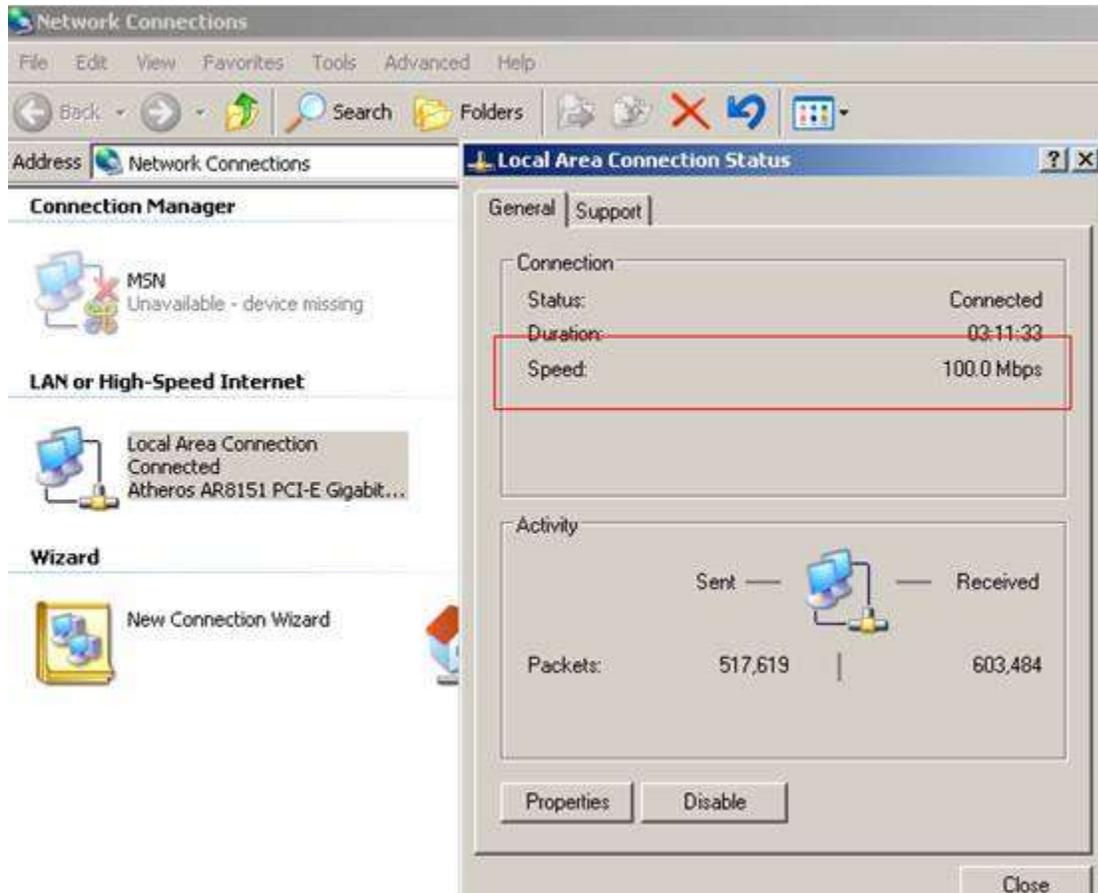
Ping result analysis:

- 1) If the ping result is "**Request timed out**" or '**Destination Unreachable**' etc, then there might be a problem of the switch, **please contact support@tp-link.com**.
- 2) A successful ping will result in a response of "**Reply from**" followed by the IP address, which means the switch is working properly then please **contact your router's support**, cause there might be some special settings in the router that stop the communication between the switch and the PCs.

The reasons why this happens are usually as below: the router and the switch or the switch and the Ethernet card in the PC don't communicate well ; there are some special settings in the router ; the switch is not working fine ; nonstandard cables.

Please refer to the following to troubleshoot step by one step.

