

# 5 Years Later, Is Docker Still Delivering ?

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Systems Engineer,  
Riot Games

@tomwillfixit



# Agenda

- A Brief History of Docker
- Journey to Production and Beyond
- Is Docker Still Delivering ?
- Pop Quiz



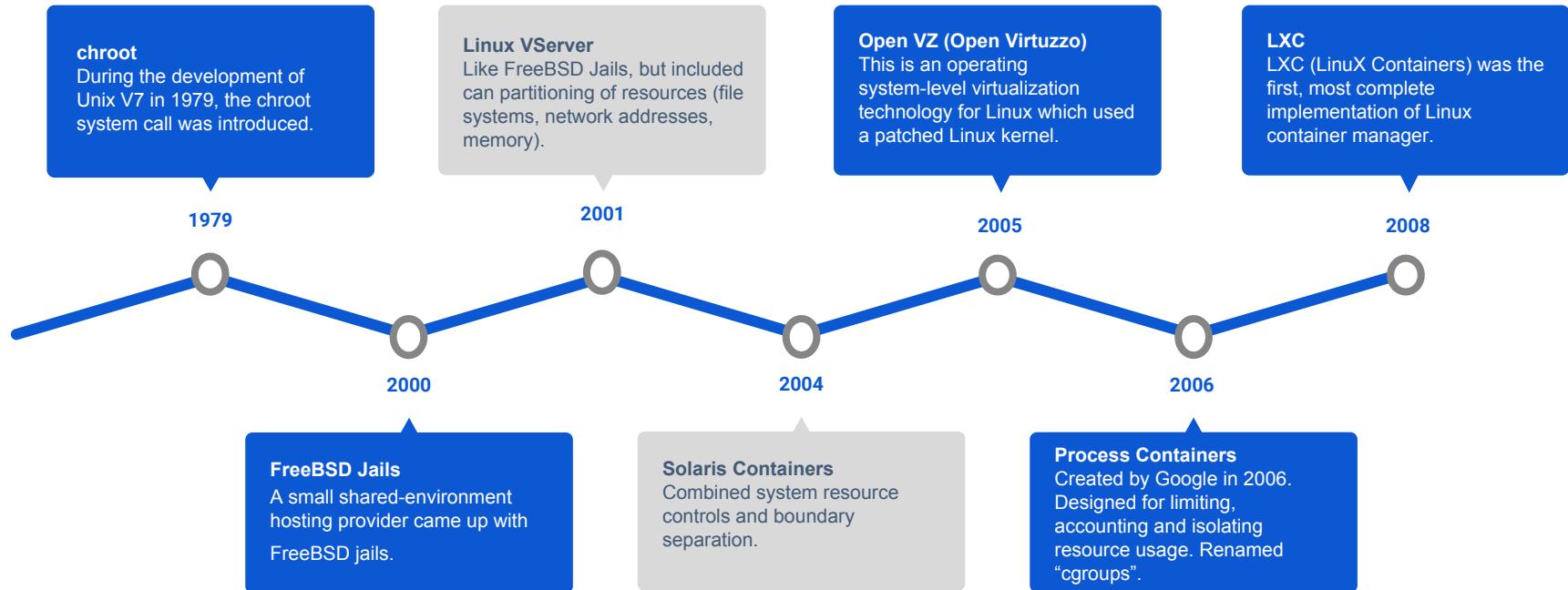
# Who is Tom ?

