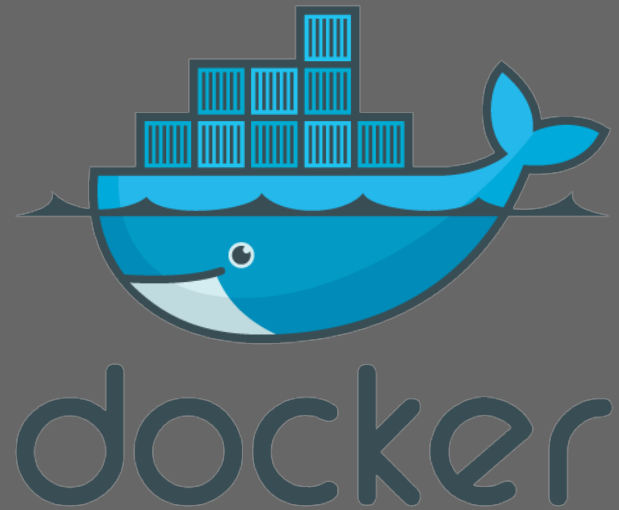
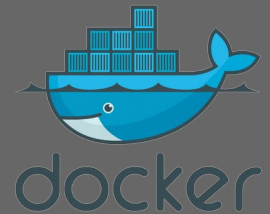


HANDS-ON DOCKER WORKSHOP



17 DE FEVEREIRO DE 2016



Ricardo Azevedo

Product Owner at Mindera

Aveiro Area, Portugal | Computer Networking

500+
connections

Current	Product Owner - Mindera, Invited Assistant Lecturer - Escola Sup. de Tecnologia e Gestão de Águeda (Universidade de Aveiro), Co-Founder The 1st Floor Challenge
Previous	Critical Links, Escola Superior de Tecnologia e Gestão de Águeda (Universidade de Aveiro), Portugal Telecom Inovação, S.A
Education	Queen Mary University of London
Recommendations	11 people have recommended Ricardo

<https://pt.linkedin.com/in/razevedoper>
<https://about.me/razevedo>

Tiago Pires

Software Engineer na PT Inovação e Sistemas

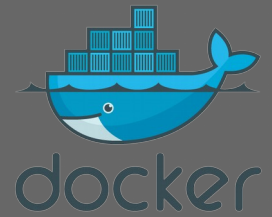
Aveiro e Região, Portugal | Software

259
conexões

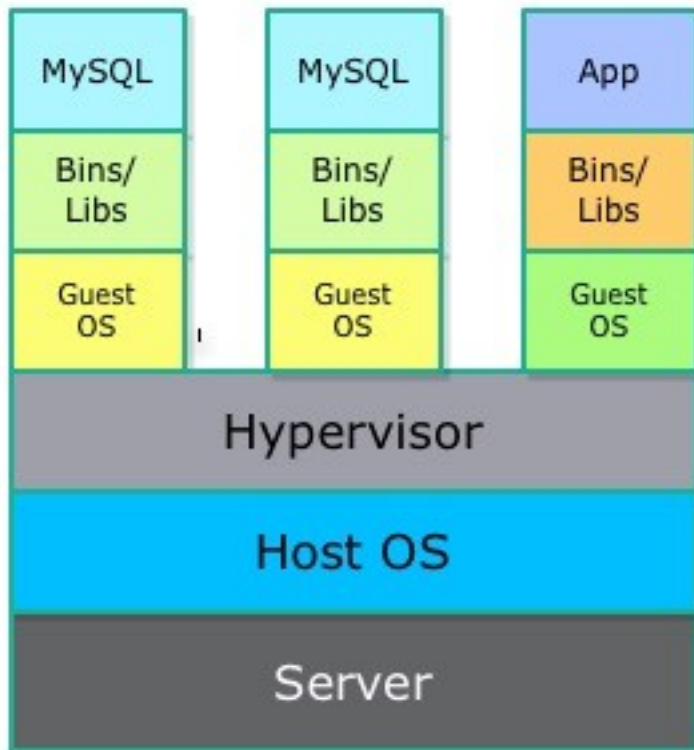
Voltar	PT Inovação, Departamento de Engenharia Informática, UC
Formação académica	Faculdade de Ciências e Tecnologia da Universidade de Coimbra
Recomendações	1 pessoa recomendou Tiago
Sites	Site pessoal

