

RESOLVING COMPUTER HARDWARE LIMITATIONS THAT LIMIT THE SPEEDS PROVIDED BY AN INTERNET SUPPLIER- PART 1



An International
Association of Technology
& Computer User Groups

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TOPICS

- After a mandatory speed upgrade from a fiber-optic based residential Internet Provider from 200 Megabits per second up to 1000 Megabits per second: all computers in the residence were limited to Internet speeds that were only a fraction of the speeds that were now provided by the Internet Provider. Here are the parts that we added to the existing computers to resolve the slowdown:

BIG STEPS

- BIG STEP 100: Obtain a Ethernet adapter for a newer cell phone or an lightning to Ethernet adapter for an older iPhone
- BIG STEP 200: Temporarily connect the Ethernet adapter to your cell phone and disconnect the cell phone from Wi-Fi, BlueTooth, and the SIM or eSIM module
- BIG STEP 300: Use the cell phone to test the Internet speeds at various points of your home or business network
- BIG STEP 400: Restore the cell phone back to it's normal configuration

BIG STEP 100: OBTAIN A ETHERNET ADAPTER

- BIG STEP 100:
Procure a USB-C to Ethernet adapter for the later-model Android cell phone
or a micro-USB-C to Ethernet adapter for a really old Android phone
or an lightning to Ethernet adapter for a older iPhone:

BIG STEP 100:

OBTAIN A ETHERNET ADAPTER

(continued)

- <https://www.amazon.com/dp/B0C2H9HVH3>
- is a good example of a USB-C to Gigabit Ethernet adapter for a later model Android cell phone or a later model iPhone



BIG STEP 100: OBTAIN A ETHERNET ADAPTER (continued)

- <https://www.amazon.com/Lightning-1000Mbps-Ethernet-IVSHOWCO-Charging/dp/B0CSSVXM1M/>
AND
<https://www.amazon.com/sunshot-Ethernet-Charging-Connector-Compatible/dp/B09DRR5YMT/>
- are good examples of a lightning to Gigabit Ethernet adapter for an older iPhone.

BIG STEP 100:

OBTAIN A ETHERNET ADAPTER

(continued)

- <https://www.amazon.com/1000-Ethernet-Adapter-ELECTOP-Micro/dp/B0D7MBSNS4/>
and
<https://www.amazon.com/ZEXMTE-Ethernet-1000Mbps-Compatible-Chromecast/dp/B0D22PT2D5/>
are good examples of a micro USB to Gigabit Ethernet adapter for an older Android cell phone.

BIG STEP 200:

TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER

- Connect the Ethernet adapter to your cell phone
- Then turn off the following connections inside the the cell phone:
the the Wi-Fi connection,
the SIM or eSIM cellular connection
and the Bluetooth connection

BIG STEP 200:

TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- Attach the Ethernet adapter to the USB-C port or the micro-USB port or the lightning port of the cell phone
- Get into the Settings applet of the cell phone
- Tap on "Connections"

BIG STEP 200:

TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- Tap on "Connections"
- Tap on "Ethernet" and make sure that the cell phone recognizes the "Ethernet" adapter
- Turn off the Wi-Fi connection.
- Turn off the Bluetooth connection.
- Turn off the active SIM or eSAM, if there is one.

BIG STEP 200:

TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- From inside the "..store" of the cell phone, install the "Speedtest" (= "Speedtest by Ookla") app
- With the Ethernet adapter NOT connected to any network, tap on the "Speedtest" (by "Ookla") app of the cell phone and run a speedtest. The speedtest needs to fail. If the speedtest does not fail, find out what other ways that your cell phone is connected to the Internet.

BIG STEP 200: TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- Go to "gateway", or "fiber optic terminal" or "cable modem" of your Internet provider and disconnect the line that connects to the local network of your home or business.

BIG STEP 200: TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- Use a short Ethernet cable to connect the gateway", or "fiber optic terminal" or "cable modem" of your Internet provider to the Ethernet adapter that is connected to your cell phone

BIG STEP 200:

TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- Tap on "Settings" inside the cell phone.
- Then tap on "Connections".
- Swipe up to go vertically downward.

BIG STEP 200:

TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- Tap on "Ethernet"
- If you do not find "Ethernet", tap on "More connection settings"
- Tap on "Ethernet".
(If "Ethernet" is not shown, disconnect and the re-connect the Ethernet-to-USB-C adapter.)

BIG STEP 200: TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- The slider inside the "Ethernet" screen should indicate that it is "Enabled". If this slider is not "Enabled", tap on it to Enable it.

BIG STEP 200: TEMPORARILY CONFIGURE THE ANDROID PHONE TO ONLY CONNECT THROUGH THE ETHERNET ADAPTER (continued)

- The Enable slider in the Ethernet screen should now show that it is "enabled".
- Tap on the "Speedtest" app of the cell phone.
- After the "Speedtest" process completes, take a screenshot of the results.

BIG STEP 300:

USE THE ANDROID CELL PHONE TO TEST THE INTERNET SPEED AT VARIOUS POINTS OF YOUR HOME OR BUSINESS NETWORK

- Disconnect the short Ethernet cable from the cell phone.
Reconnect your home or business to the interface of your Internet supplier.
- Test the Internet speed at various points in your home or business network.

BIG STEP 300:
USE THE ANDROID CELL PHONE TO TEST
THE INTERNET SPEED AT VARIOUS POINTS
OF YOUR HOME OR BUSINESS NETWORK
(continued)

- If your Windows.. or ..Linux.. computer has a USB-to-Ethernet adapter attached to a USB-C or USB-A port, only the ports that run at "USB 3" or "USB 4" or "Thunderbolt" signal formats will be as fast as the Internet speeds that are provide by your Internet supplier at their "point of entry".

BIG STEP 400:

RESTORE THE CELL PHONE BACK TO IT'S NORMAL CONFIGURATION (continued)

- Tap on "Connections"
- Turn on the Wi-Fi connection.
- Turn on the Bluetooth connection.
- Turn on the active SIM, if there is one.

BIG STEP 400: RESTORE THE CELL PHONE BACK TO IT'S NORMAL CONFIGURATION (continued)

- Tap on the "Speedtest" (by "Ookla") app of the cell phone and run a speedtest. The speedtest should now be the same as before your performed BIG STEP 200.

MEASURED INTERNET SPEEDS AT VARIOUS PARTS OF THE LOCAL NETWORK

- 980 Megabits per second downloads and 1020 Megabits per second uploads at the Internet Provider's point of entry into the residence.
- Same speeds at the "Wide Area Network" port of the main router of the residence
- 30 percent or less speeds at all of the computers in the residence²⁴

CONTRIBUTING HARDWARE ISSUES

- None of the on-board wired and wireless adapters on the motherboards of the computers were fast enough to handle the upgraded Internet speeds of 1 Gigabits per second download and upload.
- There were not enough USB 3 ports on the computers to allow for the installation of any add-on Ethernet adapters or Wi-Fi adapters

CONTRIBUTING HARDWARE ISSUES

- The existing graphics adapters inside the motherboards of the computers were too wide to allow for the use of the available PCIe slots inside the computers.

