



Les Microservices.

“On ne fait pas qu’en parler.”

L’histoire d’une migration vers les microservices

@geraldcroes

Un retour d'expérience

D'où on vient

Ce qu'on voulait faire (et pourquoi)

Ce qu'on fait

Comment on y est venu

Des titres alternatifs

The Microservices Theory

Very Bad Microservices

The Microservices Has You

Papa, comment on fait les Microservices ?



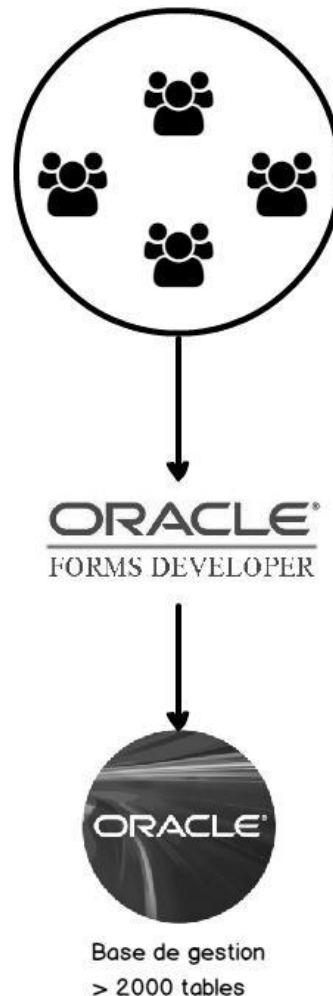
D'où l'on vient...

Oracle

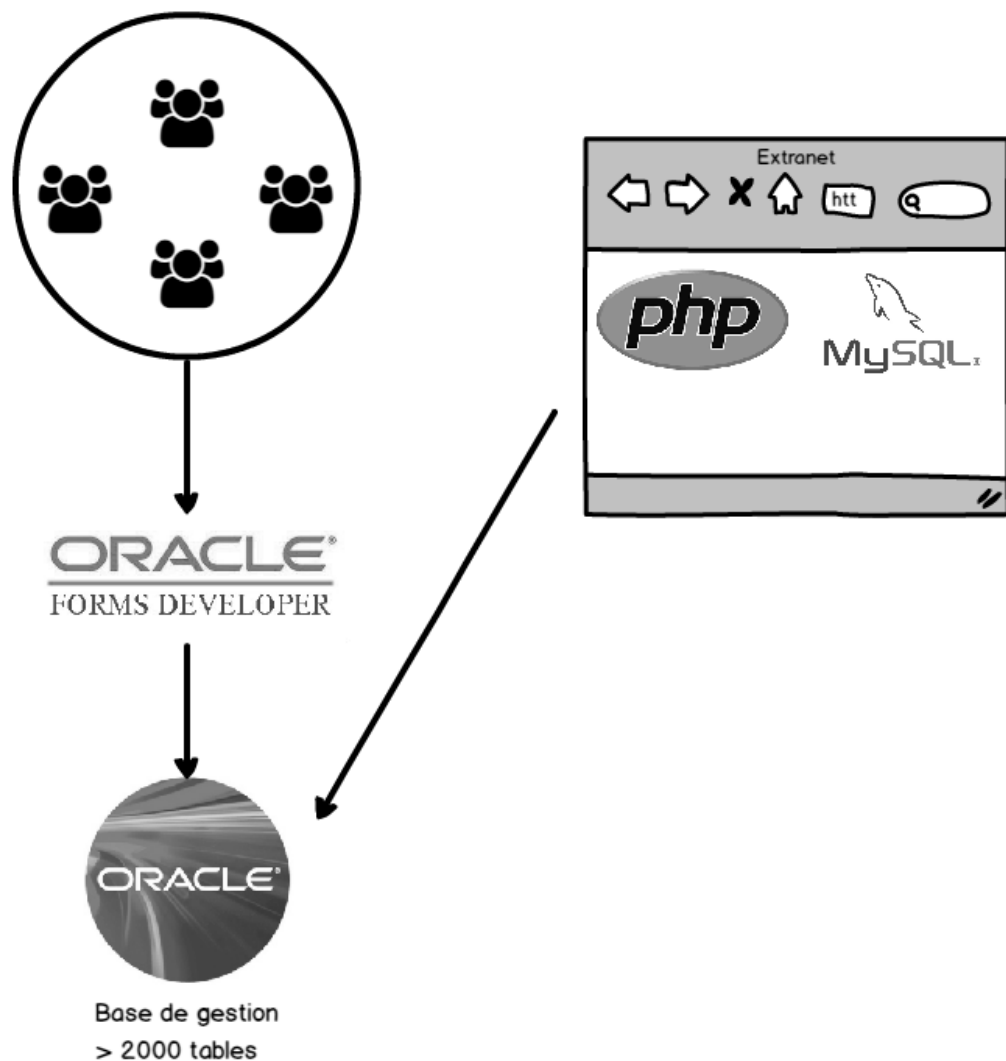
Oracle Forms

Transactionnel

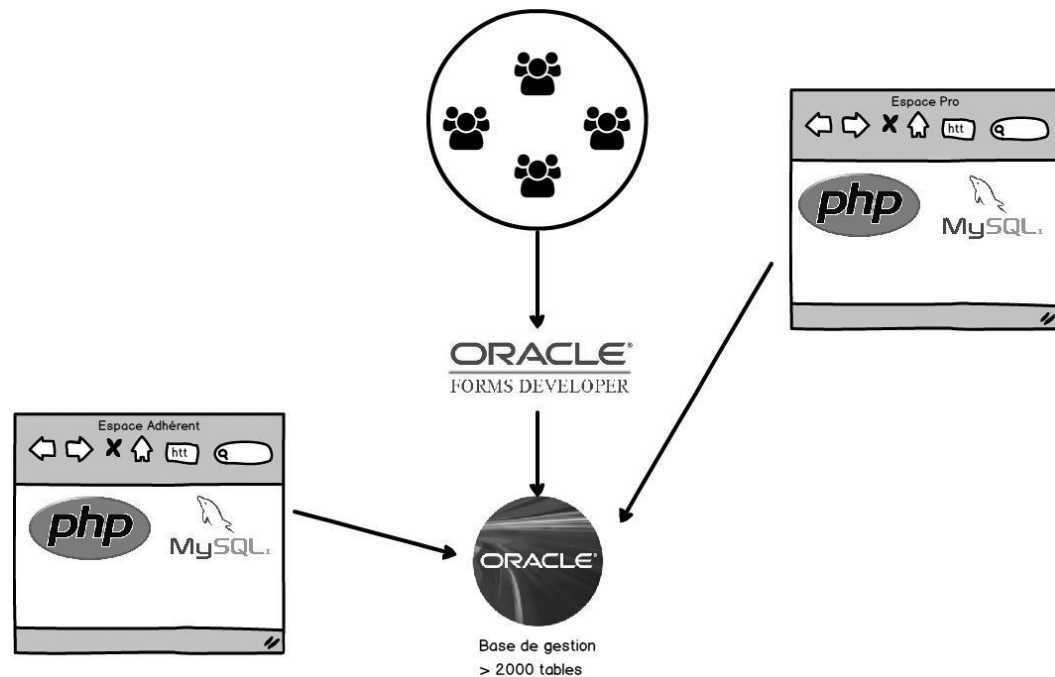
**Moteur de
règles**



Une porte vers l'extérieur

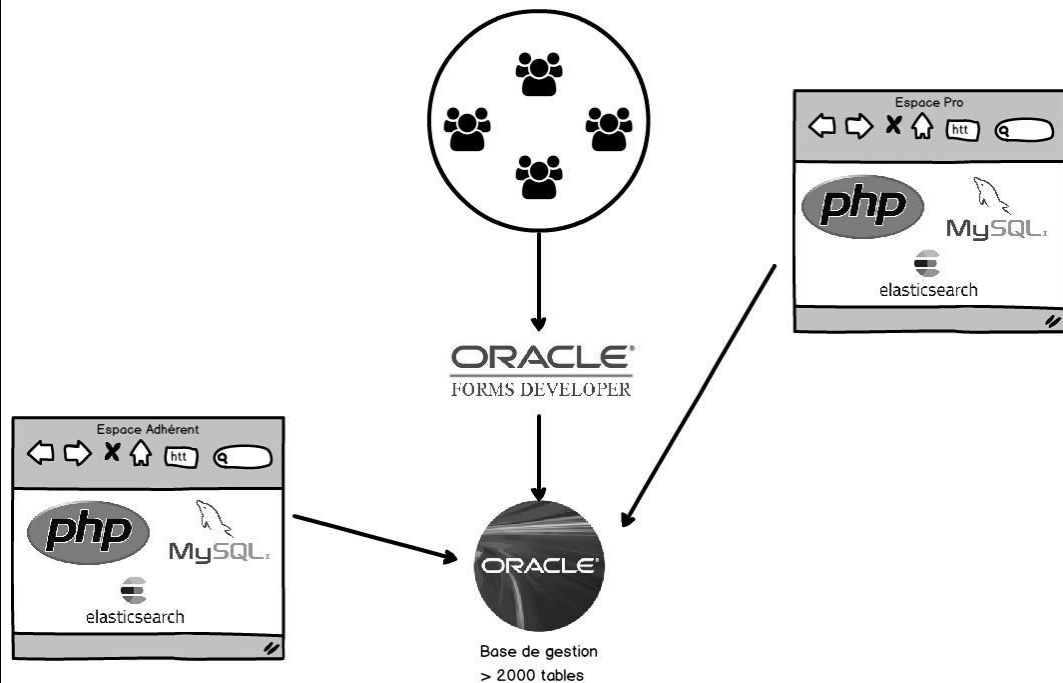


Des portes vers l'extérieur

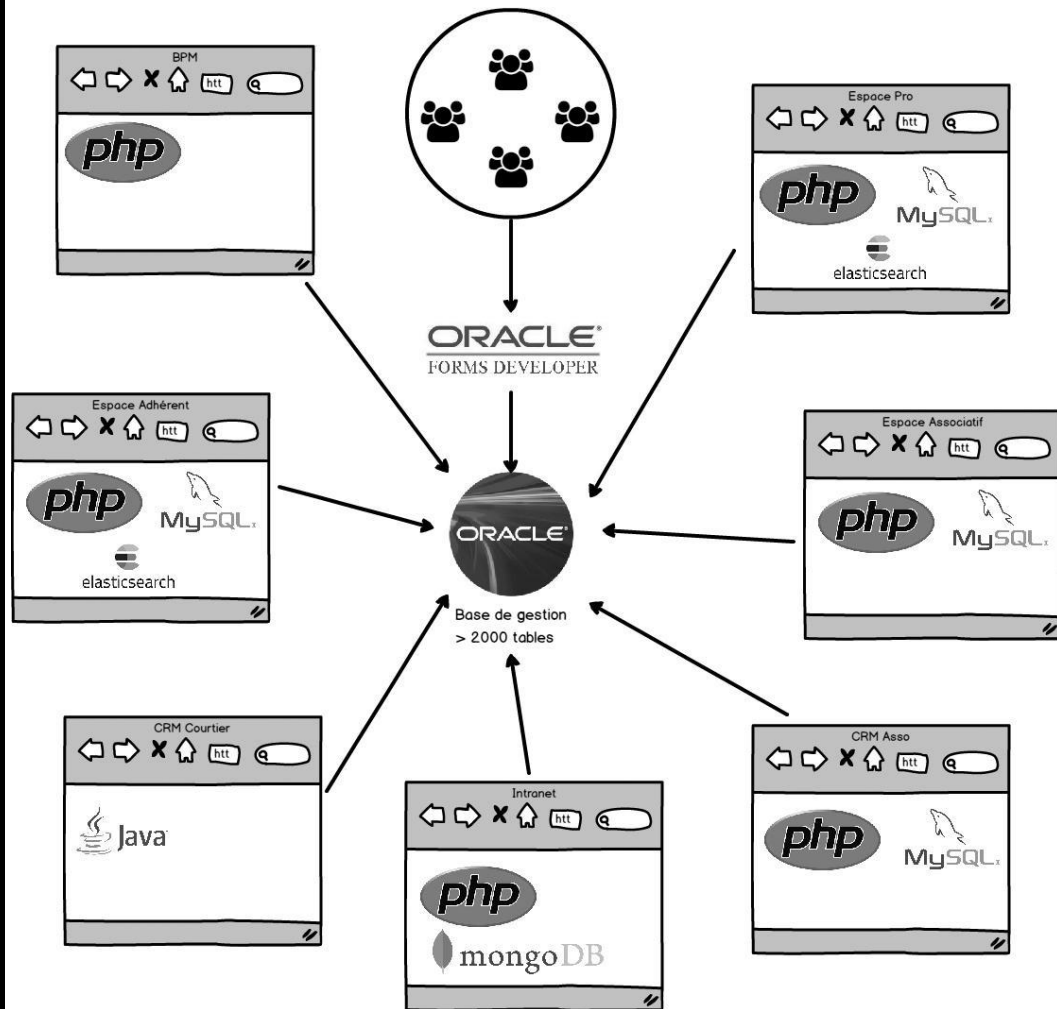


Des portes vers l'extérieur

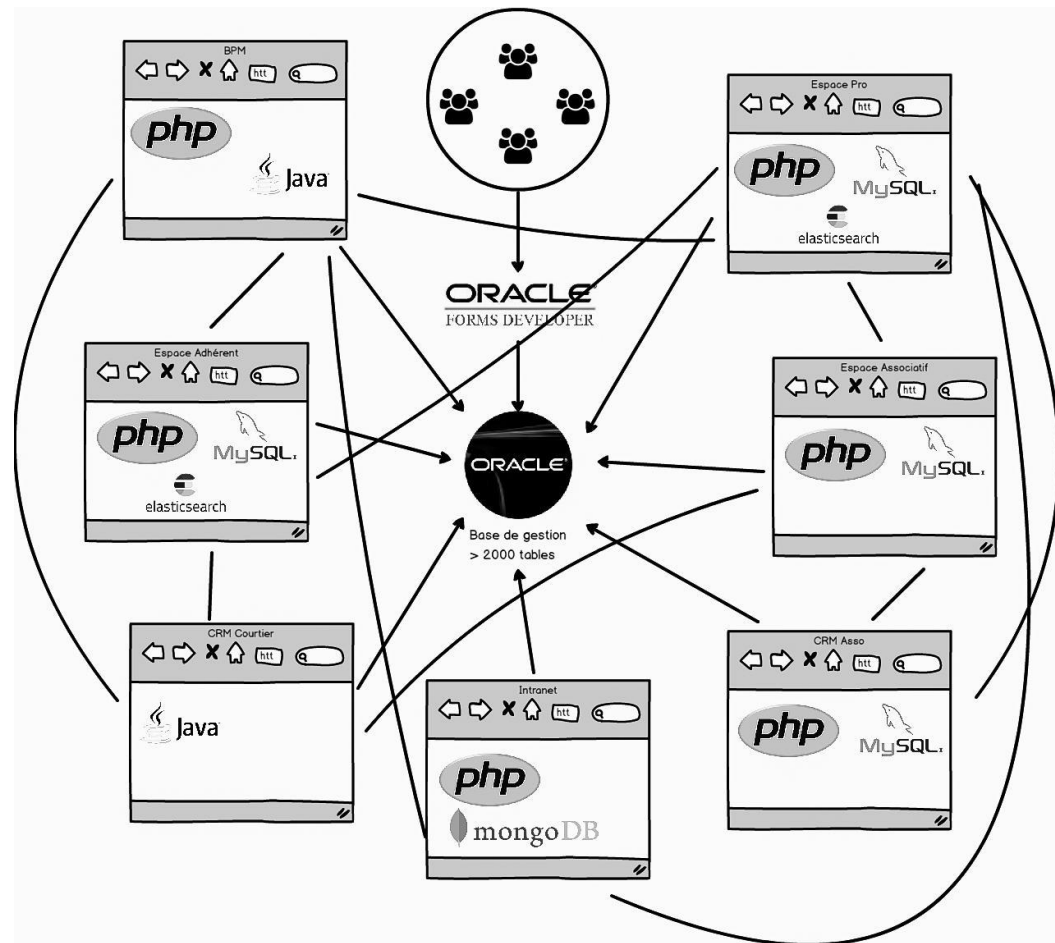
Avec des technologies pour l'extérieur



Et avec le temps...



Et encore plus de temps...



A dramatic space scene featuring the Death Star in the background, its massive circular opening and surface details visible. Several TIE fighters are scattered across the frame, some near the station and others further away in the star-filled void. A semi-transparent white box is overlaid on the left side of the image.

Une galaxie de services

A black and white photograph of the animated characters Shrek and Donkey from the movie 'Shrek'. They are standing in a cobblestone town square with medieval-style buildings in the background. Shrek is on the right, looking slightly to the left with a concerned expression. Donkey is on the left, looking up at Shrek. A semi-transparent white rectangular box is overlaid on the left side of the image, containing the text 'Agiliser le SI'.

