



Login & Access Control in Angular

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- Motivation
- OAuth 2
- Single Sign on and OpenId Connect



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Motivation

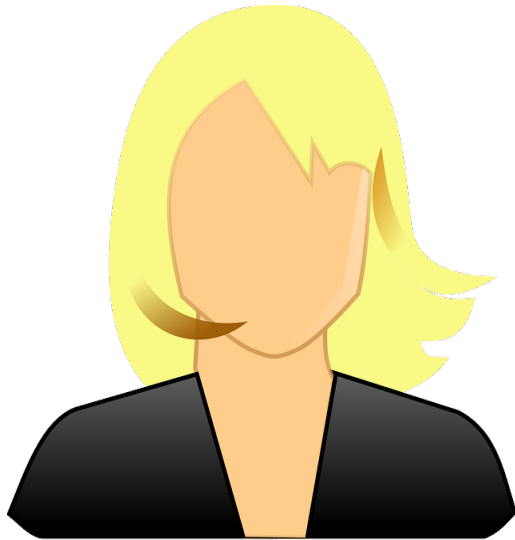


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Access to App and Backend



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Requirements for Modern Apps

Service
delegates to
other services

Cross Origin
Requests

Using existing
Identity
Solutions

Loosely
Coupling to
Identity Solution

Single Sign on/
out

Protect from
XSRF



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Roles

Authorization-Server

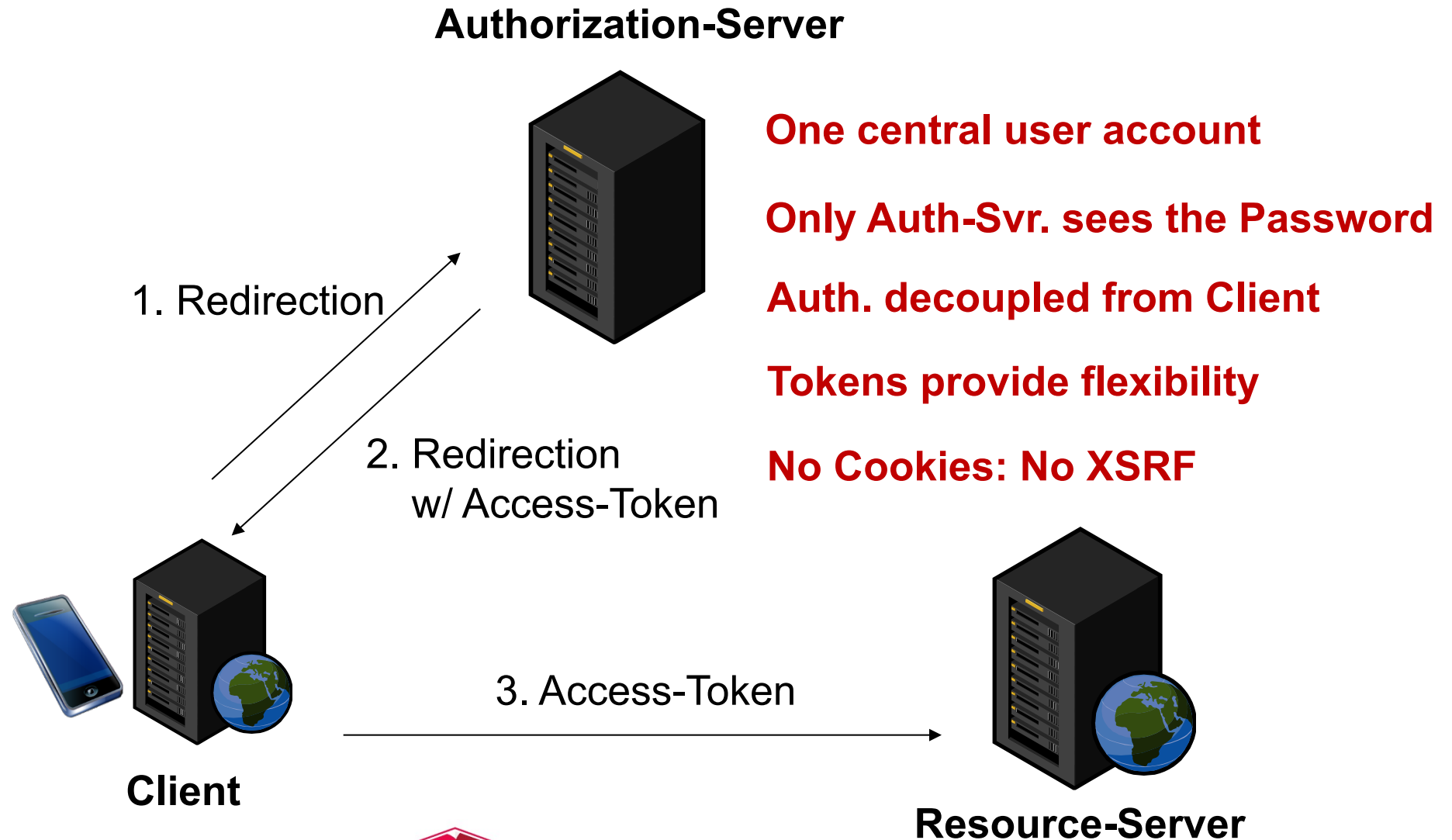


Client



Resource-Server

Flow



Lots of Auth Server out there ...

On Premises

Active Directory
Federation
Services

Identity Server
(.NET)

Redhat Keycloak
(Java)

Okta

Auth0

Firebase

Azure Active
Directory

...

