Creating Hypermedia REST APIs with Apio Architect

Recipes with Apio

@alejandrohdezma
@votilde

Ask any doubt!

Slides available here:

slidr.io/ahdezma/recipes-with-apio

apio-workshop

Liferay APIs in 2018

- *SOAP*
- *JSONWS API* (`/api/jsonws`)
- *JAX-RS (7.0+)*

...

Preparing the environment

- Clone this repo: ***github.com/liferay-labs/apio-workshop***
- Download Postman (a REST client)
- Download a Liferay CE Portal 7.1 GA2

What are we going to do?

Liferay Portal Headless APP

About what?


I'M HOMER,
I'LL BE YOUR CUSTOMER.

An API that publish Liferay Portal organisations as restaurants

An API that publish Liferay Portal organisations as restaurants. And also publish their recipes.

An API that publish Liferay Portal organisations as restaurants. And also publish their recipes. And follows standards.

An API that publish Liferay Portal organisations as restaurants. And also publish their recipes. And follows standards. **And works!**


How?

JAX-RS

Creating Hypermedia REST APIs with **Apio Architect**?

Is important to understand foundations

Let's start!

JAX-RS

JAX-RS: Java API for RESTful Web Services

```
@GET
@Path("/blogs/{id}")
@Produces(APPLICATION_JSON)
public Response getBlogsEntry(@PathParam("id") long id) {
    BlogsEntry blogsEntry = blogsEntryService.getBlogsEntry(id);

    return Response.ok(blogsEntry).build();

}
```

What do we need to create a JAX-RS API?

- Application
- Resources
- Extensions

Application

- Mandatory
- Manages the API resources

```
@Component
@ApplicationPath("api")
public class MyApplication extends Application {

    @Override
    public Set<Class<?>> getClasses() {
        return Collections.singleton(new Resource());
    }

}
```

Resources

- Optional (if you don't want to modularize)
- Manages endpoints in a specific path

```
@Path("/blogs")
public class Resource {

    @GET
    @Path("/{id}")
    @Produces(APPLICATION_JSON)
    public Response getBlogsEntry(@PathParam("id") long id) {
        BlogsEntry blogsEntry = blogsEntryService.getBlogsEntry(id);

        return Response.ok(blogsEntry).build();

    }

}
```

Extensions

- Optional
- Adds additional logic to the API

```
@PreMatching
public class AuthFilter implements ContainerRequestFilter {

    public void filter(ContainerRequestContext ctx) {
        String authHeader = request.getHeaderString(HttpHeaders.AUTHORIZATION);

        if (authHeader == null) {
            throw new NotAuthorizedException("Not authenticated");
        }

        if (!verifyUser(authHeader)) {
            throw new NotAuthorizedException("User not authorized");
        }
    }

    private boolean verifyUser(String authHeader) {}

}
```

How do we use JAX-RS in Liferay Portal?

JAX-RS Whiteboard

- Aries JAX-RS Whiteboard is the reference implementation of the OSGi JAX-RS Services Whiteboard 1.0 (JAX-RS for OSGI)
- Component-property based

```
@Component(service = Resource.class, property = JAX_RS_RESOURCE + "=true")
@Path("/blogs")
public class Resource {

    @GET
    @Path("/{id}")
    @Produces(APPLICATION_JSON)
    public Response getBlogsEntry(@PathParam("id") long id) {
        BlogsEntry blogsEntry = blogsEntryService.getBlogsEntry(id);

        return Response.ok(blogsEntry).build();
    }

}
```

Thanks @csierra & @rotty3000!

Completing the environment

- Open the project ***workshop*** (included in the repository)
- Set your Liferay Home
- Run **`./gradlew prepare`**
- Start Liferay Portal: **`path/to/liferay_home/tomcat-9.0.10/bin/catalina.sh jpda run`**
- Wait for starting...
- Run **`./gradlew deploy`**

Let's test the APIs!

- Click on the 

button
- Follow the instructions of our handsome speaker

What do we have?

Restaurants

Chefs

Kitchen Assistants

Recipes

Our tools

GoGo Shell

`telnet localhost 11311`

```
vagrant@vagrant:~$ telnet localhost 11311
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.

____________________________
Welcome to Apache Felix Gogo

g! help
blade:usercount
dependencymanager:dm
equinox:b
equinox:bundle
equinox:bundles
equinox:classSpaces
equinox:close
equinox:diag
equinox:disconnect
```

