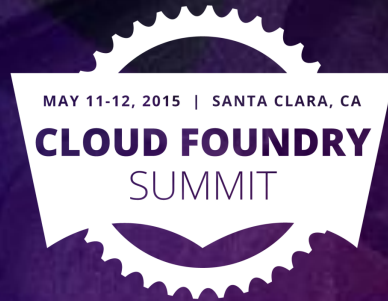




MAY 11-12, 2015 | SANTA CLARA, CA

**CLOUD FOUNDRY**  
SUMMIT

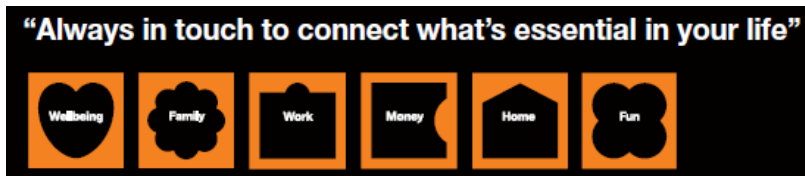


# Case Study: Orange Labs & Cloud Foundry

Guillaume Berche

# Intro

- About Orange
- Disclaimer
- About EIPaaso
- Contact me: [@gberche](#) or guillaume.berche [at] orange.com



# Session overview

- CF adoption history within Orange
- EIPaaso
  - product goals
  - feature overview
  - demo
  - tech internals
  - future work and challenges
- Could future CF extensions help ?

# EIPaaso team & CF history

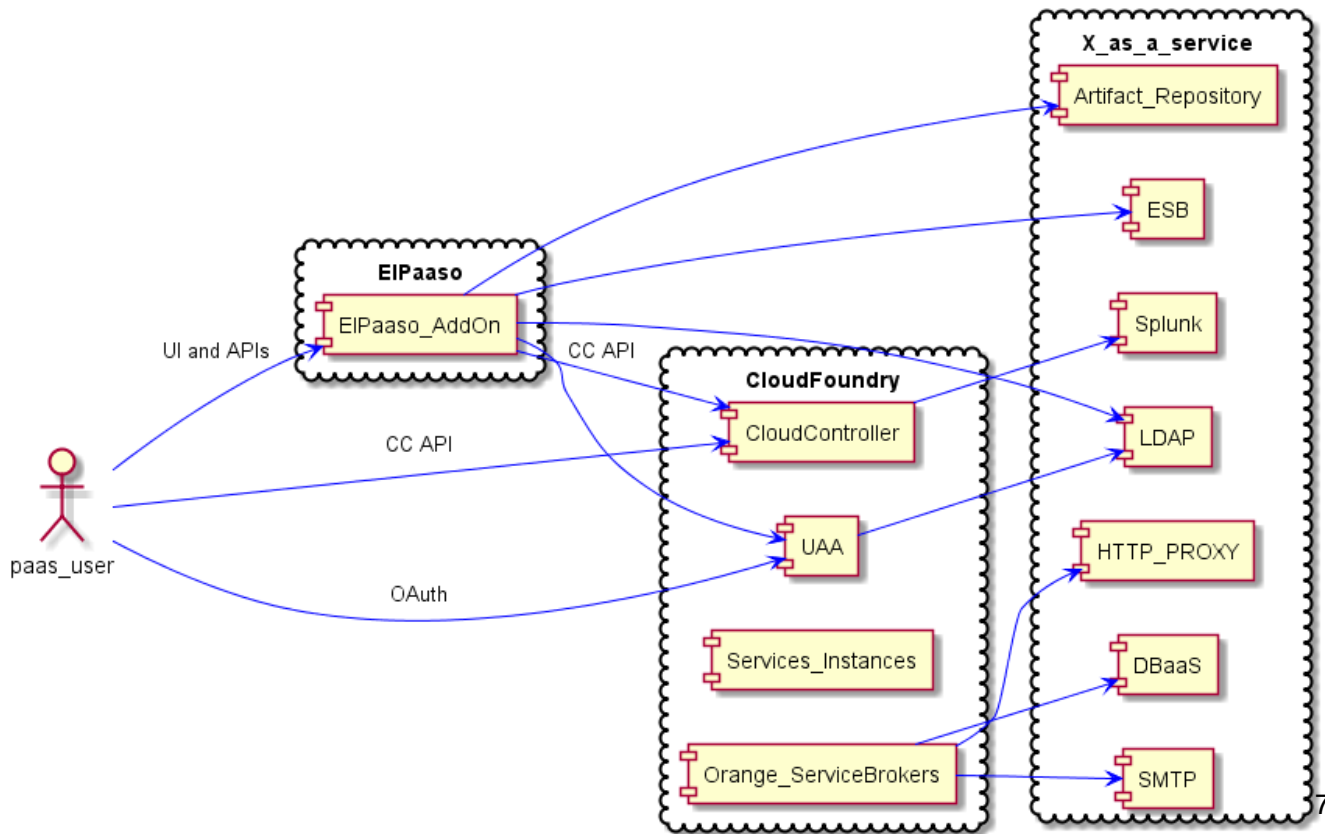
- 2010 : IaaS won't be the silver bullet for our apps. How can PaaS help massive cloud migration ?
  - Orange specificities: OS, DB, WAS, network architecture, IaaS
  - First EIPaaso prototype on vphere + vCloud,
  - dynamic vm image generation + ssh post-config
  - dbaaS product (on demand pg + mysql instances)
- 2012: try bosh on AWS
- 2013: prototype migrating to CF using PWS / run.pivotal.io
- 2014: vcloud cpi released, host private CF instance, EIPaaso leverages CF
- 2015: Dual hosting mode: raw CF + EIPaaso



