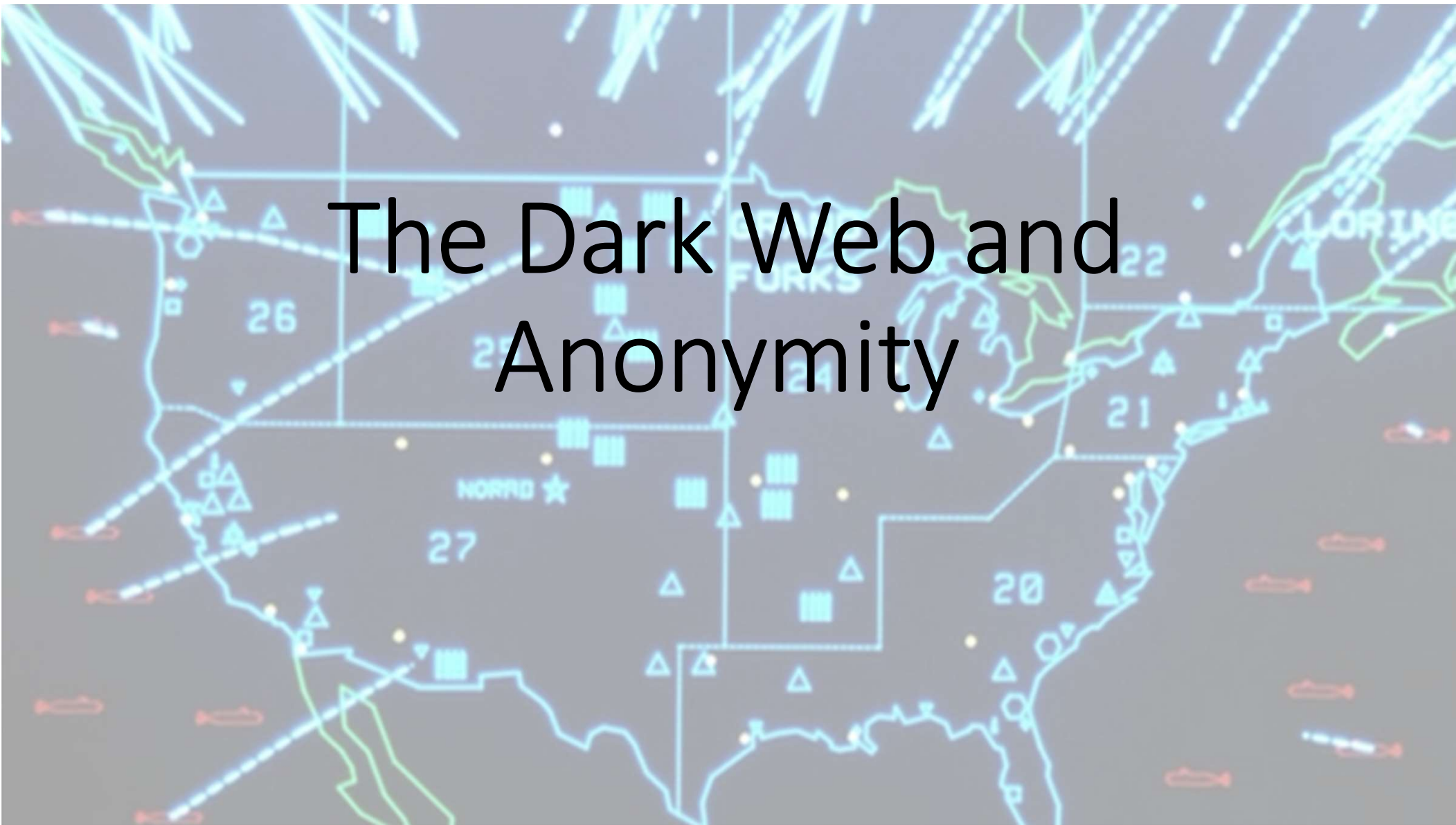


The Dark Web and Anonymity



Who's Speaking?



Brian Pichman

- President & Chief Education Officer, LibChalk
- Director of Strategic Innovation, Evolve Project
- Manager of the Personal Support Center, Collegis Education

Brian is a presenter, a collaborator, an innovator, and a technology expert/trend spotter. Brian is able to provide technology audits, make library design recommendations, and provide solutions to problems all with an effective cost strategy.



Justin Denton

- President & Chief Innovation Officer, Libchalk
- Director of the Personal Support Center, Collegis Education

Justin Denton is a driven new technology adopter that utilizes his vast experience within the technology industry to implement and manage solutions based environments. Driven by the passion to learn Justin also co-focuses on developmental learning activities through his efforts as Faculty Member and Leader.

The Dark Web and Privacy

- The term the dark web is often used - but what does it mean? While its often associated with the under-belly of the Internet. It goes beyond the under-belly and can provide resources to protect your users privacy.
 - In this session, we will explore:
 - The origins of the Dark Web
 - Anonymous Browsing tools like the Tor Project
 - Navigating the Dark Web - Including the pitfalls
 - Explore tools hackers use to exploit companies and us
- Whether you plan to implement new tools at your library or educate your users - this workshop will help you become knowledgeable on the Dark Web.

Disclaimer

- Technology is inherently neutral.
 - It can be used by bad people to bad things
 - It can be used by good people to do good things.
- This presentation is provided for informational and technical training purposes only.
- It is intended to familiarize you with some of the methods, tools, and services used to provide Internet anonymity.
- It may, at times, “pull back the veil” and offer a look at the other side of the Internet.
- We do not encourage or support using the information presented in this session for illegal or unethical purposes.

