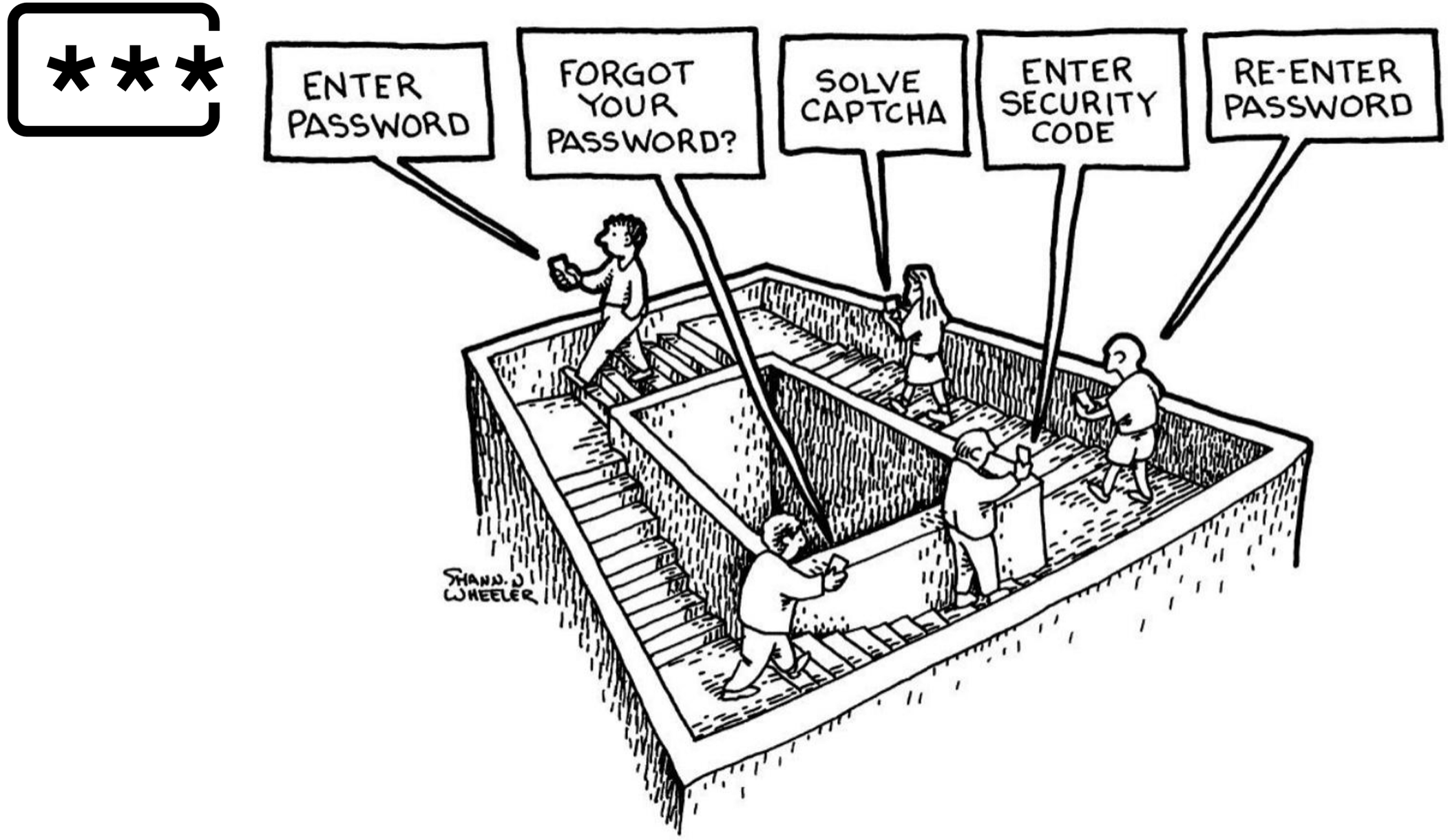
Going passwordless

Faster, easier, and more secure customer logins with passkeys

Toby Allen


***
ENTER PASSWORD
FORGOT YOUR PASSWORD?
SOLVE CAPTCHA
ENTER SECURITY CODE
RE-ENTER PASSWORD
SHANNON WHEELER

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Lower conversions, weaker security, & more costs

43%

of lost revenue due to passwords

Okta Customer Identity Trends Report

49%

of breaches involve stolen credentials

Verizon Data Breach Investigation Report

$20

cost per call center password reset

Forrester: FIDO Passkeys and the Future of Authentication

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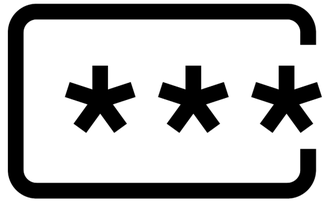

Passwords are insecure and inconvenient resulting in breaches and lower conversion rates.

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Common Passwordless Login Options

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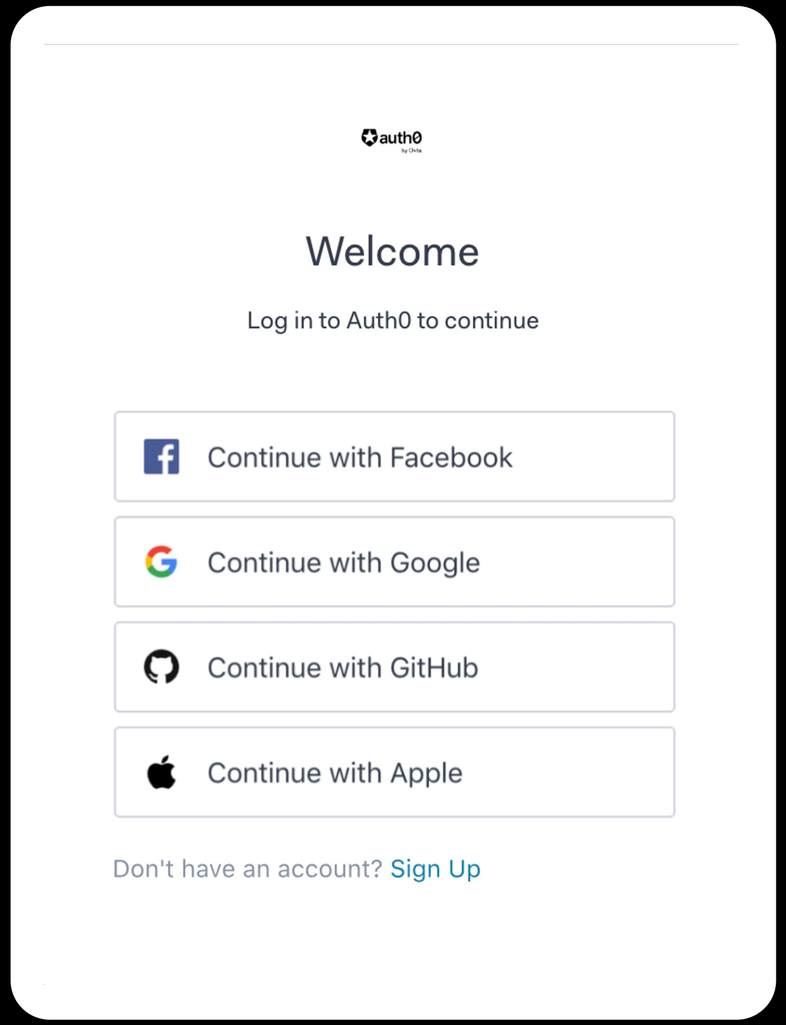
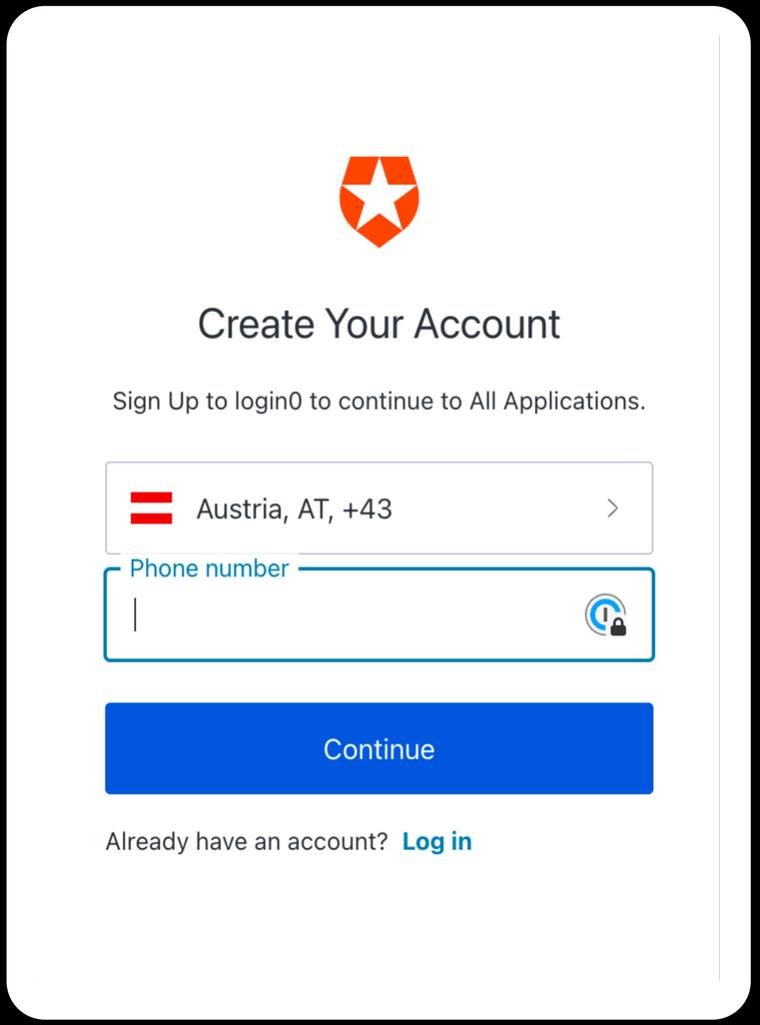
A password is an authenticator

It can be substituted by any other

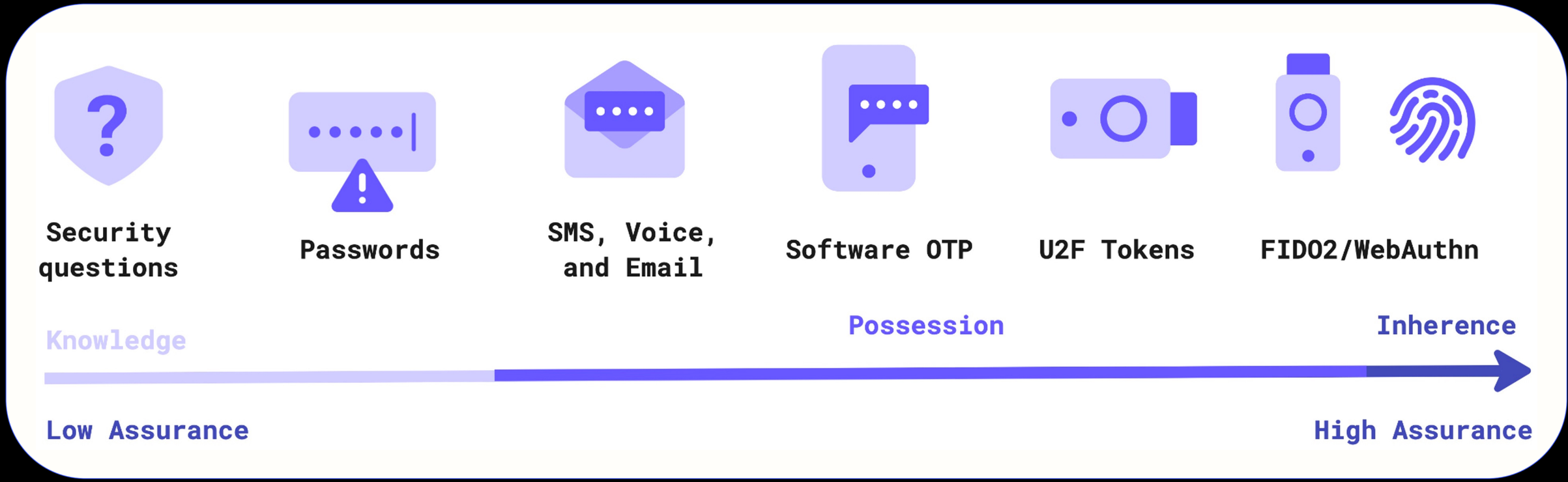
Common Passwordless Approaches

- OTP via SMS
- Email Magic Link
- Social Login
- Push Notifications
- WebAuthN?





