Getting Started With AWS

Matthew Swain
Software Engineer at MassRelevance

Mass Relevance Platform

- Instagram, FB, Twitter, YouTube, G+ Curation
- Visualizations for our clients
- Anywhere between 500 and 70k HTTP RPS
- Anywhere between 2k and 200k TPS

Why AWS?

- Flexible
- Scalable
- Fun!

Flexible

- Variety
- On-Demand
- Robust

Scalable

- Autoscaling
- CloudFront
- Multi-Region

Everything Your App Needs

- EC2 - Servers
- RDS - MySQL / Oracle / MSSQL Databases
- Route53 - DNS
- CloudFront - CDN
- ELB - Load Balancer
- S3 - File Storage

The Old Way

- Create an Account
- Fetch Security Credentials
- Launch EC2 Instances
- Install OS dependencies
- Install Rails
- Launch RDS
- Create Databases
- Launch ELB
- Write AutoScale Scripts
- Setup Image / Configuration Management
- Map ELB to EC2 Instances
- Configure Rails App
- Write Deployment Scripts
- Deploy!

New Hotness

- Sign Up
- Acquire Security Credentials
- Install ElasticBeanstalk CLI Tools
- Configure RailsApp
- Deploy!

Elastic Beanstalk

- AutoScaling EC2 Instances Pre-configured for Rails
- Load Balancer
- S3 Bucket for deployment
- RDS MySQL instance

Getting Started

Sign Up

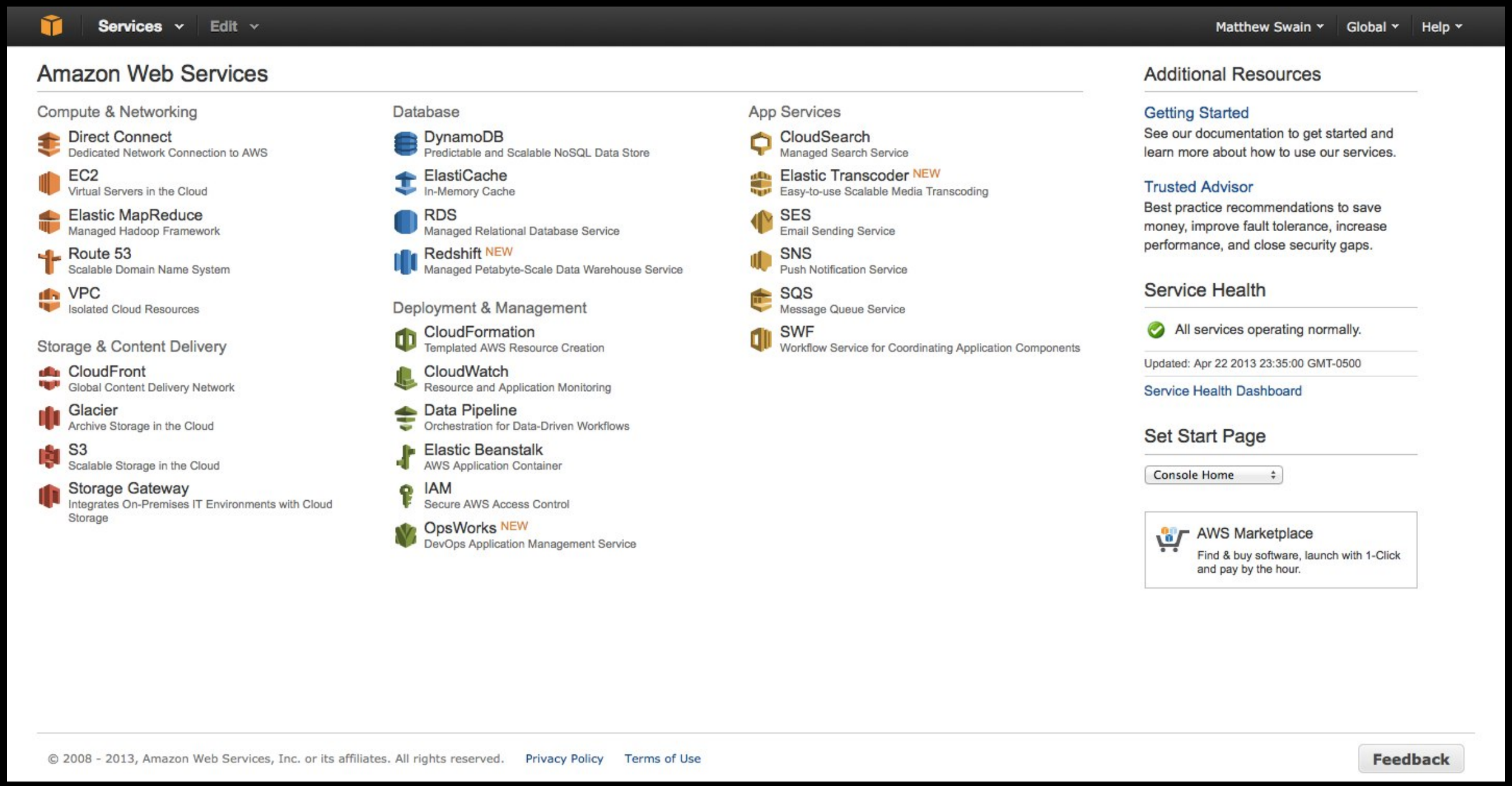
- http://aws.amazon.com
- You'll need: CC Info, Phone Number
- Free Tier!

