RedIRIS

Jornadas Técnicas de RedIRIS - Salamanca
10/05/2018

Autenticación con OpenID Connect a través de SimpleSAMLphp

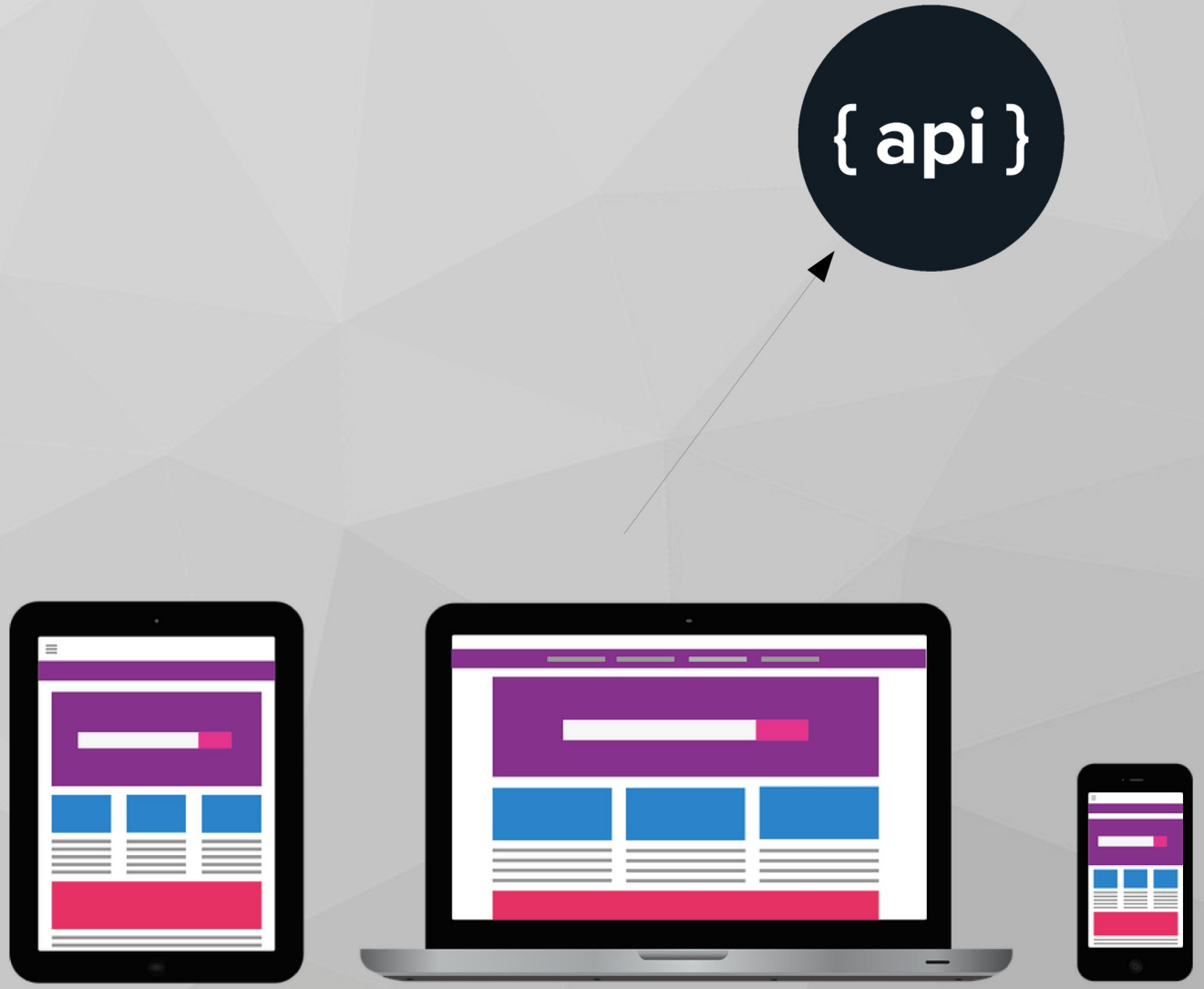
SERGIO GÓMEZ BACHILLER
Operador del Servicio de Informática
Universidad de Córdoba

