Internet and privacy

- •How does the internet work?
- •Who tracks us?
- •How are they tracking us?
- •What do they know about us?
- •Why do we need to do something about it?
- •What can we do about it?
- Exploring the darknet
 - Censorship
 - Guns, drugs and other illegal things

Internet

- · Data center
 - Has IP
 - Stores a website
- Worldwide interconnected optical fiber system
 - Connects networks
 - Provider network
 - Firm network (Intranet)
 - · University and research facilities
- IP address
 - Address every computer connected to the internet has
 - Like your physical address
 - Unique
 - Cmd → "ping [Domain name]"
- DNS
 - Provides a better to memorize name to an IP
 - 172.217.19.67 = www.google.com
- ISP
 - decides your IP

Who tracks us?

- Facebook, Google, Apple, Spotify, GPS systems, Oracle, Amazon, Microsoft, Refugee control, fitness apps, smart city, autonomous cars, smartphone, smartwatch, smart assistant, Gebühreneinzugszentrale, Schufa, General Electric, IBM, Cloudera, Kaggle, Governments, intelligence services all over the world, banks
- Basically everyone

How they track us

IP

- All websites receive, and many track, which IP address is used by a visitor's computer
- Companies match data over time

HTTP cookies

- Data stored on a user's computer
 - Assists in automated access to websites or web features
 - Also used for user-tracking by storing special usage history data in a cookie
- Was advertisers main way of targeting potential customers

Flash cookies

- Flash cookies are a popular mechanism for storing data on the top 100 most visited sites
 - 31 had Flash cookies
- 58% of users deleted cookies at least once
- 39% of users delete cookies monthly
 - started to use persistent Flash cookies and zombie cookies
 - blocked and removed by modern browsers and anti-malware software

Evercookies

- JavaScript-based applications
 - Produce cookies that actively "resist" deletion
 - copying themselves in different forms on the user's machine and resurrecting copies that are missing or expired
- blocked and removed by modern browsers and antimalware software

Device fingerprinting

- information about the software and hardware of a remote computer
 - Screen resolution
 - CPU
 - OS
- Positive uses
 - prevent identity theft and credit card fraud
- Negative uses
 - compile long-term records of individuals browsing histories
 - even when they're attempting to avoid tracking

Third Party Requests

- 1. Website
- 2. Your device
- 3. External connection to website
 - used for loading external content (e.g. advertisements, images, icons, fonts, captchas)
- Importance increased since Mozilla (2019), Apple (2020), and google (2022) have announced to block third party cookies by default
- may enable third parties to execute a device fingerprint or place any other kind of marketing tag

Google Street View

- person's whereabouts
- activities
- private property
- Scans WLANs
- removes abstractions of a person's appearance
- Street View began to blur license plates and people's faces
 - technology is faulty

Search engines

- Negative use
 - track a user's searches
 - assigns each user a ID
 - Tracks visited sites
 - Tracks location
 - Tracks time spent using the search engine

Internet service provider

- All data transmitted to and from users must pass through the ISP
- potential to observe all user activities on the internet
- Hackers could hack ISP and obtain sensitive information of victims

Other potential Internet privacy risks

- Cross-device tracking
- Massive personal data extraction through mobile device apps that receive carte-blanche-permissions for data access upon installation
- Malware
- Spyware
- Phishing
- Pharming
- Social engineering
- Malicious proxy server (or other "anonymity" services).
- Use of weak password
- Use of recycled password
- Using out-of-date software
- WebRTC

Smart phone

- Most useful tracking device to date
 - Camera
 - GPS
 - Microphone
 - Unique
 - Always around
 - Lots of data streams going in and out at all time

What do they know about us?

- Sexual orientation
- Political and religious views
- Race
- Substance use
- Intelligence
- Personality
- Age
- Financial situation
- Address
- Mood from day to day
- Interests
- Social environment
- Language
- Whereabouts

Why do we need to do something?

- Security expert Bruce Schneier:
 - "Privacy protects us from abuses by those in power, even if we're doing nothing wrong at the time of surveillance."
- Surveillance is used for:
 - Manipulation
 - Misinformation
 - Blackmailing

What we can do

Virtual private network

Pros

- Encrypts your data
- Hides your IP and location
- ISP cant tell what you are doing
- Bypasses most firewall blocks

Cons

- Information still out there
 - Can be read as soon as it leaves the VPN
 - VPN provider can read and safe your data
- Authorities have the power to force VPN companies to show them your data

Browser

- Mozilla Firefox
 - Pros
 - Not Chromium based
 - · Every feature a normal consumer needs
 - · High customization
 - Cons
 - Fewer extensions than Chrome
- Brave
 - Pros
 - · Privacy focused
 - · is in no way inferior to chrome
 - Built-in ad blocker, tracker blocker, https upgrade, script blocker, fingerprinting blocker
 - Easy to use (built on the chrome framework)
 - · Built in TOR browser
 - Cons
 - Chromium based
 - Google controls development
 - Gives google market share
 - Gives google the power to implement things like FloC (Federated Learning of Cohorts)
 - Will replace third-party cookies (was key for 20y multi billion dollar advertising-surveillance industry) in a worse way

