

API

{ "API" : "101" }

2017-10-16



Agenda

- Syfte med eftermiddagen
- Varför API'er?
 - API sett från verksamheten
- Representational State Transfer (REST)
 - HATEOAS
 - Queries
- Säkerhet
- Praktiskt exempel
- Standarder



Christer Berglund

- Oberoende egenkonsult
- IT-Arkitekt
 - 20 års erfarenhet av implementationsprojekt
- Integrationsspecialist
- Cloud-evangelist
- Open Source användare



Varför API'er?



API sett från verksamheten



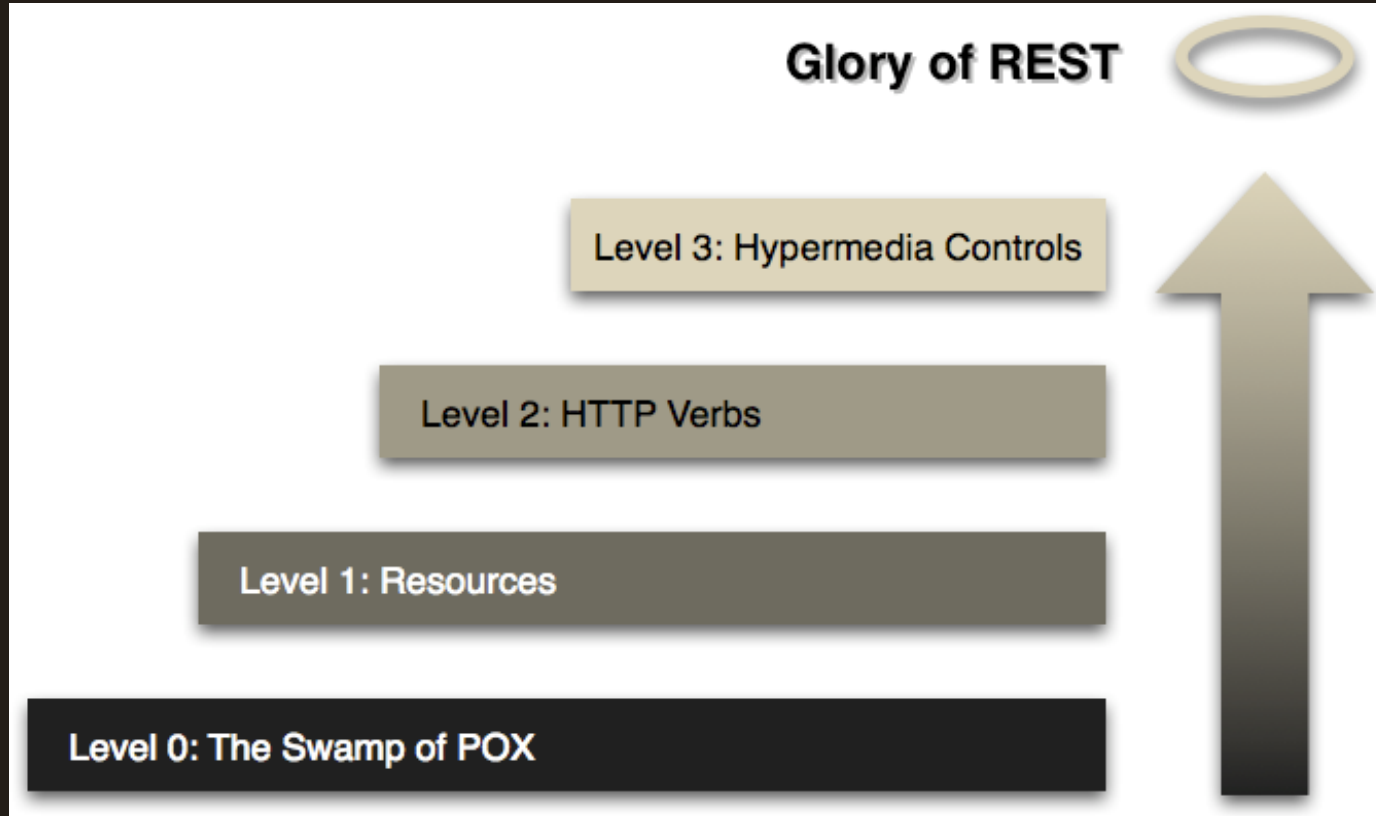
{ "API" : "101" }

Representational State Transfer (REST)

- Sex principer för REST baserad arkitektur
 - Client-Server
 - Stateless
 - Cache
 - Interface / Uniform Contract
 - Layered System
 - Code-On-Demand



Representational State Transfer (REST)



HATEOAS

- Hypermedia As The Engine Of Application State
- Tar bort behov av ett fördefinierat kontrakt (jmf. wsd)

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: ...