- Systems Engineer at Riot Games
- Docker Captain
- Co-Founder of ShipltCon

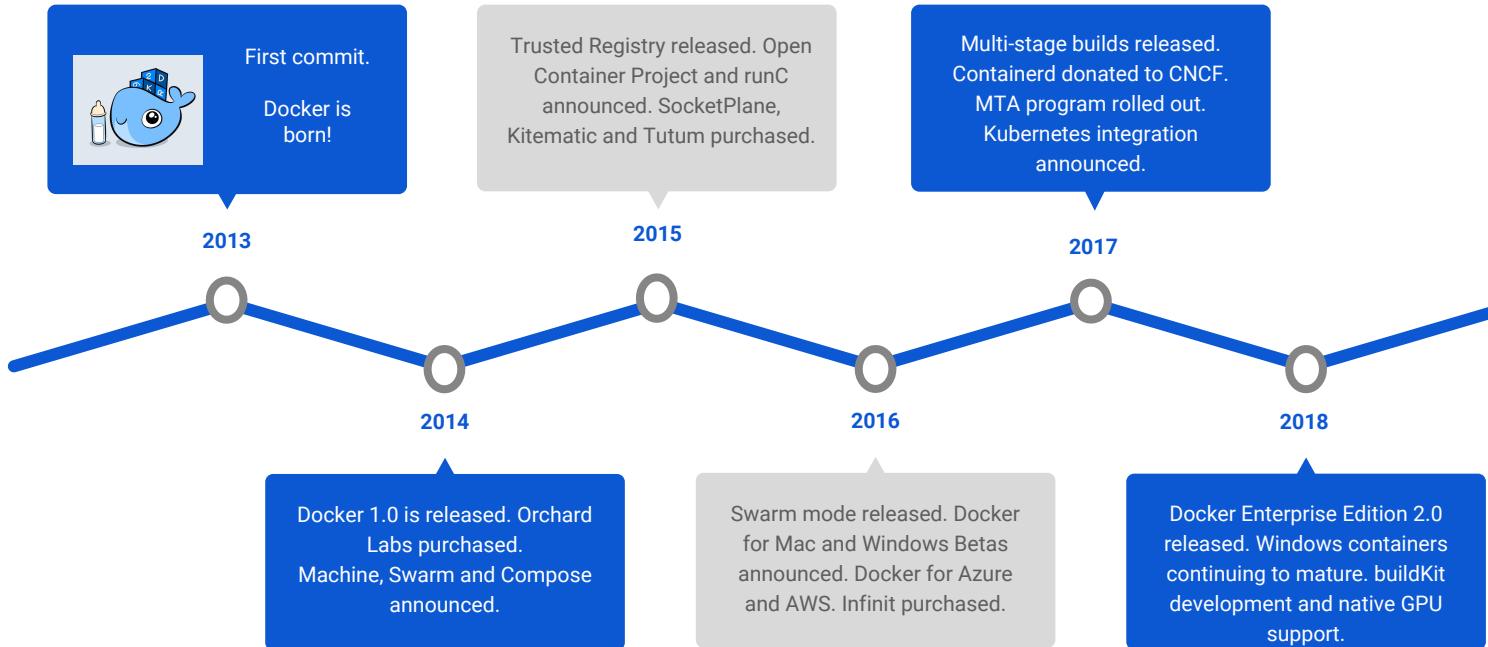
Previous roles include :

- Build Engineer at Demonware (Activision)
- Tools/System Automation at Oracle
- Configuration Manager at Citi
- Java QA Engineer at Sun Microsystems

# Standing on the shoulders of giants



# A Brief History of Docker



# Docker Adoption

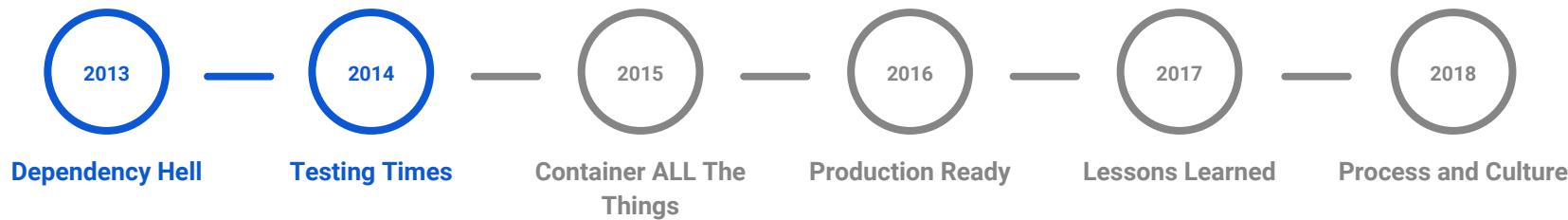
5x growth between August 2014 - August 2015