Search engine

- DuckDuckGo
 - Cons
 - Fewer instant answers
 - Pros
 - Doesn't track you
 - Respects privacy
 - Meta search engine

Other alternatives

- Gmail → Protonmail
- Google Maps → OpenStreetMap
- Google Callander → SmartDay
- Google Docs, Microsoft Office → LibreOffice
- Whatsapp → Signal, Telegram
- Google authenticator → Authy
- Google Drive → Tresorit
- Google Photos → Piwigo
- Google Translate → DeepL
- Google analytics → Clicky
- Google Play Store → F-Droid
- Windows, MacOS → Linux
- Android, Apple → LineageOS
- Google Hangouts → Wire

Add-On

- Ublock Origin
- Disconnect
- DuckDuckGo Privacy Essentials
- Umatrix
- Ghostery
- Privacy Badger
- Avast Online Security
- Canvas Fingerprint Defender

What is Tor?

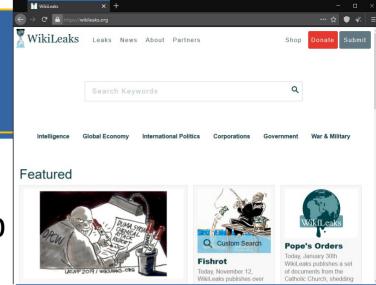
- Anonymity application
- free and open-source software
- enabling anonymous communication
 - directing Internet traffic through a worldwide overlay network consisting of seven thousand relays
- conceals a user's location and usage from anyone
- makes it much more if not impossible to trace the Internet activity to the user
- Number one tool for internet privacy

The amnesic incognito live system

- Tails is a security-focused Linux distribution aimed at preserving privacy and anonymity
- All its incoming and outgoing connections are forced to go through Tor
- any non-anonymous connections are blocked
- designed to be booted as a live DVD or live USB
- will leave no digital footprint on the machine
- Tor Project provided financial support

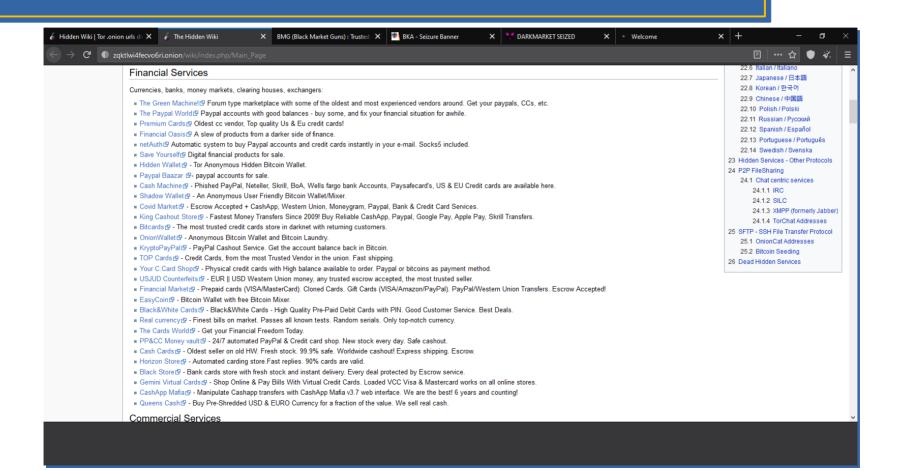
Darknet

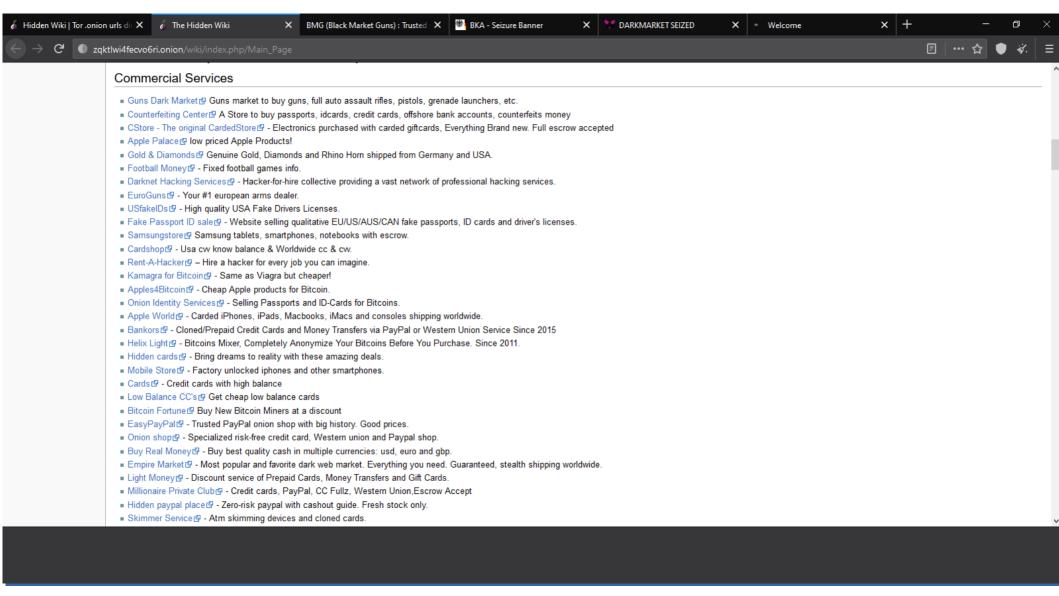
- Easily accessed trough Tor
- Most of the internet with the deep web
- Not "bad" in itself
 - Important tool for internet privacy and against state censorship
- Hidden from normal browsers and search engines

