





What is Docker?

An Introduction to Docker

What is Docker?

- Docker is a standard for Linux containers.
- A “Container” is an isolated runtime inside of Linux.
- A “Container” provides a private machine like space under Linux.
- Containers will run under any modern Linux Kernel

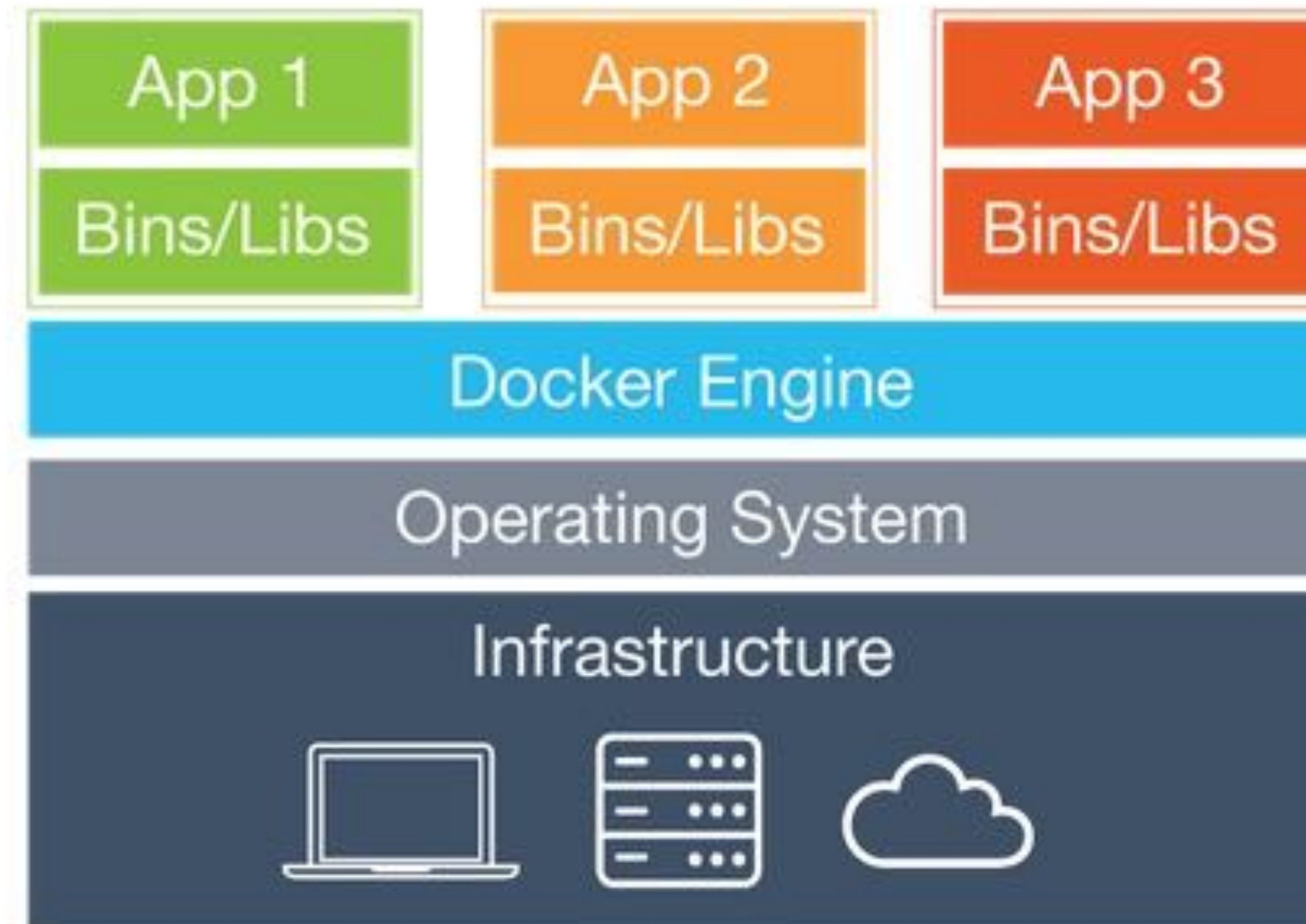
Containers can:

- Have their own process space.
- Their own network interface.
- 'Run' processes as root (inside the container)
- Have their own disk space.
 - (can share with host too)

A Container is not a VM!



