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Code challenge: Subscription Service

Development environment

- Jboss Developer Studio 11.1.0.GA
- Jboss EAP 7.0
- MySQL 5.7.21

Technical requirements:

- *Expected SLA response time of the new service: 300ms*
  The service has to make three calls
  Event service: 100ms
  Insert into Database: 100ms
  Email service: 2 seconds
  So is not possible to call de emal service in a synchronous call:
  Solution A: use a jms queue which finally would make the email service call.
  Solucion B: use Async call to de email service generating backlog in case of failure.

- *Database as a costly resource:*

  Switch form classic many to many relational model to one table (denormalization of the model). Other option could be a noSQL database.

  At least one index for the email field.

- *The service must be secure.*
  In this scenario the user is not logged so the best option is to use an API KEY. Must be used over HTTPS (TLS).

- *SLA monthly uptime*
  - EAP must be installed in domain mode, with a group of servers clustering in more than one host (HA).
  - Web.xml of the front-end app must contain <distributable/> tag
  - The deploy must be done with rollout which it means it deploy one by one host with no lost of service.

- *Scalability*
  Adding more nodes (hosts) to de domain or more resources to each host. Vertical, horizontal.

Deploy strategy

Rollout, using CLI

First deploy:

```
deploy newsletter-frontend.war --name= newsletter-frontend.war --
runtime-name= newsletter-frontend.war --server-groups=ha-server-group -
-headers={rollout ha-server-group(rolling-to-servers=true)}
```

next updates

```
deploy newsletter-frontend.war --name= newsletter-frontend.war --
runtime-name= newsletter-frontend.war --headers={rollout ha-server-
group(rolling-to-servers=true)} --force
```

CI proposal

Basic Jenkins:

- download de code from git
- fire sonar analysis for quality
- generate war artifacts.
- Send war files over the network and install using CLI