Identity as a Service



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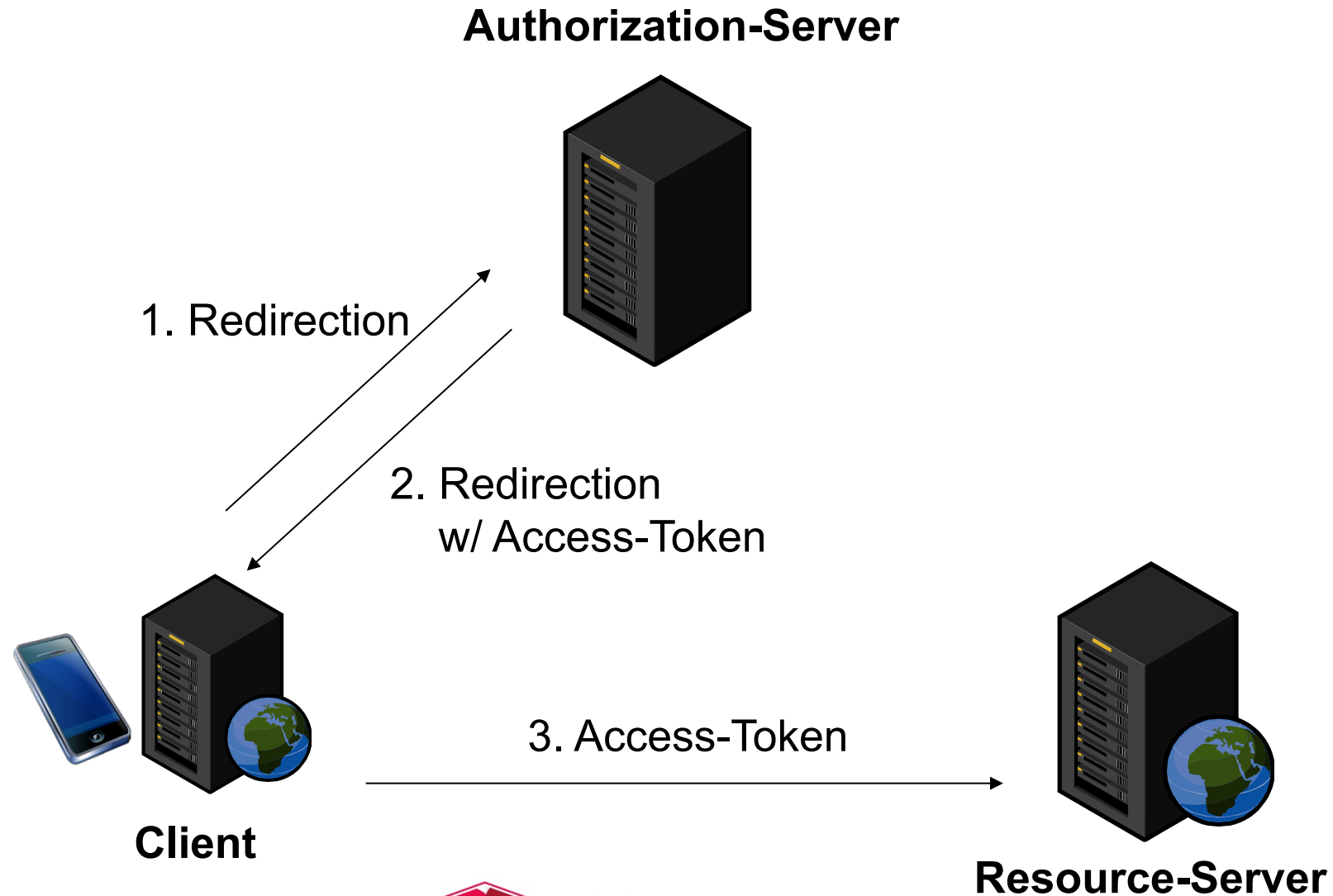