# EIPaaso product role

- A playground for cloud-native architecture
- A lab to experiment how to ease paas adoption

# EIPaaso & CF Overview



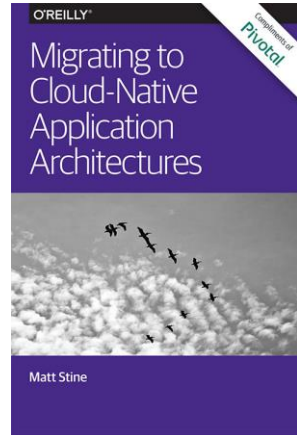
# EIPaaso goals and use-cases

- Gradual adoption for the majority, beyond innovators
- Integration in ecosystem and work processes
- Capture expertise/best practices
- Stable interfaces to isolate projects from changes



# EIPaaso features overview

- Decentralized autonomy... with transparency
- Reproducibility/continuity from development to operations
- Sharing reusable application blueprints among teams
- Formalizing application supported configuration





# EIPaaso Demo



[home](#)[applications](#)[releases](#)[environments](#)you are here : [home](#) > **application : demo-agile** application : demo-agile

name \* demo-agile




























code \* demo

description A fictive application illustrating how agile teams use the paas to iteratively deliver new features while reducing their TTM

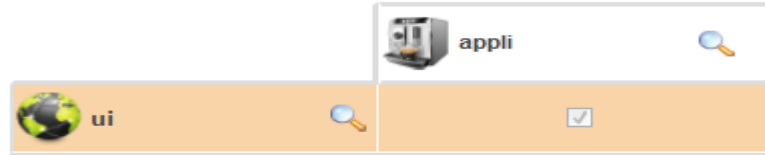
visibility \*  public (anyone can view and clone the releases)  
 private (only members can view and clone the releases)

members list  \* gberche blupin 









[edit application](#)[new release](#) releases list

release name	description	architecture state	actions
demo-agile - 0.0	debugging attempt	locked	  
demo-agile - 0.1	sprint 0: end-to-end hello world prototype	locked	  
demo-agile - 0.2	sprint 1: initial basic 3 tier architecture	editing	  
demo-agile - 0.3	sprint 2: EAR release 1.4, new config keys	editing	  
demo-agile - 0.4	sprint 3: Added catalog-management backoffice UI	editing	  
demo-agile - 0.5	sprint 4: added internal mom notifications between mgt and portal for hot config reload	editing	  
demo-agile - 0.6	sprint 5: consumes SOAP services from app X	editing	  
demo-agile - 0.7	sprint 7: publishes SOAP webservice	locked	  
demo-agile - owse		editing	  















# Example of a interactive development





















# Example of a interactive development

		 processing 
 ui 		<input checked="" type="checkbox"/>
 db 		<input checked="" type="checkbox"/>
 config 		<input checked="" type="checkbox"/>



















# Example of a interative development

		 <b>1-portal-processing</b> 	 <b>2-catalog-mgt-processing</b> 
 <b>mgt-gui</b> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 <b>portal-gui</b> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 <b>portal-config</b> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 <b>mgt-config</b> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 <b>db</b> 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