Not all Factors Are Created Equal



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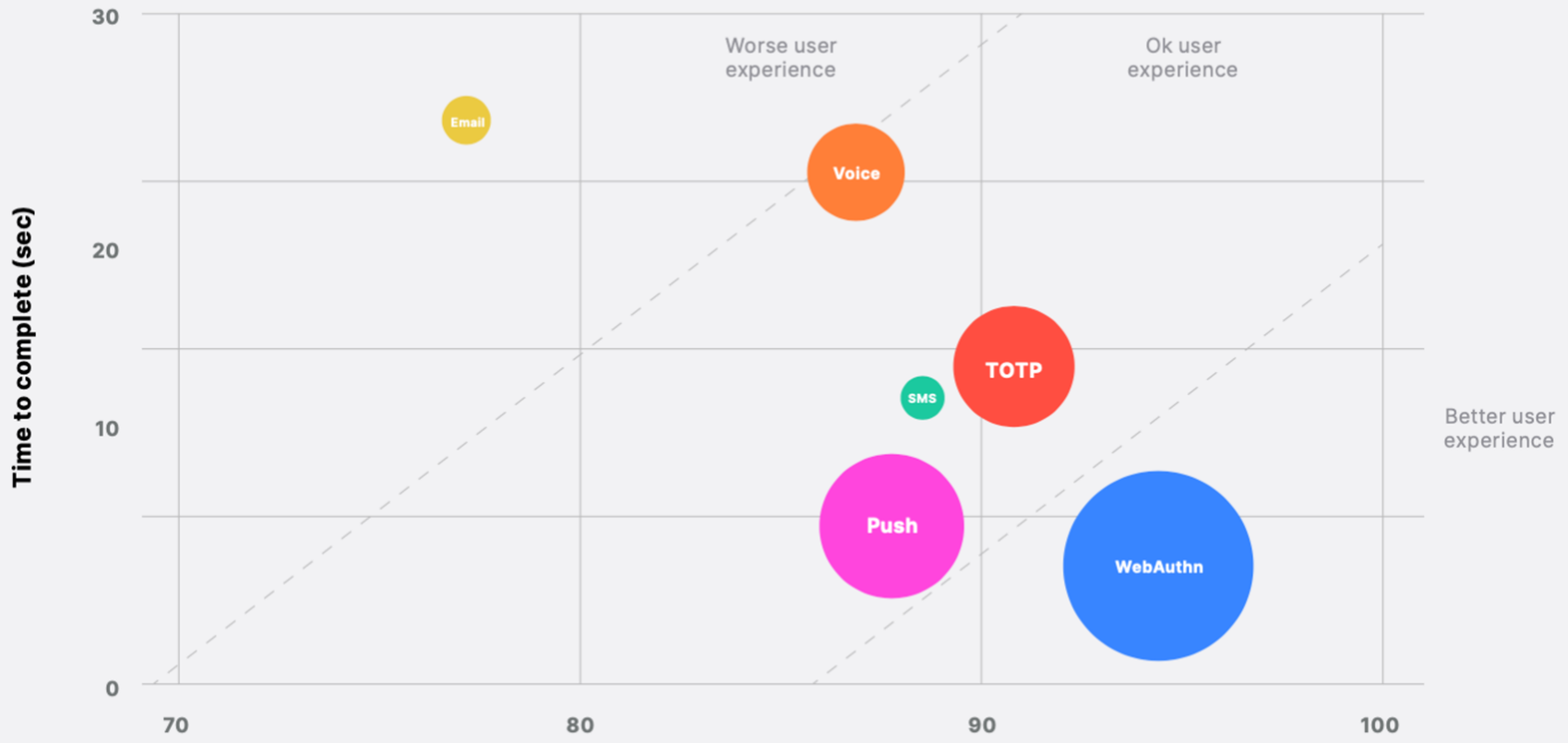

Internal study, Q4 2021

(bubble size denotes strength of security)

Enrollment friction sidelined WebAuthn

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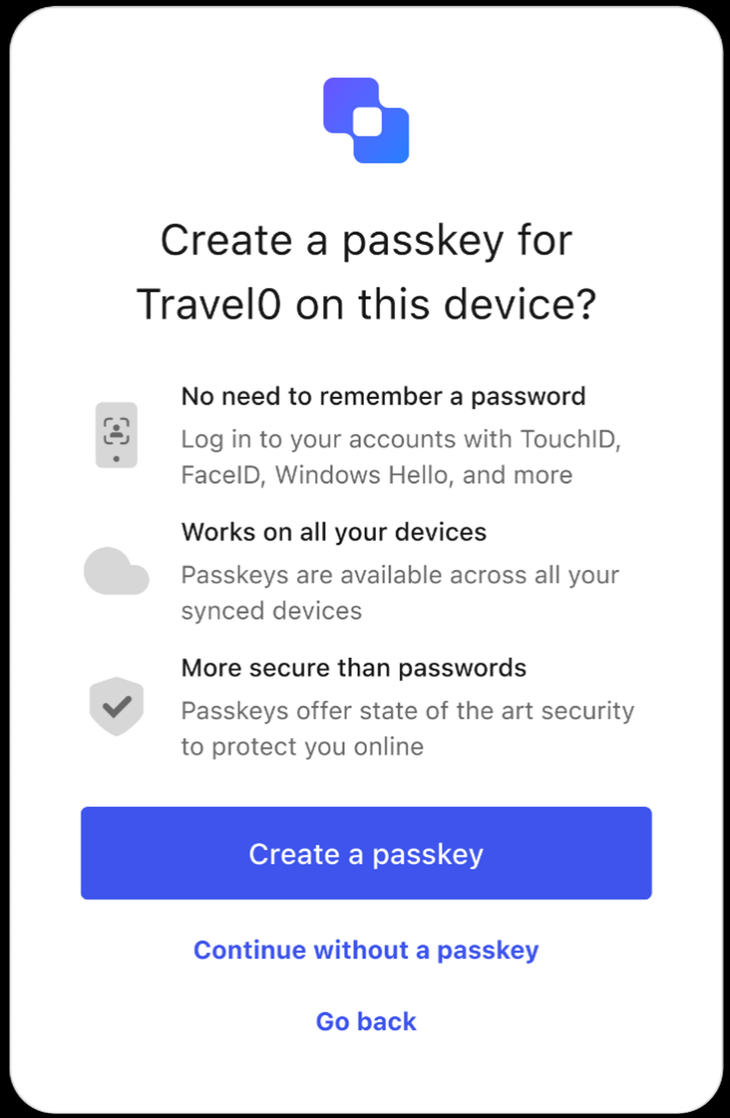
Faster, easier, and more secure customer logins with passkeys



Platform players commit to a passwordless future

PRESS RELEASE
May 5, 2022

Apple, Google, and Microsoft commit to expanded support for FIDO standard to accelerate availability of passwordless sign-ins

News Identity and access management · 5 min read

This World Password Day consider ditching passwords altogether

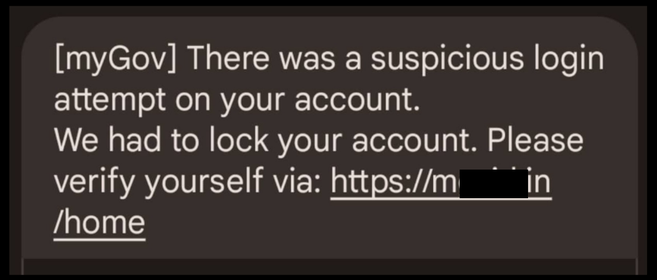
SAFETY & SECURITY

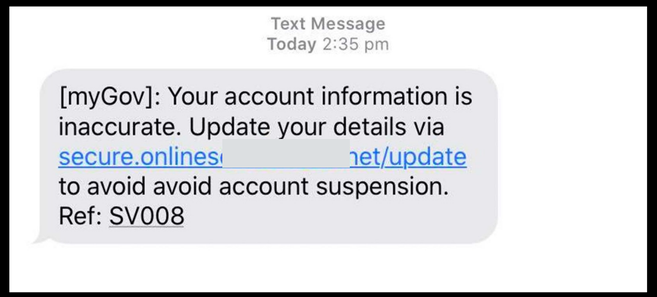
The beginning of the end of the password

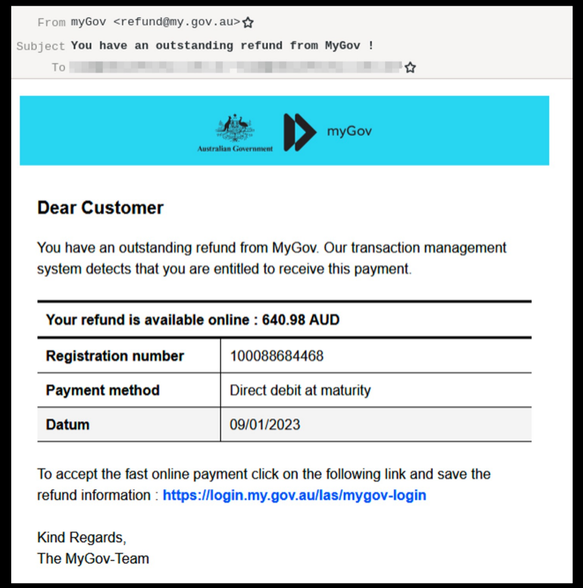
May 03, 2023
1 min read

For the first time, we've begun rolling out passkeys, the easiest and most secure way to sign in to apps and websites and a major step toward a "passwordless future."

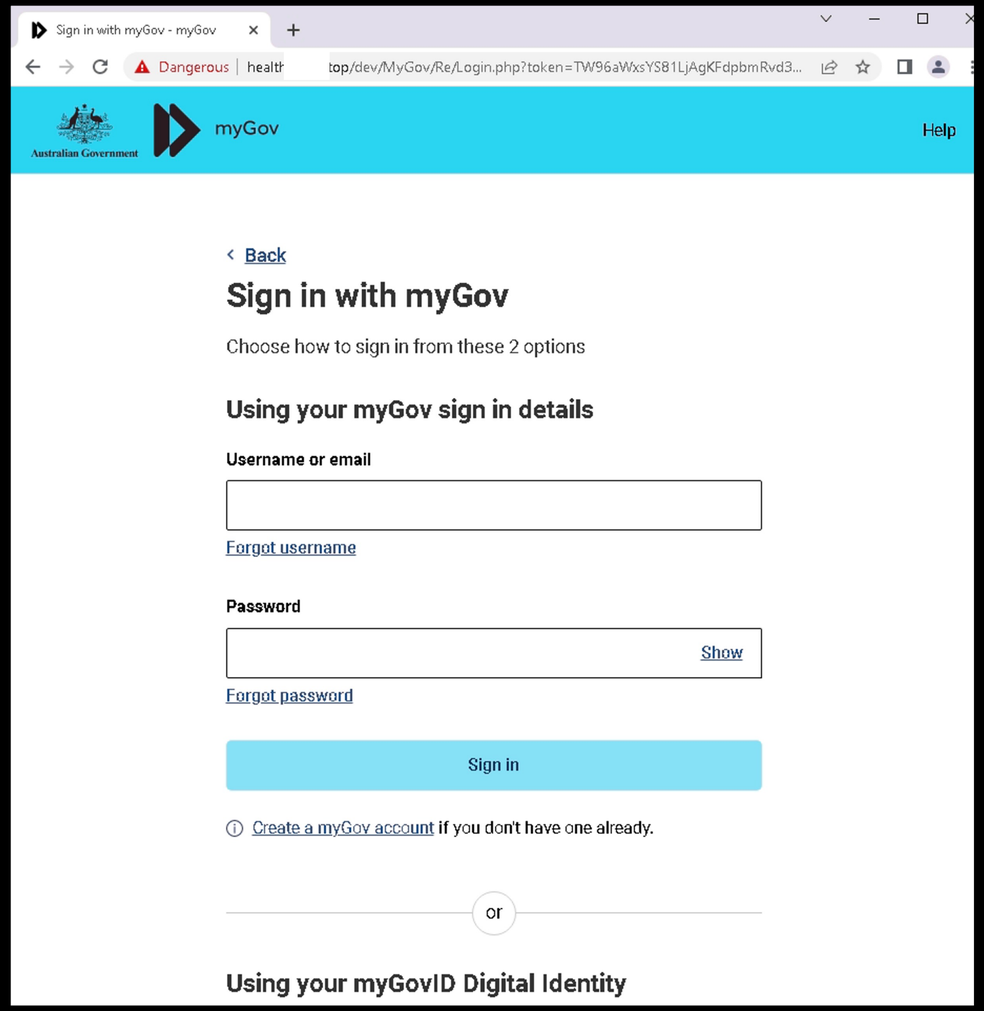
Australia to introduce passkeys for myGov login







Australians have already lost **$3.1bn** to scams this year and myGov – which hosts Centrelink, Australian Tax Office and Medicare data – is an attractive target for criminals looking to steal sensitive information.



Source: https://www.mailguard.com.au/

Passkeys are a password replacement that provide faster, easier, and more secure sign-ins to websites and apps across a user's devices. Unlike passwords, passkeys are resistant to phishing, are always strong, and are designed so that there are no shared secrets.

– FIDO Alliance

So… What are passkeys?