OAuth 2 and OpenId Connect

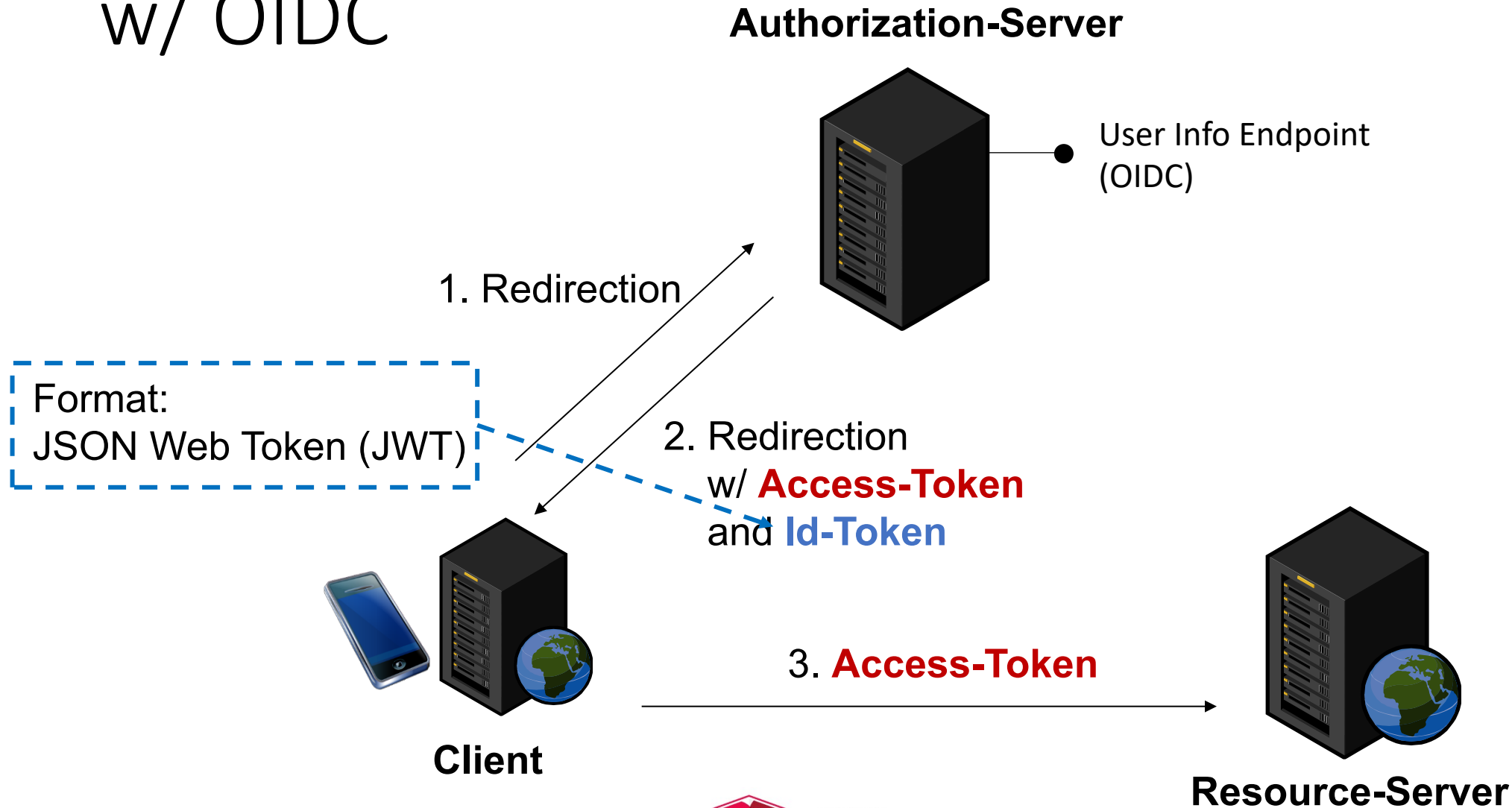
What is OAuth 2?

- Developed by Twitter and Ma.gnolia
- Protocol to delegate restricted rights
- Used by Companies like Google, Facebook, Flickr, Microsoft, Salesforce.com or Yahoo!
- Several Flows for different use cases
- Leverages HTTPS!

