IETF 95 Buenos Aires

OAuth 2.0 for Apps (Draft BCP)

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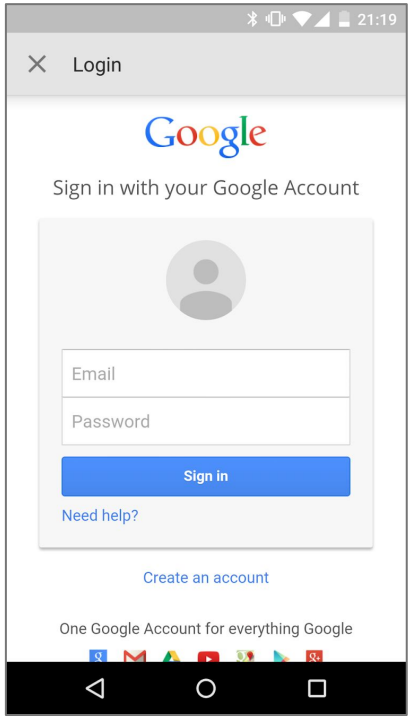
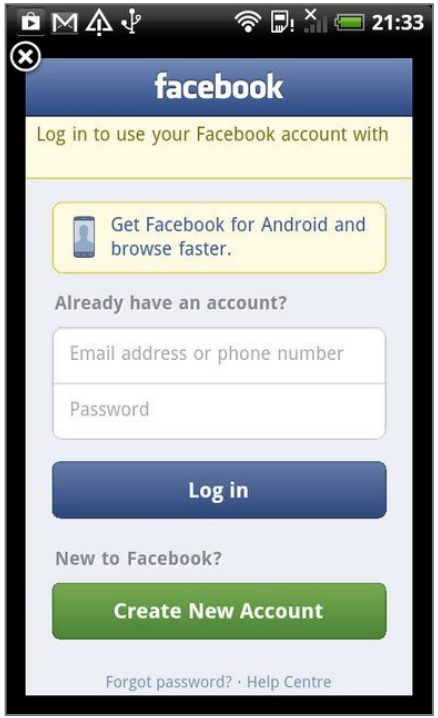
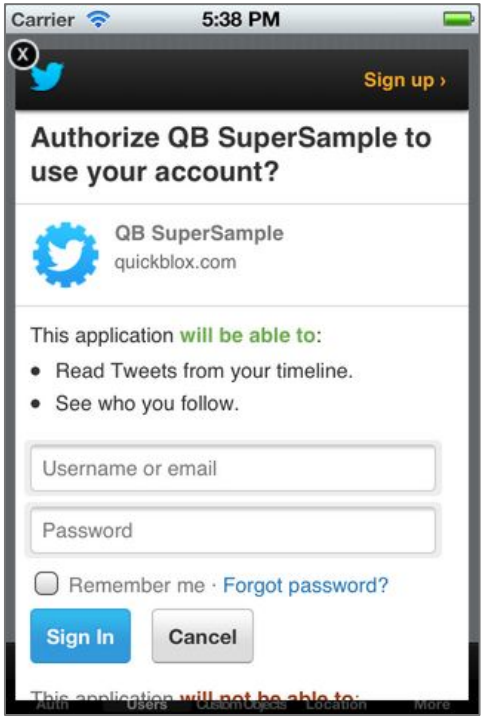
Embedded User Agent (WebView)







48%

of users abandon app sign-in flows when no authentication state is present.