<https://pt.linkedin.com/in/tiago-pires-22061949>
<https://about.me/tpires>

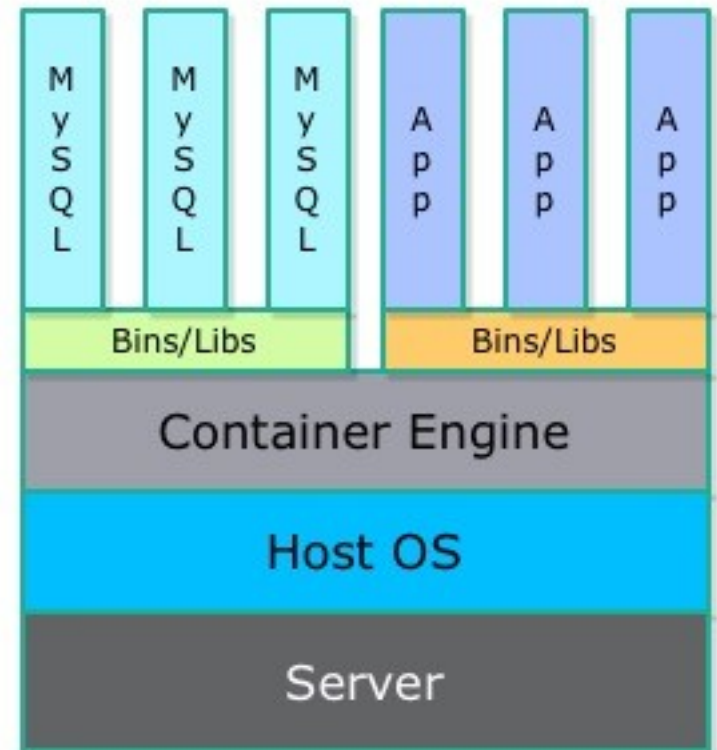
VIRTUALIZAÇÃO



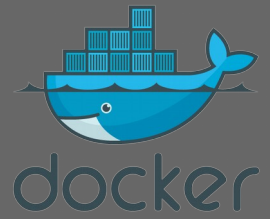
Virtual Machines



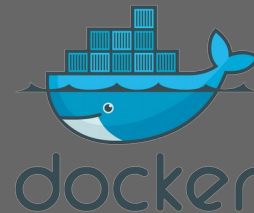
Containers



CONTAINERS? O QUE É ISSO?

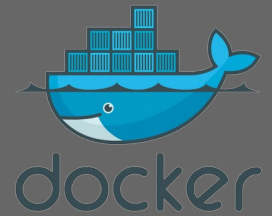


CONTAINERS? O QUE É ISSO?



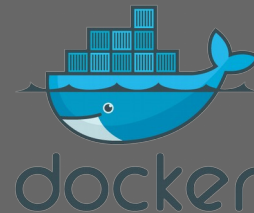
- **TECNOLOGIA DE VIRTUALIZAÇÃO “LIGHTWEIGHT”**
- **ISOLAMENTO AO NÍVEL DO KERNEL**
- **PRÓPRIO ESPAÇO DE PROCESSOS, SISTEMA DE FICHEIROS E INTERFACES DE REDE**
- **ARMAZENAMENTO BASEADO EM LAYERS (CAMADAS)**

DOCKER?



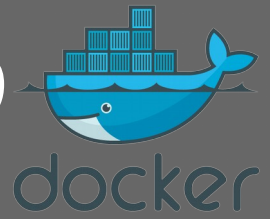
- **100% GRÁTIS, OPEN SOURCE**
- **SUORTE PARA LINUX 3.8+ (WINDOWS OU MAC OS X COM VM)**
- **CONFIGURAÇÃO COM UM SCRIPT (!!)**
- **EXECUTAR ONDE QUISE, QUANDO QUISE.**

PORQUÊ DOCKER?



