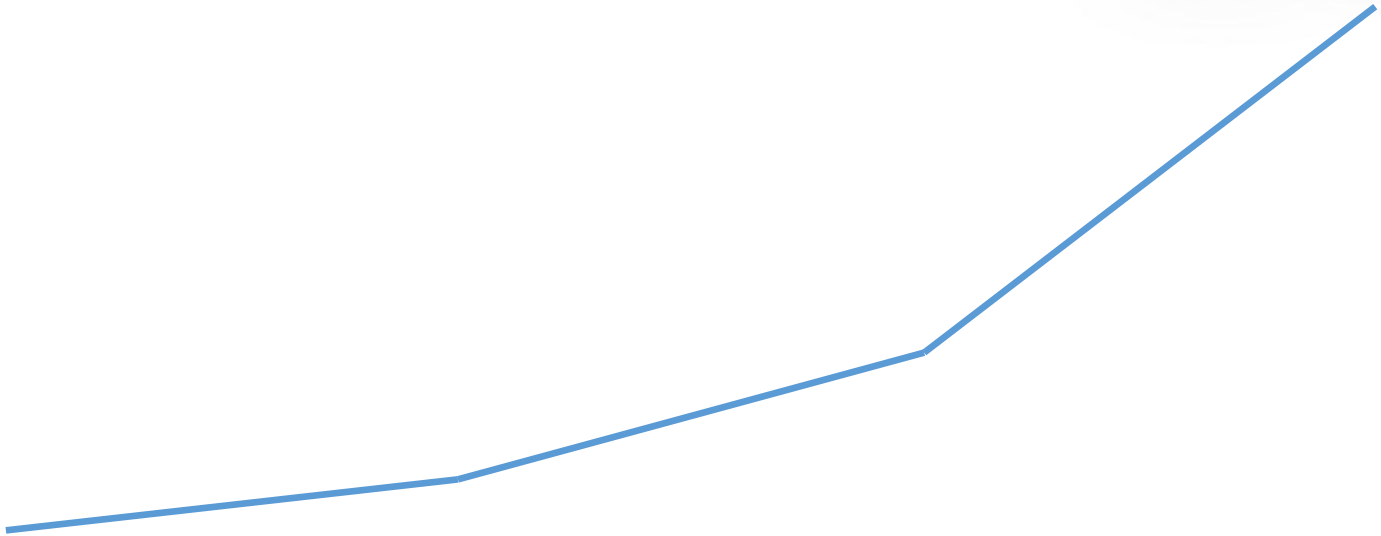
CCTC 2017 中国云计算技术大会
Cloud Computing Technology Conference 2017
CSDN

How Simplicity Will Unlock the True Potential of Container Cloud

Sheng Liang, Rancher Labs
May 18 2017

Growth of Docker



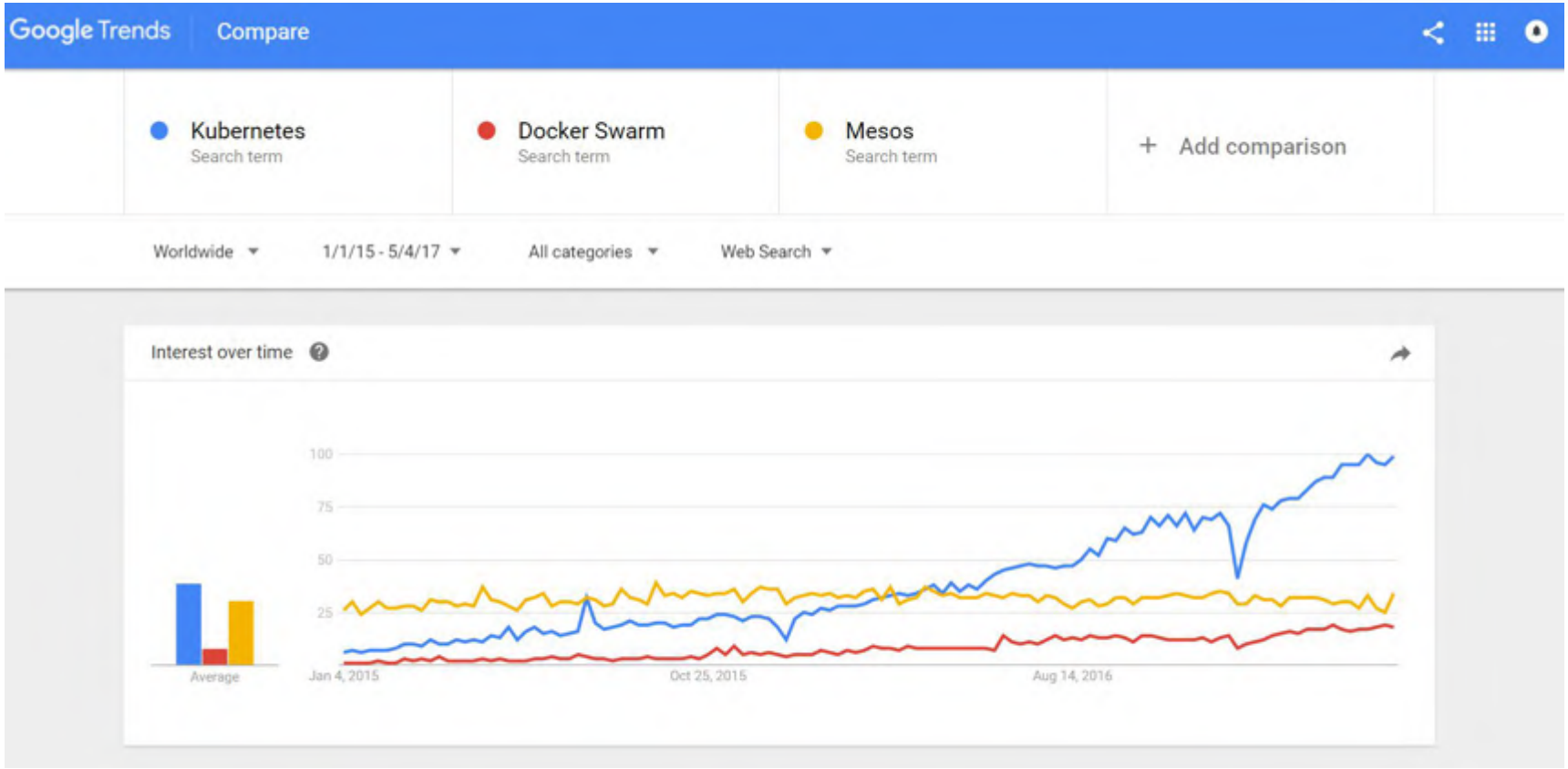
Early 2015
100M pulls

Nov 2015
1B pulls

June 2016
4B pulls

April 2017
12B pulls

Growth of container orchestration



Public container services

Amazon
EC2 Container
Service (ECS)

