



Digital Defense for Activists

(And the Rest of Us)



Who Am I?

- + Michele Chubirka, aka "Mrs. Y."
- + Industry analyst, blogger, tech writer, podcaster and Security Jedi Knight.
- + Researcher and pontificator on topics such as security architecture, privacy and best practices.
- + Twitter: @MrsYisWhy
- + www.postmodernsecurity.com
- + Digs good nerd memes.



Topics

- + Current Landscape
- + Risk Management 101
- + Digital Defense Techniques



What You Won't Get From Me

- + Digital *offensive* techniques and/or activities that violate state/federal laws.
- + Legal Advice. I'm not an attorney or law enforcement official.
- + I'm also not here to fix your computer, printer, or other digital device.



"Never say anything in an electronic message that you wouldn't want appearing, and attributed to you, in tomorrow morning's front-page headline in the New York Times."

—Colonel David Russell, former head of DARPA's Information Processing Techniques Office



It's Scary Out There

- + In 2013, Edward Snowden, a Booz Allen employee contracted to the NSA , revealed massive domestic and global surveillance programs sponsored by the US, UK, and Australia .
- + In May 2014, six officers of China's People's Liberation Army (PLA) were indicted for economic espionage against a number of U.S. based companies.
- + In November 2014, a North Korean hacker group posted corporate data from Sony Pictures on Wikileaks. This included employee PII and email.
- + In June 2015, Office of Personnel Management (OPM) announced it had been hacked. Records of 22.1M federal workers and contractors were compromised, including members of the intelligence community. Breach was attributed to China
- + In April 2015, it was disclosed that Russian hackers had breached the White House's network.
- + In the 2015 Anthem Blue Cross breach, approximately 80M records were impacted. The breach was attributed to China.

Not If, But When

- + **Organizations hit over the last 12 months include:**
 - + Arby's, Wendy's and other food chains.
 - + InterContinental, Holiday Inn, Hyatt, Trump and Kimpton Hotels
 - + LinkedIn, LANDESK, Scottrade, Experian, Oracle, Twitter, ADP, Pwnedlist, Spotify, Yahoo!

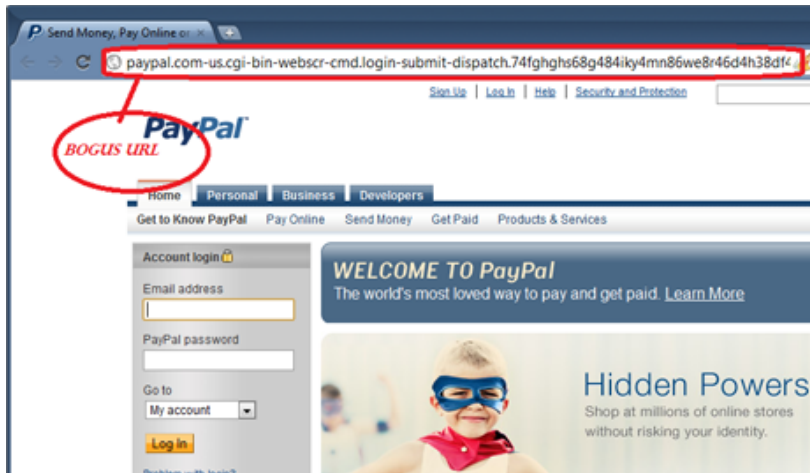
AND

- + ***Democratic National Committee and National Republican Senatorial Committee systems allegedly breached by Russia.***

How Criminals Get Your Data

PASTEBIN + new paste trends API tools faq search...			
Trending Pastes			
<p>This page contains the most popular pastes that were created in the last 30 days. Filter trends: right now last 7 days last 30 days last 365 days all time</p>			
NAME / TITLE	ADDED	HITS	USER
DCW List - As of Feb 3 2017, 3:30PM	11 days ago	32,258	-
Transkript Hücke, Dresden-Rede 17.1.2017	27 days ago	18,013	-
Compromised Accounts	23 days ago	150,552	-
wahtsapp crash	28 days ago	4,226	-
NNID Leak: Affected Accounts	23 days ago	57,228	TheKoopakKingdom
Untitled	28 days ago	7,841	-
Gaypal valid	20 days ago	5,366	ariesta_heart
Anonymous call to action: #BDStheUS	15 days ago	15,471	-
FacebookBruteForcePerl	19 days ago	4,591	-
a backdoor with backdoors	12 days ago	31,265	-
FetLife Announcement	26 days ago	17,026	-
Libri Gratis!!!	23 days ago	6,870	-
Anon	9 days ago	11,147	-
Untitled	6 days ago	8,221	-
Untitled	15 days ago	3,931	-
NESMania Game Replays	10 days ago	4,651	TheMexicanRunner
Accounts by Vinicius Saw	19 days ago	4,751	-
películas estreno	23 days ago	6,651	saupablo
10k combo - Fimvark	23 days ago	6,921	FimvarkGuzman
Anonymous - Expose & Destroy ISIS Week 1	13 days ago	4,990	LatestAnonNews PRO
Message	19 days ago	7,653	-
BEDABOX - EMAIL LIST LEAKED	21 days ago	3,945	bug7sec PRO

Social Engineering, aka Phishing



From: brettdi1@just81.justhost.com [mailto:brettdi1@just81.justhost.com]
Sent: Wednesday, November 19, 2014 4:52 PM
To: [REDACTED]
Subject: [REDACTED] Shipment Status ID#000884027

Pretty sure this isn't an official
FedEx email address... lol



Personalized

Dear [REDACTED],

Courier was unable to deliver the parcel to you.
Shipment Label is attached to email.

Am I expecting a package?

Why is FedEx sending me an attachment,
don't they normally use tracking numbers?

Yours sincerely,
Mathew Gorman,
Sr. Delivery Manager.

Why is an individual from FedEx emailing me,
shouldn't something like this be automated?

From: NSA token update <protection@nsa.security.gov>

To:

Sent: Thu Jul 21 03:31:31 2011

Subject: Token code update

NATIONAL SECURITY AGENCY



CENTRAL SECURITY SERVICE

Defending Our Nation. Securing The Future.

Dear costumers,

A **critical vulnerability** has been discovered in a certain types of our token devices. Please, check that **your token device is safe**, checking the following [link](#). If your token is listed as unsafe, please, **download and install** the maintance update, available [here](#). It will exclude the possibility of abuse.

Best regards, *RSA security*

[This message (and any associated files) is intended only for the use of the individual or entity to which it is addressed and may contain information that is confidential, subject to copyright or constitutes a trade secret. If you are not the intended recipient you are hereby notified that any dissemination, copying or distribution of this message, or files associated with this message, is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer. Messages sent to and from the California Credit Union may be monitored.]

User Support <gabb-boarded@nevadageek.net>

To: 1

Important Profile Changes

May 15, 2013 12:30 AM

1

LinkedIn

From: User Support

Date: 5/15/2013

Subject: Important Profile Changes

LinkedIn Important Profile Changes.

Just click on the [link](#) or button below for further details.

[View/reply to this message](#)

<http://199.47.149.2/~sunnycha/probabilities.html>

Don't want to receive e-mail notifications? [Adjust your message settings](#)

This email was intended for [\[redacted\]](#) at [mac.com](#). [Learn why we included this.](#) © 2013, LinkedIn Corporation. 2029 Stierlin Ct. Mountain View, CA 94043, USA

Hovering over the link
does not reveal a
LinkedIn URL

Passwords Really Suck

- + Samples from the Ashley Madison breach
- + Originally posted on Pastebin, a site for sharing text, but often used for distributing stolen data.

```
jeremy  
katie  
123456  
crystal  
loving  
bella1  
456456  
newyork1  
password  
abcde  
dennis  
budlight  
hotdog  
dallas  
goldfish  
letmein  
joshua1  
666666  
11111  
david  
lucky7  
master  
123456789  
bitch  
777777  
alvin  
school  
booboo  
fuckme  
monkey  
charlie1  
canada  
tiger1  
qazwsx  
lucky1  
12345  
boomer  
bitch1
```


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Cellphone Recon

IMAGES



Product Summary

What is the Cell Phone Recon? Cell Phone Recon is a ingenious and prudent software that allows you to track, trace and monitor your mobile phone. It can monitor GSM ...

[More Info »](#)

★★★★☆ 16 Reviews

\$249.95

Out of stock

Free Ground Shipping



SHIPPING INFO

Highlights

- ✓ For use with Monitoring Android / Blackberry Phones
- ✓ Monitor a Cellphone in Real-Time On-Line
- ✓ Records Text Messages, E-mails, Call Logs
- ✓ 100% Confidential
- ✓ Built by Cellphone Recon

Have a Question?
Ask a Spy Tec Expert!
877-212-7400



CHAT NOW



Brian Krebs's Immutable Truths About Data Breaches

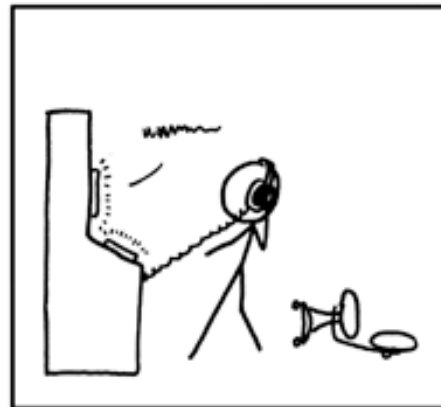
- + If you connect it to the Internet, someone will try to hack it.
- + If what you put on the Internet has value, someone will invest time and effort to steal it.
- + Even if what is stolen does not have immediate value to the thief, he can easily find buyers for it.
- + The price he secures for it will almost certainly be a tiny slice of its true worth to the victim.
- + Organizations and individuals unwilling to spend a small fraction of what those assets are worth to secure them against cybercrooks can expect to eventually be relieved of said assets.

<https://krebsonsecurity.com/2017/01/krebss-immutable-truths-about-data-breaches/>

"Only the paranoid survive."

—Andy Grove, founder and former CEO of Intel

NOW AND THEN, I ANNOUNCE "I KNOW
YOU'RE LISTENING" TO EMPTY ROOMS.

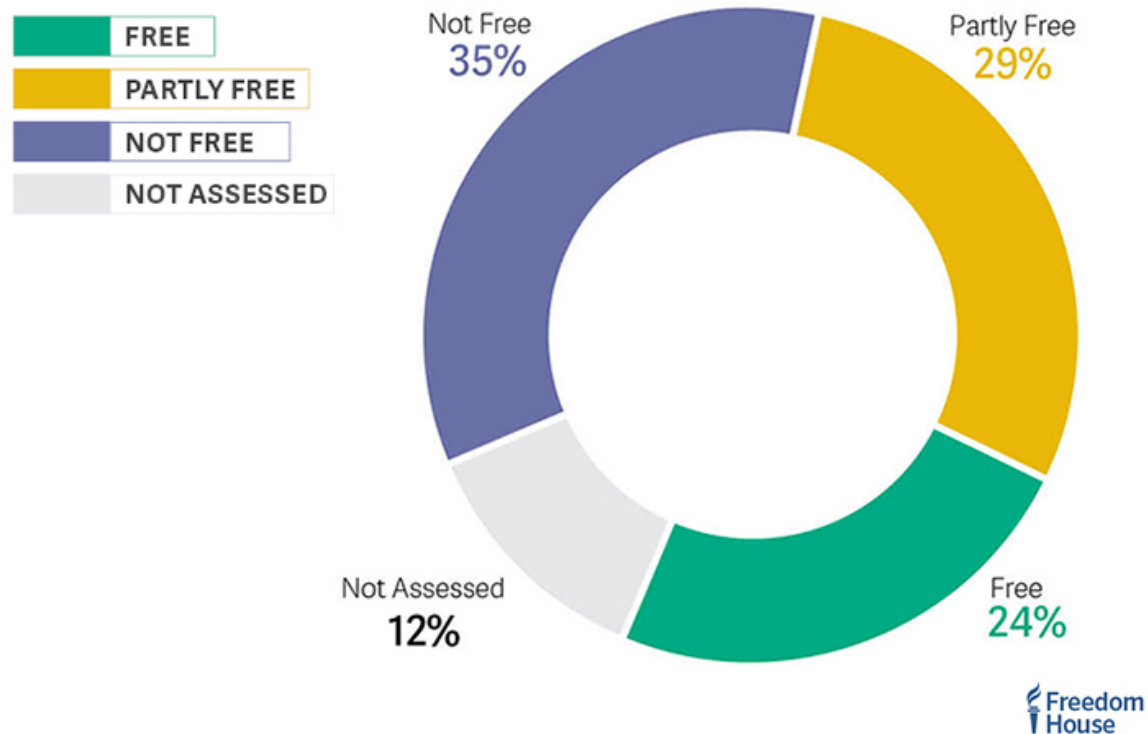


IF I'M WRONG, NO ONE KNOWS.
AND IF I'M RIGHT, MAYBE I JUST FREAKED
THE HELL OUT OF SOME SECRET ORGANIZATION.