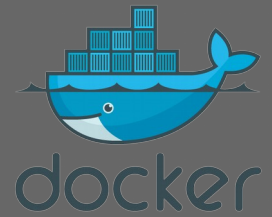
- **PORTÁVEL**
- **VERSIONAMENTO**
- **PARTILHA**
- **CONTROLO DE CPU, MEMÓRIA E REDE**
- **PORQUE NÃO VM?**
 - **VM CONSOME MAIS RECURSOS, MAIS HARDWARE!**
- **CONTAINERS SÃO AO NÍVEL DOS PROCESSOS**
- **LEVE, RÁPIDO... MUITO RÁPIDO!**

PORQUE ME DEVO IMPORTAR?



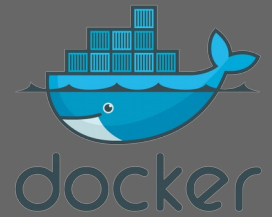
CANONICAL™

CONCEITOS E TERMOS



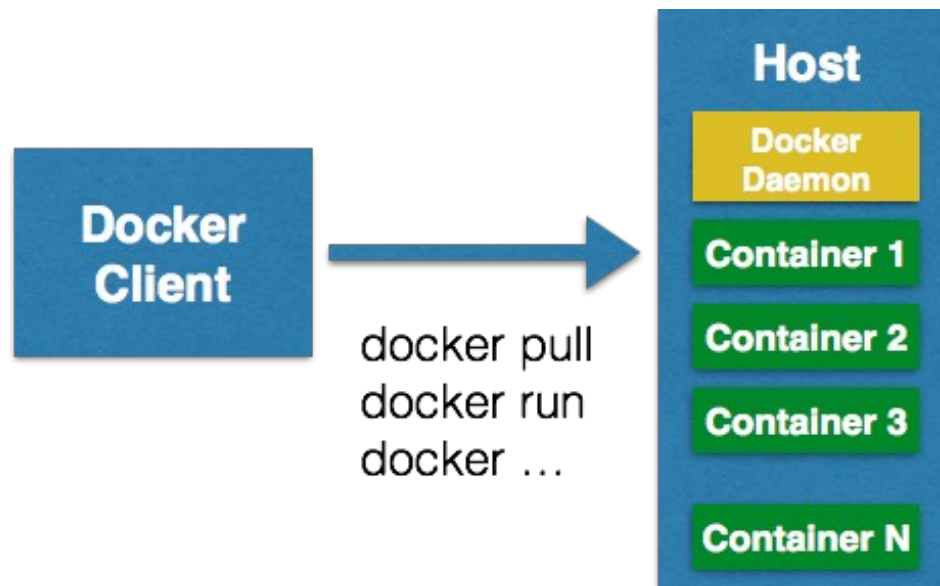
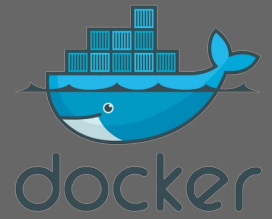
- **DOCKER ENGINE**
- **ARQUITECTURA DOCKER CLIENT/SERVER**
- **IMAGENS DOCKER E CONTAINERS**
- **REGISTRY E REPOSITORY**
- **DOCKERFILE**
- **DOCKER ORCHESTRATION**