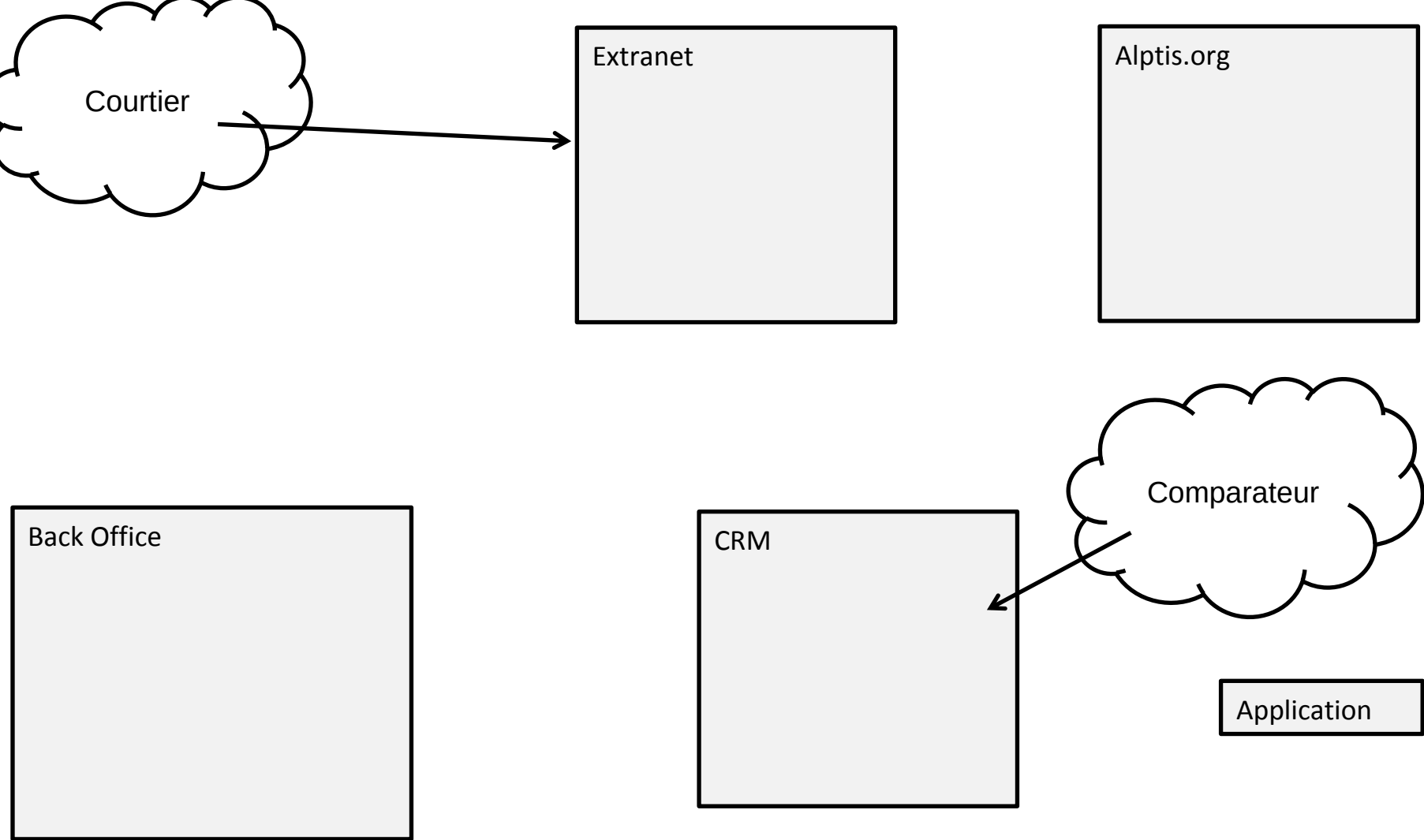
Agiliser le SI

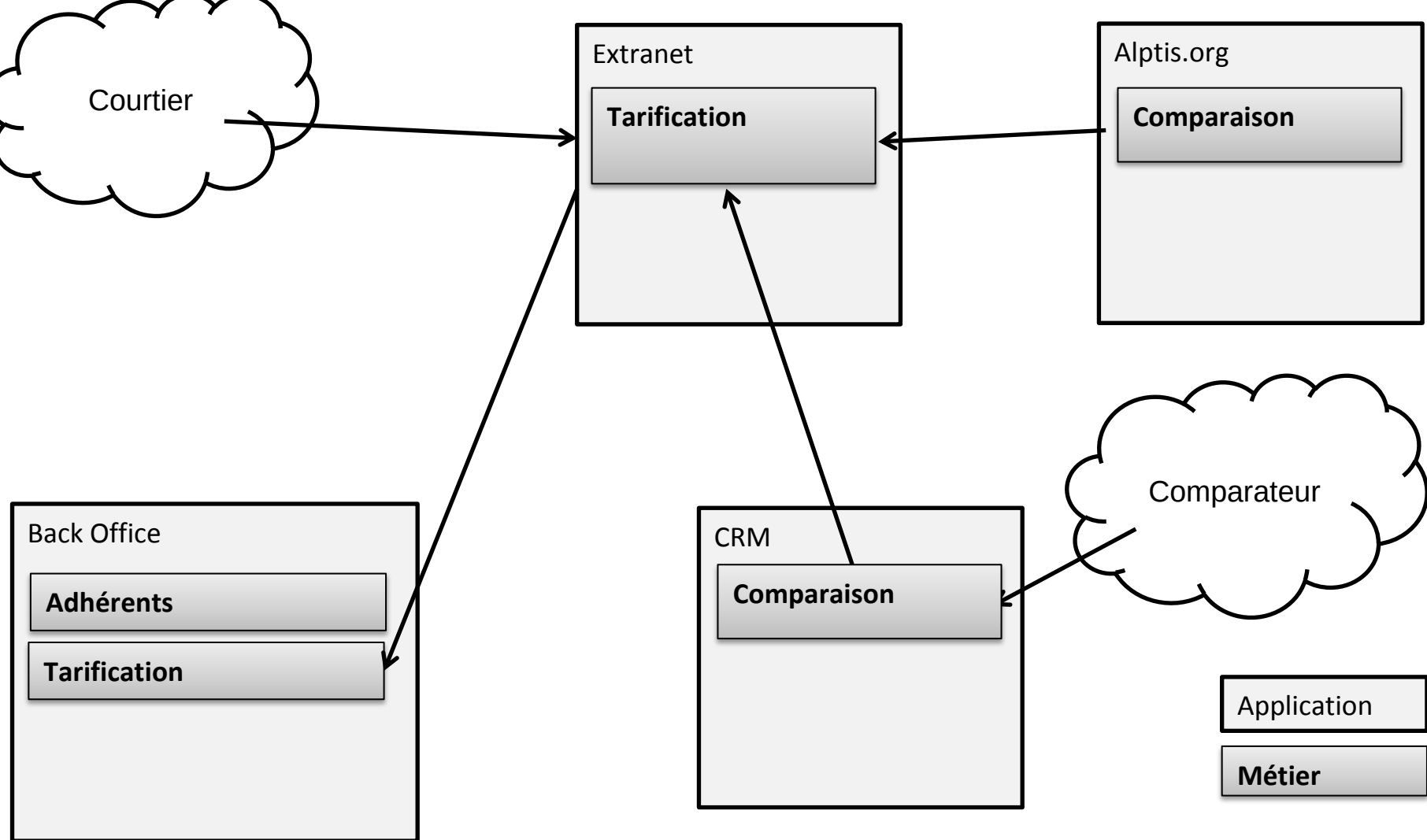


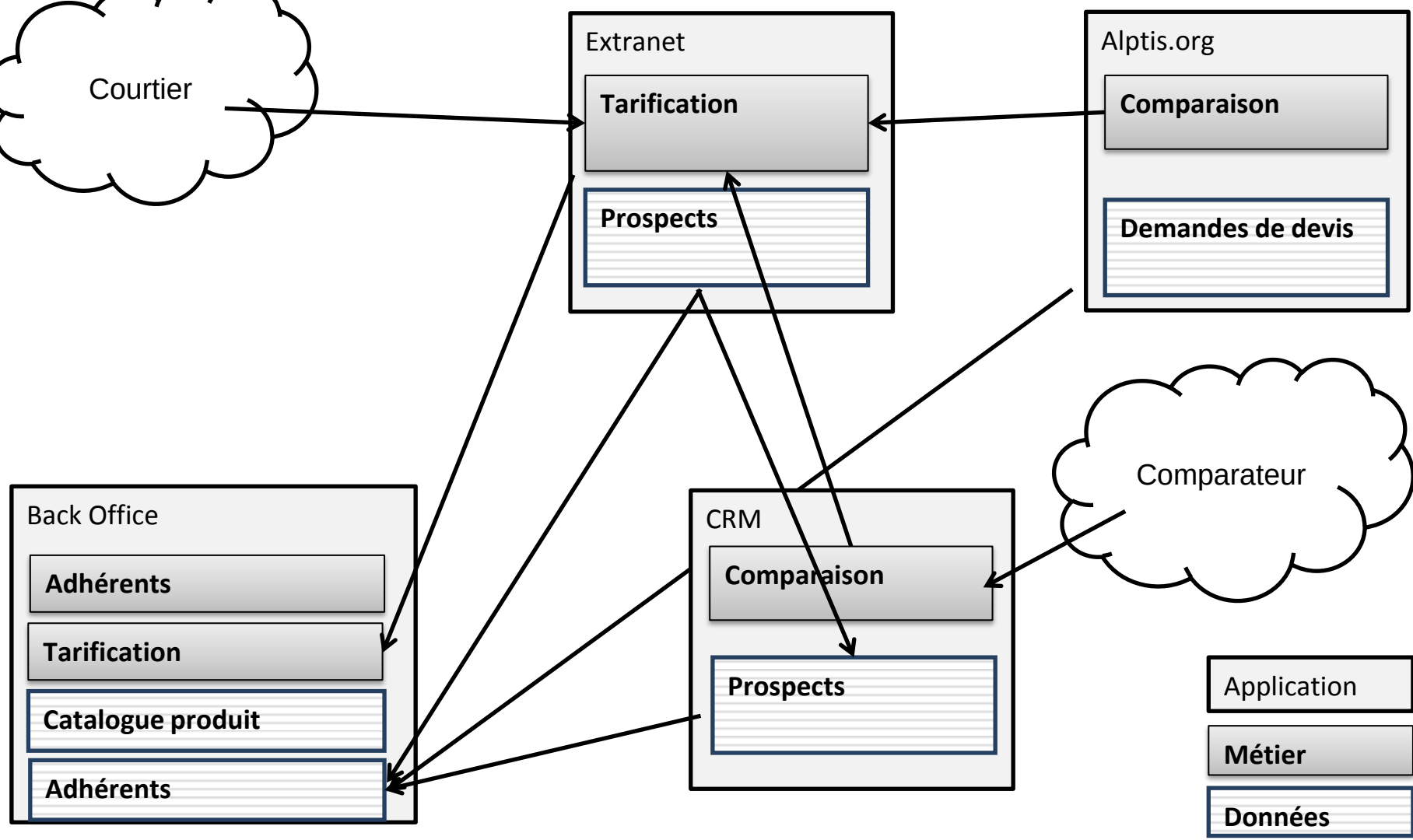
**Écrire de nouvelles
solutions**

Agilité & SI









A large pile of unsorted, multi-colored LEGO bricks, including various shapes and sizes, filling the background. The bricks are in shades of grey, white, and black, creating a textured, chaotic pattern.

Agilité & SI

La mise en œuvre d'un besoin précis

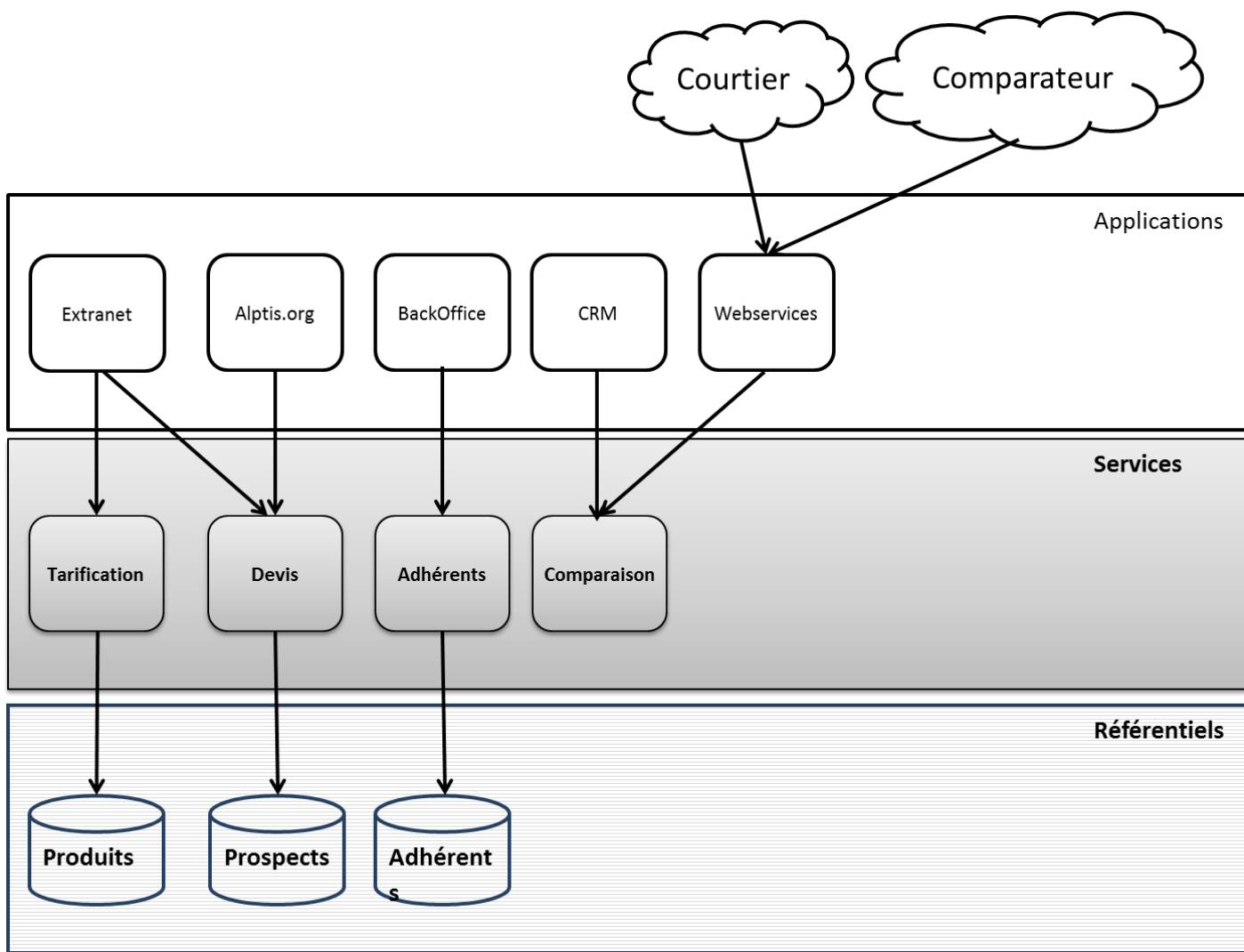
Services

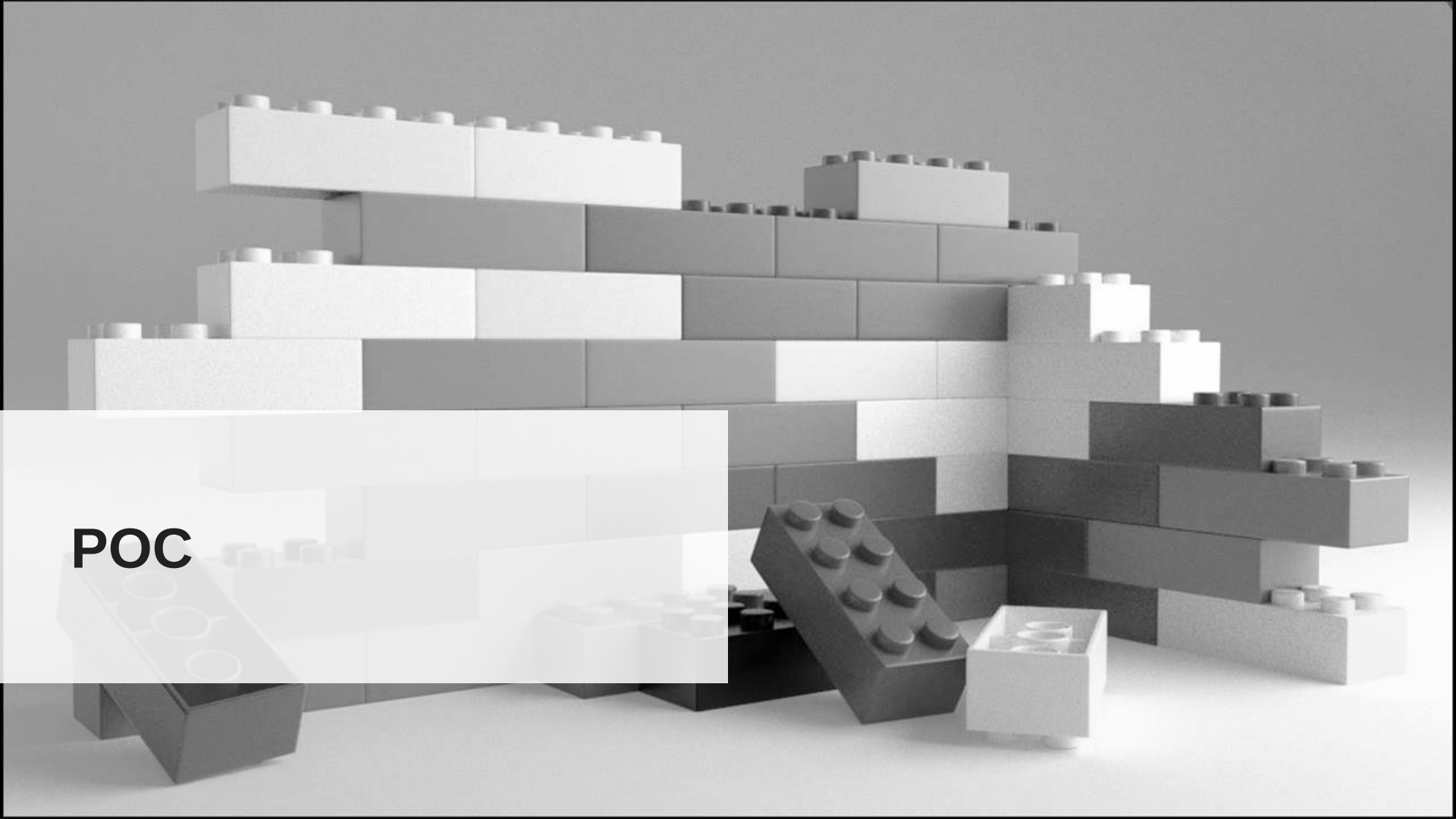
Les opérations, logiques, processus métiers