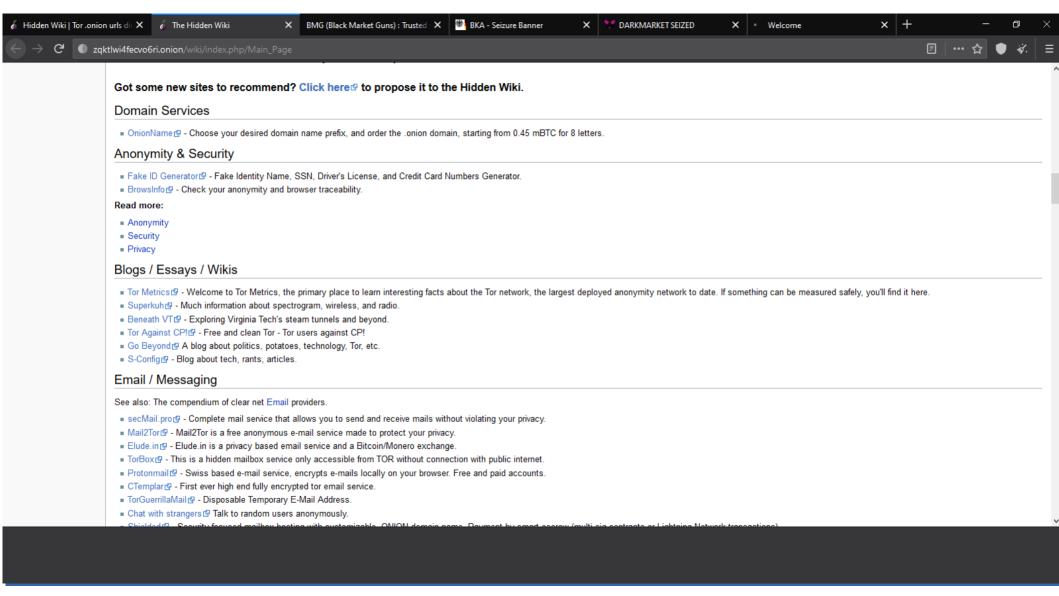


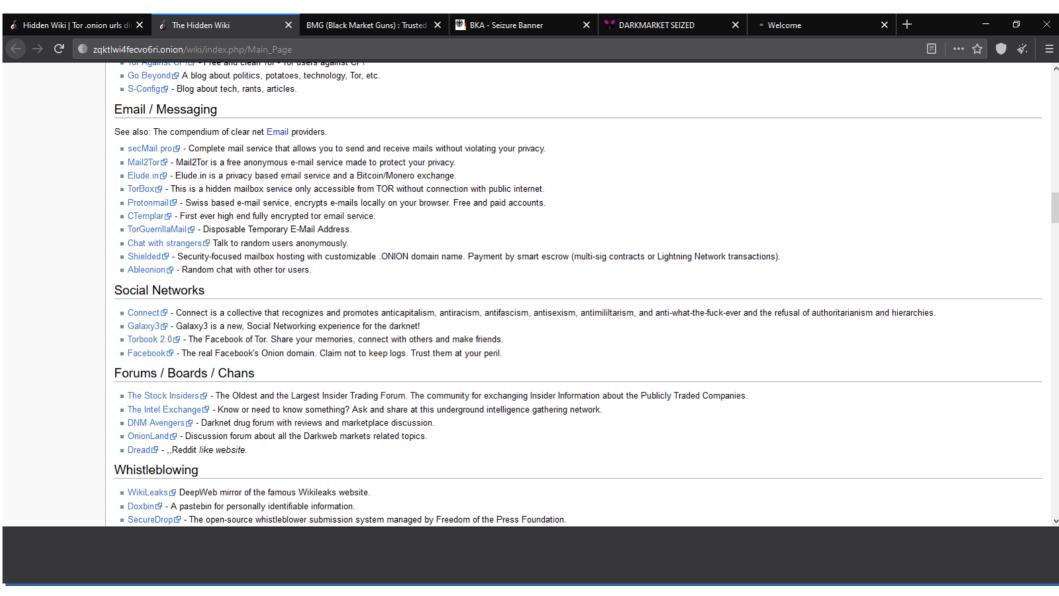
Exploring the darknet

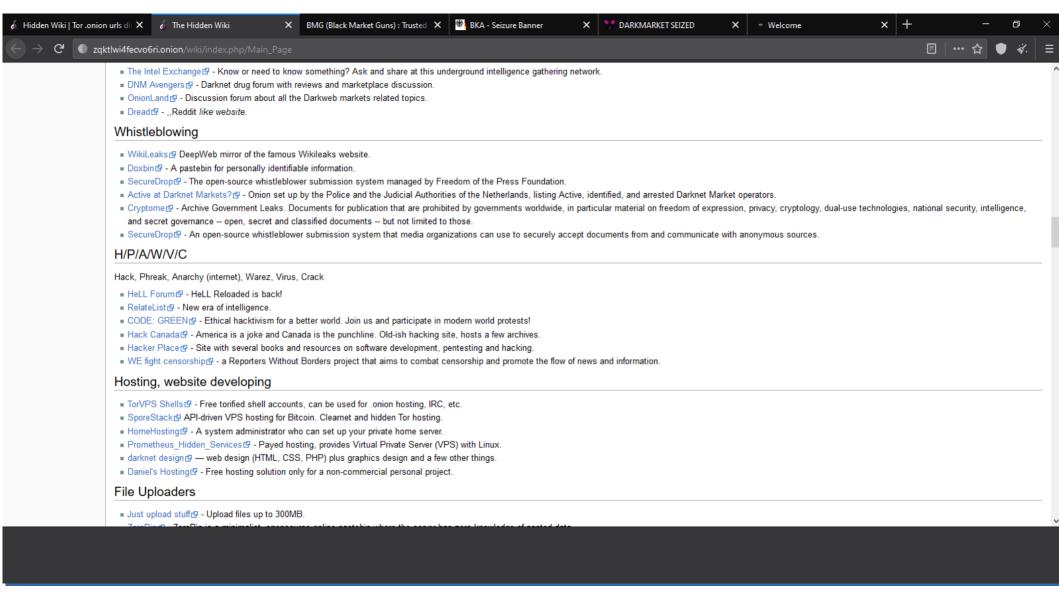