Agenda

- WHAT? Dial-up!
- How DEEP can you get?
- Cloak of Invisibility
- How to navigate and prevent wrong turns
- Tools to become a hacker

HELLO

A STRANGE GAME.
THE ONLY WINNING MOVE IS
NOT TO PLAY.

HOW ABOUT A NICE GAME OF CHESS?

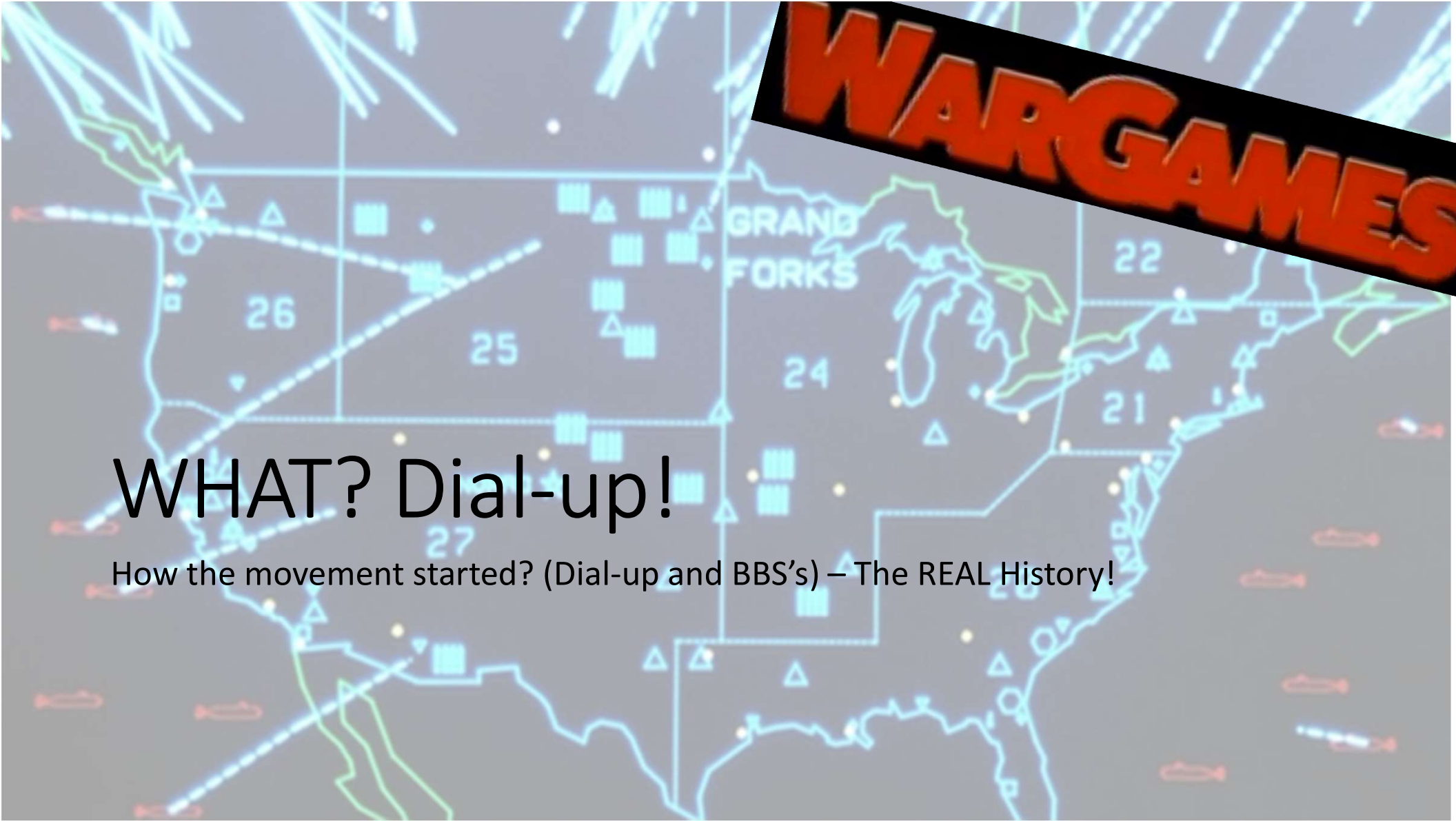


"On the Internet, nobody knows you're a dog."

WARGAMES

WHAT? Dial-up!

How the movement started? (Dial-up and BBS's) – The REAL History!



WHAT? Dial-up!

- Originated back in the 80's as computers entered many peoples homes.
- Computer + Modem + Boredom = FUN!
- Users collaborated over Bulletin Board Systems



WHAT? Dial-up!

- Users on BBS's then wanted to meet in person
- The "User Group" was spawned.
 - AKA – Hacker Groups Spawned right after.
 - The "Anti-User Group".
 - And they wanted there own place to meet.



WHAT? Dial-up!

- User groups spawned collective thinking/planning
- Competitions ensued
 - Who gets Bragging Rights?
 - Post back to BBS
- Competition spawned teams
- Teams worked to find flaws
- Individuals exposed flaws for fun/personal gain



WHAT? Dial-up!

- Hacking goes Mainstream with larger Internet Providers
- Service oriented “Annoyance Tools” recruited more people.
 - <https://en.wikipedia.org/wiki/AOHell>
- The existence of software like AOHell provided a sort of parallel 'lite' version of the hacker underground that had existed for years before, based around bulletin board systems.



