THE STATE OF AUTHENTICATION

Chad Spensky

Allthenticate

OUTLINE

- Who am I?
- Authentication overview
- Current state of Authentication
- The future of authentication

MY JOURNEY

1998-2004

Internet Pirate
Console Modder

2004-2011

B.S. in CS & Math
M.S. in CS (Authentication)

2012-2015

Staff at MIT LL
Offensive Security

2015-Present

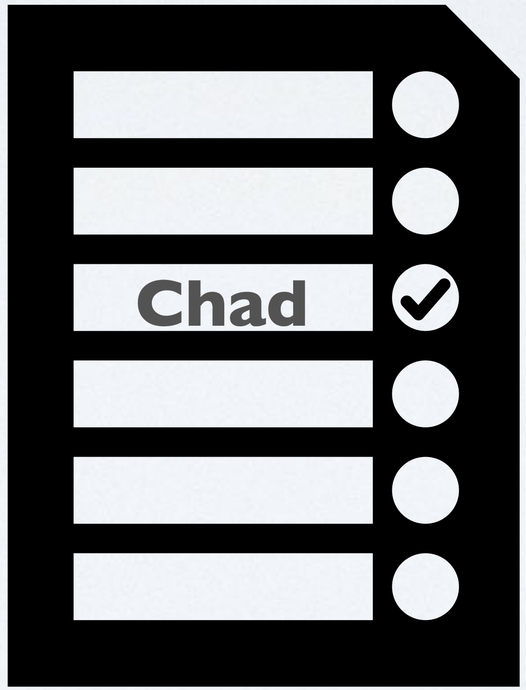
Ph.D. CS (Security)
Founder of Allthenticate

THE PROBLEM

Everyone should not have access to everything.

AUTHENTICATION

Only permitting authorized users to access a resource



AUTHENTICATION

Real World

Digital World

AUTHENTICATION

- What you know

- What you have

- What you are

PASSWORDS

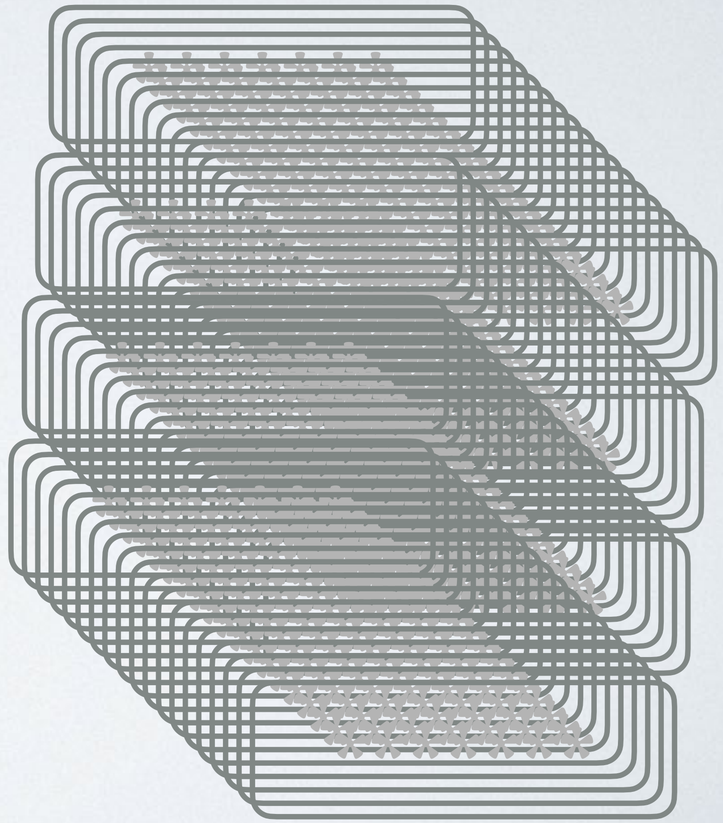
More than 15 usernames

cspensky@ucsb.edu
cspensky@gmail.com
cspensky@mit.edu
chad@allthenticate.net
cspensky@cs.ucsb.edu
chad@cspensky.info
cspensky@unc.edu
cspensky@alumni.pitt.edu
chad.spensky@ll.mit.edu
cspensky@comcast.net
cspensky@alumni.unc.edu

