



Demystifying the Definitions of the Surface, Deep and Dark Web

Brief Bio

- Fadli B. Sidek
- Cyber Security Enthusiast
- Evening & Weekend Researcher
- Huge Interest in Cyber Conflicts, Cyber Threat Intelligence, Cyber Terrorism and Cyber Realities
- Jack of All Trades
- Spoken in BSides Las Vegas (U.S) & Vienna (Austria), DefCamp (Romania), Defcon (U.S), THC (India), HITB (SGP x 2)

Disclaimer

- ⦿ All views expressed in this presentation are my own and do not represent the opinions of any entity with which i have been, am now, or will be affiliated.

Agenda & Key Take away

- ② To illustrate the definitions of the 3 layers of the web with practical examples
- ② Audience/Viewers will
 - Understand the key differences between the 3 layers.
 - Question the use of the term/s in current and future publications.
 - Have the courage to explore.

Thou Shalt Google for Answers

is the deep web |



is the deep web **illegal**
is the deep web **dangerous**
is the deep web **illegal in singapore**
is the deep web **legal**
is the deep web **safe**
is the deep web **still active**
is the deep web **a real thing**
is the deep web **illegal in canada**
is the deep web **dead**
is the deep web **scary**

Misinformation

dark web



Investigating Deep Web Red Rooms

ScareTheater • 2.1M views • 2 years ago

Previous Video: bit.ly/23OYRfA Script Written By: Eric Wise (ScareTheater) Many rumors have arisen from the Deep Web. One of ...

Related



3 Scary Deep Web Stories That Actually Happened

Chills • 1.9M views • 1 year ago

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Related CC



THE DARK WEB

shane • 6.4M views • 1 year ago

New Podcast Episode: iTunes: <https://itunes.apple.com/us/podcast/shane-and-friends/id658136421?mt=2> SoundCloud: ...

Related



Does the Intellectual Dark Web Really Want "Debate?"

David Pakman Show • 3.9K views • 4 hours ago

Audience Question: Do free speech warriors and members of the Intellectual Dark Web actually want to debate? -Become a ...

New



10 Horror Stories from the Deep Web

MatthewSantoro • 751K views • 3 weeks ago

Open the description below for my podcast, social links, PO box address and more! Consider subscribing if you enjoyed this!

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Negative “Experiences”



Posted by u/thedamaged 1 year ago

1.1k



Please, stay away from the deep web.

I had always been aware of the deep web. You hear the craziest, most fucked up stories from people who have the balls to explore it. Websites that involve human experimentation, hiring a hitman, and even watching people through their

Posted by u/Littlefootbox 3 years ago

I thought the Deepweb was a joke... Please help me

I'm so scared, I don't know what to do. It all started a few days ago, now I'm sitting alone in my basement praying to god whatever is outside will just turn around and leave me alone.

On July 25th I accessed the Deepweb for the first time after downloading the Tor browser and toying with the idea, but being far too much of a pansy to actually go through with it. On that day, though, I manned up and went for it. What's the harm, right?

Posted by u/TASdiablo 2 years ago

Why I Left The Deep Web nsfw

-- DISCLAIMER: This is not a ghost story or creepypasta that most of you are here to read. , please do not read this post if you are easily disturbed. --

In order to give context to this post, let me explain who I am and why the fuck I am bothering sharing this information. 22 year old male, just finished my masters at university. I was about 12 when I was given permission to start using my dad's spare laptop, since his work g... getting used to tech early on.

Why You Should Avoid The Deep Web

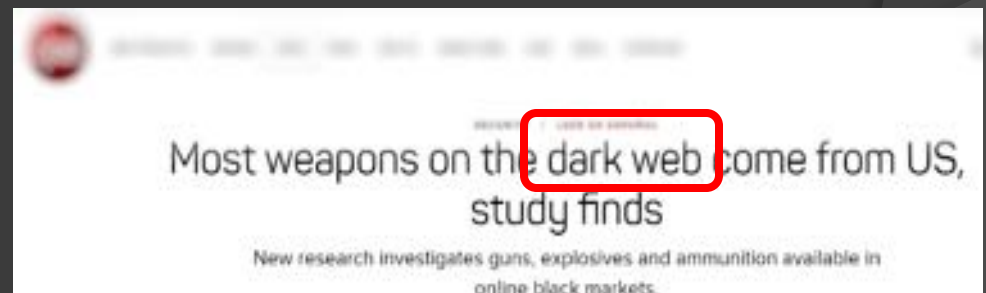
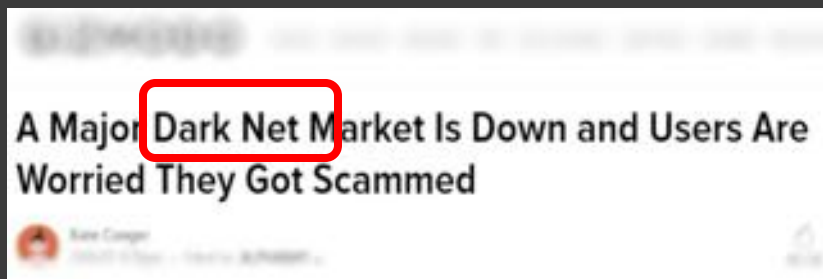
Posted on November 2, 2015

It is said that the surface web, consisting of sites we can visit regularly such as Facebook, Twitter, Gmail and, well, this one, is only 0.03% of the entire Internet. The rest consists of the Deep Web – sites that are not listed by Google. We're talking about databases of various companies, communication hubs, e-mail exchanges, as well as some darker stuff. When browsing the Web