Freedom on the Net 2016

GLOBAL INTERNET POPULATION BY 2016 FOTN STATUS

FOTN assesses 88 percent of the world's internet user population.



An annual study of internet freedom around the world

INTERNET OUTAGE

Cameroon's Internet Has Been Cut For Four Weeks With No End in Sight



MARC SHAW

Feb 13 2017, 2:23pm



Social apps like WhatsApp and Facebook are lifelines between members of the African diaspora.

Since January 17, English-speaking parts of Cameroon have had their internet blocked. Although no official reason has been given, residents of the African country say it's an intentional act by the government, affecting about 20 percent of the population.

https://motherboard.vice.com/en_us/article/cameroon-internet-outage-diaspora-whatsapp

How the US Government Gets Your Data

- + Communications Assistance for Law Enforcement Act – CALEA is a wiretapping law requiring telecom providers and manufacturers to provide built-in surveillance capabilities for voice and Internet traffic.
- + Digital Collection System Network - DCSNet is an FBI surveillance system used for instant wiretaps for telecommunications devices in the US.
- + Computer Fraud and Abuse Act – federal law making it illegal to intentionally access a computer without authorization or in excess of authorization, but proposed amendments have been sought to justify increased data collection.
- + USA FREEDOM Act – Update to Patriot Act that imposed some limits on bulk metadata collection but restored authorization for roving wiretaps and tracking lone wolf terrorists.

How Technology Companies and Service Providers May Violate Your Privacy

- + Monitoring network traffic for RIAA (Recording Industry of America) and MPAA (Motion Picture Association of America) violations.
- + Information Sharing and Analysis Centers – ISACs are industry-focused associations that share threat data between members.
- + Collection of telemetry data for security, performance analysis and troubleshooting.
- + Collection of full packet data for security, performance analysis and troubleshooting.
- + Providing data to law enforcement with and without warrants.

Electronic Frontier Foundation: Police Depts. Paid AT&T Millions to Scrutinize Our Texts & Chats

NOVEMBER 29, 2016 | BY [DAVE MAASS](#) AND [AARON MACKEY](#)



Law Enforcement's Secret "Super Search Engine" Amasses Trillions of Phone Records for Decades

EFF Fights For More Disclosure About Hemisphere Program

TECHNOLOGY NEWS | Tue Oct 4, 2016 | 9:27pm EDT

Exclusive: Yahoo secretly scanned customer emails for U.S. intelligence - sources

Windows 10 telemetry secrets: Where, when, and why Microsoft collects your data

How does Windows 10 telemetry really work? It's not a state secret. I've gone through the documentation and sorted out the where, when, and why. If you're concerned about private documents accidentally leaving your network, you might want to turn the telemetry setting down.



By [Ed Bott](#) for [The Ed Bott Report](#) | February 23, 2016 -- 12:24 GMT (04:24 PST) | Topic: [Windows 10](#)

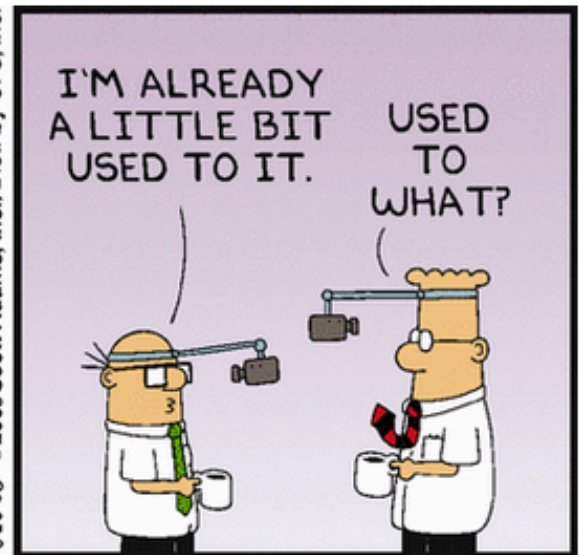
Guess Who Else Is Watching?



www.dilbert.com
scottadams@aol.com



6-20-08 © 2008 Scott Adams, Inc./Dist. by UFS, Inc.



How the Workplace Invades Your Privacy

- + Acceptable Use Policy – AUPs are agreements that employees must sign to obtain network access from an organization. They set guidelines on how the network may be used and generally contain “consent to monitoring” clauses.
- + Social Media Policies – this not only includes guidelines for how you may speak about your employer, it can also impact how you are allowed to access social media sites at work.
- + Security and network technologies such as firewalls, proxy servers, SSL Intercept, IDS/IPS, DLP, network taps, endpoint agents, DNS filters and other metadata collection tools.
- + Most workplaces implement controls on Internet traffic similar to repressive governments.

Risk Management 101

+ Risk = threat x vulnerability x impact

Asset – something of value

Risk – exposure of asset to harm.

Threat – a person or thing likely to cause damage or harm.

Vulnerability – susceptibility to threat.

Impact – effect of damage.

Attack – action to cause harm.

"Risk management is the process of identifying, assessing and controlling threats to an organization's capital and earnings."

<http://searchcompliance.techtarget.com/definition/risk-management>

Threat Modeling 101

- + A process in which potential threats are identified and analyzed for likelihood of damage to assets.
- + Helps to identify your vulnerability to various attack types.
- + Assessment questions:
 - + What do you want to protect?
 - + Who do you want to protect it from?
 - + How likely is it that you will need to protect it?
 - + How bad are the consequences if you fail?
 - + How much trouble are you willing to go through in order to try to prevent those?

<https://ssd.eff.org/en/module/introduction-threat-modeling>

BRUCE WAYNE/BATMAN'S THREAT MODEL



ASSETS



BAT CAVE



ALFRED



EMAILS



TEXTS

PROTECTION



SECURITY SYSTEM



HIDE LOCATION



ENCRYPTION

THREATS



POLICE



THE JOKER



JOURNALISTS

- - - LOW RISK
— MED RISK
= HIGH RISK

Common Threats

- + Stingrays aka “IMSI catchers”, Wireless “evil twins”
- + Social engineering campaigns using phishing/spearphishing
- + Malware, backdoors and surveillance software
- + OSINT (open source intelligence aka “passive recon”) – gathered from social media, blogs, whois, EXIF data, Spokeo, PeekYou, Google Hacking, etc...
- + Denial of Service (DoS/DDoS) attacks
- + Compromised privacy software and technologies (open source encryption, hiding or purchasing vulnerabilities, setting up bogus Tor nodes)

Governments use the SAME TECHNIQUES AS HACKERS to track you and violate your privacy.

WARNING!



Passive Reconnaissance Using Whois

```
The Registry database contains ONLY .COM, .NET, .EDU domains and
Registrars.
Domain Name: SEANSPICER.COM
Registry Domain ID: 1554195566_DOMAIN_COM-VRSN
Registrar WHOIS Server: whois.godaddy.com
Registrar URL: http://www.godaddy.com
Update Date: 2010-03-03T18:37:12Z
Creation Date: 2009-05-02T00:43:22Z
Registrar Registration Expiration Date: 2019-05-02T00:43:22Z
Registrar: GoDaddy.com, LLC
Registrar IANA ID: 146
Registrar Abuse Contact Email: abuse@godaddy.com
Registrar Abuse Contact Phone: +1.4806242505
Domain Status: clientTransferProhibited http://www.icann.org/epp#clientTransferProhibited
Domain Status: clientUpdateProhibited http://www.icann.org/epp#clientUpdateProhibited
Domain Status: clientRenewProhibited http://www.icann.org/epp#clientRenewProhibited
Domain Status: clientDeleteProhibited http://www.icann.org/epp#clientDeleteProhibited
Registry Registrant ID: Not Available From Registry
Registrant Name: Sean Spicer
Registrant Organization:
Registrant Street: 815 Enderby Drive
Registrant City: Alexandria
Registrant State/Province: Virginia
Registrant Postal Code: 22302
Registrant Country: US
Registrant Phone: +1.7036236167
Registrant Phone Ext:
Registrant Fax:
Registrant Fax Ext:
Registrant Email: seanspicer@yahoo.com
Registry Admin ID: Not Available From Registry
Admin Name: Sean Spicer
Admin Organization:
Admin Street: 815 Enderby Drive
Admin City: Alexandria
Admin State/Province: Virginia
Admin Postal Code: 22302
Admin Country: US
```

Google Hacking Database (GHDB)

Search the Google Hacking Database or browse GHDB categories

Any Category ▾

SEARCH

Date	Title	Category
2017-02-16	inurl:sendMessage.php?type=skype	Advisories and Vulnerabilities
2017-02-14	intitle:"Login - OpenStack Dashboard" inurl:"dashboard"	Pages Containing Login Portals
2017-02-14	site:onedrive.live.com shared by	Sensitive Directories
2017-02-08	inurl:forgot.do?sessionId=	Pages Containing Login Portals
2017-02-08	intitle:"FormAssembly Enterprise -"	Files Containing Juicy Info
2017-02-08	inurl:"/graphs" intext:"Traffic and system resource graphing"	Various Online Devices
2017-02-07	site:cloudshark.org/captures# password	Files Containing Passwords
2017-02-03	inurl:/o/oauth2 inurl:client_id	Files Containing Juicy Info
2017-02-01	intitle:Login "Login to pfSense" "Password" "LLC"	Pages Containing Login Portals
2017-01-26	inurl:iProber2.php ext:php	Files Containing Juicy Info

Footholds (57)

Examples of queries that can help an attacker gain a foothold into a web server

Sensitive Directories (123)

Google's collection of web sites sharing sensitive directories. The files contained in here will vary from sensitive to uber-secret!

Vulnerable Files (62)

HUNDREDS of vulnerable files that Google can find on websites.

Vulnerable Servers (83)

These searches reveal servers with specific vulnerabilities. These are found in a different way than the searches found in the "Vulnerable Files" section.

Error Messages (94)

Really verbose error messages that say WAY too much!

Web Server Detection (80)

These links demonstrate Google's awesome ability to profile web servers.

Files Containing Usernames (17)

These files contain usernames, but no passwords... Still, Google finding usernames on a web site.

Files Containing Passwords (200)

PASSWORDS!!! Google found PASSWORDS!

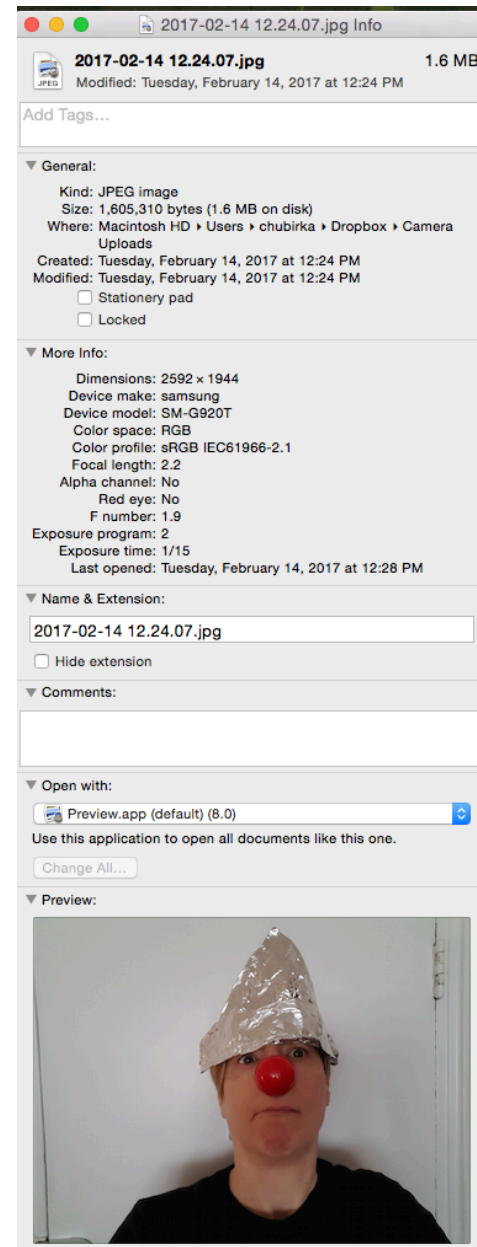
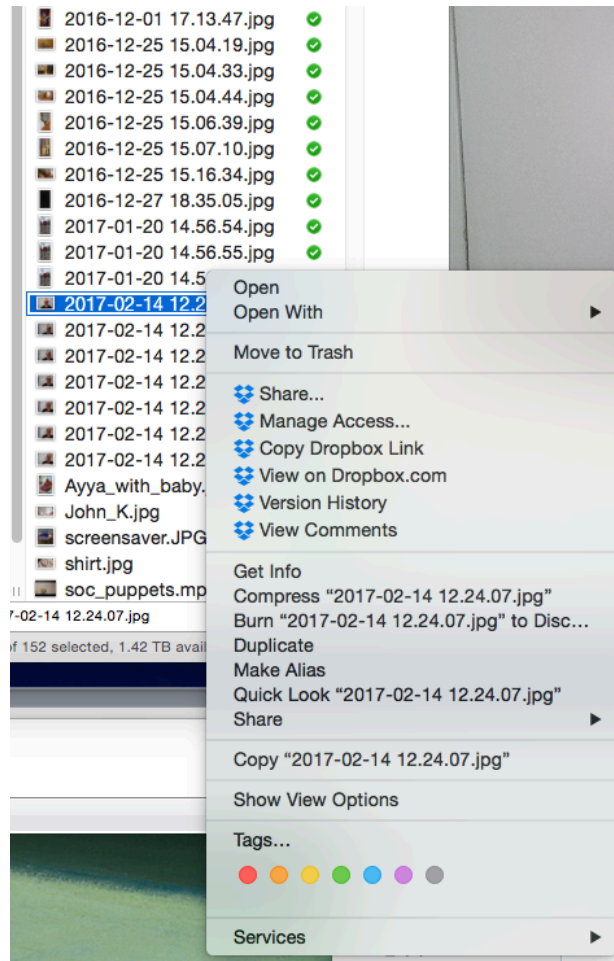
Sensitive Online Shopping Info (11)