Passkeys are an intuitive discoverable credential

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Passkey properties

- Discoverable
- Phishing Resistant
- Remote attack resistant
- Breach resistant
- Not reusable / unique per service
- Not easily shareable*
- Allow Cross-device Authentication

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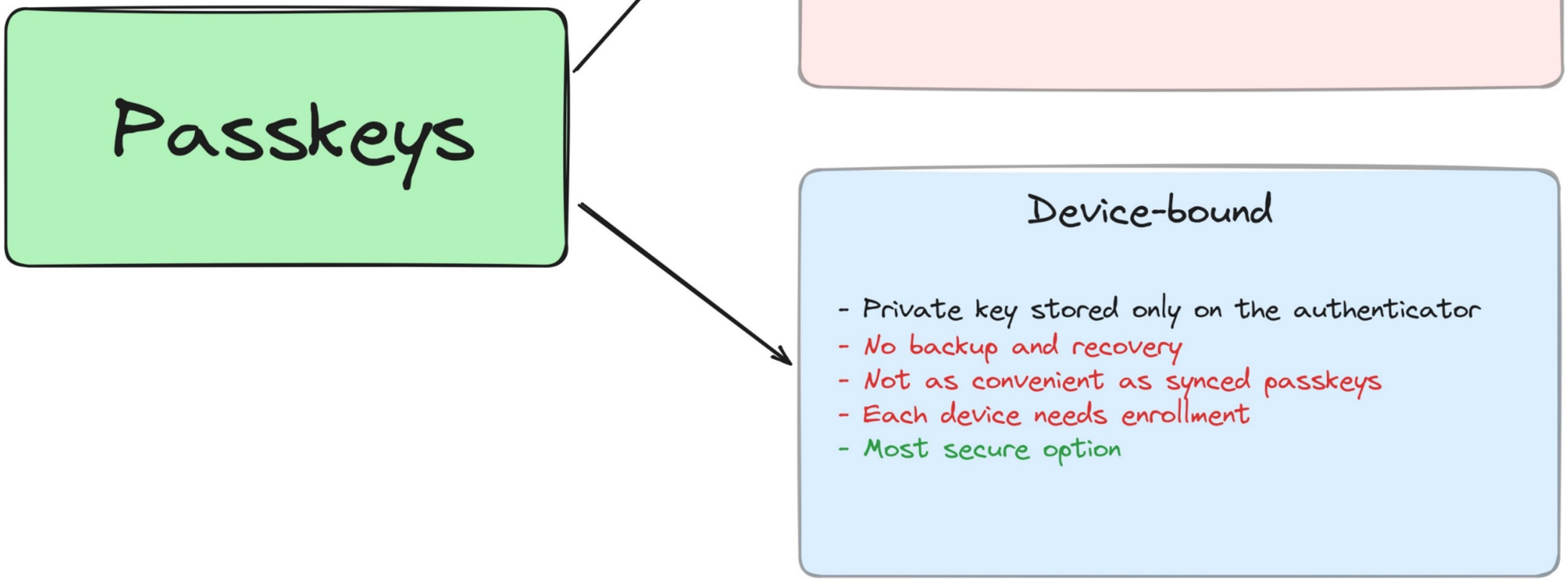
Types of passkeys



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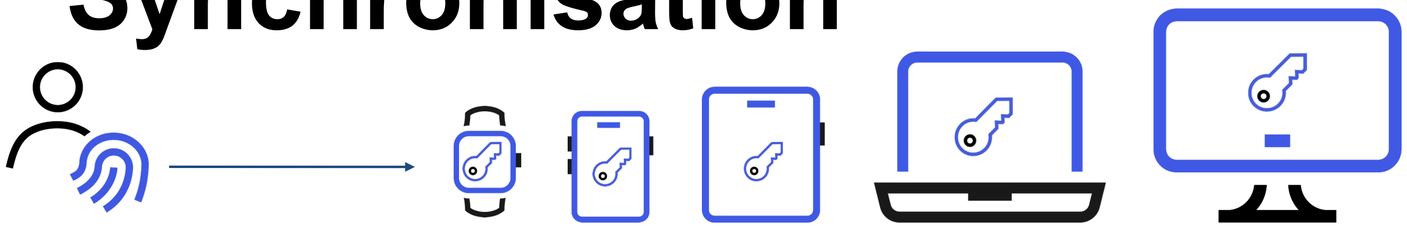
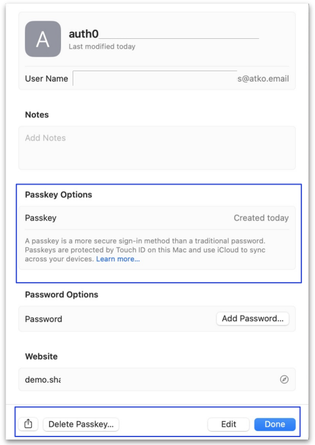
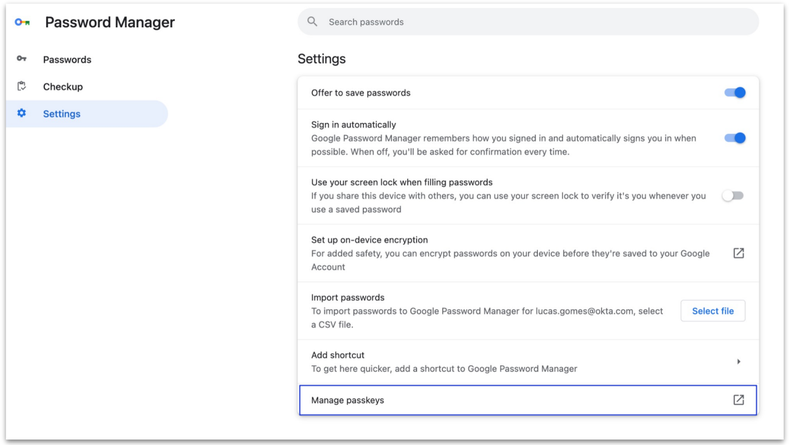
Synchronisation



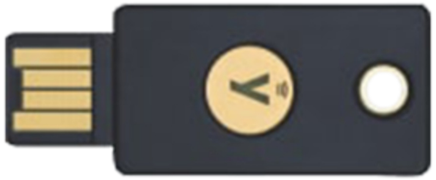




- Make passkeys available automatically across devices within the same platform
  - Apple iCloud keychain
  - Google Password Manager
  - Microsoft Hello (soon!! maybe
  - Password managers
    - 1Password
    - Dashlane
    - Bitwarden
    - …
- Backup, recovery and security are therefore vendor/platform dependent.

WebAuthN vs passkeys

- **Platform authenticators**: built into a user's device.
- **Roaming authenticators**: A removable authenticator usable with any device the user is trying to sign in from.



- A passkey is like a **syncable** platform authenticator

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WebAuthN vs passkeys

- passkeys are discoverable
- WebAuthn MFA are non-discoverable/server-side credentials
- WebAuthN does not have a synced option
- passkeys can be a **FIRST** factor

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passkeys at work?

- Use WebAuthN…
- …or any supported phishing resistant authenticator

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User Journeys

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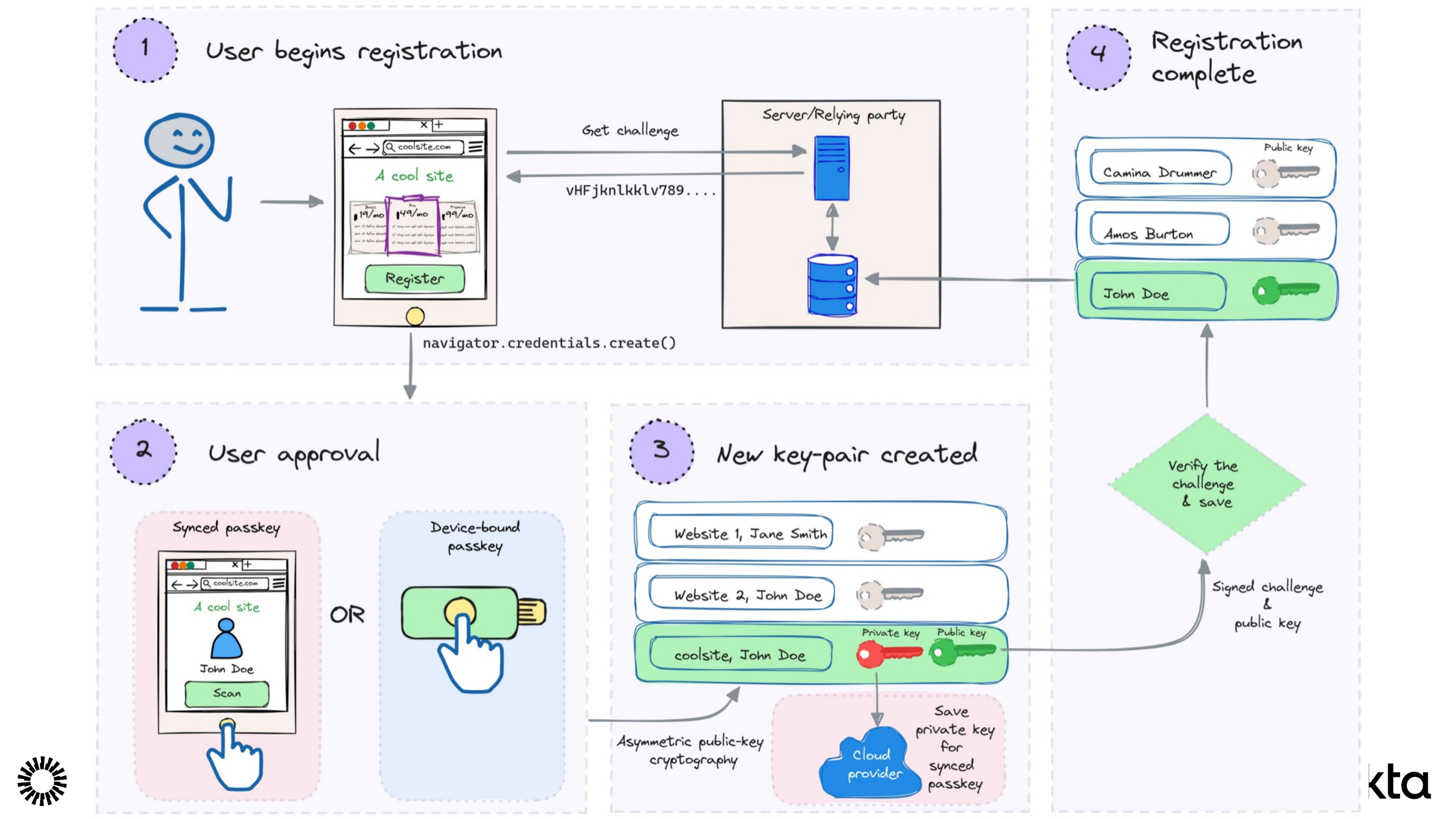
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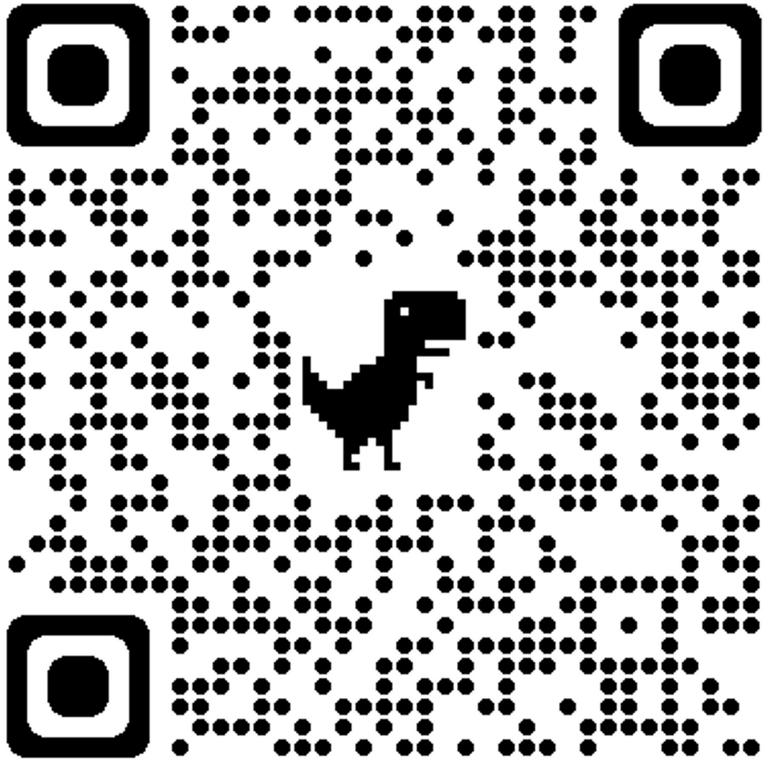
User begins registration
coolsite.com
A cool site
Basic
19/mo
Pro
49/mo
Premium
99/mo
Register
Get challenge
vHFjknlkklv789....
Server/Relying party
navigator.credentials.create()
4
Registration complete
Public key
Camina Drummer
Amos Burton
John Doe
2
User approval
Synced passkey
coolsite.com
A cool site
John Doe
Scan
OR
Device-bound passkey
3
New key-pair created
Website 1, Jane Smith
Website 2, John Doe
coolsite, John Doe
Private key
Public key
Asymmetric public-key cryptography
Cloud provider
Save private key for synced passkey
Verify the challenge & save
Signed challenge & public key

