

Practical Internet Privacy

Part I: Tor



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Achievements!

- Understand the basics of Tor
- Be able to download, install, run, and verify that Tor is working
- Know how to connect to a hidden service
- Know where to go to find help with Tor

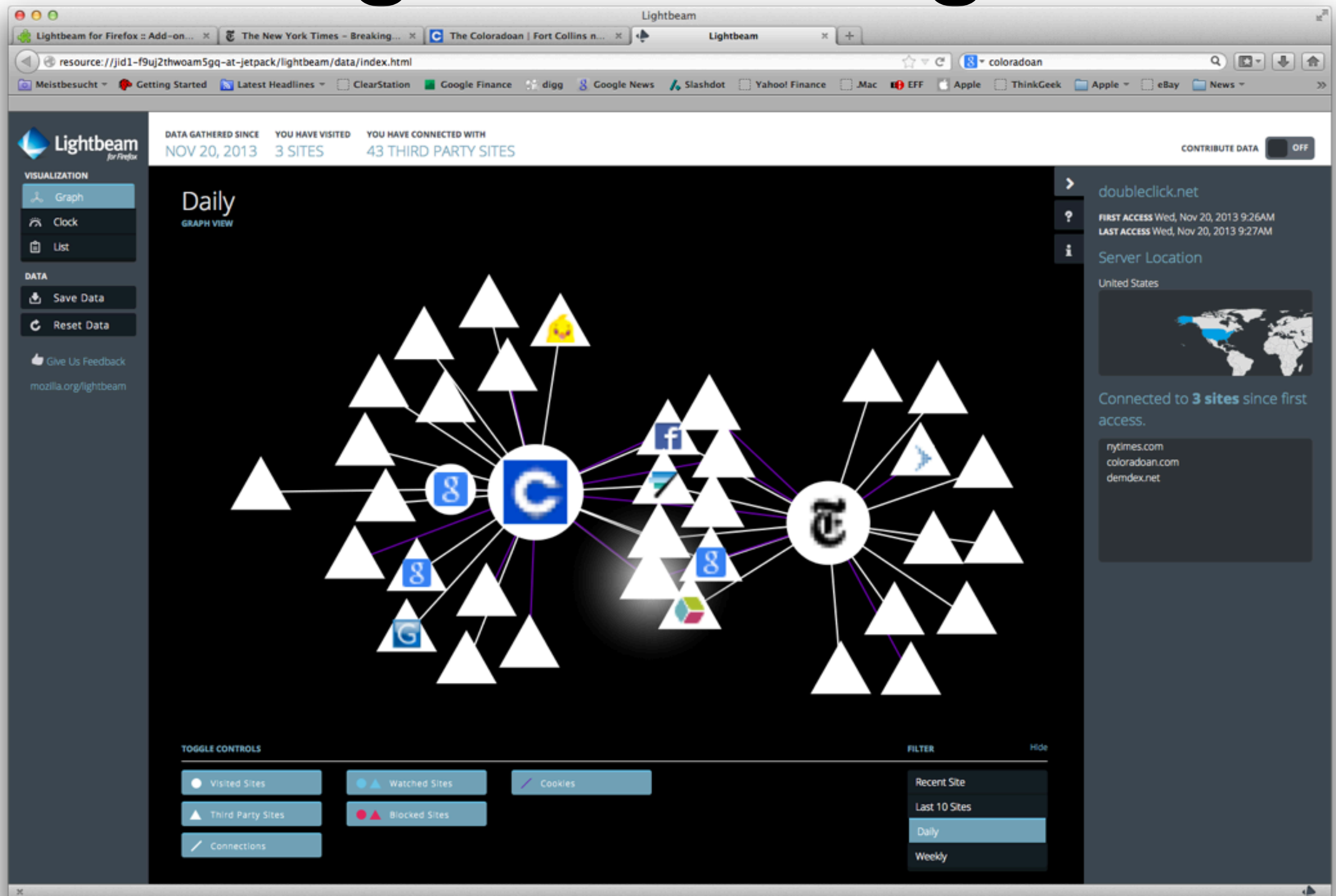
Achievements!



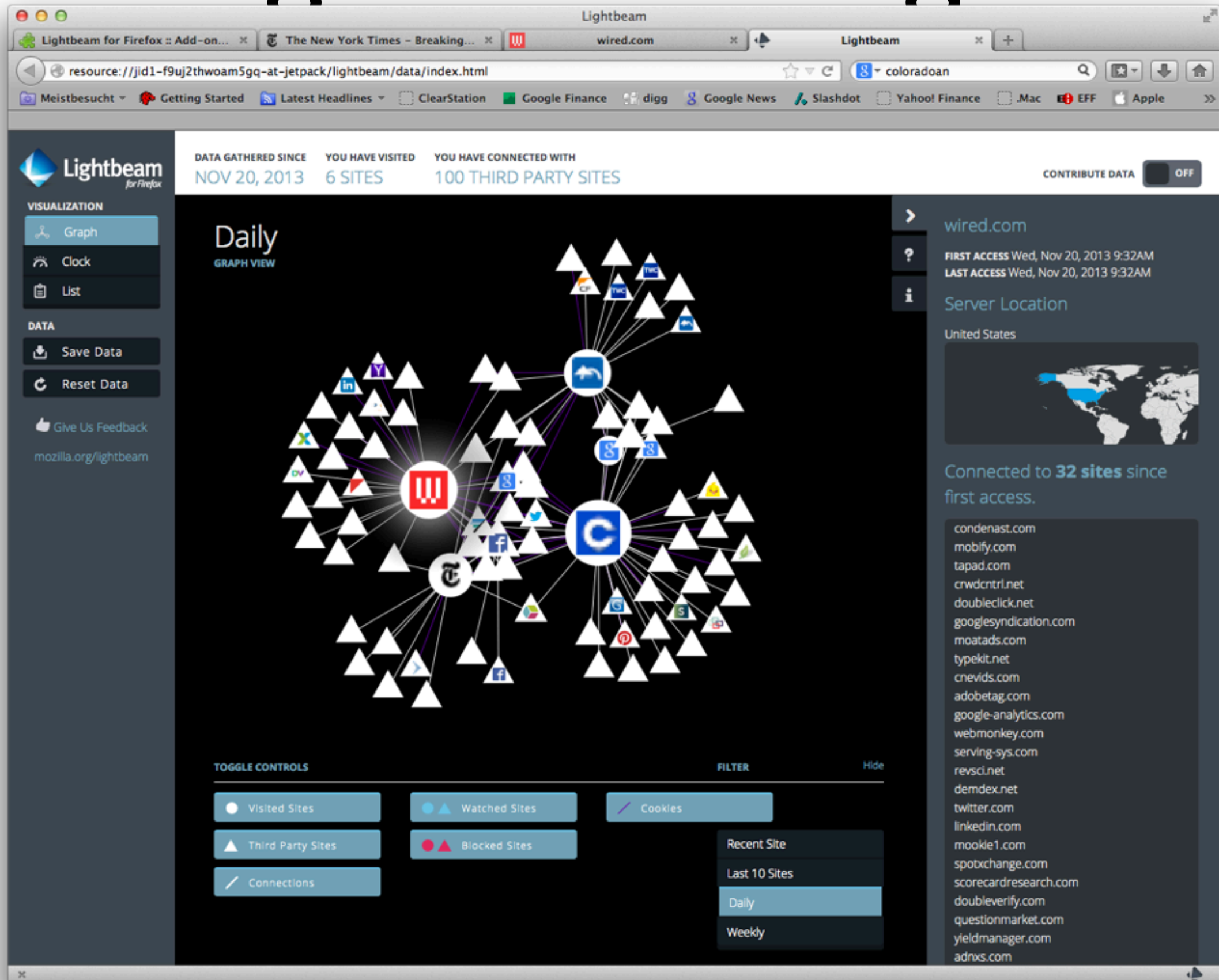
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Lightbeam Plugin

