

Docker Introduction

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What is Docker?

- Open source project and company



- Used to create containers for software applications
- Package Once Deploy Anywhere (PODA)

Docker Contributors by employers/hackers

 [gistfile1.txt](#)

```
1 Top changeset contributors by employer
2 (Unknown) 4520 (47.9%)
3 "Docker" 3821 (40.5%)
4 "Red Hat" 685 (7.3%)
5 "IBM" 232 (2.5%)
6 "Google" 119 (1.3%)
7 "Cisco" 49 (0.5%)
8 "Amadeus" 4 (0.0%)
9 "VMWare" 2 (0.0%)
10 "CoreOS" 1 (0.0%)
11
```

<https://gist.github.com/arun-gupta/7d5a373099ff831d7213>

<http://www.infoworld.com/article/2925484/application-virtualization/look-whos-helping-build-docker-besides-docker-itself.html>



Build

Develop an app using Docker containers with any language and any toolchain.



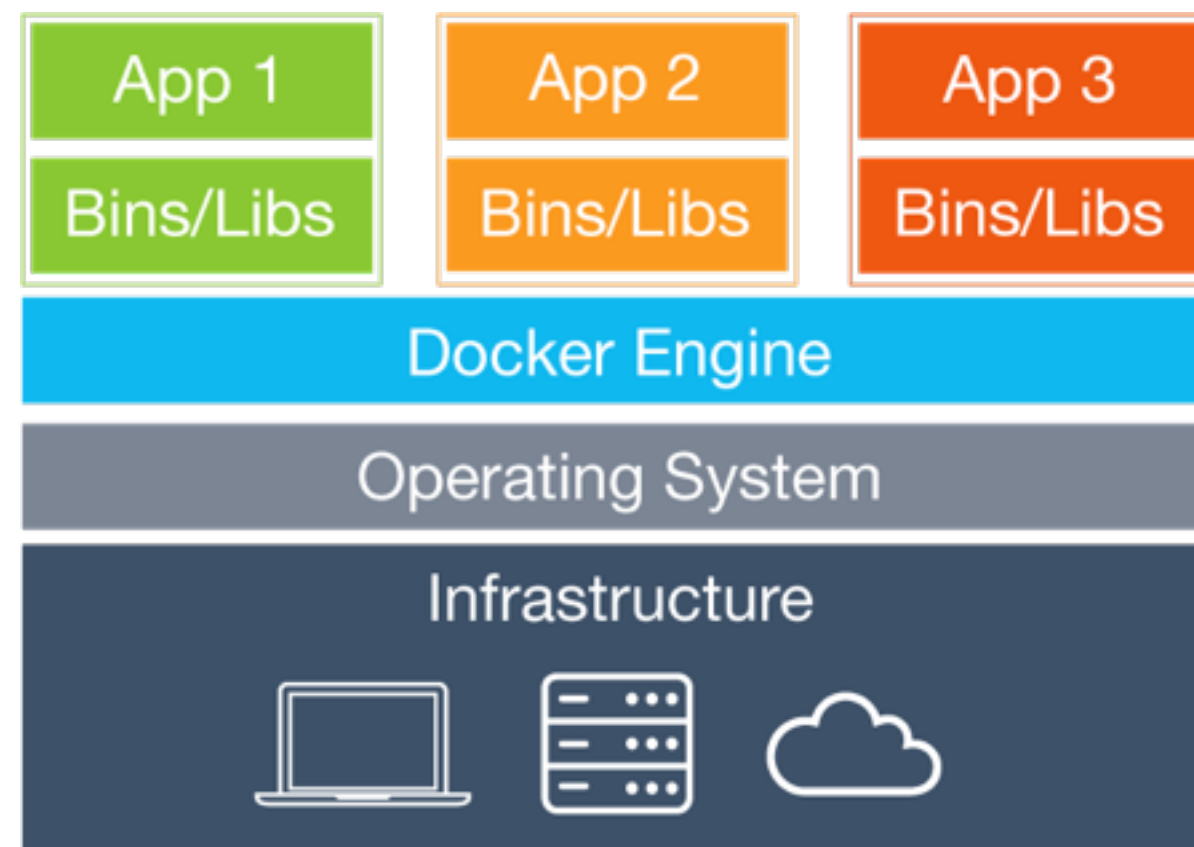
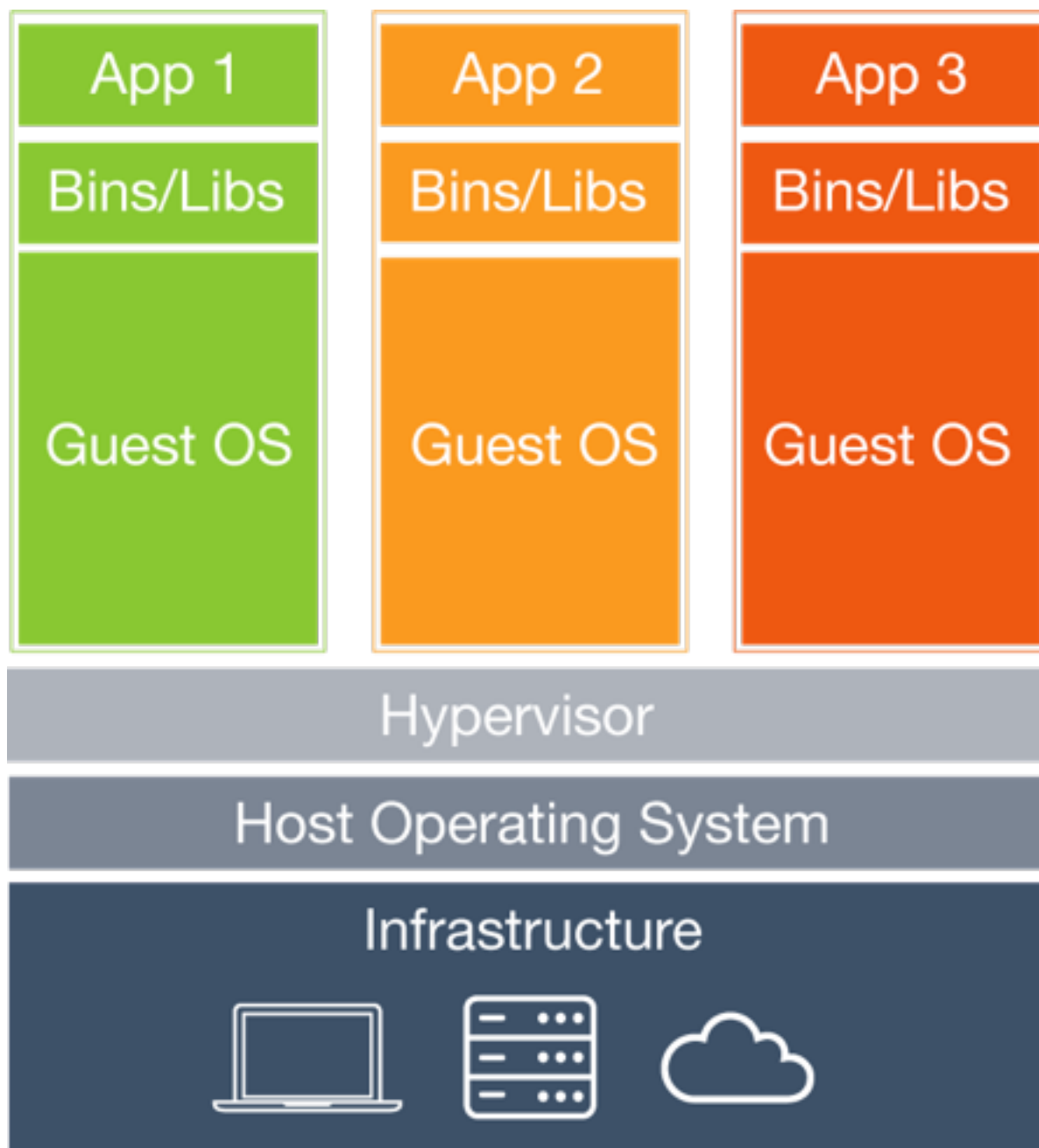
Ship

Ship the “Dockerized” app and dependencies anywhere - to QA, teammates, or the cloud - without breaking anything.

