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PASSWORD MANAGERS – AN OVERVIEW

Agenda

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One Solution



10 Worst Passwords of 2018

1. 123456
2. password
3. 123456789
4. 12345678
5. 12345
6. 111111
7. 1234567
8. sunshine
9. qwerty
10. iloveyou

Time to Crack Password

Amount of Time to Crack Passwords

"abcdefg" 7 characters  .29 milliseconds

"abcdefgh" 8 characters  5 hours

"abcdefghi" 9 characters  5 days

"abcdefghij" 10 characters  4 months

"abcdefghijk" 11 characters  1 decade


"abcdefghijkl" 12 characters  2 centuries




Time to Crack Password

Character Type Difference


Combining Alpha and Numeric



"123456789"
Cracked 431 times during
the blink of an eye



"A23456789"
Will be cracked when
Oscar Winner Leonardo DiCaprio is 78 years old

 Better Buys

Time to Crack Password

Character Type Difference

Combining ASCII, Lowercase, Uppercase, and Numeric

"Password"

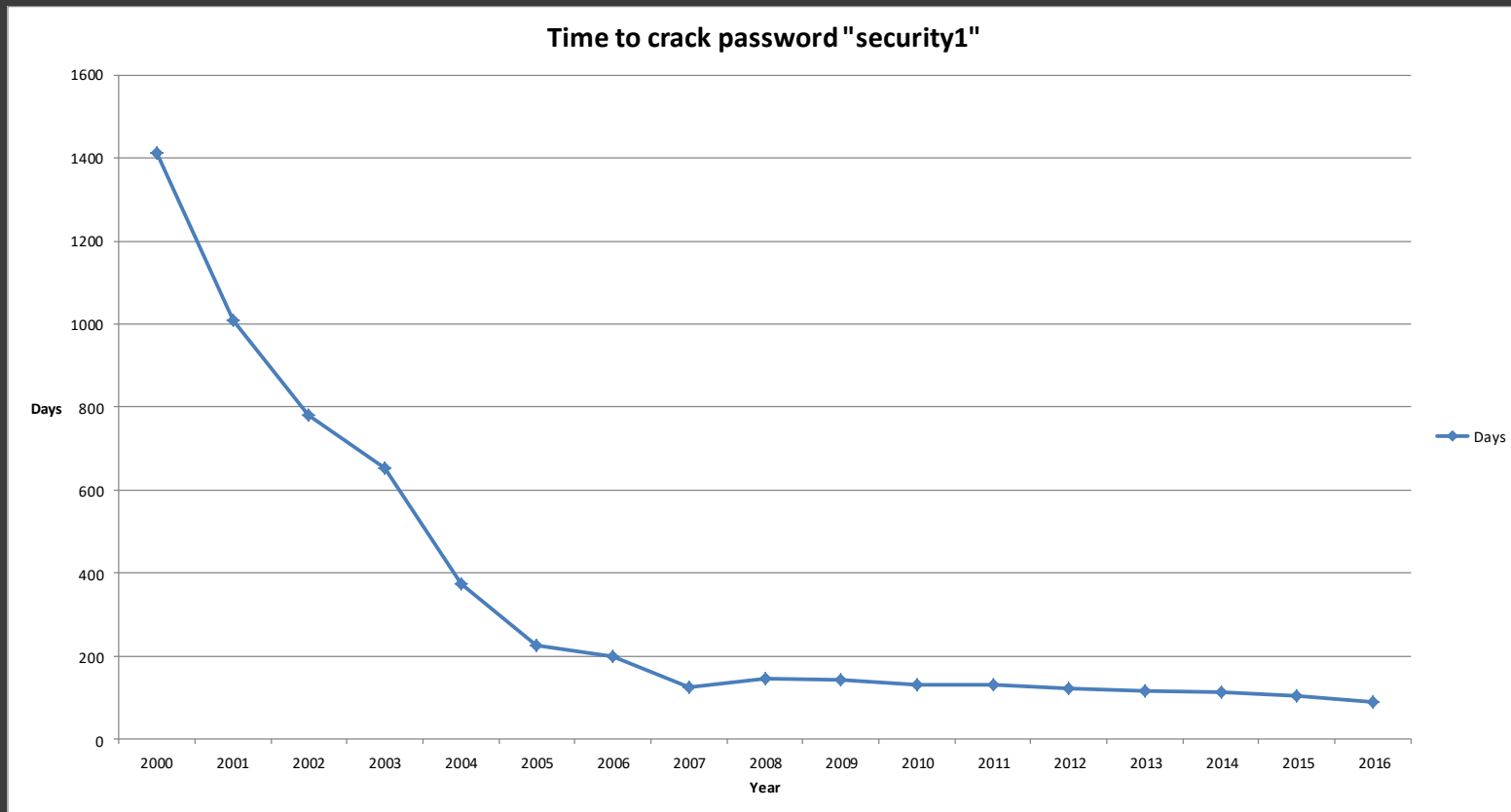
Cracked just under the time
it would take lightning to strike 2-3 times

