Internet Privacy

Tor, Whonix, and Tails

About Me

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Privacy: Why do you need it?

- ~~I have nothing to hide!~~
- Because you DO have something to hide
- Because you might have something to hide later
- Because others have something to hide

Privacy: How do they track you?

- Network Level

  - IP Address: 173.239.79.196

- Application Level (Browser)

  - Cookies, browser fingerprinting (user agent, etc.)

- User supplied information

  - Social media posts, user names, email address, etc.

Privacy: How does Tor help?

- Network Level
  - Onion routing: more private than a VPN
- Application Level
  - Tor Browser: common fingerprint for all users
- User supplied information
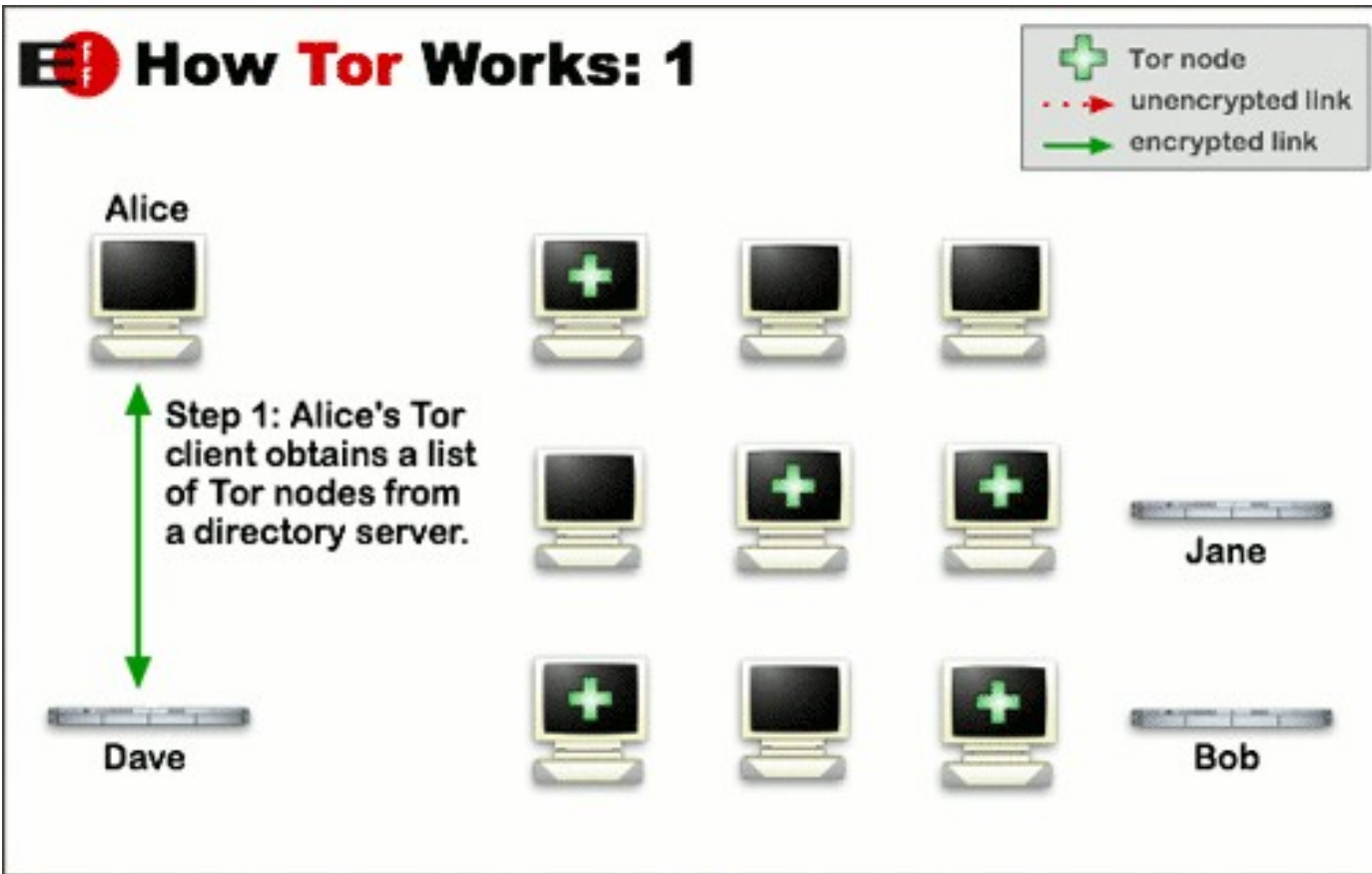 - Tor doesn't help: **It's on you!**

Tor: Where did it come from?