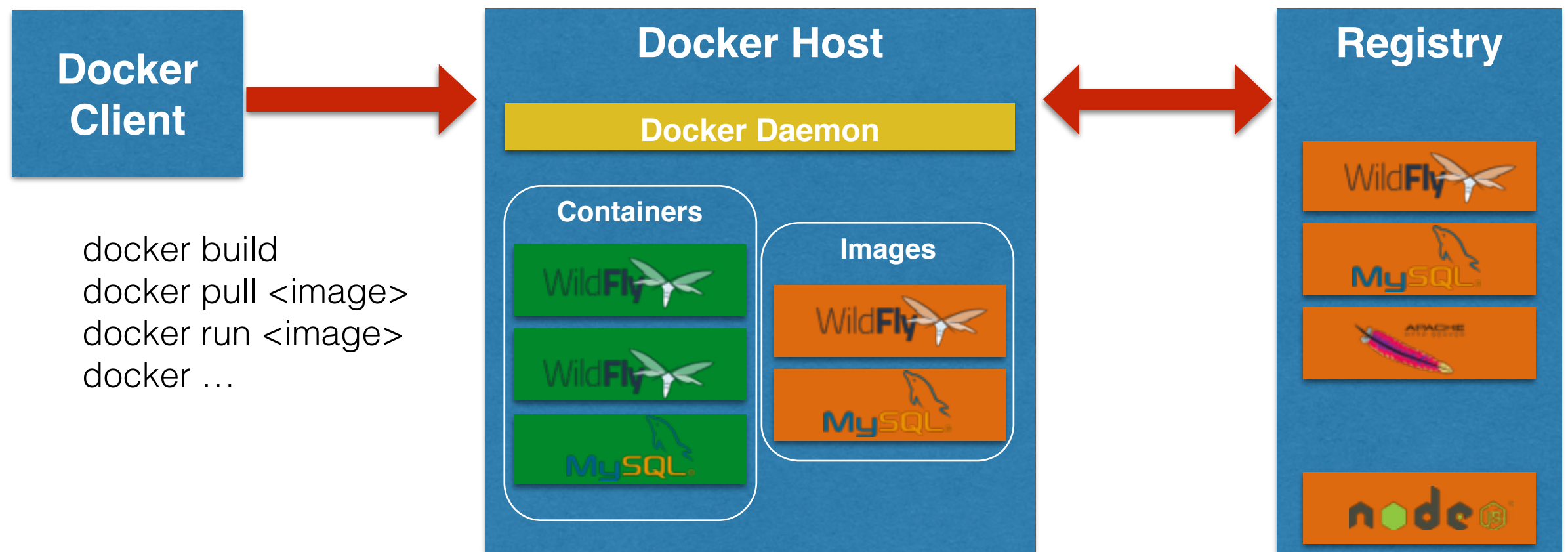


Run

Scale to 1000s of nodes, move between data centers and clouds, update with zero downtime and more.



Docker Workflow



Container

Image

Image

Base Image

Bootfs/Kernel

jboss/wildfly

jboss/base-jdk:8

jboss/base

centos:7

Docker Machine



- Create Docker Host on computer or cloud provider

```
docker-machine create --driver=virtualbox  
myhost
```

- Configure Docker client to talk to host
 - Create and pull images
 - Start, stop, restart containers
 - Upgrade Docker
- Not recommended for production yet

Docker Compose

- Defining and running multi-container applications
- Configuration defined in a single file
- Great for dev, staging, and CI
- Not recommended for production yet

docker-compose.yml

mysqldb:

image: mysql

environment:

MYSQL_DATABASE: sample

MYSQL_USER: mysql

MYSQL_PASSWORD: mysql

MYSQL_ROOT_PASSWORD: supersecret

mywildfly:

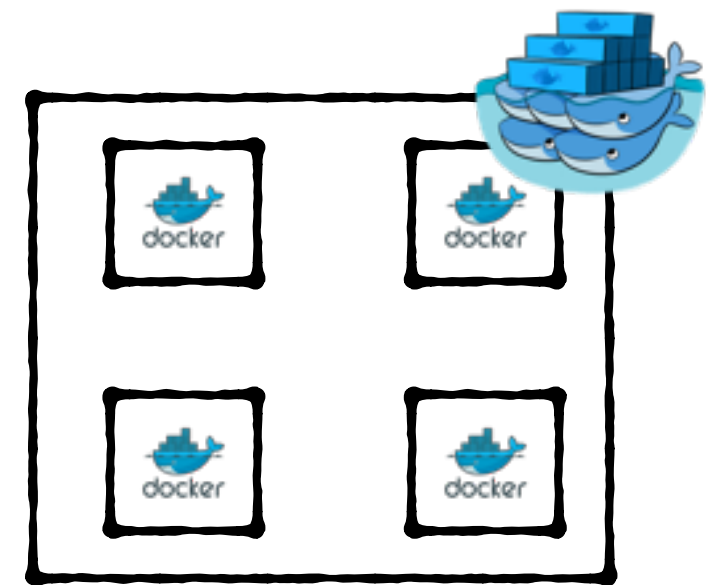
image: arungupta/wildfly-mysql-javaee7

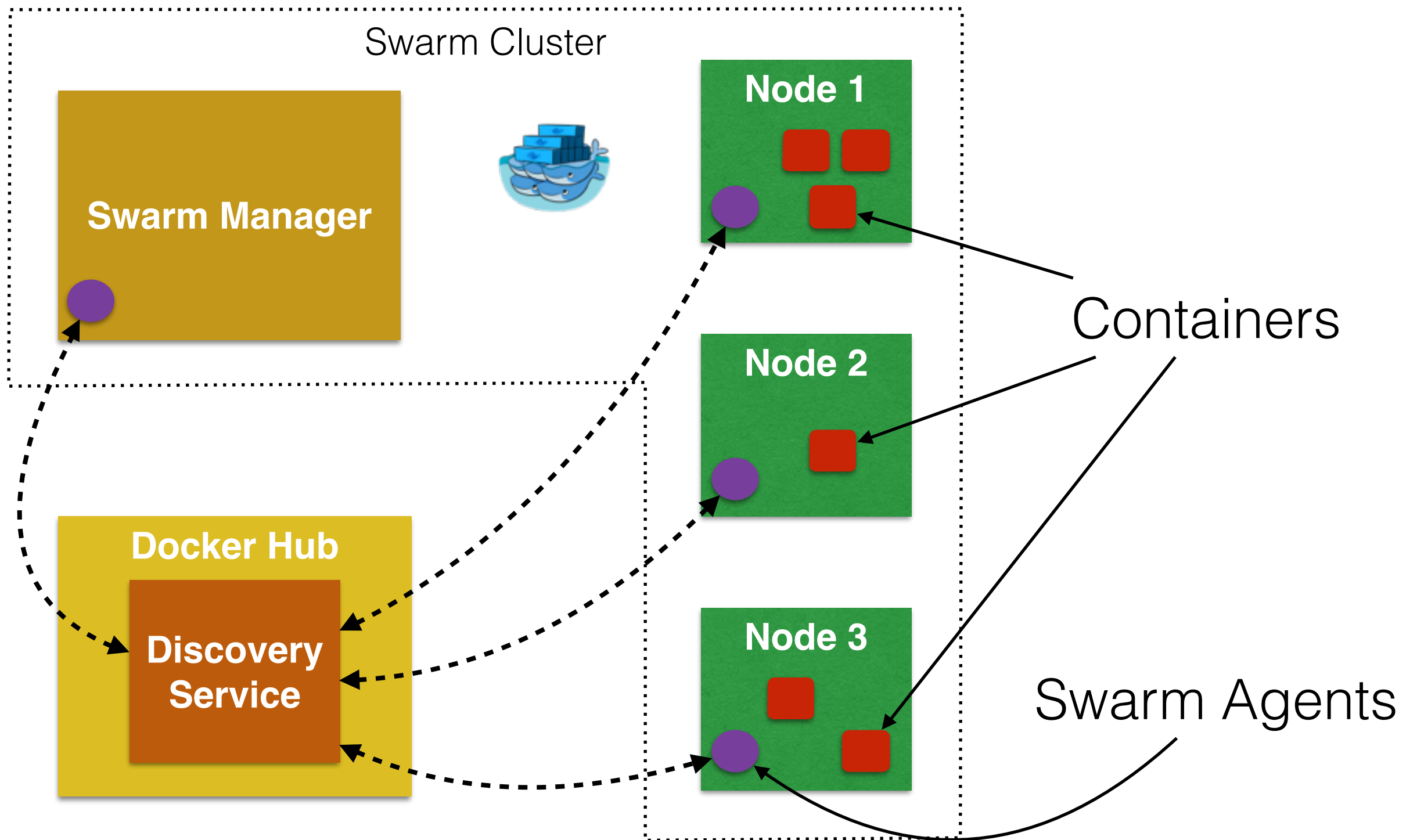
links:

- mysql

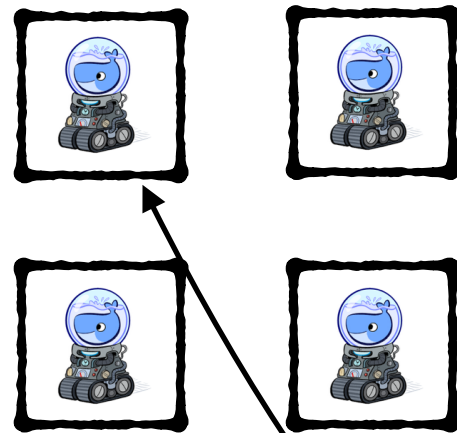
Docker Swarm

- Native clustering for Docker
- Provides a unified interface to a pool of Docker hosts
- Fully integrated with Machine
- Serves the standard Docker API
- Partially integrated with Compose
- Not recommended for production yet

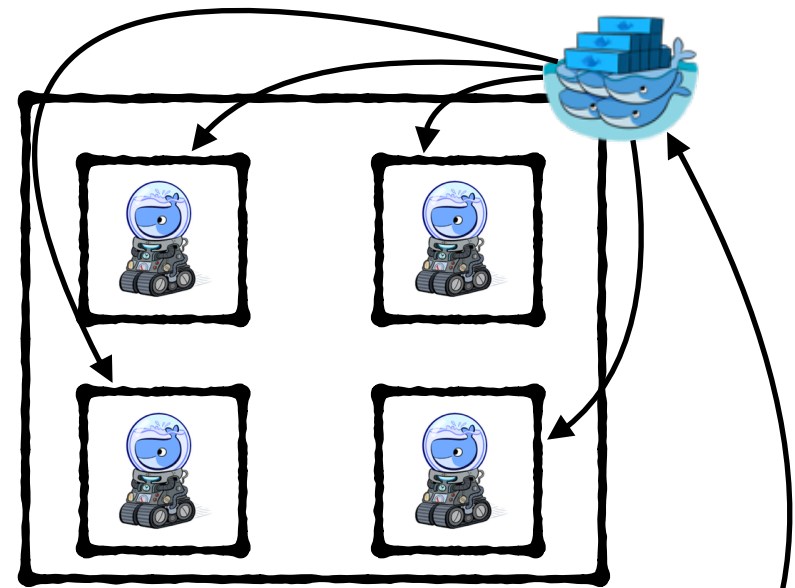




Machine



Swarm



YAML

Compose

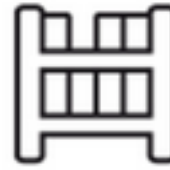
Docker Toolbox

- Docker Client 1.8.0
- Docker Machine 0.4.0
- Docker Compose 1.4.0 (Mac only)
- Docker Kitematic 0.8.1
- Virtualbox 5.0.0





Engine



Registry



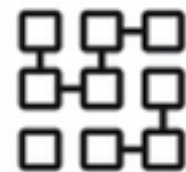
Kitematic



Machine



Swarm



Compose



Networking

Continuous Delivery using Docker and Jenkins Workflow