30x growth between May 2015 - May 2016

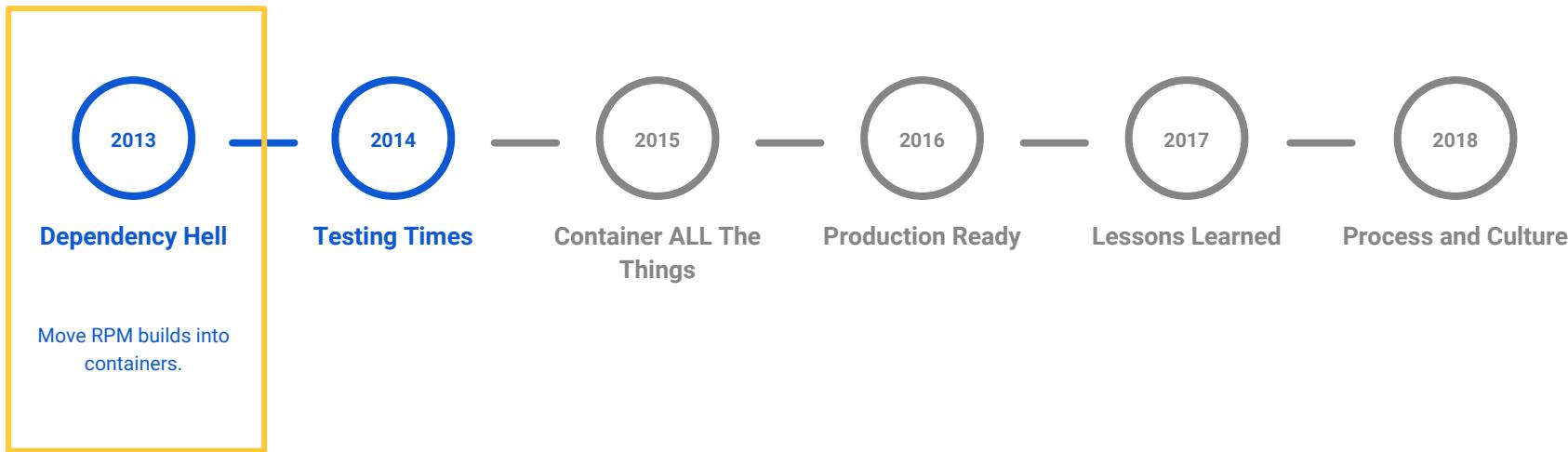
40x growth between March 2016 - March 2017

Source: Datadog (<https://www.datadoghq.com/docker-adoption/>)

