Containers != Docker

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Container Meetup Prague 2017

History

I am chroot

Chroot (1979 ~~1982~~)

I am chroot

BSD Jails (2000)

Missed Jail

Linux VServer (2001)

Missed Jail

Solaris Zones (2004)

Friendzone

OpenVZ (2005)

Qemu inside OpenVZ

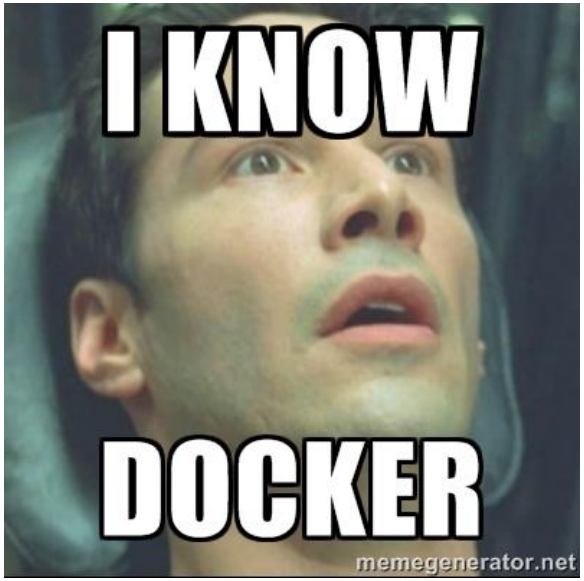
LXC (2008)

Try LXC instead

systemd-nspawn (2012)

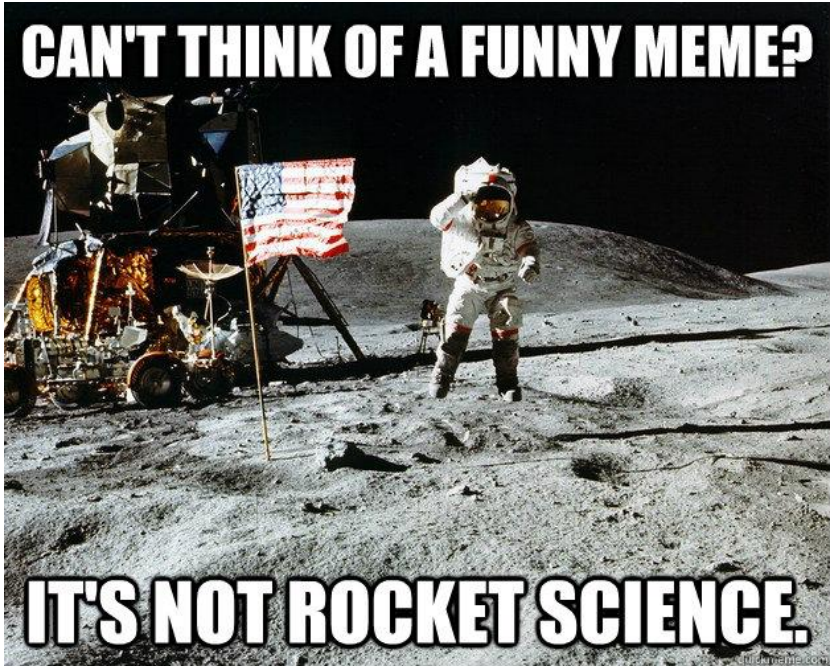
systemd Everywhere

Docker (2013)



I know Docker

Rocket (2014)



Rocket Science

runc (2015)