SOA

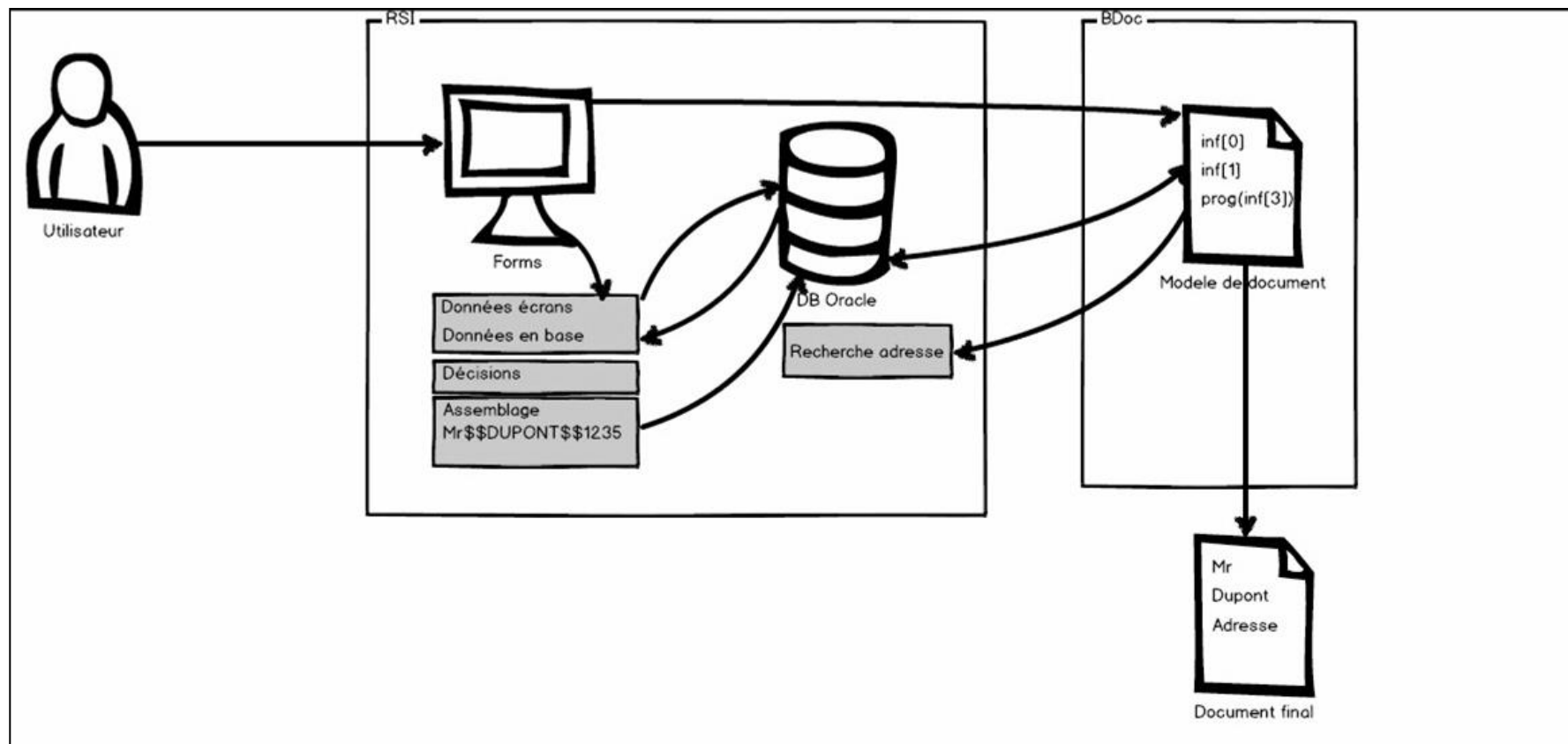
Référentiels

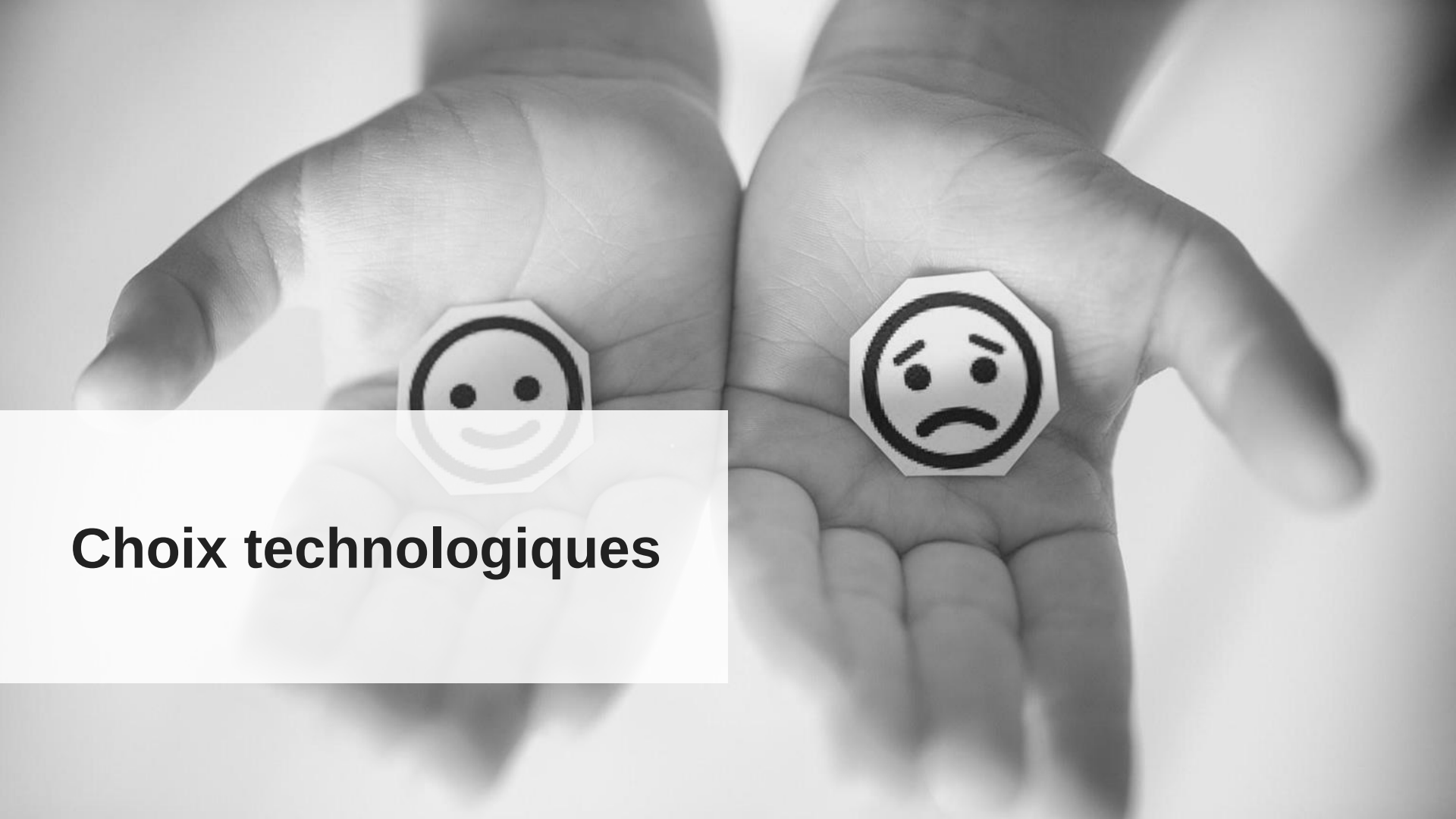
Les données partagées de l'entreprise





POC





Choix technologiques

Applications



ios



ORACLE®
Forms



Services



Référentiels

ORACLE

earlier

2000s

2010s

(monolithic)
coupling

Traditional SOA
Looser coupling

Microservices
Decoupled

My ESB is rich



Choix structurants

Java 8

Spring

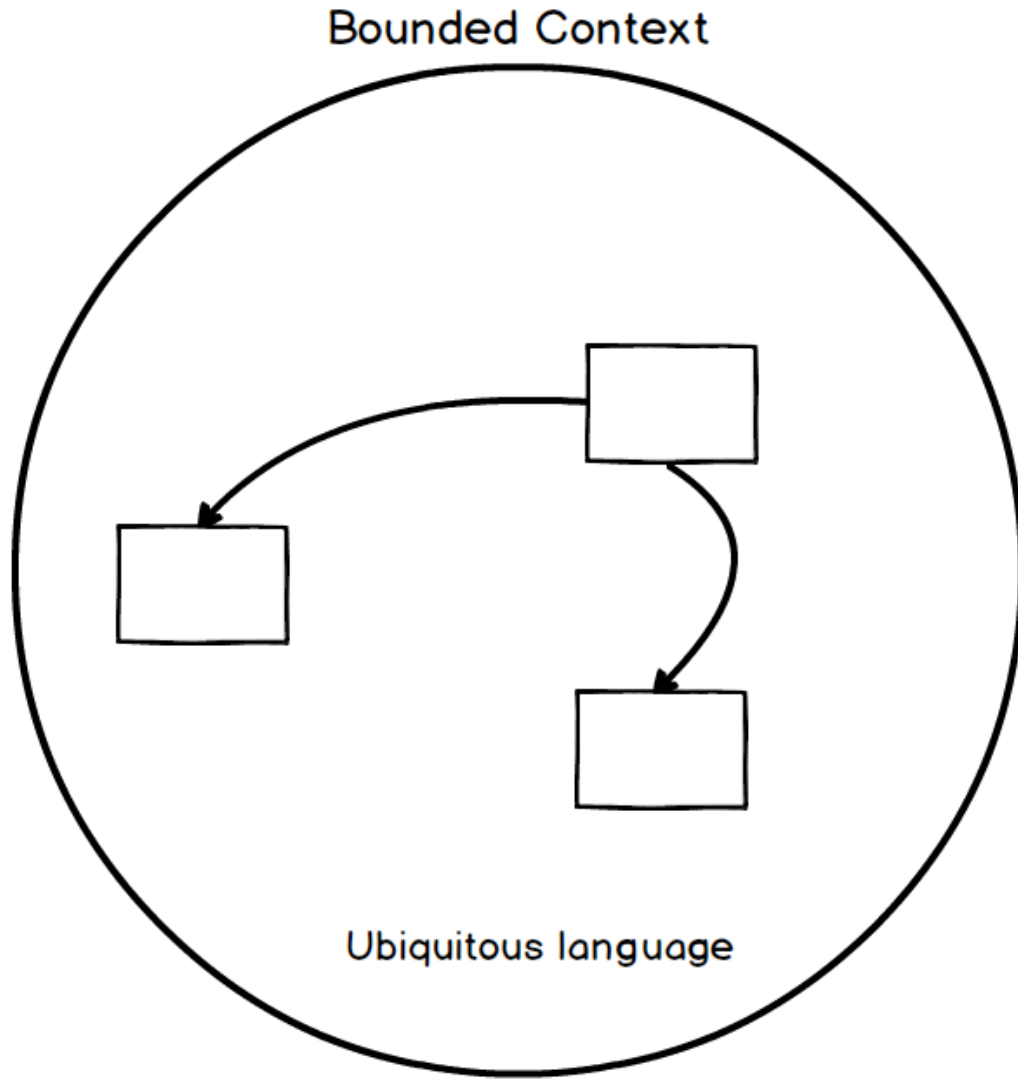
DDD

REST / Json

RabbitMQ

Swagger

DDD
En vrai



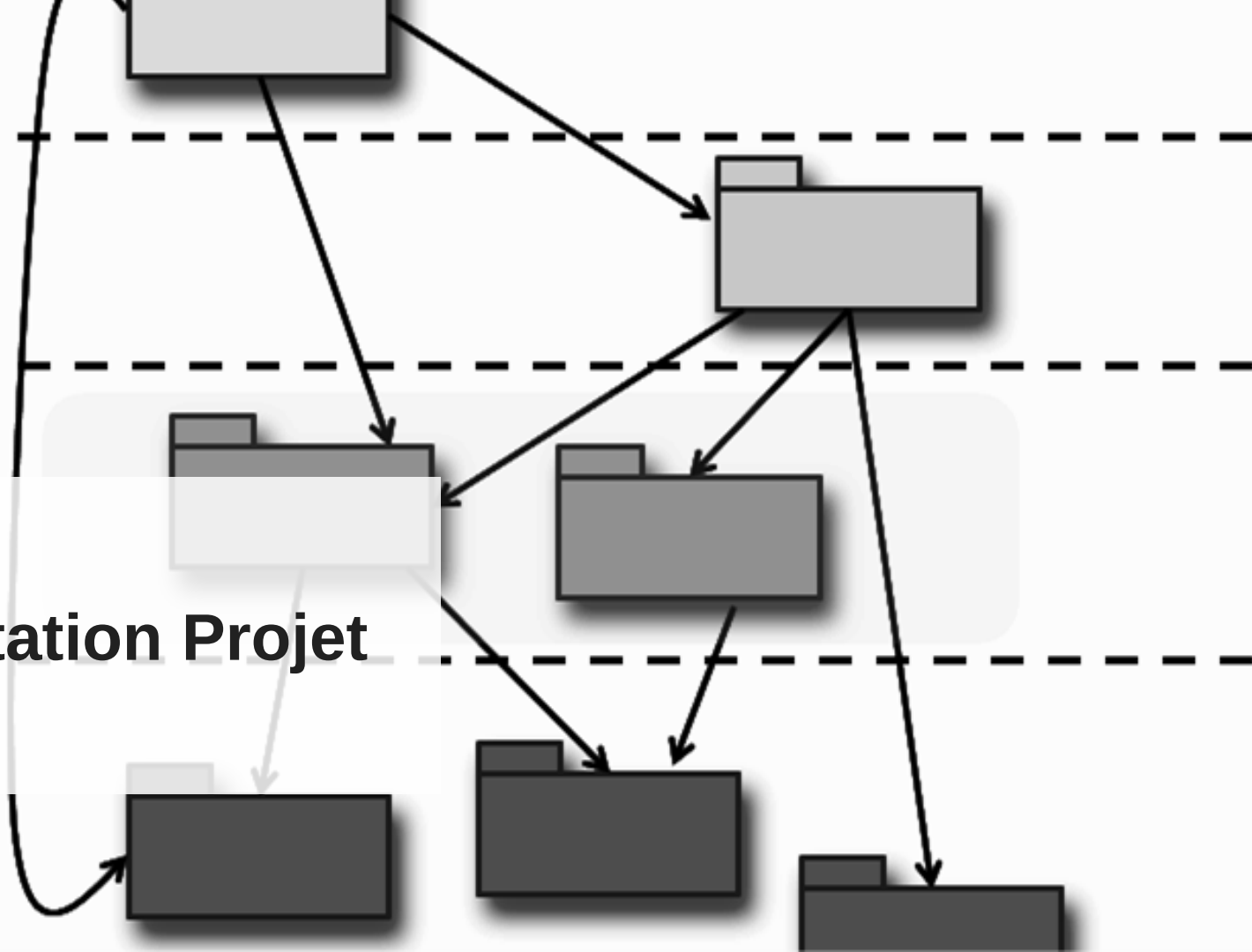
Layer

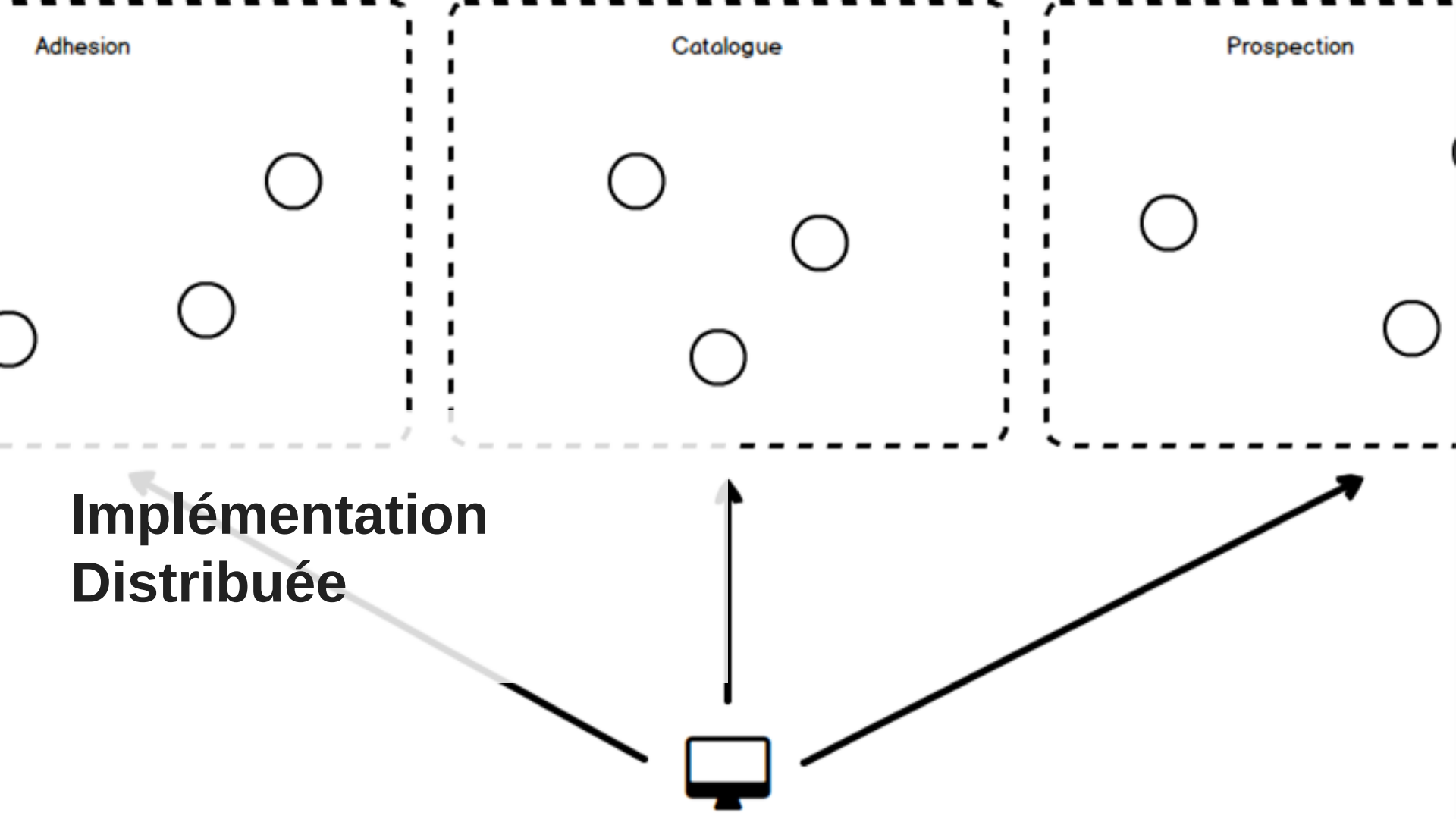
Application
Layer

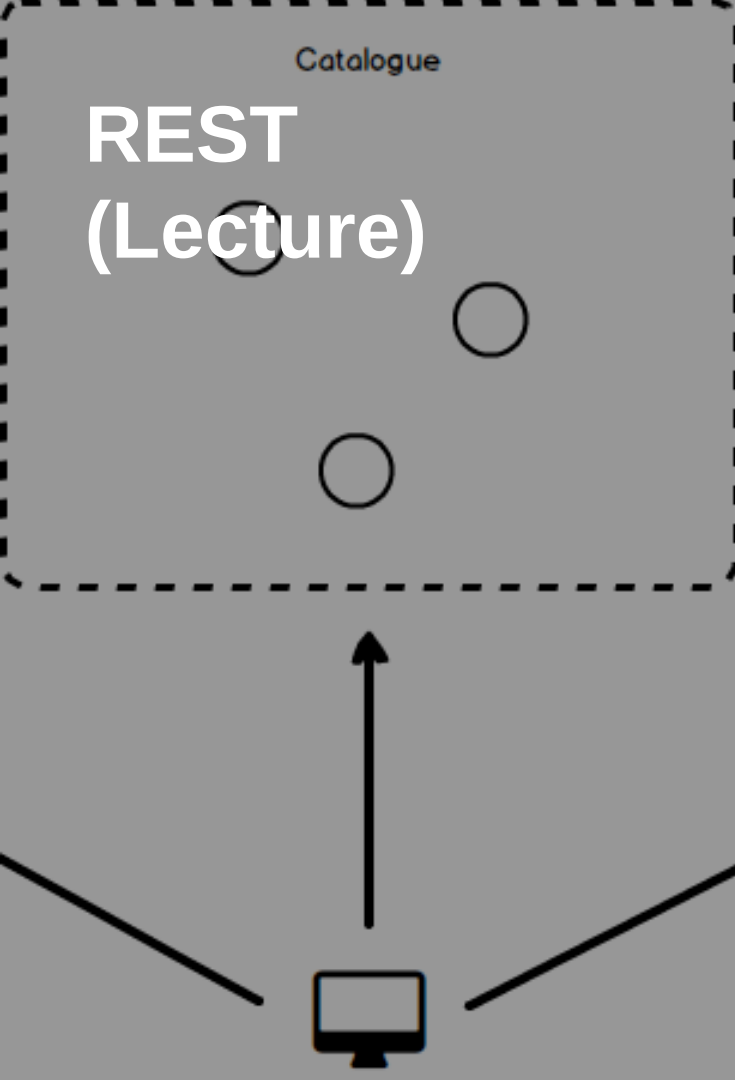
Domain
Layer

Infrastructure
Layer

Implémentation Projet







`http://environnement`

`/bounded-context`

`/ressources`

`?field=value&field-2=value`

Catalogue

REST & JSon



```
{
```

```
  uid : xxx,
```

```
  nom:
```

```
  prenom:
```

```
  assures : [
```

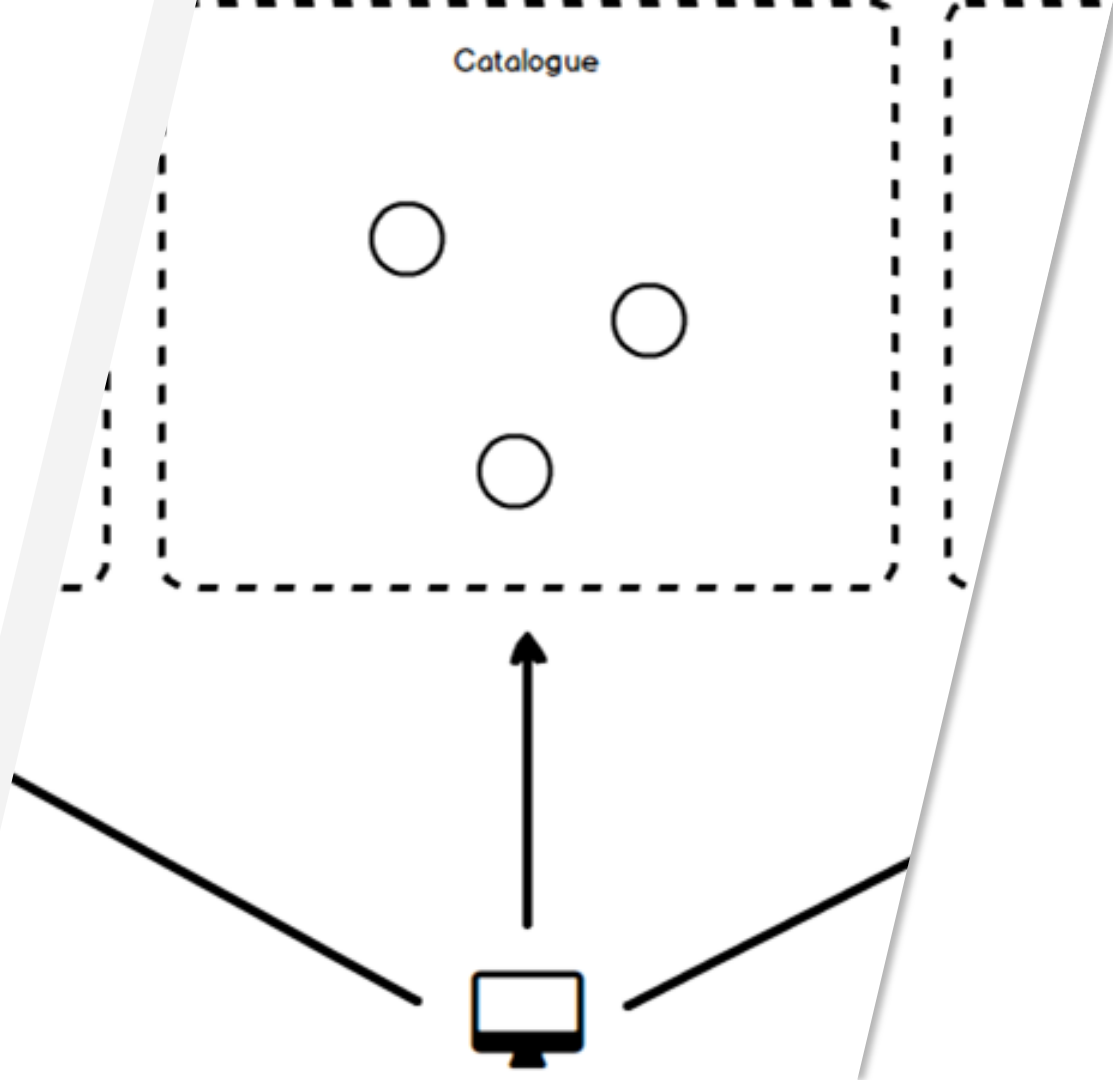
```
    { ...}, {...}, {...}
```

```
  ]
```

```
}
```

REST & Ecriture

PUT ? POST ? DELETE ?