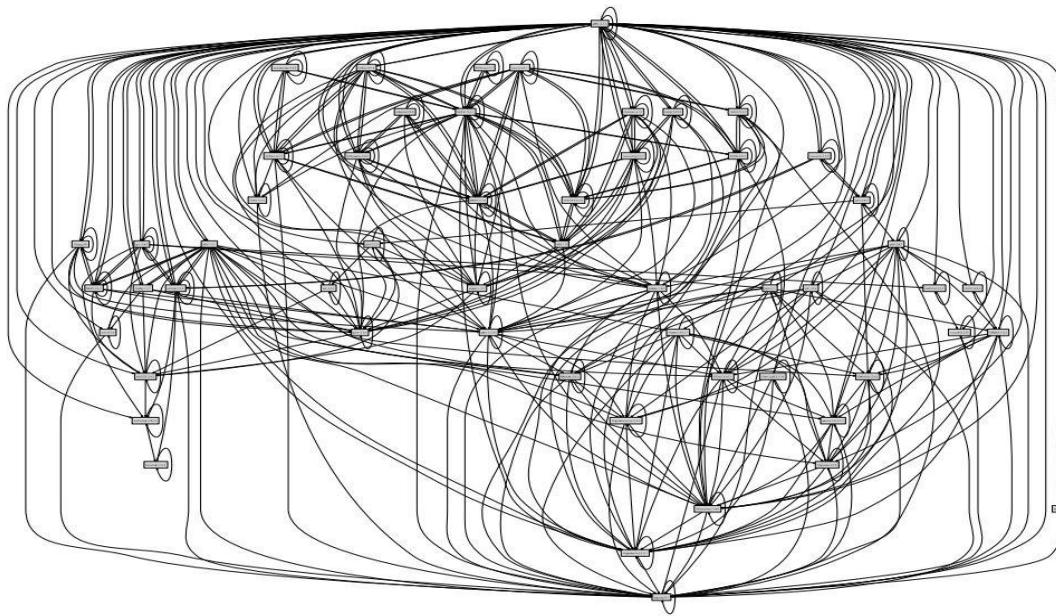
# Journey to Production and Beyond



# Journey to Production and Beyond



# What does Dependency Hell look like?



# What does Dependency Hell feel like ?

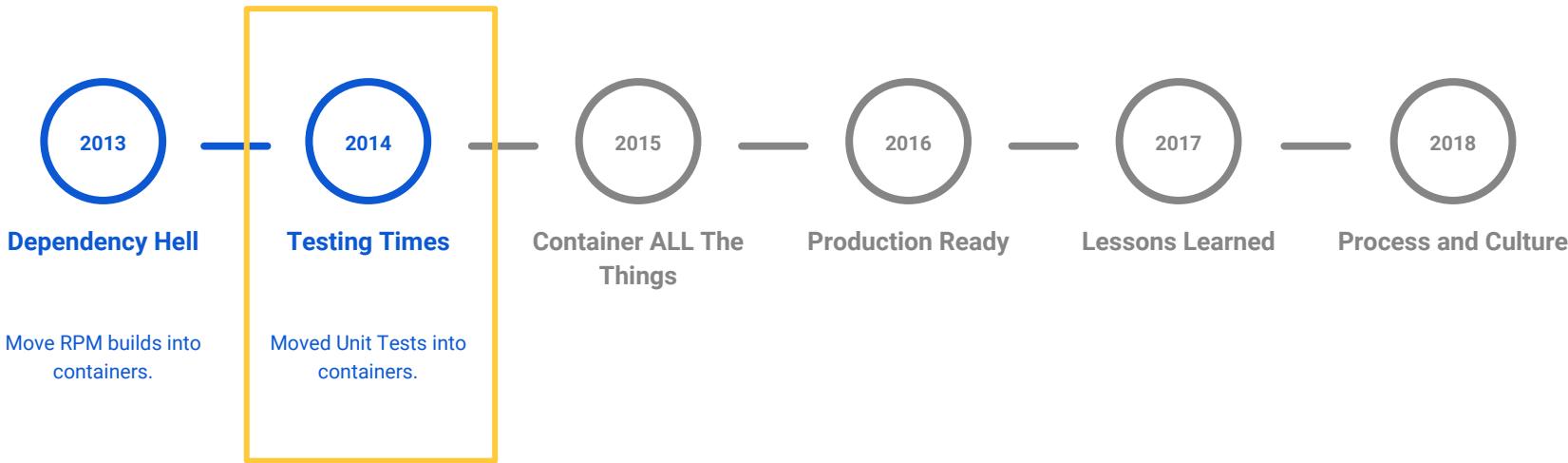


# How did Docker help ?

“Prior to Docker, the portability of an application or service was never guaranteed ... Because of the way that Docker containers separate the application constraints from infrastructure concerns, we help solve that dependency hell.”

