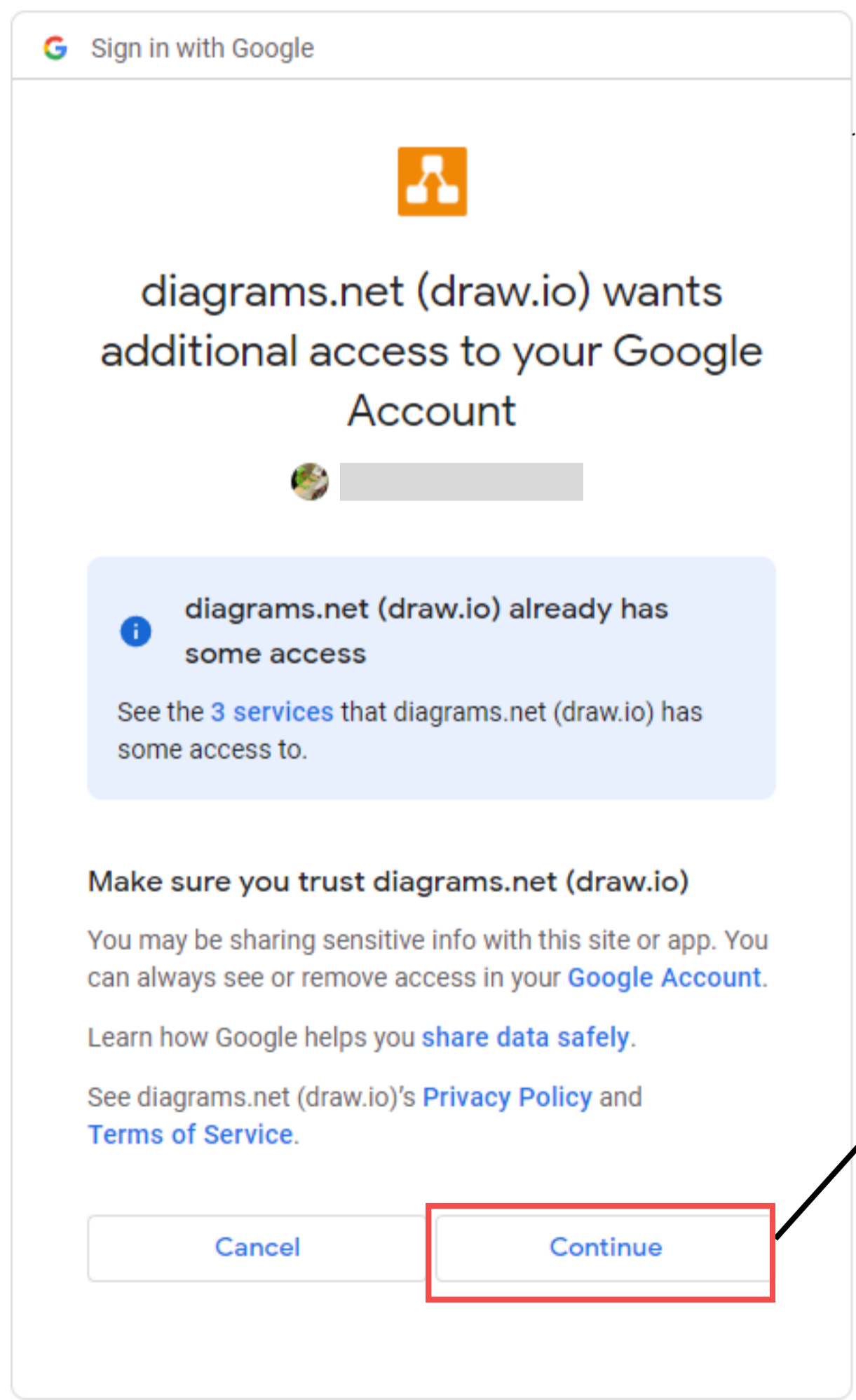
