

CHICAGO  
INTERNATIONAL  
SOFTWARE DEVELOPMENT  
CONFERENCE 2016

goto;  
conference

# Docker for Devs

*Bud Siddhisena*

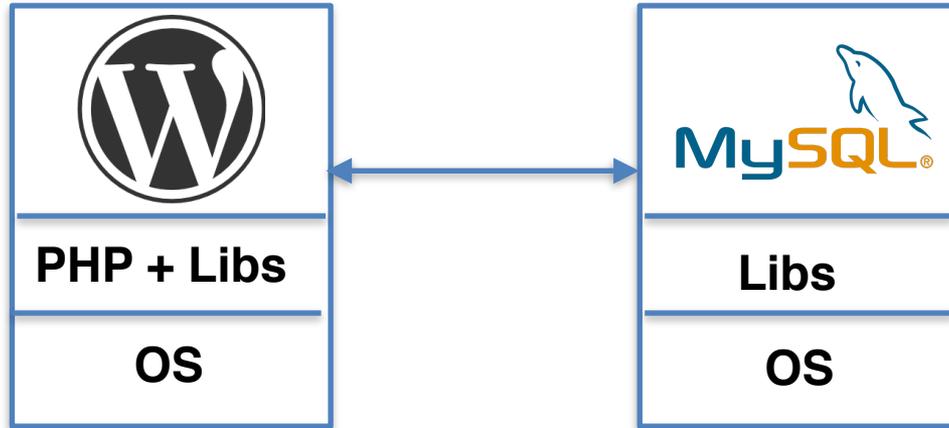
Lead Engineer, Enova

My goal is to inform



Convince Me!

# Basic Web Service





# is in the details



**PHP**

**DB**

**OS + Libs**

|  | DEV           | QA           | Prod         |
|--|---------------|--------------|--------------|
|  | 4.5.2         | 4.5.0        | 4.3.8        |
|  | 5.6.21        | 5.6.1        | 5.5.35       |
|  | Maria 10.1.14 | MySQL 5.7.12 | MySQL 5.5.49 |
|  | OSX El cap    | Ubuntu 14.04 | RHEL 7.1     |

