Internet Privacy

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Your Presenter

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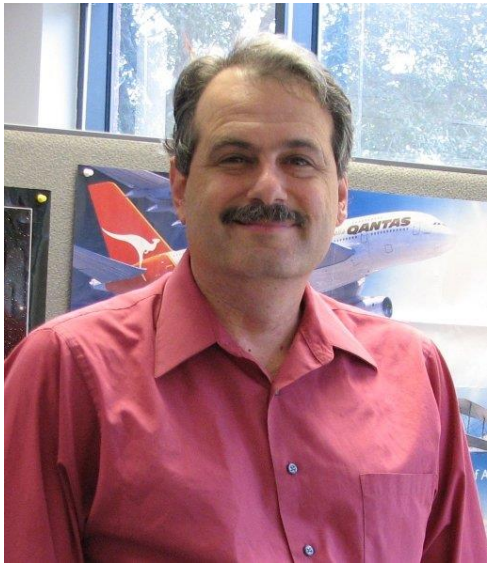
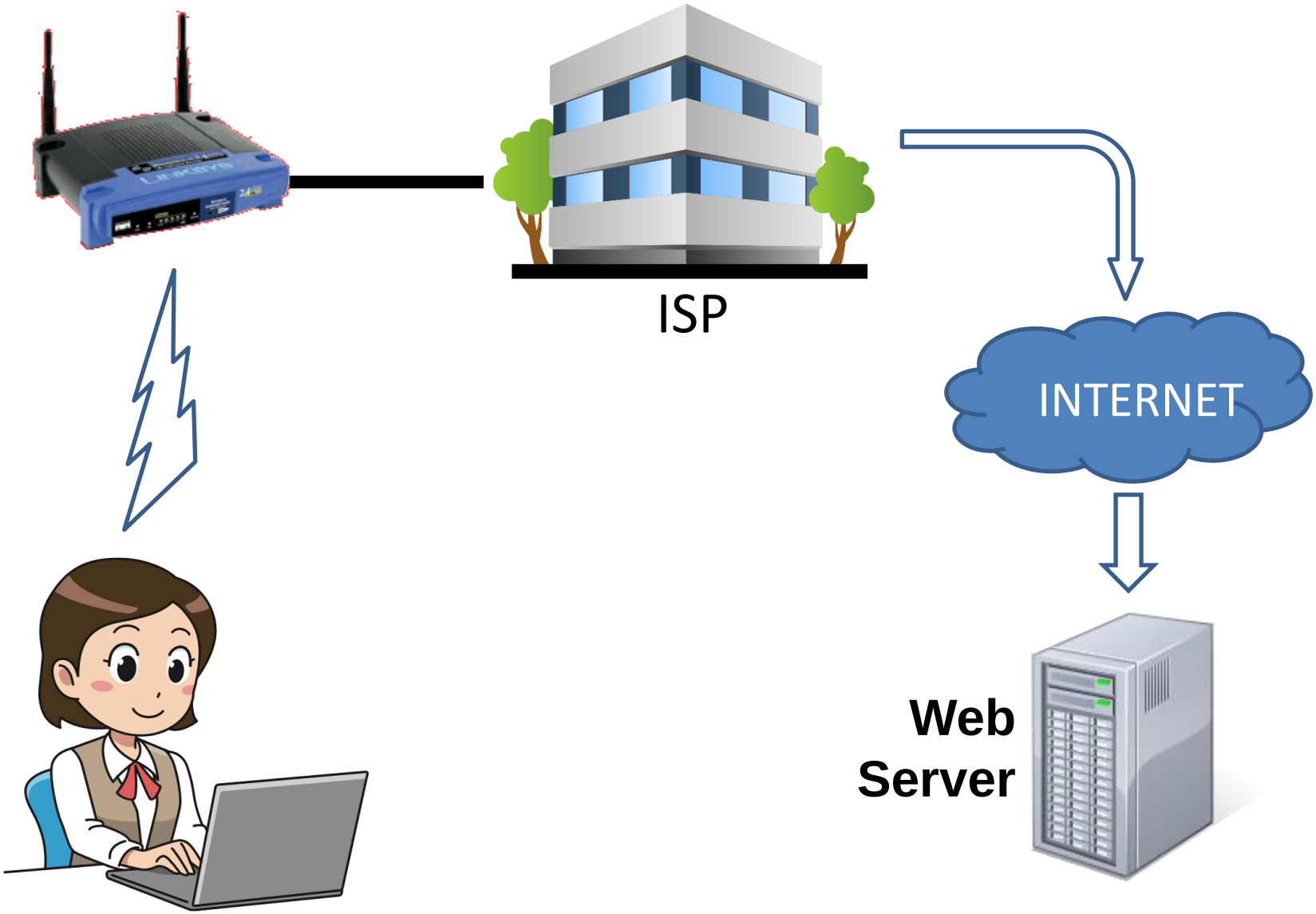


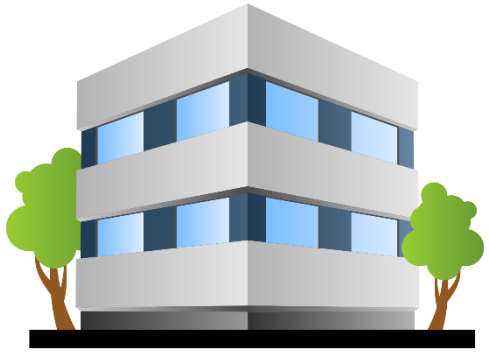
- IT professional for almost 40 years
- IT manager for a small medical office
- No affiliation with any product (except one)

