

INTRO TO DATA SCIENCE

AMAZON WEB SERVICES

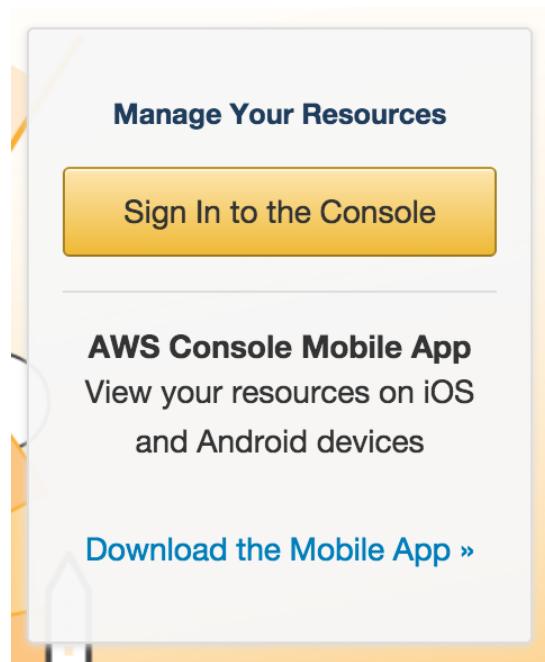
- I. SETTING UP AMAZON WEB SERVICES (AWS)**
- II. KEEPING AN EYE ON COSTS**
- III. GENERATING KEY PAIRS**
- IV. LAUNCHING AN EC2 INSTANCE**
- V. LAUNCHING A SPARK CLUSTER**

INTRO TO DATA SCIENCE

AMAZON WEB SERVICES (AWS)

Some of the most important services are:

- *Elastic Compute Cloud (EC2)*
- *Simple Storage Service (S3)*
- *Relational Database Service*
- *Amazon Elastic MapReduce (EMR)*
- *Tools for Deployment & Management*




AWS Services Edit

[Naeff](#) ▼
[N. Virginia](#) ▼
[Support](#) ▼

Amazon Web Services

Compute

-  **EC2**
Virtual Servers in the Cloud
-  **Lambda**
Run Code in Response to Events
-  **EC2 Container Service**
Run and Manage Docker Containers

Storage & Content Delivery

-  **S3**
Scalable Storage in the Cloud
-  **Elastic File System** [PREVIEW](#)
Fully Managed File System for EC2
-  **Storage Gateway**
Integrates On-Premises IT Environments with Cloud Storage
-  **Glacier**
Archive Storage in the Cloud
-  **CloudFront**
Global Content Delivery Network

Database

-  **RDS**
MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora
-  **DynamoDB**
Predictable and Scalable NoSQL Data Store
-  **ElastiCache**
In-Memory Cache
-  **Redshift**
Managed Petabyte-Scale Data Warehouse Service

Networking

-  **VPC**
Isolated Cloud Resources
-  **Direct Connect**
Dedicated Network Connection to AWS
-  **Route 53**
Scalable DNS and Domain Name Registration

Administration & Security

-  **Directory Service**
Managed Directories in the Cloud
-  **Identity & Access Management**
Access Control and Key Management
-  **Trusted Advisor**
AWS Cloud Optimization Expert
-  **CloudTrail**
User Activity and Change Tracking
-  **Config**
Resource Configurations and Inventory
-  **CloudWatch**
Resource and Application Monitoring
-  **Service Catalog**
Personalized Catalog of AWS Resources

Deployment & Management

-  **Elastic Beanstalk**
AWS Application Container
-  **OpsWorks**
DevOps Application Management Service
-  **CloudFormation**
Templated AWS Resource Creation
-  **CodeDeploy**
Automated Deployments
-  **CodeCommit**
Managed Git Repositories
-  **CodePipeline**
Continuous Delivery

Analytics

-  **EMR**
Managed Hadoop Framework
-  **Kinesis**
Real-time Processing of Streaming Big Data
-  **Data Pipeline**
Orchestration for Data-Driven Workflows
-  **Machine Learning**
Build Smart Applications Quickly and Easily

Application Services

-  **SQS**
Message Queue Service
-  **SWF**
Workflow Service for Coordinating Application Components
-  **AppStream**
Low Latency Application Streaming
-  **Elastic Transcoder**
Easy-to-use Scalable Media Transcoding
-  **SES**
Email Sending Service
-  **CloudSearch**
Managed Search Service
-  **API Gateway**
Build, Deploy and Manage APIs

Mobile Services

-  **Cognito**
User Identity and App Data Synchronization
-  **Device Farm**
Test Android, Fire OS, and iOS apps on real devices in the Cloud
-  **Mobile Analytics**
Collect, View and Export App Analytics
-  **SNS**
Push Notification Service

Enterprise Applications

-  **WorkSpaces**
Desktops in the Cloud
-  **WorkDocs**
Secure Enterprise Storage and Sharing Service
-  **WorkMail** [PREVIEW](#)
Secure Email and Calendaring Service

Resource Groups

A resource group is a collection of resources that share one or more tags. Create a group for each project, application, or environment in your account.

[Create a Group](#)

[Tag Editor](#)

Additional Resources

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AWS Console Mobile App

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AWS Marketplace

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

AWS Lambda

Run your code without managing servers. Try AWS Lambda for free today.

Service Health

 All services operating normally.

Updated: Aug 25 2015 15:57:00 GMT-0400

[Service Health Dashboard](#)

INTRO TO DATA SCIENCE

KEEPING AN EYE ON COSTS

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AWS Services Edit ▾

N. Virginia ▾ Support ▾

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- Elastic Beanstalk** AWS Application Container
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- EMR** Managed Hadoop Framework
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My Account

Billing & Cost Management

Security Credentials

Sign Out

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AWS Marketplace

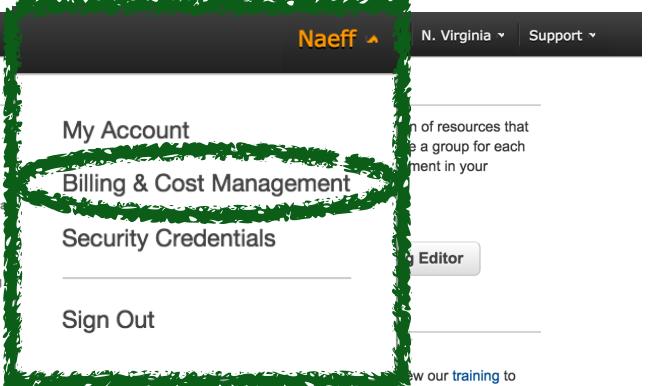
AWS Lambda

Service Health

All services operating normally.