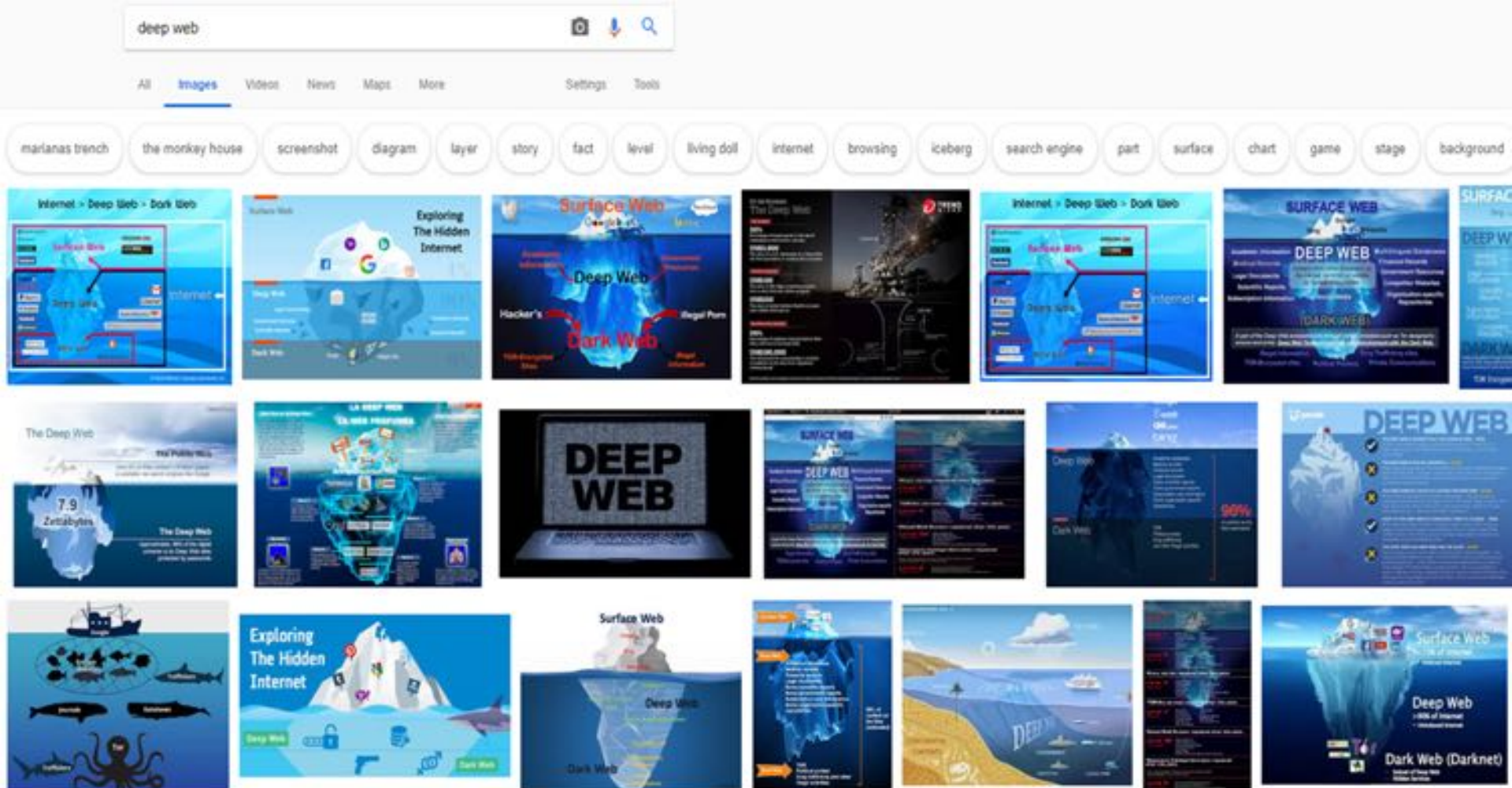
Fear



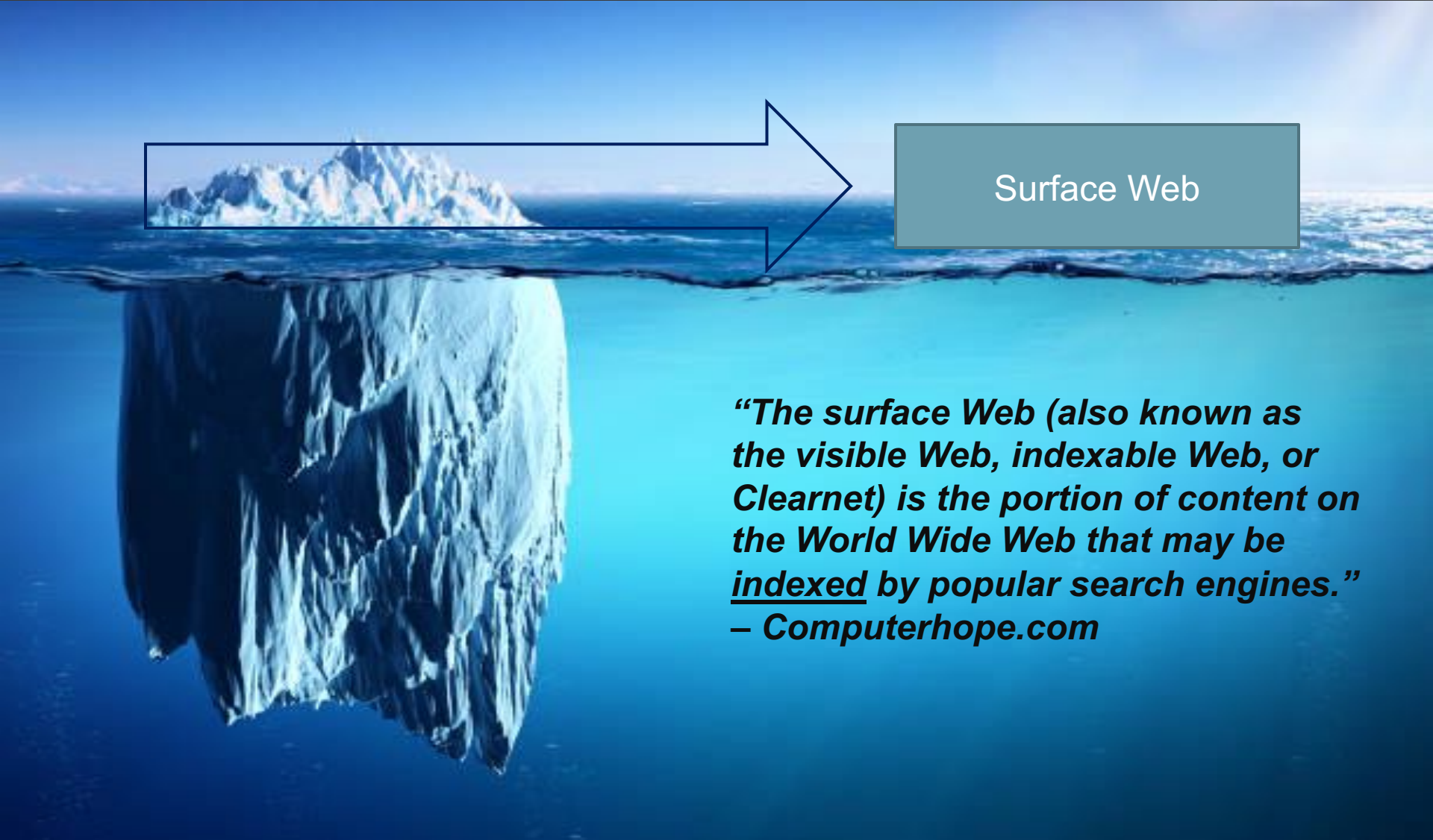
In the News



The Famous Iceberg...



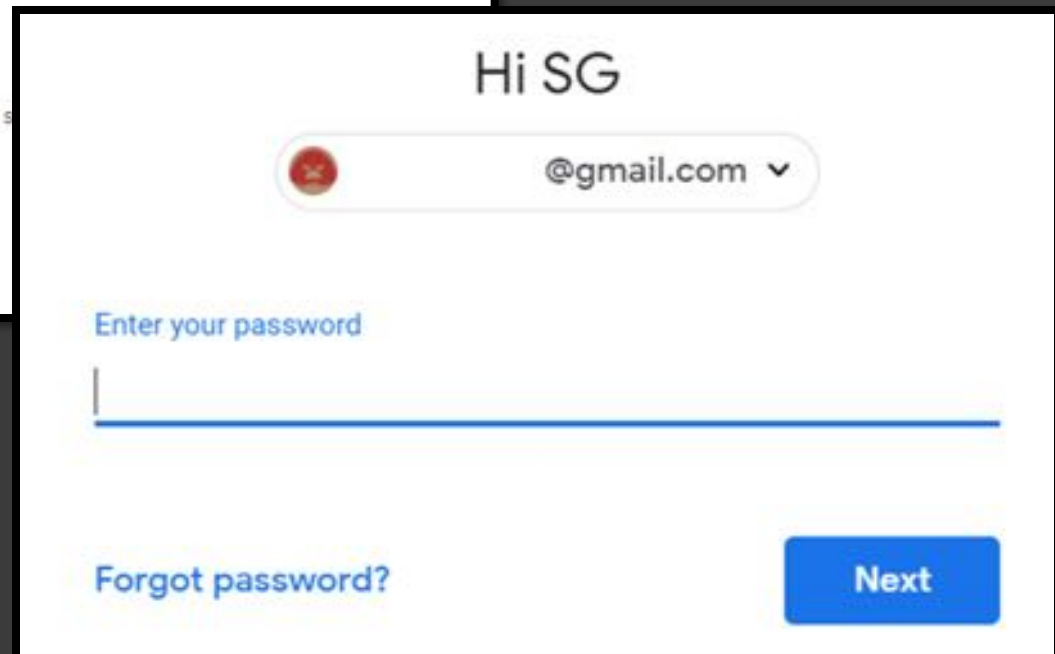
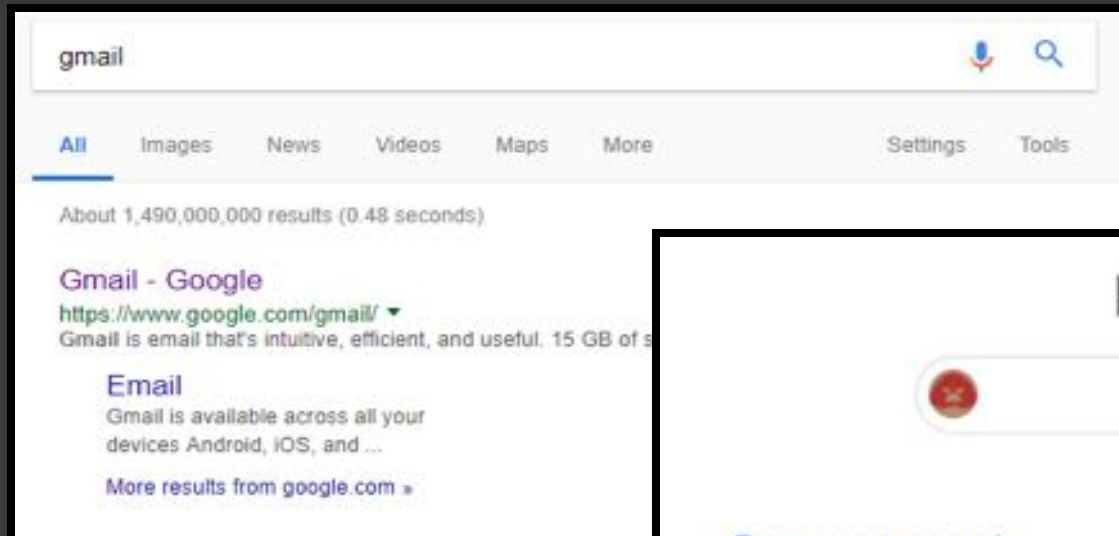
Definition – Surface Web