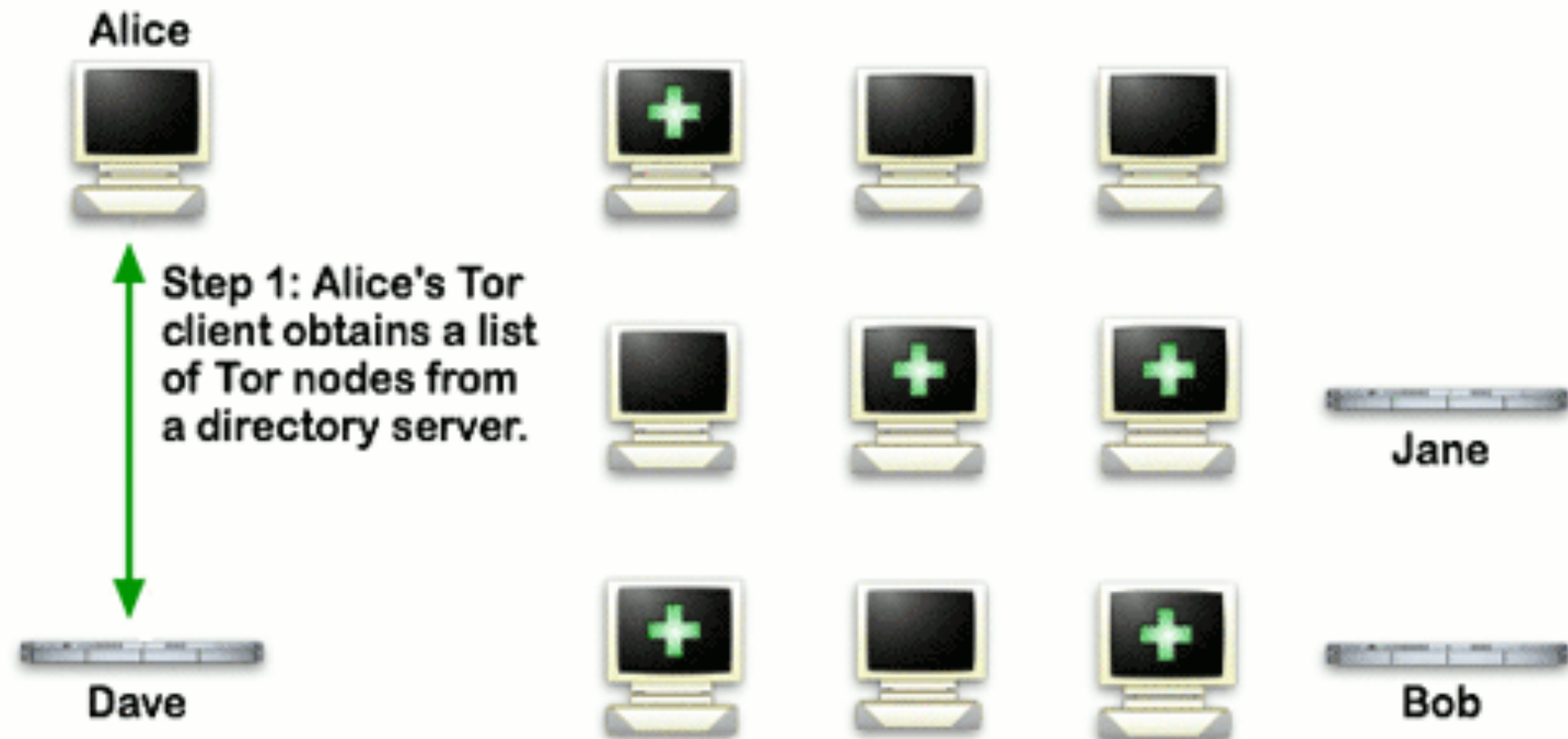
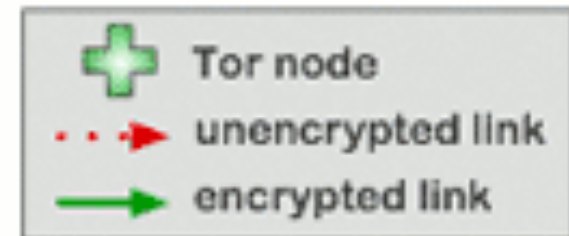
Lightbeam Plugin



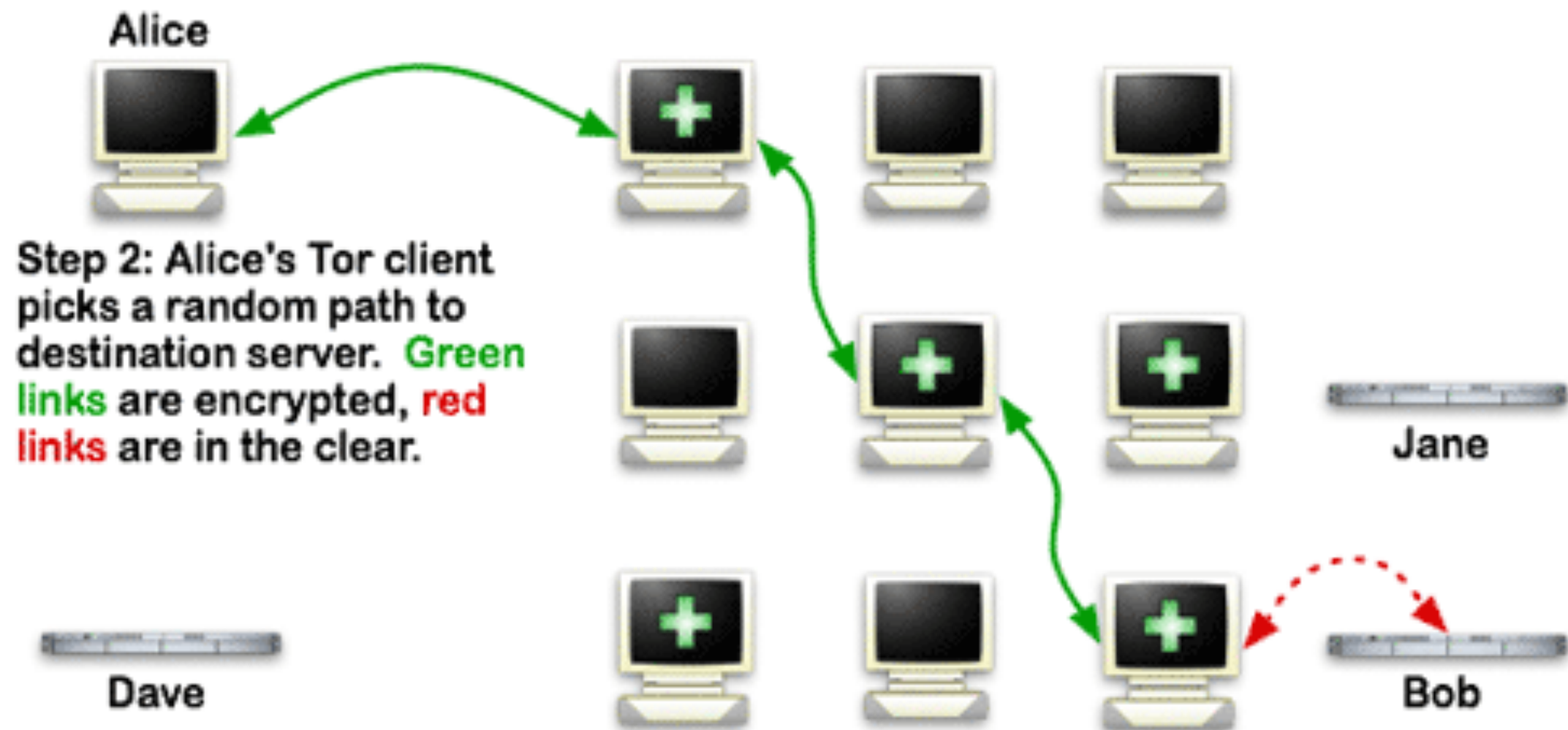
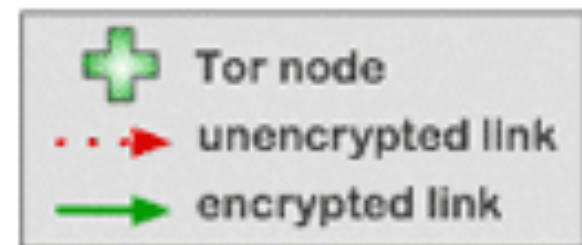
Lightbeam Plugin