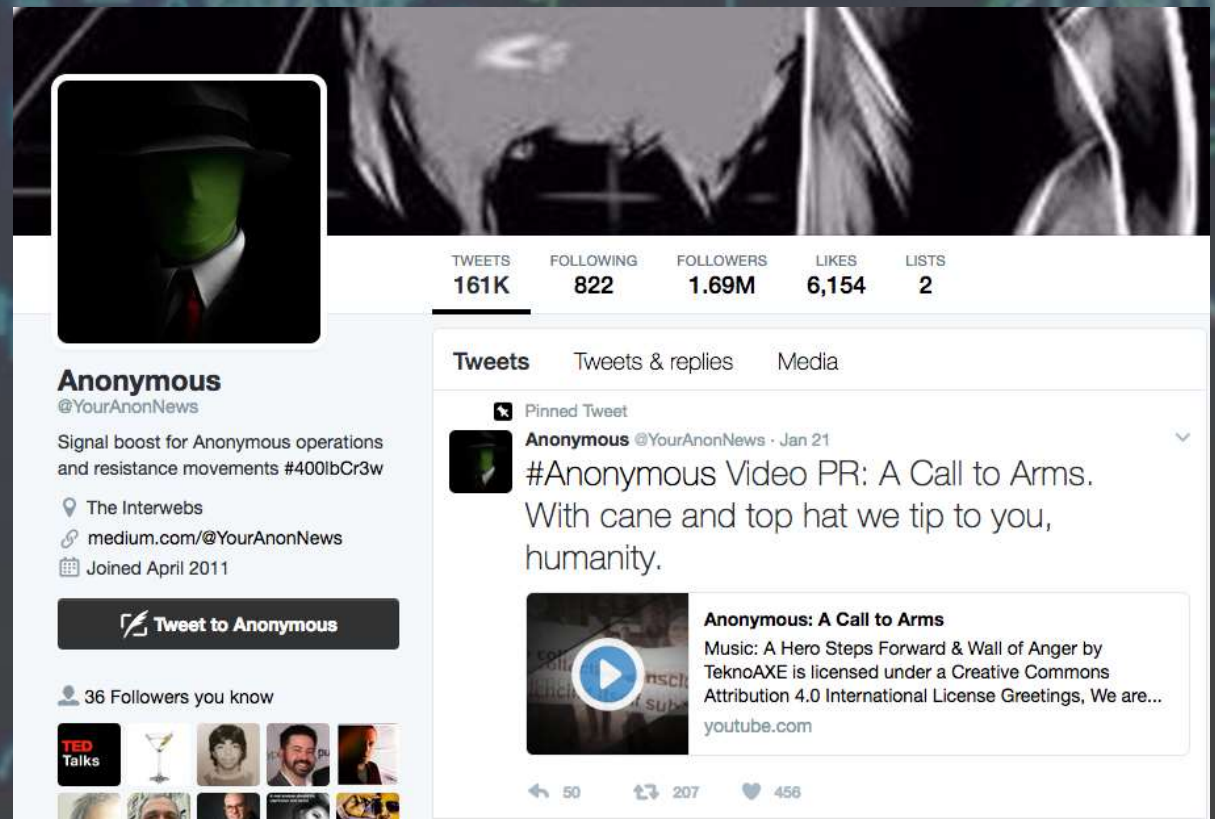
WHAT? Broadband!

- Hacking has evolved because of Social Media
- Core values haven't changed
- But Social websites have pushed this Hacktivism to the mainstream.
- The news keeps covering to drive more awareness.



WHAT? Broadband!

- Social media continues to draw awareness & new recruits
- Mainstream is for show
- Dark Web is for go



Anonymous
@YourAnonNews

Signal boost for Anonymous operations and resistance movements #400lbCr3w

The Interwebs
medium.com/@YourAnonNews
Joined April 2011

[Tweet to Anonymous](#)

36 Followers you know

Tweets Tweets & replies Media

Pinned Tweet

Anonymous @YourAnonNews · Jan 21
#Anonymous Video PR: A Call to Arms. With cane and top hat we tip to you, humanity.

Anonymous: A Call to Arms
Music: A Hero Steps Forward & Wall of Anger by TeknoAXE is licensed under a Creative Commons Attribution 4.0 International License Greetings, We are...
youtube.com

50 207 458

WHAT? Broadband!

- With Social Media & a new found Cause, “Hacktivism”
 - Born in the era of the Internet
 - Rooted in Hacker Culture/Ethics with ties related to Free Speech, Human Rights, and Freedom of Information.
- Cyber attacks ensue
 - Most with a purpose
 - Some for fun
 - Minimal for Personal Gain



