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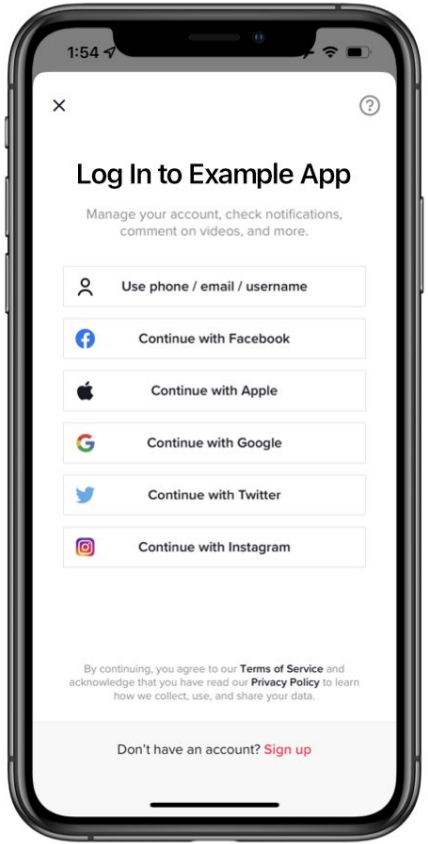
OAuth for First-Party Apps