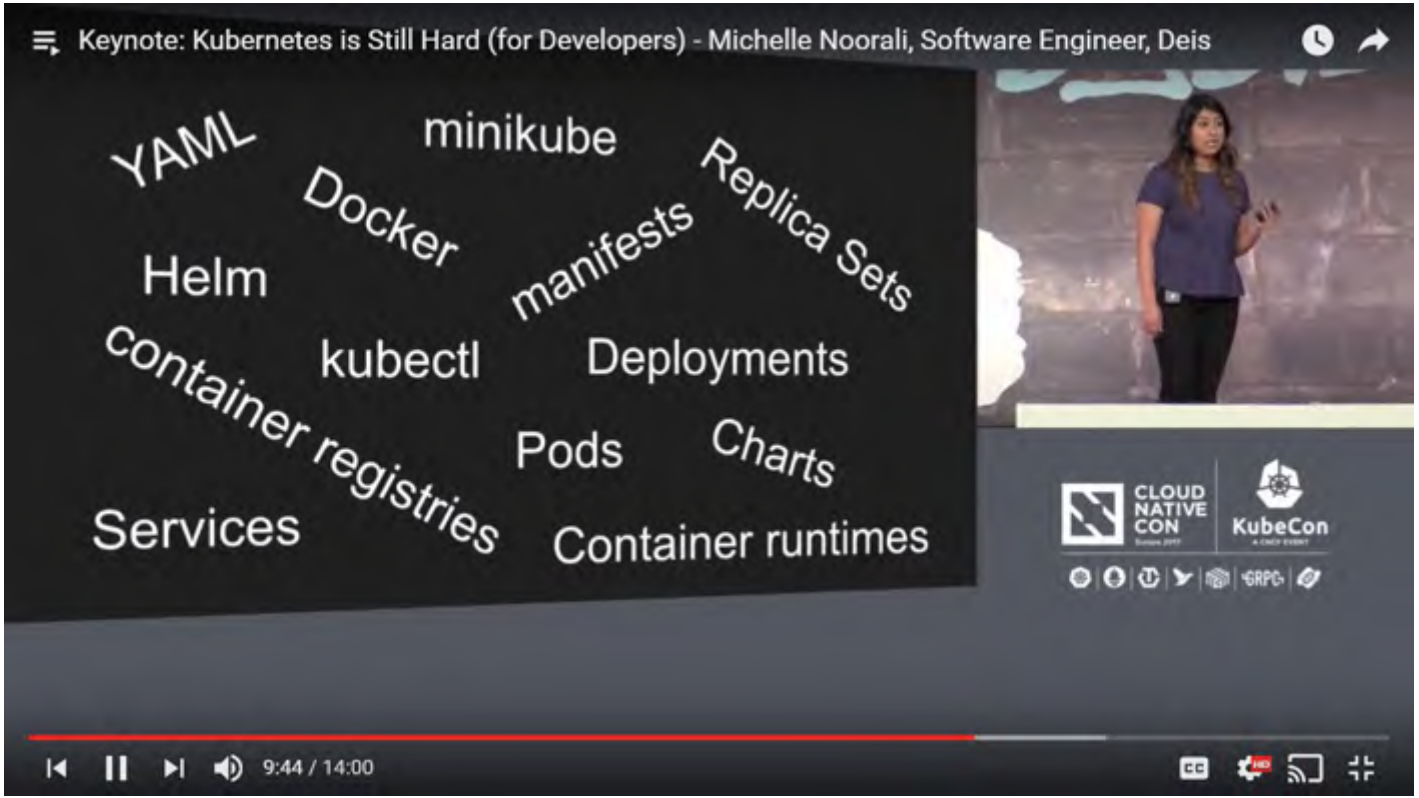
Aliyun (Alibaba Cloud) Container Service
阿里云容器服务
China http://www.aliyun.com/product/containerse...

HUAWEI Products Solutions
Cloud Container Engine (CCE)