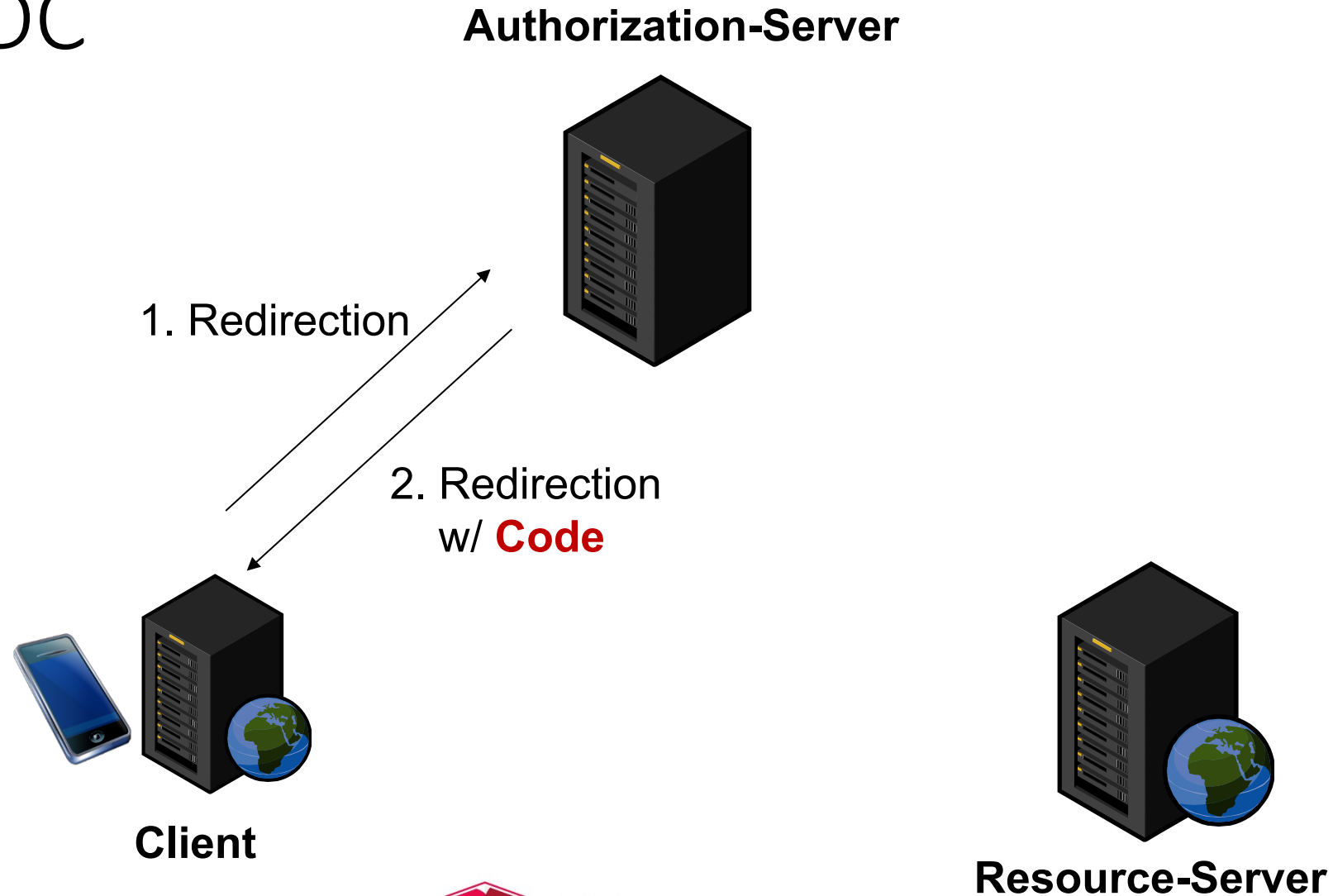
Implicit Flow for SPA



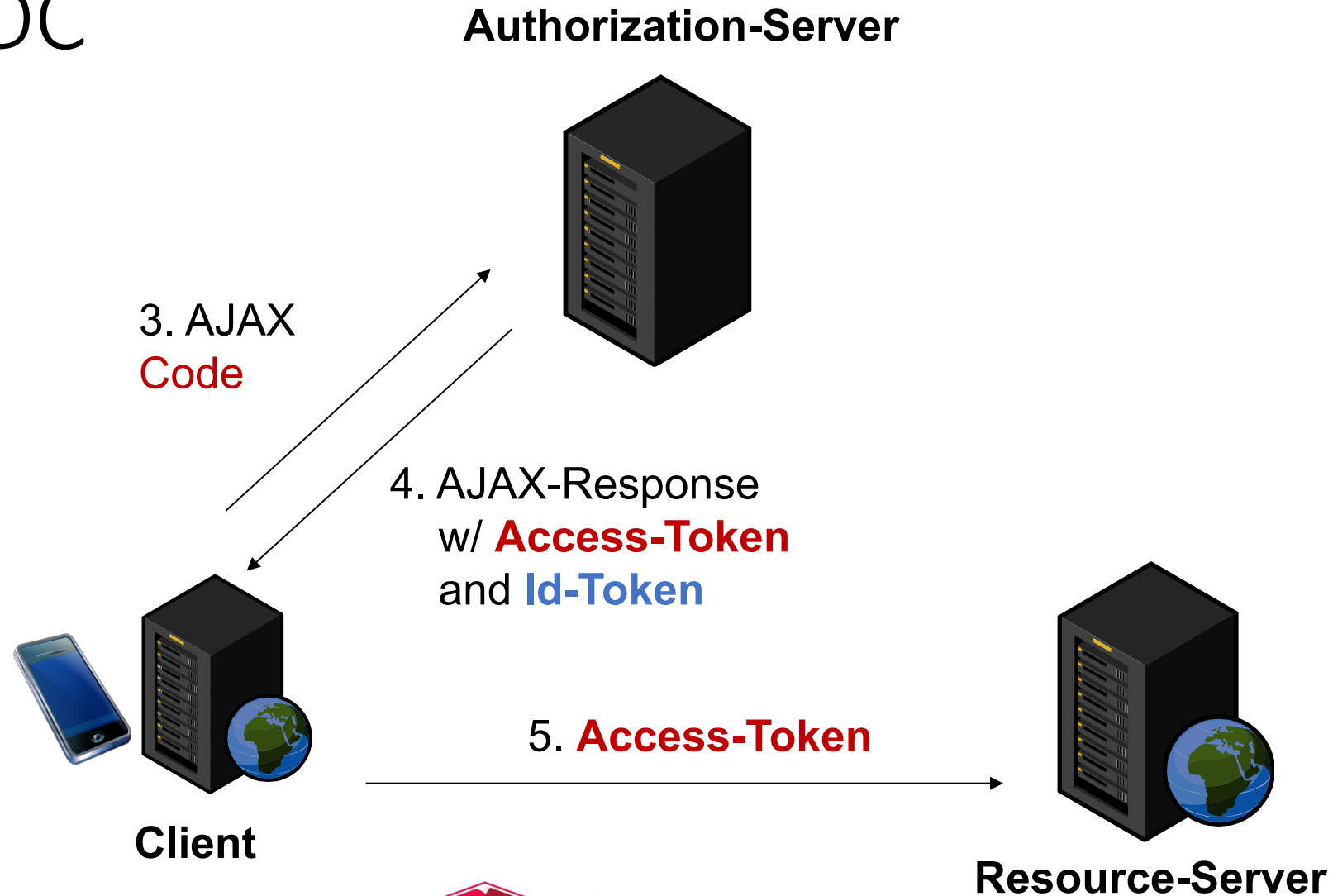
Implicit Flow w/ OIDC



