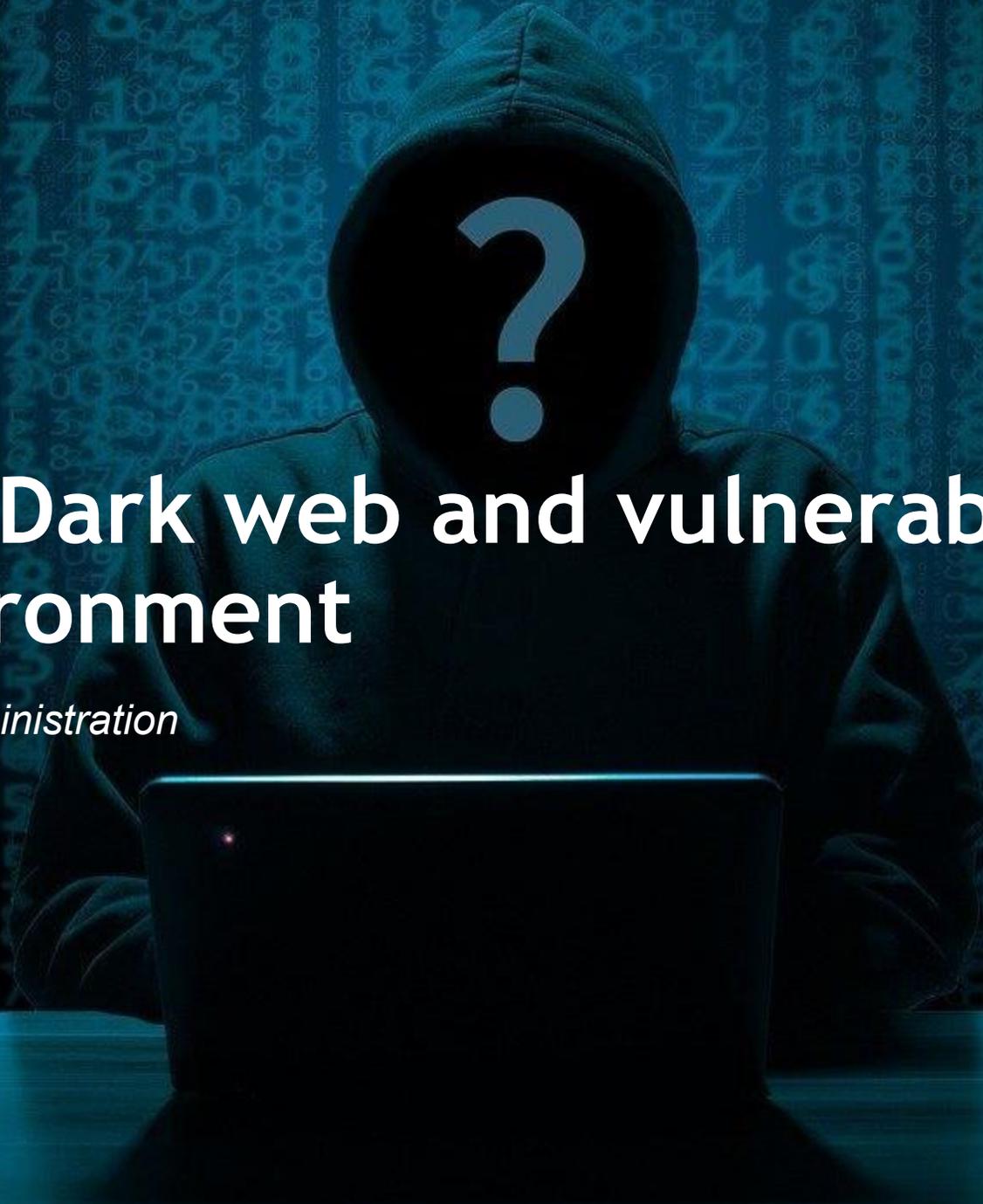




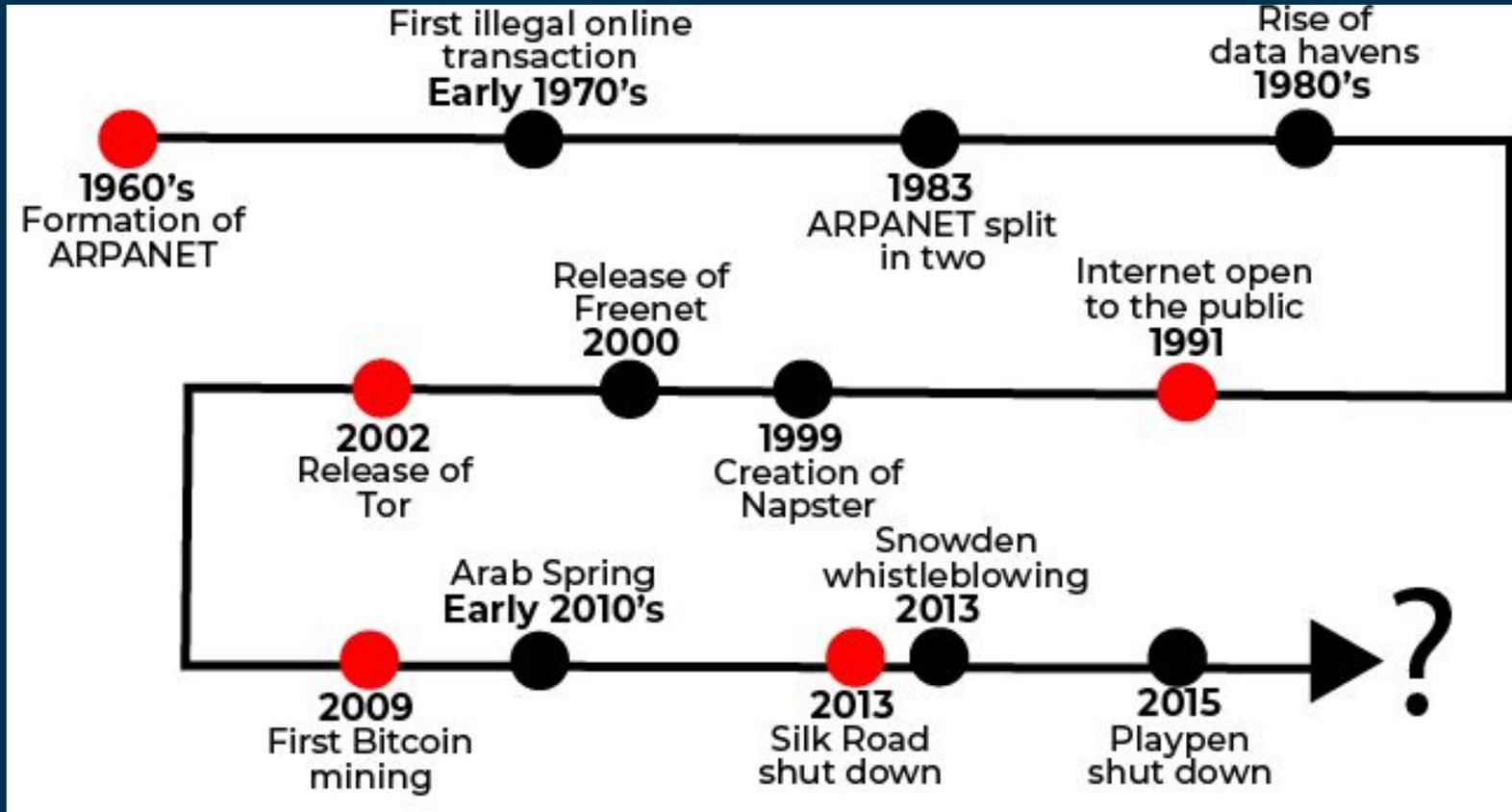
Overview of Dark web and vulnerabilities