

Hands-on Privacy Tools



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Today's Topics

- **Introduction**

- Importance of smartphone privacy and security
- Overview of potential risks

- **Commonly used tools**

- Private Web Browsers
- Private Email
- Private Instant Messaging
- Password Manager
- Virtual Private Networks (VPNs)

- **Where to find good tools**

- Privacy Tools Website
 - <https://privacytools.io>

- **Installation and use**

- Brave Browser
- Proton Mail
- Signal Messenger
- Bitwarden / Proton Pass
- Proton VPN

Importance of Smartphone Privacy and Security

- **Your smartphone: A treasure trove of personal information**
- **Privacy and security: Key to protecting your digital life**



Potential Risks

- **Identity theft**
- **Financial fraud**
- **Data breaches**
- **Unauthorized access to personal information**
- **Location tracking**
- **Everyone is a target (Yes, even you!)**

Commonly Used Privacy Tools

- **Private Web Browsers**
- **Private Email**
- **Private Instant Messaging**
- **Password Manager**
- **Virtual Private Networks (VPNs)**

Private Web Browser – Brave Browser

- **Prevents invisible trackers from building a portfolio of your behavior**

Private Email – Proton Mail

- **Prevents invisible trackers from building a portfolio of your behavior**
- **End-to-end encryption**
- **Doesn't use email content for marketing**
- **Cannot or does not provide account access to third parties (both commercial and government)**
- **Referral link: <https://pr.tn/ref/YJS1HGKJNYD0>**

Private Instant Messaging – Signal

- **End-to-end encryption**
- **Cannot or does not provide account access to third parties (both commercial and government)**
- **Preferably has a unique identifier that is not tied to other personal information (such as phone number, email address, etc)**

Password Manager – Bitwarden or Proton Pass

- **Helps you create unique passwords for each app/website**
- **Only need to remember a single password even though you may use hundreds of sites**
- **Strong encryption and key management to prevent third party access**
- **Referral link: <https://pr.tn/ref/YJS1HGKJNYD0>**

Virtual Private Network (VPN) – Proton VPN

- **Often considered the #1 priority for internet privacy and safety, but marketing has encouraged a lot of misunderstanding about what VPNs actually do**
- **Referral link: <https://pr.tn/ref/YJS1HGKJNYD0>**

Where to Find Other Good Tools

- **Privacy Tools Website – <https://privacytools.io>**
- **Many other good options**
- **My picks are based on personal preference**
- **Proton Suite provides a good all-in-one platform**
 - Free version includes email, calendar, cloud storage, VPN, and password manager



Questions?

Q&A

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Resources

- **Youtube**

- <https://www.youtube.com/@NaomiBrockwellTV>
- <https://www.youtube.com/@AllThingsSecured>

- **Blogs/News**

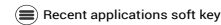
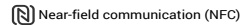
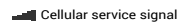
- <https://www.privacytools.io/guides/category/smartphones>
- NSA's Mobile Device Best Practices

Mobile Device Best Practices from the NSA



National Security Agency | Mobile Device Best Practices

Threats to mobile devices are more prevalent and increasing in scope and complexity. Users of mobile devices desire to take full advantage of the features available on those devices, but many of the features provide convenience and capability but sacrifice security. This best practices guide outlines steps the users can take to better protect personal devices and information.



! BLUETOOTH¹

Disable Bluetooth[®] when you are not using it. Airplane mode does not always disable Bluetooth[®].

! WI-FI

DO NOT connect to public Wi-Fi networks. Disable Wi-Fi when unneeded. Delete unused Wi-Fi networks.

! CONTROL

Maintain physical control of the device. Avoid connecting to unknown removable media.

✓ CASE

Consider using a protective case that drowns the microphone to block room audio (hot-miking attack). Cover the camera when not using.

○ CONVERSATIONS

DO NOT have sensitive conversations in the vicinity of mobile devices not configured to handle secure voice.