Step 1: check the '**connection speed**' of local area connection between the PC and the switch:



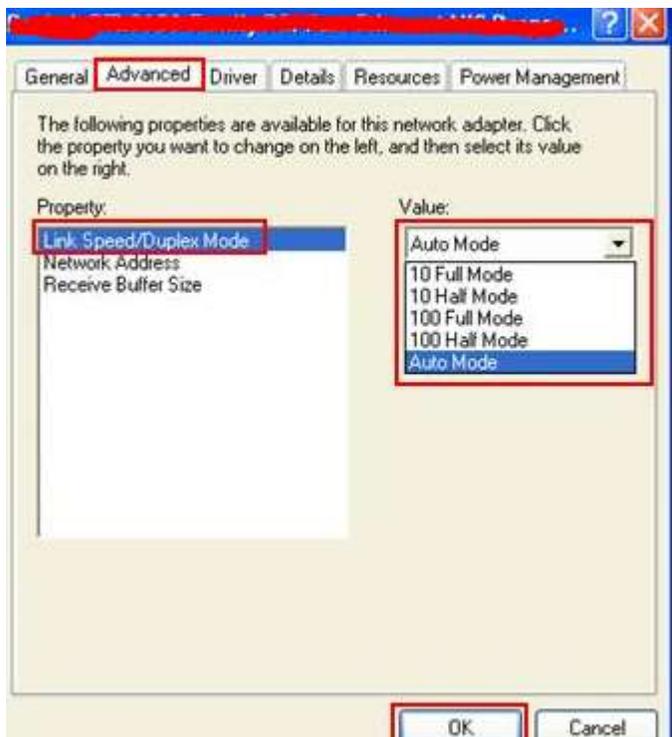
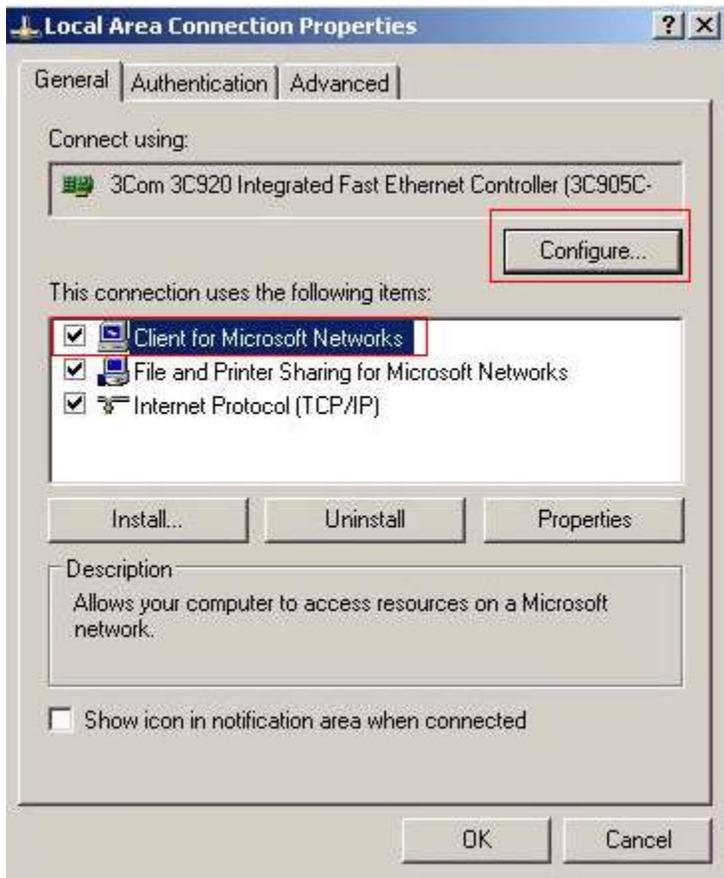
If the 'connection speed' is quite **normal** (pretty the same compared to what the PC gets when connected to the router directly), **then please go to [step 2](#)**.

If the 'connection speed' is **poor** (for example, it only has **100Mbps** while the Ethernet card and the switch are both **Gigabit devices**), then the switch and the router or switch and the PC are not communicating well.

Suggestion: as our unmanaged switches are auto-negotiation in speed, it's usually recommended that the router and the PC's **NIC(Network Interface Card)** are also set up 'auto-negotiation' in speed and a EIA/TIA-568EIA/TIA-568 standard cable is needed.

1) the 'connection speed' is usually unchangeable in a router(contact the router's company to see if you can change the speed to 'auto-negotiation' or force the speed to a higher value).

2)As to the 'connection speed' in the **NIC** of the PC, usually you can change the speed by changing the '**media type**' ('**media type**' or '**speed and duplex**' or '**link speed and duplex**'): go to 'local area connection'---right click it and go to 'properties'---'configure'--'advanced'----'media type' or 'speed and duplex' or 'link speed and duplex'- --try '**auto-detect**' or '**auto-mode**' first; if no difference, try **different speeds with different duplexes** until it gives best connection speed.



3) A **EIA/TIA-568EIA/TIA-568 standard** cable with the crystal plug and the wire cords tightly clamped is needed.