- 1990s, early 2000s: US Naval Research Laboratory
  - Originally called The Onion Router (TOR)
- 2004: Open Sourced (EFF)
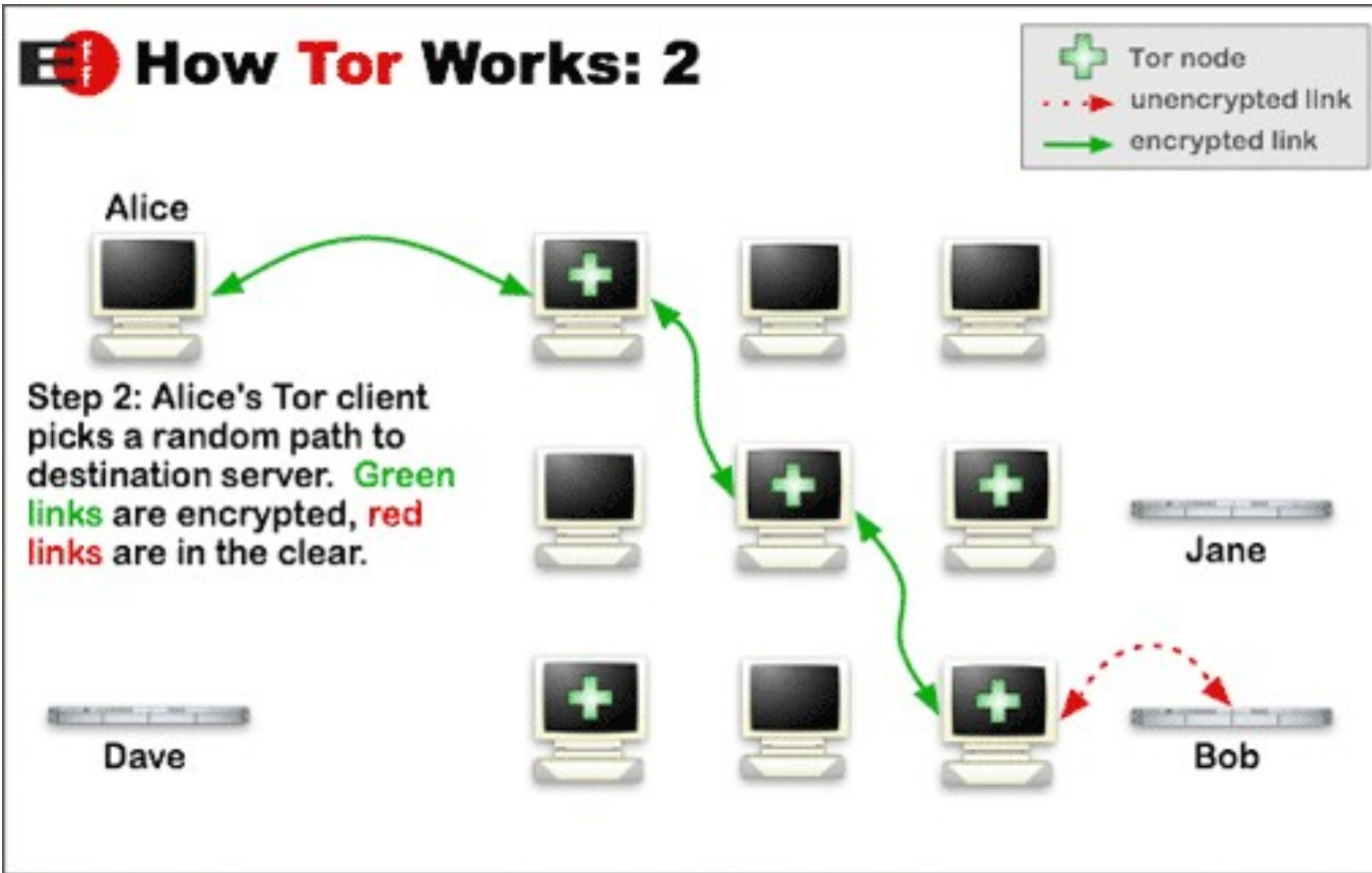- 2006: The Tor Project: 501(c)

