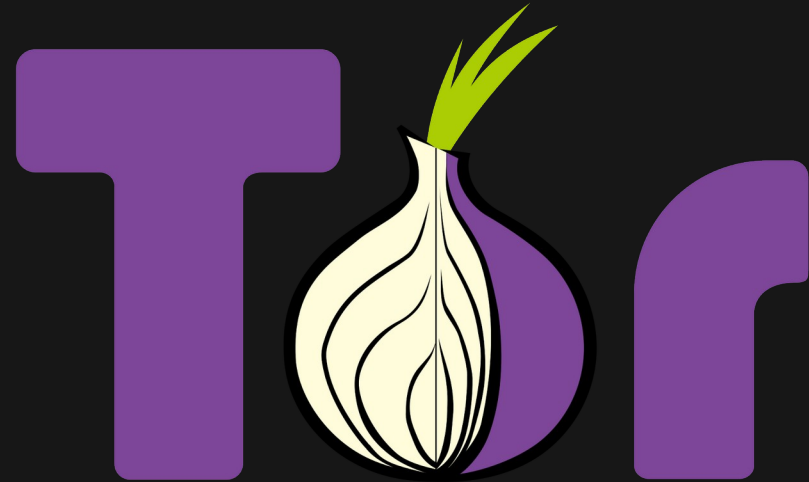


Intro to Tor

Jaxon Haws



Congrats! You're now ****probably**** on a government watchlist!

DISCLAIMER

**DON'T DO ANYTHING TO GET YOURSELF
ARRESTED**

Yay! I always wanted to be on a government watchlist!

2ND DISCLAIMER

**MORE IMPORTANTLY, DON'T DO ANYTHING
TO GET *ME* ARRESTED**

Table of Contents

- What is Tor?
- How does Tor work?
- What can you browse with Tor?
- How secure is Tor?

What isn't Tor?

- The Dark Web
- The Deep Web
- Illegal (at least in the U.S.)
- A VPN
- Torrenting
- Completely foolproof



What is Tor?

- Tor – The Onion Router
- Free and open-source software for enabling anonymous communication
- Can be used in the form of a proxy for individual applications/whole system or as a browser
- Tor directs Internet traffic through a free, worldwide, volunteer overlay network, consisting of more than six thousand relays

Tor History

- 1995 – Concept of onion routing was created
- 2002 – Tor network began being deployed
- 2006 – Tor project founded by computer scientists Roger Dingledine, Nick Mathewson and five others
- 2008 – Tor browser was released
- 2013 – Edward Snowden used Tor