**Hacktivism is the main motivation
that drives cyber attacks**

Hacktivism 50%

World

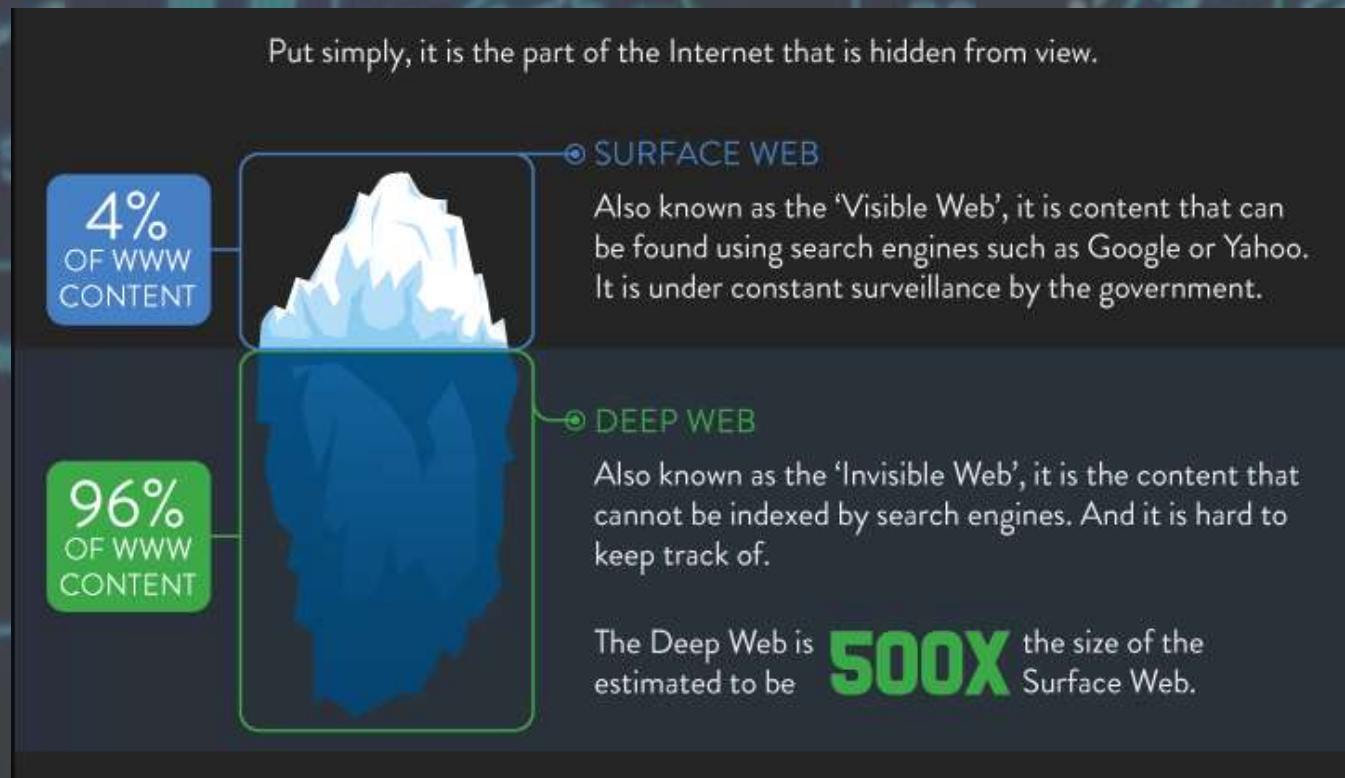


How DEEP can you get?

Deep/Dark Web – Hacker BBS's Evolved

Surface Web, Deep Web, Dark Web

- The Deep Web is anything a search engine can't find.
 - Search Engines use links to "crawl" the internet.
- Within the Deep Web is the Dark Web which requires special software or network configurations, and access rights in order to access.
 - The Dark Web is a small portion of the Deep Web



Onion Routing, Tor Browsing



- Technique for anonymous communication to take place over a network. The encryption takes place at three different times:
 - Entry Node
 - Relay Node
 - Exit Node
- Tor is made up of volunteers running relay servers. No single router knows the entire network (only its to and from).
- Tor can bypass internet content filtering, restricted government networks (like China) or allow people to be anonymous whistle blowers.
- Tor allows you to gain access to “.onion” websites that are not accessible via a normal web browser.
- Communication on the Dark Web happens, via Web, Telnet, IRC, and other means of communication being developed daily.

Some History

- Originally grew with help from the U.S. Military as a way to communicate without detection.
- In 1995 the concept of “onion routing” was born.
- The Deep Web was coined in 2001 by BrightPlanet which specializes in locating content within the dark web.
- In 2004 the U.S. Naval Research Lab released the Tor code to the public, and in 2006 it was retooled as the Tor Project.



The Silk Road

- Former Online Black Market the first “darknet” market for selling illegal drugs.
- Launched in February 2011 where users had to purchase an account through an auction and later would be set at fixed fees.
- October 2013 the site was shutdown by the FBI after arresting the hacker named “Dread Pirate Roberts” (Ross William Ulbricht). One month later the site resurfaced but was shut down again.

Anonymous hacker shuts down 20% of the dark web in a campaign to tackle child pornography

- The attack targeted 10,000 dark web sites selling or sharing child pornography
- The dark web is often associated with criminal activity and illicit content
- Each website that the hacker took down was left with a message of warning
- But Anonymous's largest Twitter account has denied responsibility

By [HARRY PETTIT FOR MAILONLINE](#)

PUBLISHED: 09:48 EST, 8 February 2017 | UPDATED: 10:16 EST, 8 February 2017

Operation Onymous

- International law enforcement operation targeting over 400 darknet markets on the Tor network that sold drugs, money laundering, and other contraband.



Shield Yourself From
Danger...
Harry Potter Style

[Click Here
Now!](#)



Cloak of Invisibility

Anonymous Browsing tools like the Tor Project

Cloak of Invisibility

Top reasons why people want to hide their IP address:

1. Hide their geographical location
2. Prevent Web tracking
3. Avoid leaving a digital footprint
4. Bypass any bans or blacklisting of their IP address
5. Perform illegal acts without being detected



Cloak of Invisibility

How do you Hide an 800lb Gorilla?