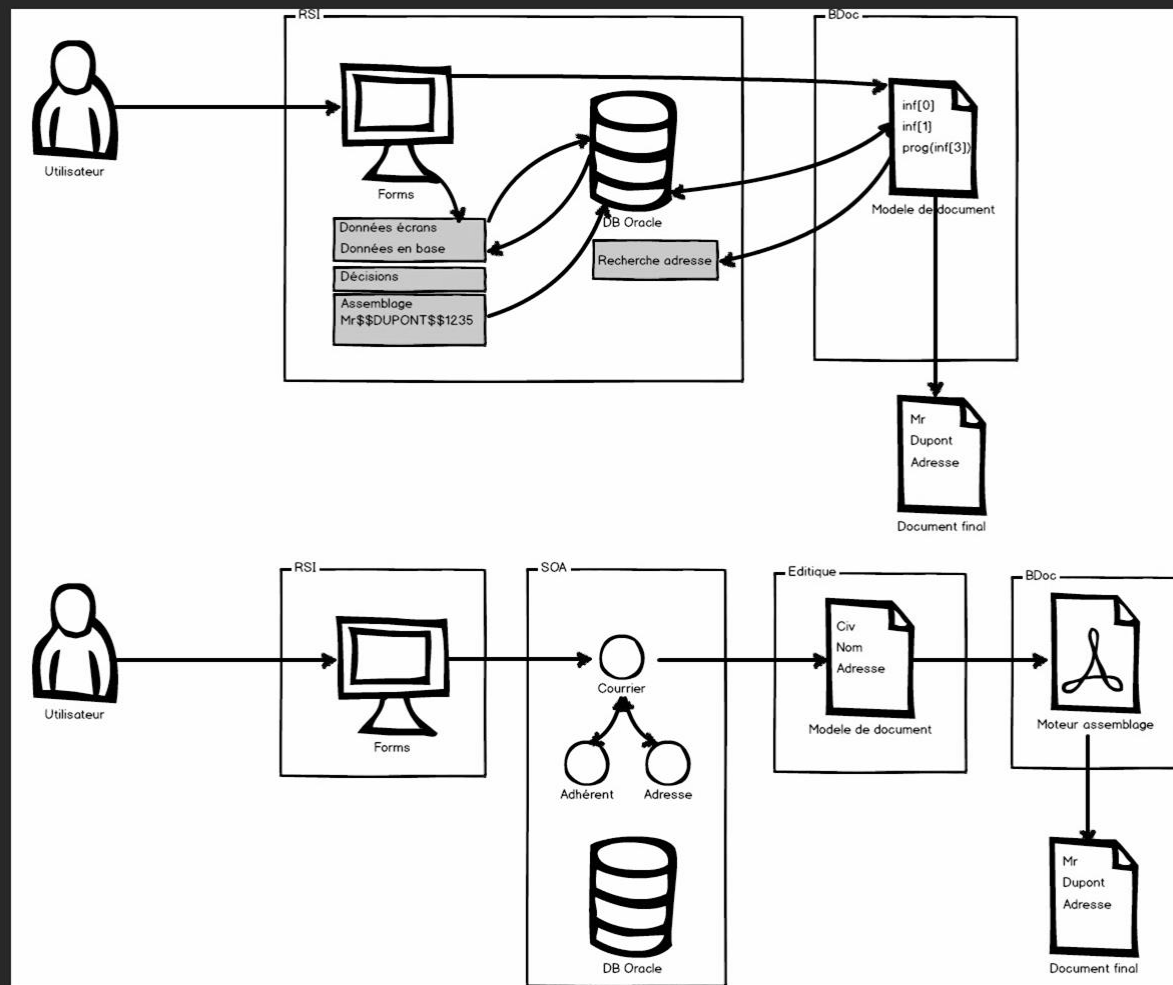
Catalogue

REST & Commandes



```
DemenagerAdherent {  
  adherent : {  
    uid: @adherent  
  },  
  adresse : {  
    rue: "",  
    code_postal: "",  
    ville: ""  
  }  
}
```

Avant / Après



Situation & Roadmap

40 à 50 bounded contexts

5 ans déploiement progressif

**Bonne nouvelle, on
lance le premier projet
!**

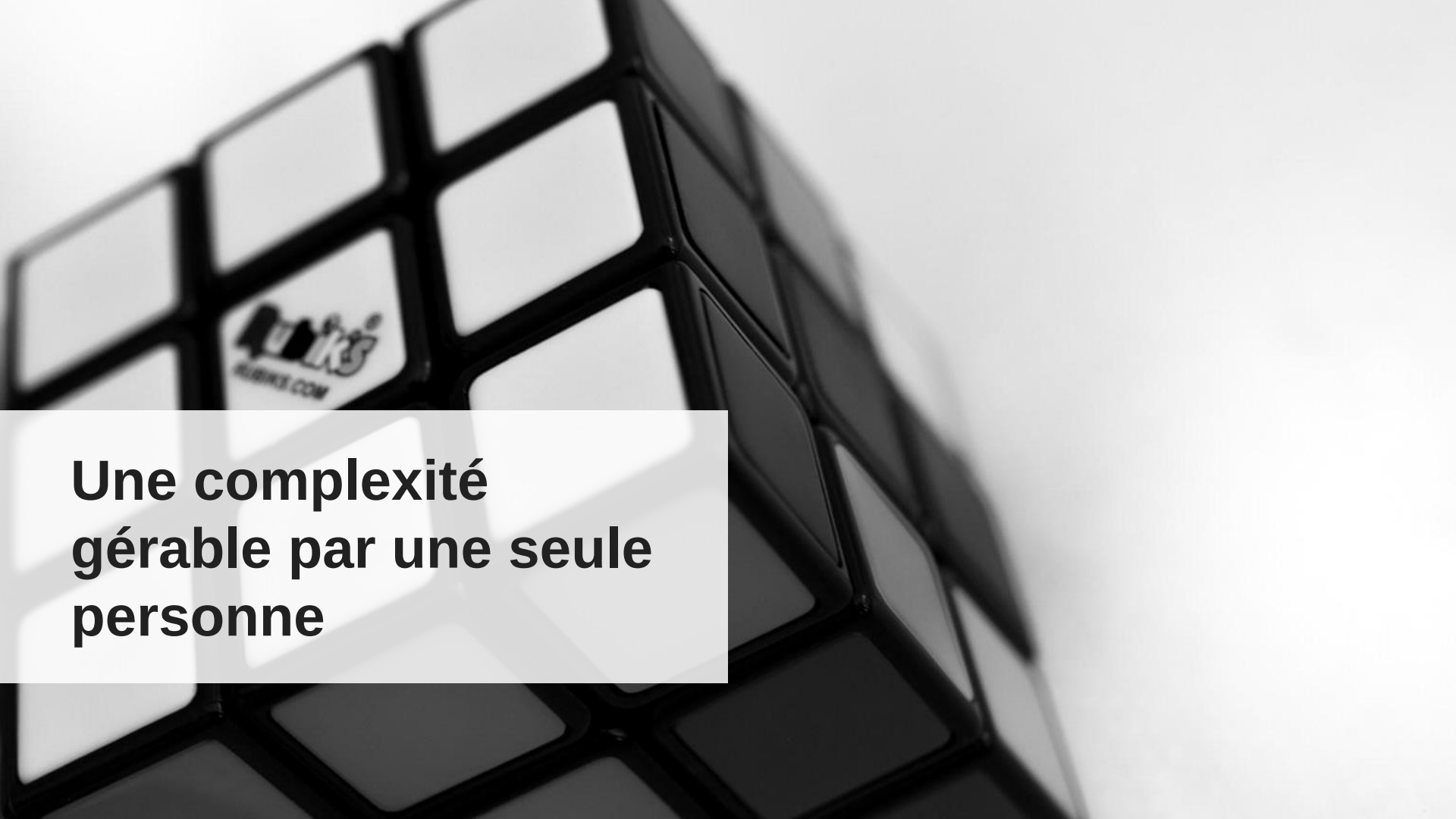




**La V1 est pour dans 6
mois**



Conception des Bounded Context



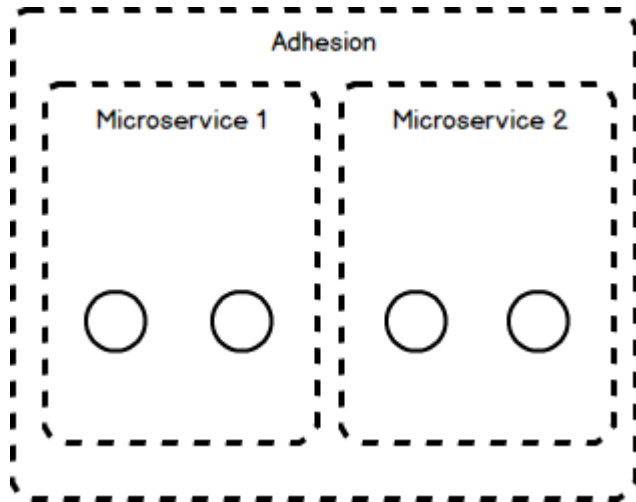
**Une complexité
gérable par une seule
personne**

Bounded Context distribué

Un bounded context

= des “microservices”

= des “services”



Situation & Roadmap (mise à jour)