"P@sswOrD"

Will be cracked in the same amount of time
it took to carve Mt. Rushmore, or 14 years.

 Better Buys

Time to Crack Password



How Hackers Crack Passwords

- <https://youtu.be/YiRPt4vrSSw>

How Easy It Is To Crack Your Password

- ◎ <https://youtu.be/YiRPt4vrSSw>

How Do Password Managers Work

- <https://youtu.be/DI72oBhMgWs>

What is a Password Manager

A password manager will generate, retrieve, and keep track of super-long, crazy-random passwords across countless accounts for you, while also protecting all your vital online info—not only passwords but PINs, credit-card numbers and their three-digit CVV codes, answers to security questions, and more ... And to get all that security, you'll only need to remember a single password



Why use a Password Manager?

- We are terrible at passwords
 - We suck at creating them
 - the top two most popular remain “123456” and “password”
 - We share them way too freely
 - We forget them all the time
- We forget them all the time
 - A password manager relieves the burden of thinking up and memorizing unique, complex logins—the hallmark of a secure password.
 - It allows you to safely share those logins with others when necessary.
 - These tools encrypt your login info in a virtual vault—either locally or in the cloud—and lock it with a single master password, they protect the passwords themselves.



What is a Password Manager

- “Password managers are not a magic pill,” Lujó Bauer, a security researcher and associate professor at Carnegie Mellon University, says, “but for most users they’ll offer a much better combination of security and convenience than they have without them. Everyone should be using one.”
- Convinced, but don’t know which one to choose? Security experts say you shouldn’t overthink it. “As long as it’s a name brand what password manager you use largely comes down to your personal preferences,” says Dan Guido, CEO of digital security firm Trail of Bits. “At the end of the day, the most important thing is that you find it easy to use so you’ll stick to it.”



Cloud Based Password Managers

Arguments for the Cloud

- ◎ **Synchronization across devices**

There's no work needed in version-managing a password vault file, as there's only one vault and it's always current.

- ◎ **Encryption**

Most cloud-based password managers encrypt your password data on your device, before it gets sent anywhere on the internet, and that encrypted data is sent to and from cloud storage using an encrypted connection.

- ◎ **Ease of use**

You don't have to be a security nerd, or even a security neophyte, to get up and running. The tools work and work quite well.

Cloud Based Password Managers

Arguments against the Cloud

- **Trusting a third party**

Your passwords move through a chain of infrastructure that encrypts your data and connects your devices to the cloud, and you are relying on all of that to be well maintained and free from security vulnerabilities.

- **All eggs in one big basket**

You could take every possible precaution to secure your account but ultimately, keeping your passwords safe relies on the encryption employed by cloud-based password working as advertised.