Tor based operating systems

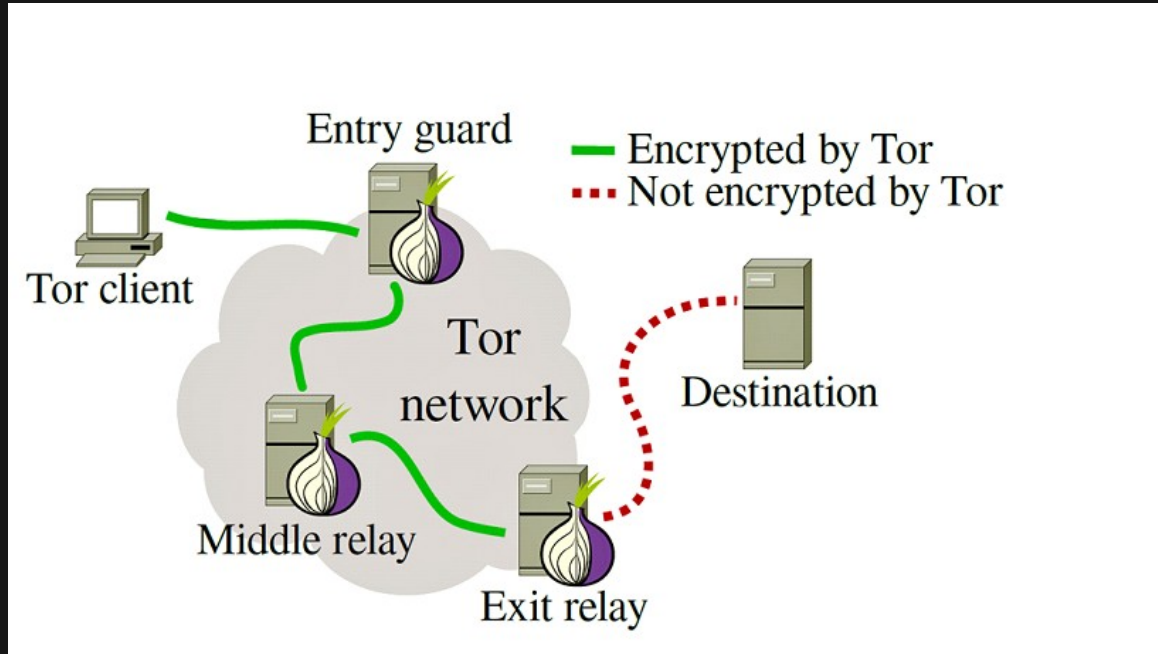
- Tails
- Whonix
- Qubes OS

How does Tor work?

Tor Nodes: Guards, Bridges, Relays, & Exit Nodes

- Guards
 - Publicly Registered Entry Nodes
 - Forward request/data to relay from users
- Bridges
 - Privately Registered Entry Nodes
- Relays
 - Middleman: receive requests from other nodes and forwards them to another node
- Exit Nodes
 - Sends content to final location/server/website
 - Retrieves content from final location/server/website and sends to relay

The Onion Router



Onion Services (*.onion)

- Basically URLs, generated based on a public key when an onion service is configured
- 16 characters long for V2 (base32 80 bit hash)
- 56 characters long for V3 (256-bit ed25519 public key, version number, and a checksum)
- Strings containing any letter and/or digits 2-7
- Require onion routing to access

What can you browse with
Tor?

Surface web

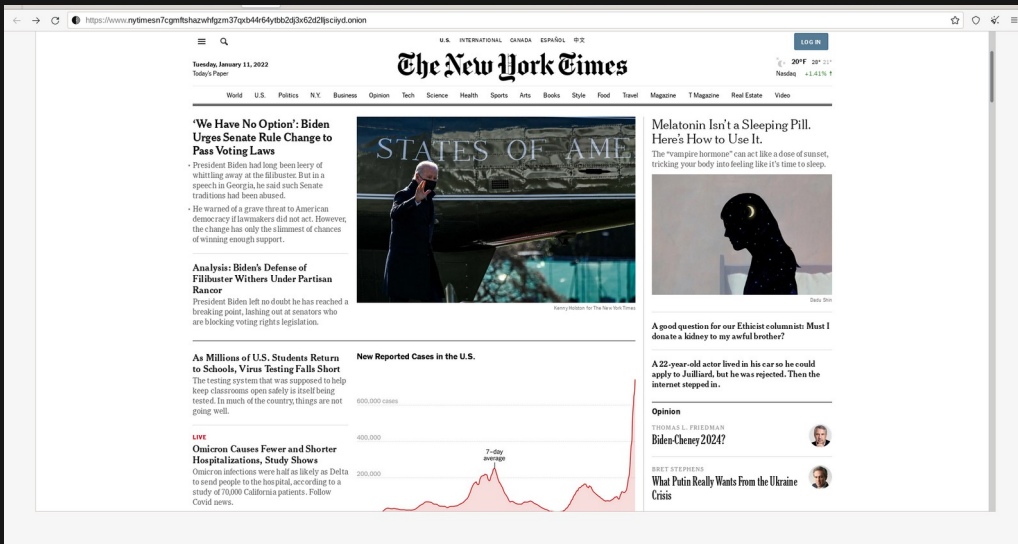
- Any public websites indexed by a search engine
 - duckduckgo.com
 - eff.org
 - torproject.org
 - cpsecurity.club
 - cplug.org