@sgomez
sgomez

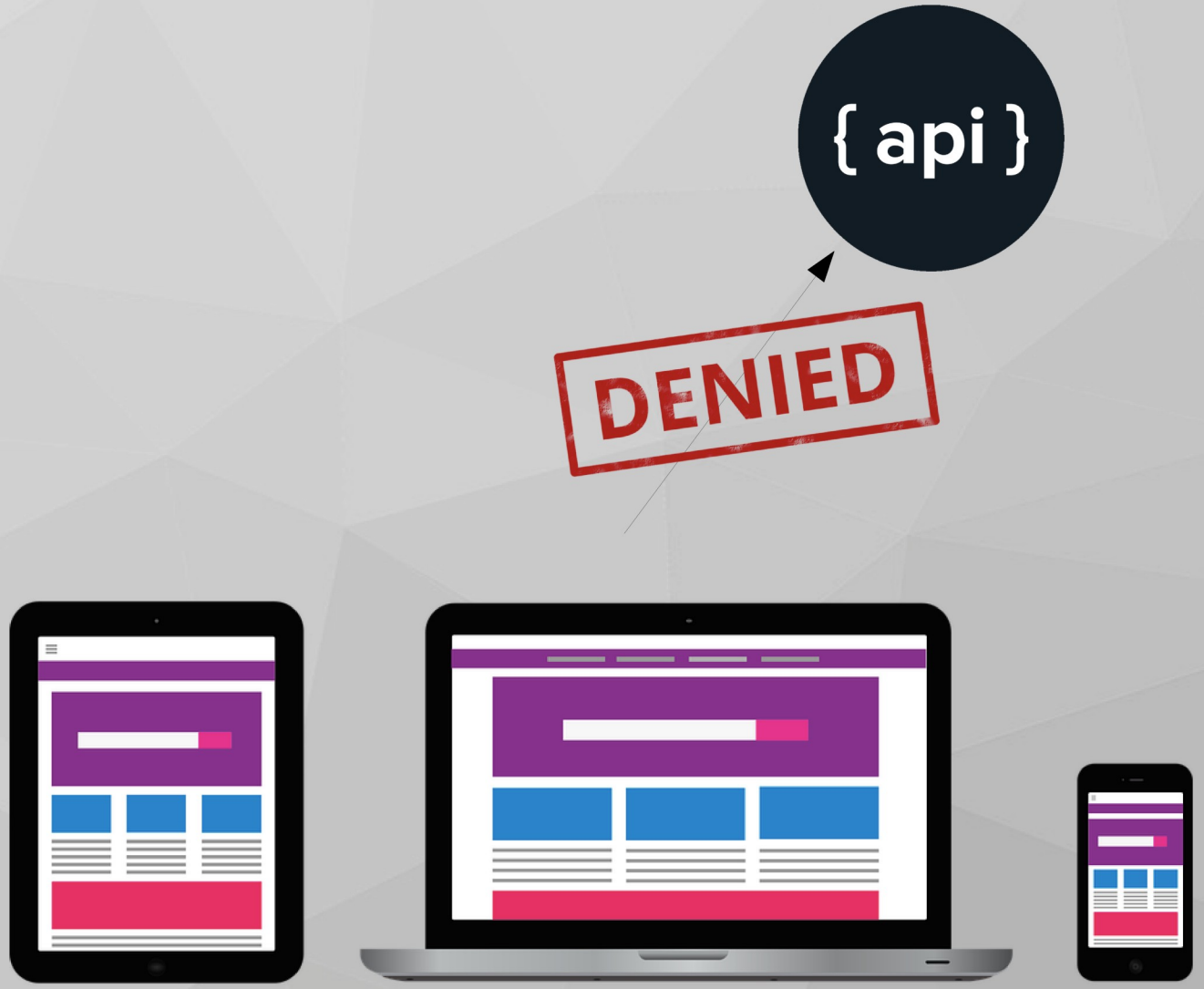
UNIVERSIDAD D CÓRDOBA

SERVICIO de INFORMÁTICA

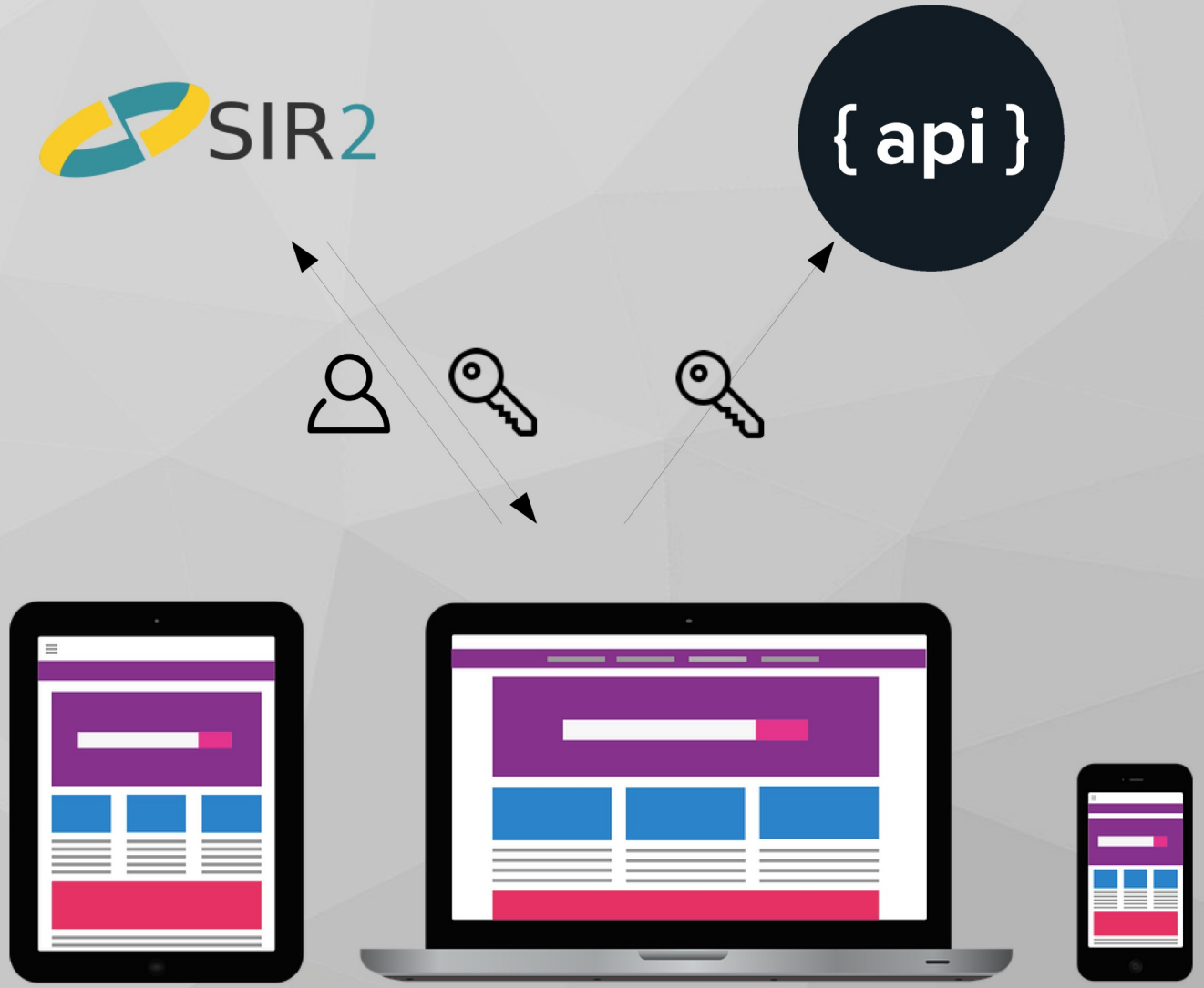
El problema



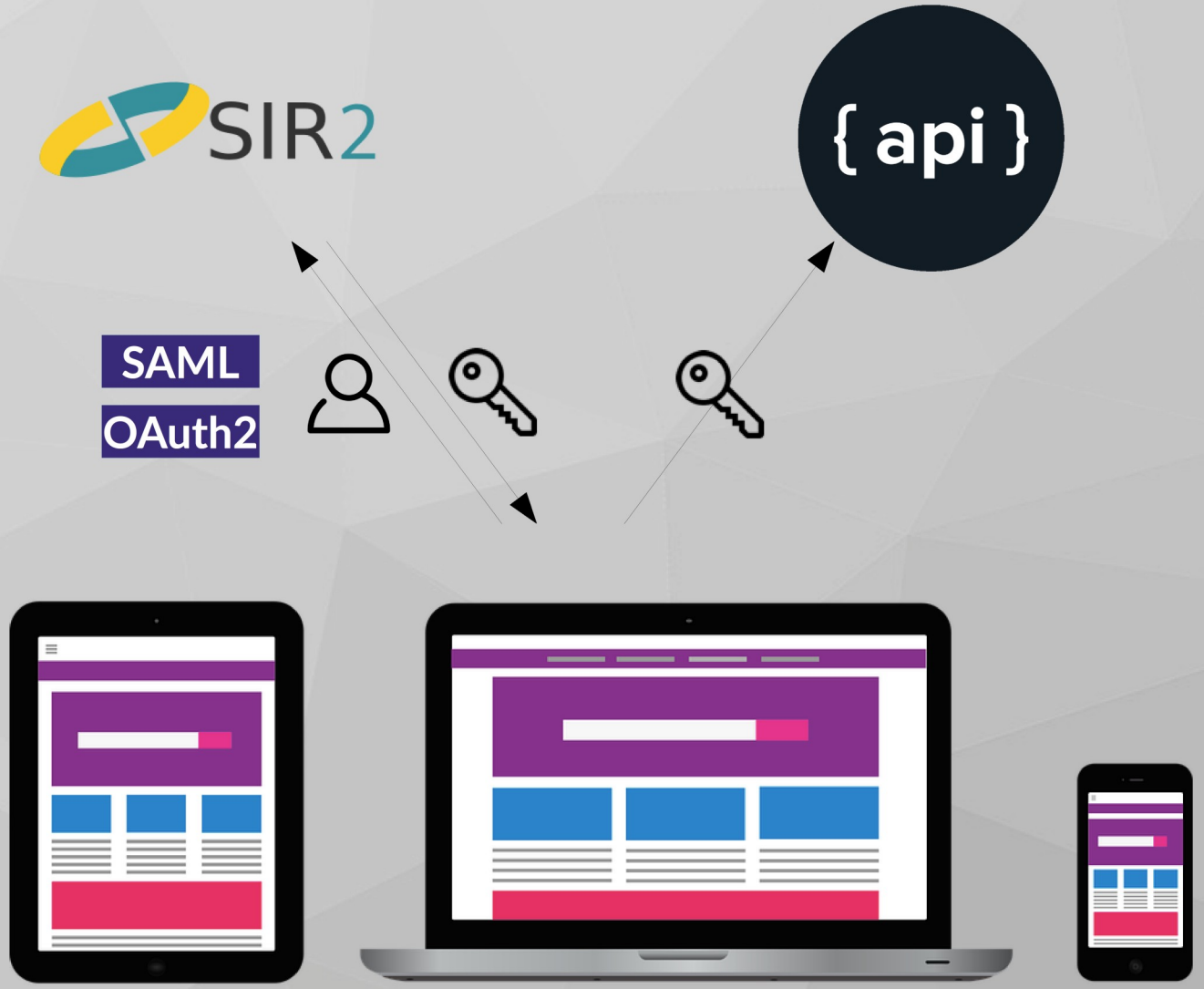
El problema



El problema



El problema



Limitaciones OAuth2

- OAuth2 es un framework de autorización delegada, no de autenticación.
- Falta de definición de (entre otras):
  - Scopes
  - Descubrimiento de puntos de acceso

Limitaciones OAuth2

Scopes (id usuario, email)

	https://www.googleapis.com/auth/userinfo.email https://www.googleapis.com/auth/userinfo.profile
	id, email, first_name, last_name, ...
	user (read:user, user:email)

Limitaciones OAuth2

Authorization endpoint

	https://accounts.google.com/o/oauth2/auth
	https://www.facebook.com/v3.0/dialog/oauth
	https://github.com/login/oauth/authorize

Limitaciones OAuth2

Token endpoint

	https://accounts.google.com/o/oauth2/token
	https://graph.facebook.com/v3.0/oauth/access_token
	https://github.com/login/oauth/access_token

¿Qué es OpenID Connect?