David Messina, Marketing VP at Docker

# Journey to Production and Beyond



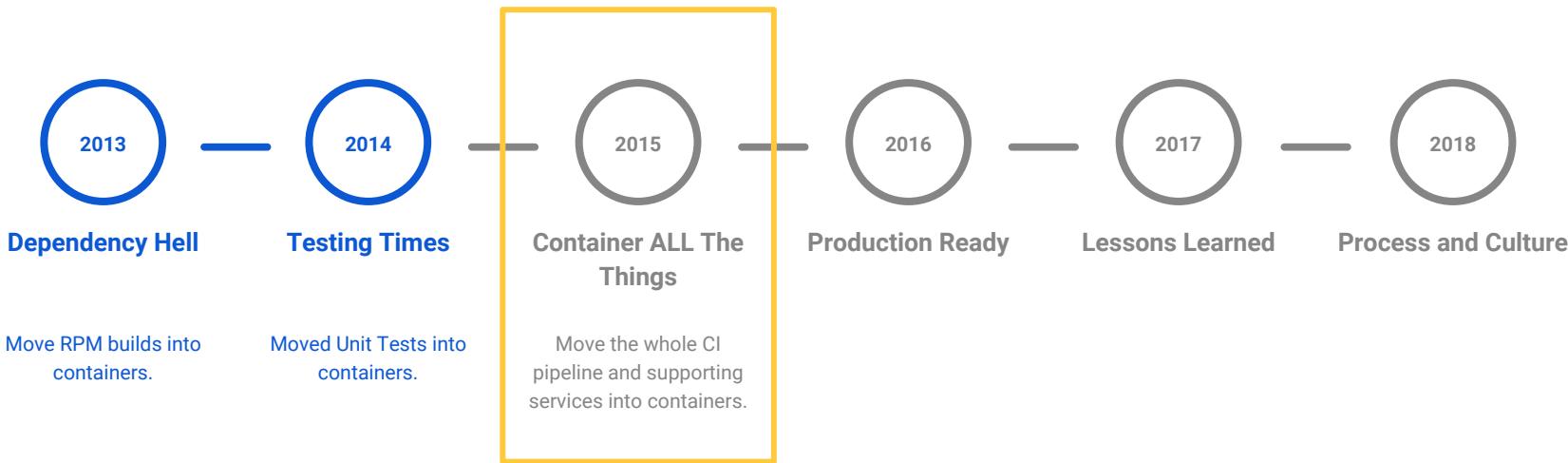
Think Big.  
Act Small.  
Fail Cheap.  
**Learn Fast.**

## Testing Times

- Single test, single container
- Test environment defined in code
- Fast to create, fast to destroy
- Improved resource utilization
- Load Testing Tooling (seasonal)
- Improved parity between local testing and staging

Source : [@mikemctaggart](#)

# Journey to Production and Beyond



# Container ALL the things



- Build Agents
- Test Environments
- Tooling
- CI servers
- Internal services
- GUI Apps
- More containers

# Networking use cases

- VRNetLab - Containerized Virtual routers
- Test configuration changes locally (Ansible/Puppet/Chef)
- Evaluating tooling such as ThousandEyes
- Networking Toolkit for Onboarding
- Smokeping sidecar running on all build/test environments

# VRNetLab

Supports :

- Arista vEO
- Cisco CSR1000v
- Cisco Nexus NX-OS (using Titanium emulator)
- Cisco XRv
- Cisco XRv 9000
- Juniper vMX
- Juniper vQFX
- Nokia VSR

Recommended by Hugo (@hugoslabbert) Network Engineer at Demonware (Activision)