Free Tier

- 750 hours / mo of EC2 Micro (613MB RAM, 1 CPU)
- 750 hours / mo Micro DB (630 MB RAM, 1 CPU, 20GB Storage
- 5 GB S3 20000 GET, 2000 PUT
- 750 hours Load Balancer, 15 GB Data
- CloudWatch Monitoring: 10 Metrics / 10 Alarms

Security Credentials

AWS Console


Services
Edit
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Global
Help
Amazon Web Services
Compute & Networking
Direct Connect
Dedicated Network Connection to AWS
EC2
Virtual Servers in the Cloud
Elastic MapReduce
Managed Hadoop Framework
Route 53
Scalable Domain Name System
VPC
Isolated Cloud Resources
Storage & Content Delivery
CloudFront
Global Content Delivery Network
Glacier
Archive Storage in the Cloud
S3
Scalable Storage in the Cloud
Storage Gateway
Integrates On-Premises IT Environments with Cloud Storage
Database
DynamoDB
Predictable and Scalable NoSQL Data Store
ElastiCache
In-Memory Cache
RDS
Managed Relational Database Service
Redshift NEW
Managed Petabyte-Scale Data Warehouse Service
Deployment & Management
CloudFormation
Templated AWS Resource Creation
CloudWatch
Resource and Application Monitoring
Data Pipeline
Orchestration for Data-Driven Workflows
Elastic Beanstalk
AWS Application Container
IAM
Secure AWS Access Control
OpsWorks NEW
DevOps Application Management Service
App Services
CloudSearch
Managed Search Service
Elastic Transcoder NEW
Easy-to-use Scalable Media Transcoding
SES
Email Sending Service
SNS
Push Notification Service
SQS
Message Queue Service
SWF
Workflow Service for Coordinating Application Components
Additional Resources
Getting Started
See our documentation to get started and learn more about how to use our services.
Trusted Advisor
Best practice recommendations to save money, improve fault tolerance, increase performance, and close security gaps.
Service Health
All services operating normally.
Updated: Apr 22 2013 23:35:00 GMT-0500
Service Health Dashboard
Set Start Page
Console Home
AWS Marketplace
Find & buy software, launch with 1-Click and pay by the hour.
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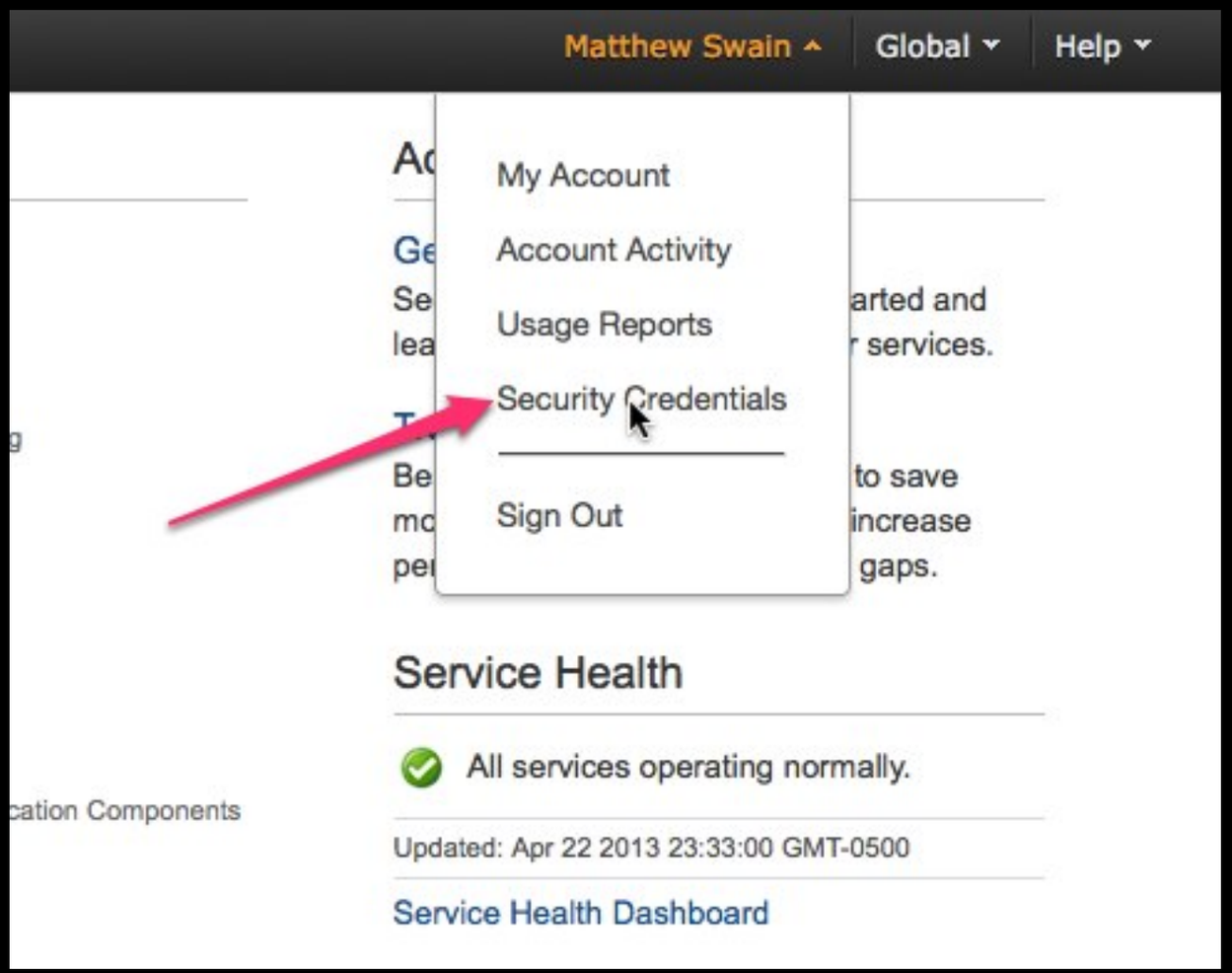
Feedback