in current environment

Indian Institute of Public Administration



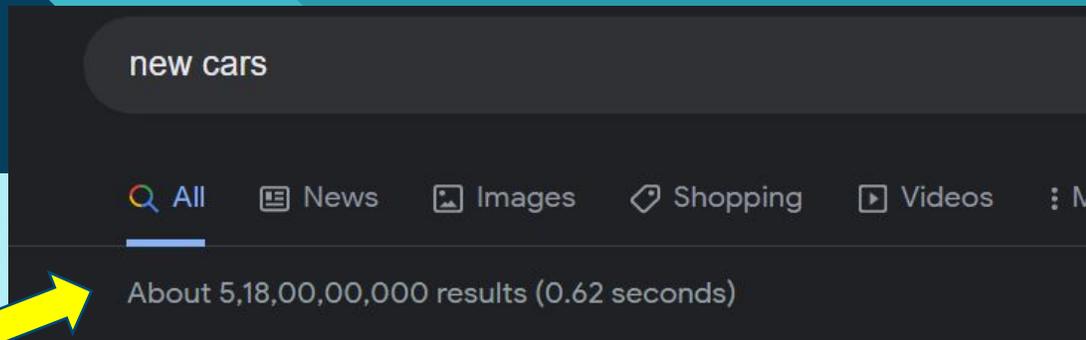
What is Dark Web?