Surface Web

“The surface Web (also known as the visible Web, indexable Web, or Clearnet) is the portion of content on the World Wide Web that may be indexed by popular search engines.”
– Computerhope.com

Definition – Surface Web – Example



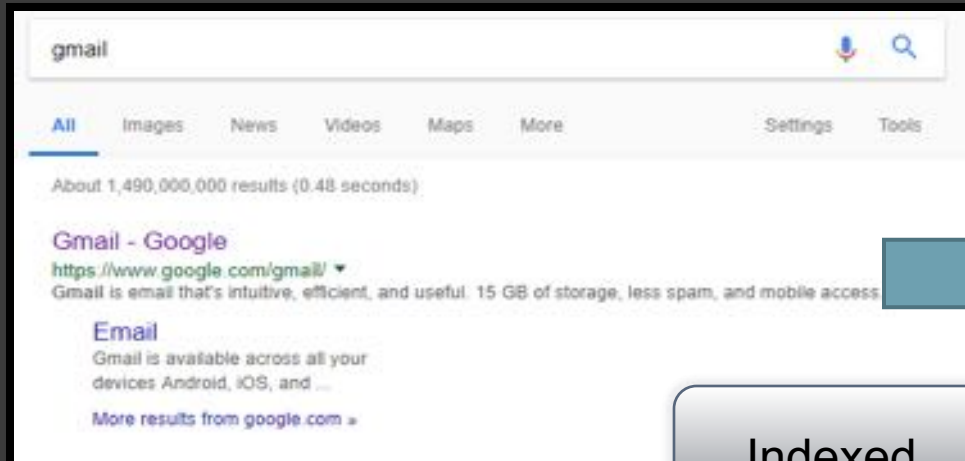
Definition – Deep Web



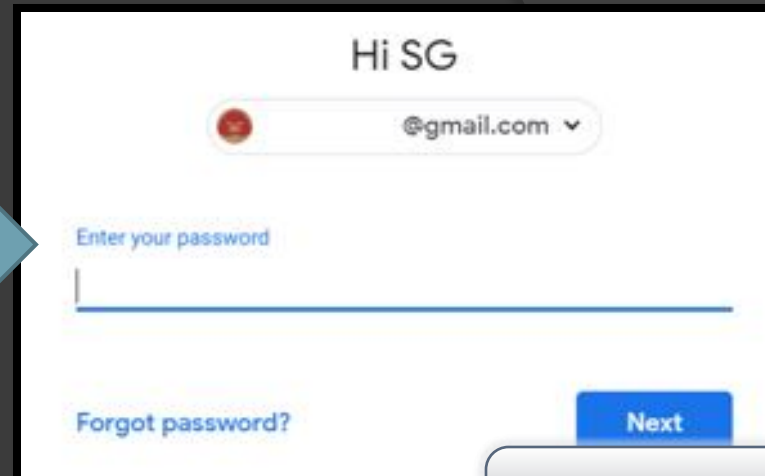
Deep Web

“The Deep Web, sometimes called the invisible Web, is the large part of the Internet that is inaccessible to conventional search engines.” – Techtarget.com