Step 2 If the ‘**connection speed**’ of your PC’s NIC is normal---then please do the following test:

1)Connect two PCs to our switch by cable and disconnect anything else from the switch.

2)Download a **file transfer software** (such as Dukto R6) on both PCs---run this software and begin to transfer a video or file between two PCs---**check the transfer speed.**

Suggestion:

If the **transfer speed** is faster than the **download speed** when the PC is connected to the router directly----then the switch is working normal---and you will need to check some info **in your main router.**

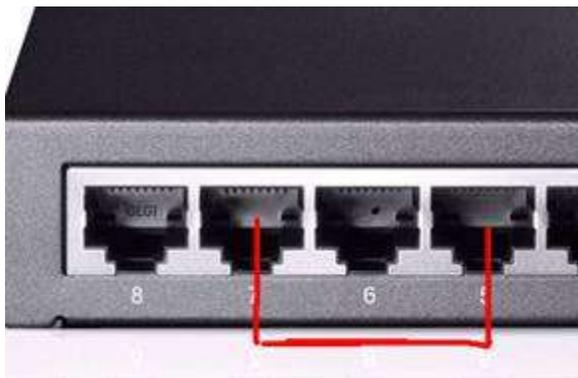
If the transfer speed is **much slower** compared with the speed when the PC is connected to the router directly, something might be wrong with the switch, pleasecontact support@tp-link.com.

Sometimes, you might find that **only the power light is lit** on your unmanaged switch when a DUT (device under test like a computer or a router) is connected to the switch, this problem might be caused by **non-standard cable, the speed negotiation failure between the switch and the DUT, or the switch might be malfunctional.**

The troubleshooting reasons below are based on the condition that the DUT is working fine when it’s connected to your whole network without the switch.

Reason 1 The switch itself

Please **do a test:** power on the switch---- use a good quality cable to connect two Ethernet ports(port 7 and port 5 for example, as shown below) on the switch and disconnect it from anything else---check if those **two corresponding Ethernet lights** will be on.



If the lights are not on, please feel free to contact support@tp-link.com

If these two lights are on, please go to reason 2 and reason 3.

Reason 2 The cable is of non-standard

Do a test: connect your PC to the switch---force your PC's NIC(**Network Interface Card**) to work in **10Mbps half-duplex**---check if the Ethernet light is on(refer to **Reason 3 pictures** to choose **10Mbps half-duplex** or Google search how to do this)

Result Analysis:

1)if the Ethernet is on, it's very likely that the cable is **not a standard** cable. Please change different cables.

2) if the Ethernet light is not on, please go to **Reason 3**.

Suggestion: make sure that you have a good quality cable with the wire cords clamped tightly to the crystal plug, following the **EIA/TIA-568 standard**.

