

# AWS Overlord & Minion

Manage Docker Applications on EC2

AWS UG Dec Meetup 2014-12-09

# Our Situation

- ~40 development teams
- Each team should
  - be able to **use any AWS service**
  - have an **isolated sandbox**
  - be able to **access services** of other teams
  - have **separate billing** & accounting

# The Challenges

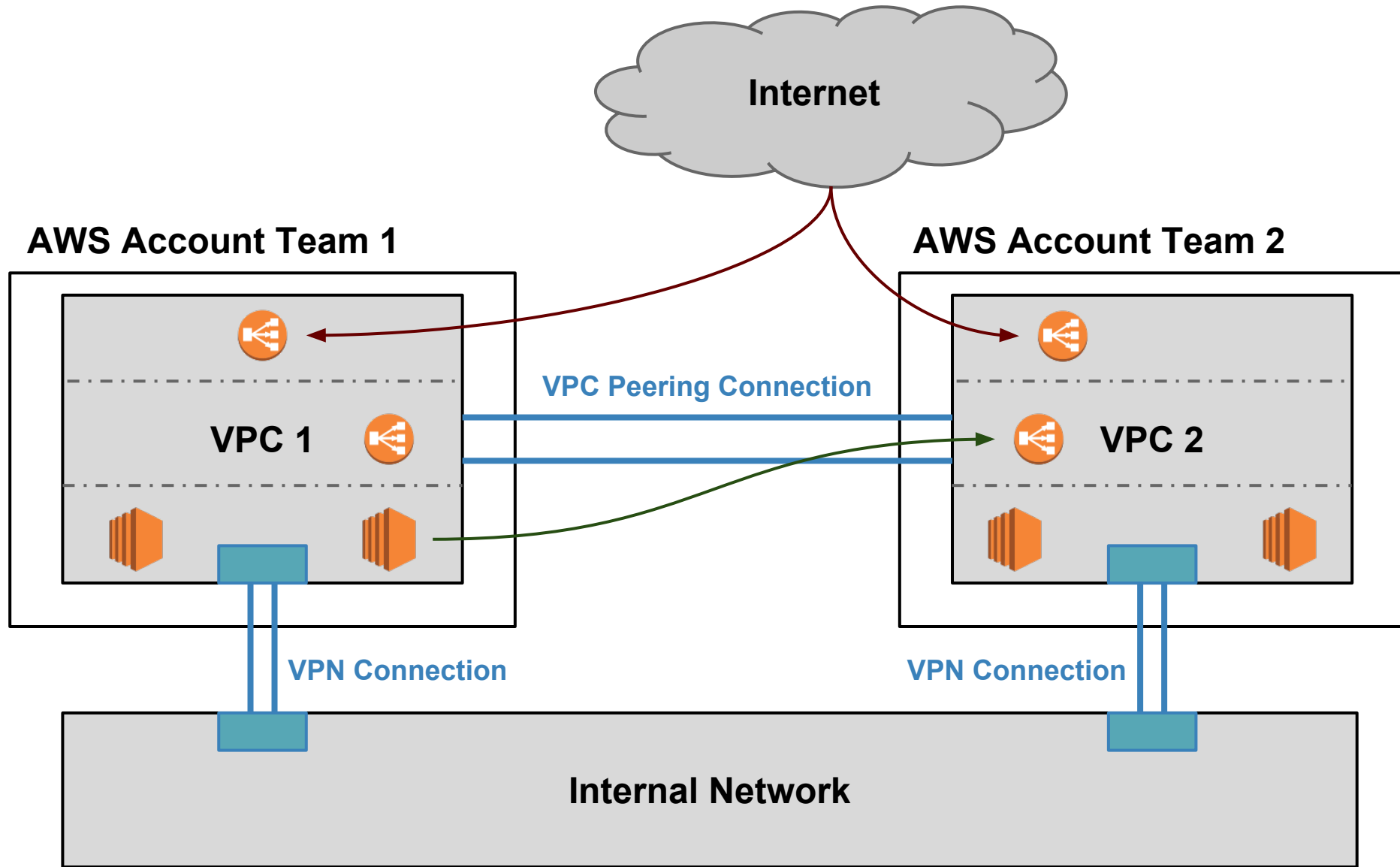
- **IAM Limits**

- Isolated sandbox not possible  