- Capa encima de OAuth2
- Proporciona:
  - Autenticación (id_token)
  - Scopes (openid, profile, email, address, phone)
  - Autodescubrimiento de end-points
  - ...

Configuración OpenID Connect

Scopes y claims en OIDC:

Scope	Claims
openid	
profile	name, family_name, given_name, middle_name, nickname, preferred_username, profile, picture, website, gender, birthdate, zoneinfo, locale, updated_at.
email	email, email_verified
address	address
phone	phone_number, phone_number_verified

Configuración OpenID Connect

Esquema de discovery_uri

```
{
  "issuer": "https://identidaddev.uco.es/",
  "authorization_endpoint": "https://.../oauth2/authorize.php",
  "token_endpoint": "https://.../oauth2/access_token.php",
  "userinfo_endpoint": "https://.../oauth2/userinfo.php",
  "jwks_uri": "https://.../jwks.php",
  "scopes_supported": [
    "basic"
  ],
  "response_types_supported": [
    "code",
    "token"
  ],
  "subject_types_supported": [
    "basic"
  ],
  "id_token_signing_alg_values_supported": [
    "RS256"
  ]
}
```

Configuración OpenID Connect

Esquema de jwks_uri

```
{
  "keys": [
    {
      "kty": "RSA",
      "n": "zj1MKYL8y-sS4jfeocZCvQZ2j9SU0LvzWbJAQiGEHo5
            jjFKFSq9dTqPyp_UoX-jQt9doeaU3-eIV51qUXu80zK
            cnUYZcB6if60fUN15H9ehRvEdjo0vuv3WQ4py_mKj7o
            G_Jr_zXcBoih_PrsgPb0BAg4Q5_wKixF7_ifEwVcB8",
      "e": "AQAB",
      "use": "sig",
      "alg": "RS256"
    }
  ]
}
```

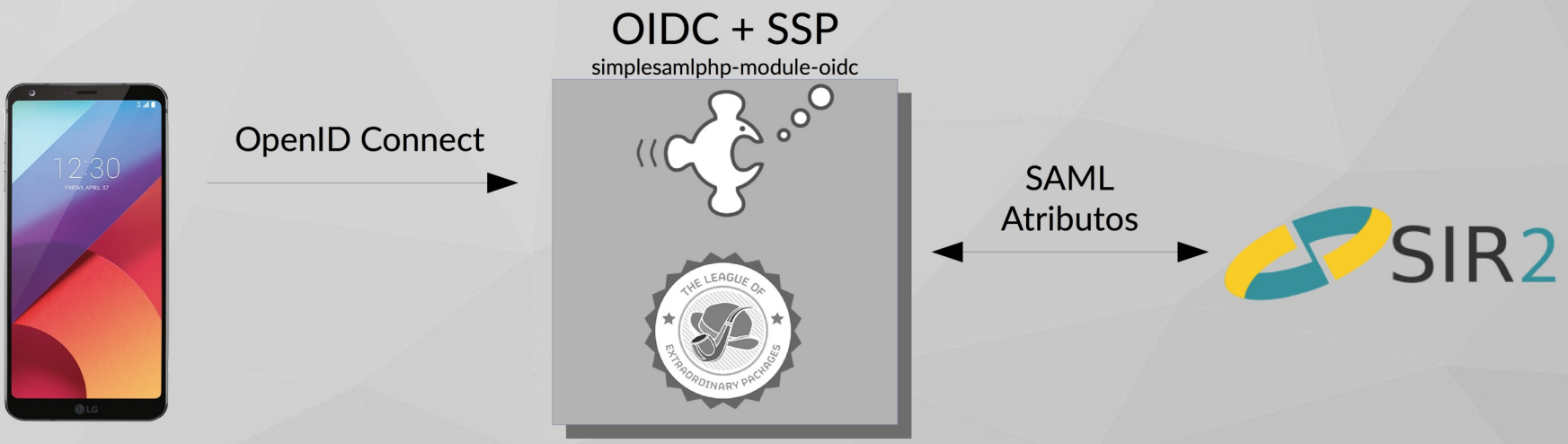
Módulo simpleSAMLphp OIDC

Características

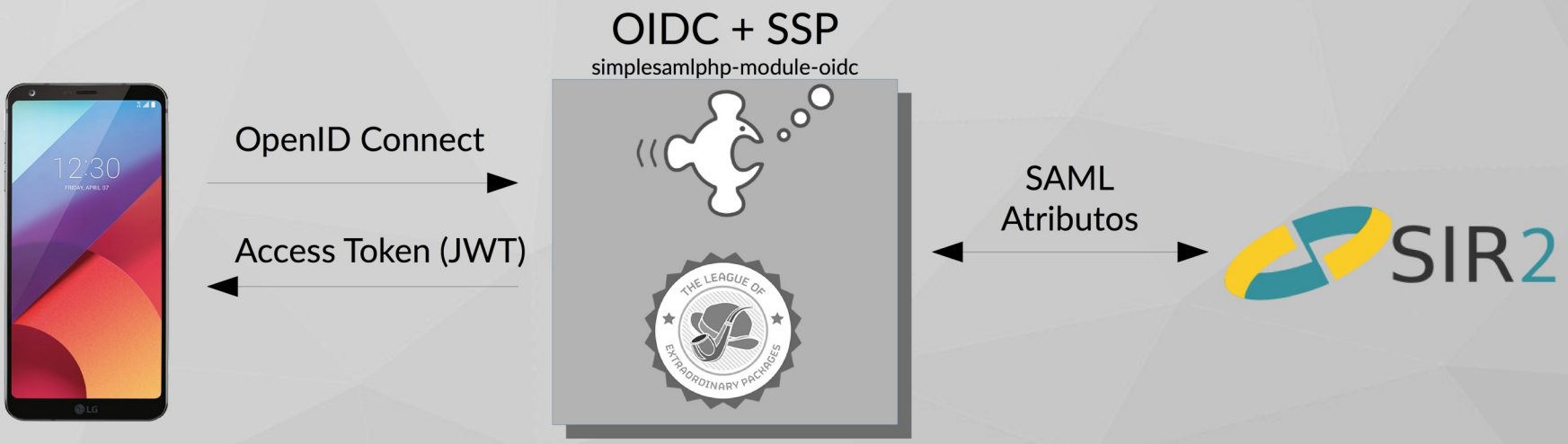
- RFC 8252: OAuth2 for Native Apps
- RFC 7636: Proof Key for Code Exchange (PKCE)
- OAuth2
- OpenID Connect