Interactive Demo



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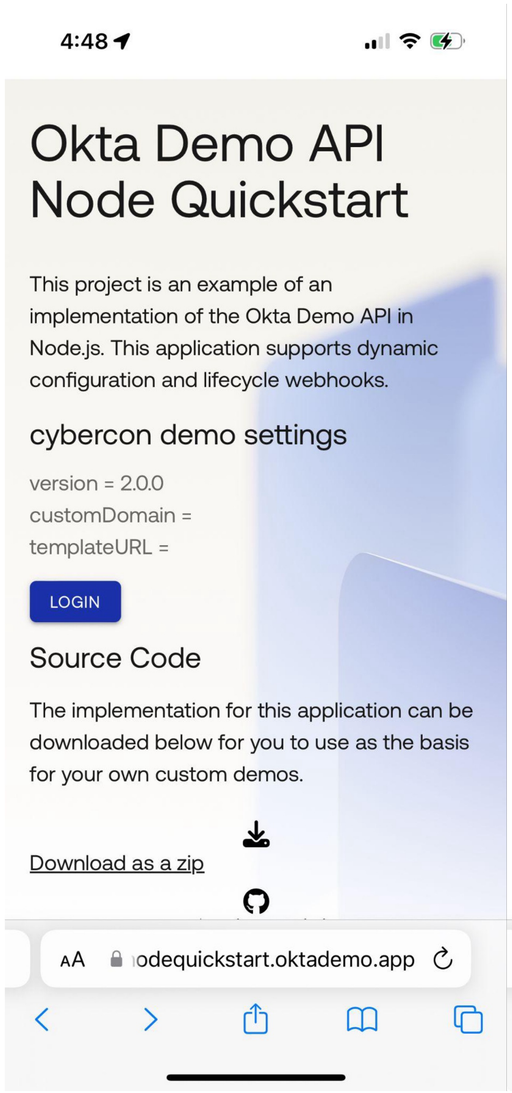
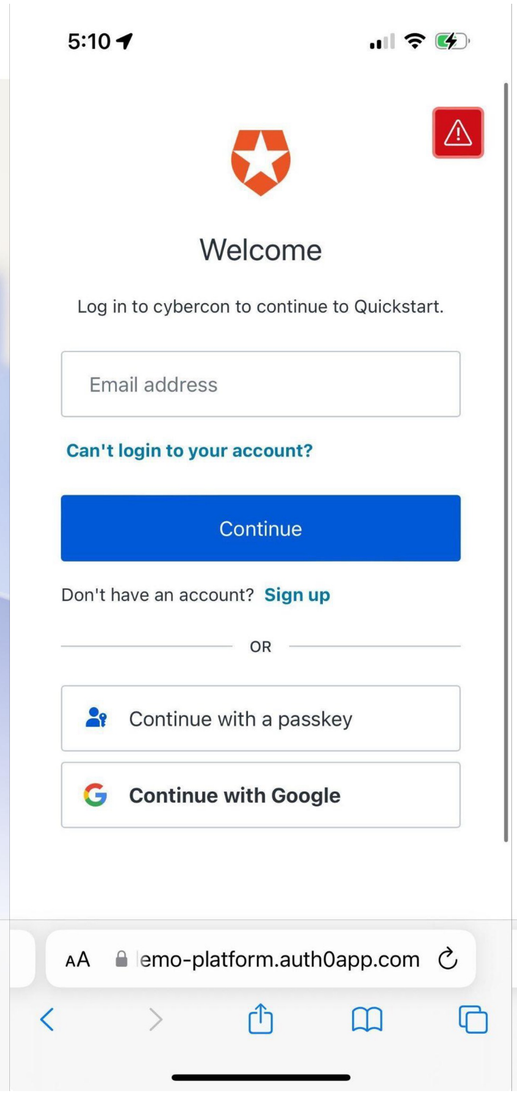
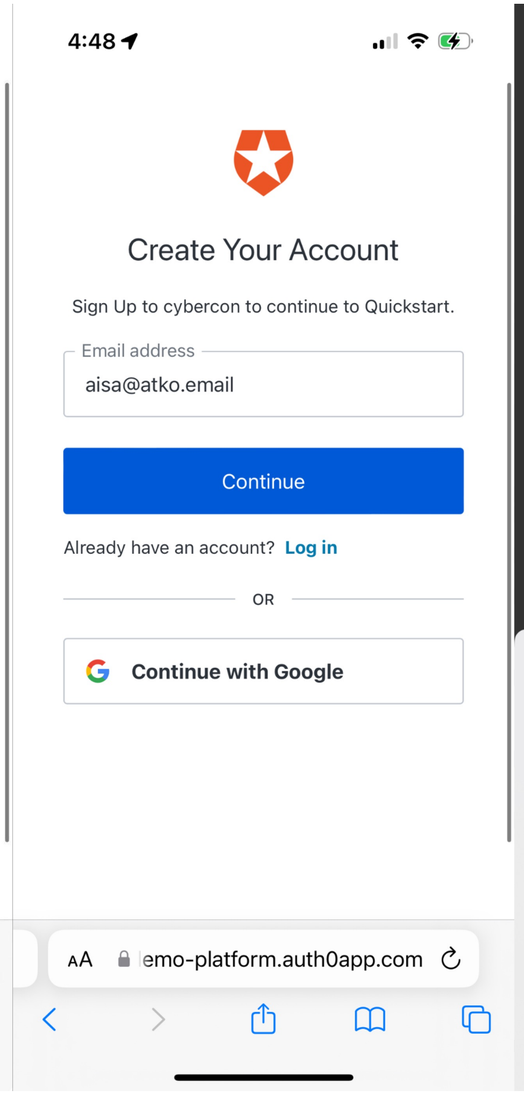
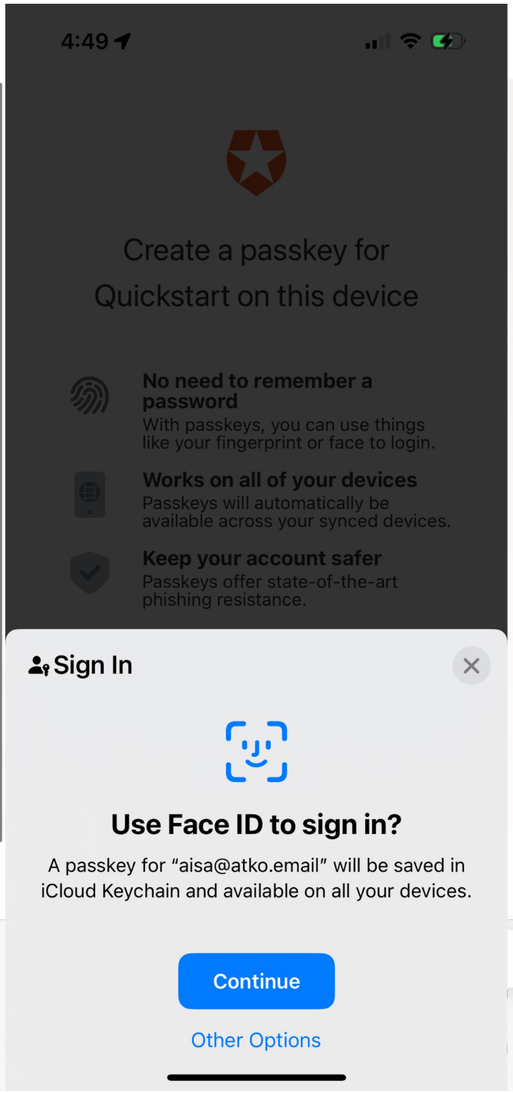
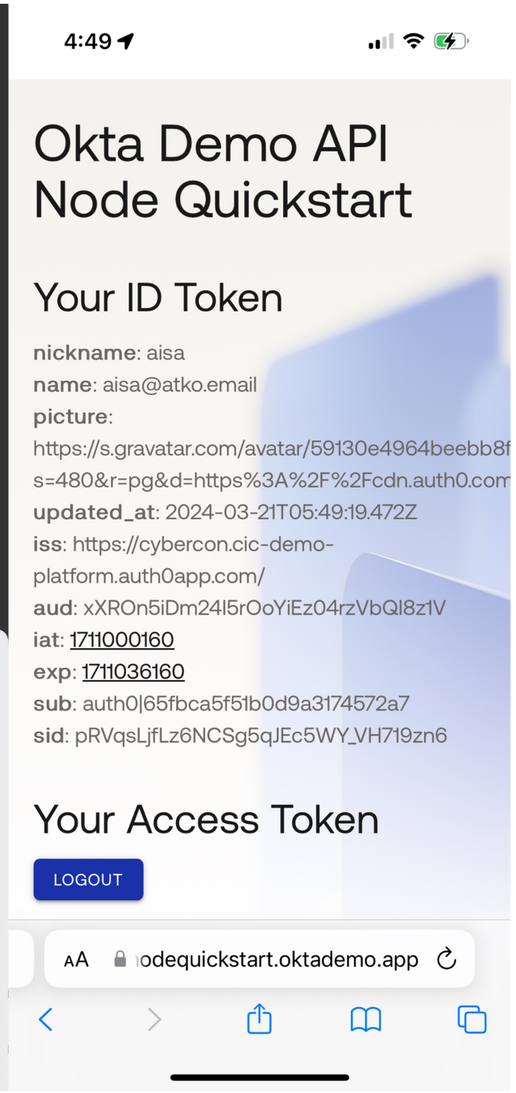
Interactive Demo

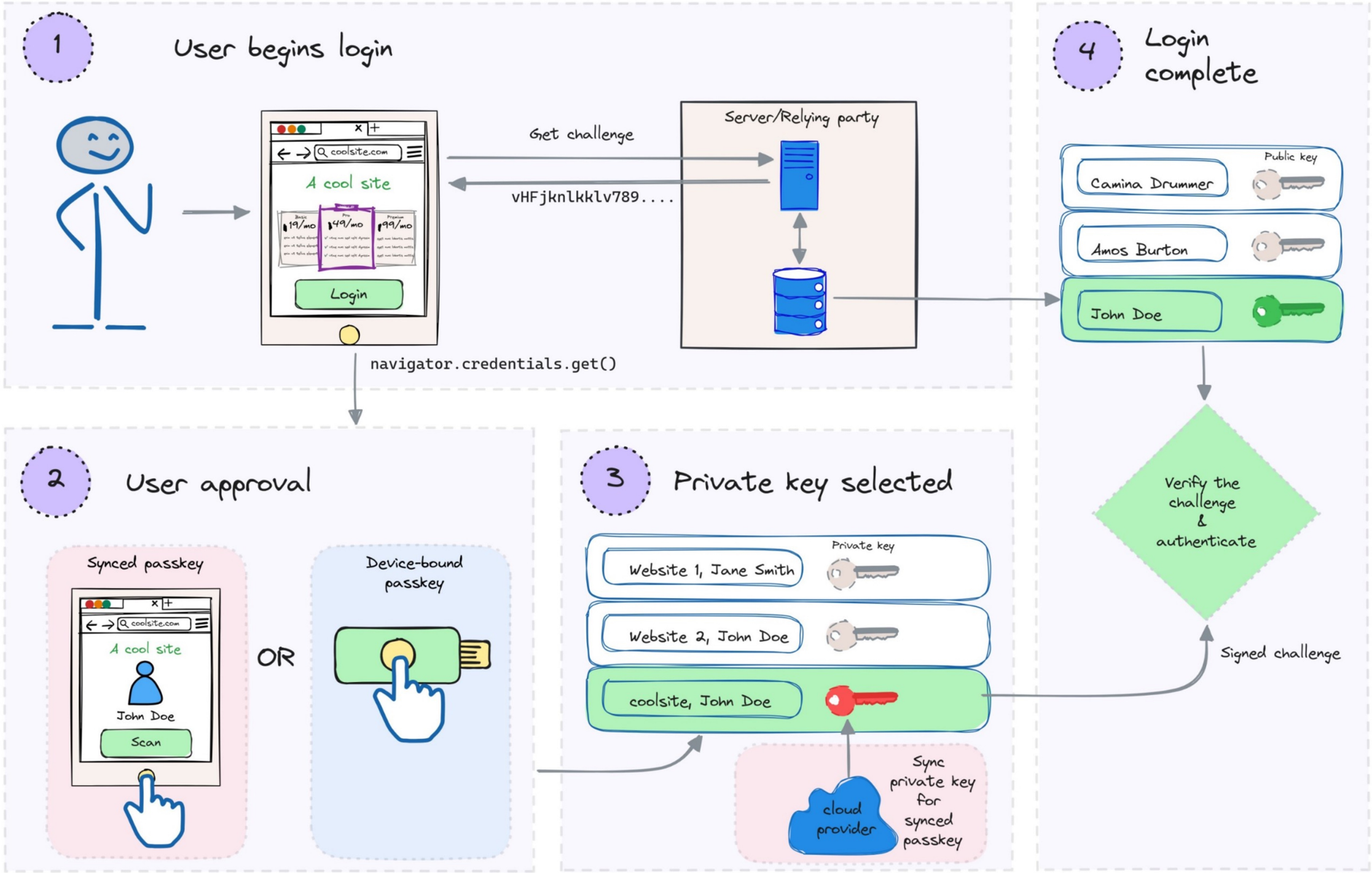




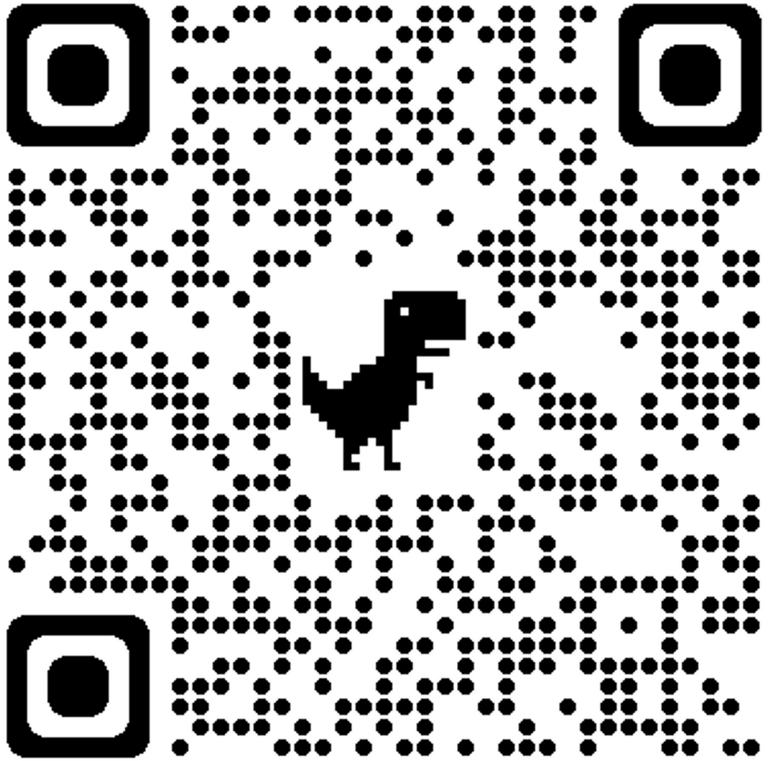







1
User begins login
coolsite.com
A cool site
Basic $19/mo
Pro $49/mo
Premium $99/mo
Login
Get challenge
vHFjknlkklv789....
Server/Relying party
navigator.credentials.get()
4
Login complete
Public key
Camina Drummer
Amos Burton
John Doe
Verify the challenge & authenticate
Signed challenge
2
User approval
Synced passkey
coolsite.com
A cool site
John Doe
Scan
OR
Device-bound passkey
3
Private key selected
Private key
Website 1, Jane Smith
Website 2, John Doe
coolsite, John Doe
cloud provider
Sync private key for synced passkey