Dedicated apps

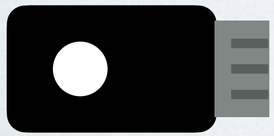
Today

More than 150 *saved* passwords

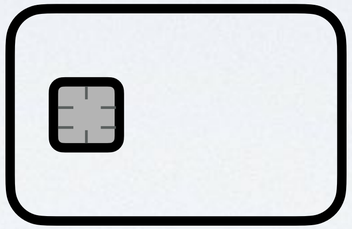


HARDWARE TOKENS

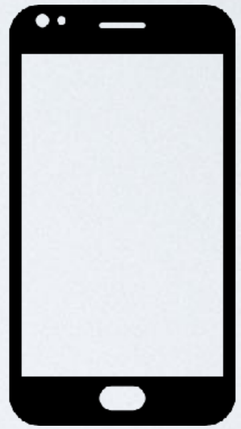
Second Factor



Hardware Credential



~~Smartphone~~
Portable Computer



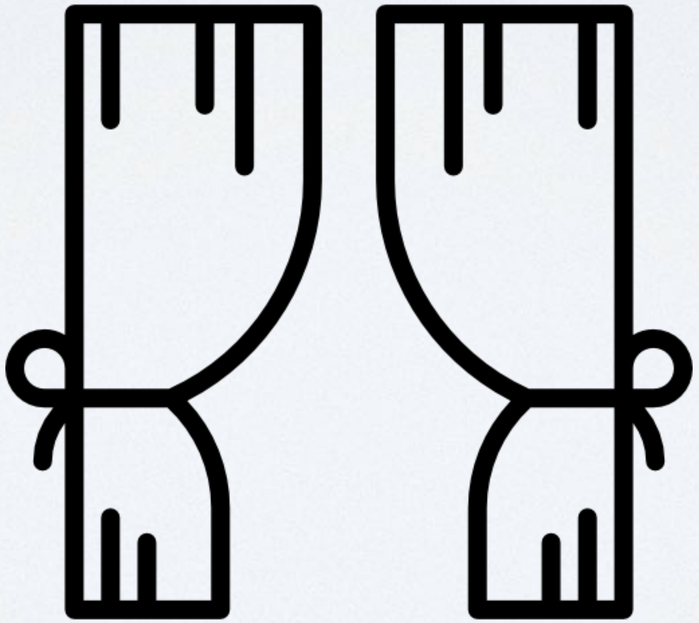
BIOMETRICS

Fingerprint

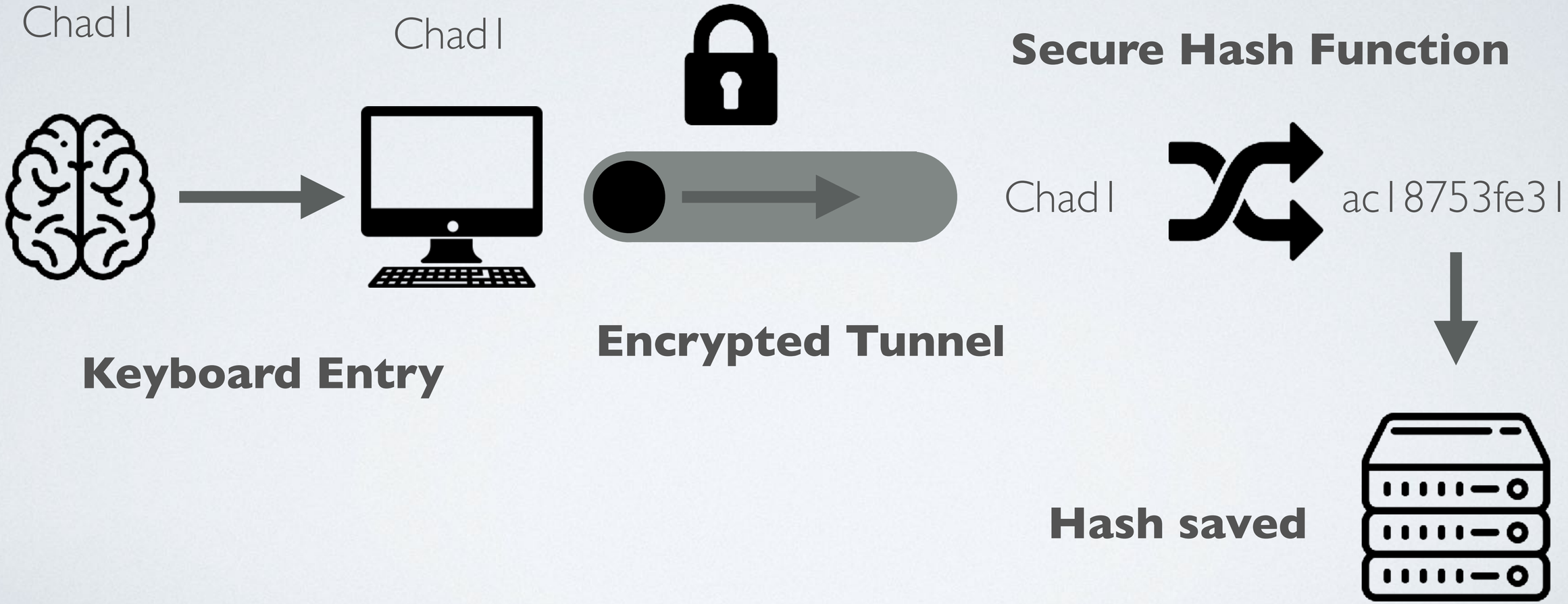
Voice Recognition