# Example of a interative development





















	 1-portal-processing 	 2-catalog-mgt-processing 
 portal-gui 	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-gui 	<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-response-queue 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 mgt-config 	<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-request-queue 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 db 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-config 	<input checked="" type="checkbox"/>	<input type="checkbox"/>

# Example of a interative development



		 <b>1-portal-processing</b> 	 <b>2-catalog-mgt-processing</b> 
 <b>portal-gui</b> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 <b>mgt-gui</b> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 <b>portal-response-queue</b> 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 <b>mgt-config</b> 		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 <b>portal-request-queue</b> 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 <b>db</b> 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 <b>portal-config</b> 		<input checked="" type="checkbox"/>	<input type="checkbox"/>

























# Example of a interative development


	 1-portal-processing 	 2-catalog-mgt-processing 
 mgt-gui 	<input type="checkbox"/>	<input checked="" type="checkbox"/>
 login-service-consumer 	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 portal-gui 	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-config 	<input type="checkbox"/>	<input checked="" type="checkbox"/>
 db 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-request-queue 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-response-queue 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-config 	<input checked="" type="checkbox"/>	<input type="checkbox"/>

# Example of a interative development

	1-portal-processing	2-catalog-mgt-processing
 login-service-consumer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 wsp	<input type="checkbox"/>	<input type="checkbox"/>
 portal-gui	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-gui	<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-config	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-config	<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-request-queue	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 db	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-response-queue	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

 preview of architecture, click to configure associations

		 1-portal-processing 	 2-catalog-mgt-processing 
 login-service-consumer 		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 partner-api 		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-gui 		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-gui 		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-config 		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-config 		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 portal-request-queue 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-response-queue 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 db 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>











legend :  external services  internal services

select an external service to add

- Choose One
- point-to-point messaging (QRS) (beta)
- point-to-point messaging (QSS) (beta)
- web gui
- web service consumer (beta)
- web service provider (beta)

next step

preview of architecture, click to configure associations

		1-portal-processing	2-catalog-mgt-processing
 mgt-gui		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-gui		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-config		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-config		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 db		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>











legend :  external services  internal services

+ select an internal service to add

- Choose One
- configuration
- internal point-to-point messaging
- jee processing
- log
- blob store (beta)
- relational database

previous step
next step

+ preview of architecture, click to configure associations

		1-portal- processing	2-catalog- mgt-processing
 mgt-gui		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-gui		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 mgt-config		<input type="checkbox"/>	<input checked="" type="checkbox"/>
 portal-config		<input checked="" type="checkbox"/>	<input type="checkbox"/>
 db		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

legend :  external services     internal services



## JEE Processing

### description

JEE-compliant container runtime in which a single application artifact (packaged as an EAR file) is executed

### functional attributes

label \*

### maven reference

group id \*

artifact id \*

version \*

classifier

generate helloworld artifact if missing



### sizing hints

minimum memory in MB \*

### display options

use custom icon Url



**preview**

icon will be displayed as

Looking for cool icon?

**cancel**

**update**

\*\* not yet available parameter



## Config set

## description

By being associated to a Config Set, an execution node exposes contract of configurable keys it supports. This contract precises the intended syntax and associated semantic with each configuration entry. Such contract is offered to users that will instantiate this Application Release into environments.

## functional attributes

label \*

JNDI prefix

content \*

```
# property used for database selection (mysql / oracle / postgresql / hsqldb). See jpaDa
database.dialect=mysql

#Number of items per page
ui.item-per-page=30
```

\*\* not yet available parameter

**WebService Consumer**

**description**

Provides access to a SOAP web service exposed by a another application. A set of JNDI properties (HTTP url and credentials) are made available to the application.

**functional attributes**

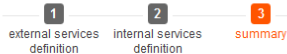
label *	login-service-consummer
jndiPrefix *	login-wsc
WS Domain *	EXTERNAL_BROKERED
provider name *	LoginOrange
service name *	verifyCredentials
service major version *	1
service minor version *	0

**close**

\*\* not yet available parameter



you are here : [home](#) > [applications](#) : [demo-agile](#) > [release : 0.7](#) > **architecture**



#### summary result

your architecture has been previously validated and an environment instantiated with this architecture. You can now create a new environment or review the existing ones. Note that this architecture is now read-only. If you need to make changes to the architecture, please create a new release (usually by cloning this one) and apply the changes. This is to ensure reproducibility.