Esquema de funcionamiento

Esquema de funcionamiento



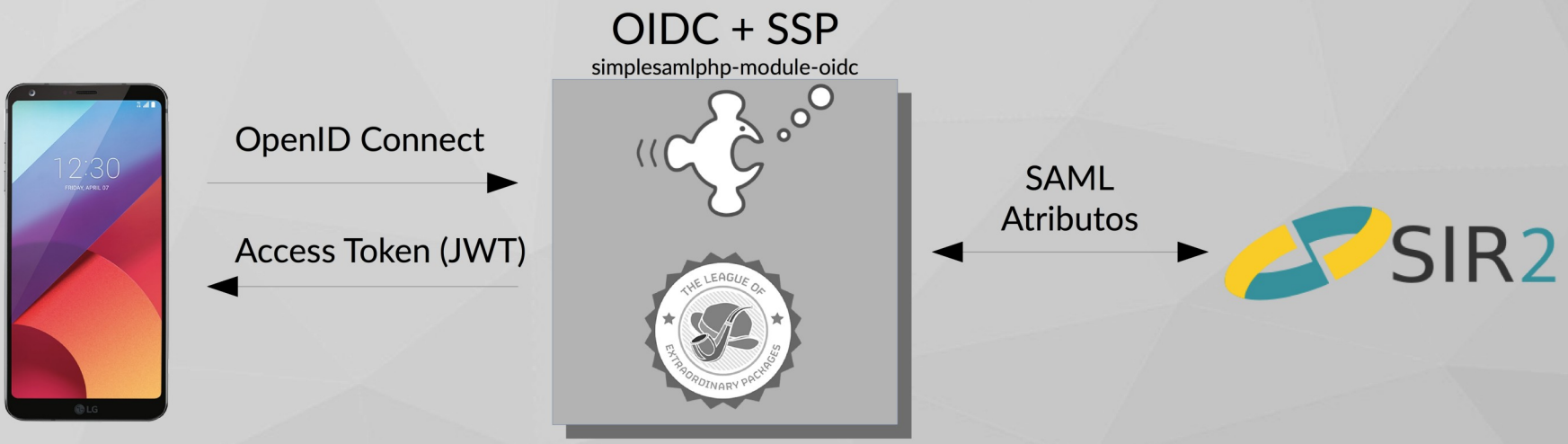
Esquema de funcionamiento




```
EyJhbGciOiJIUzI1NiIsInR5cCI
6IkpXVCJ9.eyJzdWIiOiIxMjM0N
TY3ODkwIiwibmFtZSI6IkpvaG4g
RG9lIiwiYWRtaW4iOnRydWV9.TJ
VA95OrM7E2cBab30RMHrHDcEfxj
oYZgeFONFh7HgQ
```

```
{
  "alg": "HS256",
  "typ": "JWT"
}
```

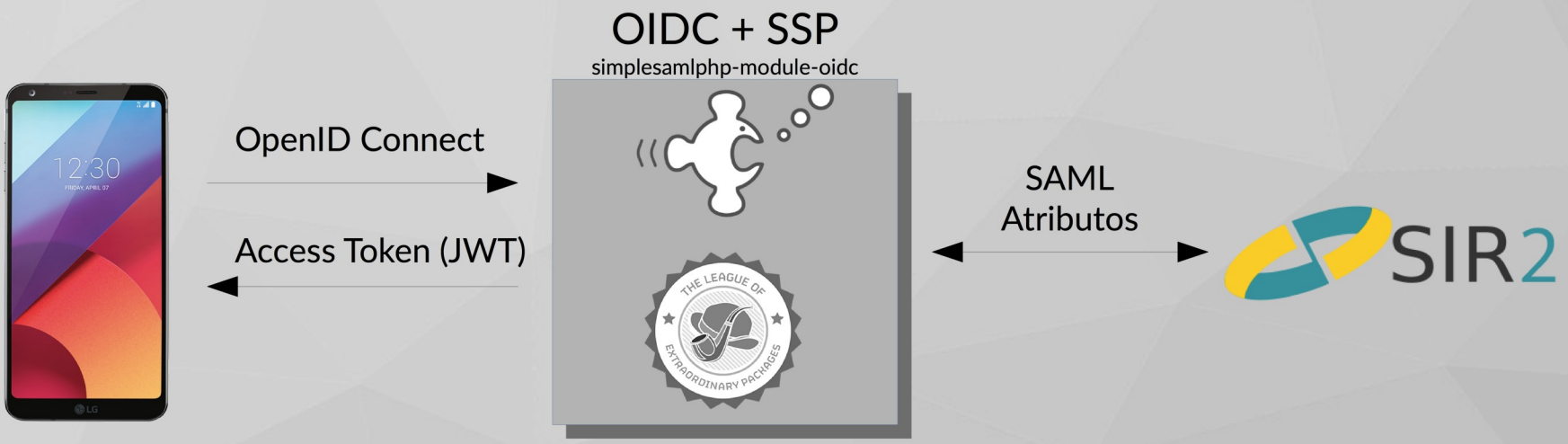
Esquema de funcionamiento




```
EyJhbGciOiJIUzI1NiIsInR5cCI
6IkpXVCJ9.eyJzdWIiOiIxMjM0N
TY3ODkwIiwibmFtZSI6IkpvaG4g
RG9lIiwiYWRtaW4iOnRydWV9.TJ
VA95OrM7E2cBab30RMHrHDcEfxj
oYZgeFONFh7HgQ
```

```
{
  "sub": "cc0gobas@uco.es",
  "iat": 1511927043,
  "exp": 1547927043
}
```

