Speed-Test Guide

The Internet age, the age where just about every device, gadget all the way down to the oval office (the toilet) can connect to providing a wide range of technologies. These are things like remote security (seeing your house when you are away on vacation), Controlling temperature from your smart phone, and much more.

In the first version of my guide on internet speed I went over the basics, but now I am ready to give a more in depth analysis of it and what it means to you.

Bandwidth Speed is how fast the data is transferred, it can really vary by: Location, Type of service, Quality, and hardware.

Let's tackle the location aspect first. Location can impact on the types of service as well as the quality, so why does your location matter? Because technology is ALWAYS changing it can't be everywhere in an instant, so you have to be at the right place at the right time or at least where there are a lot of people. That is generally where the newer and best service is offered in popular locations such as cities which are a companies headquarters.

Types of service are plentiful as well: Cell Phone Service (wireless), Broadband (DSL), Fiber – Broadband, Satellite, Wireless Broadband, Dial-Up.

Depending on the service will depend on how fast your speeds are, this of course doesn't factor other things in such as Wireless vs wired connections, wired connections are faster than Wireless due to latency which will be explained a little bit later.

For cellphone based internet, your speed will depend on what Generation of technology your device runs on, and the current location as you depend on towers to give you your connection.

Your device can have the biggest impact even if better service is available as your device will only handle what it was made to handle.

Speeds Based On Service:

Cell-Phone Based:

2G

2G or Second Generation is the oldest, and on newer devices can be displayed as "E" This is not very popular anymore and is even being decommissioned by some companies.

Speeds: 9 Kbps to 15 Kbps.

3G

3G or Third Generation is the newer and more common service type as many use prepaid providers or still have a 3G device.

Speeds: 500-700 Kbps. Note: Some 3G networks have speeds up to 1 Mbps.

4G

4G or Fourth Generation is the latest and greatest connection there is – well, that is except LTE (Long-Term Evolution)

4G speeds are actually faster again depending on location than I first researched.

Speeds:

Min 2 Mbps

Max ~25 Mbps

The Higher end will be explained near the end of this section.

4G LTE

LTE or Long-Term Evolution is the newest and best technology – it is the premium of the Fourth Gen. Networks with speeds in some places reaching 100 Mbps.

Speeds:

Min: 2-3 Mbps (depending on the carrier and location)

Max: 100-150 Mbps.

4G and LTE Max Speeds Explained.

The 4G and LTE speeds are pretty amazing, that is depending again where you live will impact your speed.

The fast speeds are due to the fact that Fiber Networks (DSL using Fiber cables) can reach speeds up to 1 Gbps.

With that being said, in a few select locations the cell phone hardware on the towers are high quality. We should start seeing 5G or the Fifth Generation of Cell-Phone based internet rolling in by 2017-18. These will include most of us with better speeds.

Home Networks Types (Includes businesses its non-cell phone based services)

DSL (Broadband)

DSL or Digital Subscriber Line is the traditional internet methods, and is also the replacement of its predecessor Dial-Up which will be discussed later on.

Speeds:

1 Mbps To 100 Mbps.

Generally companies offer the speeds in a package at set speeds but if you use a Wifi connection your speed can drop as low as 5 Mbps or more. A Wired connection is better but, obviously isn't available to mobile devices.

Fiber- DSL (Broadband)

This is the new generation of DSL, and is starting to fill into the USA and other countries, however, just like DSL in some locations it isn't available yet.

Speeds:

Min: 100 Mbps Note: You can probably get smaller speeds however it is unlikely as the wiring is very expensive and transfers data faster.

Max: 1 Gbps (isolated locations may offer faster)

Satellite and Wireless Broadband (via hardware like Antenna)

Satellite and Wireless Broadband are barely the same but, in this case they are relativily close related.

Sattellite Based is limited speeds up to 8 Mbps

Wireless Broadband is limited also with speeds up to 10 Mbps.

Dial Up

The antique style is still around in some locations

Speeds from 25 Kbps to 100 Kbps.

Dial up is the ultimate predecessor to all of the internet world.

Why is my internet slow? Reasons explained.

Hardware Impacts

The hardware your provider brings you when you first sign up may stay with you even when a newer version is available that is why it is a good idea to talk to your provider about upgrading your hardware, such as modems and routers every 2 years.

Hardware that is 2+ years old is probably not the best for the speed of your internet and can reduce it even if you are suppose to have lets say 8 Mbps internet you could have as low as 2 Mbps on some devices because of the technology your hardware is made of.

Provider Plans

The next one is your plan, most companies offer a wide range of plans ranging from $20 to $100+ this of course will determine your speed (for DSL and Fiber customers) – Remember the peak speed is what the package says, so even though you are paying to get “8 Mbps” congestion on the DSL can create your internet to be a little slower than the rest.

But what if?

What if it is super slow, lets say I have the 8 Mbps plan but getting as low as 1 Mbps? This could be a hardware issue, if you experience it very much reboot the devices, and the hardware, and see what happens. Rebooting once a month can clear jammed memory from the hardware.

Further Research

If you have questions, you can always create an issue on github.
I will be happy to answer any questions.