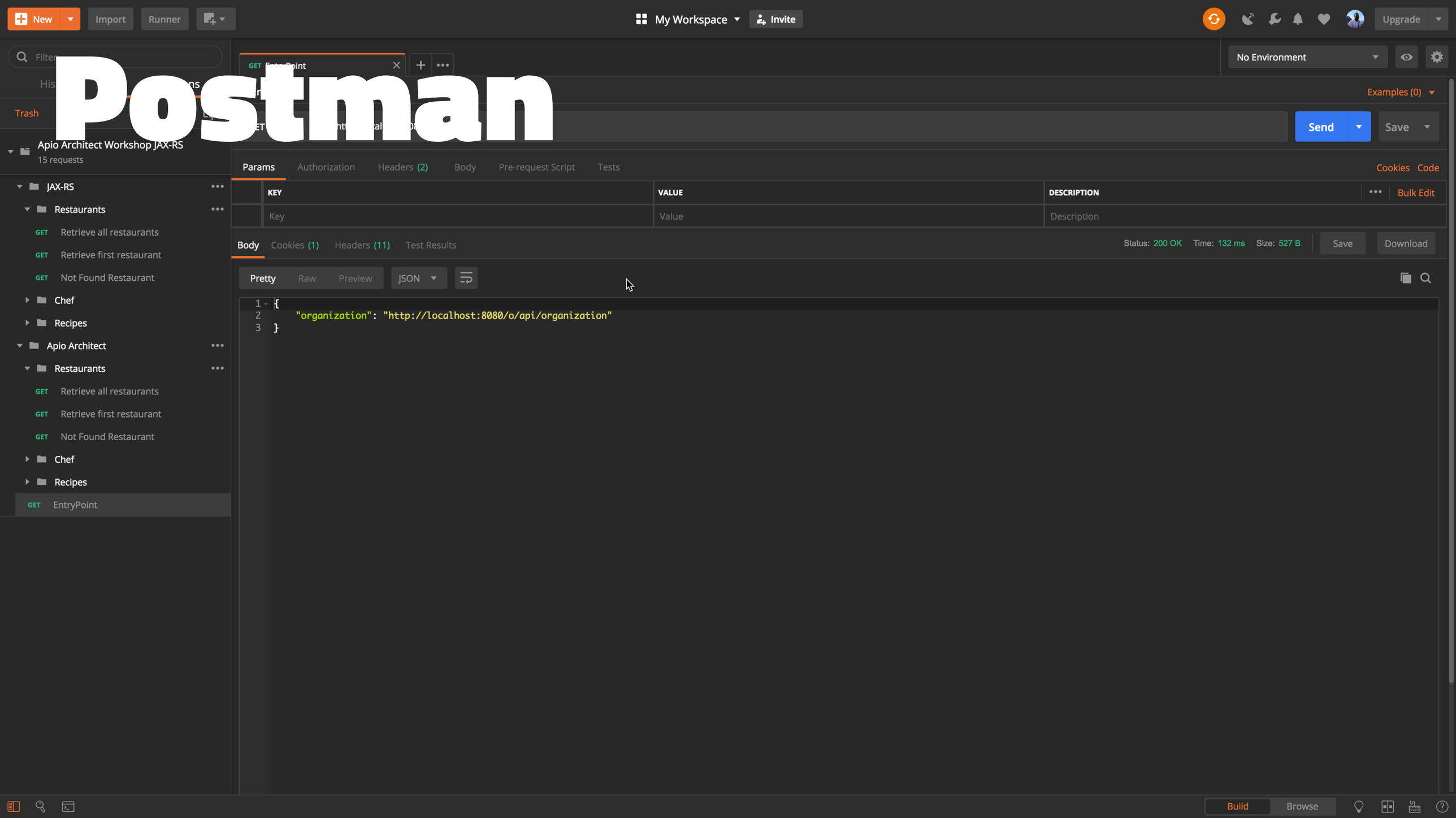
GoGo Shell

- `apio:restaurants`

ID	Name	Chef Email
35301	Diverxo	the.chef@diverxo.com

- `apio:assistants`

Kitchen Assistant Email	Organizations
the.assistant@diverxo.com	Diverxo


New
Import
Runner
My Workspace
Invite
Upgrade
Postman
No Environment
Examples (0)
Send
Save
Trash
Apio Architect Workshop JAX-RS
15 requests
JAX-RS
Restaurants
GET Retrieve all restaurants
GET Retrieve first restaurant
GET Not Found Restaurant
Chef
Recipes
Apio Architect
Restaurants
GET Retrieve all restaurants
GET Retrieve first restaurant
GET Not Found Restaurant
Chef
Recipes
GET EntryPoint
Params
Authorization
Headers (2)
Body
Pre-request Script
Tests
Cookies
Code
KEY
VALUE
DESCRIPTION
Bulk Edit
Key
Value
Description
Body
Cookies (1)
Headers (11)
Test Results
Status: 200 OK
Time: 132 ms
Size: 527 B
Save
Download
Pretty
Raw
Preview
JSON
{
"organization": "http://localhost:8080/o/api/organization"
}
Build
Browse

Our IDE

- Eclipse
- Liferay Dev Studio
- IntelliJ
- Visual Studio Code
- ...

Demo time