Java in the amazon cloud

Christopher M. Judd

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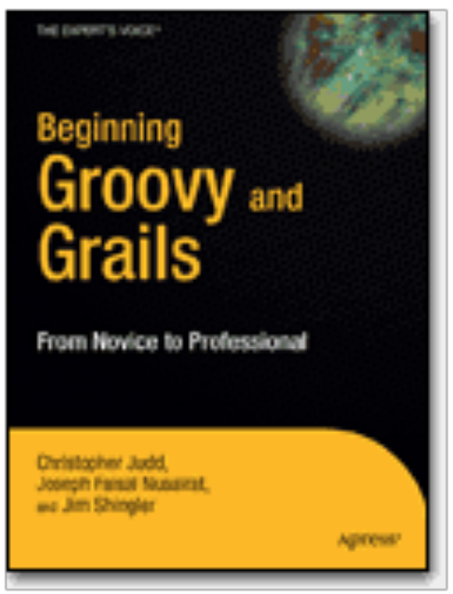
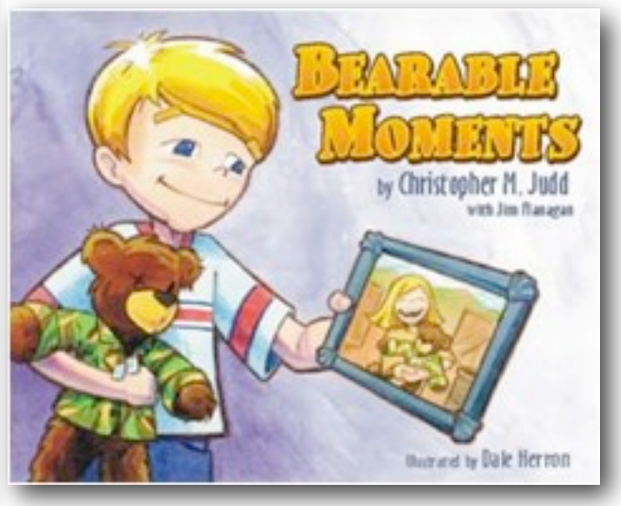
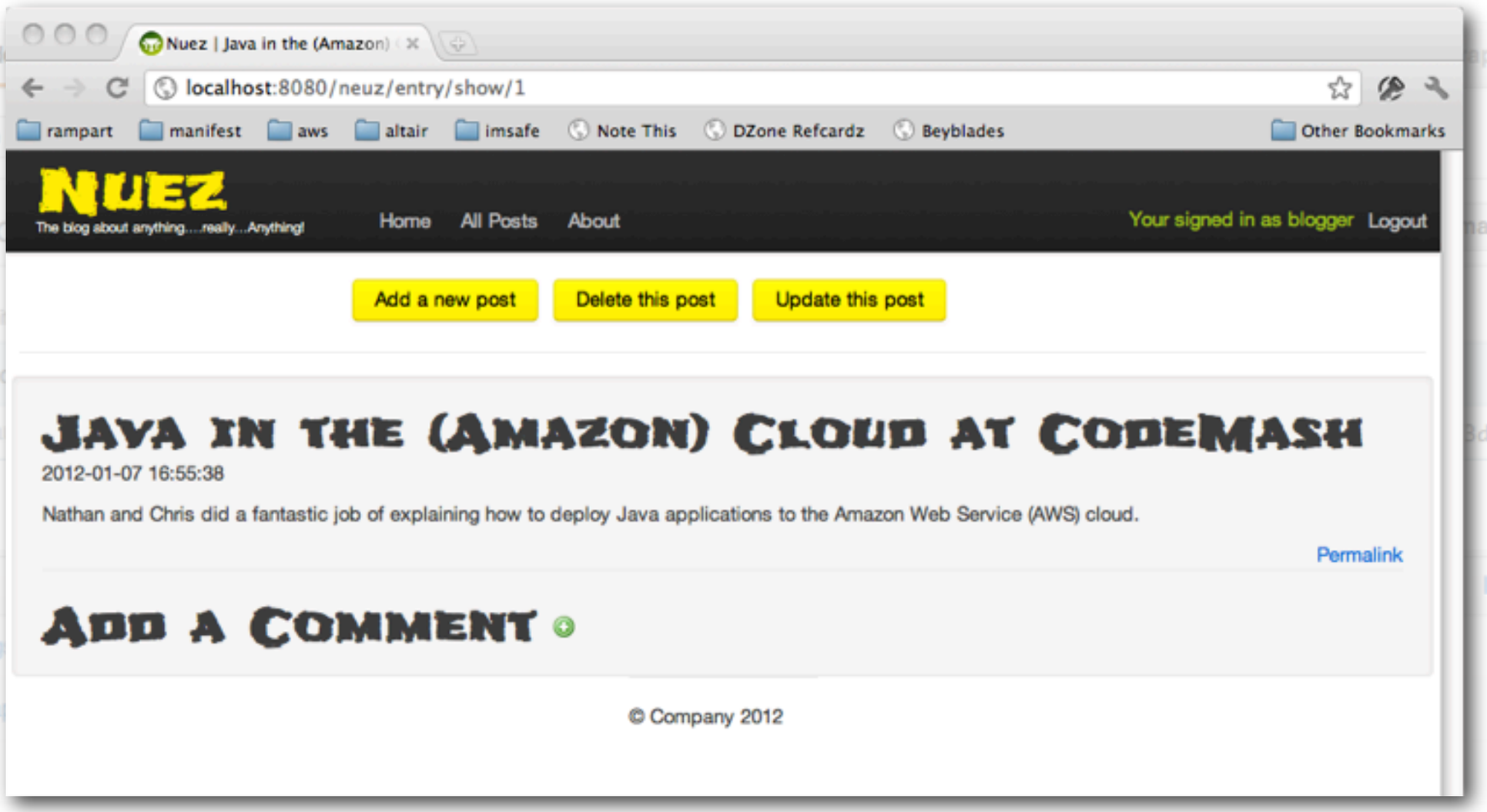
CTO and Partner at Manifest Solutions

Central Ohio Java Users Group leader

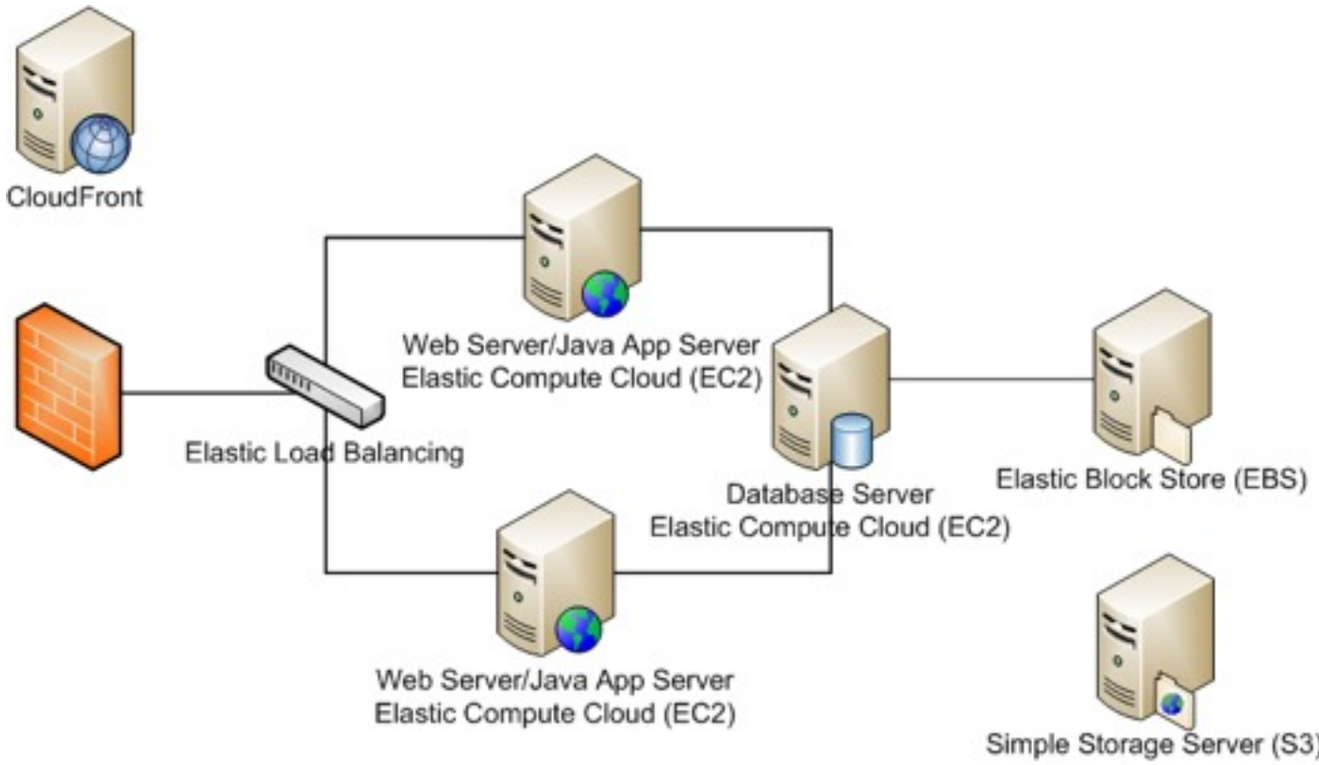
Columbus iPhone Developer User Group (CIDUG)

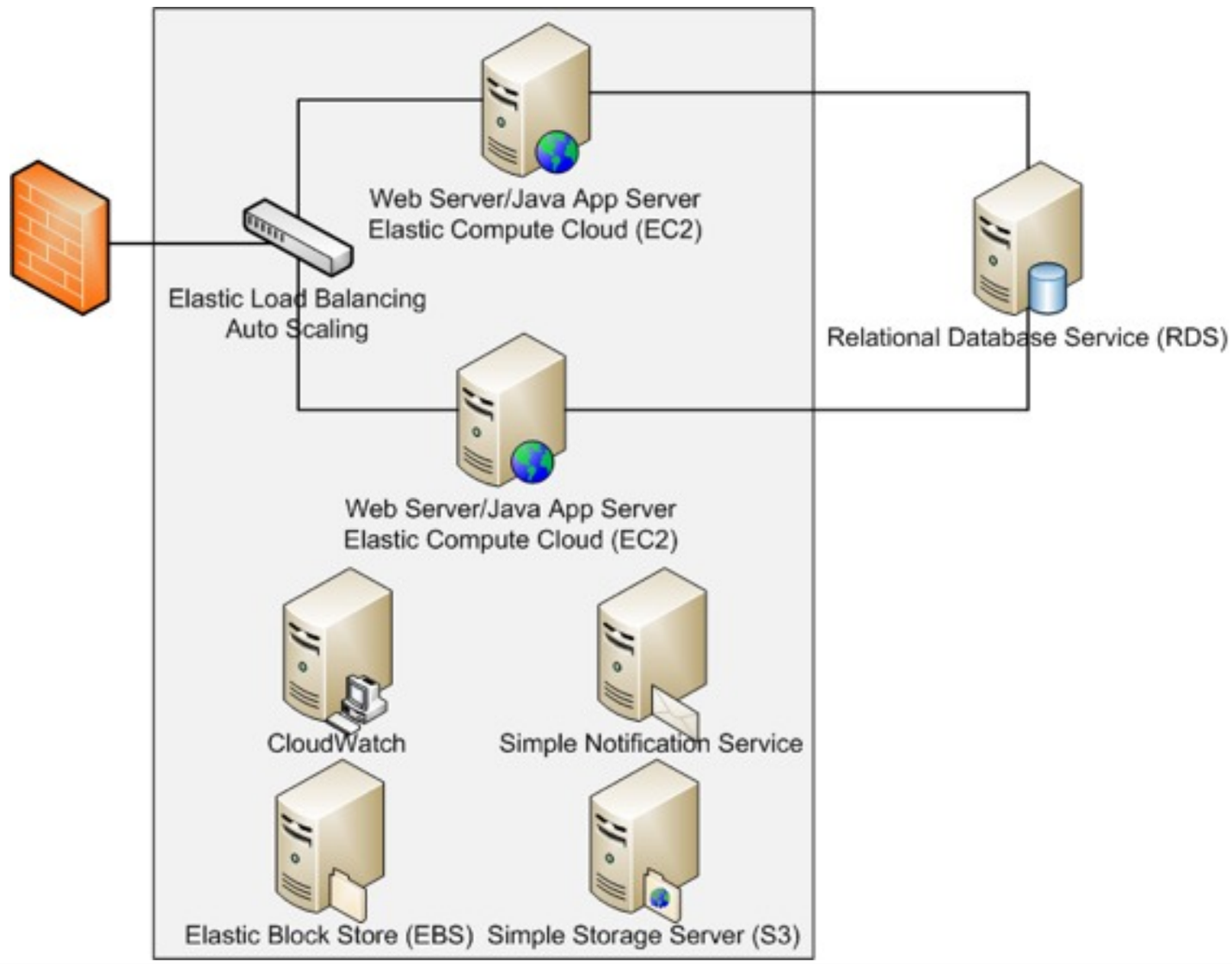






https://github.com/zendern/nuez


CloudFront
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Elastic Load Balancing
Database Server
Elastic Compute Cloud (EC2)
Elastic Block Store (EBS)
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Simple Storage Server (S3)


Web Server/Java App Server
Elastic Compute Cloud (EC2)
Elastic Load Balancing
Auto Scaling
Relational Database Service (RDS)
Web Server/Java App Server
Elastic Compute Cloud (EC2)
CloudWatch
Simple Notification Service
Elastic Block Store (EBS)
Simple Storage Server (S3)

What is cloud computing?

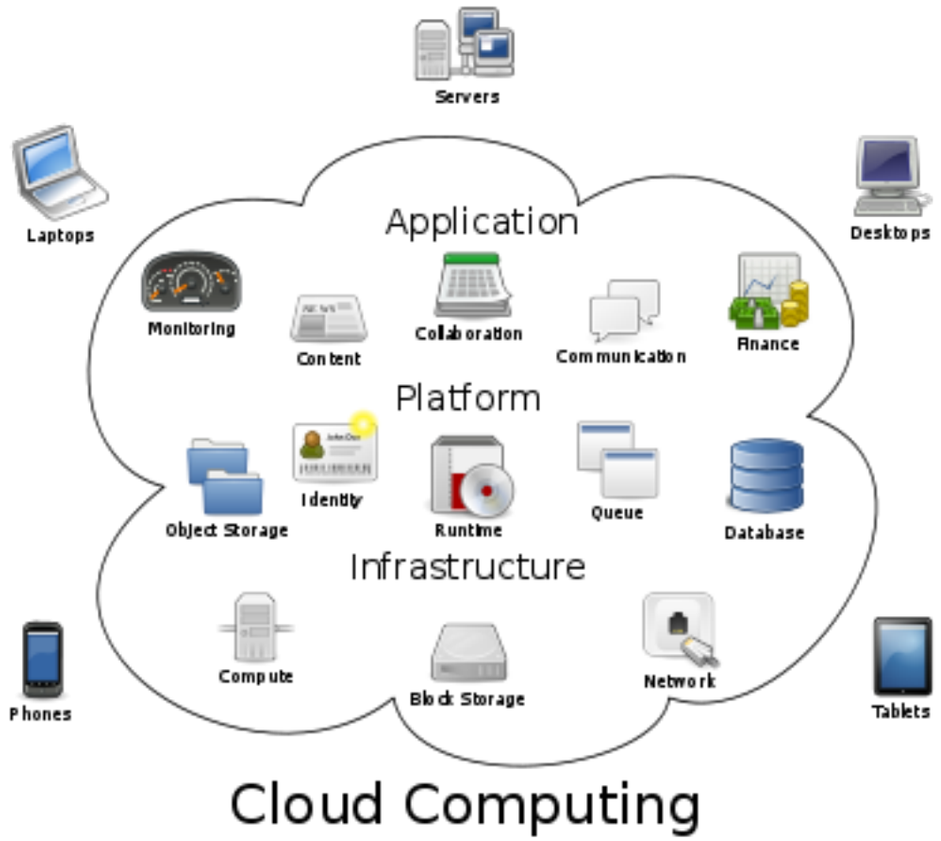
How do I get started?

How is different from what I am doing today?

Will I get a raise?

Cloud Computing

Cloud computing is the delivery of computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a metered service over a network (typically the Internet).



Cloud Computing

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The Free Encyclopedia

Software as a service (SaaS) - “on-demand” software

Platform as a service (PaaS) - solution stack

Infrastructure as a service (IaaS) - virtual computing infrastructure

PaaS

IaaS

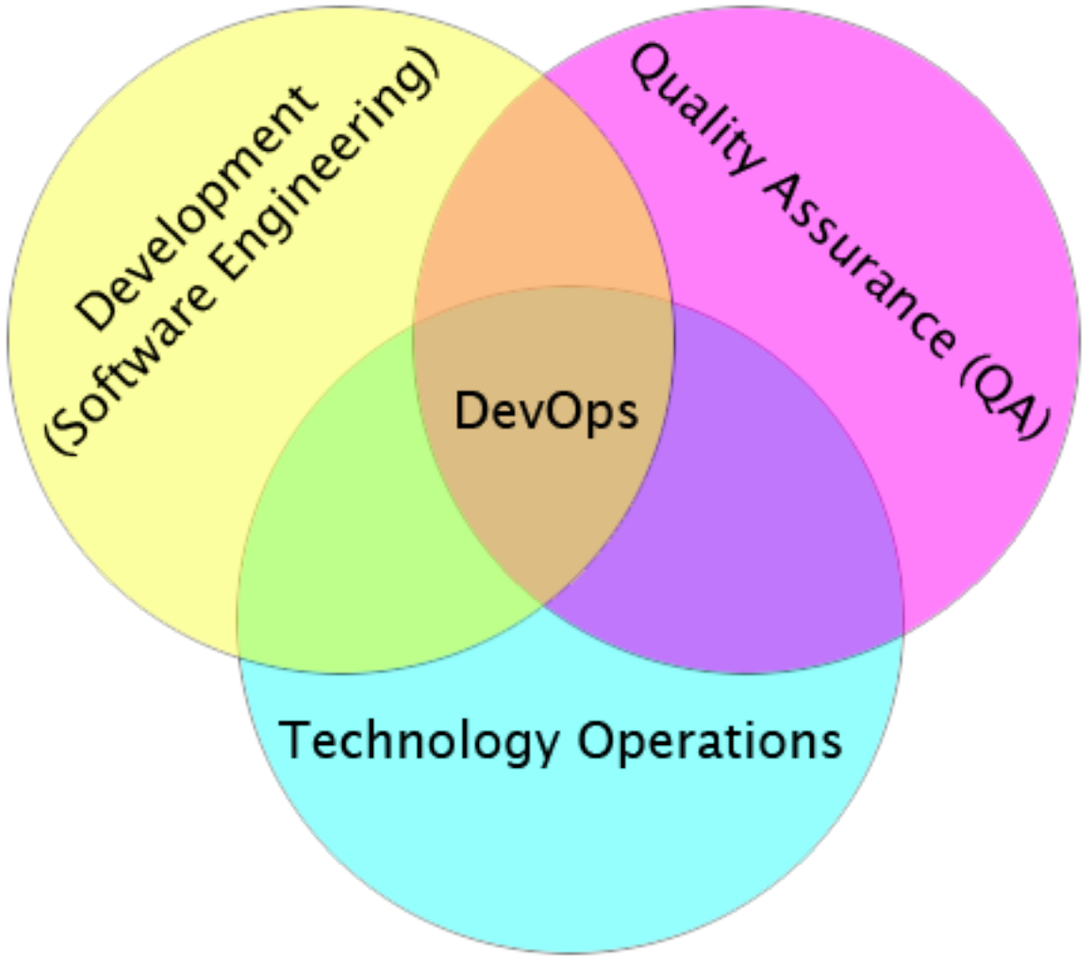
⬇ flexibility ⬆

⬇ complexity ⬆

⬇ cost ⬆

DevOps

an emerging set of principles, methods and practices for communication, collaboration and integration between software development (application/software engineering) and IT operations (systems administration/ infrastructure) professionals. It has developed in response to the emerging understanding of the interdependence and importance of both the development and operations disciplines in meeting an organization's goal of rapidly producing software products and services.



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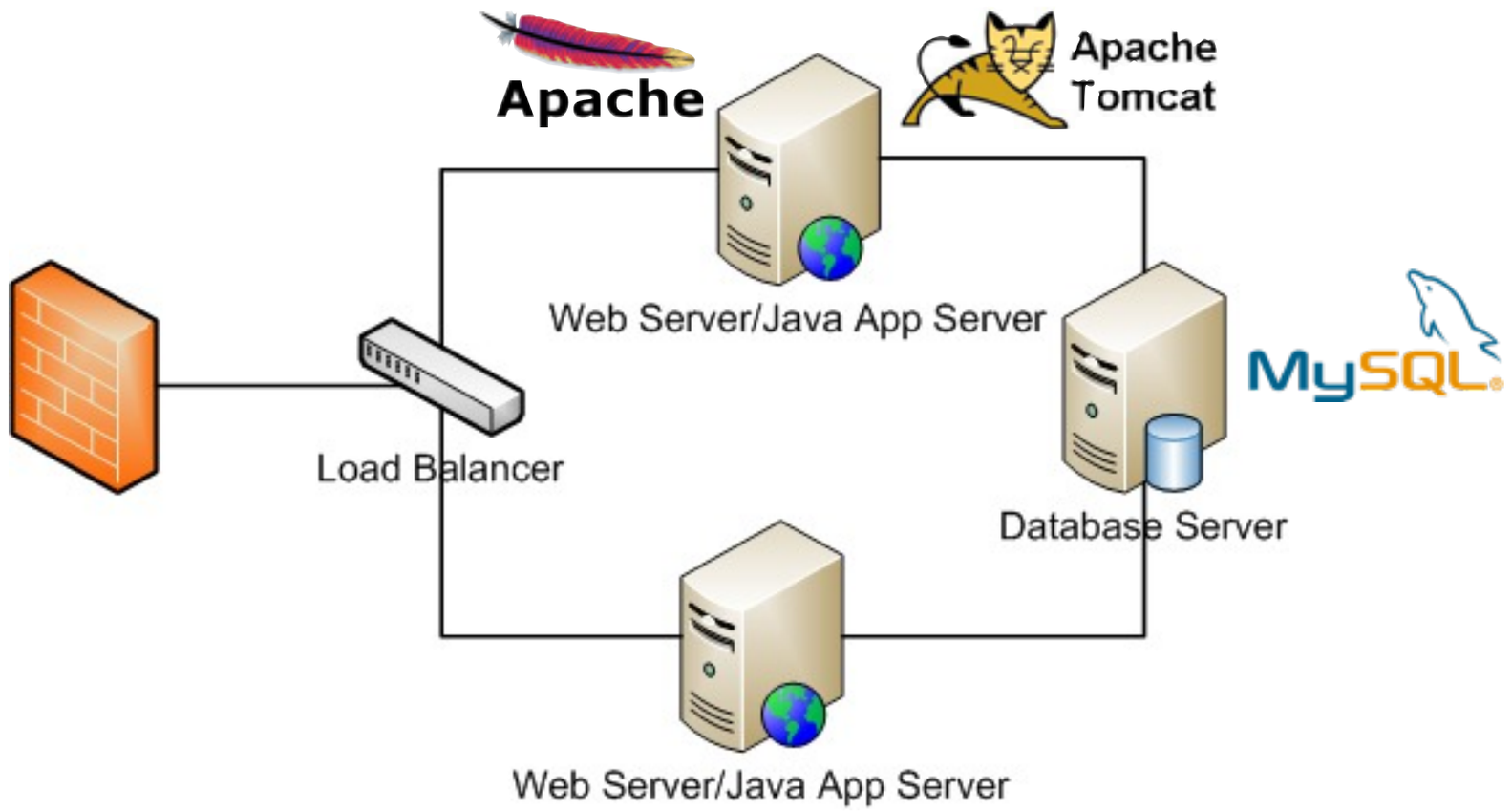
treat infrastructure like
cattle not like pets

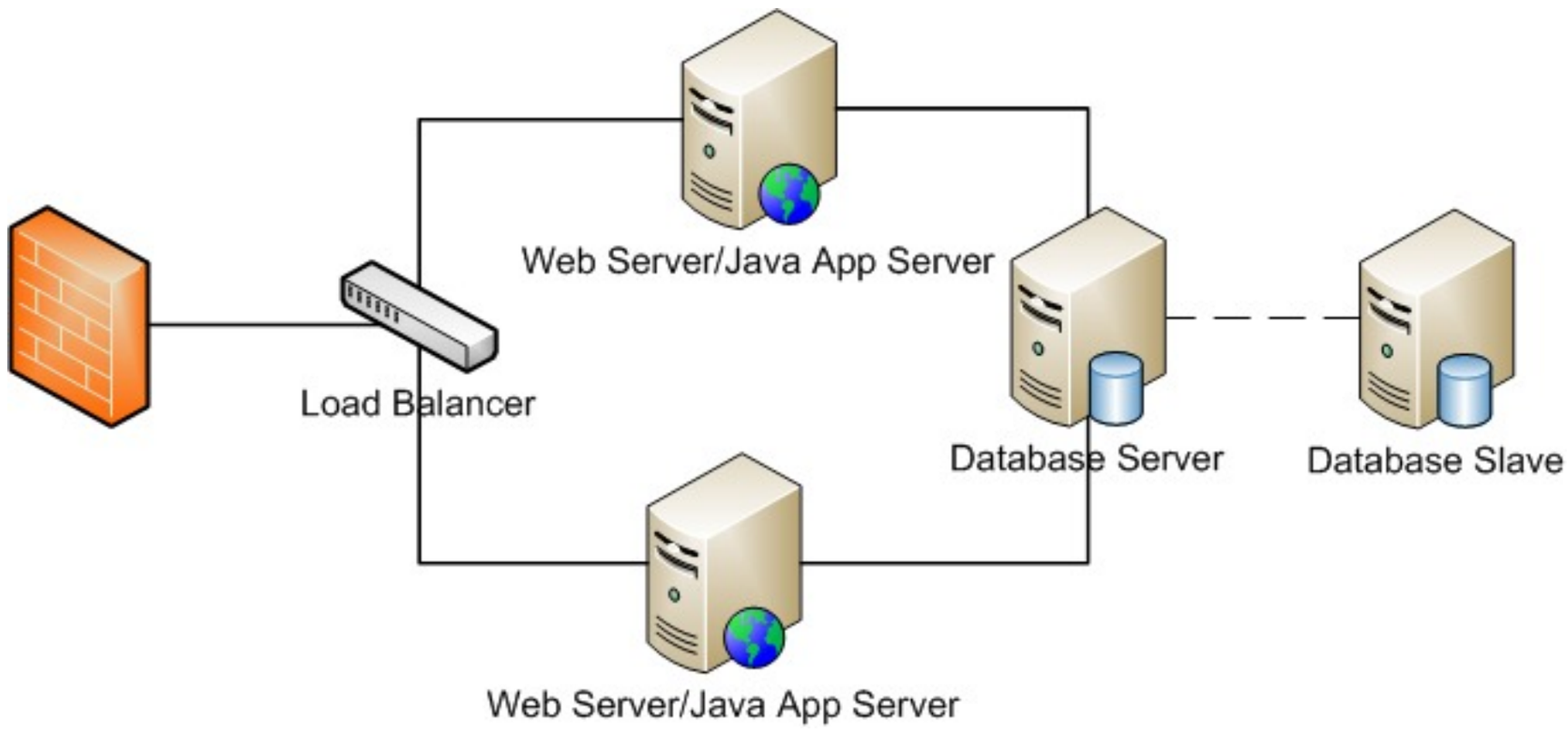
Current

Architecture

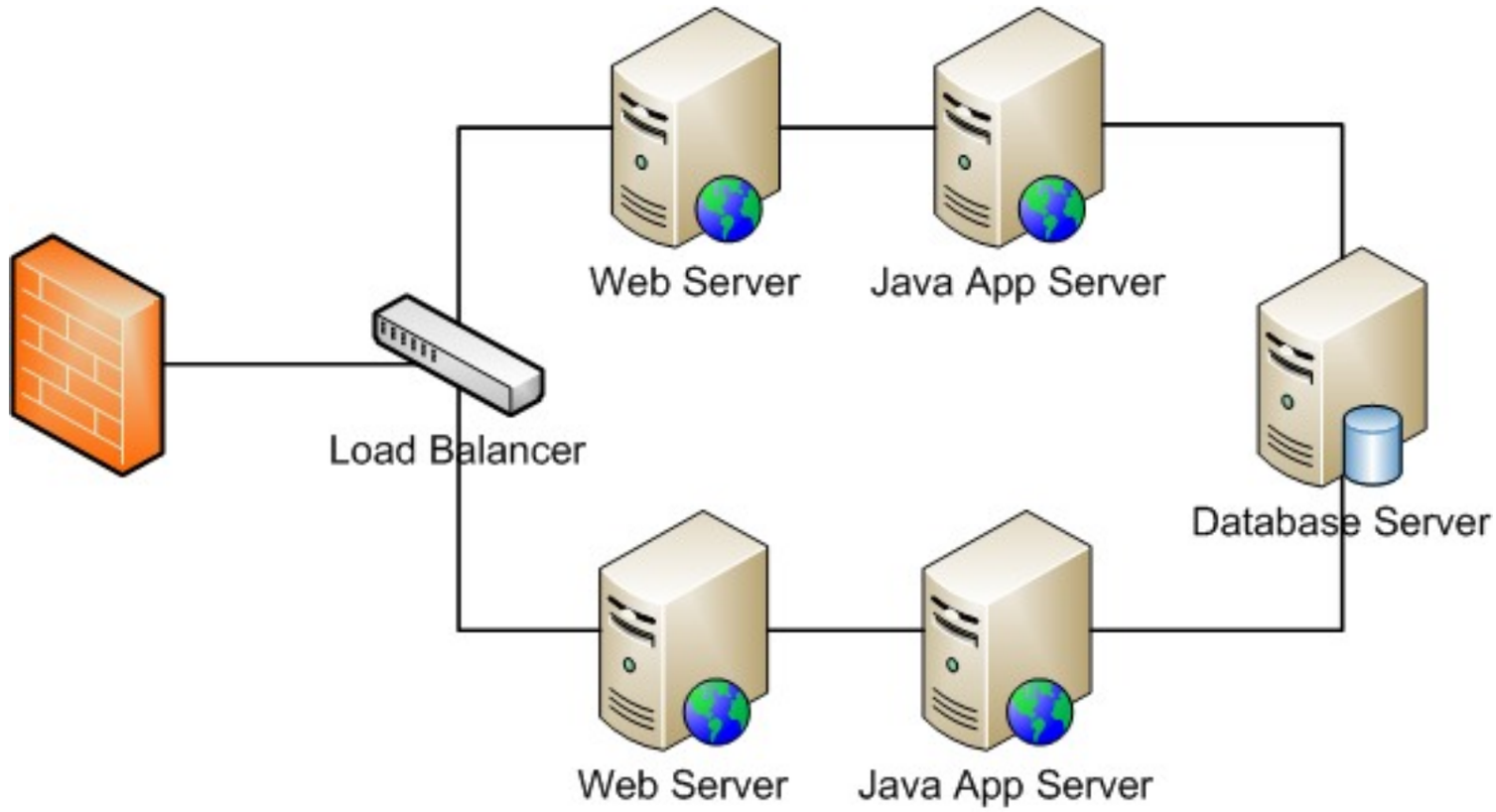
traditional Java architecture



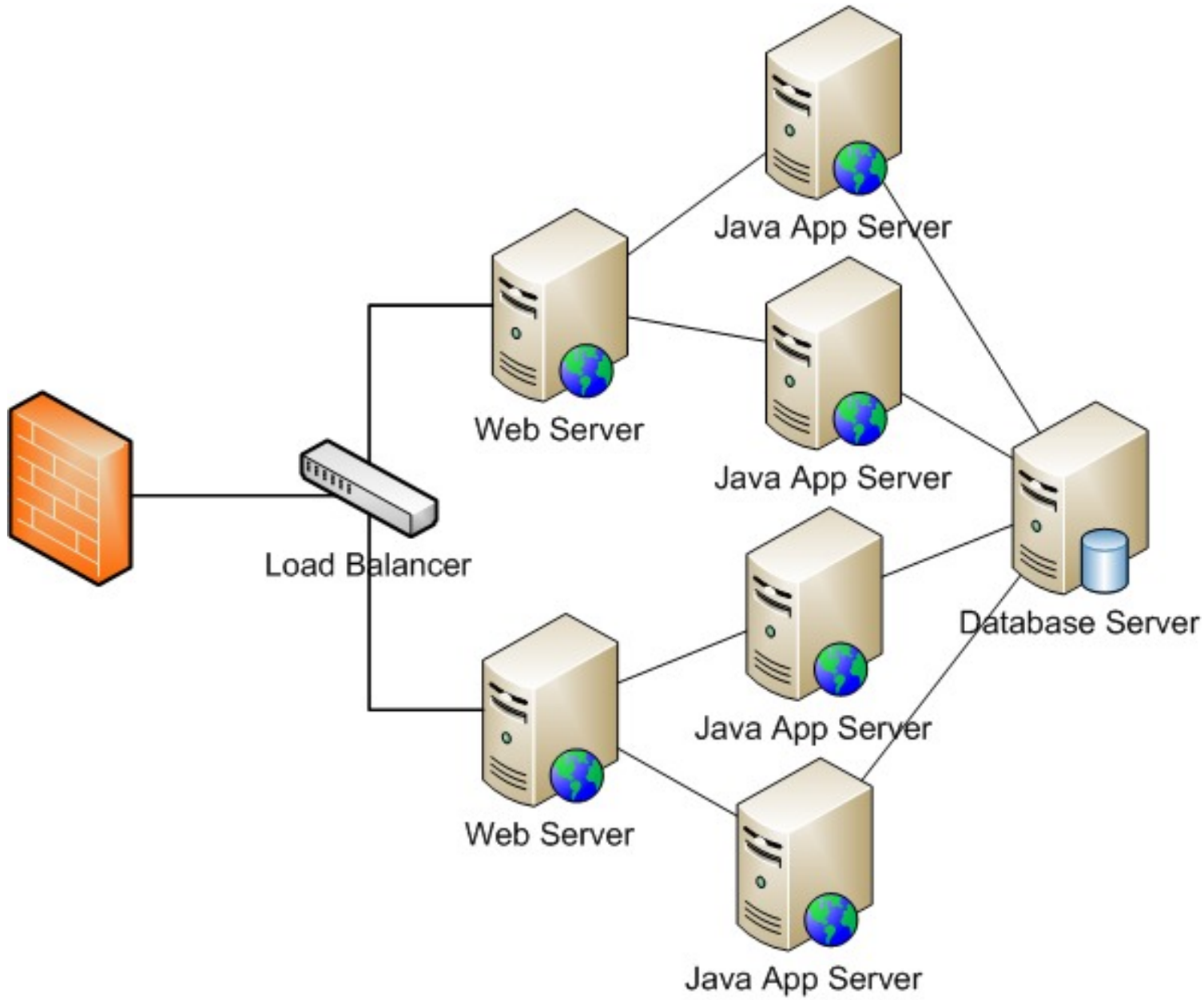
traditional Java architecture



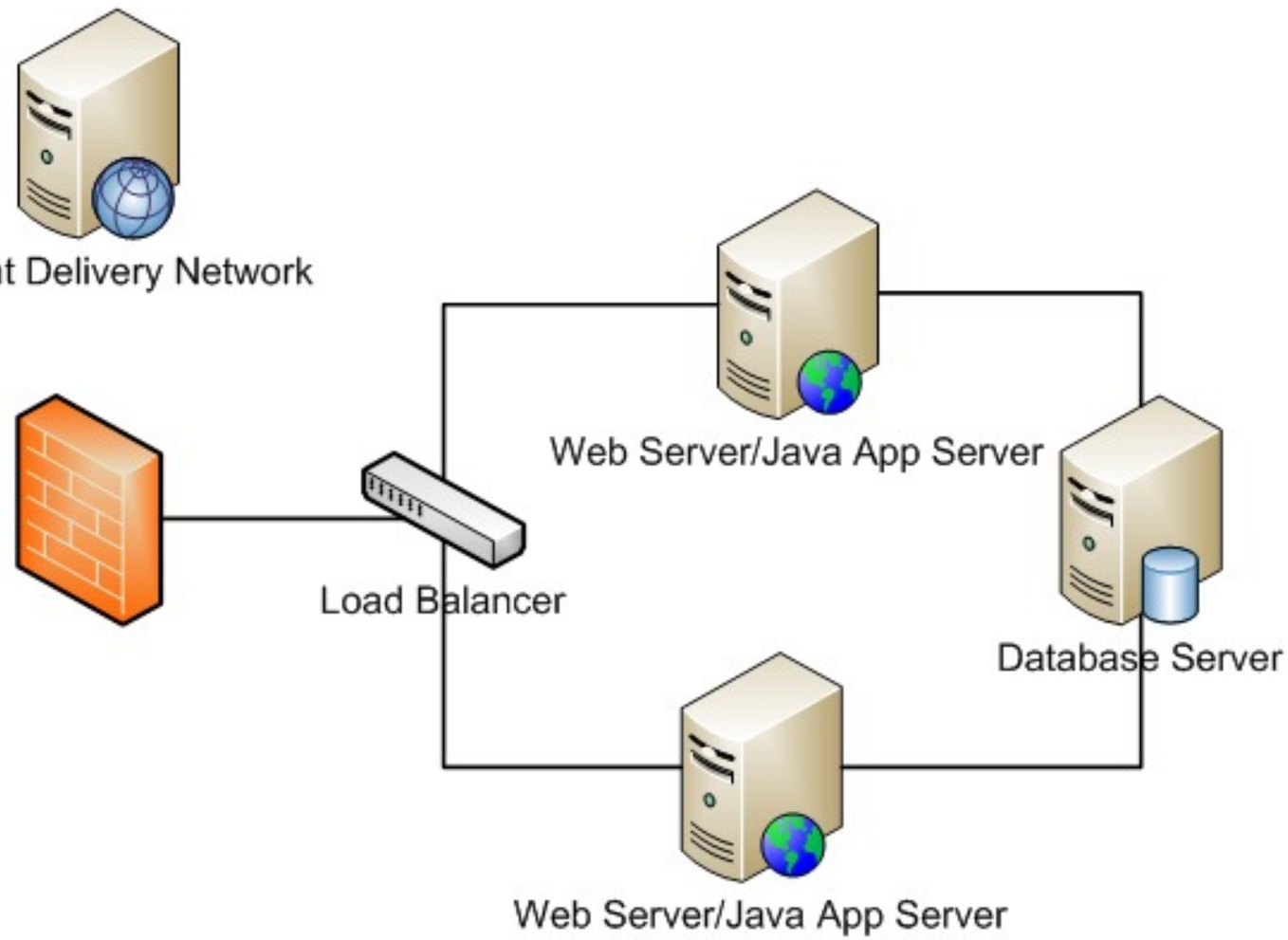
traditional Java architecture



traditional Java architecture



traditional Java architecture



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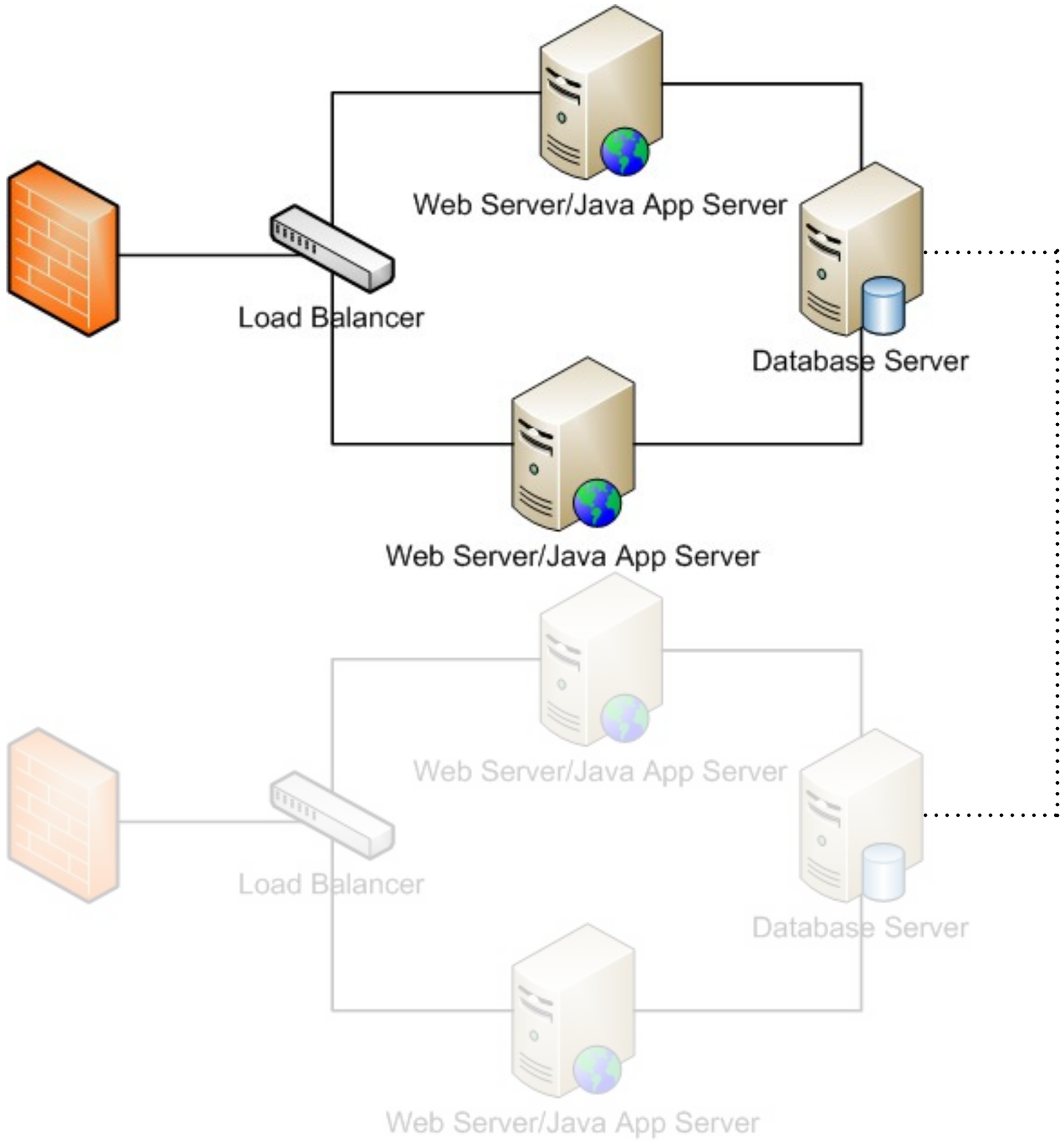


amazon
web services™

Your Applications

Management & Administration

Web Interface
AWS Management Console

Identity & Access
IAM
Identity Federation
Consolidated Billing

Deployment & Automation
AWS Elastic Beanstalk
AWS CloudFormation

Monitoring
Amazon CloudWatch

Application Platform Services

Content Distribution
Amazon CloudFront

Messaging
Amazon SNS
Amazon SQS
Amazon SES

Search
Amazon CloudSearch

Distributed Computing
Elastic MapReduce
Amazon SWF

Libraries & SDKs
Java, PHP, Python, Ruby, .NET

Foundation Services

Compute
Amazon EC2
Auto Scaling

Storage
Amazon S3
Amazon EBS
AWS Storage Gateway

Database
Amazon RDS
Amazon DynamoDB
Amazon SimpleDB
Amazon ElastiCache

Networking
Amazon VPC
Elastic Load Balancing
Amazon Route 53
AWS Direct Connect

AWS Global Infrastructure

Availability Zones

Regions

Edge Locations

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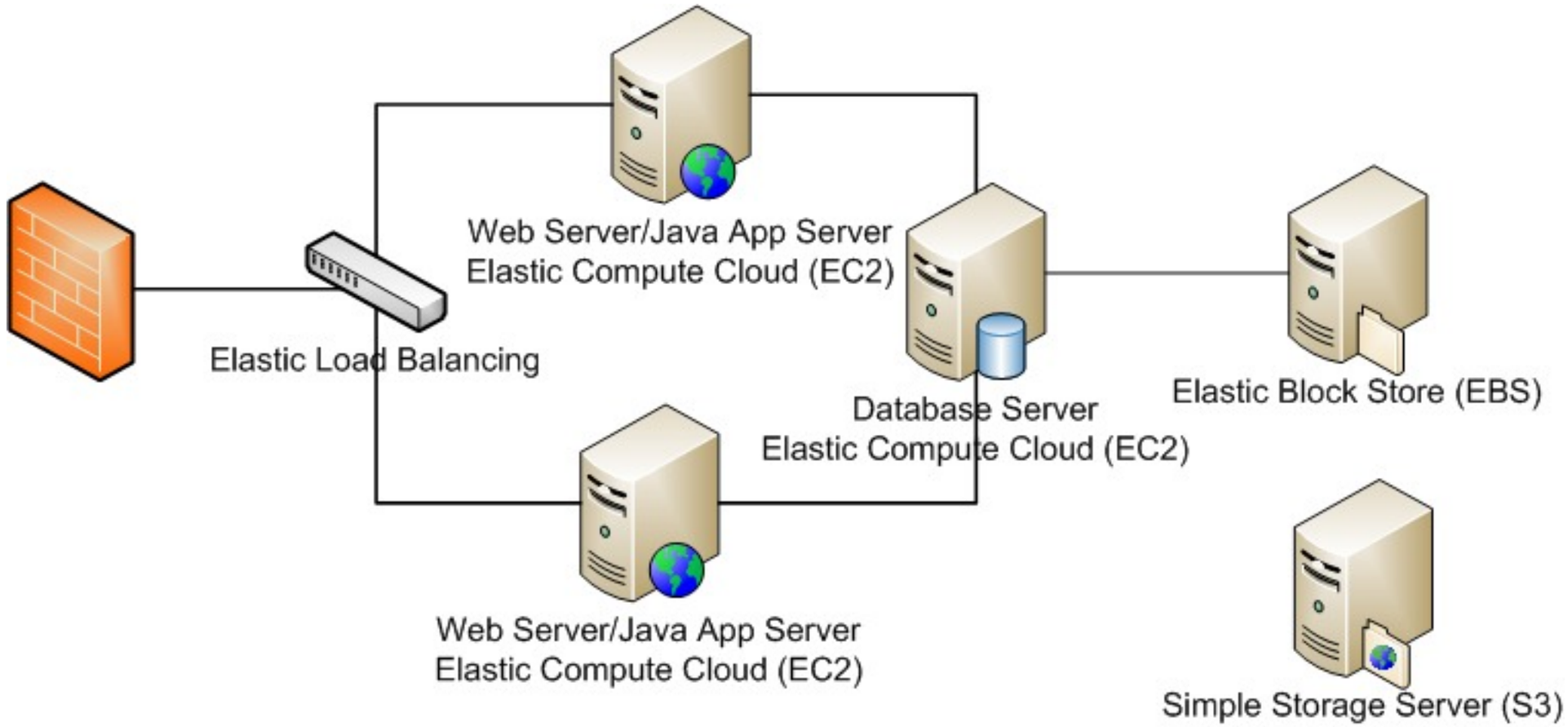
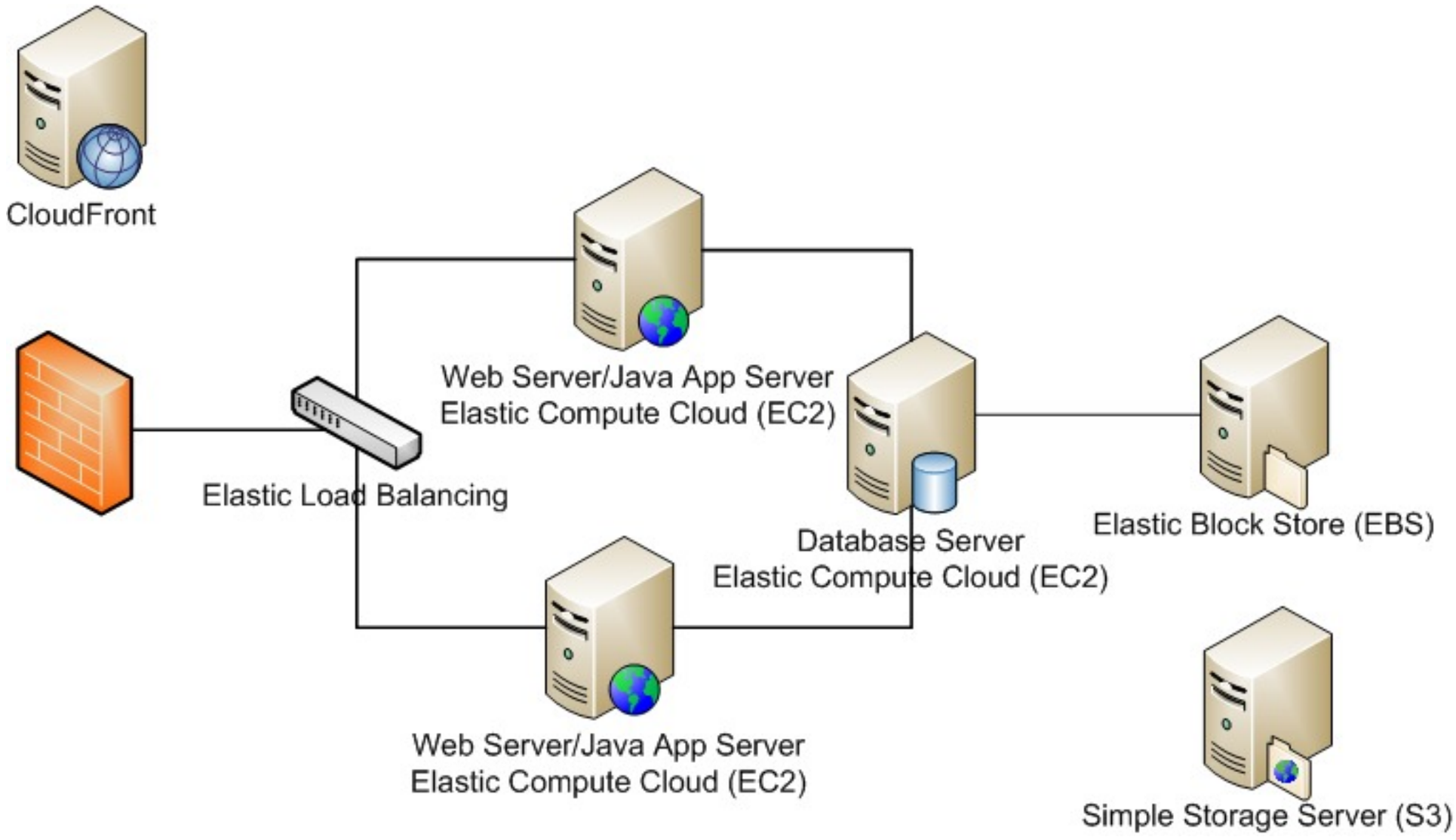
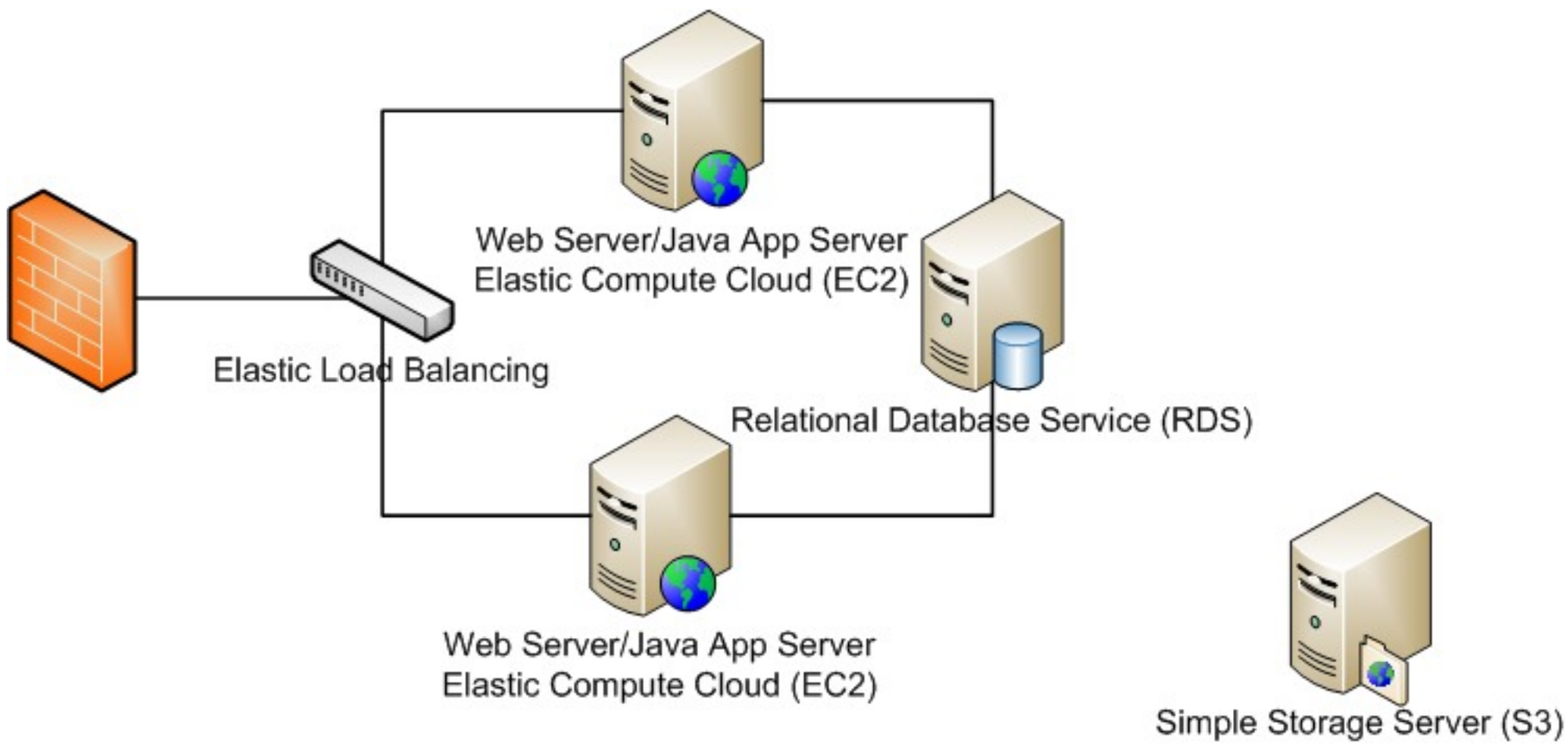
AWS architecture