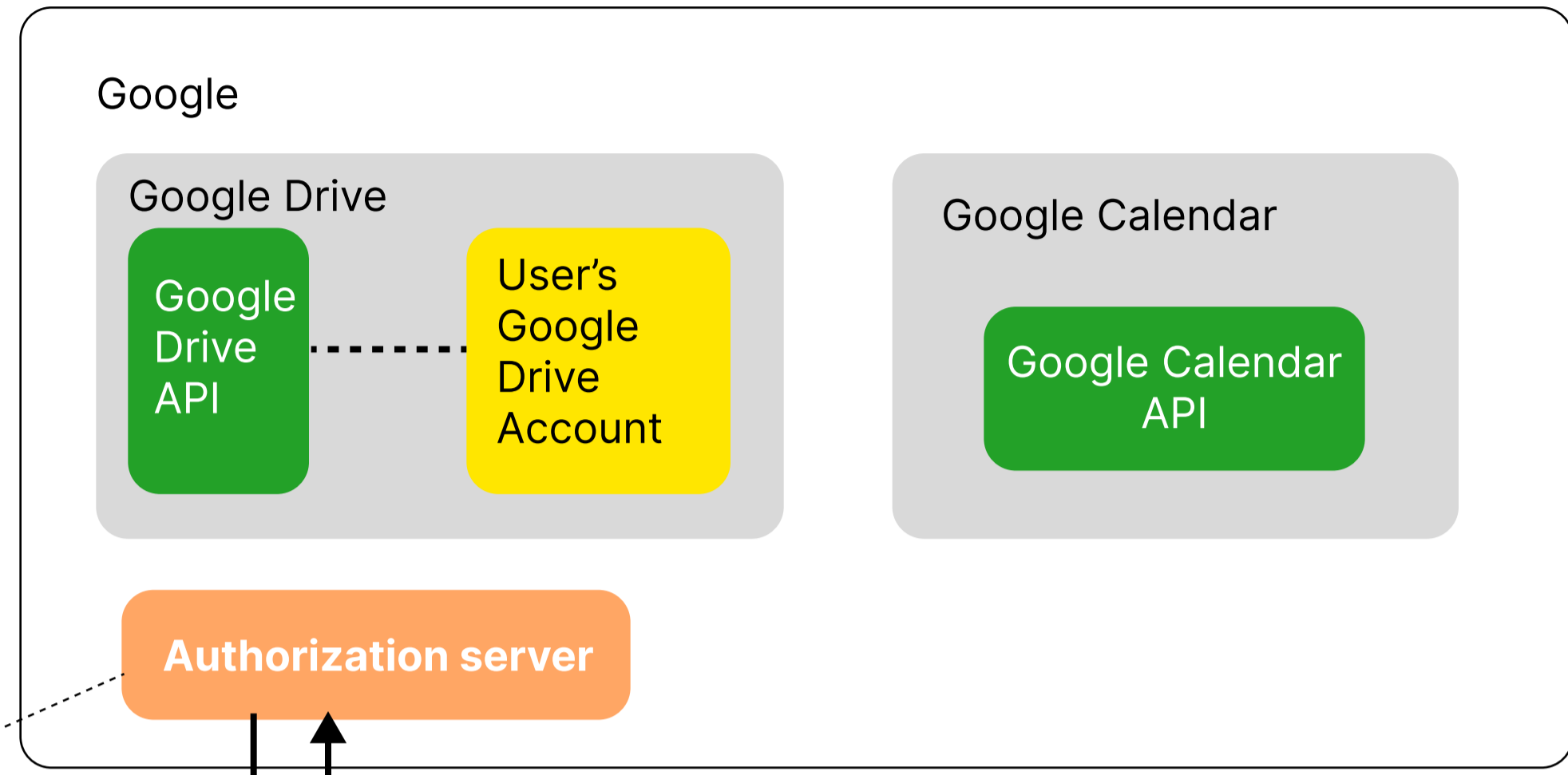


