



KUBERNETES

We're all going to drown!

A brief overview of what Kubernetes is and is not

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Why use an orchestration tool at all?

- Scale
- Forces Best Practice
 - <https://12factor.net/>
- Simplifies Optimization
- Unifies Automation
- Improved visibility and control
 - Real time monitoring
 - Logging
- Self Service Portal
 - Cloud Services, Storage, Networking
- Long term cost-savings
- Facilitates business agility

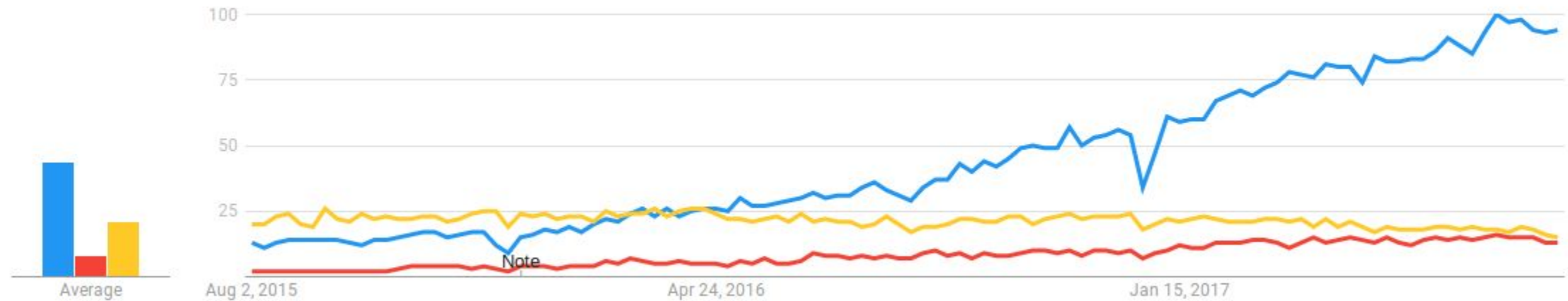
cloud orchestration = automation +
integration + best practices.

Most popular orchestration tools

- Kubernetes (k8s)
 - Designed by Google and donated to the Cloud Native Computing Foundation (google, intel, IBM, twitter...)
- Docker Swarm
 - Don't know anything about it. Shane - Say something!
- Mesosphere
 - Port of Apache Mesos
 - SMACK stack (Spark, Mesos, Akka, Cassandra, Kafka)

Orchestration tool uptake

Interest over time ?



Tools

<https://console.cloud.google.com>

- Docker
- GCloud API
- Kubectl
- Minikube
 - VirtualBox

Terminology

- Container Registry (GCR)
- Nodes (worker)
- Pods (contains 1 or more images)
- Deployments
- Services
- StatefulSets / DaemonSets
- Jobs / Cronjobs
- Configmaps
- Secrets
- Scaling (Replicasets, HPA's)
- Monitoring (Liveness probes)

Lets look at some examples

kubectl config get-contexts

kubectl config use-context ...

kubectl get/describe pods/services -n NAMESPACE

kubectl create/apply -f FILENAME

kubectl edit configmap

kubectl proxy

eval \$(minikube docker-env)

```
Kubectl create namespace joe
```

```
k apply -f deployment.yaml -n joe  
--validate=false
```

```
k port-forward ... 8080:80 -n joe
```

```
Set replicates to 2 and re-apply
```

```
Add Service as ClusterIP or  
LoadBalancer
```

```
k get svc -n joe -w
```

```
k exec ... printenv -n joe
```

```
K delete namespace joe
```



THANK YOU

