



I N T R O D U C T I O N T O A W S

Getting Started with AWS

Learn how to use AWS with simple lab



Getting Started with AWS

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Dedicated to the beautiful Joanne. Wish her happy every day!

As the largest cloud computing platform in the world, Amazon Web Services (AWS) provides one of the most popular web services options available. This easy-to-understand guide is the perfect introduction to the Amazon Web Services platform and all it can do for you. You'll learn about the Amazon Web Services tool set; how different web services (including S3, Amazon EC2 and etc) ; and how you can implement AWS in your organization.

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1. Setting Up

1.1 Sign Up for AWS

when you sign up for Amazon Web Service (AWS), your AWS account is automatically signed up for all services in AWS and you can start using them immediately. You are charged only for the services that you use.

If you create your AWS account less than 12 months ago, you can get started with AWS for free. For more information, see [free¹](#).

If you have AWS account already, skip to go next step. If you don't have a AWS account, use the following procedure to create one.

1.1.1 To create an AWS account

1. Open [aws²](#), and then click Sign Up.
2. Follow the on-screen instruction.

Part of sign-up procedure involves receiving a phone call and entering a PIN using the phone keypad

1.2 Create a Key Pair

AWS users public-key cryptography to secure the login information for your instance. A Linux has no password; you use a key pair to log in to your instance securely. You specify the name of the key pair when you launch your instance, then provide the private key when you log in using SSH.

1.2.1 To create a key pair

1. Open the Amazon EC2 console.
2. From the navigation bar, in the region selector, click **US West(Oregon)**.
3. In the navigation pane, click **Key Pairs**.
4. Click **Create Key Pair**.
5. Enter a name for the new key pair in the **Key pair name** field of the **Create Key pair** dialog box and then click **Create**. Choose a name that is easy for you to remember.

¹<http://aws.amazon.com/cn/free>

²<http://aws.amazon.com>

6. The private key file is automatically downloaded by your browser. The base file name is the name you specified as the name of your key pair, and the file name extension is *.pem*. Save the private key file in a safe place.

Important

This is the only chance for you to save the private key file. You'll need to provide the name of your key pair when launch an instance and the corresponding private key each time you connect to the instance.

7. Prepare the private key file. This process depends on the operating system of the computer that you're using. 1). If your computer runs Mac OS X or Linux, use the following command to set the permission for your private key file so that only you can read it.

\$ chmod 400 my-key-pair.pem

2). If your computer runs Windows, use the following step to convert your *.pem* to a *.ppk* file for use with PuTTY.

- a. Download and install PuTTY from <http://www.chiark.greenend.org.uk/~sgtatham/putty/>. Be sure to install the entire suite.
- b. Start PuTTYgen (for example, from the **Start menu**, click **All Programs > PuTTY > PuTTYgen**).

c. Under **Type of key to generate**, select **SSH-2 RSA**.

d. Click **Load**. By default, PuTTYgen displays only files with extension *.ppk*. To locate your *.pem* file, select the option to display files of all types.

e. Select your private key file and then click **Open**. Click **OK** to dismiss the confirmation dialog box.

f. Click **Save private key**. PuTTYgen displays a warning about saving the key without a passphrase. Click **Yes**.

g. Specify the same name that you used for the key pair (for example, *my-key-pair*) and then click **Save**. PuTTY automatically adds the *.ppk* file extension.

2. Amazon Elastic Compute Cloud

2.1 What is Amazon Elastic Compute Cloud

Amazon EC2 is a web service that provides resizable computer capacity in the cloud. It is also designed to make web-scale computing easier for everyone.

Amazon EC2 is more than just a virtual machine. The Amazon EC2 Service offers a variety of benefits and features, such as elasticity, complete user control of resources, flexibility, reliability and security. It is also quick easy to get up and running with Amazon EC2.

2.1.1 Topics Covered

This chapter will introduce you to basic Amazon EC2 activities, including:

- Creating an Amazon Linux Instance from an Amazon Machine Image (AMI)
- Finding Your Instance in the Amazon Management Console
- Logging into Your Instance

2.2 Create an Amazon Linux Instance from an Amazon Machine Image (AMI)

To get started creating your first Amazon instance, you will need to access the Amazon EC2 icon on the Amazon Management Console, and utilize the wizard.

