Tor: Privacy Enhancing Technology in Real Life (Sometimes Onions Make You Cry)

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Presenter

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GitHub

Supporting developers around the world with collaboration, code review, and code management tools for open source and private projects.

10.9 Million people 26.9 Million code repositories.

GitHub

Tor

a Privacy Enhancing Technology
Routes Internet traffic through the network
Traffic leaves through exit nodes
Anonymizes traffic to the server

Tor Network Diagram

Tor Network
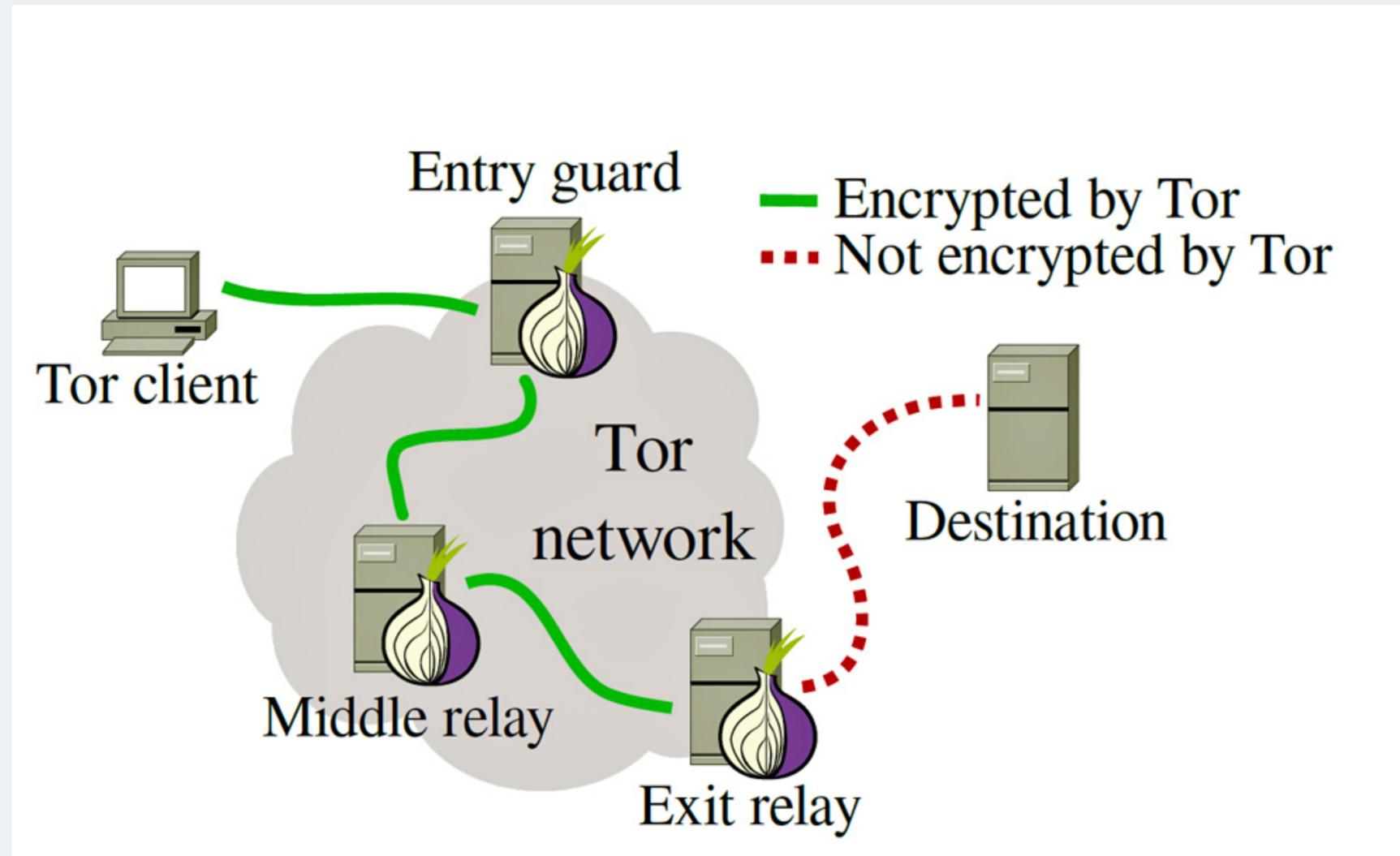
- Large amount of traffic coming from Tor exits nodes from many different users

- == Exit node IP address doesn't correlate to a particular user

- == some anonymity!

Problem

- Email verification was not required to create a GitHub account

- Logged-in Tor accounts make up ~ 0.08% of GitHub traffic

- ~ 95% of logged-in Tor accounts were known spammers / harassers

Solution

- Ban Tor network users from using the site / logging in!

Tor Exit Node Addresses

https://check.torproject.org/exit-addresses

ExitNode 0011BD2485AD45D984EC4159C88FC066E5E3300E
Published 2015-09-14 16:18:00
LastStatus 2015-09-14 17:03:44
ExitAddress 162.247.72.201 2015-09-14 17:05:54

ExitNode 00AE2BBFB5C0BBF25853B49E04CC76895044A795
Published 2015-09-14 06:30:25
LastStatus 2015-09-14 10:03:48
ExitAddress 80.82.79.58 2015-09-14 07:07:16

ExitNode 00C4B4731658D3B4987132A3F77100CFCB190D97
Published 2015-09-14 17:47:54
LastStatus 2015-09-14 18:03:41
ExitAddress 81.7.17.171 2015-09-14 18:07:58

~~Solution~~

- ~~**Ban Tor network users from using the site / logging in**~~

- **Just because it would only ruin the day of at most 0.08% of our users, we wanted to respect use of PETs**

Solution #2

- **Require 100% of Tor users to have a confirmed email address**

- **Not allowed to take <u>any</u> action until address confirmed**

Results

- **Eliminated non-verified Tor accounts**

- **Increased overall verified account rates by %**

- **ZERO% increase in spam/troll activity for verified accounts**

Lessons

- Balancing the needs of the majority of users vs those who use PETs will be an ongoing and increasingly common issue.

- You need to understand how PETs work

- You can treat PETs users differently without harming them

Thank you!

How people build software