In addition, WebView doesn’t protect the session

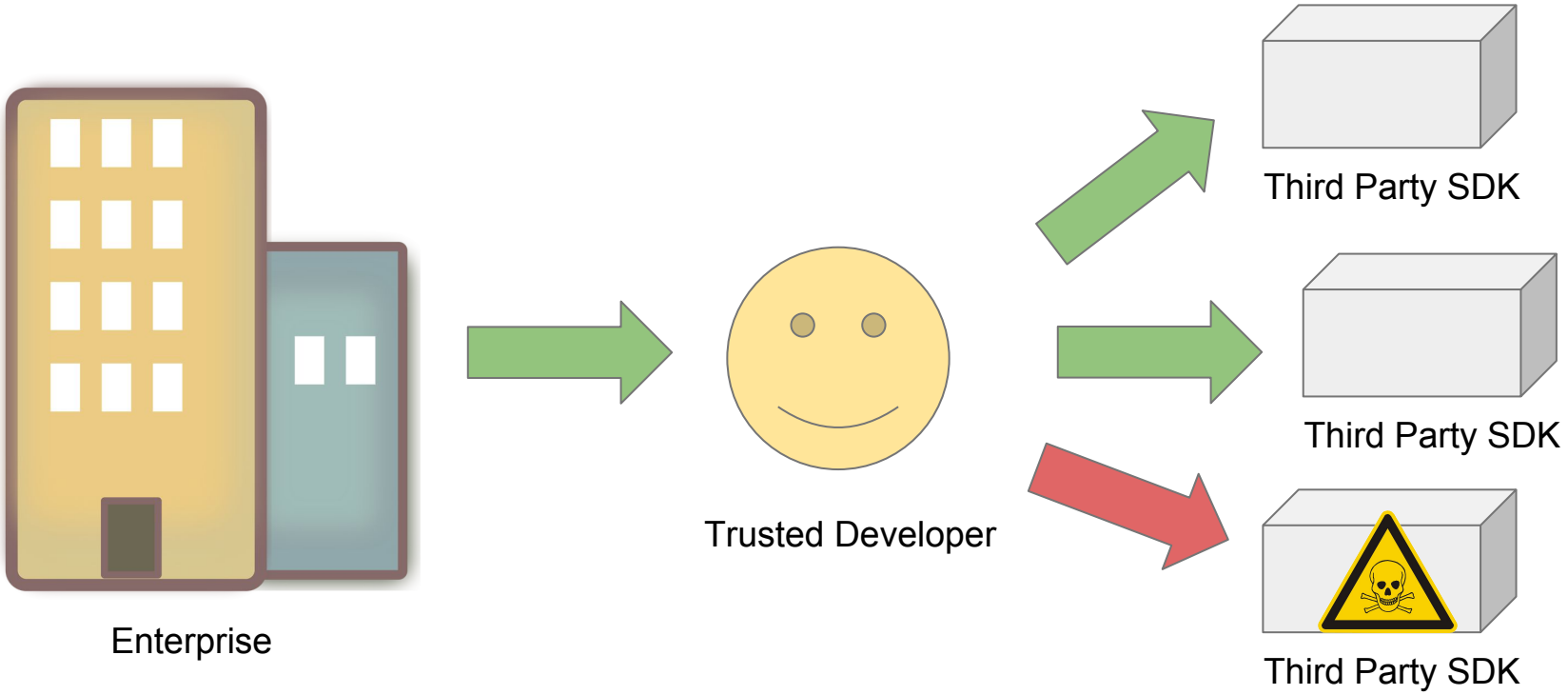
The host app can extract the cookies:

```
String cookies = CookieManager.getInstance().getCookie(url);
```

Or inject javascript:

```
webView.evaluateJavascript(
    "(function() { return document.getElementById('password').value; })();",
    new ValueCallback<String>() {
 @Override public void onReceiveValue(String s) {
   Log.d("WebViewField", s);
 }
});
```

