

**Java Developers
&
Solaris Administrators**

DAY



ORACLE[®]



Java API for RESTful Web Services

Jakub Podlešák

jakub.podlesak@oracle.com

Agenda

- **REST Primer**
- **JAX-RS (JSR-311) Specification**
- **Project Jersey**
- **OAuth Demo**



Agenda

- **REST Primer**
- **JAX-RS (JSR-311) Specification**
- **Project Jersey**
- **OAuth Demo**



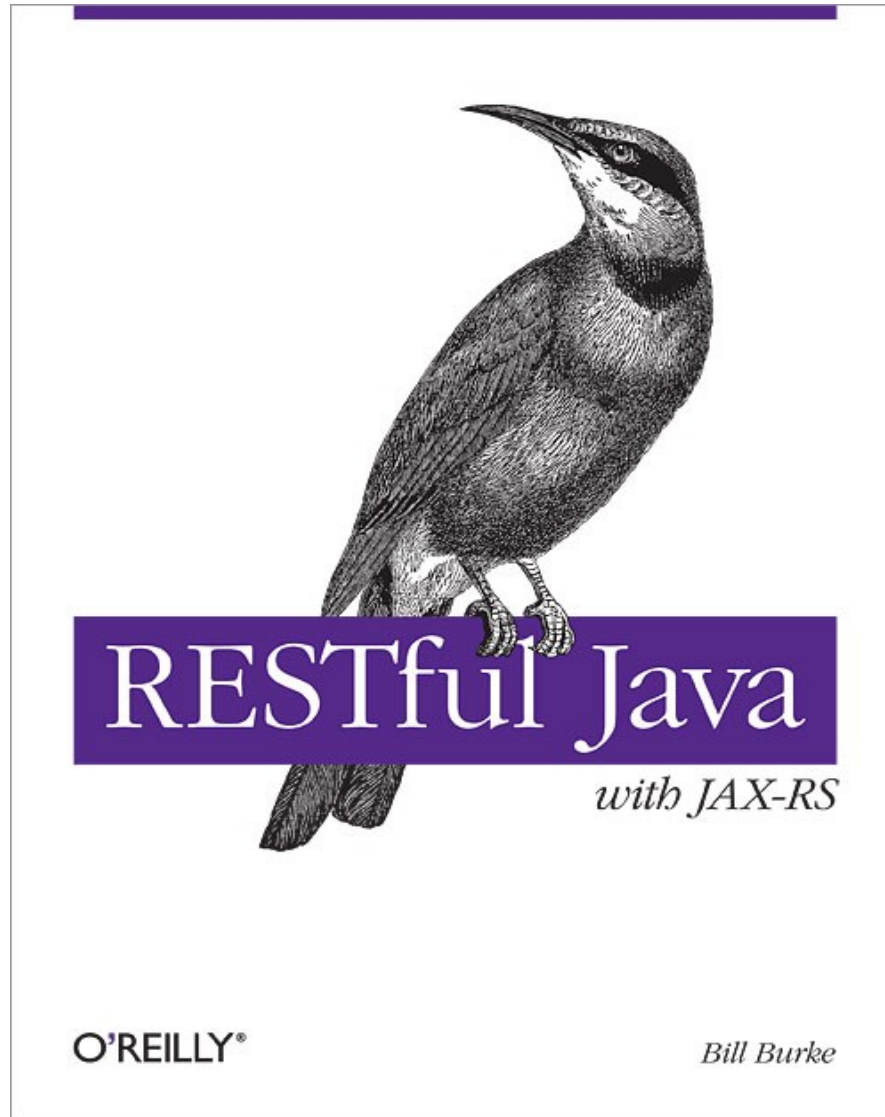
REST Primer

- Read this :-)



REST Primer

- Or this :-p



What is REST?