Interactive Demo



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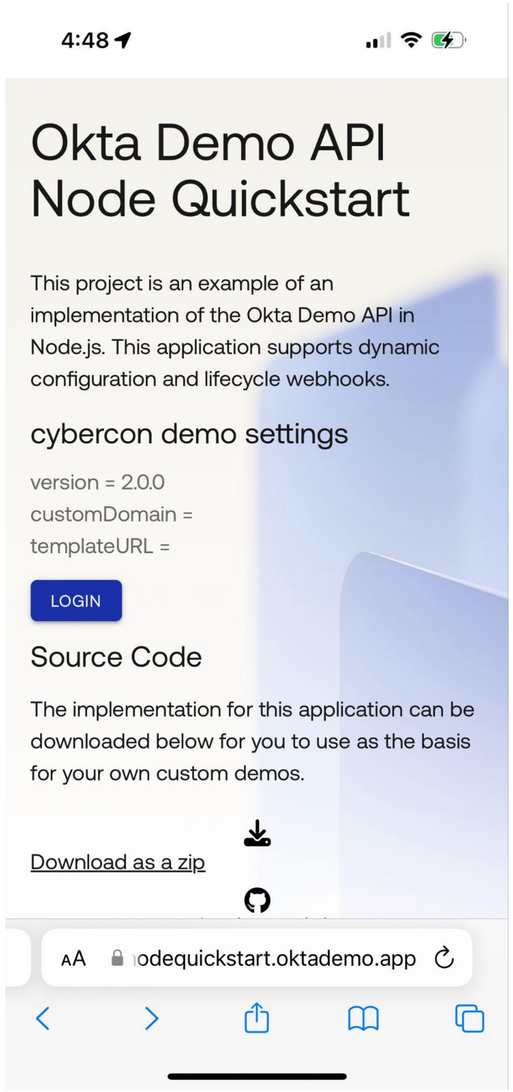
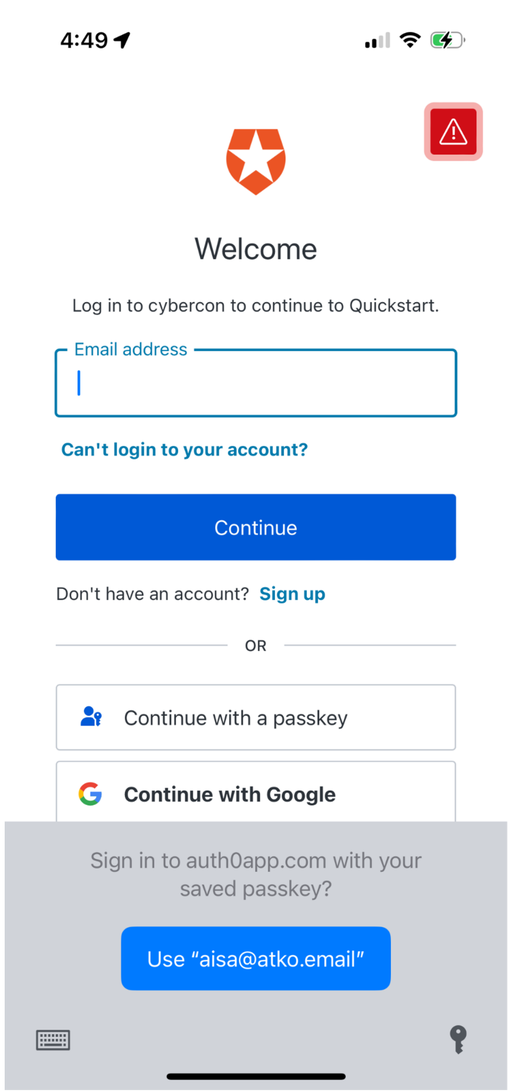
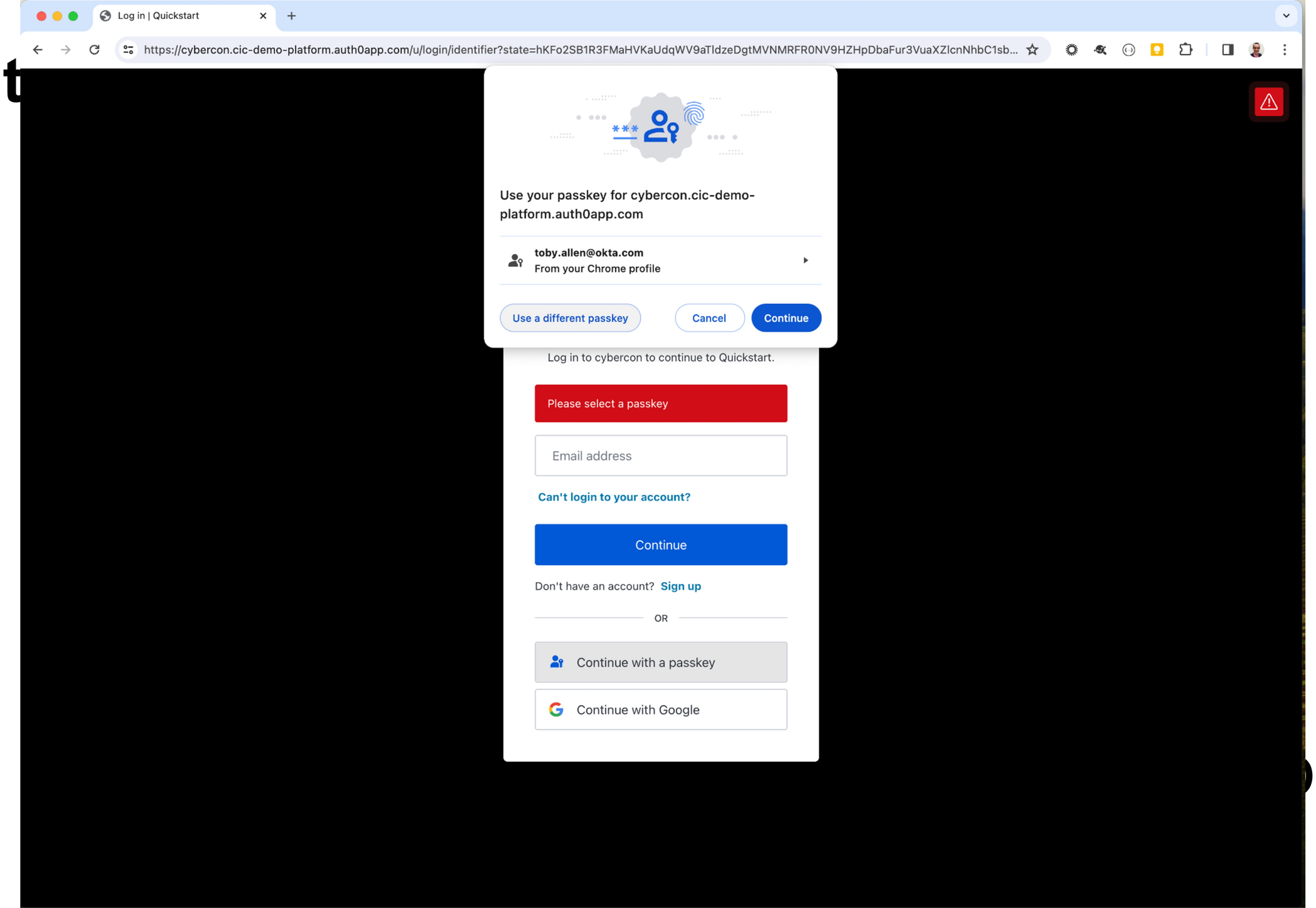
Interactive Demo





Cross Device Authentication

Int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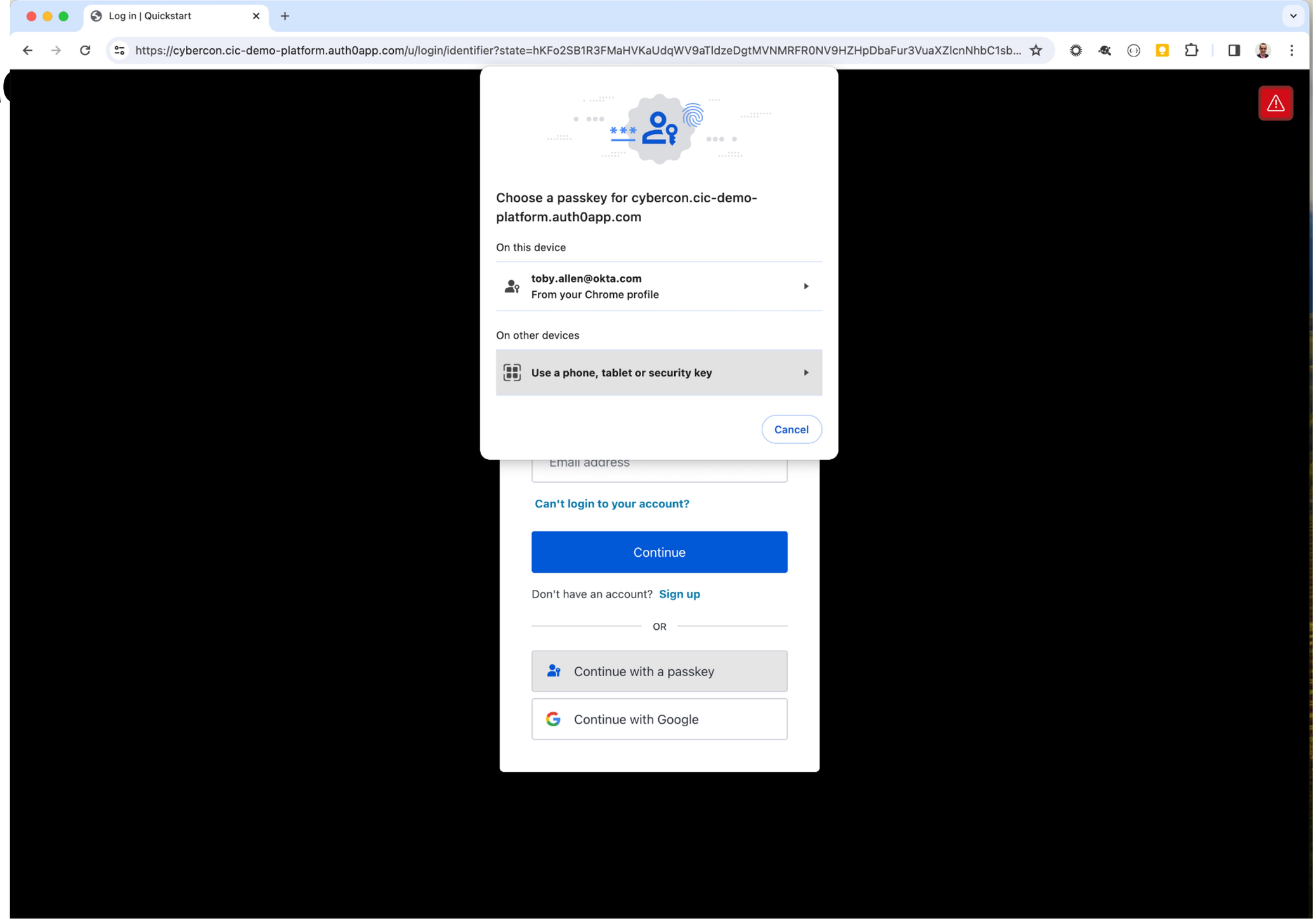
Use your passkey for cybercon.cic-demo-platform.auth0app.com
toby.allen@okta.com
From your Chrome profile
Use a different passkey
Cancel
Continue
Log in to cybercon to continue to Quickstart.
Please select a passkey
Email address
Can't login to your account?
Continue
Don't have an account? Sign up
OR
Continue with a passkey
Continue with Google

