



OPENSIFT

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CNCF Ambassador

Topics!

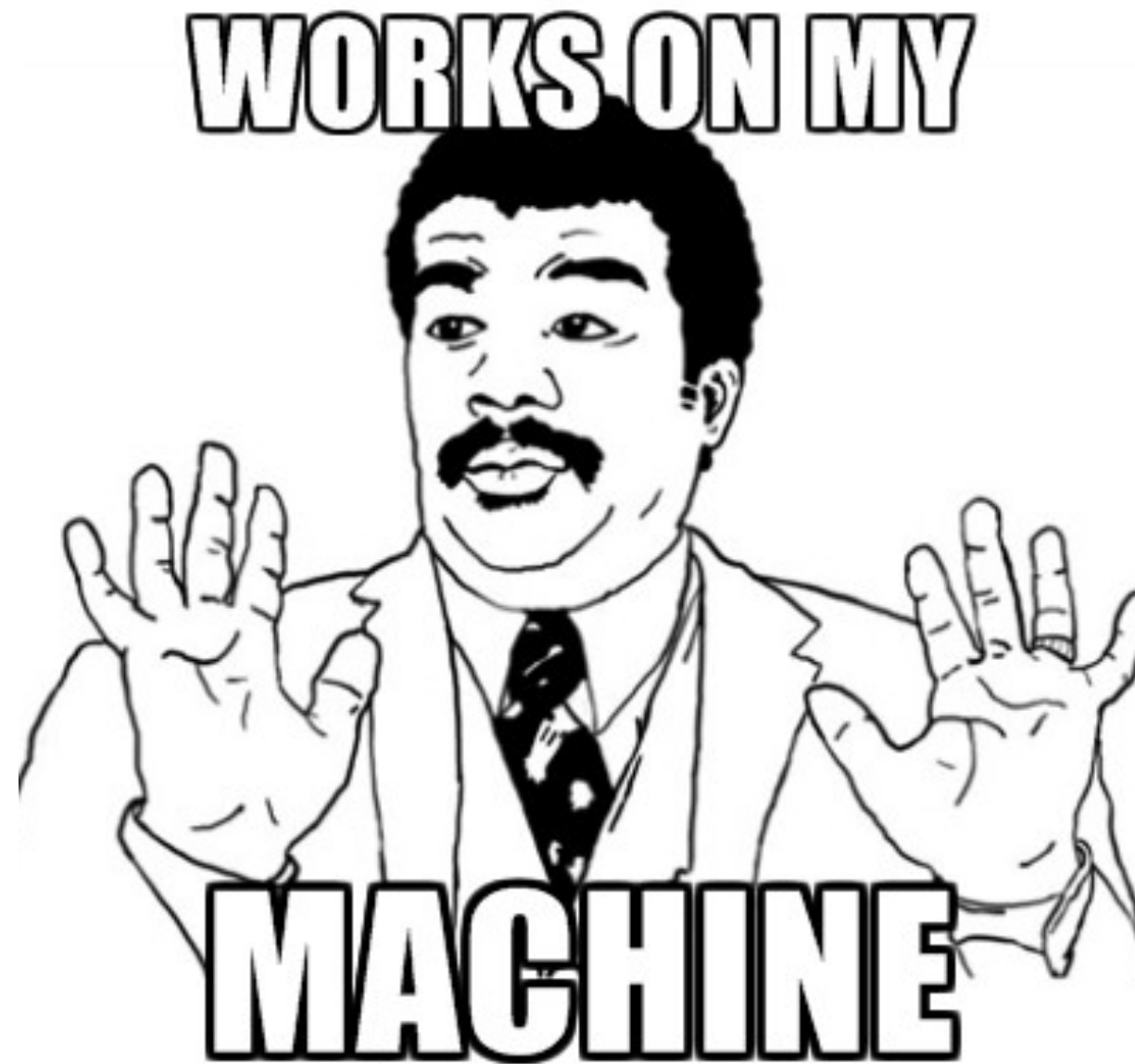
-> What is Docker?

-> What is K8s?

-> What is openshift?

→ Why docker / k8s ?




"Why K&S?"



ENVIRONMENT ISSUES

"Why K8s?"