- Use Free Wifi (To Hide your location)
- Use a Secure Web Browser
- Use a Private VPN
- Go back to Dial-up
- Setup RF Data Transfer over CB Radio Waves
- Use Kali linux to hack someone else's Wifi Encryption.
- Setup long-range Wireless Antennas





Cloak of Invisibility

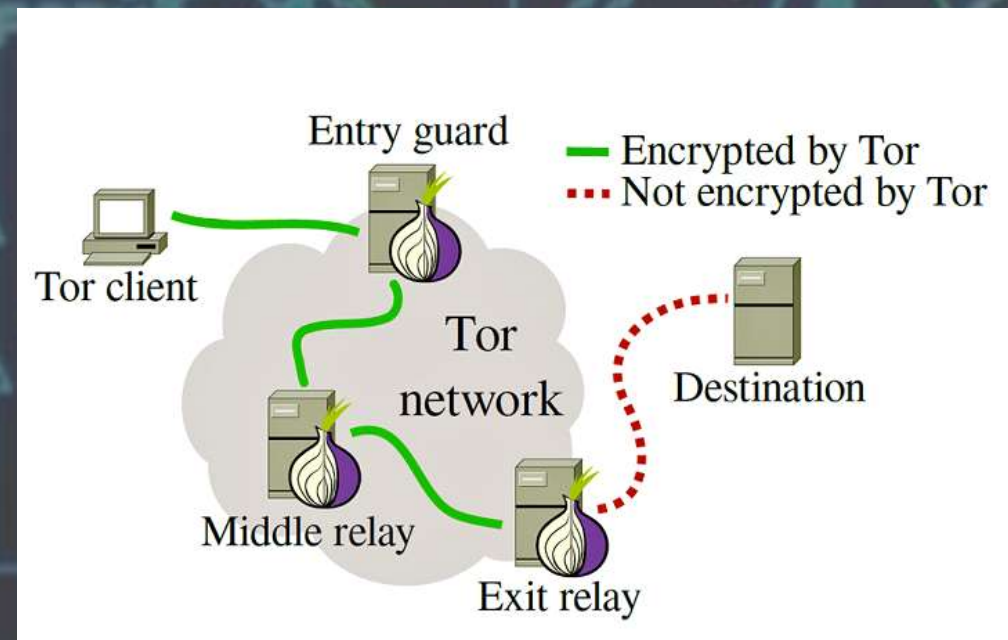
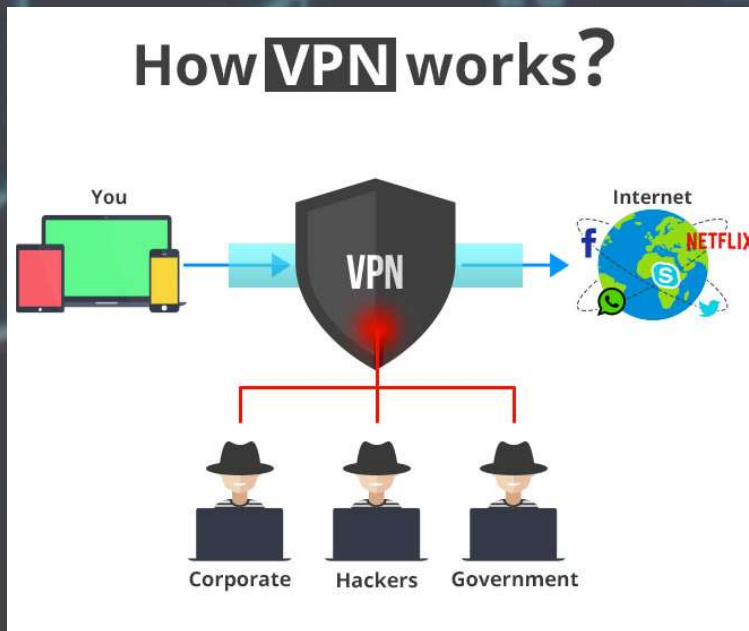


- How to hide yourself?
 - Private VPN
 - You want a TOTALLY anonymous service.
 - Look for one that keeps no log history (Verify via reviews)
 - Look at Bandwidth & Available Servers
 - Recommendations:
 - Private Internet Access (PIA)
 - TorGuard VPN
 - Pure VPN
 - Opera Web Browser
 - Avast AntiVirus (SecureLine)
- Worst Case: Free WIFI

Name	IPVanish VPN	ExpressVPN	NordVPN	Private Internet Access VPN	KeepSolid VPN Unlimited	TorGuard VPN	AnchorFree Hotspot Shield Elite	PureVPN	Hide My Ass VPN	Spotflux Premium VPN
Lowest Price	SEE IT	SEE IT	SEE IT	SEE IT	SEE IT	SEE IT	SEE IT	SEE IT	SEE IT	
Editor Rating	●●●●○	●●●●○	●●●●●	●●●●●	●●●●●	●●●●○	●●●●○	●●●●○	●●●●○	●●●●○
Annual Plans	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monthly Plans	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Free Version Offered	✗	✗	✗	✗	✗	✗	✓	✗	✗	✓
Multi-Device and Mobile Support	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mac Version	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Blocks Ads	✗	✗	✗	✓	✗	✗	✗	✗	✗	✓

Cloak of Invisibility

- How Tor anonymizes – “You”.
- How VPN keeps “You” protected.