Updated: Aug 25 2015 15:57:00 GMT-0400

Service Health Dashboard



The screenshot shows the AWS Management Console with the user 'Naeff' logged in. The main navigation bar includes 'AWS', 'Services', 'Edit', 'N. Virginia', and 'Support'. Below the navigation is a grid of service icons. A large green circle highlights the 'Billing & Cost Management' section under 'My Account'. To the right of the grid, there's a sidebar with links like 'Editor', 'View our training to learn more about AWS.', 'AWS Console Mobile App', 'AWS Marketplace', 'AWS Lambda', 'Service Health', and status information ('All services operating normally.' and 'Updated: Aug 25 2015 15:57:00 GMT-0400').

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AWS Services Edit Naeff Global Support

Dashboard (circled)

Cost Explorer
Budgets
Payment Methods
Payment History
Consolidated Billing
Reports
Preferences
Credits
Tax Settings
DevPay

Billing & Cost Management Dashboard

Spend Summary

Welcome to the AWS Account Billing console. Your last month, month-to-date, and month-end forecasted costs appear below.

Current month-to-date balance for September 2015

\$0.00

► Important Information about these Costs Include Subscription Charges

Month-to-Date Spend by Service Bill Details

The chart below shows the proportion of costs spent for each service you use.

Month-to-Date Top Services by Spend

	Amount
SimpleDB	\$0.00
S3	\$0.00
Tax	\$0.00
Total	\$0.00

Alerts & Notifications

Your account is enabled for monitoring estimated charges. Set your first billing alarm to receive an e-mail when charges reach a threshold you define.

IAM access to your account's billing information is not enabled. You can enable it on the [Account Information](#) page.



Dashboard

Bills

Cost Explorer

Budgets

Payment Methods

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DevPay

Preferences

Receive PDF Invoice By Email
Turn on this feature to receive a PDF version of your invoice by email. Invoices are generally available within the first three days of the month.

Receive Billing Alerts
Turn on this feature to monitor your AWS usage charges and recurring fees automatically, making it easier to track and manage your spending on AWS. You can set billing alerts to receive email notifications when your charges reach a specified threshold. Once enabled, this preference cannot be disabled. [Manage Billing Alerts](#)

Receive Billing Reports
Turn on this feature to receive ongoing reports of your AWS charges once or more daily. AWS delivers these reports to the Amazon S3 bucket that you specify where indicated below. For consolidated billing customers, AWS generates reports only for paying accounts. Linked accounts cannot sign up for billing reports.

Save to S3 Bucket: [Verify](#)

[Save preferences](#)

The screenshot shows the AWS CloudWatch Metrics interface. On the left, a sidebar menu includes 'Dashboard', 'Alarms' (which is selected and highlighted in orange), 'Billing' (with three circular icons next to it), and 'Metrics' (with sub-options: 'Selected Metrics', 'Billing', 'EBS', 'EC2', 'EMR', and 'S3'). A large green oval highlights the 'Create Alarm' button at the bottom of the main content area. The main content area is titled 'Billing Alarms' and contains the following text:

Amazon CloudWatch can help you monitor the charges on your [AWS bill](#) by sending you email alerts when charges exceed a threshold you define.

Once you update your preferences in the Account Billing console, you will begin receiving Amazon CloudWatch metrics that reflect your month-to-date AWS charges. Then, you can create a billing alarm by specifying a spending threshold and an e-mail address to notify. [Learn more about billing alerts](#)

You get 10 free alarms and 1,000 free e-mail notifications each month as part of the [AWS Free Tier](#).

At the top right of the page, there are navigation links for 'Naeff', 'N. Virginia', and 'Support', along with an 'Edit' dropdown menu. On the far right, under 'Additional Info', there is a list of links: 'Getting Started Guide', 'Monitoring Scripts Guide', 'Overview and Features', 'Documentation', 'Forums', and 'Report an Issue'.

AWS Services Edit

Dashboard Alarms ALARM INSUFFICIENT OK Billing Logs Metrics Selected Metrics Billing EBS EC2 EMR S3

Billing Alarm Amazon CloudWatch Once you update Then, you can cr You get 10 free a Create Alarm

Create Alarm

Billing Alarm

You can create a billing alarm to receive e-mail alerts when your AWS charges exceed a threshold you choose. Simply:

1. Enter a spending threshold
2. Provide an email address
3. Check your inbox for a confirmation email and click the link provided

When my total monthly charges for the month exceed: \$ USD send a notification to:

Reminder: for each address you specify, we'll send an email from AWS with the subject "AWS Notification - Subscription Confirmation". Click the link provided in the message to confirm that AWS may deliver alerts to that address.

showing simple options | show advanced

Alarm Preview

This alarm will trigger when the blue line goes above the red line

EstimatedCharges > 0

More resources

[AWS Billing console](#)
[Getting started with billing alarms](#)
[More help with billing alarms](#)
[AWS Billing FAQs](#)

Create Alarm

Naeff N. Virginia Support

Additional Info

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Monitoring Scripts Guide
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AWS Services
Naeff ▾ N. Virginia ▾ Support ▾

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- WorkD Secure
- WorkL Secure

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[Create a Group](#)
[Tag Editor](#)

Additional Resources

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Make sure to kill your instances to prevent adding minutes and \$\$ to your bill

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Run and Manage Docker Containers

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Create a Group Tag Editor

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AWS Marketplace

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

Make sure to kill your instances to prevent adding minutes and \$\$ to your bill

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Spot Requests, Reserved Instances, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, and Network Interfaces. The main area displays a table of four EC2 instances. The fourth instance, with the ID i-9dcdf236, has a context menu open over it. The menu includes options like Connect, Get Windows Password, Launch More Like This, Instance State (with Start, Stop, and Terminate), Instance Settings, Image, Networking, and CloudWatch Monitoring. The 'Terminate' option under Instance State is highlighted with a red box. The entire context menu is also circled in red. To the right of the menu, the instance details are shown: Name (i-9dcdf236), Instance State (running), Status Checks (2/2 checks passed), Alarm Status (None), Public DNS (ec2-52-21-176-167.com), Public IP (52.21.176.167), Key Name (ga), and Monitoring (disabled). A small blue square icon is located to the left of the instance ID in the table.