Hidden Wiki

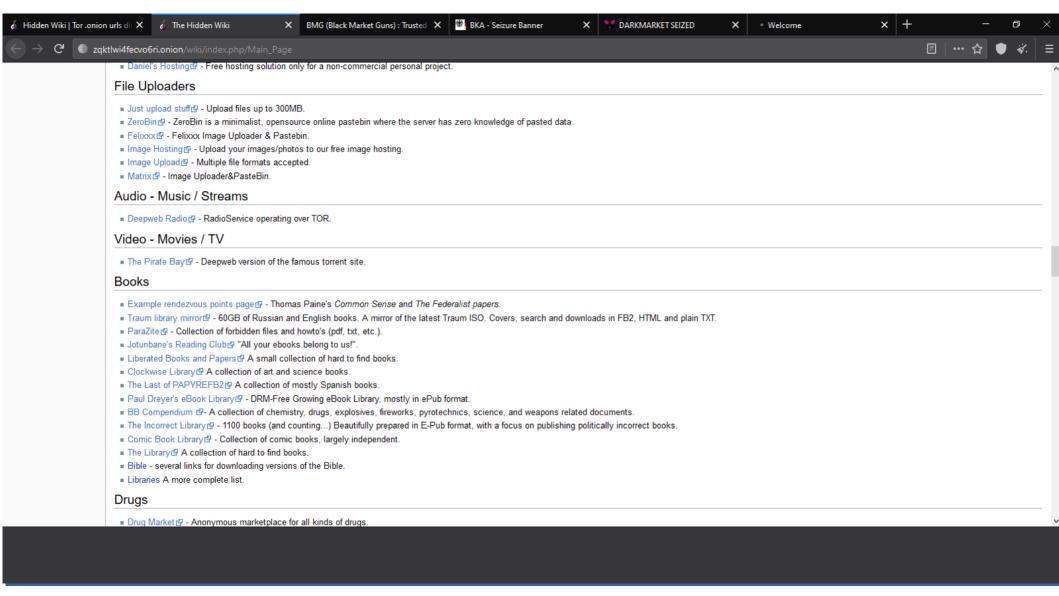


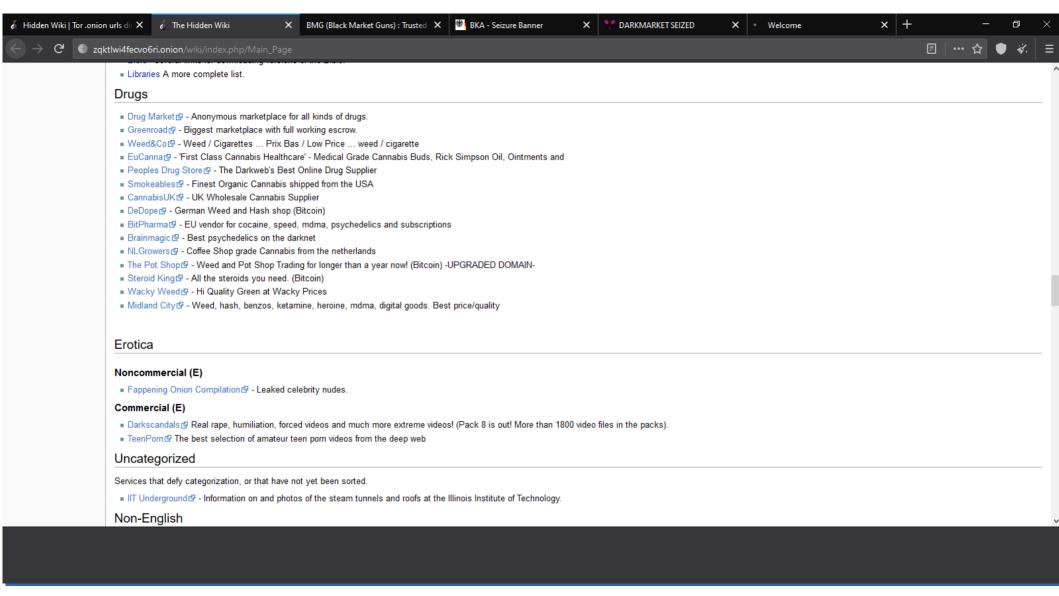




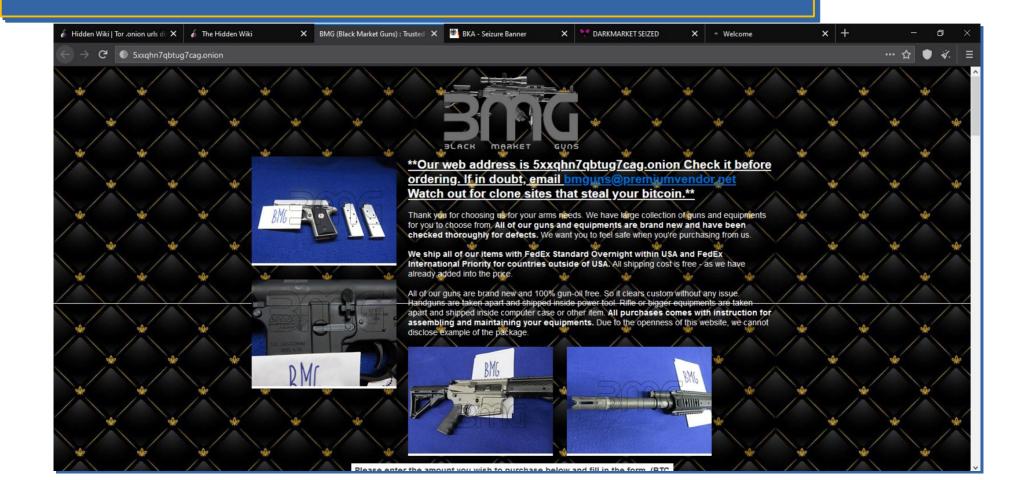