FaceID

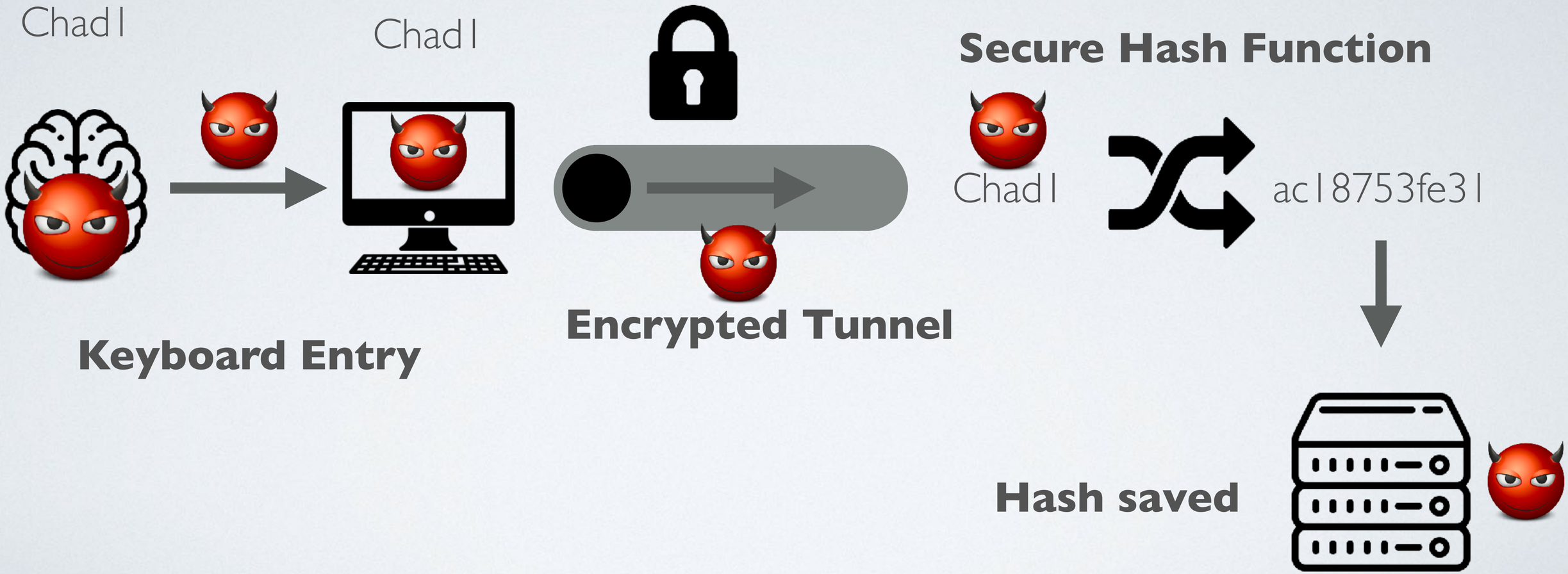
AUTHENTICATION IMPLEMENTATIONS

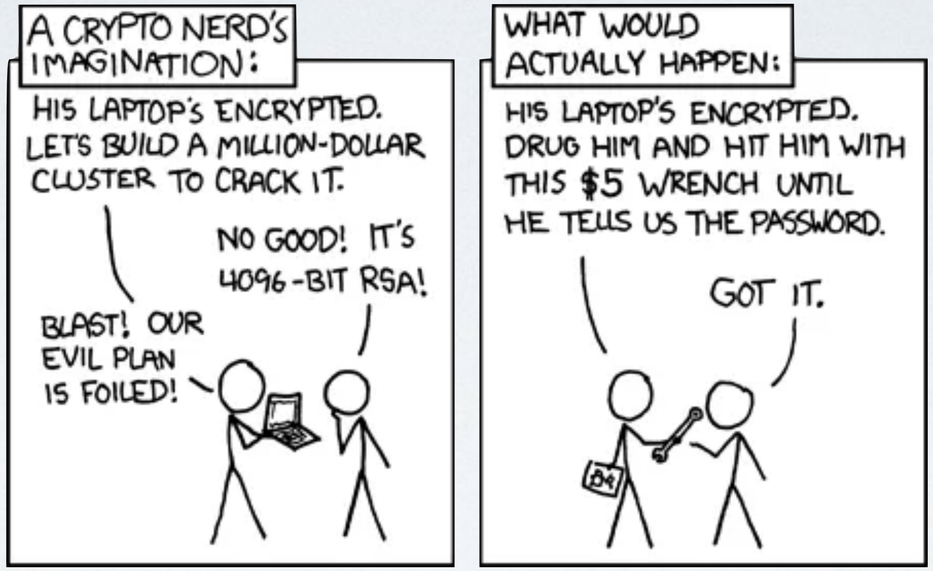


HOW **PASSWORDS** WORK



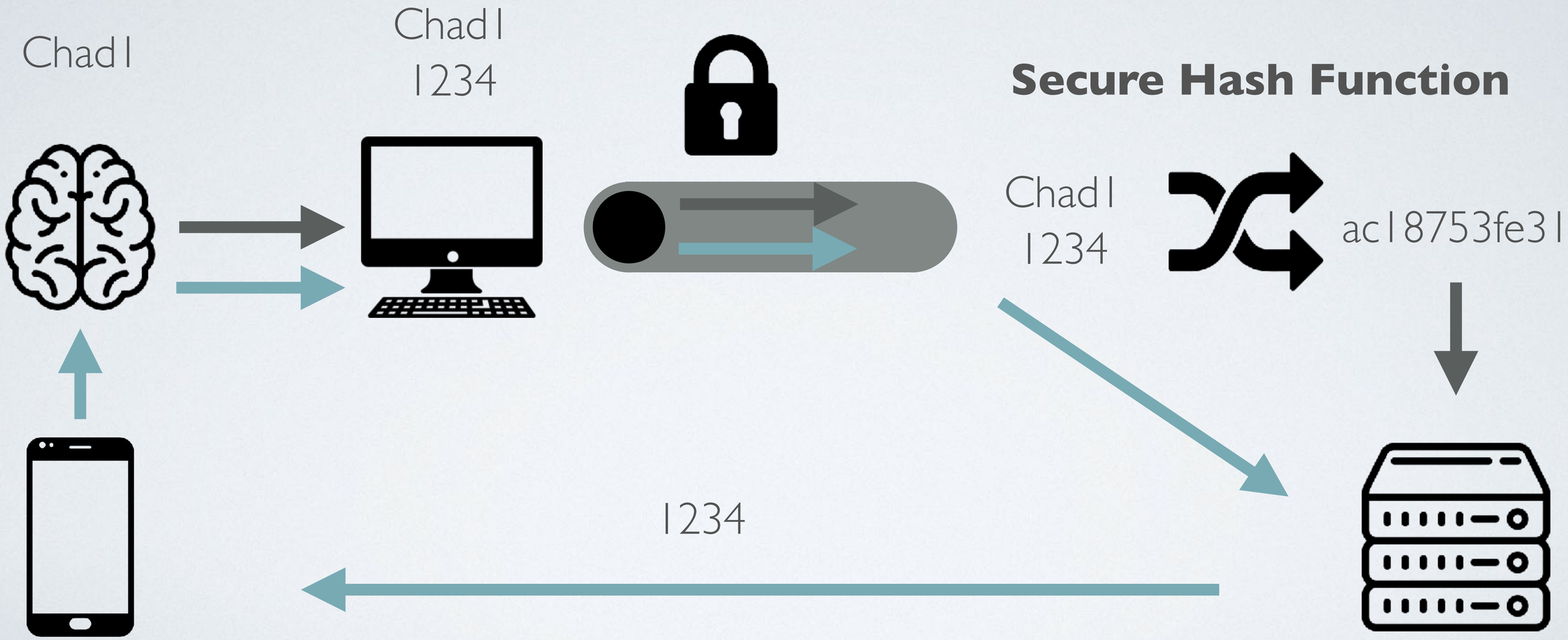
HOW **PASSWORDS** FAIL



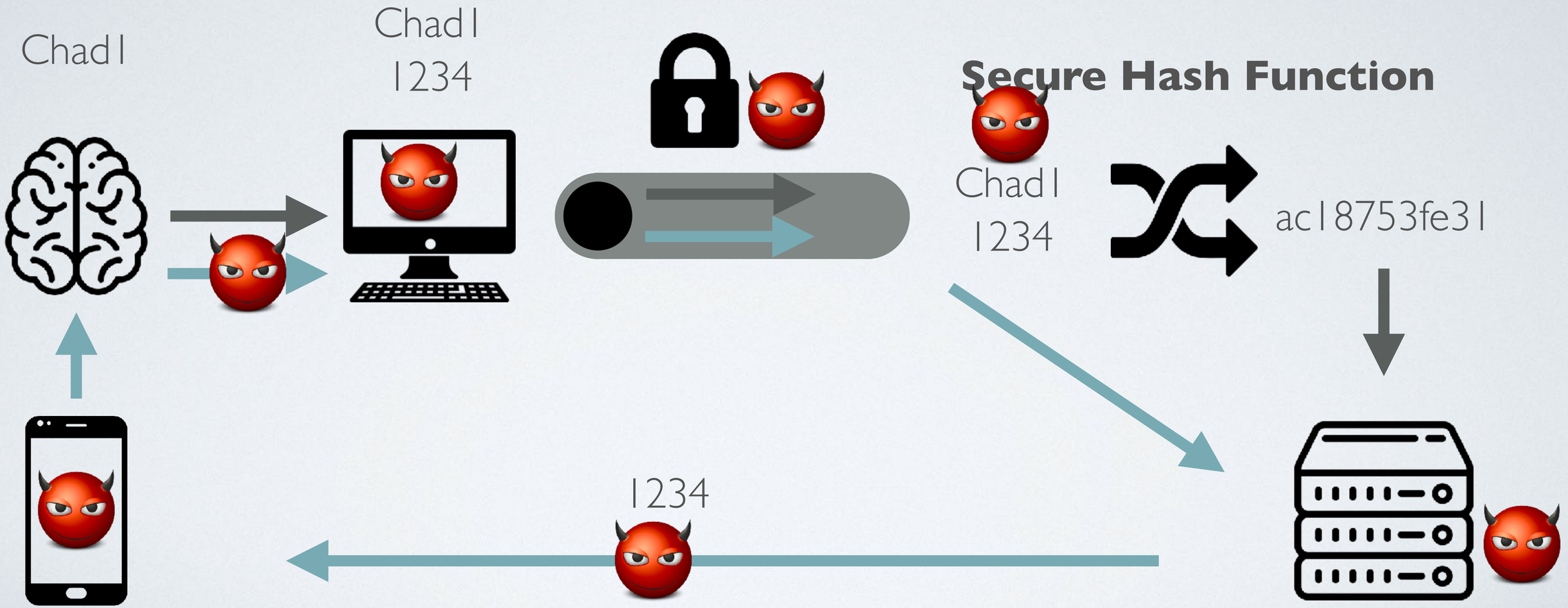


https://xkcd.com/538/

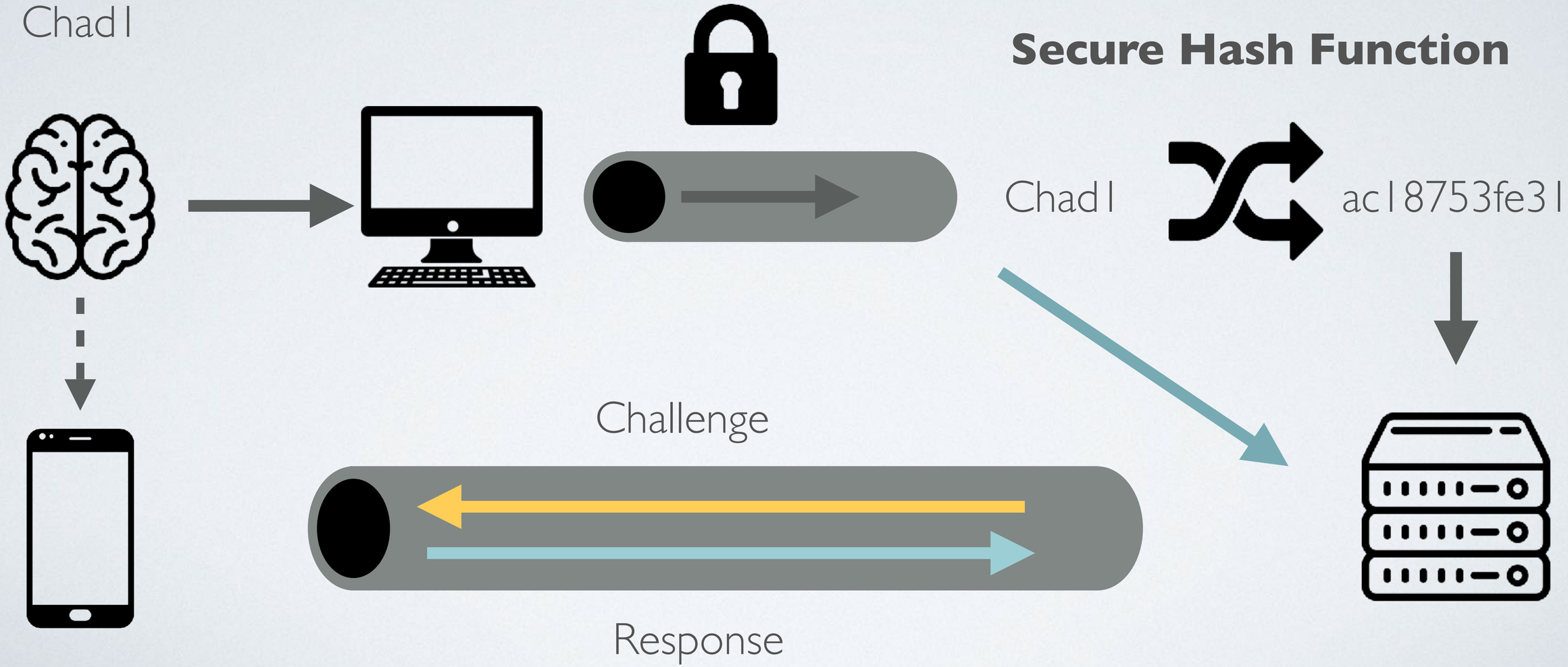
HOW **2FA** WORKS



HOW **2FA** FAILS



HOW **2FA** WORKS
(BETTER SOLUTION)



