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SECURITY

Facebook buys black market passwords to keep your account safe

The company's security chief says account safety is about more than just building secure software.

BY KATIE COLLINS | NOVEMBER 9, 2016 12:56 PM PST



For a data-saturated company of its size and scope, Facebook has markedly managed to avoid the kind of security scandals, breaches and hacks that have affected many other major web companies.

Take a closer look, and you'll see why. Though on the surface all seems calm, below the waves the social network is kicking its legs frantically and working around the clock to keep users' accounts safe.

Keeping Facebook safe and keeping it secure are two different things, the social network's chief security officer, Alex Stamos, said Wednesday at Web Summit in Lisbon. Security is about building walls to keep out threats and shore up defenses, but according to Stamos, safety is bigger than that.

"It turns out that we can build perfectly secure software and yet people can still get hurt," he said.

Stamos came to Facebook in summer 2015 from Yahoo and now leads a team at the social network that tries to get ahead of hackers and other threats and head off trouble before it strikes. The biggest headache he deals with is caused by the humble password.

"The reuse of passwords is the No. 1 cause of harm on the internet," said the security chief.

When passwords are stolen en masse and traded on the black market, it becomes apparent just how many of them are the same -- "123456" and its consecutive numerical brethren are the main culprits. If you're using one of these passwords, that automatically makes your account more



"The reuse of passwords is the No. 1 cause of harm on the internet," says Facebook's Alex Stamos.

Brendan Moran/Getty Images

vulnerable to being compromised. This is something Facebook is keen to help you avoid.

To check that Facebook members are not choosing these commonly used passwords for their accounts, Stamos revealed, the social network buys passwords hackers are selling on the black market and cross-references them with encrypted passwords used on the site. He described the task as "computationally heavy" but said that as a result of the exercise Facebook has been able to alert tens of millions of users that their passwords needed changing because they weren't strong enough.

Facebook provides a whole bunch of tools for users to make the security on an account nice and tight, ranging from traditional two-factor authentication to identifying faces of friends. But for Stamos, this is only part of the solution when it comes to keeping people safe.

"Even though we provide these options, it is our responsibility to think about those people that choose not to use them," he said.

One way the company does this is to apply machine learning algorithms to Facebook's social graph to establish whether activity on your account is fraudulent. Another concept currently in the works tackles the problem of account recovery. If hackers find their way into your email, it's easy for them to seize your Facebook account too, by choosing the password reset option. Instead, Facebook wants people to allow their close friends to verify an account-recovery request on their behalf.

"Usernames and passwords are an idea that came out of 1970s mainframe architectures," said Stamos. "They were not built for 2016."

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MOBILE ACCESSORIES

Best back-to-school headphones

What student wouldn't appreciate a good pair of headphones? Here's a wide selection of top wireless models.

BY DAVID CARNOY | AUGUST 17, 2019 10:01 AM PDT





Angela Lang/CNET

With a multitude of models to choose from, it's not easy to figure out which headphones to buy. With that in mind, we're highlighting several of our [highest rated wireless headphones](#) -- not all of them are pricey -- to help narrow down your gift choice this back-to-school season.

Note that these products are independently chosen by our editors. All products have been used hands-on, and all but the AfterShokz have been fully reviewed. Note also that CNET may get a share of the revenue if you buy anything featured on our site.

Bose Noise Cancelling Headphones 700



Sarah Tew/CNET

Bose Noise Cancelling Headphones 700, the long-awaited successor to its [QuietComfort 35 II](#) models, may not be a quantum leap forward but they offer slightly better noise canceling, sound and call quality. Alas, they cost \$400, but they're great for blocking out the world while studying.

\$399 AT AMAZON

[Read the Bose Noise Cancelling Hea...](#)

Sony WH-1000XM3



David Carnoy/CNET

Sony's WH-1000XM3, the third generation of Sony's excellent wireless noise-canceling headphones, is more comfortable and features even better performance. It's currently our top-rated noise-canceling headphone, edging out the Bose models on some key points.

[\\$298 AT AMAZON](#)[Read Sony WH-1000XM3 review](#)

JBL Live 650BTNC



Sarah Tew/CNET

While its noise-canceling feature and comfort levels aren't quite on par with competing models from Bose and Sony, JBL's Live 650BTNC (\$160) measures up well in terms of sound. It's worth considering if you don't want to spend \$300 or more on a noise-canceling headphone.

[\\$160 AT AMAZON](#)[Read the JBL Live 650BTNC review](#)

Sony WF-1000XM3



Sarah Tew/CNET

While they aren't water-resistant, Sony's new WF-1000XM3 true wireless earphones feature excellent sound and something you won't find in Apple's AirPods: active noise-cancelling. At \$230, they're not cheap, but they are among the best new true wireless earphones of 2019.