1. Open the AWS Management Console which should still be open in your browser.

2. Click Amazon EC2 Icon on the AWS Management Console homepage.

Amazon Web Services

Compute & Networking

-  **Direct Connect**
Dedicated Network Connection to AWS
-  **EC2**
Virtual Servers in the Cloud
-  **Route 53**
Scalable Domain Name System
-  **VPC**
Isolated Cloud Resources

Storage & Content Delivery

-  **CloudFront**
Global Content Delivery Network
-  **Glacier**
Archive Storage in the Cloud
-  **S3**
Scalable Storage in the Cloud
-  **Storage Gateway**
Integrates On-Premises IT Environments with Cloud Storage

Database

-  **DynamoDB**
Predictable and Scalable NoSQL Data Store
-  **ElastiCache**
In-Memory Cache
-  **RDS**
Managed Relational Database Service
-  **Redshift**
Managed Petabyte-Scale Data Warehouse Service

Deployment & Management

-  **CloudFormation**
Templated AWS Resource Creation
-  **CloudTrail**
User Activity and Change Tracking
-  **CloudWatch**
Resource and Application Monitoring
-  **Elastic Beanstalk**
AWS Application Container
-  **IAM**
Secure AWS Access Control
-  **OpsWorks**
DevOps Application Management Service
-  **Trusted Advisor**
AWS Cloud Optimization Expert

Analytics

-  **Data Pipeline**
Orchestration for Data-Driven Workflows
-  **Elastic MapReduce**
Managed Hadoop Framework
-  **Kinesis**
Real-time Processing of Streaming Big Data

Mobile Services

-  **Cognito**
User Identity and App Data Synchronization
-  **Mobile Analytics**
Understand App Usage Data at Scale
-  **SNS**
Push Notification Service

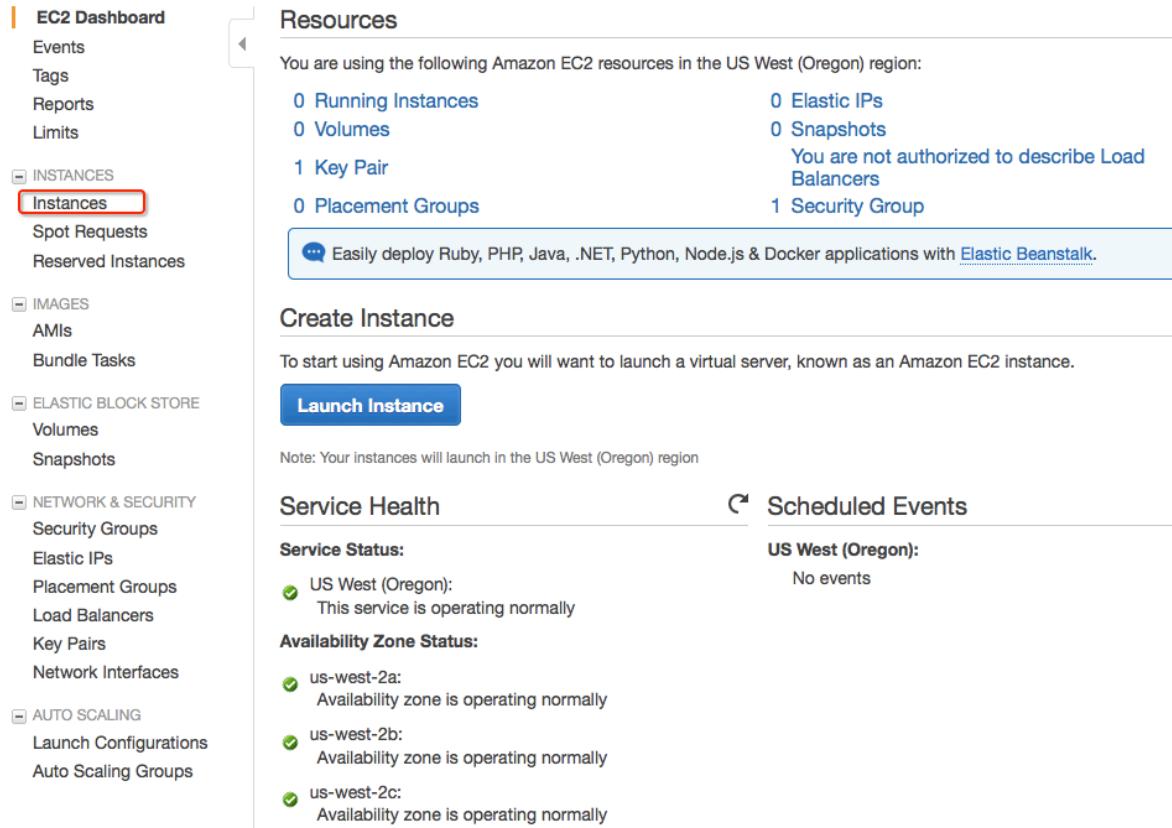
App Services

-  **AppStream**
Low Latency Application Streaming
-  **CloudSearch**
Managed Search Service
-  **Elastic Transcoder**
Easy-to-use Scalable Media Transcoding
-  **SES**
Email Sending Service
-  **SQS**
Message Queue Service
-  **SWF**
Workflow Service for Coordinating Application Components