Security Credentials



amazon web services

AWS Products & Solutions

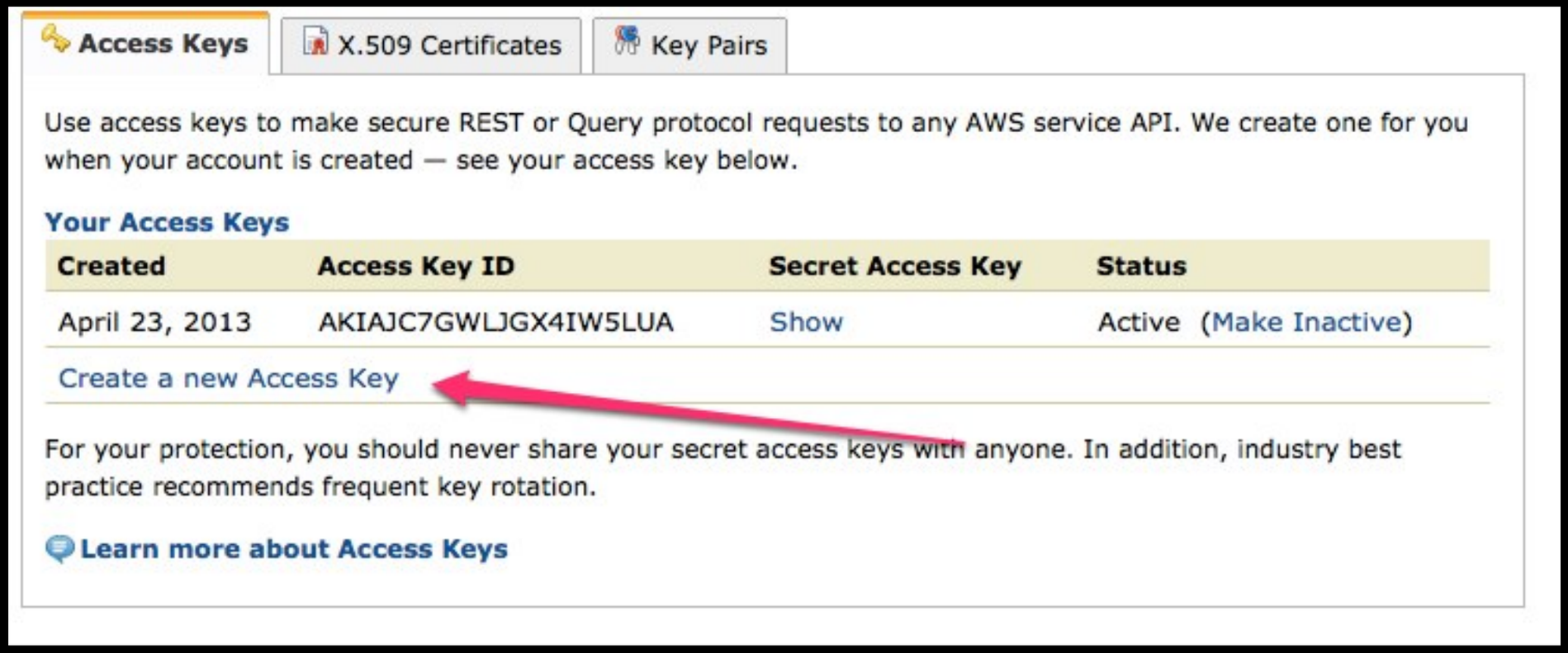
Account

- Account Activity
- AWS Identity and Access Management
- AWS Management Console
- Consolidated Billing
- DevPay
- **Manage Your Account**
- Payment Method
- Personal Information
- Security Credentials
- Usage Reports
- Billing Alerts
- Billing Preferences