Even trusted developers can create risk



Draft Best Current Practice for Apps

https://tools.ietf.org/html/draft-ietf-oauth-native-apps

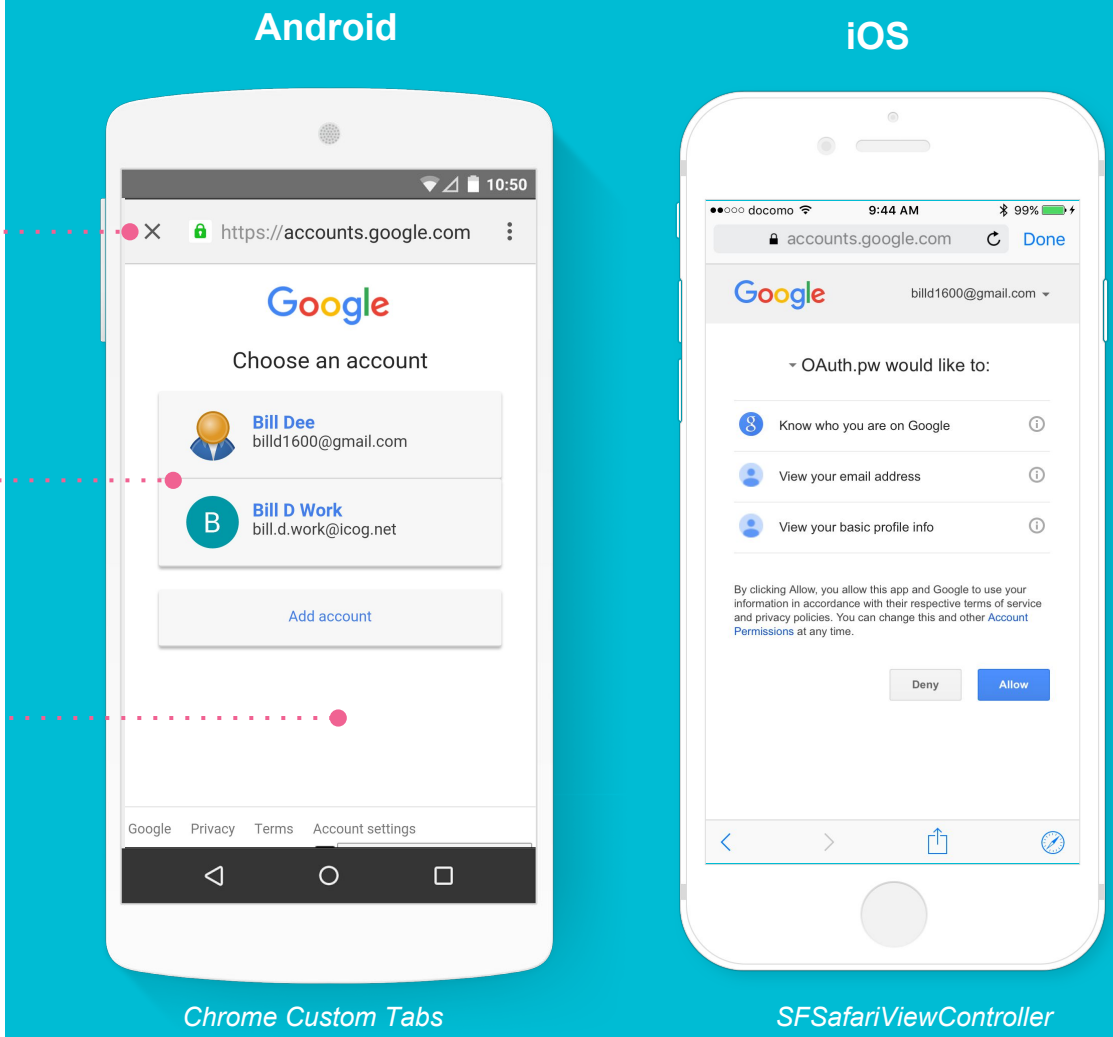
1. Apps should perform Authorization Requests in an External User Agent (i.e. a browser).
2. Authorization Servers should not assume all clients are confidential.
3. Custom URI schemes should be supported for OAuth redirects.
4. RFC7636 (PKCE) should be used.