History of Dark Web



The dark web is known to have begun in 2000 with the release of Freenet, the thesis project of University of Edinburgh student **Ian Clarke**

Dark Web



Surface Web
4%

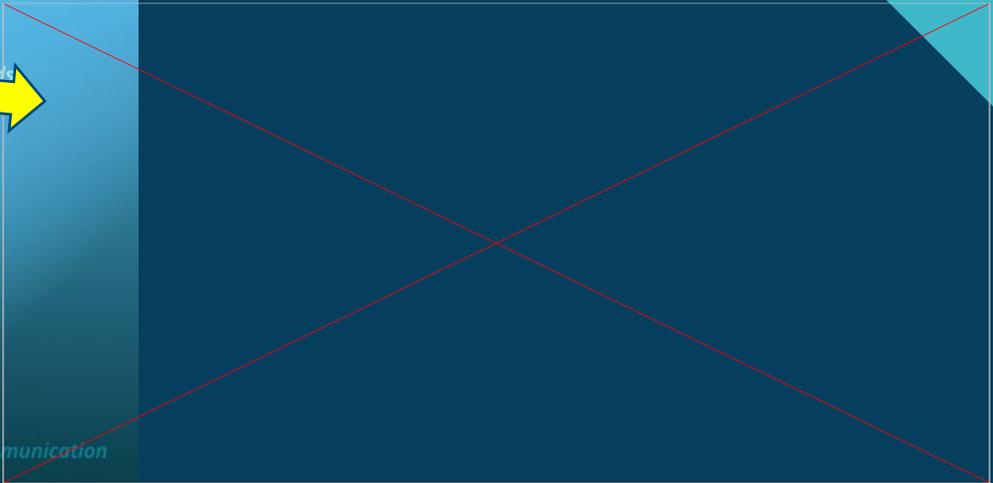
YAHOO!
Google
bing

Deep Web
96%

Specific URL
Legal Documents etc.

Dark Web
access using
Tor

Private Communication
Encrypted sites
illegal information



Examples of Types of Web

✓ The Surface Web

encompasses everyday internet browsing and is available to the general public.

Examples

- Google
- Yahoo
- Bing
- FireFox
- Wikipedia
- News sources

! The Deep Web

protects private accounts and information not meant for public viewing.

Examples

- Academic information
- Medical records
- Legal documents
- Government reports
- Private databases
- Subscription platforms

✗ The Dark Web

is an extension of the deep web, operating on encrypted internet connections.

Examples

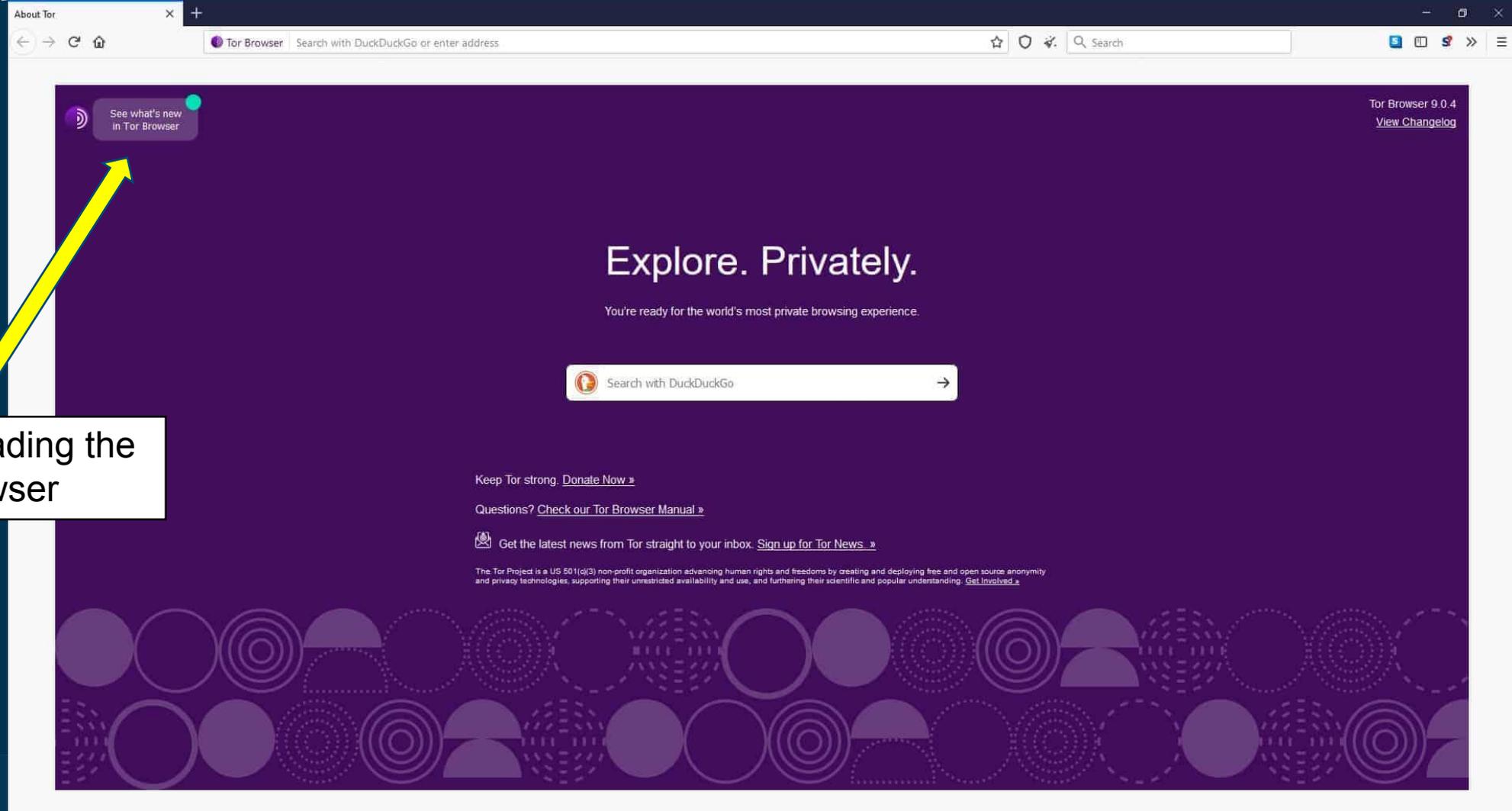
- Drug trafficking
- Cryptocurrency scams
- Illegal activities
- Political protests
- Private communication
- Tor encrypted sites