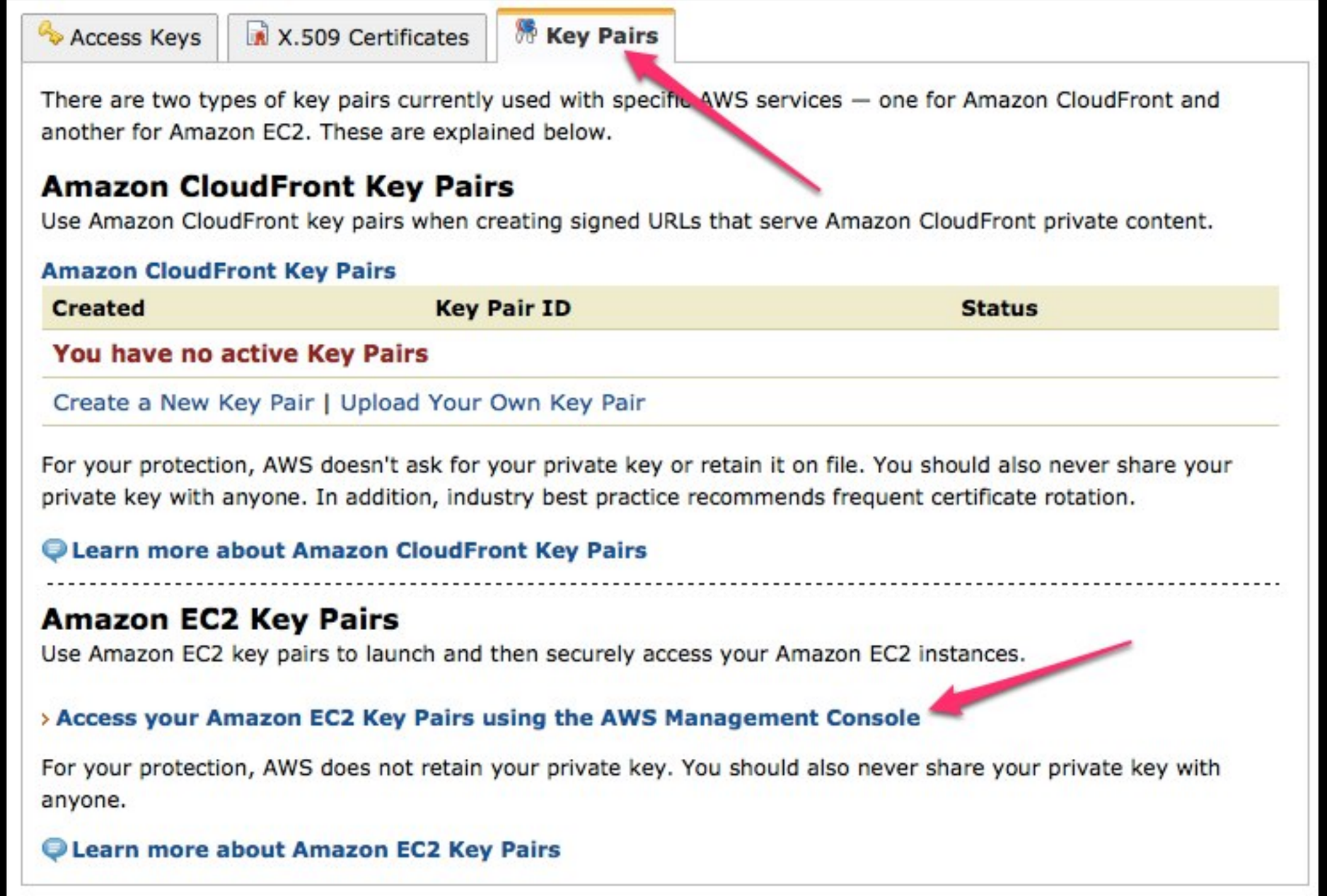
Types of Access Keys

- AWS ID / Secret ID for AWS Management
- SSH Keys for Server Access

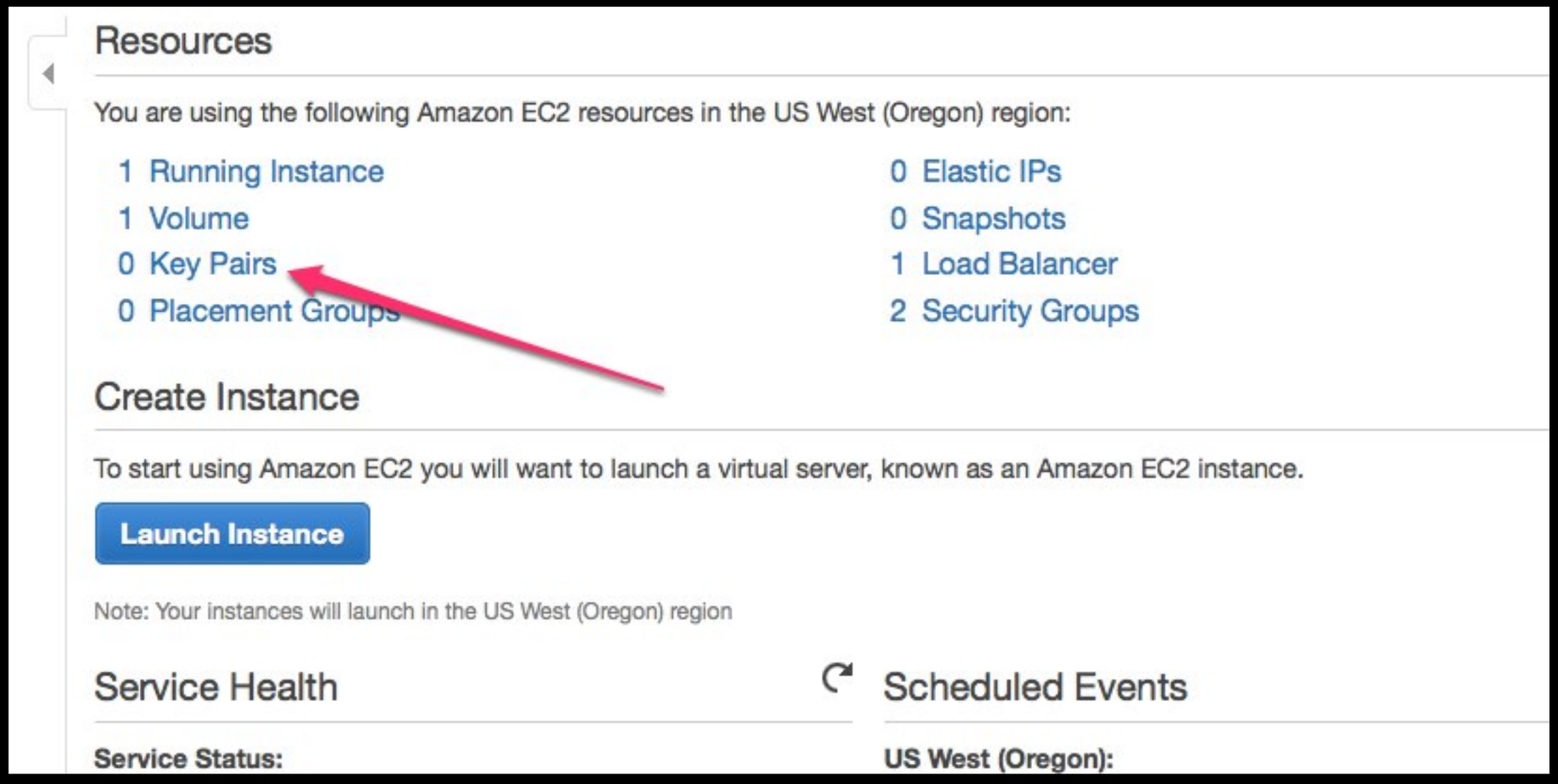
AWS Access Keys



SSH Keys


Access Keys
X.509 Certificates
Key Pairs
There are two types of key pairs currently used with specific AWS services — one for Amazon CloudFront and another for Amazon EC2. These are explained below.
Amazon CloudFront Key Pairs
Use Amazon CloudFront key pairs when creating signed URLs that serve Amazon CloudFront private content.
Amazon CloudFront Key Pairs
Created
Key Pair ID
Status
You have no active Key Pairs
Create a New Key Pair | Upload Your Own Key Pair
For your protection, AWS doesn't ask for your private key or retain it on file. You should also never share your private key with anyone. In addition, industry best practice recommends frequent certificate rotation.
Learn more about Amazon CloudFront Key Pairs
Amazon EC2 Key Pairs
Use Amazon EC2 key pairs to launch and then securely access your Amazon EC2 instances.
Access your Amazon EC2 Key Pairs using the AWS Management Console
For your protection, AWS does not retain your private key. You should also never share your private key with anyone.
Learn more about Amazon EC2 Key Pairs

SSH Keys


Resources
You are using the following Amazon EC2 resources in the US West (Oregon) region:
1 Running Instance
1 Volume
0 Key Pairs
0 Placement Groups
0 Elastic IPs
0 Snapshots
1 Load Balancer
2 Security Groups
Create Instance
To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.
Launch Instance
Note: Your instances will launch in the US West (Oregon) region
Service Health
Service Status:
Scheduled Events
US West (Oregon):

SSH Keys


Create Key Pair
Import Key Pair
Delete
