Introduction to Personal Digital Security and Privacy

Danbury Area Computer Society (DACS)

August 1, 2017

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Connected world

We live in a very connected and tracked world

When we …

      browse the web,

      send an email,

      turn on our phones,

      purchase items with our credit cards

- all of it is tracked for various reasons

Some of this may be useful, but in some cases, this information can be harmful or used for nefarious purposes

Privacy

The desire of a person to control the disclosure of personal information

Confidentiality

The ability of a person to control release of personal information to another entity under an agreement limiting further release of that information

Security

Protection of privacy and confidentiality through policies, procedures and safeguards

Why do they matter?

Ethically, privacy and confidentiality are considered to be rights (in our culture)

Information revealed may result in harm to interests of the individual

Solutions to Personal Digital Privacy and Security

Passwords, Password Manager, and 2FA

Email

Credit Cards

Cloud Storage

Virtual Private Network (VPN)

Browsing Options

Tor

Tails

Other Recommendations

Personal Mobile and Wi-Fi Security

Passwords

Passwords are not easy to manage

Need to remember the rules – and many still write them down

Many use a version of <password>1, <password>2, <password>3 to keep them different

Best passwords are passphrases (25+ characters)

Green Horses Jumps Orange Fences

Tiny Elephant Is 35% Home Cooked

Check if your email / password has been compromised by entering your email: https://haveibeenpwned.com/

Password Manager

Help manage passwords – one master password to unlock many passwords

Helps with creating secure passwords

Helps with managing unique passwords (one per website)

Can also use to keep track of answers to security questions, etc.

1Password https://1password.com/

Blur https://dnt.abine.com/ (many other services)

2FA – Two Factor Authentication

One password is not enough for keeping accounts safe

Many services now offer 2FA – Amazon, Google, Microsoft, etc.

https://twofactorauth.org/

Set up with SMS, or better, with an Authenticator App

Google Authenticator (avail. for iOS, Android, etc.)

Email

All email is wide open – anyone could potentially read it

Plus, it is stored in copies somewhere (even if deleted on your local email app)

Use PGP (Pretty Good Privacy)

http://openpgp.org/

Credit Cards

Criminals will target your debit and credit cards

Check your free credit report (once a year)

https://www.annualcreditreport.com

Experian and TransUnion also free once a year

Consider Fraud Alert

Watch for card skimming

Consider virtual and prepaid cards

Cloud Storage

Cloud storage makes it convenient to back up data

Not all cloud storage options are encrypted or secure enough

      Microsoft OneDrive (no encryption)

      Google Drive (128-bit encryption – they own keys)

      Apple iCloud (128-bit encryption – they own keys)

      DropBox (256-bit encryption – they own keys)

Best: SpiderOak (256-bit AES encryption – 2FA and **you** own keys)

Virtual Private Network (VPN)

Virtual Private Networks (VPNs) provide good mix of security and privacy

Route internet traffic through a secure channel

Privacy – not anonymity

Available for desktop, laptop, mobile phones

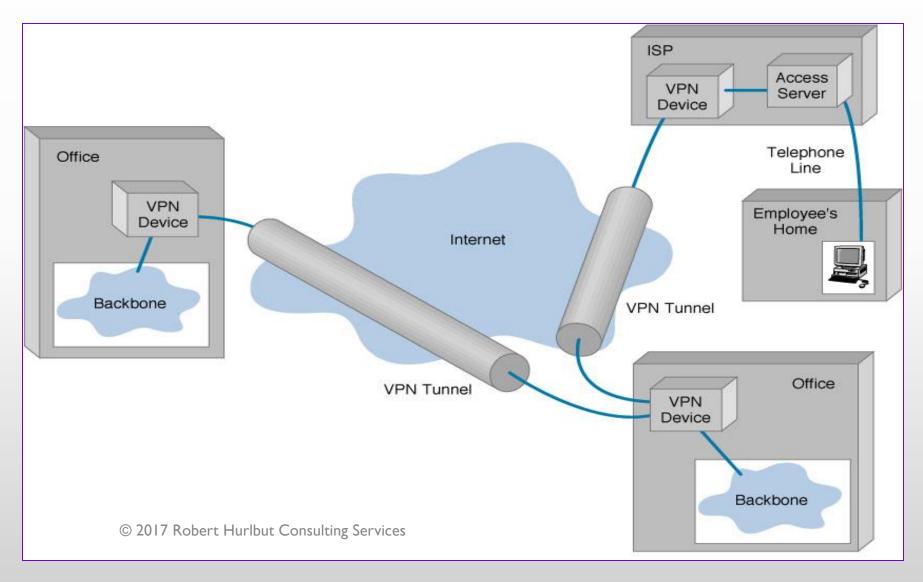Select a reputable paid VPN provider (do not use free ones) that states no or minimal logging

      Private Internet Access (PIA)
   https://www.privateinternetaccess.com/

      F-Secure Freedome
https://www.f-secure.com/en_US/web/home_us/freedome

Virtual Private Networks (VPN)
Basic Architecture

OpenVPN

Many firewalls / routers have built-in OpenVPN

Easy to set up, install OpenVPN Client on computer

OpenVPN How To

https://openvpn.net/index.php/open-source/documentation/howto.html
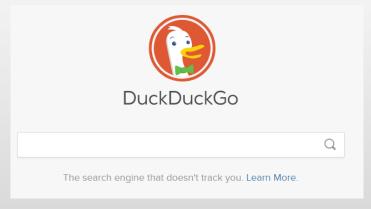
Browsing Options

Most browsers track what you are doing (Google Chrome, Mozilla Firefox, Microsoft IE/Edge)

This helps advertisers know what you like, etc.

Other options:

DuckDuckGo

https://duckduckgo.com

Tor

Tor (acronym for "the onion router") is network and software package that helps anonymity

Tor encrypts data and hides source / destination of internet traffic

Tor Browser Bundle to navigate the web on the internet

https://www.torproject.org

Tails

Using Tor on your own computer may not be enough to keep it anonymous

Tails is a live operating system (using DVD, USB, SD card)

It routes all connections through Tor network

Provides anonymity and privacy solution

Using DVD, no internet session information is saved

https://tails.boum.org

Other Recomendations

Virtual machines (VirtualBox, VMWare, Parallels, etc.)

Separate laptop / separate identities (email, etc.) – keep these separate to truly be anonymous and private

Personal Mobile Security

1. Update to latest version / patch
2. Password/Passcode protect your device
3. Lock your device
4. Review / adjust permissions per mobile app
5. Use anti-virus software (mainly Android)
6. Sync/back up your data
7. Install a phone finder app
8. Turn off Wi-Fi / Bluetooth when not home and not around trusted endpoints (i.e. almost everywhere!)

Personal Wi-Fi Security

Don't connect to public Wi-Fi – if so, use VPN

Ideally, use Mobile Hotspot tethered to Phone (turn off Wi-Fi/Bluetooth)

For Home Wi-Fi, set up WPA2 (AES) with secure password

Never use WEP, and don't use the automatic "button" feature on Wi-Fi routers – not secure

Lots of things to do!

All important methods for keeping secure and private

Mix and match – use what works best for you

Resources - Books

Personal Digital Security: Protecting Yourself from Online Crime

Michael Bazzell

Hiding from the Internet: Eliminating Personal Online Information

Michael Bazzell

The Complete Privacy and Security Desk Reference: Volume 1: Digital

Michael Bazzell and Justin Carroll

The Art of Invisibility: The World's Most Famous Hacker Teaches You How to Be Safe in the Age of Big Brother and Big Data

Kevin Mitnick

Questions?

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