Name	Instance ID	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name	Monitoring
i-3c031ceef	i-3c031ceef	us-east-1c	running	2/2 checks passed	None	ec2-52-7-232-239.com...	52.7.232.239	ga	disabled
i-3d031cef0	i-3d031cef0	us-east-1c	running	2/2 checks passed	None	ec2-52-20-51-153.com...	52.20.51.153	ga	disabled
i-9b021d49f	i-9b021d49f	us-east-1c	running	2/2 checks passed	None	ec2-52-22-146-230.co...	52.22.146.230	ga	disabled
i-9dcdf236	i-9dcdf236	us-east-1c	running	2/2 checks passed	None	ec2-52-21-176-167.co...	52.21.176.167	ga	disabled

Make sure to kill your instances to prevent adding minutes and \$\$ to your bill

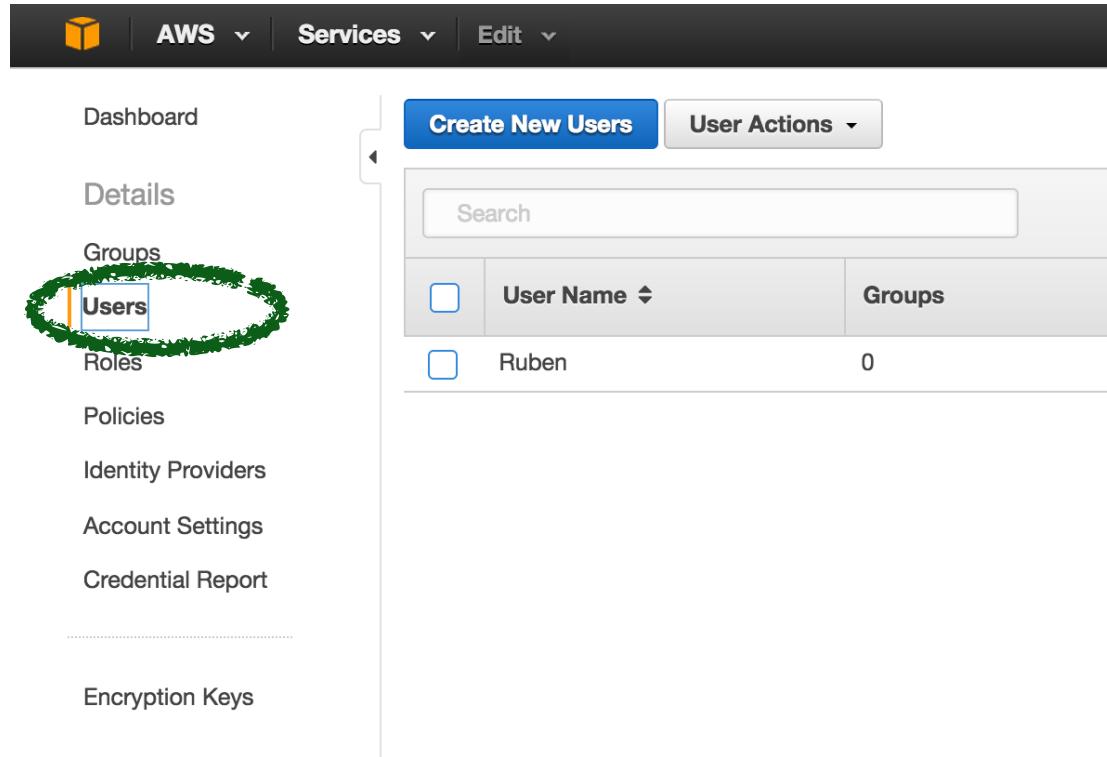
INTRO TO DATA SCIENCE

GENERATING YOUR KEY PAIRS

The screenshot shows the AWS Management Console homepage with a navigation bar at the top. The main content area is divided into several sections:

- Compute**: EC2 (Virtual Servers in the Cloud), Lambda (Run Code in Response to Events), EC2 Container Service (Run and Manage Docker Containers).
- Storage & Content Delivery**: S3 (Scalable Storage in the Cloud), Elastic File System (PREVIEW), Fully Managed File System for EC2, Storage Gateway (Integrates On-Premises IT Environments with Cloud Storage), Glacier (Archive Storage in the Cloud), CloudFront (Global Content Delivery Network).
- Database**: RDS (MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora), DynamoDB (Predictable and Scalable NoSQL Data Store), ElastiCache (In-Memory Cache), Redshift (Managed Petabyte-Scale Data Warehouse Service).
- Networking**: VPC (Isolated Cloud Resources), Direct Connect (Dedicated Network Connection to AWS), Route 53 (Scalable DNS and Domain Name Registration).
- Administration & Security**: Directory Service (Managed Directories in the Cloud), Identity & Access Management (Access Control and Key Management), Trusted Advisor (AWS Cloud Optimization Expert), CloudTrail (User Activity and Change Tracking), Config (Resource Configurations and Inventory), CloudWatch (Resource and Application Monitoring), Service Catalog (Personalized Catalog of AWS Resources).
- Application Services**: SQS (Message Queue Service), SWF (Workflow Service for Coordinating Applications), AppStream (Low Latency Application Streaming), Elastic Transcoder (Easy-to-use Scalable Media Transcoding), SES (Email Sending Service), CloudSearch (Managed Search Service), API Gateway (Build, Deploy and Manage APIs).
- Deployment & Management**: Elastic Beanstalk (AWS Application Container), OpsWorks (DevOps Application Management Service), CloudFormation (Templated AWS Resource Creation), CodeDeploy (Automated Deployments), CodeCommit (Managed Git Repositories), CodePipeline (Continuous Delivery).
- Mobile Services**: Cognito (User Identity and App Data Synchronization), Device Farm (Test Android, Fire OS, and iOS apps on real devices in the Cloud), Mobile Analytics (Collect, View and Export App Analytics), SNS (Push Notification Service).
- Analytics**: EMR (Managed Hadoop Framework), Kinesis (Real-time Processing of Streaming Big Data), Data Pipeline (Orchestration for Data-Driven Workflows), Machine Learning (Build Smart Applications Quickly and Easily).
- Enterprise Applications**: WorkSpaces (Desktops in the Cloud), WorkDocs (Secure Enterprise Storage and Sharing Service), WorkMail (PREVIEW, Secure Email and Calendaring Service).
- Service Health**: All services operating normally.