**WORKED FINE IN DEV**



**OPS PROBLEM NOW**

**DOCKER !**



**IT REALLY WHIPS THE LLAMA'S  
ASS !!!**

# Basic Web Service

**DOCKERIZED**

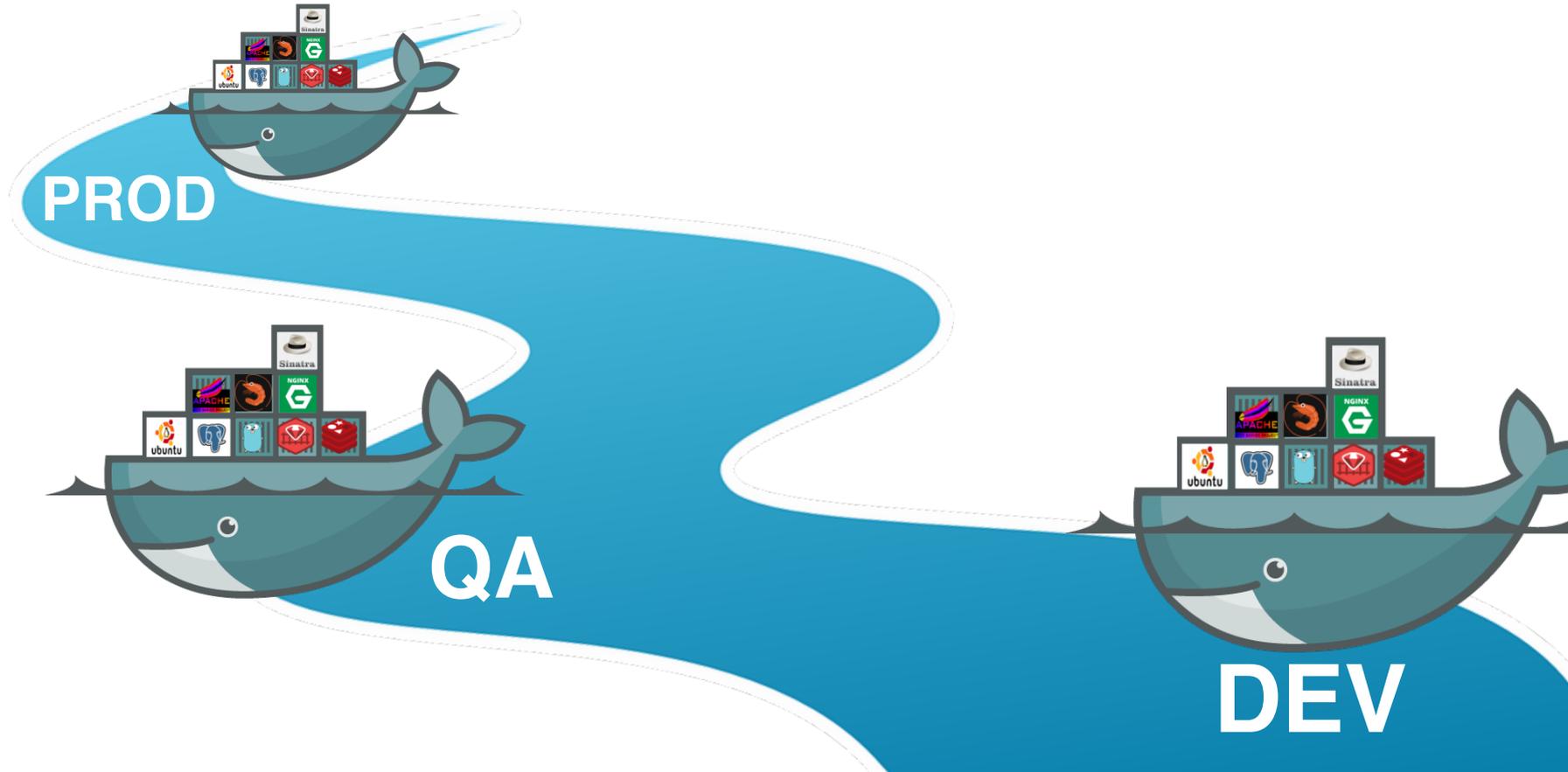


WP Container



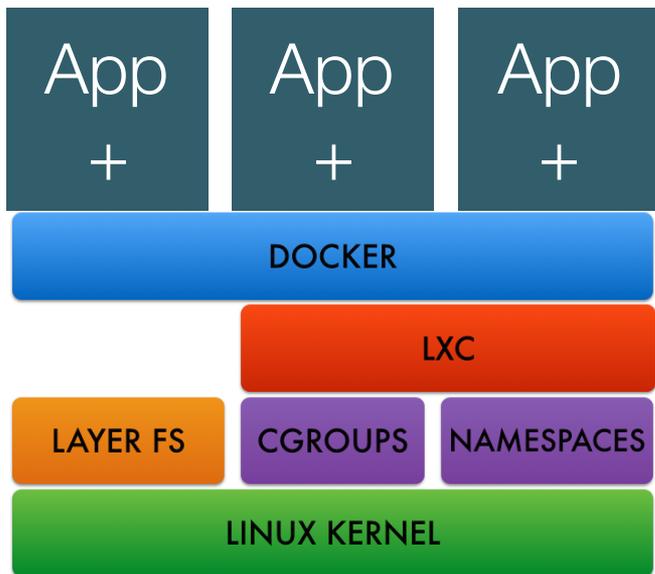
MySQL Container

# Transport containers



# What is Docker?

Open Source, portable, lightweight, containerized [application distribution](#)