DOCKER ENGINE

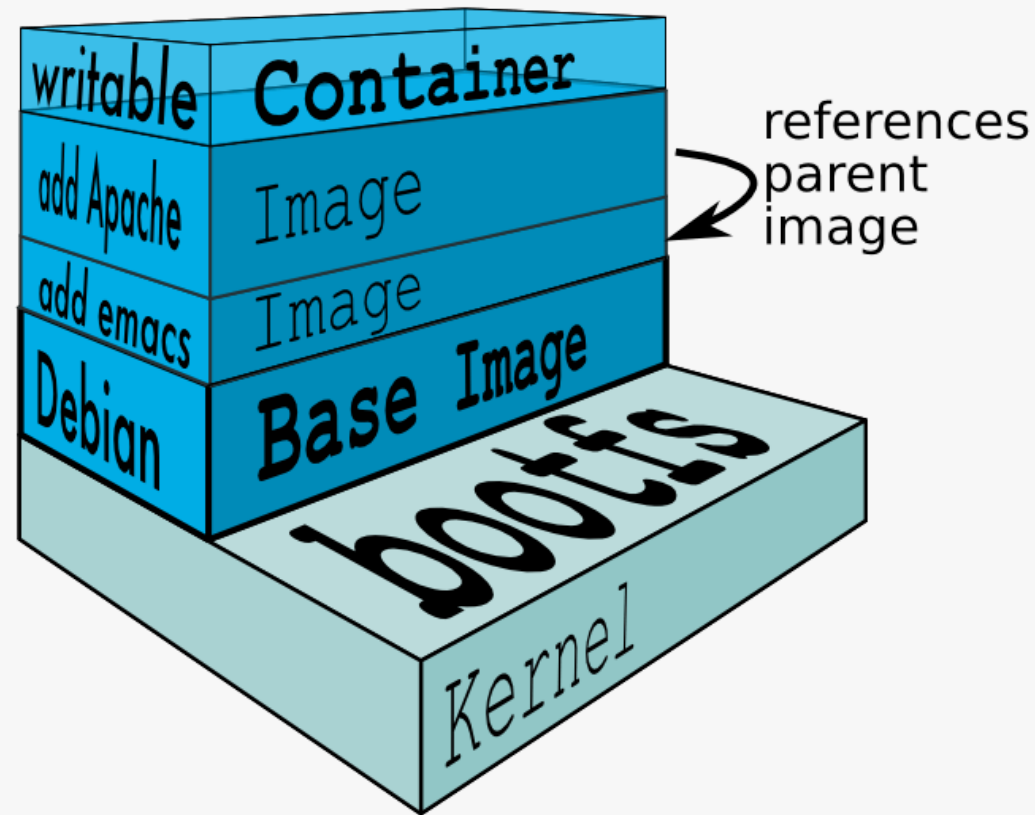
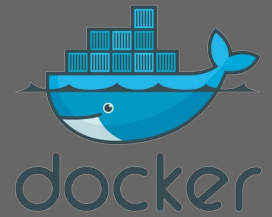


- **PERMITE CONSTRUIR, EXECUTAR E ENVIAR CONTAINERS**
- **USA LINUX KERNEL NAMESPACES E CGROUPS**
- **NAMESPACES PERMITE OBTER UM WORKSPACE ISOLADO**

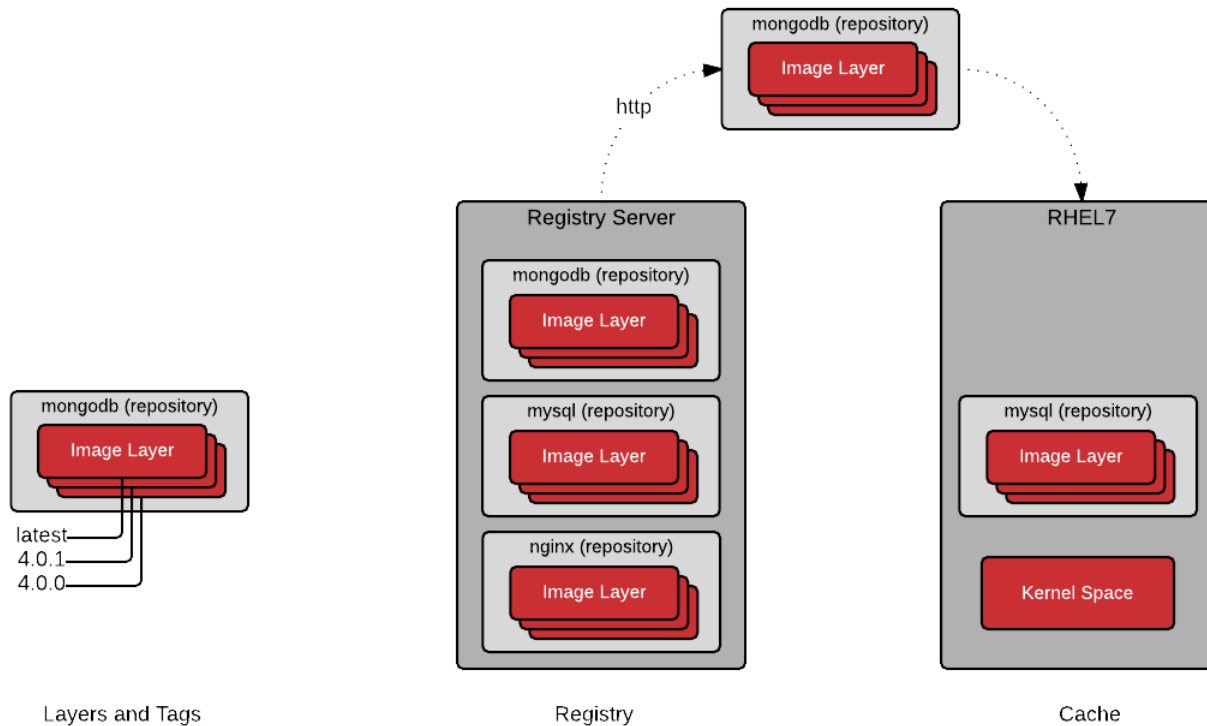
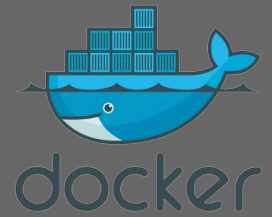
DOCKER CLIENT/DAEMON