A green box highlights the "Security Credentials" link under the "Billing & Cost Management" section. The "My Account" and "Sign Out" links are also visible in the top right corner.



The screenshot shows the AWS Identity and Access Management (IAM) service interface. On the left, a sidebar lists navigation options: Dashboard, Details, Groups, **Users** (which is highlighted with a green oval), Roles, Policies, Identity Providers, Account Settings, Credential Report, and Encryption Keys. The main content area has a header with 'Create New Users' and 'User Actions'. It includes a search bar and a table with two columns: 'User Name' and 'Groups'. The table shows one user, Ruben, who is associated with 0 groups.

User Name	Groups
Ruben	0

The screenshot shows the AWS IAM (Identity and Access Management) service interface. The top navigation bar includes the AWS logo, a Services dropdown, and an Edit dropdown. On the left, a sidebar menu lists several options: Dashboard, Details, Groups, Users (which is selected and highlighted with a blue border), Roles, Policies, Identity Providers, Account Settings, Credential Report, and Encryption Keys. The main content area displays a table with one row for the user 'Ruben'. The table has three columns: a checkbox column, a 'User Name' column containing 'Ruben' with a downward arrow, and a 'Groups' column showing '0'. Above the table, there is a blue button labeled 'Create New Users' and a 'User Actions' dropdown menu. A green oval has been drawn around the 'Create New Users' button.

	User Name	Groups
<input type="checkbox"/>	Ruben	0

The screenshot shows the AWS IAM (Identity and Access Management) service interface. The left sidebar has a navigation menu with the following items:

- Dashboard
- Details
- Groups
- Users** (highlighted with a blue border)
- Roles
- Policies
- Identity Providers
- Account Settings
- Credential Report

A horizontal line separates this from the main content area.

The main content area has a dark header bar with the following buttons:

- AWS icon
- Services dropdown
- Edit dropdown

Below the header are two buttons:

- Create New Users** (blue button)
- User Actions dropdown

The main content area contains a search bar labeled "Search". Below it is a table with the following columns:

<input type="checkbox"/>	User Name ▲	Groups
<input type="checkbox"/>	Ruben	0

At the bottom right of the main content area, there is a green oval highlighting a blue button labeled "Download Credentials". To its left is a "Close" link.

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EC2 Dashboard

- Events
- Tags
- Reports
- Limits

INSTANCES

- Instances
- Spot Requests
- Reserved Instances

IMAGES

- AMIs
- Bundle Tasks

ELASTIC BLOCK STORE

- Volumes
- Snapshots

NETWORK & SECURITY

- Security Groups
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces

LOAD BALANCING

- Load Balancers

AUTO SCALING

- Launch Configurations
- Auto Scaling Groups

Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

0 Running Instances	0 Elastic IPs
0 Volumes	0 Snapshots
2 Key Pairs	0 Load Balancers
0 Placement Groups	3 Security Groups

Automate application deployments to EC2 with [CodeDeploy](#).

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your instances will launch in the US East (N. Virginia) region

Service Health

Service Status:

- US East (N. Virginia): This service is operating normally

Availability Zone Status:

- us-east-1a: Availability zone is operating normally
- us-east-1c: Availability zone is operating normally
- us-east-1d: Availability zone is operating normally
- us-east-1e: Availability zone is operating normally

Scheduled Events

US East (N. Virginia):

No events

Account Attributes

Supported Platforms VPC

Default VPC [vpc-978576f2](#)

Additional Information

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AWS Marketplace

Find free software trial products in the AWS Marketplace from the [EC2 Launch Wizard](#). Or try these popular AMIs:

Brocade 5400 Virtual Router/Firewall/VPN

Provided by Brocade Rating ★★★★☆ Pay by the hour for software and AWS usage [View all Networking](#)

Alert Logic Threat Manager for AWS

Provided by Alert Logic, Inc. Rating ★★★★★ Pay by the hour for software and AWS usage [View all Security Software](#)

TIBCO Spotfire Analytics Platform (Hourly)

Provided by TIBCO Software, Inc.

The screenshot shows the AWS EC2 Key Pairs page. The top navigation bar includes the AWS logo, a Services dropdown, and a user dropdown for Naeff in the N. Virginia region. The main content area has a sidebar with links for EC2 Dashboard, Events, Tags, Reports, Limits, Instances, AMIs, and various storage and security options. The 'Key Pairs' section is currently selected, indicated by an orange vertical bar. A large green circle highlights the 'Create Key Pair' button at the top left of the main content area. Below it, a message states, "You do not have any Key Pairs in this region. Click the 'Create Key Pair' button to create your first Key Pair." A search bar and navigation controls are also visible.

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

- Instances
- Spot Requests
- Reserved Instances

IMAGES

- AMIs
- Bundle Tasks

ELASTIC BLOCK STORE

- Volumes
- Snapshots

NETWORK & SECURITY

- Security Groups
- Elastic IPs
- Placement Groups

Key Pairs

- Network Interfaces

LOAD BALANCING

- Load Balancers

AUTO SCALING

- Launch Configurations
- Auto Scaling Groups

AWS Services

Services

Edit

Create Key Pair

Import Key Pair

Delete

Filter by attributes or search by keyword

You do not have any Key Pairs in this region.

Click the "Create Key Pair" button to create your first Key Pair.

Create Key Pair

Select a key pair

The screenshot shows the AWS EC2 dashboard with the 'Key Pairs' section selected. A modal window titled 'Create Key Pair' is open, prompting the user to enter a key pair name. The name 'ga' has been typed into the input field, which is highlighted with a green oval. The 'Create' button at the bottom right of the modal is also highlighted with a green oval. The background shows a message indicating no key pairs exist in the region, and a search bar at the top.

AWS Services Edit

EC2 Dashboard Events Tags Reports Limits

INSTANCES Instances Spot Requests Reserved Instances

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots

NETWORK & SECURITY Security Groups Elastic IPs Placement Groups

Key Pairs Network Interfaces

LOAD BALANCING Load Balancers

AUTO SCALING Launch Configurations Auto Scaling Groups

Create Key Pair Import Key Pair Delete

Filter by attributes or search by keyword

You do not have any Key Pairs in this region.