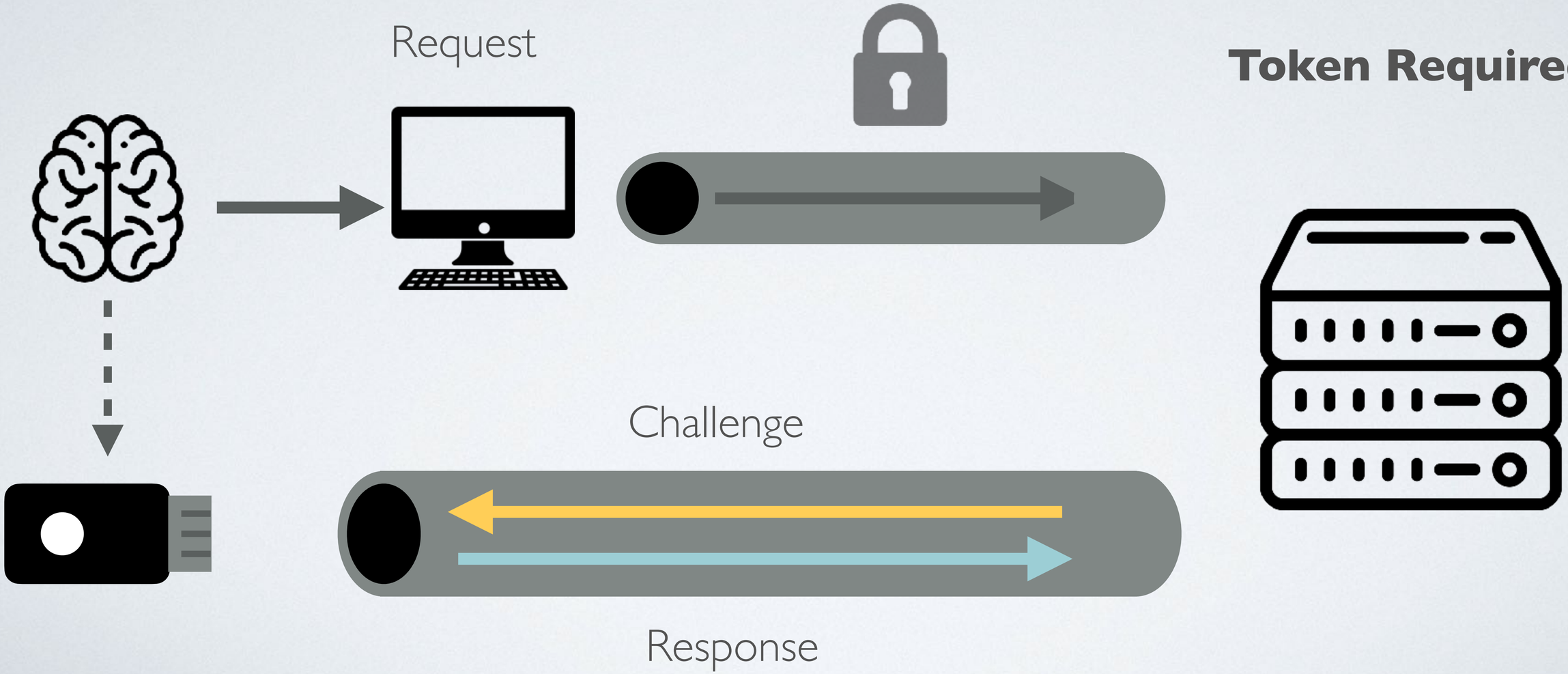
New reverse proxy tool posted on Github can easily bypass 2FA and automate phishing attacks

The tool can bypass traditional 2FA, but doesn't work against the newer U2F standard

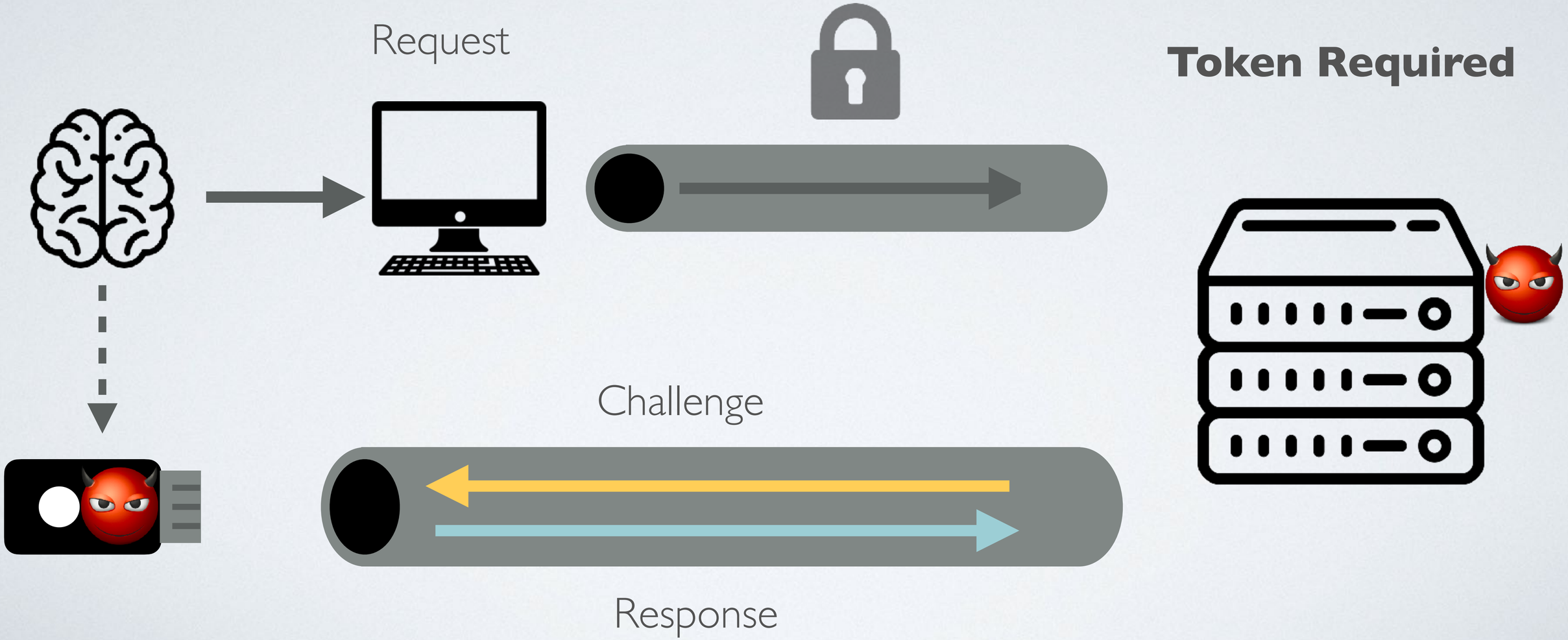
By **William Gayde** on January 16, 2019, 3:44 PM

https://www.techspot.com/news/78292-new-reverse-proxy-tool-posted-github-can-easily.html