Viewing:
All Key Pairs
Search
You do not have any key pairs defined.
Click the Create Key Pair button to download a new private key.
Create Key Pair

SSH Keys


Import Keypair
Cancel
Click Browse and navigate to your public key. You may change the name of your key if necessary. Alternatively you can copy and paste the contents of your public key into the dialog.
Load public key from file:
/Users/mswain/id_rsa.pub
Browse...
Keypair Name:
mswain
Public Key contents:
Are you sure you want to import this Keypair?
Cancel
Yes, Import

Installing EB CLI Tools

EB CLI Tools

http://aws.amazon.com/code/6752709412171743

Requires Python 2.7 or later (comes with OSX 10.7+)

Installing EB CLI Tools

1. Download and extract the zip
2. Add the ‘eb’ tool to your path.

Example: Installing EB CLI on OSX 10.8

```
wget https://s3.amazonaws.com/elasticbeanstalk/cli/AWS-ElasticBeanstalk-CLI-2.4.0.zip
unzip AWS-ElasticBeanstalk-CLI-2.4.0.zip
export PATH=$PATH:$(pwd)/AWS-ElasticBeanstalk-CLI-2.4.0/eb/macosx/python2.7
```

Configuring Your App

My Example Application

- Rails 3.2
- mysql2
- Ruby 1.9.3

Example App

```
rails new ebapp -database=mysql
cd ebapp
git init && git add -A && git commit -m "My First EBApp"
rails g scaffold User name:string email:string
bundle install
Edit database.yml
```

database.yml

```
production:
  adapter: mysql2
  encoding: utf8
  database: <%= ENV['RDS_DB_NAME'] %>
  username: <%= ENV['RDS_USERNAME'] %>
  password: <%= ENV['RDS_PASSWORD'] %>
  host: <%= ENV['RDS_HOSTNAME'] %>
  port: <%= ENV['RDS_PORT'] %>
```

Setting Up eb

eb init

- In your rails app, run “eb init”
- Fill in the prompted information:
  - AWS Access ID
  - AWS Secret Key
  - Region (probably US-East)
  - Name your app (will autogenerate)