40 à 50 bounded contexts

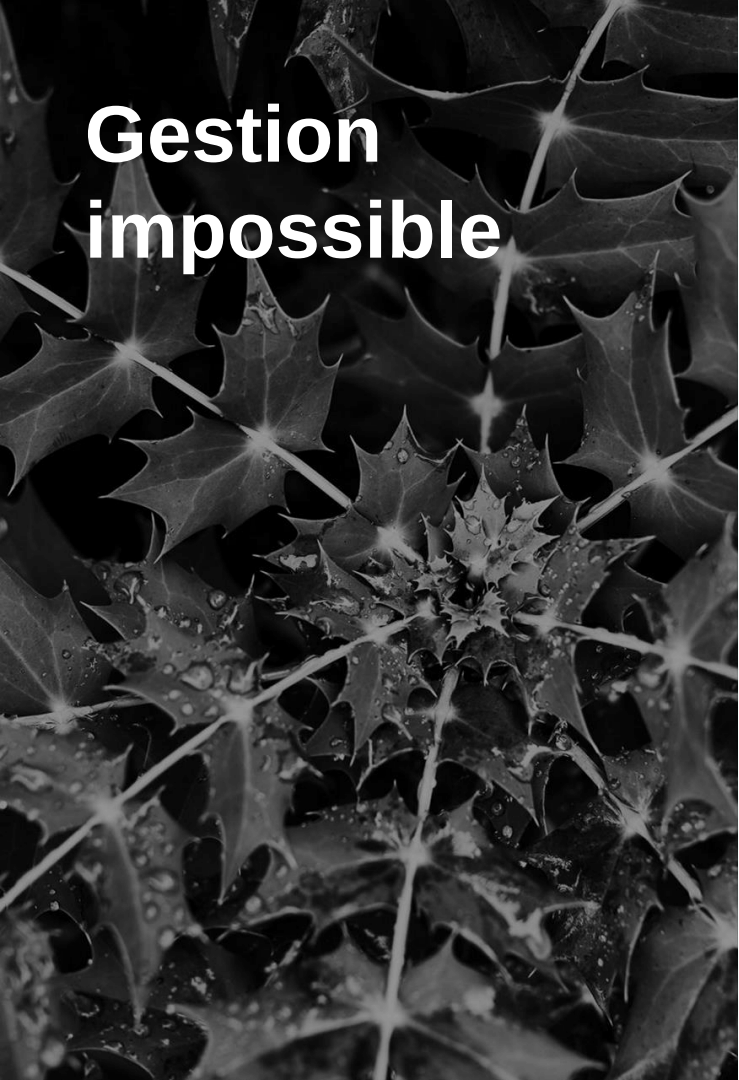
Plusieurs centaines de microservices

5 ans déploiement progressif

Première livraison dans 6 mois



**Plus il y a de fous,
plus on le devient.**



Gestion impossible

Documentation lancement / arrêt

Création d'un projet

Configuration

Packaging

Livraison

Dépendances entre projets

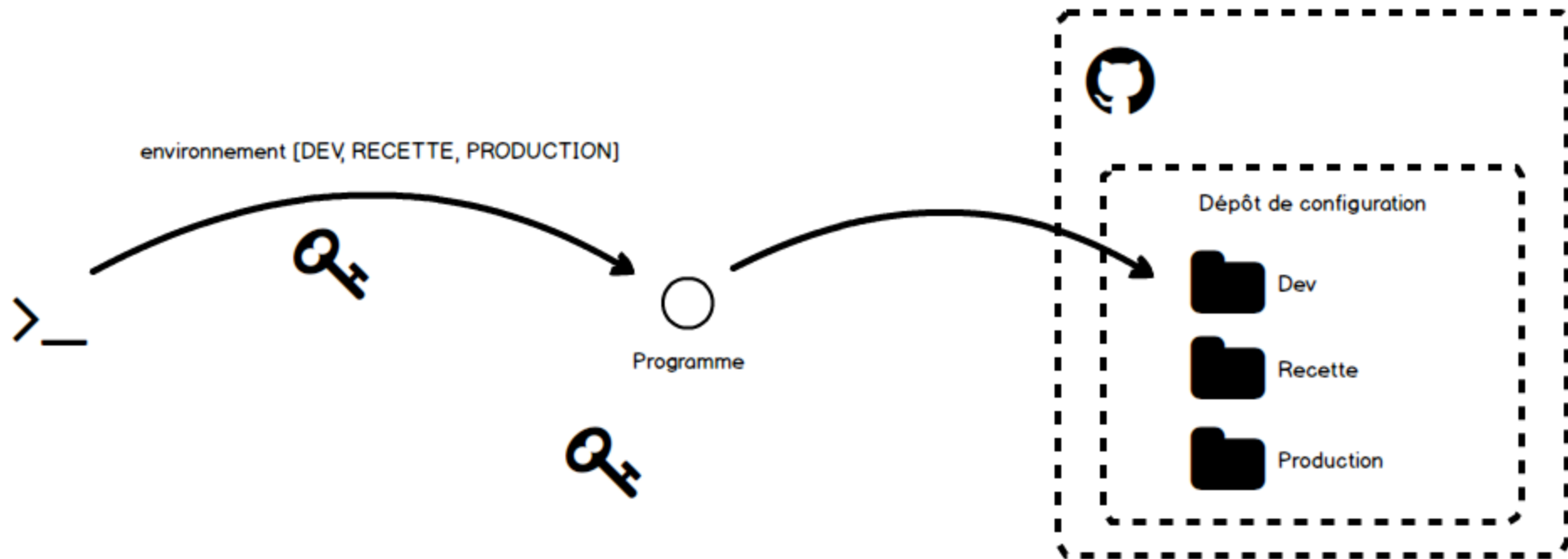
Jobs Jenkins

Logs

Sécurité

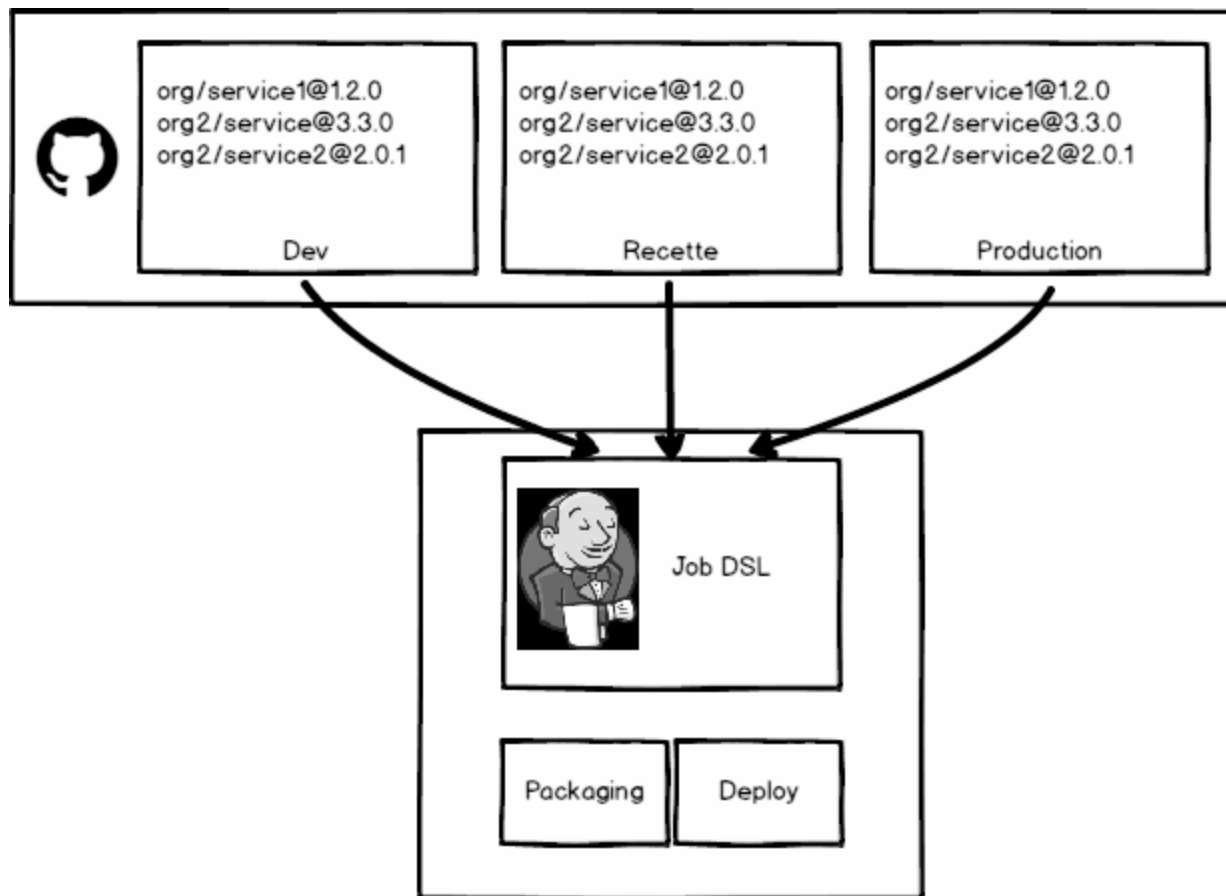


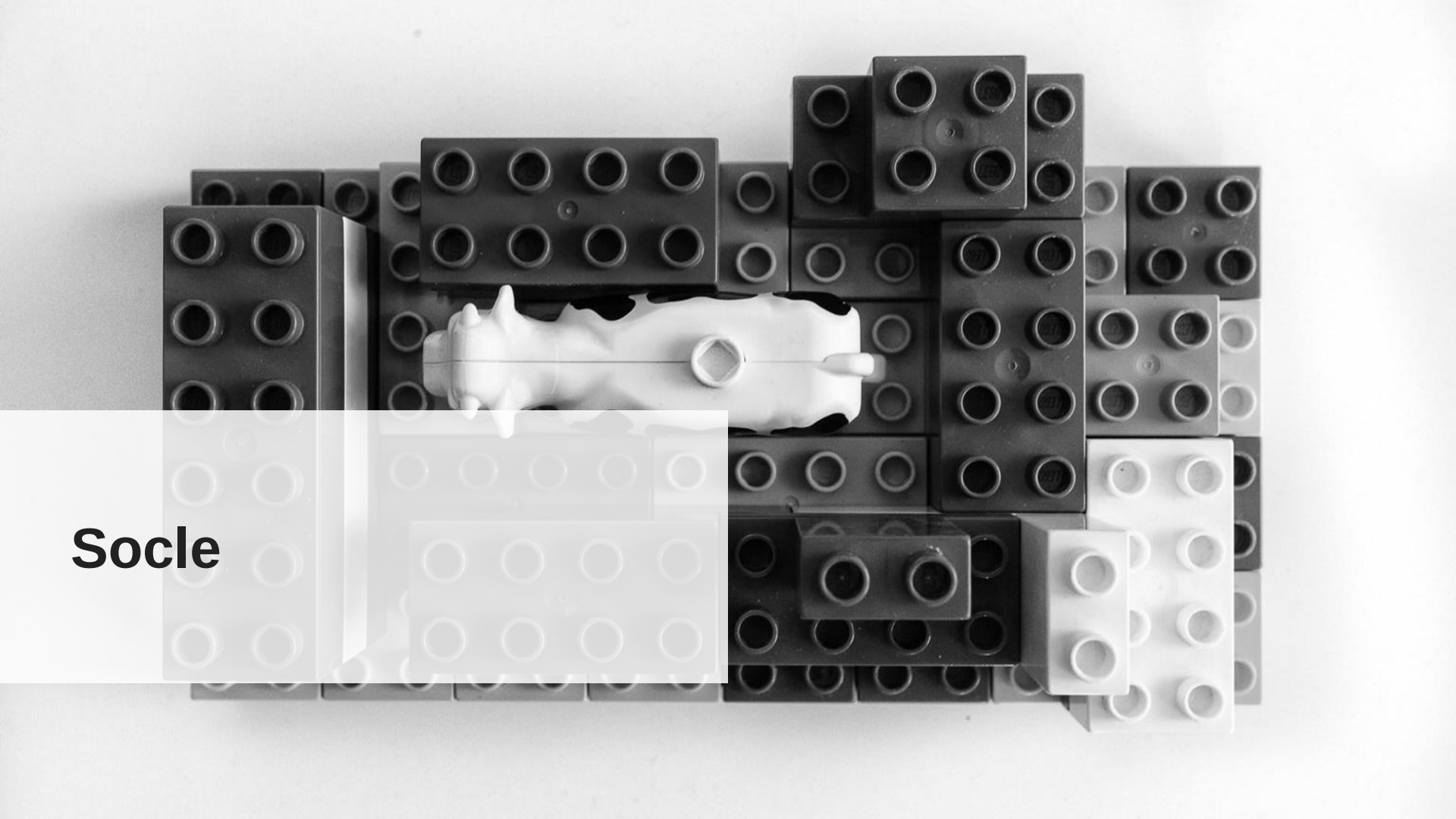
Configuration Server (SpringCloud)



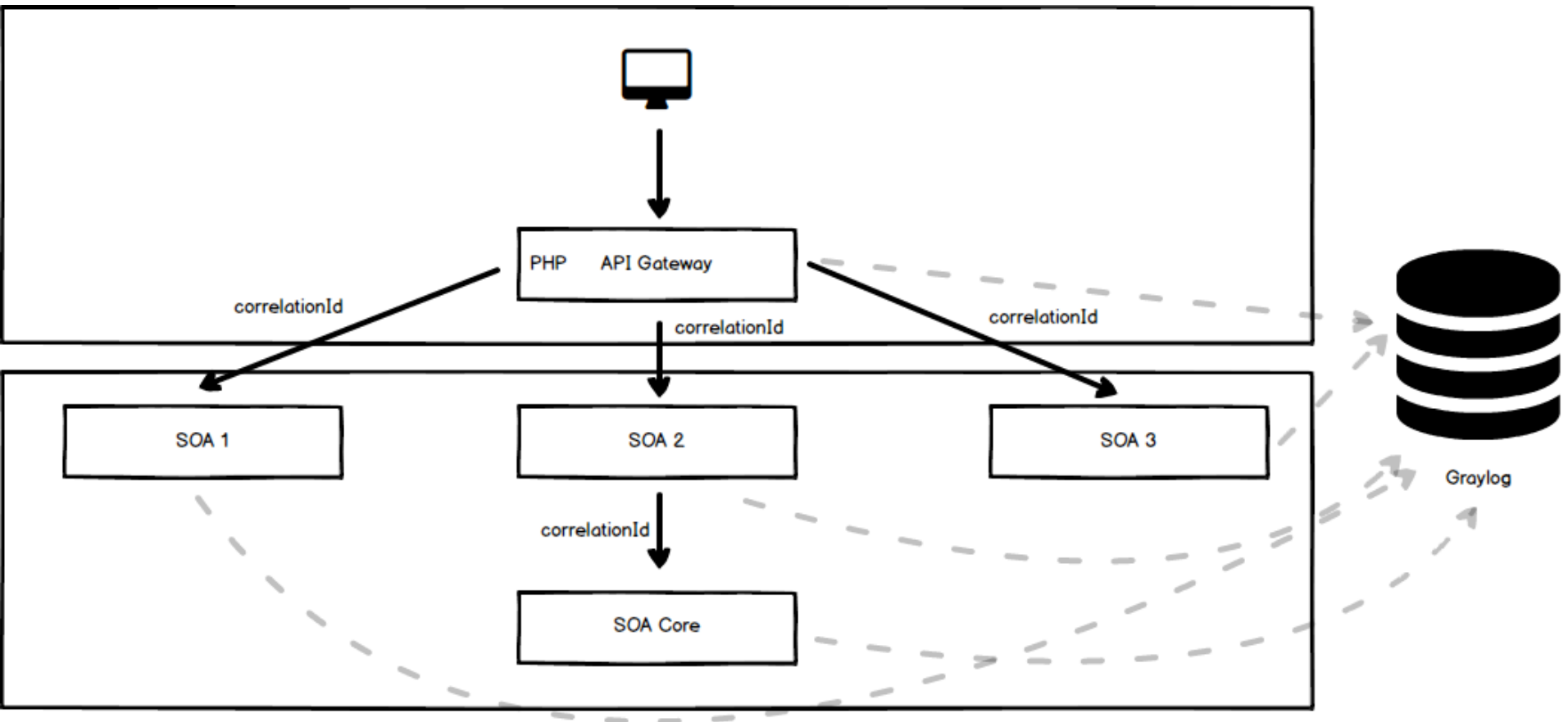


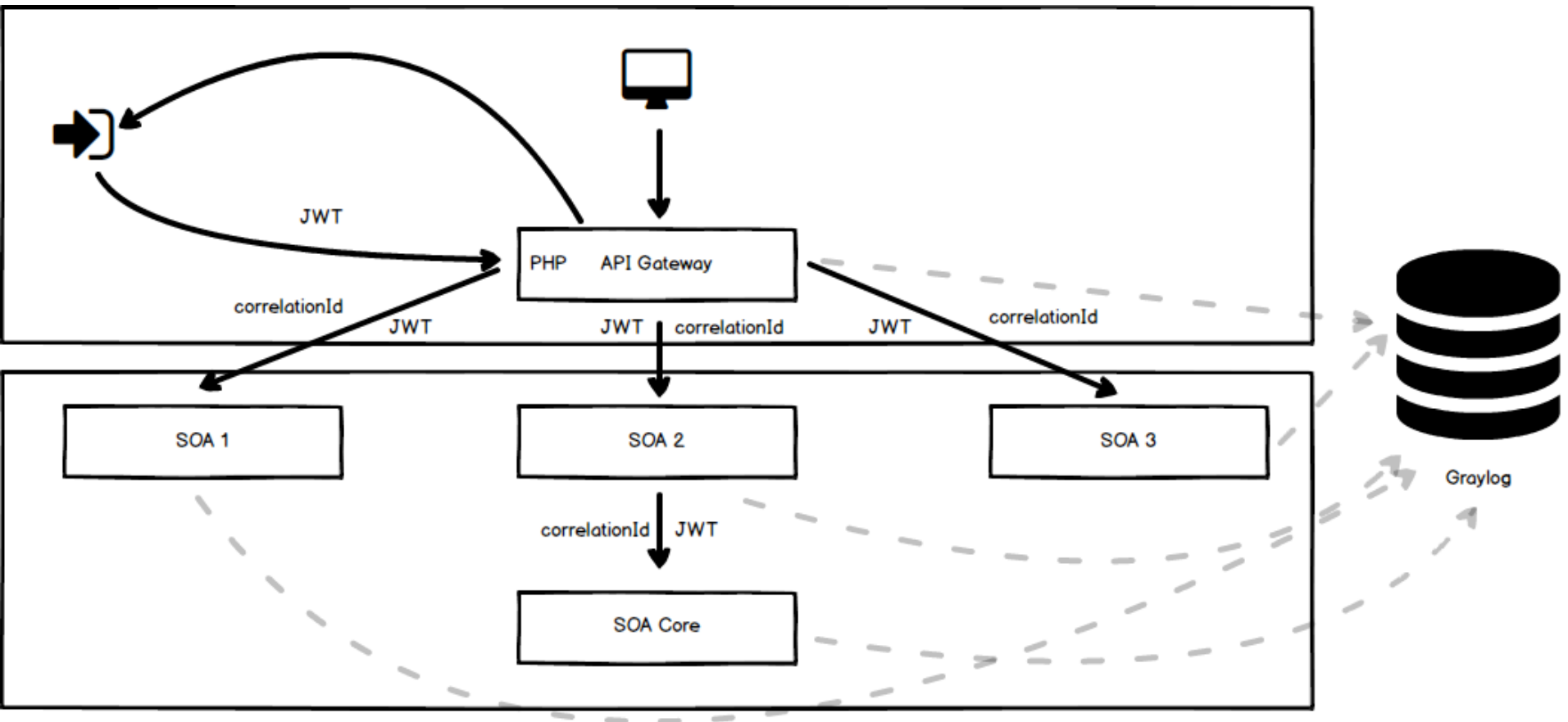
Gestion des jobs & Photographie du système





Socle







**Une boîte pour les
contenir tous**



Infrastructure & Conteneurisation

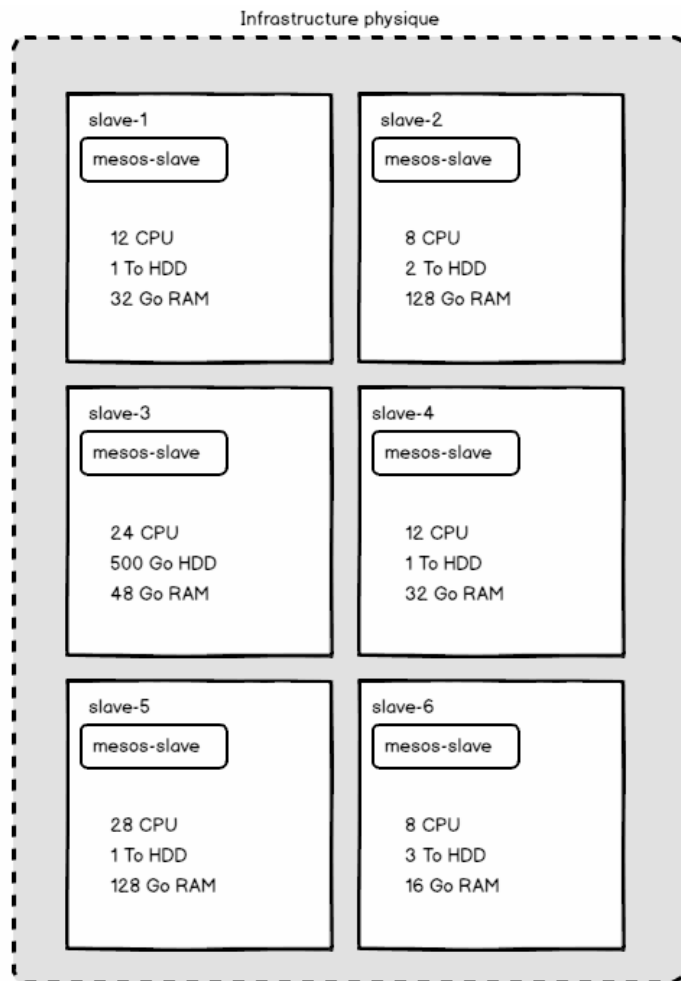
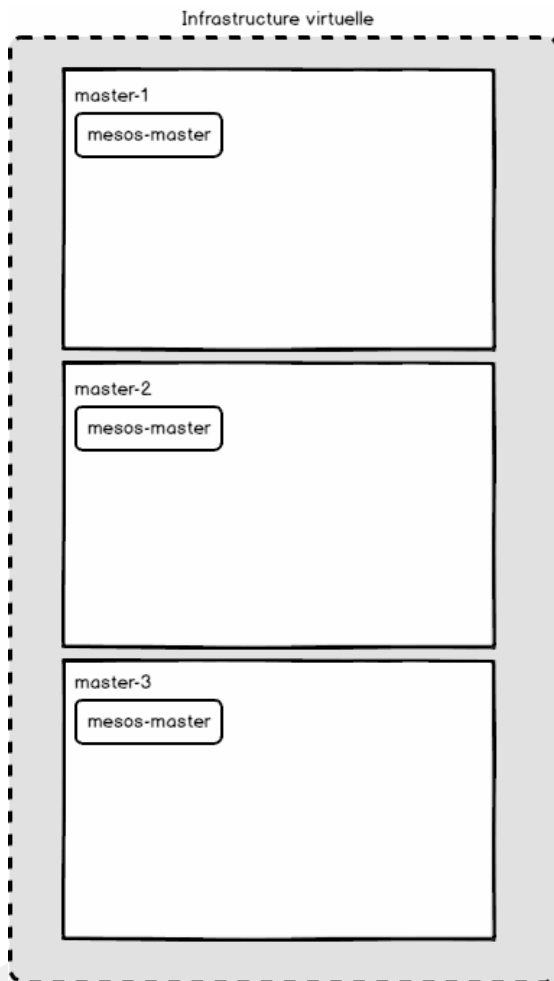
A black and white photograph of a pair of running shoes, likely Salomon, with white laces and a white headband, resting on a white surface. The shoes are positioned side-by-side, with the headband arching over them. The background is blurred, showing what appears to be a desk or table with some papers and a chair.

Mesos & Marathon

Mesos

Quelles ressources sont disponibles ?

Où sont-elles disponibles ?



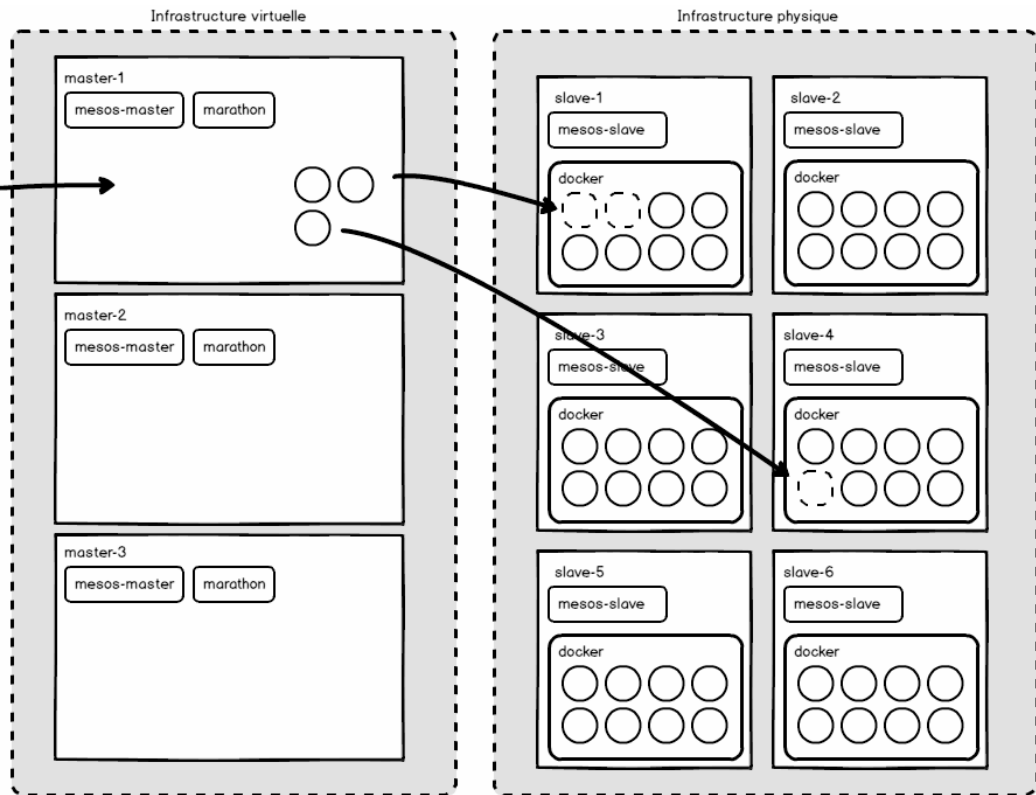
Marathon

Quels sont les logiciels ?

De quoi ont-ils besoin ?