Virtual Machines



Containers

Docker Terminology

- Docker Image - The representation of a Docker Container. Kind of like a JAR or WAR file in Java.
- Docker Container - The standard runtime of Docker. Effectively a deployed and running Docker Image. Like a Spring Boot Executable JAR.
- Docker Engine - The code which manages Docker stuff. Creates and runs Docker Containers.

The Challenge

Multiplicity of Stacks



Static website

nginx 1.5 + modsecurity + openssl + bootstrap 2



Background workers

Python 3.0 + celery + pyredis + libcurl + ffmpeg + libopencv + nodejs + phantomjs



User DB

postgresql + pgv8 + v8



Queue

Redis + redis-sentinel



Analytics DB

hadoop + hive + thrift + OpenJDK



Web frontend

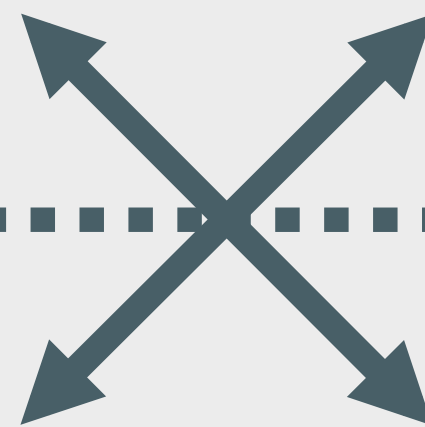
Ruby + Rails + sass + Unicorn



API endpoint

Python 2.7 + Flask + pyredis + celery + psycopg + postgresql-client

Do services and apps
interact
appropriately?



Public Cloud



Development VM



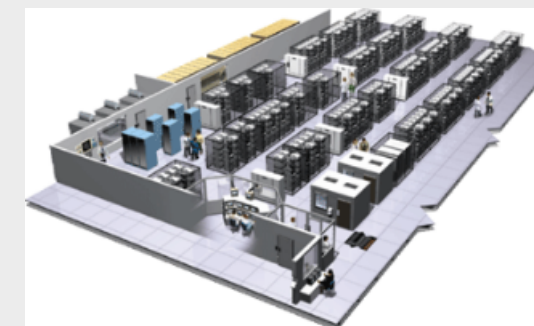
QA server

Customer Data Center



Disaster recovery

Production Servers



Production Cluster



Contributor's laptop



Can I migrate
smoothly and
quickly?

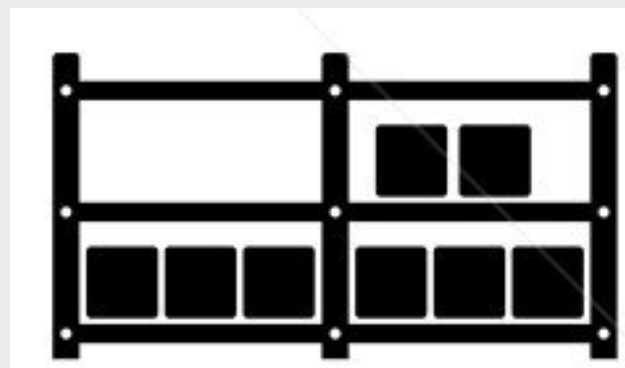
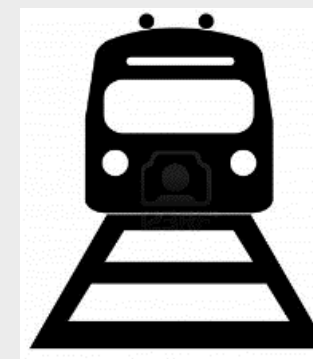
Cargo Transport Pre 1960