Examples of queries that can reveal online shopping information like customer data, suppliers, orders, credit card numbers, credit card info, etc

Files Containing Juicy Info (374)

No usernames or passwords, but interesting stuff none the less.

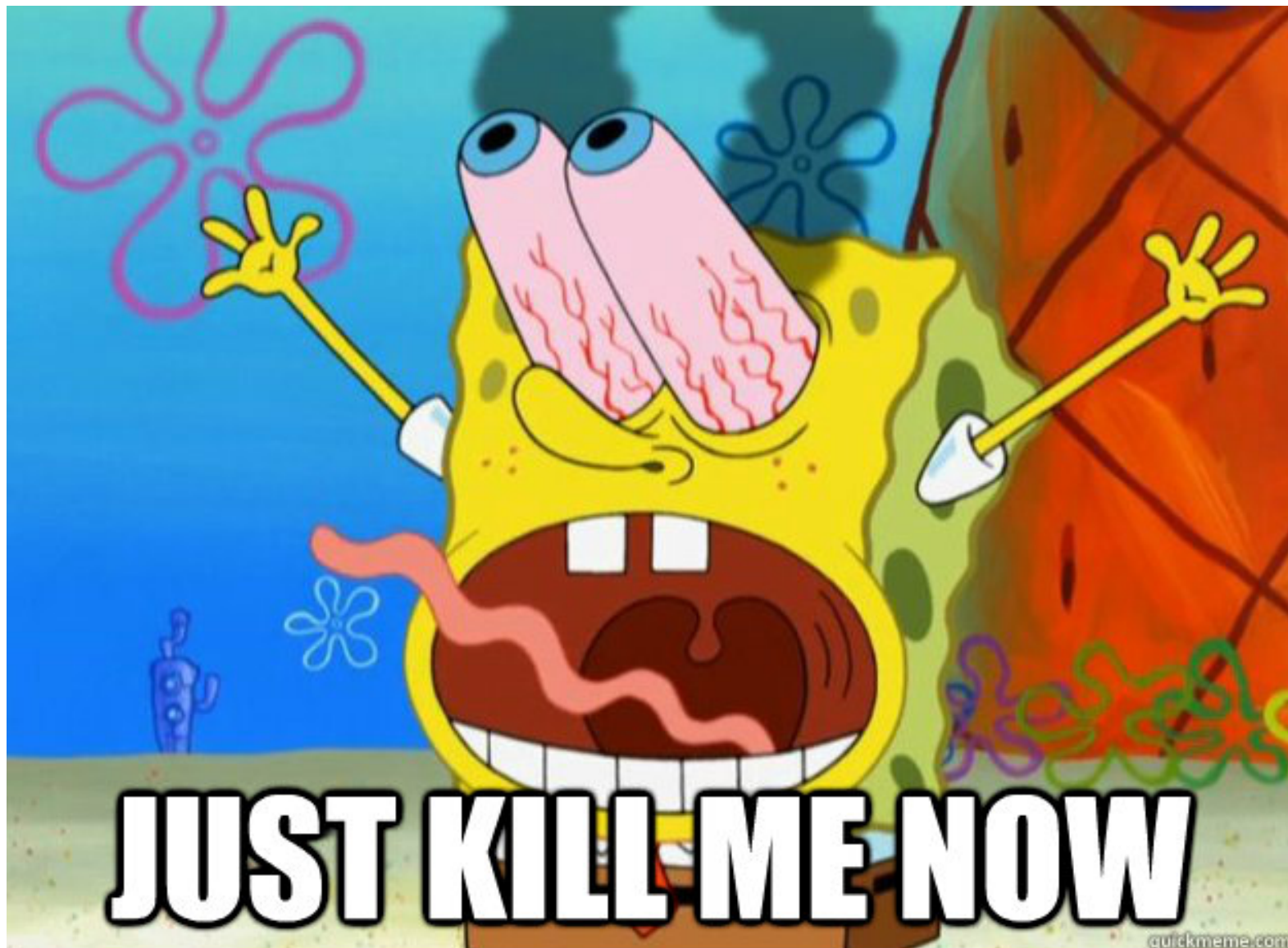
EXIF Photo Data



Your Cell Phone Is a Tracking Device

Even when the GPS is disabled, your phone may leak location information.

- + When a device isn't associated to a Wi-Fi network, it sends "beacons" attempting to reconnect to a previously used network. On some devices, "airplane mode" doesn't disable the wireless functionality. This leaks information about the device and can also make it vulnerable to "man in the middle" attacks, hijacking any Internet traffic.
- + Cellular networks can use cell tower position and distance to calculate your location.
- + Mobile devices and laptops have unique hardware addresses such as the MAC, IMSI, IMEI and MEID. These can be used for tracking.
- + Internet traffic uses a logical address, an IP number, for sending and receiving traffic. This data is easily captured and viewed over an open wireless network.
- + Bluetooth – a short range wireless device for connecting to speakers or keyboards. It has a physical address and signal that can be intercepted or tracked.
- + IMSI "catchers" aka Stingrays can track the hardware address of your phone and intercept cellular connections allowing data and voice traffic to be monitored.



How a 'Stingray' Cellphone-Tracking Device Works

Law-enforcement officials are quietly using gadgets referred to generically as 'stingrays' to locate cellphones as part of investigative work.



1. Often the device is used in a vehicle along with a computer with mapping software.



2. The stingray system, which mimics a cellphone tower, gets the target phone to connect to it.

3. Once the cellphone is detected by the stingray, the phone's signal strength is measured.



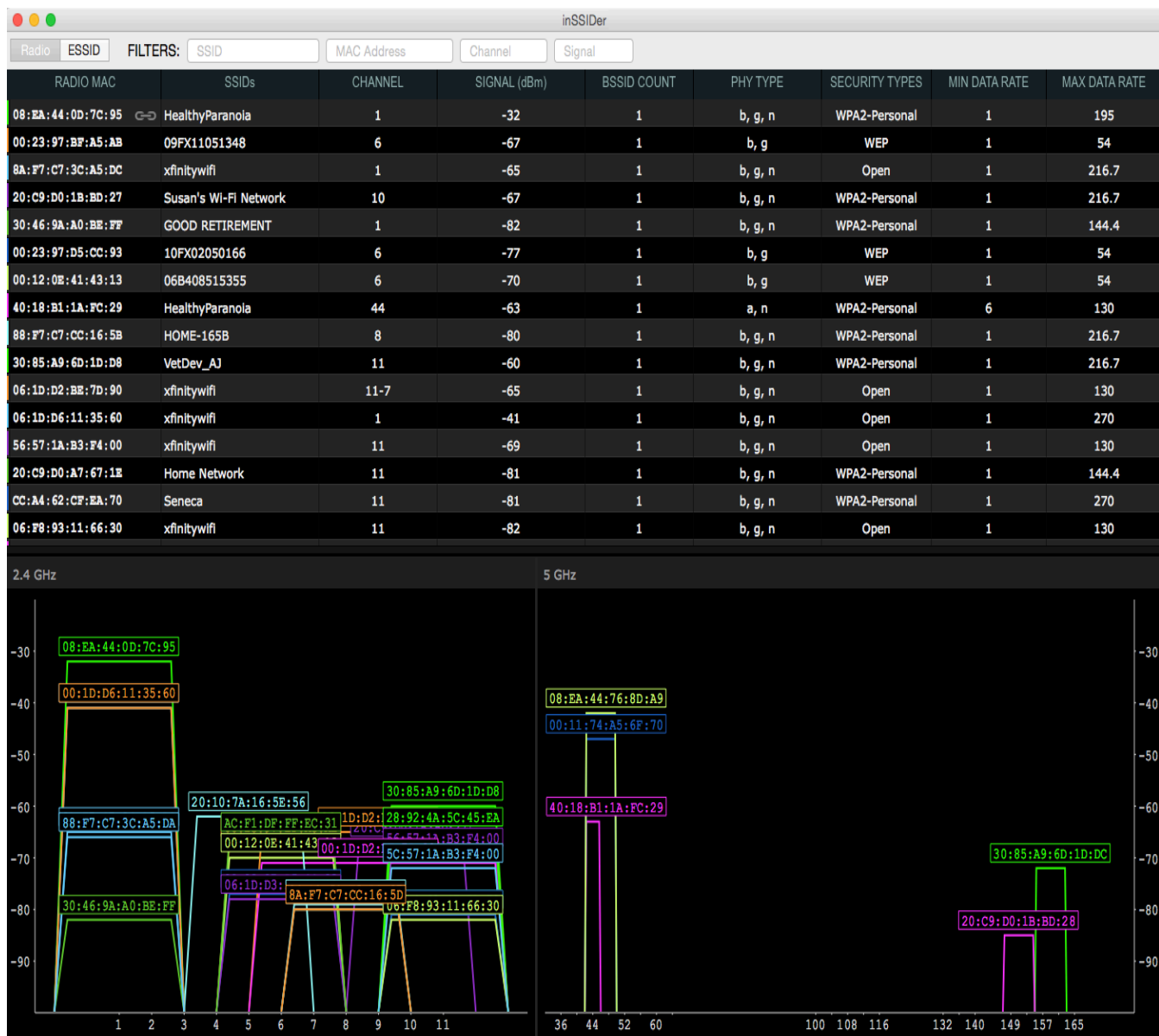
4. The vehicle can then move to another location and again measure the phone's signal strength.