Click the "Create Key Pair" button to create your first Key Pair.

Create Key Pair

Key pair name:

Cancel Create

Select a key pair

- ▶ *Download your key pair file (e.g., ga.pem)*
- ▶ *You can name it and save the .pem locally wherever you'd like.
We save it in a dedicated folder (e.g., ~/.aws/)*
- ▶ *Set the proper permissions:* chmod 600 ~/.aws/ga.pem

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[Create a Group](#) [Tag Editor](#)

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Service Health

All services operating normally.

Updated: Aug 25 2015 15:57:00 GMT-0400

[Service Health Dashboard](#)

AWS Services Edit Naeff N. Virginia Support

EC2 Dashboard

- Events
- Tags
- Reports
- Limits

INSTANCES

- Instances
- Spot Requests
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- Key Pairs
- Network Interfaces

LOAD BALANCING

- Load Balancers

AUTO SCALING

- Launch Configurations
- Auto Scaling Groups

Resources

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

0 Running Instances	0 Elastic IPs
0 Volumes	0 Snapshots
2 Key Pairs	0 Load Balancers
0 Placement Groups	3 Security Groups

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[Service Health Dashboard](#)

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US East (N. Virginia):

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Default VPC [vpc-978576f2](#)

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Provided by TIBCO Software, Inc.

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AWS Services Edit Naeff N. Virginia Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

- My AMIs
- AWS Marketplace
- Community AMIs
- Free tier only ⓘ

		1 to 22 of 22 AMIs	
	Amazon Linux AMI 2015.03.1 (HVM), SSD Volume Type - ami-0d4cf66		64-bit
	The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.		
	Root device type: ebs Virtualization type: hvm		
	Red Hat Enterprise Linux 7.1 (HVM), SSD Volume Type - ami-12663b7a		64-bit
	Red Hat Enterprise Linux version 7.1 (HVM), EBS General Purpose (SSD) Volume Type		
	Root device type: ebs Virtualization type: hvm		
	SUSE Linux Enterprise Server 12 (HVM), SSD Volume Type - ami-aeb532c6		64-bit
	SUSE Linux Enterprise Server 12 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.		
	Root device type: ebs Virtualization type: hvm		
	Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-d05e75b8		64-bit
	Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).		
	Root device type: ebs Virtualization type: hvm		
	Microsoft Windows Server 2012 R2 Base - ami-cd9339a6		64-bit
	Microsoft Windows 2012 R2 Standard edition with 64-bit architecture. [English]		
	Root device type: ebs Virtualization type: hvm		



1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types ▾ Current generation ▾ Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs ⓘ	Memory (GiB) ⓘ	Instance Storage (GB) ⓘ	EBS-Optimized Available ⓘ	Network Performance ⓘ
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

AWS Services Edit

Naeff N. Virginia Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

A Improve your instances' security. Your security group, launch-wizard-1, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

▶ AMI Details [Edit AMI](#)

▶ Instance Type [Edit instance type](#)

▶ Security Groups [Edit security groups](#)

▶ Instance Details [Edit instance details](#)

▶ Storage [Edit storage](#)

▶ Tags [Edit tags](#)

Cancel Previous **Launch**

AWS Services Edit Naeff N. Virginia Support

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Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

⚠ Improve your instances' security. Your security group, launch-wizard-1, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group's rules to allow access from known IP addresses only. You can also open additional ports in your security group.

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

Select a key pair

ga

I acknowledge that I have access to the selected private key file (ga.pem), and that without this file, I won't be able to log into my instance.

CANCEL Launch Instances

Edit AMI Edit instance type Edit security groups Edit instance details Edit storage Edit tags

Cancel Previous Launch

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AWS Services

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EC2 Virtual Servers in the Cloud

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[Create a Group](#) [Tag Editor](#)

Additional Resources

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

AWS Lambda
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Service Health

All services operating normally.

Updated: Aug 25 2015 15:57:00 GMT-0400

[Service Health Dashboard](#)

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AWS Services Edit

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EC2 Dashboard Events Tags Reports Limits Instances Spot Requests Reserved Instances

Images AMIs Bundle Tasks

Elastic Block Store Volumes Snapshots

Network & Security Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

Load Balancing Load Balancers

Auto Scaling Launch Configurations Auto Scaling Groups

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

1 to 4 of 4

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name	Monitor
i-3c031cee	i-3c031cee	m3.xlarge	us-east-1d	running	2/2 checks ...	None	ec2-52-7-232-239.com...	52.7.232.239	ga	disabled
i-3d031cef	i-3d031cef	m3.xlarge	us-east-1d	running	2/2 checks ...	None	ec2-52-20-51-153.com...	52.20.51.153	ga	disabled
i-9b021d49	i-9b021d49	m3.xlarge	us-east-1d	running	2/2 checks ...	None	ec2-52-22-146-230.co...	52.22.146.230	ga	disabled
i-9cdcf236	i-9cdcf236	t2.micro	us-east-1c	running	2/2 checks ...	None	ec2-52-21-176-167.co...	52.21.176.167	ga	disabled

Select an instance above

Instances

Spot Requests

Reserved Instances

Images

AMIs

Bundle Tasks

Elastic Block Store

Volumes

Snapshots

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Auto Scaling

Launch Configurations

Auto Scaling Groups

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with navigation links for EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces, Load Balancing, and Auto Scaling.

The main area displays a table of instances with columns: Name, Instance ID, Instance Type, and Availability. There are four instances listed:

Name	Instance ID	Instance Type	Availability
i-3c031cee	i-3c031cee	m3.xlarge	us-east-1d
i-3d031cef	i-3d031cef	m3.xlarge	us-east-1d
i-9b021d49	i-9b021d49	m3.xlarge	us-east-1d
i-9cdcf236	i-9cdcf236	t2.micro	us-east-1c

A context menu is open over the first instance (i-3c031cee), with the 'Connect' option circled in green. Another green circle highlights the 'Connect' button in the top navigation bar. A large green box highlights the 'Connect' section of the interface, which includes options like 'Get Windows Password', 'Launch More Like This', 'Instance State', 'Instance Settings', 'Image', 'Networking', and 'CloudWatch Monitoring'.

At the bottom, a message says "Select an instance above".