runc

Fundaments

1. Kernel Namespaces
2. CoW filesystem
3. cgroups
4. SELinux

Namespaces

Namespace

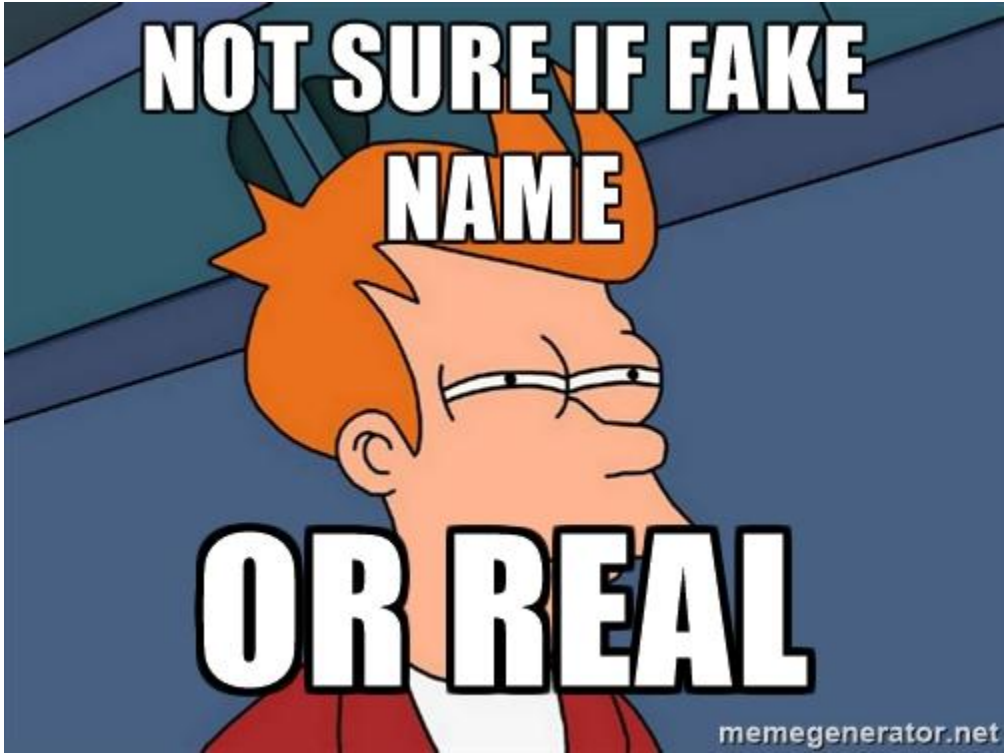
Namespaces

Mount (2.4.19)

Box of screws

Namespaces

UTS (2.6.19)



Not sure

Namespaces

IPC (2.6.19)

Yoda communication

Namespaces

PID (2.6.24)

Blindfold hat

Namespaces

Network (2.6.29)

Network down

Namespaces

User (3.8)

Smokin'

Namespaces

User (3.8)

Smokin'

Copy-on-Write filesystem

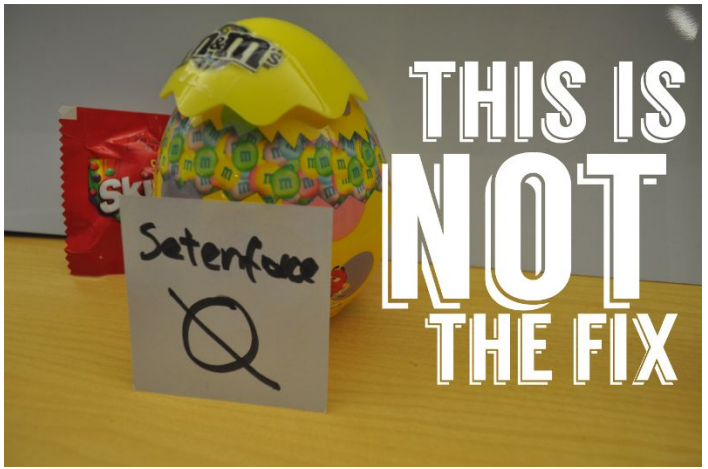
Sheet

Cgroups

Groups

SELinux


SOMEONE PUT SKITTLES
IN THE M&M'S DISPENSER


Setenforce
THIS IS
NOT
THE FIX

Why is

Docker == Containers

then?

One more time

UX

Swiss Knife, Kids Knife

Container Packaging

Packaging

Distribution

Container Truck

Marketing

Containers Everywhere, Works on My Machine, Containers in Production

Why is it wrong?

- Too many layers (kube -> kubelet -> docker -> containerd -> runc)
- One big project (Where did the Unix filosopihy go?)
  - CRI-O - runc, containers/image, containers/storage, CNI
- Hostile environment (You cannot name a repo docker-*)

My point?

- containers are good
- using Docker is ok
- there are other options too
  - https://www.opencontainers.org/
- pick the right one

Catch'em all

Thanks

Have a great day

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Links

- https://en.wikipedia.org/wiki/Operating-system-level_virtualization
- http://pivotal.io/platform/infographic/moments-in-container-history
- https://www.freebsd.org/doc/handbook/jails-build.html
- https://lwn.net/Articles/531114/

- https://github.com/vpavlin/installfest2016

Catch'em all