@nandollaca

Barcelona, 15-11-2018

Automated Tests in Virtual Environments with Docker

Fernando Llaca



@nandollaca

Barcelona, 15-11-2018

Site Reliability Engineer at Tuenti

Fernando Llaca





Goals

- 1. Intro to Docker & Integration Tests
- 2. Exercise Time!
 - 2.1. Docker Fundamentals
 - 2.2. Running Unit & Integration Tests with Docker
 - 2.3. Continuous Integration
- 3. Summary





Integration tests

"Integration tests are those that help us to find faults in the interactions between software components."



Integration tests

"Integration tests are those that help us to find faults in the interactions between software components."

Nelson Mandela



@nandollaca

Barcelona, 15-11-2018

Deployment



@nandollaca

Barcelona, 15-11-2018

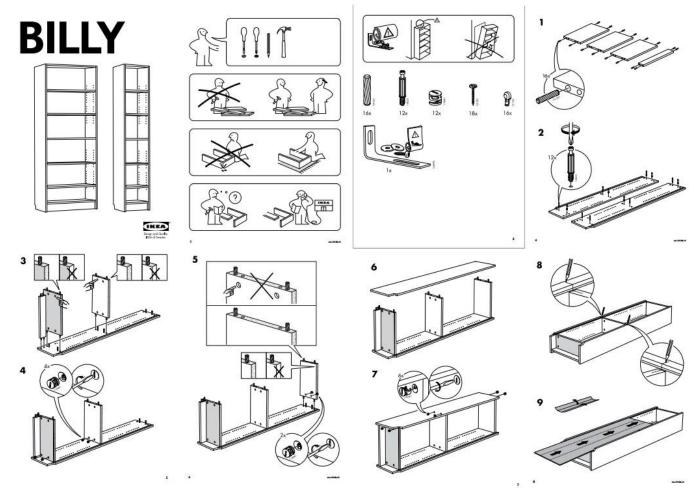
Deployment The Ikea way



@nandollaca

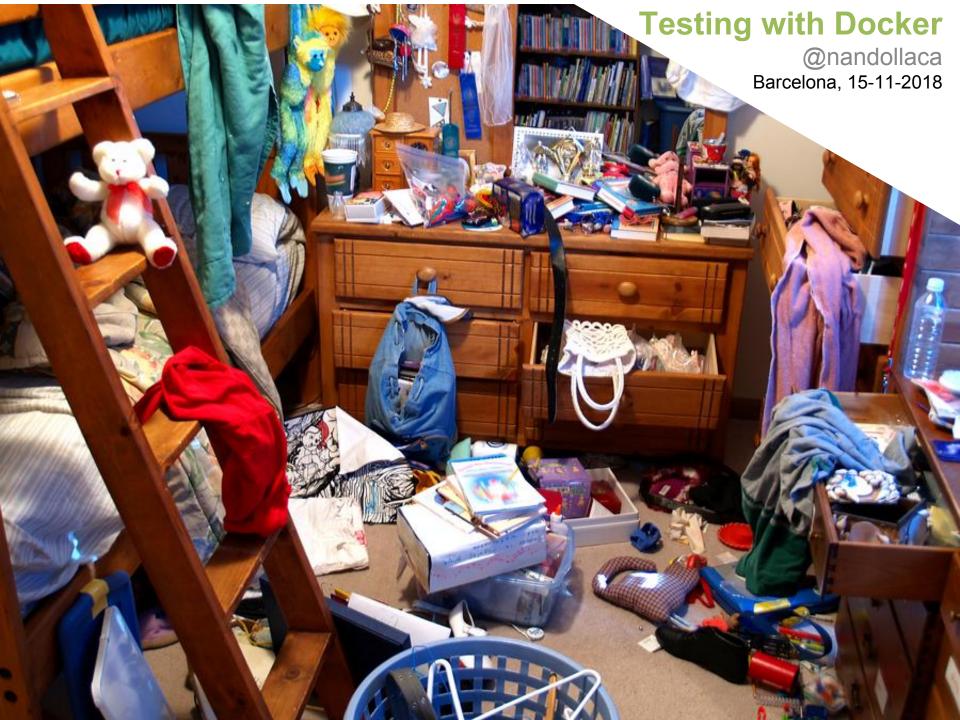
Barcelona, 15-11-2018

Deployment The Ikea way













Dificultades



Testing with Docker

@nandollaca Barcelona, 15-11-2018



Installation / **Configuration** Too complex







Stubs Errors, excessive cost



Scalability / Parallel tests Cost!!