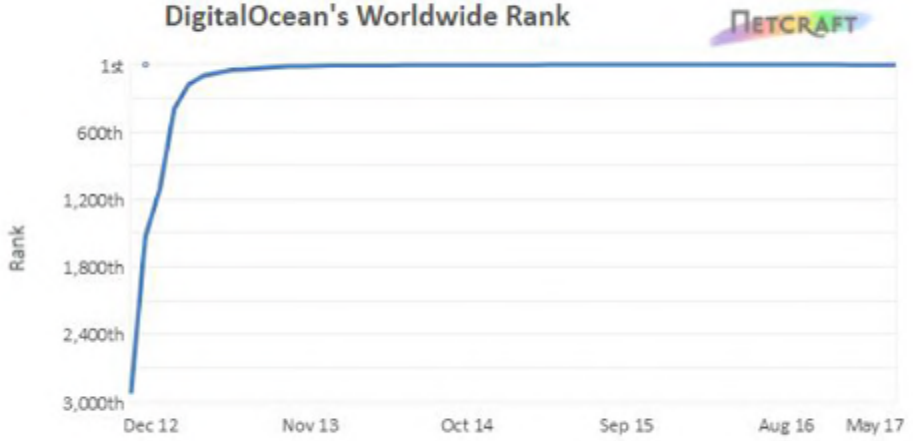
DaoCloud

Google Container Engine
(GKE)
Google Container Registry

时速云
tenxcloud.com

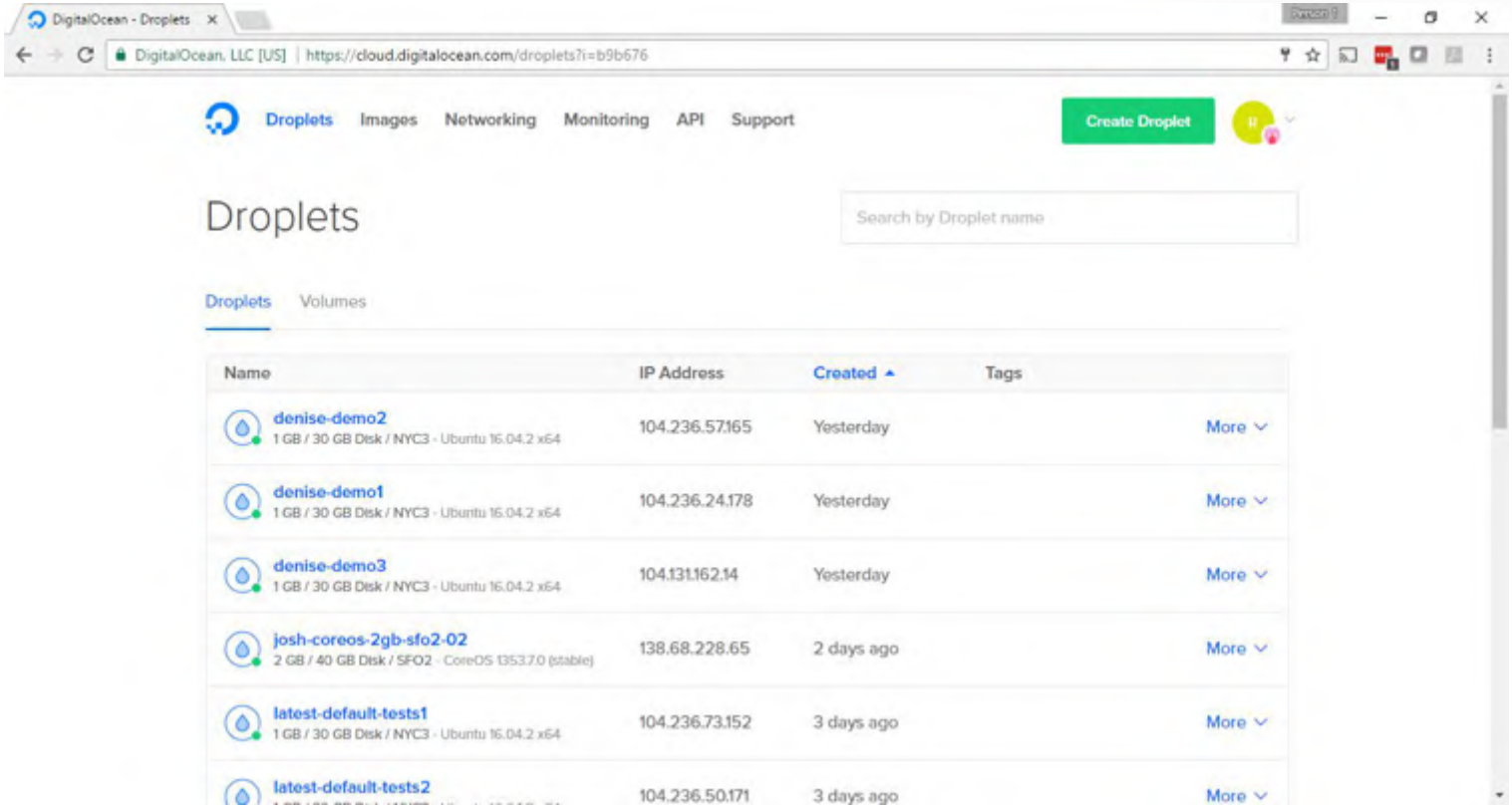

Keynote: Kubernetes is Still Hard (for Developers) - Michelle Noorali, Software Engineer, Deis
YAML
minikube
Replica Sets
Docker
manifests
Helm
kubectl
Deployments
container registries
Pods
Charts
Services
Container runtimes
CLOUD NATIVE CON
KubeCon
GRPC
9:44 / 14:00