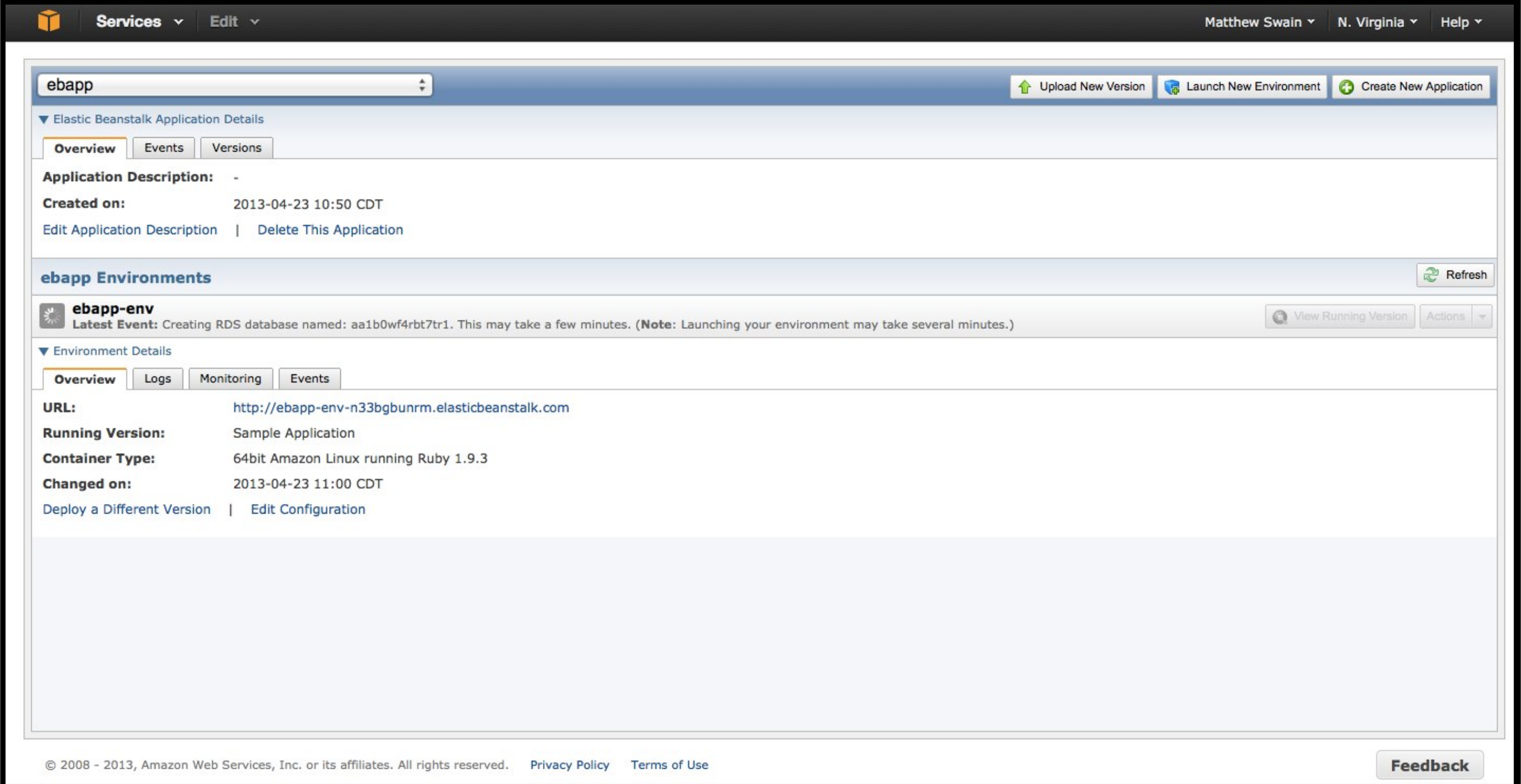
eb init

- Specify a “solution stack” (My example, I’ll choose Linux running Ruby 1.9.3, 64 bit)
- Create an RDS Instance (no snapshot)
- Create an instance profile.
- If you want to save your data when you terminate the env, select “create snapshot”
- git add .gitignore && git commit -a

eb start

- Now, run “eb start” Since this is your first run, answer “no” when asked to deploy your app.
- The stack will launch and create:
  - EC2 instances that match the profile you selected (64 bit Linux, Ruby 1.9.3)
  - An RDS database instance.
  - ELB containing the EC2 instance.
  - Autoscale Groups that will scale on CPU
  - An S3 Bucket from which your app will be deployed

eb start


Services
Edit
Matthew Swain
N. Virginia
Help
ebapp
Upload New Version
Launch New Environment
Create New Application
Elastic Beanstalk Application Details
Overview
Events
Versions
Application Description: -
Created on: 2013-04-23 10:50 CDT
Edit Application Description | Delete This Application
ebapp Environments
Refresh
ebapp-env
Latest Event: Creating RDS database named: aa1b0wf4rbt7tr1. This may take a few minutes. (Note: Launching your environment may take several minutes.)
View Running Version
Actions
Environment Details
Overview
Logs
Monitoring
Events
URL: http://ebapp-env-n33bgbunrm.elasticbeanstalk.com
Running Version: Sample Application
Container Type: 64bit Amazon Linux running Ruby 1.9.3
Changed on: 2013-04-23 11:00 CDT
Deploy a Different Version | Edit Configuration
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Feedback

git aws.push

- Setting up eb created a git subcommand called “git aws.push”
- Deploys your app, runs rake db:migrate, and compiles assets.
- Puts your app in S3 so that when new instances launch in this app environment, they’ll get your new code