https://datatracker.ietf.org/doc/draft-parecki-oauth-first-party-apps/
draft -00

OAuth for Native Mobile Apps Today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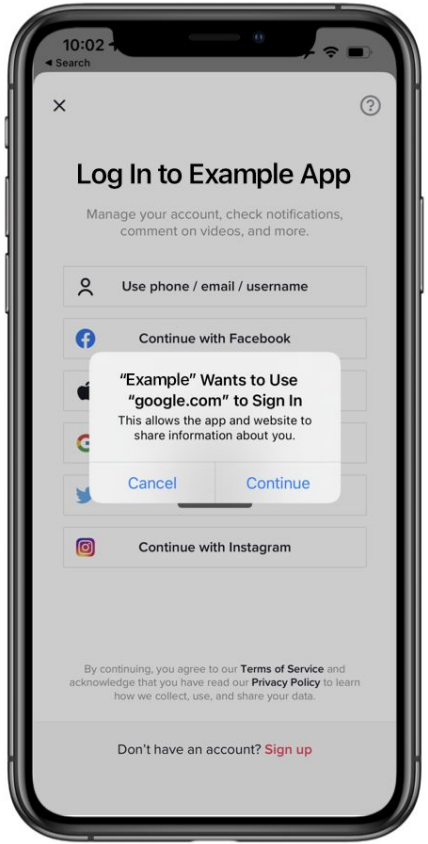
Log In to Example App
Manage your account, check notifications, comment on videos, and more.
Use phone / email / username
Continue with Facebook
Continue with Apple
Continue with Google
Continue with Twitter
Continue with Instagram
By continuing, you agree to our Terms of Service and acknowledge that you have read our Privacy Policy to learn how we collect, use, and share your data.
Don't have an account? Sign up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Search
Log In to Example App
Manage your account, check notifications, comment on videos, and more.
Use phone / email / username
Continue with Facebook
"Example" Wants to Use "google.com" to Sign In
This allows the app and website to share information about you.
Cancel
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Continue with Instagram
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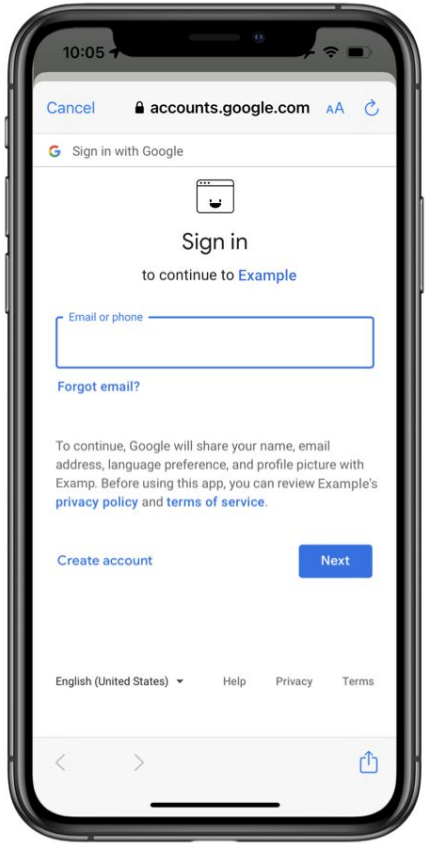
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Create account
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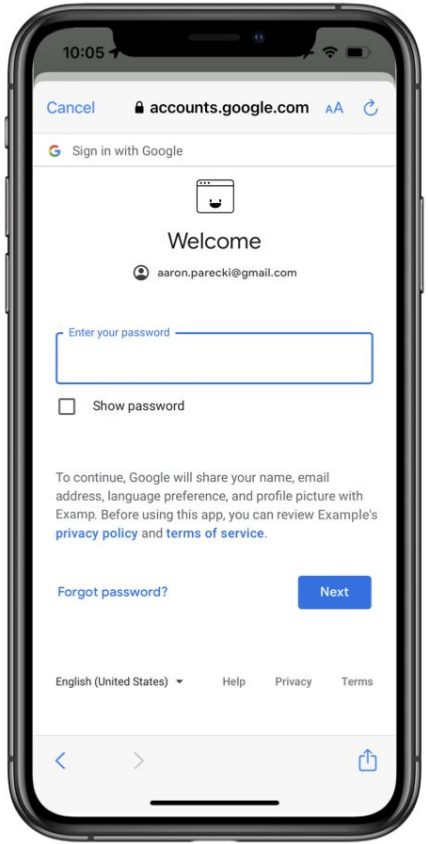
Help
Privacy
Terms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accounts.google.com
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Sign in with Google
Welcome
aaron.parecki@gmail.com
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Show password
To continue, Google will share your name, email address, language preference, and profile picture with Examp. Before using this app, you can review Example's privacy policy and terms of service.
Forgot password?
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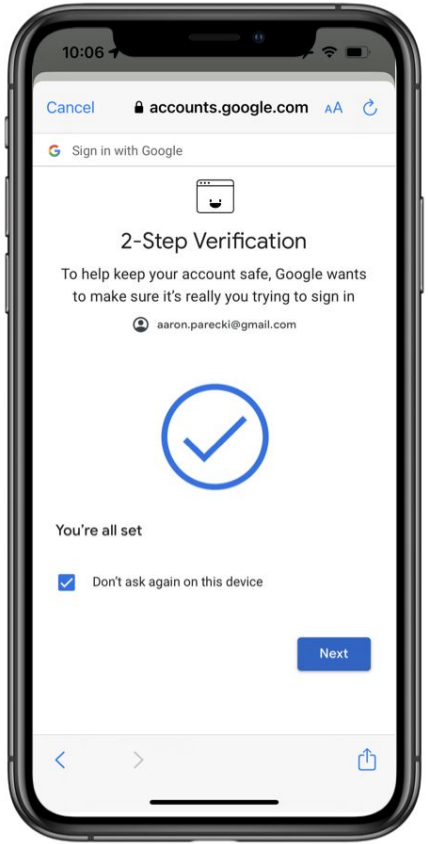
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Sign in with Google
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You're all set
Don't ask again on this device
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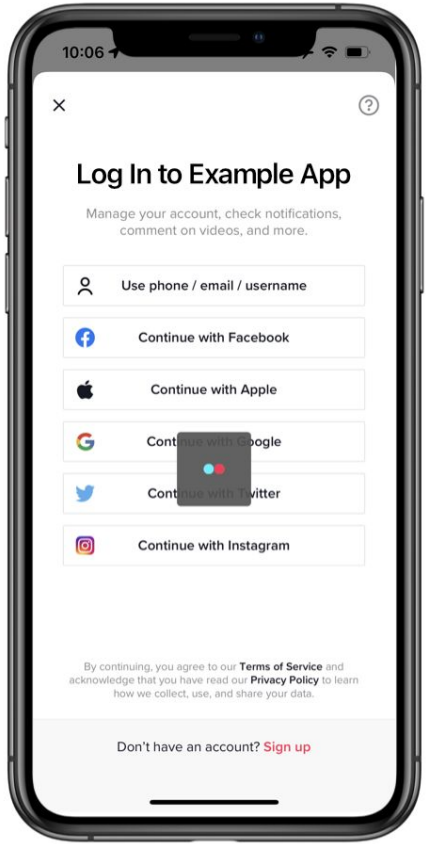
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Great for third-party apps

- Secure isolation between app and system browser
- Leverages existing session at the OAuth server
- Supports phishing-resistant MFA

