

VPN

Virtual Private Network

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What is a VPN

- Creates an encrypted Tunnel for internet traffic between
 - Client (your PC, Phone, Tablet, Router)
 - Server – Remote device – exit point for the VPN
- Two primary encryption techniques
 - Open VPN
 - Mature
 - Open Source
 - Wireguard
 - New
 - Somewhat faster than OpenVPN

Why a VPN

- Privacy
 - Especially over WiFi
 - Even more especially for public WiFi
- Security
 - You ISP and DNS provider know where you are going
 - Bit Torrenting – Don't do this without a VPN
 - For that vacation to Russia or China 😊
- GeoLocation
 - You assume the location of your IP address
 - New City / New Country

Why not a VPN

- Some impact on latency and throughput
 - Typically 5% to 25%
 - Wireguard typically, but not always, has better throughput
- Some sites will block “known” VPN’s
 - Netflix, Prime, streaming media
- Can be a pricey solution to a non-existent problem

VPN Providers

- Many commercial providers
 - Private Internet Access
 - Nord VPN
 - Surfshark
 - Cyberghost
 - Exress VPN
 - Tunnel Bear
 - ...
- <https://www.pcmag.com/picks/the-best-vpn-services>

How do VPN Providers Differ

- Maturity and Trust
- Price & Performance
 - Long term contracts can lower the price
 - Some VPN providers are “free”, but usually have limitations
- Features
 - Clients supported (most allow 5 or more clients, but not all)
 - Number of servers / Number of locations
 - Logging practices
 - Retention of logs
 - Some claim their servers are “ram” only – pull the cord, everything disappears
 - User Interface – Some are easier to use than others
 - Kill Switch
 - Private DNS
 - Static IP address
 - Level of encryptions offered
 - Split Tunnel
 - Some traffic through the VPN; other traffic bypasses the VPN
 - Claims to work with Netflix, Prime, etc.
 - It’s a game of cat and mouse
 - From foreign country to US
 - From US to foreign country (more dubious)

DIY VPN

- Some routers offer VPN Server capability
 - ASUS
 - Netgear
 - Ubiquity
- Usually implemented with OpenVPN
- Can provide encrypted tunnel to your home network while travelling
- Can provide point of presence from your home network to services such as Netflix, Prime, YouTube TV, etc.
- Level of difficulty – moderately high
- Free alternative to a paid service