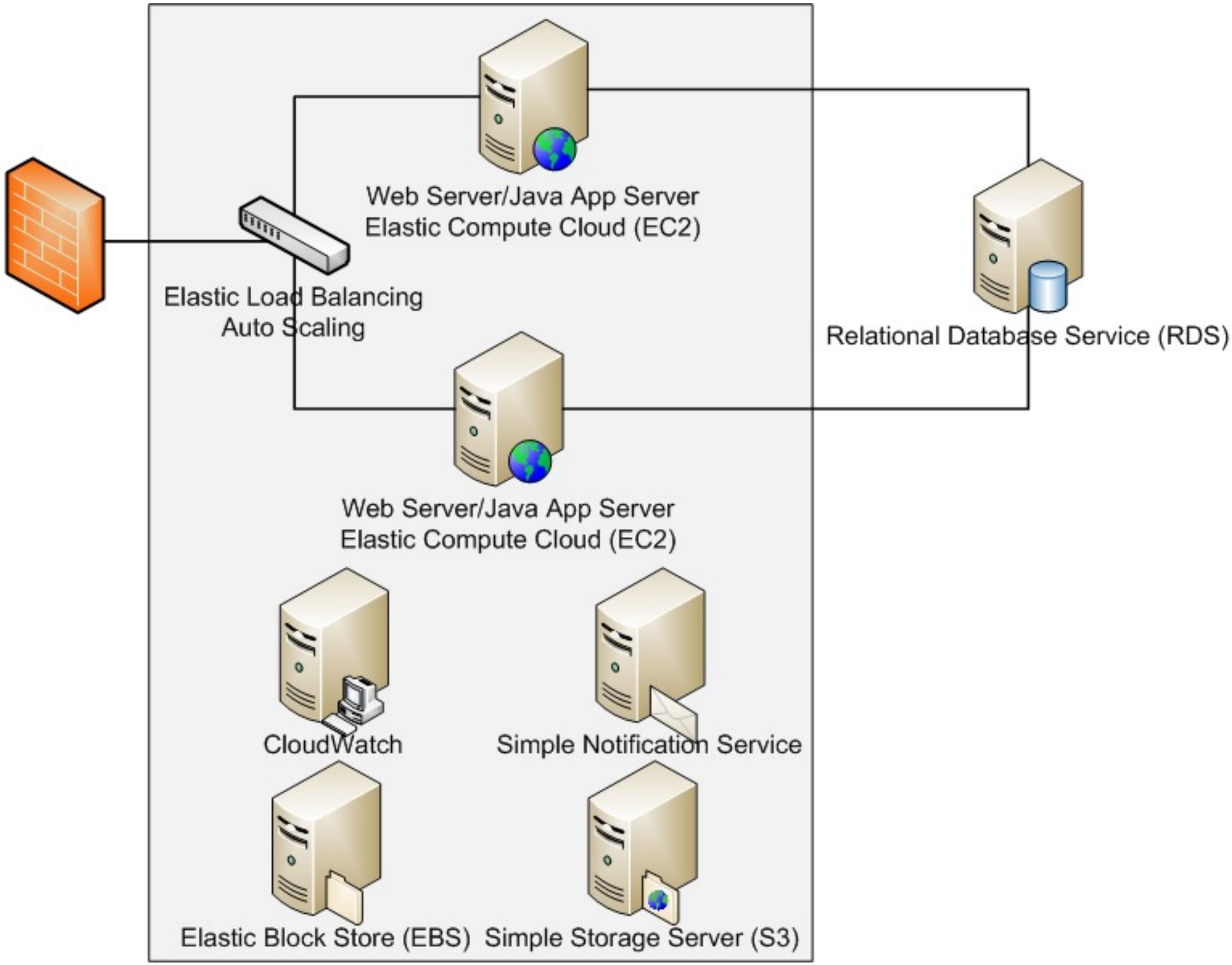
AWS architecture



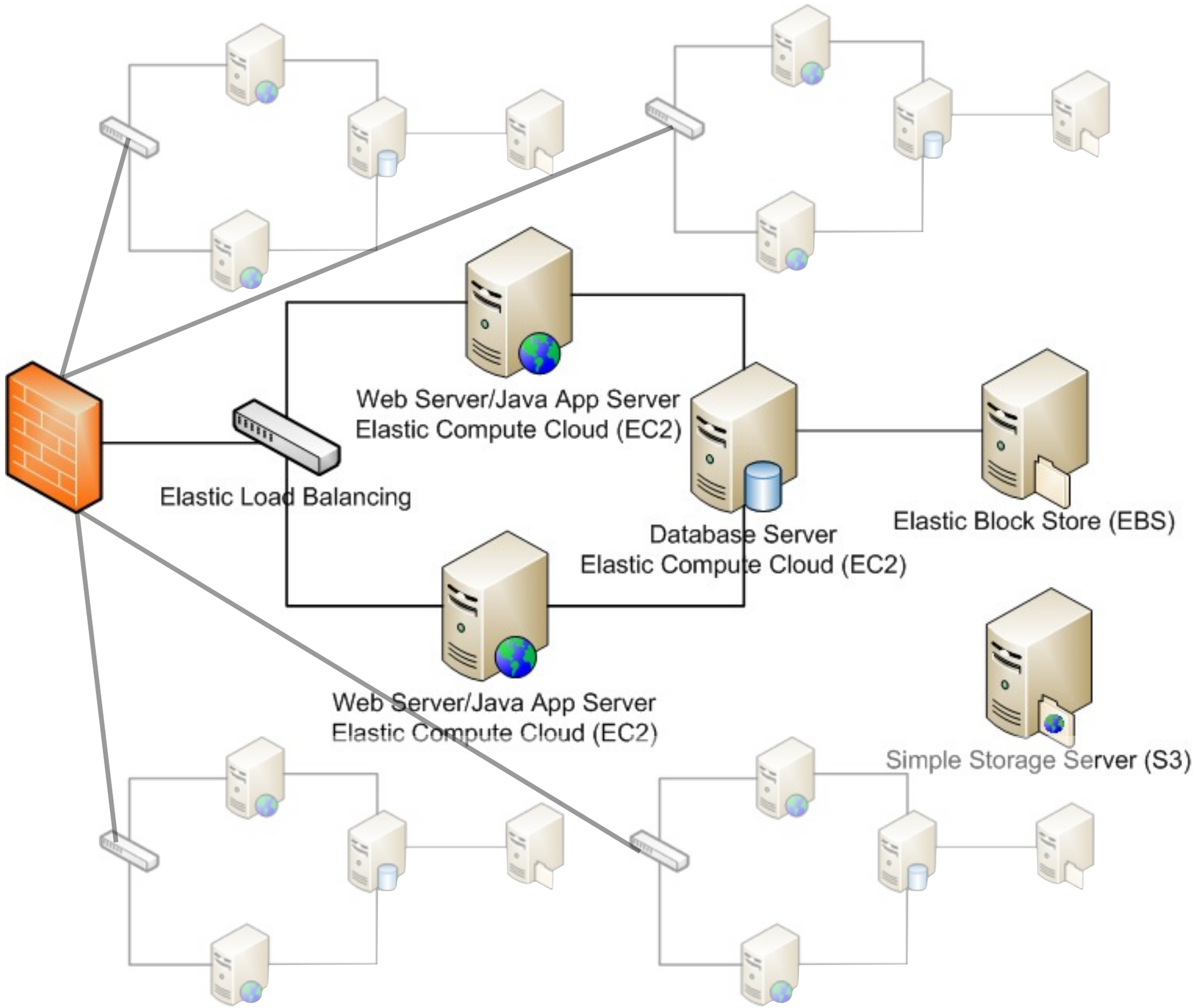
Amazon web services architecture



AWS Elastic Beanstalk architecture

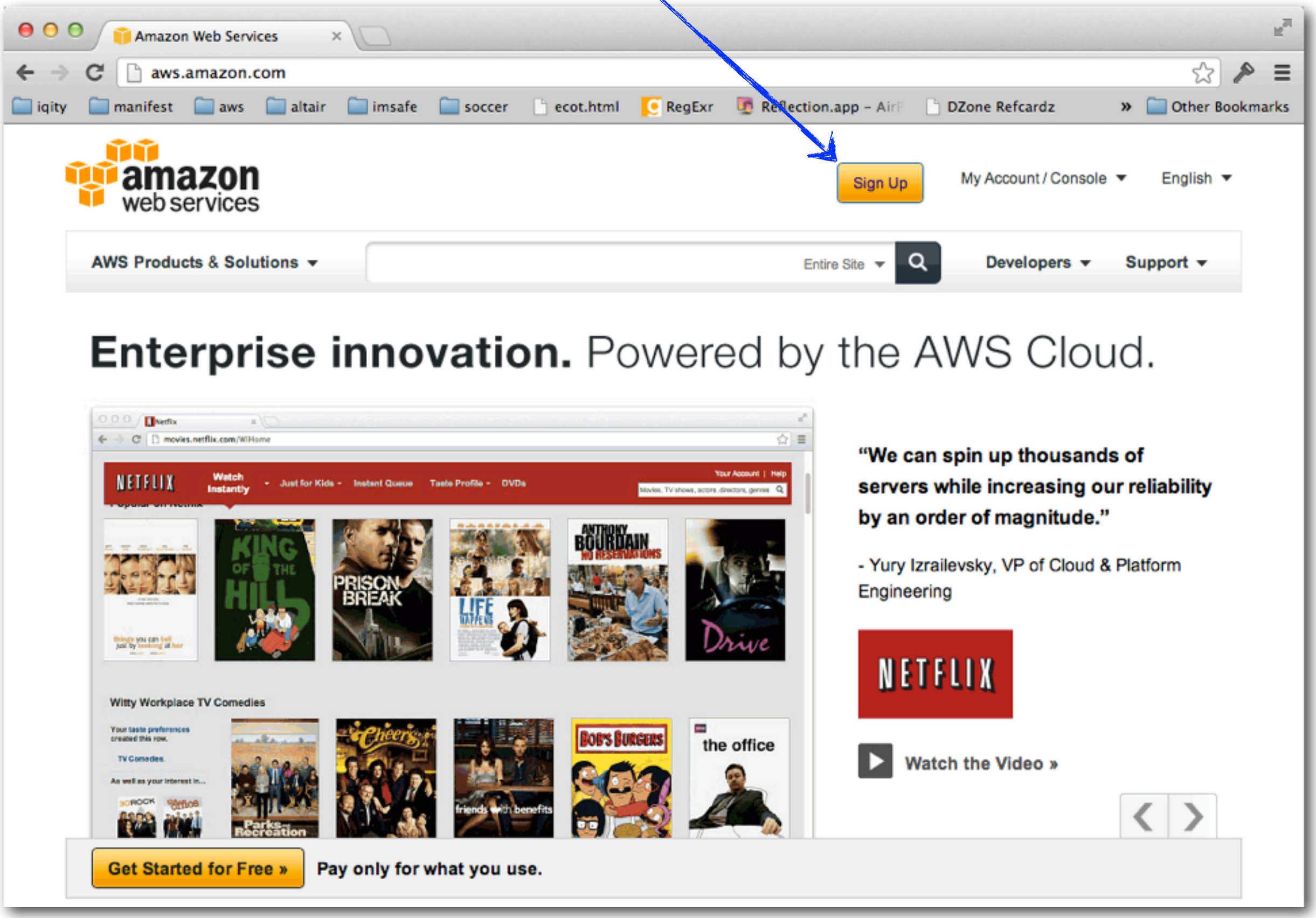


AWS architecture



Registration

start here



http://aws.amazon.com/

amazon web services™

Sign In or Create an AWS Account

You may sign in using your existing Amazon.com account or you can create a new account by selecting "I am a new user."

My e-mail address is: newuser@juddsolutions.com

I am a new user.

I am a returning user and my password is:

Sign in using our secure server

Forgot your password?

Has your e-mail address changed?

Learn more about AWS Identity and Access Management and AWS Multi-Factor Authentication, features that provide additional security for your AWS Account.

need a valid email address

amazon web services™

Login Credentials

Use the form below to create login credentials that can be used for AWS as well as Amazon.com.

My name is: Christopher Judd

My e-mail address is: newuser@juddsolutions.com

Type it again: newuser@juddsolutions.com

note: this is the e-mail address that we will use to contact you about your account

Enter a new password: ••••••••

Type it again: ••••••••

Continue

About Amazon.com Sign In

Amazon Web Services uses information from your Amazon.com account to identify you and allow access to Amazon Web Services. Your use of this site is governed by our Terms of Use and Privacy Policy linked below.

amazon web services™

Amazon Web Services Sign Up

Contact Information

* required fields

Full Name*: Christopher Judd

Company Name: Judd Solutions

Country*: United States

Address Line 1*: 685 Farrington Dr.

Street address, P.O. box, company name, c/o

Address Line 2:

Apartment, suite, unit, building, floor, etc.

City*: Worthington

State, Province or Region*: OH

ZIP or Postal Code*: 43085

Phone number*: 6143784119

Security Check

Image:

Try a different image

Why do we ask you to type these characters?

Type the characters in the above image*: F98MBA

Having Trouble? Contact us.

AWS Customer Agreement

Check here to indicate that you have read and agree to the terms of the Amazon Web Services Customer Agreement.

Create Account and Continue

amazon web services™

Amazon Web Services Sign Up

CREATE ACCOUNT — PAYMENT METHOD — IDENTITY VERIFICATION — CONFIRMATION

Your AWS account credentials have been created, but in order to begin using any of the services, you will need to provide your payment information and continue. There is no fee to sign up and you only pay for what you use.

Enter Your Payment Information Below

Your credit card will not be charged until you begin using AWS, and many of your applications and uses of AWS may be able to operate within the AWS free usage tier. If your monthly usage goes beyond the free tier, your AWS service charges will be billed to the credit card you provide below. View detailed service pricing

* required fields

Credit Card*: Visa

Card Number*:

Cardholder's Name*:

Expiration Date*: 01 2011

Enter Your Billing Address

Select the billing address associated with your credit card.

- (•) Use my contact address as my billing address
  (685 Farrington Dr., WORTHINGTON, Ohio 43085, US, (614) 378-4119)
- ( ) Enter a new address

Continue

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Amazon Web Services Sign Up

CREATE ACCOUNT ✓ — PAYMENT METHOD ✓ — IDENTITY VERIFICATION — CONFIRMATION

In order to complete the sign up process, we will need to verify your identity.

Identity Verification by Telephone

After you provide a telephone number where you can be reached below, you will then be called immediately by an automated system and prompted to enter the PIN number over the phone. Once completed, you'll be able to proceed to review your account details. Please follow the 3 simple steps below.

1. Provide a telephone number

Please enter your information below and click the "Call Me Now" button.

Country Code: United States (+1) Phone number: (614) 378-4119 ext:

Call Me Now

2. Call in progress

3. Identity verification complete

amazon web services™

Amazon Web Services Sign Up

CREATE ACCOUNT ✓ — PAYMENT METHOD ✓ — IDENTITY VERIFICATION — CONFIRMATION

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✓ Provide a telephone number

✓ Call to 1 (614) 378-4119

3. Identity verification complete

Your identity has been verified successfully

Continue

amazon web services™

Amazon Web Services Sign Up

CREATE ACCOUNT ✓ — PAYMENT METHOD ✓ — IDENTITY VERIFICATION ✓ — CONFIRMATION

Activating your account...

We are in the process of activating your account so that you can begin using AWS.

We will notify you by e-mail at **aws@juddsolutions.com** once the verification is complete. You will then be able to begin using all AWS Infrastructure Services. For most customers, this process only takes a couple of minutes (but can sometimes take a few hours if additional account verification is required). As part of the account activation process, a $1 authorization will be placed on the payment method (normally, a Debit or Credit Card) to make sure your payment method is valid. **This authorization is not a charge**, but your bank may hold the authorized funds as unavailable until the authorization expires

Start Exploring Amazon Web Services

- Products & Services
- Detailed Service Pricing
- Documentation
- FAQs
- Discussion Forums

Protect your account with AWS Multi-Factor authentication (MFA)

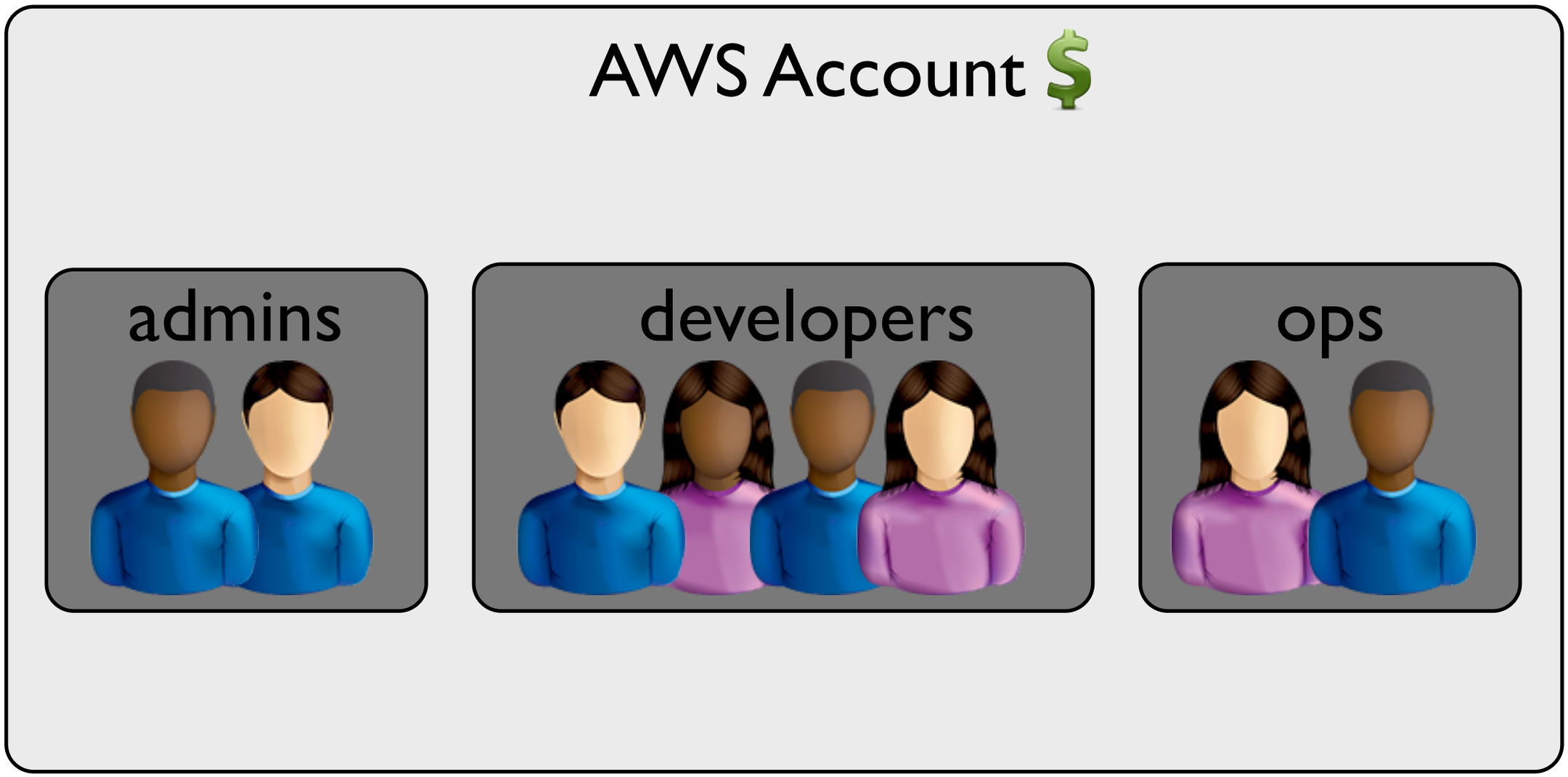
AWS MFA is a feature that is available at no extra cost that greatly enhances your account's security. In addition to your username and password, AWS MFA requires a one-time code from your MFA device when signing in to AWS web properties.

Activate MFA > Learn more

Sign Up For AWS Support

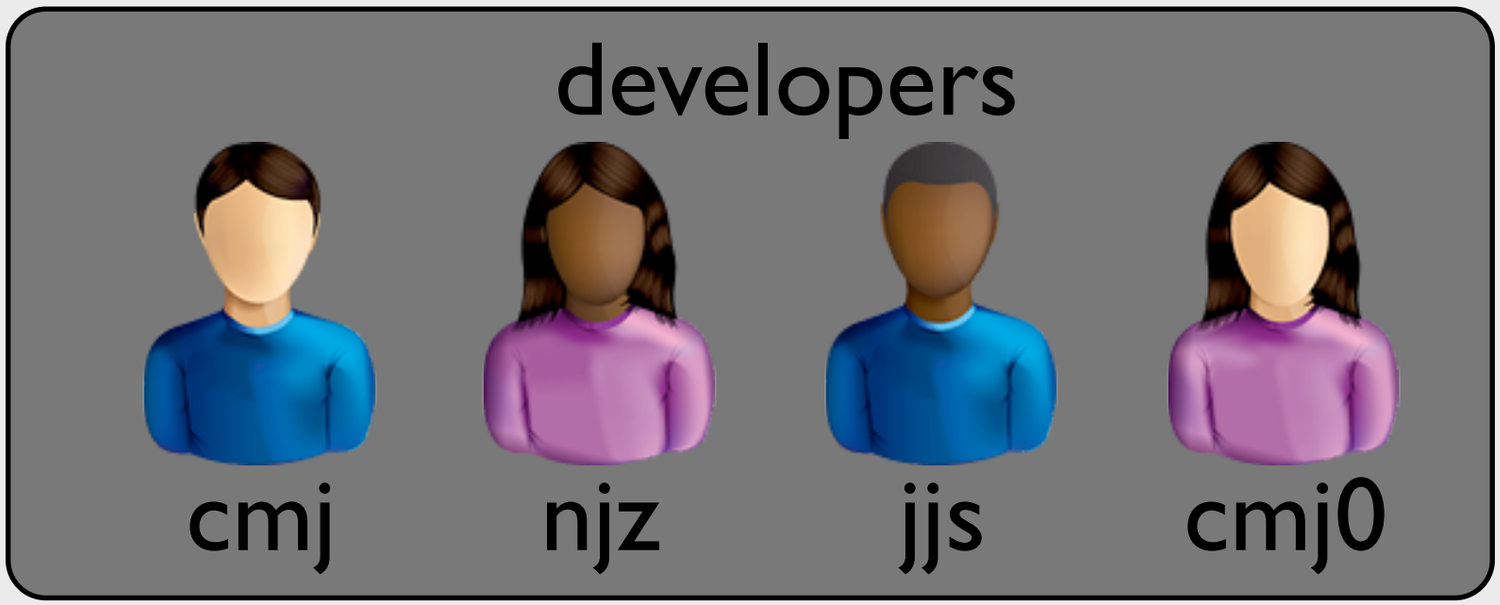
AWS Support is a one-on-one, fast response support channel to help you build and run applications on AWS. With pay-by-the-month pricing and an unlimited number of support cases, you are not constrained by long-term support contracts or limited support privileges.

Sign Up Now > Learn more



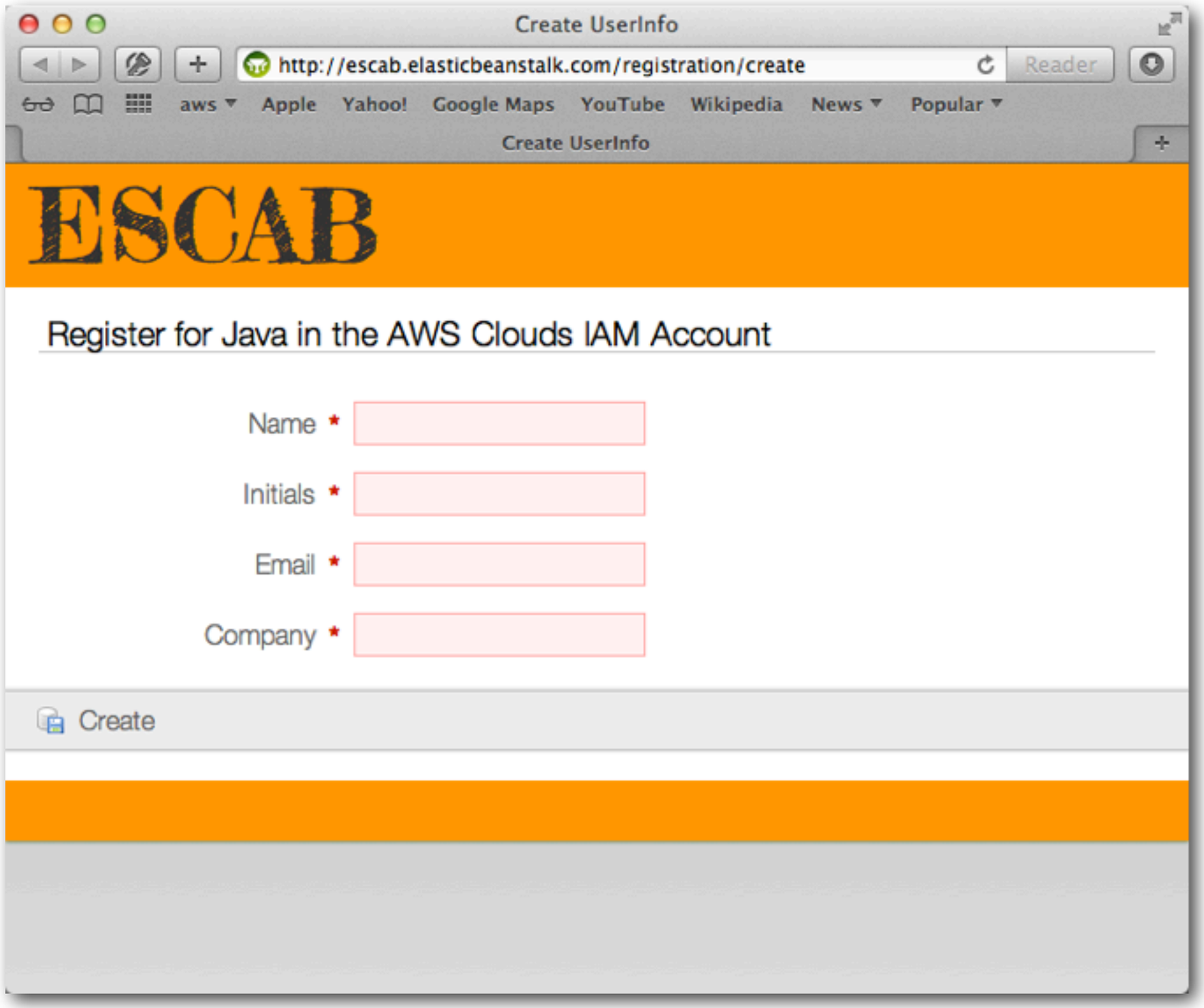
user/group based security

563700736850 💲



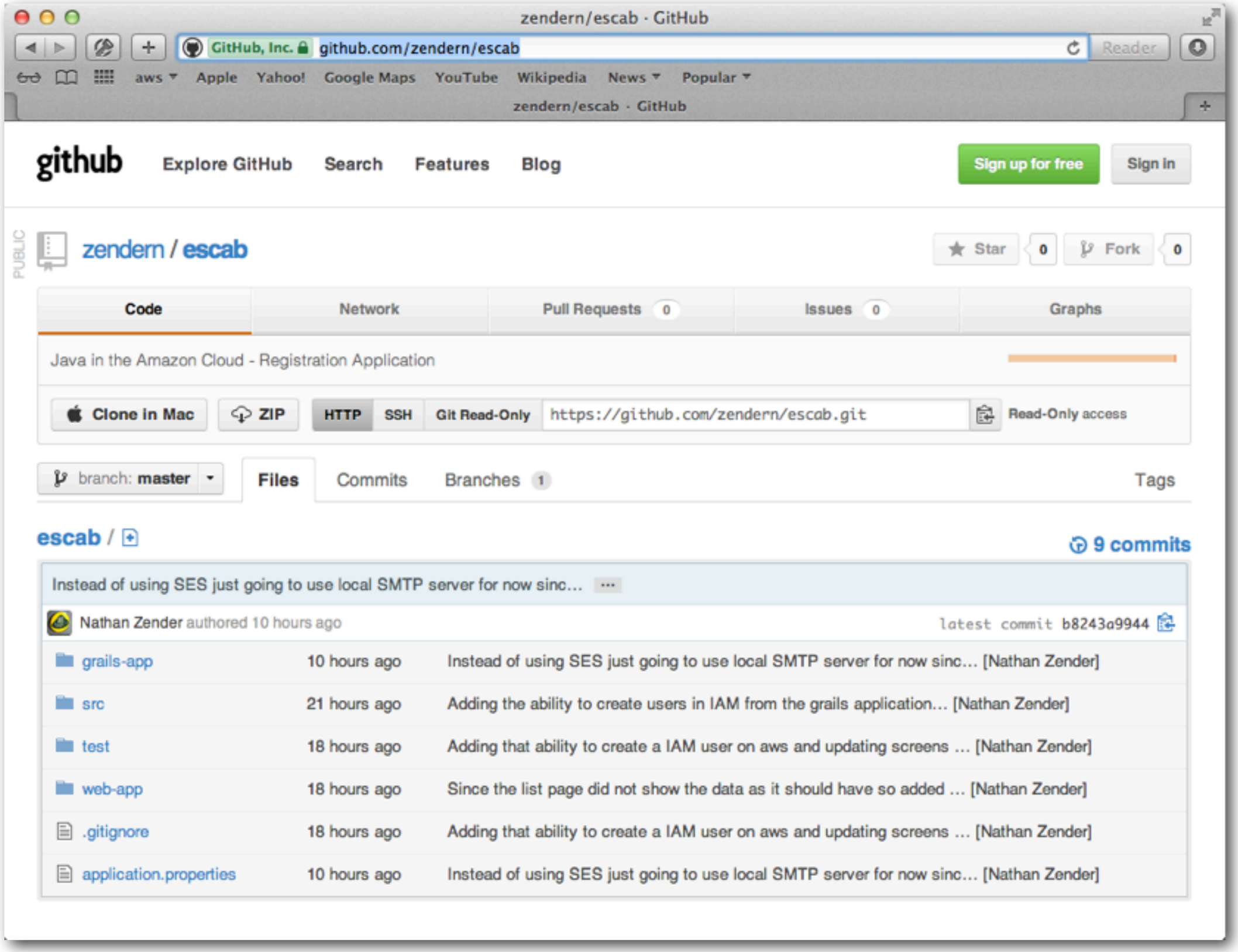
* all accounts will be removed in a month

Register for your user account

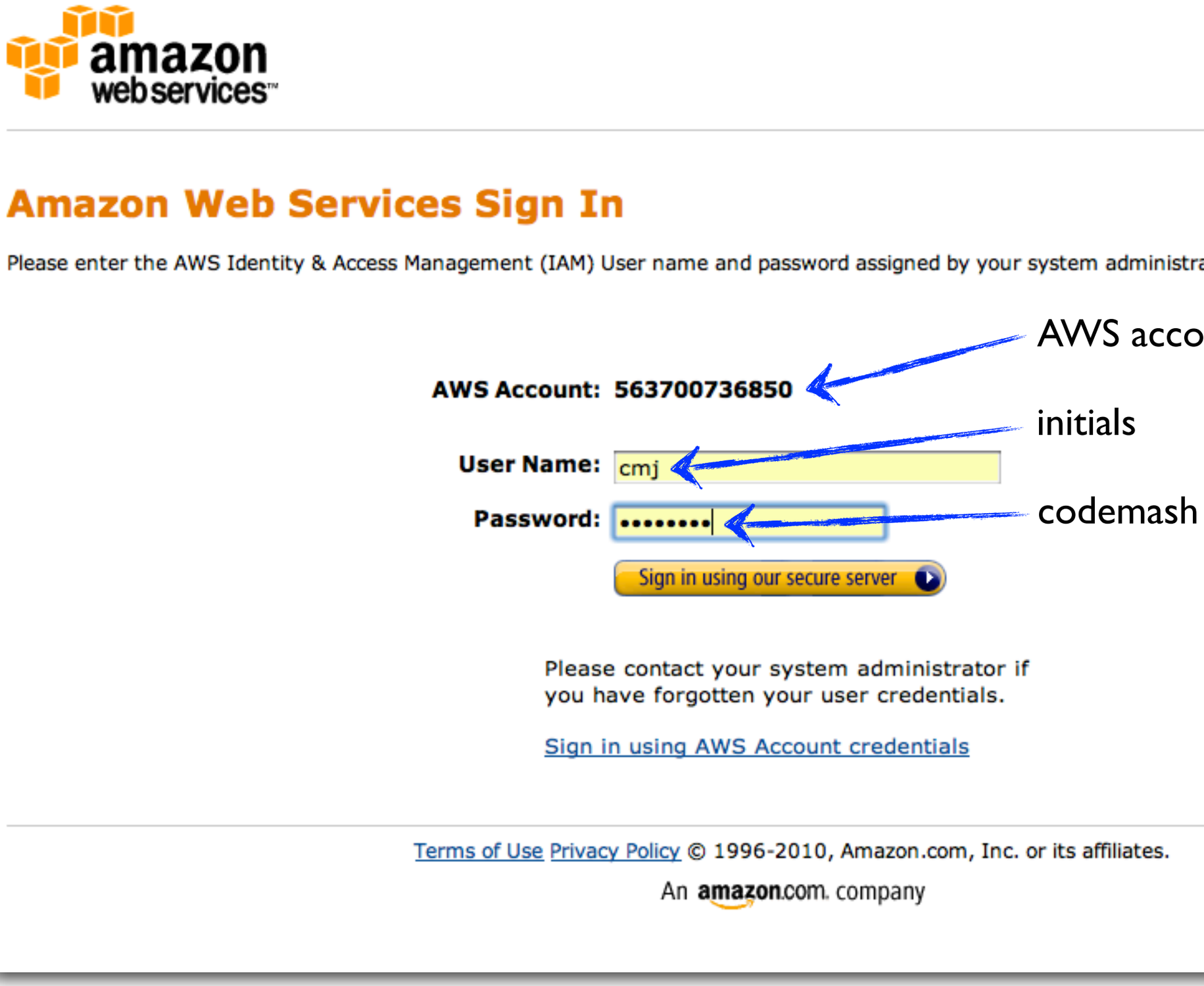


http://escab.elasticbeanstalk.com/registration/

You AWS Credentials will be emailed to you. If you don't see it check your spam folder.



https://github.com/zendern/escab



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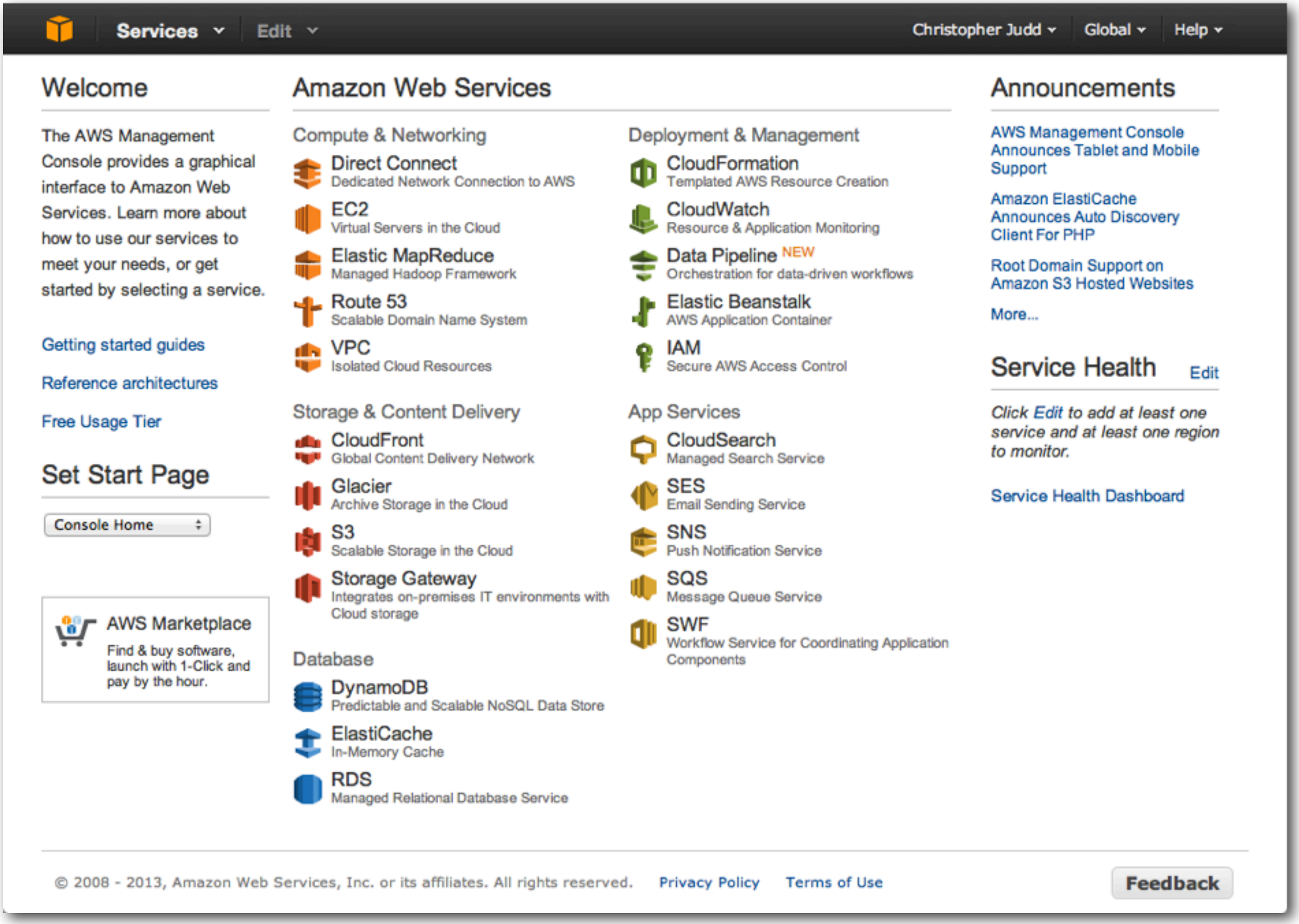
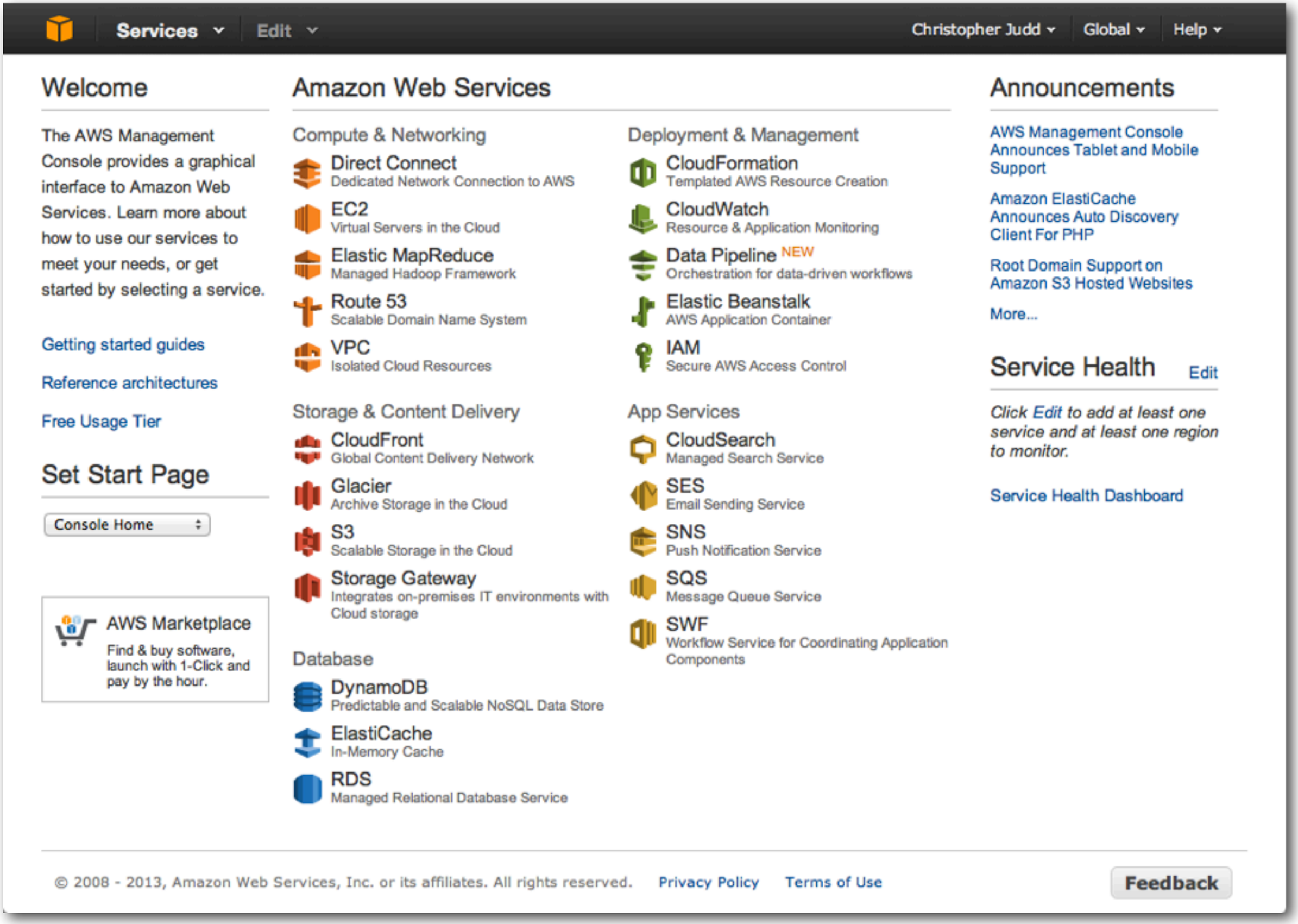


https://console.aws.amazon.com

Interfaces

Web Console


Services
Edit
Christopher Judd
Global
Help
Welcome
The AWS Management Console provides a graphical interface to Amazon Web Services. Learn more about how to use our services to meet your needs, or get started by selecting a service.
Getting started guides
Reference architectures
Free Usage Tier
Set Start Page
Console Home
AWS Marketplace
Find & buy software, launch with 1-Click and pay by the hour.
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
Deployment & Management
CloudFormation
Templated AWS Resource Creation
CloudWatch
Resource & Application Monitoring
Data Pipeline NEW
Orchestration for data-driven workflows
Elastic Beanstalk
AWS Application Container
IAM
Secure AWS Access Control
App Services
CloudSearch
Managed Search Service
SES
Email Sending Service
SNS
Push Notification Service
SQS
Message Queue Service
SWF
Workflow Service for Coordinating Application Components
Announcements
AWS Management Console Announces Tablet and Mobile Support
Amazon ElastiCache Announces Auto Discovery Client For PHP
Root Domain Support on Amazon S3 Hosted Websites
More...
Service Health
Edit
Click Edit to add at least one service and at least one region to monitor.
Service Health Dashboard
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Feedback

Command-line

```
ec2-user@ip-10-112-57-116:~ — bash — 87×37
Christopher-Judds-MacBook-Pro:~ cjudd$ ec2-describe-instances -H
Type    ReservationID   Owner   Groups  Platform
RESERVATION     r-91216af0      892852523686    cmj-webapp
INSTANCE        i-ace4adce      ami-4bb96d22                    stopped cmj-webapp    t
1.micro 2012-01-11T05:02:41+0000        us-east-1b      aki-427d952b                    m
onitoring-disabled                                      ebs                             p
aravirtual      xen             sg-a2d220ca     default
BLOCKDEVICE     /dev/sda1       vol-272c764a    2012-01-11T06:19:52.000Z
TAG     instance        i-ace4adce      Name    cmj-webapp-01
RESERVATION     r-5f68393e      892852523686    cmj-db
INSTANCE        i-c0ecbda2      ami-d1984fb8                    stopped cmj-webapp    t
1.micro 2012-01-11T03:43:42+0000        us-east-1b      aki-825ea7eb                    m
onitoring-disabled                                      ebs                             p
aravirtual      xen             sg-b045b7d8     default
BLOCKDEVICE     /dev/sda1       vol-df684eb2    2012-01-11T06:20:15.000Z
TAG     instance        i-c0ecbda2      Name    cmj-db-01
RESERVATION     r-ab5c0fca      892852523686    njz-webapp
INSTANCE        i-24461446      ami-4bb96d22    ec2-50-17-21-152.compute-1.amazonaws.co
m       ip-10-194-137-164.ec2.internal  running njz-webapp      0               t1.micr
o       2012-01-11T11:46:11+0000        us-east-1b      aki-427d952b                    m
onitoring-disabled      50.17.21.152    10.194.137.164                  ebs             p
aravirtual      xen             sg-5c9b6634     default
BLOCKDEVICE     /dev/sda1       vol-3d93b550    2012-01-11T11:46:33.000Z
TAG     instance        i-24461446      Name    njz-webserver
RESERVATION     r-9f4211fe      892852523686    njz-mysql
INSTANCE        i-a04416c2      ami-d1984fb8    ec2-50-19-181-246.compute-1.amazonaws.c
om      ip-10-245-79-116.ec2.internal   running njz-webapp      0               t1.micr
o       2012-01-11T11:48:41+0000        us-east-1b      aki-825ea7eb                    m
onitoring-disabled      50.19.181.246   10.245.79.116                   ebs             p
aravirtual      xen             sg-029b666a     default
BLOCKDEVICE     /dev/sda1       vol-cd90b6a0    2012-01-11T11:49:05.000Z
TAG     instance        i-a04416c2      Name    njz-mysql
RESERVATION     r-47792a26      892852523686    njz-webapp
INSTANCE        i-f0643692      ami-4bb96d22    ec2-67-202-2-209.compute-1.amazonaws.co
m       ip-10-203-45-12.ec2.internal    running njz-webapp      0               t1.micr
o       2012-01-11T12:13:26+0000        us-east-1b      aki-427d952b                    m
onitoring-disabled      67.202.2.209    10.203.45.12                    ebs             p
```

SDK Language Support

EC2

A **virtual machine (VM)** is a software implementation of a machine (i.e. a computer) that executes programs like a physical machine. Virtual machines are separated into two major categories, based on their use and degree of correspondence to any real machine. A system virtual machine provides a complete system platform which supports the execution of a complete operating system (OS). In contrast, a process virtual machine is designed to run a single program, which means that it supports a single process. An essential characteristic of a virtual machine is that the software running inside is limited to the resources and abstractions provided by the virtual machine—it cannot break out of its virtual world.

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AMIs (Amazon Machine Images)

amazon

Public AMIs

8180 of them and counting

Request Instances Wizard Cancel

CHOOSE AN AMI · INSTANCE DETAILS · CREATE KEY PAIR · CONFIGURE FIREWALL · REVIEW

Choose an Amazon Machine Image (AMI) from one of the tabbed lists below by clicking its **Select** button.

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Viewing: All Images — 1 to 50 of 8180 Items

AMI ID	Root Device	Manifest	Platform	
ami-000af969	instance-store	bitnami-cloud/wordpress/bitnami-wordpress-3.1-0-lin	Ubuntu	Select
ami-0011e069	instance-store	clovr-standard-2011-01-07-16-01-33/clovr-standard-2(	Other Linux	Select
ami-0022c769	instance-store	level22-ec2-images/ubuntu-7.04-feisty-base-2007122	Ubuntu	Select
ami-002dd269	ebs	293077032498/xsd.web.server	Windows	Select
ami-0032c769	ebs	816268476753/cit-c-2-5-1285003210	Windows	Select
ami-0055ad69	ebs	962722313162/ubuntu-jenkins-slave	Ubuntu	Select
ami-0059bb69	instance-store	elasticbamboo/elasticbamboo-2.5-rc1-126111436914	Other Linux	Select
ami-005daf69	ebs	amazon/ElasticBeanstalk-Tomcat6-64bit-20110322-1	Amazon Linux	Select
ami-005db969	instance-store	alestic-64/ubuntu-8.04-hardy-base-64-20081222.mar	Ubuntu	Select
ami-005dba69	instance-store	rbuilder-online/new-example-1-x86_64_20133.img.m	Other Linux	Select
ami-005eba69	instance-store	kaavo-ntier-db/imod-ntier-32bit-FC-DB.manifest.xml	Other Linux	Select

http://aws.amazon.com/amis

That's awesome....

All I have to do is find what I need and off I go.
Someone else created it, maintains it....

But there could be some issues with using these.....

Did this guy setup this server?

Who knows....


ssdpapi .dll WINDOWS\system32 34816
ssdpsrv .dll WINDOWS\system32 71680
ssflwbox.scr WINDOWS\system32 393216
ssmarque.scr WINDOWS\system32 20992
ssmypics.scr WINDOWS\system32 47104
ssmyst .scr WINDOWS\system32 18944
sspipes .scr WINDOWS\system32 610304
ssplt30.ocx WINDOWS\system32 177608
ssstars .scr WINDOWS\system32 14336
sstext3d.scr WINDOWS\system32 679936
Status .MPF WINDOWS\system32 63296
stclient.dll WINDOWS\system32 59392
stdole32.tlb WINDOWS\system32 7168
sti .dll WINDOWS\system32 68096
sti_ci .dll WINDOWS\system32 136704
stimon .exe WINDOWS\system32 14848
stobject.dll WINDOWS\system32 121856
storage .dll WINDOWS\system32 4208
storprop.dll WINDOWS\system32 74752
streamci.dll WINDOWS\system32 8192
strmdll .dll WINDOWS\system32
AskBobRankin.com

Don't be discouraged....

http://cloud.ubuntu.com/ami/

http://fedoraproject.org/wiki/Cloud_images

http://blog.susestudio.com/2011/03/opensuse-114-for-amazon-ec2.html

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers.