5. By collecting signal strength in several locations, the system can triangulate and map a phone's location.

Source: WSJ research and government documents

Monitoring Wireless Networks



Identifying Wireless User Devices

CH 11][Elapsed: 40 s][2015-04-24 23:53

BSSID	PWR	Beacons	#Data, #/s	CH	MB	ENC	CIPHER	AUTH	ESSID
00:24:36:AE:4A:69	-41	393	209	5	11	54e.	WPA2	CCMP	PSK <length: 0>
00:13:37:A5:13:8C	-54	381	0	0	11	54e.	OPN		Pineapple5_138C
30:85:A9:6D:1D:D8	-70	353	31	0	11	54e	WPA2	CCMP	PSK VetDev_AJ
20:C9:D0:1B:BD:27	-71	44	0	0	10	54e.	WPA2	CCMP	PSK Susan's Wi-Fi Network
60:02:92:C6:59:B8	-77	271	0	0	11	54e.	WPA2	CCMP	PSK HOME-E2C5-2.4
52:57:1A:B3:F4:00	-77	254	0	0	11	54e	WPA2	CCMP	PSK <length: 0>
60:02:92:C6:59:B9	-78	242	0	0	11	54e.	WPA2	CCMP	PSK <length: 0>
02:1D:D2:BE:7D:90	-77	69	0	0	11	54e	WPA2	CCMP	PSK <length: 0>
5C:57:1A:B3:F4:00	-78	270	0	0	11	54e	WPA2	CCMP	PSK Catopia
56:57:1A:B3:F4:00	-79	237	0	0	11	54e	OPN		xfinitywifi
20:C9:D0:A7:67:1E	-79	242	0	0	11	54e.	WPA2	CCMP	PSK Home Network
06:1D:D2:BE:7D:90	-78	60	0	0	11	54e	OPN		xfinitywifi
00:17:3F:0C:CD:F4	-79	288	0	0	11	54	WPA	TKIP	PSK belkin54g
00:1D:D2:BE:7D:90	-79	81	0	0	11	54e	WPA2	CCMP	PSK HOME-7D92

BSSID	STATION	PWR	Rate	Lost	Packets	Probes
(not associated)	C8:E0:EB:29:89:5D	-16	0 - 1	0	62	Michele Chubirka's G2 0751,
(not associated)	00:BB:3A:A4:46:11	-52	0 - 1	0	6	HealthyParanoia
(not associated)	90:18:7C:26:FE:D3	-62	0 - 1	0	3	
(not associated)	84:38:35:53:06:DA	-65	0 - 1	0	33	pwnme,Michele Chubirka's G2
(not associated)	78:7E:61:76:C3:3B	-78	0 - 1	0	1	
00:24:36:AE:4A:69	00:09:B0:96:58:61	-127	0 - 0e	284	9	

Network Protocol Analyzer

The screenshot displays a Network Protocol Analyzer (NPA) interface. The top toolbar includes icons for file operations, search, and packet manipulation. The main window shows a list of network packets captured on the 'Thunderbolt Ethernet: en4' interface. The packets are filtered by 'dns'. The selected packet (No. 37624) is a DNS query from 73.135.232.4 to 8.8.8.8 for the domain 'guzzoni.apple.com'. The detailed view below the packet list shows the transaction ID, flags, questions, and the query details.

No.	Time	Source	Destination	Protocol	Length	Info
37618	2...	73.135.232.4	8.8.8.8	ICMP	162	Destination unreachable (Port unreachable)
37620	2...	73.135.232.4	8.8.8.8	DNS	74	Standard query 0xd02b A www.icloud.com
37621	2...	73.135.232.4	8.8.8.8	DNS	90	Standard query 0xacea A p30-keyvalueservice.icloud.com
37622	2...	8.8.8.8	73.135.232.4	DNS	203	Standard query response 0xd02b A www.icloud.com CNAME www-cdn.icloud.com.akadns.net
37623	2...	73.135.232.4	8.8.8.8	DNS	85	Standard query 0xf543 A 39-courier.push.apple.com
37624	2...	73.135.232.4	8.8.8.8	DNS	77	Standard query 0x2b99 A guzzoni.apple.com
37625	2...	8.8.8.8	73.135.232.4	DNS	156	Standard query response 0xacea A p30-keyvalueservice.icloud.com CNAME p30-keyvalueservice.icloud.com
37629	2...	8.8.8.8	73.135.232.4	DNS	309	Standard query response 0xf543 A 39-courier.push.apple.com CNAME 39.courier.push.apple.com
37631	2...	73.135.232.4	8.8.8.8	DNS	75	Standard query 0x01af A docs.google.com
37633	2...	8.8.8.8	73.135.232.4	DNS	166	Standard query response 0x2b99 A guzzoni.apple.com CNAME origin.guzzoni-apple.com
37634	2...	8.8.8.8	73.135.232.4	DNS	91	Standard query response 0x01af A docs.google.com A 172.217.1.14
37805	2...	73.135.232.4	8.8.4.4	DNS	94	Standard query 0xbcf1 A redirector.online.spectraguard.net
37806	2...	73.135.232.4	8.8.8.8	DNS	94	Standard query 0xbcf1 A redirector.online.spectraguard.net
37809	2...	8.8.4.4	73.135.232.4	DNS	206	Standard query response 0xbcf1 A redirector.online.spectraguard.net A 35.154.33.14
37811	2...	8.8.8.8	73.135.232.4	DNS	206	Standard query response 0xbcf1 A redirector.online.spectraguard.net A 35.154.33.14
37812	2...	73.135.232.4	8.8.8.8	ICMP	234	Destination unreachable (Port unreachable)
37900	2...	73.135.232.4	8.8.4.4	DNS	88	Standard query 0x3123 A redirector.ccb.cloudwifi.com
37901	2...	73.135.232.4	8.8.8.8	DNS	88	Standard query 0x3123 A redirector.ccb.cloudwifi.com

Transaction ID: 0x2b99

- Flags: 0x0100 Standard query
- Questions: 1
- Answer RRs: 0
- Authority RRs: 0
- Additional RRs: 0

Queries

- guzzoni.apple.com: type A, class IN

0000 00 01 5c 82 5a 46 64 a5 c3 5d ad 03 08 00 45 00 ..\ZFd. .]....E.
0010 00 3f 7d 85 00 00 fe 11 fd 8c 49 87 e8 04 08 08 .?}..... .I.....
0020 08 08 ba 47 00 35 00 2b 1a 24 2b 99 01 00 00 01 ...G.5.+ .\$.+.....
0030 00 00 00 00 00 00 07 67 75 7a 7a 6f 6e 69 05 61g uzzoni.a
0040 70 70 6c 65 03 63 6f 6d 00 00 01 00 01 pple.com

Online Security Basics

- + Email Links are dangerous. Use caution.
- + Don't open attachments you aren't expecting. Scan with an AV program prior to opening.
- + Be careful when sharing information on social media.
- + Use secure, encrypted connections when transmitting personal information.
- + Never send passwords in email.
- + Avoid using public computers in libraries or hotels.
- + Don't use Wi-Fi in airports, coffee shops or hotels. If you must, use a VPN.
- + Never leave passwords, credit card numbers or your SSN unencrypted in email, in the cloud or on your computer.
- + Shred anything with your data before throwing away.



Data Privacy Principles

- + Identify and categorize your personal data in terms of risk. The most sensitive information deserves the greatest care.
- + Minimize the creation of sensitive data.
- + Delete any sensitive data whenever possible.
- + Encrypt any of this data that can't be deleted.

How to Verify a Secure Browser Connection

The image displays two browser windows illustrating secure connections and certificate verification.

Top Window (Amazon.com): The address bar shows a secure connection to <https://www.amazon.com/gp/buy/spc/handlers/display.html?hasWorkingJavascript=1>. A red box highlights the lock icon in the address bar, with a red arrow pointing to the connection details window below it. The page content shows the Amazon.com logo, navigation links (SIGN IN, SHIPPING & PAYMENT, GIFT OPTIONS, PLACE ORDER), and a "Review your order" section.

Connection Details Window: This window provides information about the secure connection to **www.amazon.com**. It states: "Your connection to this site is private." The "Connection" tab is selected, showing the following details:

- The identity of this website has been verified by VeriSign Class 3 Secure Server CA - G3. No Certificate Transparency information was supplied by the server. [Certificate Information](#)
- Your connection to **www.amazon.com** is encrypted using a modern cipher suite. The connection uses TLS 1.2.
- The connection is encrypted and authenticated using AES_128_GCM and uses ECDHE_RSA as the key exchange mechanism.

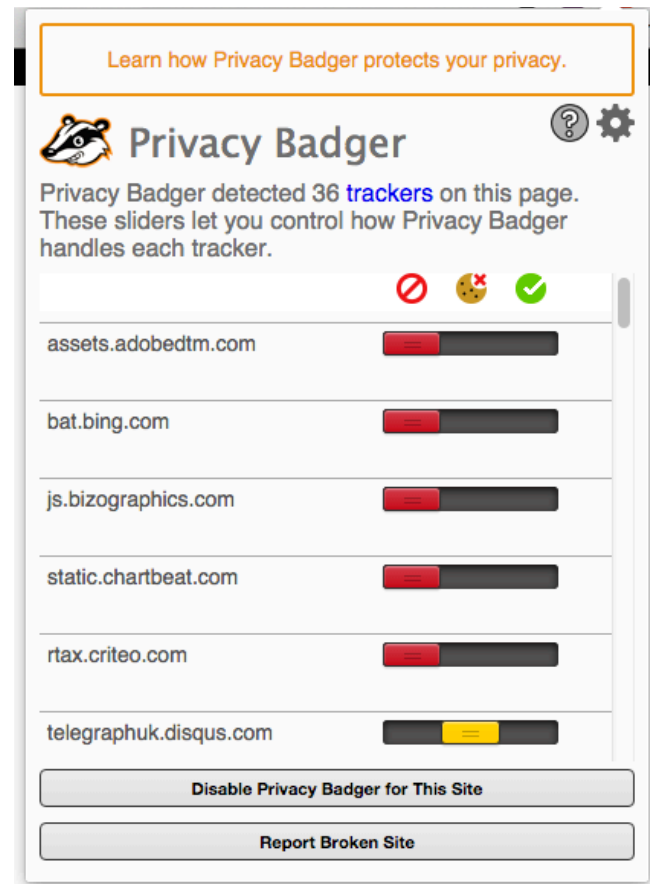
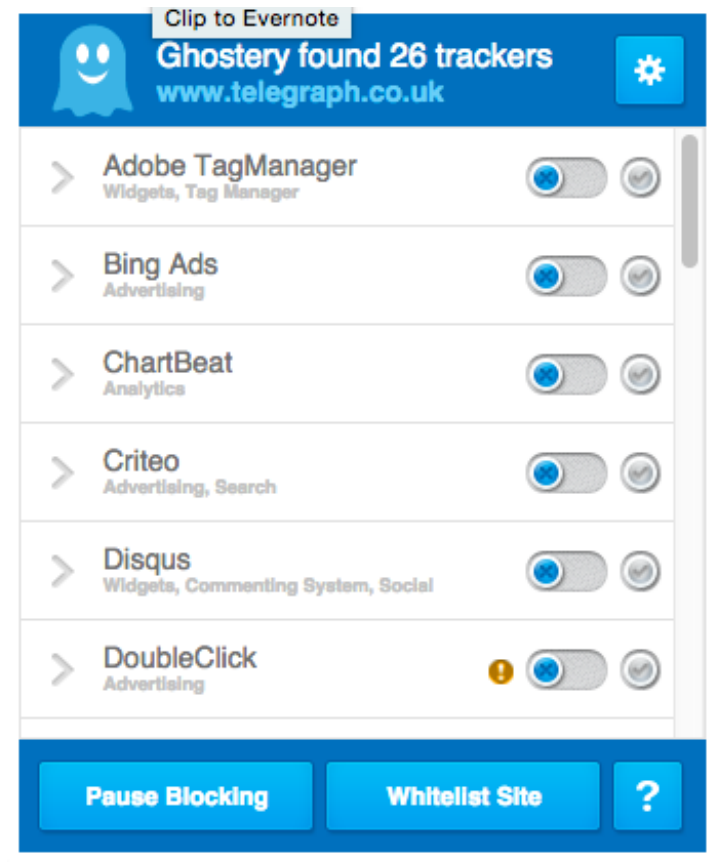
A link [What do these mean?](#) is provided at the bottom.

Bottom Window (localhost:44302): This window shows a warning for an "Untrusted Certificate". The message states: "The security certificate presented by this website was not issued by a trusted certificate authority. This problem might indicate an attempt to fool you or intercept any data you send to the server. We recommend that you close this webpage." It includes links for [About certificate errors](#) and [View certificates](#).

Securing Your Browser (and Your Privacy)

- + Web browsers can be dangerous. Information they collect and store can be used by malicious actors for surveillance. A web browser can also be used to deliver malware or backdoors.
- + Helpful tools:
 - + Tor browser (there are mobile versions for Android and iOS)
 - + Privacy Badger
 - + Ghostery privacy extension
 - + Incognito mode in Chrome or private browsing in Firefox.
 - + Search engines without personalization or tracking
 - + DuckDuckGo <https://duckduckgo.com/>
 - + searX <https://searx.me/>
 - + Startpage <https://www.startpage.com/>
 - + Trackmenot <https://addons.mozilla.org/en-us/firefox/addon/trackmenot/>
 - + Avoid Flash and other helper apps, they leak information. Disable by default.
 - + Periodically delete cache, cookies and other stored data.