Deep web

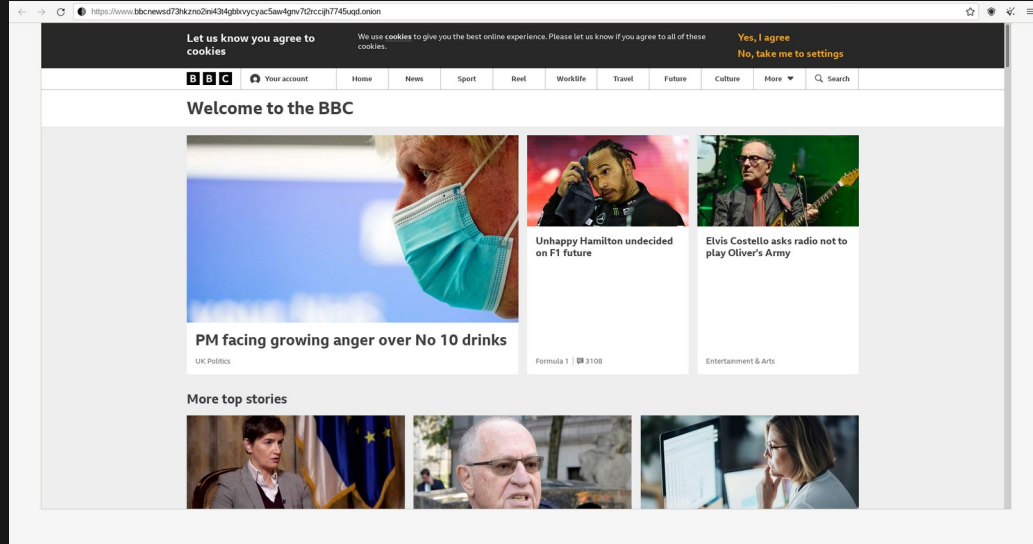
- Anything that is not indexed by publicly accessible search engines
- Onion sites
 - See examples ->

Journalism

- <https://www.nytimesn7cgmftshazwhfgzm37qxb44r64ytbb2dj3x62d2lljsciidy.onion>
- <https://www.bbcnewsd73hkzno2ini43t4gbxvycyac5aw4gnv7t2rccijh7745uqd.onion>