- Elastic
- Completely Controlled
- Flexible
- Reliable

EC2 Instance Types

- Micro
- M1 Small
- M1 Medium
- M1 Large
- M1 Extra Large
- M3 Extra Large
- M3 Double Extra Large
- High Memory Extra Large
- High Memory Double Extra Large
- High Memory Quadruple Extra Large
- High CPU Medium
- High CPU Extra Large
- Cluster Compute Eight Extra Large
- Cluster GPU Quadruple Extra Large
- High I/O Quadruple Extra Large
- High Storage

Cost for On Demand

Region: US East (N. Virginia)

	Linux/UNIX Usage	Windows Usage
Standard On-Demand Instances		
Small (Default)	$0.065 per Hour	$0.115 per Hour
Medium	$0.130 per Hour	$0.230 per Hour
Large	$0.260 per Hour	$0.460 per Hour
Extra Large	$0.520 per Hour	$0.920 per Hour
Second Generation Standard On-Demand Instances		
Extra Large	$0.580 per Hour	$0.980 per Hour
Double Extra Large	$1.160 per Hour	$1.960 per Hour
Micro On-Demand Instances		
Micro	$0.020 per Hour	$0.020 per Hour
High-Memory On-Demand Instances		
Extra Large	$0.450 per Hour	$0.570 per Hour
Double Extra Large	$0.900 per Hour	$1.140 per Hour
Quadruple Extra Large	$1.800 per Hour	$2.280 per Hour
High-CPU On-Demand Instances		
Medium	$0.165 per Hour	$0.285 per Hour
Extra Large	$0.660 per Hour	$1.140 per Hour
Cluster Compute Instances		
Quadruple Extra Large	$1.300 per Hour	$1.610 per Hour
Eight Extra Large	$2.400 per Hour	$2.970 per Hour
Cluster GPU Instances		
Quadruple Extra Large	$2.100 per Hour	$2.600 per Hour
High-I/O On-Demand Instances		
Quadruple Extra Large	$3.100 per Hour	$3.580 per Hour
High-Storage On-Demand Instances		
Eight Extra Large	$4.600 per Hour	$4.931 per Hour

Cost for Reserved Instances

Linux | RHEL | SLES | Windows | Windows with SQL Standard | Windows with SQL Web

Light Utilization Reserved Instances

Region: US East (N. Virginia)

	1 yr Term		3 yr Term	
	Upfront	**Hourly**	**Upfront**	**Hourly**
Standard Reserved Instances				
Small (Default)	$61	$0.034 per Hour	$96	$0.027 per Hour
Medium	$122	$0.068 per Hour	$192	$0.054 per Hour
Large	$243	$0.136 per Hour	$384	$0.108 per Hour
Extra Large	$486	$0.271 per Hour	$768	$0.215 per Hour
Second Generation Standard Reserved Instances				
Extra Large	$517	$0.299 per Hour	$807	$0.236 per Hour
Double Extra Large	$1034	$0.598 per Hour	$1614	$0.472 per Hour
Micro Reserved Instances				
Micro	$23	$0.012 per Hour	$35	$0.012 per Hour
High-Memory Reserved Instances				
Extra Large	$272	$0.169 per Hour	$398	$0.136 per Hour
Double Extra Large	$544	$0.338 per Hour	$796	$0.272 per Hour
Quadruple Extra Large	$1088	$0.676 per Hour	$1592	$0.544 per Hour
High-CPU Reserved Instances				
Medium	$161	$0.09 per Hour	$243	$0.079 per Hour
Extra Large	$644	$0.36 per Hour	$972	$0.316 per Hour
Cluster Compute Reserved Instances				
Quadruple Extra Large	N/A	N/A	N/A	N/A
Eight Extra Large	$1762	$0.904 per Hour	$2710	$0.904 per Hour
High-Memory Cluster Reserved Instances				
Eight Extra Large	$2474	$1.54 per Hour	$3846	$1.225 per Hour
Cluster GPU Reserved Instances				
Quadruple Extra Large	N/A	N/A	N/A	N/A
High-I/O Reserved Instances				
Quadruple Extra Large	$2576	$1.477 per Hour	$3884	$1.15 per Hour
High-Storage Reserved Instances				
Eight Extra Large	$3968	$2.24 per Hour	$5997	$1.81 per Hour

Bandwidth Pricing

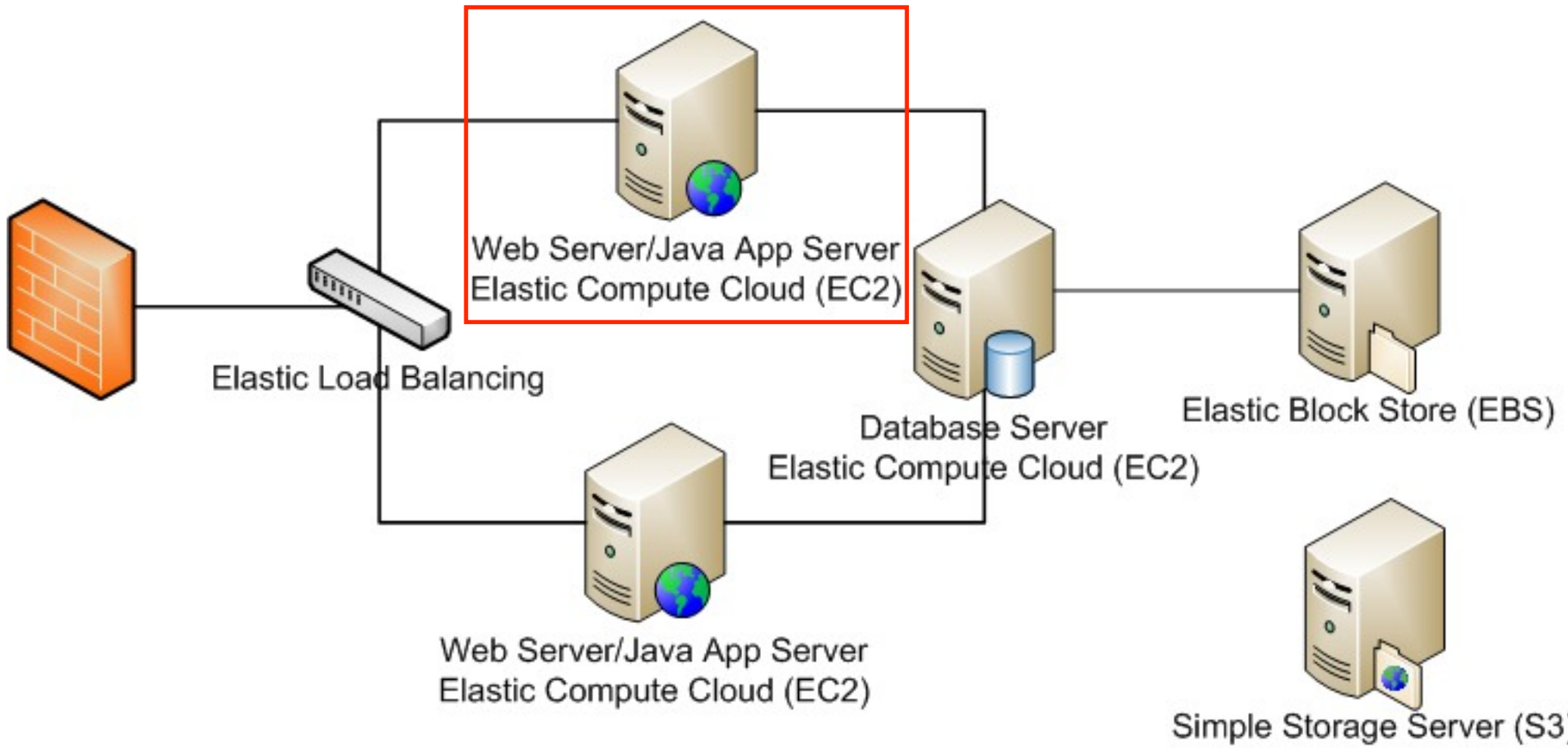
Region: US East (N. Virginia)

	Pricing
Data Transfer IN To Amazon EC2 From	
Internet	$0.00 per GB
Another AWS Region (from any AWS Service)	$0.00 per GB
Amazon S3, Amazon Glacier, Amazon DynamoDB, Amazon SQS, or Amazon SimpleDB in the same AWS Region	$0.00 per GB
Amazon EC2, Amazon RDS and Amazon ElastiCache instances or Elastic Network Interfaces in the same Availability Zone	
Using a private IP address	$0.00 per GB
Using a public or Elastic IP address	$0.01 per GB
Amazon EC2, Amazon RDS and Amazon ElastiCache instances or Elastic Network Interfaces in another Availability Zone in the same AWS Region	$0.01 per GB
Data Transfer OUT From Amazon EC2 To	
Amazon S3, Amazon Glacier, Amazon DynamoDB, Amazon SQS, Amazon SimpleDB in the same AWS Region	$0.00 per GB
Amazon EC2, Amazon RDS, or Amazon ElastiCache instances, Amazon Elastic Load Balancing, or Elastic Network Interfaces in the same Availability Zone	
Using a private IP address	$0.00 per GB
Using a public or Elastic IP address	$0.01 per GB
Amazon EC2, Amazon RDS or Amazon ElastiCache instances, Amazon Elastic Load Balancing, or Elastic Network Interfaces in another Availability Zone in the same AWS Region	$0.01 per GB
Another AWS Region or Amazon CloudFront	$0.02 per GB
Data Transfer OUT From Amazon EC2 To Internet	
First 1 GB / month	$0.00 per GB
Up to 10 TB / month	$0.12 per GB
Next 40 TB / month	$0.09 per GB
Next 100 TB / month	$0.07 per GB
Next 350 TB / month	$0.05 per GB
Next 524 TB / month	Contact Us
Next 4 PB / month	Contact Us
Greater than 5 PB / month	Contact Us

EC2

WITH

WEB CONSOLE


Web Server/Java App Server
Elastic Compute Cloud (EC2)
Elastic Load Balancing
Database Server
Elastic Compute Cloud (EC2)
Elastic Block Store (EBS)
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Simple Storage Server (S3)

start here

Services | Edit | cmj @ 563700736850 | Global | Help

Welcome

The AWS Management Console provides a graphical interface to Amazon Web Services. Learn more about how to use our services to meet your needs, or get started by selecting a service.

Getting started guides

Reference architectures

Free Usage Tier

Set Start Page

Console Home

AWS Marketplace

Find & buy software, launch with 1-Click and pay by the hour.

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

Deployment & Management

- **CloudFormation** — Templated AWS Resource Creation
- **CloudWatch** — Resource & Application Monitoring
- **Data Pipeline** NEW — Orchestration for data-driven workflows
- **Elastic Beanstalk** — AWS Application Container
- **IAM** — Secure AWS Access Control

App Services

- **CloudSearch** — Managed Search Service
- **SES** — Email Sending Service
- **SNS** — Push Notification Service
- **SQS** — Message Queue Service
- **SWF** — Workflow Service for Coordinating Application Components

Announcements

Use Amazon CloudWatch to Detect and Shut Down Unused Amazon EC2 Instances

AWS Management Console Announces Tablet and Mobile Support

Amazon ElastiCache Announces Auto Discovery Client For PHP

More...

Service Health Edit

Click Edit to add at least one service and at least one region to monitor.

Service Health Dashboard

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then here or here

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

- EC2 Dashboard
- Events

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

Getting Started

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 region.

Service Health

Service Status

Current Status	Details
Amazon EC2 (US East - N. Virginia)	Service is operating normally

View complete service health details

My Resources

You are using the following Amazon EC2 resources in the region:

3 Running Instances	0 Elastic IPs
3 EBS Volumes	2 EBS Snapshots
2 Key Pairs	1 Load Balancer
0 Placement Groups	5 Security Groups

Events

US East (N. Virginia): No events

Related Links

- Getting Started Guide
- Documentation

No EC2 Instances selected.

Select an instance above

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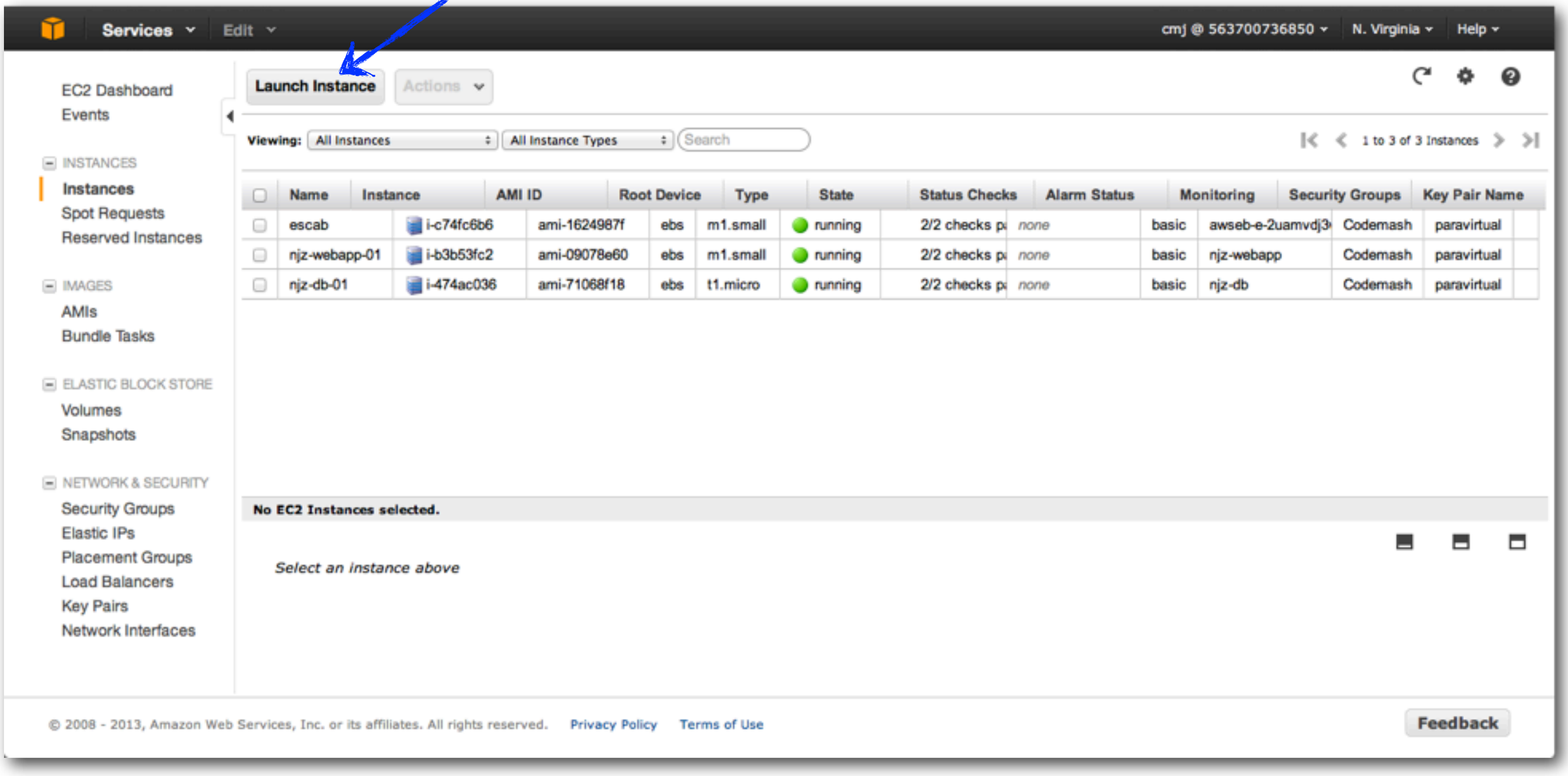
launch here


Services
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Network Interfaces
Launch Instance
Actions
Viewing: All Instances
All Instance Types
Search
1 to 3 of 3 Instances
Name
Instance
AMI ID
Root Device
Type
State
Status Checks
Alarm Status
Monitoring
Security Groups
Key Pair Name
escab
i-c74fc6b6
ami-1624987f
ebs
m1.small
running
2/2 checks p
none
basic
awseb-e-2uamvdj3
Codemash
paravirtual
njz-webapp-01
i-b3b53fc2
ami-09078e60
ebs
m1.small
running
2/2 checks p
none
basic
njz-webapp
Codemash
paravirtual
njz-db-01
i-474ac036
ami-71068f18
ebs
t1.micro
running
2/2 checks p
none
basic
njz-db
Codemash
paravirtual
No EC2 Instances selected.
Select an instance above
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Create a New Instance

Cancel

Select an option below:

Classic Wizard

Launch an On-Demand or Spot instance using the classic wizard with fine-grained control over how it is launched.

Quick Launch Wizard

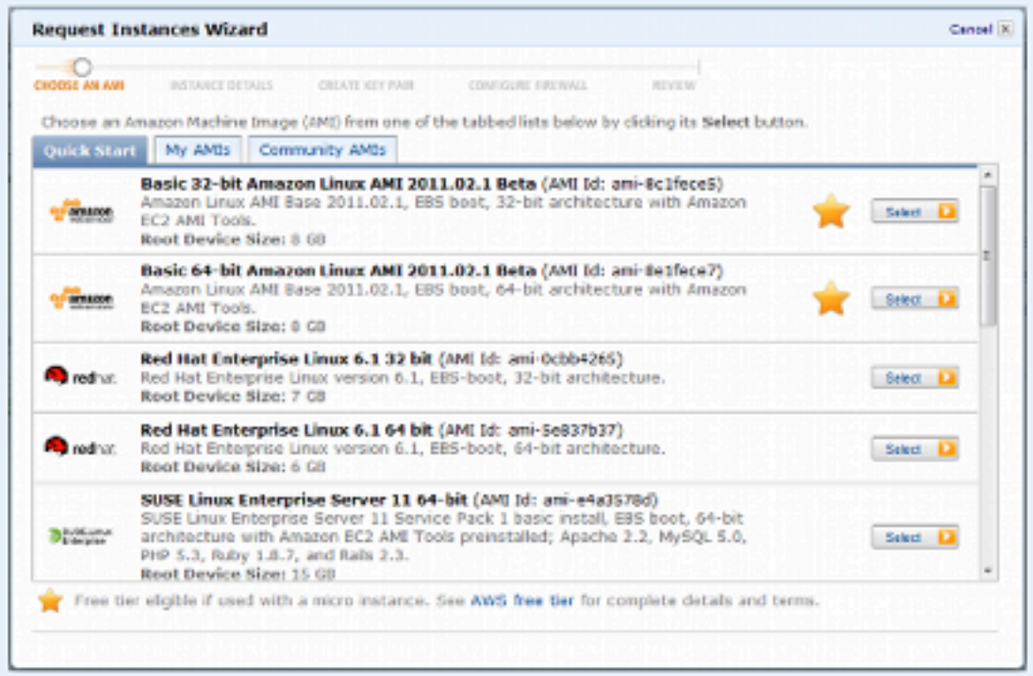
Launch an On-Demand instance using an editable, default configuration so that you can get started in the cloud as quickly as possible.

AWS Marketplace

AWS Marketplace is an online store where you can find and buy software that runs on AWS. Launch with 1-Click and pay by the hour.

Submit Feedback Getting Started Guide

Launch with the Classic Wizard



Continue

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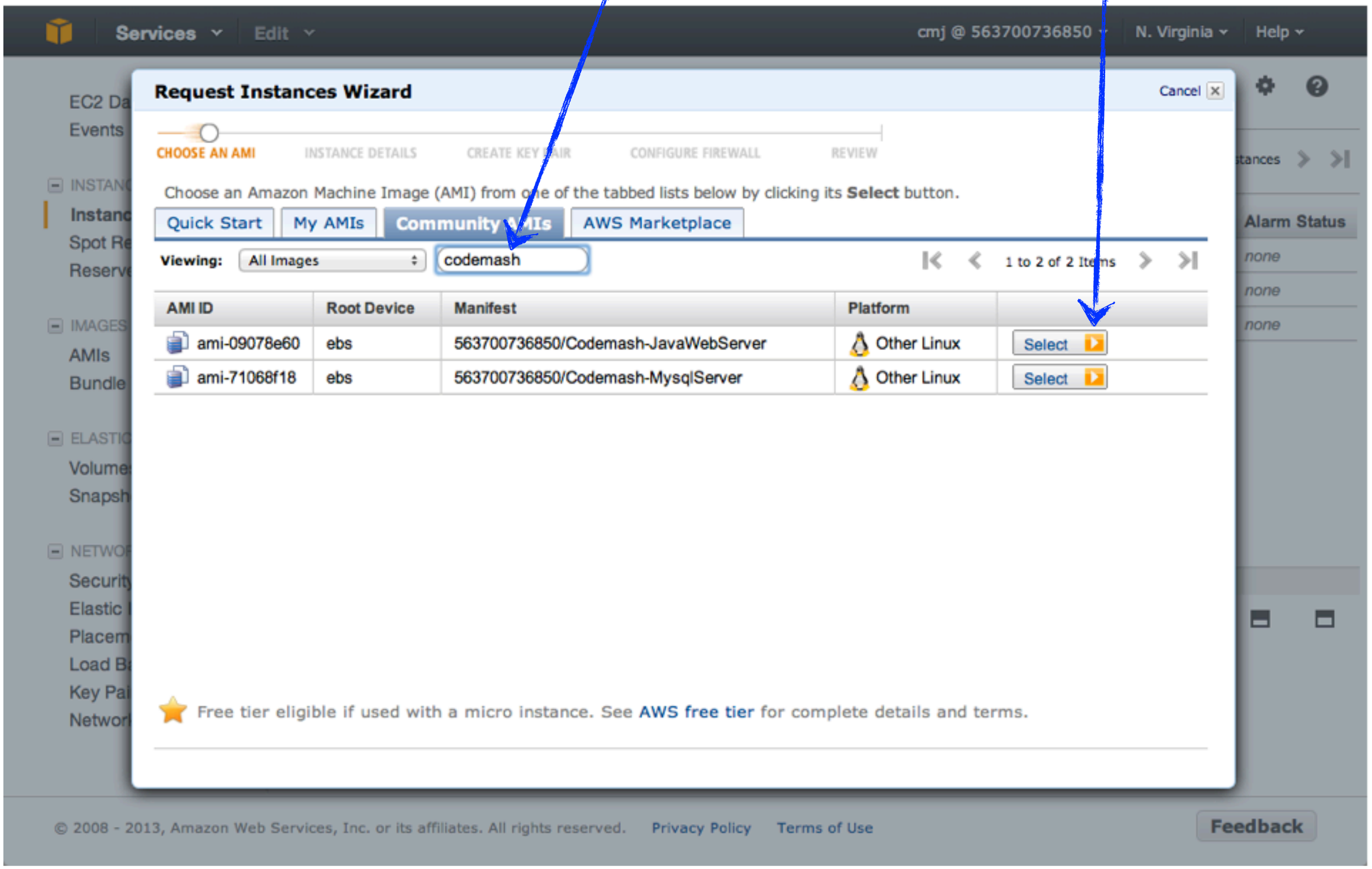
search for codemash

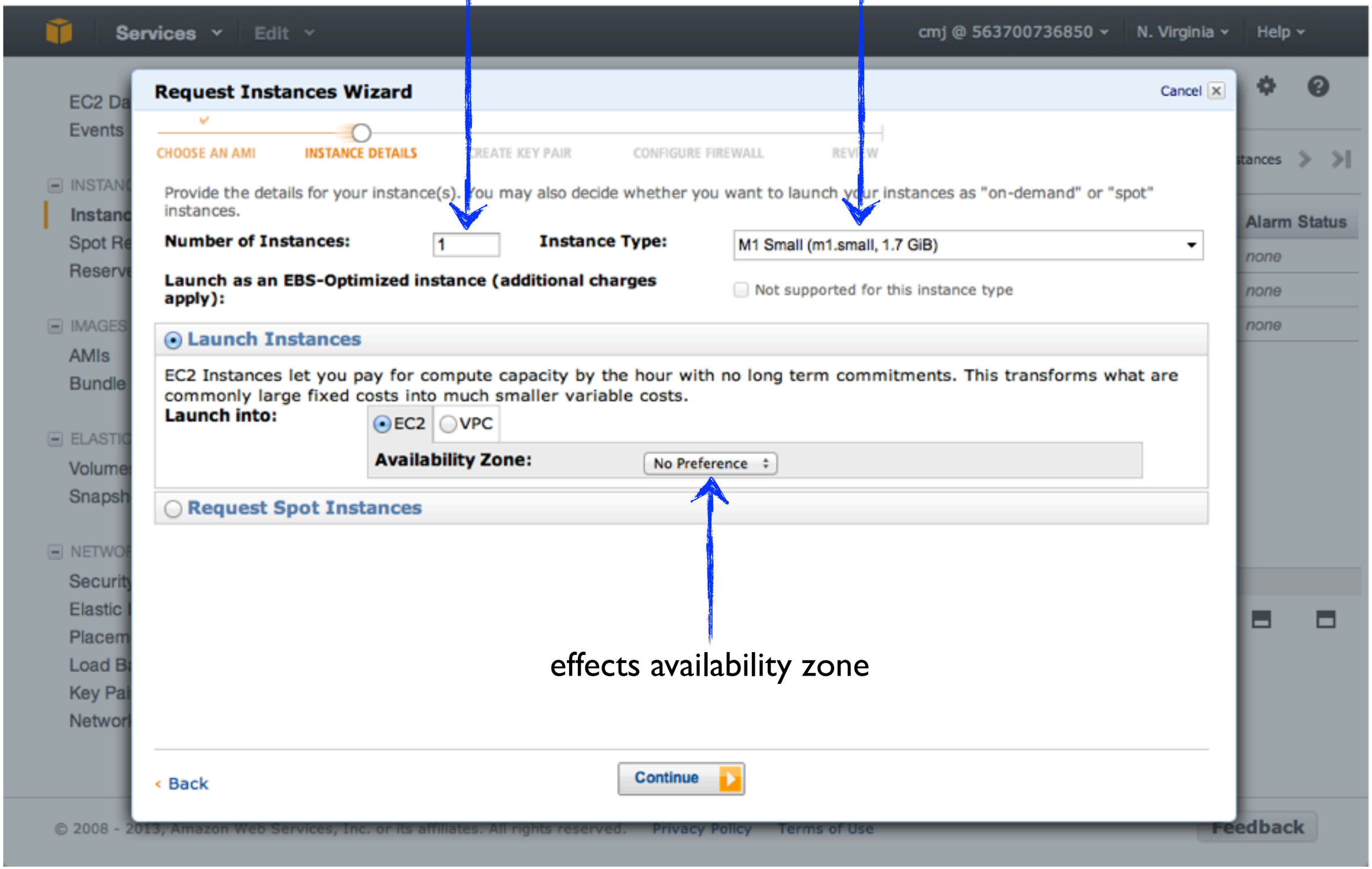
select JavaWebServer AMI



7.x

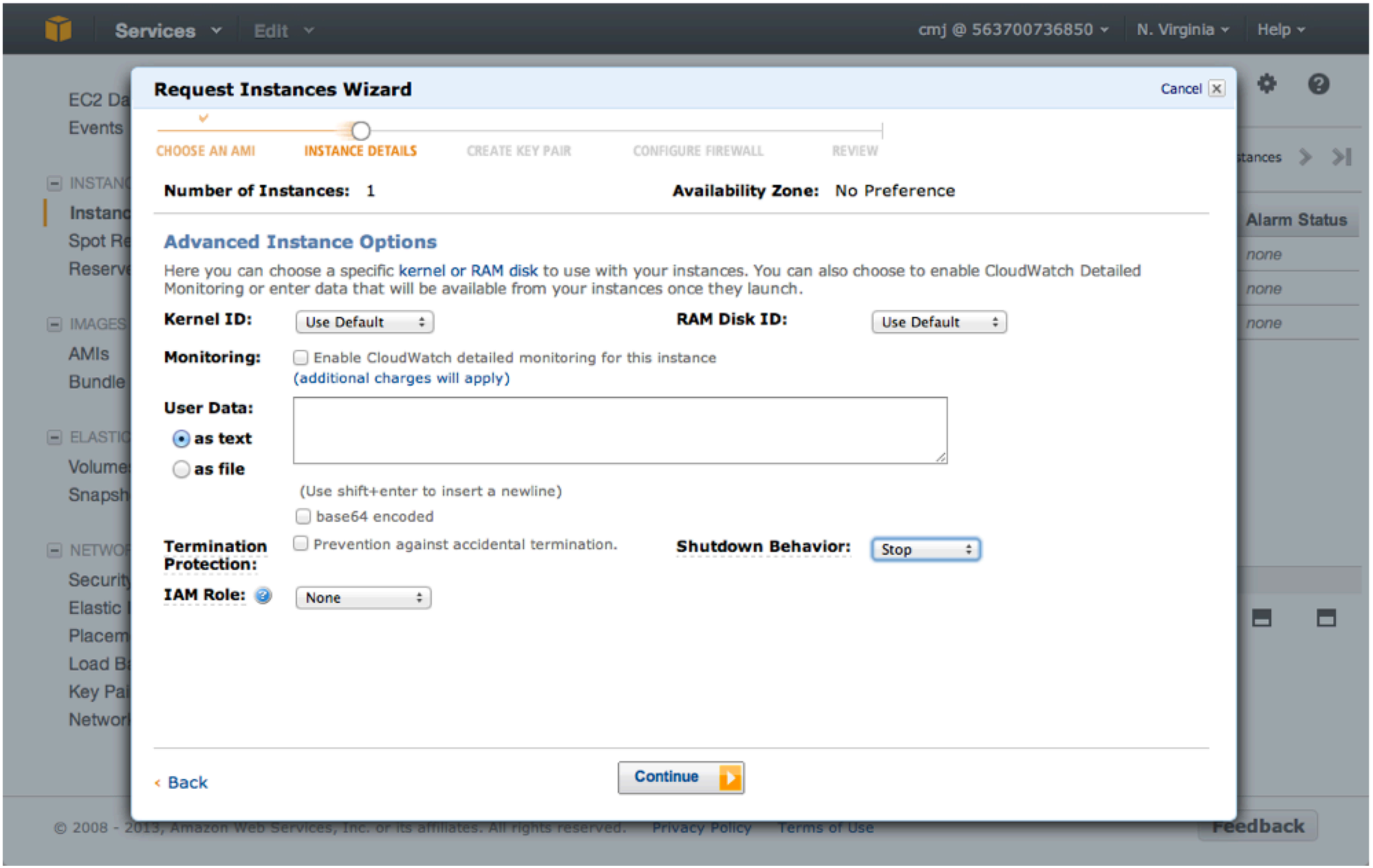
effects redundancy and scale

effects price and performance

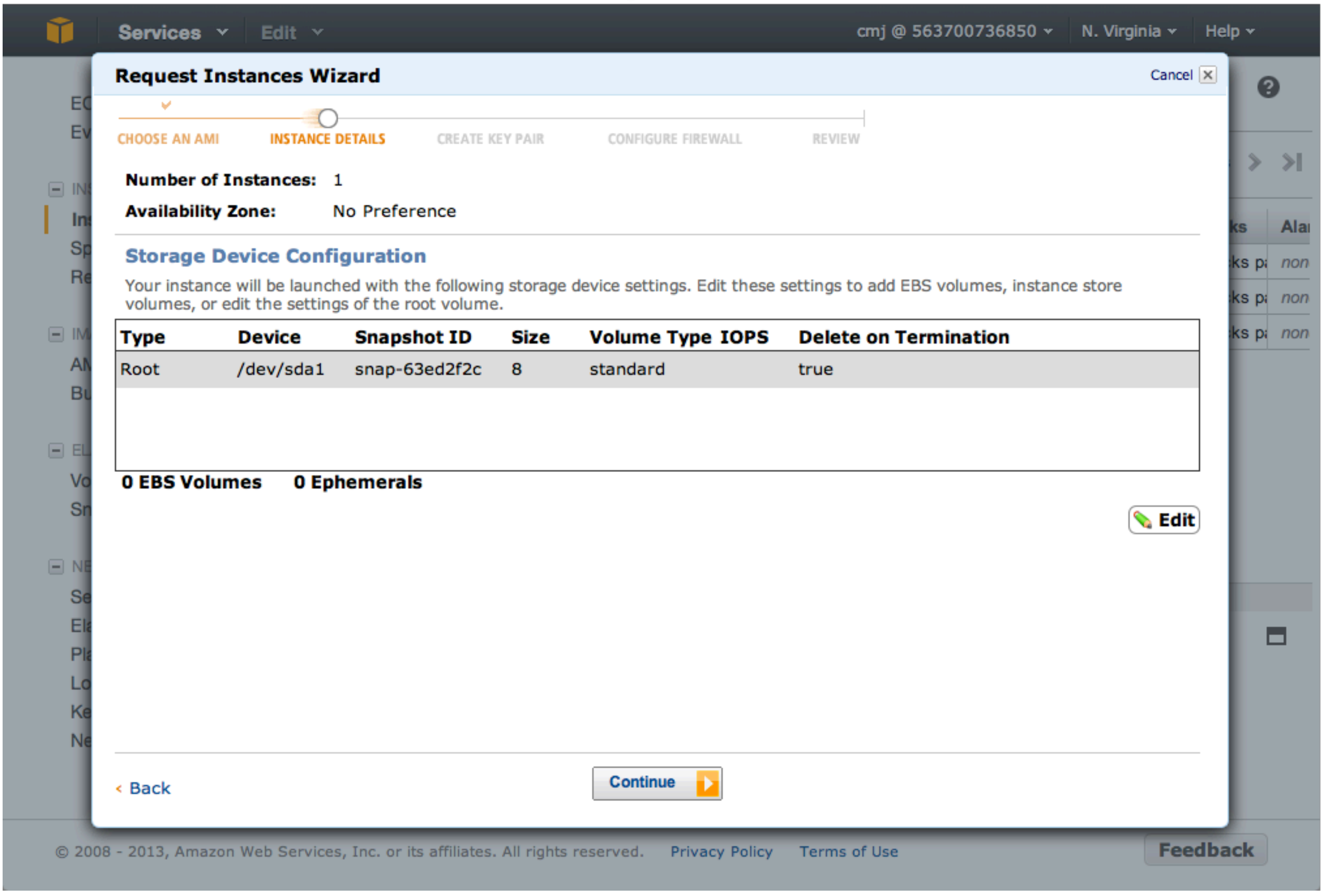


effects availability zone

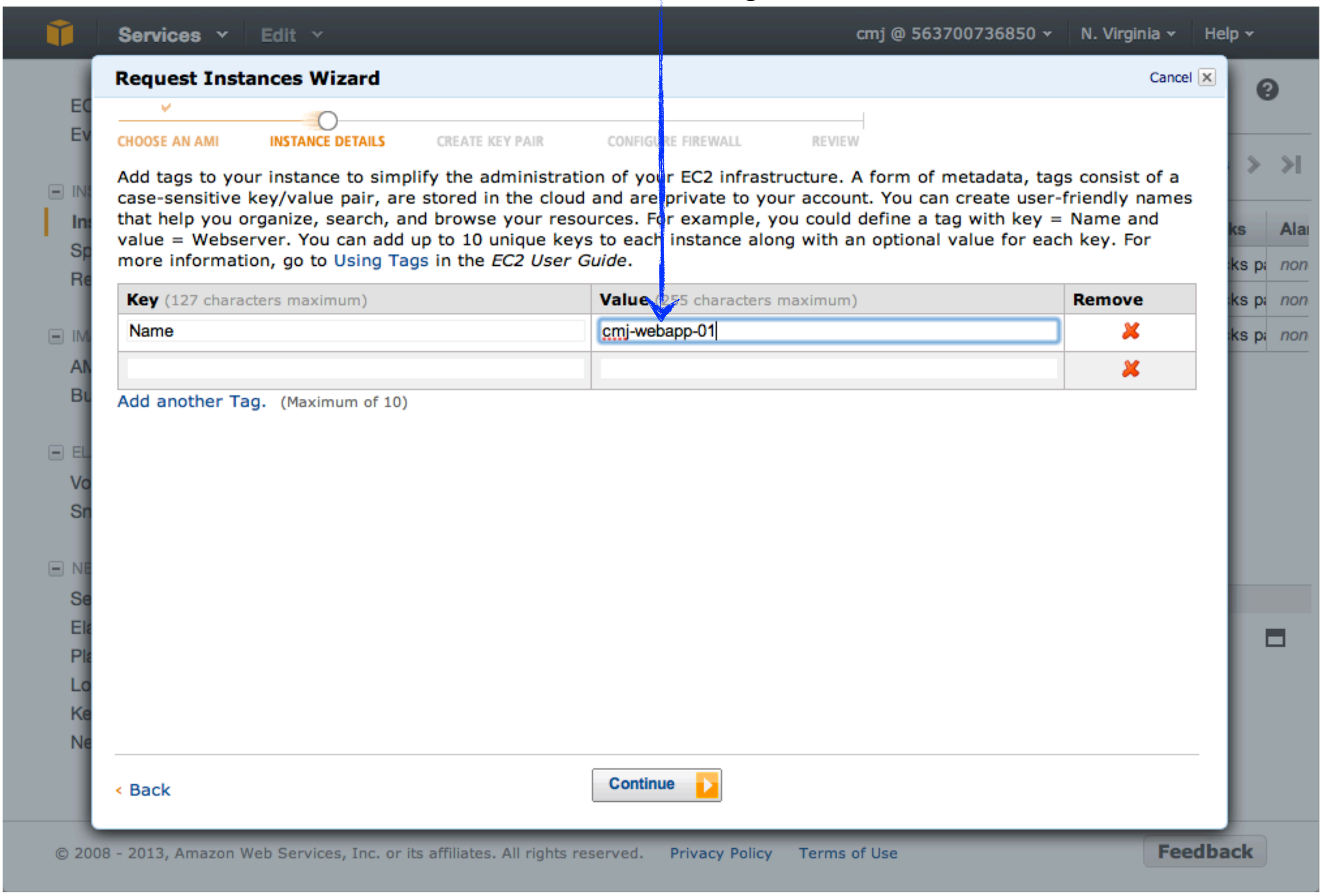
nothing to do here



nothing to do here



name instance with naming convention



create new key pair

name key pair

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

Request Instances Wizard Cancel

CHOOSE AN AMI — INSTANCE DETAILS — CREATE KEY PAIR — CONFIGURE FIREWALL — REVIEW

Public/private key pairs allow you to securely connect to your instance after it launches. For Windows Server instances, a Key Pair is required to set and deliver a secure encrypted password. For Linux server instances, a key pair allows you to SSH into your instance. To create a key pair, enter a name and click **Create & Download Your Key Pair**. You will be prompted to save the private key to your computer. Note: You only need to generate a key pair once - not each time you want to deploy an Amazon EC2 instance.

○ **Choose from your existing Key Pairs**

◉ **Create a new Key Pair**

1. **Enter a name for your key pair:*** cmj-key (e.g., jdoekey)
2. **Click to create your key pair:*** Create & Download your Key Pair

Save this file in a place that you will remember. You can use this key pair to launch other instances in the future or visit the Key Pairs page to create or manage existing ones.

download key pair and copy it to ~/.ssh

○ **Proceed without a Key Pair**

‹ Back Continue

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create or use key pair for remote login

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Request Instances Wizard

Cancel

CHOOSE AN AMI | INSTANCE DETAILS | CREATE KEY PAIR | CONFIGURE FIREWALL | REVIEW

Security groups determine whether a network port is open or blocked on your instances. You may use an existing security group, or we can help you create a new security group to allow access to your instances using the suggested ports below. Add additional ports now or update your security group anytime using the Security Groups page.

○ **Choose one or more of your existing Security Groups**

◉ **Create a new Security Group**

Group Name cmj-webapp

Group Description cmj web application secur

Inbound Rules

Create a new rule: SSH

Source: 0.0.0.0/0

(e.g., 192.168.2.0/24, sg-47ad482e, or 123456789/default)

Add Rule

ssh rule

allowed ip addresses

‹ Back

Continue

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Services | Edit | cmj @ 563700736850 | N. Virginia | Help

Request Instances Wizard

Cancel

CHOOSE AN AMI ✓ | INSTANCE DETAILS ✓ | CREATE KEY PAIR ✓ | CONFIGURE FIREWALL | REVIEW

Security groups determine whether a network port is open or blocked on your instances. You may use an existing security group, or we can help you create a new security group to allow access to your instances using the suggested ports below. Add additional ports now or update your security group anytime using the Security Groups page.

○ **Choose one or more of your existing Security Groups**

◉ **Create a new Security Group**

Group Name cmj-webapp

Group Description cmj web application secur

Inbound Rules

Create a new rule: Custom TCP rule

Port range:

(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

ssh

TCP Port (Service)	Source	Action
22 (SSH)	0.0.0.0/0	Delete
8080 (HTTP*)	0.0.0.0/0	Delete

tomcat

open to the world

‹ Back

Continue

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Increased Security

what is my ip – Google Search

https www.google.com/#hl=en&sugexp=les%3B&gs_rn=1&gs_ri=hp&cp=10&gs_id=

Reader

aws Apple Yahoo! Google Maps YouTube Wikipedia News Popular

what is my ip – Google Search

+You Search Images Maps Play YouTube News Gmail Drive Calendar More

Google what is my ip

Web Images Maps Shopping More Search tools

About 488,000,000 results (0.14 seconds)

Your public IP address is **72.240.63.90** - Learn more

What Is My IP Address | Shows Your IP Address
www.whatismyip.com/
Locate **Your IP** Address; Speed Tests; IP Address Lookup; IP Address Host Lookup ...
Knowing your own IP address is crucial for online gaming, tech support , ...
IP Address Lookup - Speed Test - How to Change Your IP Address - IP FAQ

mj @ 563700736850 N. Virginia Help

Cancel

ay use an existing security group, or we
ports below. Add additional ports now or

This field is required

Inbound Rules

Create a new rule: Custom TCP rule

Port range:

(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 (Service)	**Source**	**Action**
22 (SSH)	72.240.63.90/32	Delete
8080 (HTTP*)	0.0.0.0/0	Delete

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Continue

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Request Instances Wizard

Cancel

CHOOSE AN AMI ✓ | INSTANCE DETAILS ✓ | CREATE KEY PAIR ✓ | CONFIGURE FIREWALL ✓ | REVIEW

Please review the information below, then click **Launch**.

AMI: Other Linux AMI ID ami-09078e60 (x86_64) Edit AMI

Number of Instances: 1
Availability Zone: No Preference
Instance Type: M1 Small (m1.small)
Instance Class: On Demand
EBS-Optimized: No

Edit Instance Details

Monitoring: Disabled
Termination Protection: Disabled
Tenancy: Default
Kernel ID: Use Default
Shutdown Behavior: Stop
RAM Disk ID: Use Default
Network Interfaces:
Secondary IP Addresses:
User Data:
IAM Role:

Edit Advanced Details

Key Pair Name: cmj-key — Edit Key Pair

Security Group(s): sg-749ea71c — Edit Firewall

< Back

Launch

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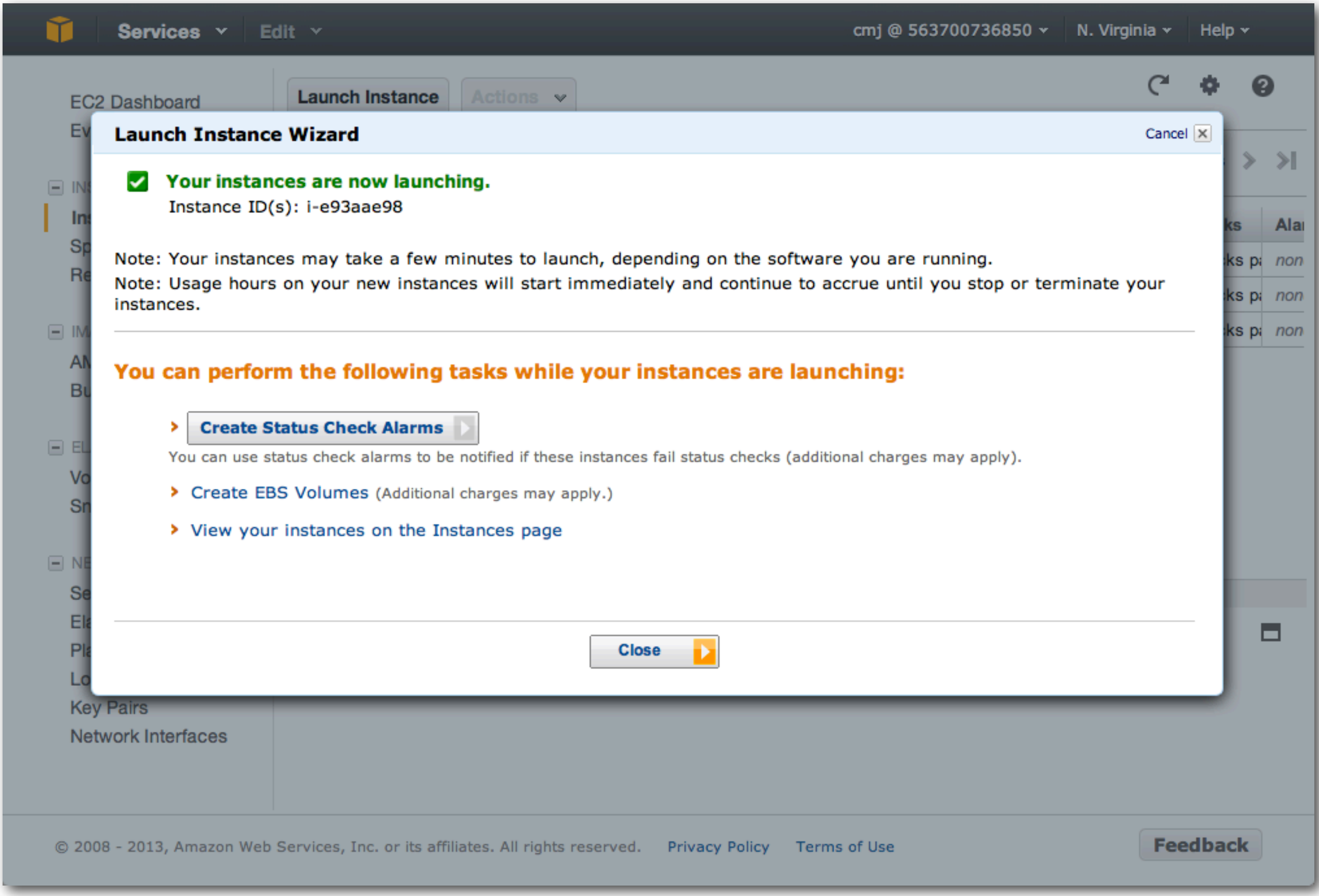
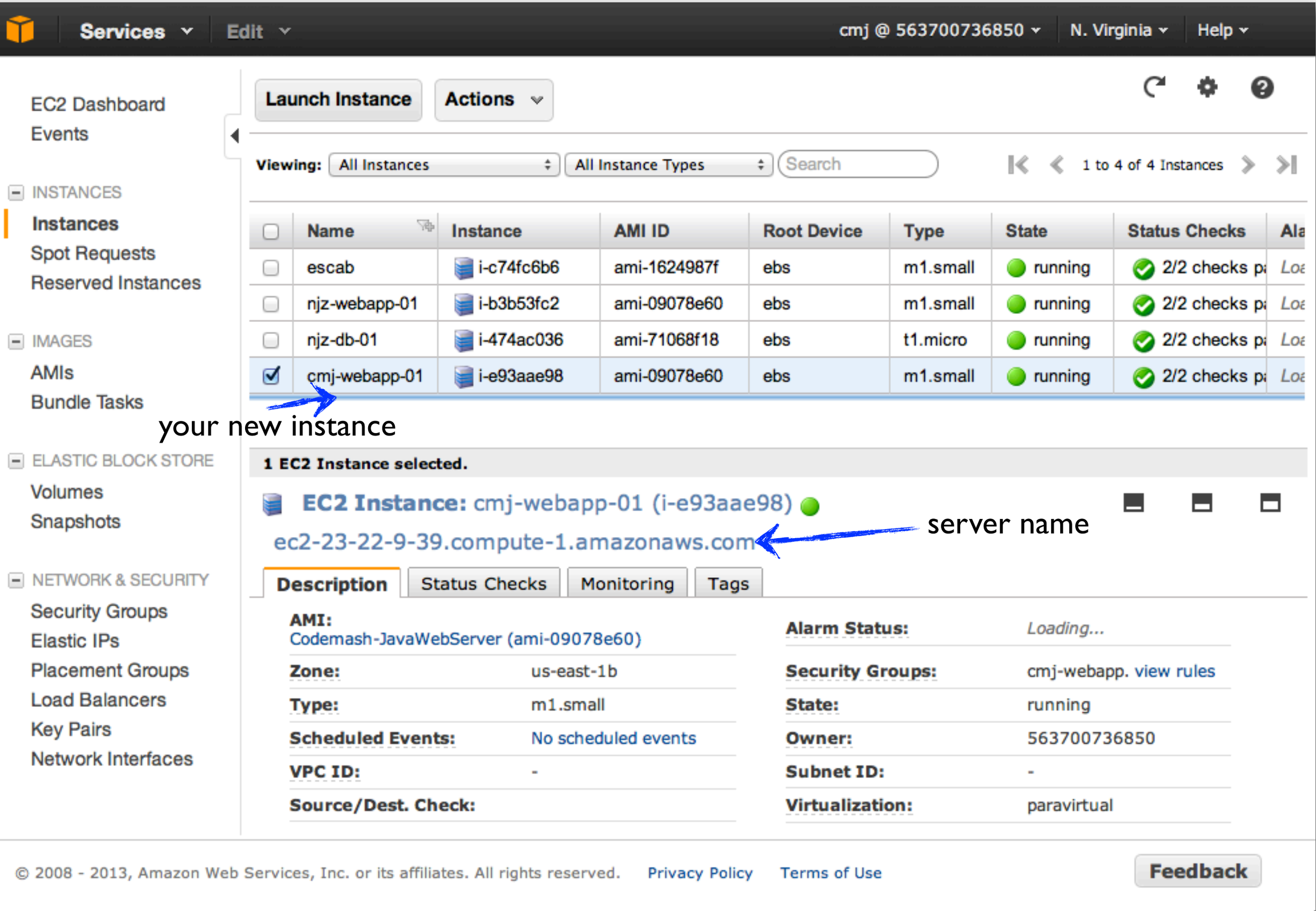
your done



ok, almost done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Reserved Instances
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Security Groups
Elastic IPs
Placement Groups
Load Balancers
Key Pairs
Network Interfaces
Launch Instance
Actions
Viewing: All Instances
All Instance Types
Search
1 to 4 of 4 Instances
Name
Instance
AMI ID
Root Device
Type
State
Status Checks
escab i-c74fc6b6 ami-1624987f ebs m1.small running 2/2 checks pa
njz-webapp-01 i-b3b53fc2 ami-09078e60 ebs m1.small running 2/2 checks pa
njz-db-01 i-474ac036 ami-71068f18 ebs t1.micro running 2/2 checks pa
cmj-webapp-01 i-e93aae98 ami-09078e60 ebs m1.small running 2/2 checks pa
your new instance
1 EC2 Instance selected.
EC2 Instance: cmj-webapp-01 (i-e93aae98)
ec2-23-22-9-39.compute-1.amazonaws.com
server name
Description
Status Checks
Monitoring
Tags
AMI:
Codemash-JavaWebServer (ami-09078e60)
Zone: us-east-1b
Type: m1.small
Scheduled Events: No scheduled events
VPC ID: -
Source/Dest. Check:
Alarm Status: Loading...
Security Groups: cmj-webapp. view rules
State: running
Owner: 563700736850
Subnet ID: -
Virtualization: paravirtual
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Apache Tomcat/7.0.34

ec2-23-22-9-39.compute-1.amazonaws.com:8080

Reader

aws Apple Yahoo! Google Maps YouTube Wikipedia News Popular

Apache Tomcat/7.0.34

Home Documentation Configuration Examples Wiki Mailing Lists Find H

Apache Tomcat/7.0.34

The Apache Software Foundat
http://www.apache.org/

If you're seeing this, you've successfully installed Tomcat. Congratulations!