300,000 sites switched to DigitalOcean between April and May 2017



Retrieved from http://trends.netcraft.com/www.digitalocean.com on May 12, 2017

Dead-simple and easy for developers

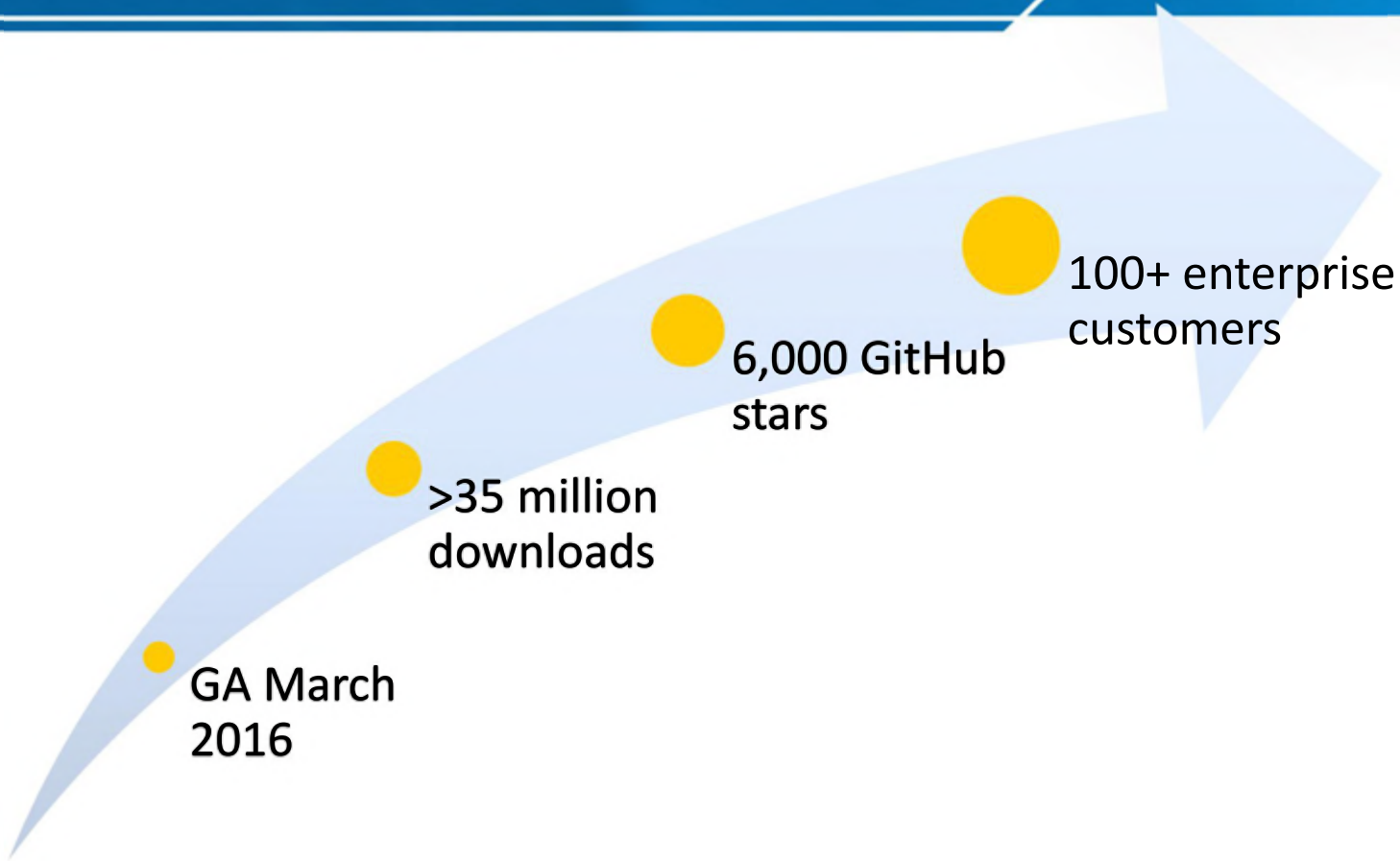


Docker won because of ease-of-use

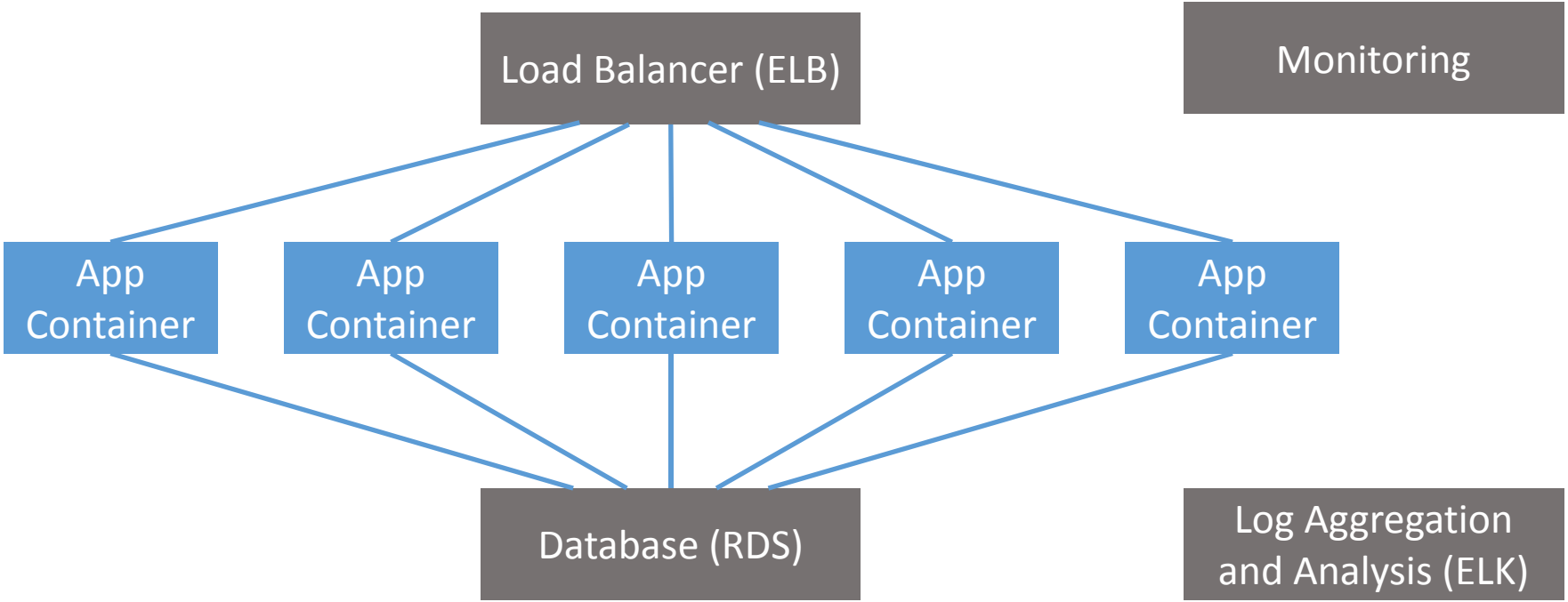
Zones

AIX WPAR

FreeBSD Jail


GA March 2016
>35 million downloads
6,000 GitHub stars
100+ enterprise customers

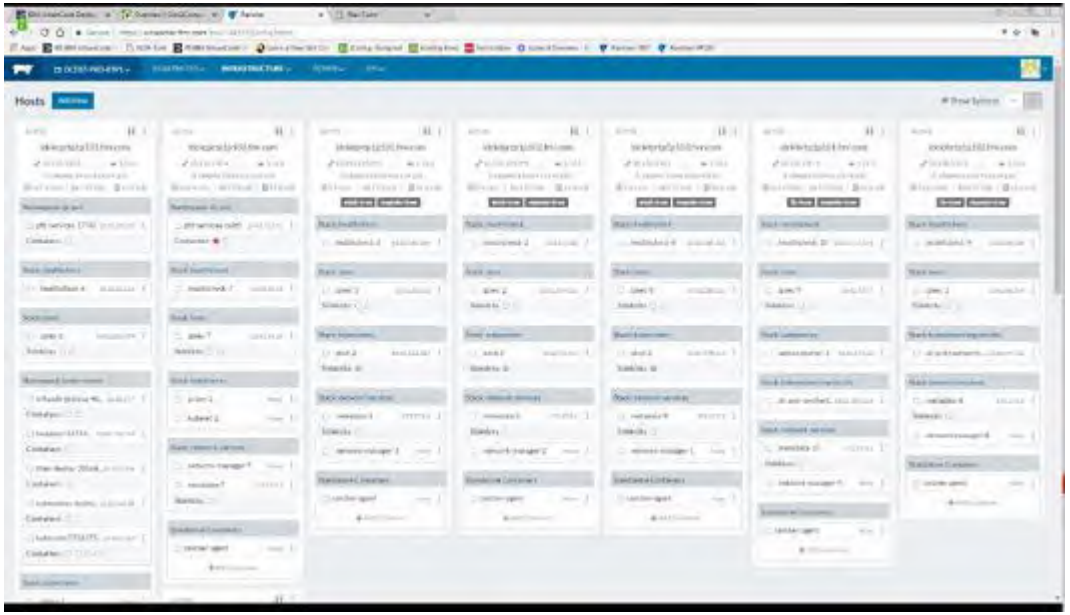
Most common way to deploy container apps