Deep Web Vs Dark Web

Deep Web	Dark Web
 Can protect information stored online	 Makes your online activity anonymous
 Can access from anywhere with specific passwords or unique links	 Can only access with a dark web browser, similar to the Tor Project
 Makes up about 96% of the internet	 Size is unknown
 VPNs can help keep your IP address and identity safe	 Dark web browsers provide automatic encryption

**Access the deep and
dark web safely**

Accessing the Dark Web Safely



Downloading the
Tor Browser

More about dark Web



Anonymous



Special access software

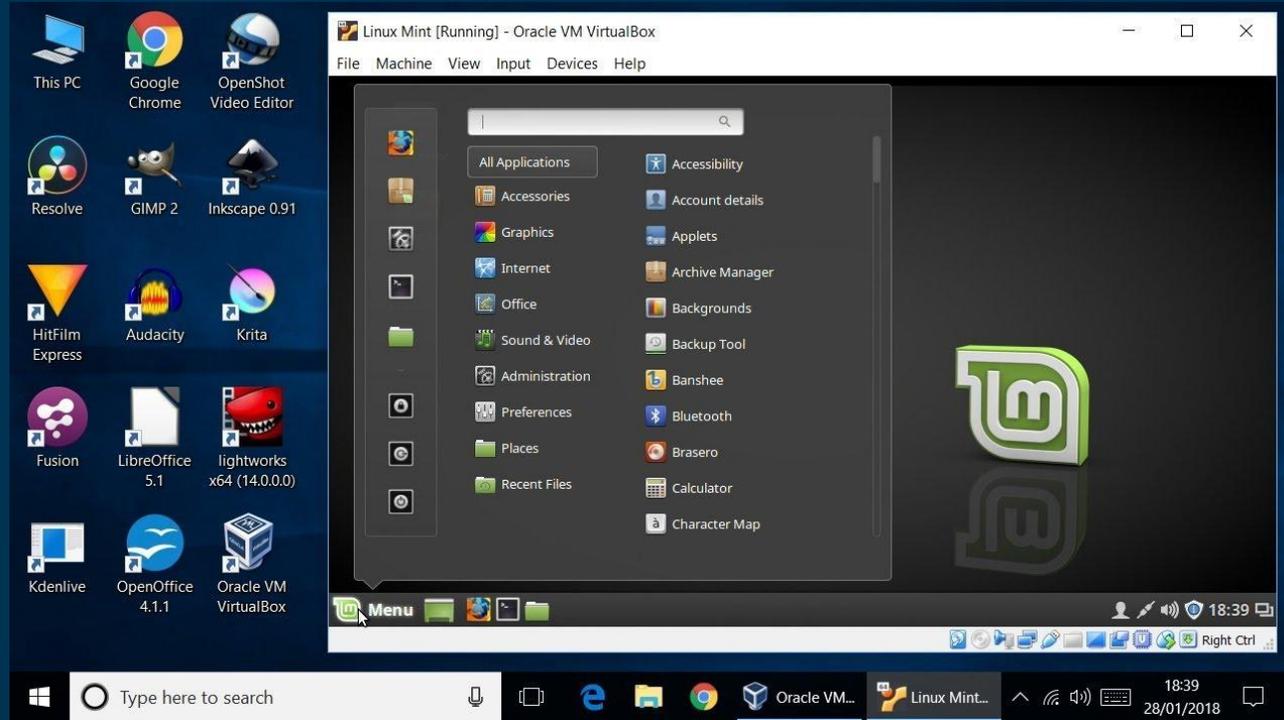


Associated with illegal activities

Securing your network



Use of VPN



Use of Virtual Machine

Relays in Tor network

A guard relay is the first relay in the chain of 3 relays building a Tor circuit. A middle relay is neither a guard nor an exit, but acts as the second hop between the two.