Int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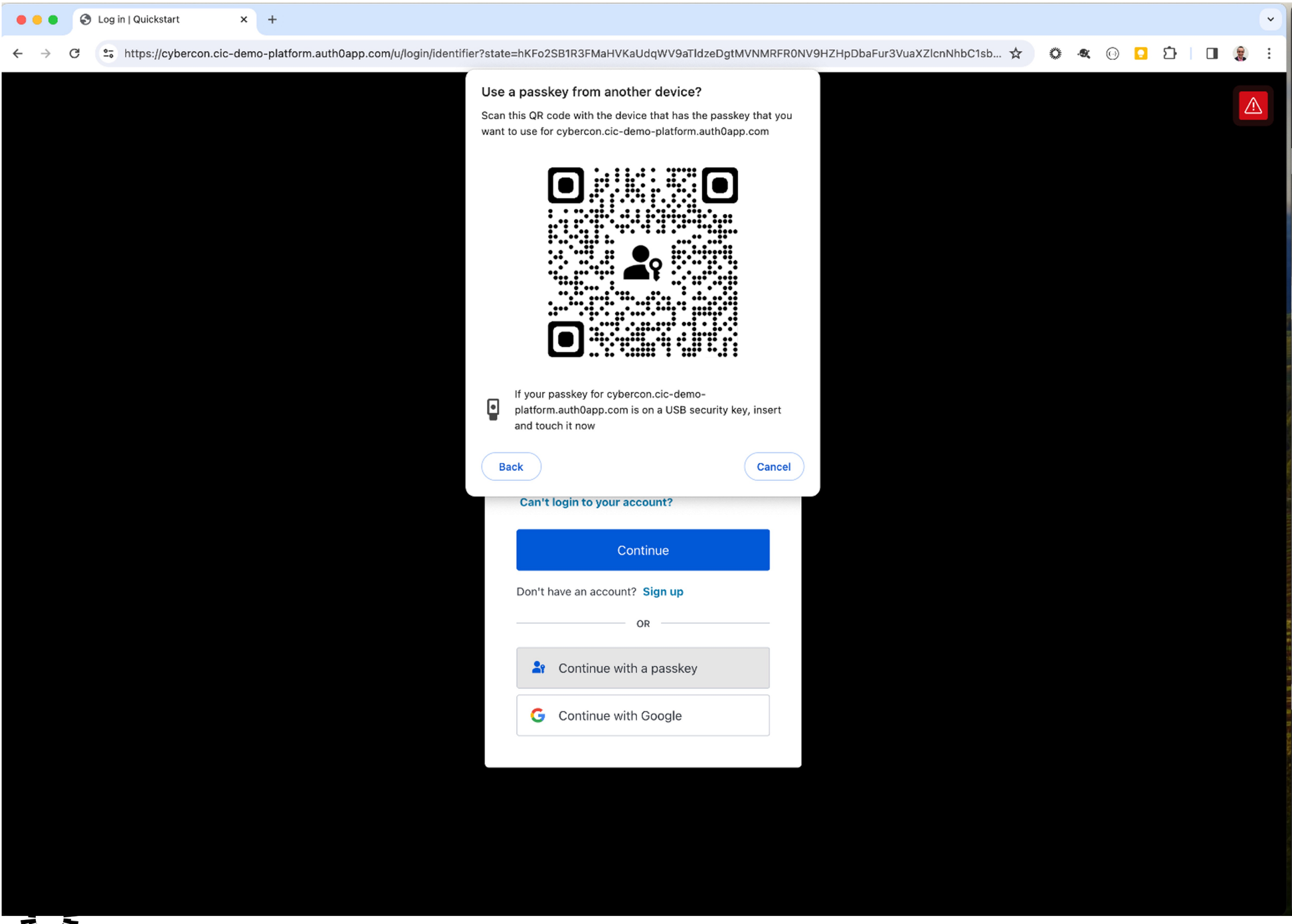
Choose a passkey for cybercon.cic-demo-platform.auth0app.com
On this device
toby.allen@okta.com
From your Chrome profile
On other devices
Use a phone, tablet or security key
Cancel
Email address
Can't login to your account?
Continue
Don't have an account? Sign up
OR
Continue with a passkey
Continue with Google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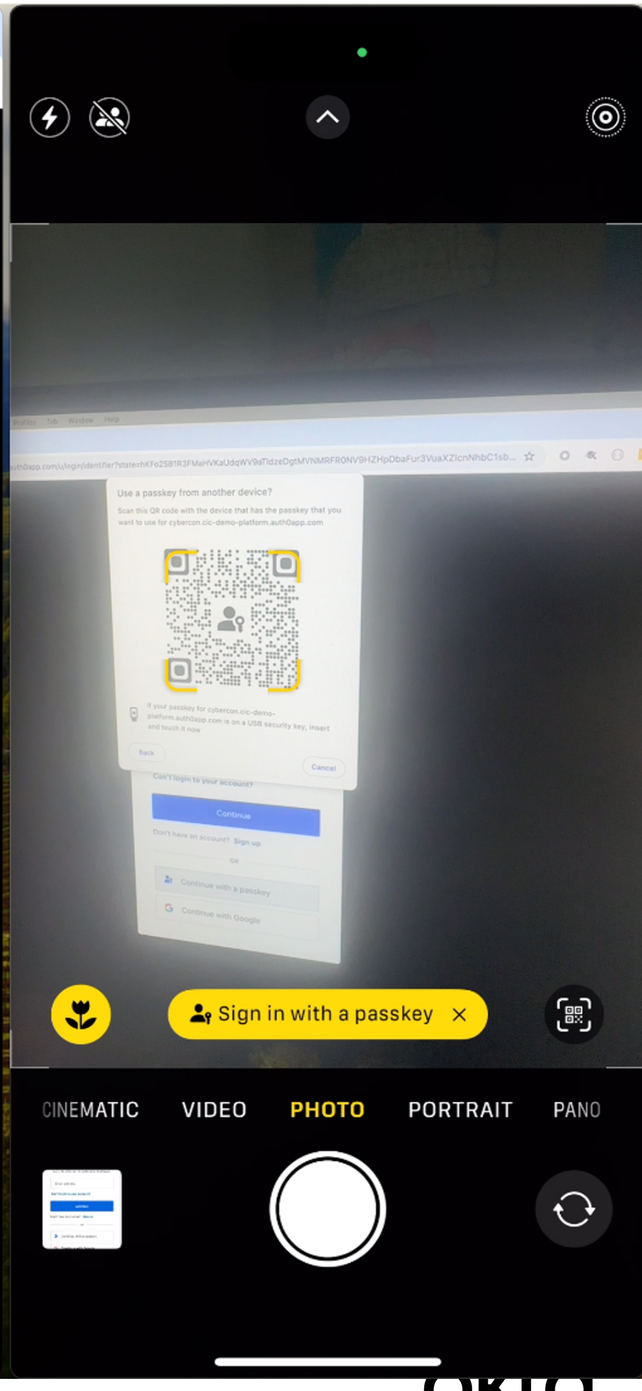
Use a passkey from another device?
Scan this QR code with the device that has the passkey that you want to use for cybercon.cic-demo-platform.auth0app.com
If your passkey for cybercon.cic-demo-platform.auth0app.com is on a USB security key, insert and touch it now
Back
Cancel
Can't login to your account?
Continue
Don't have an account? Sign up
OR
Continue with a passkey
Continue with Google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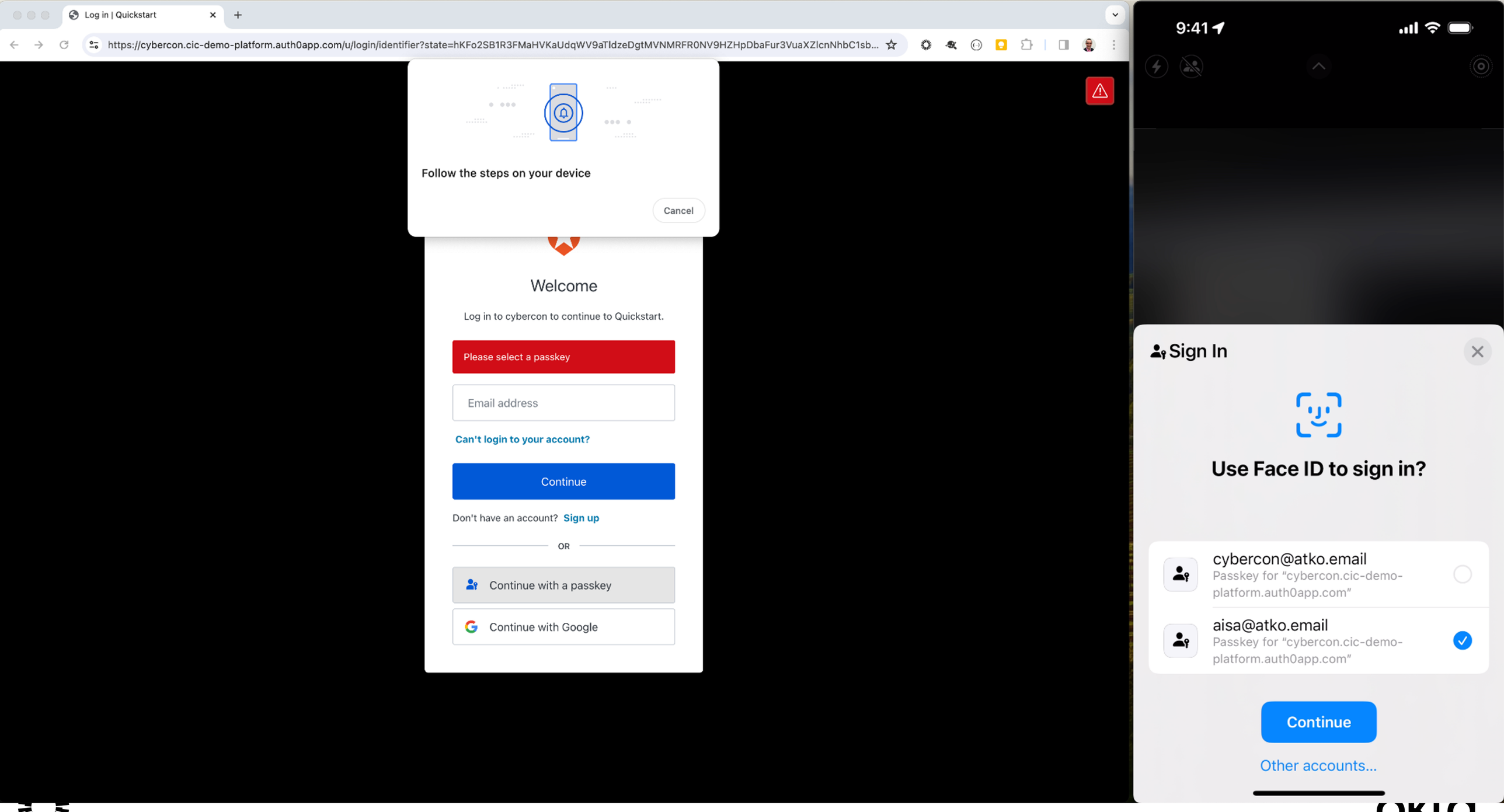
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Follow the steps on your device
Cancel
Welcome
Log in to cybercon to continue to Quickstart.
Please select a passkey
Email address
Can't login to your account?
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Don't have an account? Sign up
OR
Continue with a passkey
Continue with Google
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Sign In
Use Face ID to sign in?
cybercon@atko.email
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Passkey for "cybercon.cic-demo-platform.auth0app.com"
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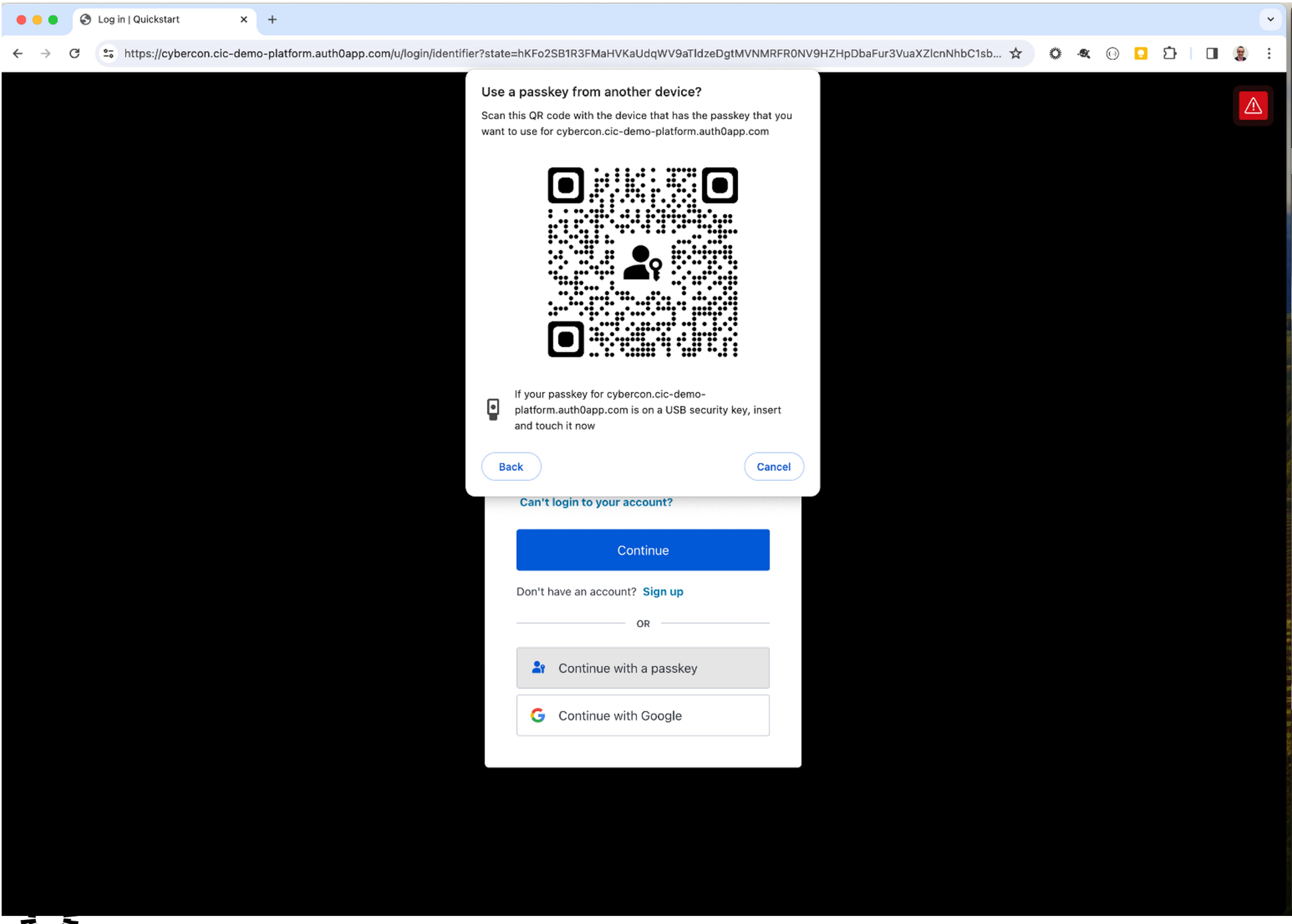
Other accounts...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Use a passkey from another device?
Scan this QR code with the device that has the passkey that you want to use for cybercon.cic-demo-platform.auth0app.com
If your passkey for cybercon.cic-demo-platform.auth0app.com is on a USB security key, insert and touch it now
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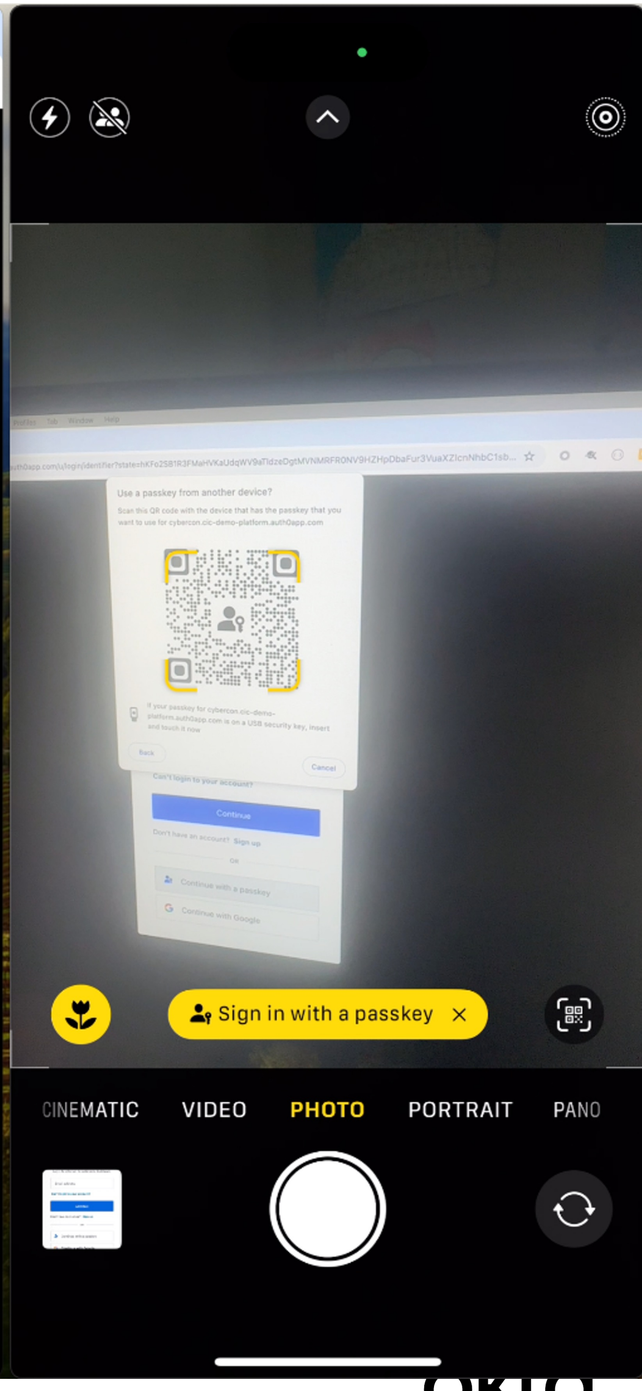
Cancel
Can't login to your account?
Continue
Don't have an account? Sign up
OR
Continue with a passkey
Continue with Google