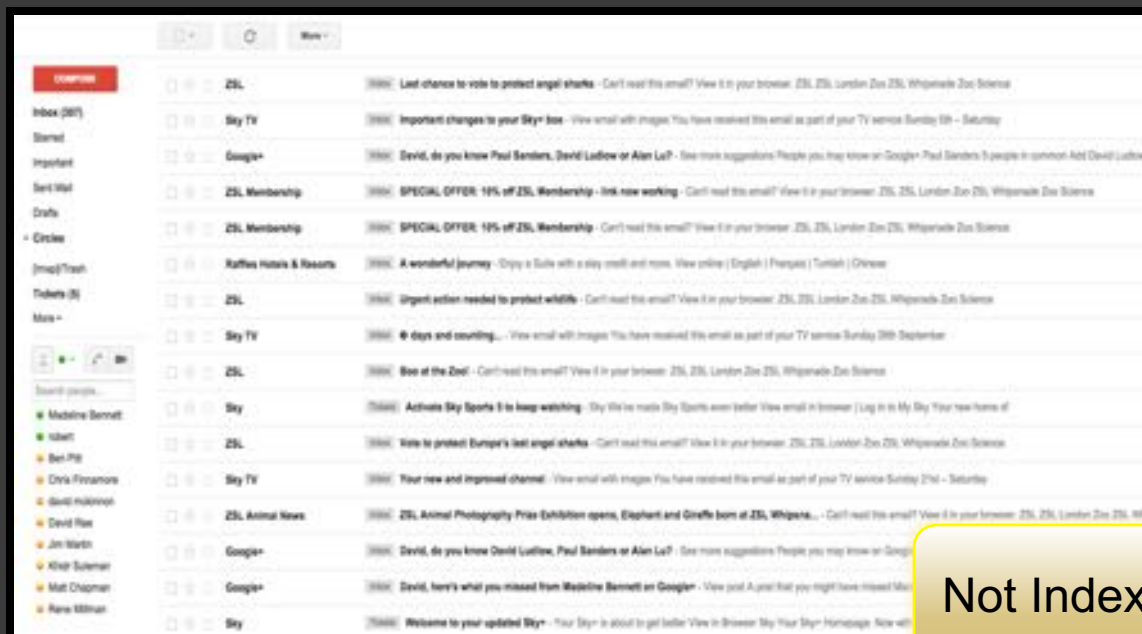
Definition – Deep Web – Example



Indexed

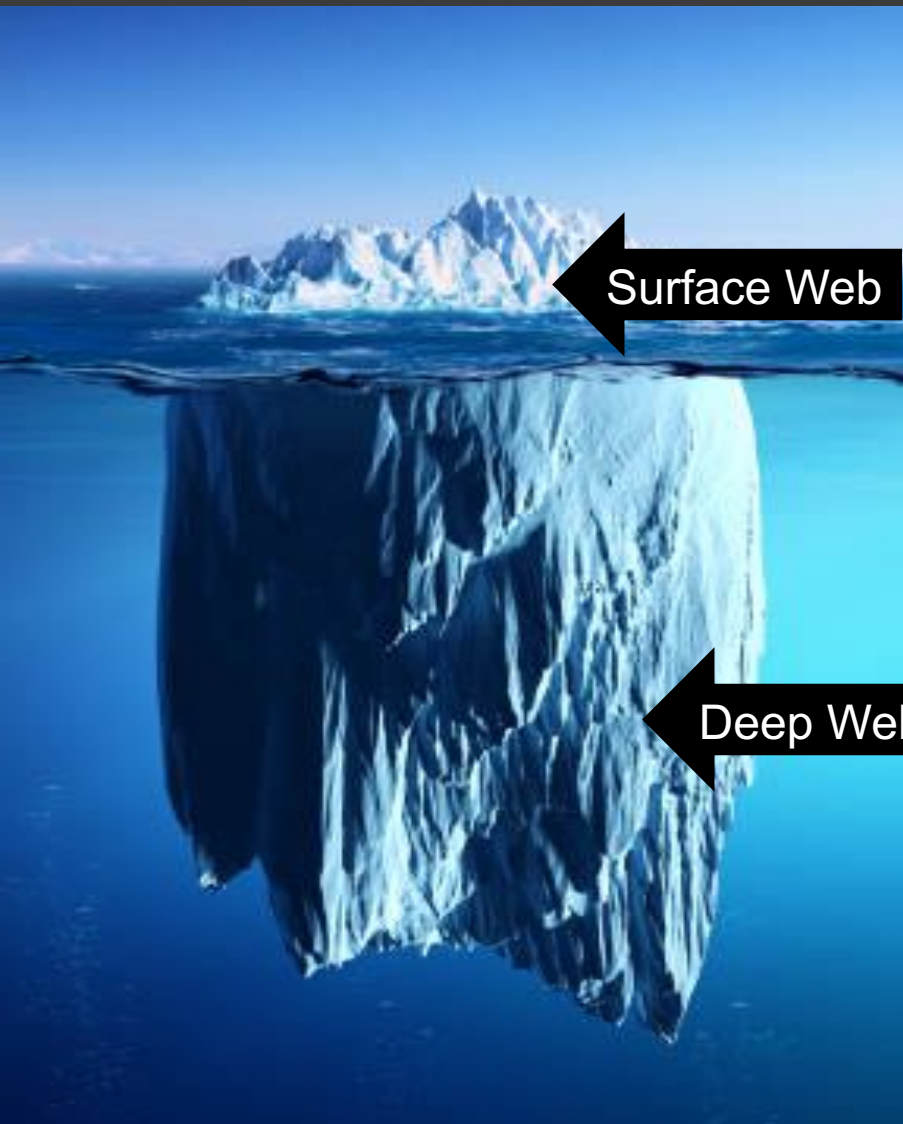


Indexed

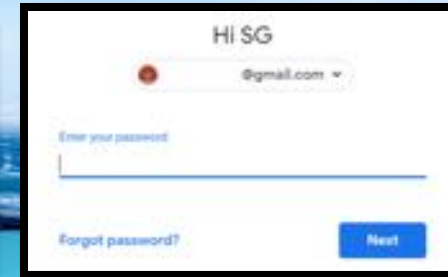
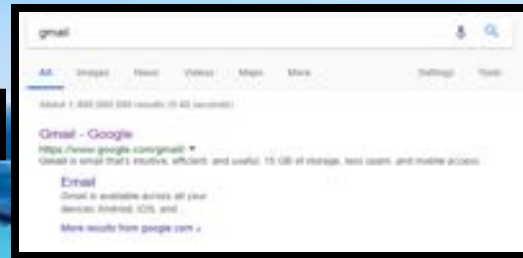


Not Indexed

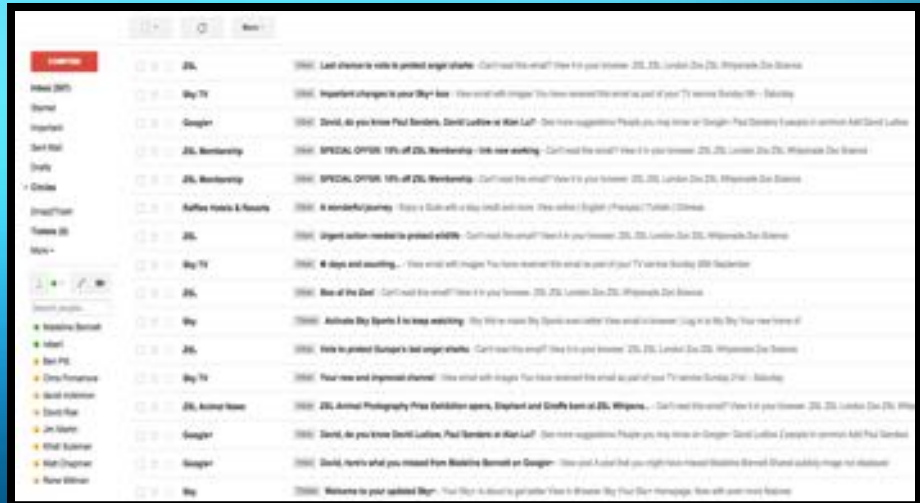
Applying the Iceberg concept



Surface Web



Deep Web



More Deep Web Examples

- ❑ Government/Citizens Portal
- ❑ Properly Protected Databases
- ❑ Cloud Storages
- ❑ Password protected websites/forums
- ❑ Banking Accounts
- ❑ Etc..



Non-Public Posts

Deep Web - Size



SANS Institute InfoSec Reading Room

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Under The Ocean of the Internet - The Deep Web

The Internet was a revolutionary invention, and its use continues to evolve. People around the world use the Internet every day for things such as social media, shopping, email, reading news, and much more. However, this only makes up a very small piece of the Internet, and the rest is filled by an area called The Deep Web.

1.4.2 The Deep Web

The Deep Web is an area of the Internet that is not indexable by search engines and not linked to pages on the Surface Web. Other names for this area of the Internet are Deep Net, Hidden Web, or Invisible Web ("Deep web", 2016). This part of the Internet makes up 96% of it, which is obviously significantly larger than the Surface Web. The Deep Web is 500 times larger than the Surface Web (Epstein, 2014).

Deep Web – What makes it huge?



Demystifying the misconception of the Deep Web/Invisible Web



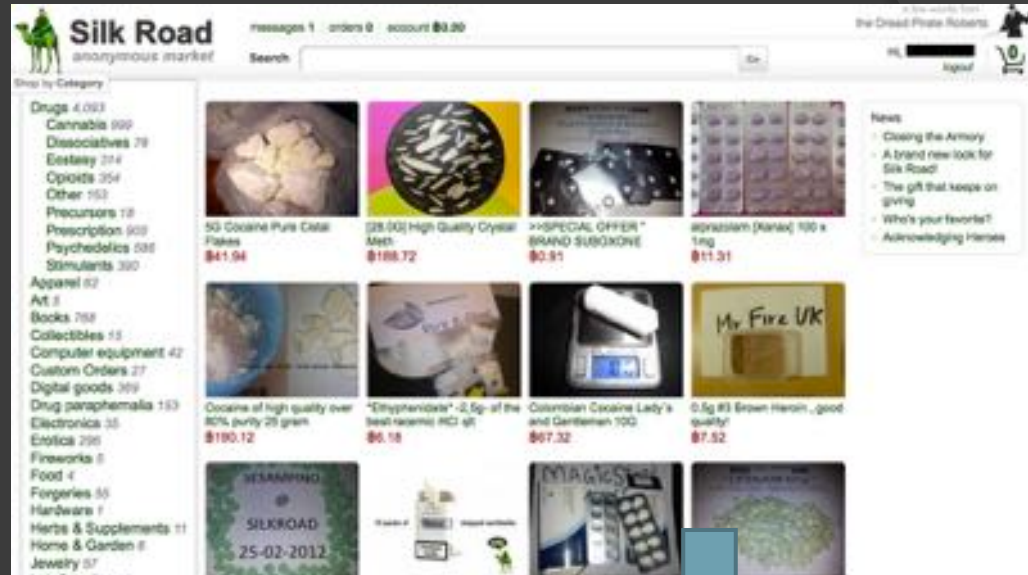
Definition – Dark Web



Dark Web

“The Dark Web is classified as a small portion (subset) of the Deep Web that has been intentionally hidden and is inaccessible through standard web browsers. The most famous content that resides on the Dark Web is found in the TOR network (via the TOR browser).” – Brightplanet.com

Dark Web – The 2013 Arrest that made it Famous



Silk Road's Dread Pirate Roberts sentenced to life in prison



Dark Activities from the Dark Web in the Media

'OUT OF CONTROL' Senior NHS doctor
'tried to hire Chechen hitmen off dark
web to kill his financial adviser who
he wrongly blamed for losing £300k'

**FBI: Dark web is like a 'drug
dealer on the corner in the
virtual world'**

**Dark web vendors are selling remote
access to corporate PCs for as little as \$3**

**This year's Jewish center bomb threats were part of
a dark web threat-for-hire business**

Dark Web – First Case of Singaporean Arrest in 2017

SINGAPORE

Man jailed for cheating via dark web

Dark Web – Researchers Findings

The darkness online

Cryptopolitik and the Darknet

Daniel Moore & Thomas Rid

Pages 7-38 | Published online: 01 Feb 2016

Dark web is mostly illegal, say researchers

“The results suggest that the most common uses for websites on Tor hidden services are criminal, including drugs, illicit finance and pornography involving violence, children and animals.”

Dark Web - Size

There Are Only 30,000 Websites on the Dark Web

Most of them are in English and contain illegal content

Apr 8, 2016 15:10 GMT - By Catalin Cimpanu

With 71 percent of people responding in a recent Ipsos poll saying that the Dark Web should be shut down, it may be a good idea to learn and understand what we can find in this hidden and hard-to-reach part of the Internet before we form our own opinion.