™

Recommended Reading:

Security Considerations HOW-TO

Manager Application HOW-TO

Clustering/Session Replication HOW-TO

Server Status

Manager App

Host Manager

Developer Quick Start

563700736850 N. Virginia Help

1 to 4 of 4 Instances

Type	State	Status Checks	Ala
m1.small	running	2/2 checks pa	Loa
m1.small	running	2/2 checks pa	Loa
t1.micro	running	2/2 checks pa	Loa
m1.small	running	2/2 checks pa	Loa

Volumes
Snapshots

NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Load Balancers
Key Pairs
Network Interfaces

EC2 Instance: cmj-webapp-01 (i-e93aae98)

ec2-23-22-9-39.compute-1.amazonaws.com

Description | Status Checks | Monitoring | Tags

AMI: Codemash-JavaWebServer (ami-09078e60)		**Alarm Status:**	*Loading...*
Zone:	us-east-1b	**Security Groups:**	cmj-webapp. view rules
Type:	m1.small	**State:**	running
Scheduled Events:	No scheduled events	**Owner:**	563700736850
VPC ID:	-	**Subnet ID:**	-
Source/Dest. Check:		**Virtualization:**	paravirtual

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Feedback

Remote access to your EC2 instance

key downloaded earlier

login as ec2-user

server name

```
$ ssh -i ~/.ssh/your-key-pair.pem ec2-user@ec2-23-22-9-39.compute-1.amazonaws.com

The authenticity of host 'ec2-23-22-9-39.compute-1.amazonaws.com (50.19.72.29)' can't be
established.
RSA key fingerprint is 0b:c1:e1:b4:50:ec:cf:e7:a5:cb:20:4f:74:34:c5:29.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-23-22-9-39.compute-1.amazonaws.com,50.19.72.29' (RSA) to the
list of known hosts.
```

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@         WARNING: UNPROTECTED PRIVATE KEY FILE!          @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Permissions 0644 for '~/.ssh/your-key-pair.pem' are too open.
It is recommended that your private key files are NOT accessible by others.
This private key will be ignored.
bad permissions: ignore key: ~/.ssh/your-key-pair.pem
Permission denied (publickey).
```

don't panic

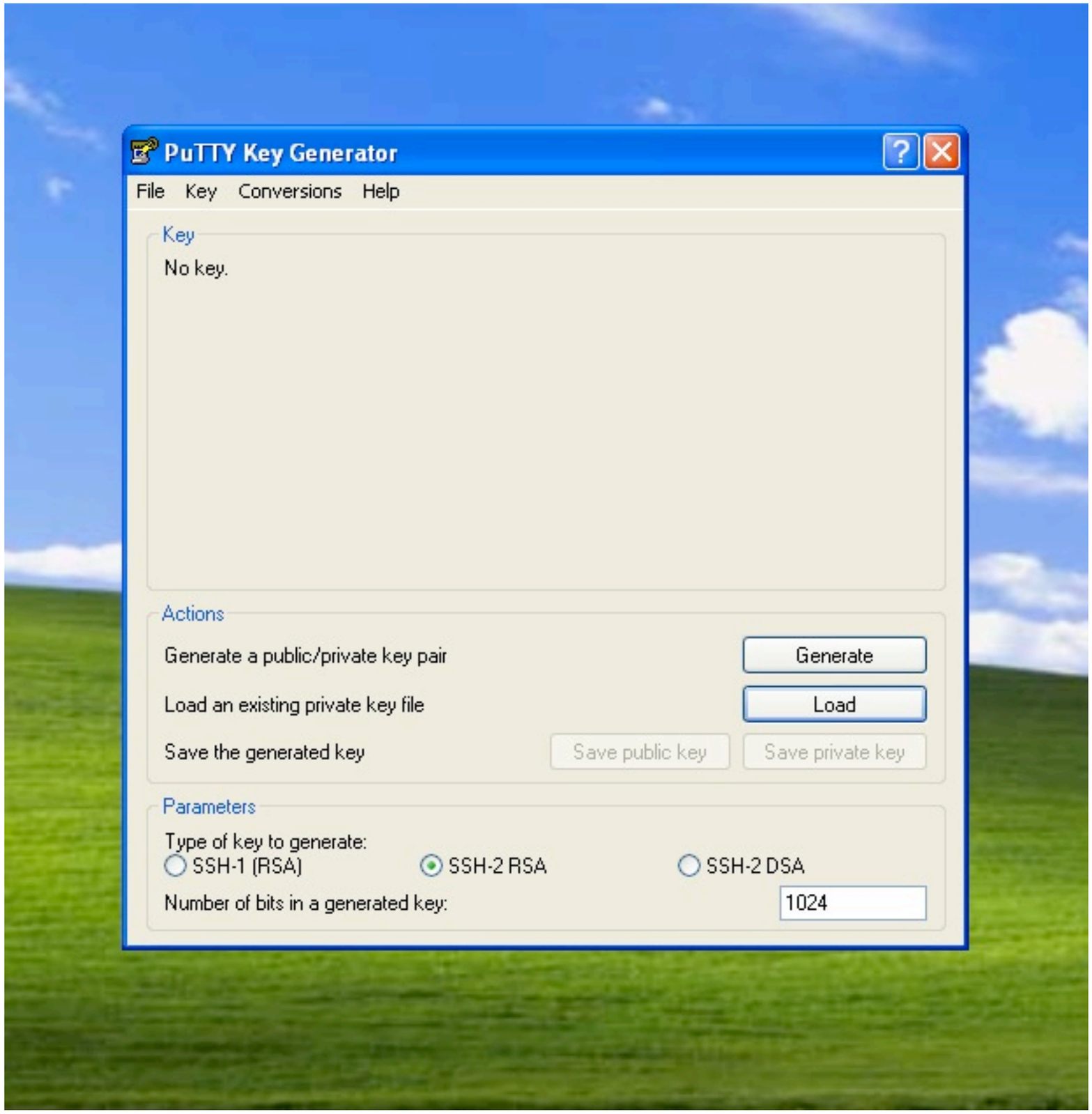
```
$ chmod 400 ~/.ssh/your-key-pair.pem
```

```
$ssh -i ~/.ssh/your-key-pair.pem ec2-user@ec2-50-19-72-29.compute-1.amazonaws.com
Last login: Thu Dec 29 13:47:16 2011 from 70.60.135.250

       __|  __|_  )
       _|  (     /   Amazon Linux AMI
      ___|\___|___|

See /usr/share/doc/system-release/ for latest release notes.
There are 3 security update(s) out of 4 total update(s) available
-bash: EXPORT: command not found
[ec2-user@ip-10-245-202-126 ~]$
```

your in, now you can:

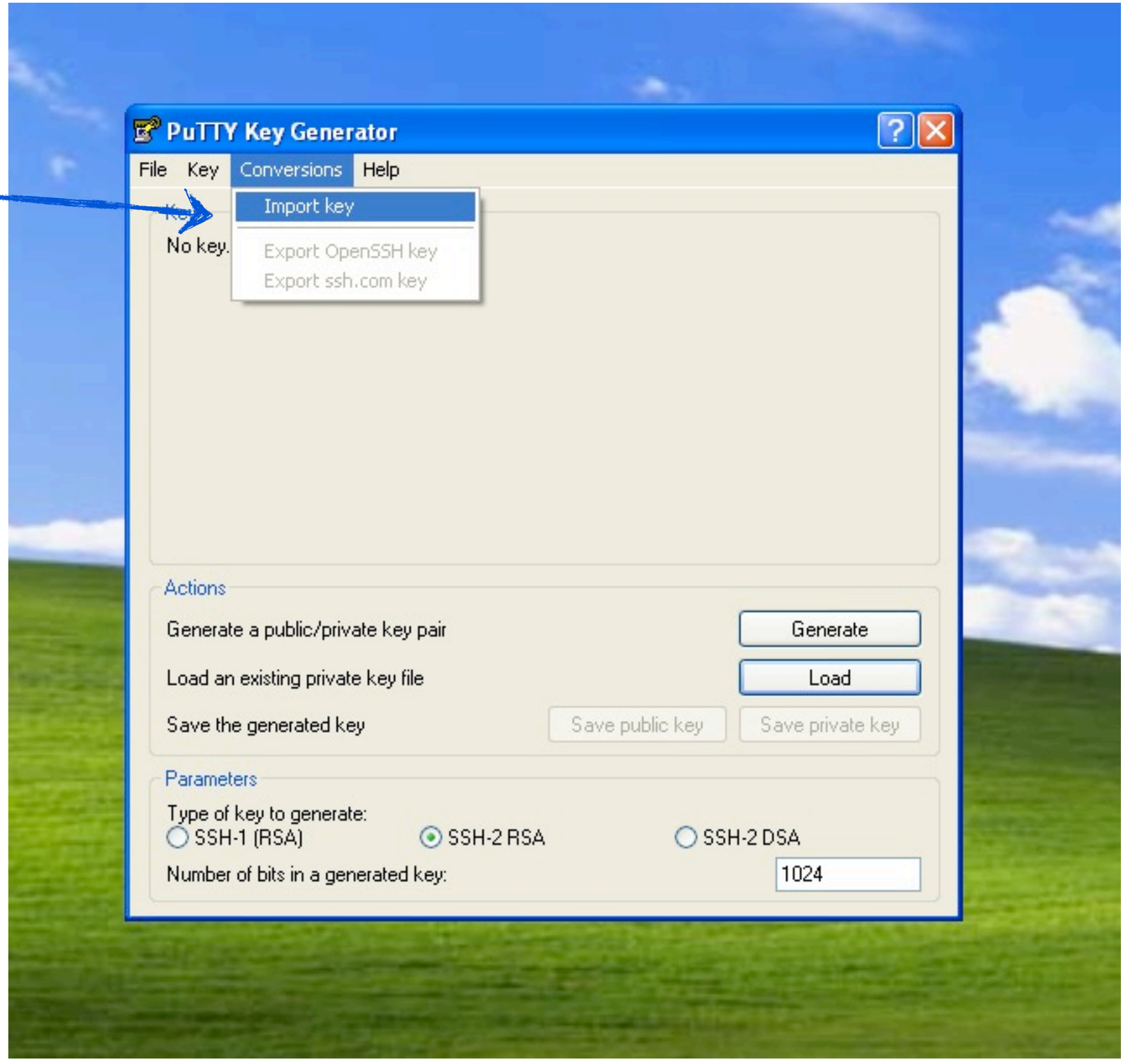
- install software
- start services

SSHing using Putty

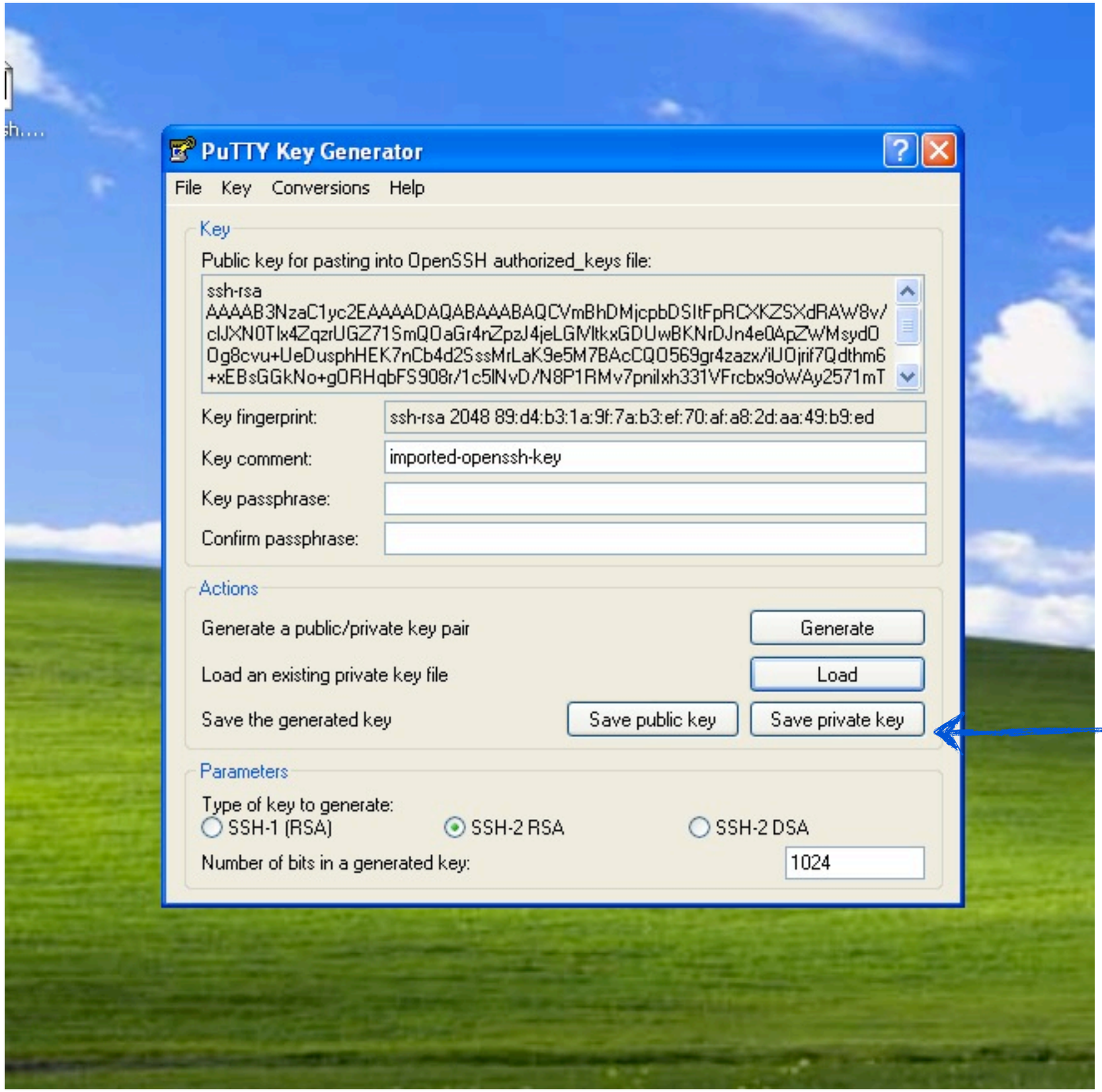


Importing the PEM file

Import PEM file for conversion

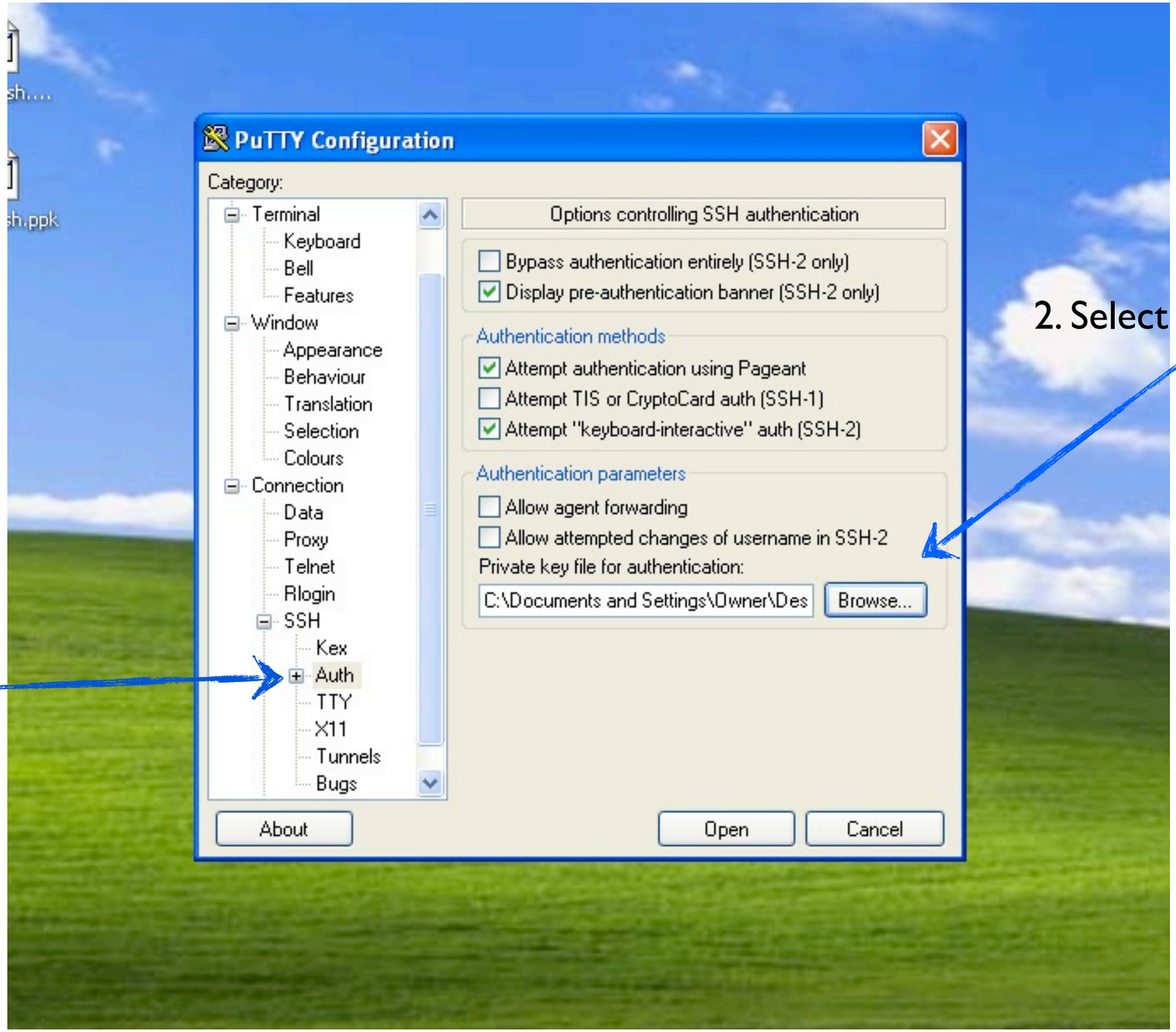


Conversion of Pem to PPK



Save private key (ppk)

Setting up Putty to use PPK

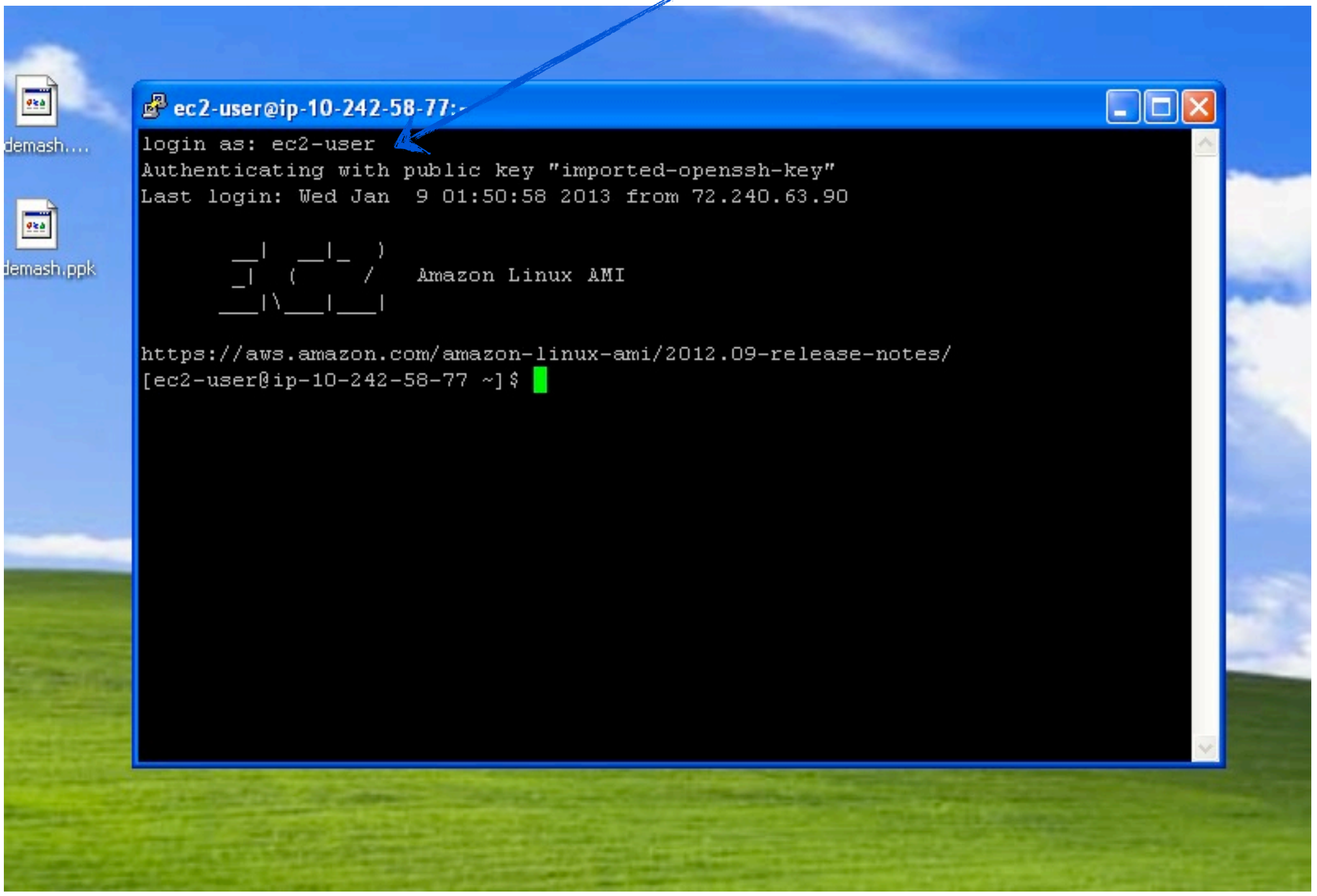


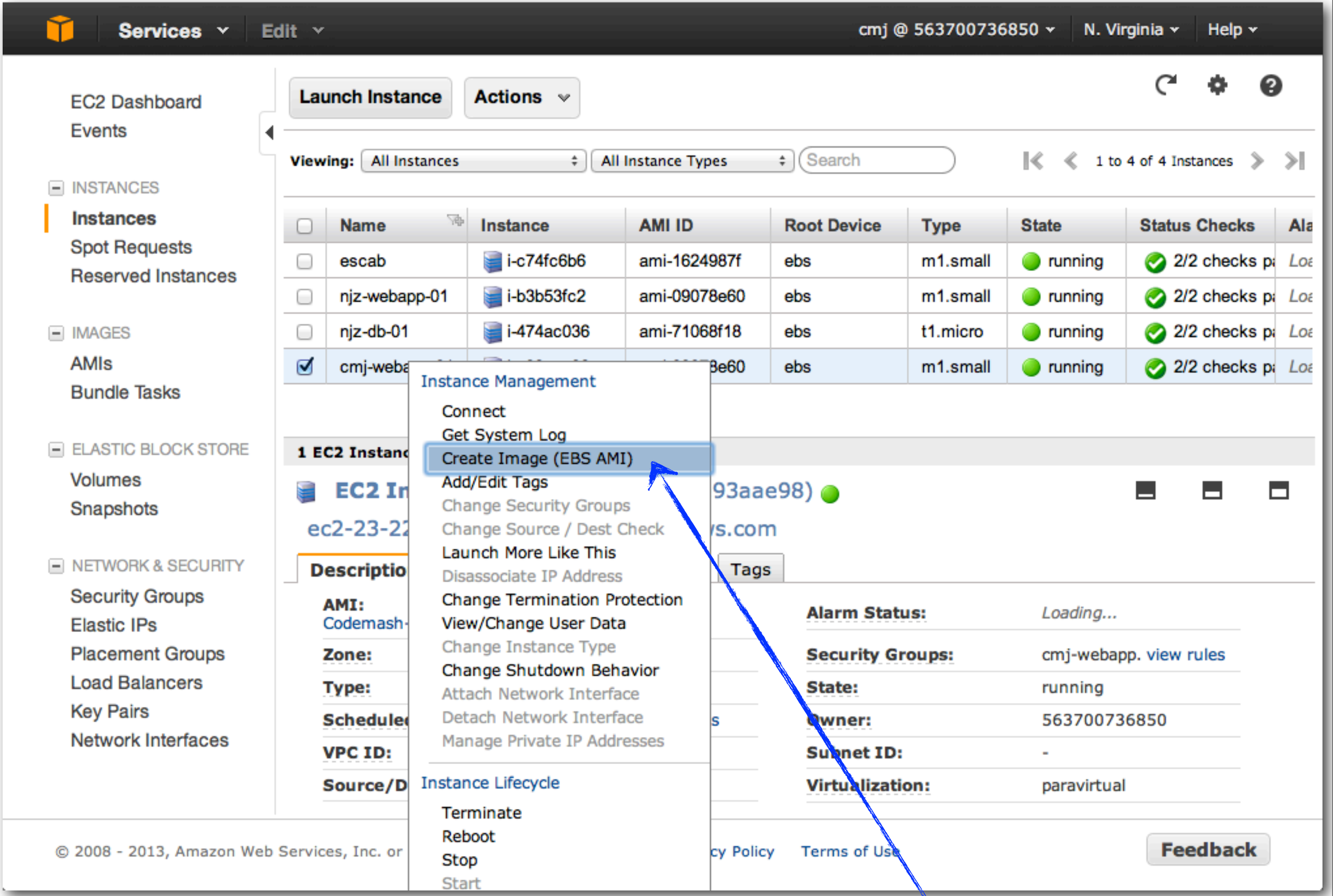
1. Navigate to Connection> SSH > Auth

2. Select ppk file here

Log in via Putty

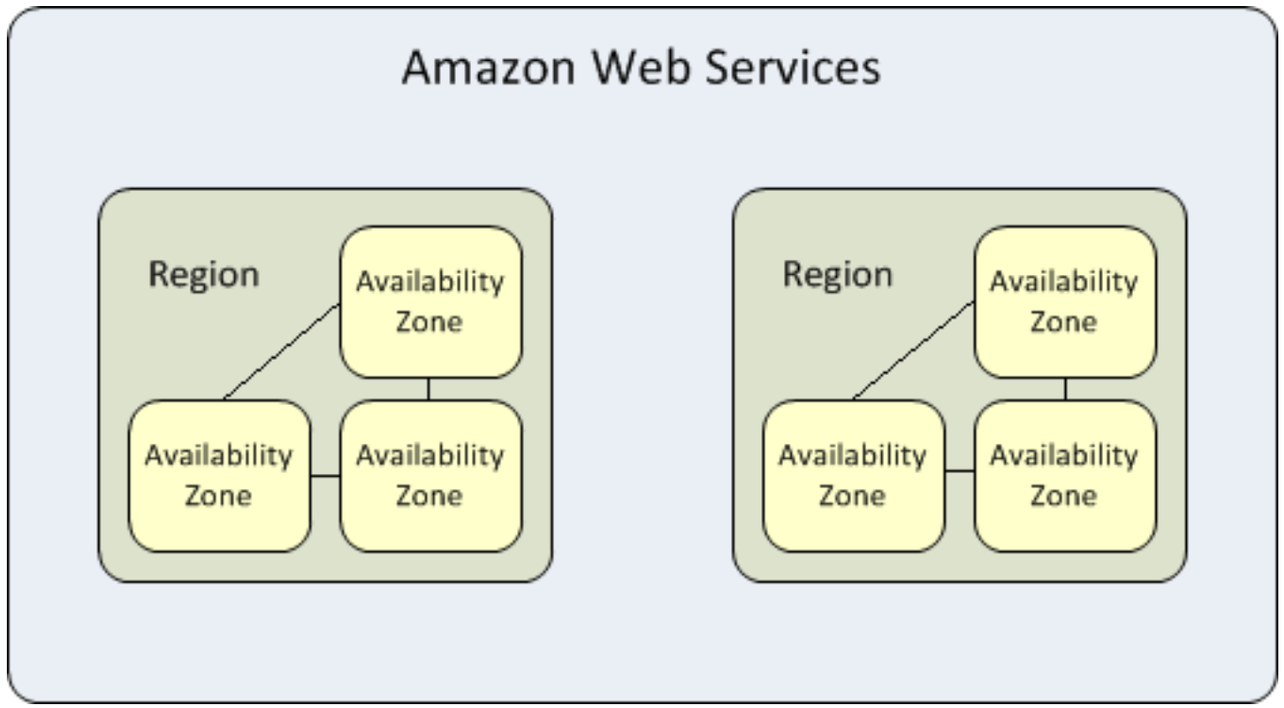
When prompted for login enter ***ec2-user***



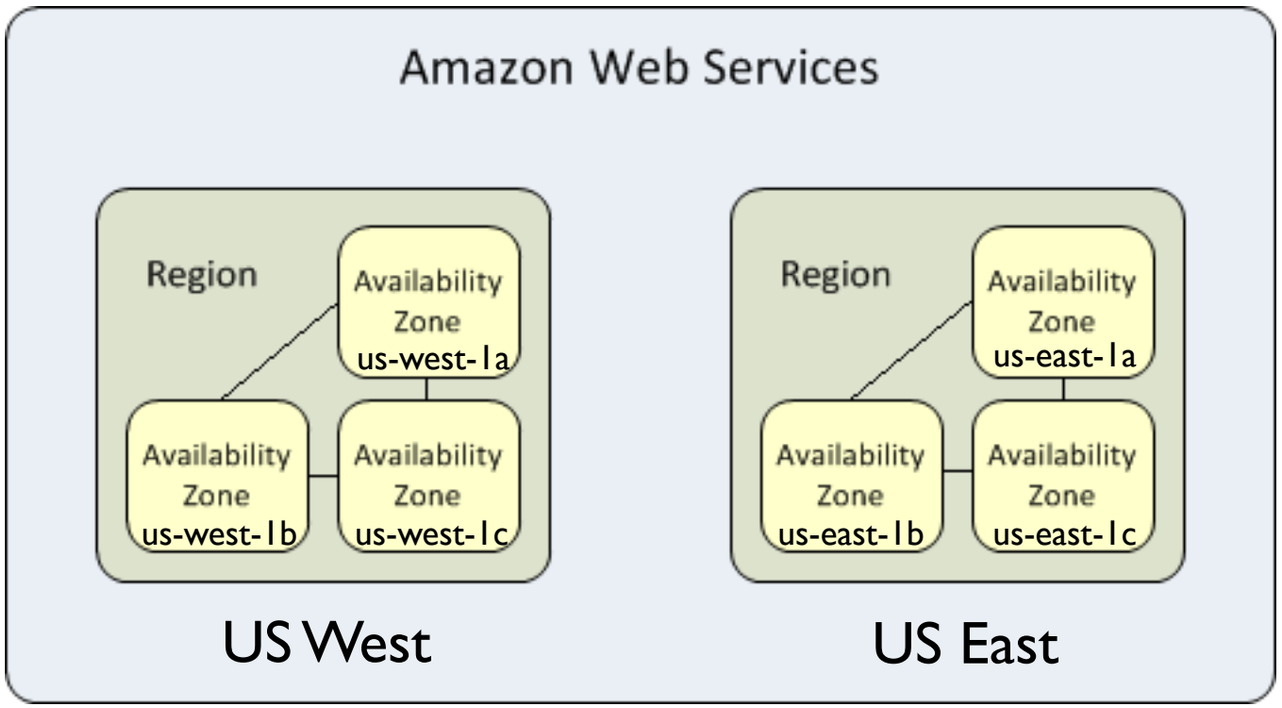


create a new AMI from this

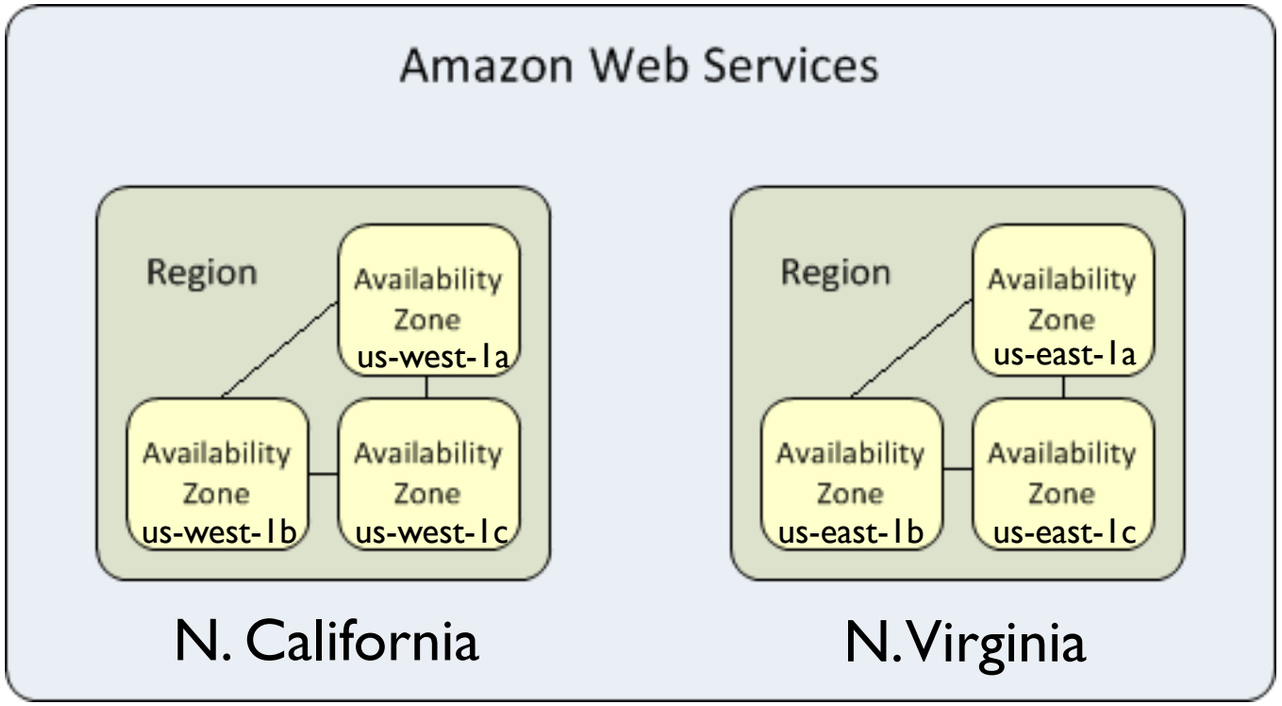
Regions and Availability Zones

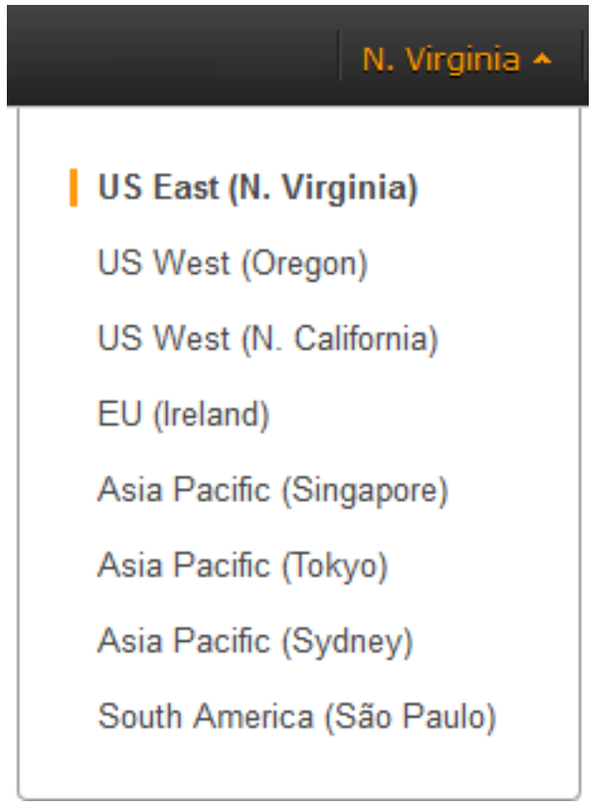


Regions and Availability Zones



Regions and Availability Zones

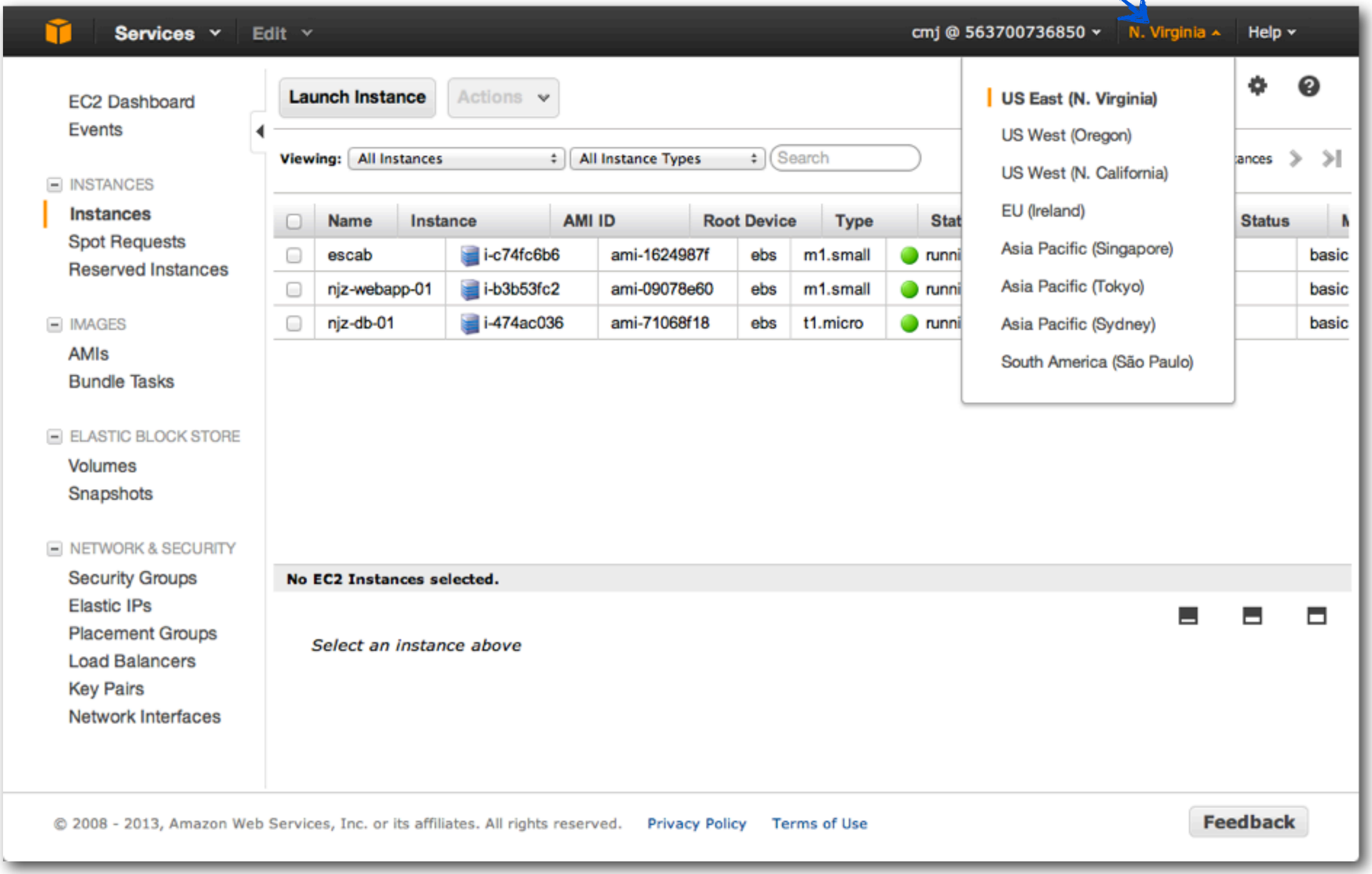




Products and Services by Region

Services offered:	N. Virginia	Oregon	N. California	Ireland	Singapore	Tokyo	Sydney	São Paulo	GovCloud
Amazon Elastic Compute Cloud (EC2)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon CloudWatch	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon Virtual Private Cloud (VPC)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon Simple Storage Service (S3)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon Elastic Block Store (EBS)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Auto Scaling	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon Simple Queue Service (SQS)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon Simple Notification Service (SNS)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Elastic Load Balancing	✔	✔	✔	✔	✔	✔	✔	✔	✔
AWS Support	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon DynamoDB	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon Relational Database Service (RDS)	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazon Elastic MapReduce	✔	✔	✔	✔	✔	✔	✔	✔	
VM Import/Export	✔	✔	✔	✔	✔	✔	✔	✔	
AWS CloudFormation	✔	✔	✔	✔	✔	✔	✔	✔	
AWS Elastic Beanstalk	✔	✔	✔	✔	✔	✔	✔	✔	
AWS Storage Gateway	✔	✔	✔	✔	✔	✔	✔	✔	
Amazon SimpleDB	✔	✔	✔	✔	✔	✔	✔	✔	
Amazon ElastiCache	✔	✔	✔	✔	✔	✔		✔	
AWS Direct Connect	✔		✔	✔	✔	✔	✔	✔	
AWS Import/Export	✔	✔	✔	✔	✔				
Amazon Glacier	✔	✔	✔	✔		✔			
High Performance Computing	✔	✔		✔					✔
Amazon Simple Email Service (SES)	✔								
Amazon CloudSearch	✔								
Amazon Simple Workflow Service (SWF)	✔								
AWS Data Pipeline	✔								

change region here



Half/Half

EC2

WITH

Command Line

Setup For Console Usage

Access Credentials

There are three types of access credentials used to authenticate your requests to AWS services: (a) access keys, (b) X.509 certificates, and (c) key pairs. Each access credential type is explained below.

Access Keys | **X.509 Certificates** | Key Pairs

Use X.509 certificates to make secure SOAP protocol requests to AWS service APIs.

Exceptions: Amazon S3 and Amazon Mechanical Turk instead require your Access Keys for SOAP requests.

Created	X.509 Certificate	Status

Create a new Certificate | Upload Your Own Certificate

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 X.509 Certificates

Console Environment Setup

- Download AWS Console API Tools
  - http://developer.amazonwebservices.com/connect/entry.jspa?externalID=351&categoryID=88
- Setup Your Path
  - export EC2_HOME=<Path to extracted download above>
  - export PATH=$PATH:$EC2_HOME/bin
  - export EC2_PRIVATE_KEY=<Path to downloaded key pair>
  - export EC2_CERT=<Path to downloaded X.509 certificate>
  - export JAVA_HOME=<Path to java install>

Console Usage

- ec2-describe-images -o amazon
- ec2-add-keypair <key-pair-name>
- ec2-add-group <sec-group> -d <description>
- ec2-authorize <sec-group> -p 22
- ec2-run-instances <ami-id> -k <key-pair-name> -g <sec-group>
- ec2-describe-instances
- ssh -i <key-pair-pem-file> ec2-user@ec2-xx-xxx-xx-xx.compute-1.amazonaws.com
- ec2-stop-instances <instance-id>
- ec2-terminate-instances <instance-id>

EC2

WITH

JAVA SDK

Letting AWS know who you are

Using Java SDK

```
//SETUP CREDENTIALS
AWSCredentials creds = new
PropertiesCredentials(this.getClass().getResourceAsStream("/awsCredentials.properties"));


//CREATING EC2 CLIENT
AmazonEC2 ec2 = new AmazonEC2Client(creds);
```

Creating a New Key Pair

Using Java SDK

```
CreateKeyPairRequest createKeyPairRequest = new CreateKeyPairRequest();


String keyName = "testKeyPair-fromjava";
createKeyPairRequest.withKeyName(keyName);


CreateKeyPairResult createKeyPairResult = ec2.createKeyPair(createKeyPairRequest);

KeyPair keyPair = createKeyPairResult.getKeyPair();
File pemFile = new File(keyName + ".pem");

BufferedWriter out = new BufferedWriter(new FileWriter(pemFile));
out.write(keyPair.getKeyMaterial());
out.close();
```

Creating a Security Group

Using the Java SDK

```
CreateSecurityGroupRequest r1 = new CreateSecurityGroupRequest("webserver-group", "Sec
Group for My Web Servers");
ec2.createSecurityGroup(r1);

AuthorizeSecurityGroupIngressRequest r2 = new AuthorizeSecurityGroupIngressRequest();
r2.setGroupName("webserver-group");
IpPermission permission = new IpPermission();
permission.setIpProtocol("tcp");
permission.setFromPort(80);
permission.setToPort(80);
List ipRanges = new ArrayList();

//use CIDR notation, see http://en.wikipedia.org/wiki/CIDR_notation
ipRanges.add("0.0.0.0/0"); permission.setIpRanges(ipRanges);

List permissions = new ArrayList();
permissions.add(permission);
r2.setIpPermissions(permissions);
ec2.authorizeSecurityGroupIngress(r2);
```

Creating the EC2 Instance

Using the Java SDK

```
// CREATE EC2 INSTANCES
RunInstancesRequest runInstancesRequest = new RunInstancesRequest()
    .withInstanceType("micro")
    .withImageId("ami-4bb96d22")
    .withMinCount(1)
    .withMaxCount(1)
    .withSecurityGroupIds("webserver-group")
    .withKeyName("testKeyPair-fromjava");

RunInstancesResult runInstances = ec2.runInstances(runInstancesRequest);
```

Giving the Instance Metadata

```
// TAG EC2 INSTANCES WITH USER METADATA
List<Instance> instances = runInstances.getReservation().getInstances();
for (Instance instance : instances) {
  CreateTagsRequest createTagsRequest = new CreateTagsRequest();
  createTagsRequest.withResources(instance.getInstanceId())
           .withTags(new Tag("Name", "MyFirstEC2Instance"));
  ec2.createTags(createTagsRequest);
}
```

Stopping/Terminating EC2 Instance

```
StopInstancesRequest stopInstanceRequest =
                                        new StopInstancesRequest().withInstanceIds(instanceIds);
ec2.terminateInstances(stopInstanceRequest);
```