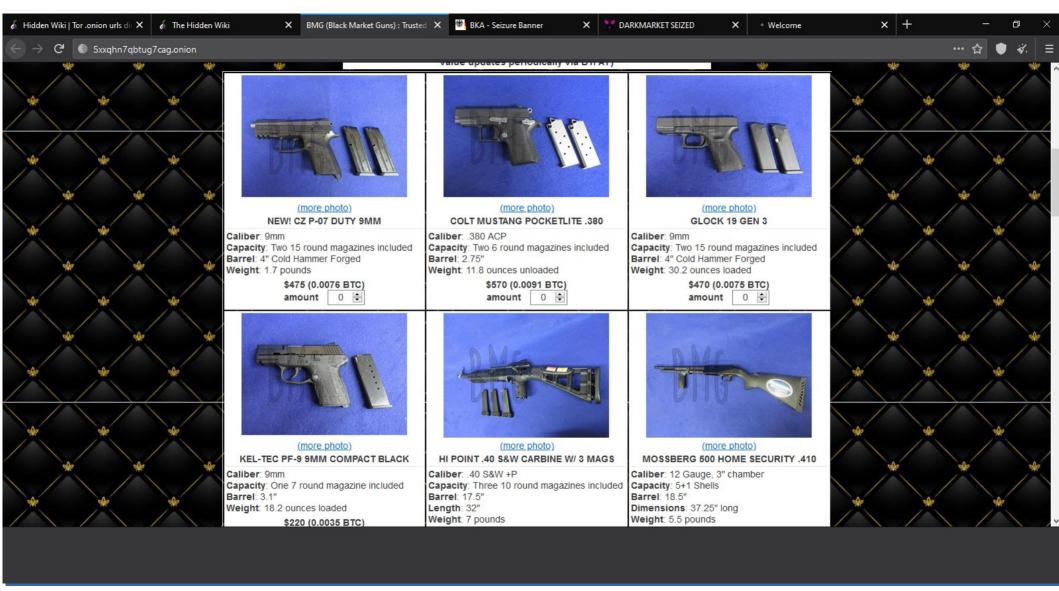


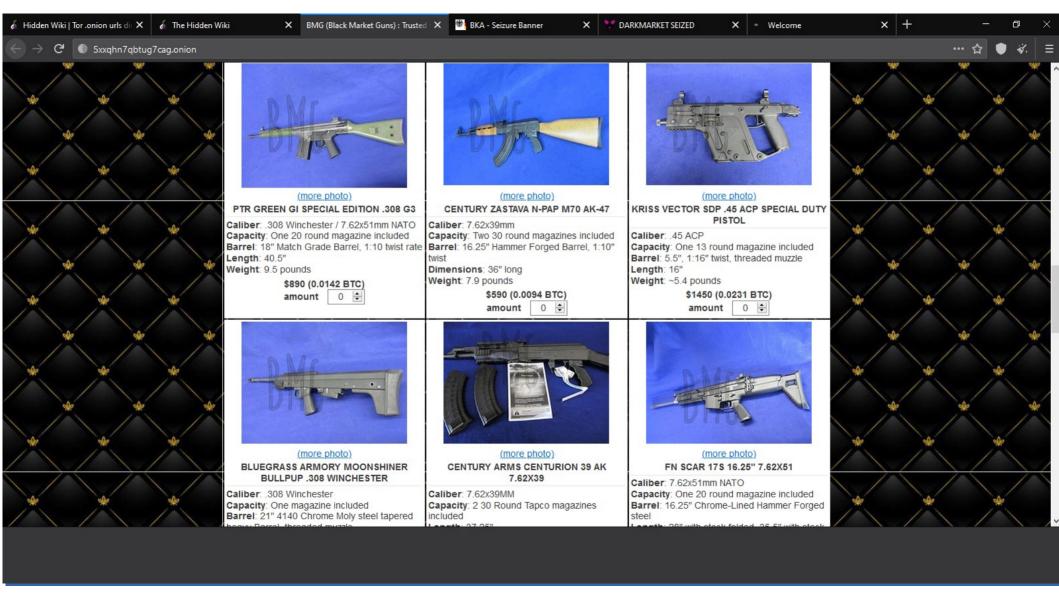




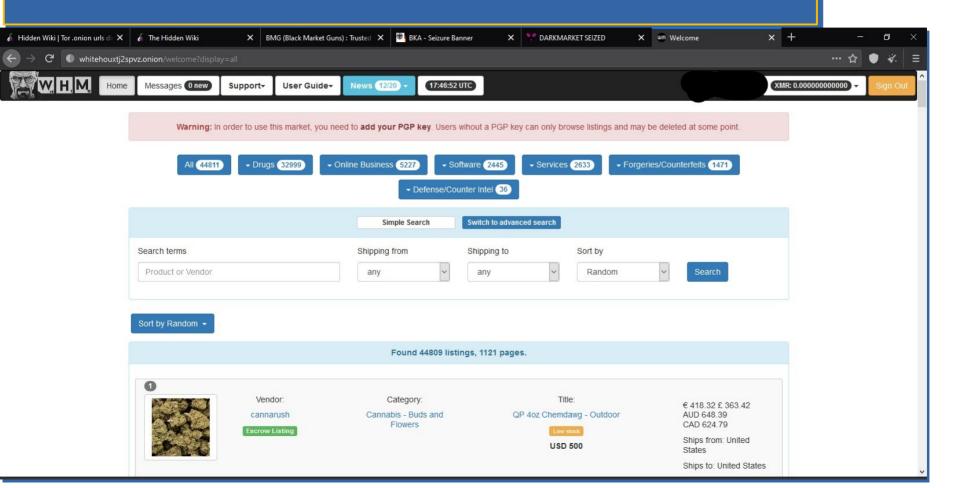