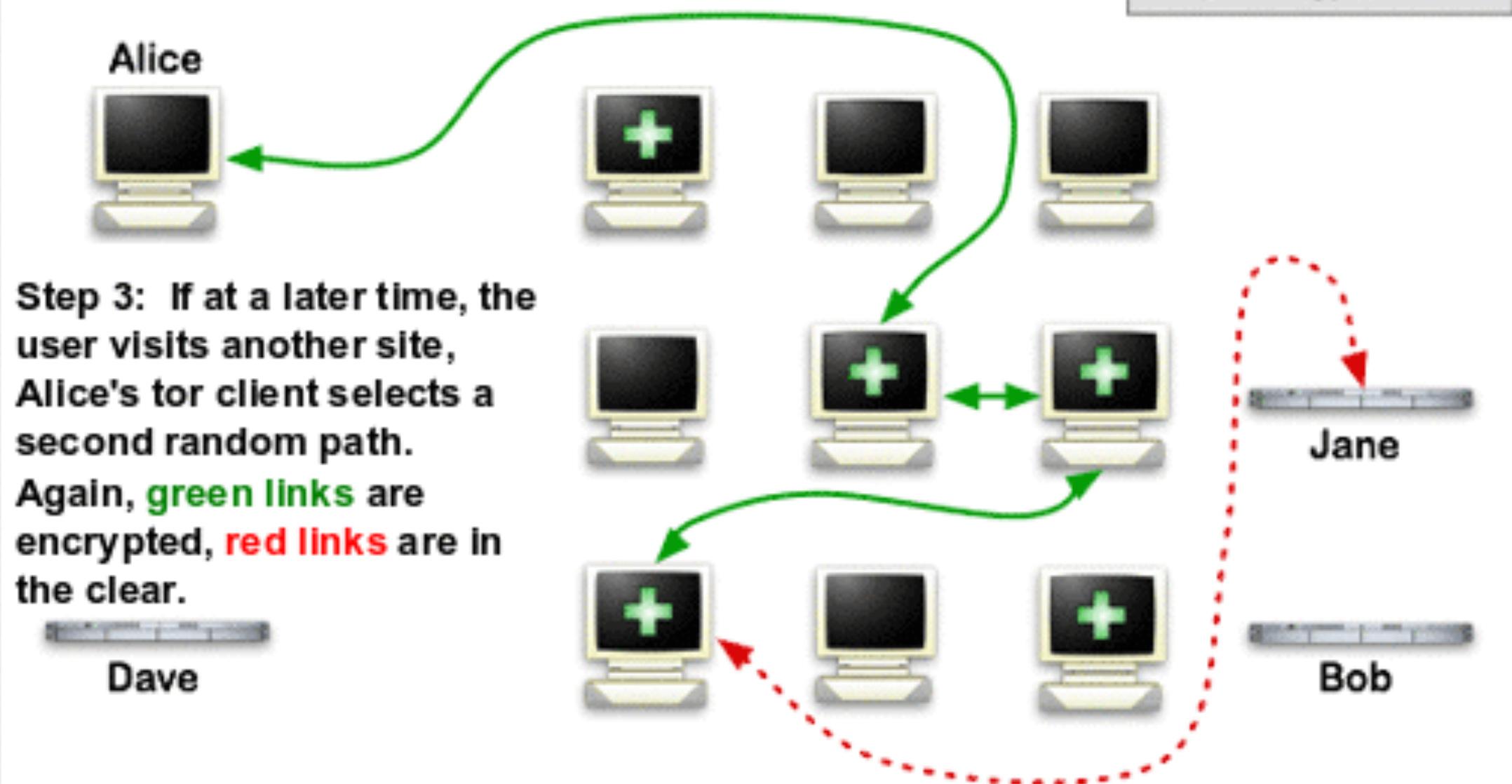
How Tor Works: 1



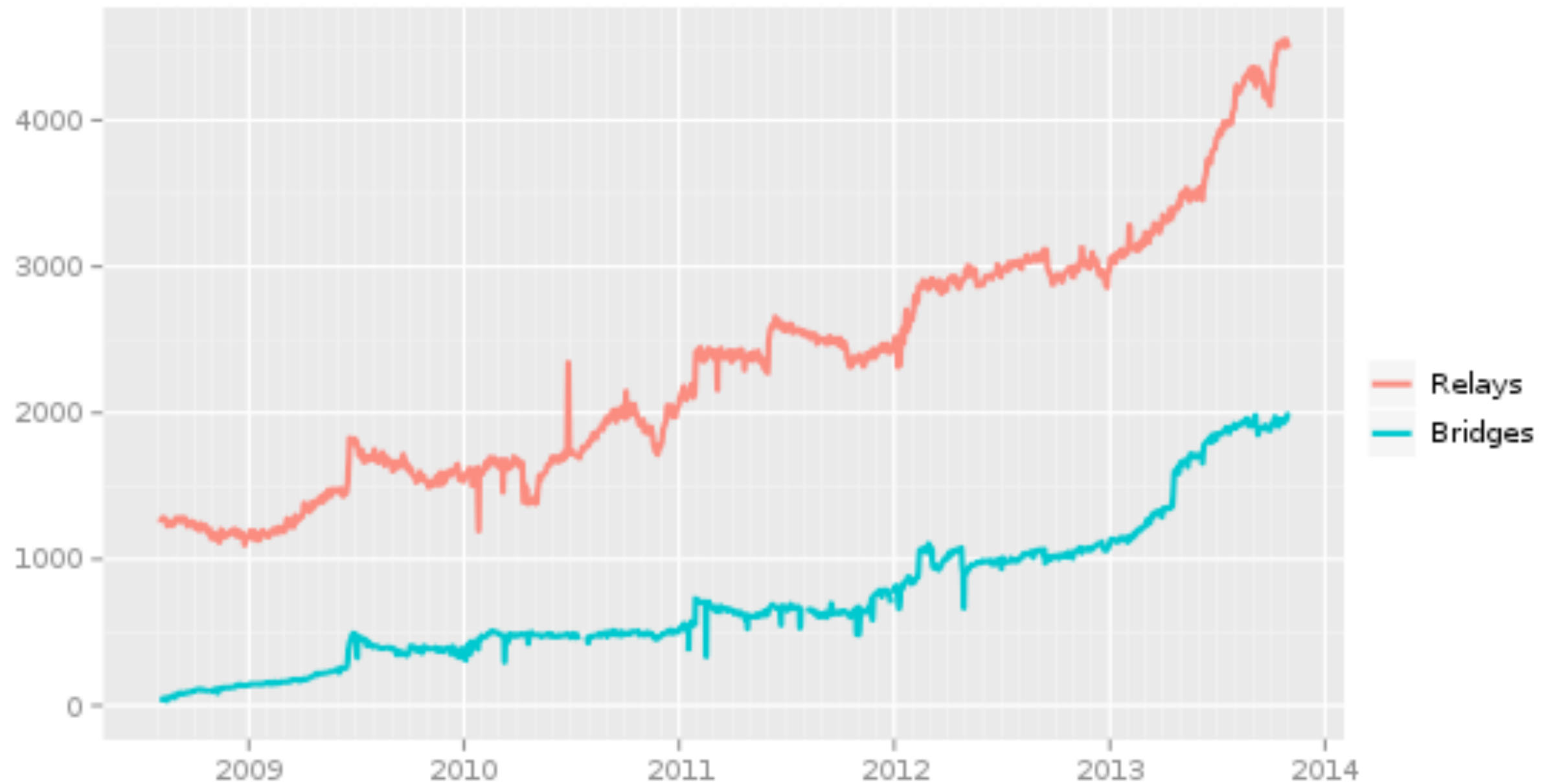
How Tor Works: 2



How Tor Works: 3

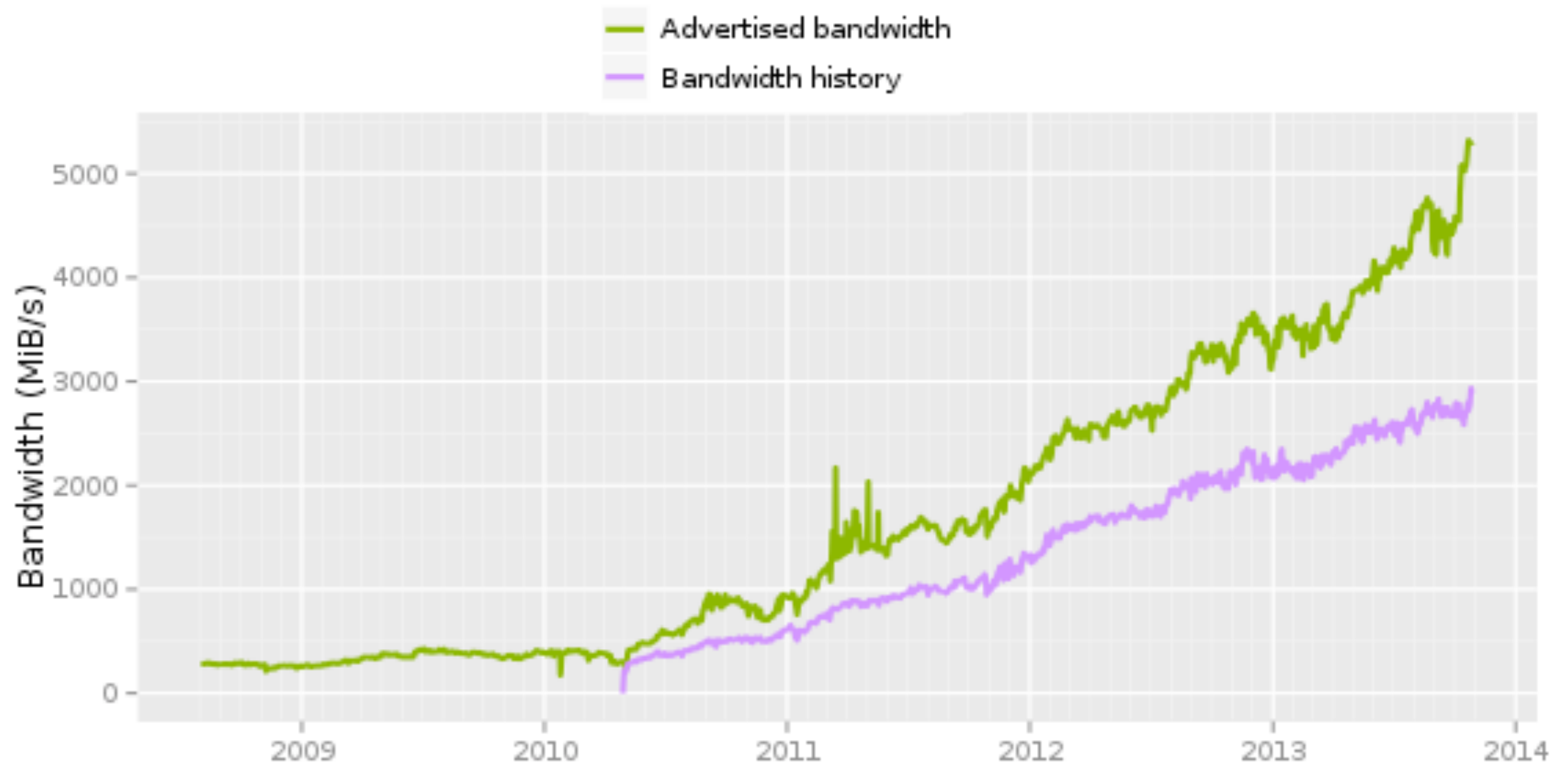


Number of relays



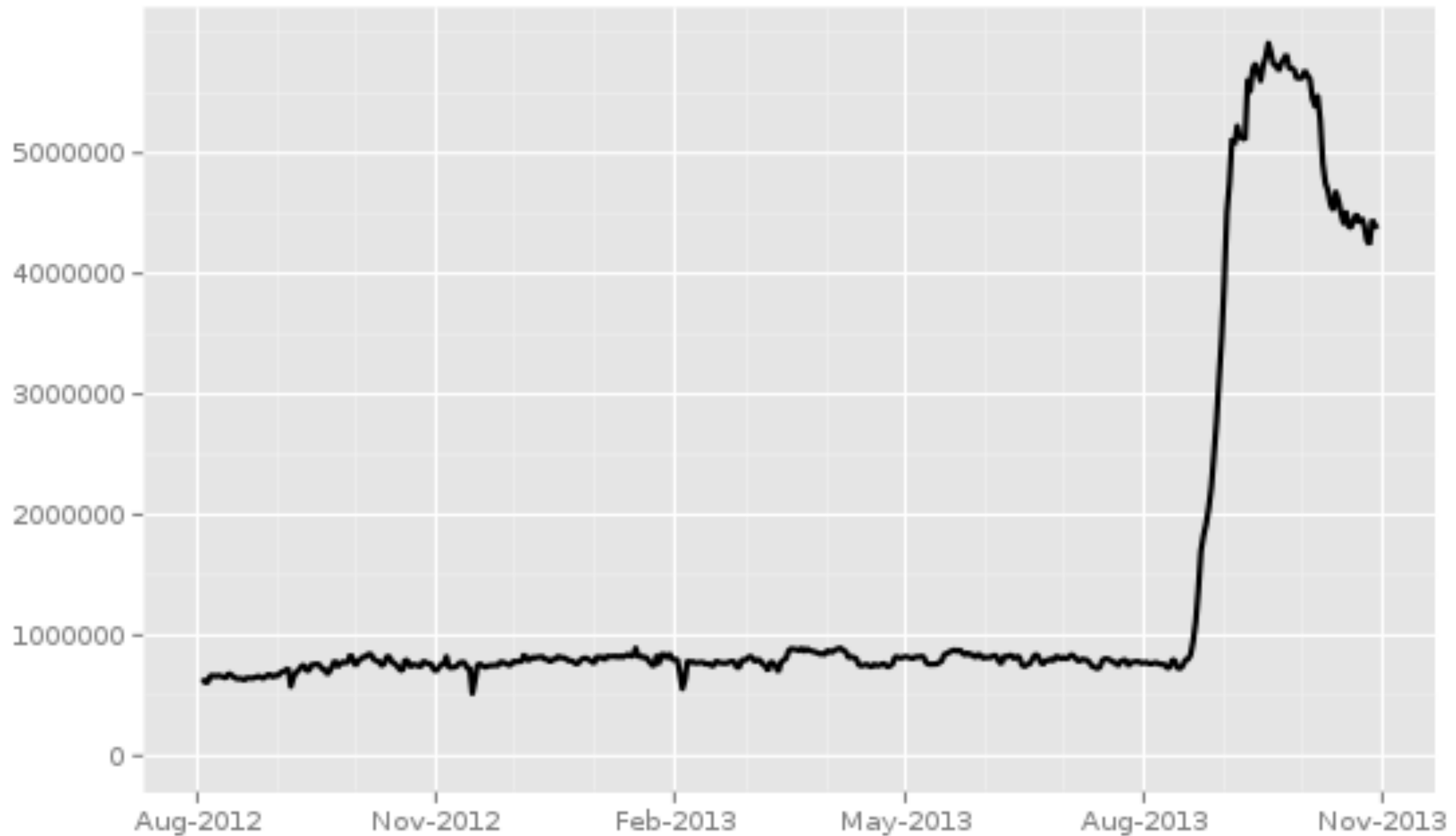
The Tor Project - <https://metrics.torproject.org/>