Sign in with a passkey
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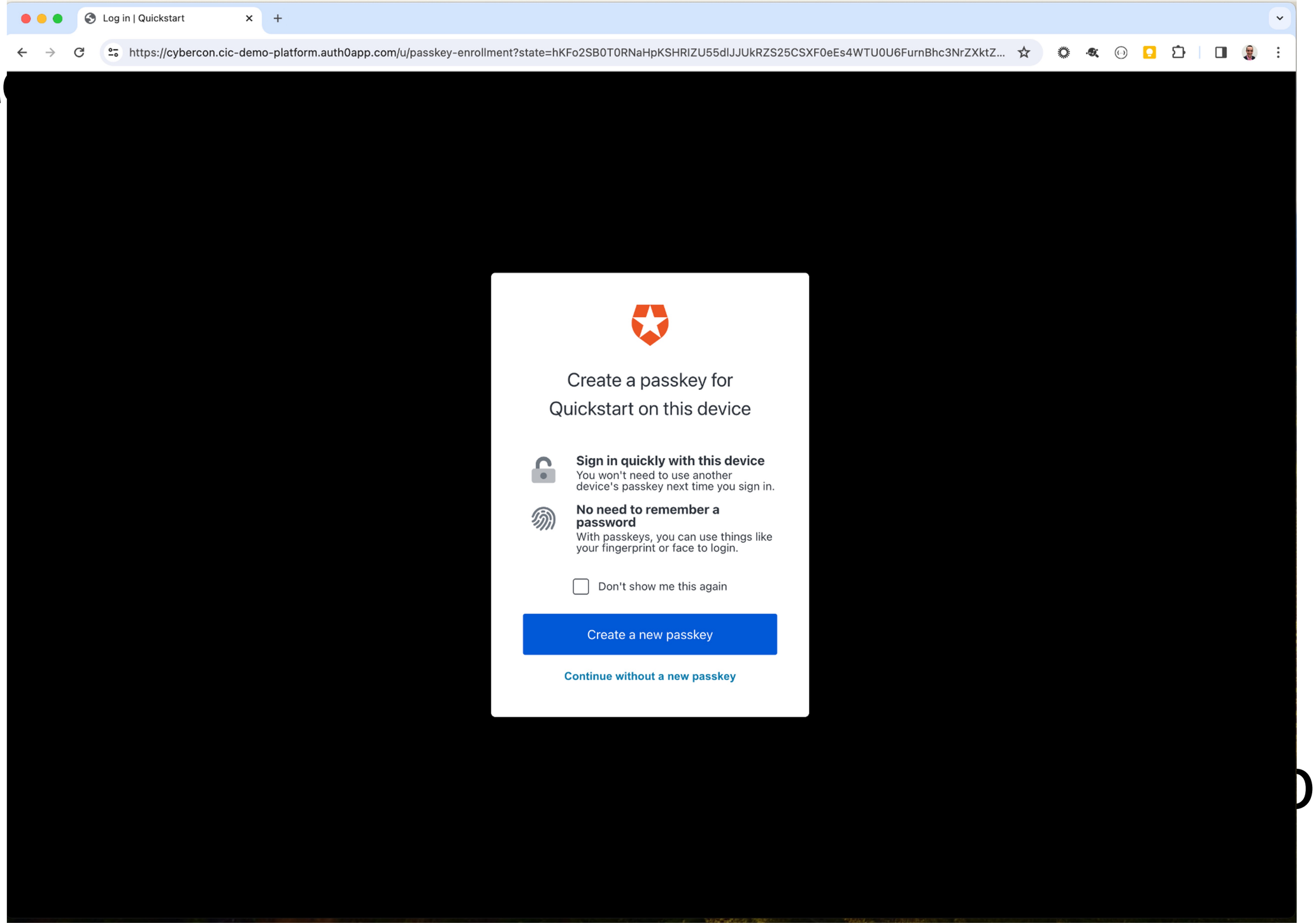
Log in | Quickstart
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Create a passkey for Quickstart on this device
Sign in quickly with this device
You won't need to use another device's passkey next time you sign in.
No need to remember a password
With passkeys, you can use things like your fingerprint or face to login.
Don't show me this again
Create a new passkey
Continue without a new passkey

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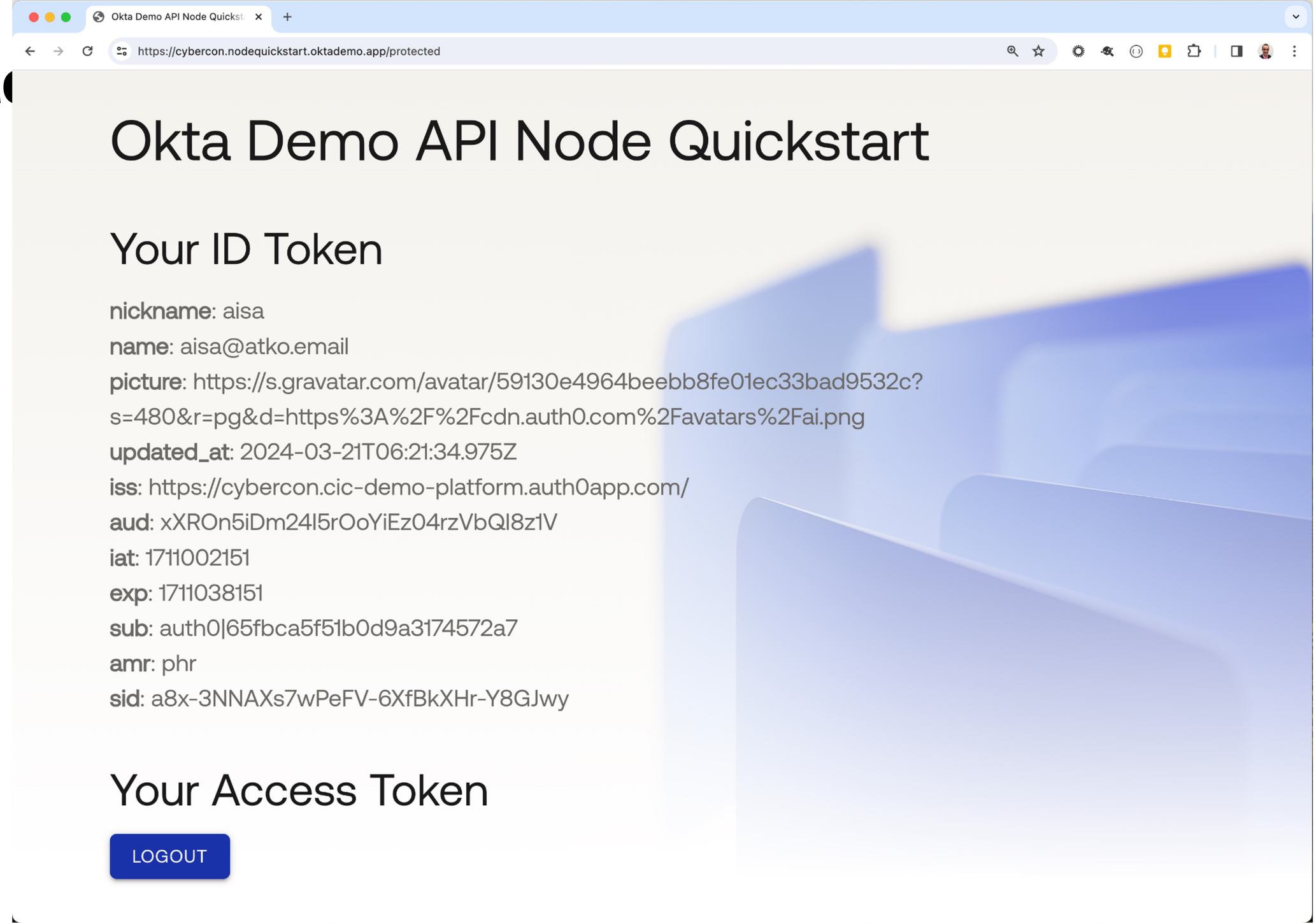
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https://cybercon.nodequickstart.oktademo.app/protected
Okta Demo API Node Quickstart
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name: aisa@atko.email
picture: https://s.gravatar.com/avatar/59130e4964beebb8fe01ec33bad9532c?s=480&r=pg&d=https%3A%2F%2Fcdn.auth0.com%2Favatars%2Fai.png
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iat: 1711002151
exp: 1711038151
sub: auth0|65fbca5f51b0d9a3174572a7
amr: phr
sid: a8x-3NNAXs7wPeFV-6XfBkXHr-Y8GJwy
Your Access Token
LOGOUT

Cross Device Authentication

Allows a passkey on an Android or iOS device to be leveraged for signin on another device or desktop. Leverages WebAuthN API and BLE for proximity.

- User opens web app and is offered option to authenticate with nearby device.
- Web app displays QR Code
- A Bluetooth Low Energy (BLE) advertisement is used to verify proximity
- Websocket is established between devices and a cryptographic handshake is completed.
- Device 2 completes sign-in with passkey

- *Best Practice is the application now offers to create a new passkey on initiating device.*

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So… What does this mean for customers?

In addition to meaningfully increasing account security for the vast majority of consumers, passkeys also lower friction – Google recently showed that logging in with a passkey takes, on average, less than half the time it takes to log in using a password (in fact, their belief in passkeys is so strong that as of October 10, 2023, Google offers passkeys as the default option across personal Google Accounts).

Google

https://security.googleblog.com/2023/05/making-authentication-faster-than-ever.html

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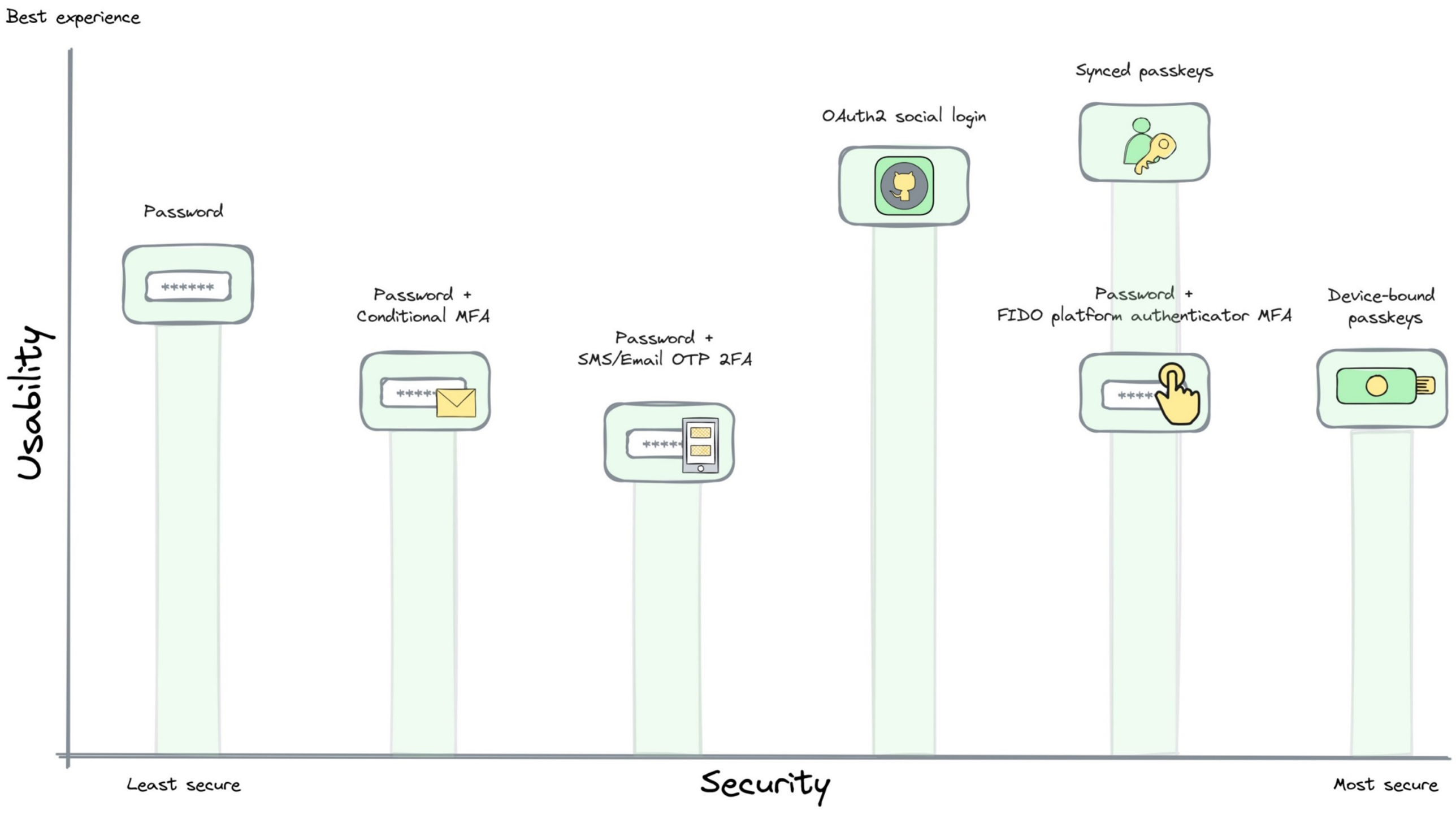
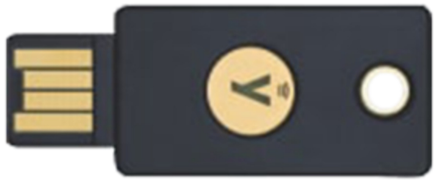