```
TerminateInstancesRequest terminateInstanceRequest =
                                      new TerminateInstancesRequest().withInstanceIds(instanceIds);
ec2.terminateInstances(terminateInstanceRequest);
```

Infrastructure Automation

AWS CloudFormation

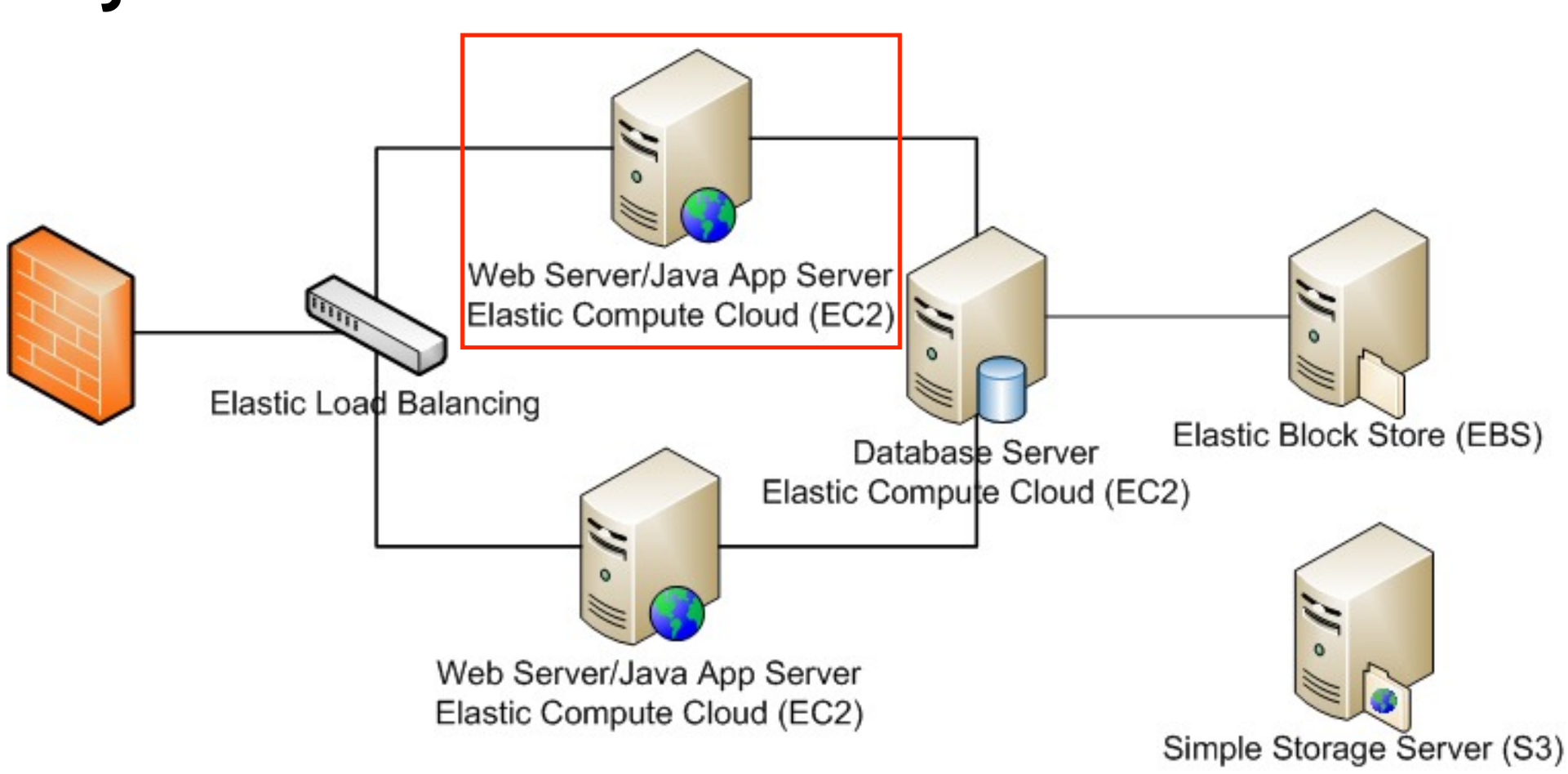
http://puppetlabs.com/

http://www.opscode.com/chef/

http://aws.amazon.com/cloudformation/

Lab 1

1. Start instance of UberConf-2013-JavaWebServer
2. Verify Tomcat is running accessible
3. ssh to JavaWebServer instance
4. Stop JavaWebServer instance
5. Restart JavaWebServer instance



STORAGE

Storage Options

- Structured Data
  - Amazon DynamoDB - NoSQL DB
  - Relational Databases (in EC2 and EBS)
  - Amazon RDS - Managed databases like mysql
  - Amazon ElasticCache - in-memory cache
  - Amazon Redshift - petabyte-scale data warehouse

- Unstructured Data
  - Amazon EC2 Instance Storage - local filesystem
  - Amazon EBS Volumes - remote mounted filesystem
  - Amazon S3 - bucket storage
  - Amazon Glacier - archiving and backup

instance

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

Request Instances Wizard

Cancel

CHOOSE AN AMI — INSTANCE DETAILS — CREATE KEY PAIR — CONFIGURE FIREWALL — REVIEW

Choose an Amazon Machine Image (AMI) from one of the tabbed lists below by clicking its **Select** button.

Quick Start | My AMIs | Community AMIs | AWS Marketplace

Viewing: All Images | Search | 1 to 50 of 14305 Items

AMI ID	Root Device	Manifest	Platform	
ami-000af969	instance store	bitnami-cloud/wordpress/bitnami-wordpress-3.1-0-lin	Ubuntu	Select
ami-0011e069	instance store	clovr-standard-2011-01-07-16-01-33/clovr-standard-2	Other Linux	Select
ami-0017b369	instance store	clovr-standard-2012-05-15-03-00-26/clovr-standard-2	Other Linux	Select
ami-0022c769	instance store	level22-ec2-images/ubuntu-7.04-feisty-base-200712	Ubuntu	Select
ami-00279c69	instance store	bitnami-cloud/gitorious/bitnami-gitorious-2.3.2-0-linux	Ubuntu	Select
ami-002bf169	instance store	bitnami-cloud/wordpress/bitnami-wordpress-3.3.2-0-r	Ubuntu	Select
ami-002dd269	ebs	293077032498/xsd.web.server	Windows	Select
ami-0032c769	ebs	816268476753/cit-c-2-5-1285003210	Windows	Select
ami-00358c69	instance store	bitnami-cloud/jrubystack/bitnami-jrubystack-1.7.0.R	Ubuntu	Select
ami-00399869	ebs	485391117403/ImageTestServer	Other Linux	Select
ami-0055ad69	ebs	962722313162/ubuntu-jenkins-slave	Ubuntu	Select

Free tier eligible if used with a micro instance. See AWS free tier for complete details and terms.

 Privacy Policy Terms of Use Feedback

EBS

	Unstructured Data			Structured Data		
	Amazon EC2 Instance Storage	**Amazon EBS Volumes**	**Amazon S3**	**Amazon SimpleDB**	**Other Relational DB (on EC2 and EBS)**	**Amazon RDS**
Performance	High	High	Moderate (single thread) to Very High (multiple threads)	Moderate to High (batched Puts / Gets)	High	High
Durability	Low	Moderate	High	High	High	Moderate
Cost	Included in EC2 cost	Provisioned per GB/Month	Stored per GB/Month	Provisioned First GB free, then per GB/Month	Provisioned (same as EBS)	Provisioned per GB/Month (5 GB minimum)
Availability	Low	Moderate to High (using EBS snapshots)	High	High	Moderate to High	High
Elasticity / Scalability	No	Manual (adding more volumes)	Automatic	Automatic	Manual	Manual (one command to modify DB Instance)
Size Limits	160 GB to 1.6 TB (larger instances have both larger volumes and more volumes)	1 GB to 1 TB per volume (can use multiple volumes or striping for larger capacities)	Effectively Unlimited (5 TB per object, unlimited objects per bucket)	10 GB/domain 100 domains (more domains available upon request)	(same as EBS)	5 GB to 1 TB per DB Instance
Persistence Across Instantiations	No	Yes	Yes	Yes	Yes	Yes
Interfaces	Block Device, access via OS / file system on EC2	N/A, access through EC2 OS / file system	HTTP, REST or SOAP	REST or SOAP	MySQL or JDBC libraries	MySQL or JDBC libraries
Security (encryption at-rest)	Run Encrypted FS	Run Encrypted FS	Encrypt using 256-bit AES	Encrypt using 256-bit AES		
Security (encryption in-transit)	N/A	N/A	SSL (HTTPS)	SSL (HTTPS)	SSL (HTTPS)	SSL (HTTPS)
RDBMS Platforms Supported	MySQL, SQL Server, Oracle, DB2, etc.	MySQL, SQL Server, Oracle, DB2, etc.	N/A	N/A	MySQL, SQL Server, Oracle, DB2 etc.	MySQL 5.1
Model (relational or otherwise)	Block	Block	Object	Non-relational, flexible schema, entity store	Relational	Relational
Degree of Automation	None	Auto-mirroring	Auto-replication, Versioning	Indexing, replication, provisioning, patching	Depends on DB	Automated backups, software
Degree of Redundancy	Not redundant	Redundant within an Availability Zone	Highly redundant across multiple data centers	Maintain multiple, geographically diverse copies of all user data	None (asynchronous replication available)	Offer both single DB Instance (one AZ) and Multi-AZ options
Cross-Instance Access (i.e., shareability)	No	No	Yes	Yes	Yes	Yes
Management and Administration	Manual	Manual	Auto	Auto	Manual	Auto

S3 Pricing

Storage Pricing

Region: US Standard

	Standard Storage	Reduced Redundancy Storage	Glacier Storage
First 1 TB / month	$0.095 per GB	$0.076 per GB	$0.010 per GB
Next 49 TB / month	$0.080 per GB	$0.064 per GB	$0.010 per GB
Next 450 TB / month	$0.070 per GB	$0.056 per GB	$0.010 per GB
Next 500 TB / month	$0.065 per GB	$0.052 per GB	$0.010 per GB
Next 4000 TB / month	$0.060 per GB	$0.048 per GB	$0.010 per GB
Over 5000 TB / month	$0.055 per GB	$0.037 per GB	$0.010 per GB

Request Pricing

Region: US Standard

	Pricing
PUT, COPY, POST, or LIST Requests	$0.005 per 1,000 requests
Glacier Archive and Restore Requests	$0.05 per 1,000 requests
Delete Requests	Free †
GET and all other Requests	$0.004 per 10,000 requests
Glacier Data Restores	Free ††

† No charge for delete requests of Standard or RRS objects. For objects that are archived to Glacier, there is a pro-rated charge of $0.03 per gigabyte for objects deleted prior to 90 days. Learn more.

†† Glacier is designed with the expectation that restores are infrequent and unusual, and data will be stored for extended periods of time. You can restore up to 5% of your average monthly Glacier storage (pro-rated daily) for free each month. If you choose to restore more than this amount of data in a month, you are charged a restore fee starting at $0.01 per gigabyte. Learn more.

Data Transfer Pricing

The pricing below is based on data transferred "in" to and "out" of Amazon S3.

Region: US Standard

	Pricing
Data Transfer IN To Amazon S3	
All data transfer in	$0.000 per GB
Data Transfer OUT From Amazon S3 To	
Amazon EC2 in the Northern Virginia Region	$0.000 per GB
Another AWS Region or Amazon CloudFront	$0.020 per GB

EBS Pricing

Region: US East (N. Virginia)

Amazon EBS Standard volumes

- $0.10 per GB-month of provisioned storage
- $0.10 per 1 million I/O requests

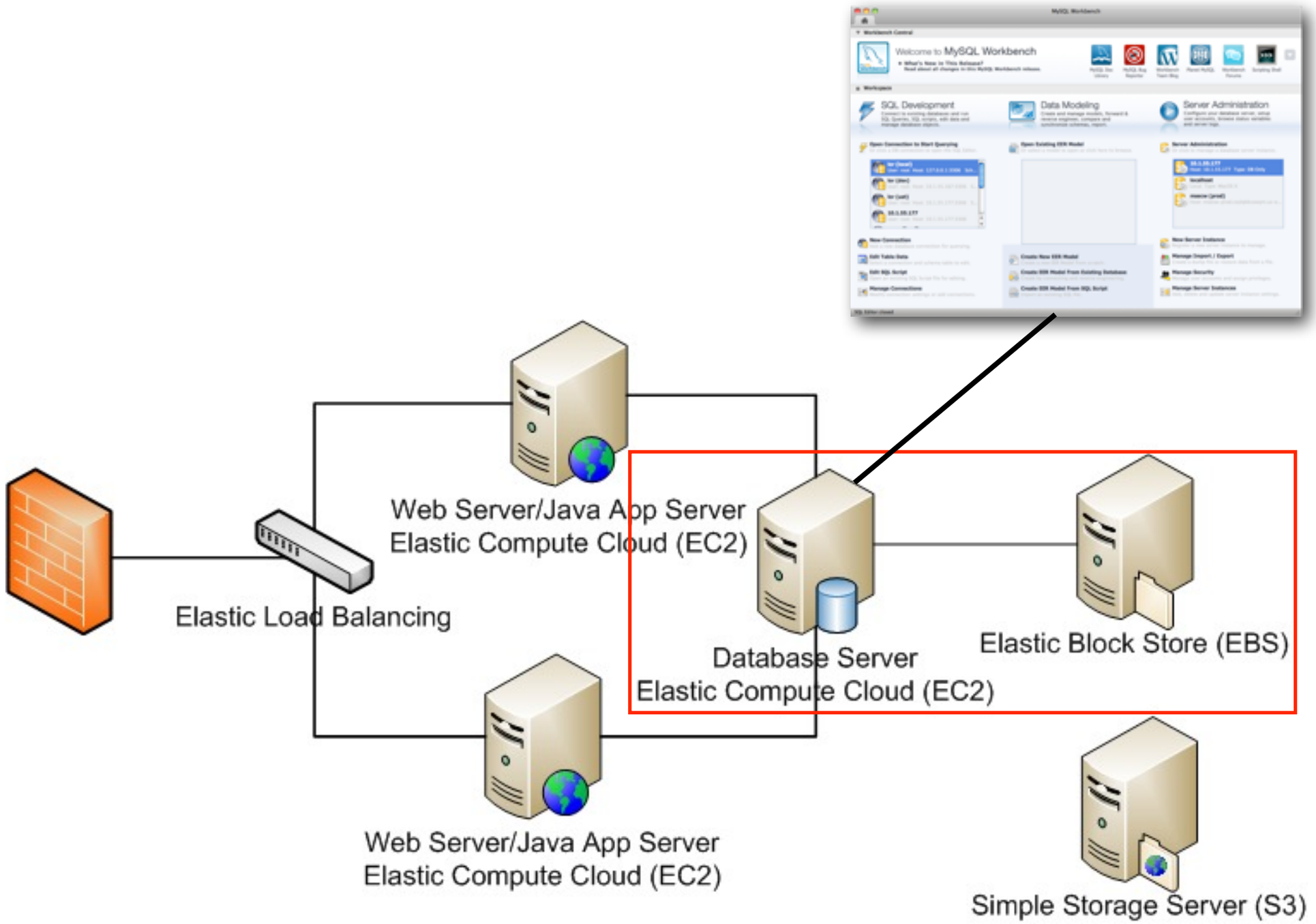
Amazon EBS Provisioned IOPS volumes

- $0.125 per GB-month of provisioned storage
- $0.10 per provisioned IOPS-month

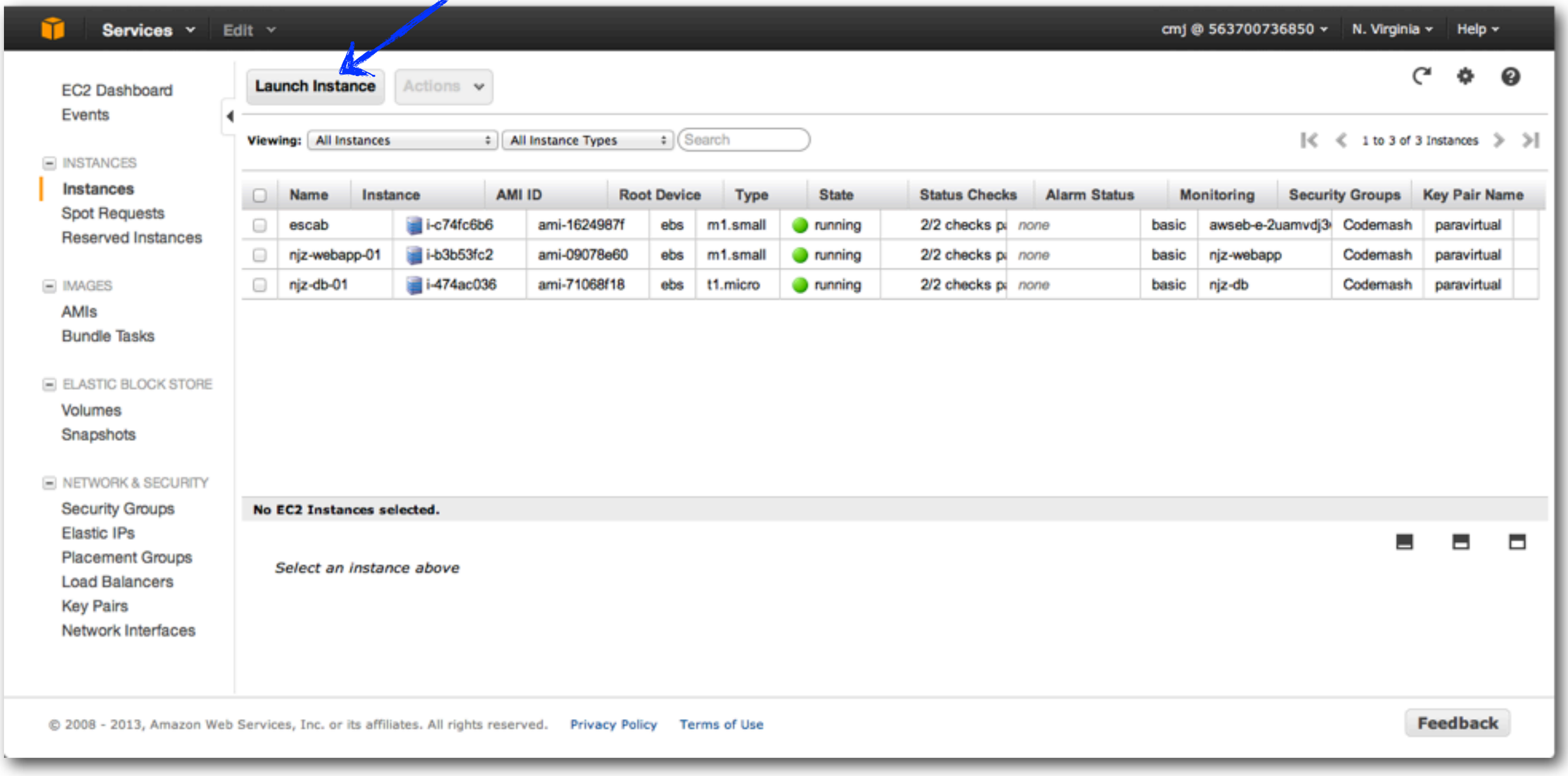
Amazon EBS Snapshots to Amazon S3

- $0.095 per GB-month of data stored

DATABASE


Welcome to MySQL Workbench
SQL Development
Data Modeling
Server Administration
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Elastic Load Balancing
Database Server
Elastic Compute Cloud (EC2)
Elastic Block Store (EBS)
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Simple Storage Server (S3)

launch here


Services
Edit
cmj @ 563700736850
N. Virginia
Help
EC2 Dashboard
Events
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
Launch Instance
Actions
Viewing: All Instances
All Instance Types
Search
1 to 3 of 3 Instances
Name
Instance
AMI ID
Root Device
Type
State
Status Checks
Alarm Status
Monitoring
Security Groups
Key Pair Name
escab
i-c74fc6b6
ami-1624987f
ebs
m1.small
running
2/2 checks p
none
basic
awseb-e-2uamvdj3
Codemash
paravirtual
njz-webapp-01
i-b3b53fc2
ami-09078e60
ebs
m1.small
running
2/2 checks p
none
basic
njz-webapp
Codemash
paravirtual
njz-db-01
i-474ac036
ami-71068f18
ebs
t1.micro
running
2/2 checks p
none
basic
njz-db
Codemash
paravirtual
No EC2 Instances selected.
Select an instance above
© 2008 - 2013, Amazon Web Services, Inc. or its affiliates. All rights reserved.
Privacy Policy
Terms of Use
Feedback

search for codemash

select MySqlServer AMI

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

Request Instances Wizard Cancel

CHOOSE AN AMI — INSTANCE DETAILS — CREATE KEY PAIR — CONFIGURE FIREWALL — REVIEW

Choose an Amazon Machine Image (AMI) from one of the tabbed lists below by clicking its **Select** button.

Quick Start | My AMIs | Community AMIs | AWS Marketplace

Viewing: All Images | codemash | 1 to 2 of 2 Items

AMI ID	Root Device	Manifest	Platform	
ami-09078e60	ebs	563700736850/Codemash-JavaWebServer	Other Linux	Select
ami-71068f18	ebs	563700736850/Codemash-MysqlServer	Other Linux	Select

Free tier eligible if used with a micro instance. See AWS free tier for complete details and terms.

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MySQL 5.5

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

Request Instances Wizard

Cancel

CHOOSE AN AMI | INSTANCE DETAILS | CREATE KEY PAIR | CONFIGURE FIREWALL | REVIEW

Provide the details for your instance(s). You may also decide whether you want to launch your instances as "on-demand" or "spot" instances.

Number of Instances: 1 **Instance Type:** T1 Micro (t1.micro, 613 MiB)

Launch as an EBS-Optimized instance (additional charges apply): Not supported for this instance type

Launch Instances

EC2 Instances let you pay for compute capacity by the hour with no long term commitments. This transforms what are commonly large fixed costs into much smaller variable costs.

Launch into: EC2 VPC

Availability Zone: No Preference

Request Spot Instances

‹ Back

Continue

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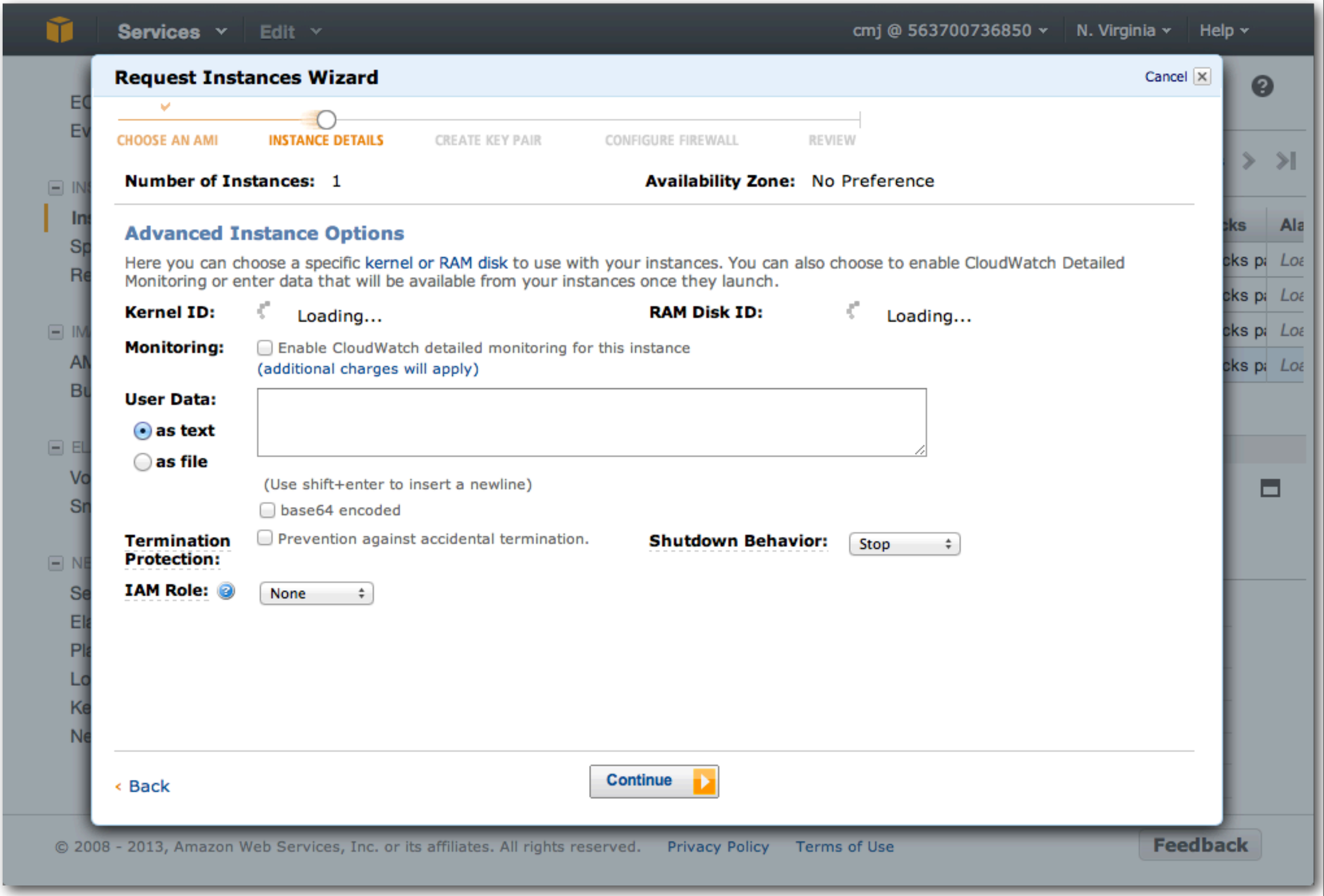
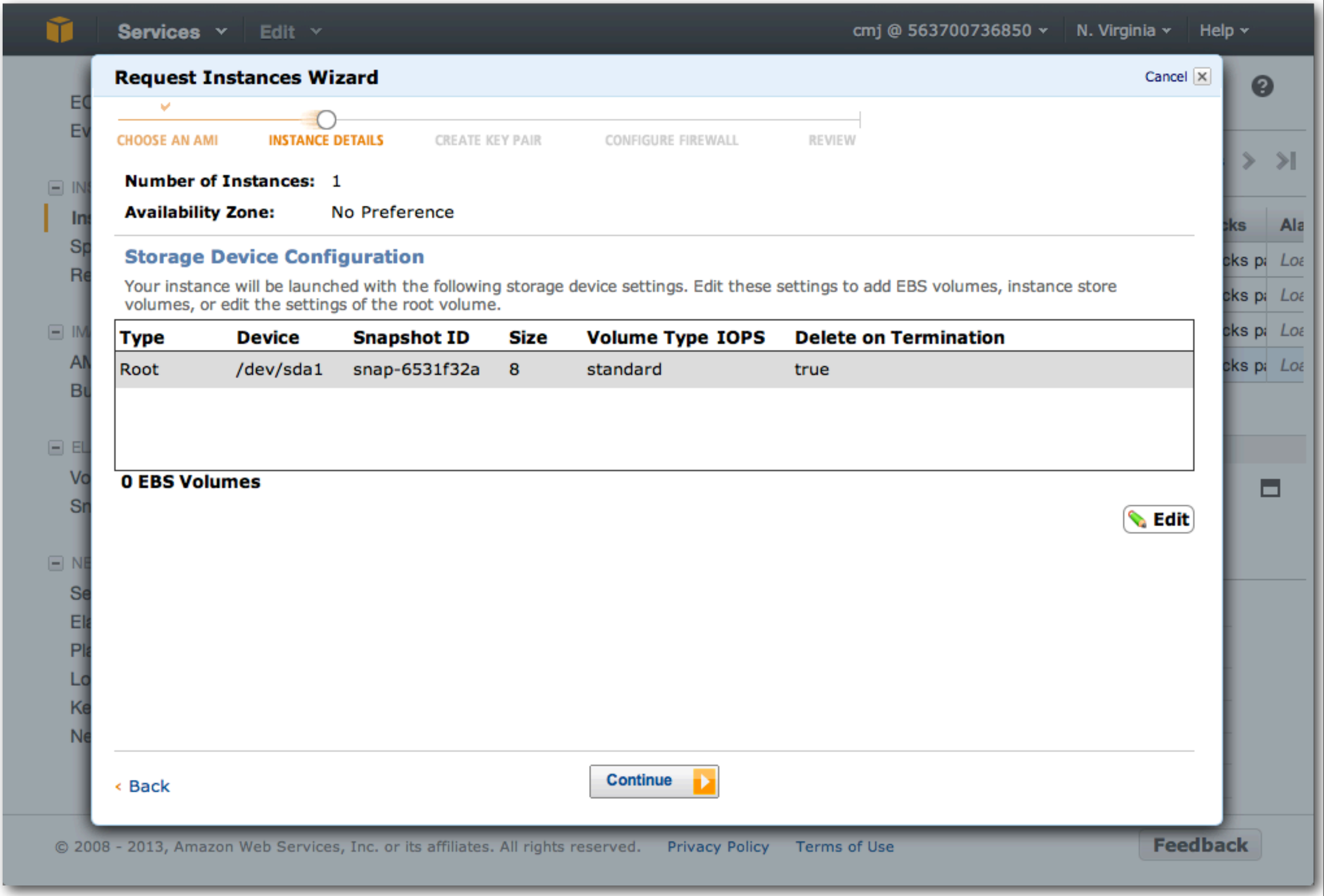
Feedback

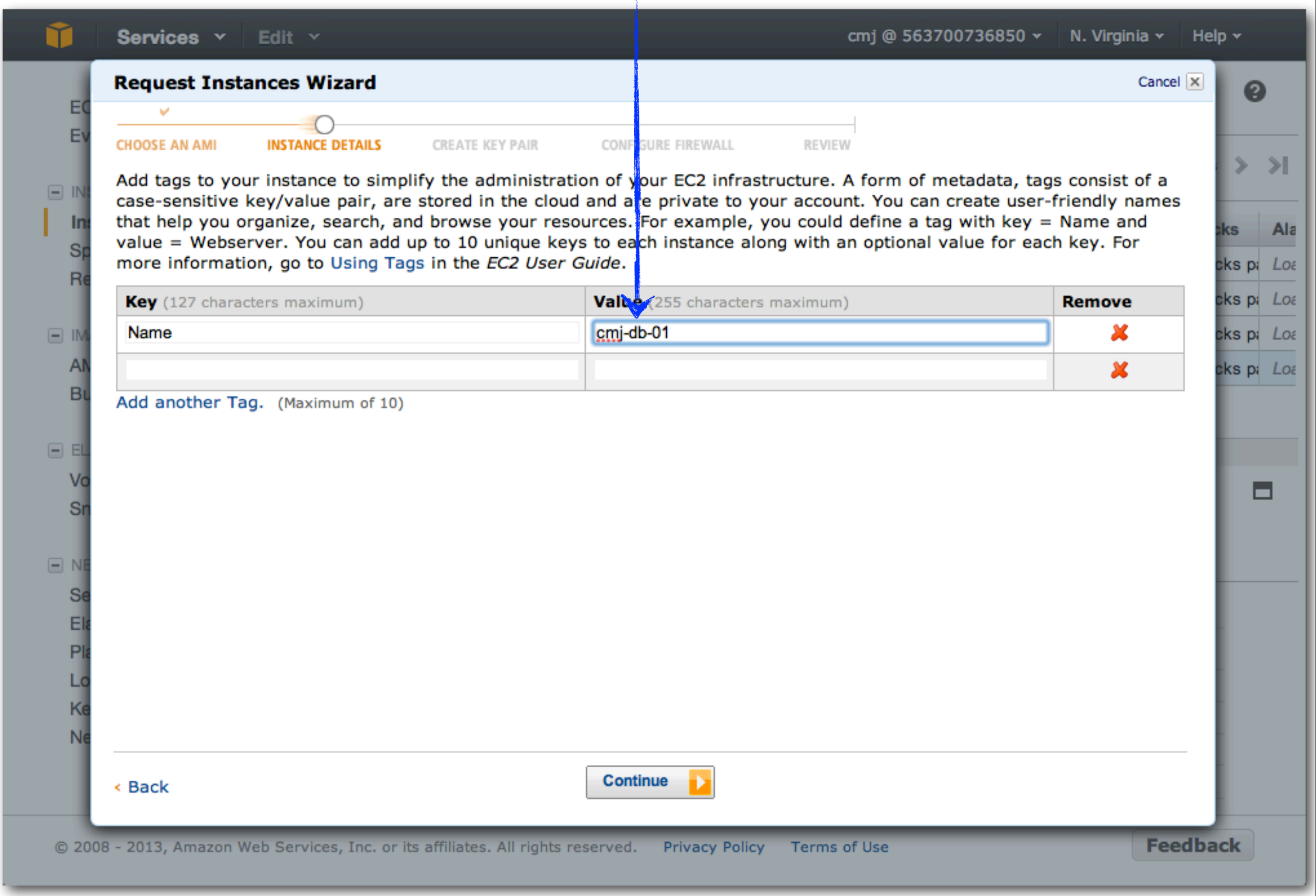
nothing to do here



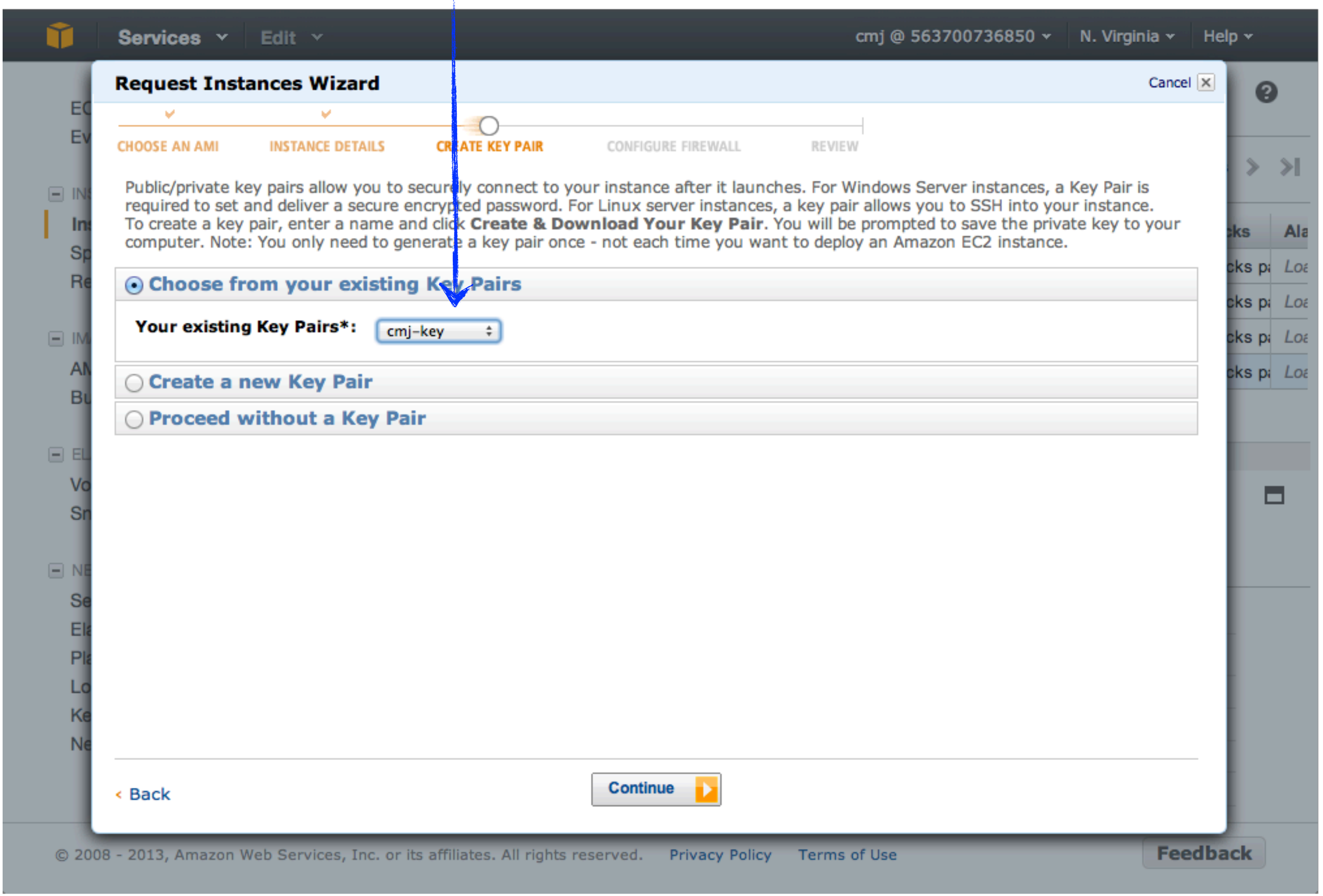
nothing to do here



name instance with naming convention



select existing key pairs



developer's machine

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

Request Instances Wizard Cancel

CHOOSE AN AMI ✓ | INSTANCE DETAILS ✓ | CREATE KEY PAIR ✓ | CONFIGURE FIREWALL | REVIEW

Security groups determine whether a network port is open or blocked on your instances. You may use an existing security group, or we can help you create a new security group to allow access to your instances using the suggested ports below. Add additional ports now or update your security group anytime using the Security Groups page.

○ **Choose one or more of your existing Security Groups**

◉ **Create a new Security Group**

Group Name cmj-db

Group Description MySQL Security Group

Inbound Rules

Create a new rule: Custom TCP rule

Port range:

(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 (Service)	**Source**	**Action**
22 (SSH)	0.0.0.0/0	Delete
3306 (MYSQL)	72.240.63.95/32	Delete
3306 (MYSQL)	sg-749ea71c	Delete

‹ Back

Continue

 Privacy Policy Terms of Use Feedback

web application security group

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

Request Instances Wizard

Cancel

CHOOSE AN AMI ✓ | INSTANCE DETAILS ✓ | CREATE KEY PAIR ✓ | CONFIGURE FIREWALL ✓ | REVIEW

Please review the information below, then click **Launch**.

AMI: Other Linux AMI ID ami-71068f18 (x86_64) Edit AMI

Number of Instances: 1
Availability Zone: No Preference
Instance Type: T1 Micro (t1.micro)
Instance Class: On Demand — Edit Instance Details
EBS-Optimized: No

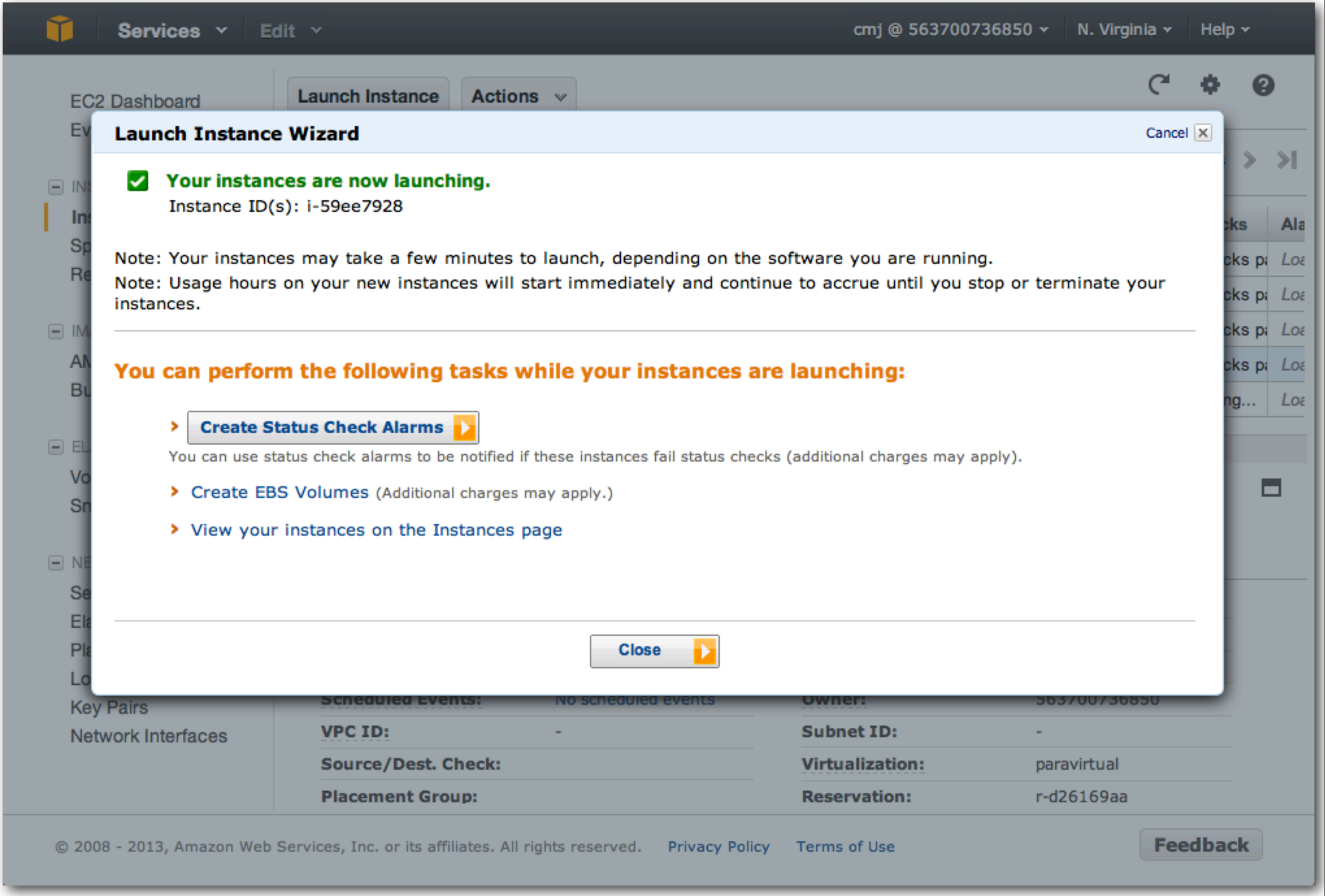
Monitoring: Disabled
Termination Protection: Disabled
Tenancy: Default
Kernel ID: Use Default
Shutdown Behavior: Stop
RAM Disk ID: Use Default
Network Interfaces:
Secondary IP Addresses:
User Data:
IAM Role: — Edit Advanced Details

Key Pair Name: cmj-key — Edit Key Pair

Security Group(s): sg-d492abbc — Edit Firewall

‹ Back | Launch

 Privacy Policy | Terms of Use | Feedback


Services
Edit
cmj @ 563700736850
N. Virginia
Help
EC2 Dashboard
Launch Instance
Actions
Launch Instance Wizard
Cancel
Your instances are now launching.
Instance ID(s): i-59ee7928
Note: Your instances may take a few minutes to launch, depending on the software you are running.
Note: Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.
You can perform the following tasks while your instances are launching:
Create Status Check Alarms
You can use status check alarms to be notified if these instances fail status checks (additional charges may apply).
Create EBS Volumes (Additional charges may apply.)
View your instances on the Instances page
Close
Key Pairs
Network Interfaces
Scheduled Events:
No scheduled events
VPC ID:
-
Source/Dest. Check:
Placement Group:
Owner:
563700736850
Subnet ID:
-
Virtualization:
paravirtual
Reservation:
r-d26169aa
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Privacy Policy
Terms of Use
Feedback

```
$ ssh -i ~/.ssh/your-key-pair.pem ec2-user@ec2-184-72-144-98.compute-1.amazonaws.com

$ mysql -u codemash -pcodemash -e 'create database nuez'
```

```
$ mysql -h ec2-54-243-16-144.compute-1.amazonaws.com -u codemash -p nuez
```

Manage DB Connections

Stored Connections
- lor (local)
- lor (dev)
- lor (uat)
- 10.1.55.177
- mgvs (local)
- msecw (prod)
- moodle (uat dev)
- lms (dev01)
- nuez

Connection Name: nuez — Type a name for the connection

Connection Method: Standard (TCP/IP) — Method to use to connect to the RDBMS

Parameters | Advanced

Hostname: ec2-184-72-144-98.co Port: 3306 — Name or IP address of the server host – TCP/IP port

Username: codemash — Name of the user to connect with.

Password: Store in Keychain ... Clear — The user's password.

Default Schema: — The schema that will be used as default schema

user = codemash
password = codemash

New | Delete | Duplicate | Move Up | Move Down | Test Connection | Close

AMIs
Bundle Tasks

ELASTIC BLOCK STORE
Volumes
Snapshots

NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Load Balancers
Key Pairs
Network Interfaces

1 EC2 Instance selected.

EC2 Instance: cmj-db-01 (i-c0ecbda2) ec2-184-72-144-98.compute-1.amazonaws.com

Description | Status Checks | Monitoring | Tags

AMI: Codemash2012MySql Server (ami-d1984fb8)

Security Groups: cmj-db

State: running

Owner: 892852523686

Zone: us-east-1b

Type: t1.micro

Scheduled Events: No scheduled events

VPC ID: -

```
// environment specific settings
environments {
    development {
        dataSource {
            dbCreate = "update"
            url = "jdbc:h2:mem:devDb;MVCC=TRUE"
        }
    }
    test {
        dataSource {
            dbCreate = "update"
            url = "jdbc:h2:mem:testDb;MVCC=TRUE"
        }
    }
    production {
        dataSource {
            driverClassName = "com.mysql.jdbc.Driver"
            dialect = "org.hibernate.dialect.MySQL5Dialect"
            username = "codemash"
            password = "codemash"
            dbCreate = "update"
            url = "jdbc:mysql://ec2-184-72-144-98-compute-1.amazonaws.com:3306/nuez"
            pooled = true
            properties {
                maxActive = -1
                minEvictableIdleTimeMillis = 1800000
                timeBetweenEvictionRunsMillis = 1800000
                numTestsPerEvictionRun = 3
                testOnBorrow = true
                testWhileIdle = true
                testOnReturn = true
                validationQuery = "SELECT 1"
            }
        }
    }
}
```

grails-app/conf/DataSource.groovy

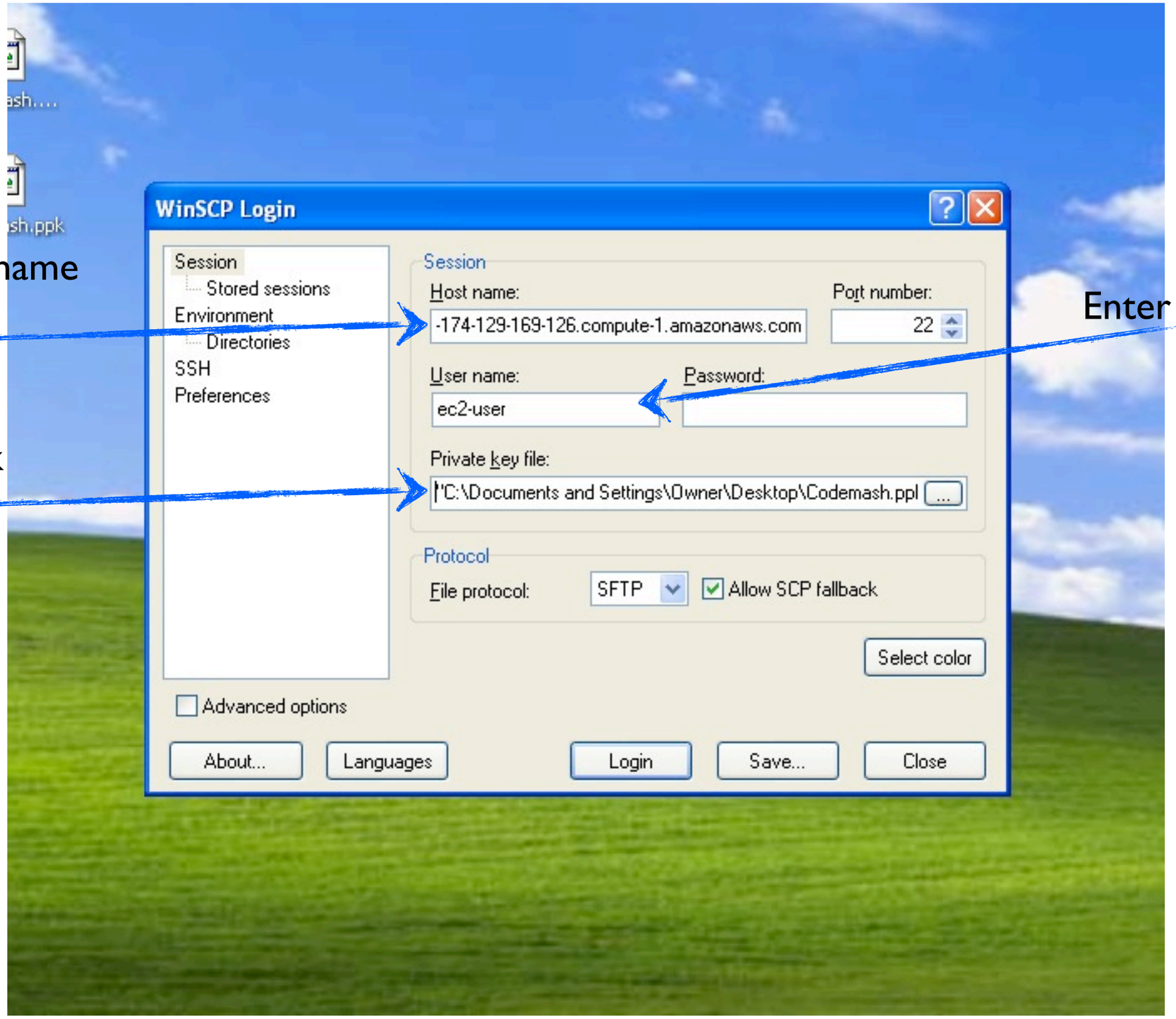
grails war

Secure Copy War