AWS Services Edit

- EC2 Dashboard
- Events
- Tags
- Reports
- Limits
- INSTANCES**
- Instances
- Spot Requests
- Reserved Instances
- IMAGES**
- AMIs
- Bundle Tasks
- ELASTIC BLOCK STORE**
- Volumes
- Snapshots
- NETWORK & SECURITY**
- Security Groups
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- Key Pairs
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- LOAD BALANCING**
- Load Balancers
- AUTO SCALING**
- Launch Configurations
- Auto Scaling Groups

Launch Instance Connect

Filter by tags and attributes

Name	Instance
i-3c031c	
i-3d031c	
i-9b021d	
i-9ddcf23	

Select an instance above

Connect To Your Instance

I would like to connect with A standalone SSH client A Java SSH Client directly from my browser (Java required)

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (ga.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:
`chmod 400 ga.pem`
4. Connect to your instance using its Public IP:
52.21.176.167

Example:

```
ssh -i "ga.pem" ec2-user@52.21.176.167
```

Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Close

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IP Key Name Monitor

IP	Key Name	Monitor
2.239	ga	disabled
1.153	ga	disabled
46.230	ga	disabled
76.167	ga	disabled

- ▶ *Log into your instance:*

```
$ ssh -i ~/.aws/ga.pem ec2-user@52.21.176.167
```

- ▶ *Log into your instance:*

```
$ ssh -i ~/.aws/ga.pem ec2-user@52.21.176.167
```

- ▶ *Log out of your instance:*

```
$ exit
```

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Spot Requests, Reserved Instances, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, and Network Interfaces. The main area displays a table of four EC2 instances. The fourth instance, with the ID i-9dcdf236, has a context menu open over it. The menu includes options like Connect, Get Windows Password, Launch More Like This, Instance State (with Start, Stop, and Terminate), Instance Settings, Image, Networking, and CloudWatch Monitoring. The 'Terminate' option under Instance State is highlighted with a green circle. The entire context menu is also circled in green. To the right of the menu, the instance details are shown: Name (i-9dcdf236), Instance State (running), Status Checks (2/2 checks passed), Alarm Status (None), Public DNS (ec2-52-21-176-167.com), Public IP (52.21.176.167), Key Name (ga), and Monitoring (disabled). A small blue square icon is also circled in green next to the instance ID in the table.

Name	Instance ID	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name	Monitoring
i-3c031ceef	i-3c031ceef	us-east-1c	running	2/2 checks passed	None	ec2-52-7-232-239.com...	52.7.232.239	ga	disabled
i-3d031cef0	i-3d031cef0	us-east-1c	running	2/2 checks passed	None	ec2-52-20-51-153.com...	52.20.51.153	ga	disabled
i-9b021d49f	i-9b021d49f	us-east-1c	running	2/2 checks passed	None	ec2-52-22-146-230.co...	52.22.146.230	ga	disabled
i-9dcdf236	i-9dcdf236	us-east-1c	running	2/2 checks passed	None	ec2-52-21-176-167.co...	52.21.176.167	ga	disabled

Make sure to kill your instances to prevent adding minutes and \$\$ to your bill

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Managed Hadoop Framework



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Tag Editor

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Updated: Aug 25 2015 15:57:00 GMT-0400

[Service Health Dashboard](#)

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Quick cluster configuration [Go to advanced options](#)

Cluster name

Logging Enable

Copy the cluster's log files automatically to S3.

S3 folder

s3://<bucket-name>/<folder>/

Launch mode Cluster

Step execution

With Cluster, EMR creates a cluster with a set of specified applications. With Step execution, EMR will create a cluster, execute added steps and terminate when done.

Cluster name

Software configuration

Vendor Amazon MapR

Release

Release

Applications All Applications: Hadoop 2.6.0, Hive 1.0.0, Mahout 0.10.0, Pig 0.14.0, and Spark 1.4.1

Core Hadoop: Hadoop 2.6.0, Hive 1.0.0, and Pig 0.14.0

Spark: Spark 1.4.1 on Hadoop 2.6.0 YARN

All Applications: Hadoop 2.6.0, Hive 1.0.0, Mahout 0.10.0, Pig 0.14.0, and Spark 1.4.1

Hardware configuration

Instance type

Number of instances (1 master and 2 core nodes)

EC2 key pair

Security and access

EC2 key pair

Use an existing EC2 key pair to SSH into the master node of the EMR cluster. [Learn how to create an EC2 key pair.](#)

Permissions Default

[View EMR role policy](#)

[View EC2 instance profile](#)

Custom

IAM roles grant EMR and your cluster's EC2 instances access to AWS services. If the roles don't exist, they are created for you using AWS managed policies. [Learn more](#)

Select custom IAM roles to tailor permissions for your cluster. [Learn more](#)

AMAZON WEB SERVICES

AWS Services Edit Naeff N. Virginia Support

Elastic MapReduce Cluster List Cluster Details EMR Help

Add step Resize Clone Terminate

Cluster: ga-cluster Starting Configuring cluster software C

Connections: Enable Web Connection – Resource Manager ... (View All)

Master public DNS: ec2-52-22-32-35.compute-1.amazonaws.com SSH

Tags: -- View All / Edit

Summary	Configuration Details	Network and Hardware	Security and Access
ID: j-2G46O8FKD36WD Creation date: 2015-08-25 16:45 (UTC-4) Elapsed time: 4 minutes Auto-terminate: No Termination Off Change protection:	Release label: emr-4.0.0 Hadoop Amazon 2.6.0 distribution: Applications: Hive 1.0.0, Mahout 0.10.0, Pig 0.14.0, Spark 1.4.1 Log URI: s3://aws-logs-430081998647-us-east-1/elasticmapreduce/ EMRFS Disabled consistent view:	Availability zone: us-east-1e Subnet ID: subnet-2623421c Master: Bootstrapping 1 m3.xlarge Core: Provisioning 2 m3.xlarge Task: --	Key name: ga EC2 instance EMR_EC2_DefaultRole profile: EMR role: EMR_DefaultRole Visible to all All Change users: Security groups sg-ee631389 for Master: (ElasticMapReduce-master) Security groups sg-ed63138a for Core & Task: (ElasticMapReduce-slave)