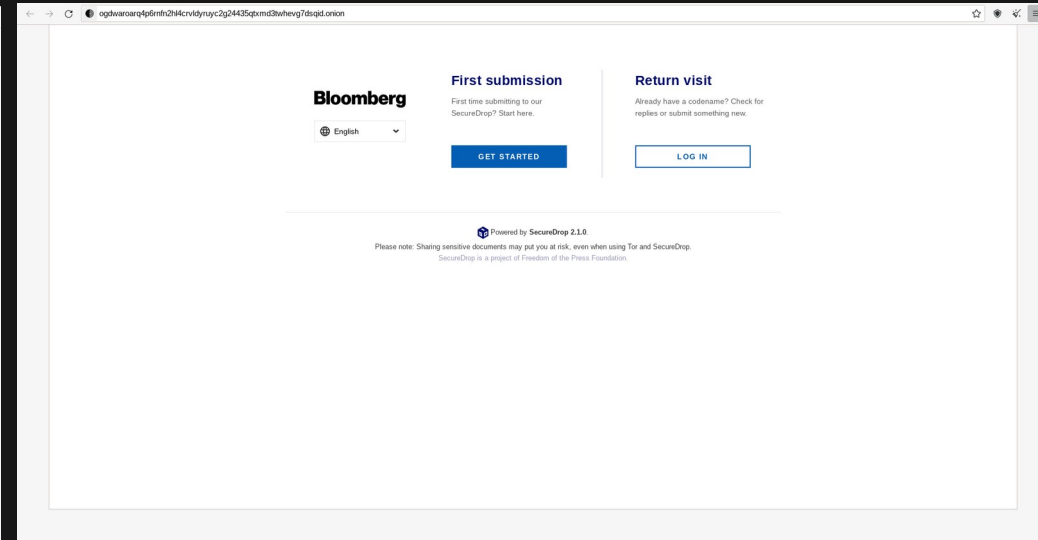
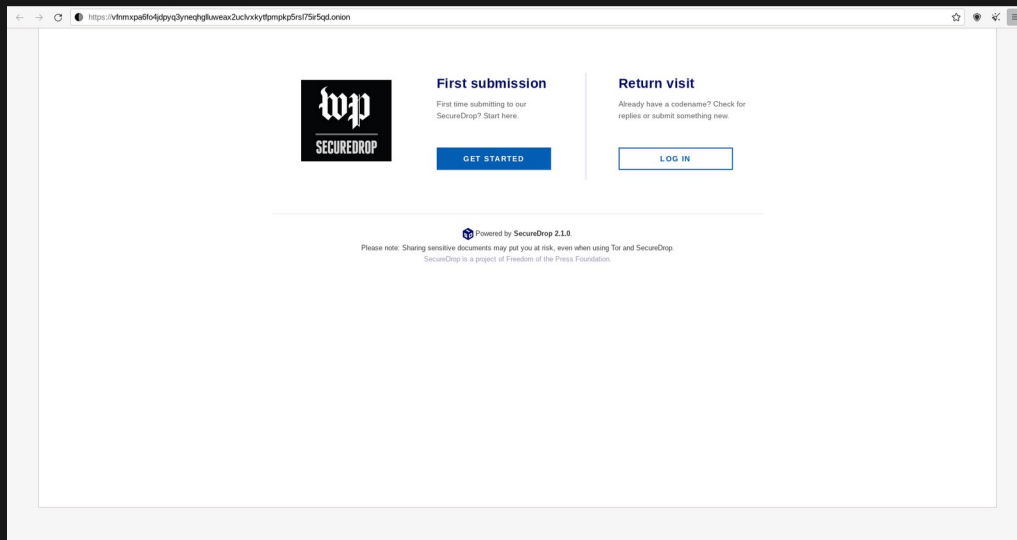
The screenshot shows the front page of The New York Times. The masthead "The New York Times" is at the top. Below it, the date "Tuesday, January 11, 2022" and the price "Today's Paper: \$5.00" are visible. The main navigation bar includes links for World, U.S., Politics, N.Y., Business, Opinion, Tech, Science, Health, Sports, Arts, Books, Style, Food, Travel, Magazine, T Magazine, Real Estate, and Video. The main content area features several articles. The top article is titled "We Have No Option: Biden Urges Senate Rule Change to Pass Voting Laws" and includes a sub-headline "President Biden had long been wary of whittling away at the filibuster. But in a speech in Georgia, he said such Senate traditions had been abused." Below this is a large image of President Biden. To the right of the main article is a smaller article titled "Melatonin Isn't a Sleeping Pill. Here's How to Use It." with a sub-headline "The 'vampire hormone' can act like a dose of sunset, tricking your body into feeling like it's time to sleep." Below the main article is a section titled "Analysis: Biden's Defense of Filibuster Withers Under Partisan Rancor" with a sub-headline "President Biden left no doubt he has reached a breaking point, lashing out at senators who are blocking voting rights legislation." To the right of this is a section titled "As Millions of U.S. Students Return to Schools, Virus Testing Falls Short" with a sub-headline "The testing system that was supposed to help keep classrooms open safely is still being tested. In much of the country, things are not going well." Below this is a section titled "New Reported Cases in the U.S." with a sub-headline "7-day average" and a line graph showing the trend. To the right of the graph is a section titled "Opinion" with a sub-headline "A good question for our Ethicist columnist: Must I donate a kidney to my awful brother?" and a sub-headline "A 22-year-old actor lived in his car so he could apply to Julliard, but he was rejected. Then the internet stepped in."



The screenshot shows the front page of the BBC News website. The masthead "BBC" is at the top. Below it, the date "Tuesday, January 11, 2022" and the price "Today's Paper: \$5.00" are visible. The main navigation bar includes links for Home, News, Sport, Reel, Worklife, Travel, Future, Culture, and More. The main content area features several articles. The top article is titled "PM facing growing anger over No 10 drinks" with a sub-headline "UK Politics". To the right of the main article is a section titled "Unhappy Hamilton undecided on F1 future" with a sub-headline "Formula 1 | 3108". Below this is a section titled "Elvis Costello asks radio not to play Oliver's Army" with a sub-headline "Entertainment & Arts". Below the main article is a section titled "More top stories" with a sub-headline "Opinion" and a sub-headline "THOMAS L. FRIEDMAN Biden-Cheney 2024?". To the right of this is a section titled "What Putin Really Wants From the Ukraine Crisis" with a sub-headline "BEST STEPHENS".