Total relay bandwidth



The Tor Project - <https://metrics.torproject.org/>

Tor Total Users



The Tor Project - <https://metrics.torproject.org/>

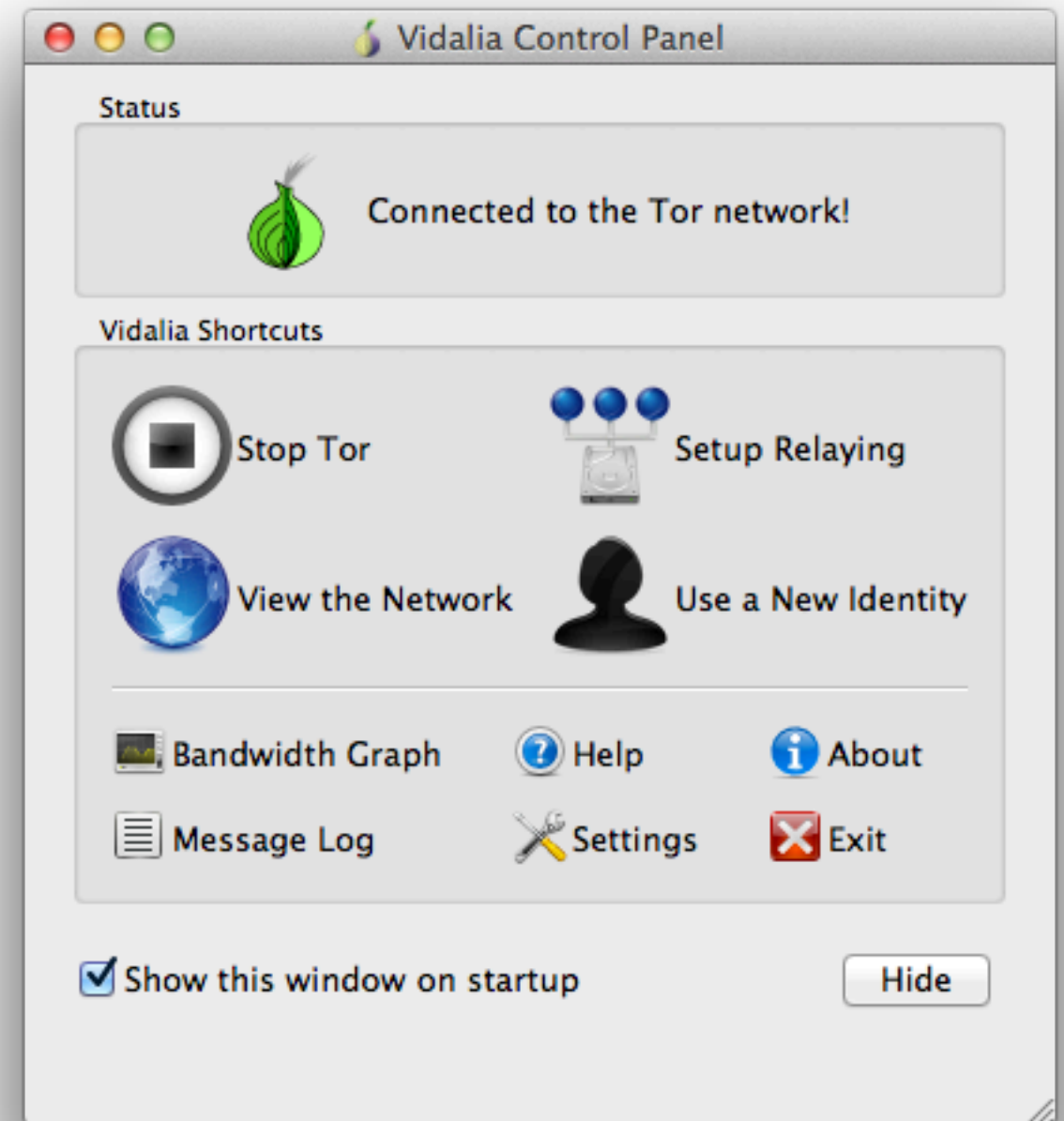
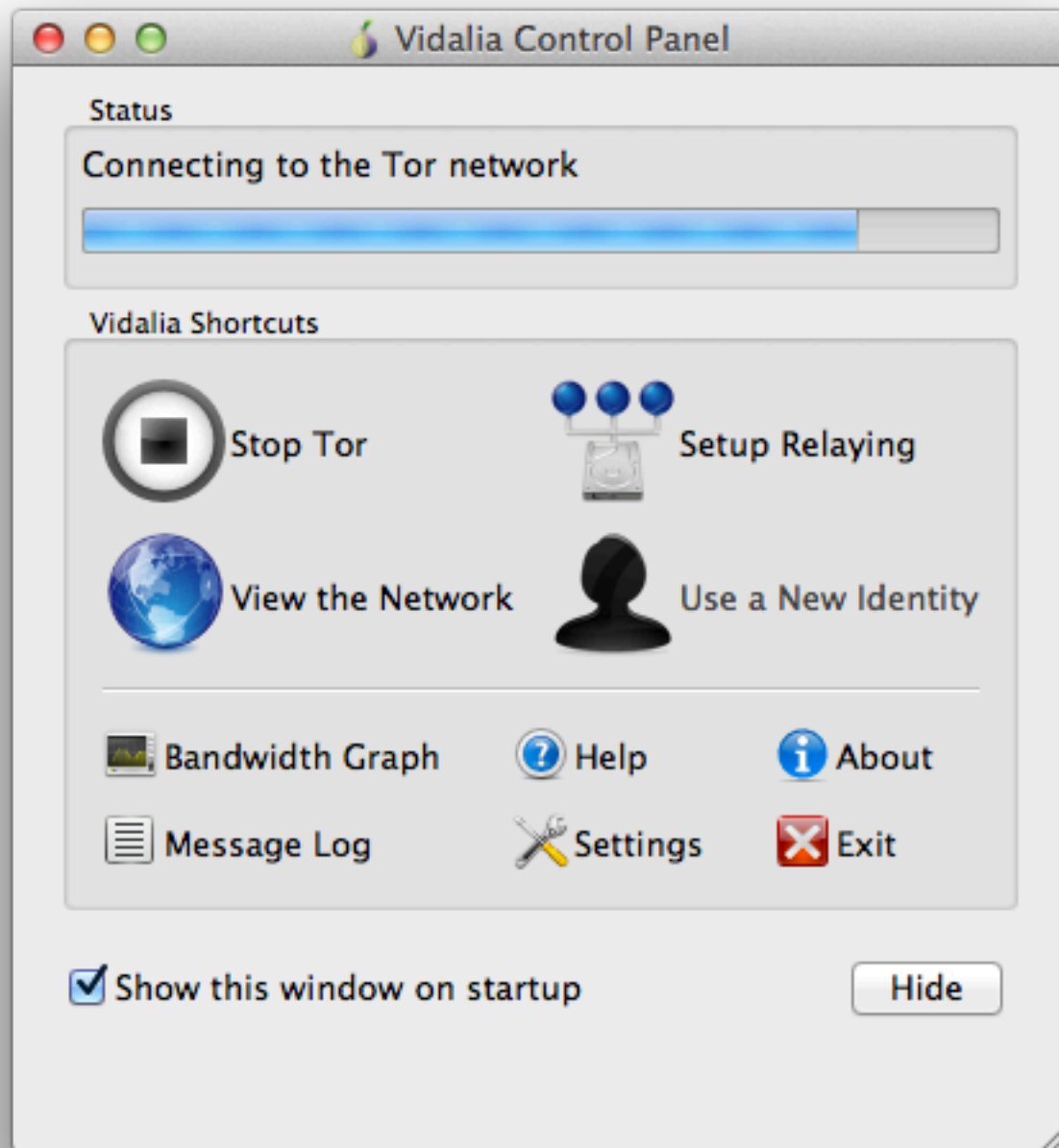
Let's Download Tor