HOW **TOKENS** WORK



HOW **TOKENS** FAIL



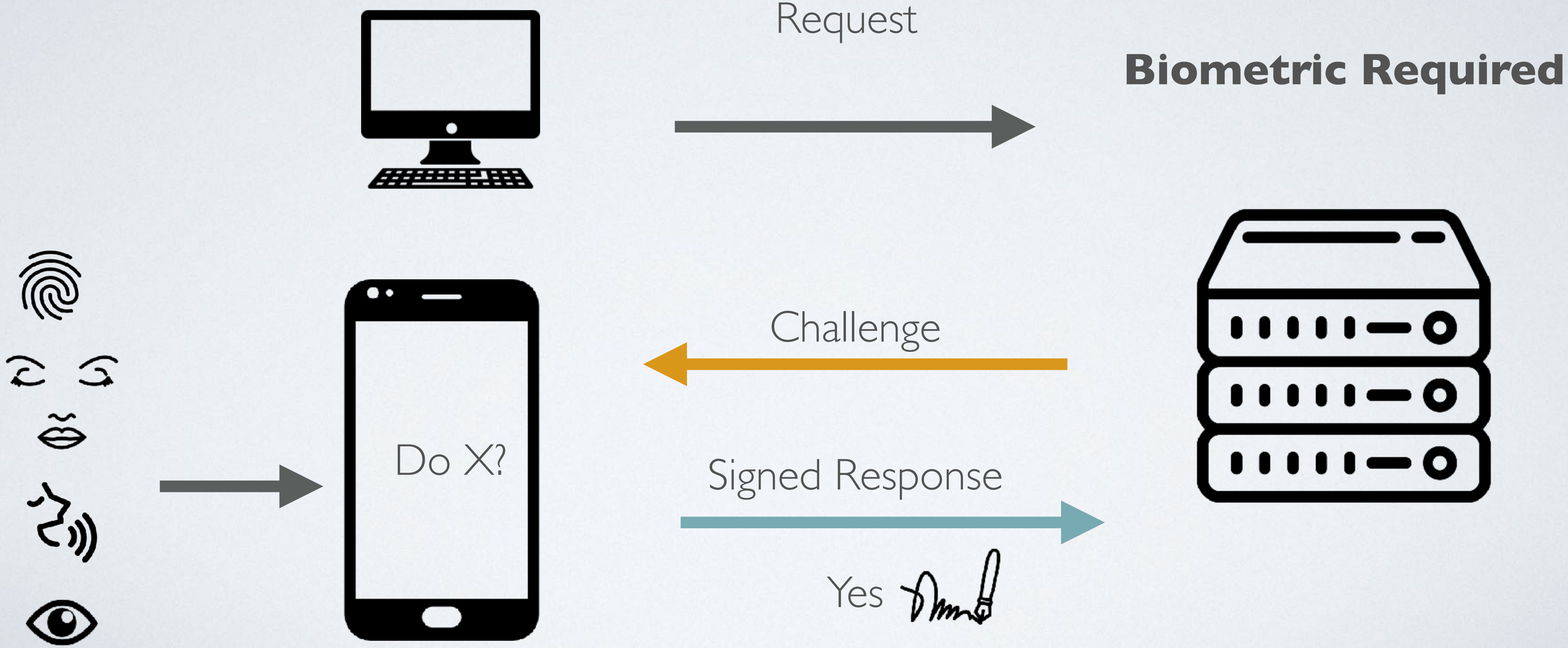
Yubico recalls FIPS Yubikey tokens after flaw found

17 JUN 2019 2

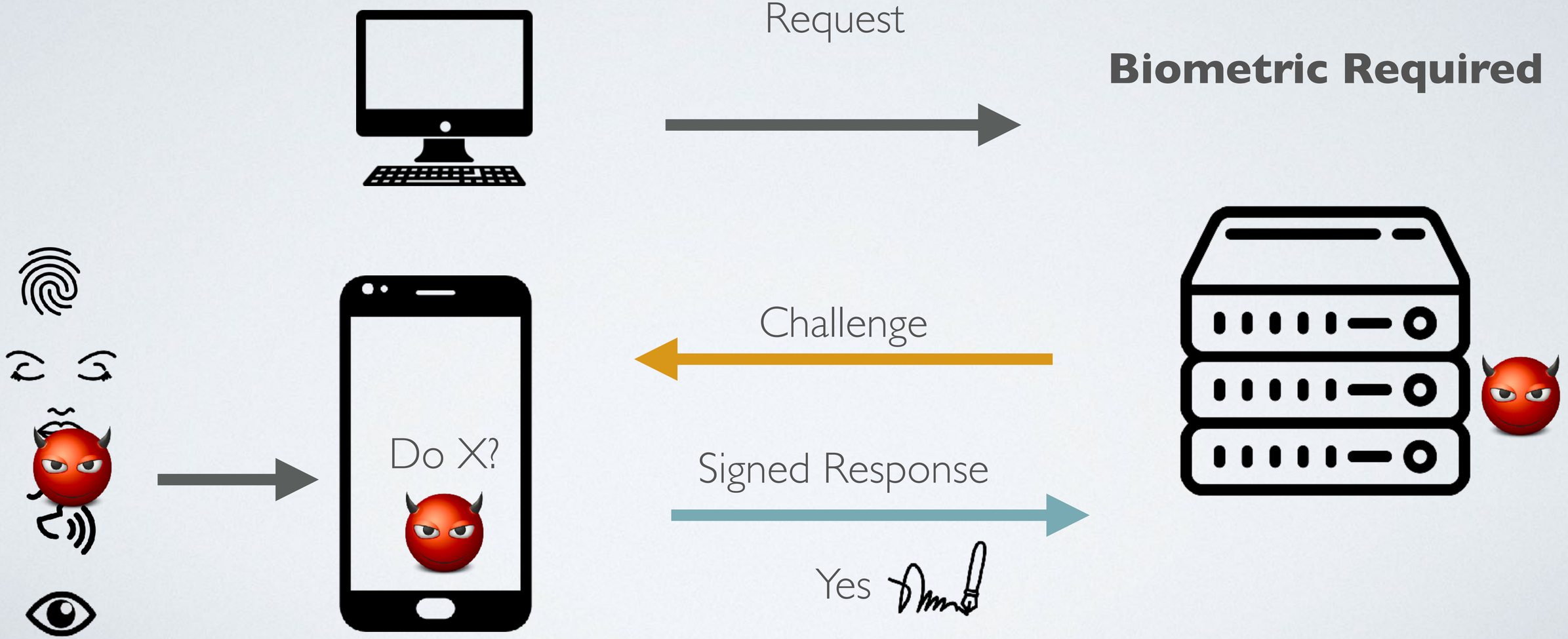
Google, Security threats, Vulnerability

https://nakedsecurity.sophos.com/2019/06/17/yubico-recalls-fips-yubikey-tokens-after-flaw-found/