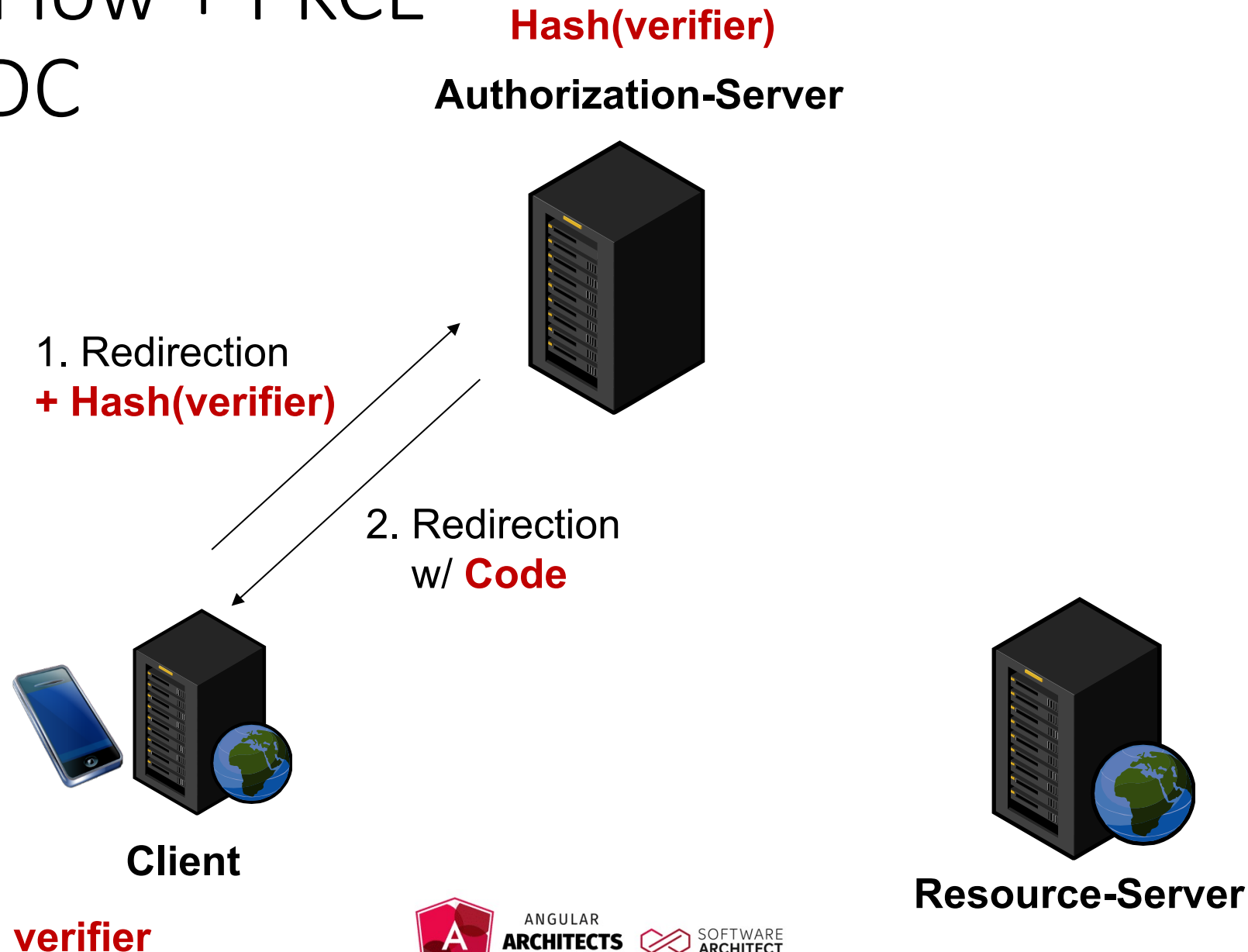
Code Flow w/ OIDC



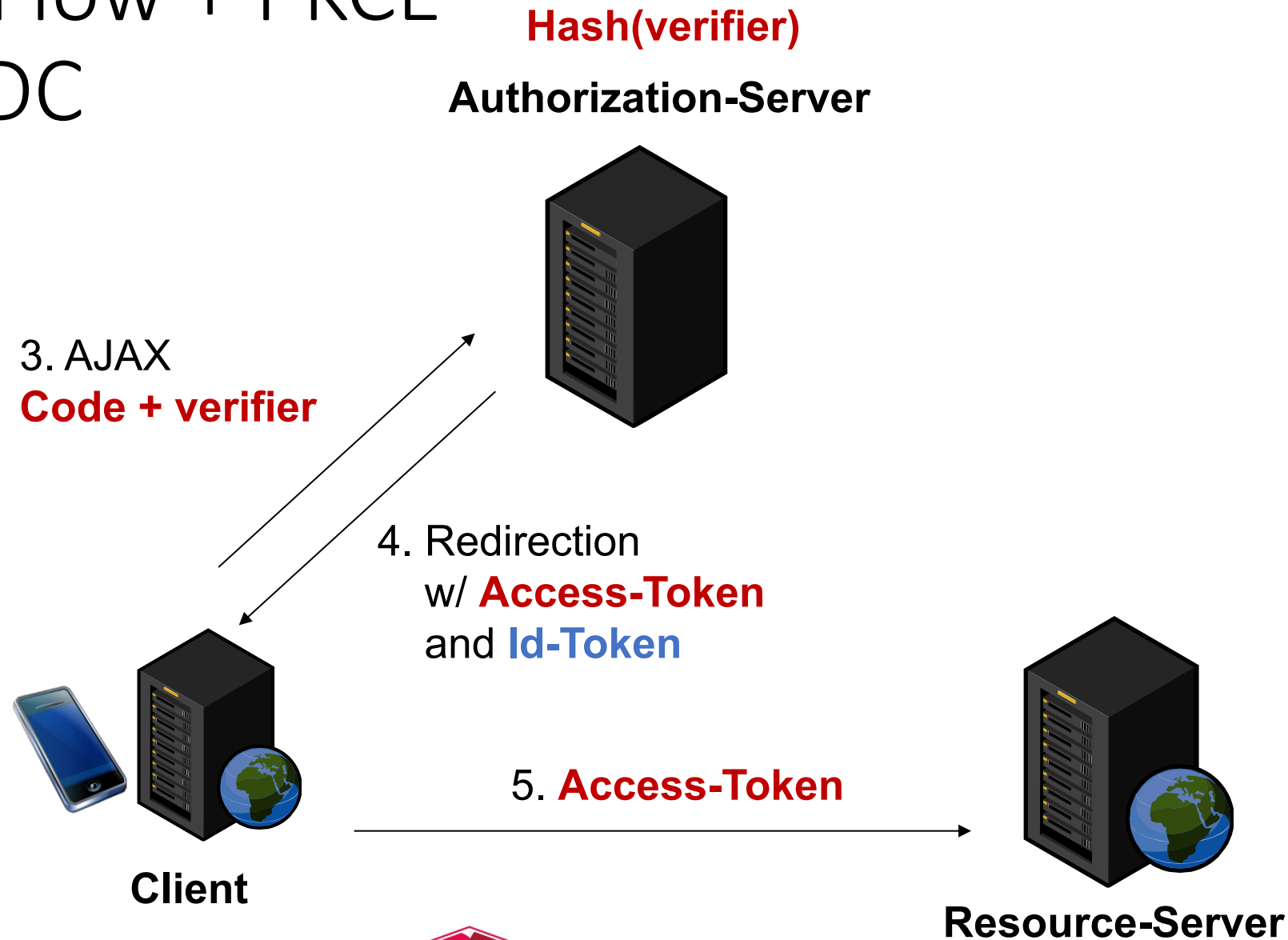
Code Flow w/ OIDC