Applications

-  **WorkSpaces**
Desktops in the Cloud
-  **Zocalo**
Secure Enterprise Storage and Sharing Service

3. Click the Instances link to create an instance.



The screenshot shows the AWS EC2 Dashboard. The left sidebar has a tree structure with the following items:

- EC2 Dashboard (selected)
- Events
- Tags
- Reports
- Limits
- INSTANCES (selected)
- Instances (highlighted)
- 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
- AUTO SCALING
- Launch Configurations
- Auto Scaling Groups

The main content area is titled "Resources" and displays the following summary:

- 0 Running Instances
- 0 Elastic IPs
- 0 Volumes
- 0 Snapshots
- 1 Key Pair
- You are not authorized to describe Load Balancers
- 0 Placement Groups
- 1 Security Group

A note at the bottom says: "Easily deploy Ruby, PHP, Java, .NET, Python, Node.js & Docker applications with [Elastic Beanstalk](#)."

A "Create Instance" section with a "Launch Instance" button is shown. A note below it says: "Note: Your instances will launch in the US West (Oregon) region".

On the right, there are sections for "Service Health" and "Scheduled Events".

Service Health

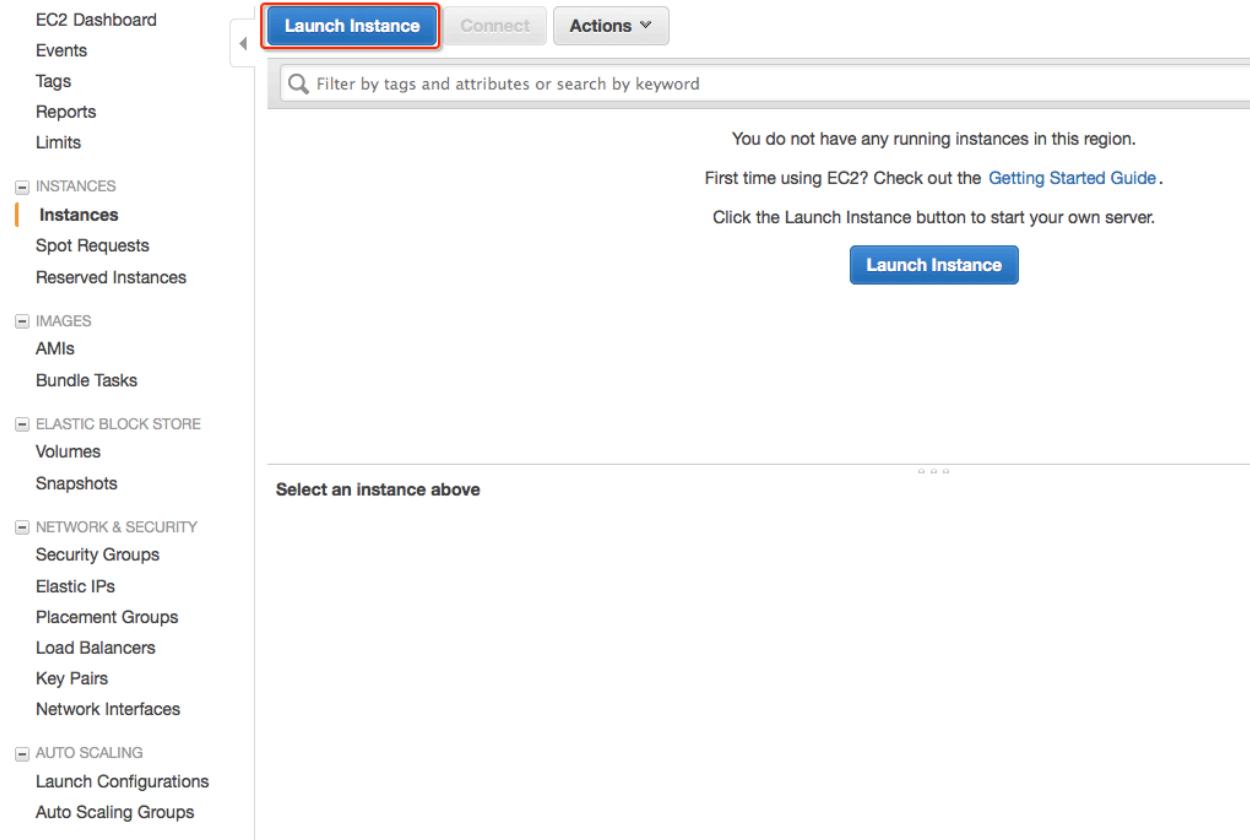
- Service Status:**
 - US West (Oregon): This service is operating normally
- Availability Zone Status:**
 - us-west-2a: Availability zone is operating normally
 - us-west-2b: Availability zone is operating normally
 - us-west-2c: Availability zone is operating normally

Scheduled Events

US West (Oregon): No events

4. Click Launch Instance button, to begin the process.

Note: There are many, different operating systems to leverage.