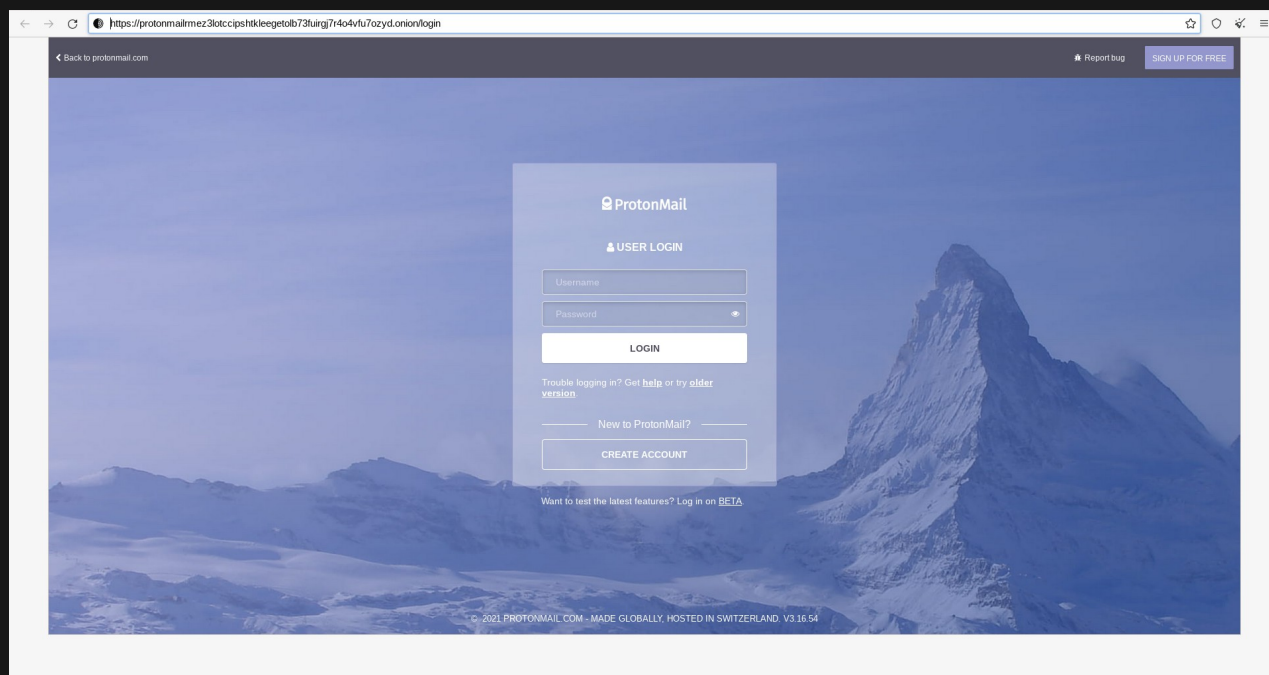
SecureDrops

- <https://vfnmxpa6fo4jdpyq3yneqhglluweax2uclvxkytfpmpkp5rs175ir5qd.onion>
- <http://ogdwaroaraq4p6rnfn2hl4crvldyruyc2g24435qtxmd3twhevg7dsqid.onion>