Code Flow + PKCE w/ OIDC



Code Flow + PKCE w/ OIDC





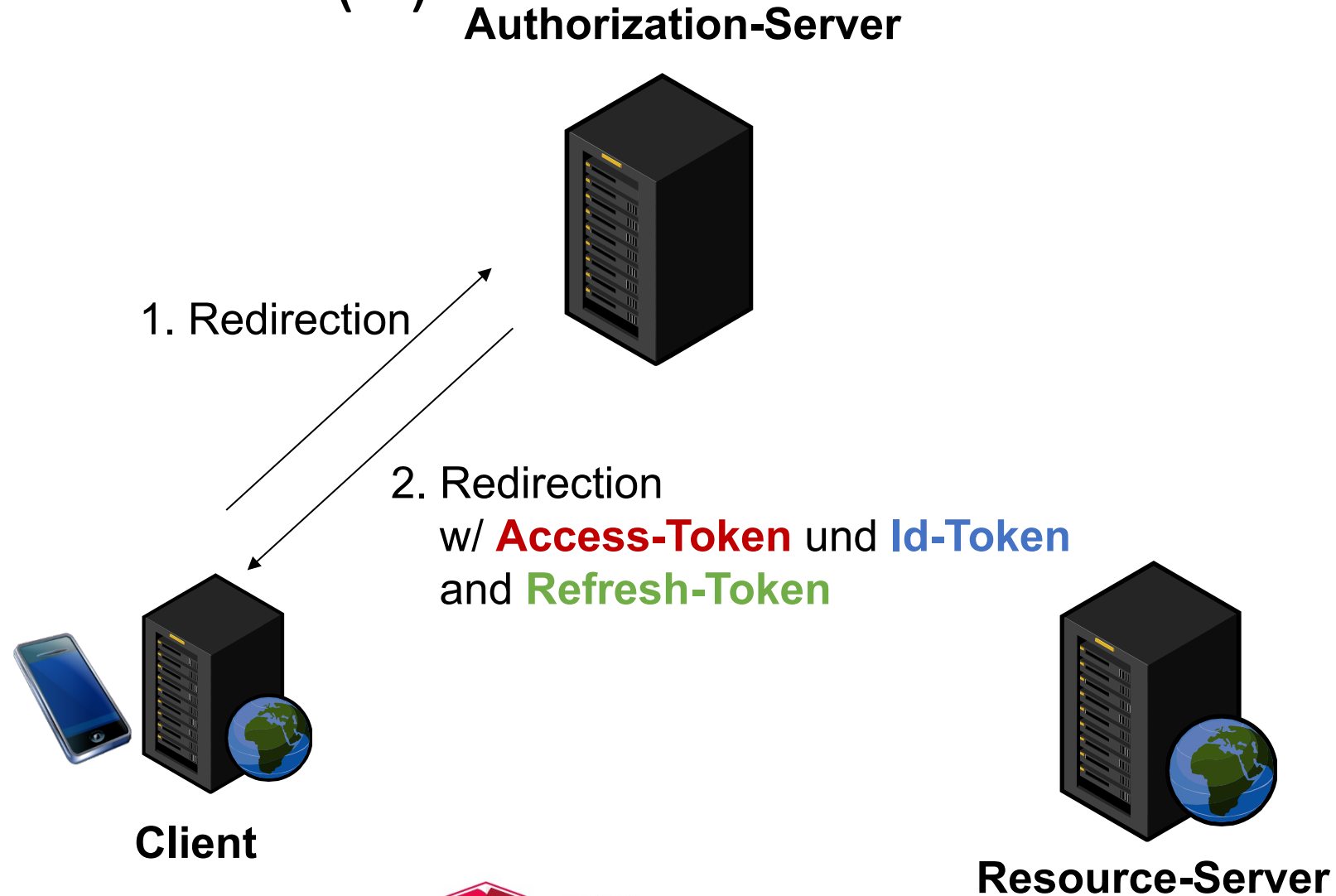
Token Refresh

Why Token Refresh?