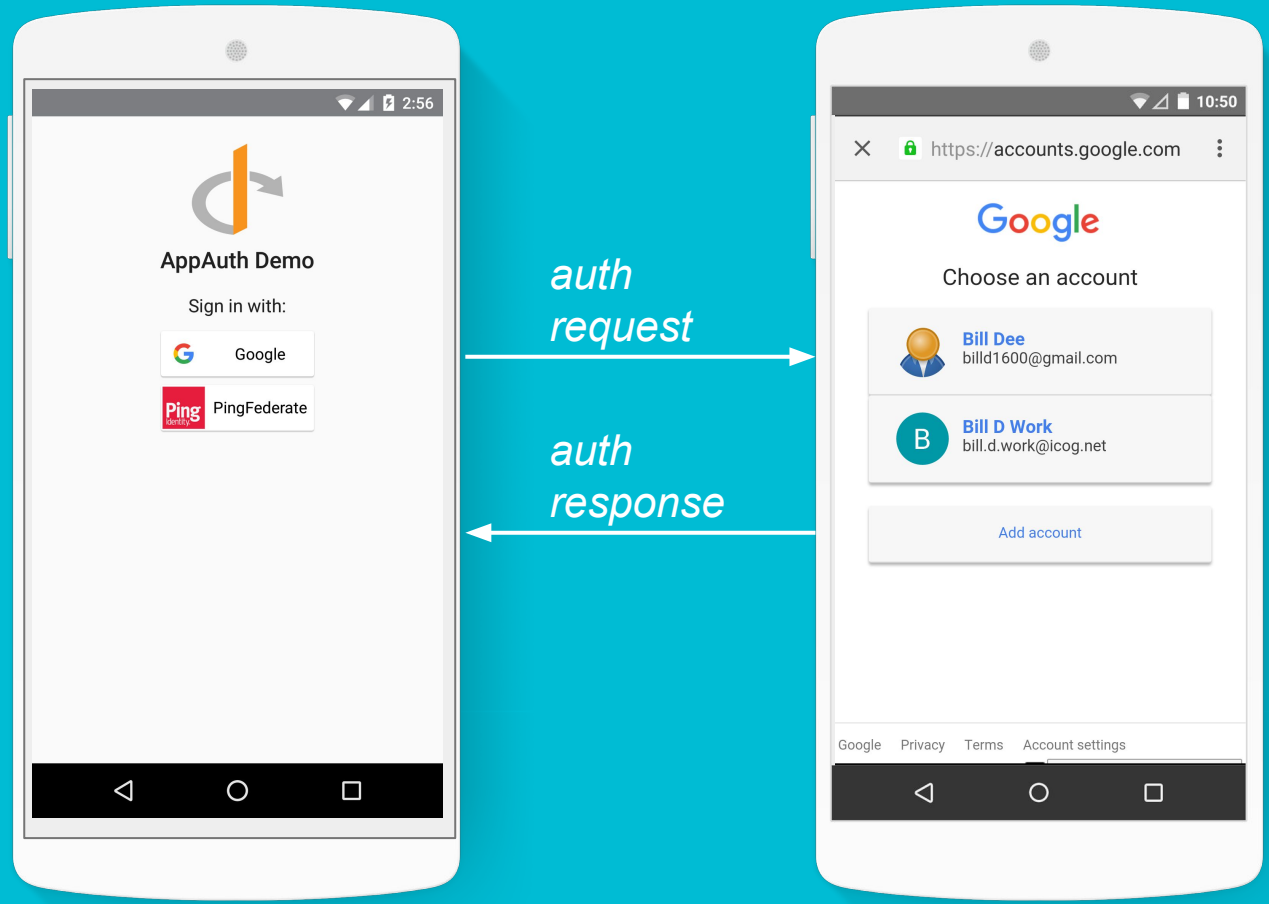
In-App Browser Tabs

Secure Context
(External User Agent)