Multiplicity of Goods



Do I worry about
how goods interact
(e.g. coffee beans
next to spices)

Multiplicity of
methods for
transporting/storing

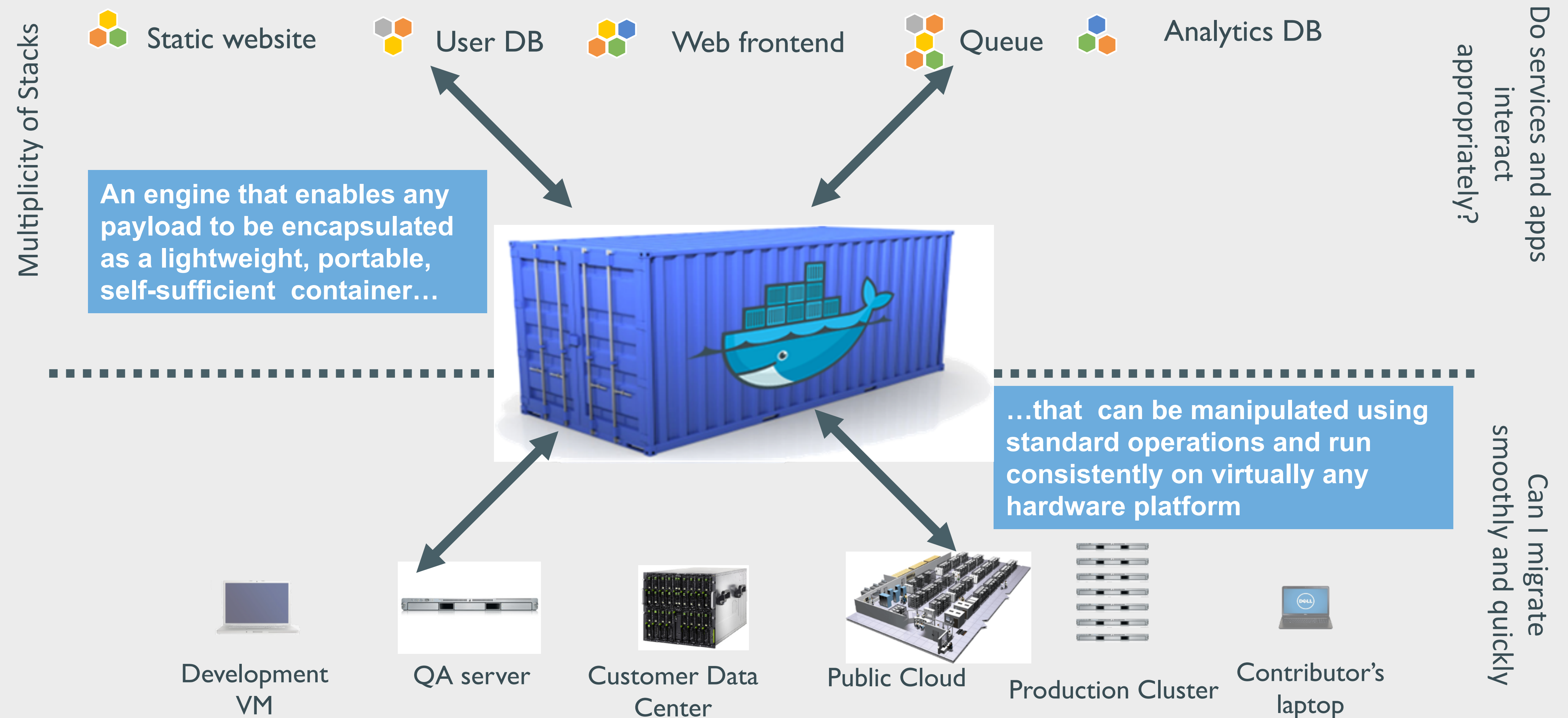


Can I transport quickly
and smoothly
(e.g. from boat to
train to truck)