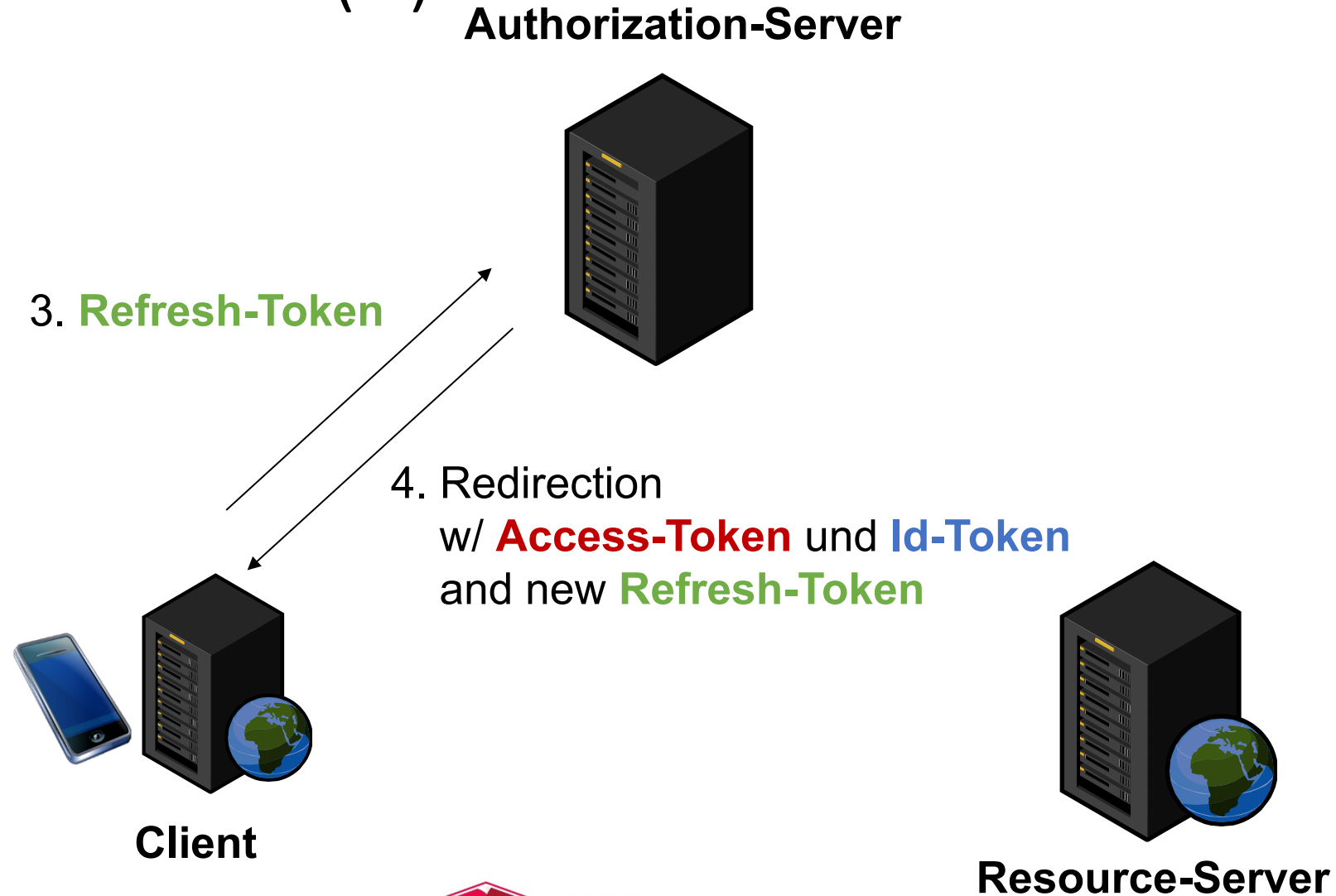
Short living Tokens
increase Security

Users don't want to
login over and over
again

Refresh Token (1)



Refresh Token (2)



Refresh-Token and Browsers

- [OAuth 2.0 Security Best Current Practice](#) allows it under specific circumstances
- Security Audit (XSS!)
- Refresh Token needs to be one-time token
- After Refresh: Client gets new refresh token
- If used by several users: log out both
- Bind Refresh Token to session (invalidate it during logout)