Developers want a better user experience for first-party apps

What is happening today

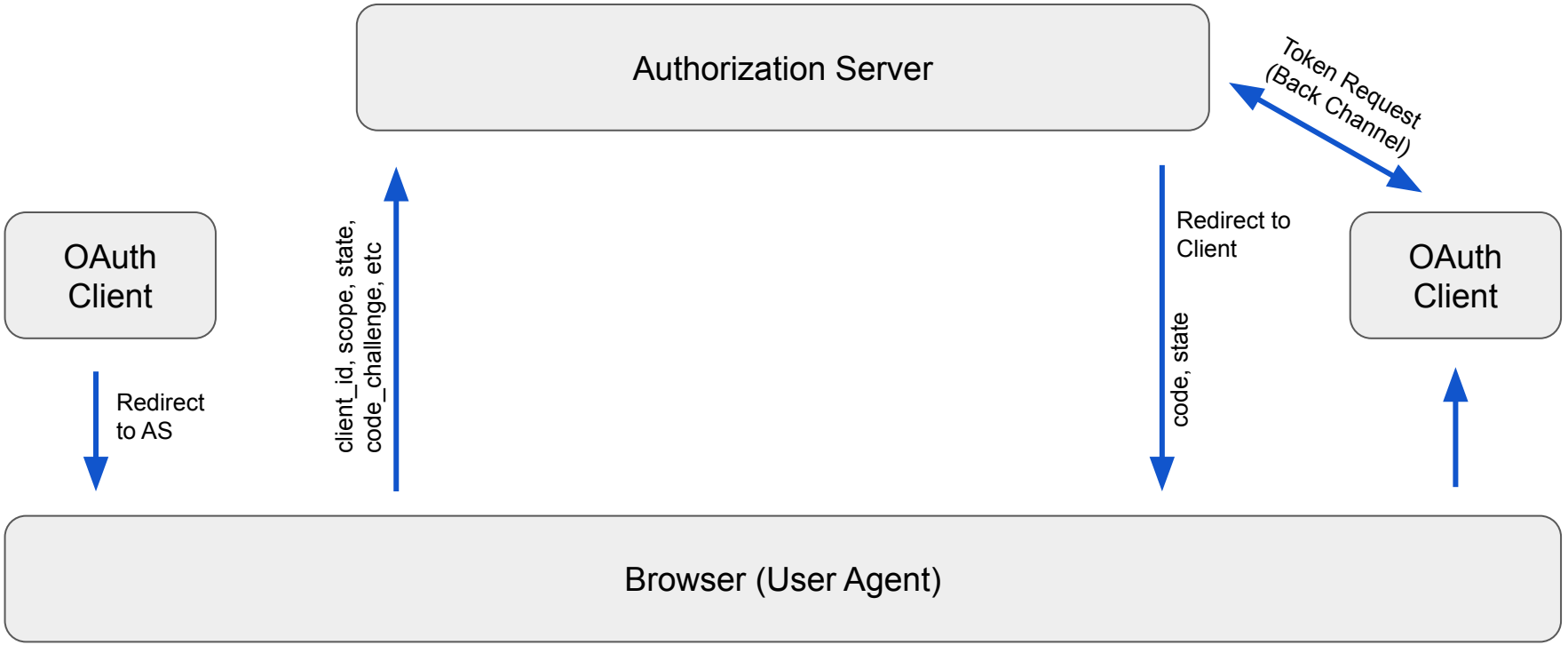
People are finding workarounds to avoid RFC8252

- Custom DIY solutions for native apps
- Using Resource Owner Password Grant
  - (Unable to add MFA)
- OAuth servers creating proprietary APIs to facilitate direct interaction with native apps
- Scripting hidden web views to emulate user interaction with the AS