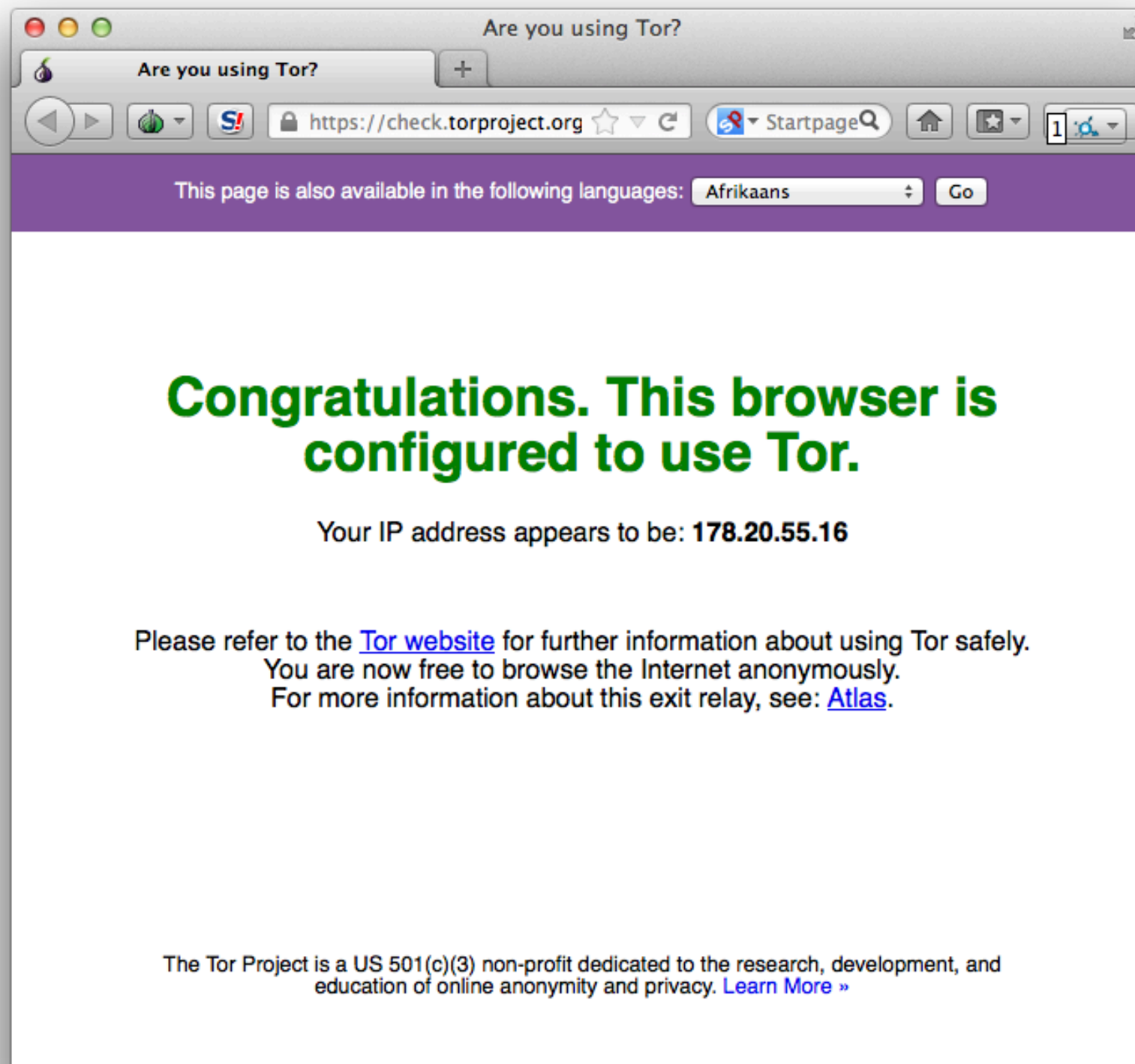
Verify your software!



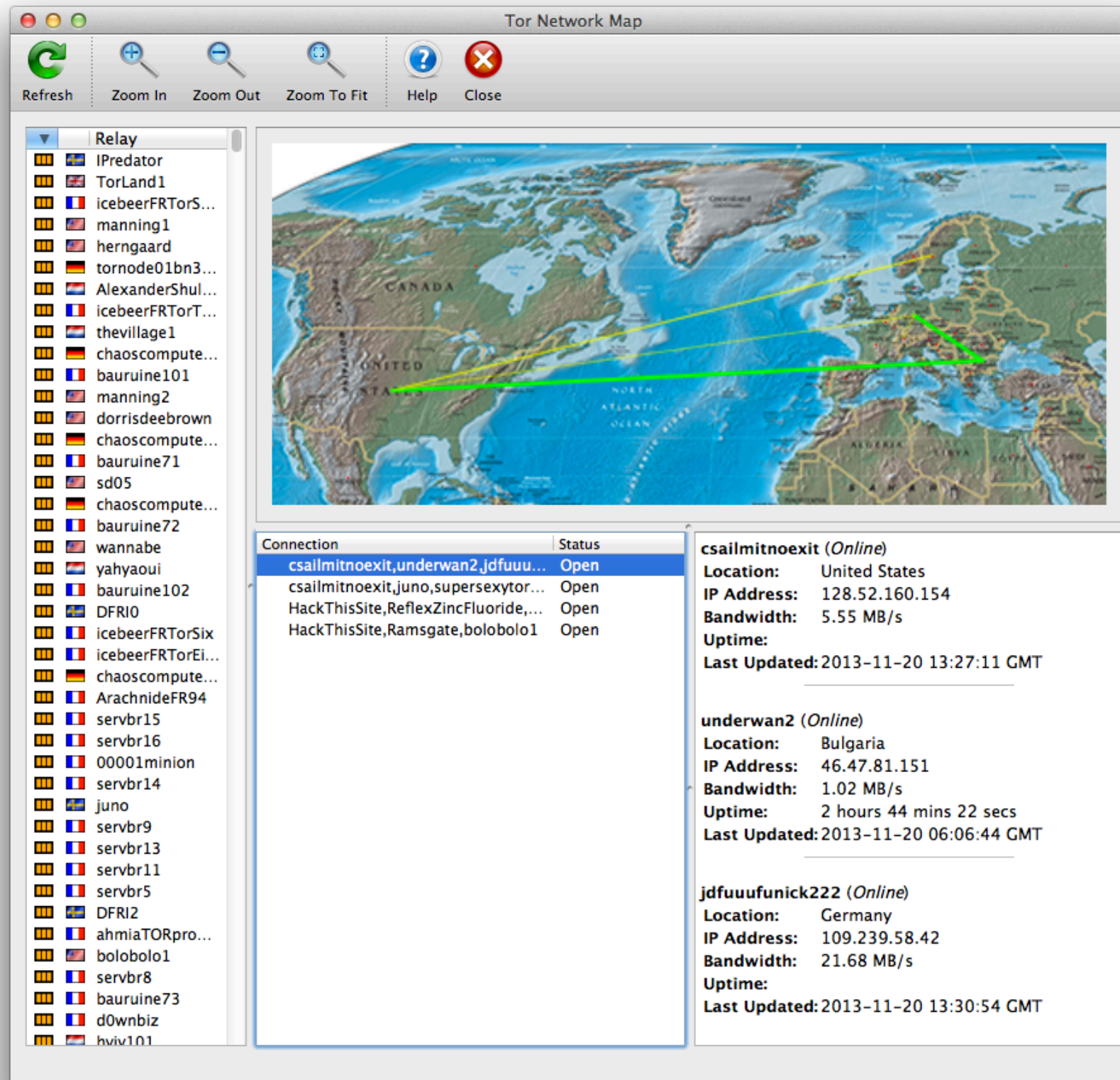
Launch Tor



It's working!



Where am I?



The screenshot shows the Tor Network Map application. The window title is "Tor Network Map". The toolbar includes "Refresh", "Zoom In", "Zoom Out", "Zoom To Fit", "Help", and "Close".

Relay List:

- IPredator
- TorLand1
- icebeerFRTorS...
- manning1
- herngaard
- tornode01bn3...
- AlexanderShul...
- icebeerFRTorT...
- thevillage1
- chaoscompute...
- bauruine101
- manning2
- dorrisdeebrown
- chaoscompute...
- bauruine71
- sd05
- chaoscompute...
- bauruine72
- wannabe
- yahyaoui
- bauruine102
- DFRIO
- icebeerFRTorSix
- icebeerFRTorEi...
- chaoscompute...
- ArachnideFR94
- servbr15
- servbr16
- 00001minion
- servbr14
- juno
- servbr9
- servbr13
- servbr11
- servbr5
- DFRI2
- ahmiaTORpro...
- bolobolo1
- servbr8
- bauruine73
- d0wnbiz
- hviv101

Connection Table:

Connection	Status
csailmitnoexit,underwan2,jdfuuu...	Open
csailmitnoexit,juno,supersexytor...	Open
HackThisSite,ReflexZincFluoride,...	Open
HackThisSite,Ramsgate,bolobolo1	Open

csailmitnoexit (Online)

Location: United States
IP Address: 128.52.160.154
Bandwidth: 5.55 MB/s
Uptime:
Last Updated: 2013-11-20 13:27:11 GMT

underwan2 (Online)

Location: Bulgaria
IP Address: 46.47.81.151
Bandwidth: 1.02 MB/s
Uptime: 2 hours 44 mins 22 secs
Last Updated: 2013-11-20 06:06:44 GMT

jdfuuufunick222 (Online)

Location: Germany
IP Address: 109.239.58.42
Bandwidth: 21.68 MB/s
Uptime:
Last Updated: 2013-11-20 13:30:54 GMT