TECH CYBERSECURITY

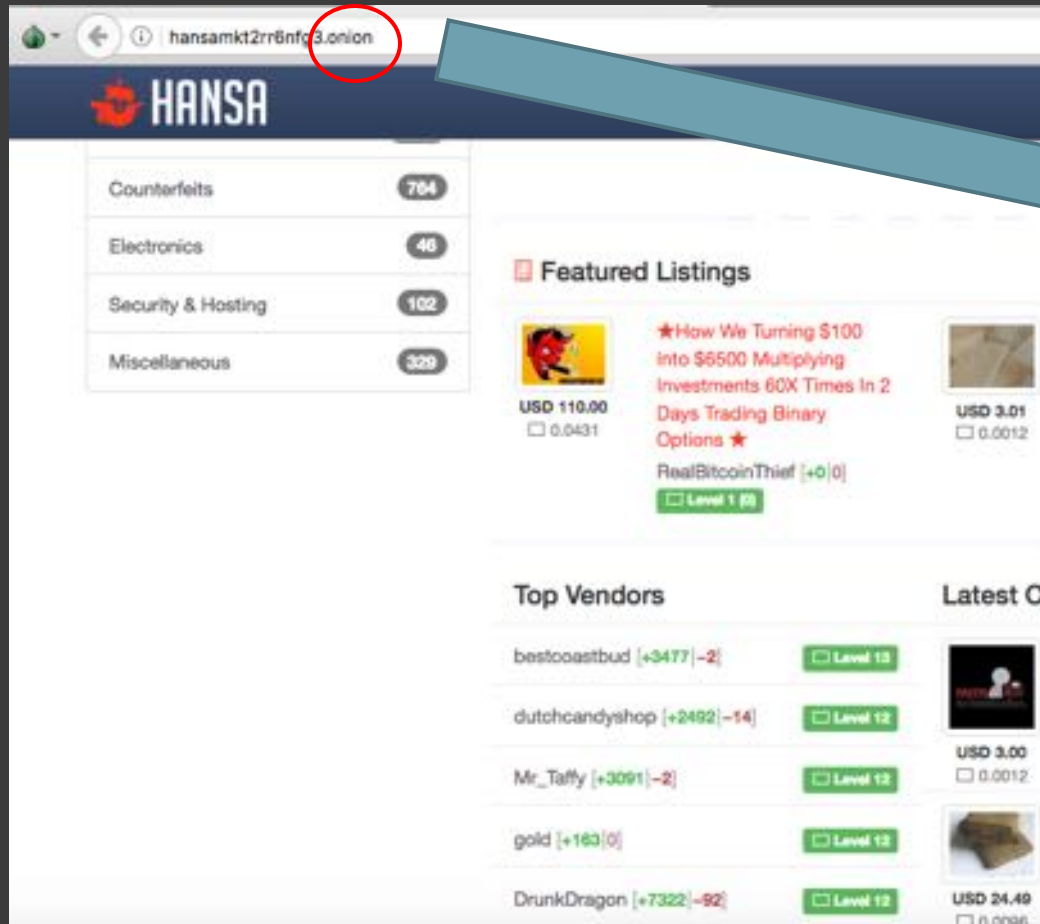
An Anonymous group just took down a fifth of the dark web

By Russell Brandom | @russellbrandom | Feb 3, 2017, 11:30am EST

Anonymous Hacker took down over 10,000 Dark Web Sites; Leaked User Database

February 05, 2017 Swati Khandelwal

One thing in common



TOR Network

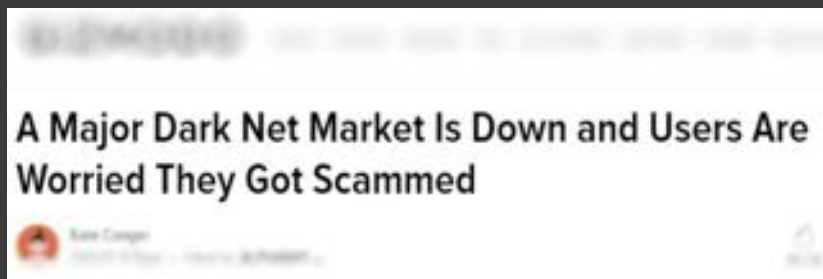
Why is it called “Dark” web

- Hidden criminals services accessed via the TOR network
- Media/Journalists/Reporters publications on the illegal activities on the network
- Researchers reports and findings mainly on the cyber-crime related hidden services

Why is it called “Dark” web

- ◎ The TOR network has been given the impression to be the Dark Side of the Internet because of the hidden mostly “Dark” activities reported by the media and researchers hence coining the term “Dark” web

Let's be specific: Deep Web or Dark Web?



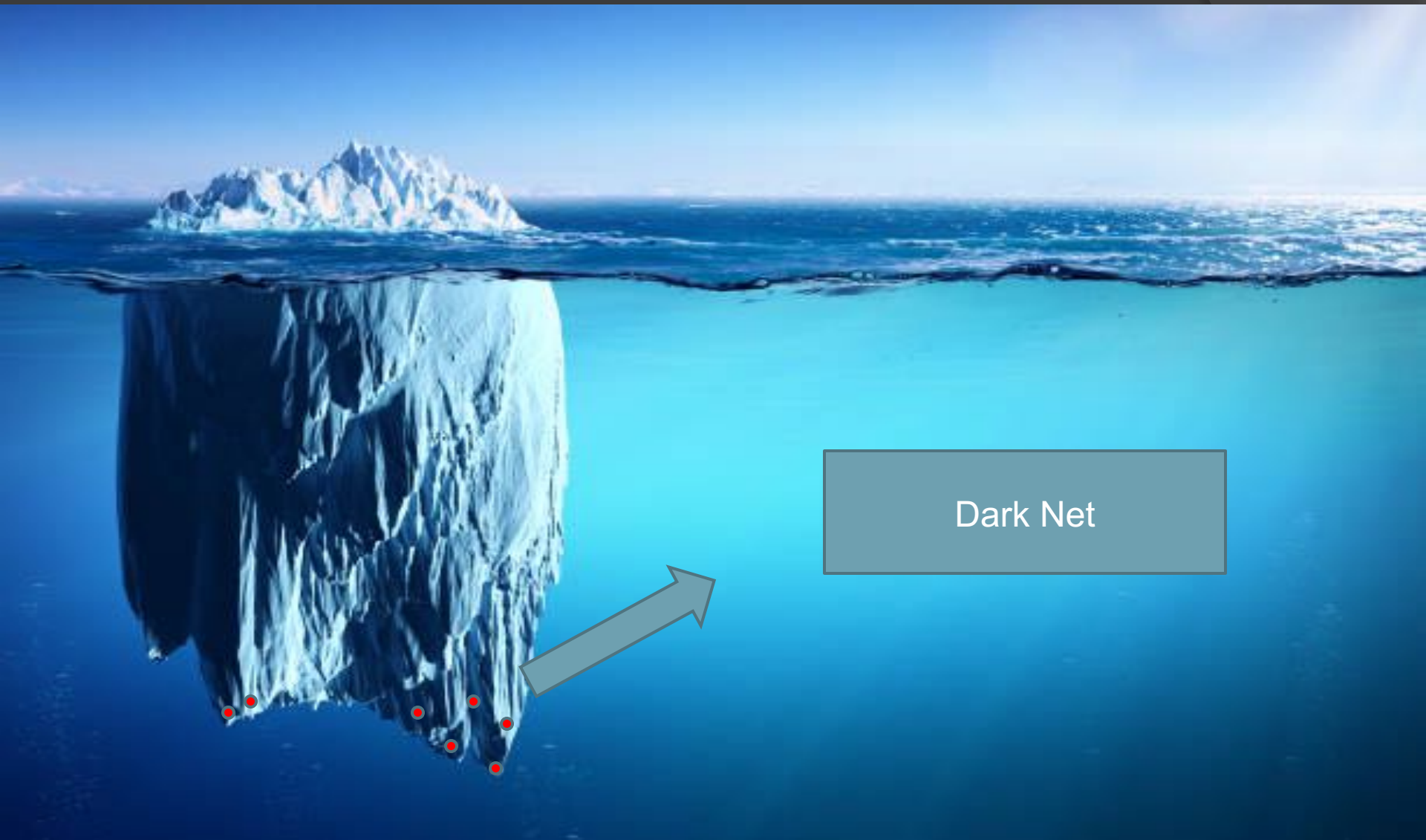
Summary

Deep Web	Dark Web
Large in size (96%-99% of the entire internet)	Very Small in size (30K sites. Maybe slightly more or less)
Accessible via standard web browsers	Requires TOR browser (for anonymity & encrypted communication)
.com, .org, .net, .gov, ...etc	.onion
Sites are public (Most unindexed content can be accessed from the indexed content)	Most sites are hidden
Mostly safe	Mostly illegal (as per researchers findings)



Dark Net

Dark Net - Definition



Dark Net

Dark Net – Defined in the Past

The Darknet and the Future of Content Distribution

Peter Biddle, Paul England, Marcus Peinado, and Bryan Willman

2002 ACM Workshop on Digital Rights Management

November 18, 2002

Originally published at <http://www.crypto.stanford.edu/DRM2002/prog.html>

- *The darknet – a collection of networks and technologies used to share digital content.*
- *The darknet is not a separate physical network but an application and protocol layer riding on existing networks.*
- *Examples of darknets are peer-to-peer file sharing, CD and DVD copying, and key or password sharing on email and newsgroups.*

Dark Nets of the past....