<?xml version="1.0"?>
  <account>
    <account_number>12345</account_number>
    <balance currency="usd">100.00</balance>
    <link rel="deposit" href="https://bank.example.com/accounts/12345/deposit" />
    <link rel="withdraw" href="https://bank.example.com/accounts/12345/withdraw" />
    <link rel="transfer" href="https://bank.example.com/accounts/12345/transfer" />
    <link rel="close" href="https://bank.example.com/accounts/12345/close" />
  </account>
```



Queries

- Parametertyper

- Locators
- Filters
- State
- Content

- Sökning

- `companies?search=123`

- Pagination

- `Companies?page=23`

- Placeholders

- Headers & cookies
- URL query strings
- URL path
- Body



Versionshantering

- URL sättet:

- /api/v1/article/1234
- /api/v2/article/1234

- Hypermedia sättet

- GET /api/article/1234 HTTP/1.1
- Accept: application/vnd.api.article+xml; version=1.0

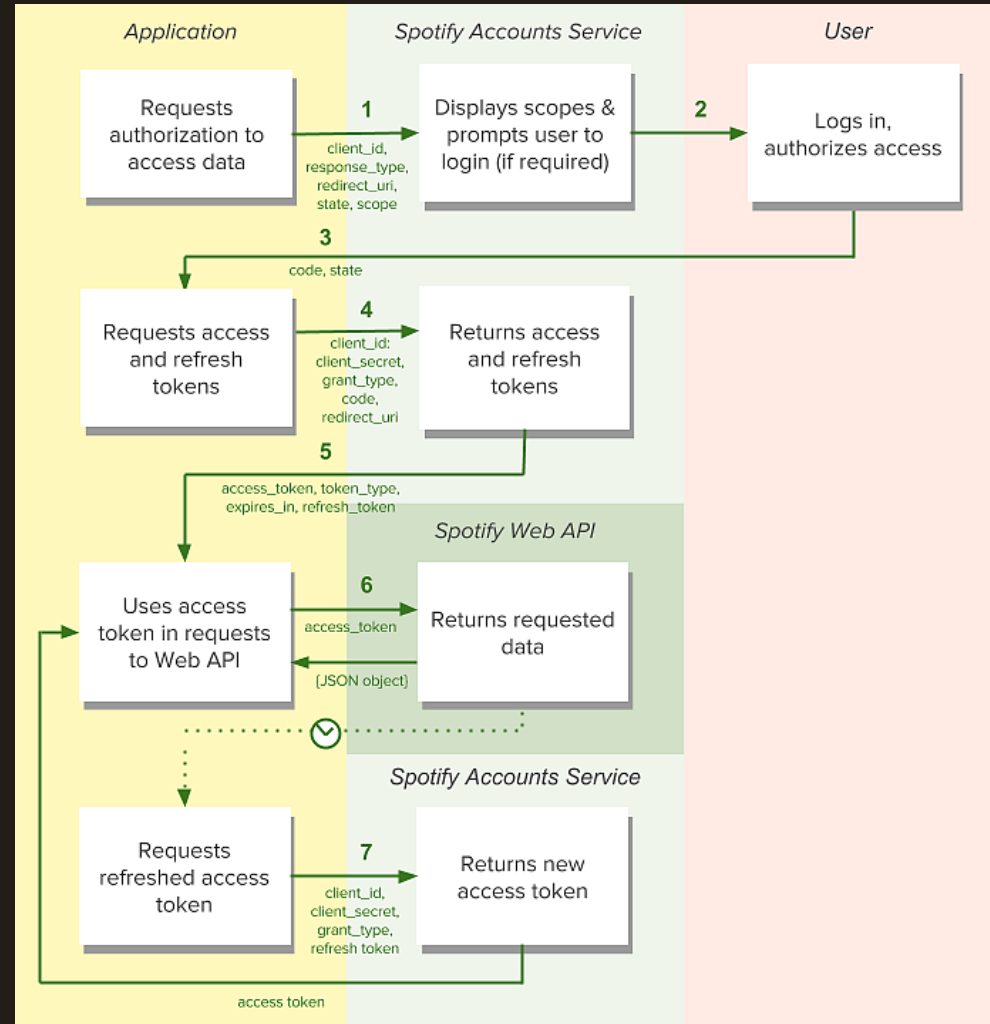


Returkoder

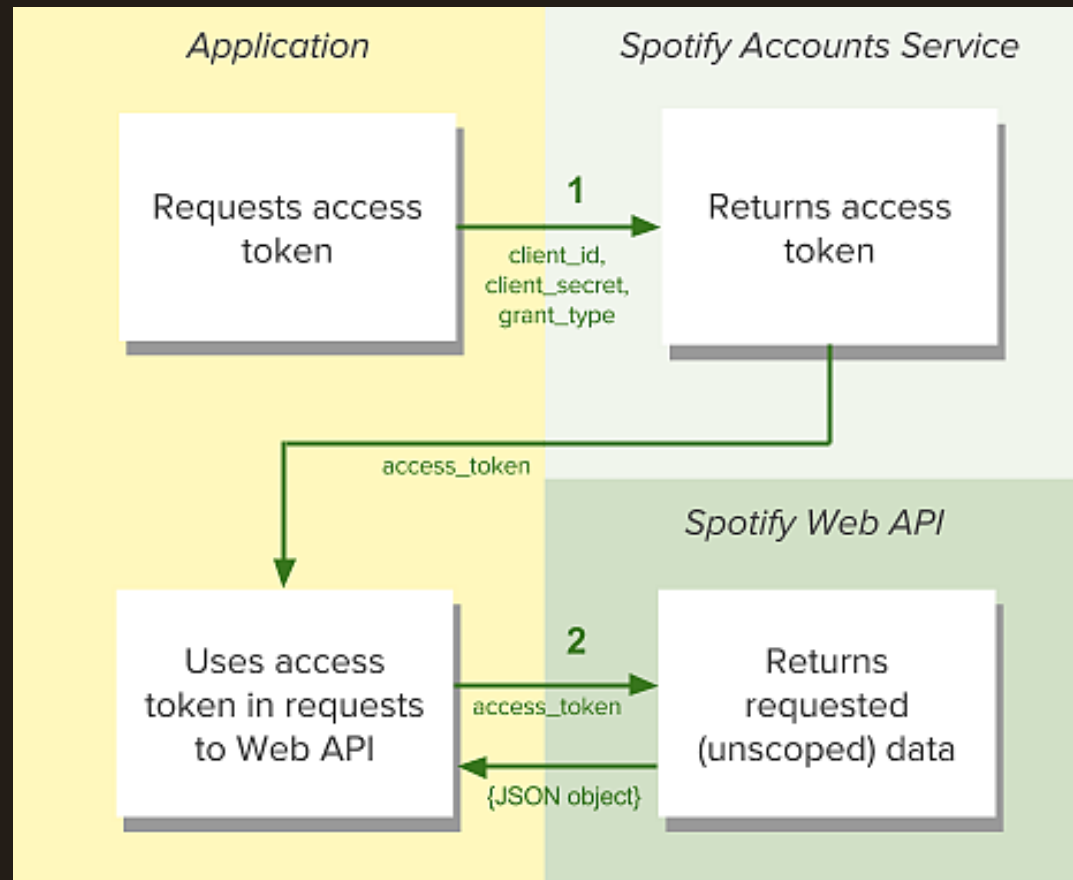
<https://stackoverflow.com/questions/942951/rest-api-error-return-good-practices>



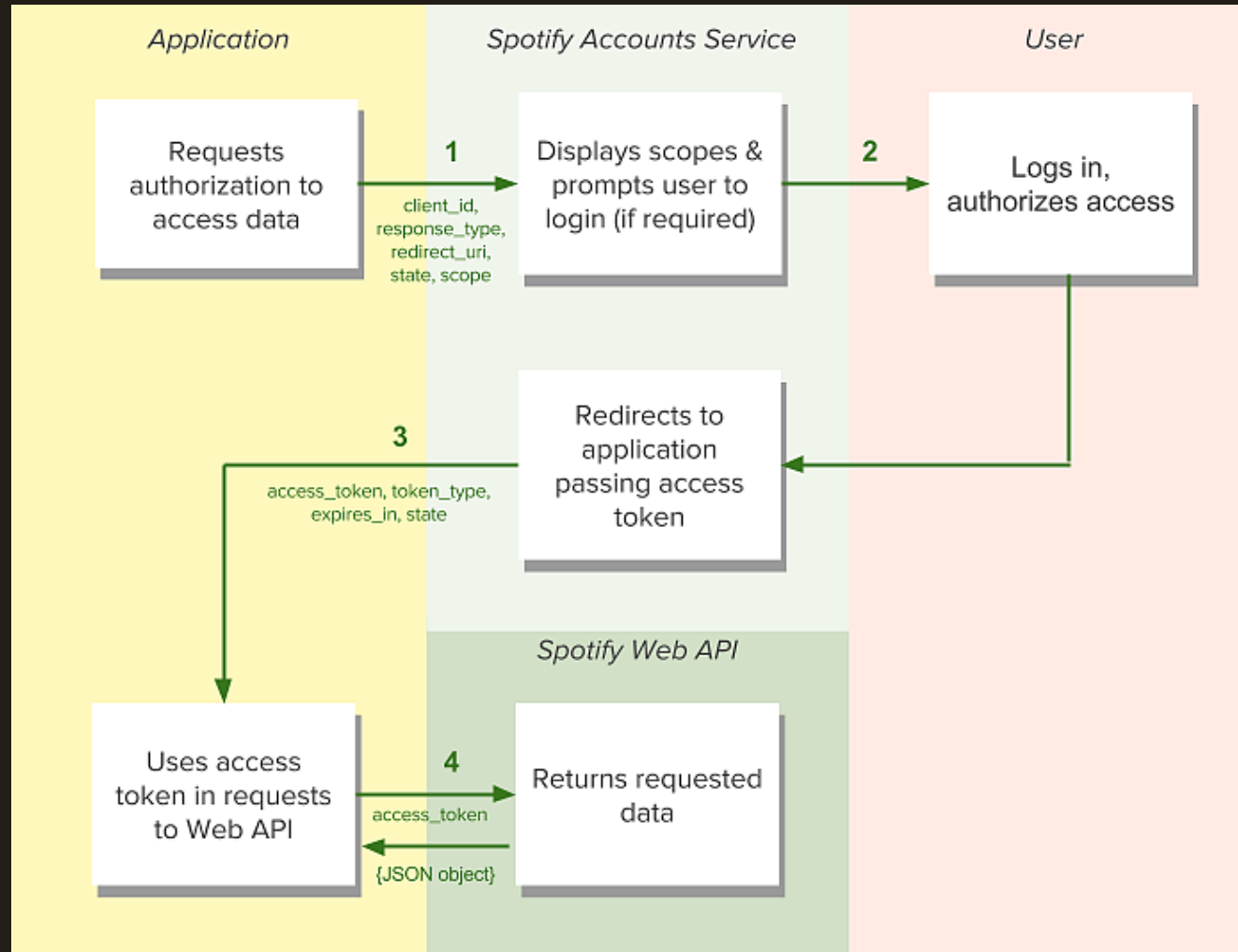
Säkerhet – Authorization Code



Säkerhet – Client Credentials



Säkerhet – Implicit Grant



Praktik

- Employee
- Company
 - /getAllEmployees
 - /addNewEmployee
 - /updateEmployee
 - /deleteEmployee
 - /deleteAllEmployees
 - /promoteEmployee
 - /promoteAllEmployees



Praktik

- /Companies
- /Employees
- /Companies/{id}/Employees
- HTTP Methods GET, POST, DELETE,PUT, PATCH



Standards och ramverk

- Odata – www.odata.org
 - Out-of-band information
 - \$metadata
- GraphQL – www.graphql.org
- ORDS – Oracle Rest Data Services
- Spring REST – www.spring.io



API Managers

- Azure
- AWS
- Wso2 API Manager
- 3Scale by RedHat
- IBM API Manager





CONSULTING