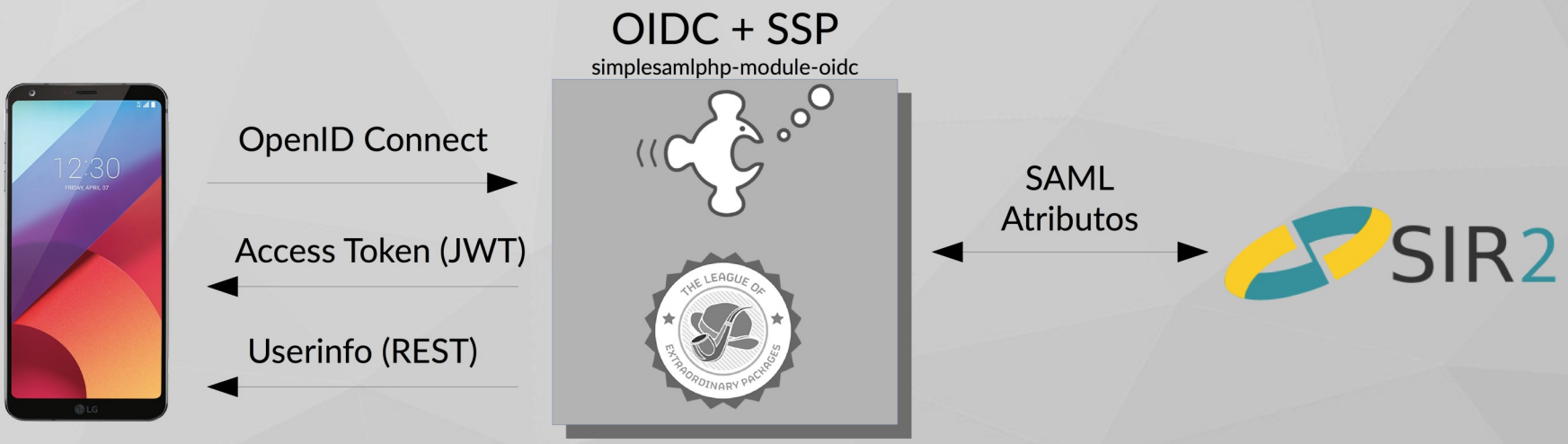
Esquema de funcionamiento



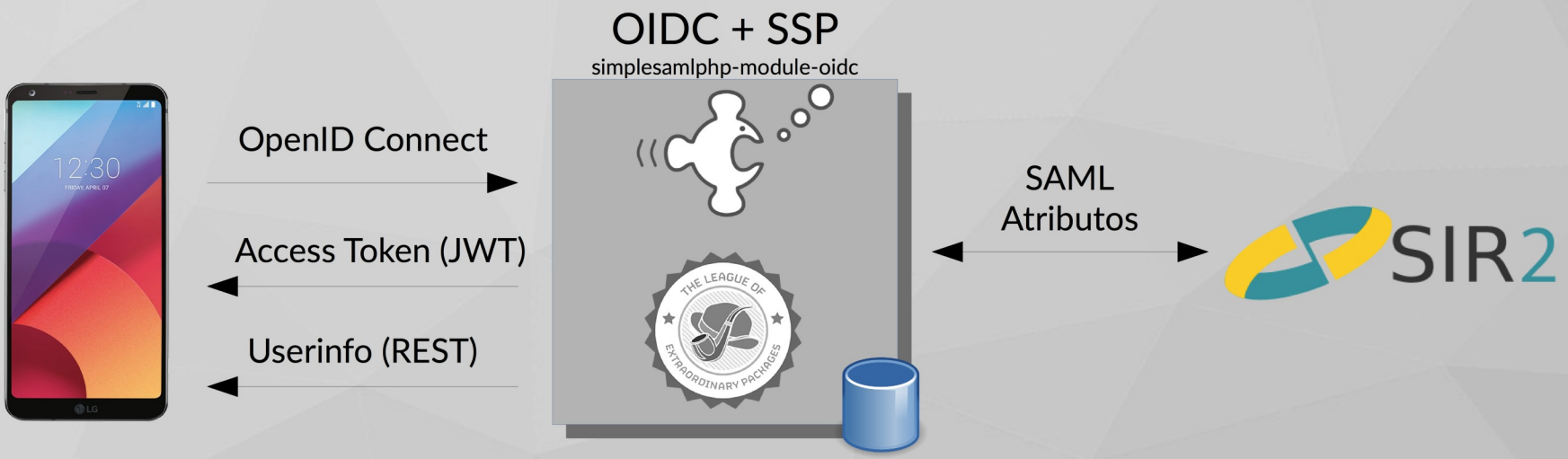

```
EyJhbGciOiJIUzI1NiIsInR5cCI
6IkpXVCJ9.eyJzdWIiOiIxMjM0N
TY3ODkwIiwibmFtZSI6IkpvaG4g
RG9lIiwiYWRtaW4iOnRydWV9.TJ
VA95OrM7E2cBab30RMHrHDcEfxj
oYZgeFONFh7HgQ
```