- ❑ Napster
- ❑ eDonkey
- ❑ LimeWire
- ❑ KaZaa
- ❑ Perfect Dark
- ❑ +++ p2p programs

What constitute a Dark Net?

Edith Cowan University
Research Online

Australian Information Security Management
Conference

Conferences, Symposia and Campus Events

2013

Determining What Characteristics Constitute a Darknet

Symon Aked

Edith Cowan University, sec.au.2013@tanstaafl.com.au

Christopher Bolan

Edith Cowan University, c.bolan@ecu.edu.au

Murray Brand

Edith Cowan University, m.brand@ecu.edu.au

High level comparison

Table 1 – Comparison of Clearnet and Darknet attributes

	Clearnet	Darknets
Encryption	Sometimes	Always
Anonymity	Users traceable	Users anonymous
Routing	Based on capacity, cost and geography	Based on anonymity, stability and capacity
Applications	Many	Few
Visibility	Obvious	Hidden

“Darknet has evolved over time to refer collectively to all encrypted communication networks that allow anonymous participation, and do so using a de-centralised, peer-to-peer network topology, running inside the Internet.”

- <http://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1151&context=ism>

Known Dark Nets (examples)

- ❑ TOR Network (2002)
- ❑ FreeNet (2000)
- ❑ i2P (2003)
- ❑ ZeroNet (2016)
- ❑ +++++ others

Encrypted | Anonymous | Few Applications | Hidden | De-centralized and/or Distributed

Dark Net: TOR's Dark Web

The screenshot shows a web browser window with the address bar displaying `zqkthi4fecvo6rl.onion/wiki/index.php/Main_Page`. The page title is "The Hidden Wiki". The main content area is titled "Main Page" and includes a welcome message, editor's picks, volunteer information, introduction points, and financial services. A sidebar on the right contains a table of contents.

Main Page

Welcome to The Hidden Wiki New hidden wiki url 2018 <http://zqkthi4fecvo6rl.onion> Add it to bookmarks and spread it!!!!

Editor's picks

Pick a random page from the article index and replace one of these slots with it:

1. [The Matrix](#) - Very nice to read.
2. [How to Exit the Matrix](#) - Learn how to Protect yourself and your rights, online and off.
3. [Verifying PGP signatures](#) - A short and simple how-to guide.
4. [In Praise Of Hawala](#) - Anonymous informal value transfer system.
5. [Terrific Strategies To Apply A Social media Marketing Approach](#) - Great tips for the internet marketer.

Volunteer

Here are the six different things that you can help us out with:

1. Plunder other hidden service lists for links and place them here!
2. File the [Snap@BSIndex](#) links wherever they go.
3. Set external links to HTTPS where available, good certificate, and same content.
4. Care to start recording onionland's history? Check out [Onionland's Museum](#).
5. Perform Dead Services Duties.
6. Remove CP shitness.

Introduction Points

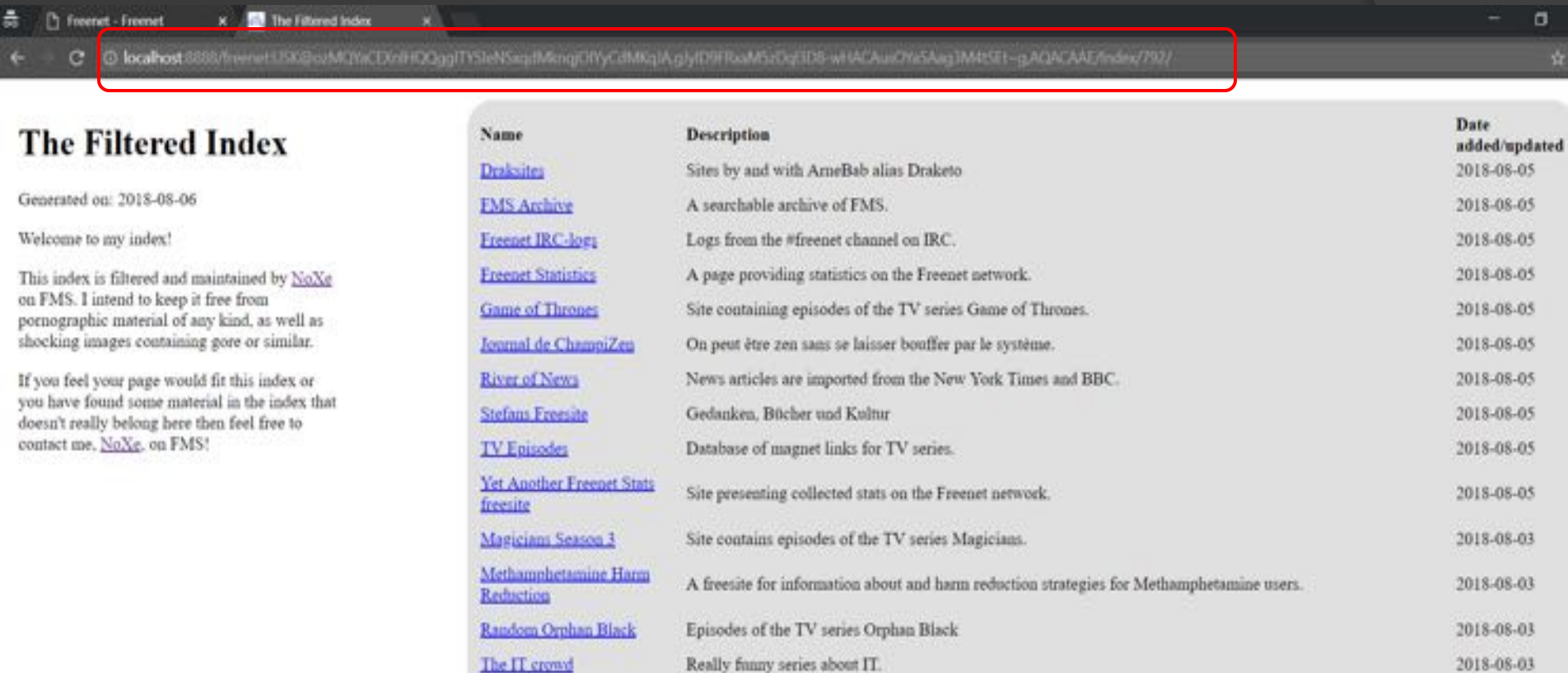
- [Ahmia.fi](#) - Clearnet search engine for Tor Hidden Services.
- [DuckDuckGo](#) - A Hidden Service that searches the clearnet.
- [Torlinks](#) - TorLinks is a moderated replacement for The Hidden Wiki.
- [Torch](#) - Tor Search Engine. Claims to index around 1.1 Million pages.
- [The Hidden Wiki](#) - A mirror of the Hidden Wiki. 2 days old users can edit the main page. **[redirect]**
- [Not Evil](#) is a Tor search engine which only indexes hidden services on Tor.
- [Self-defense Surveillance Guide](#) Tips, Tools and How-tos for Safer Online Communications (clearnet).