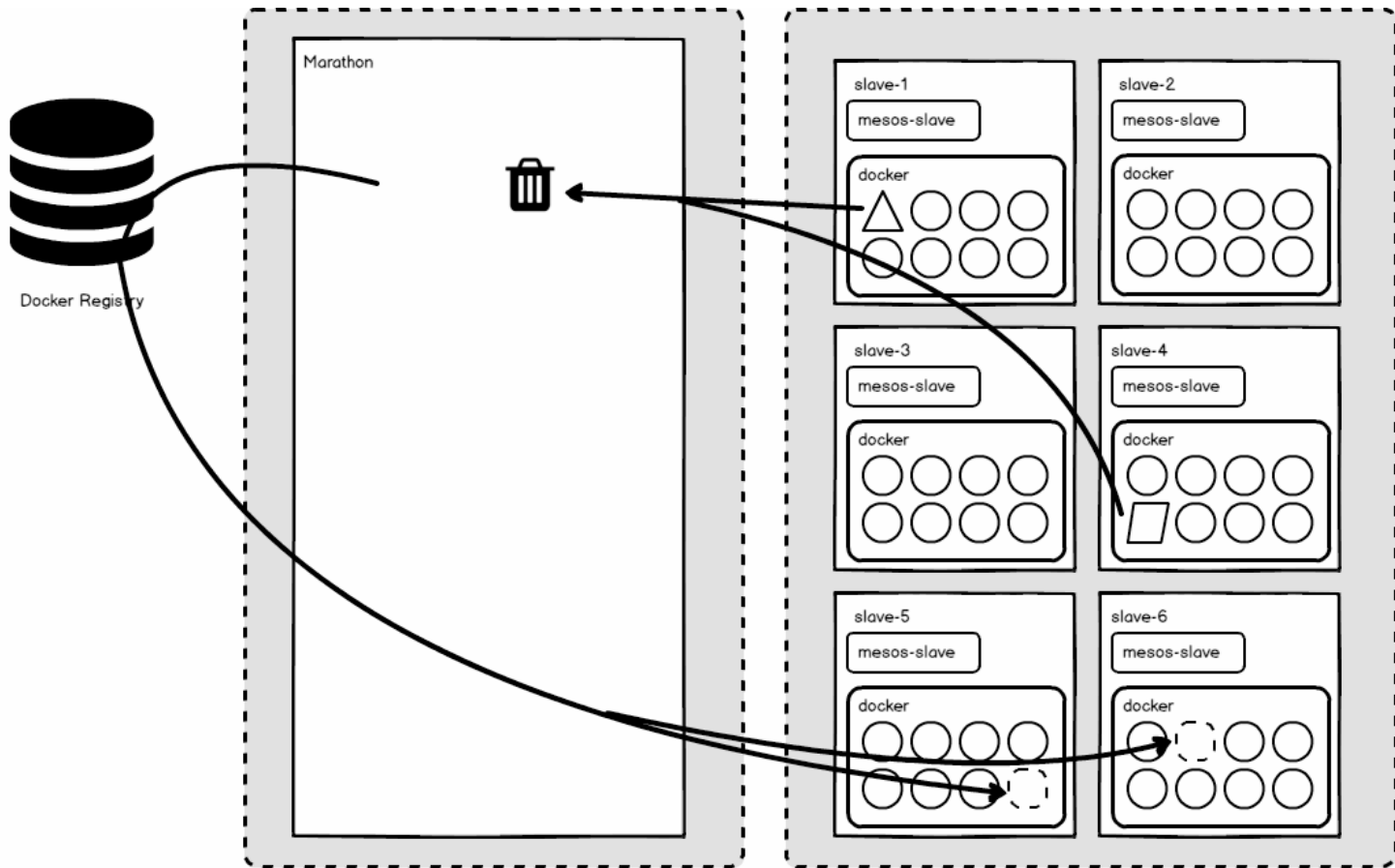
Quels sont les serveurs disponibles ?

Déploiement.



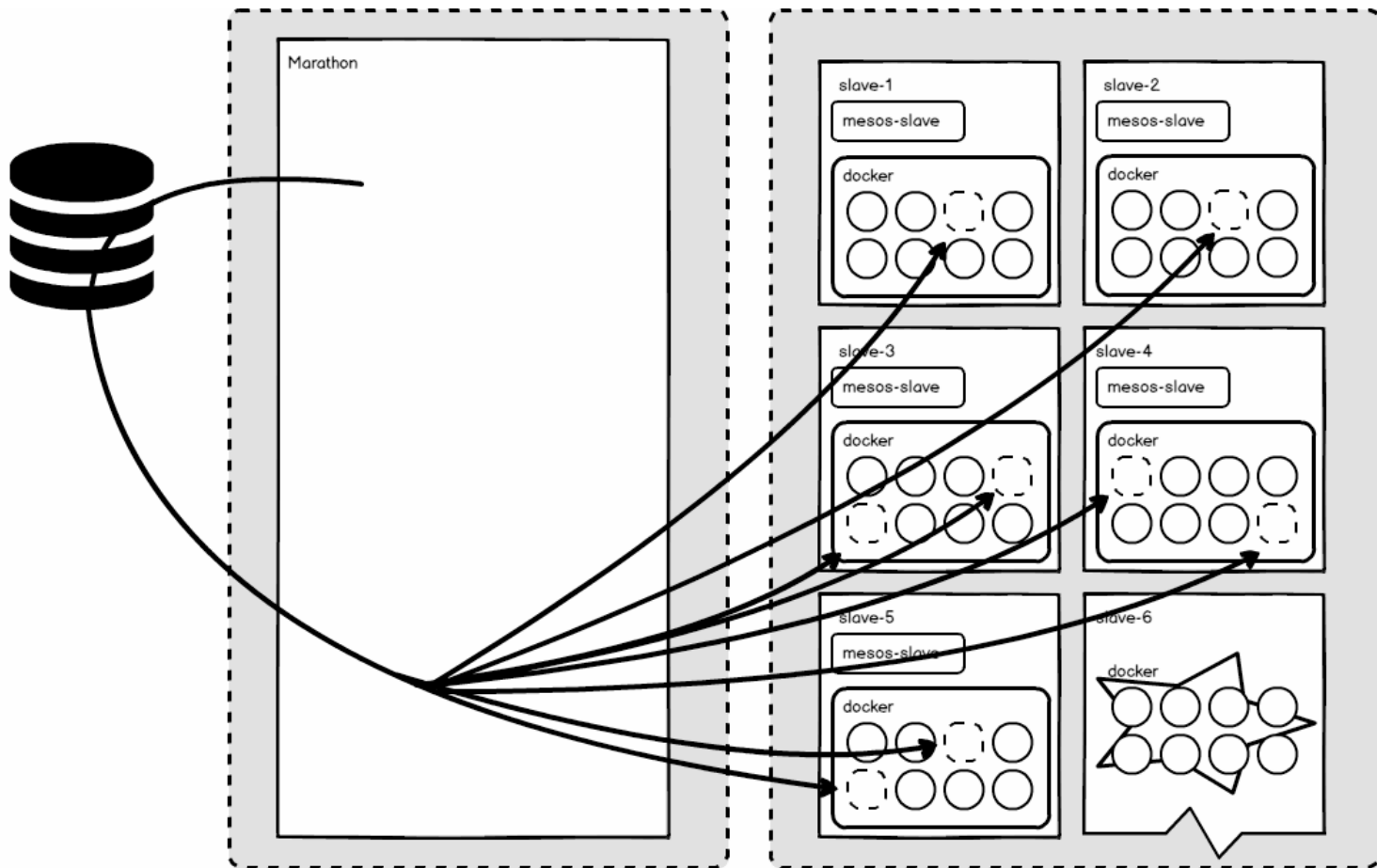
Marathon

Vérifie la santé des
logiciels déployés
(HealthCheck)



Marathon

Recouvre les
incidents.

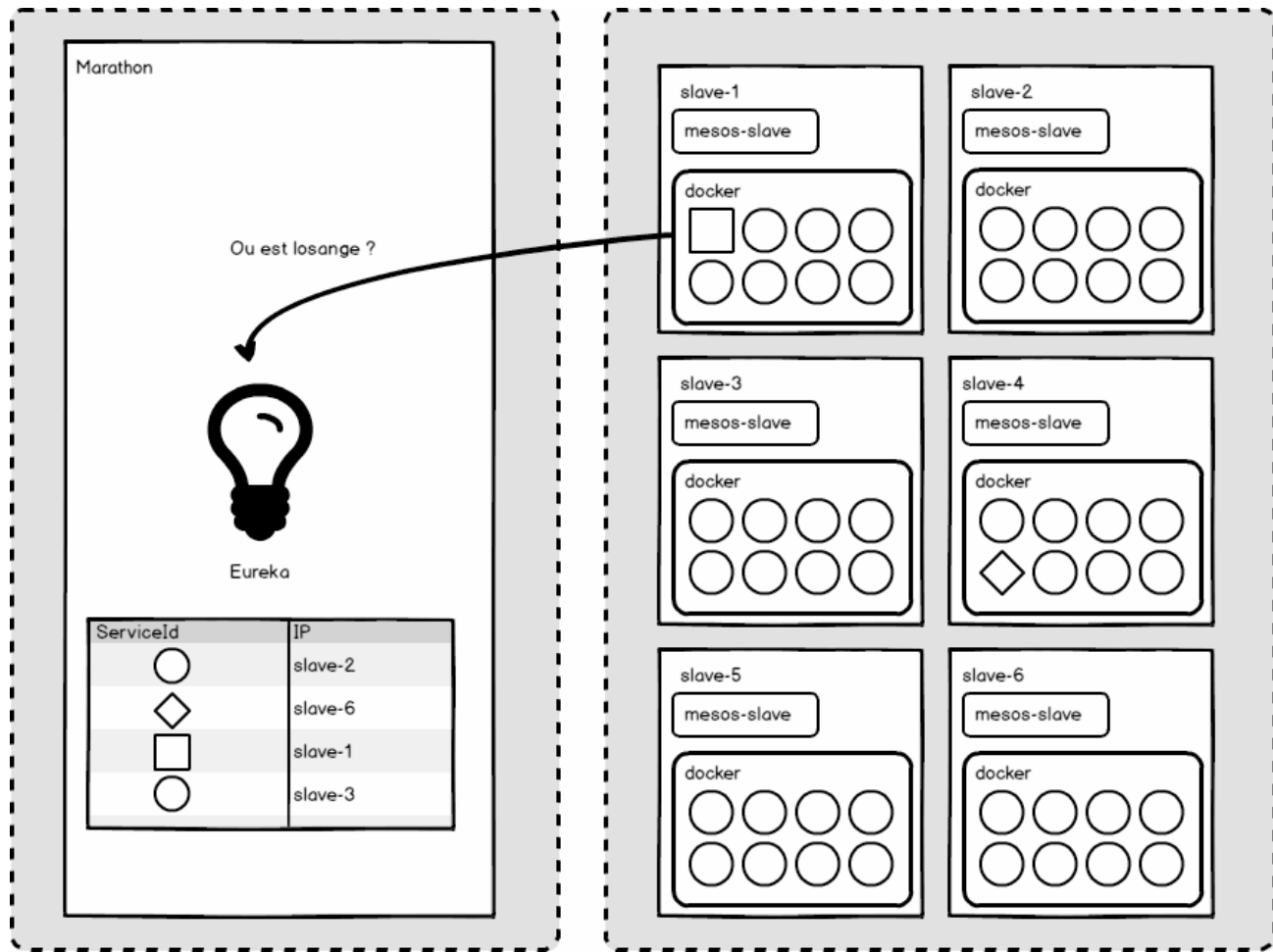




Trouver un service

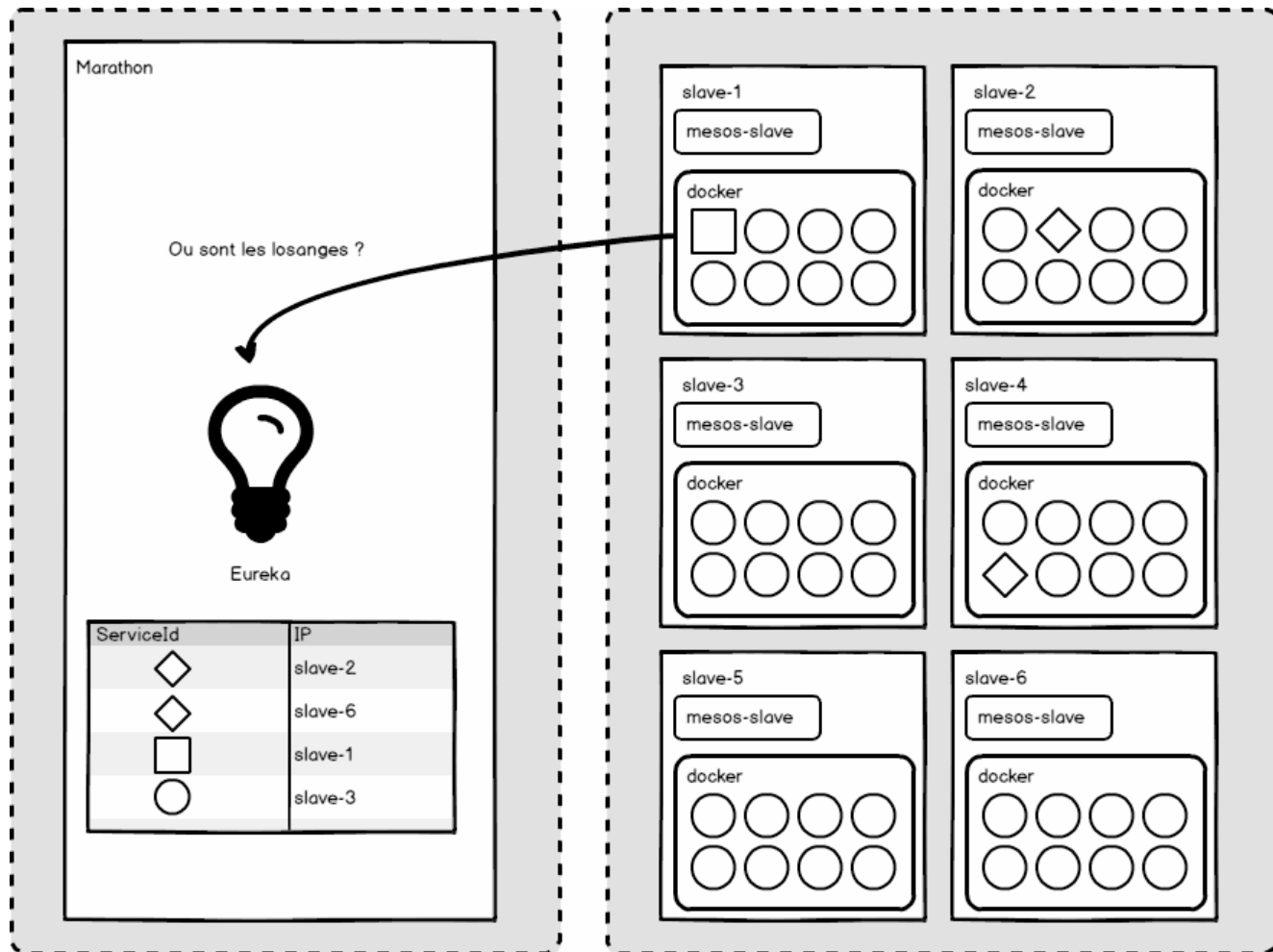
Eureka!

Le registre des services déployés



Eureka!

Multiples instances





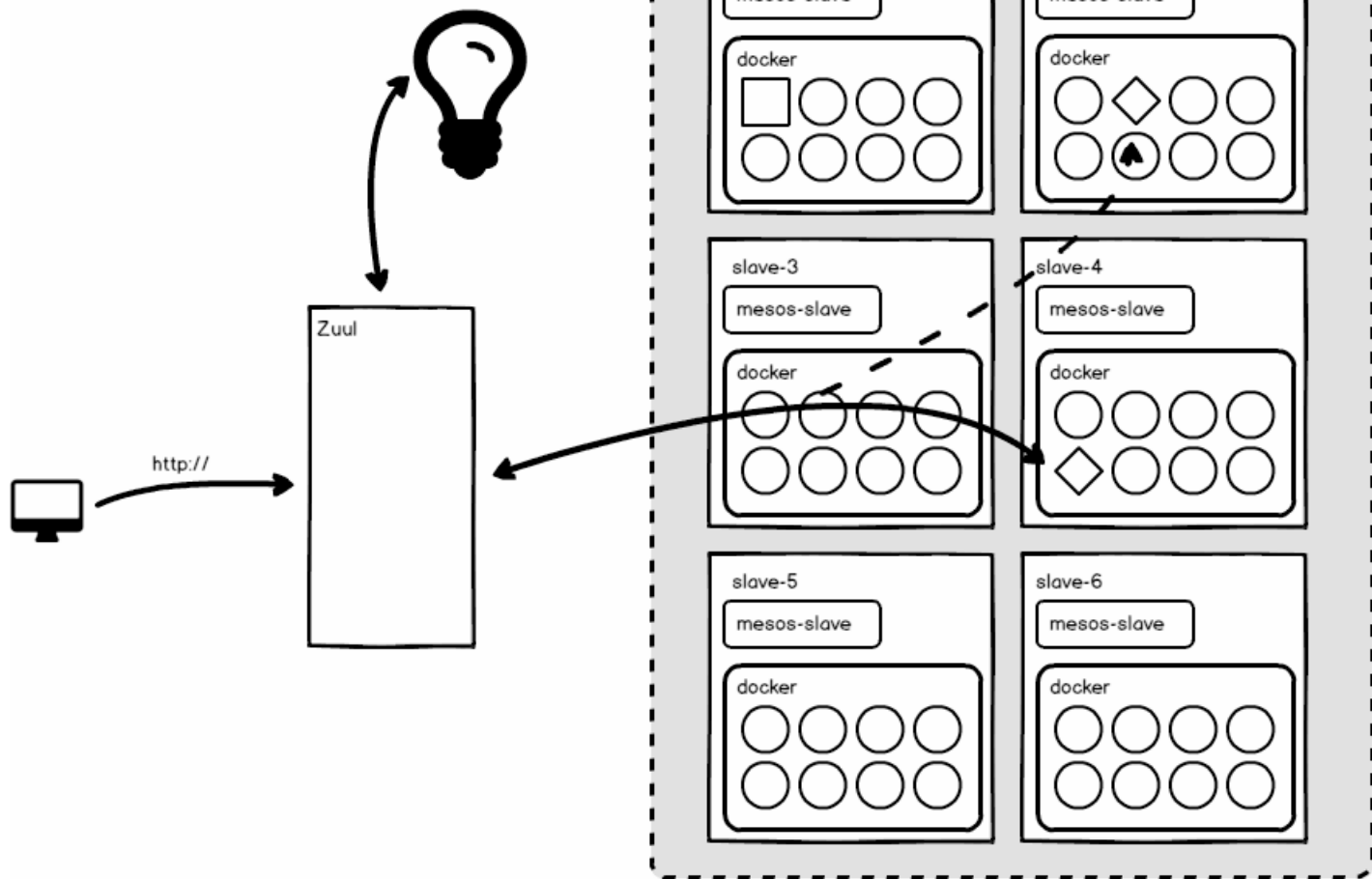
Appels REST ?

Zuul

Gardien des portes

Reverse proxy
configuré grâce à
Eureka

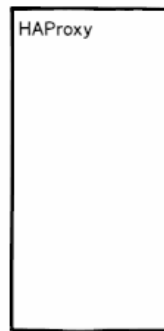
Load balancing



HA Proxy

Script de
configuration maison

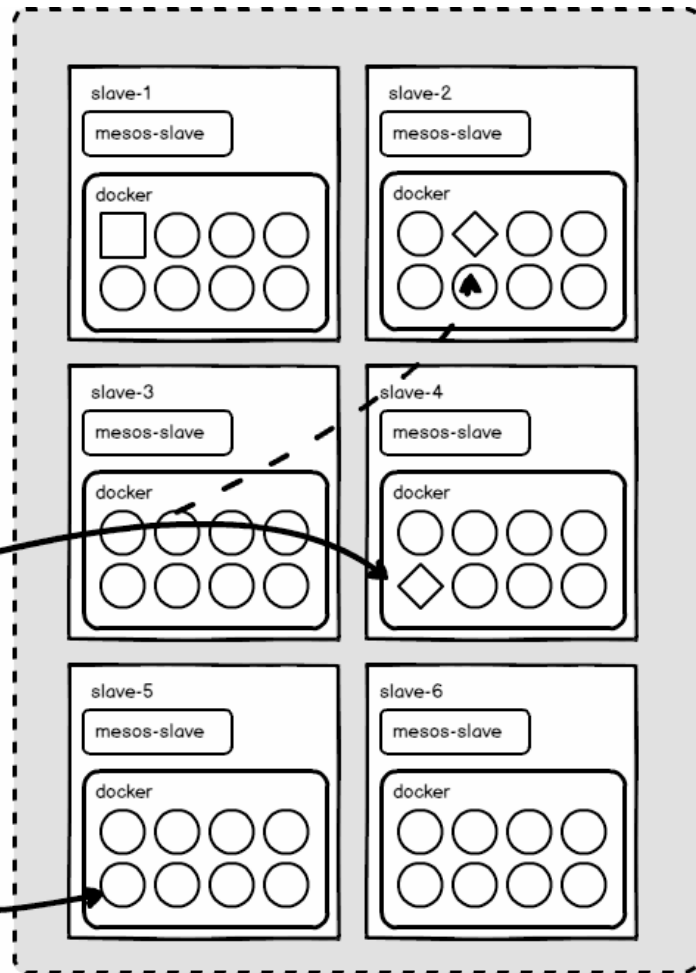
/bounded-context/ressource



Tu gères qui ?