How to navigate and prevent wrong turns

Navigating the Dark Web - Including the pitfalls

How to navigate and prevent wrong turns

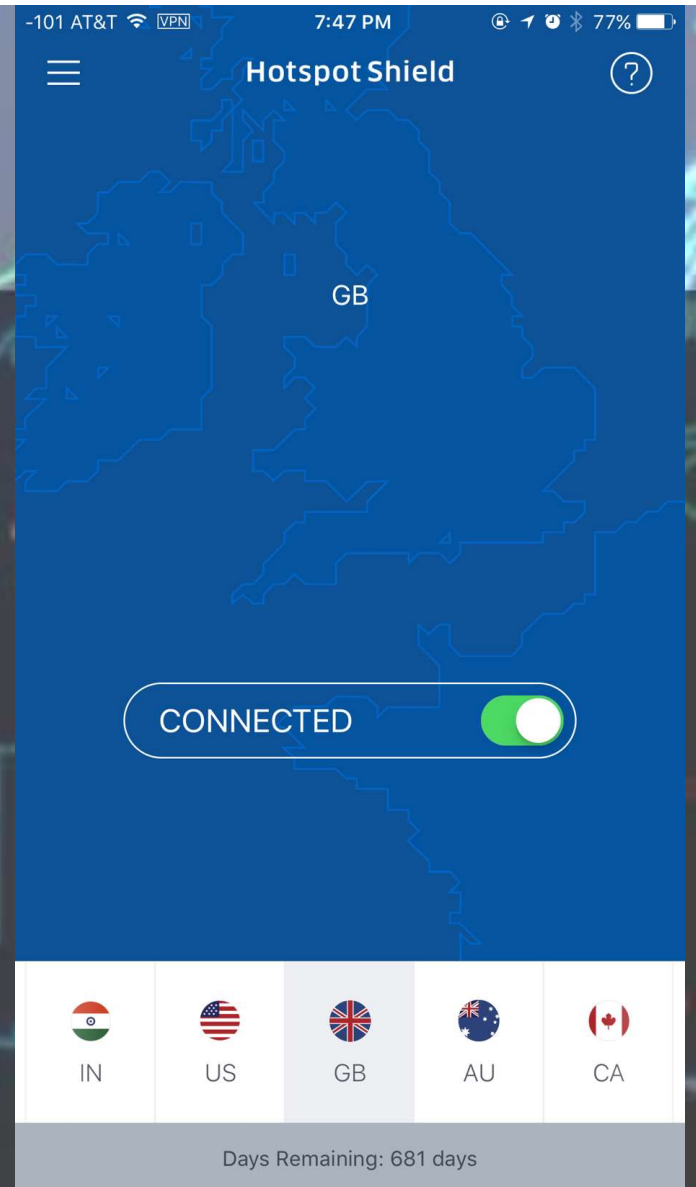
- Who are the people we're trying to void?

Hacker Groups

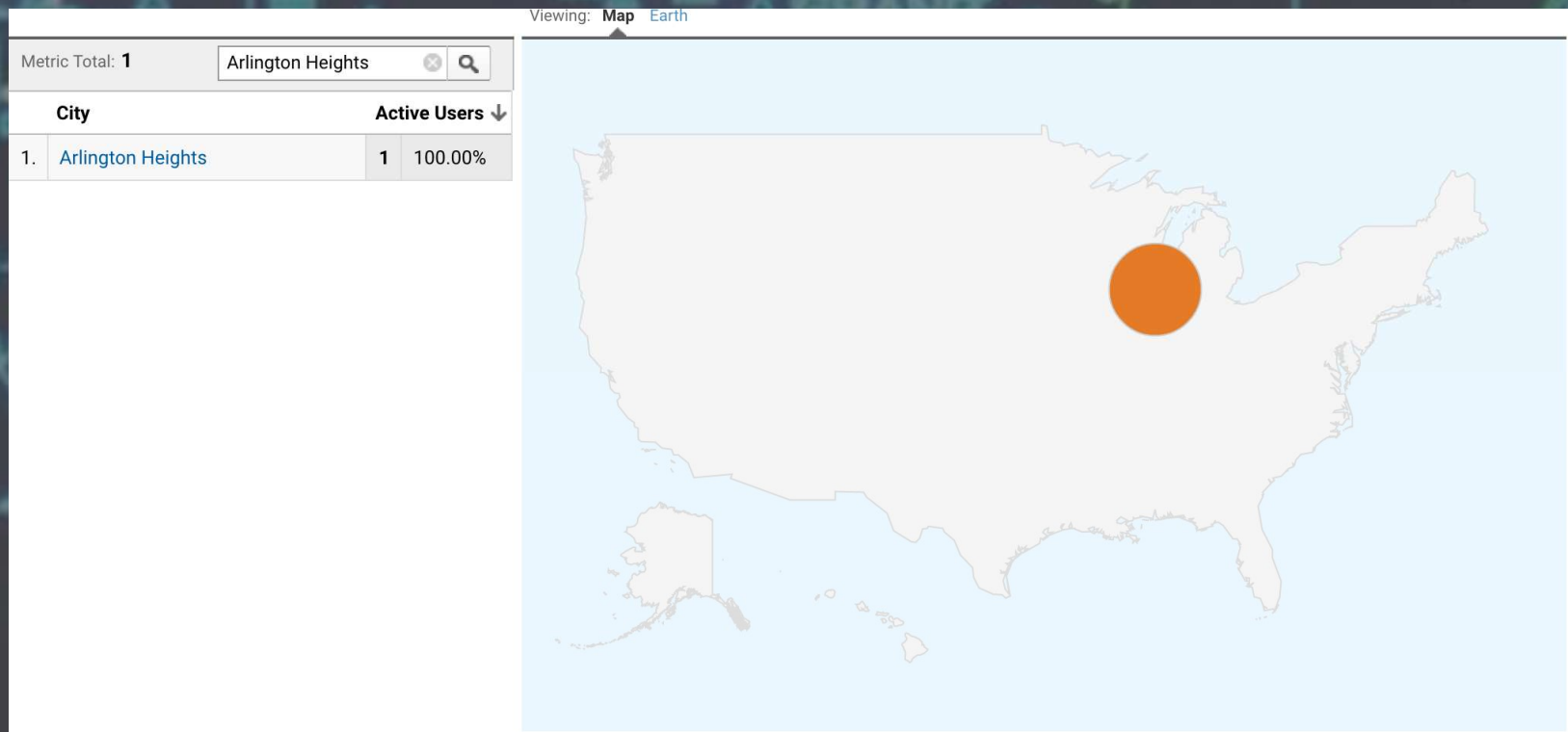
- Lizard Squad. ...
- Anonymous. ...
- LulzSec. ...
- Syrian Electronic Army. ...
- Chaos Computer Club (CCC) ...
- Iran's Tarh Andishan. ...
- The Level Seven Crew. ...
- globalHell.