Shared cookie state

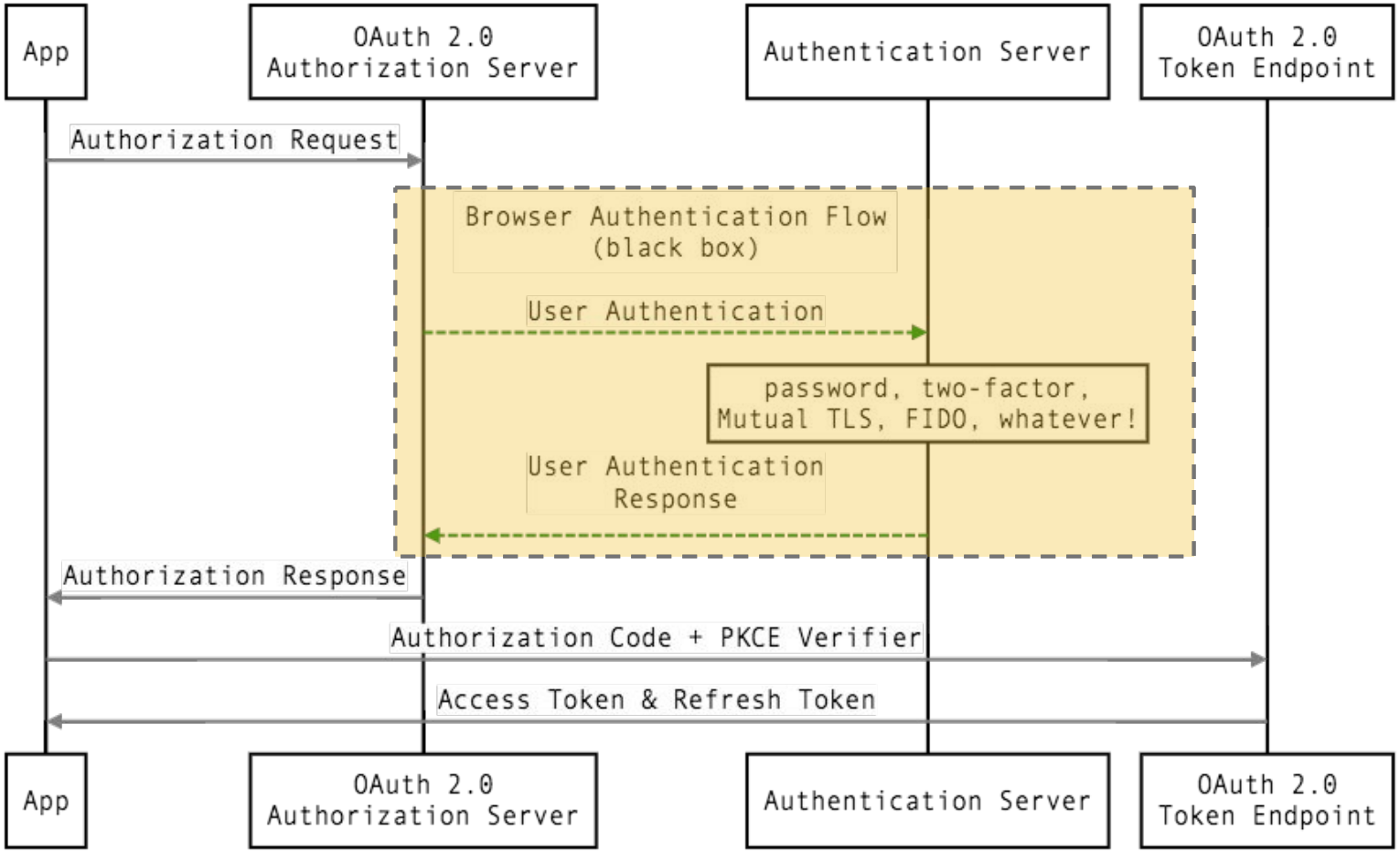
Presented in the app
(no app switch)