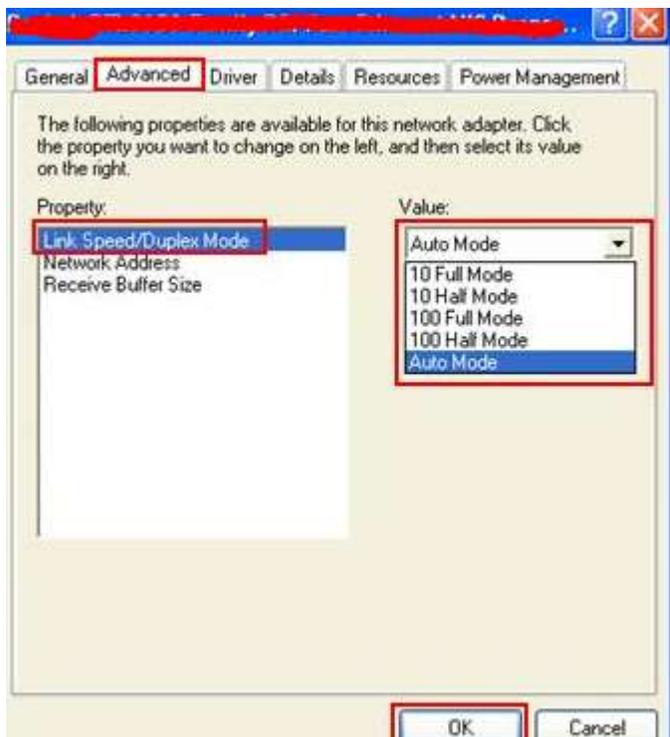
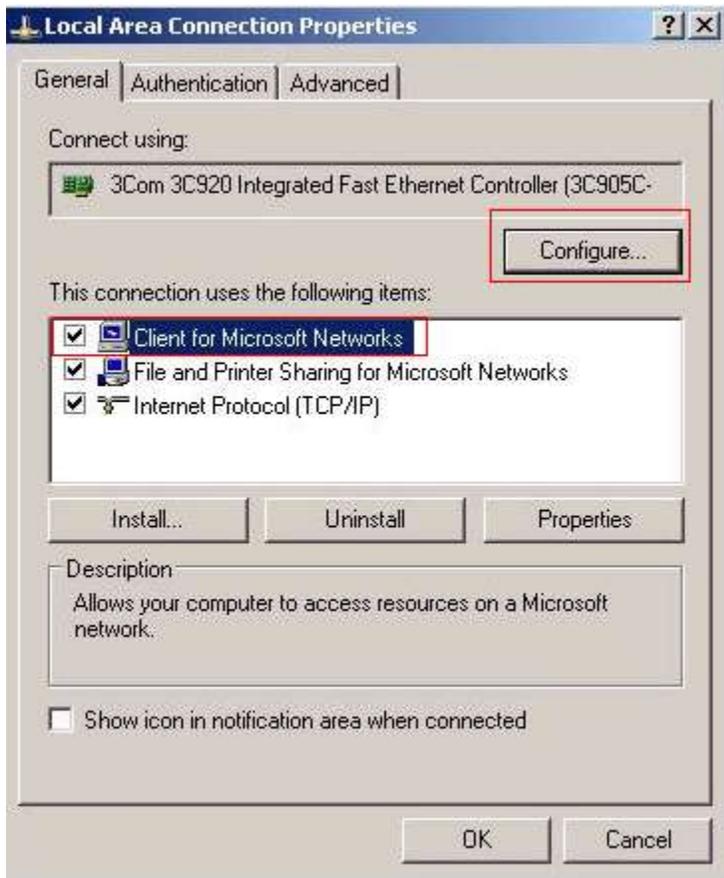
Reason 3 Speed negotiation failure

Our unmanaged switch works in **auto-negotiation mode** which usually requires that the PC's NIC also negotiates the speed automatically---If no, they might not have a common speed to work with and will not connect to each other.

Suggestion: make sure that the NIC's speed is in 'auto mode' or try different speeds with different duplexes.

You might Google search how to do this or refer to the following briefly:

Go to your PC's 'local area connection' --right click it---go to 'properties'----'configure' ----'advanced'----'media type' or 'speed and duplex' or 'link speed and duplex'---try '**auto-detect**' or '**auto-mode**' first; if no difference, try **different speeds with different duplexes** until you get one that will give you the Ethernet light on the switch and also give you a good speed.



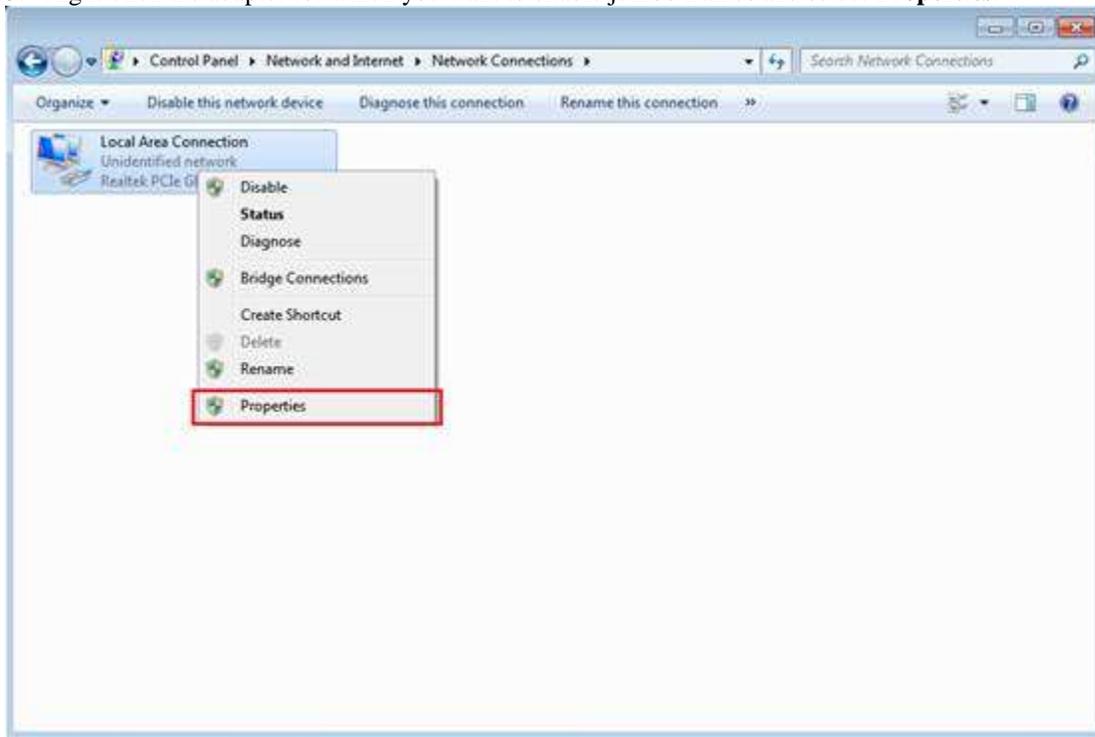
If you have further problem, please contact our support by support@tp-link.com.