Understanding Internet Browsing

Path Through the Internet



Where It Goes Wrong



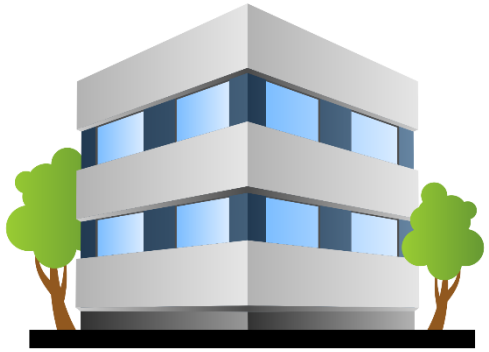
ISP

INTERNET

Other people can rummage through your browser

Web Server

Where It Goes Wrong



ISP

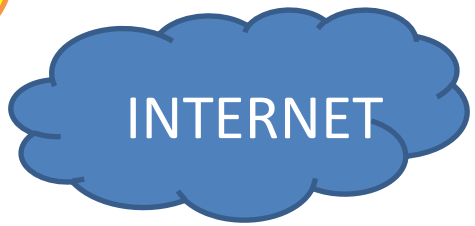
INTERNET

People on your network can see where you're going

Web Server

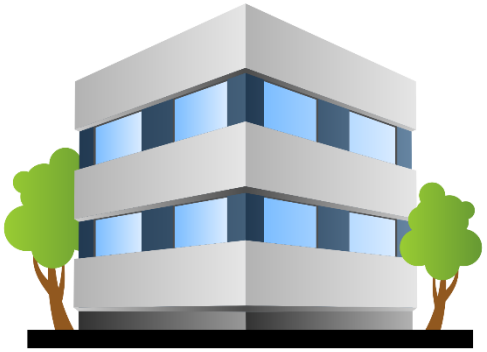
Where It Goes Wrong

Your ISP can collect usage data and sell it



Web Server

Where It Goes Wrong



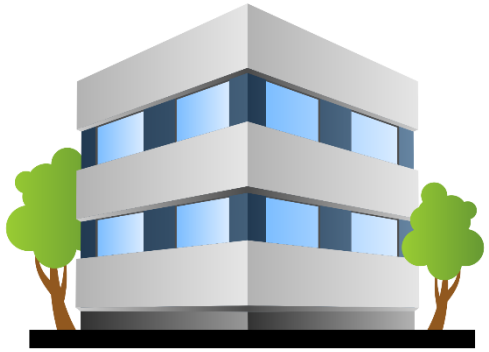
ISP

INTERNET

Servers on the Internet can snoop

Web Server

Where It Goes Wrong



ISP

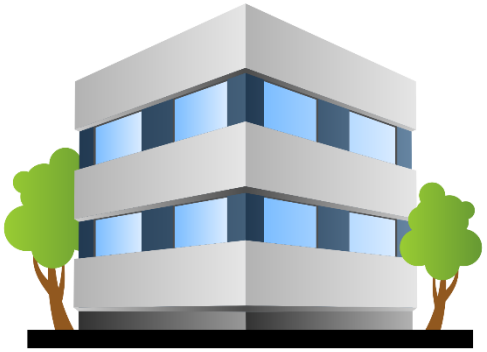
INTERNET

Websites collect information about you

Web Server

Browser Privacy

Browser Privacy



ISP

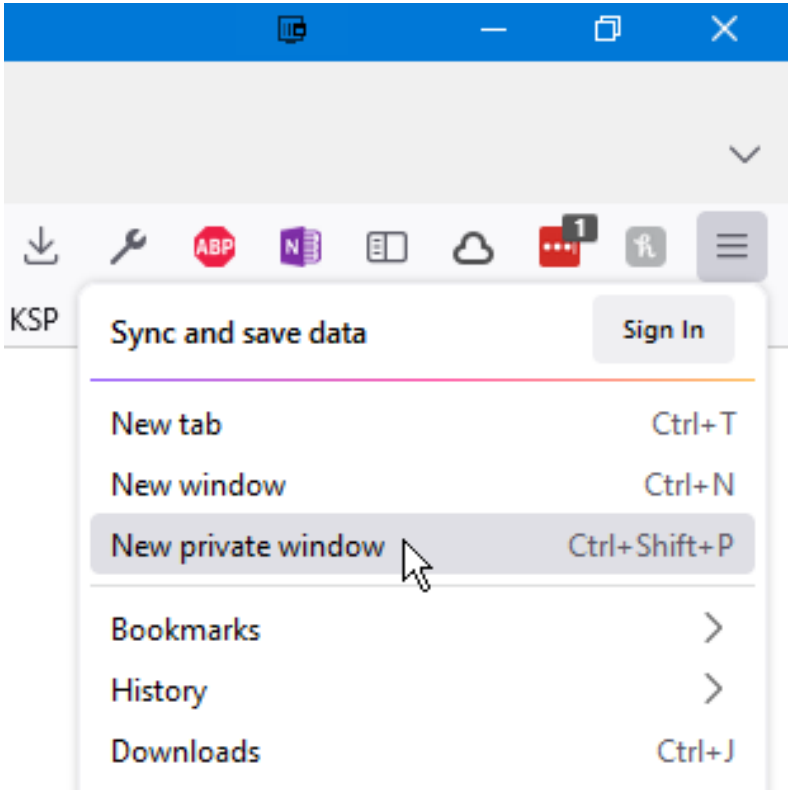
INTERNET

Other people can rummage through your browser

Web Server

Private/Incognito Mode

- Available on all browsers
- Does not save history or cookies
- Initially not logged in to any sites



Uses for Incognito/Private Mode

- Home computer: Hide the fact that you visited a website
- Public or friend's computer: Avoid saving any data

Firefox Portable

- Firefox browser which is not installed like a normal app
- Can be run from a flash drive
- All browser data is stored with the application

Firefox Portable

Q. Does Firefox Portable leave behind any personal data?

A. No. All your cookies and other data is self-contained on your portable device. At no time is any personal data stored on the local machine.

-- From Portable Firefox FAQ

Demo

Where to Get It

Firefox Portable:

https://portableapps.com/apps/internet/firefox_portable

Firefox Portable: Where This Helps

- Prevents people from rummaging through your browser history
- Enables you to use a work or friend's computer without leaving any data behind
- May slightly help prevent websites from gathering information about you
- Does **not** prevent spying on your local network, by the ISP

Using a Secure Browser

- Google wants your data, and Chrome helps them get it

- Use a better browser:

Vivaldi

Chromium

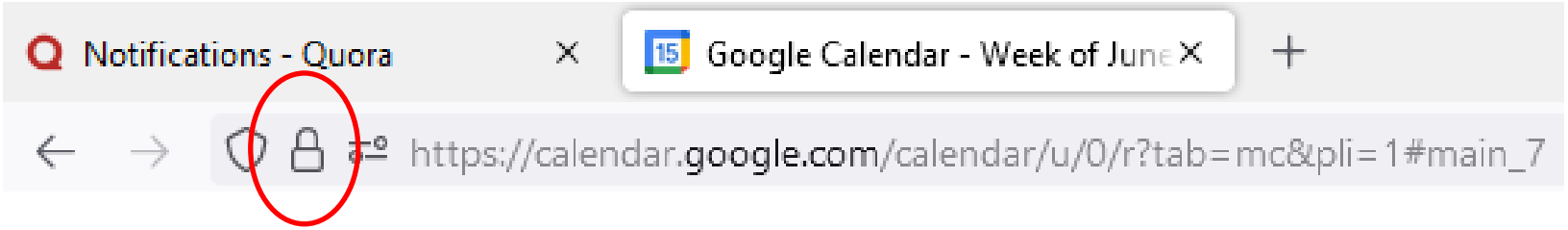
Firefox

Waterfox

Brave

HTTPS - Most Important Tip

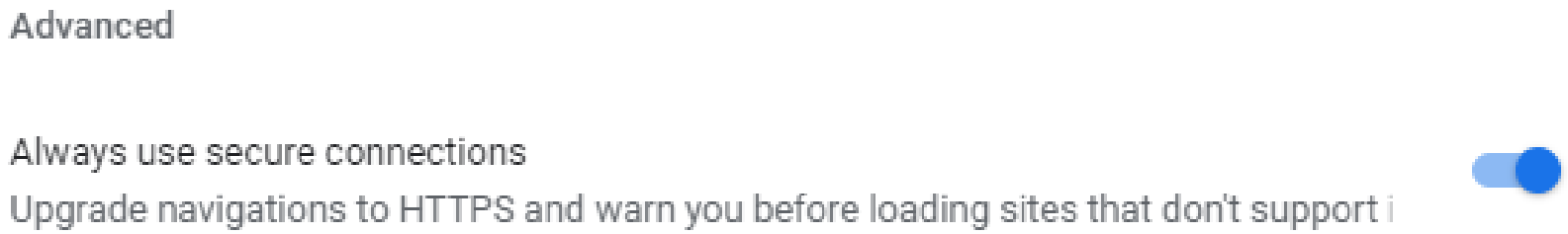
- Use HTTPS for all sites



- Hides browsing content, but snoopers could still see where you go

Force HTTPS

Force the use of HTTPS for all sites



Public Wifi

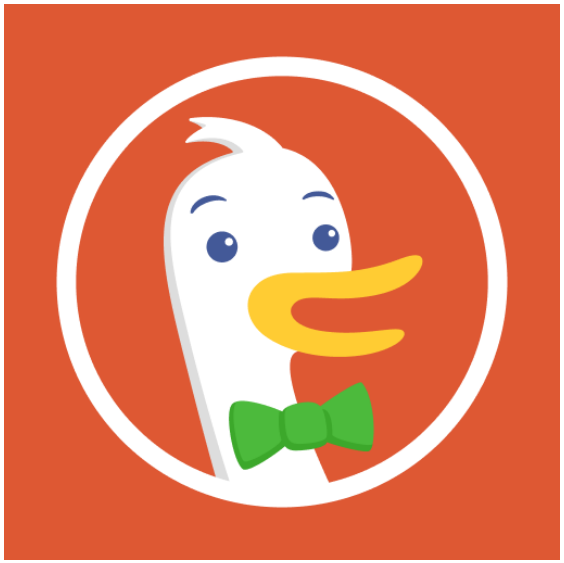
Public Hotspot Cautions

- HTTPS is vitally important
- Remember: Everyone can see where you're going
- Paid networks offer no protection
- Turn your wireless radio off when not in use
- All this applies to hotels too

Search Engines

Search Engines

- Best to avoid Google if you can.
- Consider:



DuckDuckGo.com

StartPage.com

VPNs

VPN Overload

- Ads for VPNs are everywhere
- Hundreds of providers
- Dire warnings and extravagant claims

What is a VPN?