Financial Services

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 - 20.7 Japanese / 日本語

Dark Net: FreeNet



The Filtered Index

Generated on: 2018-08-06

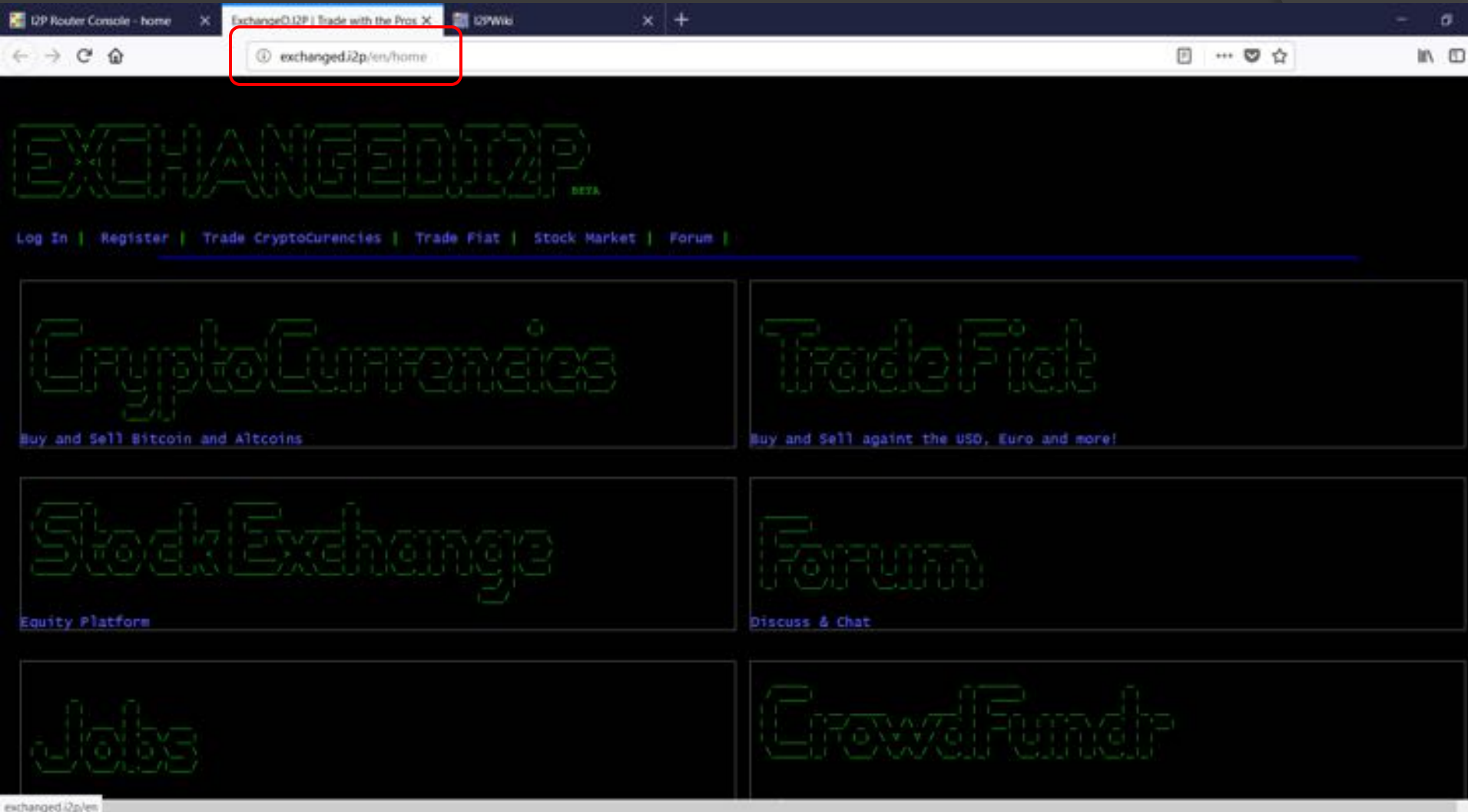
Welcome to my index!

This index is filtered and maintained by [NoXe](#) on FMS. I intend to keep it free from pornographic material of any kind, as well as shocking images containing gore or similar.

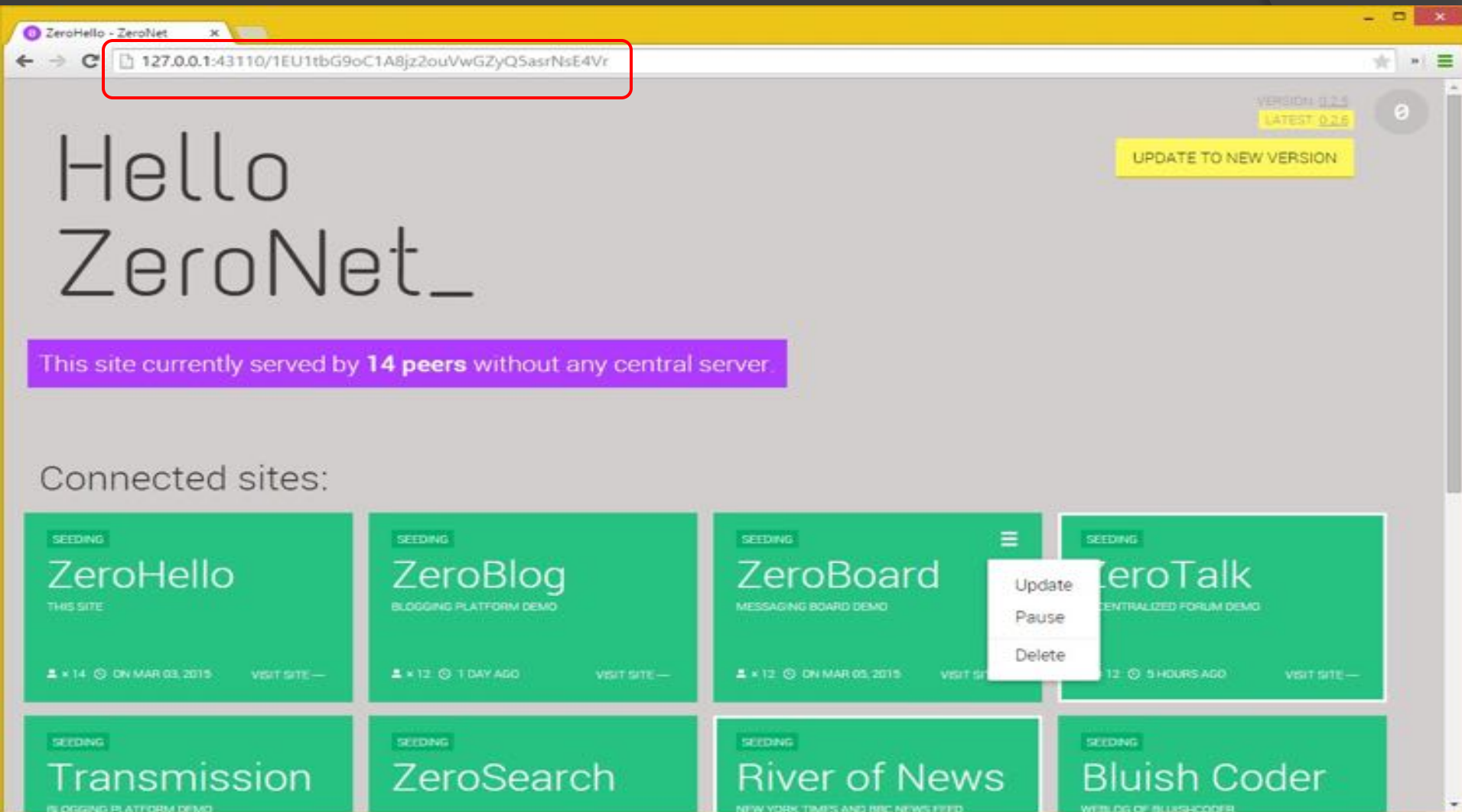
If you feel your page would fit this index or you have found some material in the index that doesn't really belong here then feel free to contact me, [NoXe](#), on FMS!

Name	Description	Date added/updated
Draksites	Sites by and with ArneBab alias Draketo	2018-08-05
FMS Archive	A searchable archive of FMS.	2018-08-05
Freenet IRC logs	Logs from the #freenet channel on IRC.	2018-08-05
Freenet Statistics	A page providing statistics on the Freenet network.	2018-08-05
Game of Thrones	Site containing episodes of the TV series Game of Thrones.	2018-08-05
Journal de ChampiZen	On peut être zen sans se laisser bouffer par le système.	2018-08-05
River of News	News articles are imported from the New York Times and BBC.	2018-08-05
Stefans Freesite	Gedanken, Bücher und Kultur	2018-08-05
TV Episodes	Database of magnet links for TV series.	2018-08-05
Yet Another Freenet Stats freesite	Site presenting collected stats on the Freenet network.	2018-08-05
Magicians Season 3	Site contains episodes of the TV series Magicians.	2018-08-03
Methamphetamine Harm Reduction	A freesite for information about and harm reduction strategies for Methamphetamine users.	2018-08-03
Random Orphan Black	Episodes of the TV series Orphan Black	2018-08-03
The IT crowd	Really funny series about IT.	2018-08-03