Most gigabit switches support jumbo frame pass through. This article is talking about how to test this feature. To do the test, we need two computers and at least two CAT5E cables. Here are the detailed test steps.

Step 1: Enable the jumbo frame feature on computers.

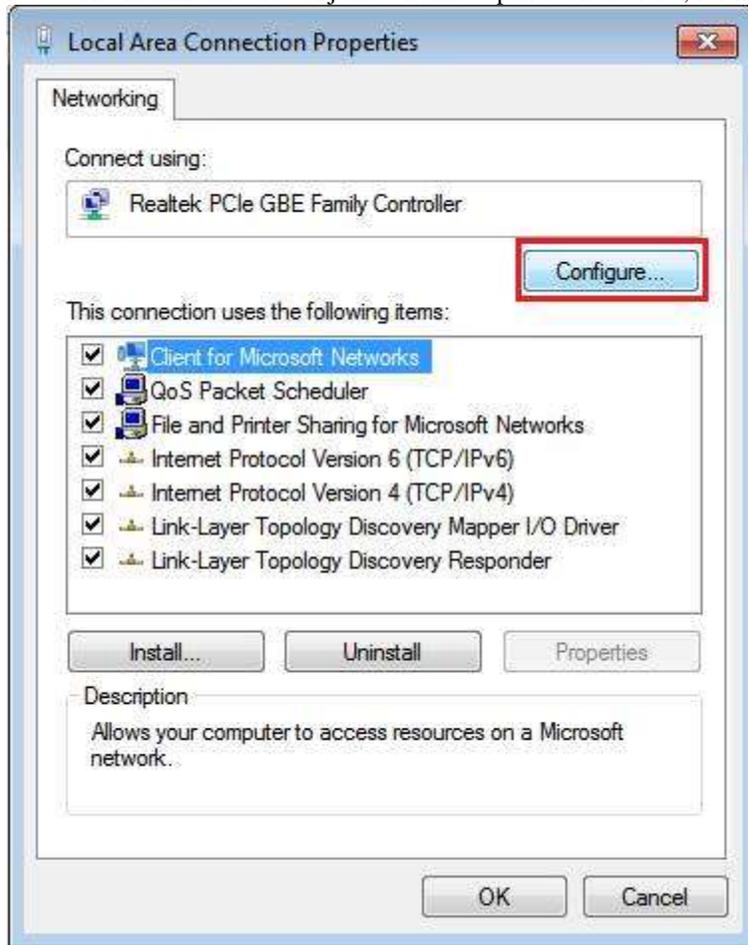
In windows system, most network adapters have jumbo frames disabled by default. To test the jumbo frame feature, we need to enable it on your network adapter via the steps below:

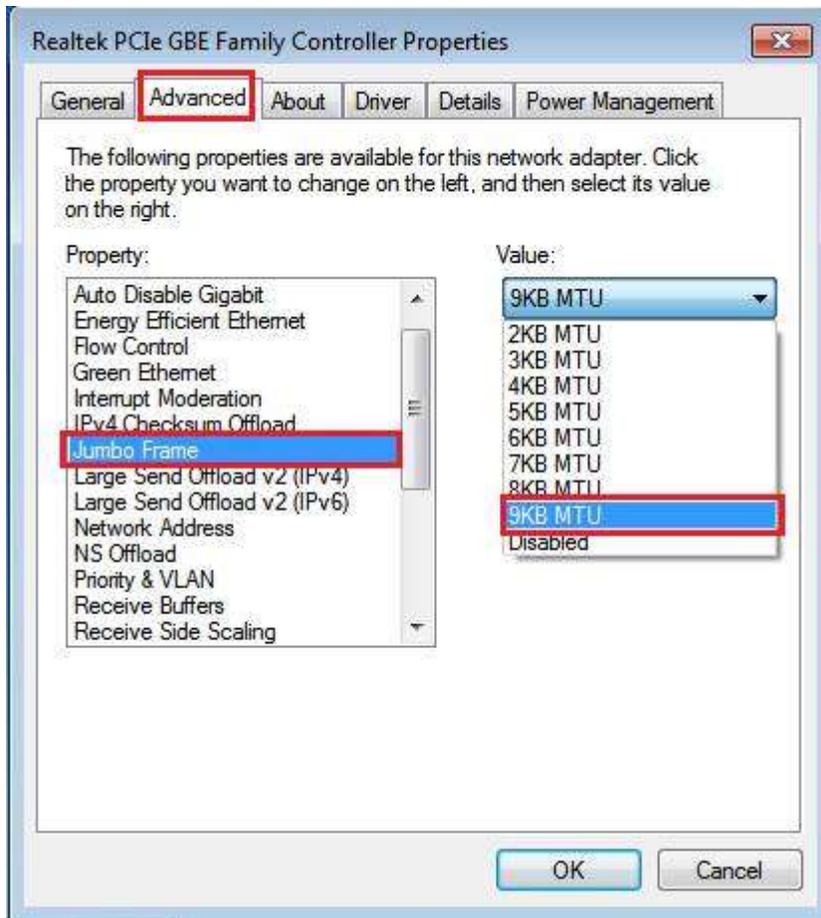
1. Open control panel and go to **Network and Sharing Center**.
2. Click **Change adapter settings**.
3. Right-click the adapter for which you want to enable jumbo frames and select **Properties**.



4. Under the **Networking** tab, click the **Configure** button.
5. Go to the **Advanced** tab. Select **Jumbo Frame** and change the value from **Disabled** to the desired value, such as **9KB MTU**.

Note: The maximum value of jumbo frame depends on the NIC, for most NIC the value is 9KB.





6. Click **OK** to all the dialogs.

Note: When you make the change, the adapter will lose network connectivity for a few seconds. You should also reboot to ensure the change has taken effect.

Do the same steps to enable the jumbo frame feature on the other computer.