- ▶ Monitoring
- ▶ Hardware
- ▶ Steps
- ▶ Bootstrap Actions

AMAZON WEB SERVICES

AWS Services Edit Naeff N. Virginia Support

Elastic MapReduce Cluster List Cluster Details EMR Help

Add step Resize Change Template

Cluster: ga-cluster Starting Configuring cluster software C

Connections:
Master public DNS: ec2-52-22-32-35.compute-1.amazonaws.com SSH

Tags: -- View All / Edit

Summary	Configuration Details	Network and Hardware	Security and Access
ID: j-2G46O8FKD36WD Creation date: 2015-08-25 16:45 (UTC-4) Elapsed time: 4 minutes Auto-terminate: No Termination Off Change protection:	Release label: emr-4.0.0 Hadoop Amazon 2.6.0 distribution: Applications: Hive 1.0.0, Mahout 0.10.0, Pig 0.14.0, Spark 1.4.1 Log URI: s3://aws-logs-430081998647-us-east-1/elasticmapreduce/ EMRFS Disabled consistent view:	Availability zone: us-east-1e Subnet ID: subnet-2623421c Master: Bootstrapping 1 m3.xlarge Core: Provisioning 2 m3.xlarge Task: --	Key name: ga EC2 instance EMR_EC2_DefaultRole profile: EMR role: EMR_DefaultRole Visible to all All Change users: Security groups sg-ee631389 for Master: (ElasticMapReduce-master) Security groups sg-ed63138a for Core & Task: (ElasticMapReduce-slave)

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AWS Services Edit Naeff N. Virginia Support

Elastic MapReduce Cluster List Cluster Details EMR Help

Add step Resize Clone Terminate

Cluster: ga-cluster Waiting Waiting after step completed C

Connections:
Master public DNS: ec2-52-22-32-35.compute-1.amazonaws.com SSH
Tags: -- View All / Edit

Summary	Configuration Details	Network and Hardware	Security and Access
ID: j-2G46O8FKD36WD Creation date: 2015-08-25 16:45 (UTC-4) Elapsed time: 4 minutes Auto-terminate: No Termination Off Change protection:	Release label: emr-4.0.0 Hadoop Amazon 2.6.0 distribution: Applications: Hive 1.0.0, Mahout 0.10.0, Pig 0.14.0, Spark 1.4.1 Log URI: s3://aws-logs-430081998647-us-east-1/elasticmapreduce/ EMRFS Disabled consistent view:	Availability zone: us-east-1e Subnet ID: subnet-2623421c Master: Bootstrapping 1 m3.xlarge Core: Provisioning 2 m3.xlarge Task: --	Key name: ga EC2 instance EMR_EC2_DefaultRole profile: EMR role: EMR_DefaultRole Visible to all All Change users: Security groups sg-ee631389 for Master: (ElasticMapReduce-master) Security groups sg-ed63138a for Core & Task: (ElasticMapReduce-slave)

► Monitoring

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AWS Services Edit Naeff N. Virginia Support

Elastic MapReduce Cluster List Cluster Details EMR Help

Add step Resize Clone Terminate

Cluster: ga-cluster Starting Configuring cluster software C

Master public DNS: ec2-52-22-32-35.compute-1.amazonaws.com [SSH](#)

Summary	Configuration Details	Network and Hardware	Security and Access
ID: j-2G46O8FKD36WD Creation date: 2015-08-25 16:45 (UTC-4) Elapsed time: 4 minutes Auto-terminate: No Termination Off Change protection:	Release label: emr-4.0.0 Hadoop Amazon 2.6.0 distribution: Applications: Hive 1.0.0, Mahout 0.10.0, Pig 0.14.0, Spark 1.4.1 Log URI: s3://aws-logs-430081998647-us-east-1/elasticmapreduce/ EMRFS Disabled consistent view:	Availability zone: us-east-1e Subnet ID: subnet-2623421c Master: Bootstrapping 1 m3.xlarge Core: Provisioning 2 m3.xlarge Task: --	Key name: ga EC2 instance EMR_EC2_DefaultRole profile: EMR role: EMR_DefaultRole Visible to all All Change users: Security groups sg-ee631389 for Master: (ElasticMapReduce-master) Security groups sg-ed63138a for Core & Task: (ElasticMapReduce-slave)

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AWS Services Edit Naeff N. Virginia Support

Elastic MapReduce Cluster List Cluster Details EMR Help

Add step Resize Clone Terminate

Cluster: ga-cluster Starting Configuring cluster software C

Master public DNS: ec2-52-22-32-35.compute-1.amazonaws.com **SSH**

Summary
 ID: j-2G46O8FKD36WD
 Creation date: 2015-08-25 16:45 (UTC-4)
 Elapsed time: 4 minutes
 Auto-terminate: No
 Termination Off Change protection:

Configuration Details
 Release label: emr-4.0.0
 Hadoop Amazon 2.6.0 distribution:
 Applications: Hive 1.0.0, Mahout 0.10.0, Pig 0.14.0, Spark 1.4.1
 Log URI: s3://aws-logs-430081998647-us-east-1/elasticmapreduce/

Network and Hardware
 Availability zone: us-east-1e
 Subnet ID: subnet-2623421c
 Master: Bootstrapping 1 m3.xlarge
 Core: Provisioning 2 m3.xlarge
 Task: --

Security and Access
 Key name: ga
 EC2 instance EMR_EC2_DefaultRole profile:
 EMR role: EMR_DefaultRole
 Visible to all All Change users:
 Security groups sg-ee631389 for Master: (ElasticMapReduce-master)
 Security groups sg-ed63138a for Core & Task: (ElasticMapReduce-slave)

▶ Monitoring

▶ Hardware

▶ Steps

▶ Bootstrap Actions

The screenshot shows the AWS Elastic MapReduce Cluster Details page. A modal dialog titled "SSH" is open, providing instructions on how to connect to the master node using SSH. The dialog includes a "Learn more" link and two tabs: "Windows" (selected) and "Mac / Linux". The "Mac / Linux" tab contains the following steps:

1. Open a terminal window. On Mac OS X, choose Applications > Utilities > Terminal. On other Linux distributions, terminal is typically found at Applications > Accessories > Terminal.
2. To establish a connection to the master node, type the following command. Replace `~/ga.pem` with the location and filename of the private key file (.pem) used to launch the cluster.

```
ssh hadoop@ec2-52-22-32-35.compute-1.amazonaws.com -i ~/ga.pem
```
3. Type yes to dismiss the security warning.

At the bottom right of the dialog is a "Close" button.