Sign in with Google

code\_verifier (43-128 characters)  
abcd8Adkdkdae33..

code\_challenge=base\_64\_url\_encode(sha256(abcd8Adkdkdae33..))

- Redirect to Google authorization server:
- redirect URL
  - client ID
  - scope
  - state
  - code\_challenge (PKCE)
  - code\_challenge\_method (PKCE)=S256



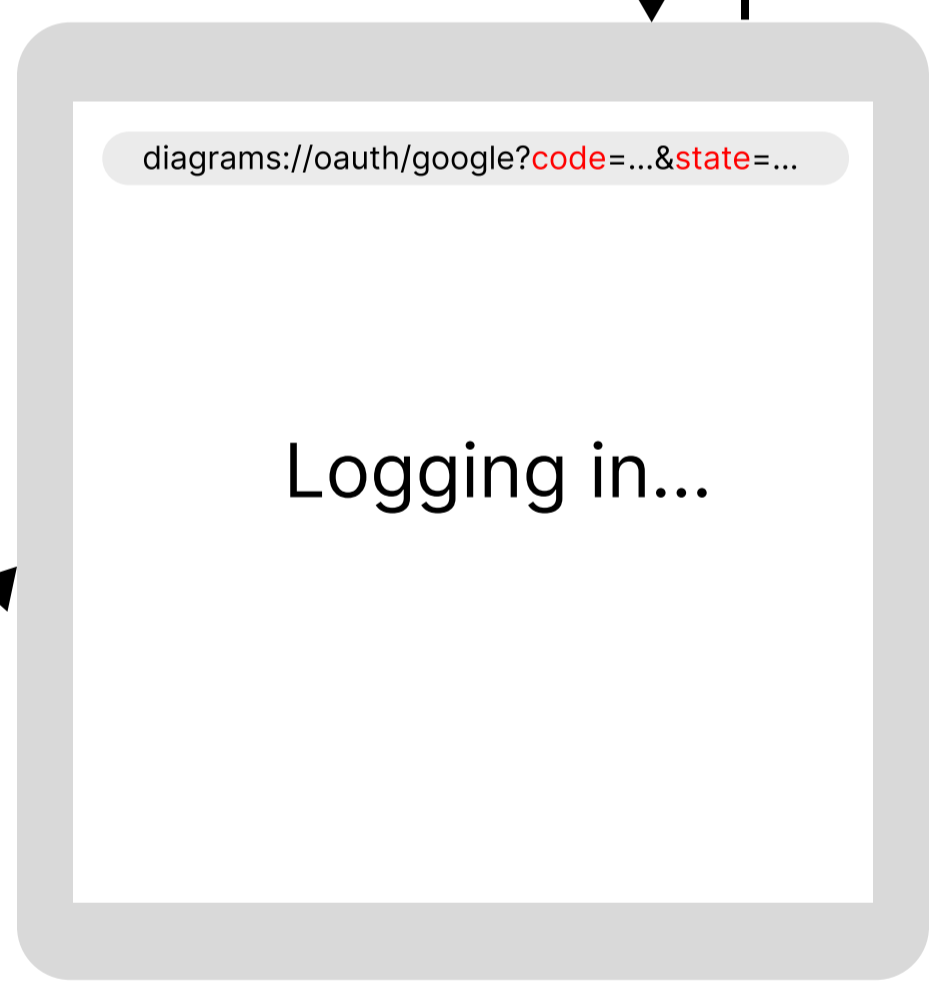
authorizaion code theft  
authorization code interception

**Authorization code interception**

Redirect to **redirect\_url** only if **redirect\_url** has been registered before with:

- state
- code

query parameters



Returns access token and refresh token if requested

- POST to authorization server to get access token:
- client\_id
  - code
  - redirect\_url
  - grant\_type
  - code\_verifier (PKCE)