FOKO

Your monolith on EC2 Container Services

The Plan

- Application running locally
- AWS ECS overview
- A look at an ECS Cluster
- Deploying the App
- Continuous Integrating with CircleCI

```
const express = require('express');
const app = express();

const environment = process.env.ENV;

app.get('/', (req, res) => {
  res.send(`Hello World, Docker Ottawa ${environment}`);
});

app.listen(3000, () => {
  console.log('Example app listening on port 3000!');
});
```

The App

Dockerfile

```
FROM mhart/alpine-node:6.5.0

RUN apk add --no-cache make gcc g++ python

WORKDIR /app
ADD . .

RUN npm install --production && npm cache clean

EXPOSE 3000
CMD ["npm", "start"]
```

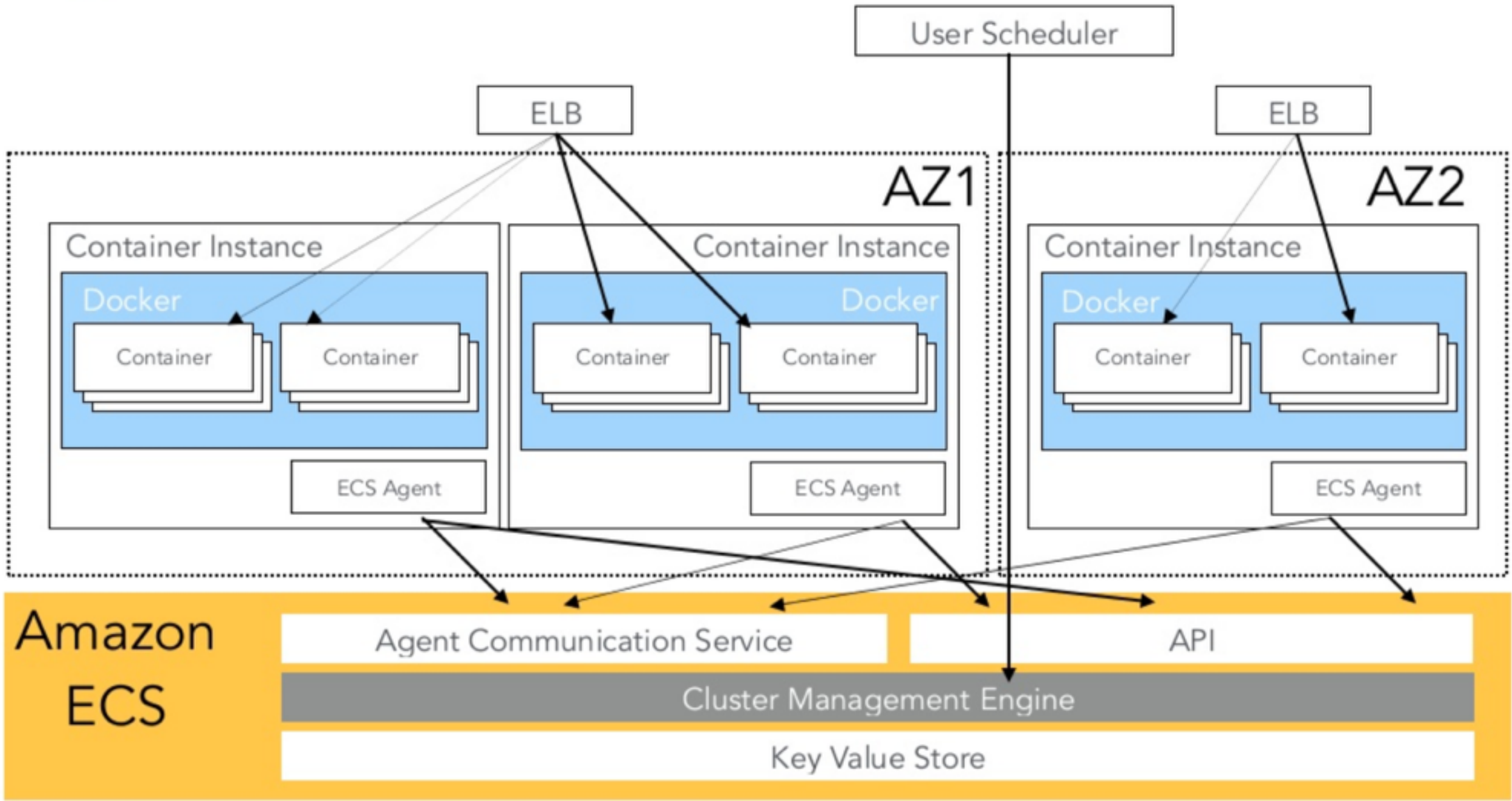
ECS Overview

5 concepts

- **Container Instance**: EC2 Instance associated to a Cluster
- **Cluster**: Logical grouping of Container Instances to run tasks
- **Task Definition**: Task Blueprint with 1 or more container definitions
- **Task**: instantiation of a Task Definition running in a Container Instance
- **Service**: Task configuration in a Cluster

A **cluster** has many **instances** running **tasks**
that are defined in their **definition**
and configured in a **service**.

Architecture at high level



First Run

1. Security Groups, IAM Roles, VPCs
2. Create Cluster
3. Create Auto-scaling groups and EC2 Instances
4. Create Repository
5. Build, Tag and push Docker image
6. Create Task Definition
7. Create Service in Cluster

Let’s have a look

Next Runs

1. Build, Tag and push Docker image
2. Create New Revision of a Task Definition
3. Update Service with New Revision

Let’s have a look

```yaml
machine:
  services:
    - docker

deployment:
  production:
    branch: master
    commands:
      - ./deploy.sh $CIRCLE_BUILD_NUM
```

Continuous Integration
circle.yml

Things I wish I knew

- Run the ECS Wizard, it sets up all IAM Roles correctly
- All your EC2 instances require a public IP
- Let Application Load Balancer target groups handle port mapping
- Using small instances is asking for trouble
- Assigning an Auto-Scaling-Group to a cluster is awkward

Questions