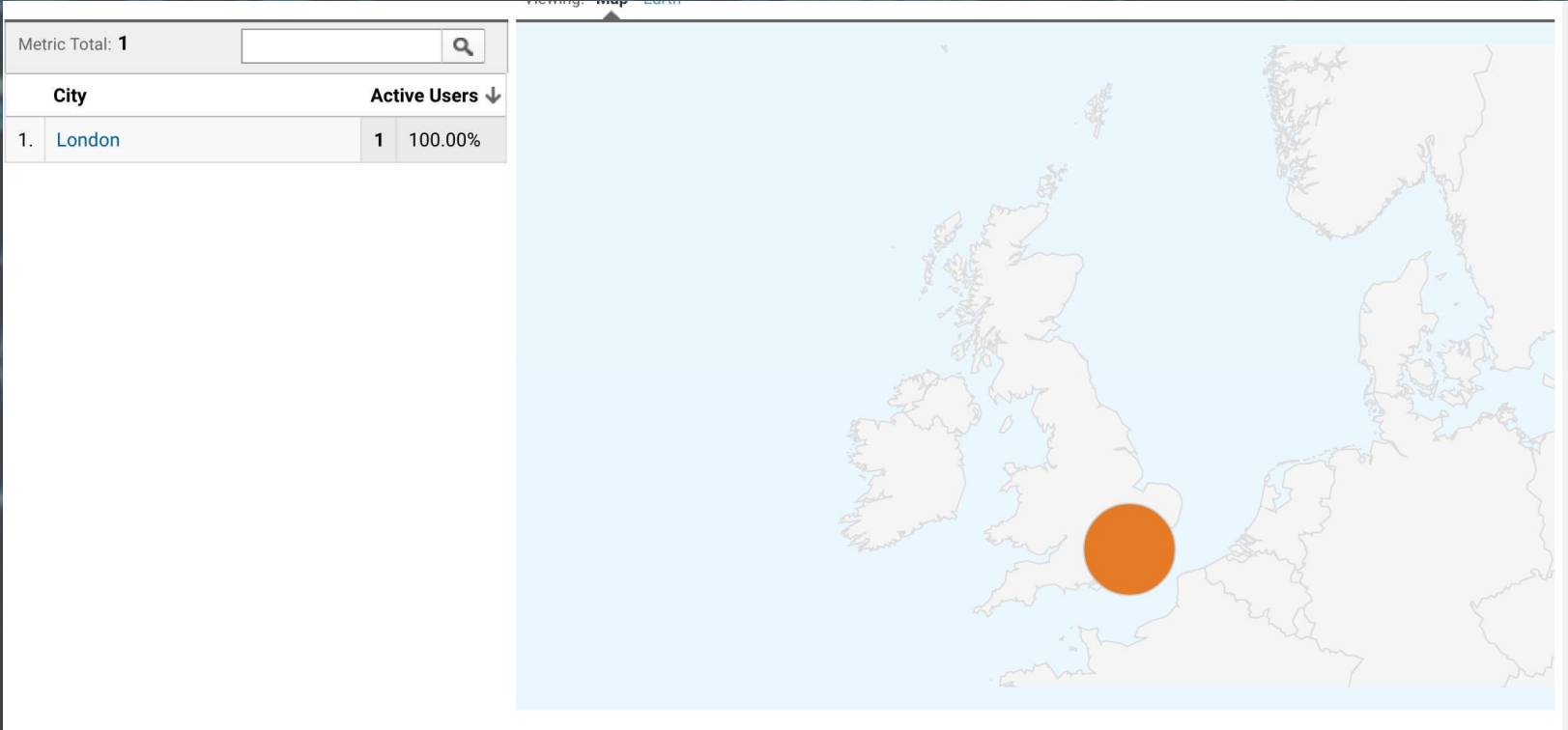
Using a VPN Client



Normal Users and How They Appear:



VPN Protected Users



Speed Tests

The screenshot shows the Hotspot Shield application interface. At the top, there are navigation tabs for 'Dashboard' and 'Settings', and an 'Upgrade' button with a star icon. Below the navigation is a blue bar containing a toggle switch that is currently turned 'On'. The main area of the interface displays the word 'Connected' in green text above a large digital timer showing '00 05'. At the bottom, there is a dark grey bar with five country codes: 'GB', 'AU', 'CA', 'CN', and 'CZ'. The 'CA' code is highlighted with a green underline, indicating it is the selected server location.

Non VPN

The image shows a speedtest.net interface with the following data and elements:

- PING:** 13 ms
- DOWNLOAD SPEED:** 118.58 Mbps
- UPLOAD SPEED:** 22.63 Mbps
- Buttons:** NEW SERVER, TEST AGAIN, SHARE THIS RESULT
- Section: SLOW MAC PERFORMANCE?**
 - Text: Run a test to identify issues and speed up your Mac
 - Button: START NOW
- Section: Are you on XFINITY?**
 - Text: Take our Broadband Internet Survey!
 - Section: See Also
 - Fastest Internet Available
 - Compare High Speed Internet
- Footer:**
 - IP: 73.45.181.206 (XFINITY)
 - Location: Chicago, IL
 - Hosted by: CenturyLink, Inc
 - Rate Your ISP: 5 stars

VPN Protected Users

The image shows a speedtest.net interface with the following data and elements:

Metric	Value
PING	115 ms
DOWNLOAD SPEED	113.64 Mbps
UPLOAD SPEED	21.38 Mbps

Buttons: NEW SERVER, TEST AGAIN, SHARE THIS RESULT

Advertisements:

- SLOW MAC PERFORMANCE?**
Run a test to identify issues and speed up your Mac
START NOW
- Are you on Alentus?**
Take our Broadband Internet Survey!