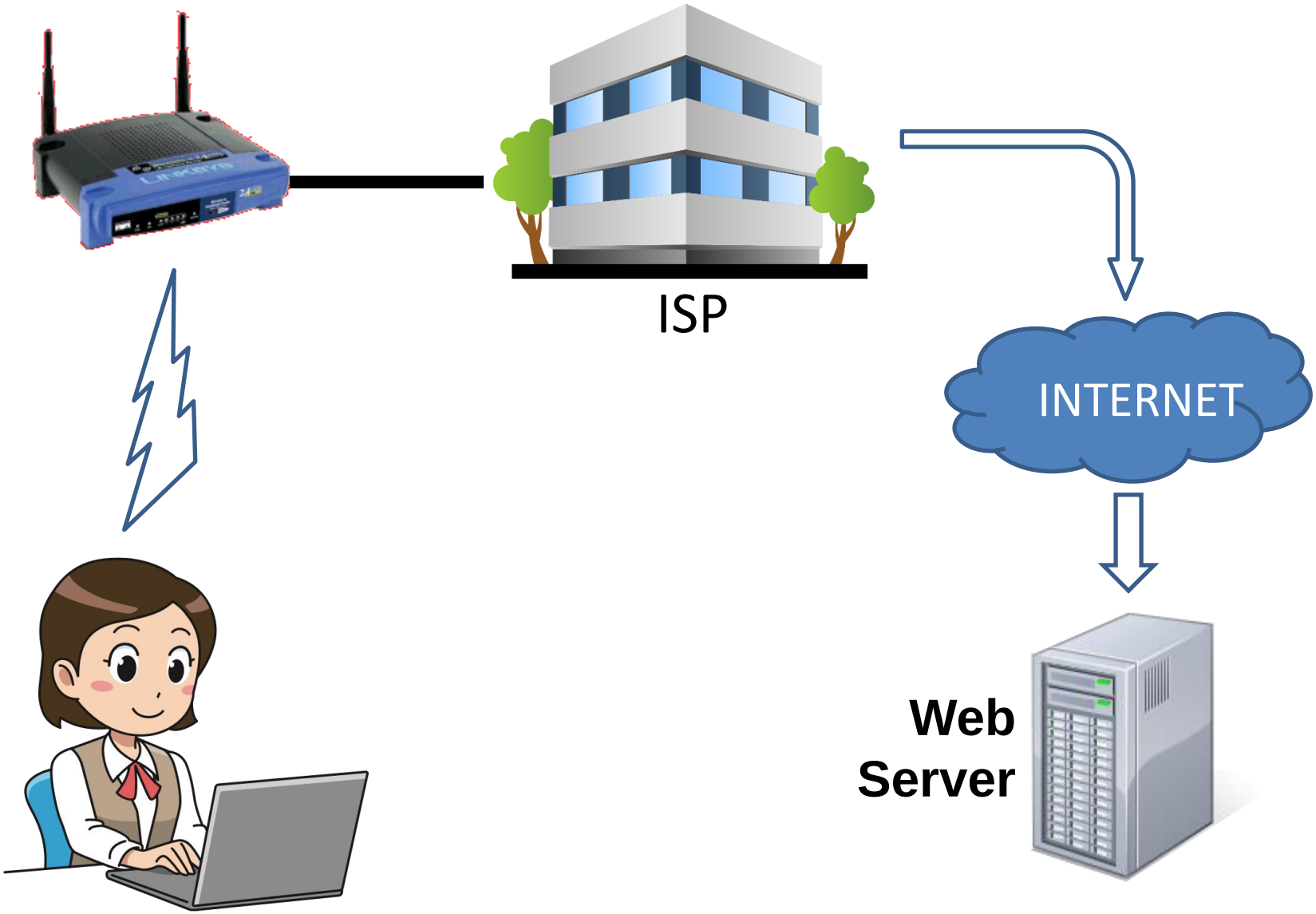
Virtual

Private

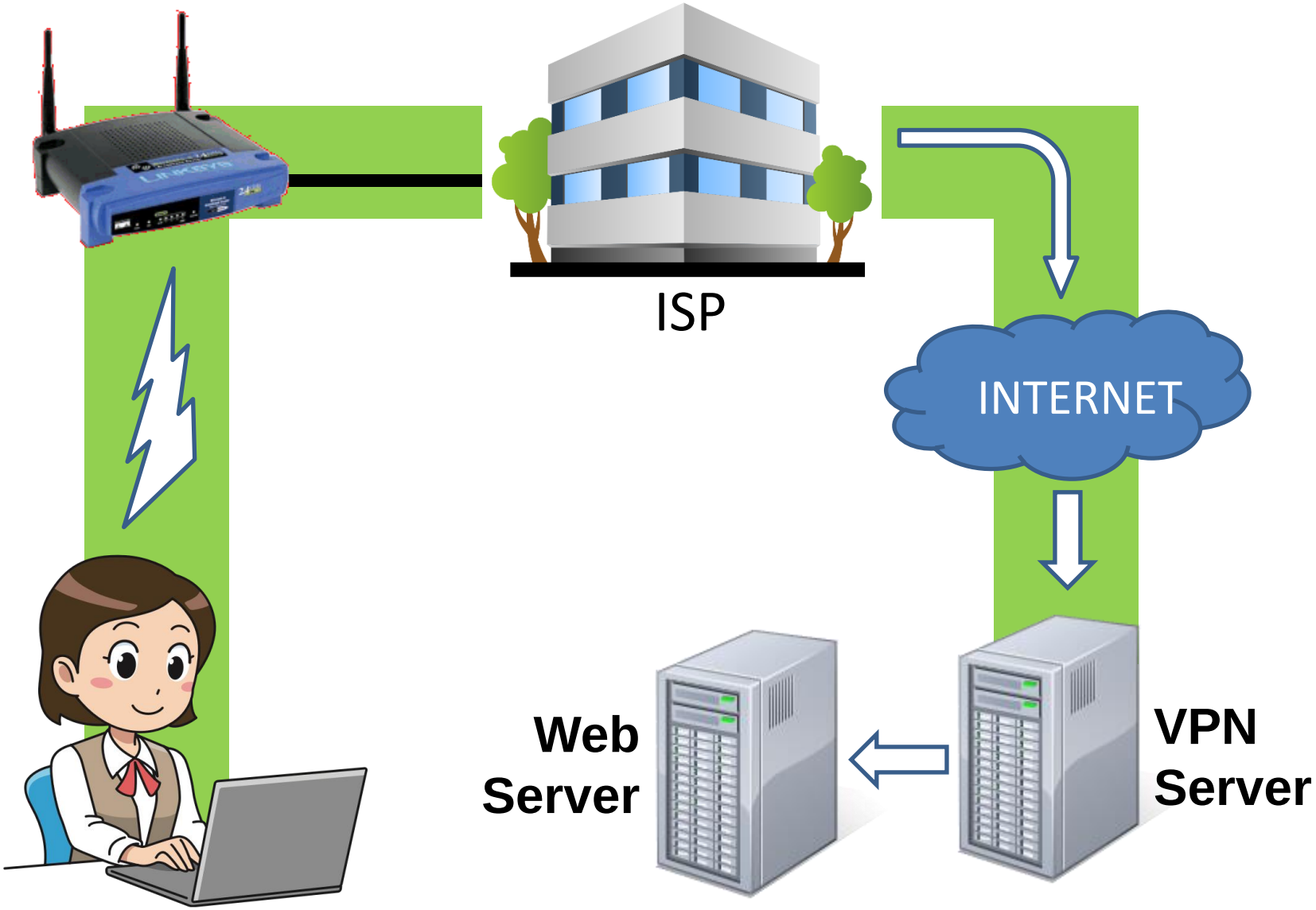
Network

... which really tells us nothing

Path Through the Internet



Path Through the Internet



How This Helps

VPN

- People on your network and your ISP cannot learn anything about what you're doing
- ISP only sees you exchanging data with the VPN server
- Website only sees the VPN server
- Does **not** affect what the website can learn about you **if you log in**

Where This Is Useful

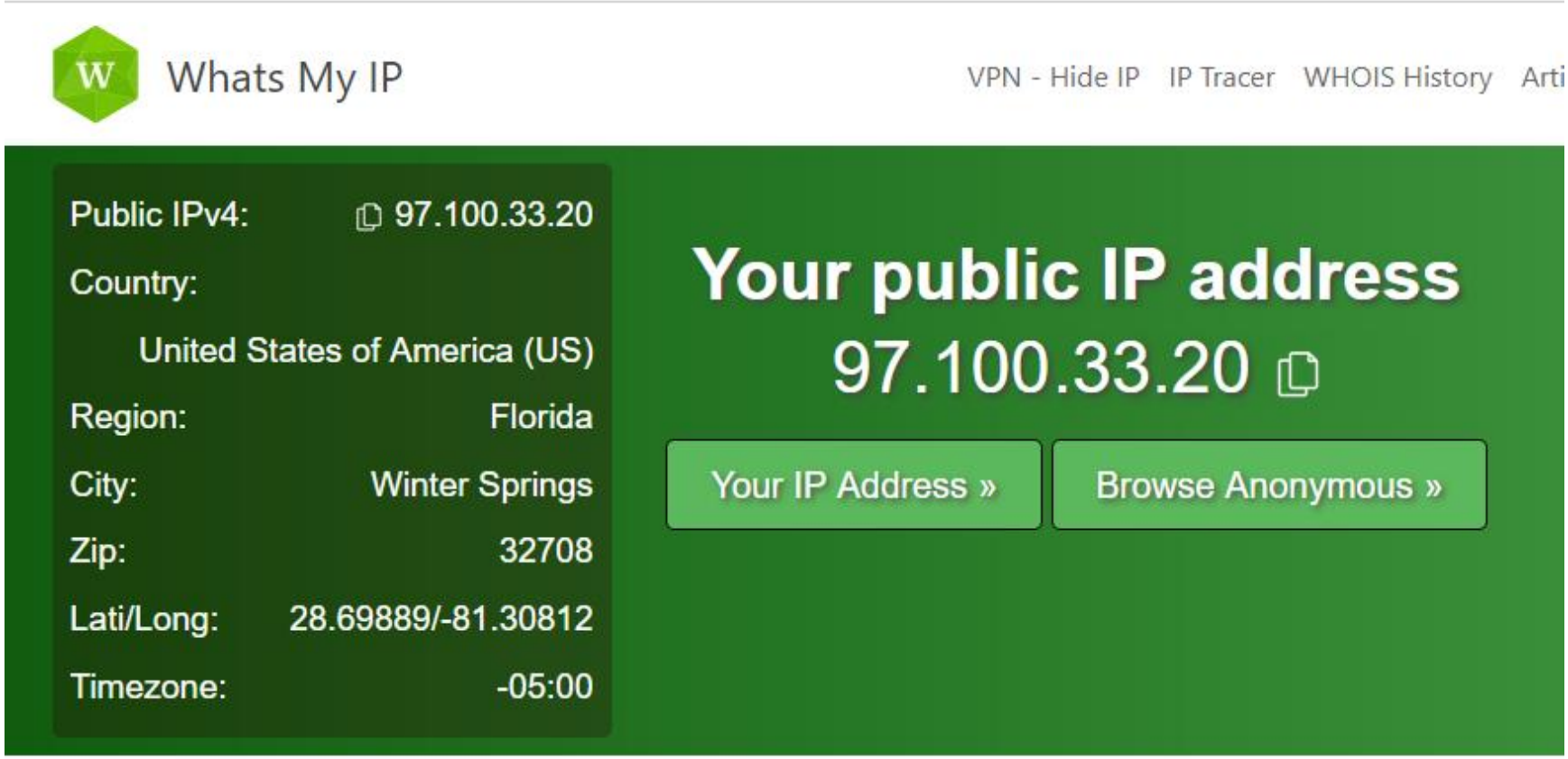
- Hiding sites from your ISP
- Making sure no information is revealed on public hotspots
- Hiding information about you from the website **if you're not logged in**