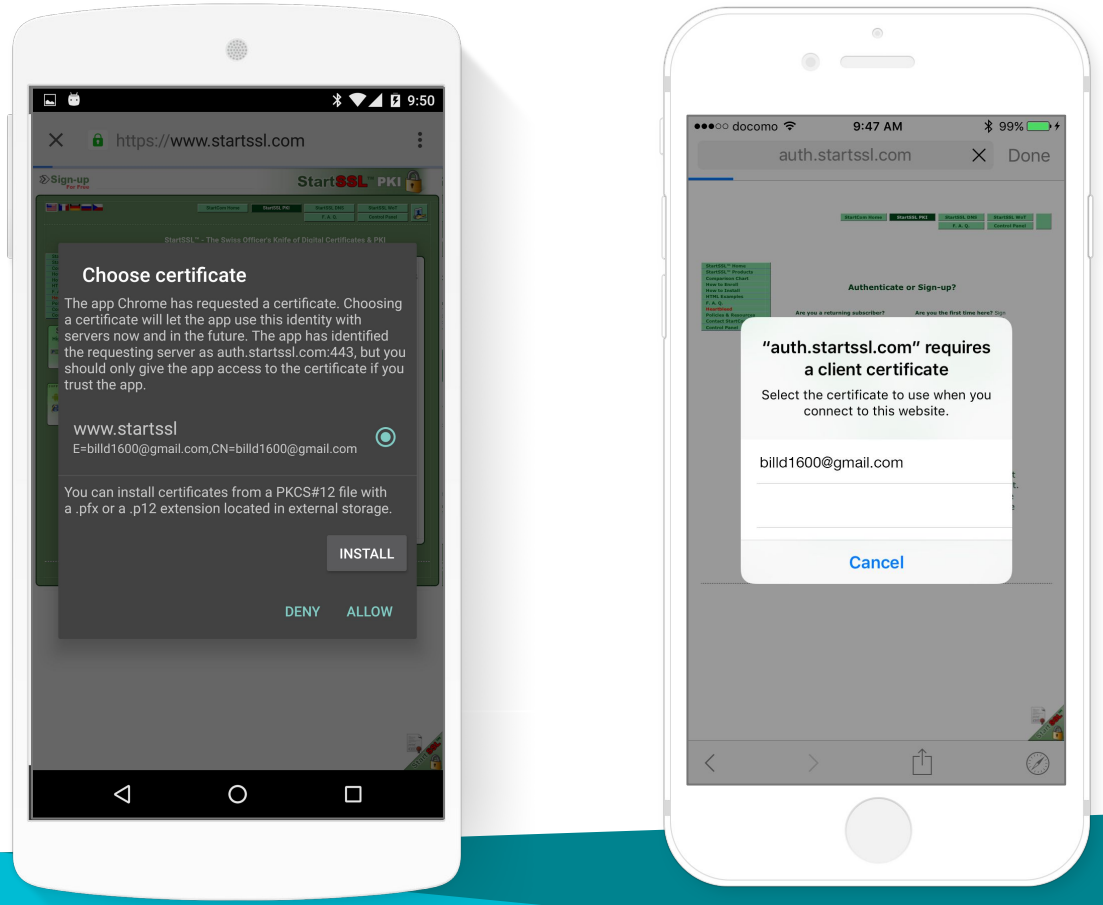


https://youtu.be/A5KmUilhRIs

Most users & platforms supported through using the browser when in-app browser tabs are not available.


App
OAuth 2.0
Authorization Server
Authentication Server
OAuth 2.0
Token Endpoint
Authorization Request
Browser Authentication Flow
(black box)
User Authentication
password, two-factor,
Mutual TLS, FIDO, whatever!
User Authentication
Response
Authorization Response
Authorization Code + PKCE Verifier
Access Token & Refresh Token
App
OAuth 2.0
Authorization Server
Authentication Server
OAuth 2.0
Token Endpoint