[new environment](#)

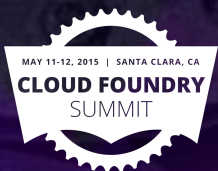
#### Config keys associated to JEE processing

JEE processing	config set	key	value	comment
1-portal-processing	portal-config	key.database.name	mysql	property used for database selection (mysql / oracle / postgresql / hsqldb). See jpaDaoContext.xml
1-portal-processing	portal-config	key.ui.item-per-page	30	Number of items per page
2-catalog-mgt-processing	mgt-config	key.force-purges	false	activate to regularly force db purges on dev/qa

#### preview of architecture, click to configure associations

	1-portal-processing	2-catalog-mgt-processing
login-service-consumer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
partner-api	<input checked="" type="checkbox"/>	<input type="checkbox"/>
mgt-gui	<input type="checkbox"/>	<input checked="" type="checkbox"/>
portal-gui	<input checked="" type="checkbox"/>	<input type="checkbox"/>
mgt-config	<input type="checkbox"/>	<input checked="" type="checkbox"/>
portal-config	<input checked="" type="checkbox"/>	<input type="checkbox"/>
portal-request-queue	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
portal-response-queue	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
db	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

legend :  external services     internal services



welcome, gberche [logout](#)

[home](#) | [applications](#) | [releases](#) | [environments](#)

you are here : [home](#) > [application : El PaaS live](#) > [release : 1.13.0](#)

release : El PaaS live - 1.13.0

release version \* 1.13.0  
middleware profile version \* 1.4.0  
release description El PaaS Live

[modify release](#)

environment

release name \*

environment name \*

environment type \*   
Choose One  
DEVELOPMENT  
TEST  
LOAD\_TEST  
PRE\_PROD  
PRODUCTION

override the configuration (experimental feature)

[cancel](#) [create environment](#)

[view release architecture](#)

environments list

release name	environment name	type	owner	creation date	status	actions
El PaaS live - 1.13.0	<a href="#">Live 1.13.0</a>	development	fbourel	Oct-02-2014 10:36	RUNNING	<a href="#">play</a> <a href="#">stop</a> <a href="#">trash</a> <a href="#">refresh</a>

release version \* 0.8-cf-summit  
 middleware profile version \* 1.4.0  
 release description

---

environment

release name \* demo-agile - 0.8-cf-summit  
 environment name \* cf-summit-test  
 environment type \* DEVELOPMENT  
 override the configuration (experimental feature)

1-portal-processing	
mgt-gui	<input type="checkbox"/>
portal-gui	<input checked="" type="checkbox"/>
mgt-config	<input type="checkbox"/>
portal-config	<input checked="" type="checkbox"/>
db	<input checked="" type="checkbox"/>

legend: external services internal services

### Config set

**description**

The application may be configured according to the contract exposed by the application, i.e. config sets define architecture as a set of properties defined as key/value/comments. For this environment, a specific value may be set for each property and record a comment, otherwise the default value in the architecture applies. Documenting the comment is useful when the environment is shared within a team that need to collaborate.

**functional attributes**

label *	mgt-config
JNDI prefix	key.
content *	

```
#As a convenience, the architecture configs are added below commented.
#You may chose to uncomment the ones you need to override and delete the others
#You may also copy/paste all overridden values among environments
#
##activate to regularly force db purges on dev/qa
#force-purges=false
```






\*\* not yet available parameter




you are here : [home](#) > [application : ElPaaSo live](#) > [release : 1.13.0](#) > [environment : Live 1.13.0](#)

