



## CONSUMER ALERT: INTERNET SERVICE PLANS

Provided by NYS Attorney General's Bureau of Information and Technology

### So You Want to Buy Internet Access...

Maybe you just moved into a new home or apartment and you want or need to select an Internet service provider for the first time. Or maybe you've had Internet access for years and you're thinking about switching Internet Service Providers ("ISPs") or plans. Either way, you have questions: What "speed" do I need to access the websites I visit or the applications I use? What equipment do I need to access the Internet? Should I buy this equipment, or lease it from my ISP? How can I get the most out of my home Wi-Fi network? We have answers.

### How Much Speed Do You Really Need?

When you choose an Internet plan, you have to decide how much speed you want. On the Internet, "speed" is a measure of how quickly you can download (or upload) data. Since digital data is made up of "bits," Internet speeds are measured in terms of the number of "bits per second" that you can download or upload, or, more often, in "megabits per second" ("Mbps"). In New York, ISPs offer a variety of speeds, from as low as approximately 6 Mbps, all the way up to 100, 200, 300 and even 1,000 Mbps. That's a lot of speed, but how much do you really need?

To answer that question, start with these:

#### 1) What will you be using the Internet for?

Different Internet applications require different minimum speeds in order to work properly. For example, Netflix recommends that you have at least a 5 Mbps connection in order to watch movies in High Definition, Skype recommends at least 1.5 Mbps for a video call, and Microsoft recommends 3 Mbps for online gaming on its Xbox Live platform.

#### *Internet Glossary*

**ISP:** "Internet Service Provider" – the company that you pay to connect you to the Internet.

**Broadband:** The Federal Communications Commission defines broadband Internet speeds as any speed at or above 25 Mbps download and 3 Mbps upload.

**Modem:** A piece of equipment that connects your devices to your ISP and the Internet.

**Wi-Fi:** The technology that allows you to connect devices to a router wirelessly using radio waves.

**Router:** A piece of equipment that allows you to connect a number of devices to your modem, either with cables or wirelessly using Wi-Fi.

**Gateway:** A combination of a modem and router in a single box.

**Mbps:** "Megabits per second" – the unit of measurement for Internet speeds.

**802.11:** An engineering standard used in Wi-Fi technology. Routers using different 802.11 standards (e.g. 802.11ac, 802.11n, 802.11g) have different maximum data rates.

2) How many devices will be connected to your home's Internet connection at the same time? The speed provided to your home Internet network will be split among all the devices using it at once. As a result, if you need 5 Mbps to watch a movie on your laptop at the same time that your children need 3 Mbps to play a video game on their tablet and your spouse needs 1.5 Mbps to make video calls on their phones, you will need at least 11 Mbps to meet your family's needs. Additionally, if you also have so-called "Internet of Things" devices, like thermostats, baby monitors, security cameras or refrigerators that use your Internet connection, you will likely want even more speed.

3) Will you be using a wireless (Wi-Fi) connection to access the Internet? The amazing conveniences of connecting wirelessly to the Internet come at a price; Wi-Fi speeds are almost always slower than wired speeds. A number of factors contribute to the slowdown over Wi-Fi, including: signal interference from things like cordless phones, baby monitors, microwave ovens and other Wi-Fi networks; physical interference from walls and furniture; and the distance between your device and router. Therefore, if you want to watch streaming movies on your tablet in the bedroom, you may want to position your router closer to your bedroom, and not hidden behind walls or furniture that may interfere with the Wi-Fi connectivity.

### **What Equipment Do You Need?**

To connect to the Internet at home, you need two pieces of equipment: a computer (or other device, like a phone or tablet), and a modem. If you want to connect to the Internet over Wi-Fi, you will also need a router. These days it is common for modems and routers to be combined into a single box, often called a "gateway." You can rent a modem and router from your ISP, or you can simply purchase them. If you decide to rent this equipment from your ISP, be sure to ask them if you are getting the right equipment for the speed level you have signed up for. If you decide to buy your own equipment, check with your ISP first to be sure the equipment you buy will be compatible with your ISP's network. Whether you rent or buy, keep in mind that, as technology evolves, your equipment needs may change. Make sure that you are getting equipment that can handle the speed you decided you need.

### **How Much Speed Are You Actually Getting?**

Once you have acquired the equipment you need to access the Internet and a commitment from your ISP to deliver a certain speed to you, you should check to see what speed you're actually getting. There are a number of tools that you can use to check your speed, including Measurement Lab's Internet Health Test << <http://internethealthtest.org>>>, Ookla << [www.speedtest.net](http://www.speedtest.net)>> and DSL Reports << [www.dslreports.com/speedtest](http://www.dslreports.com/speedtest)>>. To use these tools, simply type in their Internet address and follow their instructions.

If the speed that you measure is not the speed you are paying for, call your ISP to find out why. The problem could be as easy to fix as moving your router to a better location or changing a setting on your device to make sure that it is using the fastest Wi-Fi technology available. But the problem might also be one that only your ISP can fix. For example, your ISP might need to provide you with a new modem or router, or perform maintenance on its network.