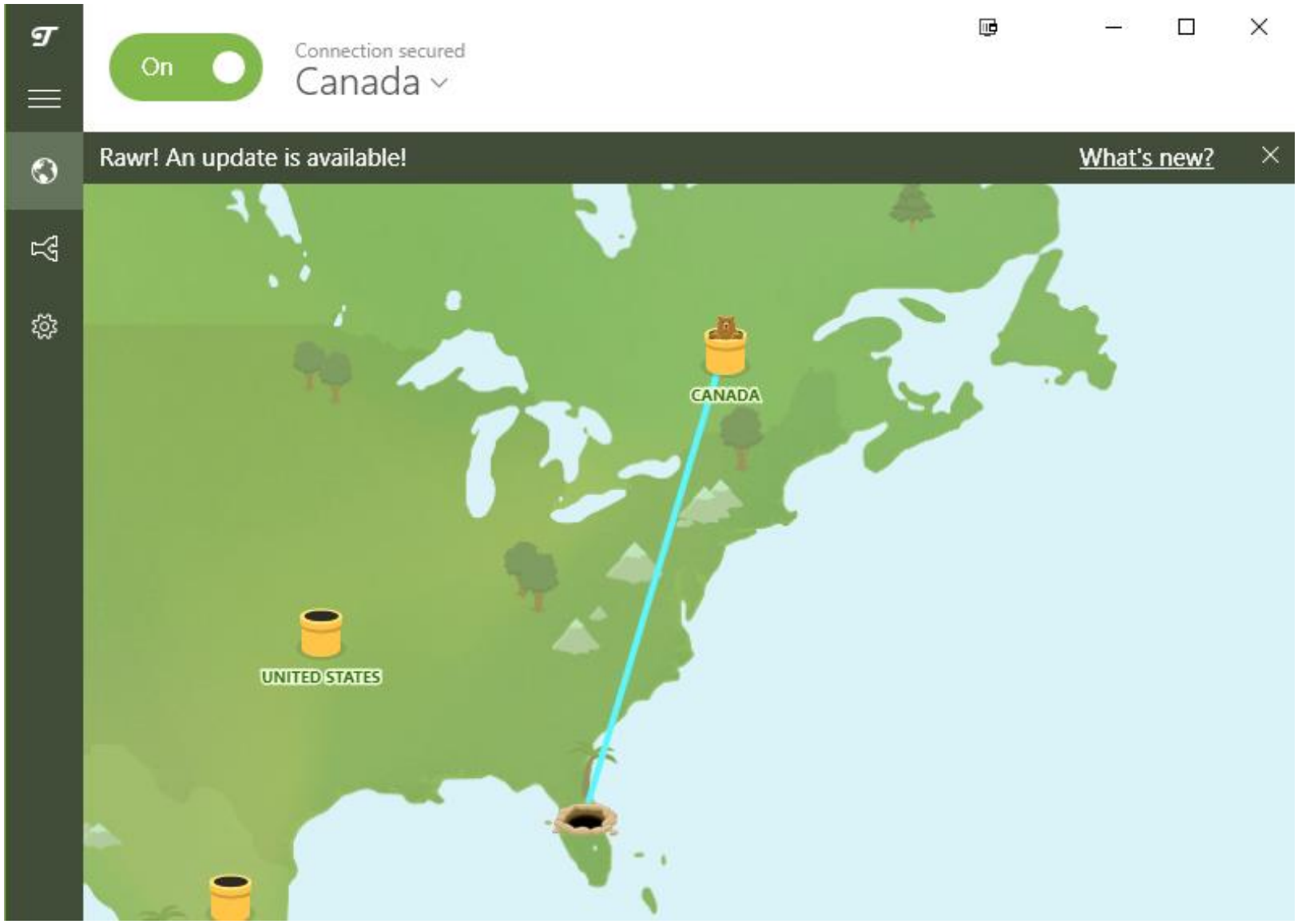
Demo

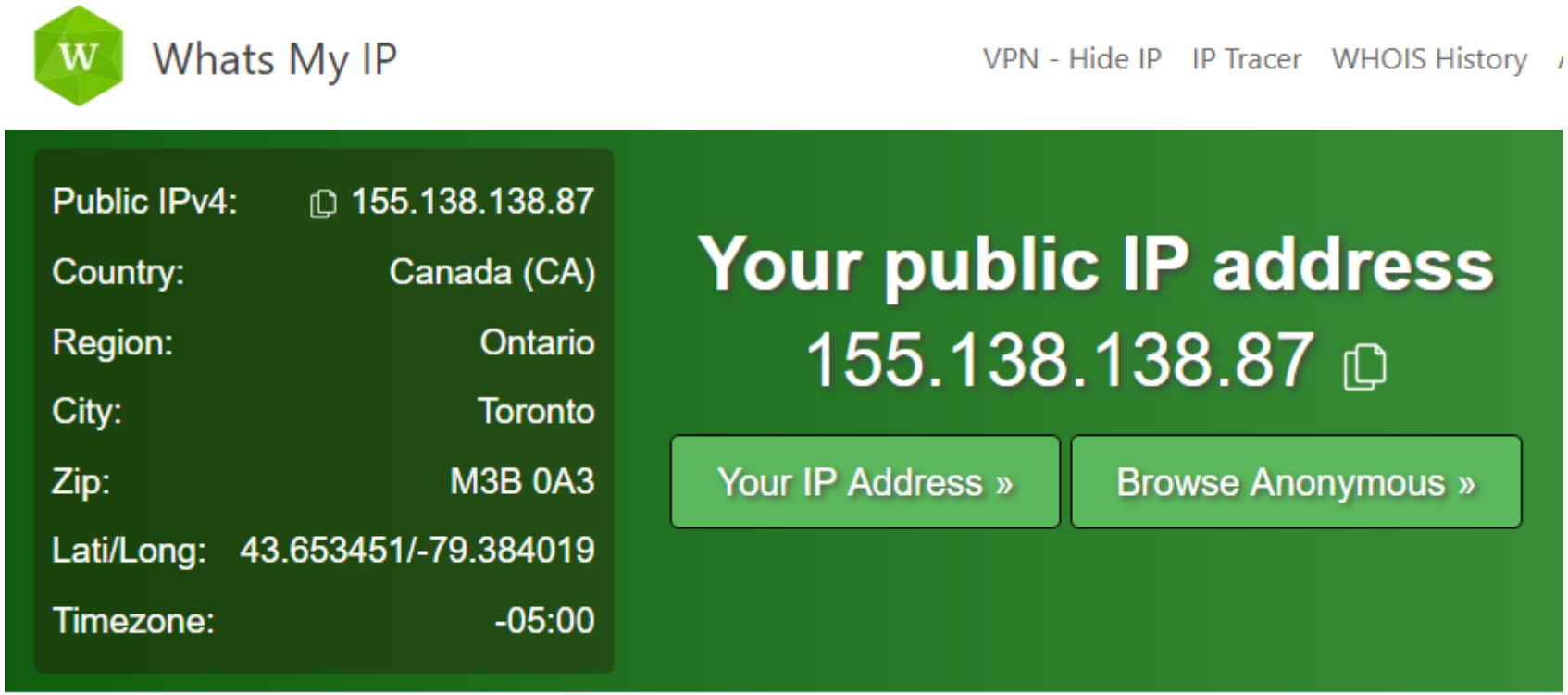
TunnelBear

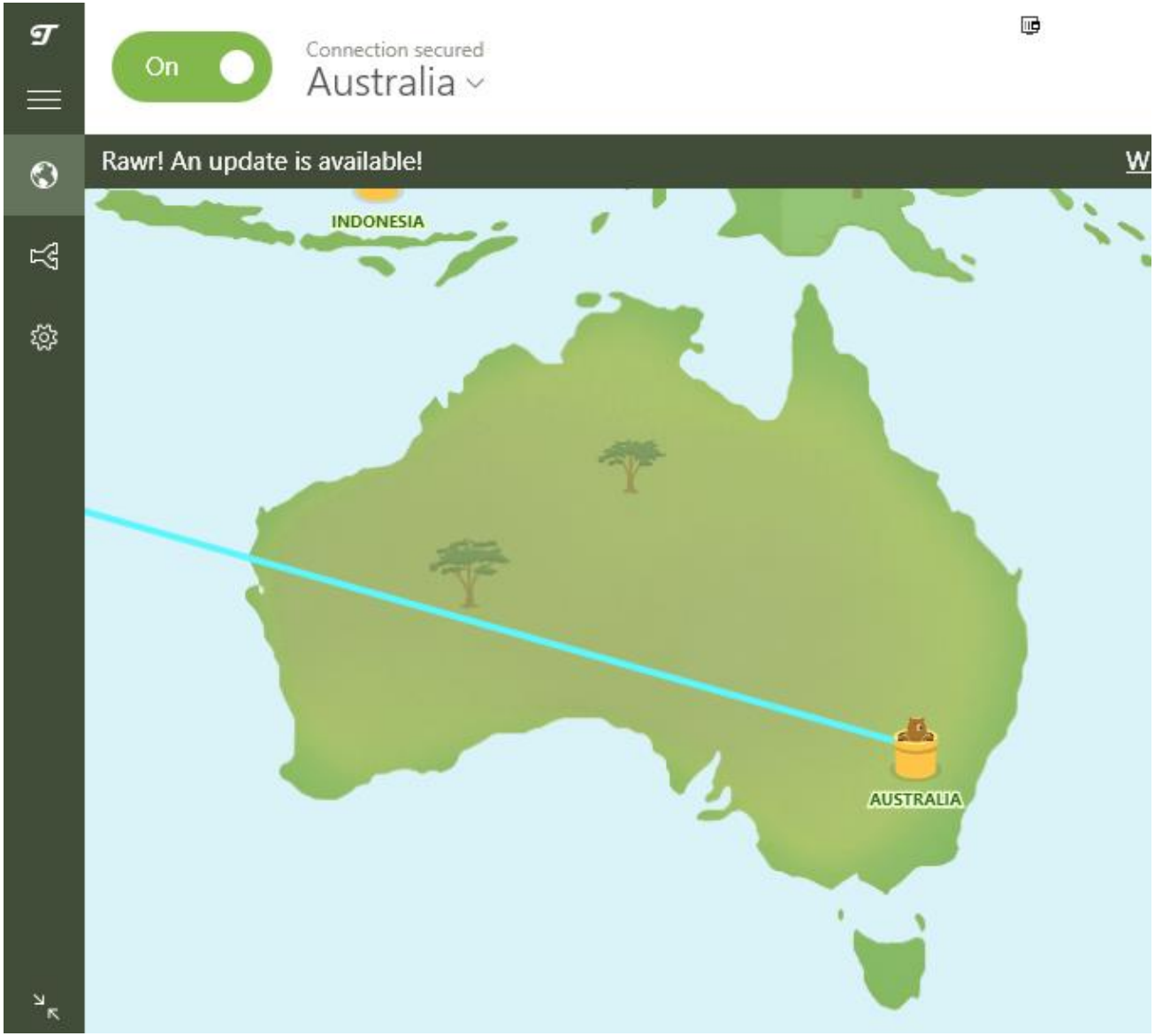
With No VPN

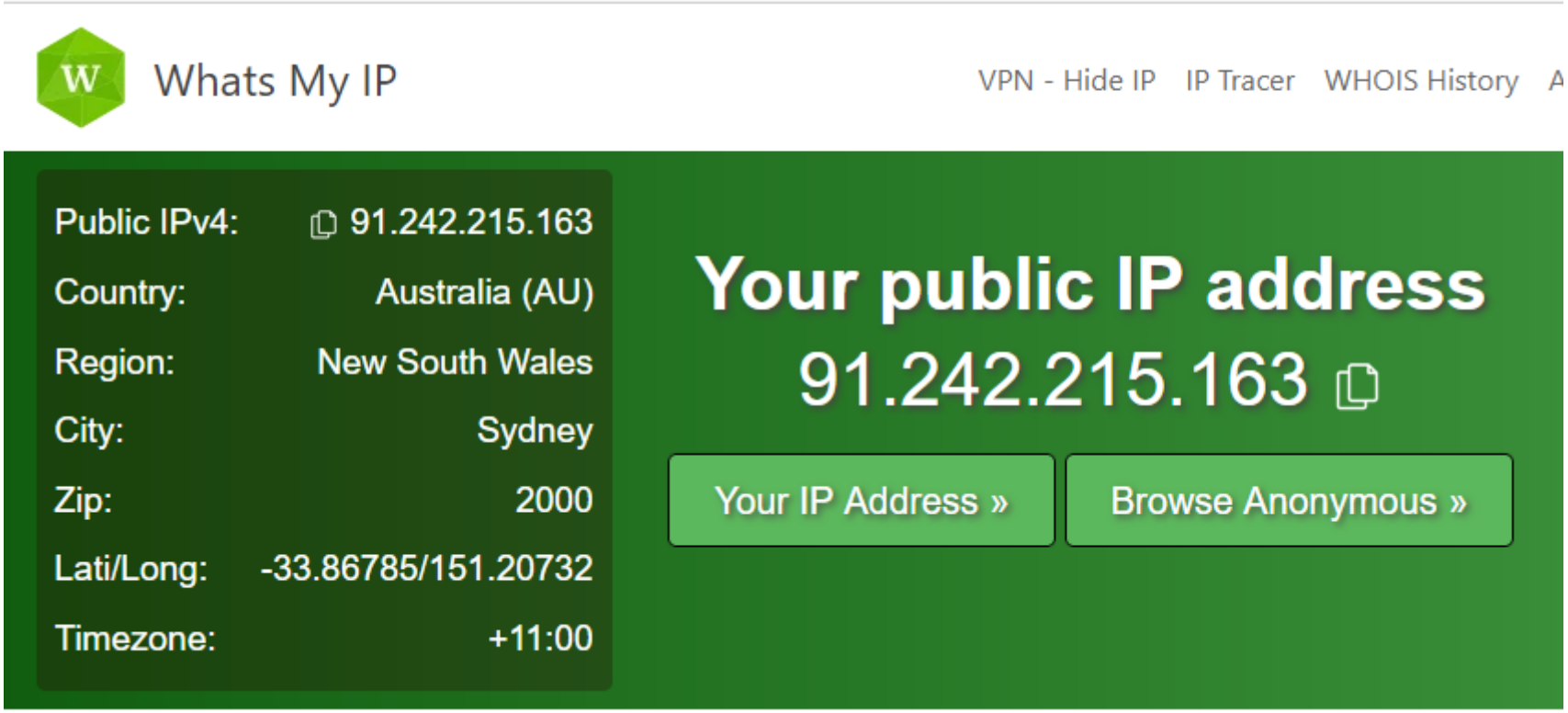
https://whatsmyip.com



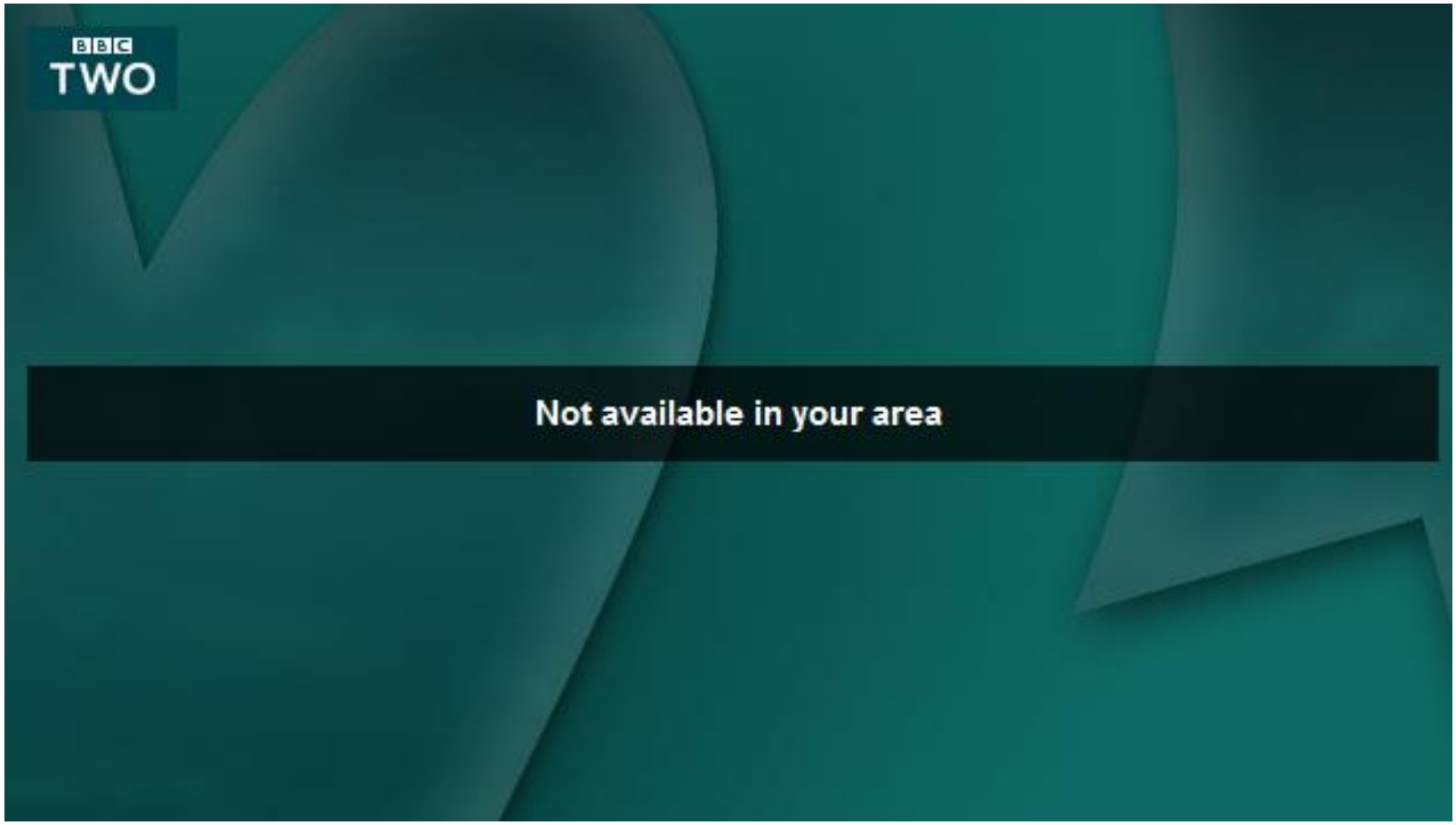

On
Connection secured
Canada
Rawr! An update is available!
What's new?
CANADA