Tor and HTTPS

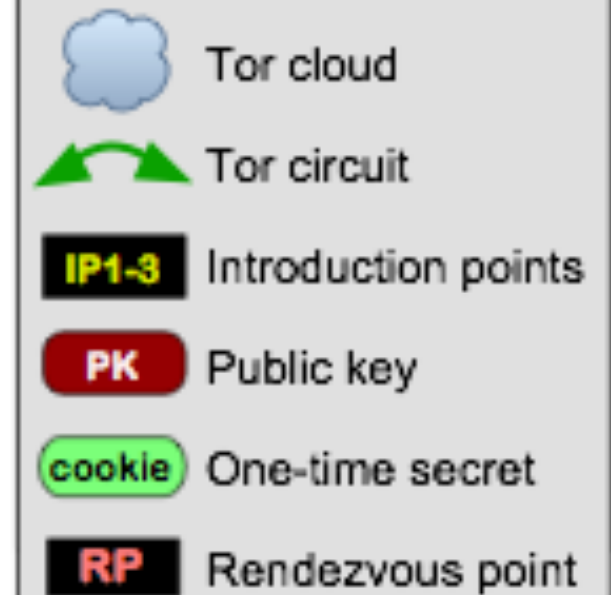
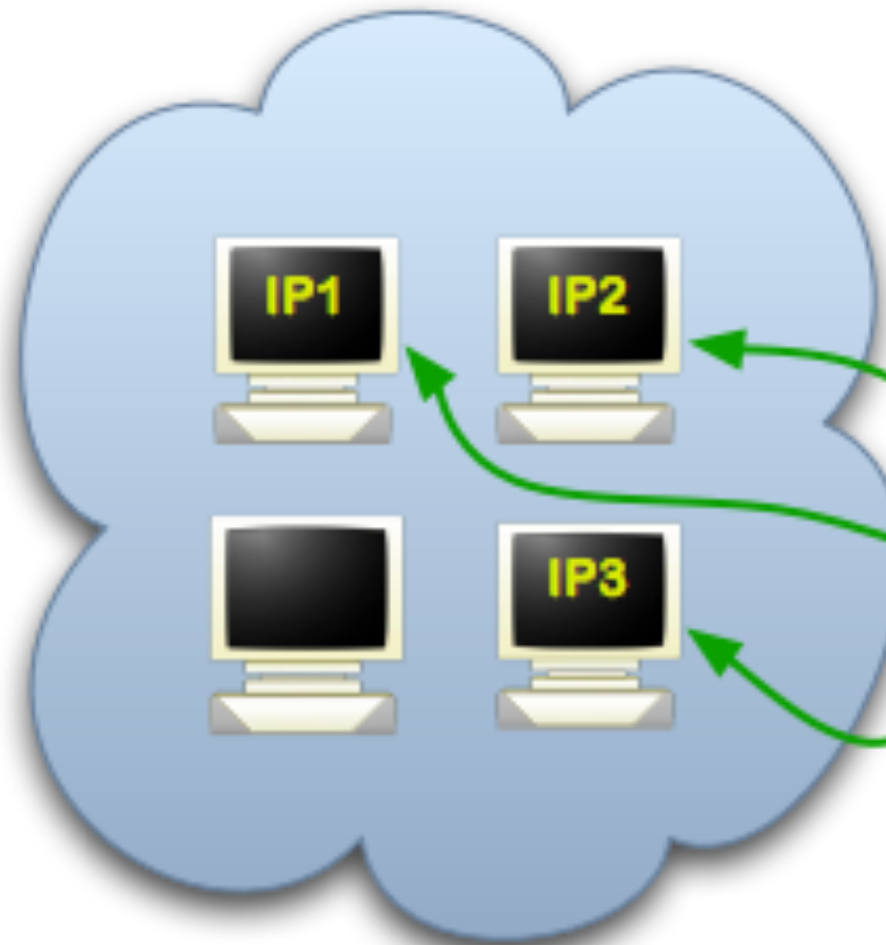


Want Tor to really work?

- Use the Tor Browser
- Don't enable or install browser plugins
- Use HTTPS versions of websites
- Don't open documents downloaded through Tor while online
- Use bridges and/or find company

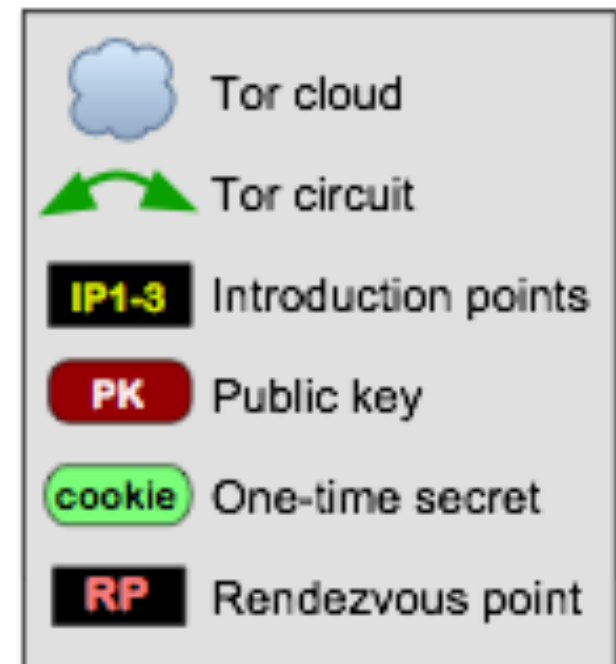
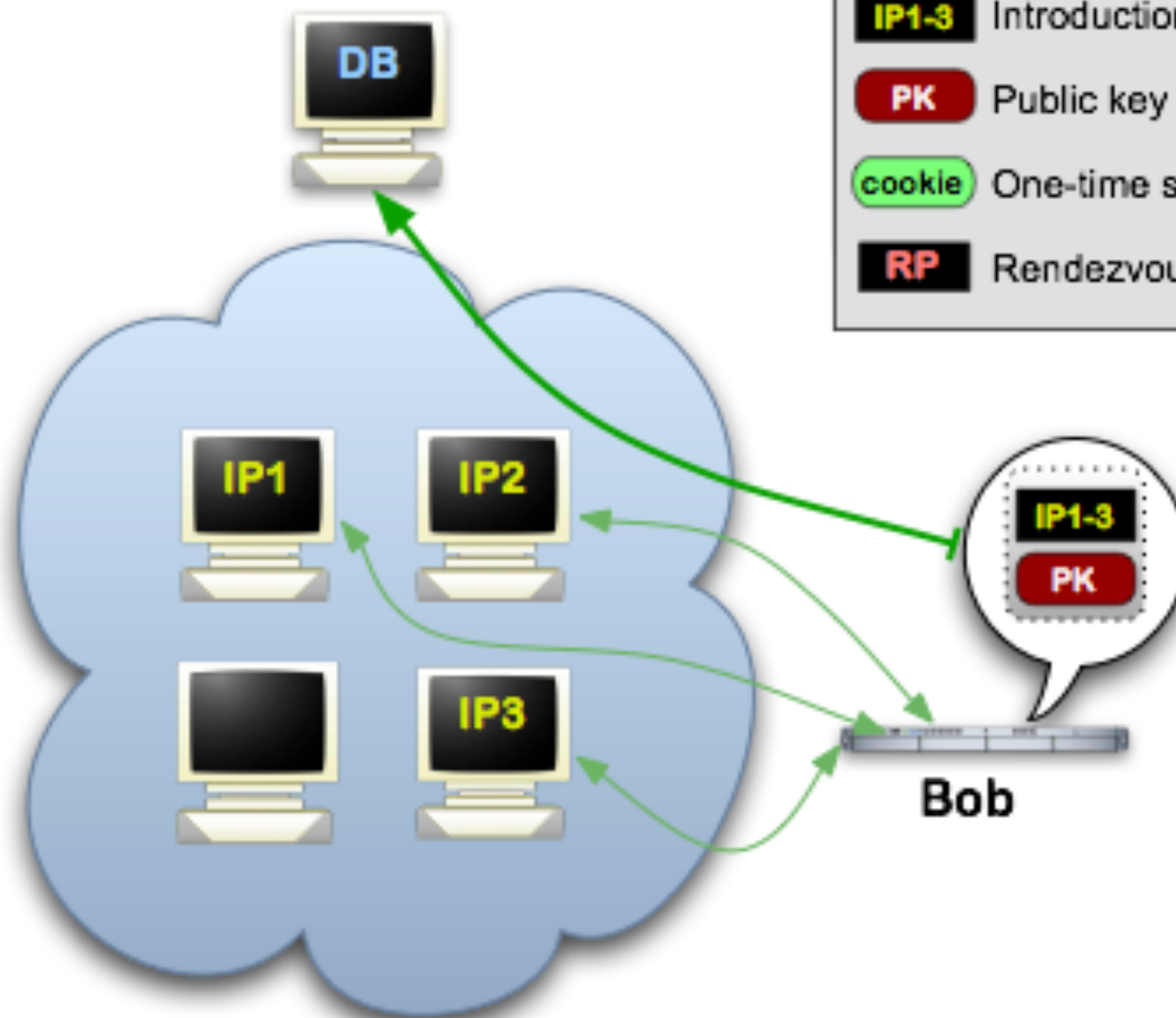
Tor Hidden Services: 1

Step 1: Bob picks some introduction points and builds circuits to them.