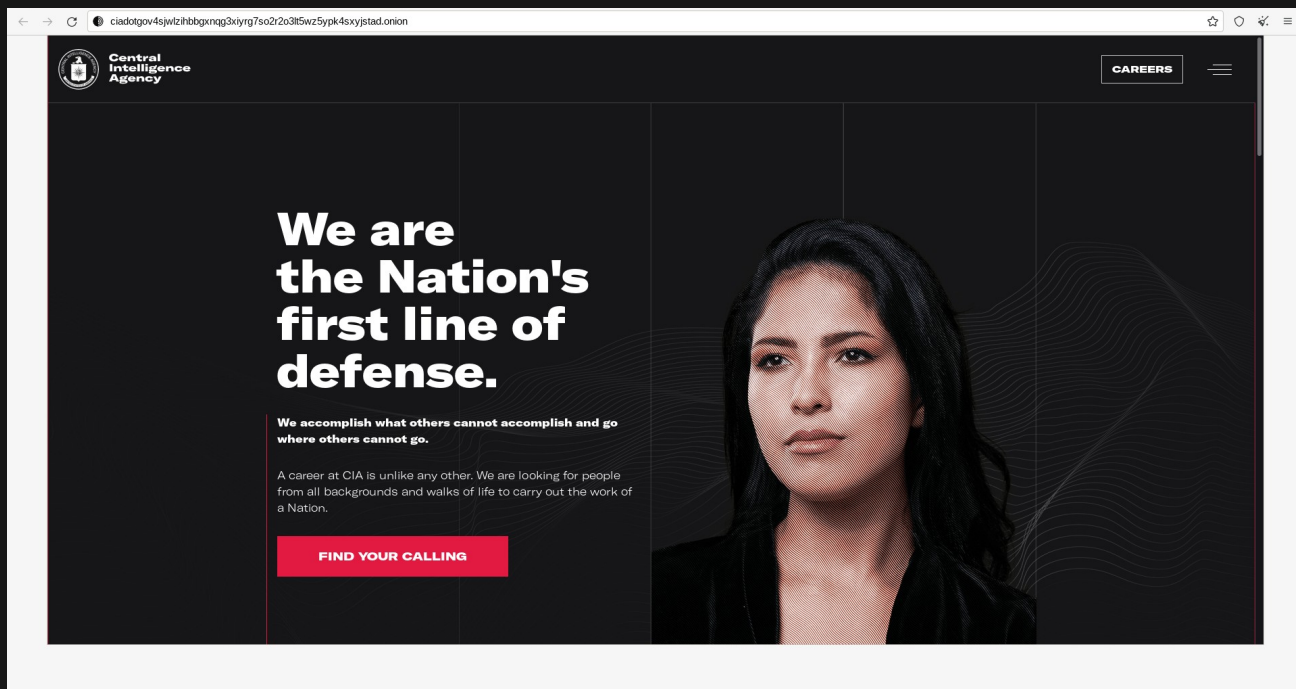
Email

- <https://protonmailmez3lotccipshtkleeegetolb73fuirgj7r4o4vf u7ozyd.onion>



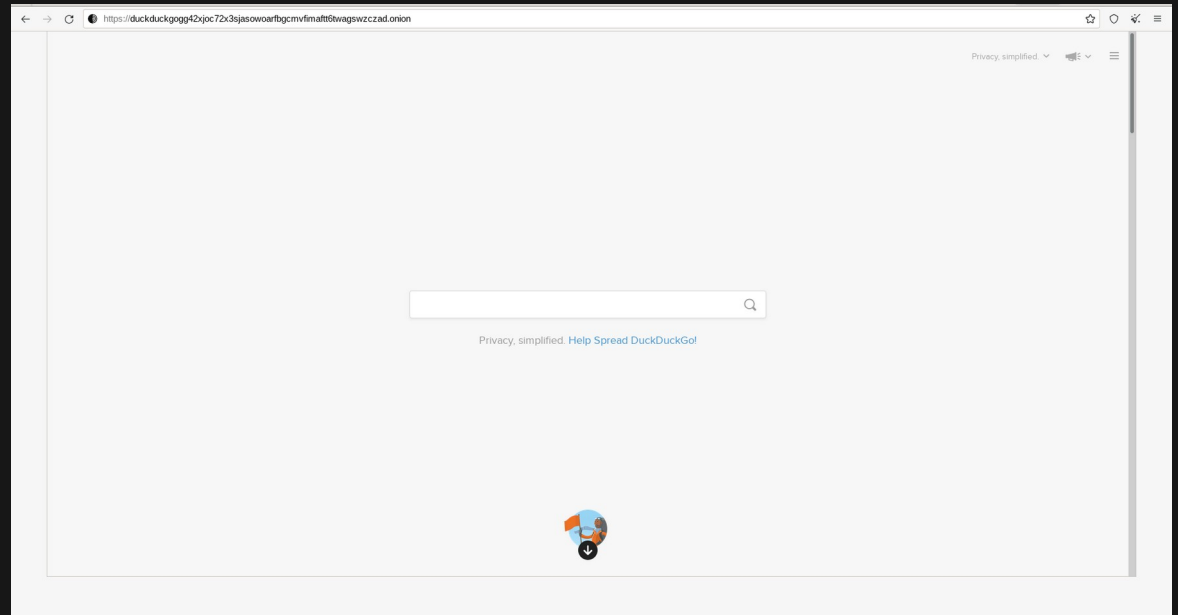
Law Enforcement

- <http://ciadotgov4sjwlzihbbgxnqg3xiyrg7so2r2o3lt5wz5ypk4sxyjstad.onion>



Search Engines

- <https://duckduckgogg42xjoc72x3sjasowoarfbgcmvfimaftt6twagswzczad.onion>



Forums

The screenshot shows the Dread forum interface. The top navigation bar includes the Dread logo, links to 'frontpage', 'all', and 'dread', and options to 'Login' or 'Register'. Below the navigation bar, there's a section for 'Sort posts by Top' with a '24 hours' filter. The main content area displays a list of posts, each with a title, author, time, and comment count. The sidebar on the right features a 'Suggestions' section with a list of subreddits and their subscriber counts.