✓ PASSWORDS

Use strong lock-screen pins/passwords: a 6-digit PIN is sufficient if the device wipes itself after 10 incorrect password attempts. Set the device to lock automatically after 5 minutes.

! APPLICATIONS

Install a minimal number of applications and only ones from official application stores. Be cautious of the personal data entered into applications. Close applications when not using.

✓ SOFTWARE UPDATES

Update the device software and applications as soon as possible.

✓ BIOMETRICS

Consider using Biometrics (e.g., fingerprint, face) authentication for convenience to protect data of minimal sensitivity.

! TEXT MESSAGES

DO NOT have sensitive conversations on personal devices, even if you think the content is generic.

○ ATTACHMENTS/LINKS

DO NOT open unknown email attachments and links. Even legitimate senders can pass on malicious content accidentally or as a result of being compromised or impersonated by a malicious actor.

! TRUSTED ACCESSORIES

Only use original charging cords or charging accessories purchased from a trusted manufacturer. **DO NOT** use public USB charging stations. Never connect personal devices to government computers, whether via physical connection, Wi-Fi, or Bluetooth[®].

! LOCATION

Disable location services when not needed. **DO NOT** bring the device with you to sensitive locations.

○ POWER

Power the device off and on weekly.

○ MODIFY

DO NOT jailbreak or root the device.

! POP-UPS

Unexpected pop-ups like this are usually malicious. If one appears, forcibly close all applications (i.e., iPhone^{®2}: double tap the Home button[®]; or Android^{™3}: click "recent apps" soft key).

! Avoid **○ Disable** **✓ Do** **○ Do Not**

¹For iPhone X[®] or later, see: support.apple.com/en-us/HT201330

²Bluetooth[®] is a registered trademark of Bluetooth SIG, Inc.

³iPhone[®] and iPhone[®] applications are a registered trademark of Apple, Inc.

⁴Android[®] is a registered trademark of Google LLC.

The information contained in this document was developed in the course of NSA's Cybersecurity mission, including its responsibilities to assist Executive departments and agencies with operations security programs.

Mobile Device Best Practices from the NSA



National Security Agency | Mobile Device Best Practices

WHAT CAN I DO TO PREVENT/MITIGATE?

THREAT/VULNERABILITY		Update Software & Apps	Only Install Apps from Official Stores	Turn Off Cellular, WiFi, Bluetooth	Do Not Connect to Public Networks	Use Encrypted Voice/ Text/Data Apps	Do Not Click Links or Open Attachments	Turn Device Off & On Weekly	Use Mic-Drowning Case, Cover Camera	Avoid Carrying Device/No Sensitive Conversations Around Device	Lock Device with PIN	Maintain Physical Control of Device	Use Trusted Accessories	Turn Off Location Services
	Spearphishing (To install Malware)	<div></div>	<div></div>				<div></div>	<div></div>						
	Malicious Apps	<div></div>	<div></div>				<div></div>							
	Zero-Click Exploits	<div></div>			<div></div>			<div></div>						
	Malicious Wi-Fi Network/Close Access Network Attack	<div></div>		<div></div>	<div></div>	<div></div>								
	Foreign Lawful Intercept/ Untrusted Cellular Network	<div></div>	<div></div>	<div></div>		<div></div>								
	Room Audio/ Video Collection	<div></div>	<div></div>						<div></div>	<div></div>				
	Call/Text/Data Collection Over Network		<div></div>	<div></div>	<div></div>	<div></div>								
	Geolocation of Device		<div></div>	<div></div>	<div></div>					<div></div>				<div></div>
	Close Access Physical Attacks	<div></div>									<div></div>	<div></div>	<div></div>	
	Supply Chain Attacks												<div></div>	
			Does not prevent (no icon)			<div></div> Sometimes prevents			<div></div> Almost always prevents					

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NSA Cybersecurity

Client Requirements General Cybersecurity Inquiries: Cybersecurity_Requests@nsa.gov, 410.854.4200, Cybersecurity_Requests@nsa.gov
Media Inquiries: Press Desk: 443.634.0721, MediaRelations@nsa.gov