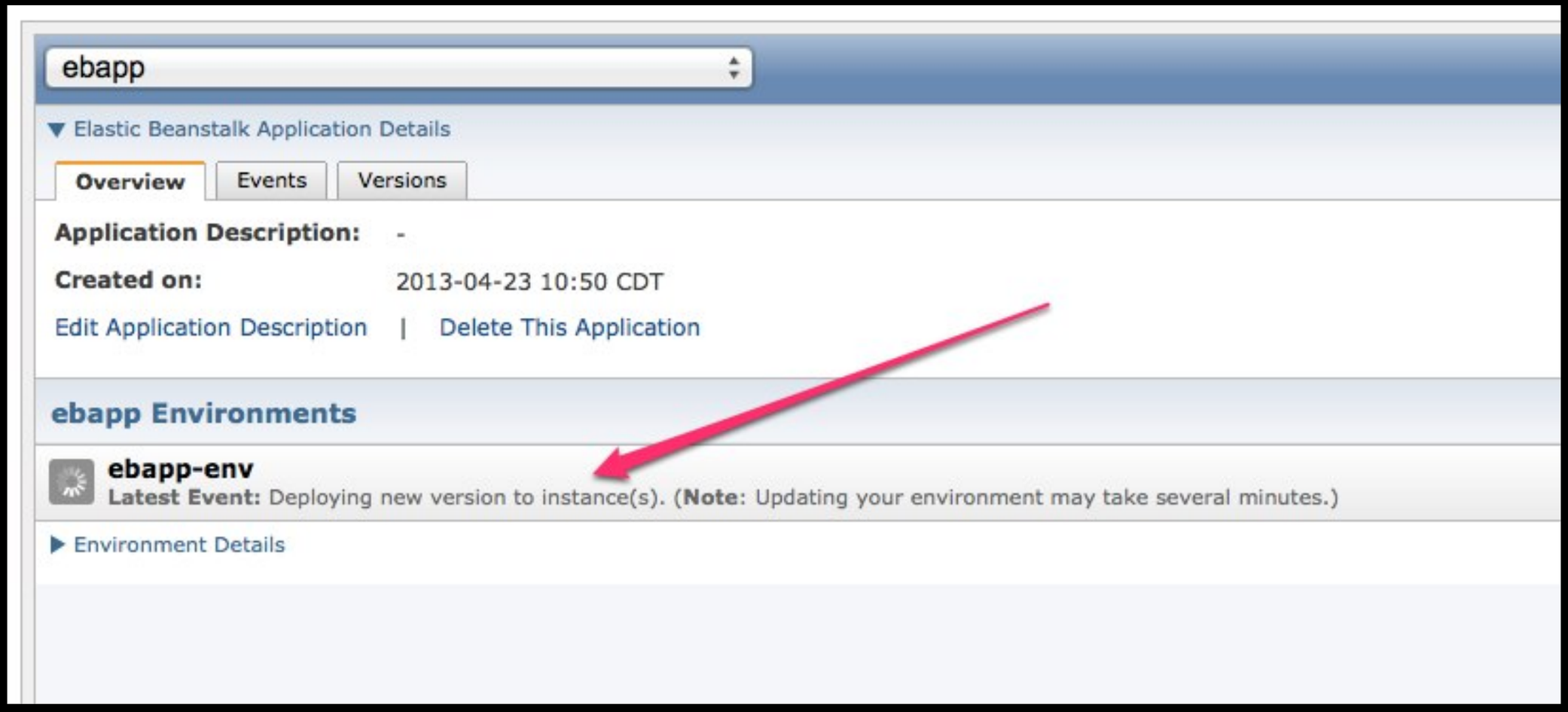
Configuring eb

- Example: you don't want asset precompilation or db:migrate.
- .ebextensions/*.config
- http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/customize-containers.html

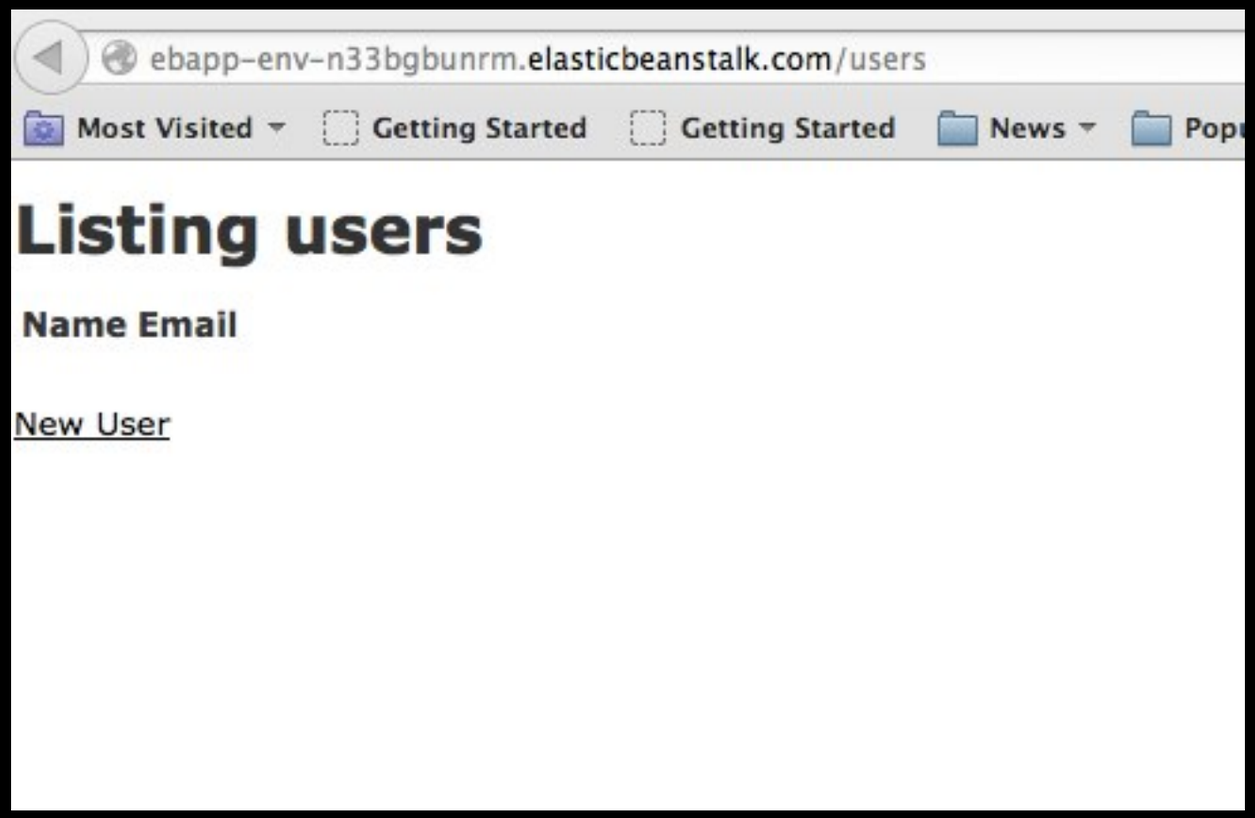
git aws.push

- Run “git aws.push”
- Run “eb status”
- Status : Updating

git aws.push


ebapp
Elastic Beanstalk Application Details
Overview
Events
Versions
Application Description: -
Created on: 2013-04-23 10:50 CDT
Edit Application Description | Delete This Application
ebapp Environments
ebapp-env
Latest Event: Deploying new version to instance(s). (Note: Updating your environment may take several minutes.)
Environment Details

git aws.push


ebapp-env-n33bgbunrm.elasticbeanstalk.com/users
Most Visited
Getting Started
Getting Started
News
Listing users
Name Email
New User