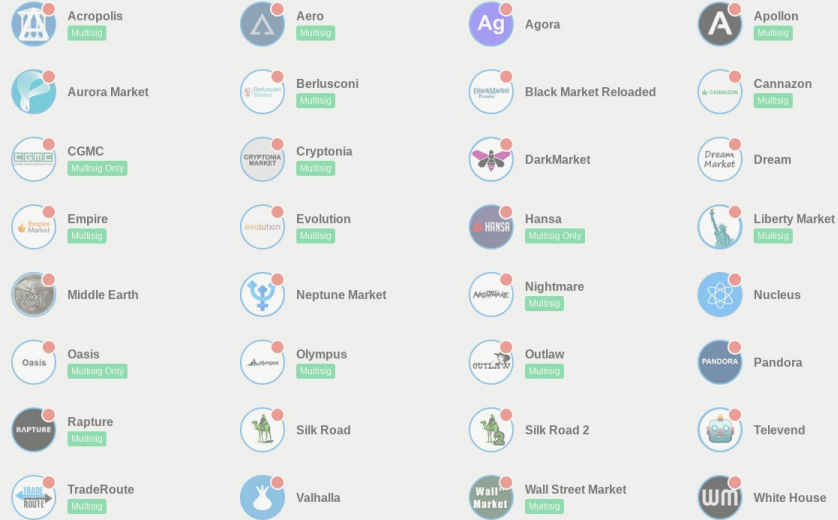
Posts:

- Archetyp Market - Admins logfiles pt.1** (Promoted)
by /u/YosemiteGhostWrite • 2 days ago in /d/Archetyp
95 comments Hide
- ToRReZ Market Final Shutdown** (Announcement)
by /u/[deleted] • 1 week ago in /d/torrezmarket
1 comments Hide
- New alternative mirrors as previous mirrors are getting attacked.**
by /u/LeChacal • 4 hours ago in /d/ASAP
0 comments Hide
- XMR Phone Numbers**
by /u/ampak237 • 7 hours ago in /d/OpSec
1 comments Hide
- Chinese dnm scene**
by /u/combiproblem • 22 hours ago in /d/DarkNetMarkets
6 comments Hide
- Anyone in USA/NA receiving packs from NL?**
by /u/WolfOfDreadStreet • 1 hour ago in /d/DarkNetMarkets
6 comments Hide
- boofing guide?**
by /u/thebachelor • 7 hours ago in /d/CafeDread
6 comments Hide

Suggestions:

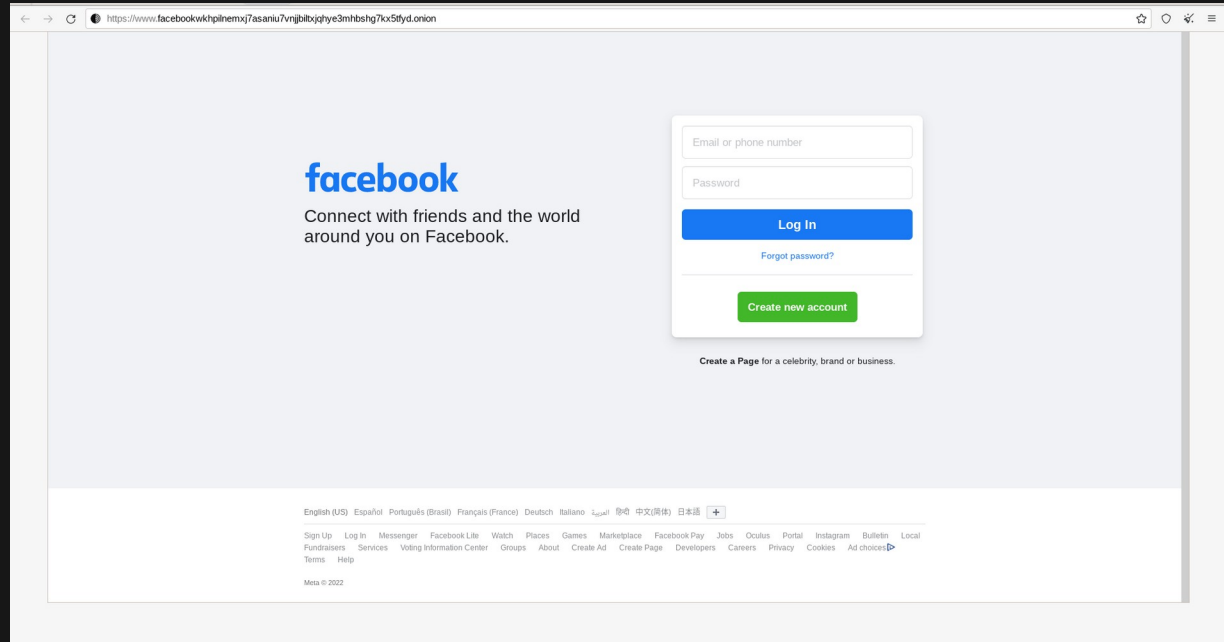
- /d/Dread: 156,447 subscribers
- /d/DarkNetMarkets: 33,556 subscribers
- /d/DankNation: 7,049 subscribers
- /d/HarmReduction: 1,870 subscribers
- /d/TheMajesticGarden: 2,314 subscribers
- /d/DarkNetMarketsNoobs: 9,955 subscribers
- /d/OpSec: 14,674 subscribers
- /d/Cannazon: 3,131 subscribers
- /d/Monero: 7,122 subscribers
- /d/CafeDread: 3,877 subscribers
- /d/Recon: 2,287 subscribers
- /d/EnergyControl: 453 subscribers
- /d/Monopoly: 2,182 subscribers