Best experience
Usability
Password
******
Password +
Conditional MFA
*****
Password +
SMS/Email OTP 2FA
*****
OAuth2 social login
Synced passkeys
Password +
FIDO platform authenticator MFA
*****
Device-bound
passkeys
Least secure
Security
Most secure

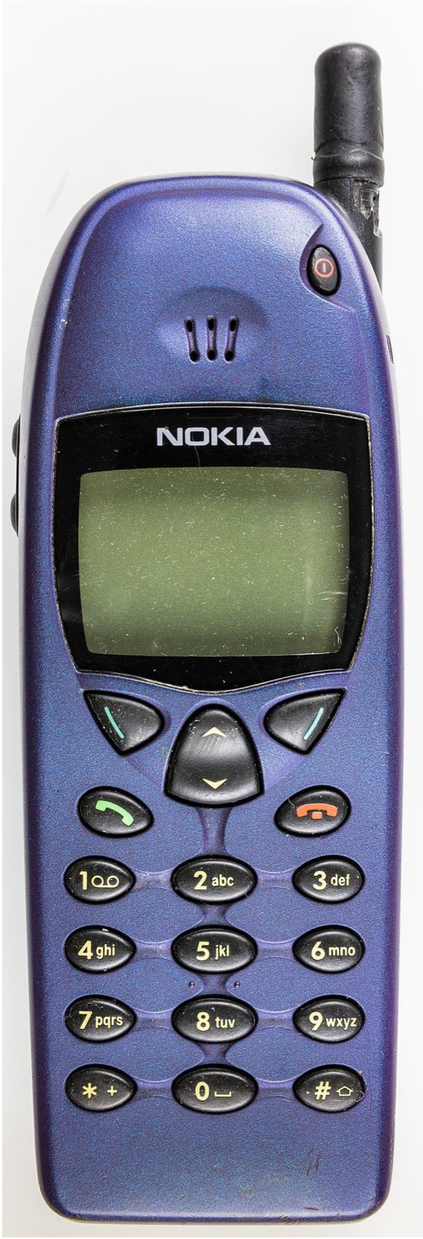
Unfortunately…

there are some rough edges

Device Support

- Who is your customer base?
- What devices can they access?





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Device Support

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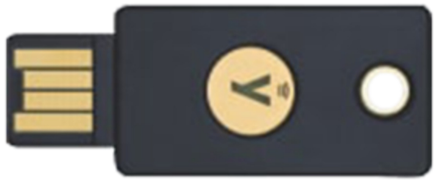
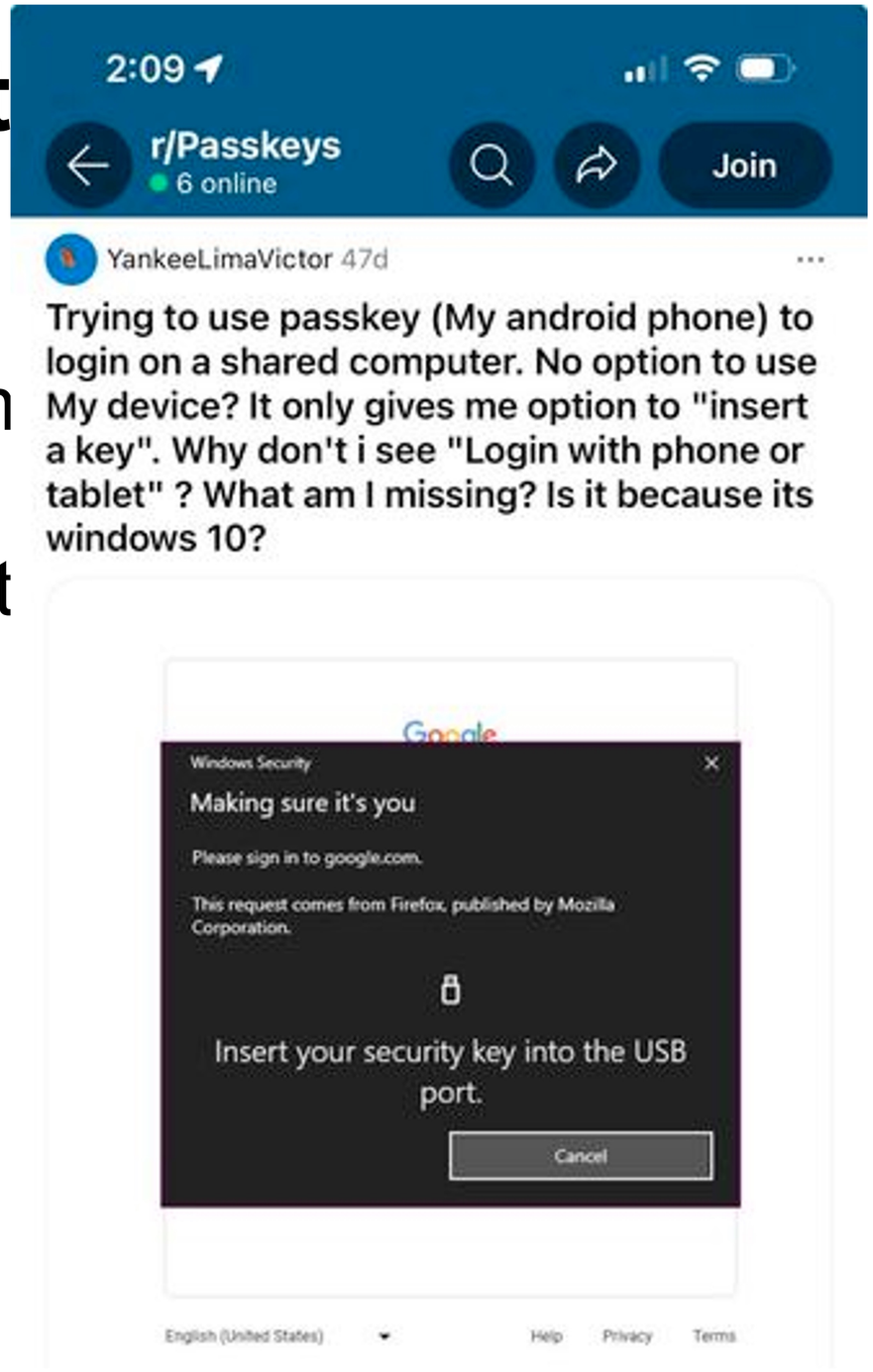
- What devices can t





~~Device Support~~
Use Case & Access Mode Support

- Where are they accessing it from?

- What devices can they access?

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Migration, Reset & Recovery

- Recovery processes for specific passkeys fallback to platform/storage solution
- Account Recovery Processes means you still need to validate other authenticators/information
- Encourage registration of multiple authenticators but solve for single device users
- Offer clean migration paths to users, test them

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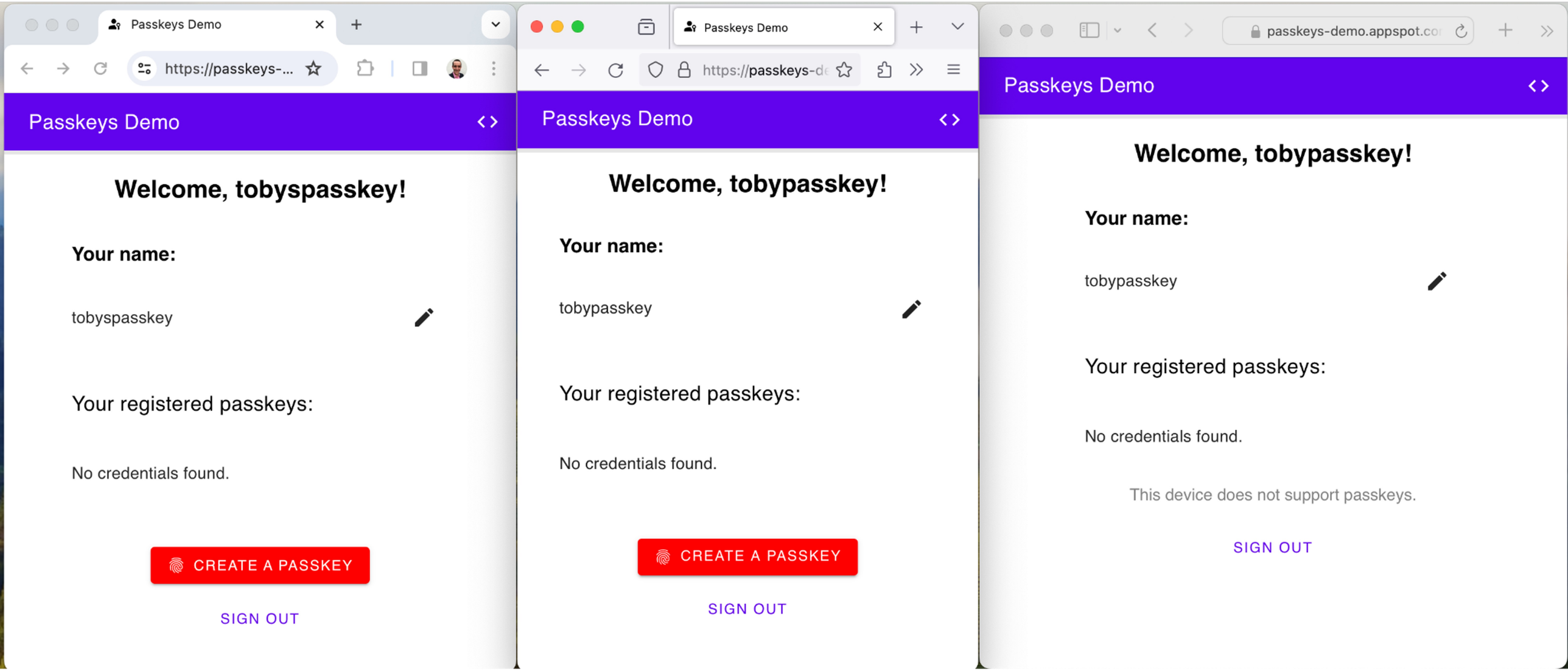
Challenges


Passkeys Demo
https://passkeys-...
Passkeys Demo
Welcome, tobyspasskey!
Your name:
tobyspasskey
Your registered passkeys:
No credentials found.
CREATE A PASSKEY
SIGN OUT
Passkeys Demo
https://passkeys-de
Passkeys Demo
Welcome, tobypasskey!
Your name:
tobypasskey
Your registered passkeys:
No credentials found.
CREATE A PASSKEY
SIGN OUT
passkeys-demo.appspot.com
Passkeys Demo
Welcome, tobypasskey!
Your name:
tobypasskey
Your registered passkeys:
No credentials found.
This device does not support passkeys.
SIGN OUT

Cross Ecosystem Challenges

- Offer Cross Device Authentication WITH follow up option to create another passkey

- Offer selfservice Passkey & Session Management options in your application.
  - Revoke a devices Session
  - Revoke a Passkey

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Final Thoughts

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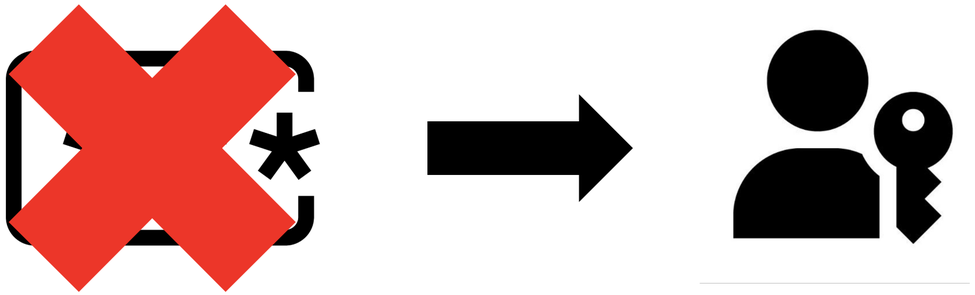

Passkeys **WILL** replace passwords and it will happen quicker than we expect.

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Learn More

learnpasskeys.io

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