GOOGLE AND MICROSOFT DEBUT: REPLACING PASSWORDS WITH FIDO2 AUTHENTICATION

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The World Has a Password Problem

81% Data breaches in 2016 that involved weak, default, or stolen passwords

1 IN 14 Phishing attacks were successful in 2016

1,579 Breaches in 2017, a 45% increase over 2016

CLUMSY | HARD TO REMEMBER | NEED TO BE CHANGED ALL THE TIME

Footnotes:
1 Verizon 2017 Data Breach Report
2 Theft Resource Center 2017
The Solution: Simpler *and* Stronger

open standards for simpler, stronger authentication using public key cryptography

Single Gesture Phishing-resistant MFA
How Does FIDO Work?

1. **User verification**: Require user gesture before private key can be used.
2. **Authenticator**: Private key (handle) per account.
3. **Challenge**: (Signed) Response.
4. **FIDO Authentication**: Public key.

**Diagram Details**:
- **User verification** arrow points to **Authenticator**.
- **Challenge** arrow points to **FIDO Authentication**.
- **Public key** arrow points to **Authenticator**.
- **Private key (handle)** is shown in **Authenticator**.
- **User** and **Device** icons are present.
Who is using FIDO today? (Sample of deployments in production)
FIDO Specifications

FIDO UAF
FIDO U2F (@FIDO)

CTAP (@FIDO)

WebAuthn (@W3C)

FIDO2 Project
WebAuthn Brings FIDO to the Web Browser

World Wide Web Consortium (W3C) developed Web Authentication ("WebAuthn") with FIDO Alliance Contributions

Candidate Recommendation

A new standard JavaScript API

That works with all FIDO2 platforms & authenticators

Participation from all these platform providers
Today’s Demonstration Participants

**Web Browsers**
- Google Chrome
- Mozilla Firefox

**Websites/Servers**
- Nok
- PayPal

**Biometrics**
- Fingerprint Authentication

**Security Key**
- Yubico
- Windows Hello
Login with Built-in Biometrics

Android Phone

Windows 10 PC

Web Authn Enabled Browsers

Internet

PayPal Service

Universal FIDO Server
Login with FIDO2 Security Key

FIDO2 Security Key

Web Authentication Enabled Browsers

Internet

Universal FIDO Server

Banking Service
Key Learnings from Today’s Debut

- We showed how FIDO2-compliant platforms enable FIDO2-compliant websites to gain true cross-platform support by using the exact same set of APIs across all these web browsers.

- Once a Relying Party has FIDO-enabled their authentication infrastructure once, there is no extra work required to use Windows Hello or Android fingerprint or FIDO2 Security Keys, etc.

- FIDO2 client implementations grow the existing FIDO ecosystem
FIDO “UNIVERSAL SERVER” Program

FIDO Universal Server

Ensures interoperability with all FIDO Certified Authenticators
APPLY WHAT YOU HAVE LEARNED

- If you are an enterprise or have a consumer-facing website
  - Go to https://fidoalliance.org for white papers, certified products and more
  - Join our free Dev Forum: https://fidoalliance.org/participate/community/
  - Ask your vendor when they will have FIDO2 support

- If you want to collaborate with the designers and first deployers of this technology, join the FIDO Alliance: info@fidoalliance.org
Q&A

- Sam (Google)
- Dave (Microsoft)
- Brett (FIDO Alliance)
- Rajiv (Nok Nok Labs)
- Darshan (PayPal)
- Derek (Yubico)