

# Demystifying Internet Basics



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National Capital **FreeNet**

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# Mandate

- We believe everyone in the National Capital Region should have access to the Internet, meaning it's affordable, high quality, they understand how to use it, and feel safe online.

# High speed/broadband internet

- Fast Internet is a relative term.
- **High-speed Internet** has a speed of 512 kilobits per second (Kbps) or higher, although the idea of fast Internet is relative.
- Just a few decades ago, dial-up was the only Internet service offered to homes, and the fastest connection possible was 56 Kbps.
- In an Internet context, **broadband** is used to mean any high-speed Internet access that is always on and faster than traditional dial-up access.

# Recent CRTC decision:

- The CRTC recognizes that a well-developed broadband infrastructure is essential for Canadians to participate in the digital economy.
- By the end of 2021, 90% of Canadian homes and businesses should have *access* to broadband speeds of at least:
  - 50 Mbps for downloads
  - 10 Mbps for uploads

# How to evaluate Internet offerings:

- Price (you probably have this covered)
- Speed
- Usage
- Technology
- Special offers: they giveth and they taketh away

# What's in a speed?

- Mbps = megabits per second
- Describes the time it takes data to travel
- The first number is the download, the second number is the upload
- Packages tell you the highest speed they can deliver *up to*
- Eg. 10/7mbps = up to 10mbps download and up to 7mbps upload

# What's in a speed, part 2

- The speed you need is determined by what you plan to use the connection for, how many people/devices, and accounting for potential wifi loss.
- Are you using the connection to email, surf the web, Skype relatives, VOIP phone, download files, and/or watch streaming video like YouTube or Netflix?
- How many people/devices will be accessing the internet at once? Eg. Mike plays online video games while Shelley watches Netflix **and**

# The Meaning of Speed

Internet Speed	Email Download (secs)	Web Page Download (secs)
6 mbps	5.78	2.9
10 mbps	3.4	1.76
50 mbps	.69	.35

## Assumptions:

1. email - if you download a batch of 10 email messages – two with photos attached, two with misc attachments and 6 with regular text (4.3MB)
2. Average web page size today is greater than 2.2 MB



# Speed and wifi

- Can you wire your computer/device to the modem via an ethernet cable? Always fastest.
- Otherwise, if relying on wifi, keep in mind congestion from other users broadcasting nearby, distance from modem, multiple devices accessing the connection.
- More speed means you have more room left after these constraints.

# A note about speed

- You are always going to be limited by the slowest link in the chain
- Eg. If you have a 250/50mbps connection, with no wireless loss and yet the website you're visiting is overloaded with traffic (because they don't have all the capacity they need) your speed on that site will be affected
- This is the difference between [google.com](http://google.com) and [ilovethesens.oneguyinhisbasement.com](http://ilovethesens.oneguyinhisbasement.com)

# Test your speed!

- Remember the difference between wired and wireless speedtests
- [speedtest.ncf.ca](http://speedtest.ncf.ca)
- [performance.cira.ca](http://performance.cira.ca)
- [speedtest.net](http://speedtest.net)

# Usage

- Measured in gigabytes (GB)
- Refers to the total amount you can download and upload in a given month
- Watch out for overages
- Some ISPs have free periods during the day (we used to, before we went all unlimited)
- You can usually check your current usage online

# Usage per application

- Websites & Email – Checking your email, Facebook, etc.
  - uses less than 0.1GB per hour on average
- Audio/Music Streaming – CBC online, podcasts, etc.
  - use approximately 0.3GB – 0.5GB per hour on average
- Standard Definition Video Streaming – YouTube etc.
  - use approximately 0.5GB – 3GB per hour
- High Definition Video Streaming – Netflix etc.
  - use approximately 3GB – 7GB per hour
- 4K Video Streaming – Netflix, IPTV
  - use approximately 10GB or more per Hour

# Types of high-speed internet

- Cable (also known as co-ax or DOCSIS: Data Over Cable Service Interface Specification)
- DSL (Digital Subscriber Line, delivered over telephone wires)
- Fixed wireless (uses radio frequency, often used in rural areas with less phone/cable infrastructure)
- Satellite (literally delivered via satellites orbiting Earth)
- Cellular (using the same technology that connects cellular phones)
- Fibre to the Home/Premises (newer technology uses fibre optic cables directly to the home)

# Cable

- Rogers, Videotron, Distributel etc.
- Speeds up to 250/50mbps
- Distance isn't an issue; if you qualify at all you likely qualify for the highest speeds
- PROS: higher speeds
- CONS: shared resource with neighbourhood which could affect speeds/congestion, especially during peak

# DSL

- Bell, NCF, TekSavvy etc.
- Speeds up to 50/10mbps; up to 100/10mbps on pair-bonded links
- Speeds above 6/0.8mbps run on FTTN (Fibre to the Node), dependent on distance from node and this can affect which speeds an address can get
- PROS: dedicated line, the speed you get is not shared
- CONS: potential extra dryline charge if you don't have a landline telephone service



# Fixed wireless

- Storm, Xplornet, etc.
- Generally used in rural areas where cable or DSL aren't available
- PROS: you get high-speed internet in the boondocks!
- CONS: you generally pay more for less speed and less usage

# Satellite

- Xplornet
- Generally used in rural areas where cable or DSL aren't available
- PROS: you get high-speed internet in the boondocks!
- CONS: you generally pay more for less speed and less usage, more affected by weather conditions

# FTTH/FTTP

- Fibre to the Home/Fibre to the Premises
- Fibre optic cable is moving data at the speed of light so is very fast
- Speeds up to 1Gbps (1000x faster than 1Mbps)
- PROS: lightning fast, dedicated line
- CONS: expensive and not available everywhere yet

# Bundles and special offers

- Can be good value, especially if you want to use internet, TV, phone (landline or mobile)
- Know that there are online alternatives to TV and phone
- Be mindful of long-term contracts
- Watch out for introductory rates that rise dramatically after a few months
- For most commercial ISPs, calling to ask about new promotions and/or threatening to leave will trigger better deals
- (Not the case for NCF as all members are equal and we strive to keep all our prices low, no introductory rate)

# NCF rates

- 6/0.8mbps, unlimited usage: \$32.95/mo
- 7/1mbps, unlimited usage: \$32.95/mo
- 10/1mbps and 10/7mbps, unlimited usage: \$30.95/mo
- 15/1mbps, unlimited usage: \$37.95/mo
- 15/10mbps, unlimited usage: \$39.95/mo
- 25/10mbps, unlimited usage: \$44.95/mo
- 50/10mbps, unlimited usage: \$49.95/mo
- Line installation: \$25+HST
- Dry line installation: \$19.95 + HST
- Monthly dry line: \$7 + HST
- Modems: \$20-\$105 + HST

# Questions?