- REST is an **architectural style**
- To help you design distributed applications
- To get certain desired features

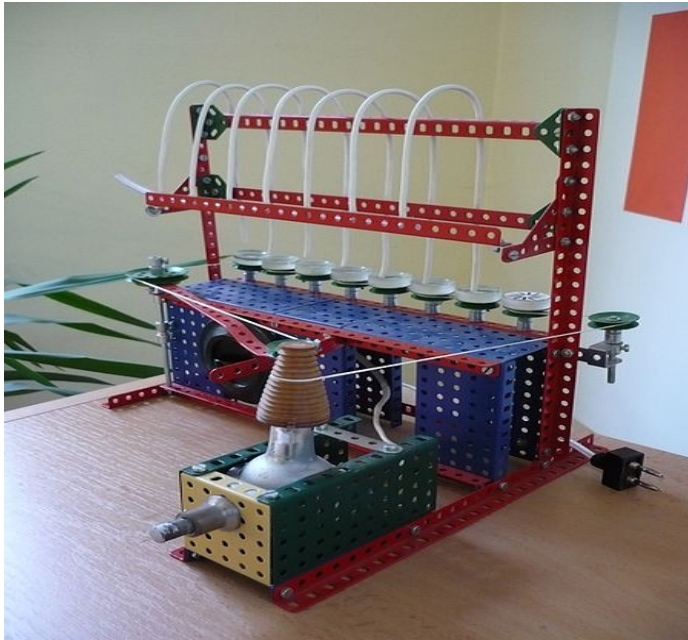


Key Concepts

- Every resource has an ID (URI)
- Uniform Service Interface
- Hypermedia Exchange
- Stateless Communication

What do i get from REST?

- Simplicity
- Loose coupling
- Scalability



Agenda

- REST Primer
- **JAX-RS (JSR-311) Specification**
- Project Jersey
- OAuth Demo



JAX-RS

- JCP: JSR-311
- Part of Java EE 6
- Server side centric

JAX-RS

- POJO based
- Annotation driven
- Container independent



JAX-RS Code Example

URI mapping

@Path("/user/{id}")

public class UserResource {

Media type

@GET @Produces("application/xml")

public User getUser(**@PathParam("id")** String id) {

return lookupUser(id);

}

}

Parameter mapping

HTTP method

JAX-RS Code Example

@Path("/user/{id}")

```
public class UserResource {
```

```
    @PUT @Consumes("application/xml")
```

```
    public void putUser(@PathParam("id") String id,  
                        User u) {
```

```
        updateUser(id, u);
```

```
    }
```

```
}
```



Body entity mapping

Agenda

- REST Primer
- JAX-RS (JSR-311) Specification
- **Project Jersey**
- OAuth Demo



Jersey

- Open source
- Production quality
- Reference implementation of JAX-RS
- 1.5 released last week

Jersey Quick Start

- Examples

<http://download.java.net/maven/2/com/sun/jersey/samples/jersey-samples/1.5/jersey-samples-1.5-project.zip>

- Maven archetypes

```
mvn -DarchetypeCatalog=http://download.java.net/maven/2/archetype-catalog.xml \
archetype:generate
```

Jersey

DEMO

Jersey Features

- Jersey client API
- Embedded Grizzly (1/2) container
- Embedded GlassFish
- JSON with/without JAXB
- MVC with JSP
- Multipart MIME
- Simple injection

Jersey features

- Spring integration
- Guice integration
- Java client API using Apache HTTP client
- Comet support