```
$ scp -i ~/.ssh/your-key-pair.pem target/nuez-0.1.war ec2-user@
ec2-23-22-9-39.compute-1.amazonaws.com:/usr/share/tomcat7/webapps/nuez.war

nuez-0.1.war                                  100%   27MB 666.3KB/s   00:42
```

SCP using Windows



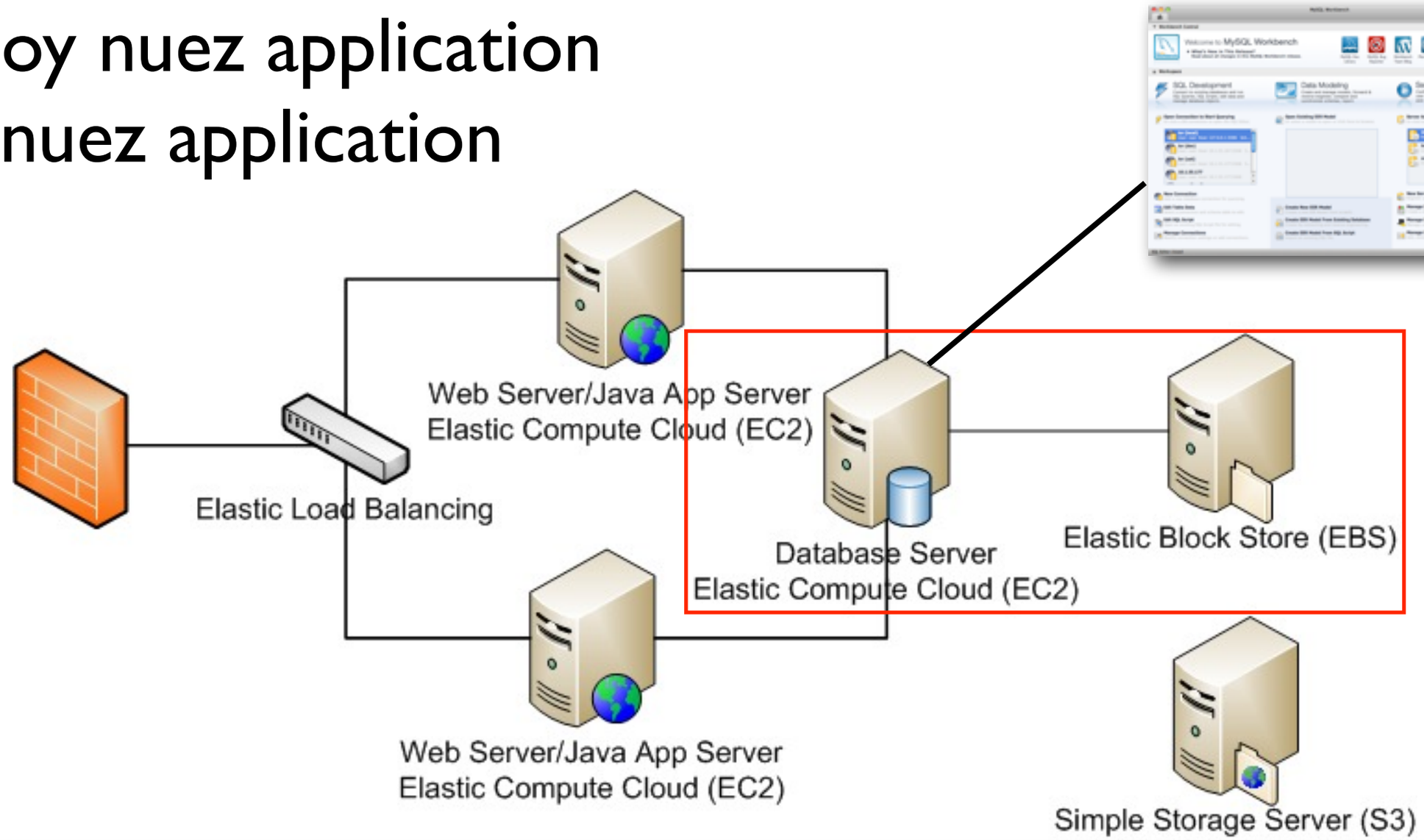
Enter machine name here

Enter ***ec2-user*** here

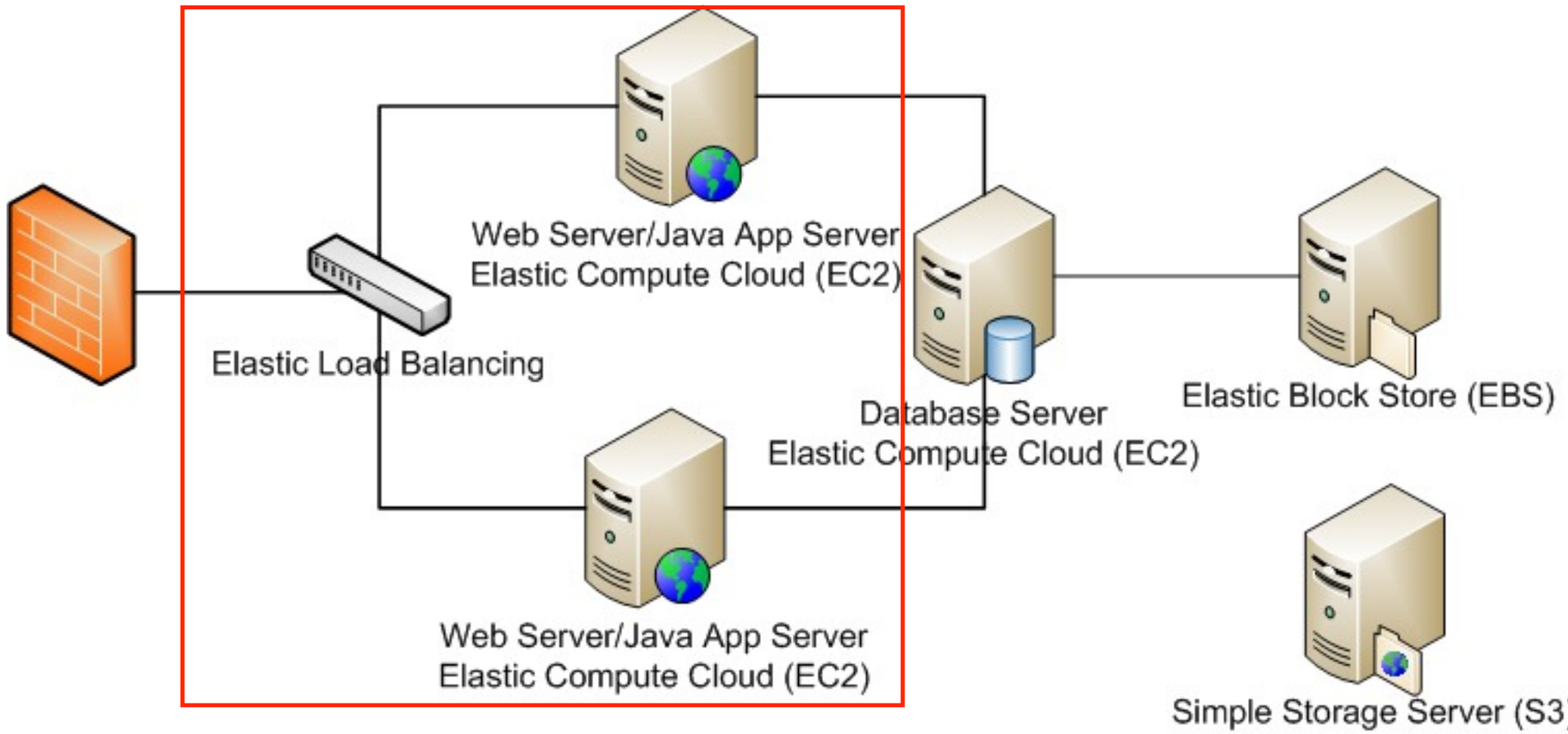
Select you ppk file here

Lab 2

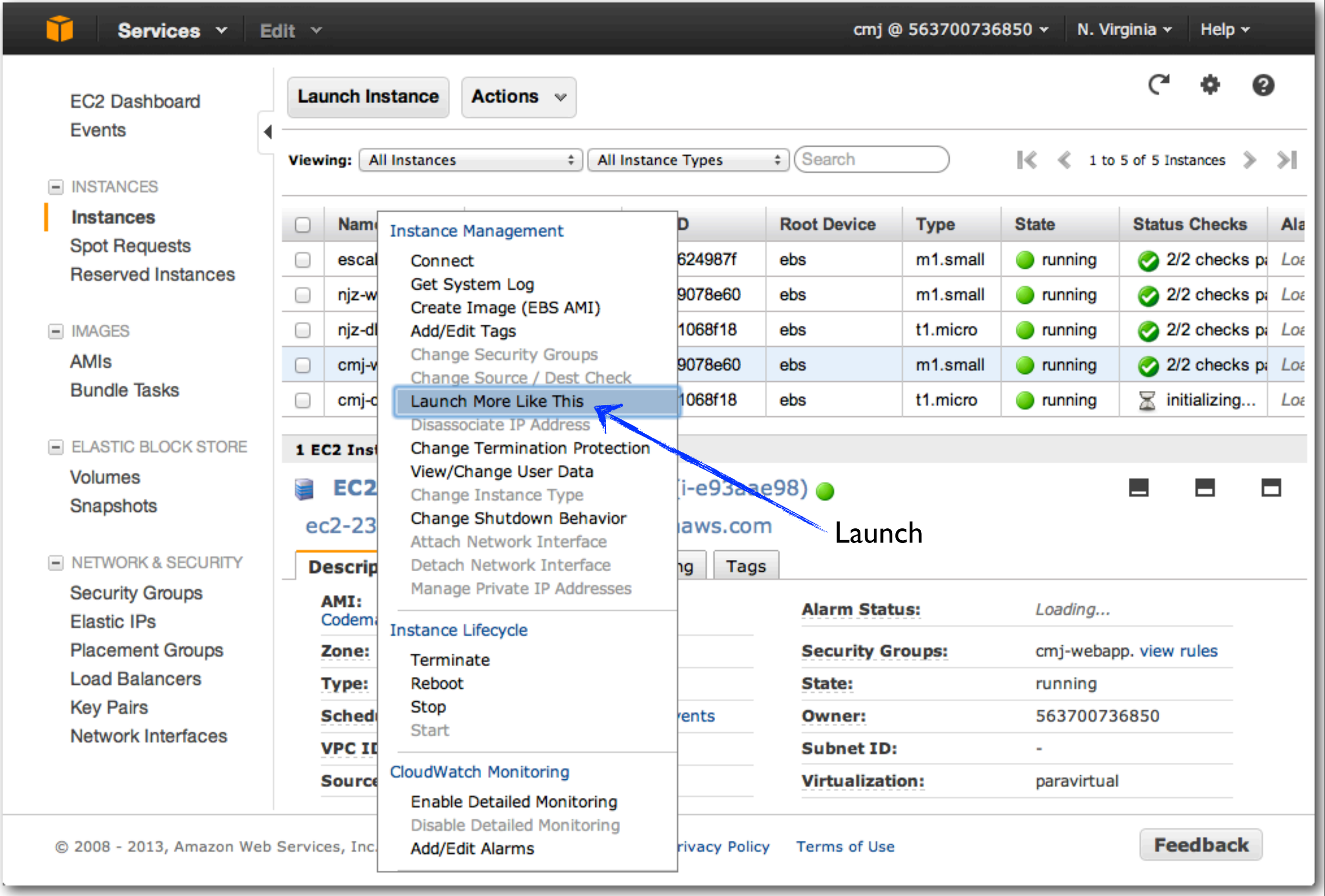
1. Start instance of UberConf-2013-MySqlServer
2. Connect with mysql tool or ssh to instance
3. Create nuez database (if not created already)
4. Change nuez application database string
5. Deploy nuez application
6. Test nuez application



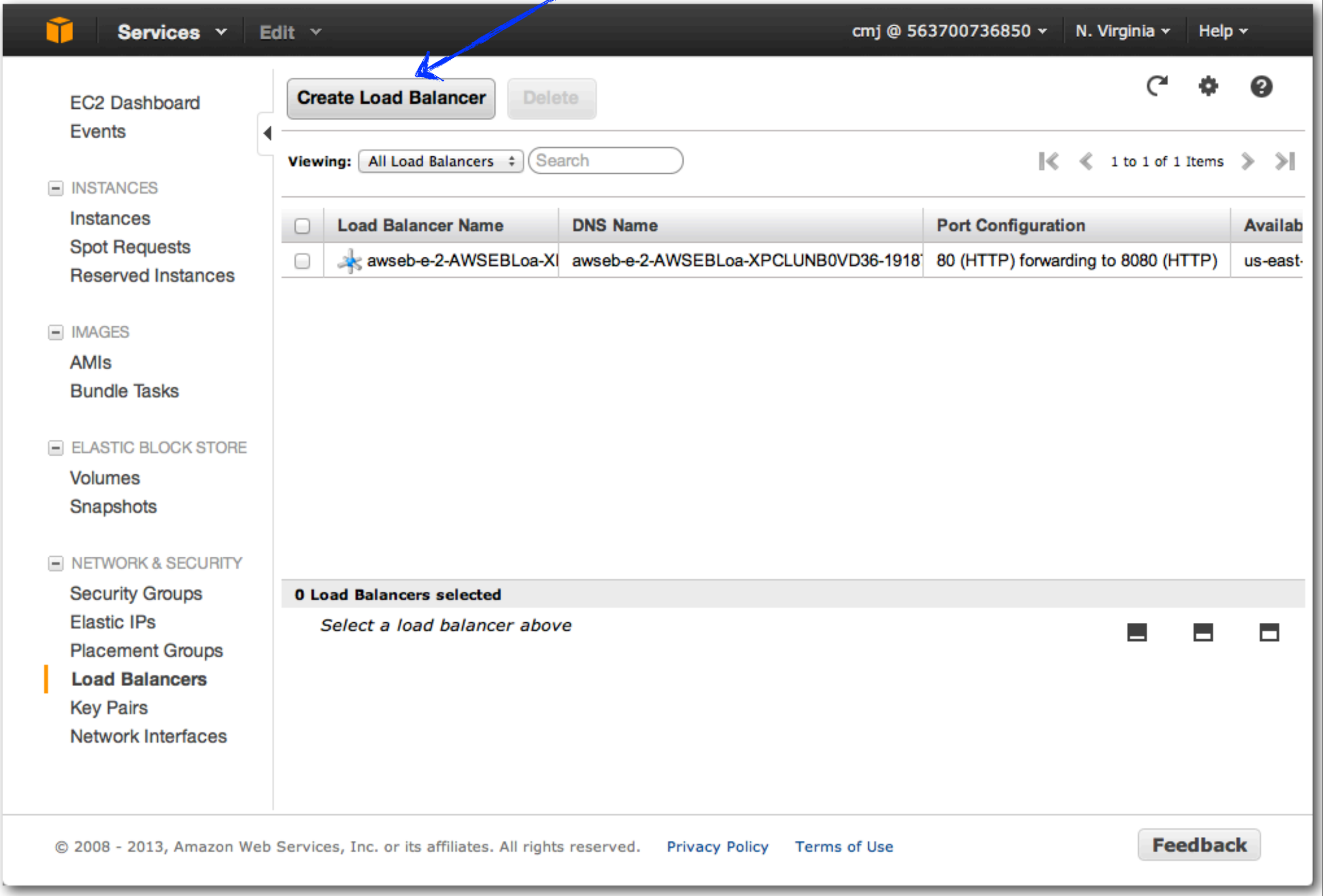
Load Balancing


Web Server/Java App Server
Elastic Compute Cloud (EC2)
Elastic Load Balancing
Database Server
Elastic Compute Cloud (EC2)
Elastic Block Store (EBS)
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Simple Storage Server (S3)

Launch Similar EC2 Instance



Launch


Services
Edit
cmj @ 563700736850
N. Virginia
Help
EC2 Dashboard
Events
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 Load Balancer
Delete
Viewing:
All Load Balancers
Search
1 to 1 of 1 Items
Load Balancer Name
DNS Name
Port Configuration
Availab
awseb-e-2-AWSEBLoa-XI
awseb-e-2-AWSEBLoa-XPCLUNB0VD36-1918
80 (HTTP) forwarding to 8080 (HTTP)
us-east-
0 Load Balancers selected
Select a load balancer above
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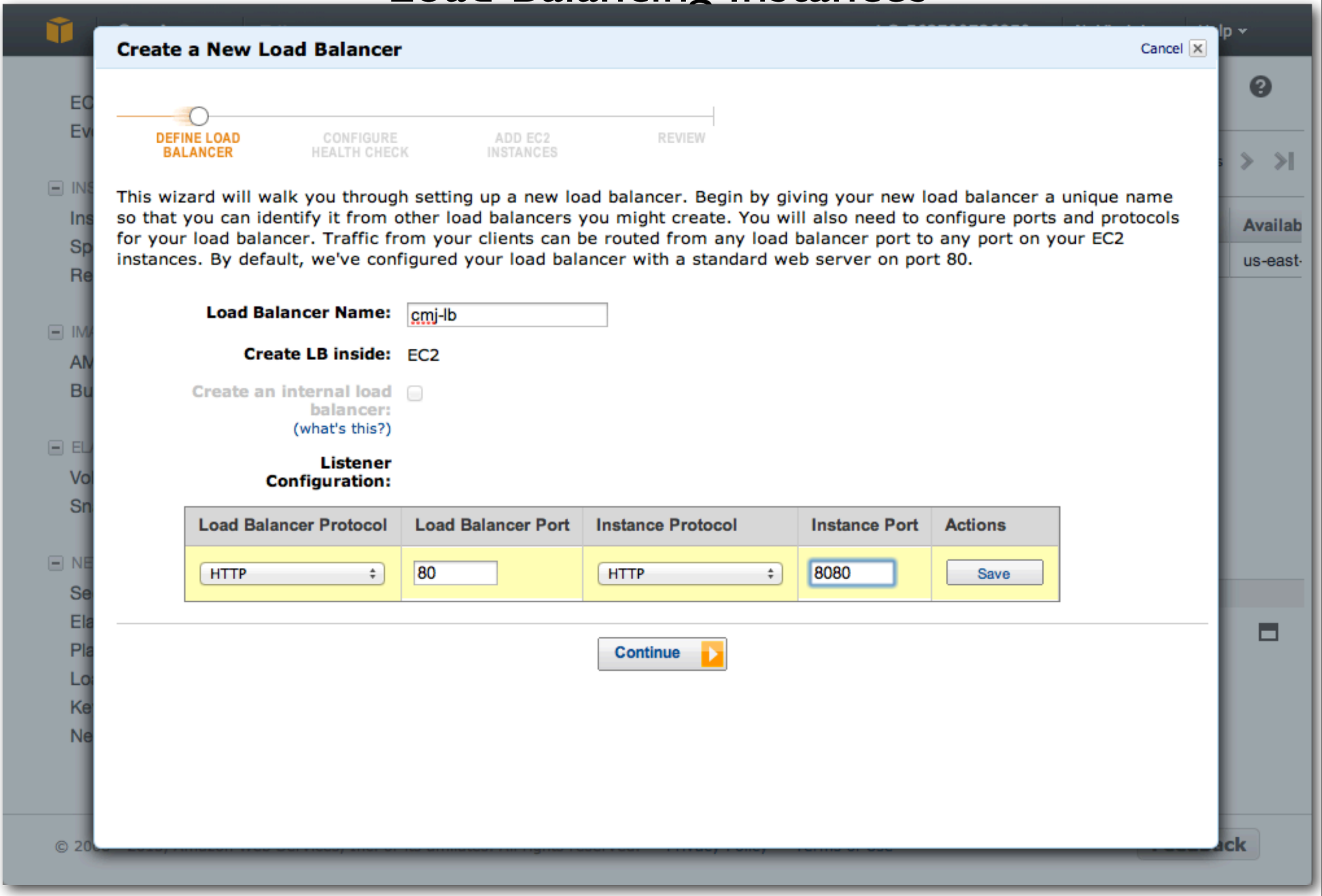
Privacy Policy
Terms of Use
Feedback

Load Balancing Instances



Configure Health Check

Create a New Load Balancer Cancel

DEFINE LOAD BALANCER ✓ — CONFIGURE HEALTH CHECK — ADD EC2 INSTANCES — REVIEW

Your load balancer will automatically perform health checks on your EC2 instances and only route traffic to instances that pass the health check. If an instance fails the health check, it is automatically removed from the load balancer. Customize the health check to meet your specific needs.

Configuration Options:

Ping Protocol: HTTP

Ping Port: 8080

Ping Path: /

Advanced Options:

Response Timeout:	5 Seconds	Time to wait when receiving a response from the health check (2 sec - 60 sec).
Health Check Interval:	0.5 Minutes	Amount of time between health checks (0.1 min - 5 min)
Unhealthy Threshold:	2 3 4 5 6 7 8 9 10	Number of consecutive health check failures before declaring an EC2 instance unhealthy.
Healthy Threshold:	2 3 4 5 6 7 8 9 10	Number of consecutive health check successes before declaring an EC2 instance healthy.

‹ Back

Continue

Select EC2 Instances

Create a New Load Balancer

Cancel

DEFINE LOAD BALANCER ✓ — CONFIGURE HEALTH CHECK ✓ — ADD EC2 INSTANCES — REVIEW

The table below lists all your running EC2 Instances that are not already behind another load balancer or part of an auto-scaling capacity group. Check the boxes in the Select column to add those instances to this load balancer.

Manually Add Instances to Load Balancer:

Select	Instance	Name	State	Security Groups
☐	i-c74fc6b6	escab	running	wseb-e-2uamvdj3wk-stack-AWSEBSecurityGroup-1BHGR05BMWU..
☐	i-b3b53fc2	njz-webapp-01	running	njz-webapp
☐	i-474ac036	njz-db-01	running	njz-db
☑	i-e93aae98	cmj-webapp-01	running	cmj-webapp
☐	i-59ee7928	cmj-db--01	running	cmj-db
☑	i-d19205a0	cmj-webapp-02	running	cmj-webapp

select all | select none

Availability Zone Distribution:

0 instances in us-east-1a
2 instances in us-east-1b

‹ Back

Continue

Review

Create a New Load Balancer

Cancel

DEFINE LOAD BALANCER ✓ — CONFIGURE HEALTH CHECK ✓ — ADD EC2 INSTANCES ✓ — REVIEW

DEFINE LOAD BALANCER

Load Balancer Name: cmj-lb
Scheme: internet-facing
Port Configuration:
80 (HTTP) forwarding to 8080 (HTTP)

Edit Load Balancer Definition

CONFIGURE HEALTH CHECK

Ping Target: HTTP:8080:/
Timeout: 5
Interval: 0.5

Unhealthy Threshold: 2
Healthy Threshold: 10

Edit Health Check

ADD EC2 INSTANCES

EC2 Instances: i-e93aae98, i-d19205a0

Edit EC2 Instance Selection

VPC INFORMATION

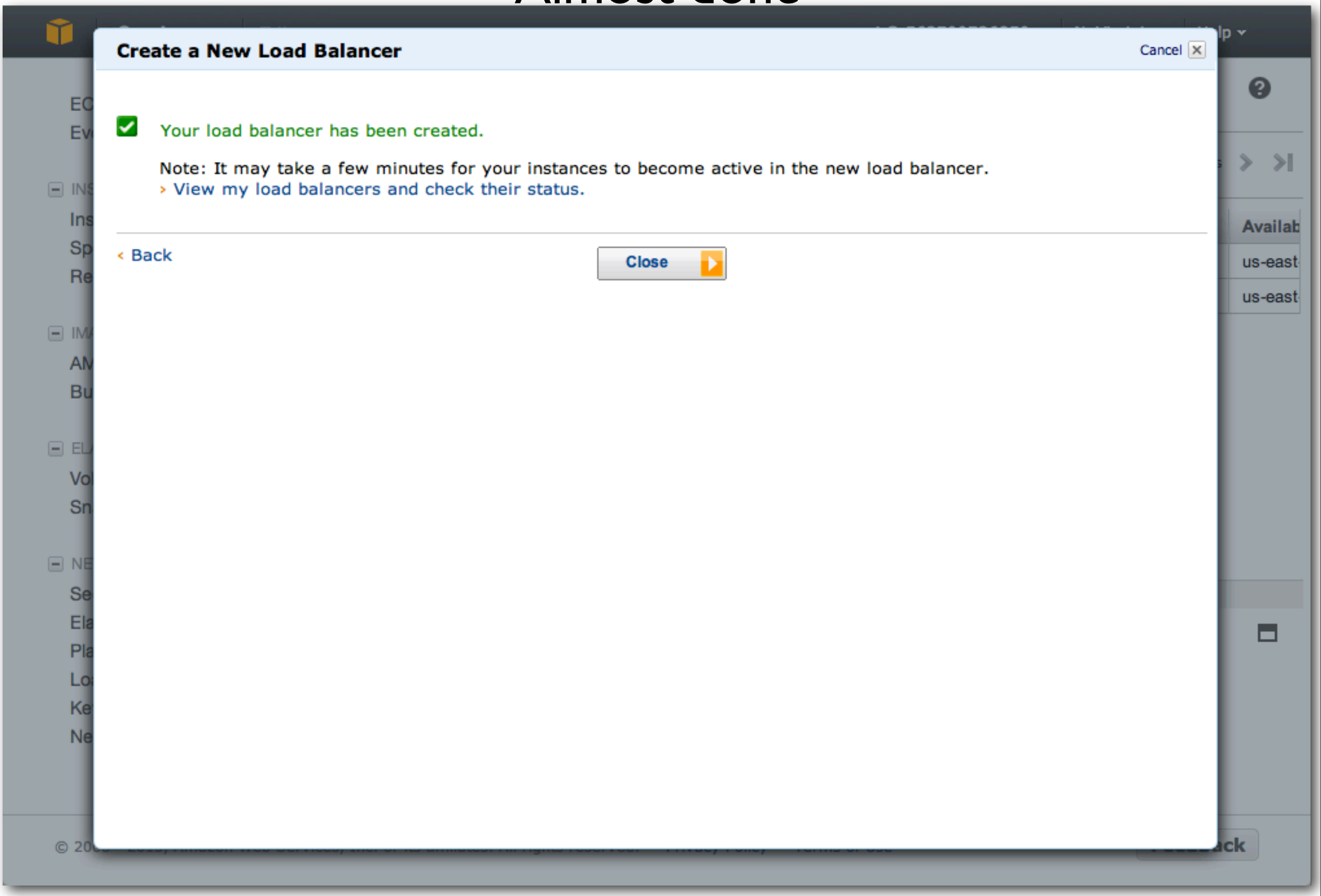
VPC:
Subnets:

‹ Back

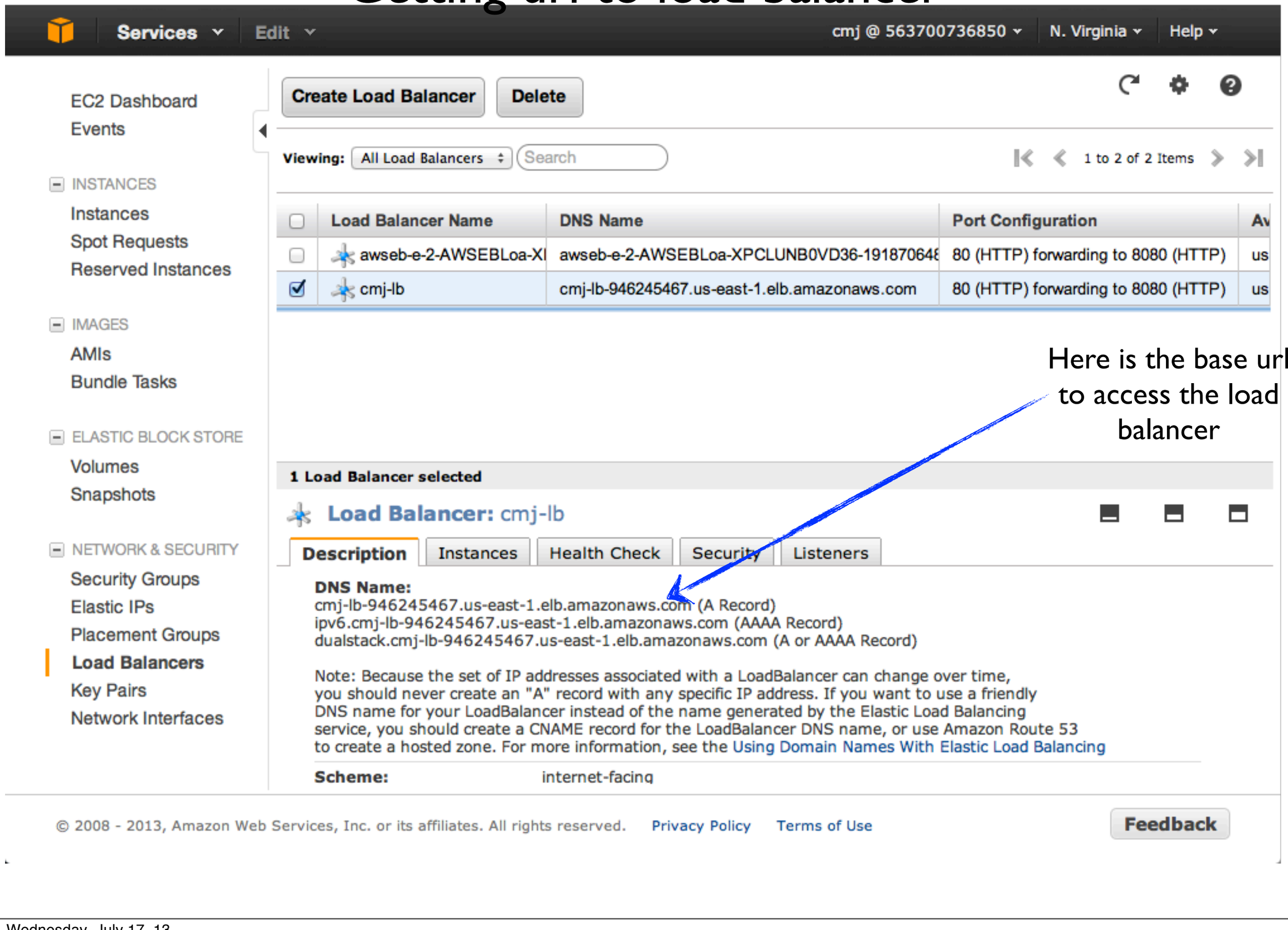
Create

Please review your selections on this page. Clicking "Create" will launch your load balancer. Check the Amazon EC2 product page for load balancer pricing info

Almost done

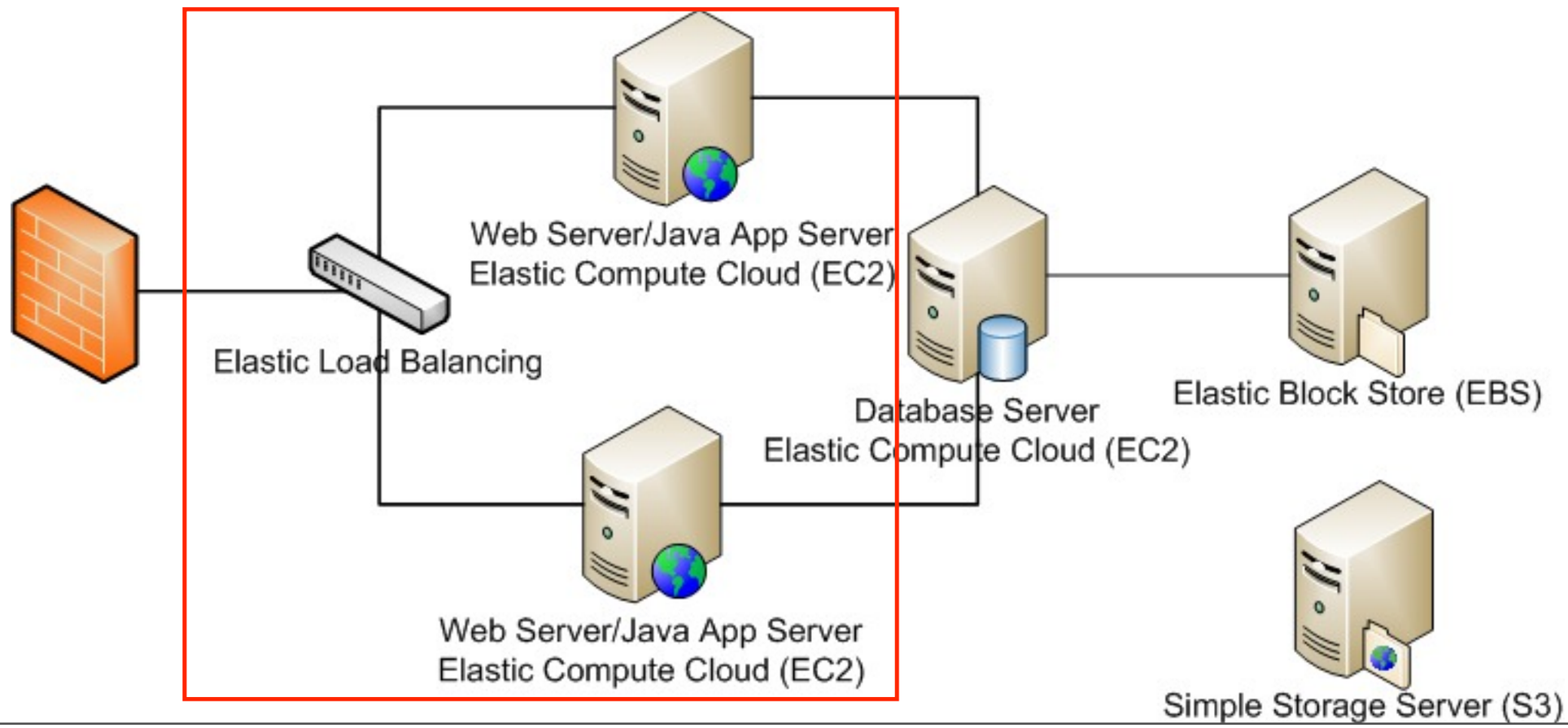

Create a New Load Balancer
Cancel
Your load balancer has been created.
Note: It may take a few minutes for your instances to become active in the new load balancer.
› View my load balancers and check their status.
‹ Back
Close

Getting url to load balancer

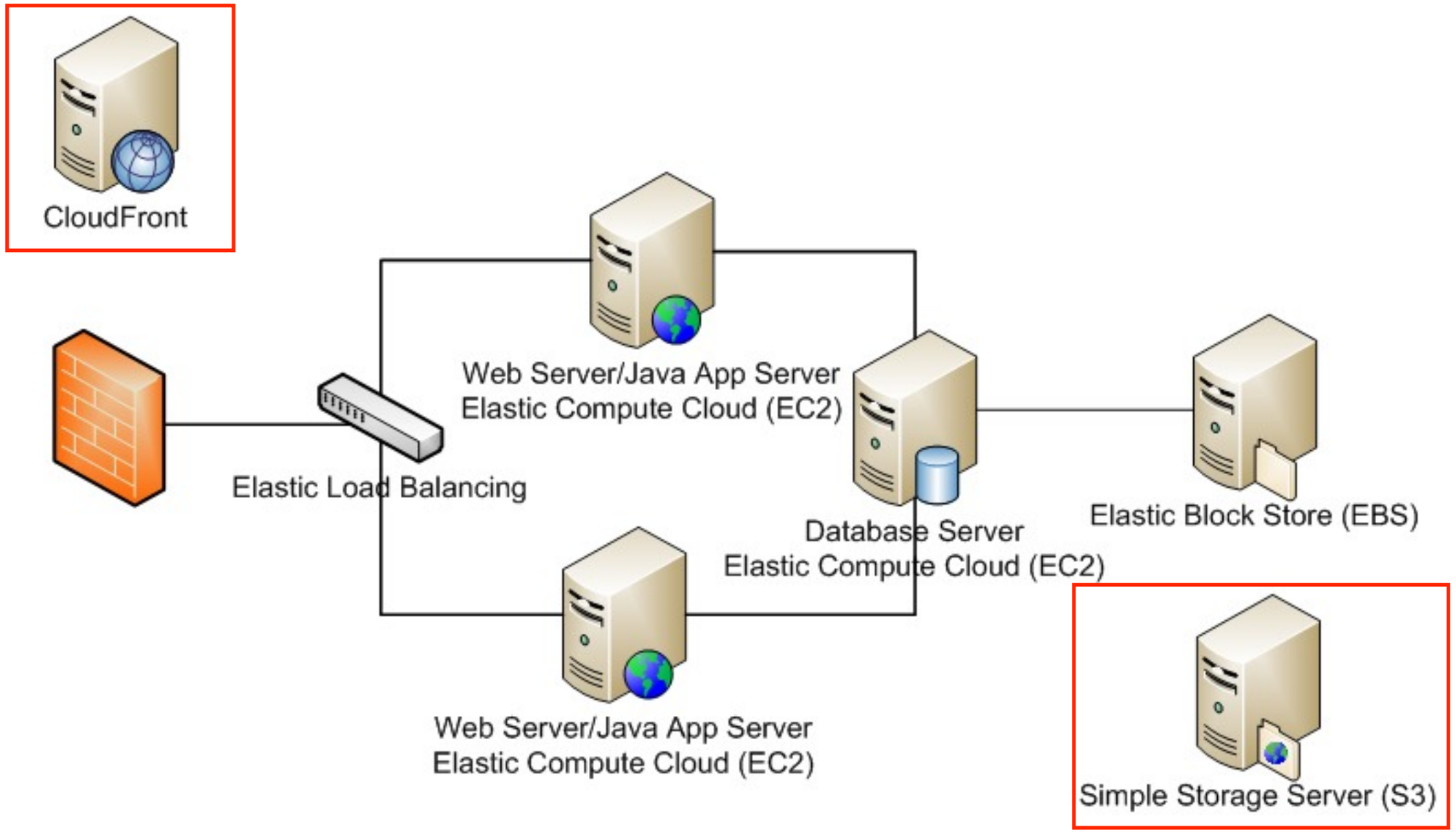


Lab 3

1. Create/start another instance of UberConf-2013-JavaWebServer
2. Create a new load balancer
3. Add both UberConf-2013-JavaWebServer EC2 instances to load balancer



CDN


CloudFront
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Elastic Load Balancing
Database Server
Elastic Compute Cloud (EC2)
Elastic Block Store (EBS)
Web Server/Java App Server
Elastic Compute Cloud (EC2)
Simple Storage Server (S3)

CloudFront Pricing

On-Demand Pricing

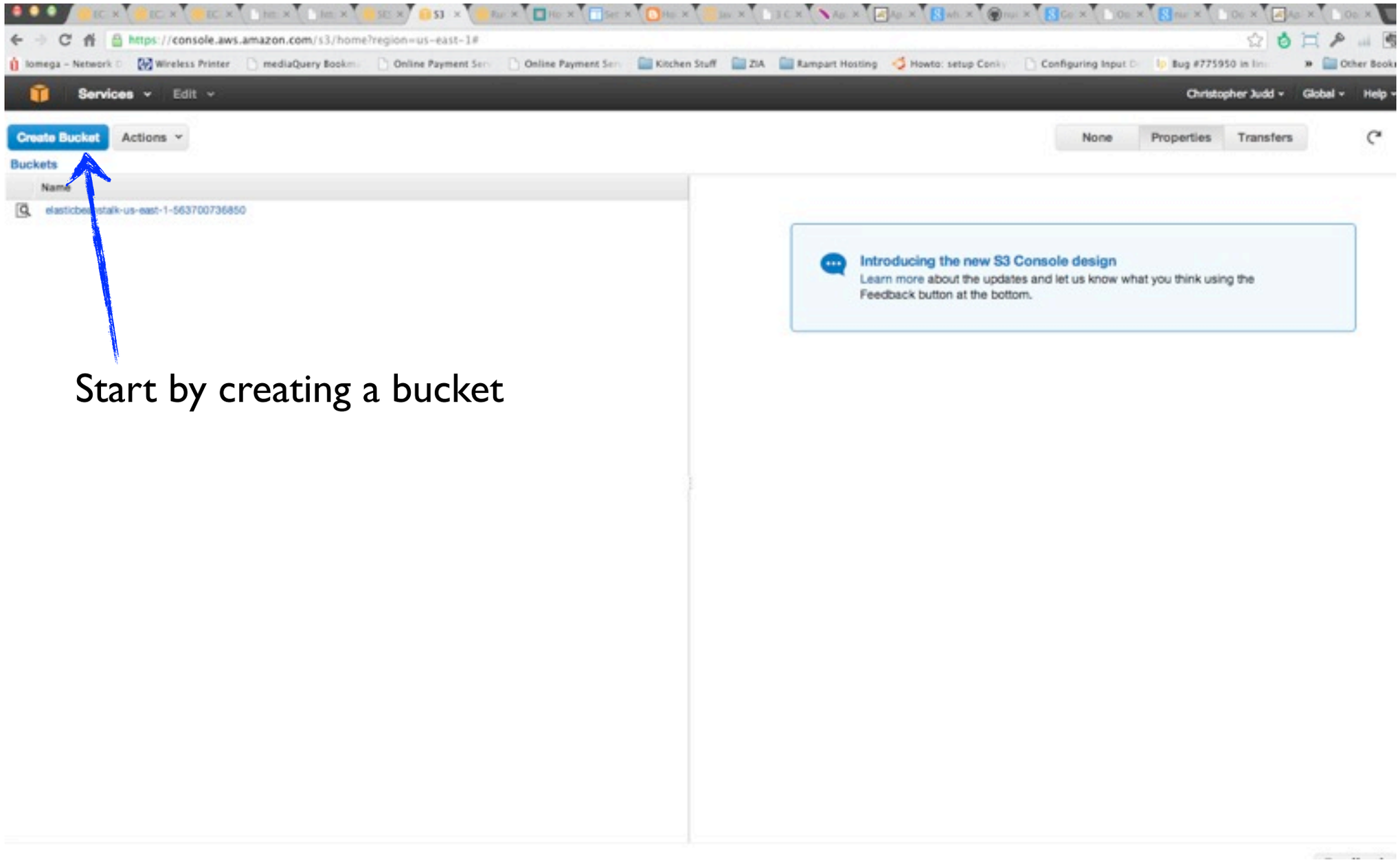
Regional Data Transfer Out (per GB)

	United States	Europe	Hong Kong & Singapore	Japan	South America	Australia	Reserved Capacity Pricing
First 10 TB / month	$0.120	$0.120	$0.190	$0.201	$0.250	$0.190	contact us
Next 40 TB / month	$0.080	$0.080	$0.140	$0.148	$0.200	$0.140	contact us
Next 100 TB / month	$0.060	$0.060	$0.120	$0.127	$0.180	$0.120	contact us
Next 350 TB / month	$0.040	$0.040	$0.100	$0.106	$0.160	$0.100	contact us
Next 524 TB / month	$0.030	$0.030	$0.080	$0.085	$0.140	$0.095	contact us
Next 4 PB / month	$0.025	$0.025	$0.070	$0.075	$0.130	$0.090	contact us
Over 5 PB / month	$0.020	$0.020	$0.060	$0.065	$0.125	$0.085	contact us

Request Pricing (per 10,000)

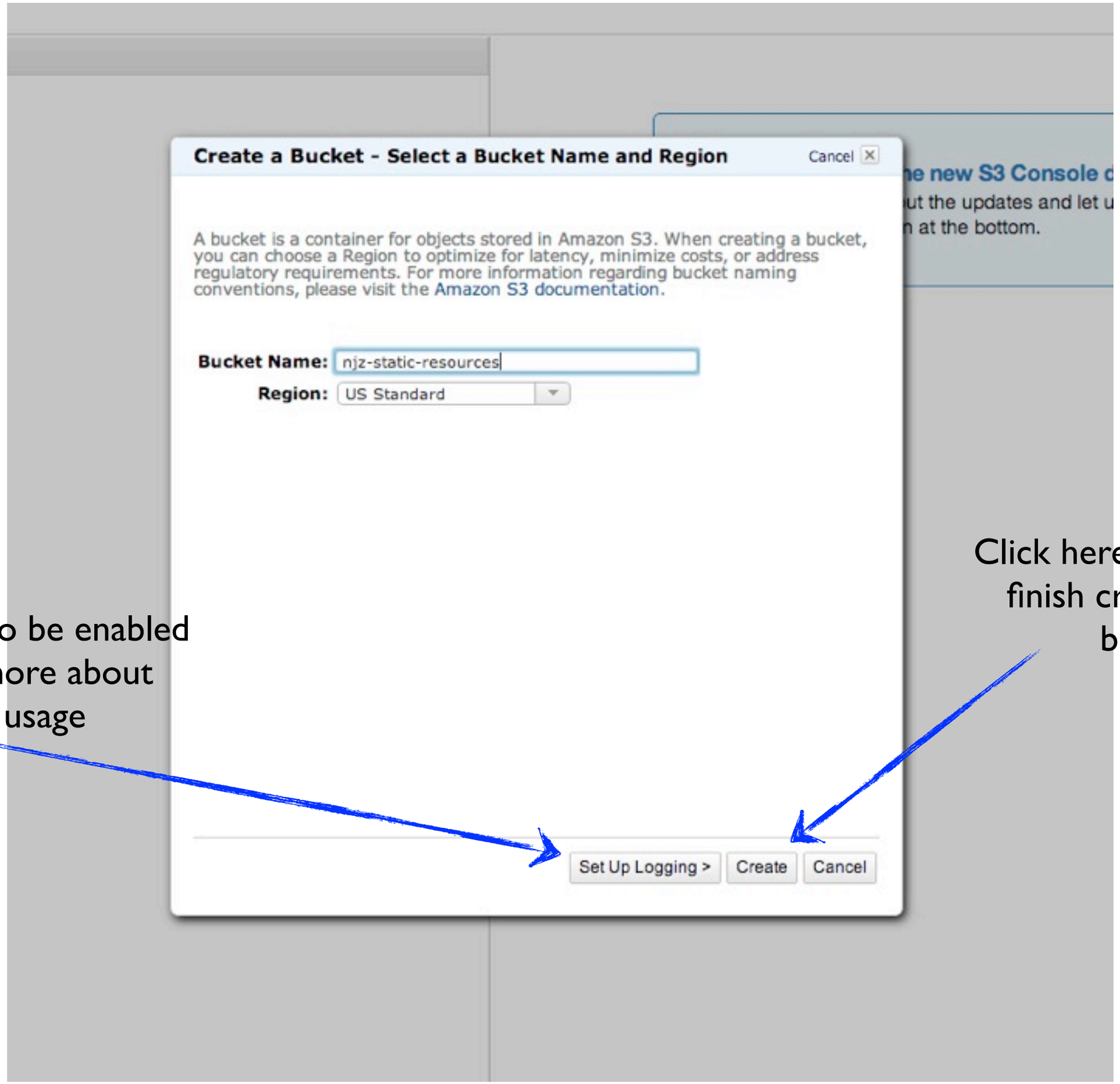
	United States	Europe	Hong Kong & Singapore	Japan	South America	Australia	Reserved Capacity Pricing
HTTP requests	$0.0075	$0.0090	$0.0090	$0.0095	$0.0160	$0.0090	contact us
HTTPS requests	$0.0100	$0.0120	$0.0120	$0.0130	$0.0220	$0.0125	contact us

Setting up S3 with CloudFront



Start by creating a bucket

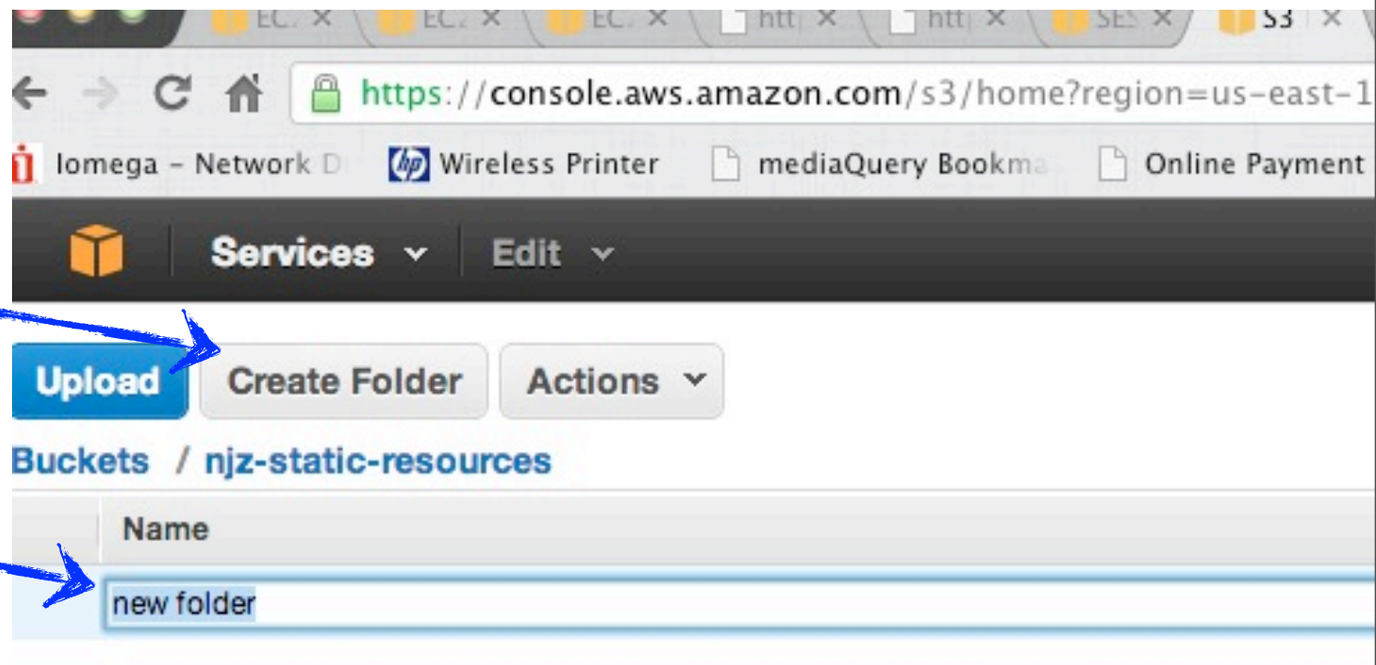
Name S3 Bucket



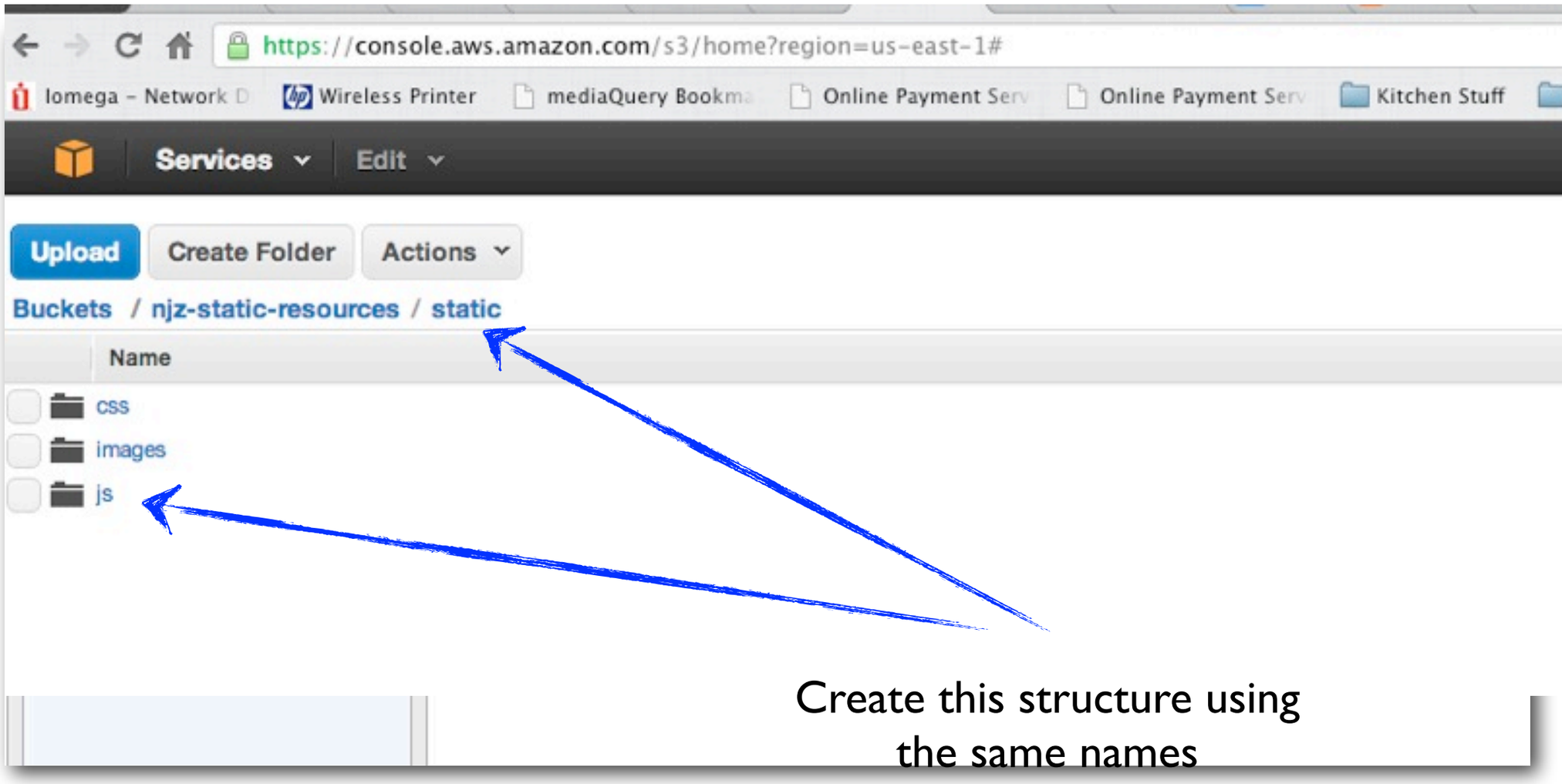
Create S3 directory structure

Click here to create a new folder inside your bucket

After clicking you will be prompted to enter the name here

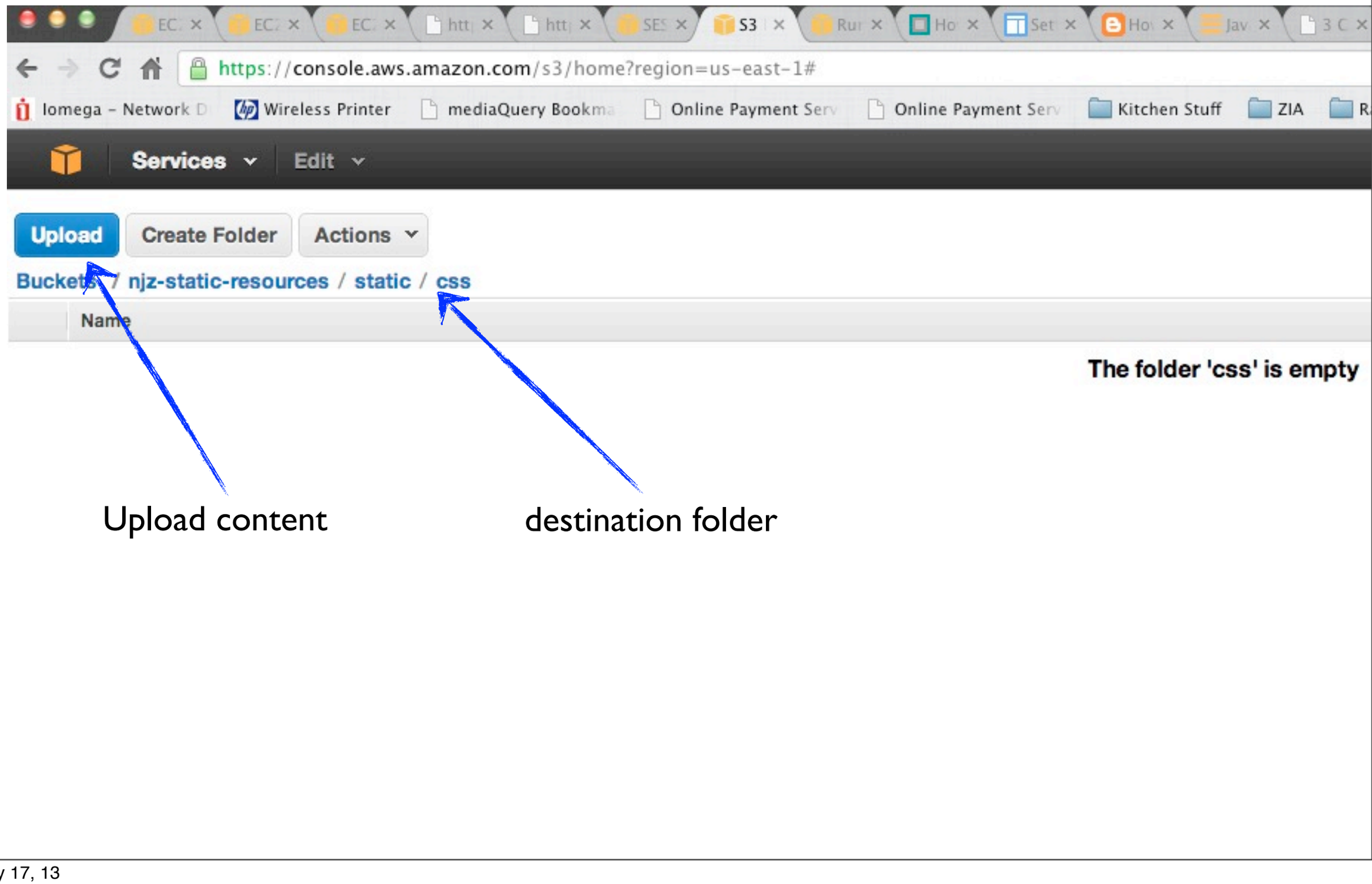


Create S3 directory structure (continued)

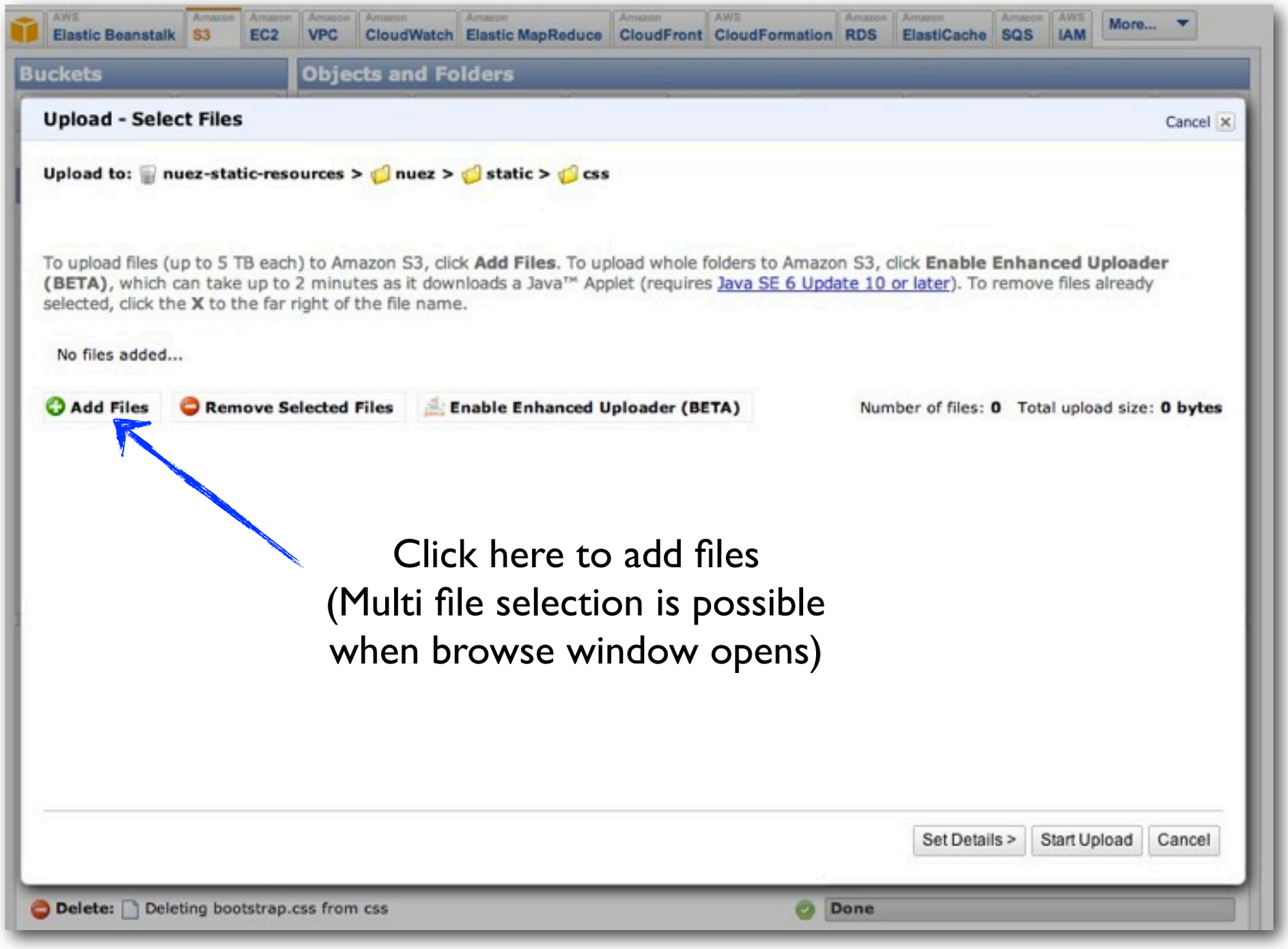


Create this structure using
the same names

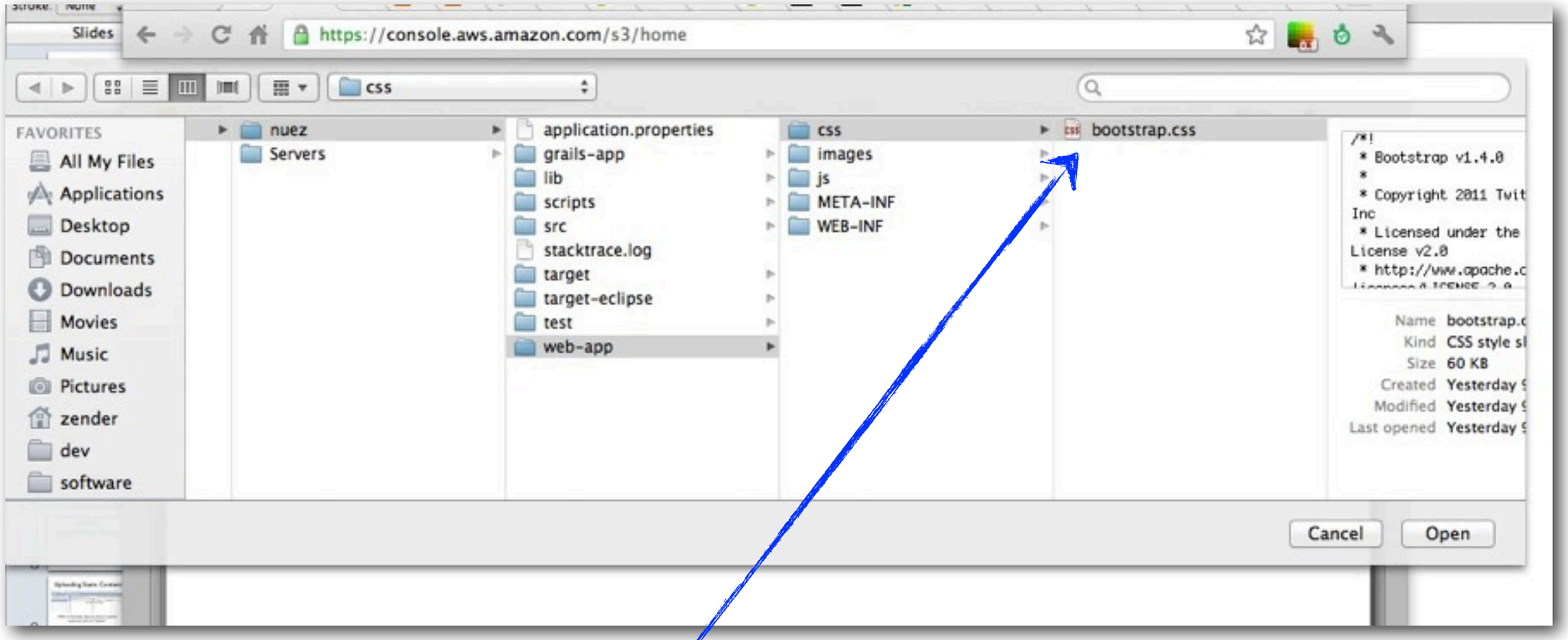
Uploading Static Content



Uploading (continued)

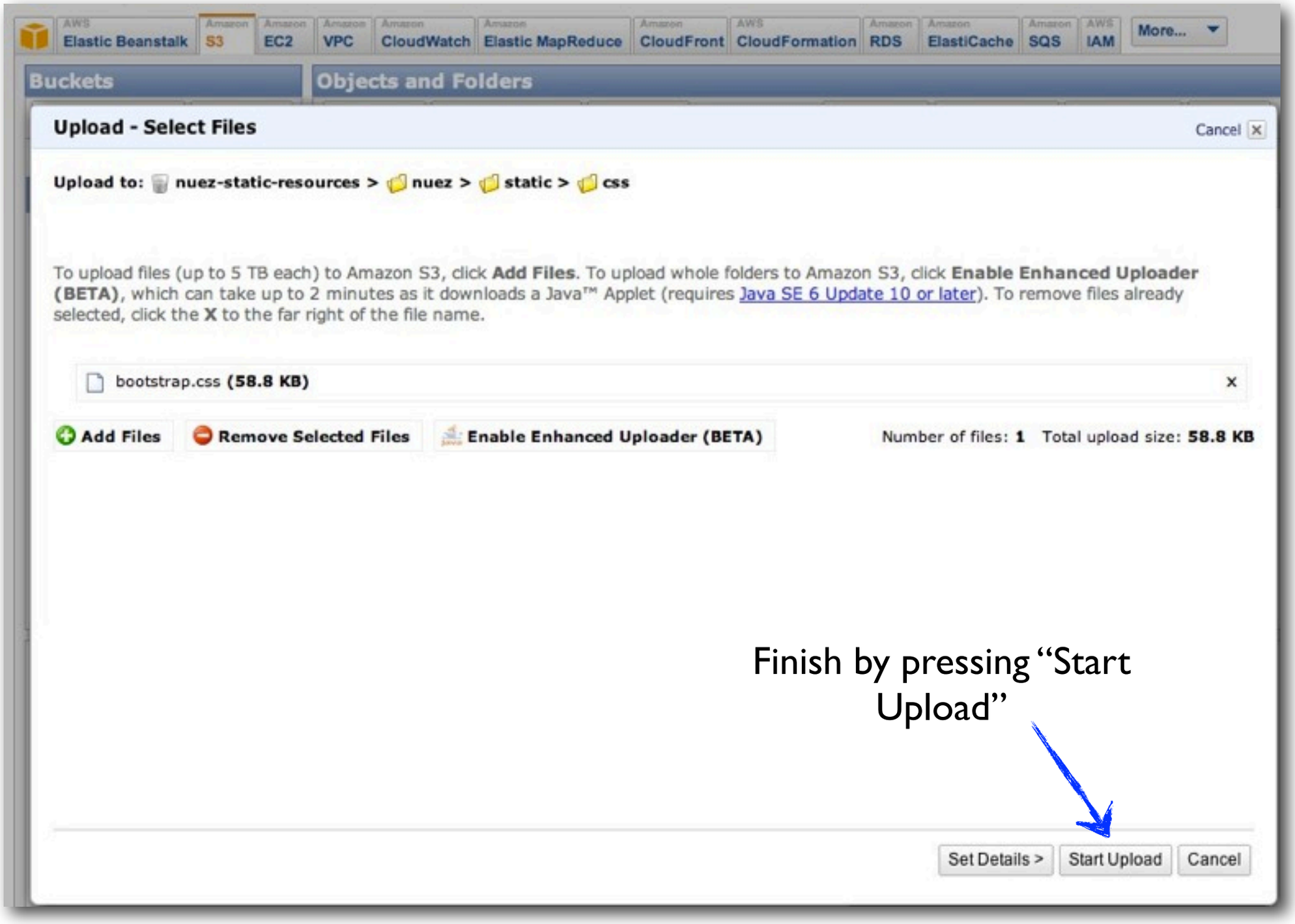


Uploading (continued)

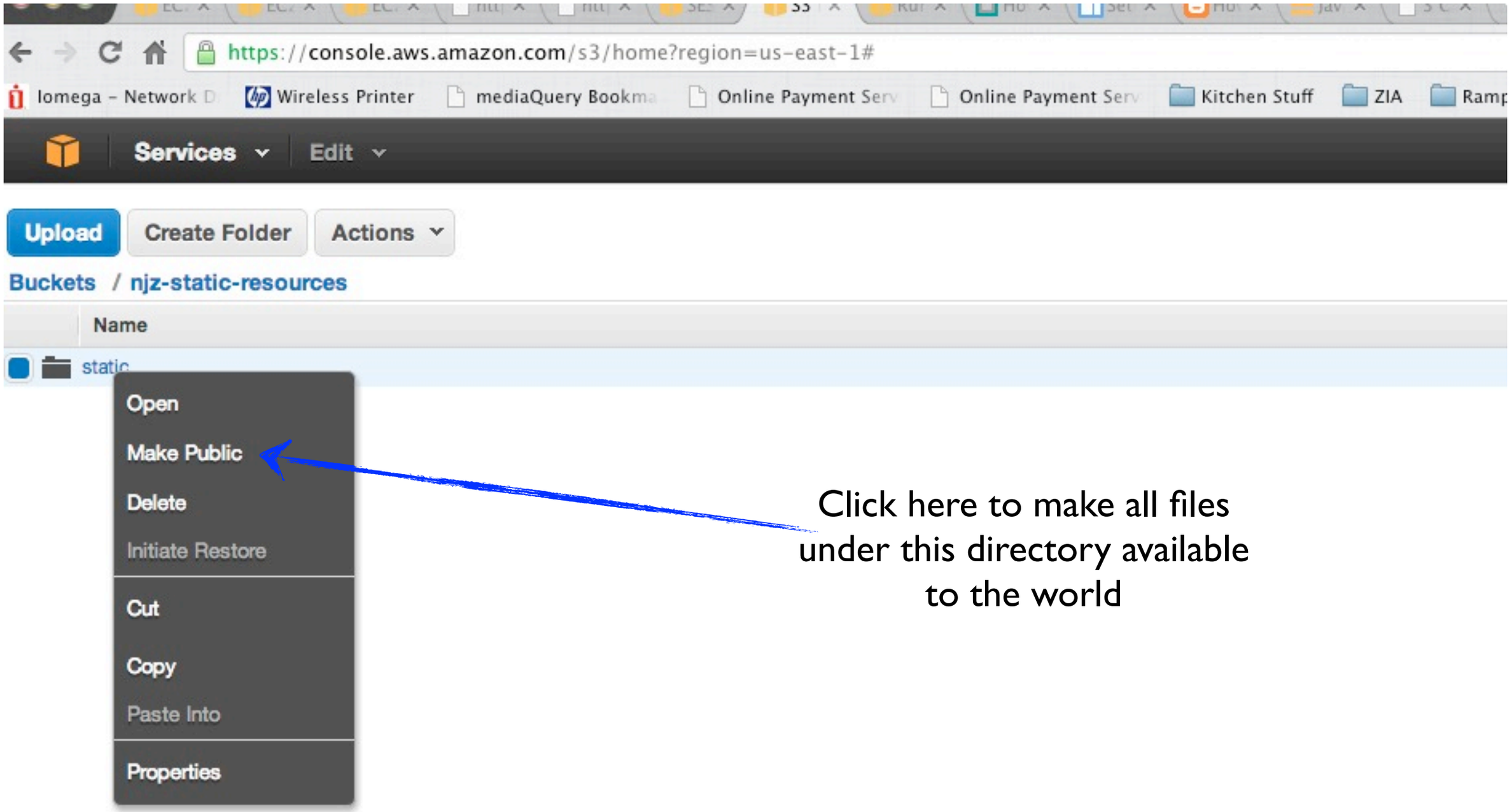


Select corresponding static files located in the webapp on your machine to be uploaded into S3

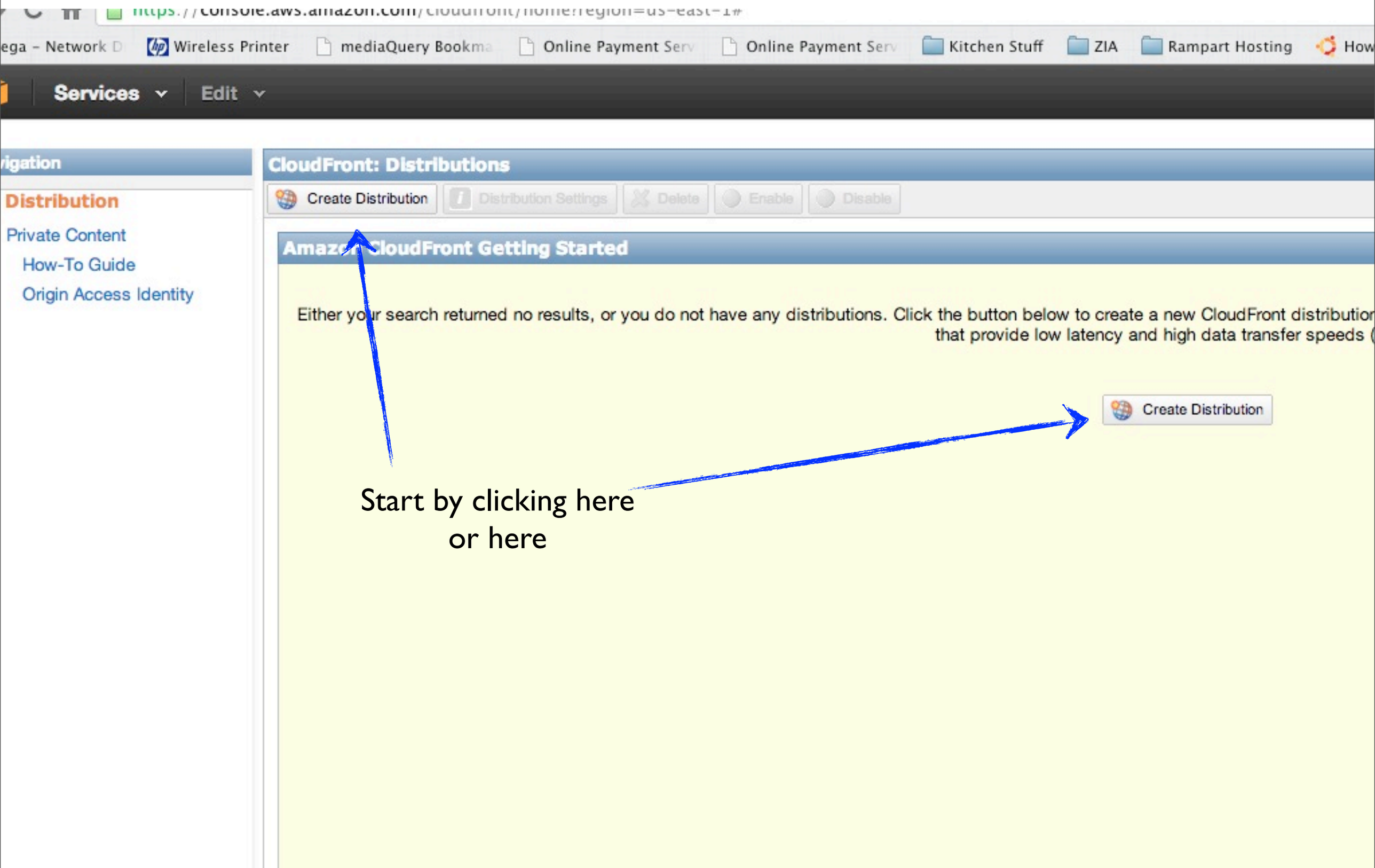
Uploading(Almost done)



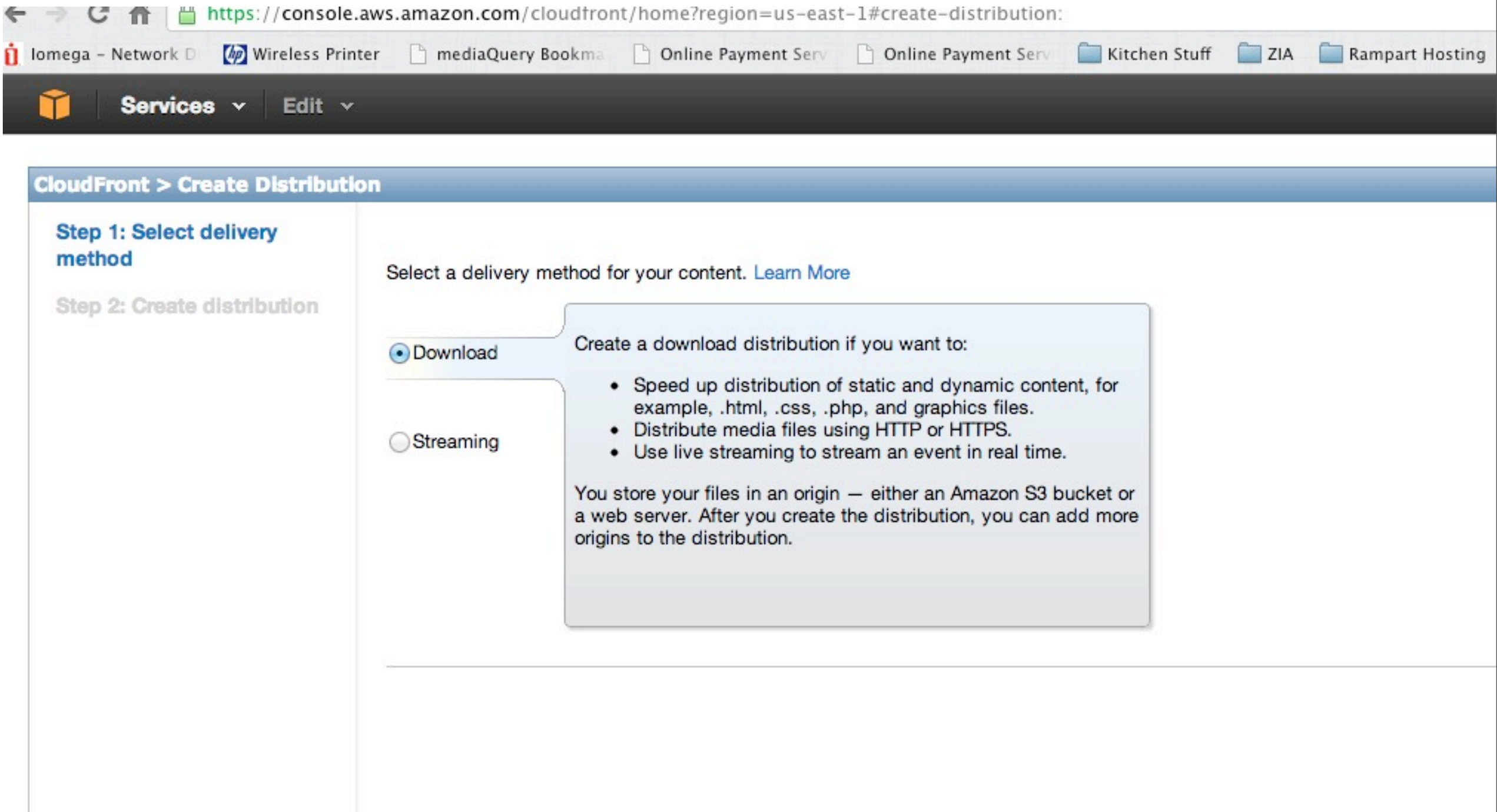
Make All S3 Files Public



Creating a new Cloudfront



Selecting CDN Type
(download vs. streaming)



Setting up S3 as Origin

https://console.aws.amazon.com/cloudfront/home?region=us-east-1#create-distribution:

Services Edit

CloudFront > Create Distribution

Step 1: Select delivery method

Step 2: Create distribution

Origin Settings

Origin Domain Name: njz-static-resources.s3.amazonaws.com

Click in the field and specify the domain name for your origin—the Amazon S3 bucket or web content. The dropdown list enumerates the AWS resources associated with the current AWS the domain name of the resource. For example, for an Amazon S3 bucket, type the name in th must be publicly readable.

Origin ID: S3-njz-static-resources

Restrict Bucket Access: (•) No ( ) Yes

If you want to require that users always access your Amazon S3 content using CloudFront URLs, not Amazon S3 URLs, click Yes to your content. In the Help, see "Serving Private Content through CloudFront."

Default Cache Behavior Settings

Path Pattern: Default (*)

Viewer Protocol Policy: (•) HTTP and HTTPS ( ) HTTPS Only

Object Caching: (•) Use Origin Cache Headers ( ) Customize

Minimum TTL: 0

Forward Cookies: None (Improves Caching)

Whitelist Cookies:

Forward Query Strings: ( ) Yes (•) No (Improves Caching)

Restrict Viewer Access (Use Signed URLs): (•) No ( ) Yes

Alternate Domain Names(CNAMEs)	
Default Root Object	
Logging	On Off
Bucket for Logs	
Log Prefix	
Cookie Logging	On Off
Comment	
Distribution State	Enabled Disabled

 Privacy Policy Terms of Use

Grails Resource Change to Support CDN url