# Why Docker?



Fast, cheap



Over 100K Apps



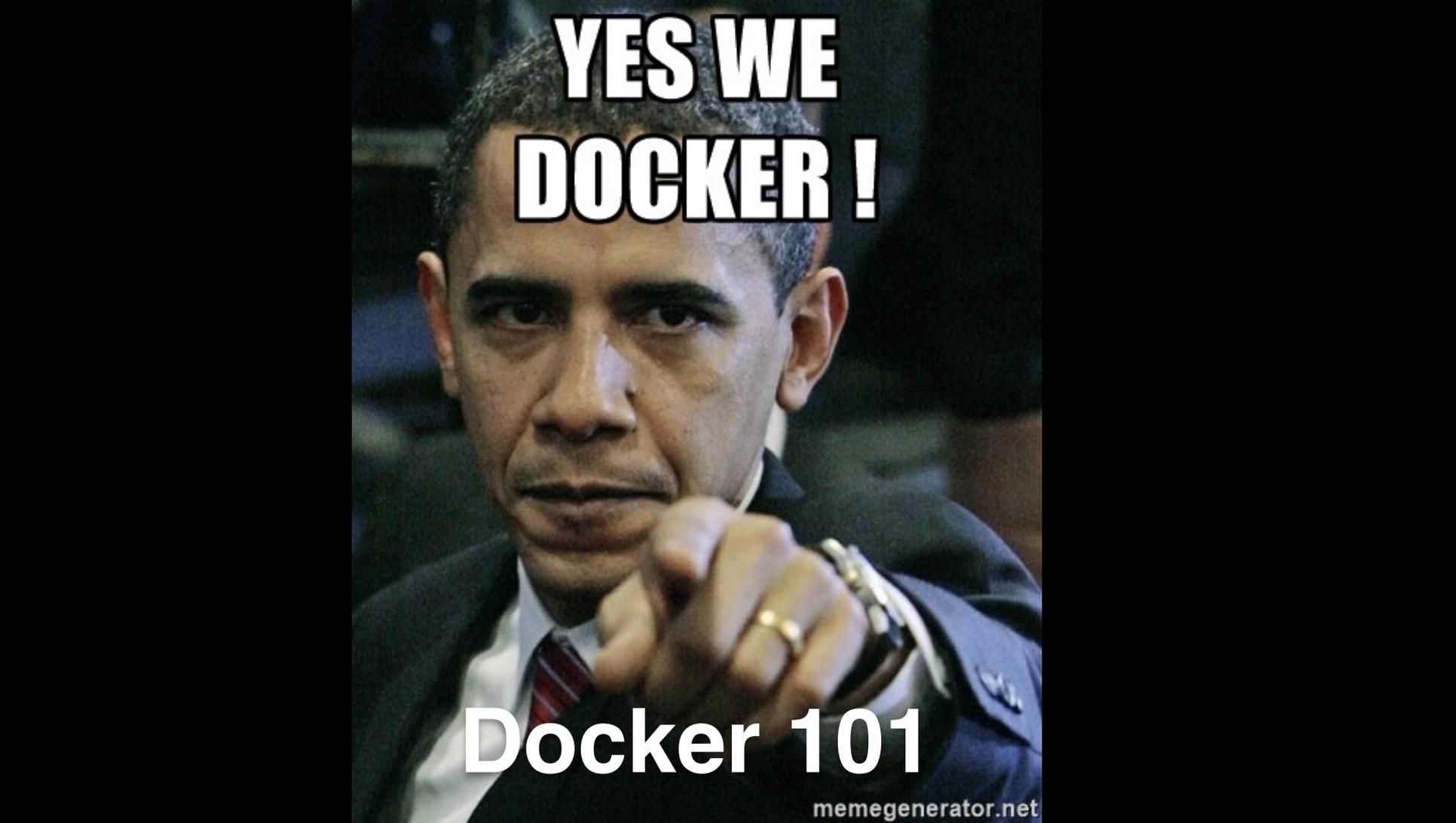
Your own PROD

# Docker hub

<http://hub.docker.com>

Explore Official Repositories

|   |               |               |                                  |
|---|---------------|---------------|----------------------------------|
|  <b>nginx</b><br>official   | 3.0K<br>STARS | 10M+<br>PULLS | <a href="#">&gt;<br/>DETAILS</a> |
|  <b>busybox</b><br>official | 672<br>STARS  | 10M+<br>PULLS | <a href="#">&gt;<br/>DETAILS</a> |
|  <b>ubuntu</b><br>official  | 4.0K<br>STARS | 10M+<br>PULLS | <a href="#">&gt;<br/>DETAILS</a> |

A close-up photograph of Barack Obama, the 44th President of the United States, pointing his right index finger directly at the viewer. He is wearing a dark suit jacket, a white shirt, and a red and blue striped tie. He has a serious expression. The background is dark and out of focus.