Marketplaces?



Facebook?

- <https://www.facebookwkhpilnemxj7asaniu7vnjjbiltxjqh3mhbshg7kx5tfyd.onion>



How secure is Tor?

Pretty secure

- Problems really only exist at entry/exit nodes

Browser Fingerprinting

- A digital fingerprint is created when a company makes a unique profile of you based on your computer hardware, software, add-ons, and even preferences.
- Tor browser sessions are designed to all look identical
- See your browser's fingerprint here:
 - [Coveryourtracks.eff.org](https://coveryourtracks.eff.org)

Browser Fingerprinting:

Personal Firefox vs Tor Browser

Our tests indicate that you have **strong protection against Web tracking**.

IS YOUR BROWSER:

Blocking tracking ads?	<u>Yes</u>
Blocking invisible trackers?	<u>Yes</u>
Protecting you from fingerprinting?	<u>Your browser has a unique fingerprint</u>

Still wondering how fingerprinting works?

[LEARN MORE](#)

Note: because tracking techniques are complex, subtle, and constantly evolving, Cover Your Tracks does not measure all forms of tracking and protection.

Your Results

Your browser fingerprint **appears to be unique** among the 220,702 tested in the past 45 days.

Currently, we estimate that your browser has a fingerprint that conveys **at least 17.75 bits of identifying information**.

The measurements we used to obtain this result are listed below. You can [read more about our methodology, statistical results, and some defenses against fingerprinting here](#).

Our tests indicate that you have **strong protection against Web tracking**, though your software isn't checking for Do Not Track policies.

IS YOUR BROWSER:

Blocking tracking ads?	<u>Yes</u>
Blocking invisible trackers?	<u>Yes</u>
Protecting you from fingerprinting?	Your browser has a non-unique fingerprint

Still wondering how fingerprinting works?

[LEARN MORE](#)

Note: because tracking techniques are complex, subtle, and constantly evolving, Cover Your Tracks does not measure all forms of tracking and protection.

Your Results

Within our dataset of several hundred thousand visitors tested in the past 45 days, only **one in 606.32 browsers have the same fingerprint as yours**.

Currently, we estimate that your browser has a fingerprint that conveys **9.24 bits of identifying information**.

The measurements we used to obtain this result are listed below. You can [read more about our methodology, statistical results, and some defenses against fingerprinting here](#).

Sources

- <https://www.torproject.org/>
- <https://wiki.archlinux.org/title/Tor>
- <https://hackernoon.com/how-does-tor-really-work-c3242844e11f>
- <https://www.reddit.com/r/onions/>
- <https://www.reddit.com/r/TOR/>
- [https://en.wikipedia.org/wiki/Tor_\(network\)](https://en.wikipedia.org/wiki/Tor_(network))
- <https://en.wikipedia.org/wiki/.onion>