Kubernetes and Docker

Eric Oestrich

smartlogic

Docker

- Idempotent builds
- Images are portable
- Containers should run a single application

smartlogic

Dockerfile

```
FROM ruby:2.2
MAINTAINER Eric Oestrich

ADD . /app
WORKDIR /app
RUN bundle install
CMD ["rails", "server"]
```

smartlogic

Kubernetes

- Cluster manager
- Schedules Docker containers

smartlogic

Pods

- Set of docker containers that are guaranteed to run on a host

smartlogic

Replication Controllers

- Schedules pods to run
- Set an amount of pods to run

smartlogic

Services

- Load balancer
- Single IP address to talk to backend pods

smartlogic

Google Container Engine

- Hosted Kubernetes

smartlogic

Creating a Replication Controller

```
apiVersion: v1

kind: ReplicationController

metadata:

  name: app

  labels:

     name: app
```

smartlogic

Creating a Replication Controller

```
spec:
  replicas: 3
  selector:
    name: app
  template:
    metadata:
      labels:
        name: app
```

smartlogic

Creating a Replication Controller

```yaml
spec:
  template:
    spec:
      containers:
        - name: rails
          image: smartlogic/rails
          imagePullPolicy: Always
          ports:
            - containerPort: 5000
```

smartlogic

Creating a Service

```
apiVersion: v1
kind: Service
metadata:
  name: rails-app
  labels:
    name: rails-app
spec:
  ports:
    - port: 5000
  selector:
    name: rails-app
```

smartlogic

Viewing Pods (and RC and Services)

- kubectl get pods
- kubectl get replicationcontrollers
- kubectl get services

smartlogic

Questions?

smartlogic