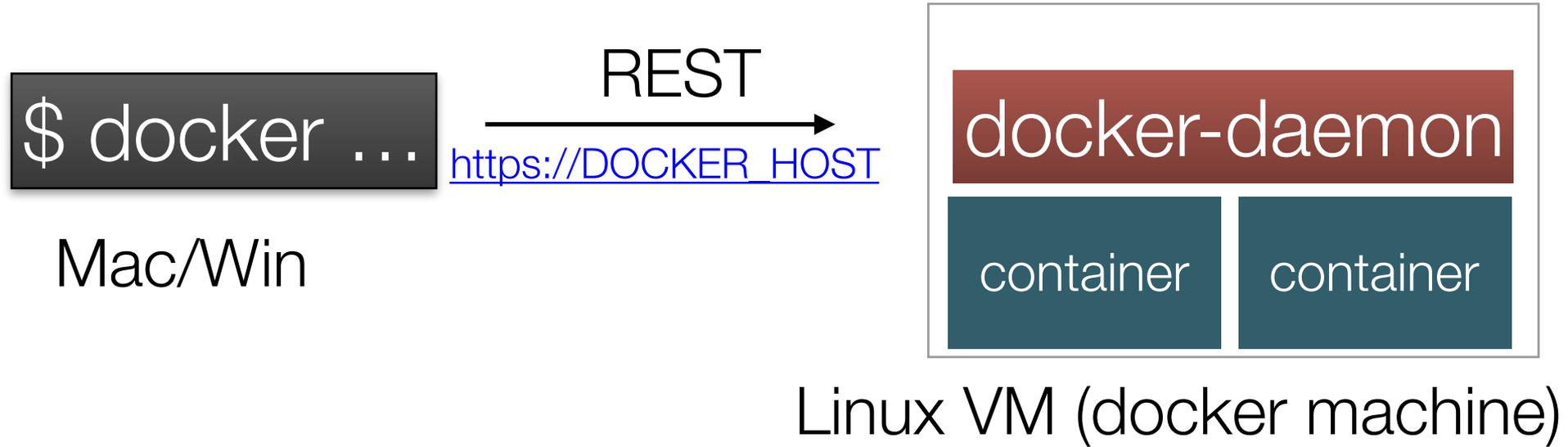
**YES WE  
DOCKER !**

**Docker 101**

# 1. Docker containers run only on Linux<sub>(for now)</sub>



## 2. Docker machine is how you run on Mac/Win



# Spinning up a Docker container

Setup DOCKER\_HOST env on mac/win docker-machine

```
$ docker-machine env
export DOCKER_TLS_VERIFY="1"
export DOCKER_HOST="tcp://192.168.99.100:2376"
export DOCKER_CERT_PATH="/Users/bsiddhisena/.docker/machine/machines/default"
export DOCKER_MACHINE_NAME="default"
# Run this command to configure your shell:
# eval $(docker-machine env)
```