Ghostery and Privacy Badger

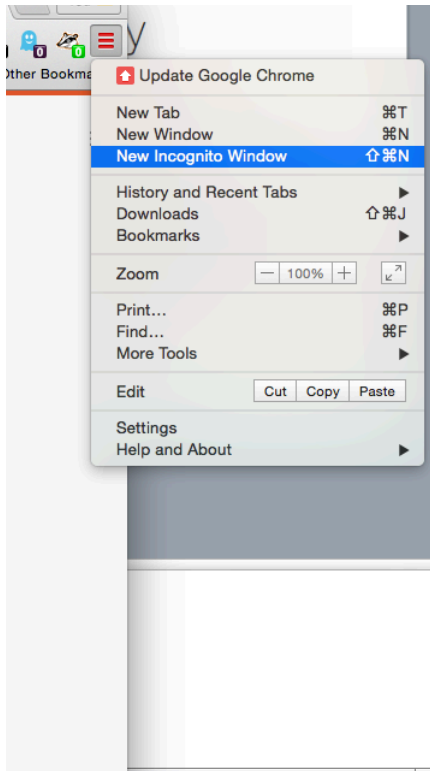


Secure Searching



DuckDuckGo is a non-tracking search engine
<https://duckduckgo.com/>

Chrome and Firefox Private Browsing



You've gone incognito

Pages you view in incognito tabs won't stick around in your browser's history, cookie store, or search history after you've closed **all** of your incognito tabs. Any files you download or bookmarks you create will be kept.

[Learn more about incognito browsing](#)

Going incognito doesn't hide your browsing from your employer, your internet service provider, or the websites you visit.



You're browsing privately

Firefox won't remember any history for this window.

That includes browsing history, search history, download history, web form history, cookies, and temporary internet files. However, files you download and bookmarks you make will be kept.

While this computer won't have a record of your browsing history, your employer or internet service provider can still track the pages you visit.

[Learn More.](#)

Panopticlick

<https://panopticlick.eff.org/>

PANOPTICCLICK

Is your browser safe against tracking?

How well are you protected against non-consensual Web tracking? After analyzing your browser and add-ons, the answer is ...

No. You are not protected against tracking on the Web. We suggest installing EFF's Privacy Badger.

INSTALL PRIVACY BADGER
AND ENABLE DO NOT TRACK

[Click here for Firefox version](#)

Test	Result
Is your browser blocking tracking ads?	X no
Is your browser blocking invisible trackers?	X no
Does your browser unblock 3rd parties that promise to honor Do Not Track ?	X no
Does your browser protect from fingerprinting ?	X your browser has a unique fingerprint

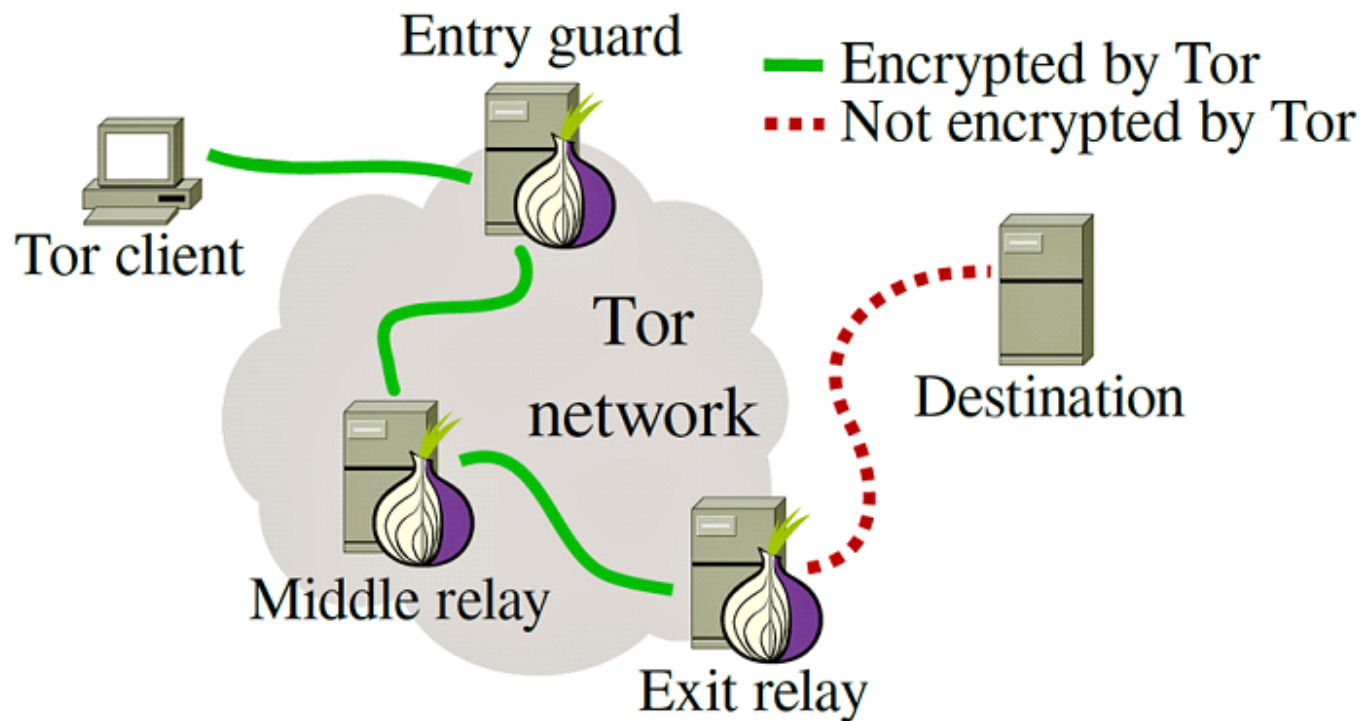
[Show full results for fingerprinting](#)

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

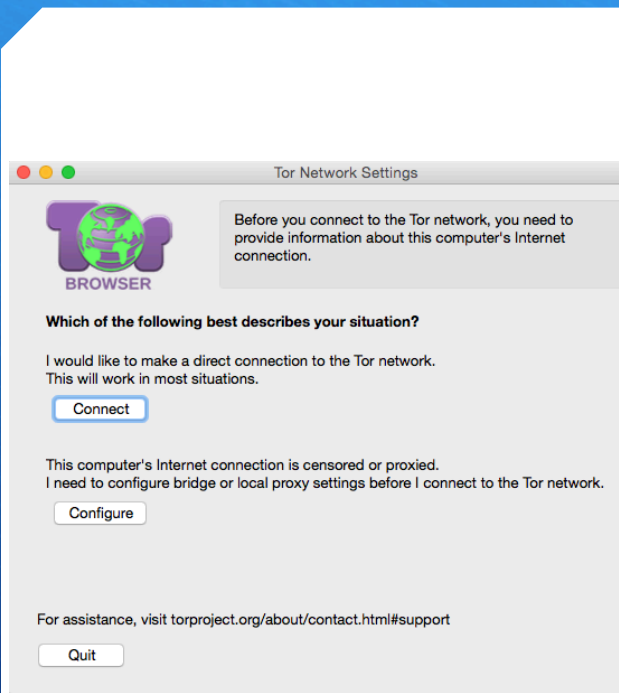
RE-TEST YOUR BROWSER

Thanks to [Fingerprint2](#) for various fingerprinting tests, [Alloodo](#) for portions of the tracker test, [browserspy.dk](#) for the font detection code, and to [breadcrumbs](#) for supercookie help. Send questions or comments to panopticlick@eff.org.

Tor – the onion router



Tor Browser - <https://www.torproject.org/>



Tor Tips

- + Tor only protects applications that are configured to send Internet traffic through Tor. To avoid problems, use the pre-configured Tor Browser or Tails OS.
- + The Tor Browser blocks browser plugins such as Flash, RealPlayer, Quicktime, and others: they can be manipulated into revealing your IP address.
- + Use HTTPS versions of websites. Tor will only encrypt your traffic to and within the Tor network
- + Don't open documents downloaded through Tor while online, this could leak data through helper apps.
- + If you must work with DOC and/or PDF files, use a disconnected computer, a virtual machine image with networking disabled, or Tails.
- + Tor prevents the disclosure of websites you connect to, but it does not prevent someone learning that you're using Tor.

Personal VPNs

- + Similar to Tor, Virtual Private Networks (VPNs) can provide an additional layer of protection from surveillance.
- + It creates an encrypted tunnel for your traffic and can route it through another network, sometimes through another country.
- + A VPN hides your original IP address and all your traffic inside the tunnel.
- + Can also help to evade monitoring and censorship of Internet content.

VPN Tips

- + Look for a VPN provider with locations outside the US. Some have stricter privacy laws and won't readily provide traffic logs or user data to US law enforcement.
- + Focus on providers that don't store traffic logs at all, so the history of your online activity is less likely to be tracked.

<http://www.techradar.com/news/the-best-vpn-services-and-vpn-deals-of-2017>

<http://www.pcmag.com/article2/0,2817,2403388,00.asp>

Encryption

A CRYPTO NERD'S IMAGINATION:

HIS LAPTOP'S ENCRYPTED.
LET'S BUILD A MILLION-DOLLAR
CLUSTER TO CRACK IT.

NO GOOD! IT'S
4096-BIT RSA!

BLAST! OUR
EVIL PLAN
IS FOILED!



WHAT WOULD ACTUALLY HAPPEN:

HIS LAPTOP'S ENCRYPTED.
DRUG HIM AND HIT HIM WITH
THIS \$5 WRENCH UNTIL
HE TELLS US THE PASSWORD.

GOT IT.



Cryptography Basics

- + Encryption is the technique of obfuscating data to prevent unauthorized access.
- + Cryptographic tools can provide the following:
 - + Confidentiality – keeping information private through encryption
 - + Integrity – making sure data hasn't been altered
 - + Authentication- ensuring identity
 - + Non-repudiation – preventing refutation

Always ask yourself, “*Who has the keys?*” If it isn't you, that organization can be forced to provide them to law enforcement.

Encryption Use-Cases

- + Encryption-at-rest means data on a device is stored encrypted (a computer disk or mobile device).
- + Encryption-in-transit means data is encrypted while in motion over a network (HTTPS).
- + Full disk or device encryption is used to prevent unauthorized *physical* access to information on a device.
- + Email encryption can be used to ensure confidentiality, integrity and non-repudiation of email communication.
- + Encrypted chat and text messaging is used to ensure confidentiality of communication in transit. Sometimes integrity and non-repudiation as well.

Encryption Tools

- + FileVault on OSX or Bitlocker on Windows
- + Android and iOS have native encryption
- + For email: Thunderbird with the Enigmail plugin, Protonmail, Virtru, Voltage, Hushmail
- + With chat: ChatSecure, Zom Mobile Messenger, Pidgin or Adium and OTR (off the record)
- + Text messaging: Signal, WhatsApp

Why Encryption Fails

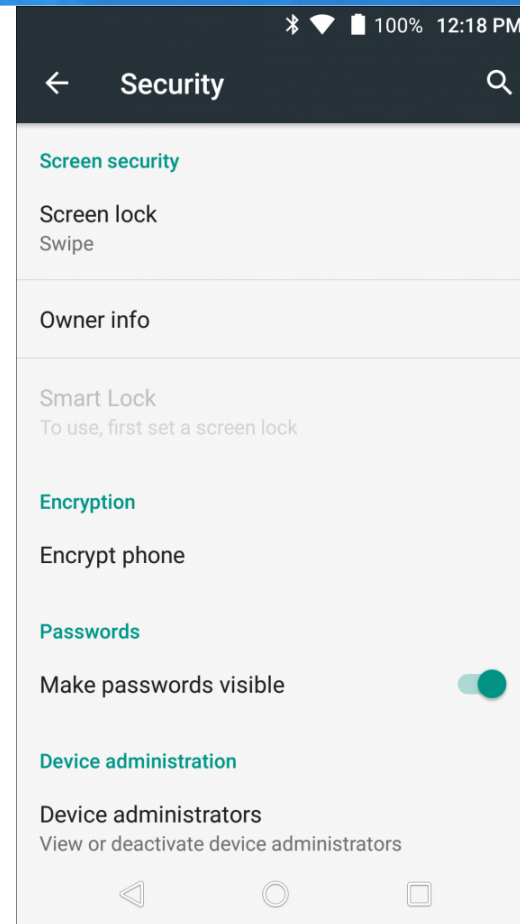
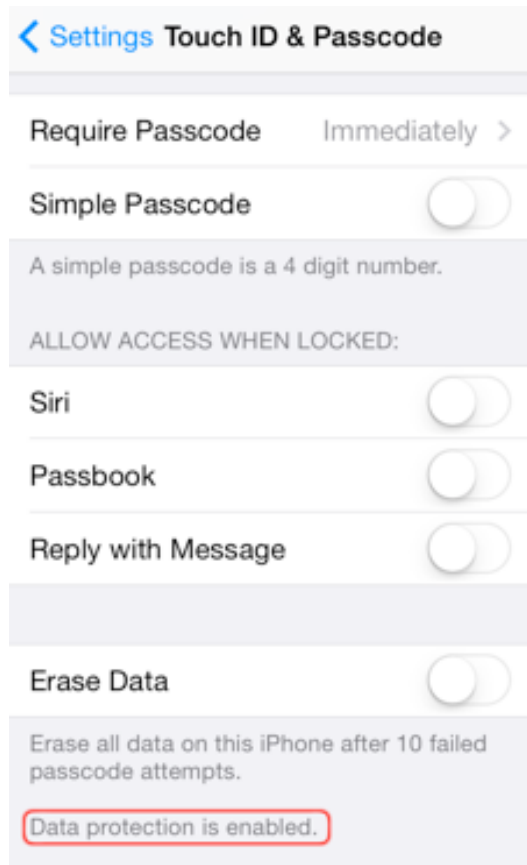
- + Poor password (i.e. key)
- + Unsecured password/key
- + Physical access to a running device (Cold Boot Attack, Evil Maid Attack)
- + Email is sent encrypted, but stored unencrypted.
- + Unencrypted chat logs are stored on a device.
- + Failure to delete data securely.
- + Encryption implementation has a backdoor, uses a weak cipher or implemented improperly.