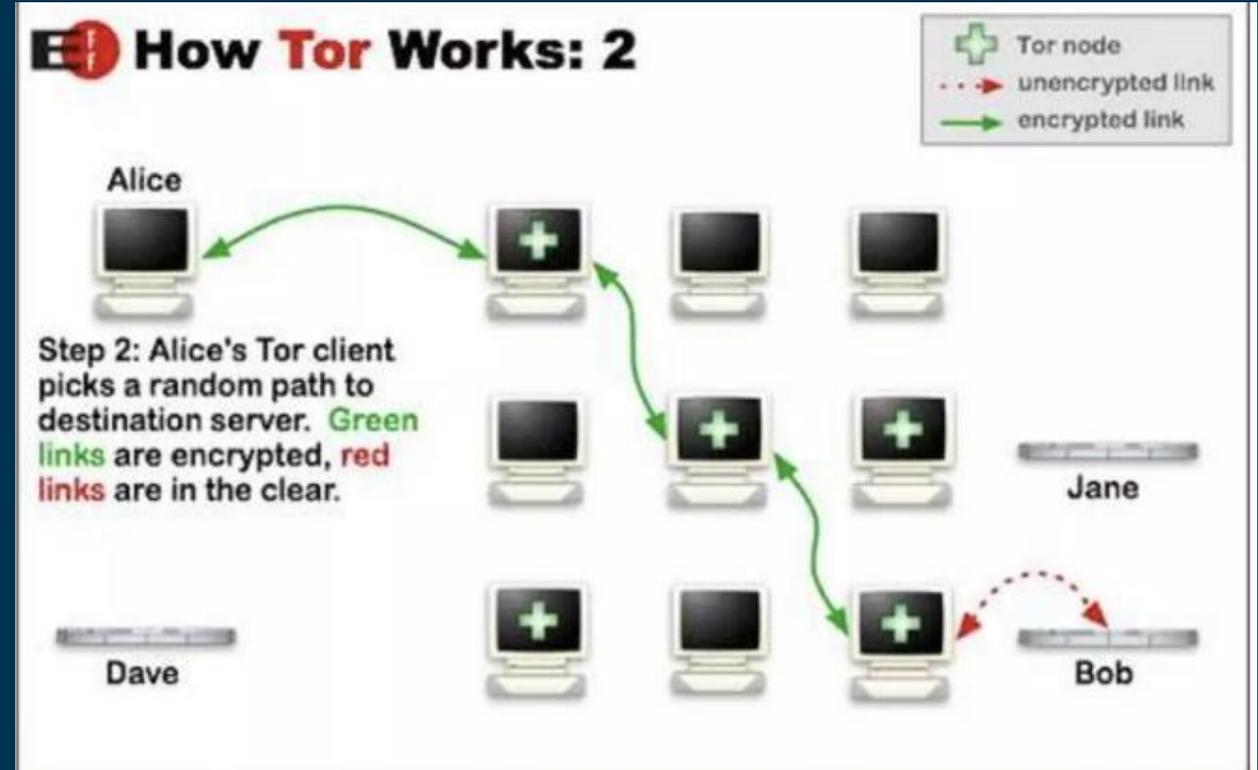
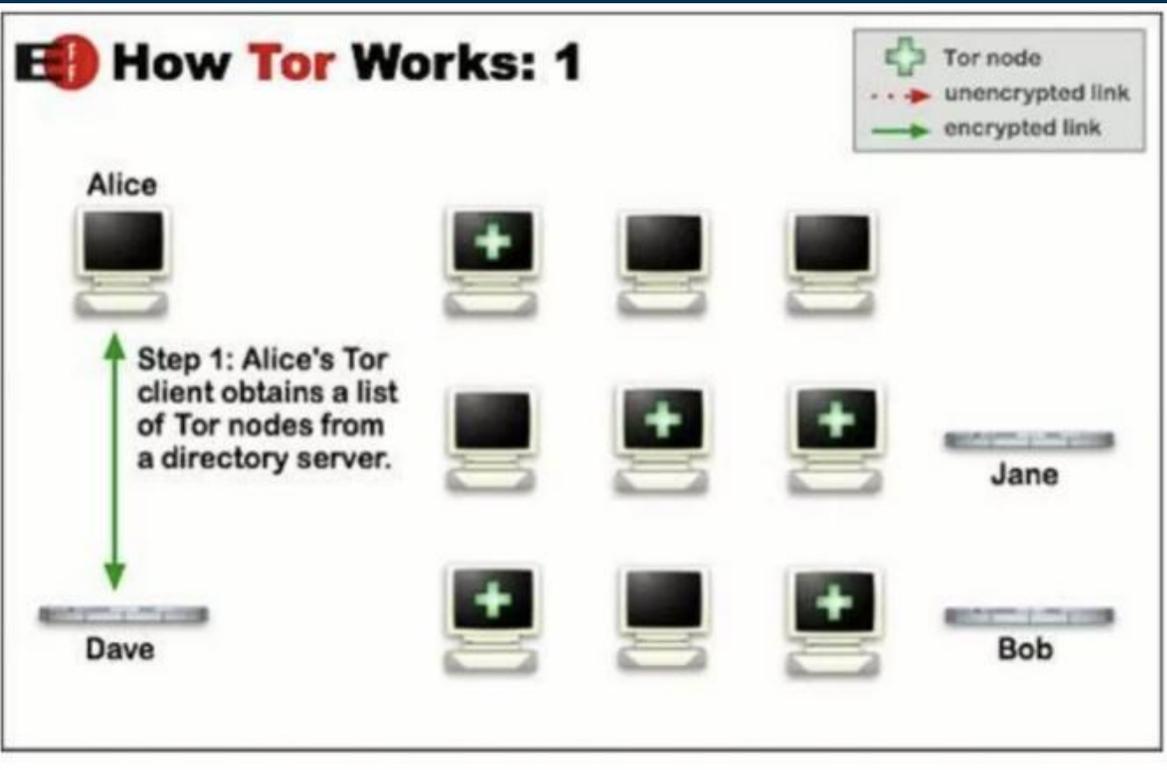
The exit relay is the final relay in a Tor circuit, the one that sends traffic out to its destination. The services Tor clients are connecting to (website, chat service, email provider, etc)