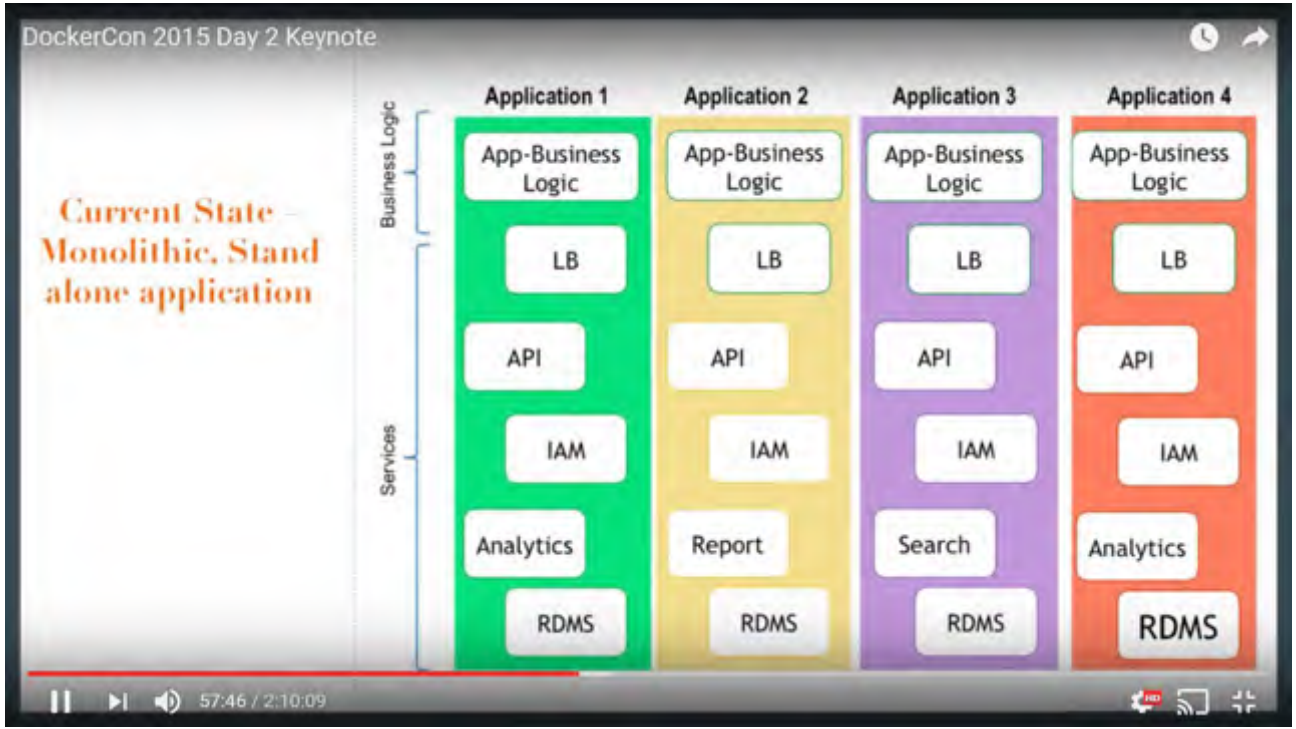
3 etcd hosts, 2 load balancer hosts, 2 kubelet hosts, Rancher HA setup 3 servers, database servers, and a custom registry deployment

Almost 100 containers in total

All of this to manage just 2 application containers!



Monolithic application architecture used by US government

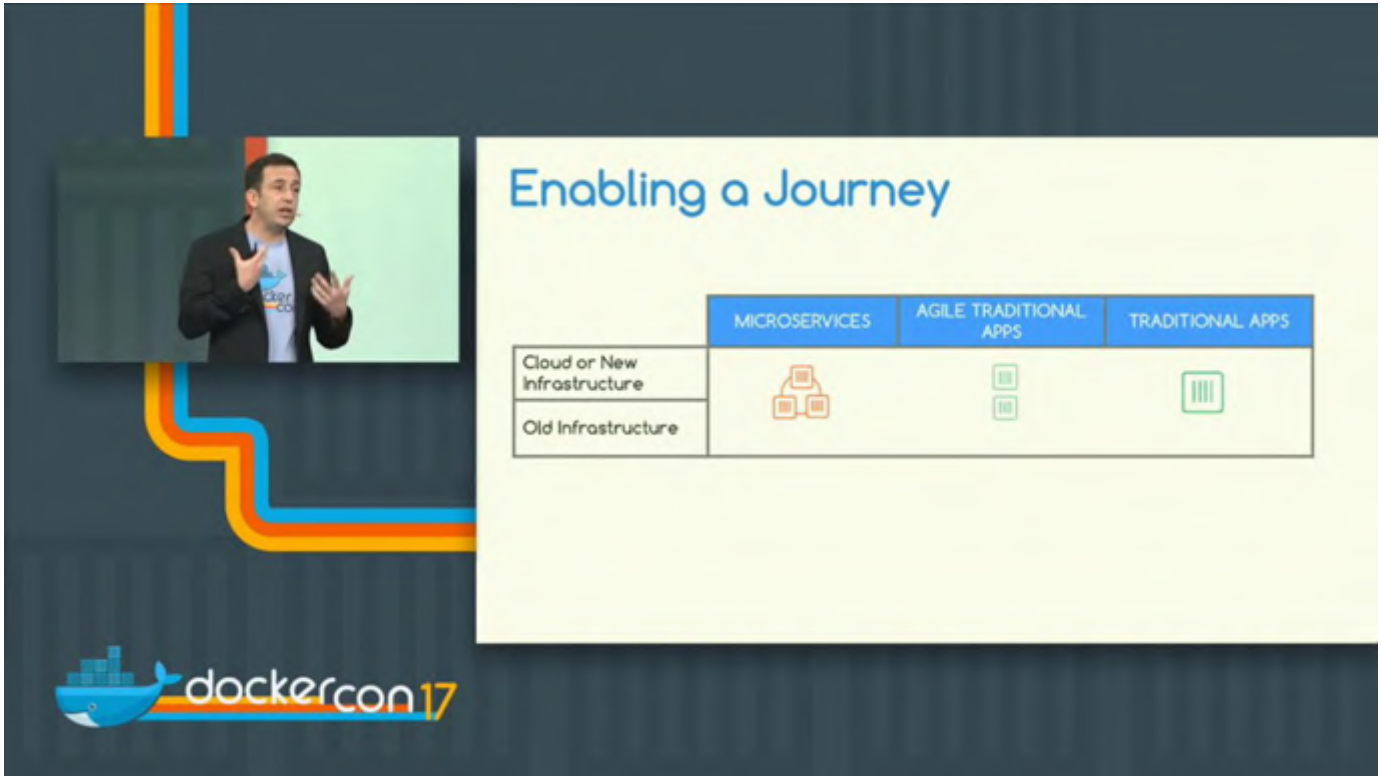


Nirmal Mehta

Booz Allen Hamilton

At least 50% of our customers run traditional apps

Ben Golub, Docker



“Orchestration by Code”