What is happening today

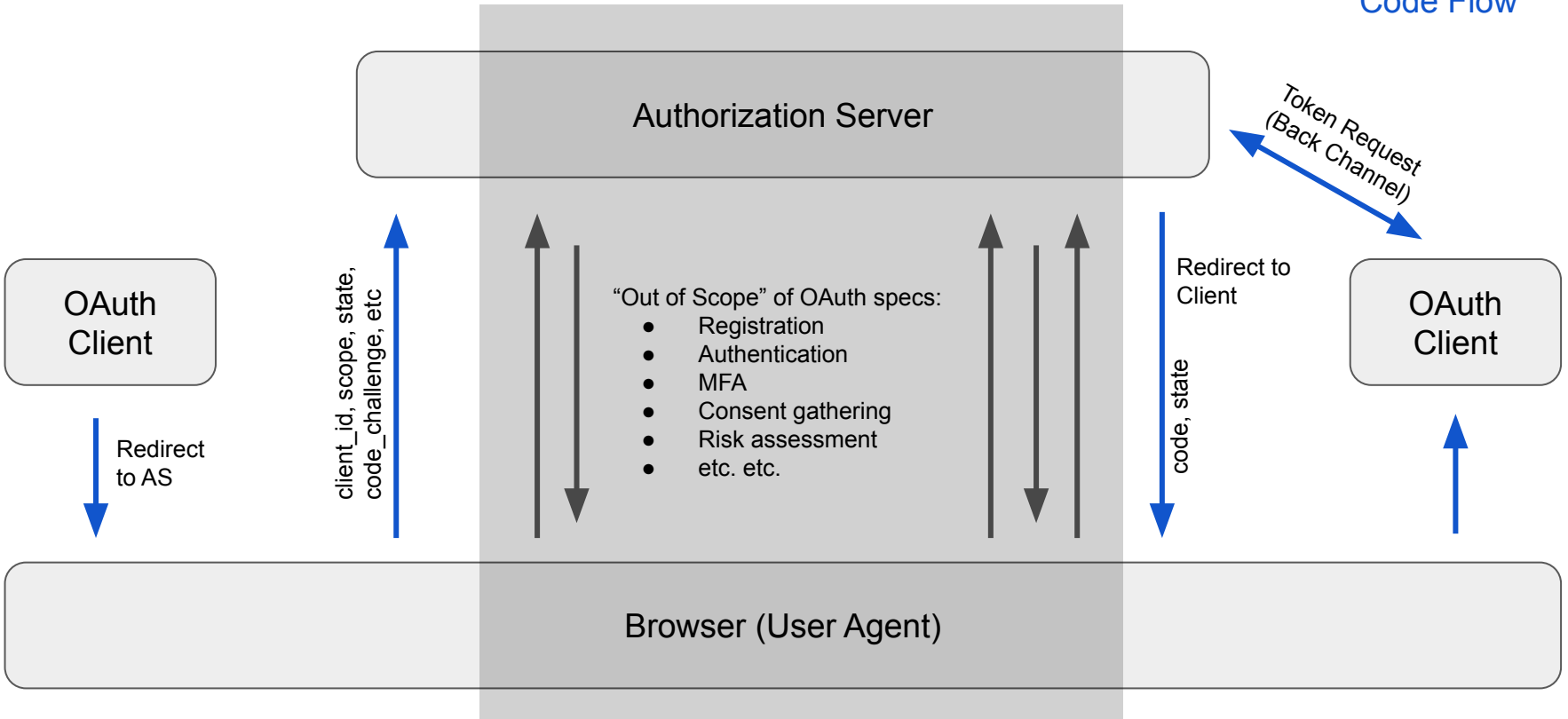
All of these lead to worse outcomes

Authorization Code Flow for Web Apps



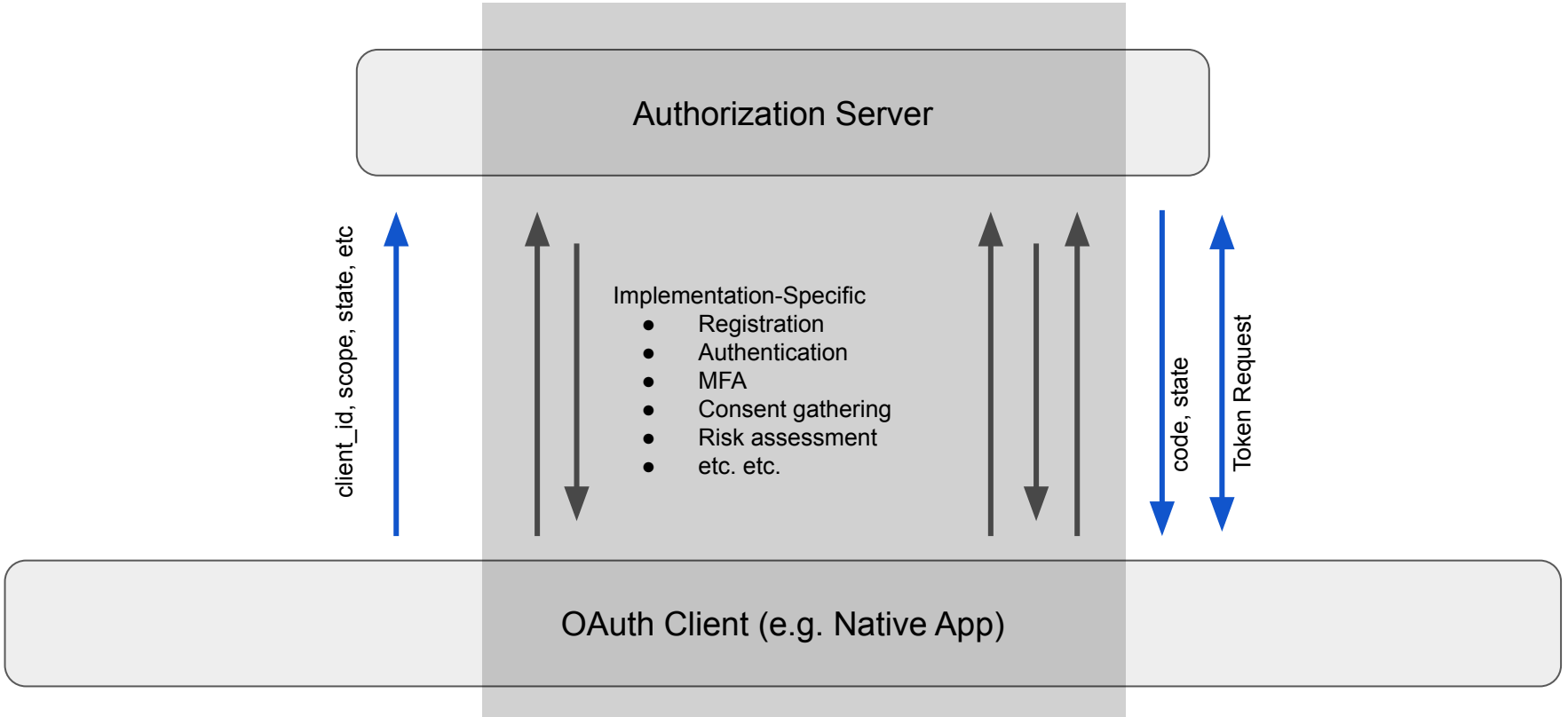
Authorization Code Flow for Web Apps

Blue arrows are the OAuth Authorization Code Flow



“Authorization Code Flow” for First-Party Apps

Blue arrows are the new flow



Goals

- Reuse existing OAuth building blocks as much as possible
- Mirror the web authorization code flow, defining how the client starts and ends the flow
  - Leave the specifics of the user authentication out of the core framework
- Specifics of user authentication can be proprietary to an AS as they are today, or can be defined as extensions
  - Especially if based on standards like WebAuthn

Authorization Challenge Endpoint

- New endpoint
- Accepts parameters that would have been included in the query string to the authorization endpoint
  - including any extensions such as Resource Indicators, OpenID Connect, JAR, etc
- Accepts POST from client to start and continue an authorization
  - The AS defines what the client sends in the requests and defines its own error responses
- Response is an authorization code, error, or redirect
  - The AS may want to interact with the user directly, e.g. based on risk assessment, new authentication method not implemented in the app, or exceptions like account recovery

Token Endpoint

- No changes to the token request
- Client POSTs the directly-obtained authorization code to get an access token

Authorization Challenge Endpoint

Why a new endpoint?

- Existing authorization endpoint is never interacted with by the OAuth client today, only by the browser