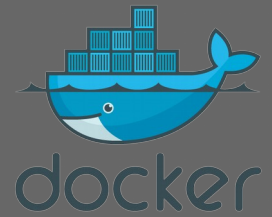
IMAGENS E CONTAINERS



REGISTRY E REPOSITORY



DOCKERFILE



```
FROM busybox:latest

ADD etcd-v0.4.9-linux-amd64/etcd /bin/etcd

# exclude the cli tool to reduce the size of the image

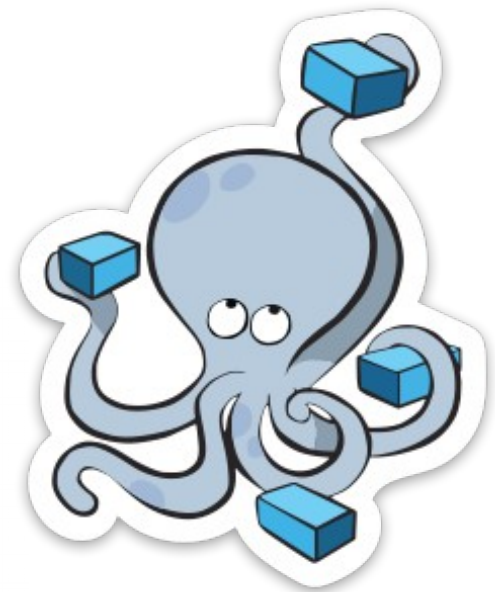
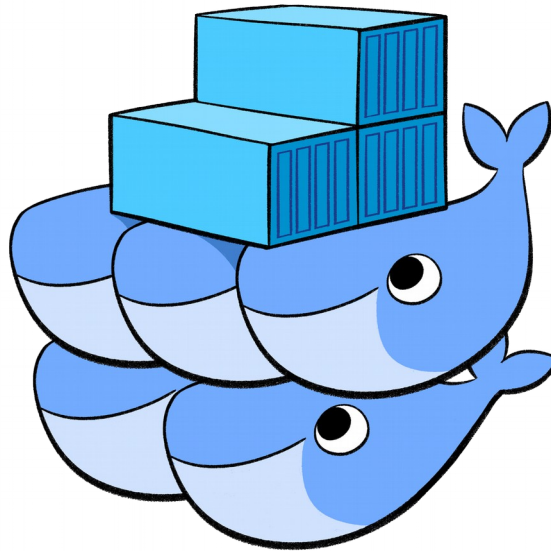
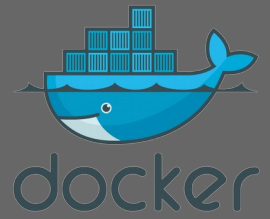
VOLUME ["/data"]

EXPOSE 4001 7001

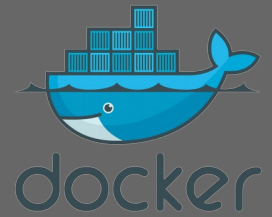
ENTRYPOINT ["/bin/etcd"]

CMD ["-data-dir=/data"]
```

DOCKER ORCHESTRATION



COMO FUNCIONA?