# Spinning up a Docker container

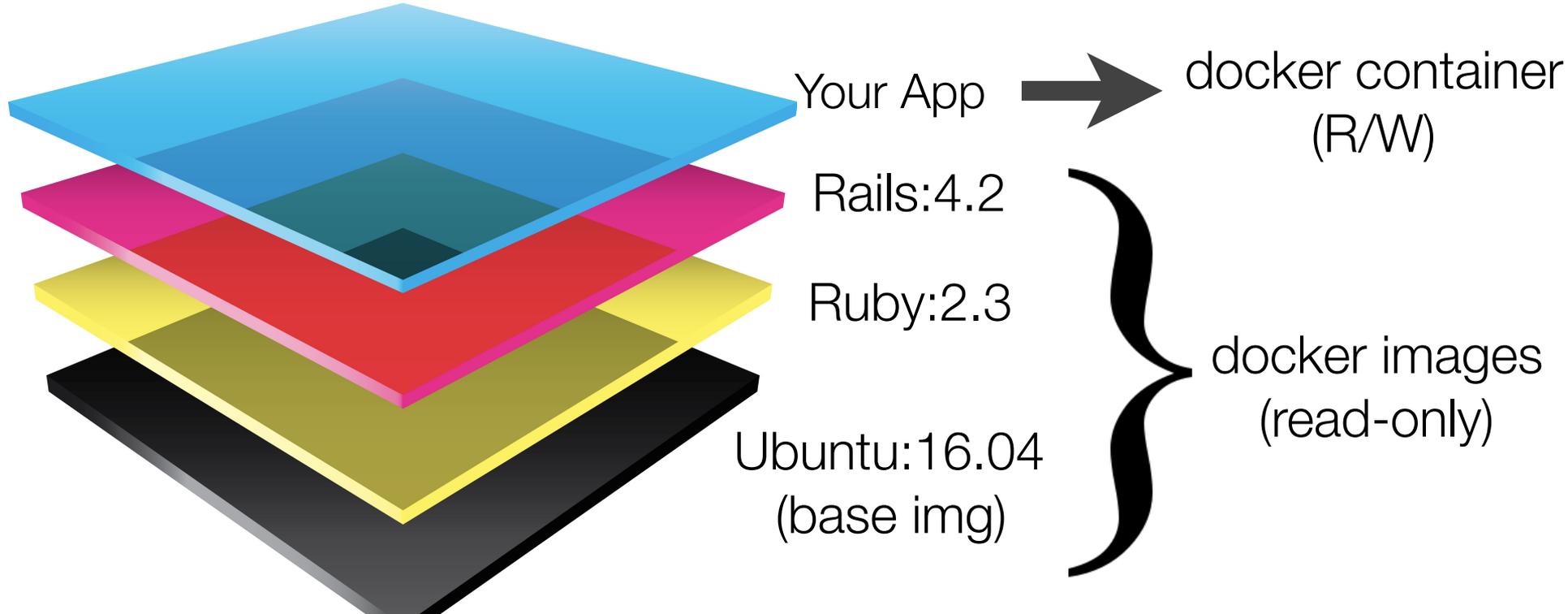
Spin up a container or two interactively (-it)...

```
$ docker run -it ubuntu /bin/bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
6d28225f8d96: Pull complete
166102ec41af: Pull complete

Digest:
sha256:5718d664299eb1db14d87db7bfa6945b28879a67b74f36da3e34f5914866b7
1c
Status: Downloaded newer image for ubuntu:latest

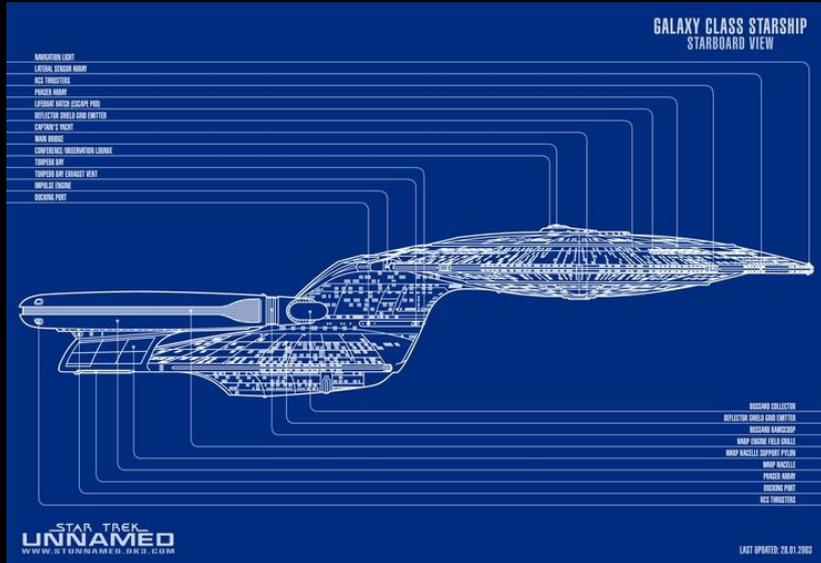
root@711d7f8ad897:/# cat /etc/issue
Ubuntu 16.04 LTS \n \l
```

# 3. Uses a layered filesystem (Union FS)



# What really are container?

Docker image  Docker container



# Docker has “muscle memory”

```
docker ps -a
```

```
docker top mycontainer
```

```
docker pull ubuntu:16.04
```

```
docker commit -m "No comment" mycont -t new_image
```

```
docker rm mycontainer
```

```
docker cp mycontainer
```

# Simple build system

```
$ cat Dockerfile
FROM ubuntu
ENV REFRESHED_AT 2016-05-17

RUN apt-get update && apt-get install -y busybox && \
    rm -fr /var/lib/apt/lists/*

RUN ln -s /bin/busybox /sbin/ifconfig
CMD /bin/bash

$ docker build -t mybuntu .
```

# Simple Orchestration

```
$ git clone https://github.com/rmetzler/sinatra-redis-docker-example.git
$ cat docker-compose.yml
web:
  build: .
  ports:
    - "4567:4567"
  links:
    - redis

redis:
  image: redis

$ docker build -t sintra-app .
```

# “Docker way”

Containers are meant to be disposable

Updating containers is an anti-pattern

Containers work best with single process

Be careful with untrusted containers



# CHICAGO

INTERNATIONAL  
SOFTWARE DEVELOPMENT  
CONFERENCE 2016

# goto; conference



*Please*

# Remember to rate this session

*Thank you!*