- It expects to receive requests from a **User Agent**, and return **HTML**
- Feedback has indicated people are unwilling to modify this behavior to accept a direct POST from a client and return JSON

Error Responses

Token Endpoint Error Response

- Any request to the token endpoint (e.g. with refresh token) can fail with an error indicating the client needs to obtain a fresh authorization from the user and start the flow over

Resource Server Error Response

- No changes in this draft
- Can use Step-Up Authentication to tell the client to start a new flow

Next: To be determined…

Changes since IETF 117

- Renamed “device session” (#27)
  - This is not really a device session, it’s a handle to the authorization session
  - Now called “auth_session”
- Enable transitioning to the web (#16)
  - In some cases, the authorization server may want to require the user bounces to the web, even in mobile
  - Ideally the web context can resume with any existing context from the app session to avoid the UX appearing like it’s a fresh start on the web
  - Section 5.2.2 adds a “**Redirect Response**”
- Added “Design Goals” section
- Described how to use DPoP with this spec
- Removed “Native” from name of spec
  - Nothing about the draft was actually specific to native apps

To Be Determined…

- We’ve heard a lot of people wanting to do FIDO as an OAuth grant, this spec enables the exchange of a FIDO assertion for a token, but…
- We need a way for the client to get an initial challenge
  - Kind of like getting a DPoP nonce
- Is there interest in creating a more specific profile of this for passkeys/WebAuthn?