environment Live 1.13.0



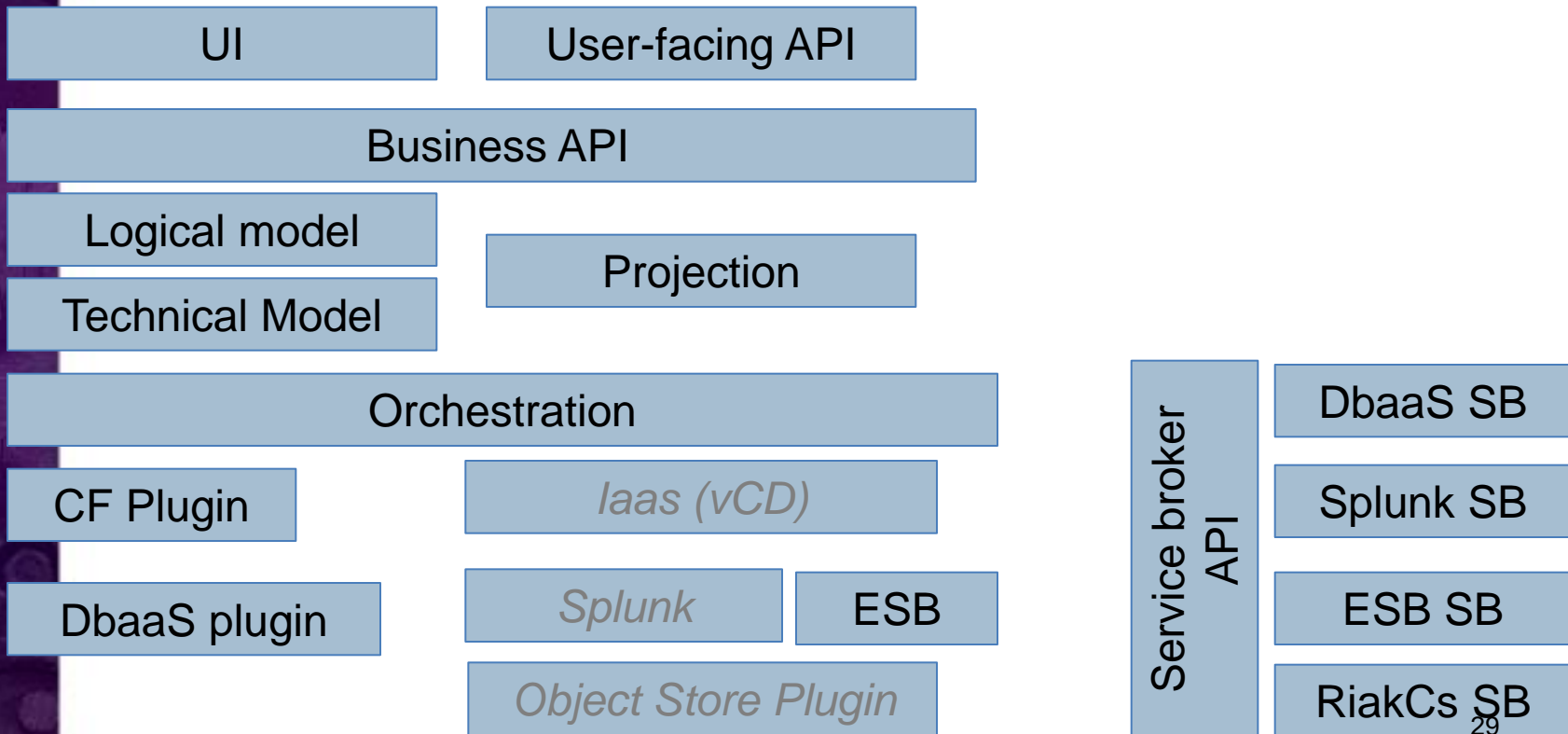
owner fbourel  
 status RUNNING     
 status message no message ...  
 environment ID 310de12b-01c0-4779-a968-32916e945934  
 creation date Oct-02-2014 10:36  
 environment overalls  apps-logs  
 apps-metrics

service access points, application logs

		EIPaaSoJEE  
	paas-portal  	<input checked="" type="checkbox"/>
	paas-portal-jmx  	<input checked="" type="checkbox"/>
	elpaaso-config 	<input checked="" type="checkbox"/>
	ActivationError Queue 	<input checked="" type="checkbox"/>
	ActivationReply Queue 	<input checked="" type="checkbox"/>
	ActivationRequest Queue 	<input checked="" type="checkbox"/>
	elpaaso-activitiDS 	<input checked="" type="checkbox"/>
	elpaaso-rds 	<input checked="" type="checkbox"/>

legend :  external services  internal services

# Internal architecture and design



# Future work, and challenges

- User-managed and elpaaso-managed modes
  - UAA/OAuth integration and user delegation
  - expert mode: lock/unlock
  - CLI plugins for parity with UI/APIs
  - Post-process native CC API user requests: notification and events
- automated app upgrade/rollback workflows
- More orange specifics projections
  - fine tuned security groups
  - cmdb
  - monitoring and alerting
  - sso
- support for multi-region/cf-instances application deployments
  - for the simple case of replicated state service across regions (Cassandra)
  - for the simple case of elpaaso-managed deployments
- governance hooks

# Opensourcing elpaaso

- why we're opensourcing
- current status
- how to get in touch

# Potential CF extensions

- Tags attached to cf entities
  - Entities queryable by tags
  - Syslog drains template include to tags
- CC API interception model





# Conclusion

- CF add-on can be an option
- interesting/useful to you ?
- Questions/comments ?