HOW **BIOMETRICS** WORK



HOW **BIOMETRICS** WORK



Malaysia car thieves steal finger

By Jonathan Kent
BBC News, Kuala Lumpur

Police in Malaysia are hunting for members of a violent gang who chopped off a car owner's finger to get round the vehicle's hi-tech security system.

http://news.bbc.co.uk/2/hi/asia-pacific/4396831.stm

SECURITY

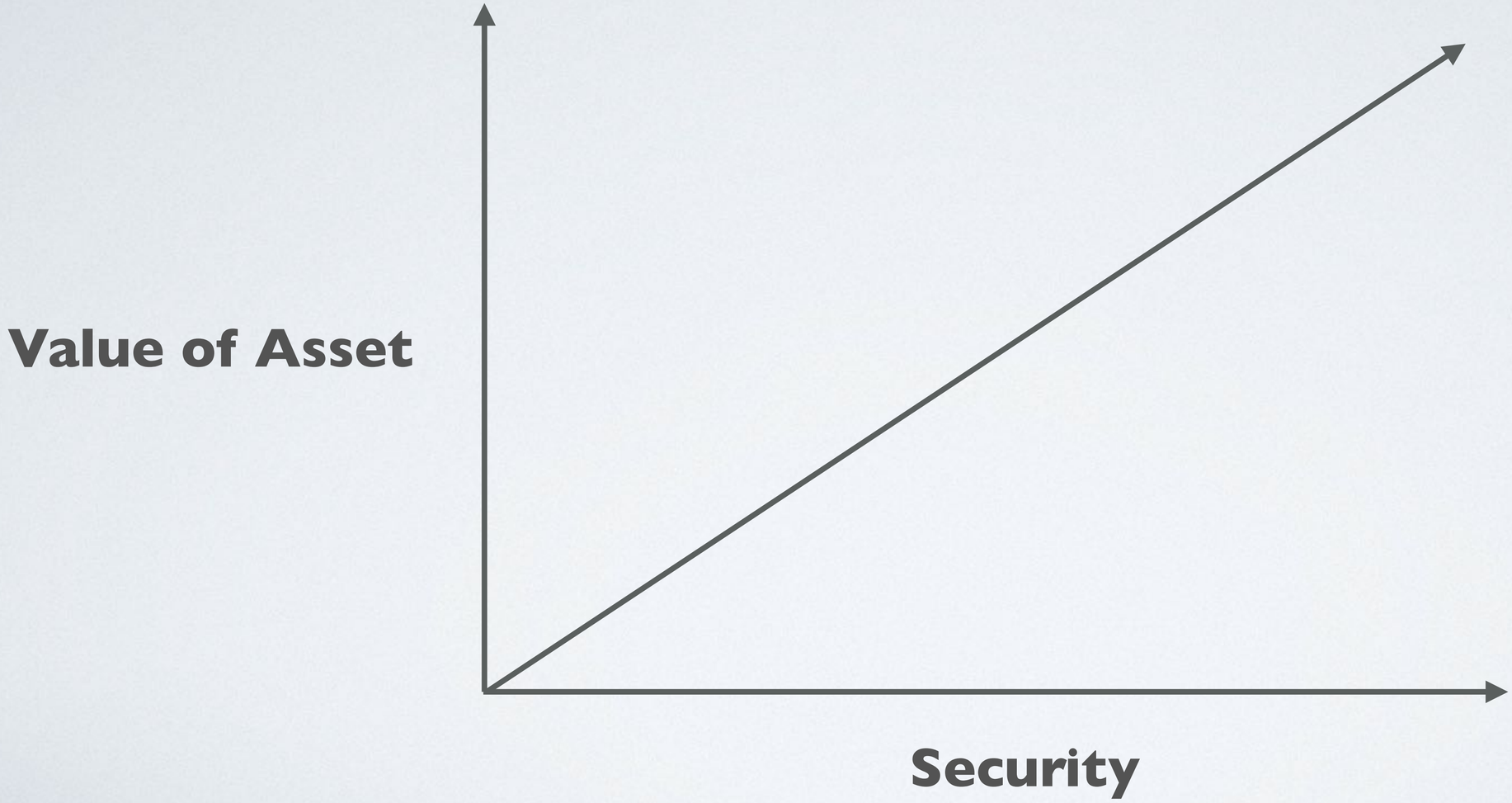
VS

USABILITY

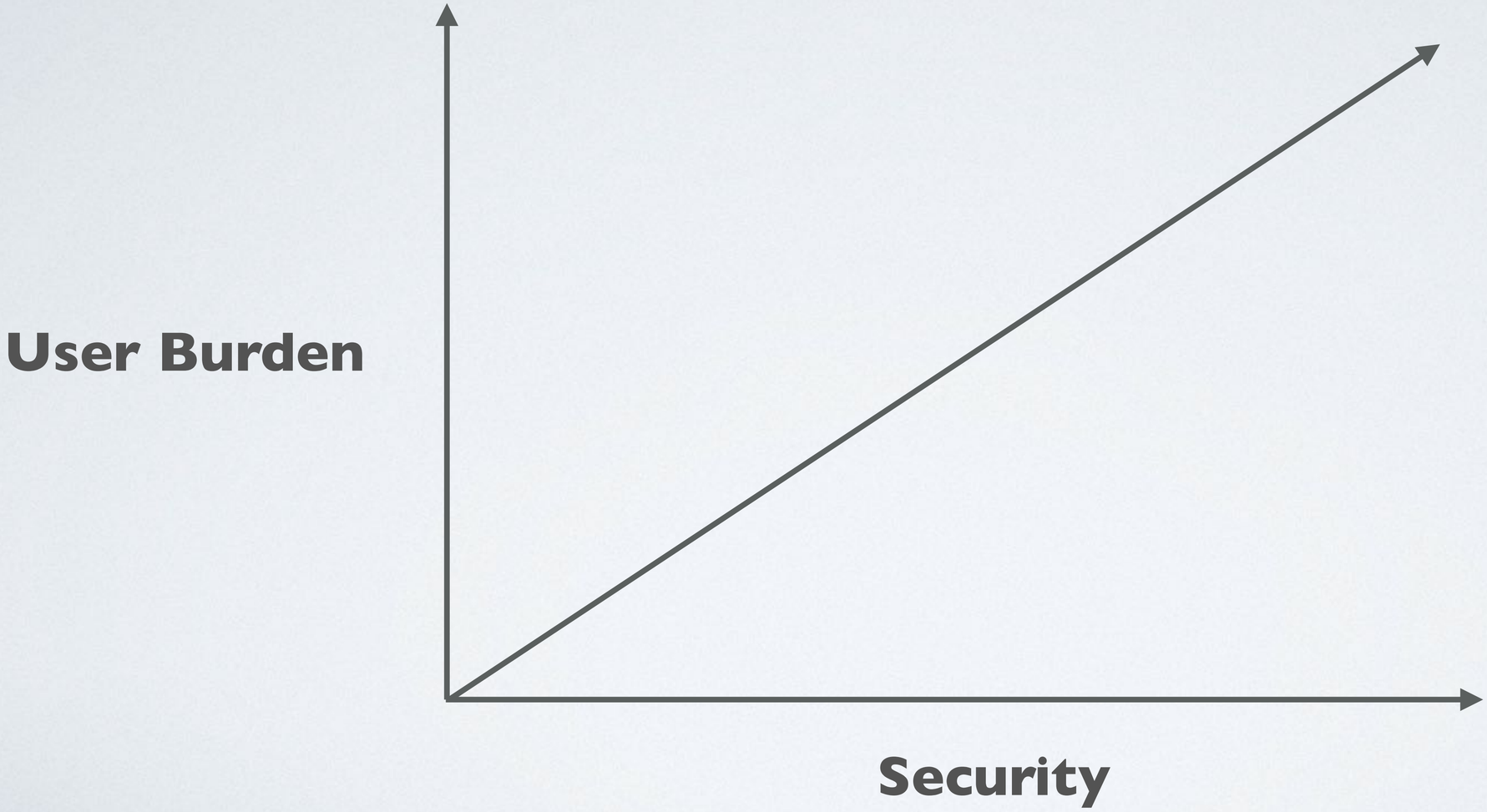
VS

COST

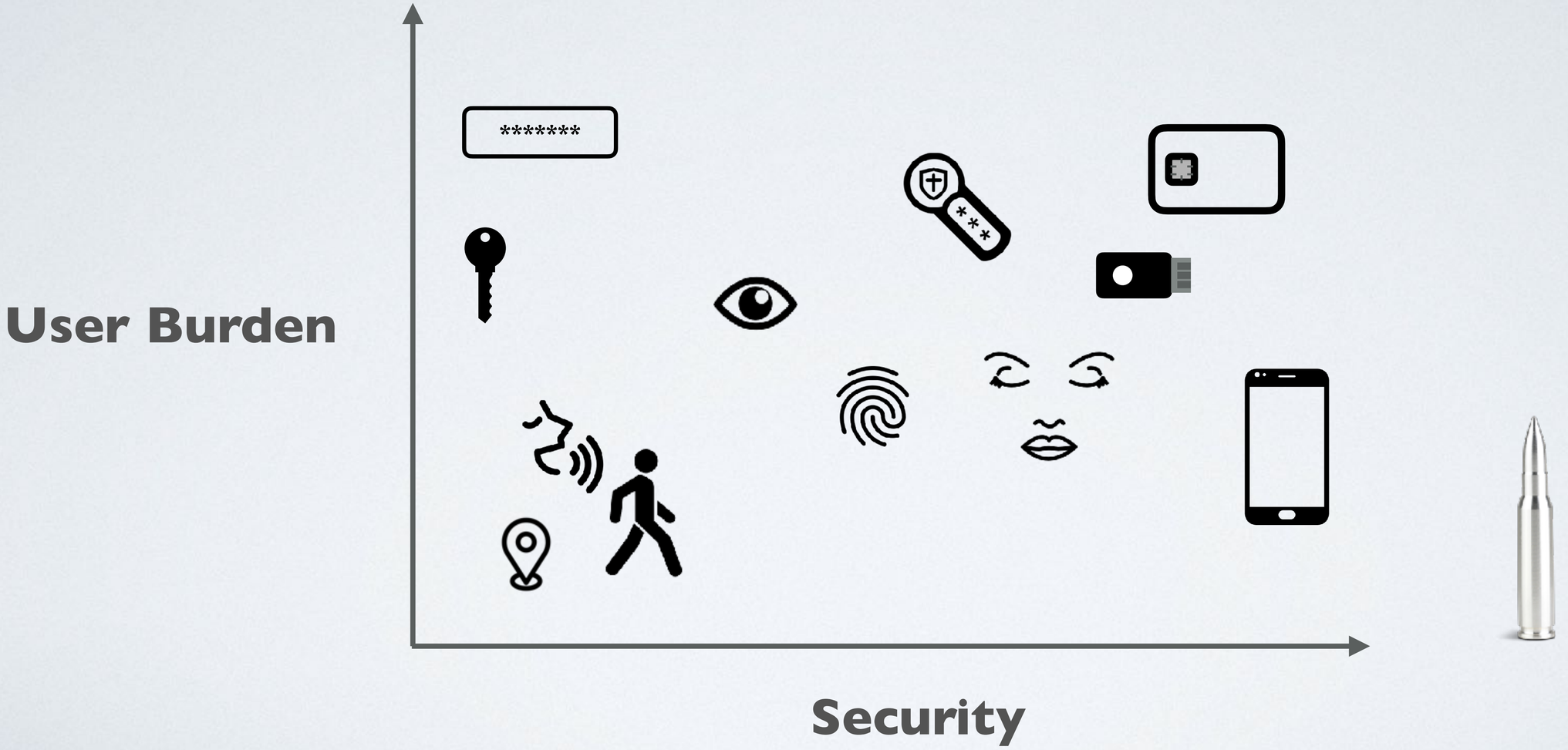
FINDING THE RIGHT FIT



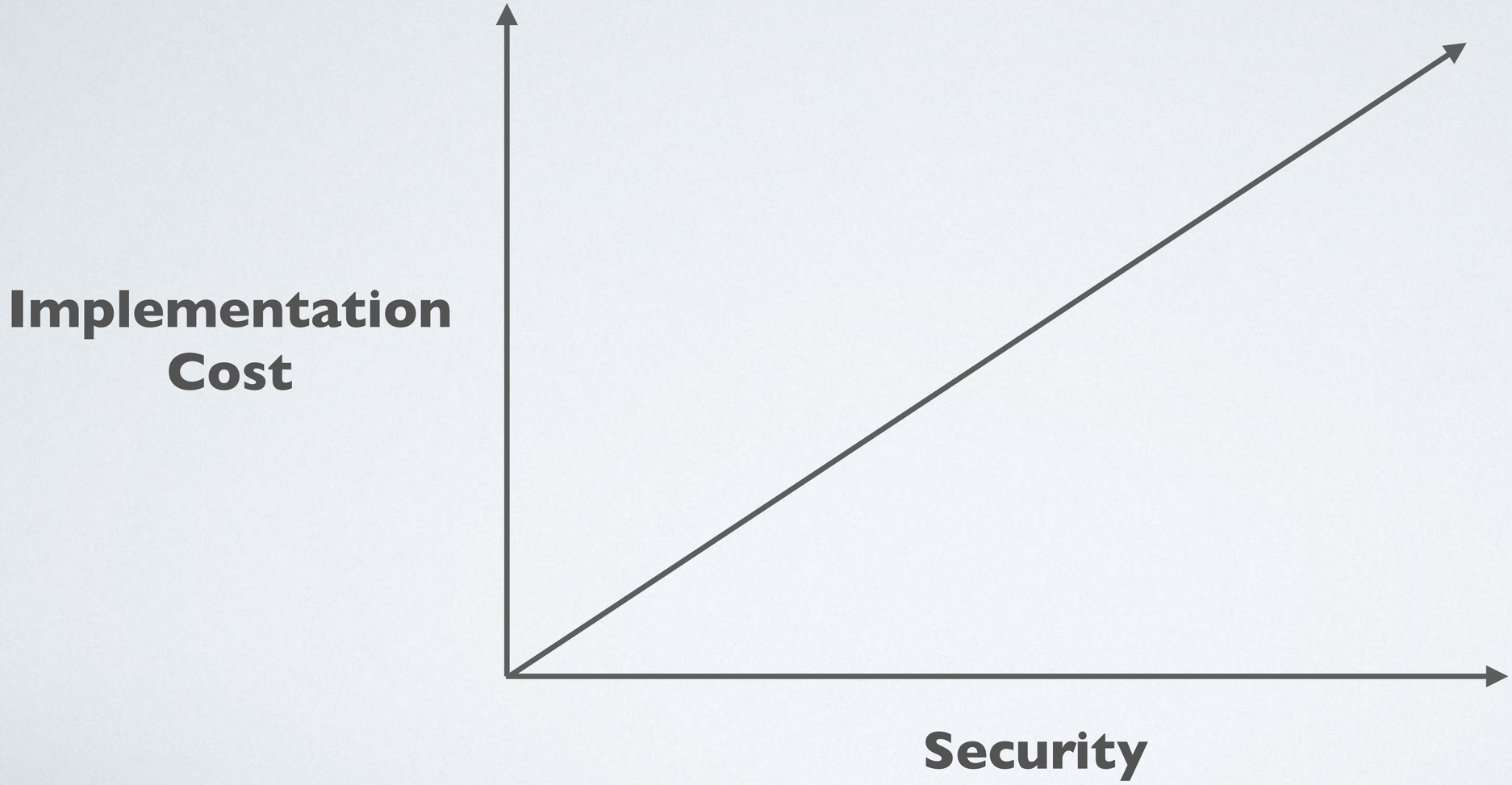
FINDING THE RIGHT FIT



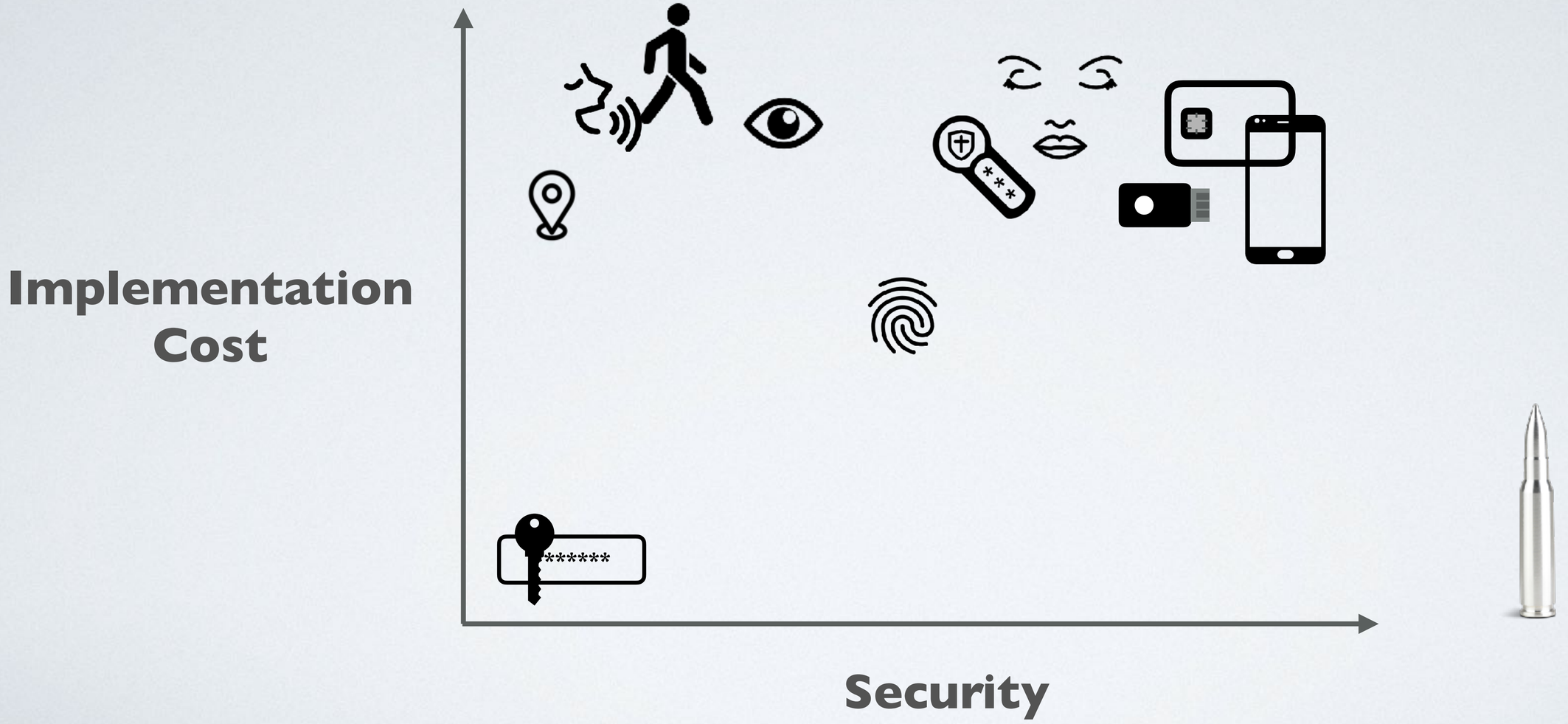
FINDING THE RIGHT FIT



FINDING THE RIGHT FIT