Maintenance Software upgrades (a pain in the ass)



@nandollaca

Barcelona, 15-11-2018

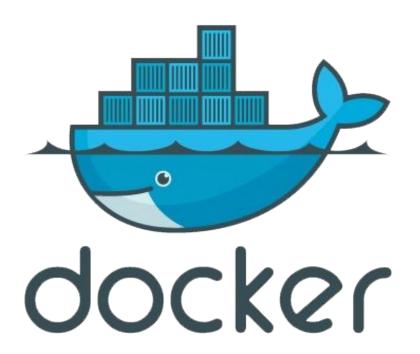
Before continuing...



@nandollaca

Barcelona, 15-11-2018

¿Docker? ¿Jenkins?



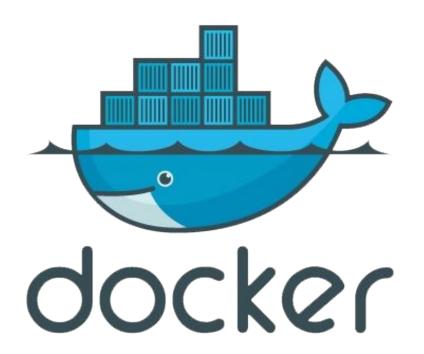




@nandollaca

Barcelona, 15-11-2018

¿Docker? ¿Travis?







Dificultades



Testing with Docker

@nandollaca Barcelona, 15-11-2018



Installation / **Configuration** Too complex







Stubs Errors, excessive cost



Scalability / Parallel tests Cost!!



Maintenance Software upgrades (a pain in the ass)



@nandollaca Barcelona, 15-11-2018

Dificultades ()







@nandollaca

Barcelona, 15-11-2018

Dificultades (:)











@nandollaca

Barcelona, 15-11-2018

Dificultades (:-)













@nandollaca

Barcelona, 15-11-2018

Dificultades (·)











Stubs

Errors, excessive cost





@nandollaca

Barcelona, 15-11-2018

Dificultades

















@nandollaca

Barcelona, 15-11-2018

Dificultades













Maintenance
Software upgrades
(a pain in the ass)



@nandollaca

Barcelona, 15-11-2018

Dificultades



Too complex













@nandollaca

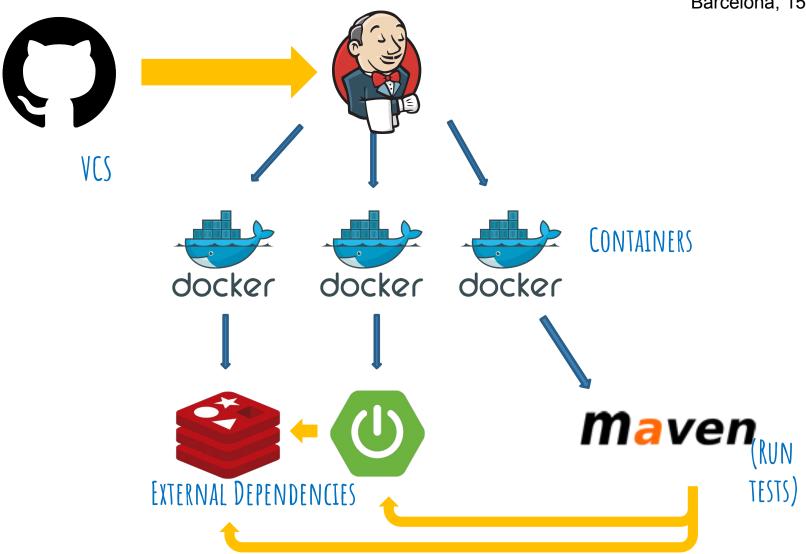
Barcelona, 15-11-2018

Sounds nice..., but how it works?



@nandollaca

Barcelona, 15-11-2018





Barcelona, 15-11-2018

- I. Create containers of the applications we want to integrate
 - I.I Feed with initial data
 - 1.2. Link containers in a network
- 2. Run the tests (also inside a container!)

3. Teardown: remove the containers

4. Process tests results







@nandollaca

Barcelona, 15-11-2018

Summarizing...



@nandollaca

Barcelona, 15-11-2018

Networking

- Docker Internal DNS
- Race Conditions
- Docker compose helps



@nandollaca

Barcelona, 15-11-2018

Dependencies

- Maven dependencies
- o Go Path
- o node modules
- O ...



@nandollaca Barcelona, 15-11-2018

★ Test Data Storage

- o Mount in volumes
- o Subfolder in the code repository
- o Dedicated repository
- o Artifacts repository
- o Docker images with test data



@nandollaca
Barcelona, 15-11-2018

Say Microservice!!



@nandollaca Barcelona, 15-11-2018



- Container networks with unique names
- o Clustering? (Docker Swarm / Kubernetes / ...)



@nandollaca

Barcelona, 15-11-2018

Questions?

Thanks a lot for your time!