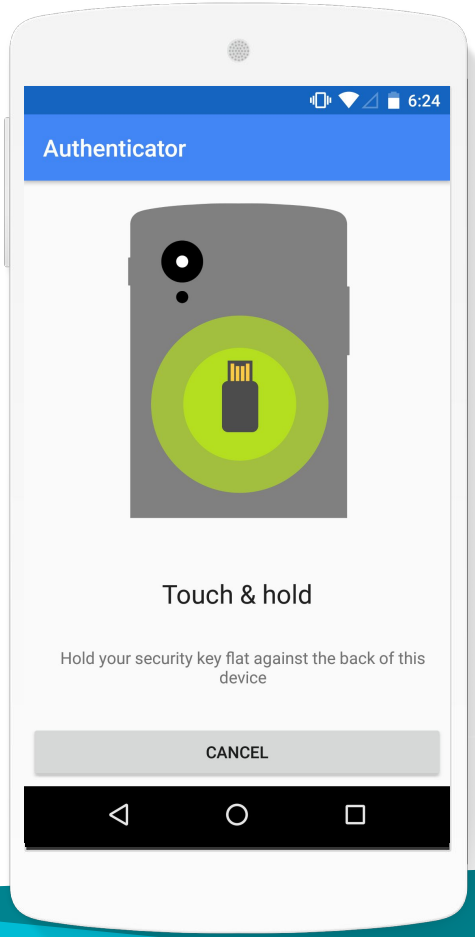
Advanced Options: Mutual TLS with Certificates

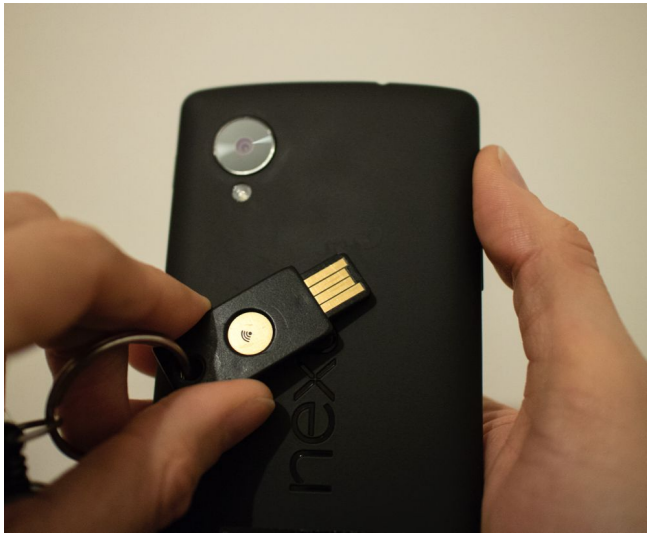


Advanced Options: FIDO U2F over NFC!

yubico

YubiKey NEO





https://youtu.be/egt7MiVBnb4

Interop

The following authorization servers already support the requirements of the best practice:

Interop in Progress

Django OIDC Provider

https://github.com/juanifioren/django-oidc-provider/

- Open source OAuth + OIDC server
- Supports Custom URI schemes
- Public client & PKCE support in progress

AppAuth: OAuth Client Libraries for Apps

Google made the initial contribution of AppAuth for iOS and Android to the Connect Working Group of the OpenID Foundation.

iOS library: http://openid.github.io/AppAuth-iOS

Android library: http://openid.github.io/AppAuth-Android

I-D ChangeLog & Status

https://tools.ietf.org/html/draft-ietf-oauth-native-apps

- Adoption by the WG following IETF94.
- Editorial refactoring, but core recommendations remain the same.
- Open source client libraries for iOS & Android released.
- Authorization Server interop progressing well.
- Plan to move to WG Last Call before Berlin.

THANK YOU

Android Custom Tabs

Common Android API available to all browsers. See: `CustomTabsService`.

Provided through a support library (API level 4+) http://developer.android.com/tools/support-library/features.html#custom-tabs

Any browser can add Custom Tab support. Example provider implementation: https://github.com/GoogleChrome/custom-tabs-provider

Example client app: https://github.com/GoogleChrome/custom-tabs-client