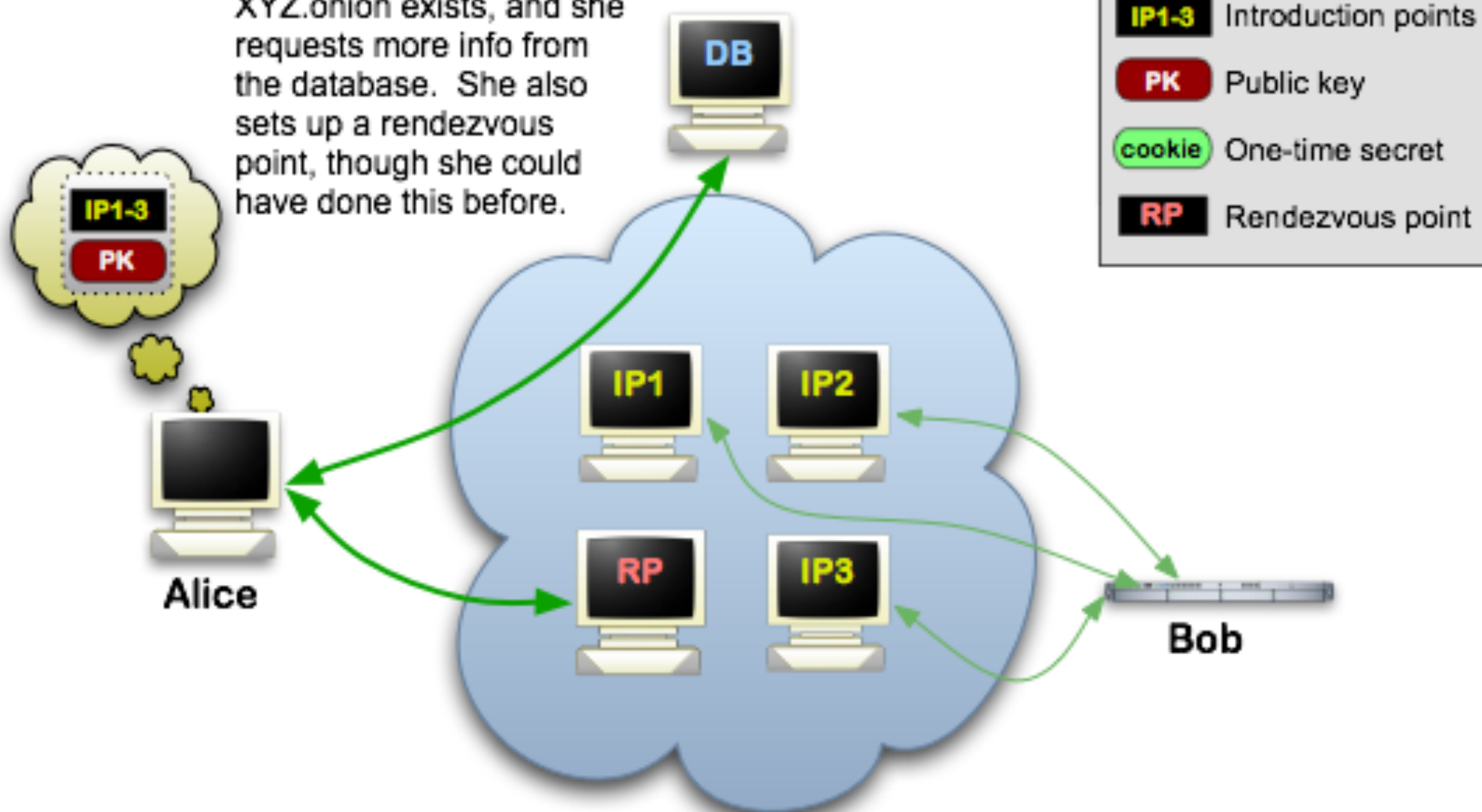
Tor Hidden Services: 2

Step 2: Bob advertises his hidden service -- XYZ.onion -- at the database.



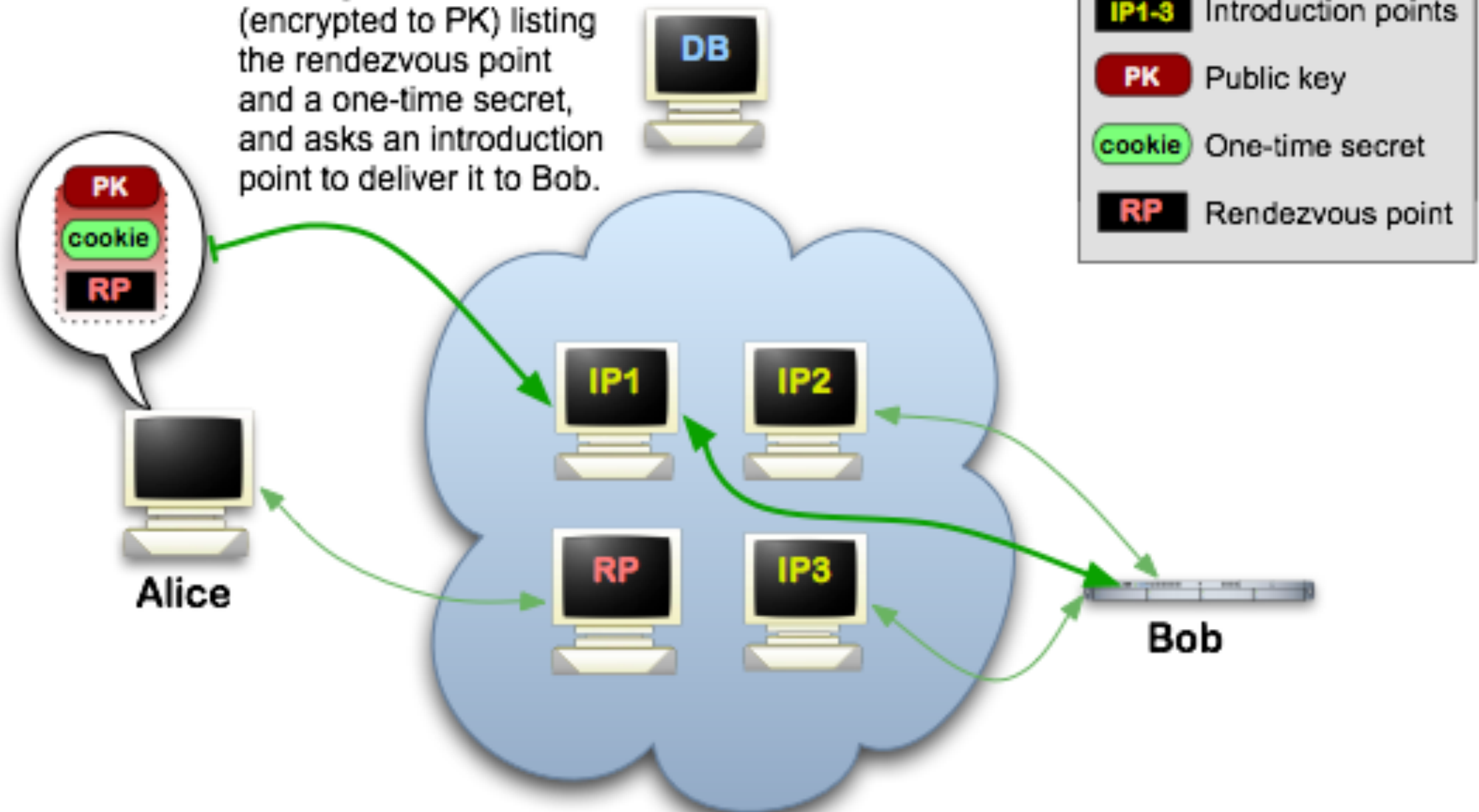
Tor Hidden Services: 3

Step 3: Alice hears that XYZ.onion exists, and she requests more info from the database. She also sets up a rendezvous point, though she could have done this before.



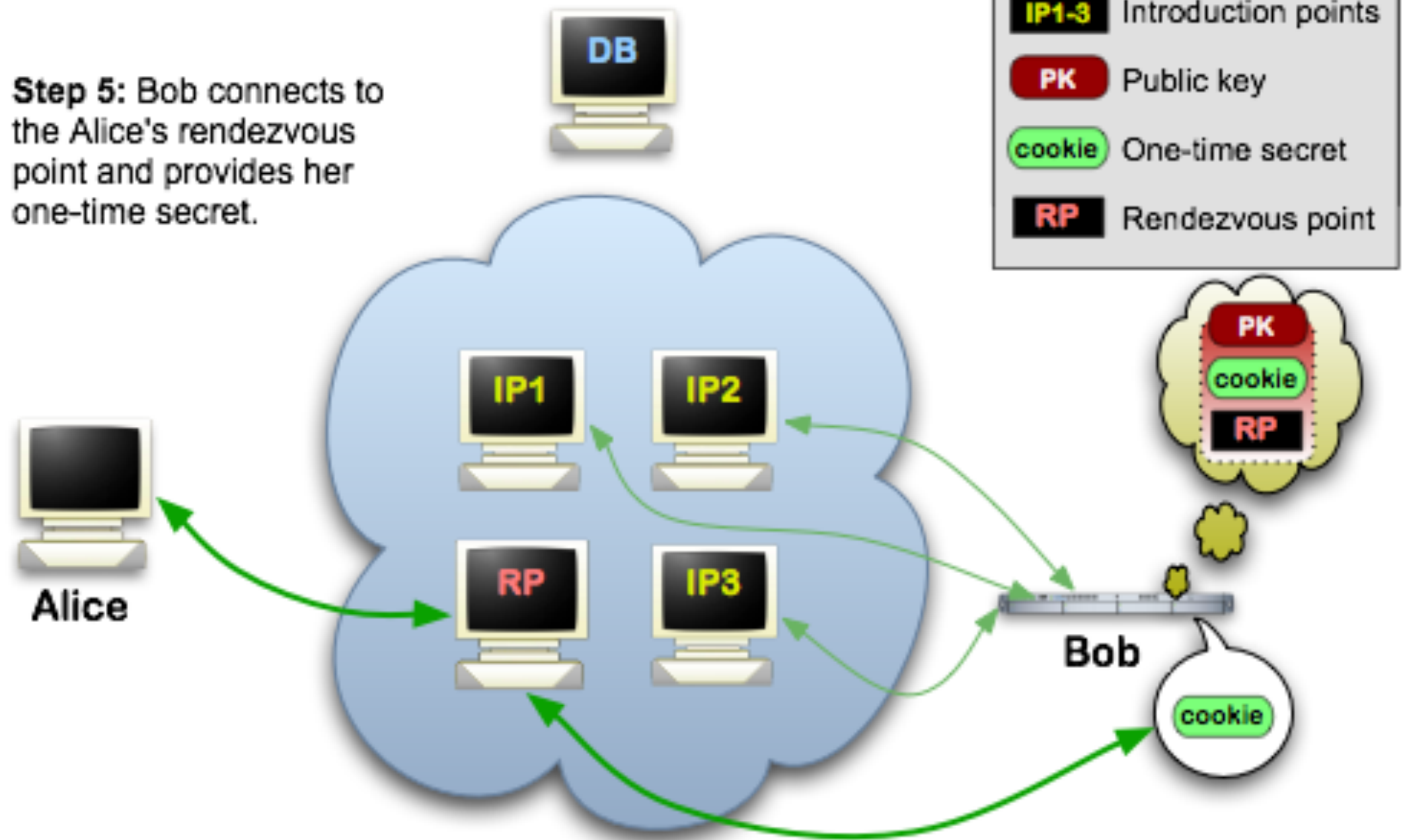
Tor Hidden Services: 4

Step 4: Alice writes a message to Bob (encrypted to PK) listing the rendezvous point and a one-time secret, and asks an introduction point to deliver it to Bob.