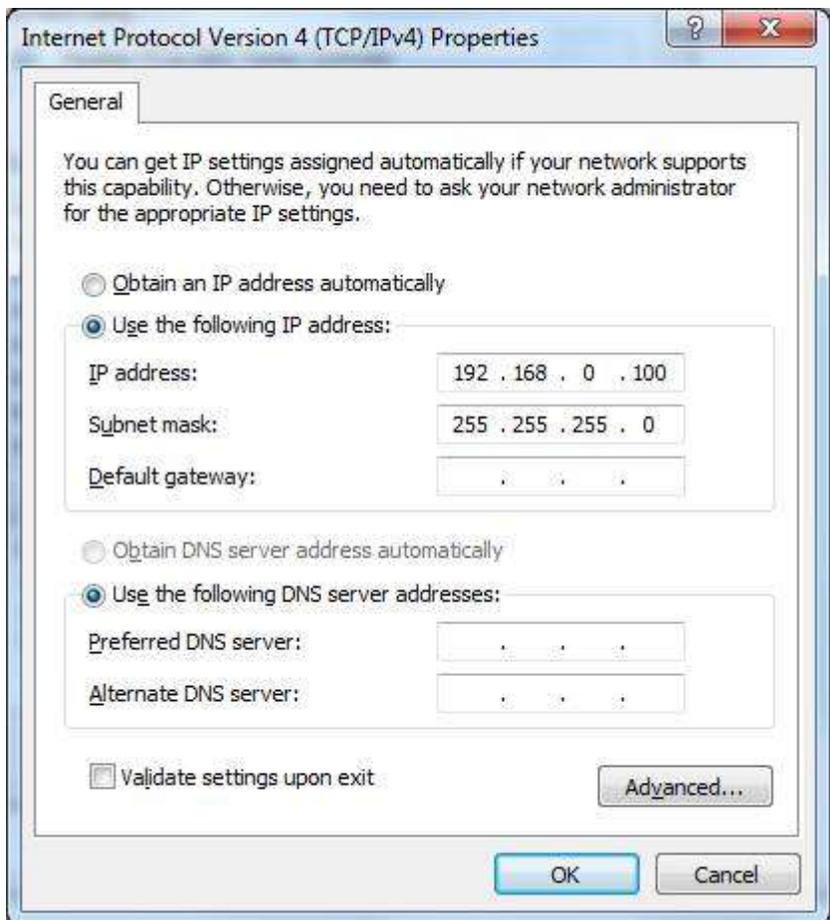
Step2: Enable jumbo frame on switch

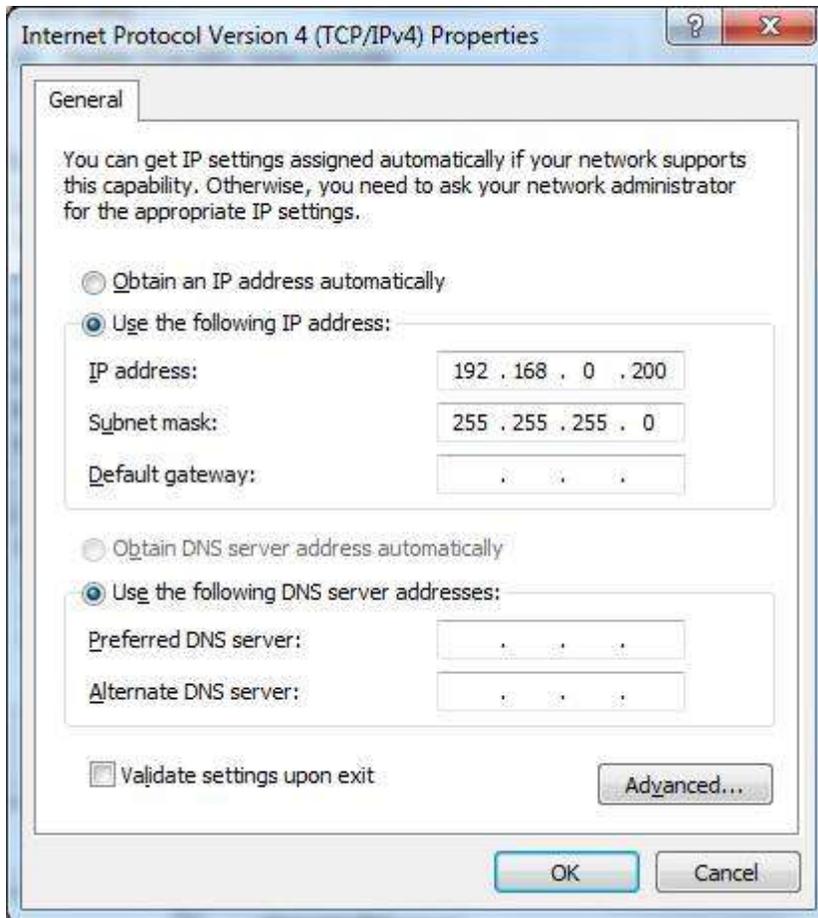
Enable the jumbo frame on switch. TP-Link will enable the jumbo frame by default. So, if you are testing with TP-Link switch, just escape this step.

Step 3: Test the jumbo frame feature.

Connect these two computers directly to the same switch with CAT5E cables; set static ip addresses to these two computers and do the ping test. Detailed steps are as below:

1. Connect two computers directly by CAT5 cable.
2. Set static IP addresses to the computers. Set the **IP address** of one computer to be *192.168.0.100* and the other to be *192.168.0.200*; Both the **Subnet mask** to be *255.255.255.0*.