within one Account

- **VPC Limits**

- /16 Network
- Entries per route table

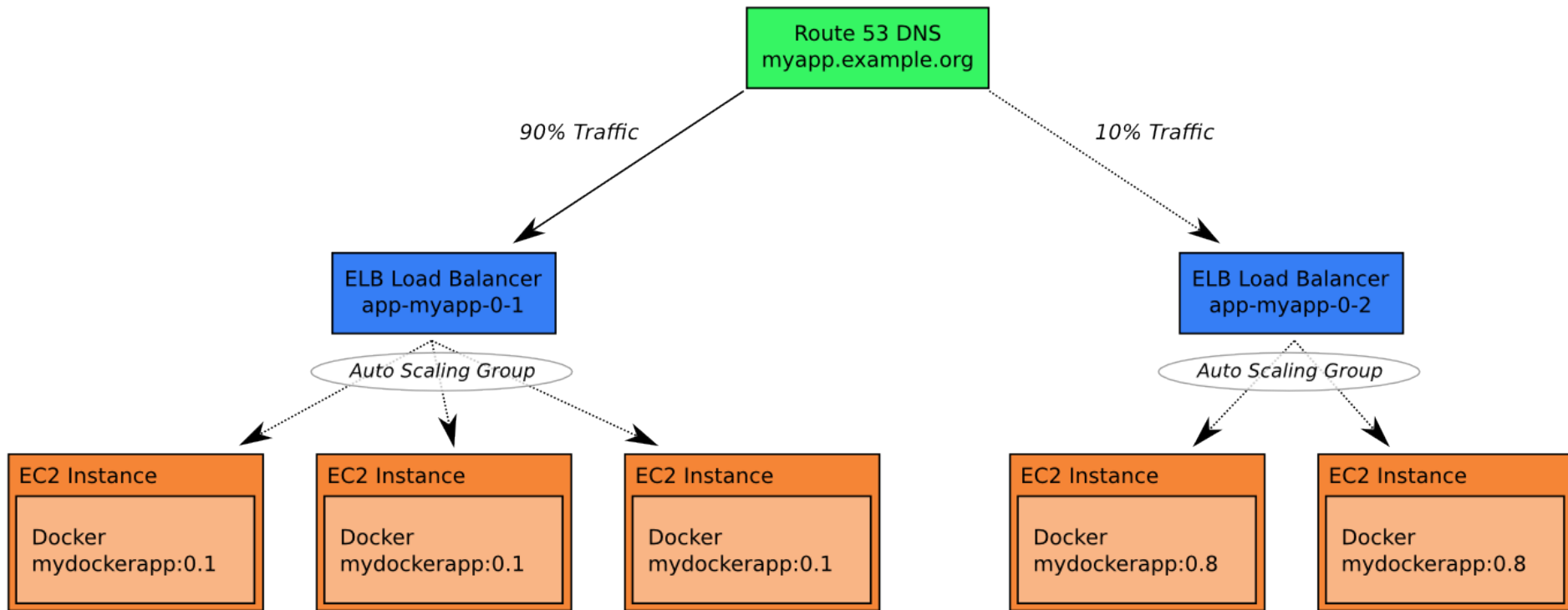
# Our Approach



# Overlord and Minion

- **AWS Overlord**  
does basic account setup for each team
- **AWS Minion**  
is a best-practice tool to deploy Docker apps

# Application Stack



# Minion Workflow

- **Create** application
- **Deploy** application version
- **Route traffic** to new application version