\$228 AT AMAZON

[Read the Sony WF-1000XM3 review](#)

Beats PowerBeats Pro



Sarah Tew/CNET

The Powerbeats Pro, Beats' first true wireless earphones, are larger, sportier versions of the 2019 AirPods. They offer all the same basic conveniences of the AirPods, including fast pairing, rock-solid wireless connectivity and always-on Siri voice recognition for iOS users, but they deliver bigger sound and have better battery life. Only drawbacks: They're fairly pricey and have a bulky charging case.

\$250 AT AMAZON

[Read the Powerbeats Pro review](#)

Apple AirPods



Sarah Tew/CNET

Apple's second-generation AirPods are an incremental upgrade from the original AirPods -- and incremental upgrades tend to be a little boring. And on the surface anyway, the new AirPods aren't exciting. Thanks to those updated components on the inside, however, including a new H1 chip that supports Bluetooth 5.0, improved audio synchronization and always-on Siri, they're definitely better in small ways that a lot of people will appreciate. Even though it's about \$40 more, the model with the wireless charging case is probably the one to get -- if you're giving it as a gift anyway. (Since midsummer, the AirPods have been reduced by \$15-\$20 at many retailers online: Don't pay more than \$145 for the regular models or \$180 for the wireless charging model.)

[\\$145 AT AMAZON](#)[Read Apple AirPods 2019 review](#)

Jabra Elite Active 65t



Sarah Tew/CNET

Jabra's Elite Active 65t (\$190) are one of the top truly wireless earphones and are superior to Apple's AirPods in some ways. The step-down Elite 65t earphones aren't quite as durable, but there isn't a huge difference and they sometimes go on sale. Just be aware that both models have been on the market for a while and are due for an upgrade. In other words, don't buy them at full price.

[\\$189 AT AMAZON](#)[Read the Jabra Elite Active 65t review](#)

Anker Soundcore Liberty Air



Sarah Tew/CNET

As long as you're OK with a noise-isolating design, the Anker Soundcore Liberty Air are an excellent alternative to the AirPods that cost half the price (\$80). And while they're available in white (like the AirPods), they also come in black.

\$80 AT AMAZON

[Read the Anker Soundcore Liberty A...](#)

Samsung Galaxy Buds



Angela Lang/CNET

If you're looking for a headphone gift for an Android user, the Galaxy Buds are Samsung's latest answer to the AirPods -- and they're a likable set of true wireless earphones.

\$128 AT AMAZON

[Read the Samsung Galaxy Buds revi...](#)

AfterShokz Aeropex



AfterShokz

Geared toward runners and bikers, [AfterShokz](#) bone-conduction headphones get a little better with each new generation. New for 2019 is the Aeropex (\$160), which AfterShokz says are its "lightest, highest-quality headphones yet."

The technology can be a good match for people with partial hearing loss. The other big benefit is that thanks to the headphone's open design, you can hear what's going on around you while listening to [music](#) or having a phone conversation through the headphone. That openness allows runners and bikers to hear traffic, an important safety feature. Also, some race coordinators don't allow you to wear anything in your ears, which is where a headphone like the Aeropex comes in handy, particularly for people who need to listen to music while they run.

[\\$160 AT AMAZON](#)[Read CNET's first take](#)

Bose Frames



Sarah Tew/CNET

Here's a way to combine two gifts into one. Yes, the Bose Frames (\$200) are both sunglasses and headphones -- and they sound surprisingly good for sunglasses.

The Frames are available in two models: the Rondo and Alto. You can only get them in black for now.

[Read the Bose Frames review](#)

Sennheiser Momentum True Wireless



Sarah Tew/CNET

It's a little expensive at \$300, but the Sennheiser Momentum True Wireless is currently the best-sounding true wireless headphone.

[\\$299 AT AMAZON](#)[Read the Sennheiser Momentum Tru...](#)

Tribit XFree Tune



Sarah Tew/CNET

If you don't want to spend a lot on a headphone gift but want something that sounds good and is comfortable to wear, the Tribit XFree Tune at \$40 is a good bet for a full-size Bluetooth headphone. It doesn't have active noise-canceling but the earcups passively seal out a fair amount of sound.

[\\$40 AT AMAZON](#)[Read the Tribit XFree Tune review](#)

Originally published earlier, updated to reflect latest pricing.

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Best wireless headphones

A lot of people may be looking for cheap true wireless headphones, but if you're looking for something with top-notch sound, this is the list for you.

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