- **Cost**

Sometimes the features you really want in a third-party password manager come with a price, either one-time or subscription based. Generally, these are for features and not the base password manager itself, *though if your budget is zero any cost is prohibitive.*

Paid Password Managers

Product	iOS	Android	Windows	Mac	Linux	Chromebook	Free Version	Base Price (Annual)	Sources	Web Page	Comments
1Password	X	X	X	X			Trial	\$ 35.88	CNET Cloudwards Digital Trends	https://1password.com	
Blur	X	X	X	X			Yes	\$ 39.00	CNET Cloudwards	https://abine.com	
Dashlane	X	X	X	X			Yes	\$ 39.96	CNET PCWorld Techradar Cloudwards Digital Trends Credit Karma	https://www.dashlane.com	
EnPass	X	X	X	X	X	X	Yes	\$ 9.99	CNET PCMag	https://www.enpass.io	one time fee per mobile device
Kaspersky Password Manager	X	X	X	x			Yes	\$ 14.99	Cloudwards	https://usa.kaspersky.com	Free limited to 15 entries
Keeper	X	X	X	X			Trial	\$ 25.49	CNET Cloudwards Digital Trends	https://keepersecurity.com	
LastPass	X	X	X	X	X		Yes	\$ 24.00	CNET PCWorld PCMag Techradar wirecutter Cloudwards Digital Trends Credit Karma	https://www.lastpass.com	

Paid Password Managers

Product	iOS	Android	Windows	Mac	Linux	Chrome book	Free Version	Base Price (Annual)	Source	Web Page	Comments
LogmeOnce	X	X	X	X			Yes	\$ 12.00	CNET PCMag	https://www.logmeonce.com	
RoboForm	X	X	X	X	X	X	Trial	\$ 19.95	CNET techradar	https://www.roboform.com	
Sticky Password	X	X	X	X			Yes	\$ 29.99	CNET techradar Cloudwards Digital Trends	https://www.stickypassword.com	
True Key	X	X	X	X			Yes	\$ 19.99	CNET	https://www.truekey.com	free version (15 passwords or fewer)
Zoho Vault	X	X	X	X			Yes	\$ 12.00	CNET	https://www.zoho.com/	Safari (Mac) Chrome and Firefox (Mac and Windows)
Symantec Norton Password Manager	X	X	X				No	\$ 0.00	PCMag	https://us.norton.com/	Norton Account Required

Free Password Managers

Product	iOS	Android	Windows	Mac	Linux	Source	Web Page	Comments
Myki Password Manager & Authenticator	X	X	X	X	X	PCMag	https://myki.com/	Smartphone based
1U Password Manager	X	X	X	X		PCMag	iTunes store or Google Play store	Smartphone based Biometric authentication
Avira Password Manager	X	X	X	X		PCMag	https://www.avira.com	
KeePass			X	X	X	PCMag techradar	https://keepass.info/	Open Source

How to Use LastPass

- <https://youtu.be/3e6QxbJMCyo>

How to Use Dashlane

- <https://youtu.be/pnp3FsOcZT8>

How to Use Keepass

- <https://youtu.be/3mQ7t2sQ0Ts>

Final Reminder



References

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- <https://www.cloudwards.net/best-password-manager/>
- <https://www.cnet.com/news/the-best-password-managers-directory/>
- <https://www.consumerreports.org/digital-security/everything-you-need-to-know-about-password-managers/>
- <https://www.creditkarma.com/advice/i/best-password-manager/>
- <https://www.digitaltrends.com/computing/best-password-managers/>
- <https://www.pcmag.com/roundup/331555/the-best-free-password-managers>
- <https://www.pcworld.com/article/3207185/best-password-managers-reviews-and-buying-advice.html>
- https://www.washingtonpost.com/technology/2018/07/12/your-password-has-likely-been-stolen-heres-what-do-about-it/?noredirect=on&utm_term=.778e457769ca