Agenda

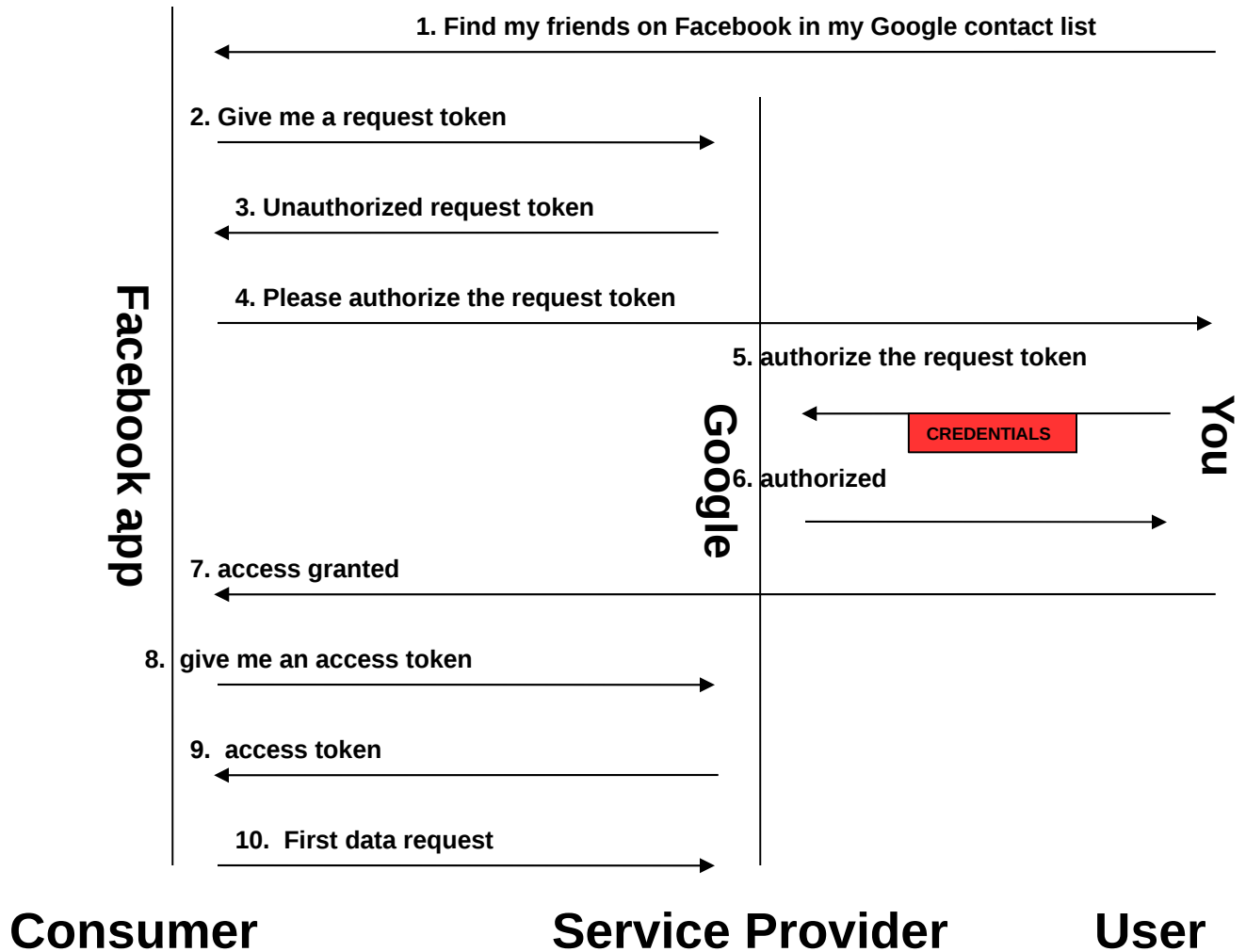
- REST Primer
- JAX-RS (JSR-311) Specification
- Project Jersey
- OAuth Demo



OAuth Overview

- **OAuth (<http://oauth.net/>)**
 - Widely adopted industrial standard
 - OAuth 2.0 via IETF
- **Use-case**
 - Grant 3rd party access to your protected resources
 - Without a need to share your credentials
 - e.g., username/password
- **Parties involved**
 - **User** (owns the resources, keeps the credentials)
 - **Service Provider** (maintains resources)
 - **Consumer** (3rd party accesses resources on User's behalf)

OAuth Operation



OAuth

DEMO

Initialization

```
secrets = new OAuthSecrets().consumerSecret(MySECRET);  
params = new OAuthParameters()  
    .consumerKey("www.example.com")  
    .signatureMethod("HMAC-SHA1").version("1.0");  
  
oAuthFilter = new OAuthClientFilter(client.getProviders(), params, secrets);  
client.addFilter(oAuthFilter);  
  
webResource = client.resource("https://www.google.com/");
```

Getting The Request Token

```
requestToken = webResource.path("accounts/0AuthGetRequestToken")  
    .queryParams("scope", "https://www.google.com/m8/feeds/")  
    .get(RequestToken.class);
```

```
Desktop.getDesktop().browse(  
    UriBuilder.fromUri("https://www.google.com/")  
        .path("accounts/0AuthAuthorizeToken")  
        .queryParams("oauth_token", requestToken.token).build());
```

```
secrets.tokenSecret(requestToken.secret);  
params.token(requestToken.token);
```

Getting The Access Token, 1st Data Request

```
accessToken = webResource.path("accounts/0AuthGetAccessToken")  
    .get(AccessToken.class);
```

```
secrets.tokenSecret(accessToken.secret);
```

```
params.token(accessToken.token);
```

```
Feed contacts = wr.path("m8/feeds/contacts")  
    .path("jakub.podlesak@gmail.com")  
    .path("full")  
    .queryParams("max-results", "15").get(Feed.class);
```

GET more information

- <http://jsr311.java.net>
- <http://jersey.java.net>