Universita degli Studi di Parma

DIPARTIMENTO DI INGEGNERIA ED ARCHITETTURA

Corso di Laurea di ingegneria Informatica, Elettronica e delle Telecomunicazioni

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OAuth2

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Contents

Introduction

The problem

Necessity of communication between client and server. Different ways to achieve the goal, here are a few of them:

1. Directly send the user id to the server

   ```
   $ curl -v -X POST http://localhost:8080/db_auth '{"user-id": 1}'
   ```

2. Http Basic Auth: each API request is signed with a username and a passwrod, encoded in base64

   ```
   $ curl -u Aladdin:OpenSesamus -v http://localhost:8080/basic

   > GET / HTTP/1.1
   > Host: google.com
   > Authorization: Basic QWxhZGRpbjpPcGVuU2VzYW11cw==
   > User-Agent: curl/7.72.0
   > Accept: */*
   ...
   ```

3. Authentication with PEM keys

4. OAuth protocol

   ```
   $ curl -v -X POST --header 'Authorization: Bearer 1234'
   > GET / HTTP/1.1
   > Host: www.google.com
   > User-Agent: curl/7.72.0
   > Accept: */*
   > Authorization: Bearer 1234
   ```

OAuth2 Protocol

Obtain an access token

1. Redirect to an authorization provider.

   ```
   http://google.apis.com?response_type=code&client_id...
   ```

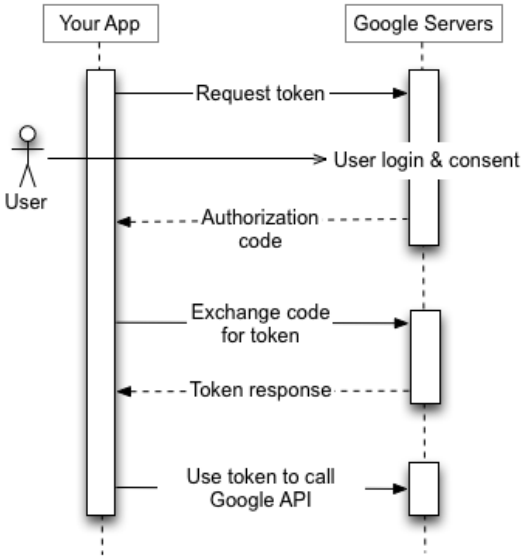
2. If the authorization is successful, the oauth server will redirect to `redirect_uri` passing a `code` as GET parameter. Otherwise `error` contains the reason why the authorization was not successful.

   ```
   POST /oauth/token HTTP/1.1
   Host: authorization-server.com

   grant_type=authorization_code
   &code=xxxxxxxxxx
   &redirect_uri=https://example-app.com/redirect
   &client_id=xxxxxxxxxx
   &client_secret=xxxxxxxxxx
   ```

   If an authorization code is used more than once, the authorization server must deny the subsequent request.

3. The client exchanges the `code`, called also "grant token", with the server to obtain an `access_token`.
4. The server returns the access token with additional informations, such as expire date and JWT.
5. The client uses the access token for APIs requests.



Revoke an access token

Something something

SSO with OpenID

JWT

JWS e JWE

Validazione JWS

Verify the SHA256 signature

References

[1] Using OAuth 2.0 to Access Gooogle APIs
`https://developers.google.com/identity/protocols/oauth2`