Guns

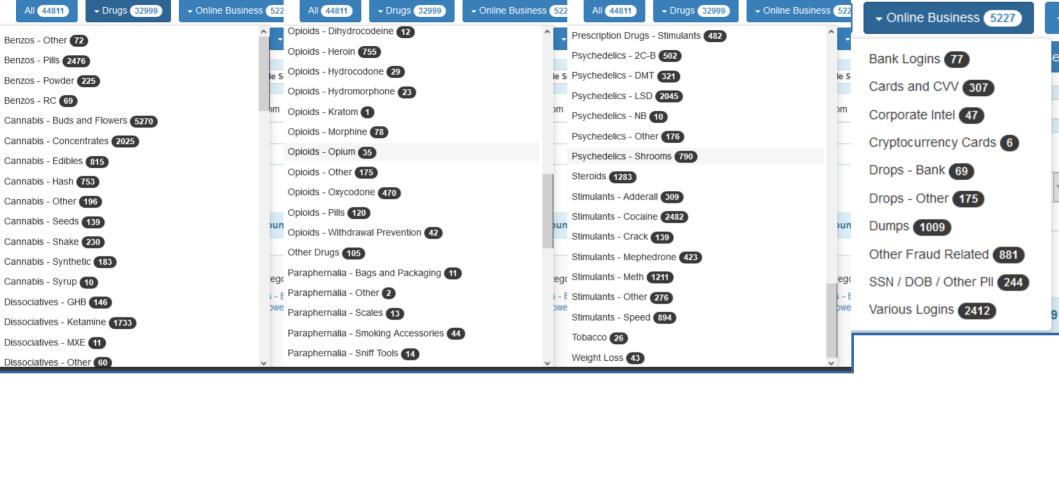


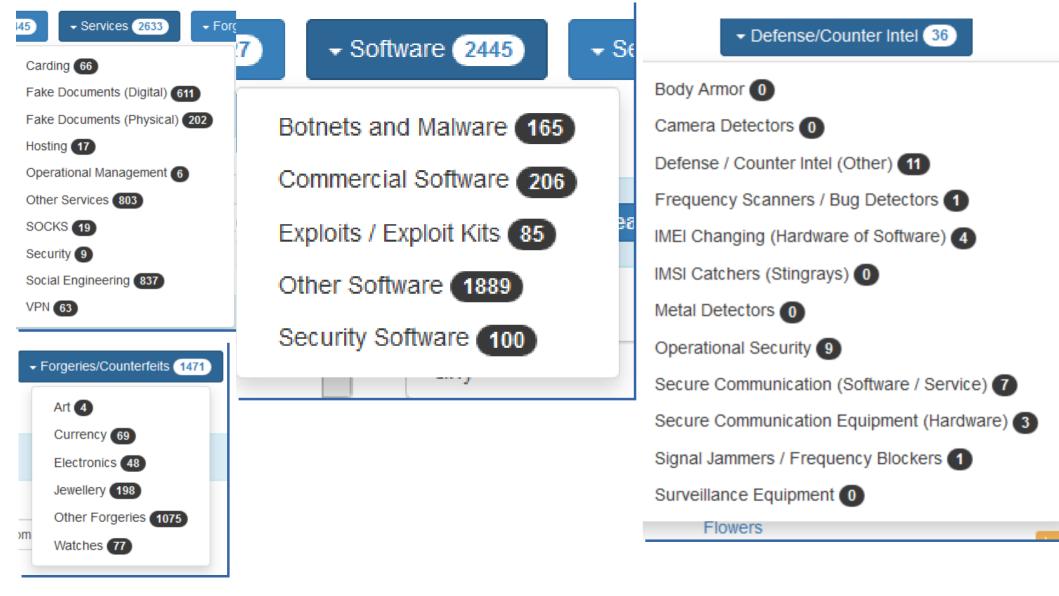


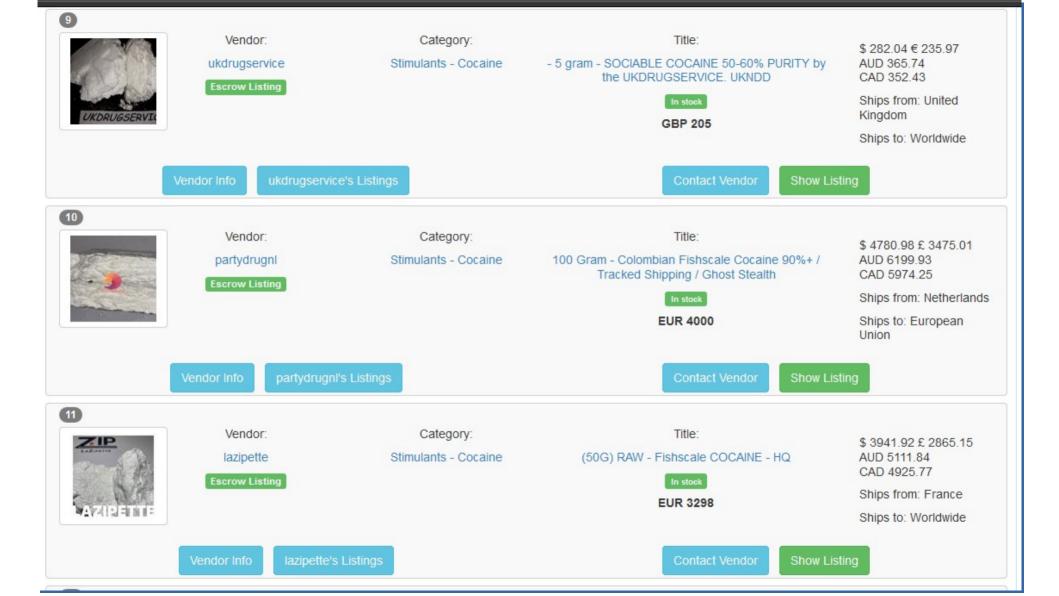


White house market









Pure Uncut Cocaine 7 Grams US-US



Price (Fiat): USD 399 (€333.88 £290.05 AUD518.33 CAD499.64)

. (.).