# Popular Docker Networking Tools

Flannel

Weave Net

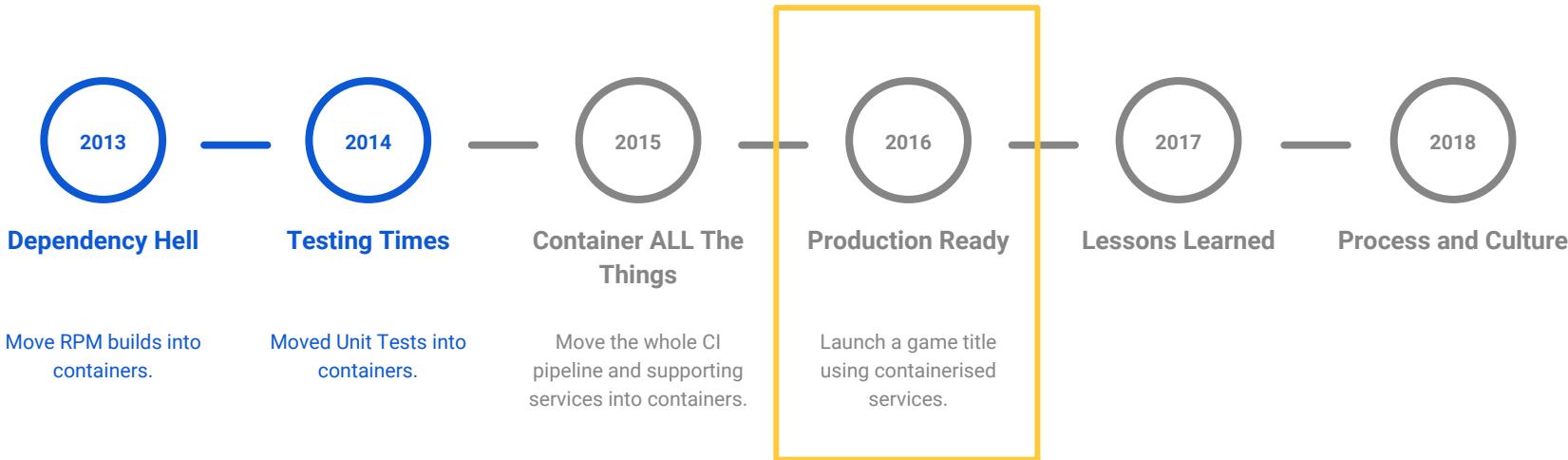
Project Calico

Big Switch Networking

Contiv



# Journey to Production and Beyond



# Production Ready



*Just me, fixing some bugs on the production server*

# Production Ready

- Codified deployments
- Gitflow Workflow driven through Jenkins
- Fully containerised CI/CD pipeline
- Developer Workflow; Docker CLI, Compose and Machine
- Title successfully shipped

# Journey to Production and Beyond



# Lessons Learned

I will not hand bomb changes into Production ... again  
I will not hand bomb changes into Production ... again  
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# Lessons Learned

- Remove opportunities for human error
- Invest in good logging and monitoring tools
- Infrastructure and supporting services as code
- Build with portability in mind
- Fix forward

# Journey to Production and Beyond



# Process and Culture

Before choosing tools, communicate with customers, define processes and best practices.

As a tool, Docker encourages best practices, enables greater understanding and provides a common language across disciplines.

“Containers will not fix  
your broken culture”

Bridget Kromhout  
[@bridgetkromhout](https://twitter.com/bridgetkromhout)



# The next 5 years ...



**I have no idea ...**



**But here are some guesses ...**

# Evolving The Platform

- Continue contributing to and evolving core components
  - Containerd
  - Runc
  - linuxKit
  - buildKit
  - swarmKit
- Docker Enterprise Edition 2.0
  - Choice for customers; Swarm and/or Kubernetes
  - Flexibility; multi-Linux, multi-OS and multi-cloud customer environments