The screenshot shows a browser's Tor circuit configuration for Facebook, Inc. The circuit consists of the following nodes:

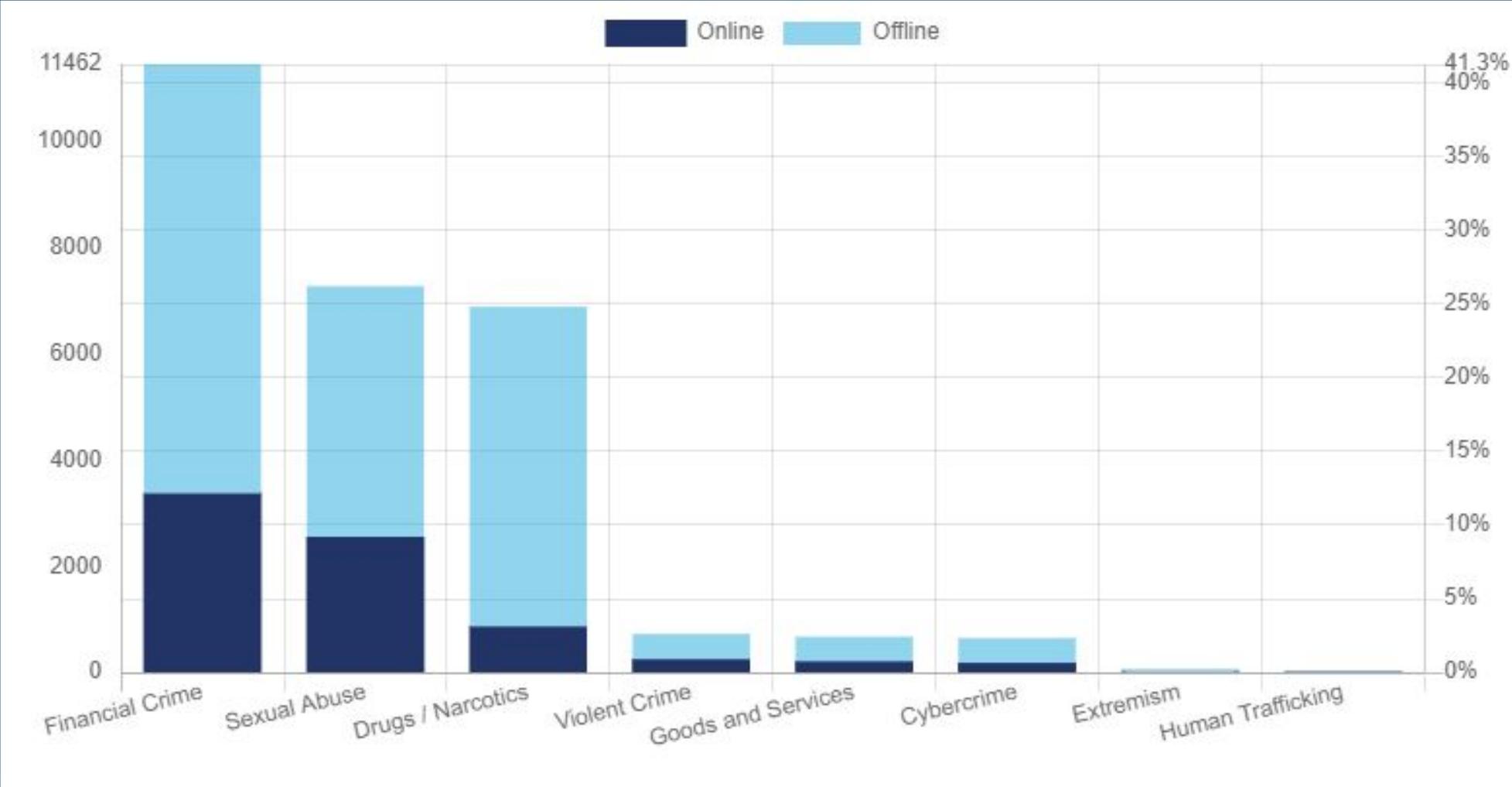
- This browser
- United Kingdom 95.154.221.3 **Guard**
- Slovakia 212.89.225.242
- Germany 217.79.184.72
- Relay
- Relay
- Relay
- facebookcorewwwi.onion