UNITED STATES


Whats My IP
VPN - Hide IP
IP Tracer
WHOIS History
Public IPv4: 155.138.138.87
Country: Canada (CA)
Region: Ontario
City: Toronto
Zip: M3B 0A3
Lati/Long: 43.653451/-79.384019
Timezone: -05:00
Your public IP address
155.138.138.87
Your IP Address »
Browse Anonymous »

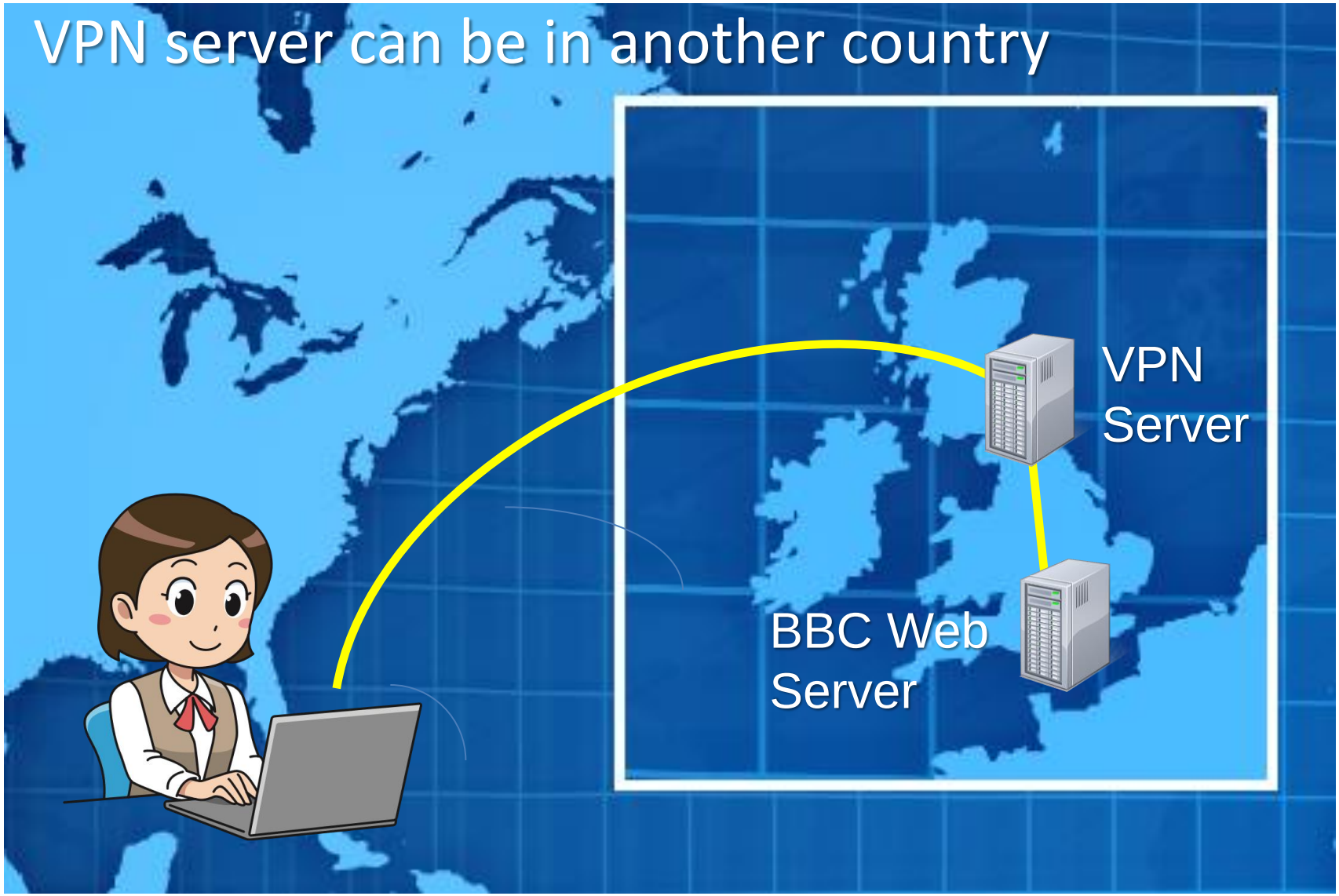

On
Connection secured
Australia
Rawr! An update is available!
INDONESIA
AUSTRALIA


Whats My IP
VPN - Hide IP
IP Tracer
WHOIS History
A
Public IPv4: 91.242.215.163
Country: Australia (AU)
Region: New South Wales
City: Sydney
Zip: 2000
Lati/Long: -33.86785/151.20732
Timezone: +11:00
Your public IP address
91.242.215.163
Your IP Address »
Browse Anonymous »