```
<link rel="shortcut icon" href="${grailsApplication.config.cloudfront.cdn.url}
${resource(dir: 'images', file: 'favicon.ico')}" type="image/x-icon">
```

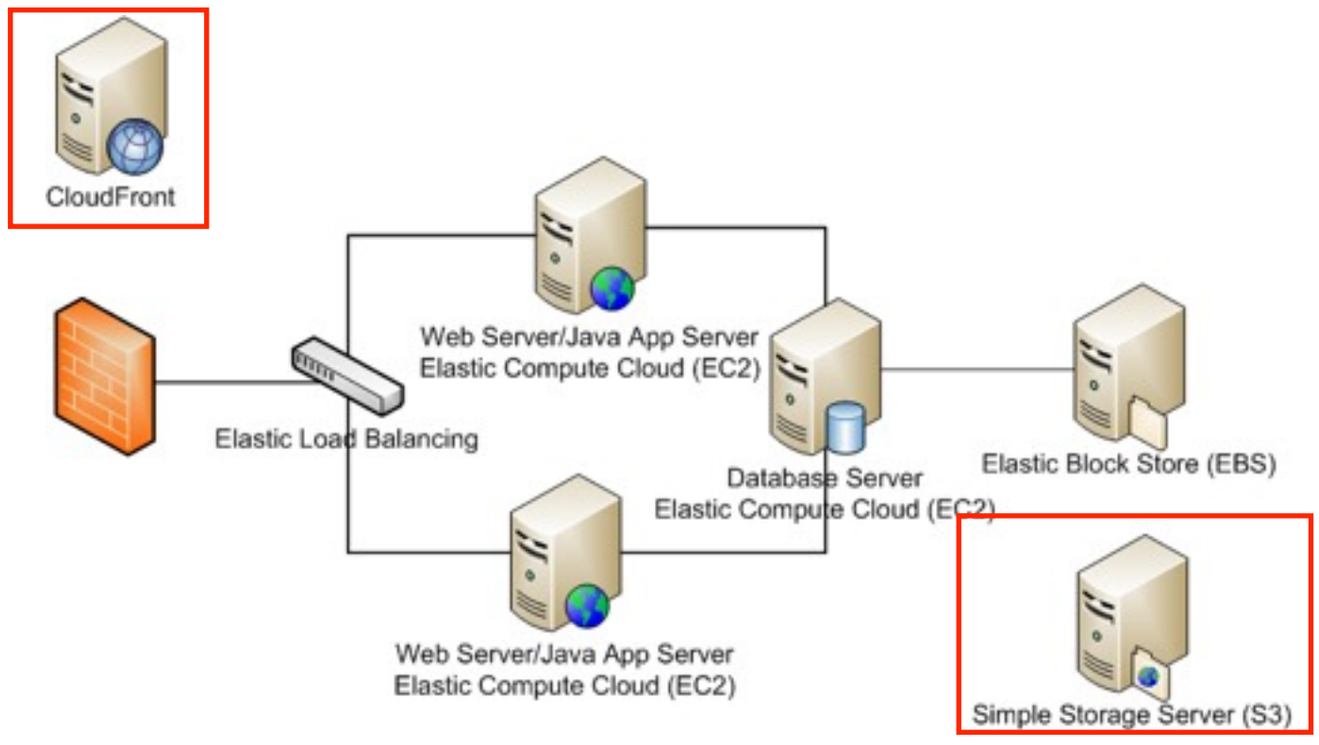
Configure Web App

Config.groovy