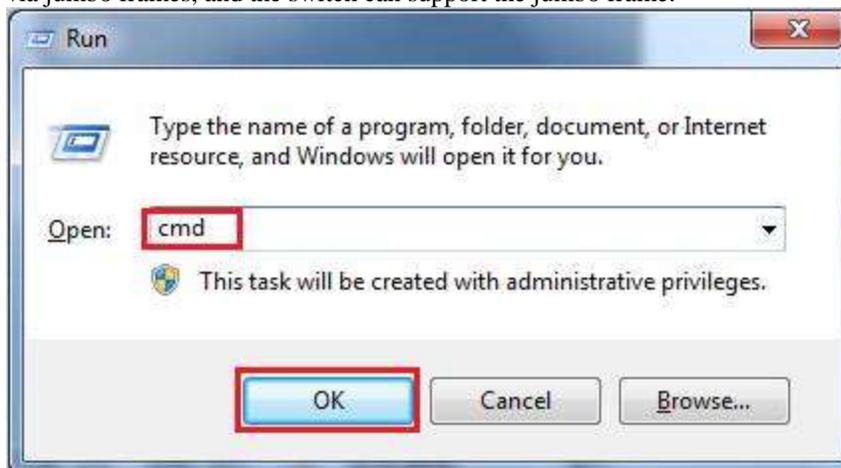


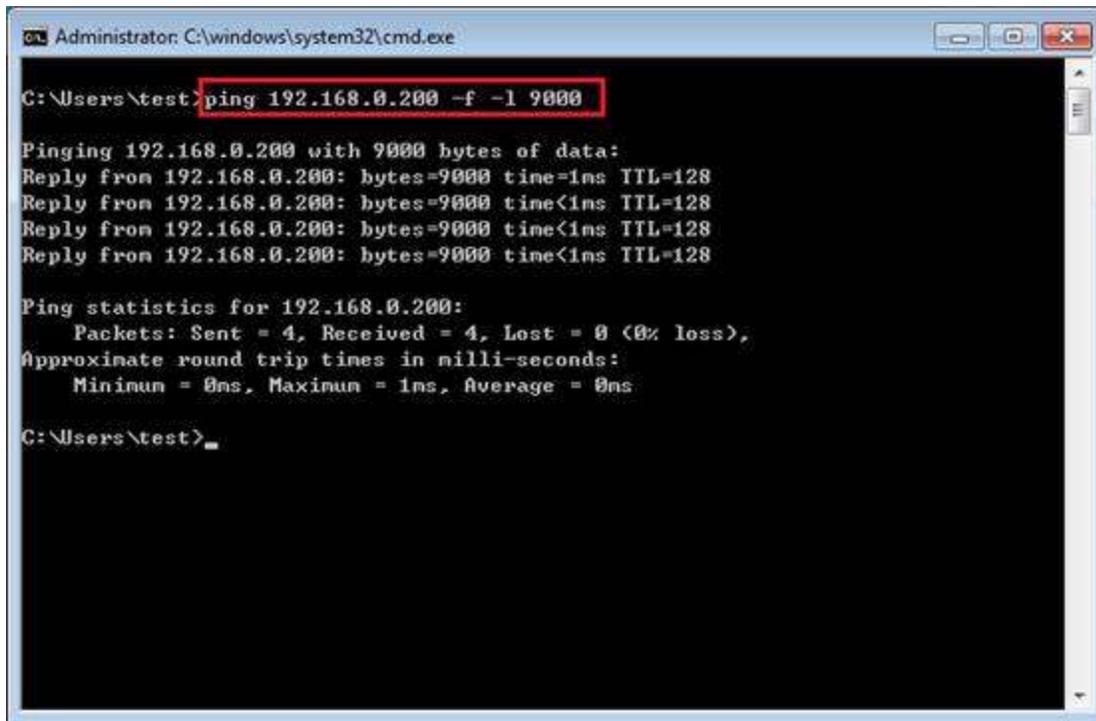


Detailed steps for static IP setting please go to FAQ 553.

<https://www.tp-link.com/us/article/?faqid=553>

3. Do the ping test with the two computers. On one computer, press **windows** key + **R**; put **cmd** in the **Open** bar and click **OK**; in the **cmd** dialog box, input the command “ping *IP address* -f -l 9000” and press enter. The *IP address* is the static ip set to the other computer. ie: *ping 192.168.0.200 -f -l 9000*
4. If the ping test is OK, you can get reply from the other computer, and then the two computers can communicate via jumbo frames, and the switch can support the jumbo frame.





```
Administrator: C:\windows\system32\cmd.exe
C:\Users\test> ping 192.168.0.200 -f -l 9000

Pinging 192.168.0.200 with 9000 bytes of data:
Reply from 192.168.0.200: bytes=9000 time=1ms TTL=128
Reply from 192.168.0.200: bytes=9000 time<1ms TTL=128
Reply from 192.168.0.200: bytes=9000 time<1ms TTL=128
Reply from 192.168.0.200: bytes=9000 time<1ms TTL=128

Ping statistics for 192.168.0.200:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\test>
```

Note: If you can't ping the other computer in step 3, you can connect the two computers directly without the switch, and do the ping test again. Just make sure your settings on computers are OK, and your computers can send and receive the jumbo frame.