Gert and Bernie on Email Security



<https://postmodernsecurity.com/category/security-soc-puppets/>

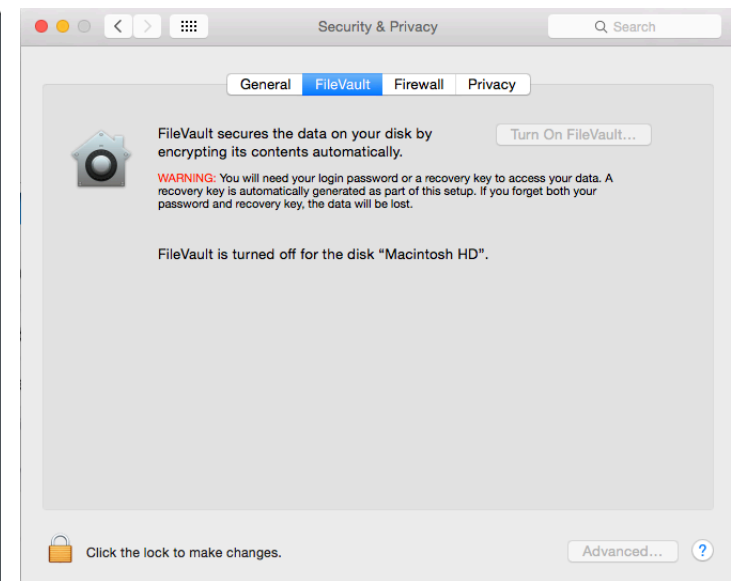
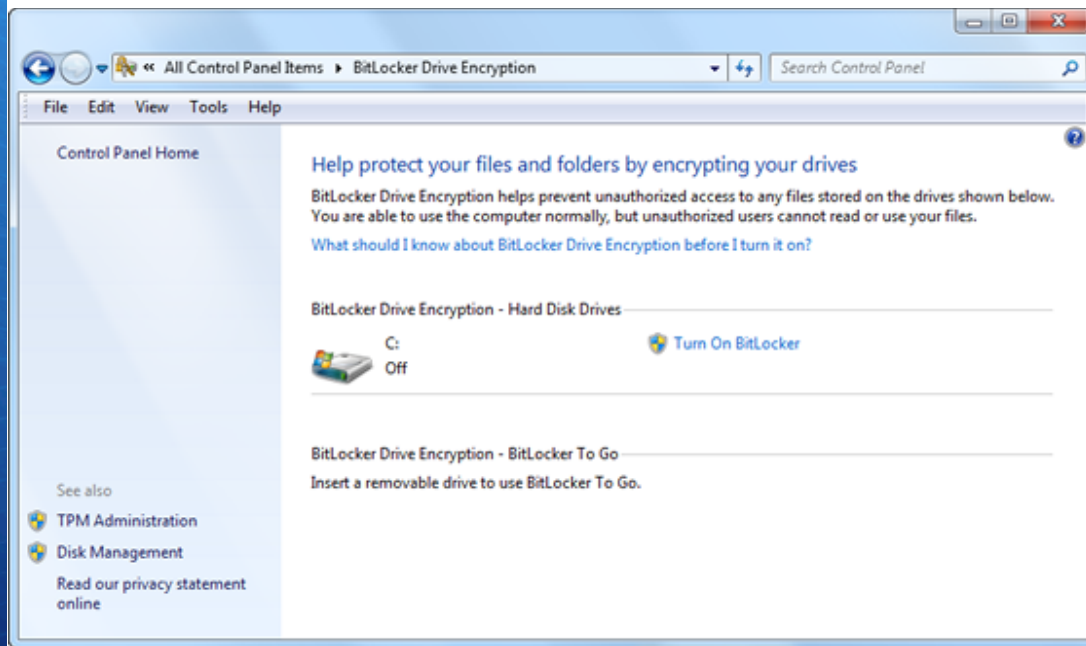
Turning On Encryption: iOS and Android



How to encrypt an iPhone <http://www.zdnet.com/article/how-to-turn-on-iphone-ipad-encryption-in-one-minute/>

How to encrypt Android <https://www.howtogeek.com/141953/how-to-encrypt-your-android-phone-and-why-you-might-want-to/>

Enable Encryption: Windows and OSX



Enabling Bitlocker <https://uit.stanford.edu/service/encryption/wholedisk/bitlocker>

Enabling FileVault <https://support.apple.com/en-us/HT204837>

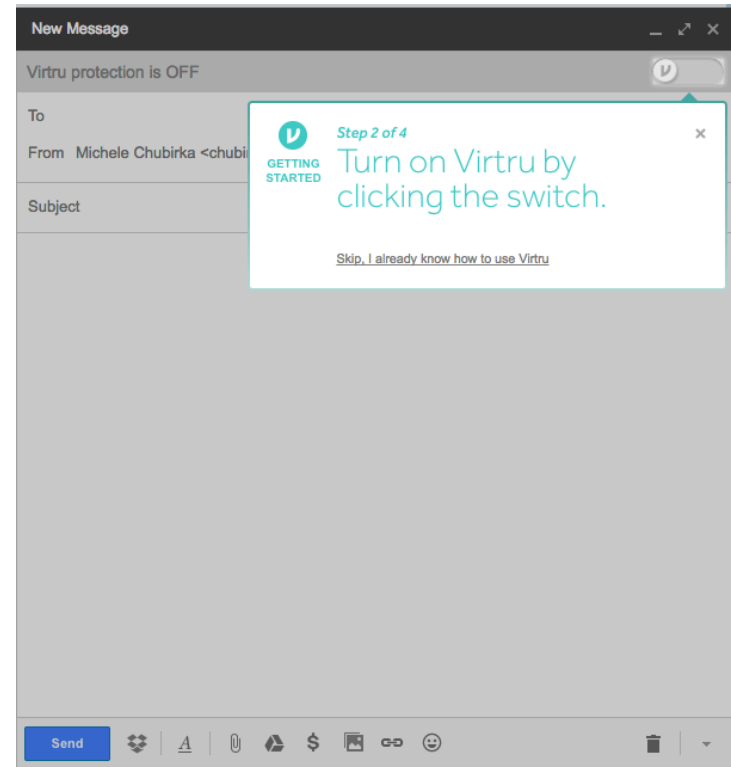
ProtonMail and Virtru



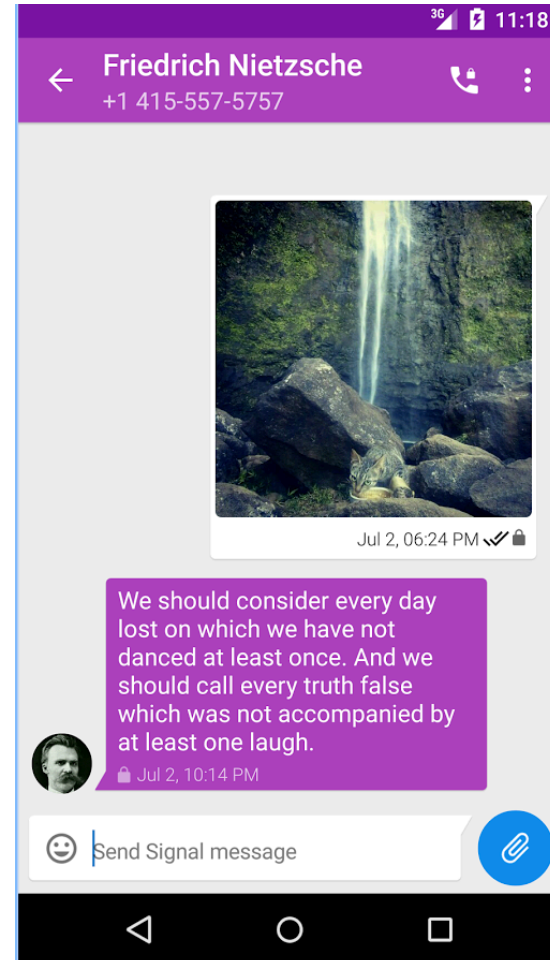
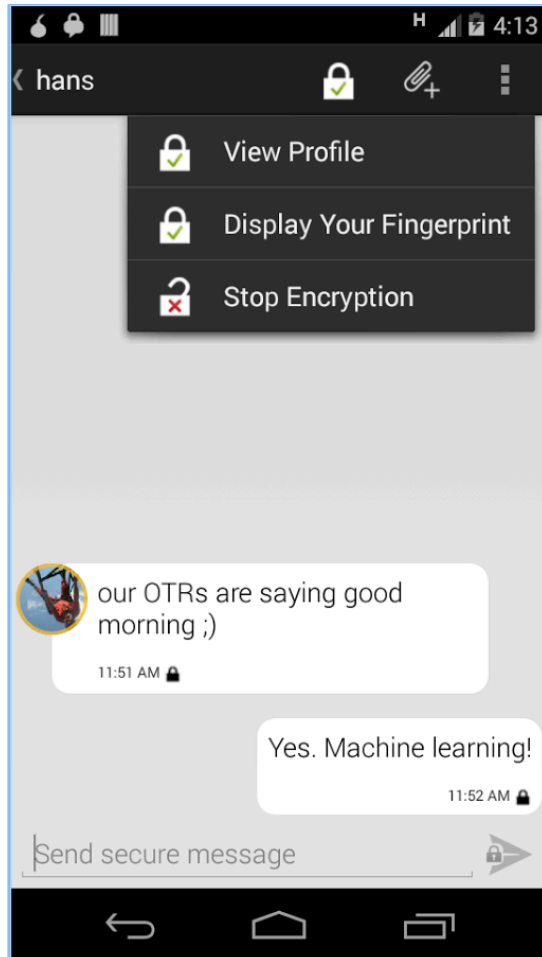
Secure Email Based in Switzerland

Secure Your Communications with ProtonMail

GET YOUR ENCRYPTED EMAIL ACCOUNT



Chatsecure and Signal



Endpoint Protection and Anti-Virus Software

- + Yes, Macs get malware.
- + Install or turn on your firewall. On OSX, it isn't enabled by default.
- + Set boot and screensaver passwords.
- + Apply all application patches and operating system updates.
- + Make sure mobile devices (laptops, phones, tablets) have screen timeouts and are password protected. The fingerprint reader is okay, but avoid PINs.
- + If your computer becomes infected with malware, reinstall it. Modern malware is difficult to remove completely.

Hackers Selling Undetectable Proton Malware for macOS in 40 BTC

The initial price for Proton RAT malware was 100 BTC.