Introducing the etcd Operator: Simplify etcd cluster configuration and management

November 03, 2016 • By Hongchao Deng

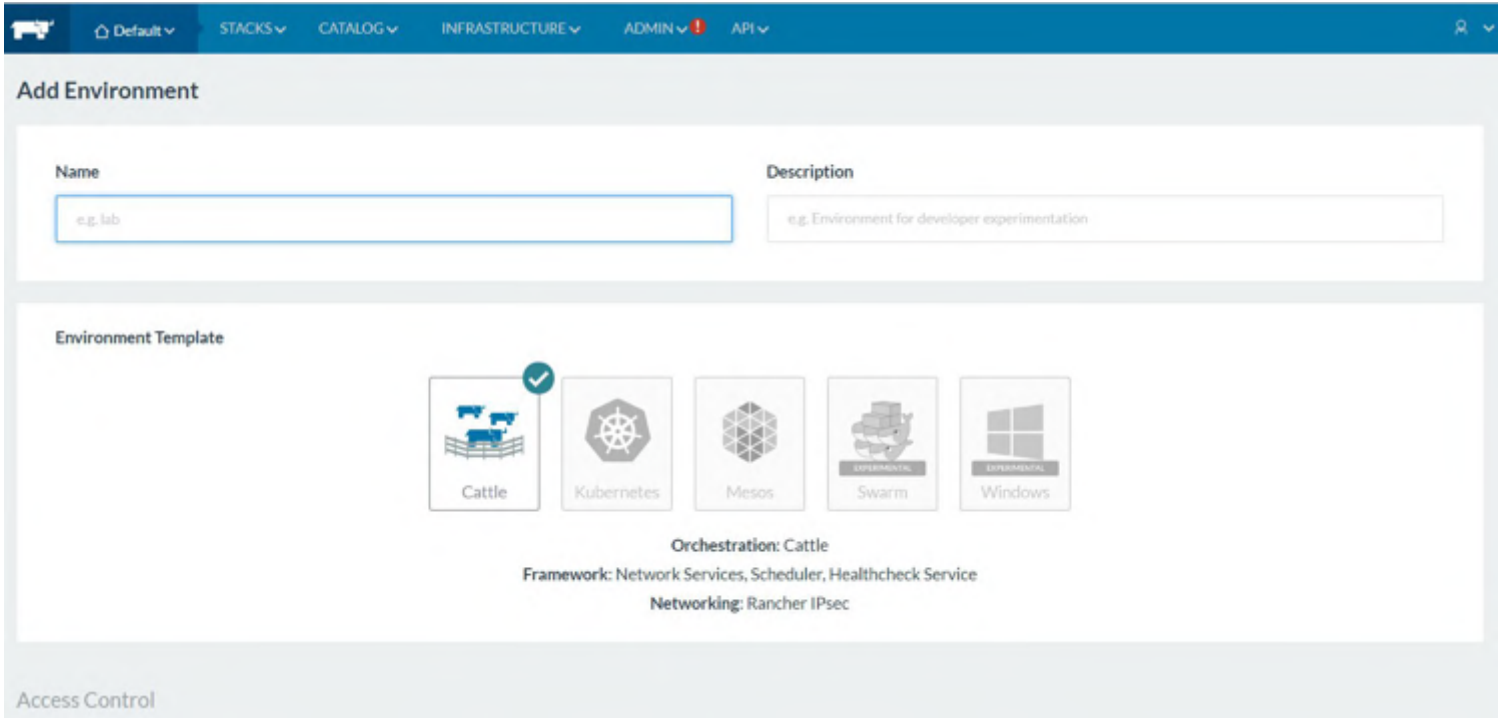
Tags: *Announcements*

Today, CoreOS introduced a new class of software in the Kubernetes community called an *Operator*. An Operator builds upon the basic Kubernetes resource and controller concepts but includes application domain knowledge to take care of common tasks. They reduce the complexity of running distributed systems and help you focus on the desired configuration, not the details of manual deployment and lifecycle management.

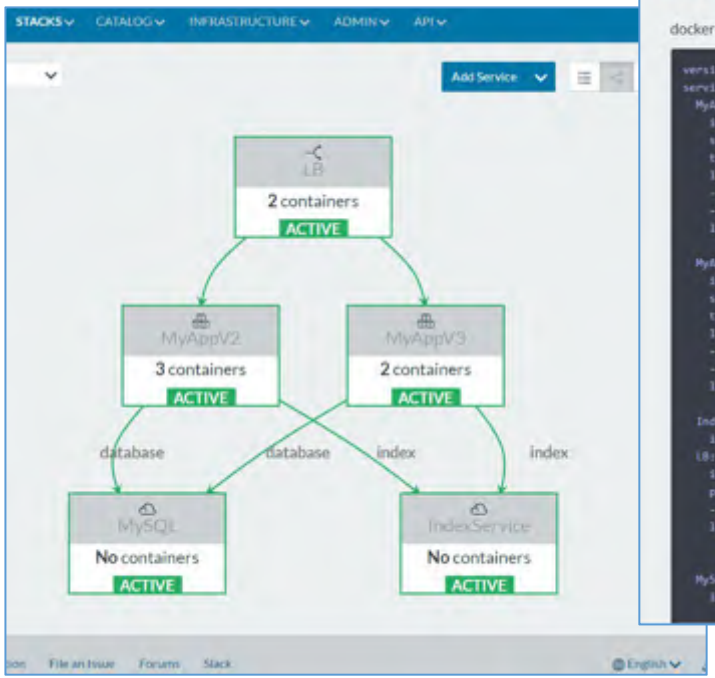
etcd is a distributed key-value store. In fact, etcd is the primary datastore of Kubernetes; storing and replicating all Kubernetes cluster state. As a critical component of a Kubernetes cluster having a reliable automated approach to its configuration and management is imperative.