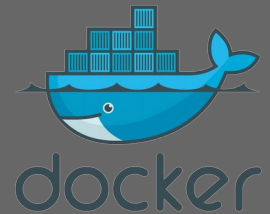


```
$ DOCKER RUN BUSYBOX ECHO 'HELLO, WORLD!'  
HELLO, WORLD!
```

```
$ DOCKER RUN FEDORA ECHO 'HELLO, WORLD!'  
HELLO, WORLD!
```

```
$ DOCKER RUN UBUNTU ECHO 'HELLO, WORLD!'  
HELLO, WORLD!
```

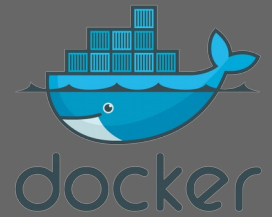

ECOSISTEMA DOCKER



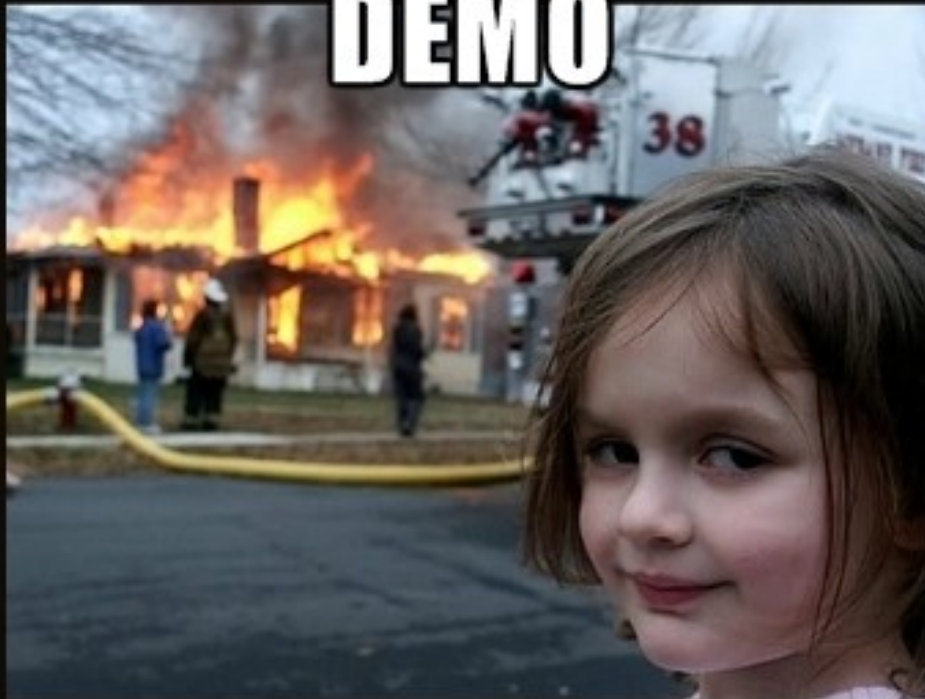
Thank You to the Ecosystem



LIVE DEMO



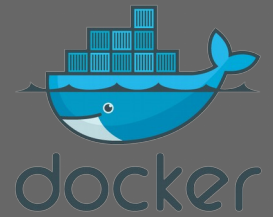
**TIME FOR A LIVE
DEMO**



WHAT COULD GO WRONG?

memegenerator.net

SHOW TIME



<https://github.com/DockerPortoCommunity/hands-on-ESTGA-2016/>

Para o desafio final:

```
$ git clone https://github.com/DockerPortoCommunity/hands-on-ESTGA-2016.git
```