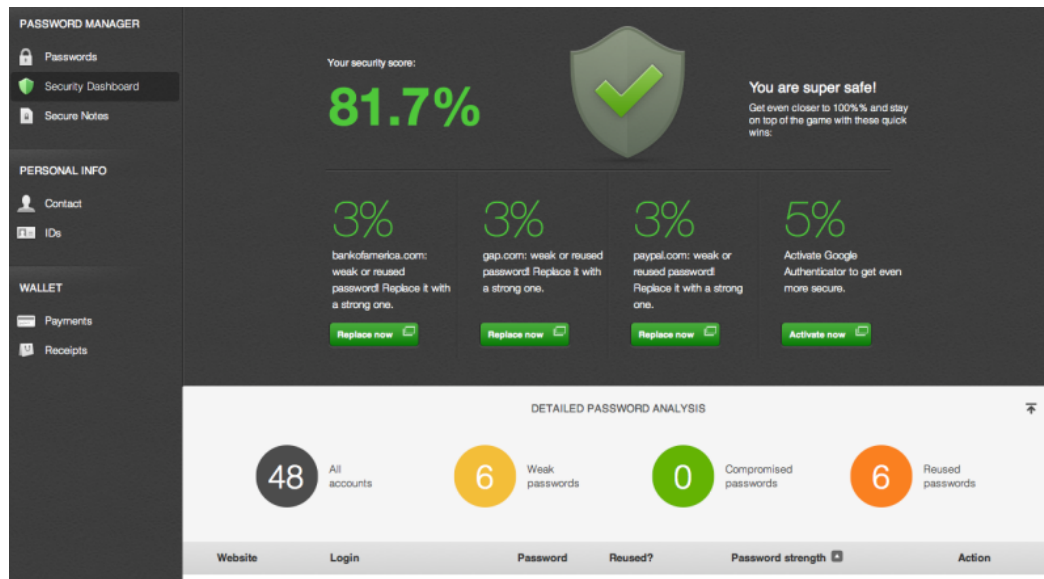
by **Waqas**
3 days ago



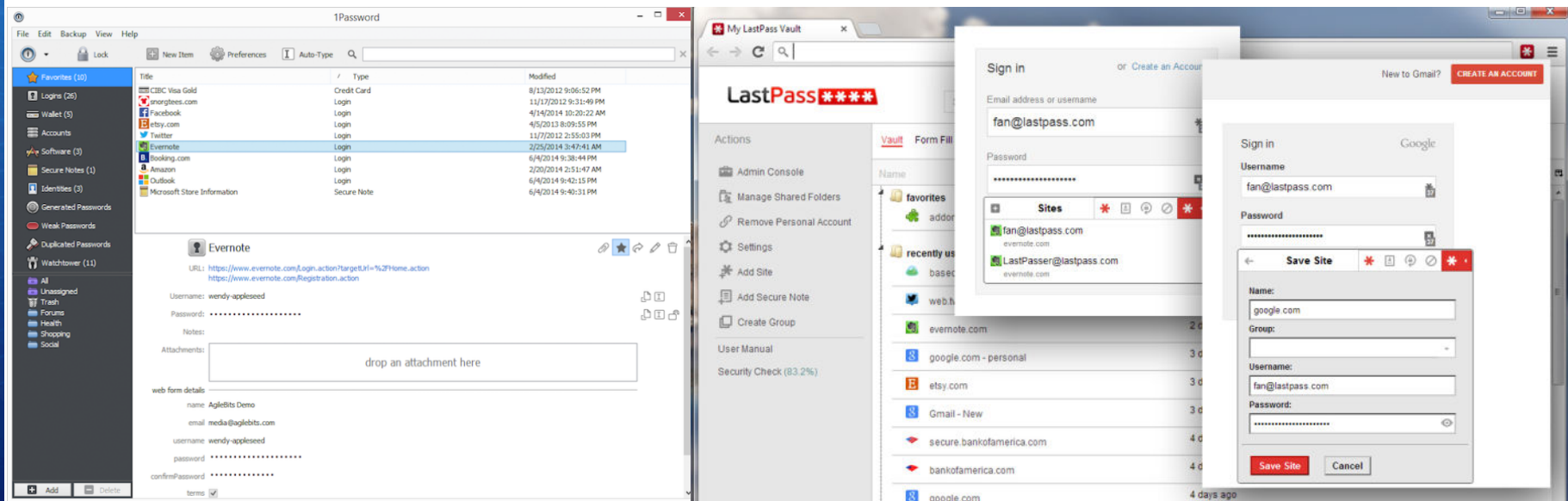
Email
@hackread



<https://www.hackread.com/hackers-selling-undetectable-proton-mac-malware/>



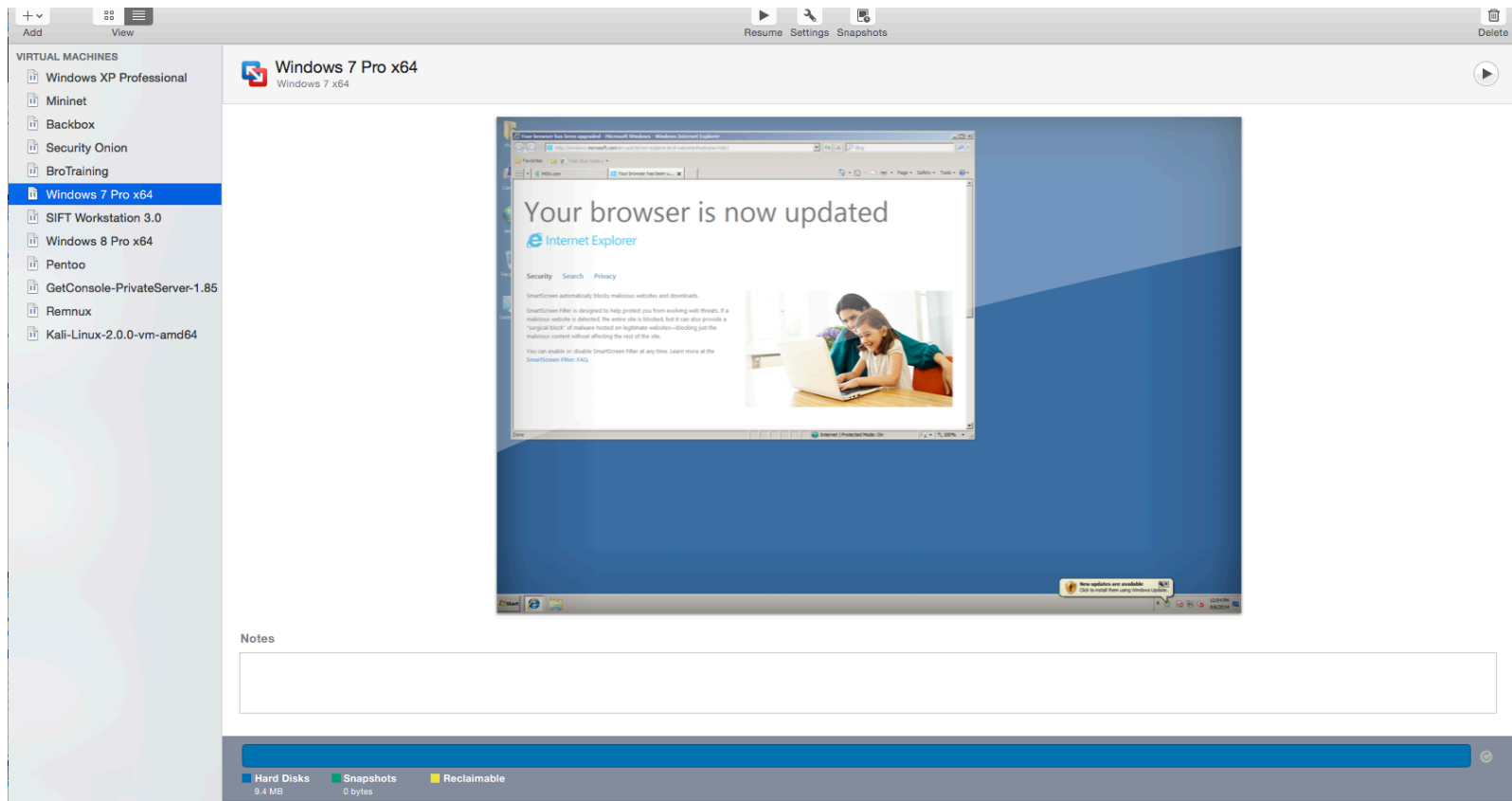
Password Managers



Going Off The Grid

- + Use dedicated devices prepaid phones and laptops without any personal information or accounts.
- + Use special software that runs a virtualized computer image on your system and can be easily destroyed.
 - + Vmware Fusion
 - + Parallels
 - + VirtualBox
- + Boot from a read-only OS, run applications from a USB drive or a sandbox environment.
 - + Tails
 - + Portable Apps
 - + Qubes OS

VMware Fusion: Windows on Mac



Tails and PortableApps



Set your PC free.

Your favorite apps,



carried on a portable or cloud drive,



work on PCs everywhere you go.

[Download Now - Free](#)



[Learn more...](#) | [Latest apps and news...](#)

As Seen In...



 **Fast**

  
Download Install and GO

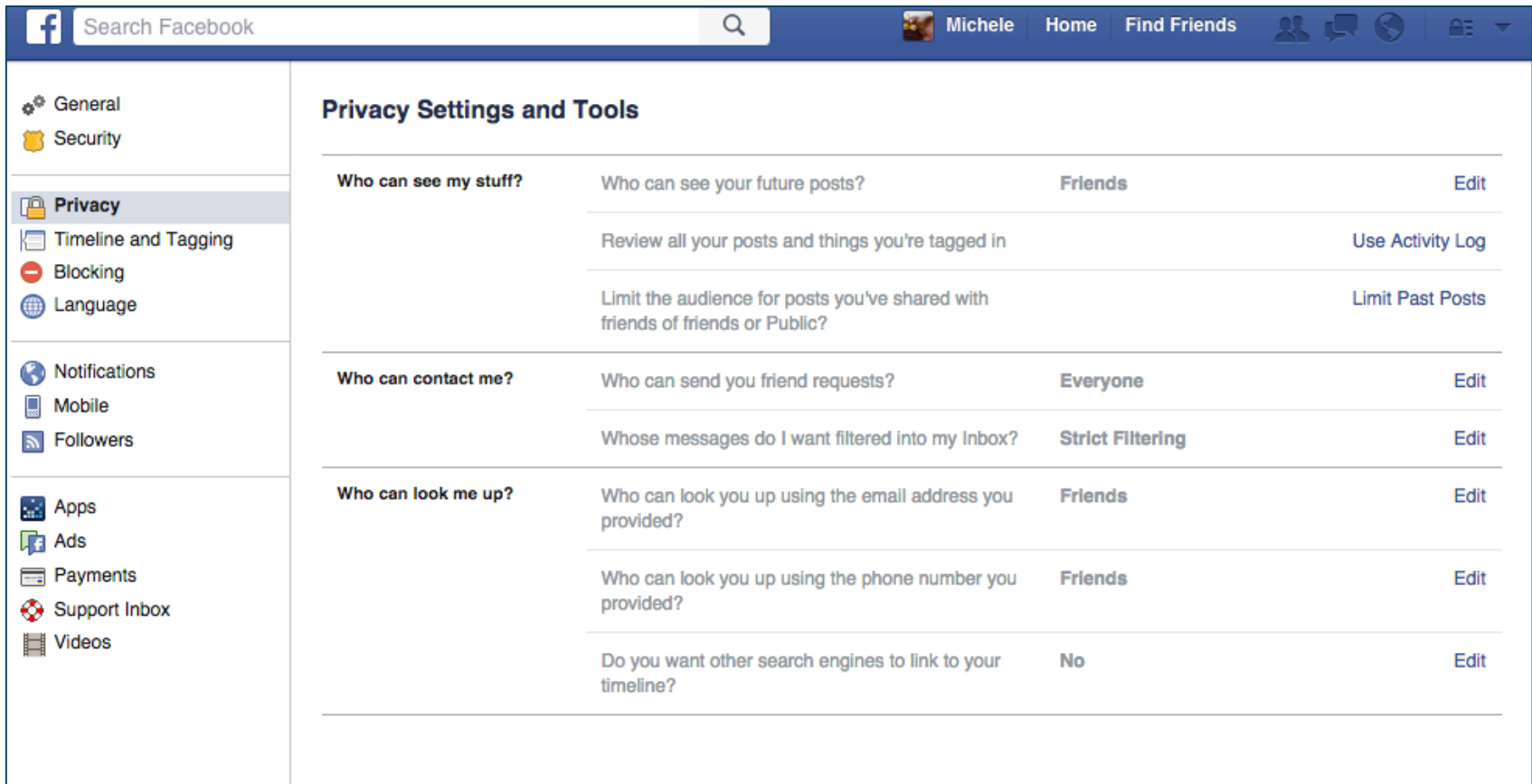
 **Flexible**

- Make every PC feel like your own
- Use your favorite software everywhere
- Carry your bookmarks and settings
- Edit your documents, photos and more

 **Free**

- Free. No time limits. No catch.
- No registration required. Never was.
- No adware. No spyware. No malware.
- OSI Certified Open Source Software™.