A yellow arrow points to the 'Guard' node. Below the circuit list is a blue button labeled 'New Circuit for this Site' and a note: 'Your Guard node may not change. Learn more'. Below that is a 'Permissions' section stating 'You have not granted this site any special permissions.' The background shows the Facebook sign-up page with fields for 'Email or Phone', 'Password', 'First name', 'Last name', 'Mobile number or email', 'New password', 'Birthday' (Aug 28, 1994), and 'Gender' (Female, Male, Custom), and a green 'Sign Up' button.

Working of Tor Browser

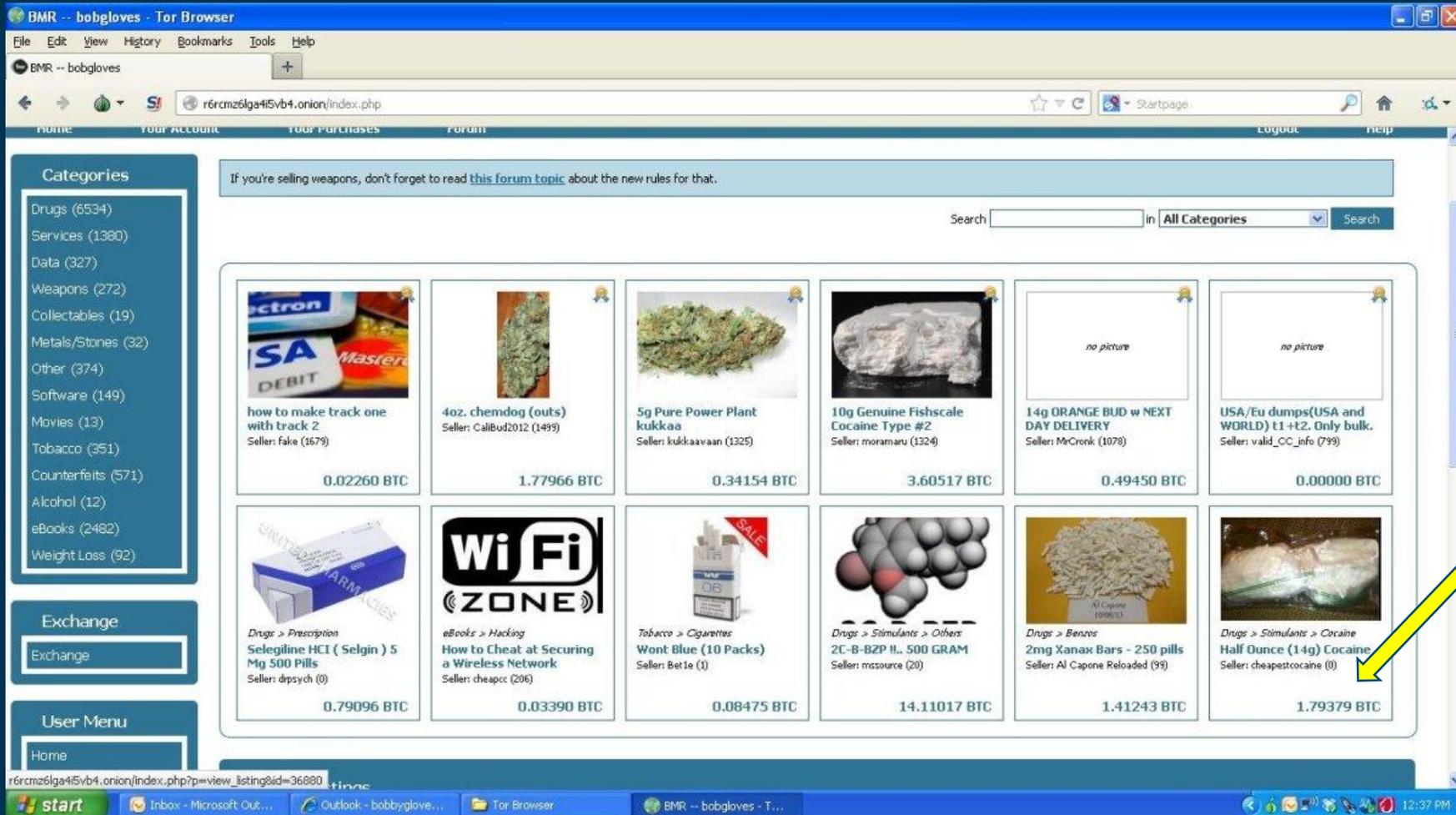


Dark Web Statistics



Source - CFLW Cyber Security

Usage of Bitcoin in Dark Web



Cryptocurrencies are popular on the dark web because they provide a convenient method of obfuscating identities and transaction details.



Recent cases

Info of 30 mn Indian railway users on sale on dark web: Report

Hackers claim there are a lot of govt emails and info about important people in leaked documents.

By **FORTUNEINDIA.COM**, Dec 28, 2022 | 3 min read



The Indian railways and its ticketing arm IRCTC have not issued any clarification on the hacker's claims so far.

Image: Indian Railways

News / Technology / News / Personal data of 40 crore Twitter users including Sundar Pichai, actor Salman Khan up for sale on dark web

Personal data of 40 crore Twitter users including Sundar Pichai, actor Salman Khan up for sale on dark web

The report reveals data of Twitter users put up for sale on the dark web containing personal details such as -- email, name, username, followers, and in some cases also phone numbers.

News / Cities / Lucknow / UP: Police arrest 4 in Lucknow for selling drugs through dark web in exchange for bitcoins

UP: Police arrest 4 in Lucknow for selling drugs through dark web in exchange for bitcoins

The Special Task Force of Uttar Pradesh Police arrested four men for supplying prohibited drugs in the international market through the dark web.



Santosh Kumar Sharma

Lucknow, UPDATED: Dec 25, 2022 23:16 IST





Safety and Precautions

Browse dark web for education/Learning purpose



Steer clear of
illegal websites



Don't enter your
actual email address



Use a legitimate
dark web browser



Avoid downloading
suspicious files



Use a
secure VPN



Download
antivirus software

Risks of the dark web for children

Lack of regulated content and users

Due to the anonymity of the dark web, it is harder for law enforcement to investigate cases of abuse

Explicit content

Children can access sites with indecent images, sites selling drugs and/or weapons. However, this is also the case for the surface web.

Online grooming