FIRMA

Esquema de funcionamiento



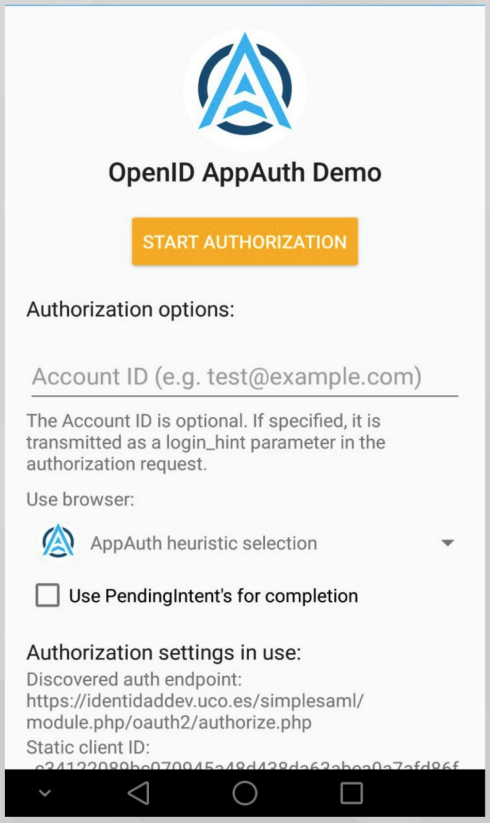
Esquema de funcionamiento

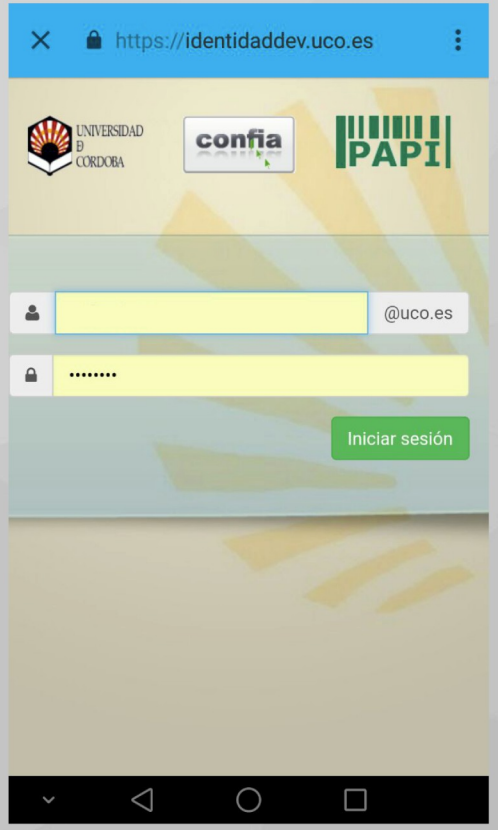


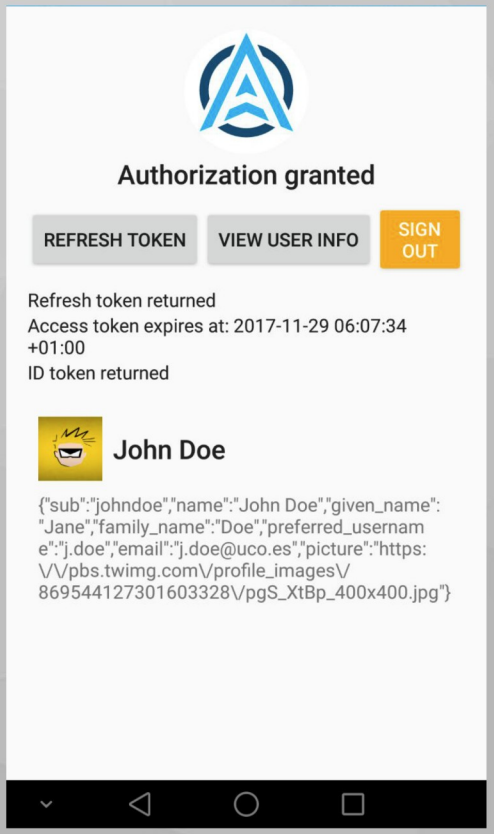

```
{
  "sub": "b822df...469490a12@uco.es",
  "name": "John Doe",
  "email": "j.doe@uco.es",
  "picture": "https://img.uco.es/..."
}
```

Seguridad (RFC8252)

External User-Agent
Custom Tab (Indicador SSL)







Seguridad (PKCE)