APP DEPLOYMENT

	DEV	QA	PROD
APPS	 Microsoft	 amazon web services	 KVM
Middleware	v1	v1.1	v1.1.1
Runtime	app A,B,C	app A,B,D	app A
Data	old	few days ago	latest

"What can i do about this issue?"

What if i can package my

- 1) operating system
- 2) middleware
- 3) application

as single binary?

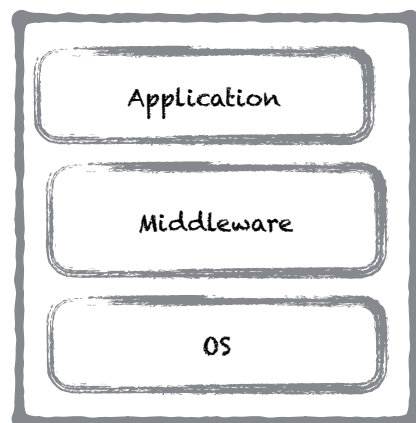
"What can i do about this issue?"

What if i can get a virtual environment where i have my own cpu / memory / network without having to spin a full blown VM ?

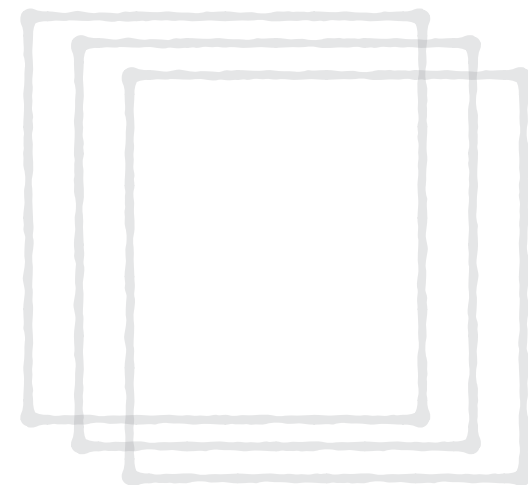
What is Docker?

What is Docker?