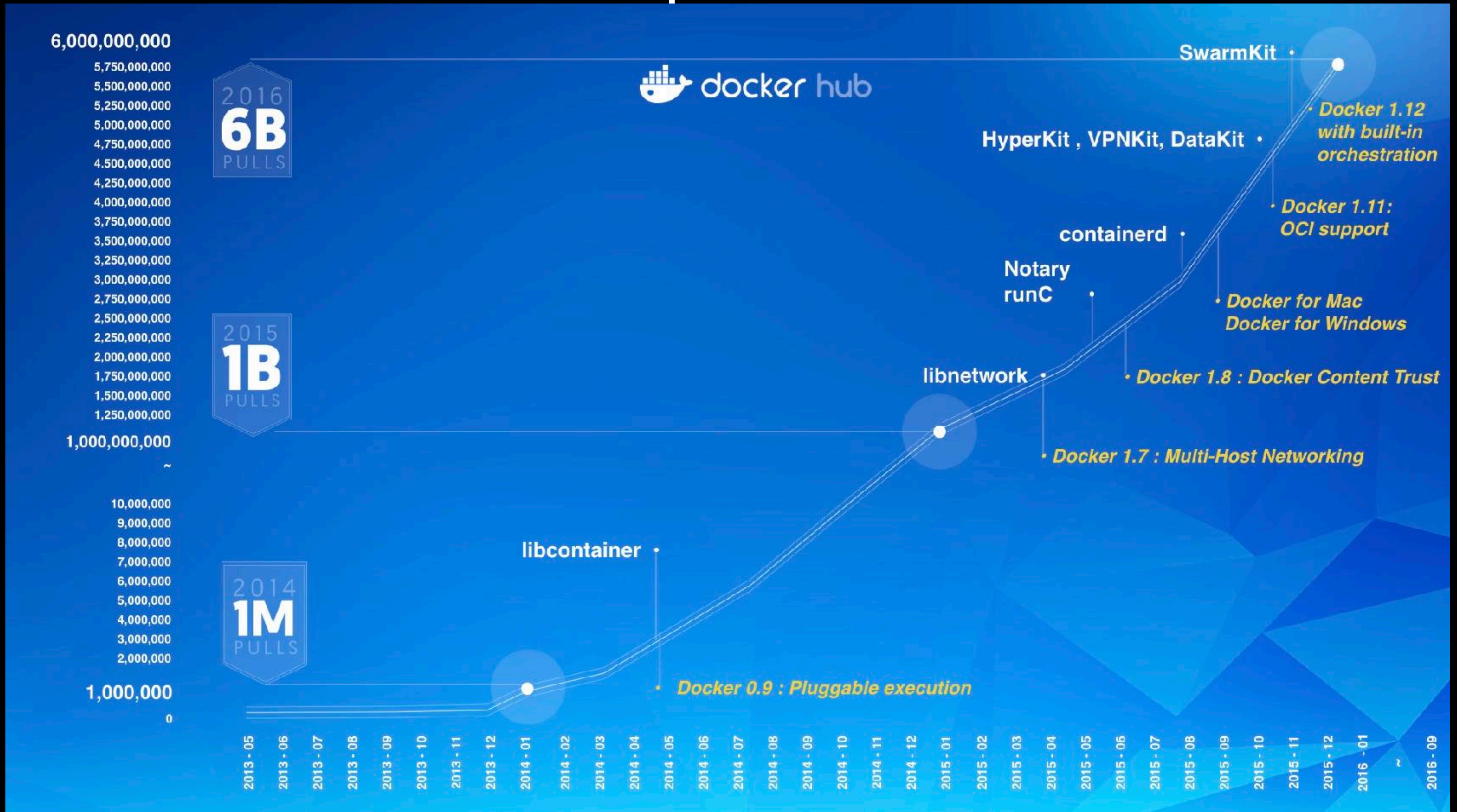
Intermodal Shipping Container



Docker - Shipping Container for Code



Docker's Explosive Growth



Docker Engine Runtime