Stopping Your app

```
eb stop
```

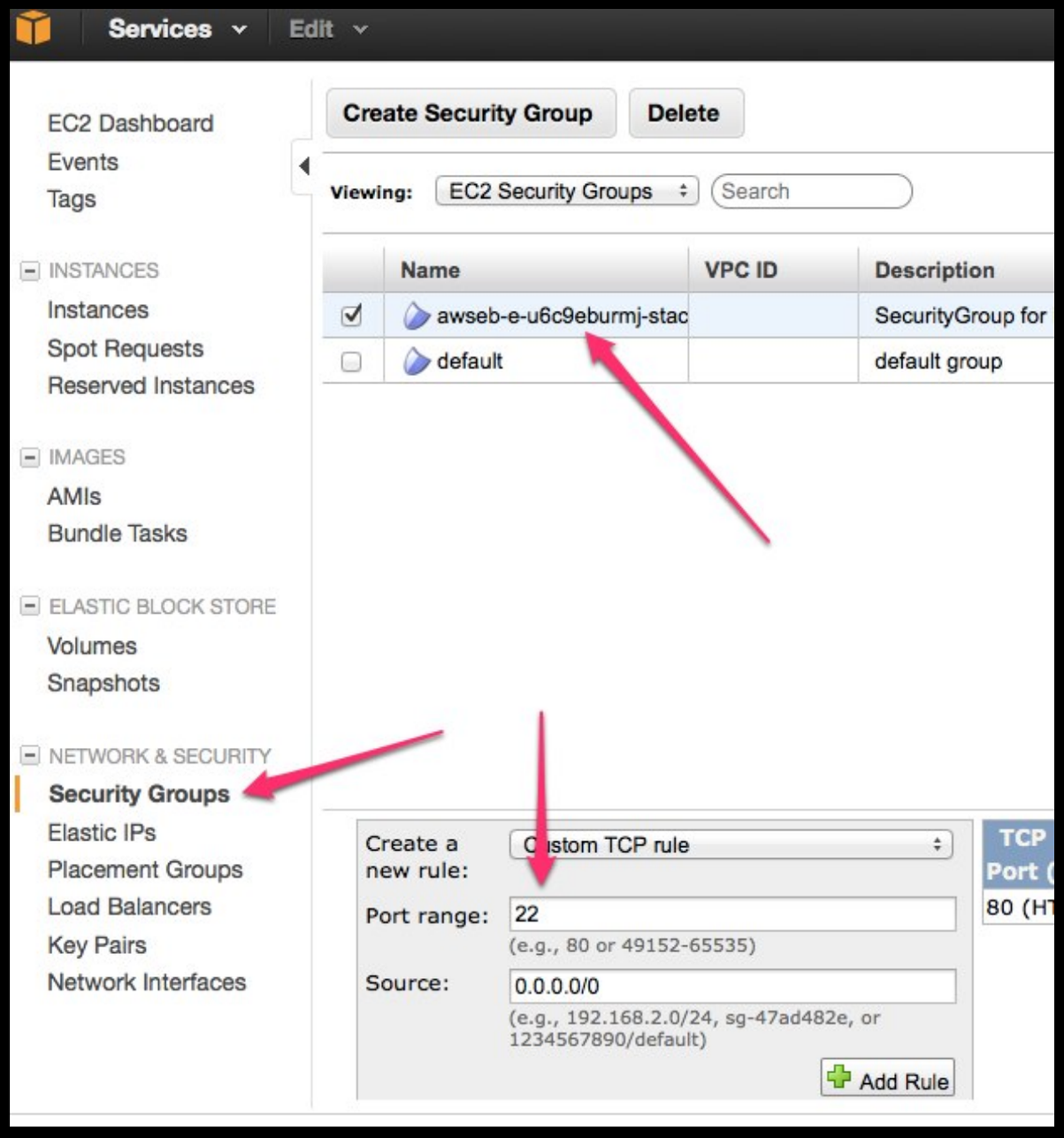
Starting Your app

eb start

Deleting Your App

eb delete

SSH


Services
Edit
EC2 Dashboard
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INSTANCES
Instances
Spot Requests
Reserved Instances
IMAGES
AMIs
Bundle Tasks
ELASTIC BLOCK STORE
Volumes
Snapshots
NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Load Balancers
Key Pairs
Network Interfaces
Create Security Group
Delete
Viewing:
EC2 Security Groups
Search
Name
VPC ID
Description
awseb-e-u6c9eburmj-stac
SecurityGroup for
default
default group
Create a new rule:
Custom TCP rule
Port range:
22
(e.g., 80 or 49152-65535)
Source:
0.0.0.0/0
(e.g., 192.168.2.0/24, sg-47ad482e, or 1234567890/default)
Add Rule
TCP
Port (
80 (HT

Demo

Questions?

@mswain