# IoT and Embedded Devices

- More Operating Systems tailored to run containers such as ResinOS
- Continued focus on the pillars of dependability
  - Availability
  - Reliability
  - Safety
  - Security
- Embedded Medical devices such as Pacemakers, Insulin pumps, Glucose monitors



eliot



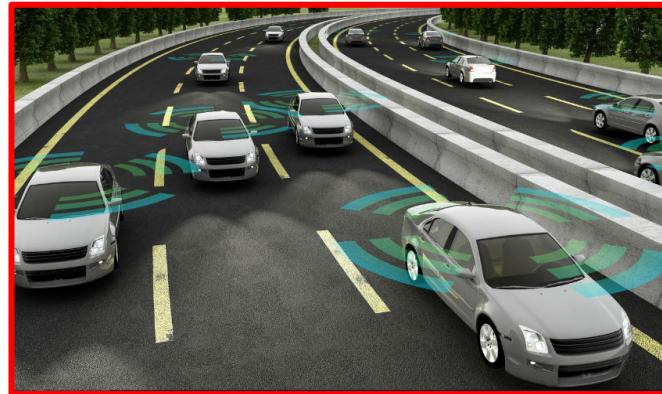
# Critical Systems



Business-critical



Mission-critical



Safety/Life-critical

# Increased Usage In Data Science

- Data Scientists ❤️ Docker
- Native support for Nvidia GPUs
- Deep Learning frameworks
- Cloud agnostic GPU accelerated containers

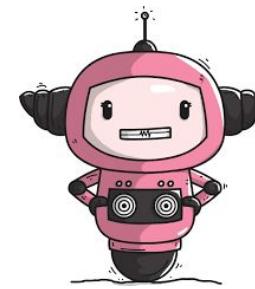


TensorFlow



Deep Learning with PyTorch

Caffe



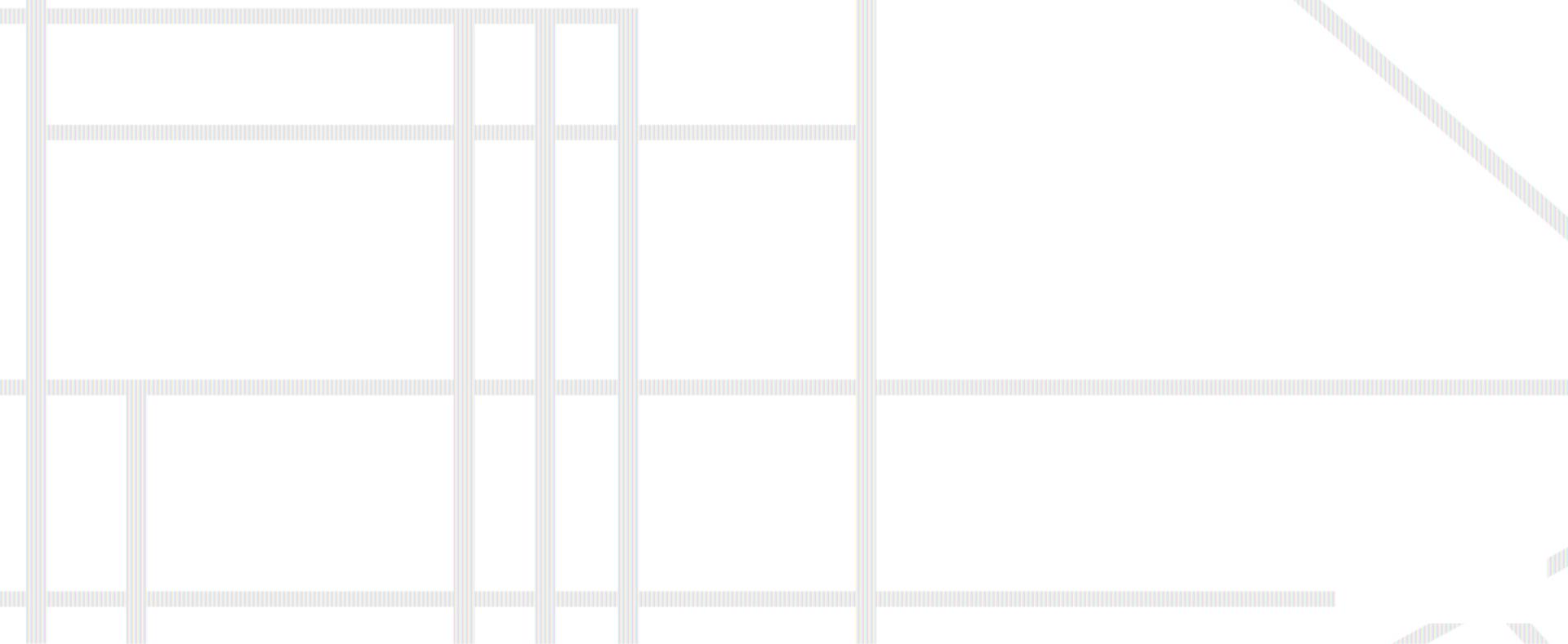
# 5 years later, is Docker still delivering ?



