

# Introduction to Tailscale CUCUG

Quentin Barnes  
*7/22/2022*

# Tailscale: What is it?

- Secure networking service
- Free (no cost) for personal users ( $\leq 20$  nodes)
- Supported on Windows, MacOS, iOS, Android, and Linux
- Makes configuring and using simple
- Designed to punch through firewalls, go around NATs
- Built on Wireguard technology

# Easy, Free, Do-It-Yourself VPN

- Create an login on <https://tailscale.com>
  - Needs a Single Sign-On (SSO) account like Google, Microsoft, Okta, GitHub, etc.
- Download and install the Tailscale software
- Register machines to your network
- Surf!

# Really? That easy?

- Well... yes and no
- “What kind of network do you want” has to be asked
- Routing all traffic for some or all of your nodes?
  - Exit nodes
- Routing some traffic to machines on local network?
  - Subnet routers

# Use Cases for Tailscale

- Secure your WiFi traffic from prying eyes
  - Hotels, public libraries, coffee shops
- Tech support for friends/family
  - After setup, won't know or care that it's there
- Sharing resources with friends/family
  - Tailscale feature of node sharing

# Nice, but What about the Flip Side?

- Does take some network topology understanding to robustly configure (exit nodes, subnet routers)
- Only usable on supported OSes
  - Can still access unsupported devices via subnet routers
    - Printers, WiFi routers, IoT gadgets
  - Unsupported devices don't count against 20 node free limit
- Network Throughput Performance Drop

# Performance Drop

- Performance hit only for traffic routed over your Tailscale network
- Drop depends on network bandwidth and saturation and CPU speeds
  - The more data you're pushing, the more CPU is needed to encrypt/decrypt
- I measured drops on my network anywhere from 0% to 94%
  - In general, about 0%-10% with around 50% for Gigabit bulk file transfers
  - For worst case 94%, Gigabit wired Ethernet, saturated bidirectionally, between a high end desktop and a Raspberry Pi

# Some Misc Features

- MagicDNS
- Access Control List (ACL) tags
- Taildrop (copy files)



Demo!