Price (XMR): 1.175361593071

Category: Drugs -> Stimulants - Cocaine

Measurement unit: Gram

sited Ctates to: Unit

Shipping: from: United States to: United States

Views: 4034

Shipping methods:

- USPS Priority 2 to 3 Day : USD 9 (XMR 0.026511915633)

Available: In stock

Vendor: simplysnow 95.80 % positive / 96 reviews Disputes: 1 won / 0 lost [140 - 150 sales]

Finalize early (FE): Listing is Escrow

Vendor last seen: Today

Minimum order amount: XMR 1.201873508704 (1.175361593071 for products + 0.026511915633 for shipping).

Vendor's PGP key fingerprint: E57F69BB717CEDA048C55362FCD76EE9F5A69532 Show Key

Listing Description

7 Grams

rams

Batch: I Heart You

Pure Uncut Cocaine

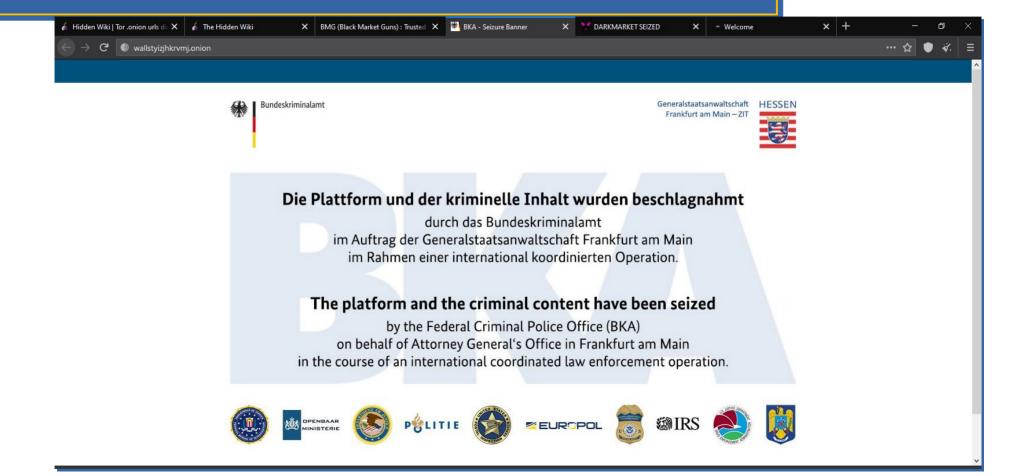
No BS, No Cutting Agent, No Mixing Agent, No Amphetamines

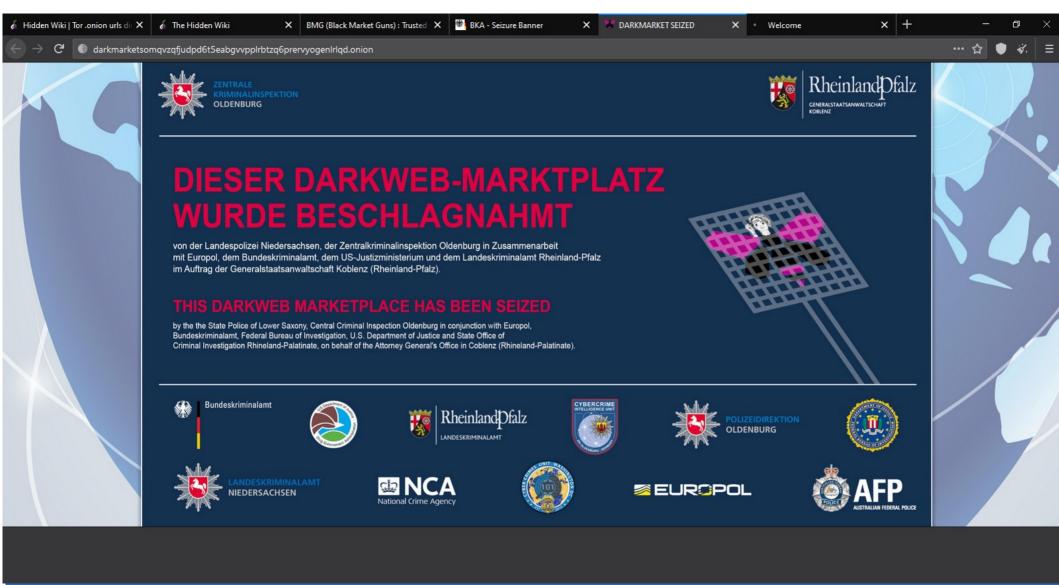


Buying things in the darknet

- Cryptocurrency
 - Bitcoin
- PGP
 - Pretty good privacy
 - Public key
 - · clear to everyone
 - Used by everyone to send you encrypted messages
 - Private key
 - clear to you
 - Used by you to decrypt messages sent to you

Seized markets





Sources

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- https://www.youtube.com/watch?v=x3c1ih2NJEg
- · https://www.wikiwand.com/de/Internet
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- https://www.wikiwand.com/de/Pretty_Good_Privacy
- https://www.wikiwand.com/en/Darknet
- https://www.wikiwand.com/en/Tails_(operating_system)