```
environments {
    development {
        grails.logging.jul.usebridge = true
         cloudfront.cdn.url = ""
    }
    production {
        grails.logging.jul.usebridge = false
         cloudfront.cdn.url = "http://your.cloudfront.net"
    }
}
```

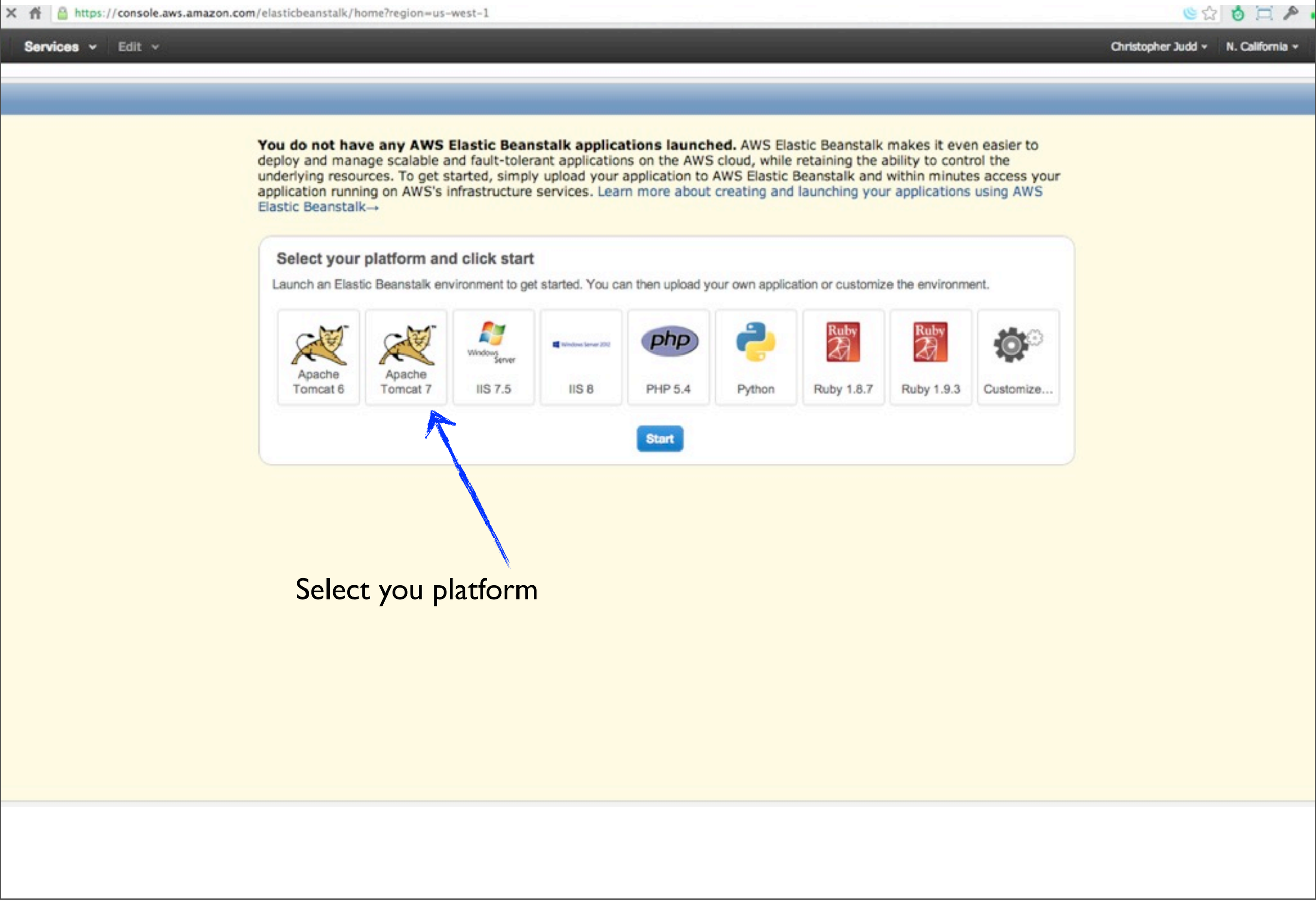
Lab 4

1. Create new S3 bucket
2. Create directory structure in S3
3. Upload all static content to S3 in the appropriate directories
4. Create new CloudFront distribution
5. Update nuez to use CloudFront distribution url
6. Redeploy nuez web app
7. Test



Elastic Beanstalk

Elastic Beanstalk



Select you platform

Elastic Beanstalk (Default application)

Services | Edit

My First Elastic Beanstalk Application

▼ Elastic Beanstalk Application Details

Overview | Events | Versions

Application Description: This is the sample application provided by Amazon Web Services for demonstrating AWS Elastic Beanstalk.

Created on: 2013-01-09 10:29 EST

Edit Application Description | Delete This Application

My First Elastic Beanstalk Application Environments

Default-Environment
Successfully running version **Sample Application**.

▼ Environment Details

Overview | Logs | Monitoring | Events

URL: http://Default-Environment-k4mkugmwy3.elasticbeanstalk.com

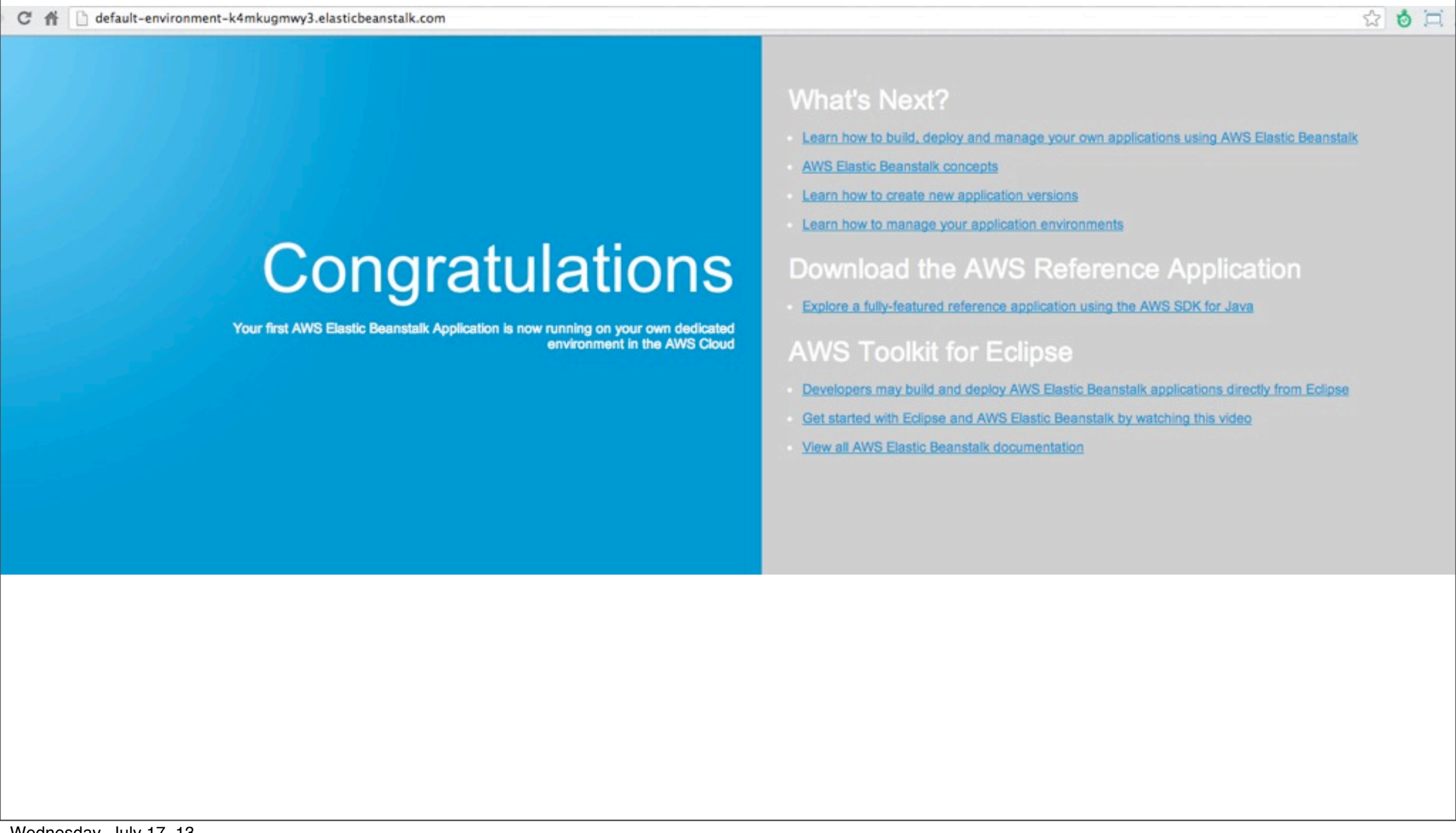
Running Version: Sample Application

Container Type: 64bit Amazon Linux running Tomcat 7

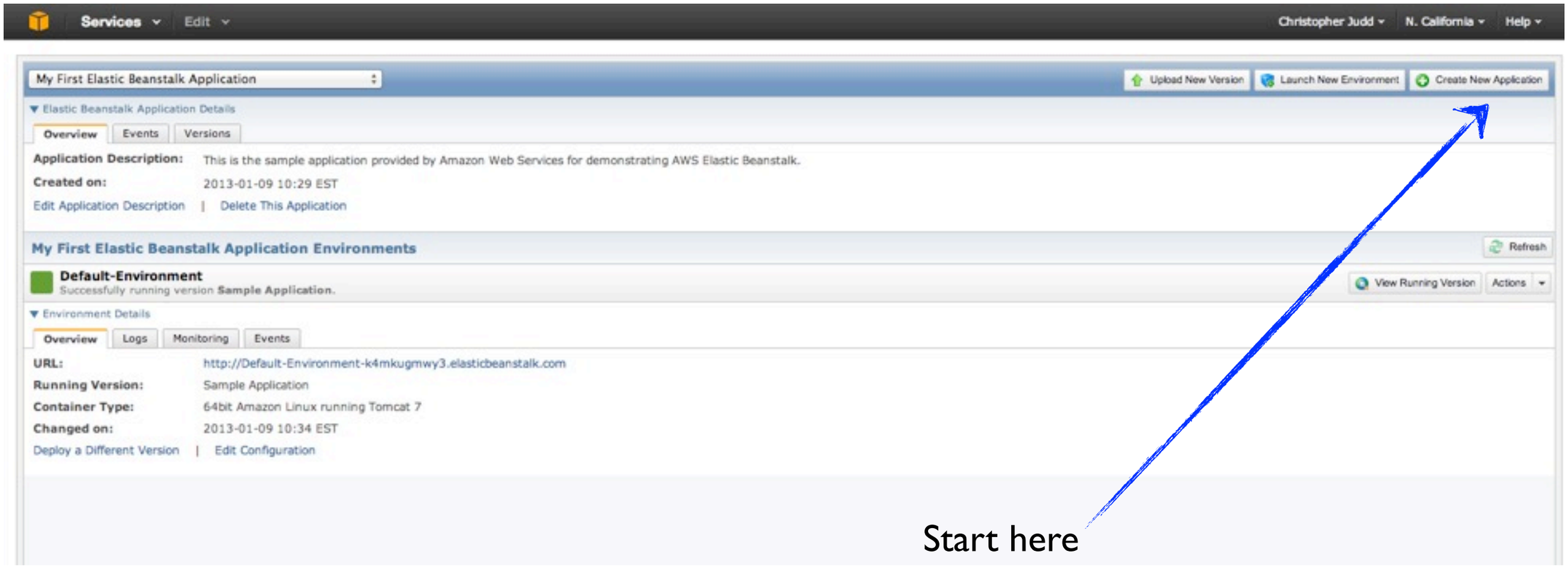
Changed on: 2013-01-09 10:34 EST

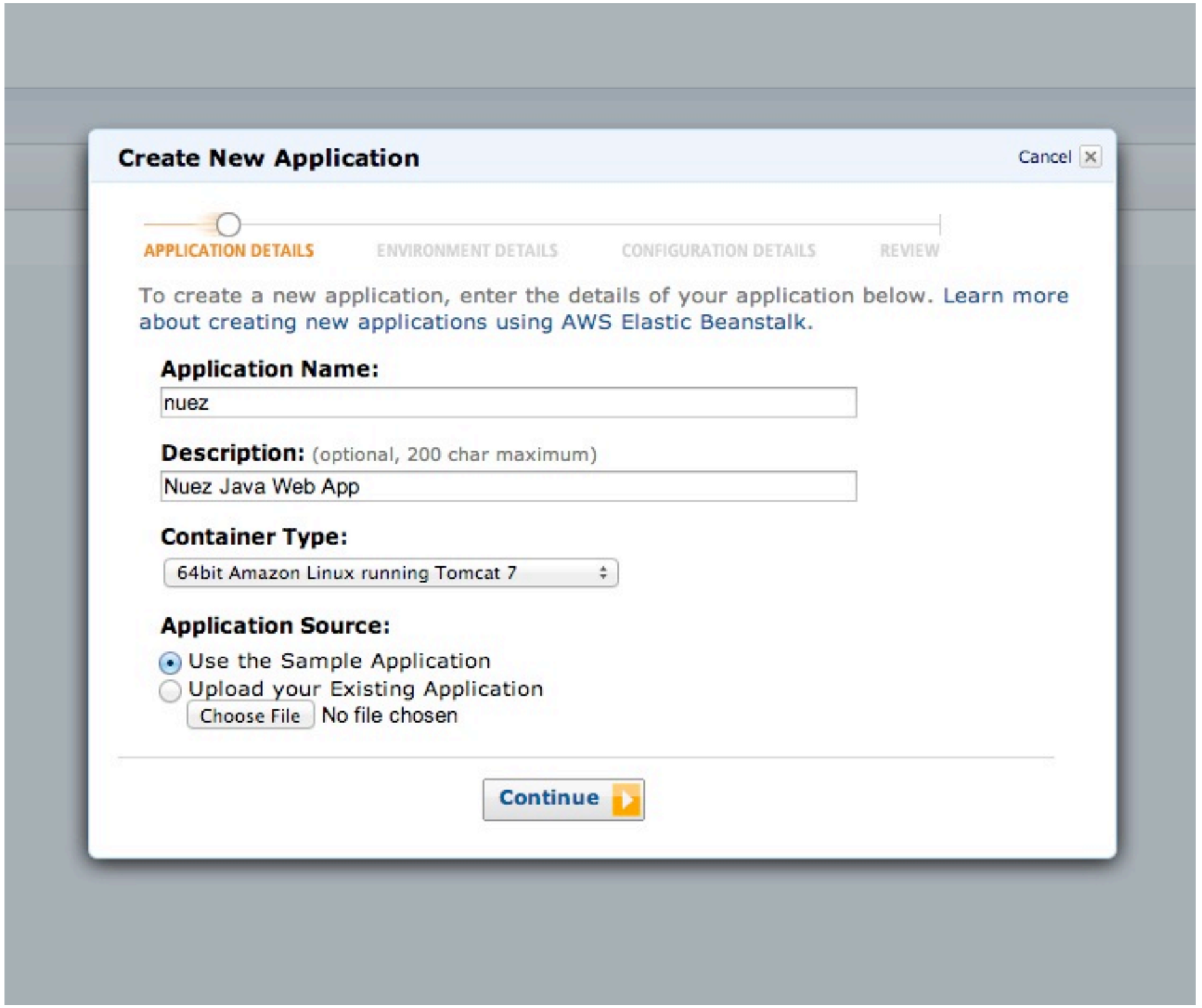
Deploy a Different Version | Edit Configuration

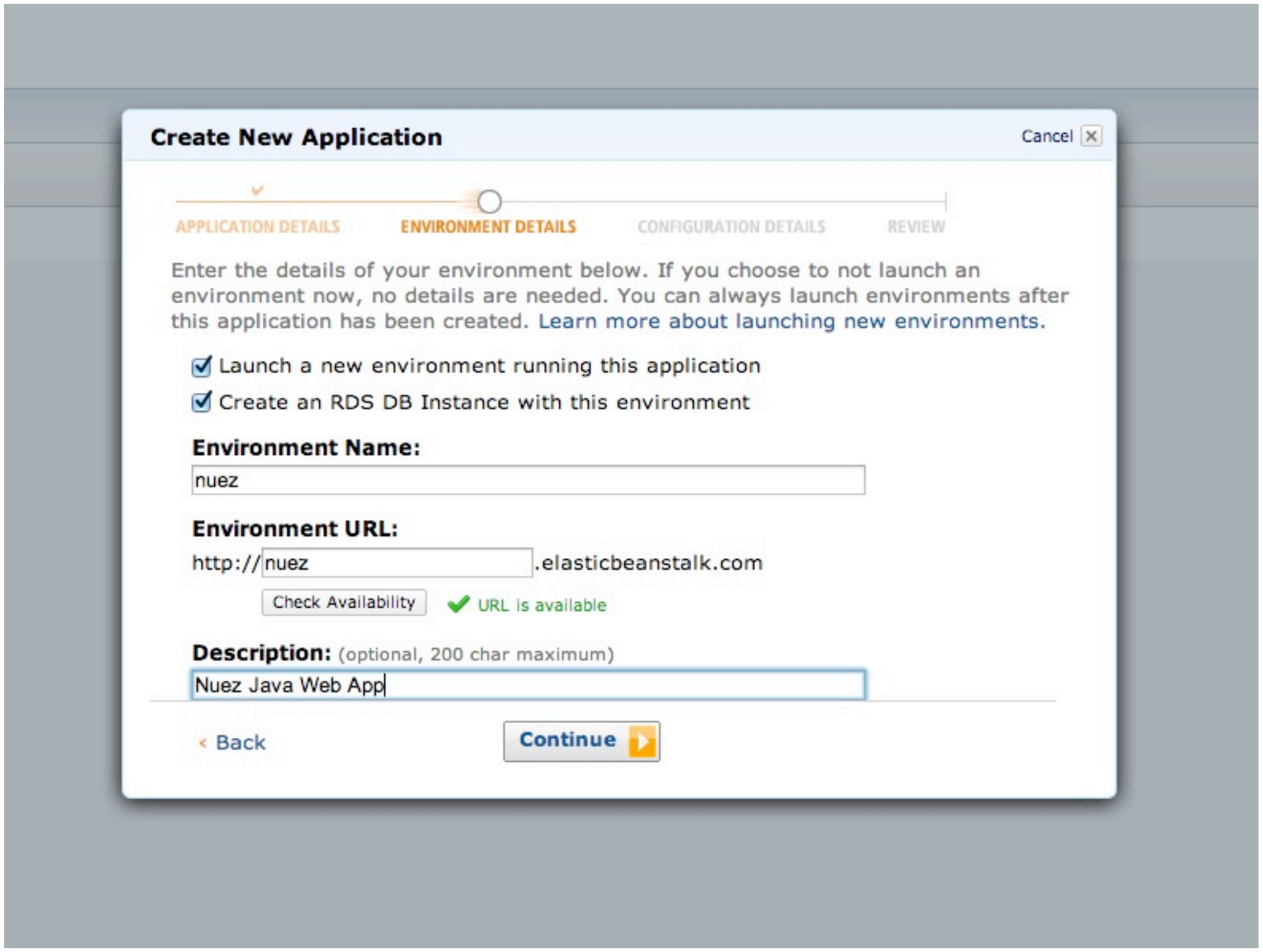
Elastic Beanstalk (Default application)

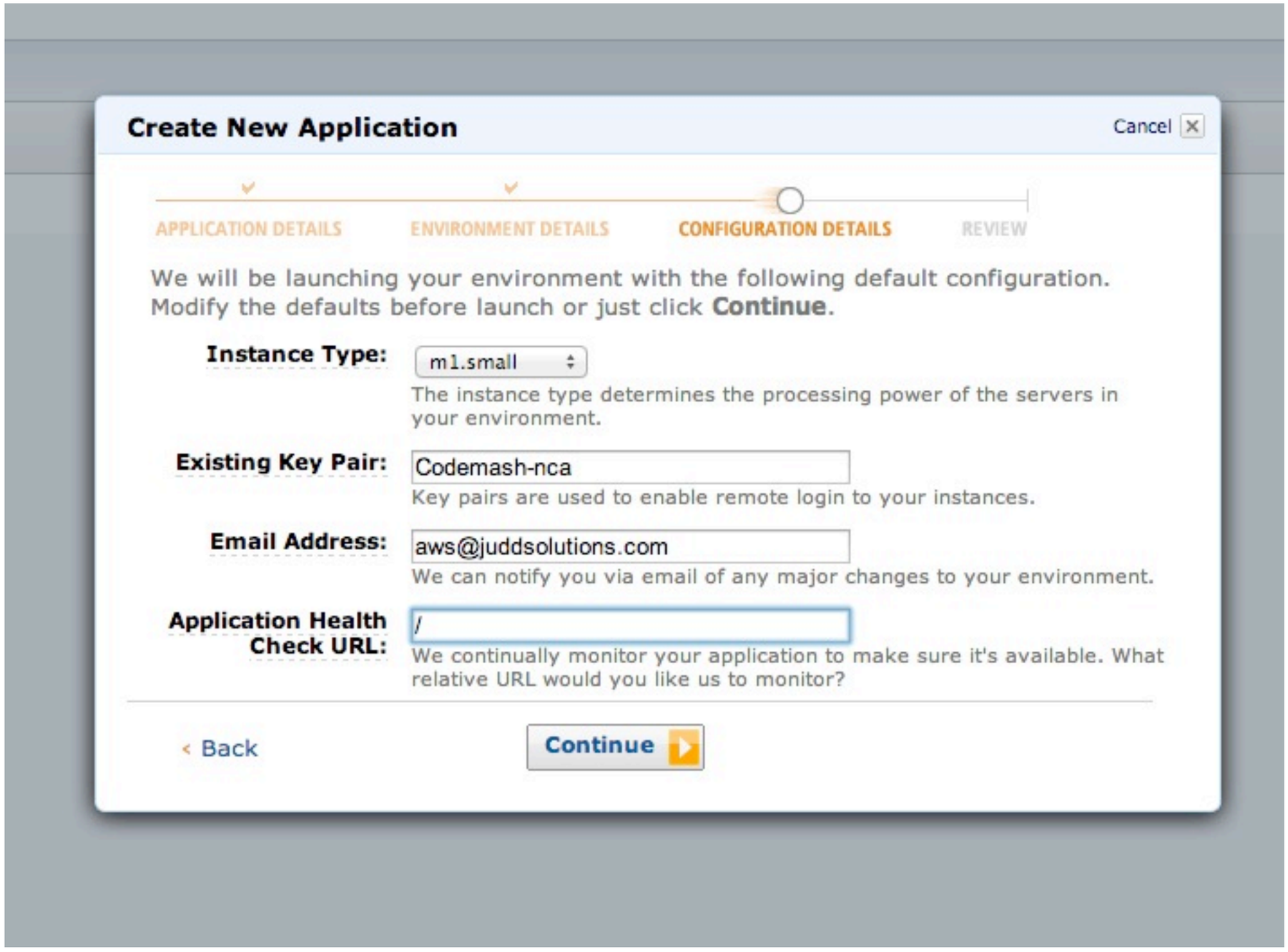


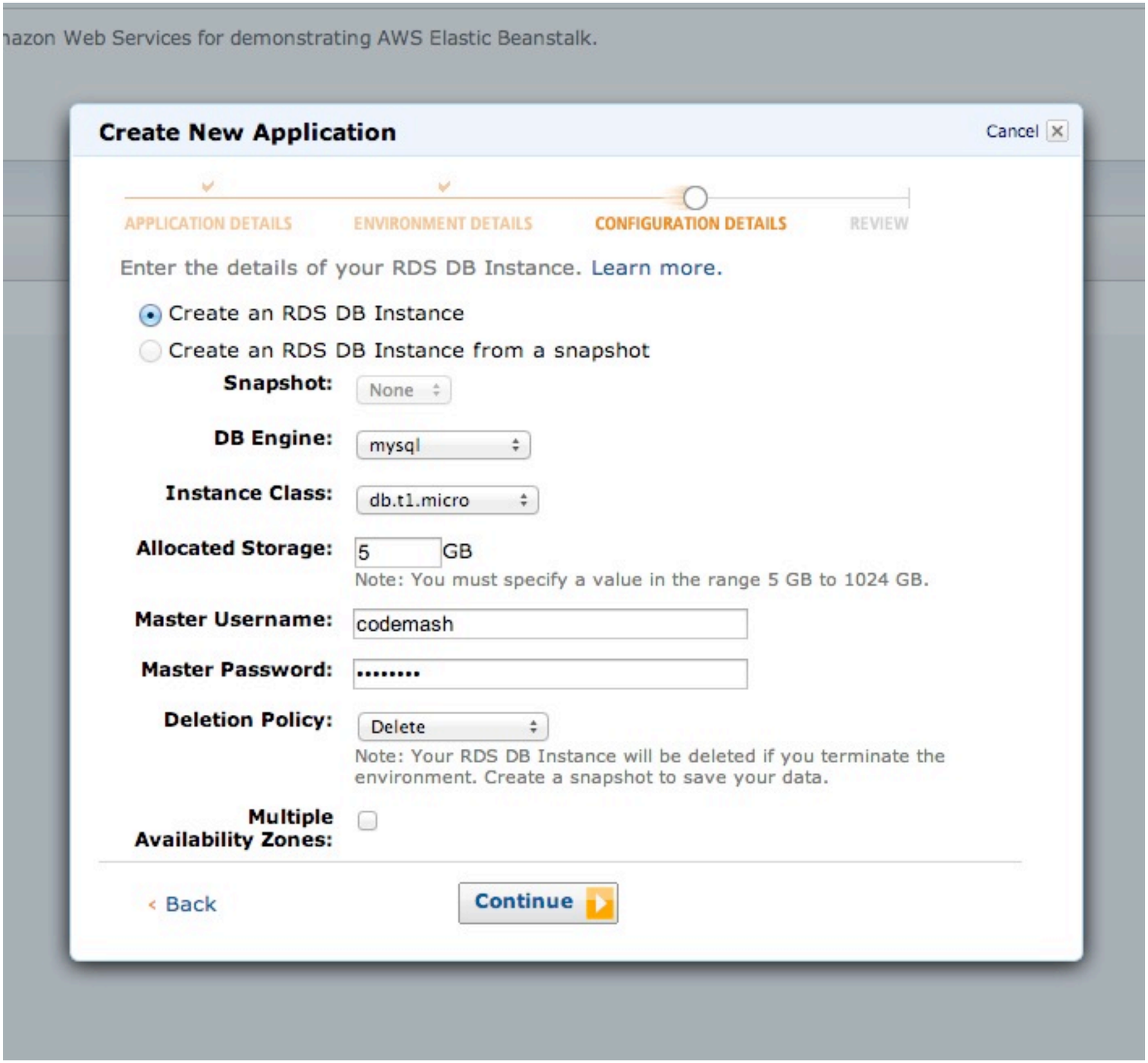
Creating your own application

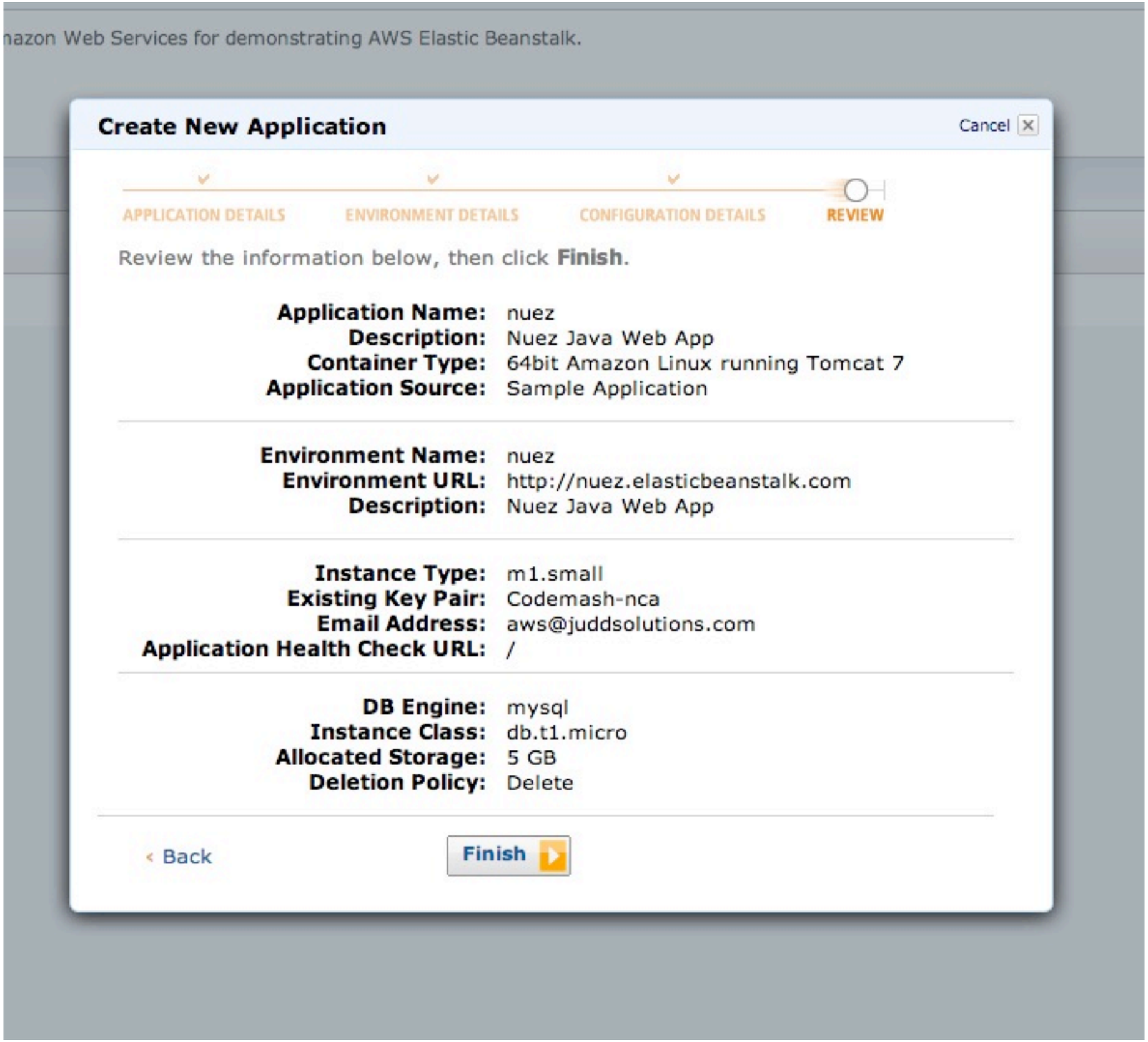



Create New Application
Cancel
APPLICATION DETAILS
ENVIRONMENT DETAILS
CONFIGURATION DETAILS
REVIEW
To create a new application, enter the details of your application below. Learn more about creating new applications using AWS Elastic Beanstalk.
Application Name:
nuez
Description: (optional, 200 char maximum)
Nuez Java Web App
Container Type:
64bit Amazon Linux running Tomcat 7
Application Source:
Use the Sample Application
Upload your Existing Application
Choose File
No file chosen
Continue


Create New Application
Cancel
APPLICATION DETAILS
ENVIRONMENT DETAILS
CONFIGURATION DETAILS
REVIEW
Enter the details of your environment below. If you choose to not launch an environment now, no details are needed. You can always launch environments after this application has been created. Learn more about launching new environments.
Launch a new environment running this application
Create an RDS DB Instance with this environment
Environment Name:
nuez
Environment URL:
http://nuez .elasticbeanstalk.com
Check Availability
URL is available
Description: (optional, 200 char maximum)
Nuez Java Web App
Back
Continue


Create New Application
Cancel
APPLICATION DETAILS
ENVIRONMENT DETAILS
CONFIGURATION DETAILS
REVIEW
We will be launching your environment with the following default configuration.
Modify the defaults before launch or just click Continue.
Instance Type:
m1.small
The instance type determines the processing power of the servers in your environment.
Existing Key Pair:
Codemash-nca
Key pairs are used to enable remote login to your instances.
Email Address:
aws@juddsolutions.com
We can notify you via email of any major changes to your environment.
Application Health Check URL:
/
We continually monitor your application to make sure it's available. What relative URL would you like us to monitor?
Back
Continue


nazon Web Services for demonstrating AWS Elastic Beanstalk.
Create New Application
Cancel
APPLICATION DETAILS
ENVIRONMENT DETAILS
CONFIGURATION DETAILS
REVIEW
Enter the details of your RDS DB Instance. Learn more.
Create an RDS DB Instance
Create an RDS DB Instance from a snapshot
Snapshot:
None
DB Engine:
mysql
Instance Class:
db.t1.micro
Allocated Storage:
5
GB
Note: You must specify a value in the range 5 GB to 1024 GB.
Master Username:
codemash
Master Password:
Deletion Policy:
Delete
Note: Your RDS DB Instance will be deleted if you terminate the environment. Create a snapshot to save your data.
Multiple Availability Zones:
Back
Continue


nazon Web Services for demonstrating AWS Elastic Beanstalk.
Create New Application
Cancel
APPLICATION DETAILS
ENVIRONMENT DETAILS
CONFIGURATION DETAILS
REVIEW
Review the information below, then click Finish.
Application Name: nuez
Description: Nuez Java Web App
Container Type: 64bit Amazon Linux running Tomcat 7
Application Source: Sample Application
Environment Name: nuez
Environment URL: http://nuez.elasticbeanstalk.com
Description: Nuez Java Web App
Instance Type: m1.small
Existing Key Pair: Codemash-nca
Email Address: aws@juddsolutions.com
Application Health Check URL: /
DB Engine: mysql
Instance Class: db.t1.micro
Allocated Storage: 5 GB
Deletion Policy: Delete
Back
Finish

Services | Edit | Christopher Judd | N. California | Hel

Navigation

- Getting Started Guide
- Dashboard

Databases

- DB Instances
- Reserved DB Purchases
- Orderable DB Options
- DB Snapshots
- DB Security Groups
- DB Parameter Groups
- Option Groups
- DB Subnet Groups
- DB Events

Click here to try our new look

Amazon RDS : My DB Instances

Launch DB Instance | Instance Actions | Show/Hide | Refresh

Viewing: All Instances | 1 to 1 of 1 Items

DB Instance	VPC ID	Multi-AZ	Class	Status	Storage	IOPS	Security Groups	Engine	Zone	Pending Changes
aa1w2u6dik6dppm		No	db.t1.micro	available	5 GiB		awseb-e-nh3zjm2vyl	mysql	us-west-1b	

Use these fields to construct connection string for application

1 DB Instances Selected

DB Instances: aa1w2u6dik6dppm

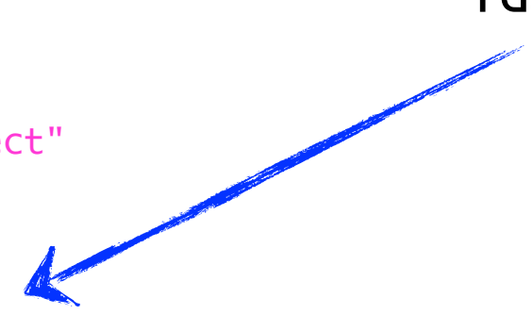
Description | Monitoring | Recent Events | Tags

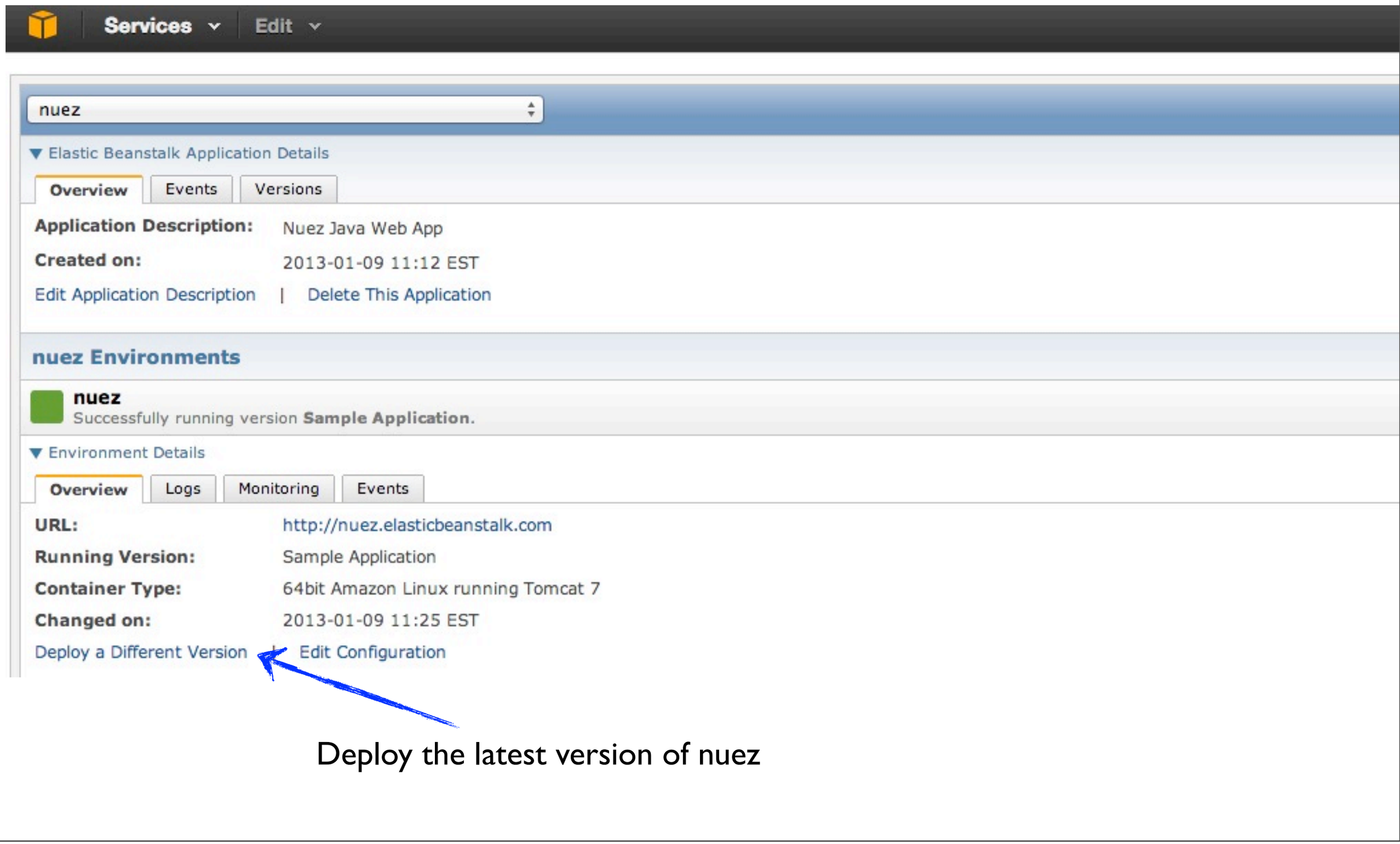
DB Instance Name:	aa1w2u6dik6dppm	**Alarm Status:**	None
DB Engine:	mysql	**DB Engine Version:**	5.5.27
License Model:	general-public-license	**Auto Minor Vers. Upgrade:**	Yes
DB Security Groups:	awseb-e-nh3zjm2vyb-stack-awsebrdsdbsecuritygroup-minqsjau86c9	**DB Status:**	available
DB Instance Class:	db.t1.micro	**Endpoint:**	aa1w2u6dik6dppm.cdrw92njsm5b.us-west-1.rds.amazonaws.com
Port:		**Zone:**	us-west-1b
Multi-AZ Deployment:	No	**DB Storage:**	5GiB
IOPS:		**Master Username:**	codemash
DB Name:	ebdb	**Created Time:**	2013 January 9 11:17:29 UTC-5
Latest Restorable Time:	2013 January 9 11:25:00 UTC-5	**Backup Retention Period:**	1
DB Parameter Group:	default.mysql5.5 (in-sync)	**Backup Window:**	09:30-10:00
Maintenance Window:	fri:06:40-fri:07:10	**Pending Modifications:**	
Read Replica Source:	None	**Read Replica(s):**	
VPC ID:		**Character Set Name:**	

Update Nuez with RDS Connection

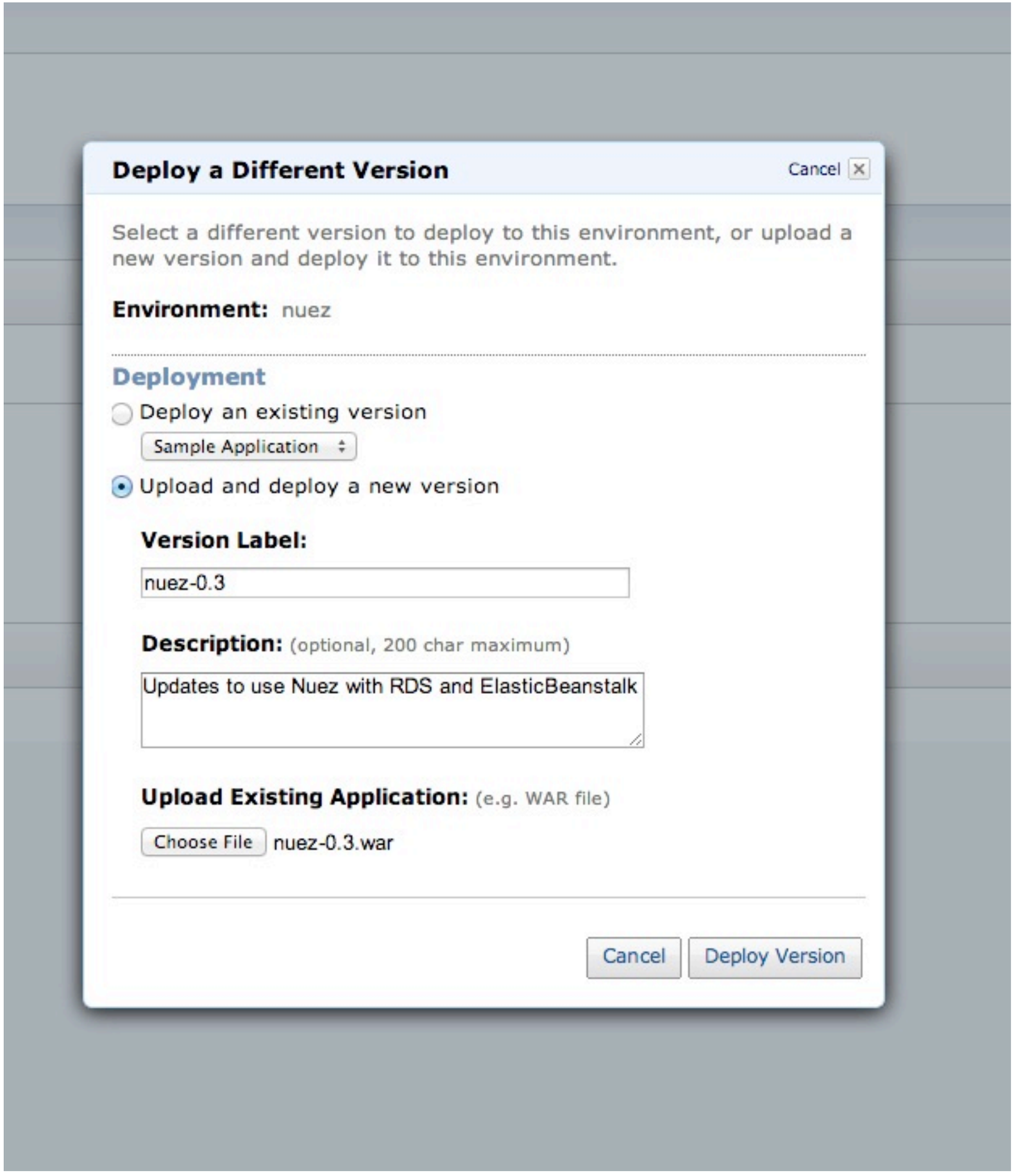
```
// environment specific settings
environments {
    development {
        dataSource {
            dbCreate = "update"
            url = "jdbc:h2:mem:devDb;MVCC=TRUE"
        }
    }
    test {
        dataSource {
            dbCreate = "update"
            url = "jdbc:h2:mem:testDb;MVCC=TRUE"
        }
    }
    production {
        dataSource {
            driverClassName = "com.mysql.jdbc.Driver"
            dialect = "org.hibernate.dialect.MySQL5Dialect"
            username = "codemash"
            password = "codemash"
            dbCreate = "update"
            url = "jdbc:mysql://aa1w2u6dik6dppm.cdrw92njsm5b.us-west-1.rds.amazonaws.com:3306/ebdb"
            pooled = true
            properties {
                maxActive = -1
                minEvictableIdleTimeMillis = 1800000
                timeBetweenEvictionRunsMillis = 1800000
                numTestsPerEvictionRun = 3
                testOnBorrow = true
                testWhileIdle = true
                testOnReturn = true
                validationQuery = "SELECT 1"
            }
        }
    }
}
```

rds url





Deploy the latest version of nuez


Deploy a Different Version
Cancel
Select a different version to deploy to this environment, or upload a new version and deploy it to this environment.
Environment: nuez
Deployment
Deploy an existing version
Sample Application
Upload and deploy a new version
Version Label:
nuez-0.3
Description: (optional, 200 char maximum)
Updates to use Nuez with RDS and ElasticBeanstalk
Upload Existing Application: (e.g. WAR file)
Choose File
nuez-0.3.war
Cancel
Deploy Version

Services | Edit

nuez

▼ Elastic Beanstalk Application Details

Overview | Events | Versions

Application Description: Nuez Java Web App

Created on: 2013-01-09 11:12 EST

Edit Application Description | Delete This Application

nuez Environments

nuez
Successfully running version **nuez-0.3**.

▼ Environment Details

Overview | Logs | Monitoring | Events

URL: http://nuez.elasticbeanstalk.com

Running Version: nuez-0.3

Container Type: 64bit Amazon Linux running Tomcat 7

Changed on: 2013-01-09 11:41 EST

Deploy a Different Version | Edit Configuration

Services | Edit

nuez

▼ Elastic Beanstalk Application Details

Overview | Events | Versions

Application Description: Nuez Java Web App

Created on: 2013-01-09 11:12 EST

Edit Application Description | Delete This Application

nuez Environments

nuez
Successfully running version **nuez-0.3**.

▼ Environment Details

Overview | Logs | Monitoring | Events

URL: http://nuez.elasticbeanstalk.com

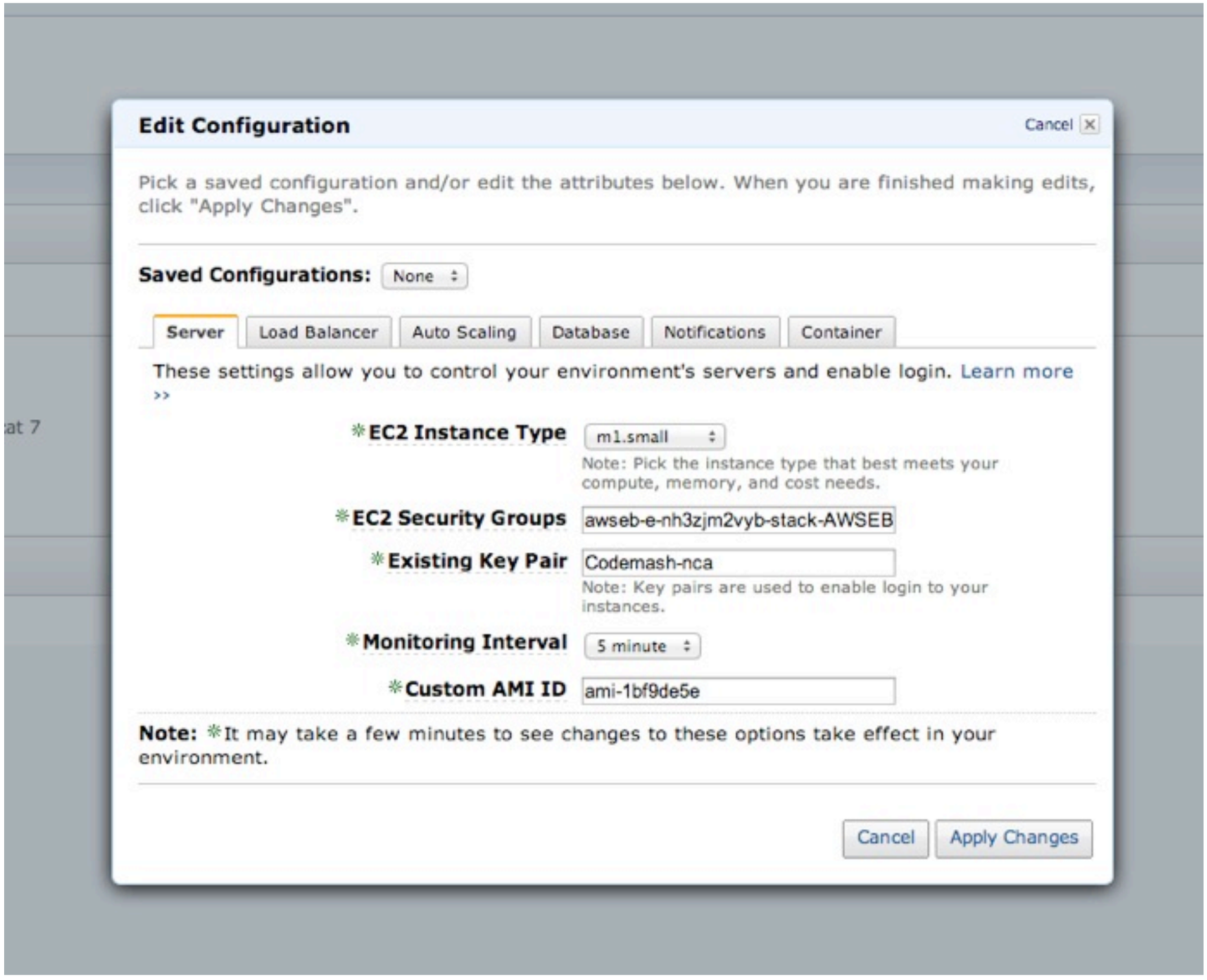
Running Version: nuez-0.3

Container Type: 64bit Amazon Linux running Tomcat 7

Changed on: 2013-01-09 11:41 EST

Deploy a Different Version | Edit Configuration

Start here to modify server configurations


Edit Configuration
Cancel
Pick a saved configuration and/or edit the attributes below. When you are finished making edits, click "Apply Changes".
Saved Configurations: None
Server
Load Balancer
Auto Scaling
Database
Notifications
Container
These settings allow you to control your environment's servers and enable login. Learn more >>
EC2 Instance Type
m1.small
Note: Pick the instance type that best meets your compute, memory, and cost needs.
EC2 Security Groups
awseb-e-nh3zjm2vyb-stack-AWSEB
Existing Key Pair
Codemash-nca
Note: Key pairs are used to enable login to your instances.
Monitoring Interval
5 minute
Custom AMI ID
ami-1bf9de5e
Note: It may take a few minutes to see changes to these options take effect in your environment.
Cancel
Apply Changes

Edit Configuration

Cancel

Pick a saved configuration and/or edit the attributes below. When you are finished making edits, click "Apply Changes".

Saved Configurations: None

Server | Load Balancer | Auto Scaling | Database | Notifications | **Container**

Container Options

These settings control container behavior and allow you to pass key/value pairs in as OS environment variables. Learn more >>

Initial JVM Heap Size (MB)	512m
Maximum JVM Heap Size (MB)	512m
Maximum JVM Permanent Generation Size (MB)	256m
JVM Command Line Options	

☐ **Enable log file rotation to Amazon S3**
Note: When enabled, Elastic Beanstalk will rotate your log files to an S3 bucket every hour.

Environment Properties

These properties are passed into the application as environment variables. Learn more >>

Cancel | Apply Changes

https://github.com/zend × | Amazon EC2 Pricing × | EC2 Management Console × | Elastic Beanstalk Manage × | Nuez | Home ×

nuez.elasticbeanstalk.com

NUEZ

The blog about anything....really...Anything!

Home All Posts About

Ads

Buy Stuff Here

And more stuff here

If you like stuff, you'll like this stuff...

More stuff here.

But I spent all my money on stuff.

Hello!

Welcome to the Nuez blog. Please feel free to login and blog about any topic that you want to

Learn more »

Pricing

pay as you use

use small EC2 instance for one hour and pay $0.065

- On-Demand - pay by hour no long-term commitment
- Reserved - one-time payment and discounted hourly rate
- Spot - bid for unused capacity

Example:

On-Demand - $569.40 ($0.065/hr)

Light Reserved - $410.64 ($0.039/hr + $69)
Medium Reserved - $370.24 ($0.024/hr + $160)
Heavy Reserved - $335.16 ($0.016/hr + $195)

* small instance for one year

Services | Edit | cmj @ 563700736850 | N. Virginia | Help

EC2 Dashboard
Events

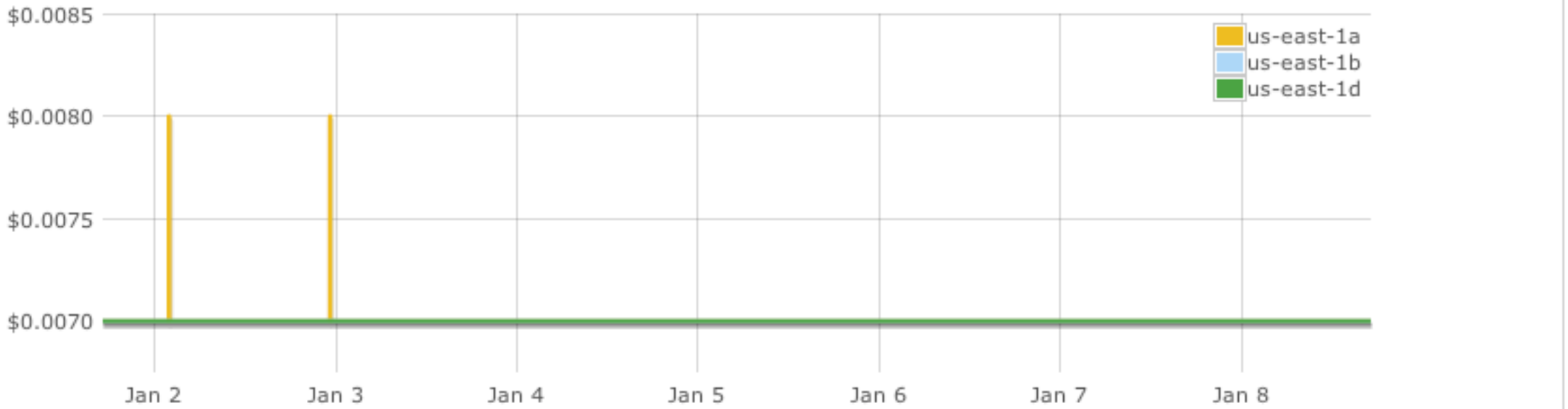
Request Spot Instances | Cancel | Pricing History

Viewing: All Requests | Search

Spot Instance Pricing History

Cancel

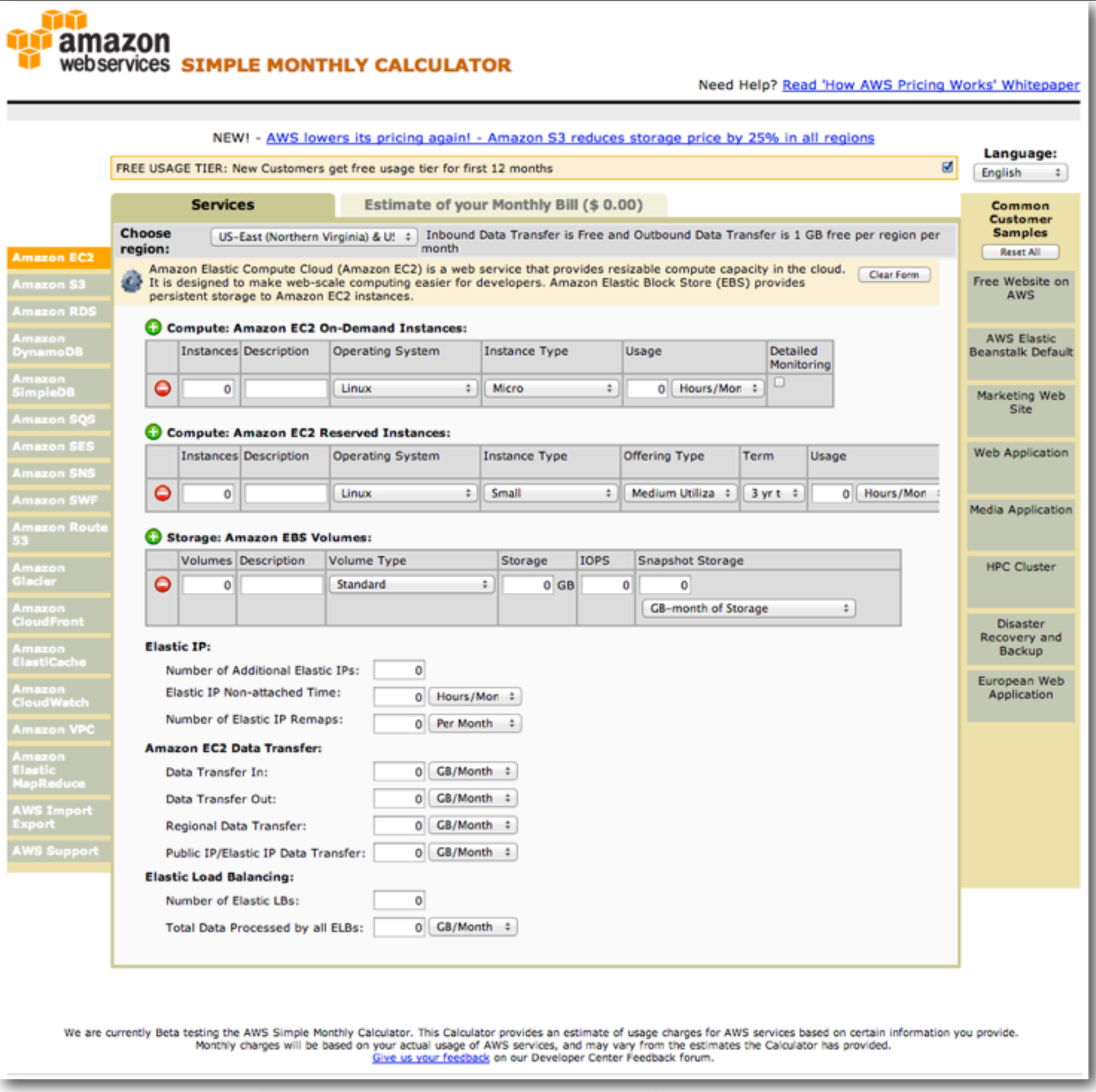
Product: Linux/UNIX | **Instance Type:** m1.small | **Date Range:** 1 week | **Zone:** All zones



Close

Load Balancers
Key Pairs
Network Interfaces

 Privacy Policy | Terms of Use | Feedback



http://aws.amazon.com/calculator

AWS Free Usage Tier (Per Month):

Elastic Compute Cloud (EC2)

- 750 hours of Amazon EC2 Linux/UNIX or RHEL† Micro Instance usage (613 MB of memory and 32-bit and 64-bit platform support) – enough hours to run continuously each month*
- 750 hours of Amazon EC2 Microsoft Windows Server‡ Micro Instance usage (613 MB of memory and 32-bit and 64-bit platform support) – enough hours to run continuously each month*
- 750 hours of an Elastic Load Balancer plus 15 GB data processing*
- 30 GB of Amazon Elastic Block Storage, plus 2 million I/Os and 1 GB of snapshot storage*

Simple Storage Service (S3)

- 5 GB of Amazon S3 standard storage, 20,000 Get Requests, and 2,000 Put Requests*

DynamoDB

- 100 MB of storage, 5 units of write capacity, and 10 units of read capacity for Amazon DynamoDB.**

Relational Database Service (RDS)

- 750 hours of Amazon RDS Single-AZ Micro DB Instances, for running MySQL, Oracle BYOL or SQL Server (running SQL Server Express Edition) – enough hours to run a DB Instance continuously each month*
- 20 GB of database storage
- 10 million I/Os
- 20 GB of backup storage for your automated database backups and any user-initiated DB Snapshots

Simple Workflow (SWF)

- 1,000 Amazon SWF workflow executions can be initiated for free. A total of 10,000 activity tasks, signals, timers and markers, and 30,000 workflow-days can also be used for free**

Simple Queue Service (SQS) and Simple Notification Service (SNS)

- 1,000,000 Requests of Amazon Simple Queue Service**
- 1,000,000 Requests, 100,000 HTTP notifications and 1,000 email notifications for Amazon Simple Notification Service**

Amazon Elastic Transcoder

- 20 minutes of SD transcoding **or** 10 minutes of HD transcoding**

CloudWatch

- 10 Amazon Cloudwatch metrics, 10 alarms, and 1,000,000 API requests**

Data Transfer

- 15 GB of bandwidth out aggregated across all AWS services*

Data Pipeline

- 3 low frequency preconditions running on AWS per month*
- 5 low frequency activities running on AWS per month*

ElastiCache

- 750 hours of Amazon ElastiCache - enough hours to run a Cache Node continuously each month.*

Resources

Products & Services

Compute
- Amazon Elastic Compute Cloud (EC2)
- Amazon Elastic MapReduce
- Auto Scaling

Content Delivery
- Amazon CloudFront

Database
- Amazon SimpleDB
- Amazon Relational Database Service (RDS)
- Amazon ElastiCache

Deployment & Management
- AWS Elastic Beanstalk
- AWS CloudFormation

E-Commerce
- Amazon Fulfillment Web Service (FWS)

Industry-specific Clouds
- AWS GovCloud (US)

Messaging
- Amazon Simple Queue Service (SQS)
- Amazon Simple Notification Service (SNS)
- Amazon Simple Email Service (SES)

Monitoring
- Amazon CloudWatch

Networking
- Amazon Route 53
- Amazon Virtual Private Cloud (VPC)
- Elastic Load Balancing
- AWS Direct Connect

Payments & Billing
- Amazon Flexible Payments Service (FPS)
- Amazon DevPay

Storage
- Amazon Simple Storage Service (S3)
- Amazon Elastic Block Store (EBS)
- AWS Import/Export

Support
- AWS Premium Support

Web Traffic
- Alexa Web Information Service
- Alexa Top Sites

Workforce
- Amazon Mechanical Turk

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

Deployment & Management

CloudFormation
Templated AWS Resource Creation

CloudWatch
Resource & Application Monitoring

Data Pipeline NEW
Orchestration for data-driven workflows

Elastic Beanstalk
AWS Application Container

IAM
Secure AWS Access Control

App Services

CloudSearch
Managed Search Service

SES
Email Sending Service

SNS
Push Notification Service

SQS
Message Queue Service

SWF
Workflow Service for Coordinating Application Components

http://aws.amazon.com/architecture/

amazon web services

Sign Up | My Account / Console | English

AWS Products & Solutions | AWS Product Information | Developers | Support

Architecture Center

- **Overview**
- AWS Simple Icons

Related Resources

- AWS Economics Center
- Security & Compliance
- AWS Products & Services
- AWS Solutions
- Case Studies

AWS Support

Please visit AWS Support for more details on getting one on one support for your architecture questions.

AWS Architecture Center

The AWS Architecture Center is designed to provide you with the necessary guidance and best practices to build highly scalable and reliable applications in the AWS Cloud. These resources will help you understand the AWS platform, its services and features, and will provide architectural guidance for design and implementation of systems that run on the AWS infrastructure.

Featured

Reference Implementation: Deploy a Microsoft SharePoint 2010 Server Farm in the AWS Cloud in 6 Simple Steps

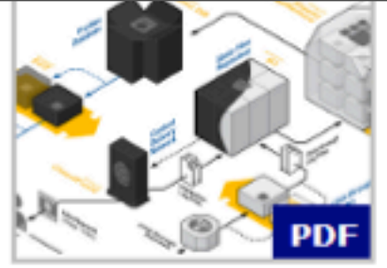
SHAW MEDIA

Read Shaw Media Case Study "Our average uptime increased rapidly from 98.8% to 99.9% without re-architecting applications"

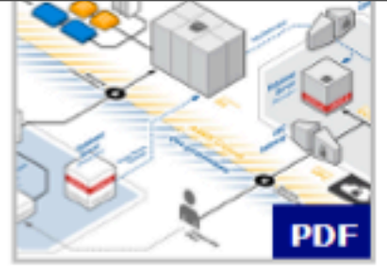
AWS Reference Architectures

The flexibility of AWS allows you to design your application architectures the way you like. AWS Reference Architecture Datasheets provide you with the architectural guidance you need in order to build an application that takes full advantage of the AWS cloud. Each datasheet includes a visual representation of the architecture and basic description of how each service is used.

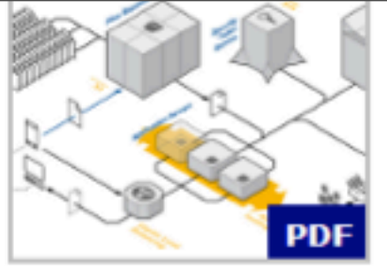
Large Scale Processing and Huge Data sets
Build high-performance computing systems that involve Big Data (PDF)



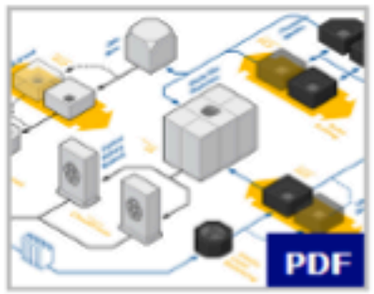
Ad Serving
Build highly-scalable online ad serving solutions (PDF)



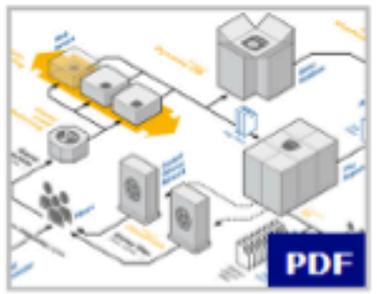
Disaster Recovery for Local Applications
Build cost-effective Disaster Recovery solutions for on-premises applications (PDF)



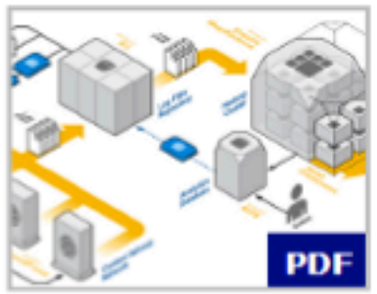
File Synchronization
Build simple file synchronization service (PDF)



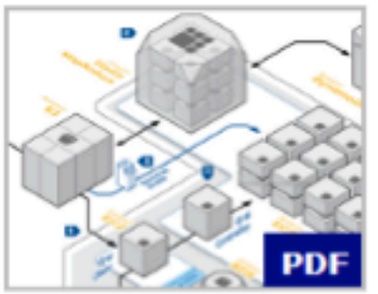
Media Sharing
Cloud-powered Media Sharing Framework (PDF)



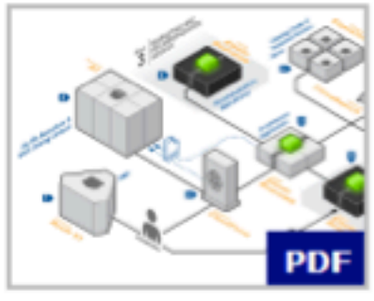
Online Games
Build powerful online games (PDF)



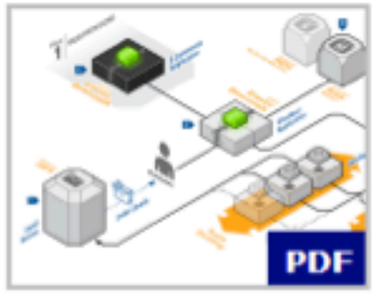
Log Analysis
Analyze massive volumes of log data in the cloud (PDF)



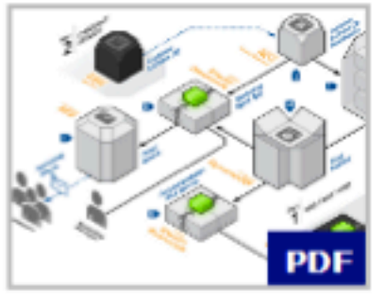
Financial Services Grid Computing
Build highly scalable and elastic grids for the Financial Services Sector (PDF)



E-Commerce Website Part 1: Web Frontend
Build elastic Web Front-ends for an e-Commerce website (PDF)



E-Commerce Website Part 2: Checkout Pipeline
Build highly scalable checkout pipeline for an e-Commerce website (PDF)



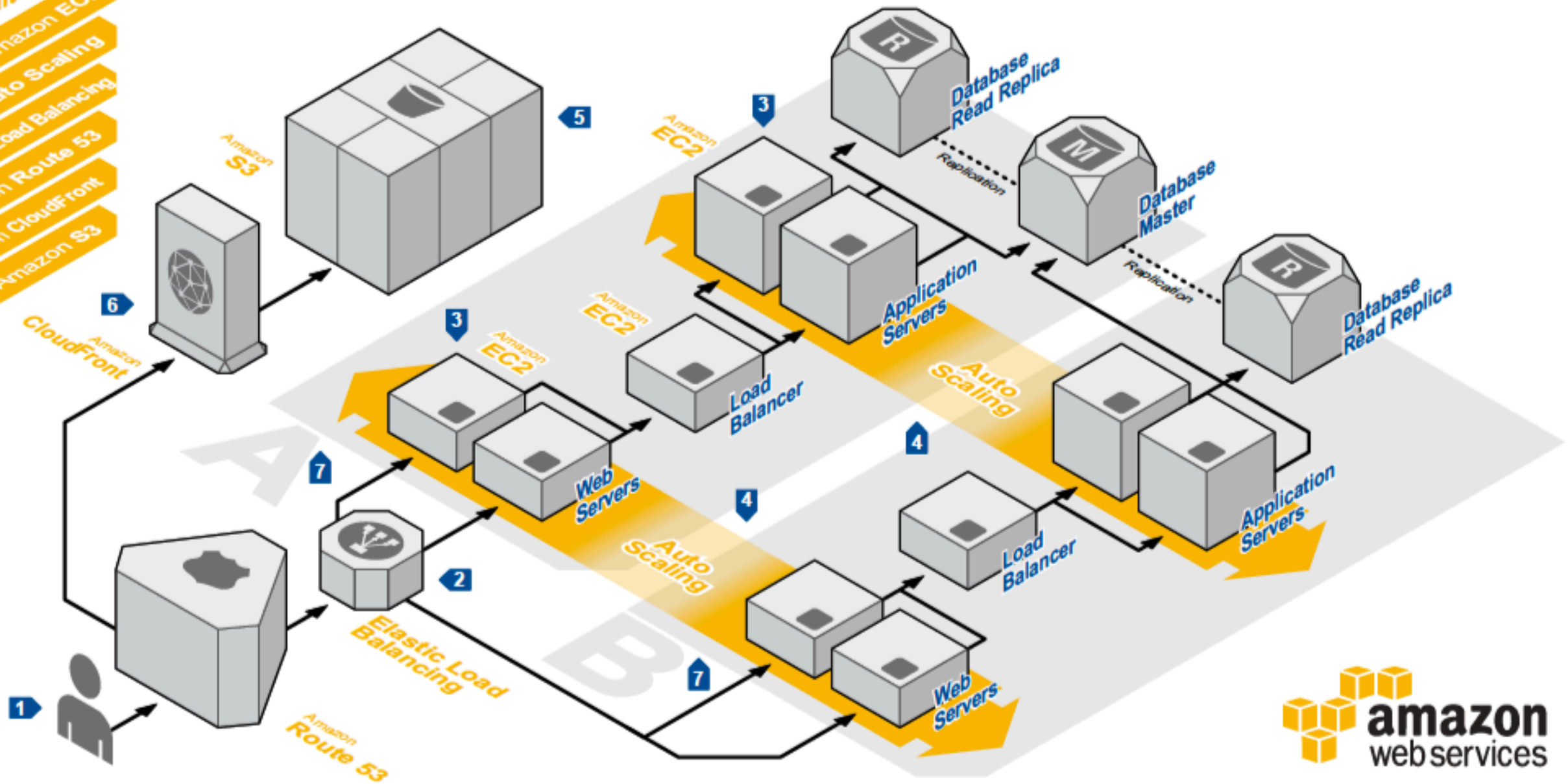
E-Commerce Website Part 3: Marketing and Recommendations
Build highly scalable recommendation engine for an e-Commerce website (PDF)

AWS Reference Architectures

- Amazon EC2
- Auto Scaling
- Basic Load Balancing
- Amazon Route 53
- Amazon CloudFront
- Amazon S3

WEB APPLICATION HOSTING

Highly available and scalable web hosting can be complex and expensive. Dense peak periods and wild swings in traffic patterns result in low utilization rates of expensive hardware. Amazon Web Services provides the reliable, scalable, secure, and high-performance infrastructure required for web applications while enabling an elastic, scale out and scale down infrastructure to match IT costs in real time as customer traffic fluctuates.



System Overview

1 The user's DNS requests are served by **Amazon Route 53**, a highly available Domain Name System (DNS) service. Network traffic is routed to infrastructure running in Amazon Web Services.

2 HTTP requests are first handled by Elastic Load Balancing, which automatically distributes incoming application traffic across multiple **Amazon Elastic Compute Cloud (EC2)** instances across Availability Zones (AZs). It enables even greater fault tolerance in your applications, seamlessly providing the amount of load balancing capacity needed in response to incoming application traffic.

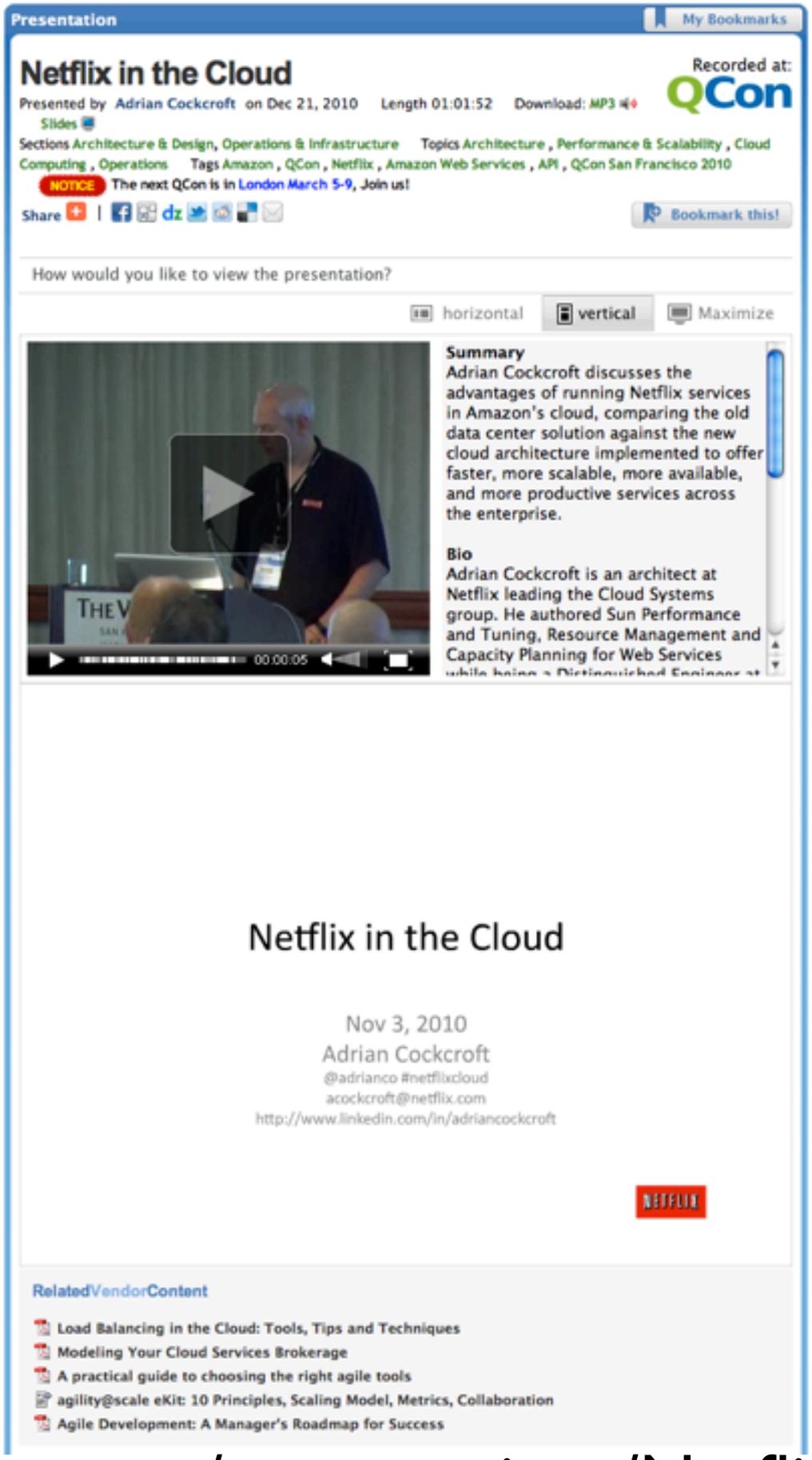
3 Web servers and application servers are deployed on **Amazon EC2** instances. Most organizations will select an **Amazon Machine Image (AMI)** and then customize it to their needs. This custom AMI will then be used as the starting point for future web development.

4 Web servers and application servers are deployed in an **Auto Scaling** group. Auto Scaling automatically adjusts your capacity up or down according to conditions you define. With Auto Scaling, you can ensure that the number of **Amazon EC2** instances you're using increases seamlessly during demand spikes to maintain performance and decreases automatically during demand lulls to minimize costs.

5 Resources and static content used by the web application are stored on **Amazon Simple Storage Service (S3)**, a highly durable storage infrastructure designed for mission-critical and primary data storage.

6 Static and streaming content is delivered by **Amazon CloudFront**, a global network of edge locations. Requests are automatically routed to the nearest edge location, so content is delivered with the best possible performance.

7 **Availability zones (AZs)** are distinct geographic locations that are engineered to insulate against failures in other AZs. Multiple AZs are combined into a region. Here, the entire web application is deployed in two different AZs for high availability.



http://www.infoq.com/presentations/Netflix-in-the-Cloud

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