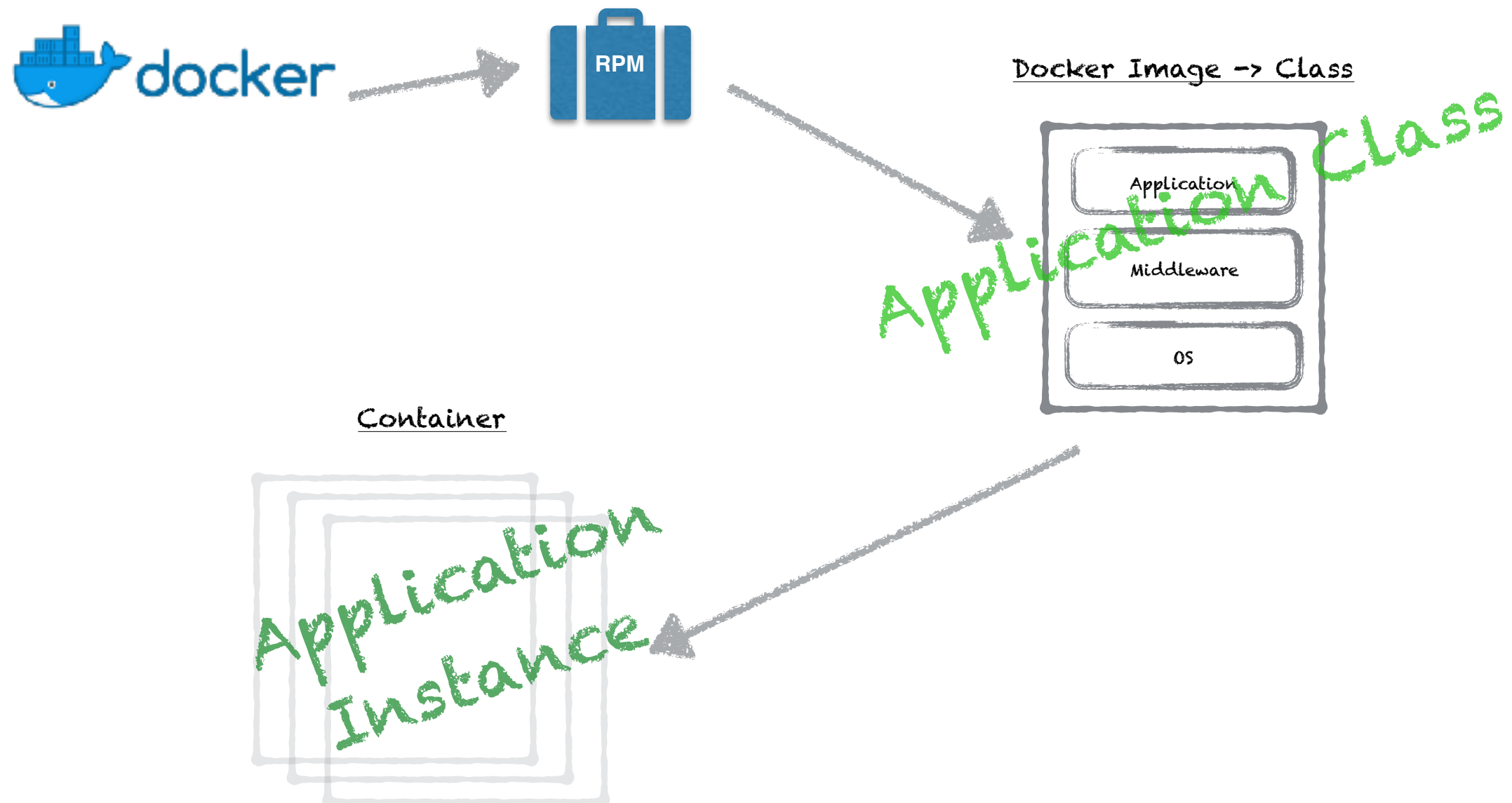
Docker Image



Container



Analogies - Docker Image

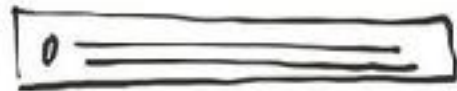


"What is docker container?"

"What is docker container?"

@jessfraz

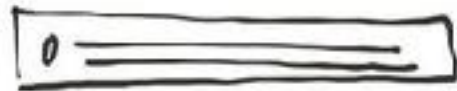
Here is a server:



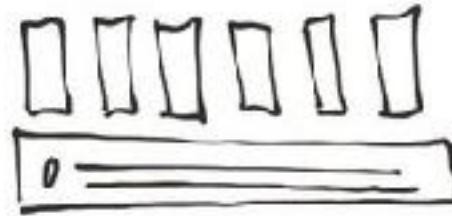
"What is docker container?"

@jessfraz

Here is a server:



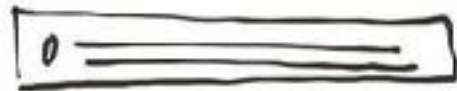
It has some processes...



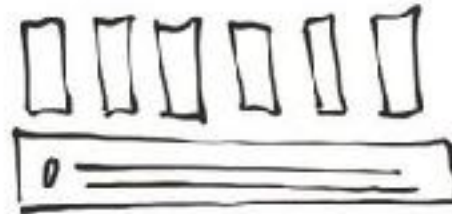
"What is docker container?"

@jessfraz

Here is a server:



It has some processes...



We can sandbox our processes with seccomp & cgroups

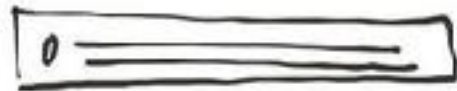


Protected

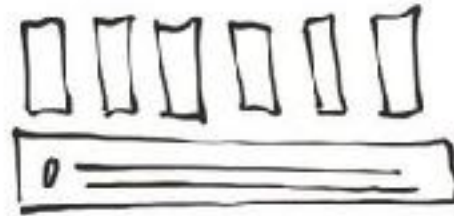
"What is docker container?"

@jessfraz

Here is a server:



It has some processes...



We can sandbox our processes with seccomp & cgroups



We can block/allow certain syscalls with seccomp...