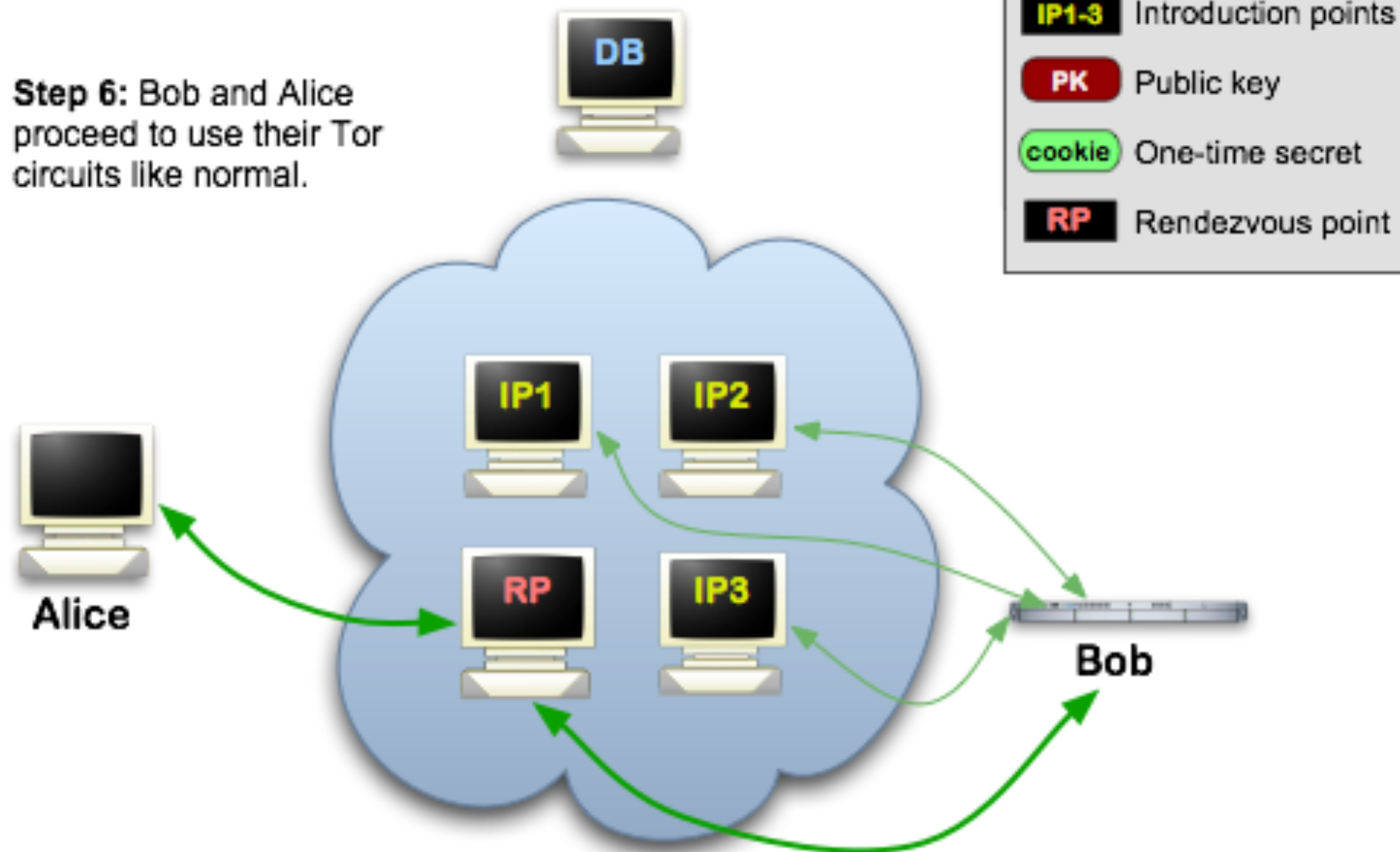
Tor Hidden Services: 5

Step 5: Bob connects to the Alice's rendezvous point and provides her one-time secret.



Tor Hidden Services: 6

Step 6: Bob and Alice proceed to use their Tor circuits like normal.



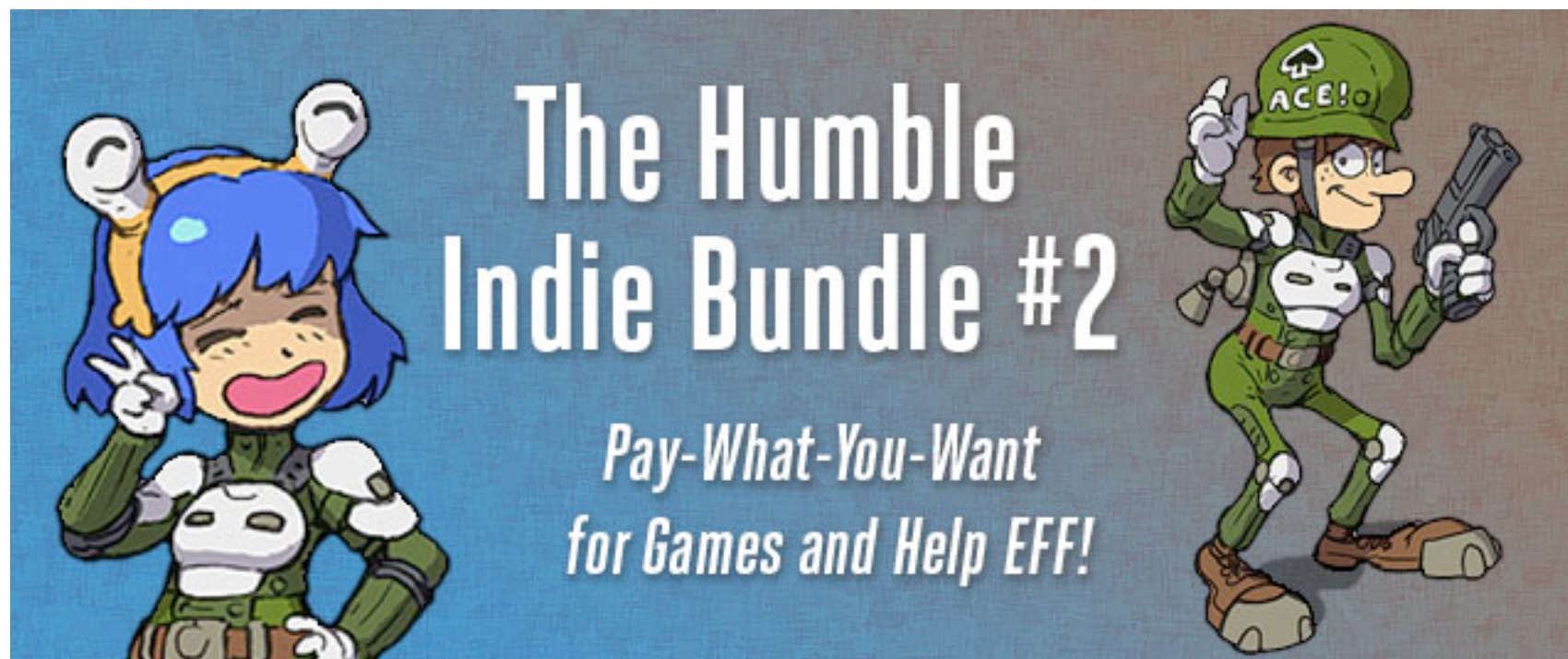
Duck Duck Go Hidden Service

3g2upl4pq6kufc4m.onion

Where to get help

- help@rt.torproject.org
- Various mailing lists
- IRC @ oftc: #tor, #tor-dev, #nottor
- <https://www.torproject.org/>

PWYW: Support LCS!

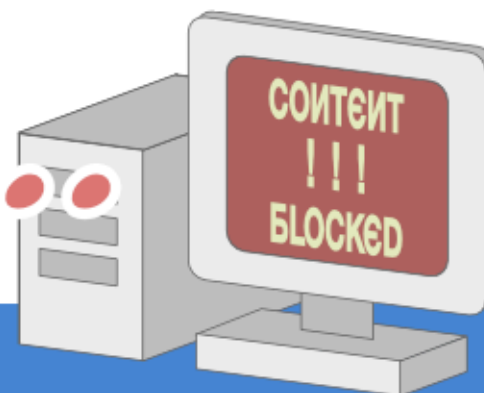


★ **YOU** ★

Can Help Protect

Freedom Of Speech

Online...



Run a
TOR RELAY
Today!

★★ **TorProject.org** ★★