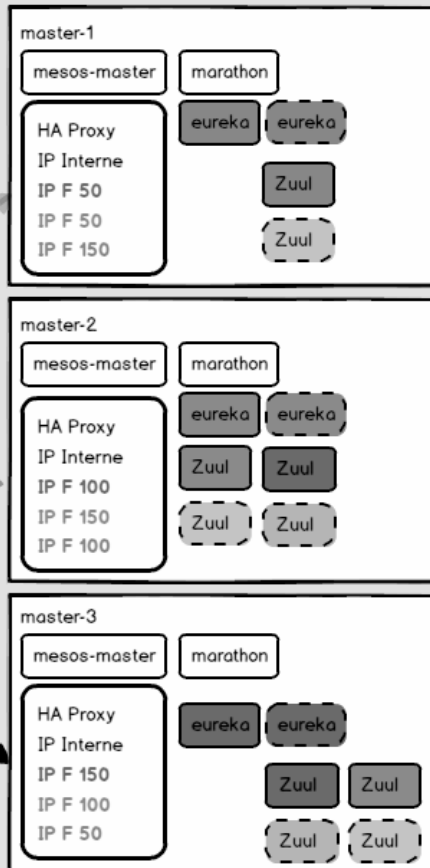
Tu fais quoi ?



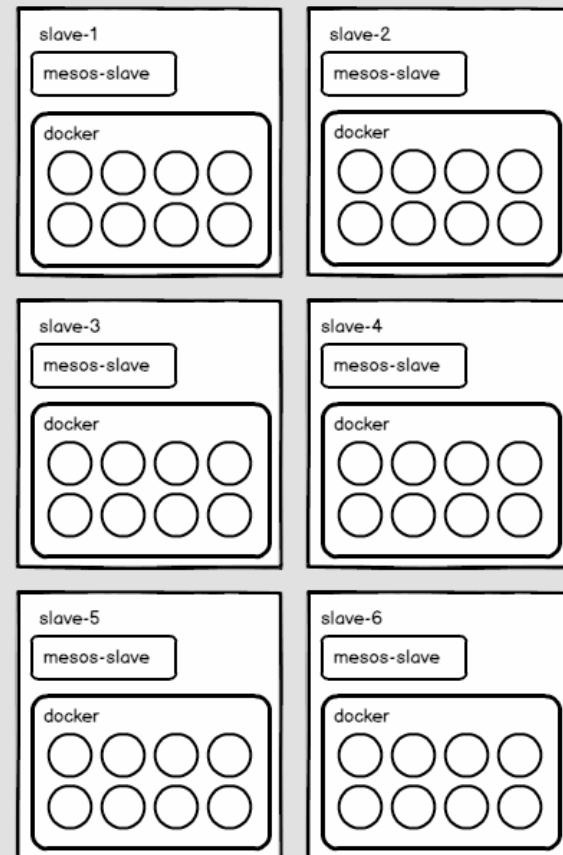


En pratique

Infrastructure virtuelle

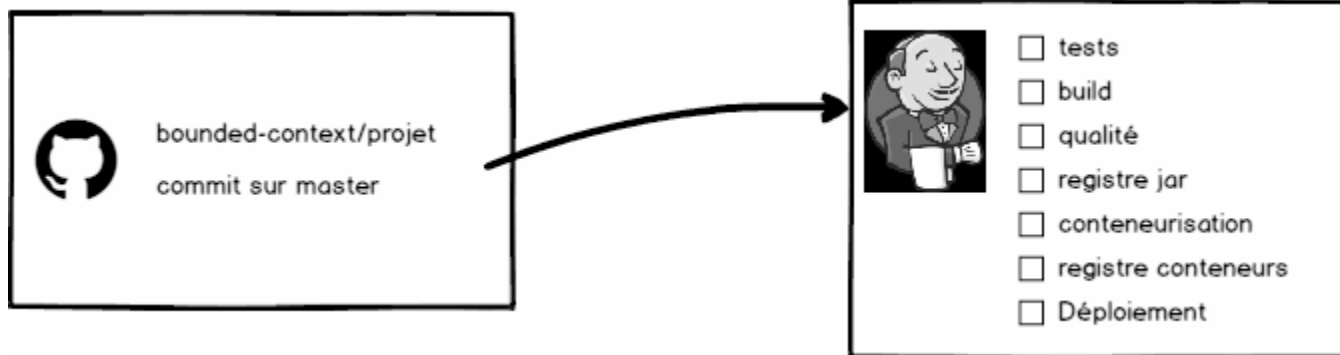


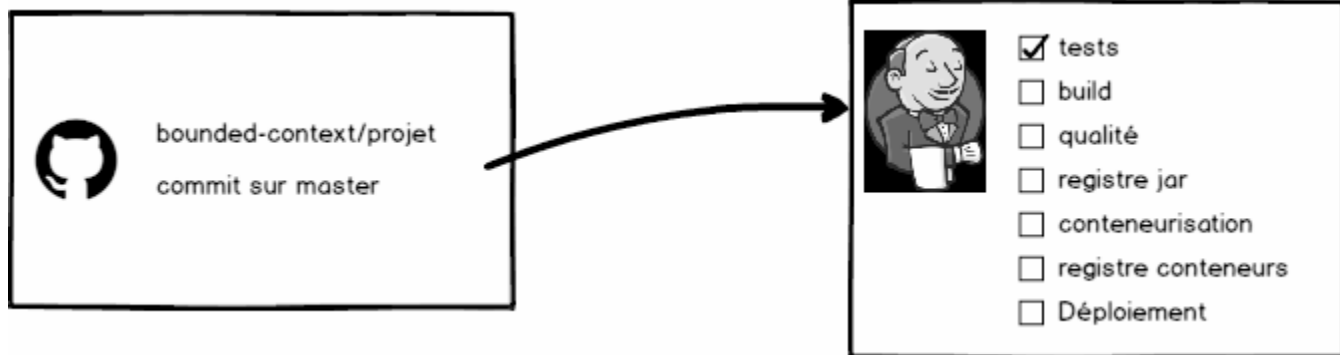
Infrastructure physique

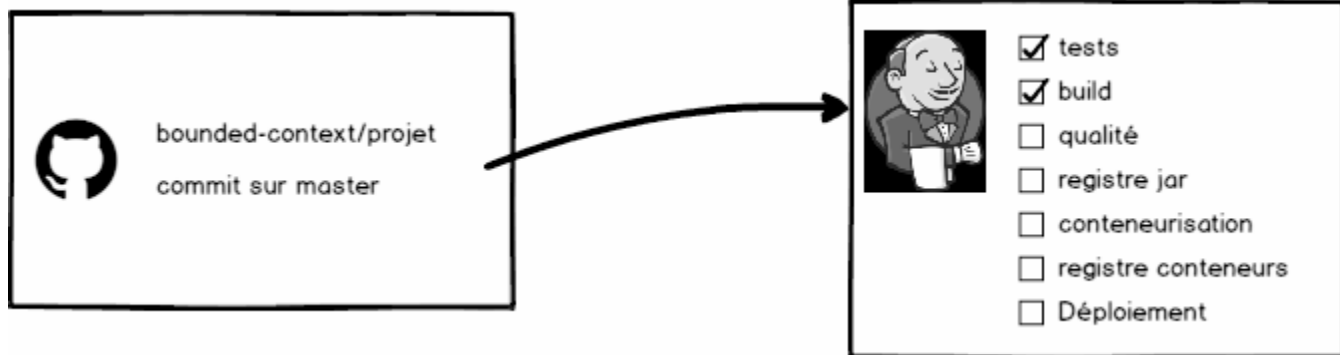


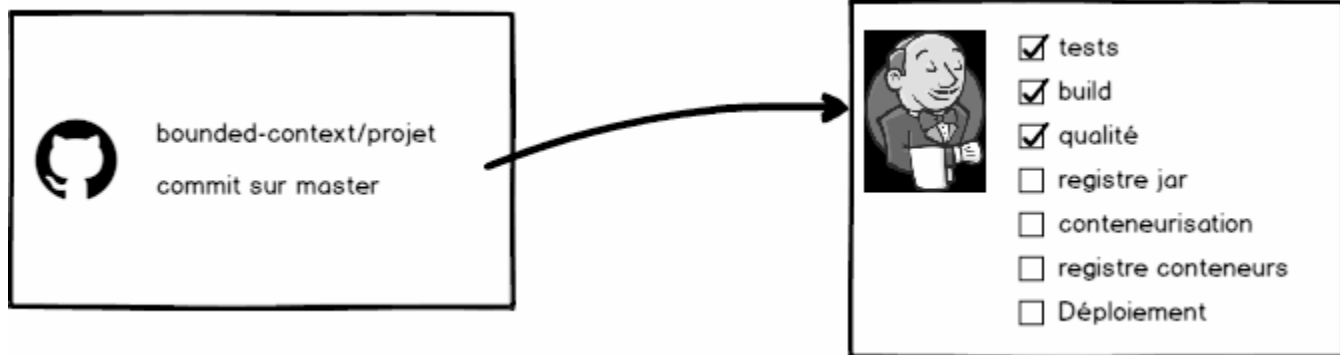


Intégration Continue Déploiement Continu











bounded-context/projet
commit sur master



- ☒ tests
- ☒ build
- ☒ qualité
- ☒ registre jar
- ☐ conteneurisation
- ☐ registre conteneurs
- ☐ Déploiement

Nexus

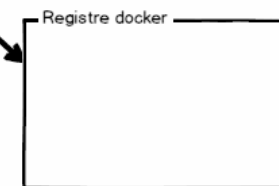
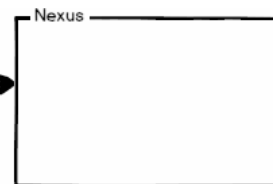
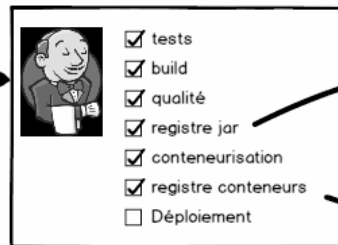
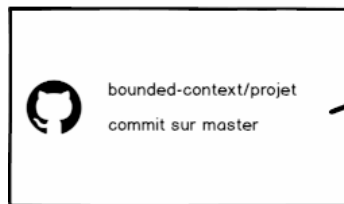


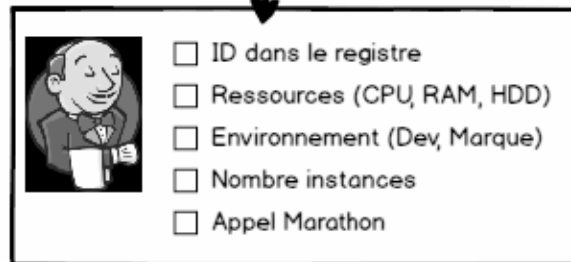
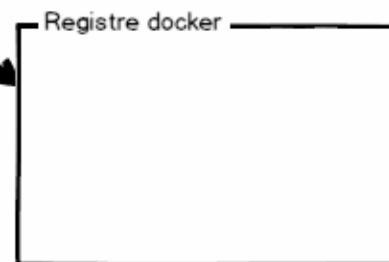
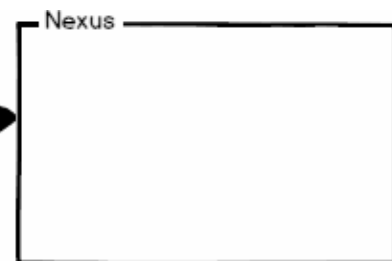
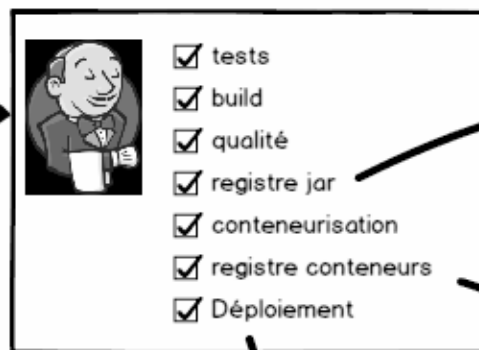
bounded-context/projet
commit sur master

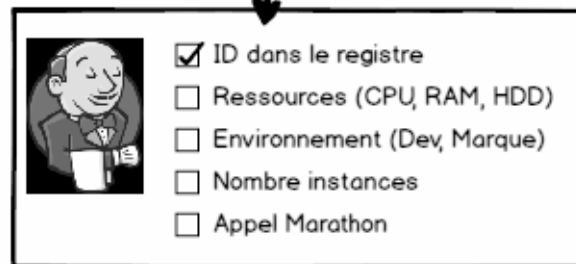
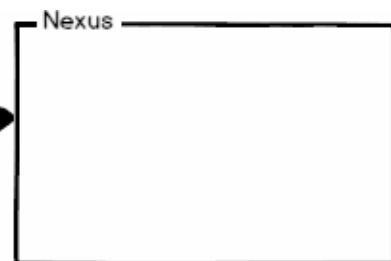
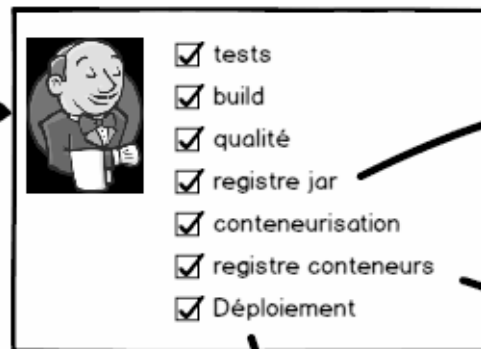


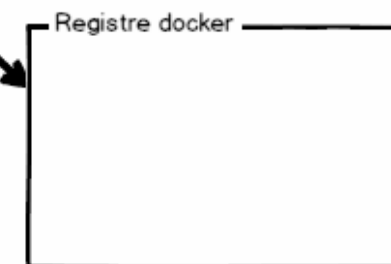
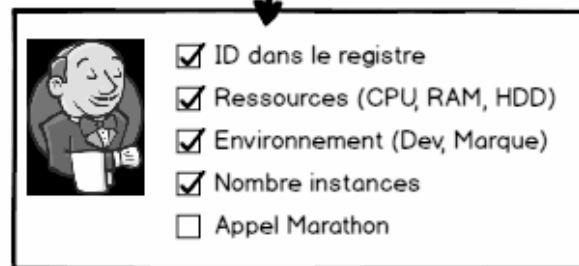
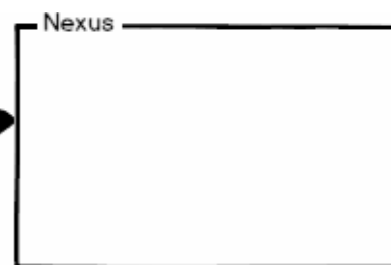
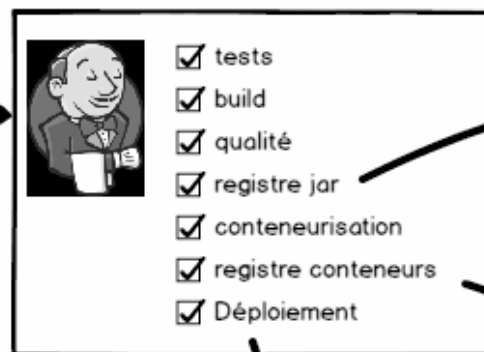
- ☒ tests
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- ☐ registre conteneurs
- ☐ Déploiement

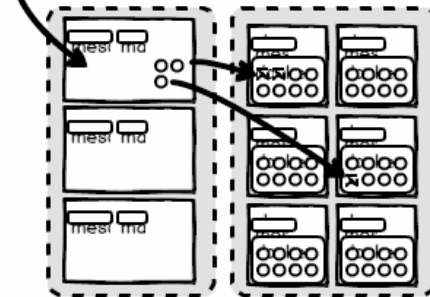
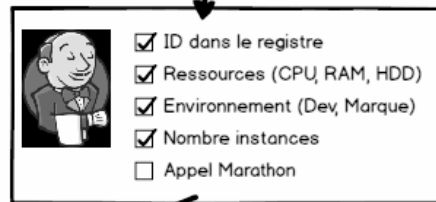
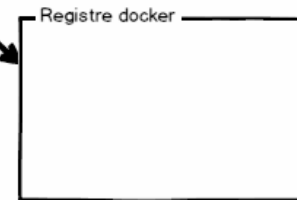
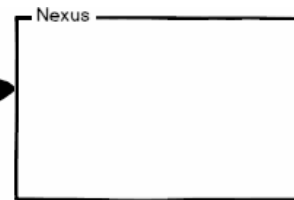
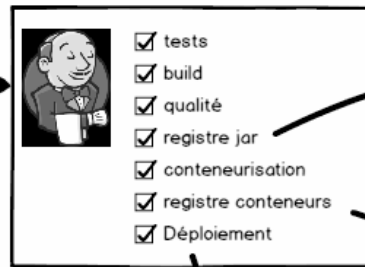
Nexus

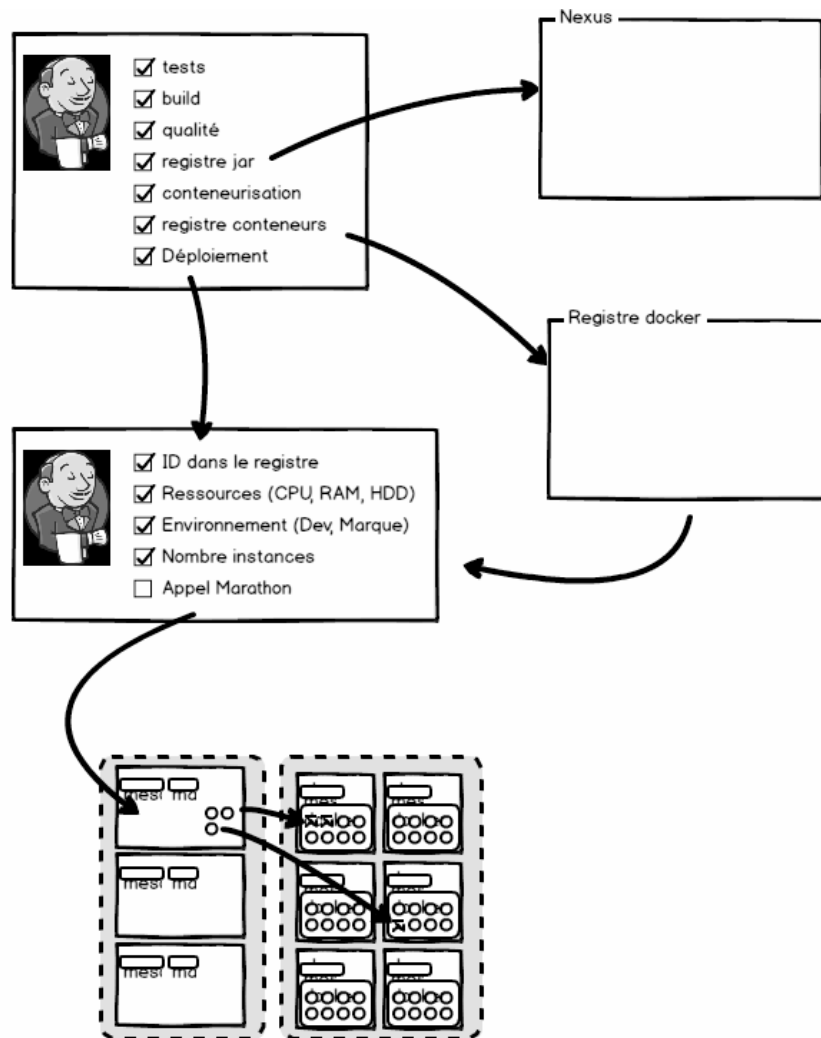
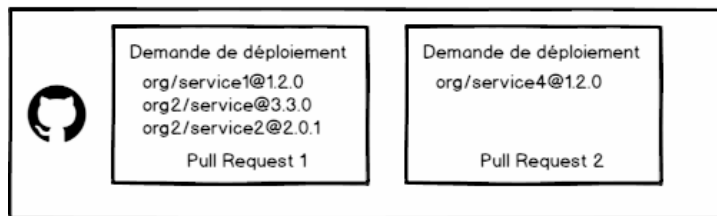