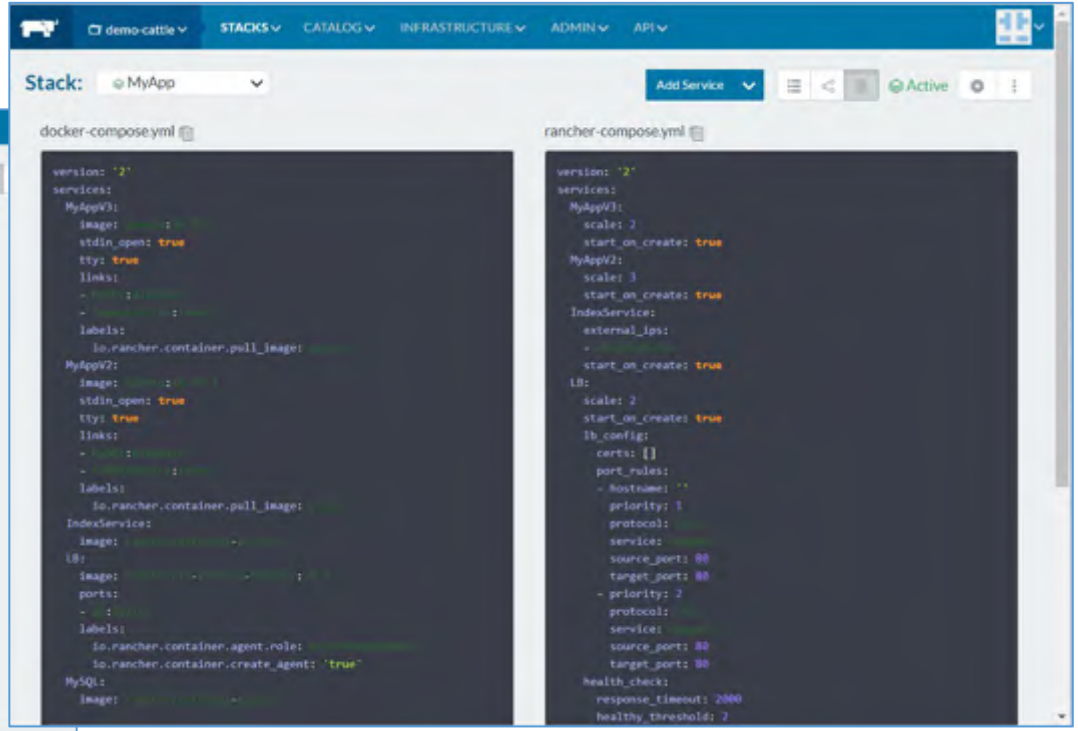
As a distributed consensus-based system, the cluster configuration of etcd can be complicated. Bootstrapping, maintaining quorum, reconfiguring cluster membership, creating backups, handling disaster recovery, and monitoring