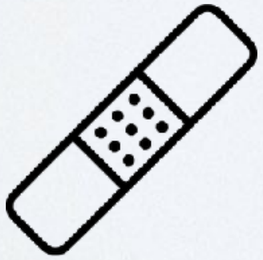


FINDING THE RIGHT FIT

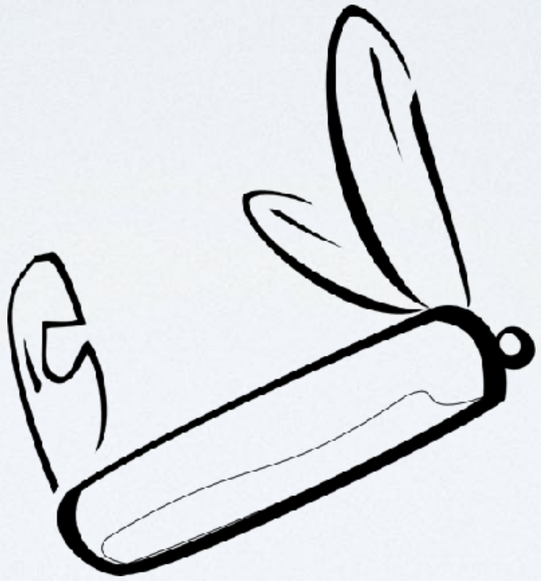


THE PROBLEM

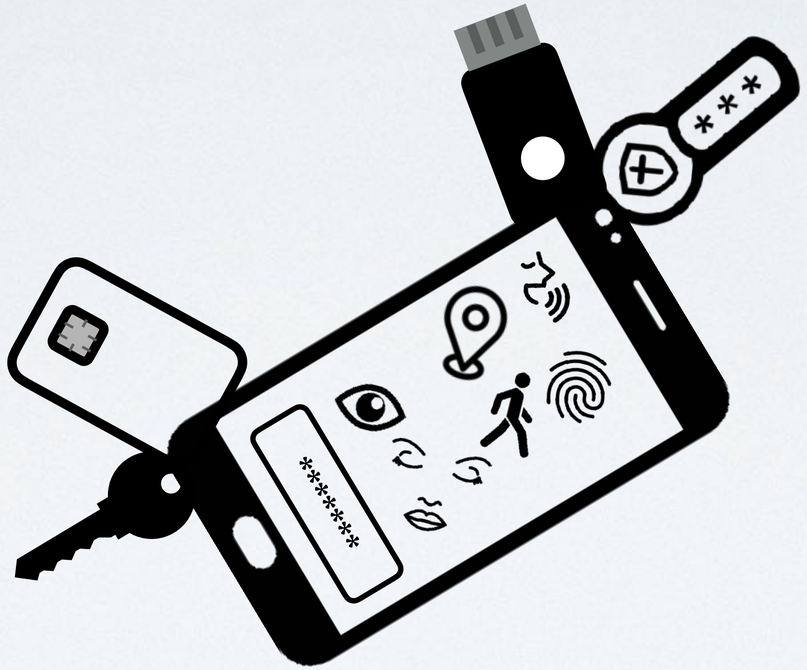
There are too many options

WE NEED FLEXIBILITY



WE NEED FLEXIBILITY



MORE SECURITY. LESS BURDEN.

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