# 5 things I wish I'd known 5 years ago

- A reliable image registry is a must
- Get customer buy-in early
- Growth isn't fast, it's exponential
- Image labelling is very important
- Sidecars are really useful

# Pop Quiz



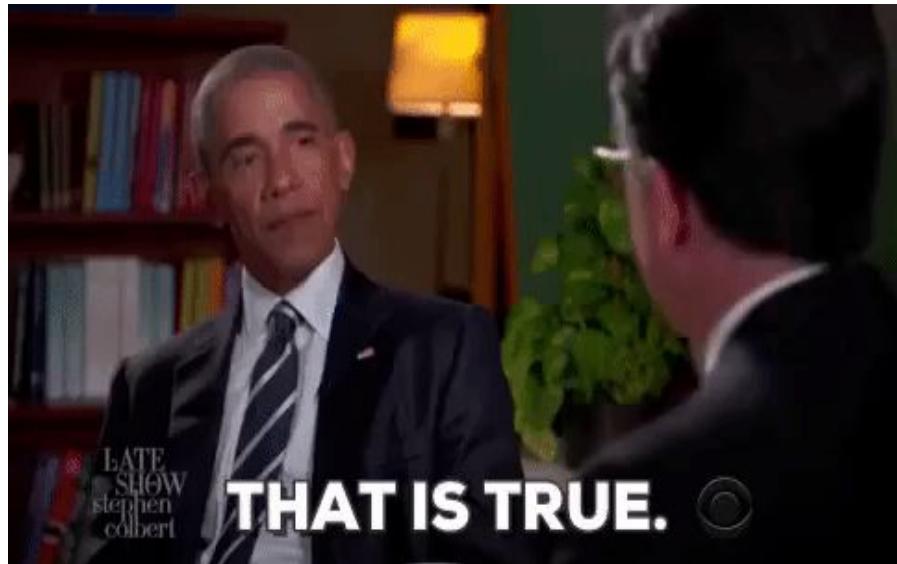
# True or False ?

Docker democratized container technology and accelerated container adoption.



# True or False ?

Docker containers can help companies save money by reducing hardware costs, increasing staff productivity and maximizing software scalability.



# True or False ?

Containers are a silver bullet and will solve ALL your problems.



# And Finally ...

## The Community needs you.



**200,000+**

Meetup members  
around the world



**200+**

Active Local  
groups



**81**

Countries



**1000+**

1000+ meetups  
per year



**100K**

Attendees  
per year



@tomwillfixit

@DockerDublin

@DandiManifesto

“It’s like the Agile Manifesto, but for humans.”

<https://diversitymanifesto.org>



A photograph of a man sitting on a stone wall at sunset, working on a laptop. He is silhouetted against the bright sky. In the background, a city skyline is visible under a warm orange and yellow sky. The foreground shows a paved path and some low walls.

**Thank you!**