

Demystifying Internet Basics



National Capital FreeNet

www.ncf.ca

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NCF history

- Started in 1992, dial-up
- Also locally-hosted email, basic webhosting
- Not-for-profit, member-owned and governed
- “Members helping members” (volunteers, DGs)
- Started selling 6mbps DSL in 2005
- Alternative to commercial providers
- Currently about 5500 members, including 3200 DSL subscribers
- In January 17 launched CAF with OCH package

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.

How we live up to our mandate

- Only changed prices three times in 12 years (and twice it involved dropping some of our prices!)
- Recently took all our packages to unlimited usage for the same price
- Community Access Fund
- Invest in capacity (bandwidth and staff)
- Award-winning HelpDesk
- Member workshops
- YWCA Project Shift
- E-waste
- Software distribution program

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** browses on her iPad

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 and ilovethesens.oneguyinhisbasement.com

Test your speed!

- Remember the difference between wired and wireless speedtests
- speedtest.ncf.ca
- performance.cira.ca
- 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

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?



Super quick primer on spam, phishing, malware, viruses and ransomware

- Spam: unsolicited bulk emails (or chat messages or blog comments etc.) that try to sell you something (usually counterfeit/fake goods)
Eg. Often pharmaceutical products or software
- Phishing: unsolicited emails (or attachments, or links, or pop-ups) that attempt to trick you into providing personal/financial information and/or login information to your email.
Eg. Fake bank or CRA emails, offers of money from overseas dignitaries, fake sexy chats
- This is especially effective because 70% of people use the same logins/passwords for almost every web service they use. Therefore access to one is access to many.

Super quick primer pt 2

- Malware: Malicious software (often inadvertently downloaded by email link or attachment) which is intended to harm the host computer
- Malware often takes over your computer (you may not notice) to infect other computers and create a botnet.
- Viruses: A type of malware that spreads through software programs and between computers
- Ransomware: A newer, advanced form of malware that restricts access to the computer/files until the user pays a fee

How to protect yourself:

- There are LOTS of free anti-virus softwares available. Use ONE (more than one does not make it more effective) and keep it updated:
- AVG
- Sophos
- Avira
- Avast

How to protect yourself pt 2:

- **Be suspicious:** Does the email claim to be from an official source but is light on details? Or does it claim to be from a friend or family member but is short with limited specific chatting? If it's from someone you don't know, why are they writing and how did they get your email?
- Eg. It says it's from Royal Bank and says things like "Your account" or "Your credit card" or "Invoice attached" vs more specific information?
- Eg. It says it's from a friend and includes "Check out this cool link!" with no other message?
- Eg. Why is the United Nations or a rich widow or someone looking for a date contacting **you** specifically?
- Be VERY careful about clicking links, opening attachments, or providing personal/financial information

How to protect yourself pt 3:

- **Back-up your data** (cloud-based subscription services or external hard drive)
- Save regularly, disconnect from your system and keep in another spot, if possible
- This means if your computer is attacked by malware, especially ransomware, you can disconnect the machine, wipe it, and restore your files from the back-up

Take heart!

Tech-savvy millennials getting scammed more than seniors

Seniors getting wise to traditional phone and door-to-door con games, say officials

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Millennials are more likely to get scammed by fraudsters than seniors, according to a new report from the Better Business Bureau. (Derek Spalding/CBC)

Technology-savvy youth are more likely to be swindled by fraudsters than seniors, according to the results of a Better Business Bureau survey that turns the stereotype of money scams on its head.

Research by the bureau indicates millennials are more vulnerable than baby boomers when it comes to getting duped for their hard-earned cash.

- **Apple ID scam targets people's financial information**
- **Police warn public to be cautious as CRA phone scam continues**

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