Support multiple orchestrators

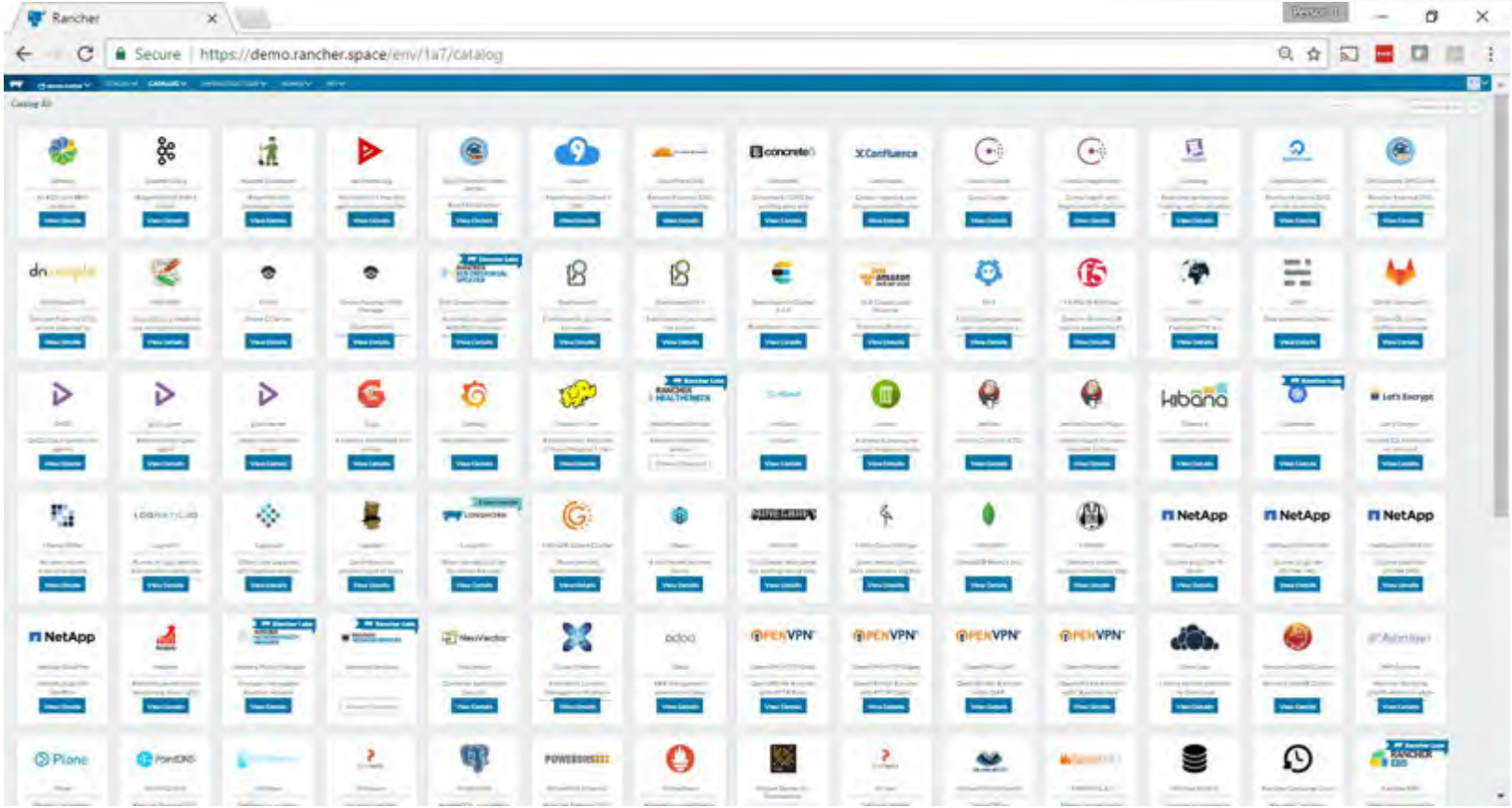


Cattle orchestrator remains popular





Catalog: the most popular feature

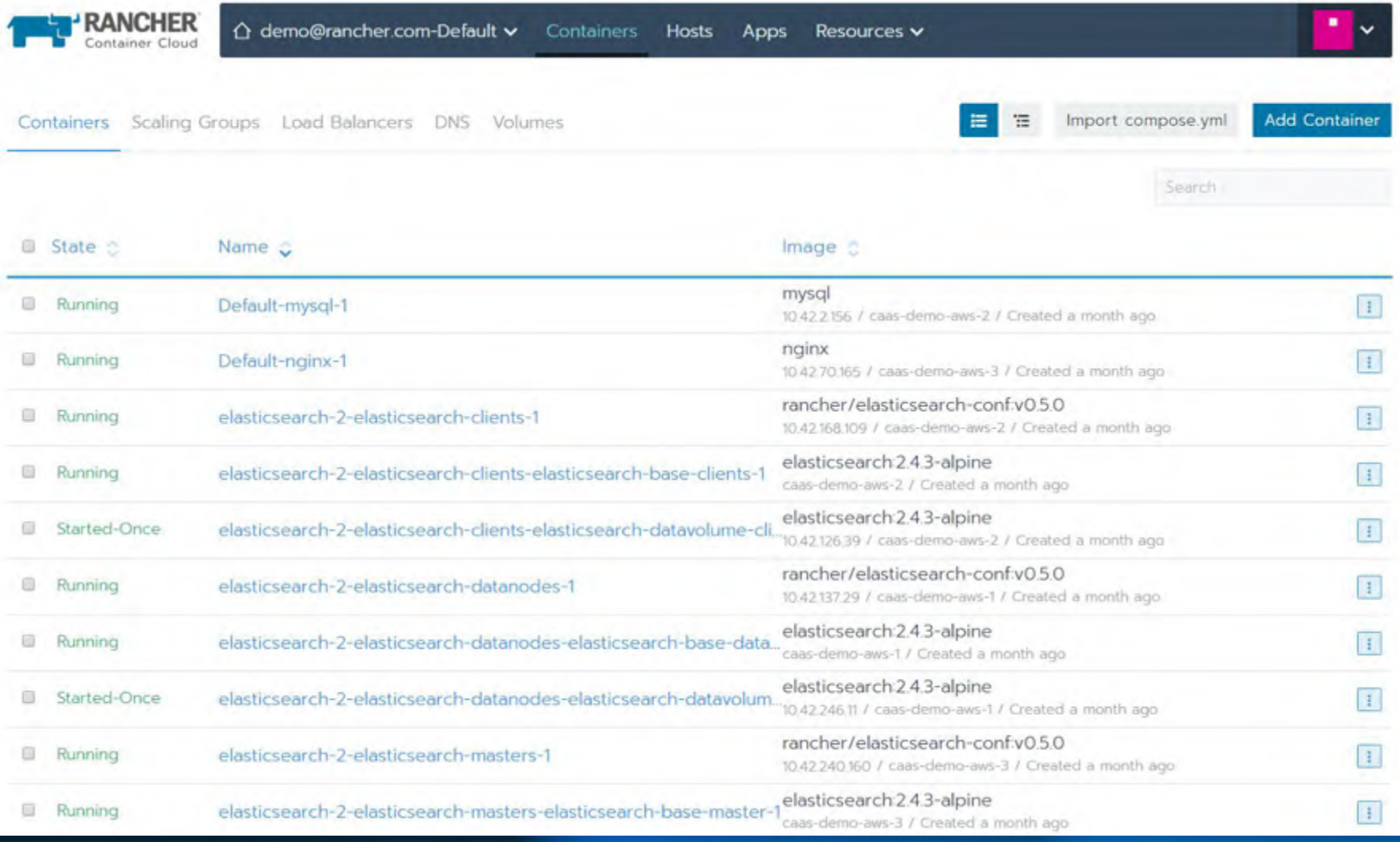


Reason for Cattle's popularity: Simplicity

Service as basic unit of operation → Container as basic unit of operation

Service reconciliation → Scaling group

Service discovery and service aliases → Load balancer and DNS


RANCHER
Container Cloud
demo@rancher.com-Default
Containers
Hosts
Apps
Resources
Containers
Scaling Groups
Load Balancers
DNS
Volumes
Import compose.yml
Add Container
Search
State
Name
Image
Running
Default-mysql-1
mysql
10.42.2.156 / caas-demo-aws-2 / Created a month ago
Running
Default-nginx-1
nginx
10.42.70.165 / caas-demo-aws-3 / Created a month ago
Running
elasticsearch-2-elasticsearch-clients-1
rancher/elasticsearch-conf:v0.5.0
10.42.168.109 / caas-demo-aws-2 / Created a month ago
Running
elasticsearch-2-elasticsearch-clients-elasticsearch-base-clients-1
elasticsearch:2.4.3-alpine
caas-demo-aws-2 / Created a month ago
Started-Once
elasticsearch-2-elasticsearch-clients-elasticsearch-datavolume-cli...
elasticsearch:2.4.3-alpine
10.42.126.39 / caas-demo-aws-2 / Created a month ago
Running
elasticsearch-2-elasticsearch-datanodes-1
rancher/elasticsearch-conf:v0.5.0
10.42.137.29 / caas-demo-aws-1 / Created a month ago
Running
elasticsearch-2-elasticsearch-datanodes-elasticsearch-base-data...
elasticsearch:2.4.3-alpine
caas-demo-aws-1 / Created a month ago
Started-Once
elasticsearch-2-elasticsearch-datanodes-elasticsearch-datavolum...
elasticsearch:2.4.3-alpine
10.42.246.11 / caas-demo-aws-1 / Created a month ago
Running
elasticsearch-2-elasticsearch-masters-1
rancher/elasticsearch-conf:v0.5.0
10.42.240.160 / caas-demo-aws-3 / Created a month ago
Running
elasticsearch-2-elasticsearch-masters-elasticsearch-base-master-1
elasticsearch:2.4.3-alpine
caas-demo-aws-3 / Created a month ago

Developer cloud services are consumer Internet services

There is no compression algorithm for experience.

- Andy Jassy, CEO AWS

Browser

Container Cloud

amazon web services™ Microsoft Azure Google Compute Engine DigitalOcean openstack cloudstack vmware