Sex offenders are more likely to approach children on the surface web than the dark web

However, sex offenders tend to use the dark web to meet online and discuss their strategy to take advantage of children

How do we protect our child from the dark web?

- Review privacy filters across all devices and apps.
- A Virtual Private Network (VPN) can be used to provide an additional layer of security to your child's online activity
- Build their critical thinking: help your child learn how to spot things that may not be what they seem and make smarter choices online. Inform them about the reasons someone using the dark web might want to remain anonymous and how that can cause them harm.

**Who monitors Dark
Web??**

Child Exploitation and Online Protection Command

- CEOP -the Child Exploitation and Online Protection Command — which is part of the National Crime Agency, uses the skills of its various experts, including forensic professionals and covert internet investigators, to track illegal activity on the dark web.
- CEOP gets over 1,300 reports a month, most of which come from industry groups such as the main internet service providers.
- An annual review (2011-2012) showed that over 400 children had been safeguarded as a result of their activity. This also led to 192 suspects being arrested.



PARENT ALERT!

The Dark Net
Endangers
Curious Kids

The Dark Web is NOT a fun place to visit

It is highly likely Dark Web users have reason to stay anonymous so these are not the type of people you want to 'hang out' with. Visiting comes with risks.

Dark Web Scanner Alert



We found one of your child's passwords on the dark web

To protect their account, change this password immediately. We can help you choose one that's strong and unique.

Email	username@gmail.com
Password4X ⓘ Found in data breach
Breach name	Facebook
Date found	Apr 21, 2021

What should you do?

1. Change their password for any accounts that use this username and password.
 - Use unique passwords for all of your accounts to limit your exposure if any are compromised.
 - Strong passwords are complex, with a mix of letters, numbers and symbols.
2. If there is a company or website listed above that you do not recognize, do not attempt to visit the website or sign in. They may have purchased your child's information on the dark web.

A Dark Web alert is a type of security notification. It informs you that your sensitive information — such as credit card numbers, phone numbers, login credentials, email accounts, home addresses, or other personally identifiable information (PII) — has surfaced somewhere on the Dark Web.

राष्ट्रीय साइबर अपराध रिपोर्टिंग पोर्टल National Cyber Crime Reporting Portal