Tor: Onion Routing

- Provides network (layer 3) anonymity
- Overlay Network: Runs on top of the internet
- Runs network traffic through three random relay servers
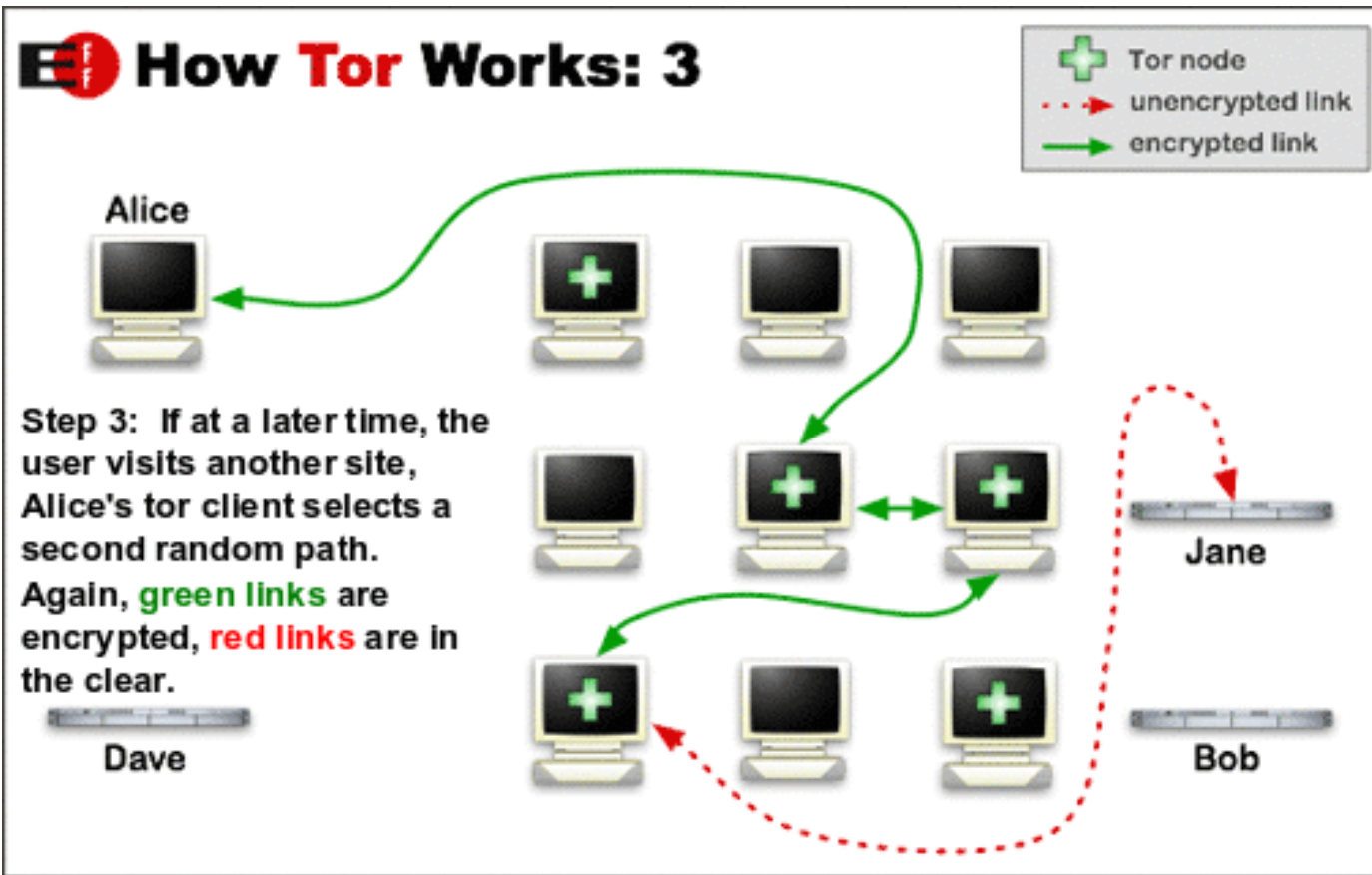- Encrypts message three times forming "layers"

Tor: Onion Routing

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How Tor Works: 3

Legend:
- Tor node (green cross)
- unencrypted link (red dashed arrow)
- encrypted link (green solid arrow)

Alice

Step 3: If at a later time, the user visits another site, Alice's tor client selects a second random path. Again, green links are encrypted, red links are in the clear.

Dave

Jane

Bob

Tor: Demo

- Network Layer Anonymity

  - IP address mask (Firefox vs. TBB)

  - Circuit management

  - Language / CAPTCHA Issues

- Application Layer Anonymity

  - Panopticlick (Firefox vs. TBB)

  - Maximize

- Other

  - Security Settings

  - Does this solve all our problems?

Whonix: Demo

- Gateway vs. Workstation (VirtualBox)
- Headless Mode
- Panopticlick and iplocation tests
- Updates
- Does this solve all our problems?

Tails: Demo

- TAILS
- Encrypted Partition / Admin Password
- Encrypted Partition Setup
- Panopticlick and iplocation tests
- Does this solve all our problems?

Links

- Tor: https://www.torproject.org/

- Whonix: https://www.whonix.org/

- Tails: https://tails.boum.org/

- IP Locator: https://www.iplocation.net/

- Panopticlick: https://panopticlick.eff.org/

- Comparison: https://www.whonix.org/wiki/Comparison_with_Others