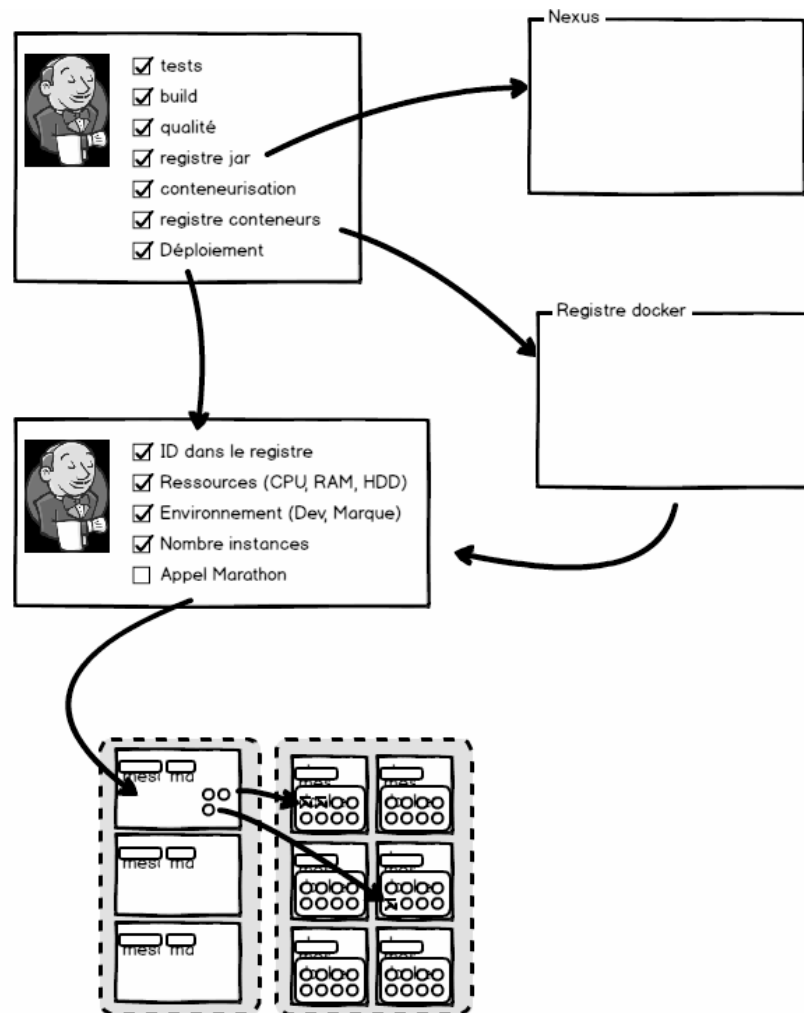
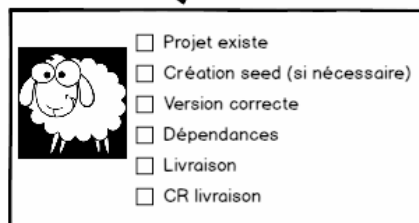
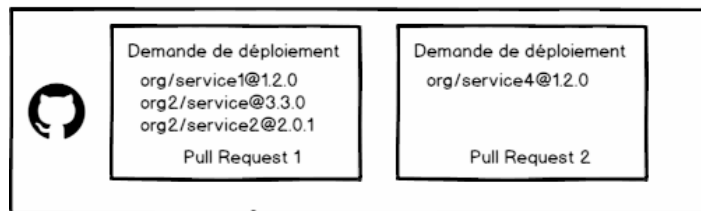


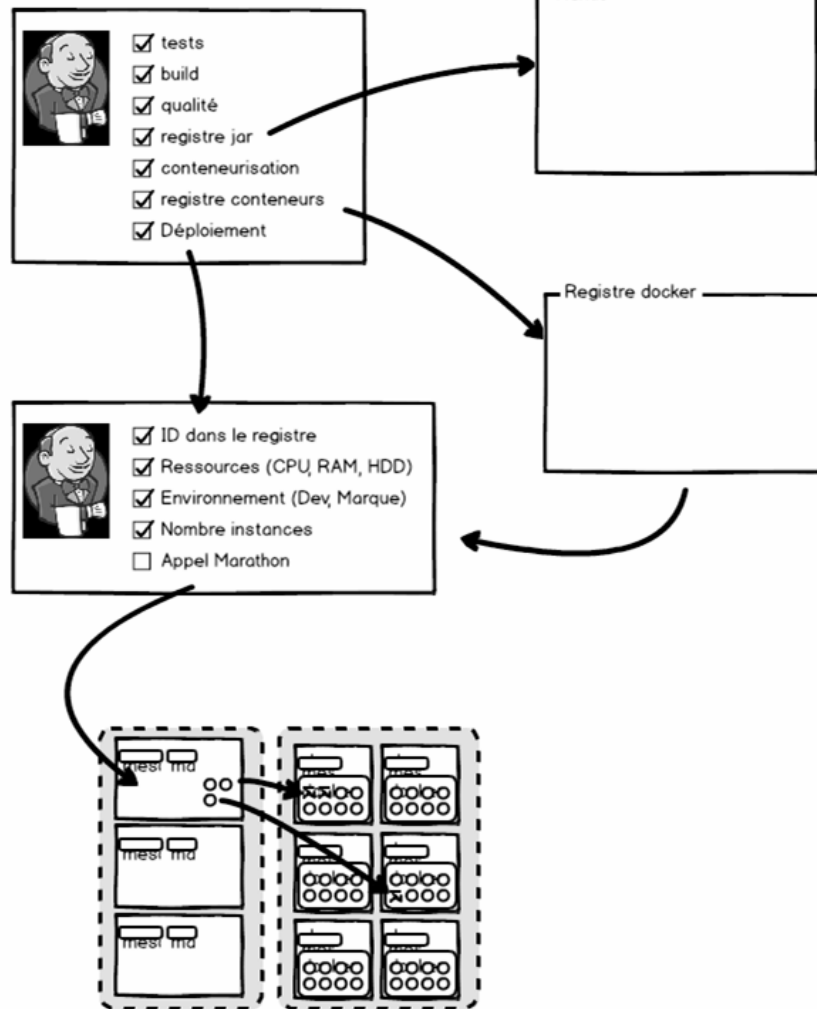
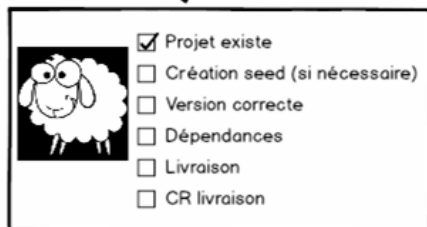
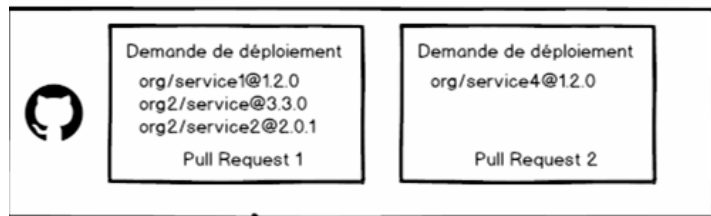


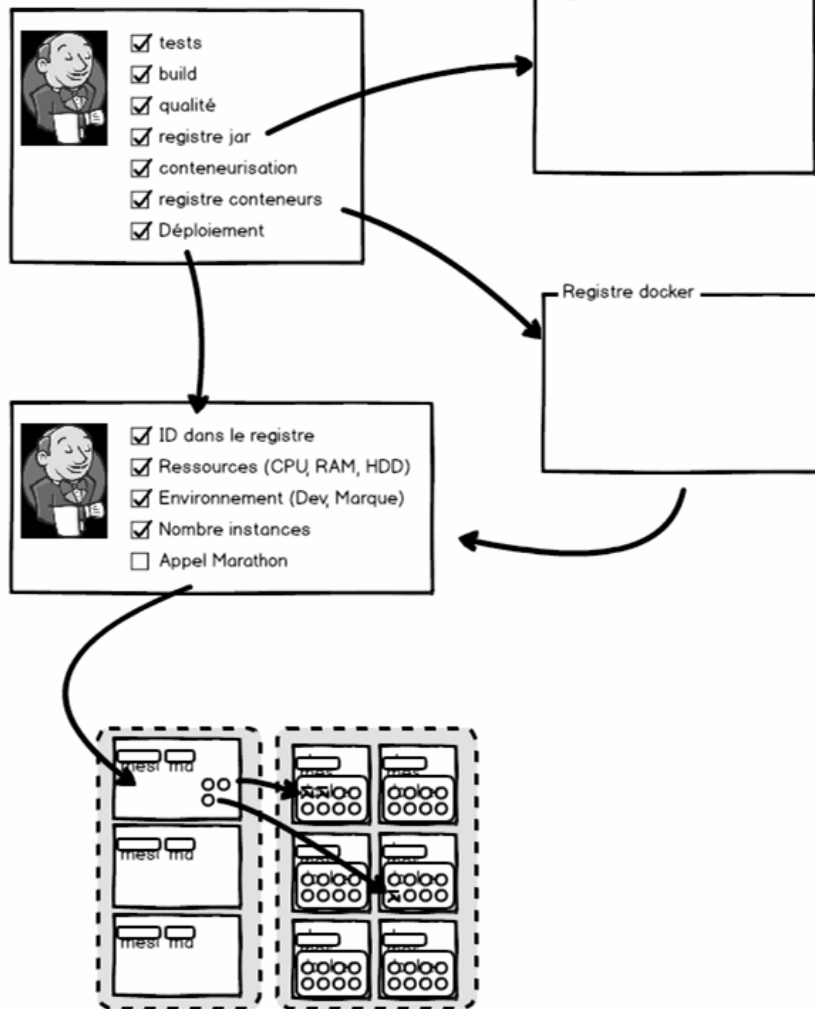
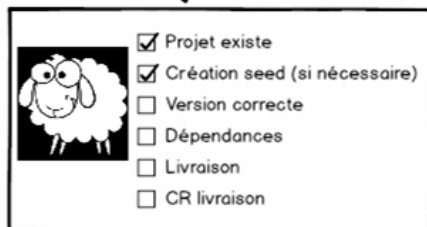
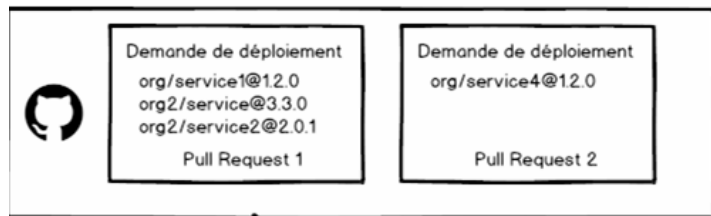


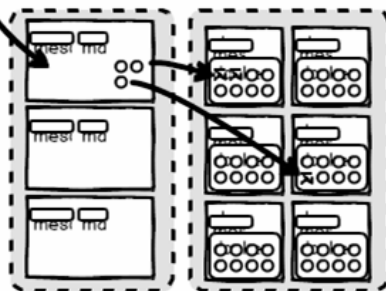
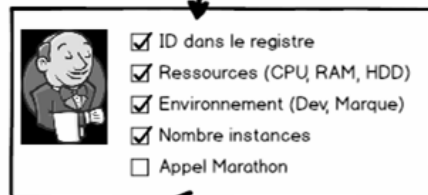
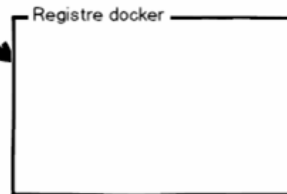
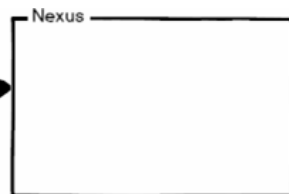
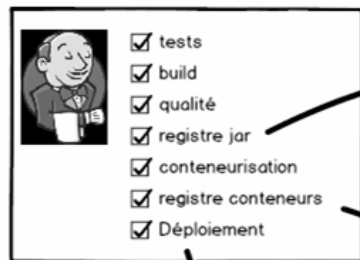
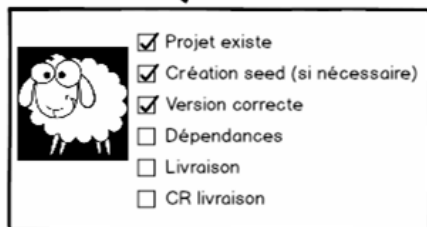
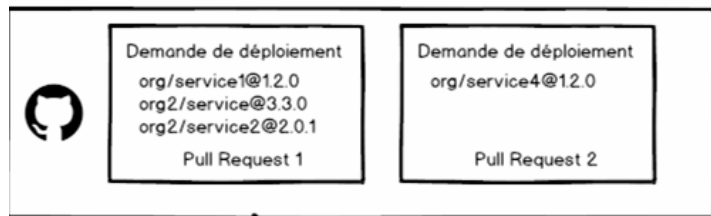


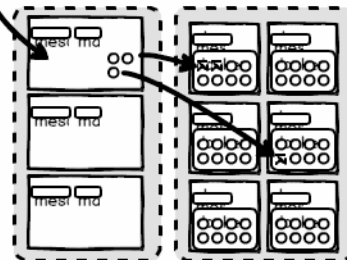
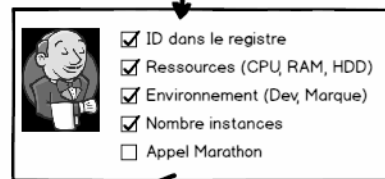
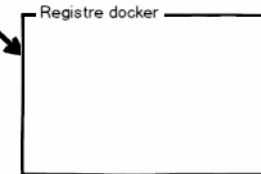
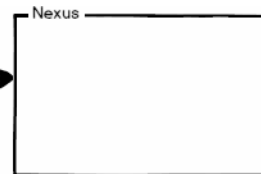
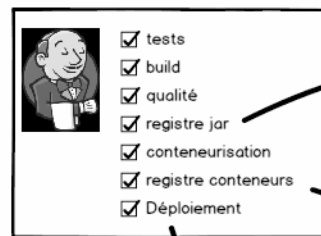
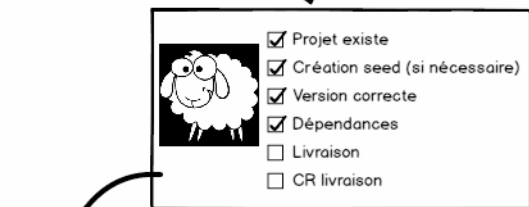
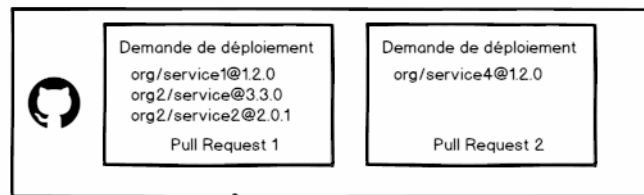


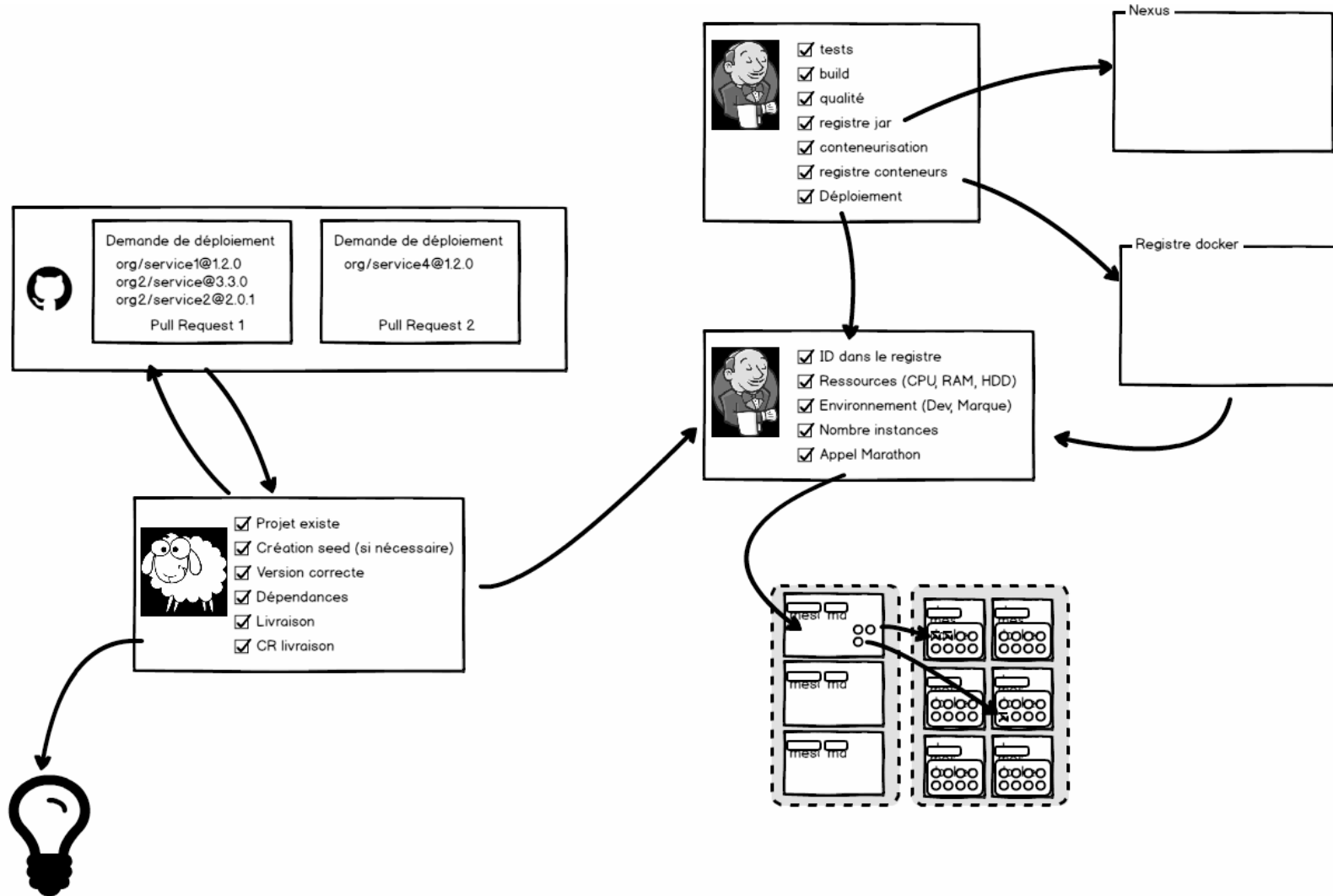












Conclusion

- **Automatisation**
- Logs distribués
- Monitoring
- Traçabilité
- Versioning
- Granularité
- Accompagnement
- API First



Questions ?