Facebook Privacy and Security Options

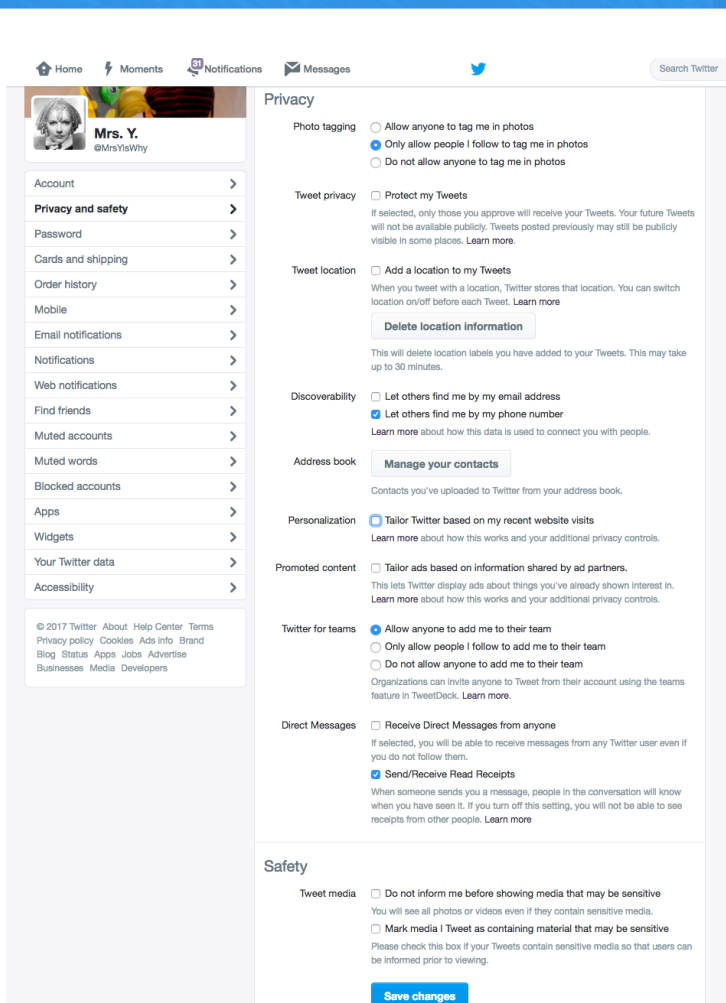


The screenshot shows the Facebook interface with the 'Privacy' settings page selected. The left sidebar contains navigation links: General, Security, Privacy (highlighted), Timeline and Tagging, Blocking, Language, Notifications, Mobile, Followers, Apps, Ads, Payments, Support Inbox, and Videos. The main content area is titled 'Privacy Settings and Tools' and displays various privacy controls organized into sections.

Privacy Settings and Tools

Who can see my stuff?	Who can see your future posts?	Friends	Edit
	Review all your posts and things you're tagged in		Use Activity Log
	Limit the audience for posts you've shared with friends of friends or Public?		Limit Past Posts
Who can contact me?	Who can send you friend requests?	Everyone	Edit
	Whose messages do I want filtered into my Inbox?	Strict Filtering	Edit
Who can look me up?	Who can look you up using the email address you provided?	Friends	Edit
	Who can look you up using the phone number you provided?	Friends	Edit
	Do you want other search engines to link to your timeline?	No	Edit

Twitter and LinkedIn Privacy Options



The screenshot shows the Twitter Privacy settings page for a user named Mrs. Y. (@MrsYsWhy). The page is divided into several sections: Photo tagging, Tweet privacy, Tweet location, Discoverability, Address book, Personalization, Promoted content, Twitter for teams, Direct Messages, and Safety. Each section contains various privacy options that can be toggled on or off. A 'Save changes' button is located at the bottom of the page.

Photo tagging

- ☐ Allow anyone to tag me in photos
- ☒ Only allow people I follow to tag me in photos
- ☐ Do not allow anyone to tag me in photos

Tweet privacy

- ☐ Protect my Tweets

If selected, only those you approve will receive your Tweets. Your future Tweets will not be available publicly. Tweets posted previously may still be publicly visible in some places. [Learn more.](#)

Tweet location

- ☐ Add a location to my Tweets

When you tweet with a location, Twitter stores that location. You can switch location on/off before each Tweet. [Learn more](#)

[Delete location information](#)

This will delete location labels you have added to your Tweets. This may take up to 30 minutes.

Discoverability

- ☐ Let others find me by my email address
- ☒ Let others find me by my phone number

[Learn more](#) about how this data is used to connect you with people.

Address book

[Manage your contacts](#)

Contacts you've uploaded to Twitter from your address book.

Personalization

- ☒ Tailor Twitter based on my recent website visits

[Learn more](#) about how this works and your additional privacy controls.

Promoted content

- ☐ Tailor ads based on information shared by ad partners.

This lets Twitter display ads about things you've already shown interest in. [Learn more](#) about how this works and your additional privacy controls.

Twitter for teams

- ☒ Allow anyone to add me to their team
- ☐ Only allow people I follow to add me to their team
- ☐ Do not allow anyone to add me to their team

Organizations can invite anyone to Tweet from their account using the teams feature in TweetDeck. [Learn more.](#)

Direct Messages

- ☐ Receive Direct Messages from anyone

If selected, you will be able to receive messages from any Twitter user even if you do not follow them.

- ☒ Send/Receive Read Receipts

When someone sends you a message, people in the conversation will know when you have seen it. If you turn off this setting, you will not be able to see receipts from other people. [Learn more](#)

Safety

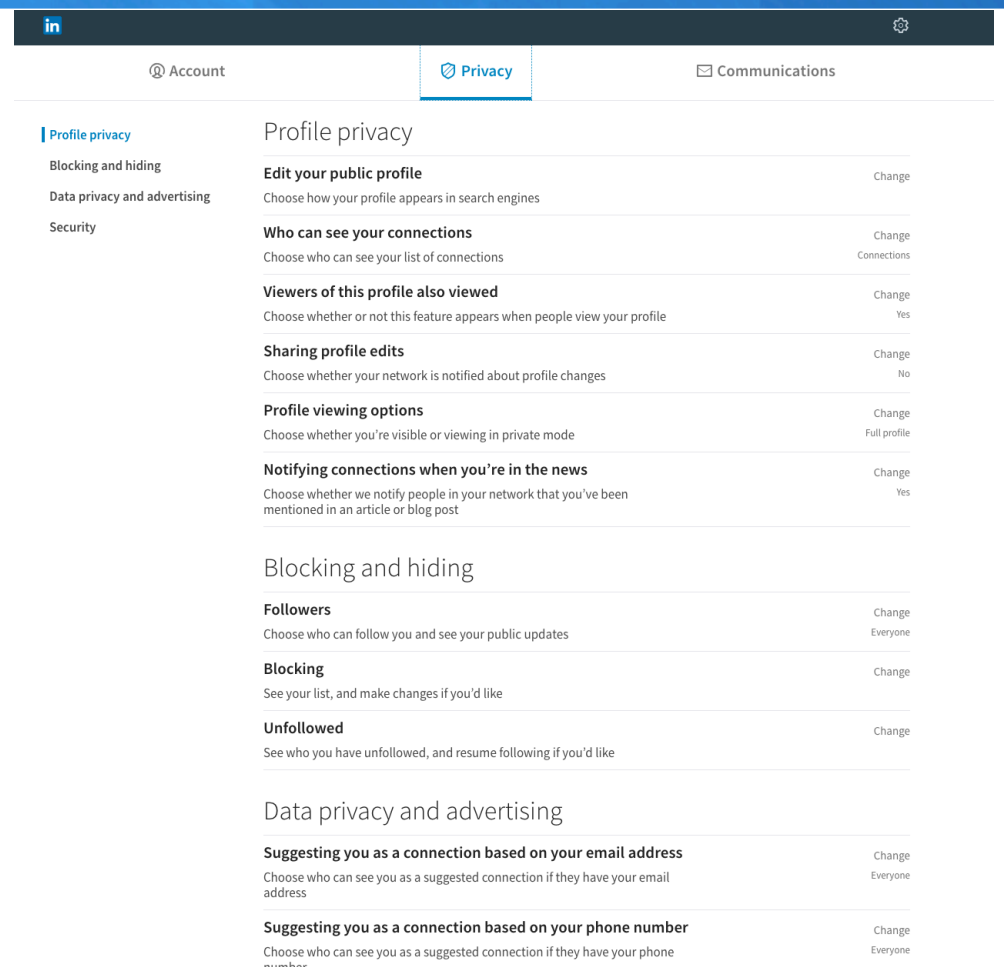
Tweet media

- ☐ Do not inform me before showing media that may be sensitive

You will see all photos or videos even if they contain sensitive media.- ☐ Mark media I Tweet as containing material that may be sensitive

Please check this box if your Tweets contain sensitive media so that users can be informed prior to viewing.

[Save changes](#)



The screenshot shows the LinkedIn Privacy settings page. The page is divided into several sections: Profile privacy, Blocking and hiding, Data privacy and advertising, and Security. Each section contains various privacy options that can be toggled on or off. A 'Save changes' button is located at the bottom of the page.

Profile privacy

Edit your public profile [Change](#)

Choose how your profile appears in search engines

Who can see your connections [Change](#)

Choose who can see your list of connections [Connections](#)

Viewers of this profile also viewed [Change](#)

Choose whether or not this feature appears when people view your profile [Yes](#)

Sharing profile edits [Change](#)

Choose whether your network is notified about profile changes [No](#)

Profile viewing options [Change](#)

Choose whether you're visible or viewing in private mode [Full profile](#)

Notifying connections when you're in the news [Change](#)

Choose whether we notify people in your network that you've been mentioned in an article or blog post [Yes](#)

Blocking and hiding

Followers [Change](#)

Choose who can follow you and see your public updates [Everyone](#)

Blocking [Change](#)

See your list, and make changes if you'd like

Unfollowed [Change](#)

See who you have unfollowed, and resume following if you'd like

Data privacy and advertising

Suggesting you as a connection based on your email address [Change](#)

Choose who can see you as a suggested connection if they have your email address [Everyone](#)

Suggesting you as a connection based on your phone number [Change](#)

Choose who can see you as a suggested connection if they have your phone number [Everyone](#)

OSINT Tool: Stalkscan

stalkscan.com

All 'public' info Facebook doesn't let you see

Enter the link of the profile you want to check

Profile #1317866193 loaded!

Attention: this tool does **not** violate Facebook's privacy settings. 'Only me' stays 'only me'.
It only shows hidden content you have access to.

Click on the hidden content you'd like to view.

Tags

Pictures

Videos

Posts

Comments

Pictures

People

Family

Friends

Friends of friends

Co-workers

Classmates

Locals

Defense in Depth

- + Enable multi-factor authentication on accounts, regularly change passwords and use a password safe to limit password reuse.
- + Delete data securely.
- + ENCRYPT: mobile devices, laptops, email, chat, messaging.
- + Cover web cameras. Strip EXIF data from photos and configure your devices not to add location information.
- + Turn off location tracking in your devices except when you need it.
- + If you need to travel with an electronic device, consider using one dedicated for this purpose that has limited access to personal data. When crossing a border, always shut down devices completely.
- + Never take an electronic device to a demonstration or consider purchasing a “burner” which isn’t associated with any of your accounts.
- + Use anti-virus, a firewall and *patch your devices regularly*. Secure your home network: encrypt wireless, change the default password on your router, configure the firewall. Remember, apply security in layers .
- + Avoid unencrypted wireless. If you must use it, then only with a VPN.
- + Enable privacy options in social media accounts and in your browser. Use search engines and other tools to validate your settings.
- + Separate your social media personas, don’t use real names if not required.

Trust No One

CAUTION:

There are limitations to any security tool. A dedicated adversary with the right resources (time and money) can bypass them.

LAYER YOUR DEFENSES!



Resources

- + How Whole Disk Encryption Works https://www.symantec.com/content/en/us/enterprise/white_papers/b-pgp_how_wholedisk_encryption_works_WP_21158817.en-us.pdf
- + Chatting in Secret <https://theintercept.com/2015/07/14/communicating-secret-watched/>
- + Enemies of the Internet <http://surveillance.rsf.org/en/>
- + Me and My Shadow Project <https://myshadow.org/>
- + Freedom on the Net <https://freedomhouse.org/report-types/freedom-net>
- + Access Now Digital Security Helpline <https://www.accessnow.org/help/>
- + EFF Surveillance Self Defense for tutorials on using security tools <https://ssd.eff.org/>
- + Krebs On Security <http://krebsonsecurity.com/>
- + Best VPN Services 2017 <http://www.pcmag.com/article2/0,2817,2403388,00.asp>
- + Digital First Aid Kit <https://www.digitaldefenders.org/digitalfirstaid/>
- + Tor Browser, Orbot or Onion Browser for mobile devices <https://www.torproject.org/about/overview.html.en>
- + Burner Phone Best Practices <http://www.b3rn3d.com/blog/2014/01/22/burnerphone/>
- + Password managers: Dashlane, 1Password, Lastpass