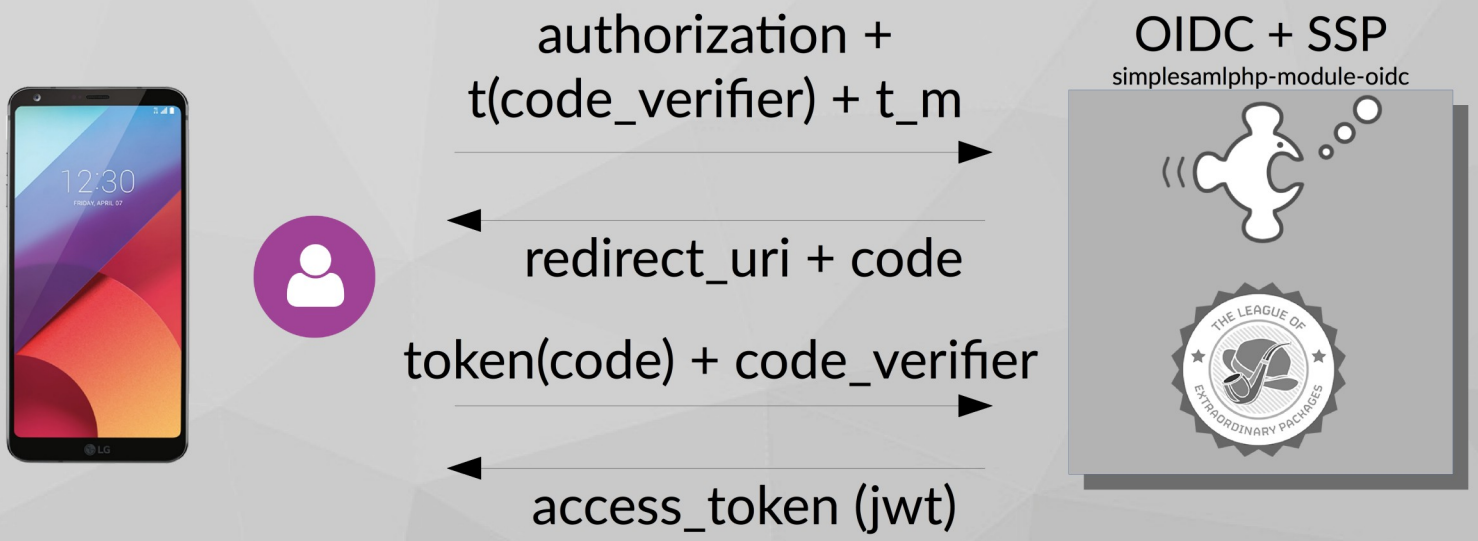
OpenID Connect sin PKCE

Seguridad (PKCE)

OpenID Connect sin PKCE

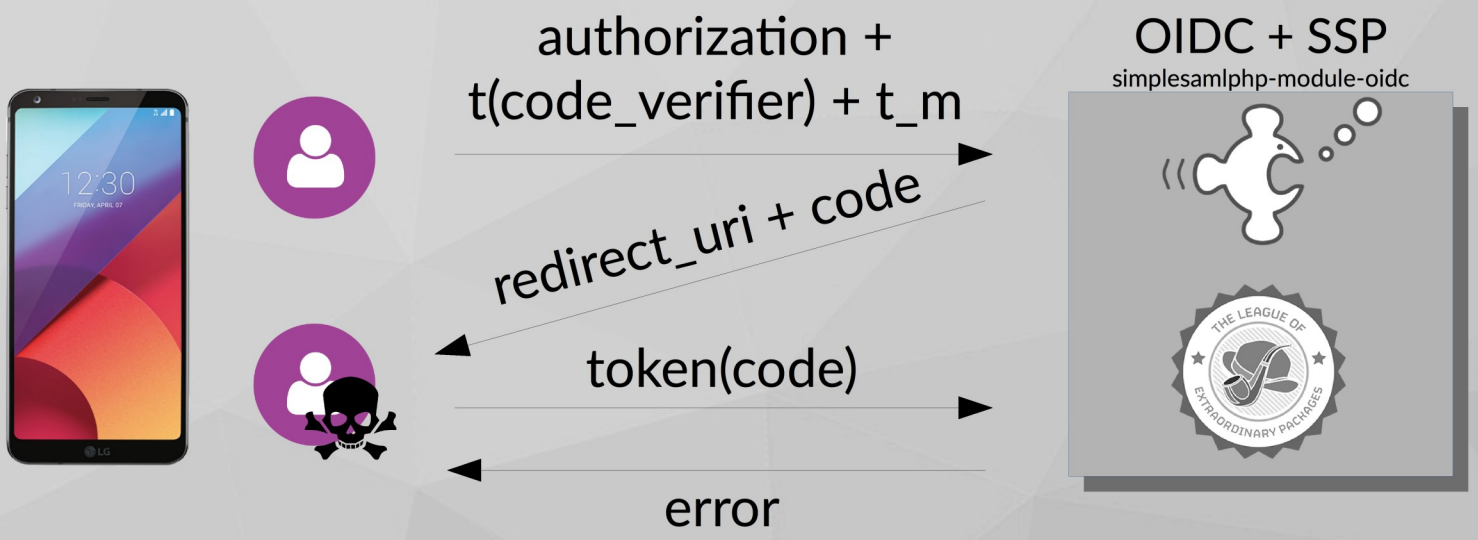
Seguridad (PKCE)

OpenID Connect con PKCE



Seguridad (PKCE)

OpenID Connect con PKCE



Demo Time

Retos

- Traducir atributos SAML ↔ OIDC
- Proporcionar el SDK basado en AppAuth
- Terminar de implementar funcionalidades no esenciales

Módulo de SimpleSAMLphp OpenID Connect:

https://github.com/rediris-es/simplesamlphp-module-oidc

Autenticación con OpenID Connect a través de SimpleSAMLphp

SERGIO GÓMEZ BACHILLER
Operador del Servicio de Informática
Universidad de Córdoba

@sgomez
sgomez