Additional Advantage of VPNs

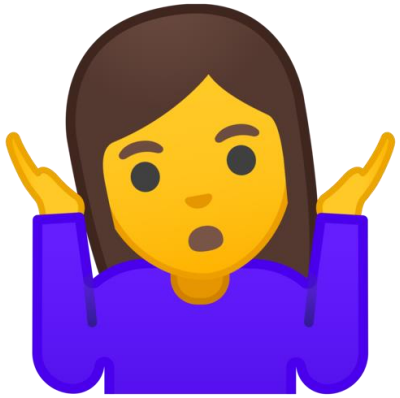


Addition Advantages



Reality

- Accessing content in other countries is hit-or-miss



What VPNs Don’t Do

- Don't protect you from malware and scams
- Don’t make you anonymous if you log in
- Don’t have anything to do with email

The Dark Underbelly of VPNs

- VPNs sometimes collect data on your, despite claims
- Several large companies own a majority of the VPNs
- 33% of VPNs owned by China
- VPN ads earn 40% commissions

Source: https://www.youtube.com/watch?v=8MHBMdTBlok

VPNs to Avoid

- Any free VPN (1clickVPN, FreeVPN)
- NordVPN
- ExpressVPN

VPN Recommendations

TunnelBear

MULLVAD

vyprvpn

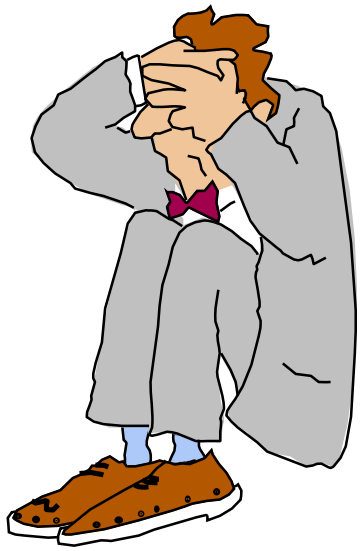
IVPN

ProtonVPN

Email Privacy

Email Privacy

- There isn't any
- Email transmissions are "in the clear"
- Email passes through many servers, owned by …. ???
- Remember the advice your mother gave you growing up …



Sage Advice from Mom

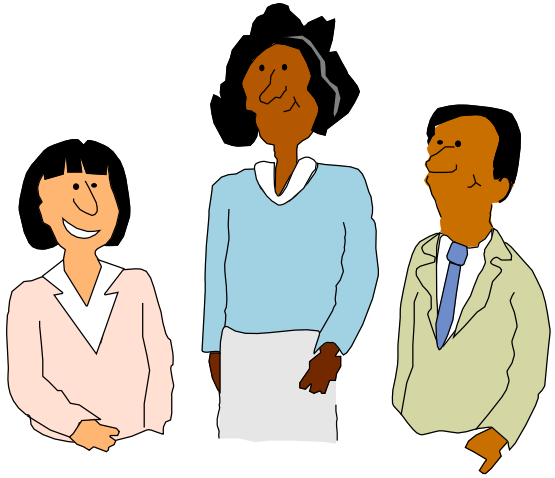
“Be careful with that thing. You don’t know where it’s been.”

-- Mom

Email Solutions

- The free providers don’t respect your privacy
- Consider a secure email provider:
  - ProtonMail
  - Startmail
  - Tutanota
  - Zoho Mail

https://cybernews.com/secure-email-providers/



Another Email Alternative

- For secure communication, use encrypted attachments
- Both people use the same software
- Must exchange passwords ahead of time
- Microsoft Office: built-in
- Other files: AES Crypt

Demo

Office 2016

Demo

AES Crypt™

Disposable Email Addresses

- Many free sites provide disposable email addresses
- Great for registering for newsletters or signing up for services
- Some services:
  - Email address good for a short time
  - Email addresses good long-term

Demo

10minutemail.com

fakemail.net

Disposable Email Addresses

- Don’t depend on these services for really secure stuff

Using Good Passwords

PASSWORD COMMANDMENTS
1. Use a password manager
2. Different password everywhere
3. Use a password generator

Password Generator

- All password managers have one built in
- Some free password generators:

BitWarden
https://bitwarden.com/password-generator

Dashlane
https://dashlane.com/features/password-generator

Mark
https://whatsthisthen.com/passwords

Phones

Phone Cautions

- Turn of Wifi when not in use

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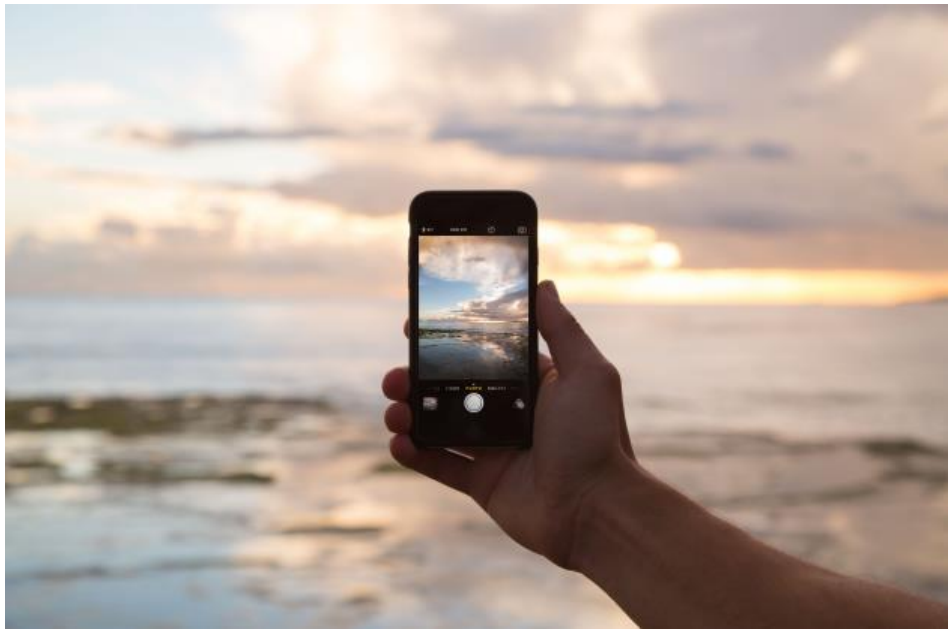
Phone Cautions

- Assume that your phone is always being tracked
- Keep sensitive contact information somewhere other than your contacts



Where To Get It

Browsers

Firefox Portable	https://portableapps.com/apps/internet/firefox_portable
Vivaldi	https://vivaldi.com
Brave	https://brave.com
Firefox	https://www.mozilla.org/en-US/firefox
Waterfox	https://www.waterfox.net

Software

AES Crypt https://www.aescrypt.com

Password Generators

BitWarden	https://bitwarden.com/password-generator
Dashlane	https://dashlane.com/features/password-generator
Mark	https://whatsthisthen.com/passwords

VPNs

TunnelBear VPN	https://www.tunnelbear.com
Mullvad VPN	https://mullvad.net
VyprVPN	https://www.vyprvpn.com
IVPN	https://www.ivpn.net
ProtonVPN	https://protonvpn.com

Secure Email

ProtonMail	https://proton.me
StartMail	https://www.startmail.com
Tutanota	https://tutanota.com
Zoho Mail	https://www.zoho.com/mail

Saturn V Step-by-Step

Saturn V Step-by-Step

Preparing and launching the largest (operational) rocket ever built.

Free:

https://whatsthisthen.com/saturnv

Contact me at:

marks@schulmans.com