Dark Net: i2P



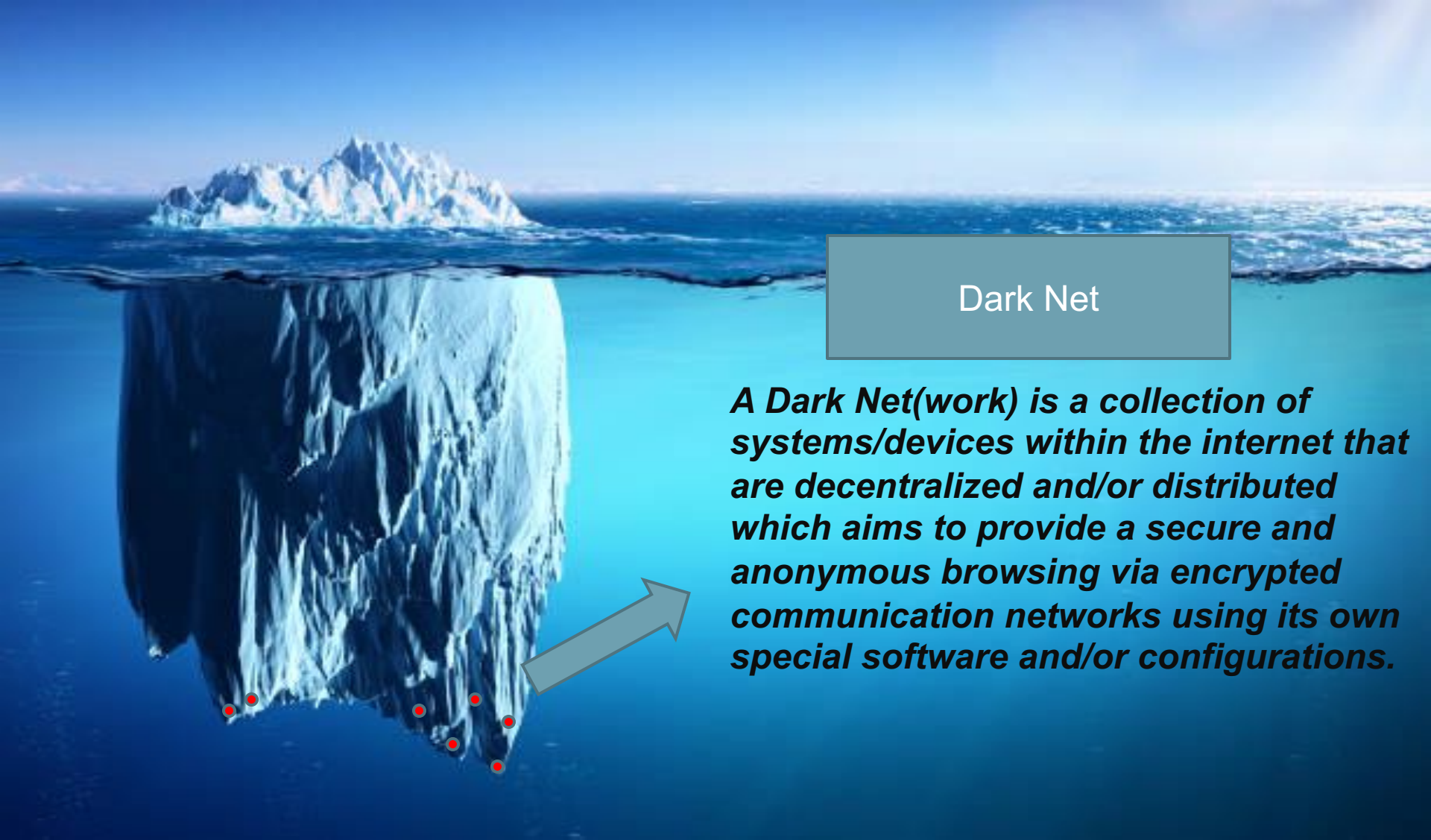
Dark Net: ZeroNet



Summary: Dark Web vs. Dark Net

- ◉ Dark Web \neq Dark Net
- ◉ TOR Net(work) is one of the known Dark Nets
- ◉ Using TOR browser \neq Accessing the Dark Web
- ◉ Dark Web is associated to the hidden dark services hosted and accessible from the TOR network & does not in any way represent the TOR network

Dark Net - Definition



Dark Net

A Dark Net(work) is a collection of systems/devices within the internet that are decentralized and/or distributed which aims to provide a secure and anonymous browsing via encrypted communication networks using its own special software and/or configurations.

Let's be specific: Dark Net or Dark Web?

EUROPE

German Couple Convicted Of Selling Child On The **Darknet**

August 7, 2018 · 11:01 AM ET

Online drug dealers fleeing **dark net** markets

After a police operation last year shut down the two largest dark net markets, cyber criminals are moving elsewhere.

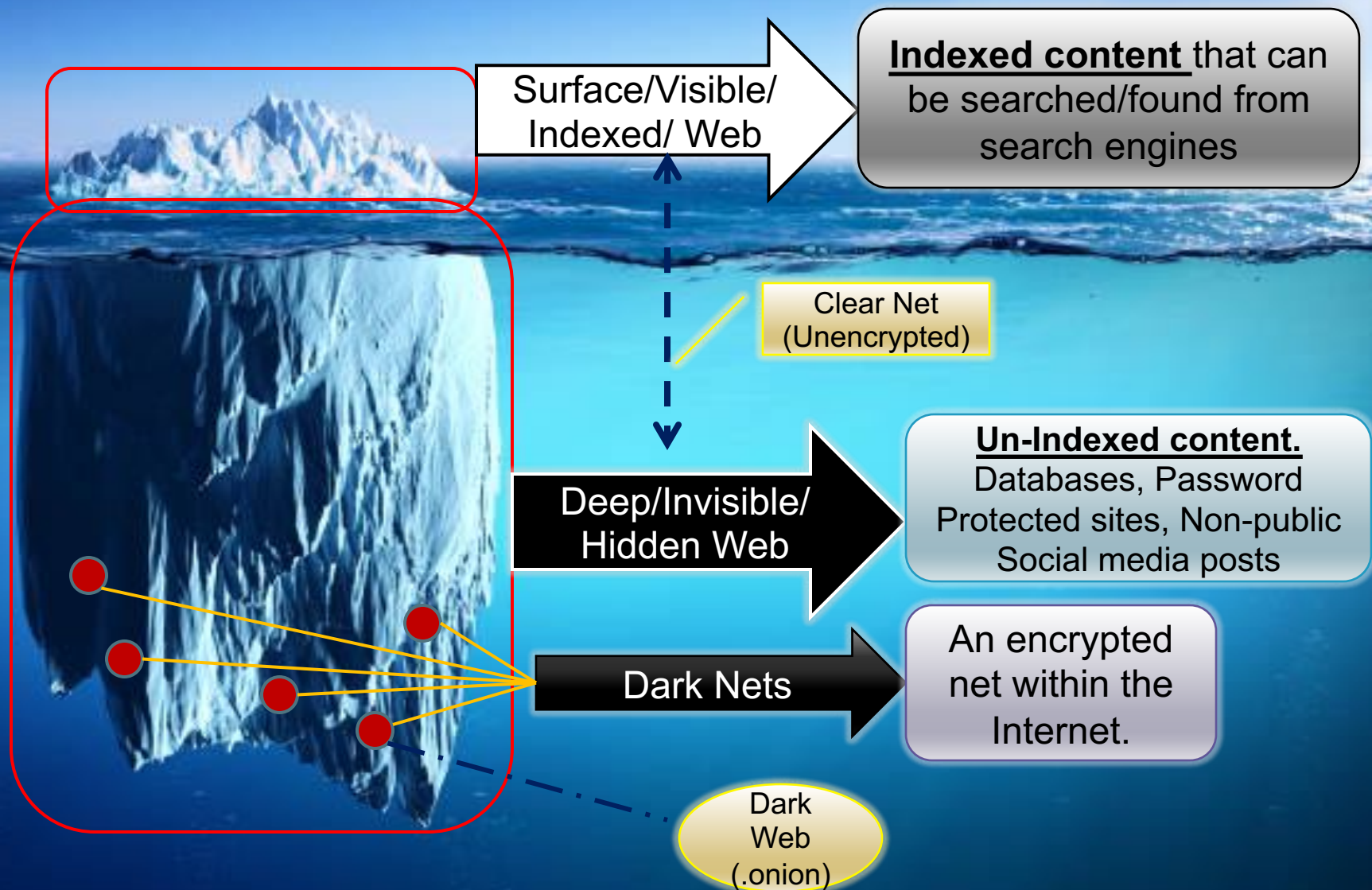
HACKERS · June 29th

Massive DOJ operation nabs illicit **Darknet** vendors

NEWS

Alphabay and Hansa **darknet** markets shut down after international police operation

Putting it all together



Final Thoughts

Q&A