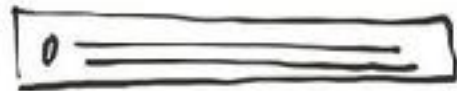
block clone NEWNS
NEW-NET

block ptrace

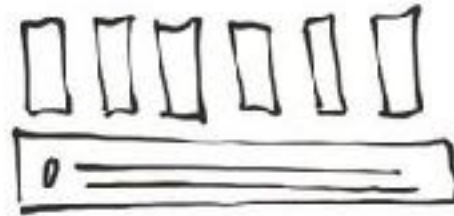
"What is docker container?"

@jessfraz

Here is a server:



It has some processes...



We can sandbox our processes with seccomp & cgroups



We can block/allow certain syscalls with seccomp...

block clone NEWNS
NEW-NET

block ptrace

We can control resource consumption with cgroups



pids.max=5

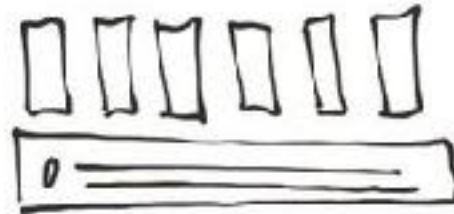
"What is docker container?"

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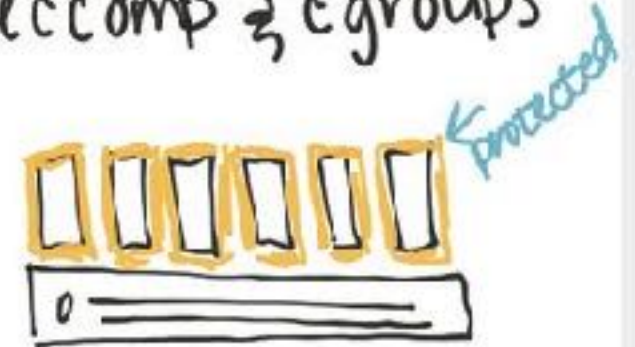
Here is a server:



It has some processes...



We can sandbox our processes with seccomp & cgroups



We can block/allow certain syscalls with seccomp...

block clone NEWNS
NEW-Net
block ptrace

We can control resource consumption with cgroups

~~fork bomb~~
pids.max=5

pin to a specific cgroup



OR memory limit in bytes
















"Why K8s?"



kubernetes

APP DEPLOYMENT

	DEV	QA	PROD
APPS	 docker	 docker	 docker
Middleware	 docker	 docker	 docker
Runtime	   docker docker docker	   docker docker docker	 docker

What is k8s?

"Kubernetes is an orchestration tool to run containers at scale across multiple nodes"

Analogies

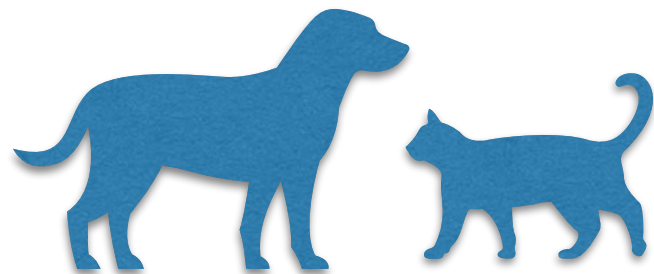
"Openshift is a Distributed
(operating) System for your
Datacenter"

"K8s is Kernel for your
Datacenter"

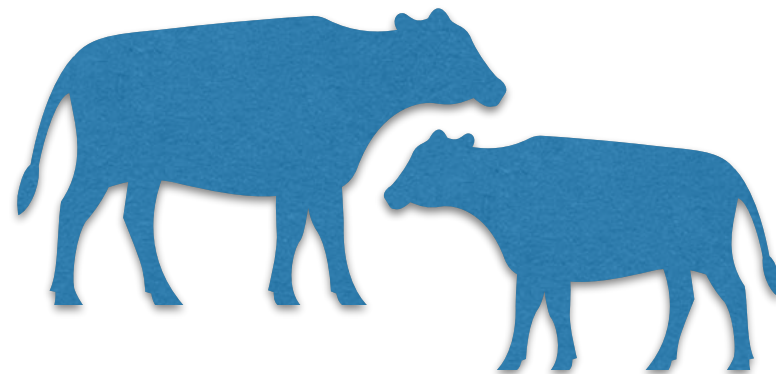
Analogies

"Kubernetes abstracts application from underlying infrastructure"

Analogies



Vs



VM's nodes

K8s nodes