Footer:

- 208.123.223.26
Alentus
☆☆☆☆☆ Rate Your ISP
- Edmonton, AB
Hosted by Shaw Communications

A stylized map of the United States with various symbols and numbers overlaid, suggesting a network or data visualization. The map is rendered in shades of blue and green, with white and yellow symbols scattered across it. Numbers 20, 21, 22, 24, 25, 26, and 27 are visible, along with the text 'GRAND FORKS' and 'LORINE'.

Tools to become a hacker

Explore tools hackers use to exploit companies and us

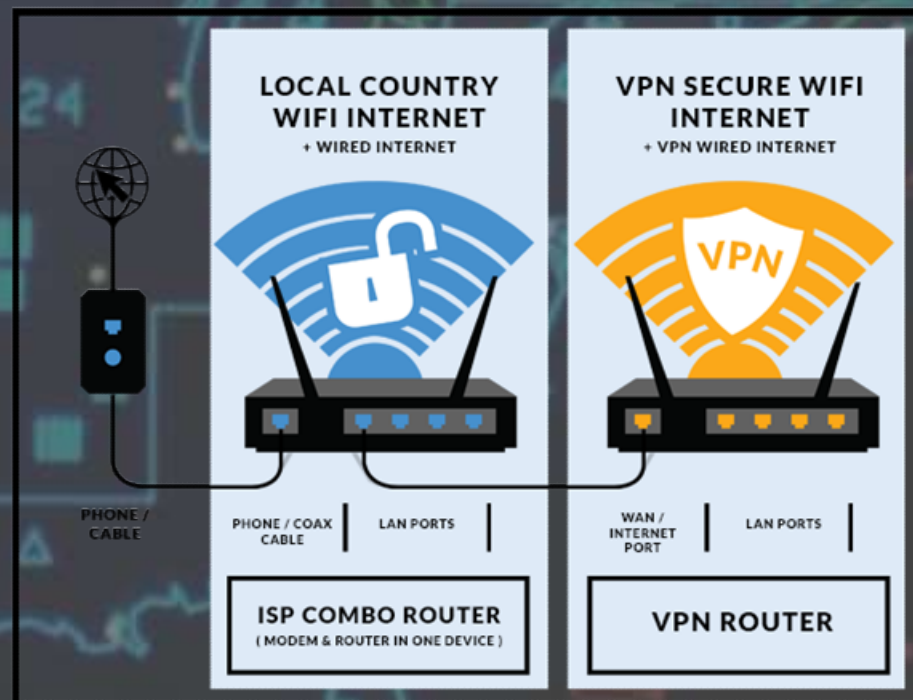
How do you Hide an 800lb Gorilla?

- TorBrowser
 - Mainstream browser that helps gain access to a private collection of websites and servers. This runs on a separate, "Parallel Universe" on the Internet.
- IRC
 - Typical way to communicate, its been around since the 80's.
- Telnet to a BBS
 - Bulletin Board Systems never died. They just got modernized!
- Kodi
 - Leverage tools for your entertainment.



Tools to become a hacker

- Get a router that allows for VPN at the router
- Install a second VPN Client on the PC
 - Use Tor Browser for Browsing
 - Access Kodi
 - Use other tools from this point
- Keeps everything anonymized



Tools to become a hacker

- The Basics.
 - Social Engineering
 - Get a Voice that's not behind a computer.
 - Write a Batch File
 - Odd, but Windows still has DOS hidden underneath



Social Engineering



The clever **manipulation** of the natural human tendency to trust!

Top Hacker Tools

- #1 Metasploit.
- #2 Nmap.
- #3 Acunetix WVS.
- #4 Wireshark.
- #5 oclHashcat. ...
- #6 Nessus Vulnerability Scanner. ...
- #7 Maltego. ...
- #8 Social-Engineer Toolkit.



#root

BackTrack can get you ALOT

- **BackTrack** was a Linux distribution that focused on security based on the Knoppix Linux distribution aimed at digital forensics and penetration testing use. In March 2013, the Offensive Security team rebuilt BackTrack around the Debian distribution and released it under the name Kali Linux.



More Sources

- <https://www.reddit.com/r/deepweb/>
- DuckDuckGo.Com doesn't track searches
 - Also lets you search of .onion sites when using TorBrowser to access.

error
if you're happy and you know it, syntax
error
if you're happy and you know, and you r
to show it, if you're happy and you know
error.

IS IT LEGAL?

YES You use it as you would any other Internet browser. Many people are now beginning to use TOR as a way of maintaining their privacy whilst online.

WHO ELSE USES IT



MILITARY



POLICE



JOURNALISTS



WHISTLEBLOWERS



Edward Snowden



Julian Assange

Due to the anonymity that TOR offers, the Deep Web has also become a popular nesting ground for criminal activity.

THIS INCLUDES THINGS SUCH AS



DRUGS



CHILD PORNOGRAPHY



WEAPONS TRADING



HIT MEN FOR HIRE*

*Though there are groups on the Deep Web claiming to offer this service, there has been no legitimate proof of their existence.



How to contact us?



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