# Create Application

```
~/workspace/clojure-web-hello-world (master) $ minion app create aws-minion-manifest.yaml
Checking whether application clojure-web-hello-world exists.. OK
Creating key pair for application clojure-web-hello-world.. OK
Creating application security group app-clojure-web-hello-world.. OK
Creating LB security group app-clojure-web-hello-world-lb.. OK
Creating IAM role and instance profile.. OK
```

- Creates **Security Group**
- Creates **IAM Role**



# Build & Push Docker Image

```
$ docker build -t  
registry.example.org/hjacobs/hello-world:0.1 .
```

```
$ docker push  
registry.example.org/hjacobs/hello-world:0.1
```

```
~/workspace/clojure-web-hello-world (master) $ minion images
```

Repository	Tag	Image
ahanin/ahanin-helloworld	0.1	ahanin/ahanin-helloworld:0.1
ahanin/ahanin-helloworld	latest	ahanin/ahanin-helloworld:latest
ahanin/ahanin-heloworld	0.1	ahanin/ahanin-heloworld:0.1
brandsolutions/analytics-play	0.1	brandsolutions/analytics-play:0.1
ci_cd/jenkins	0.01	ci_cd/jenkins:0.01
hackweek/christophs-playground	1.0	hackweek/christophs-playground:1.0
hackweek/helloworld	1.0-hseffler-SNAPSHOT	hackweek/helloworld:1.0-hseffler-SNAPSHOT
hackweek/helloworld	latest	hackweek/helloworld:latest
hjacobs/clojure-web-hello-world	0.1	hjacobs/clojure-web-hello-world:0.1
hjacobs/docker-registry	0.9.0hjacobs1	hjacobs/docker-registry:0.9.0hjacobs1
hjacobs/hello-world	0.1	hjacobs/hello-world:0.1
hjacobs/opengrok	0.1	hjacobs/opengrok:0.1
hjacobs/registry	0.8.1	hjacobs/registry:0.8.1
hjacobs/techblog	1.0	hjacobs/techblog:1.0

# Deploy Application Version

```
~/workspace/clojure-web-hello-world (master) $ minion ver create clojure-web-hello-world 2.0 hjacobs/hello-world:0.1
Checking Docker registry .. OK
Creating launch configuration for clojure-web-hello-world version 2.0.. OK
Creating load balancer for clojure-web-hello-world version 2.0.. OK
Creating auto scaling group for clojure-web-hello-world version 2.0.. OK
DNS name of load balancer is internal-app-clojure-web-hello-world-2-0-1088772597.eu-west-1.elb.amazonaws.com
Configuring DNS name clojure-web-hello-world-2-0. .. OK
Waiting for instance start and LB.. .. OK
Waiting for LB members to become active.. .. OK
Application version URL is https://clojure-web-hello-world-2-0.
```

- Creates **Auto Scaling Group**
- Creates **Load Balancer**
- Creates **DNS** myapp-<VER>.example.org

# Version & Instances

```
~/workspace/clojure-web-hello-world (master) $ minion ver
```

Application Name	Ver.	Docker Image	Instance States	Desired#	Weight	Created
clojure-web-hello-world	2.0	hjacobs/hello-world:0.1	1x InService	1		9m ago

```
~/workspace/clojure-web-hello-world (master) $ minion instances
```

Application Name	Ver.	Instance Id	Team	Public Ip	Private Ip	State	Launched
clojure-web-hello-world	2.0	i-fc0ded18	hjacobs		10.144.81.204	RUNNING	12m ago

# Route Traffic

```
~/workspace/clojure-web-hello-world (master) $ minion ver traffic clojure-web-hello-world 2.0 100  
Calculating new weights.. OK  
Application Name | Version | Identifier | Old Weight | Delta | Compensation | New Weight | Current  
clojure-web-hello-world 2.0 app-clojure-web-hello-world-2-0 0.0 100.0 100.0 <  
Setting weights for clojure-web-hello-world. ... OK
```

- Changes **weights in Route 53**
- Exposes application as **myapp.example.org**



<https://github.com/zalando/aws-minion>  
<https://github.com/zalando/aws-overlord>

# Network Setup per Team