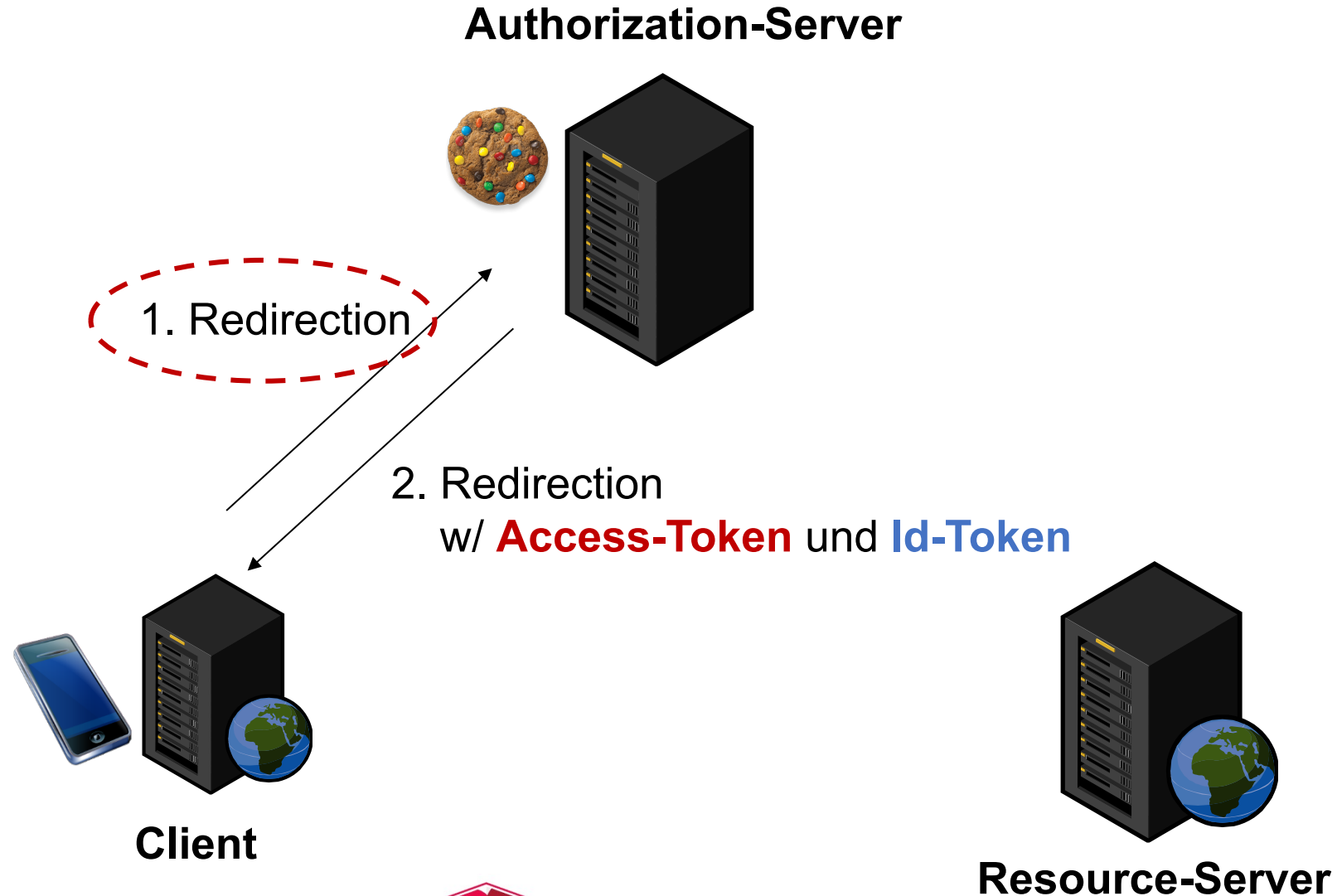


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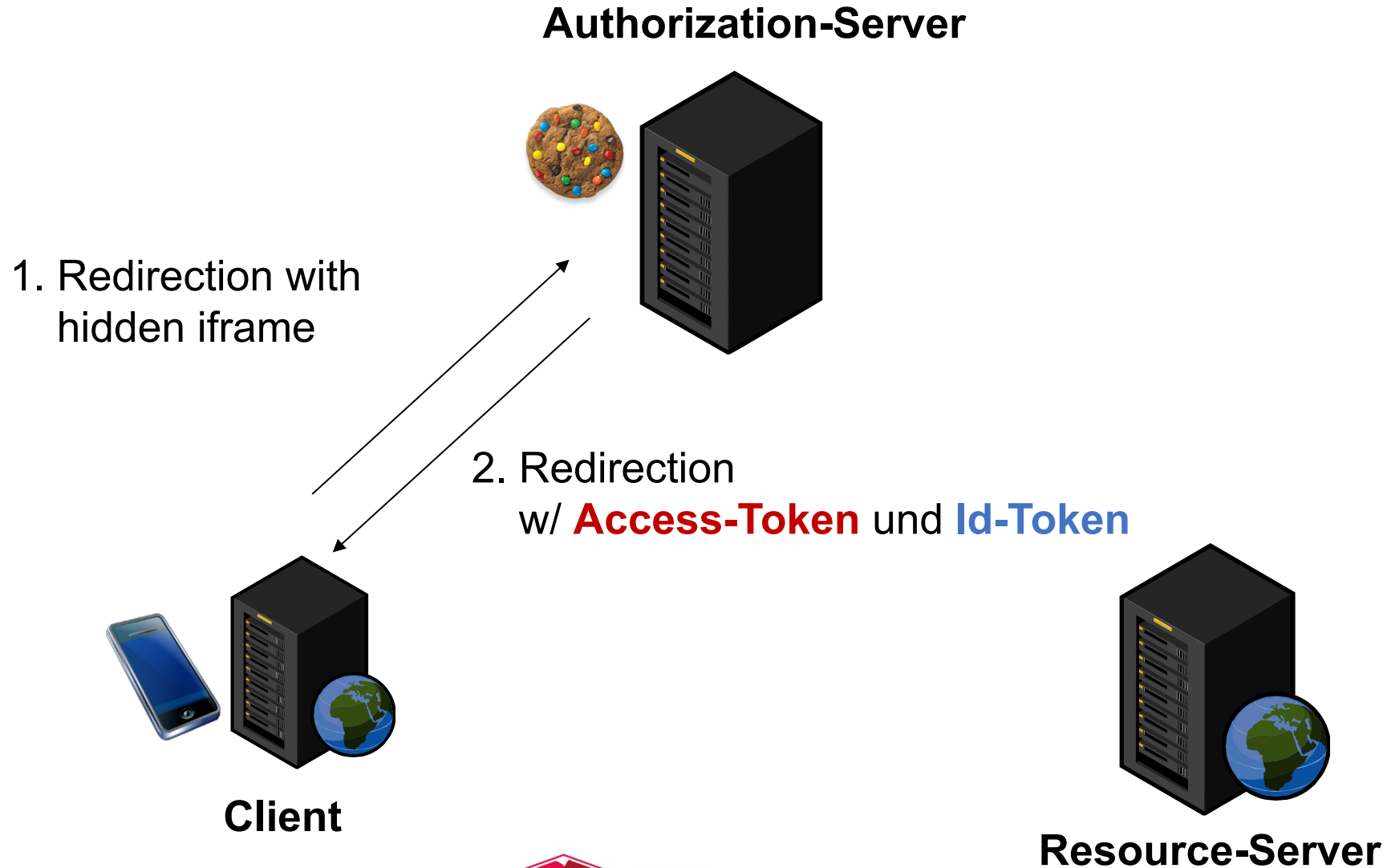


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Alternative: Refresh w/ Cookie



Alternative: Silent Refresh



Lab



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Conclusion

Token:
Flexibility,
Cross Origin ...

OAuth 2:
Access to
Service

OpenId
Connect:
SSO at Client

Implicit Flow

Code Flow +
PKCE



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