Navigation links on the left include: Add step, Cluster: ga-d, Connections:, Master public, Tags:, Summary, Creation d, Elapsed t, Auto-termi, Terminal protect, Monitoring, Hardware, Steps, and Bootstrap Actions. Top navigation includes AWS, Services, Edit, Naeff, N. Virginia, Support, and EMR Help.

Log into your master node

```
$ ssh -i ~/.aws/ga.pem hadoop@ec2-52-22-146-230.compute-1.amazonaws.com
```

Log into your master node

```
$ ssh -i ~/.aws/ga.pem hadoop@ec2-52-22-146-230.compute-1.amazonaws.com
```

```
The authenticity of host 'ec2-52-22-146-230.compute-1.amazonaws.com (52.22.146.230)' can't be established.
```

```
RSA key fingerprint is 72:6c:a8:8f:01:32:eb:90:33:70:97:24:b1:b2:39:0d.
```

```
Are you sure you want to continue connecting (yes/no)?
```

Log into your master node

```
$ ssh -i ~/.aws/ga.pem hadoop@ec2-52-22-146-230.compute-1.amazonaws.com
```

The authenticity of host 'ec2-52-22-146-230.compute-1.amazonaws.com (52.22.146.230)' can't be established.

RSA key fingerprint is 72:6c:a8:8f:01:32:eb:90:33:70:97:24:b1:b2:39:0d.

Are you sure you want to continue connecting (yes/no)? yes

Log into your master node

```
$ ssh -i ~/.aws/ga.pem hadoop@ec2-52-22-146-230.compute-1.amazonaws.com
```

```
The authenticity of host 'ec2-52-22-146-230.compute-1.amazonaws.com (52.22.146.230)' can't be established.
```

```
RSA key fingerprint is 72:6c:a8:8f:01:32:eb:90:33:70:97:24:b1:b2:39:0d.
```

```
Are you sure you want to continue connecting (yes/no)? yes
```

```
[...]
```

```
[hadoop@ip-172-31-22-179 ~]$
```

Please refer to the repo for instructions for next steps

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AWS Services

Compute

EC2 Virtual Servers in the Cloud

Run and Manage Docker Containers

Storage & Content Delivery

- S3 Scalable Storage in the Cloud
- Elastic File System PREVIEW Fully Managed File System for EC2
- Storage Gateway Integrates On-Premises IT Environments with Cloud Storage
- Glacier Archive Storage in the Cloud
- CloudFront Global Content Delivery Network

Database

- RDS MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora
- DYNAMODB Predictable and Scalable NoSQL Data Store
- ElastiCache In-Memory Cache
- Redshift Managed Petabyte-Scale Data Warehouse Service

Networking

- VPC Isolated Cloud Resources
- Direct Connect Dedicated Network Connection to AWS
- Route 53 Scalable DNS and Domain Name Registration

Administration & Security

- Directory Service Managed Directories in the Cloud
- Identity & Access Management Access Control and Key Management
- Trusted Advisor AWS Cloud Optimization Expert
- CloudTrail User Activity and Change Tracking
- Config Resource Configurations and Inventory
- CloudWatch Resource and Application Monitoring
- Service Catalog Personalized Catalog of AWS Resources

Deployment & Management

- Elastic Beanstalk AWS Application Container
- OpsWorks DevOps Application Management Service
- CloudFormation Templated AWS Resource Creation
- CodeDeploy Automated Deployments
- CodeCommit Managed Git Repositories
- CodePipeline Continuous Delivery

Analytics

- EMR Managed Hadoop Framework
- Kinesis Real-time Processing of Streaming Big Data
- Data Pipeline Orchestration for Data-Driven Workflows
- Machine Learning Build Smart Applications Quickly and Easily

Application Services

- SQS Message Queue Service
- SWF Workflow Service for Coordinating Application Components
- AppStream Low Latency Application Streaming
- Elastic Transcoder Easy-to-use Scalable Media Transcoding
- SES Email Sending Service
- CloudSearch Managed Search Service
- API Gateway Build, Deploy and Manage APIs

Mobile Services

- Cognito User Identity and App Data Synchronization
- Device Farm Test Android, Fire OS, and iOS apps on real devices in the Cloud
- Mobile Analytics Collect, View and Export App Analytics
- SNS Push Notification Service

Enterprise Applications

- WorkSpaces Desktops in the Cloud
- WorkD Secure
- Work Secure L

Resource Groups

A resource group is a collection of resources that share one or more tags. Create a group for each project, application, or environment in your account.

Create a Group Tag Editor

Additional Resources

Getting Started

Read our [documentation](#) or view our [training](#) to learn more about AWS.

AWS Console Mobile App

View your resources on the go with our AWS Console mobile app, available from [Amazon Appstore](#), [Google Play](#), or [iTunes](#).

AWS Marketplace

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

Make sure to kill your instances to prevent adding minutes and \$\$ to your bill

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with navigation links: EC2 Dashboard, Events, Tags, Reports, Limits, Instances (circled), Spot Requests, Reserved Instances, IMAGES, AMIs, Bundle Tasks, ELASTIC BLOCK STORE, Volumes, Snapshots, and NETWORK & SECURITY. The main area displays a table of four EC2 instances. The fourth instance, with ID i-9dcdf236, has a context menu open over it. The menu includes options like Connect, Get Windows Password, Launch More Like This, Instance State (with Start, Stop, and Terminate sub-options, where Terminate is highlighted with a yellow background), Instance Settings, Image, Networking, and CloudWatch Monitoring. The main interface has a header with AWS Services, Edit, and a navigation bar with Naeff, N. Virginia, and Support.

Name	Instance ID	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS	Public IP	Key Name	Monitor
i-3c031ceef	i-3c031ceef	us-east-1c	running	2/2 checks ...	None	ec2-52-7-232-239.com...	52.7.232.239	ga	disabled
i-3d031cef1	i-3d031cef1	us-east-1c	running	2/2 checks ...	None	ec2-52-20-51-153.com...	52.20.51.153	ga	disabled
i-9b021d495	i-9b021d495	us-east-1c	running	2/2 checks ...	None	ec2-52-22-146-230.co...	52.22.146.230	ga	disabled
i-9dcdf236	i-9dcdf236	us-east-1c	running	2/2 checks ...	None	ec2-52-21-176-167.co...	52.21.176.167	ga	disabled

Make sure to kill your instances to prevent adding minutes and \$\$ to your bill

INTRO TO DATA SCIENCE

DISCUSSION