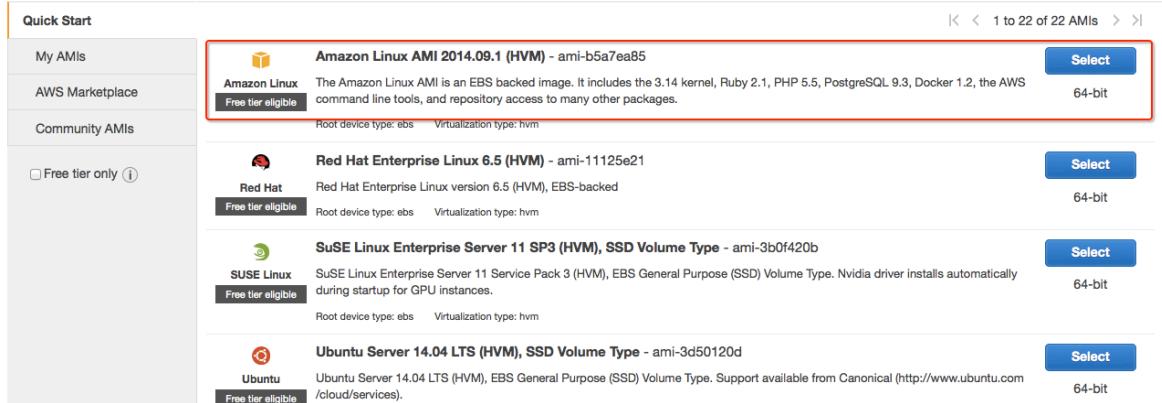


The screenshot shows the AWS EC2 Dashboard. On the left, a sidebar lists various services: EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (with Instances selected), IMAGES (with AMIs selected), ELASTIC BLOCK STORE (with Volumes and Snapshots), NETWORK & SECURITY (with Security Groups, Elastic IPs, Placement Groups, Load Balancers, Key Pairs, and Network Interfaces), and AUTO SCALING. At the top, there are buttons for Launch Instance, Connect, and Actions. A search bar says 'Filter by tags and attributes or search by keyword'. Below the search bar, a message says 'You do not have any running instances in this region.' and 'First time using EC2? Check out the [Getting Started Guide](#).'. It also says 'Click the Launch Instance button to start your own server.' A large 'Launch Instance' button is at the bottom right. The main area is titled 'Select an instance above'.

5. In the first dialogue window, Step 1: Choose an Amazon Machine Image, choose the Amazon Linux AMI instance by clicking Select next to that AMI.

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.



The screenshot shows the 'Choose an Amazon Machine Image (AMI)' dialog. On the left, a sidebar has 'Quick Start' selected, with options for My AMIs, AWS Marketplace, and Community AMIs. There is a checkbox for 'Free tier only'. The main area lists four AMIs:

- Amazon Linux AMI 2014.09.1 (HVM) - ami-b5a7ea85** (highlighted with a red box): 'Amazon Linux' icon, 'Free tier eligible'. Description: 'The Amazon Linux AMI is an EBS backed image. It includes the 3.14 kernel, Ruby 2.1, PHP 5.5, PostgreSQL 9.3, Docker 1.2, the AWS command line tools, and repository access to many other packages.' Root device type: ebs, Virtualization type: hvm. 'Select' button (also highlighted with a red box) and '64-bit' label.
- Red Hat Enterprise Linux 6.5 (HVM) - ami-11125e21**: 'Red Hat' icon, 'Free tier eligible'. Description: 'Red Hat Enterprise Linux version 6.5 (HVM), EBS-backed'. Root device type: ebs, Virtualization type: hvm. 'Select' button and '64-bit' label.
- SuSE Linux Enterprise Server 11 SP3 (HVM), SSD Volume Type - ami-3b0f420b**: 'SuSE Linux' icon, 'Free tier eligible'. Description: 'SuSE Linux Enterprise Server 11 Service Pack 3 (HVM), EBS General Purpose (SSD) Volume Type. Nvidia driver installs automatically during startup for GPU instances.'. Root device type: ebs, Virtualization type: hvm. 'Select' button and '64-bit' label.
- Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-3d50120d**: 'Ubuntu' icon, 'Free tier eligible'. Description: '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. 'Select' button and '64-bit' label.

 At the top right, there is a 'Cancel and Exit' button and a page navigation bar with '1 to 22 of 22 AMIs'.

6. Step 2: Leave the instance type set to the default, which is t1.micro. To continue, click Next: Configure Instance Details.

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	m3.medium	1	3.75	1 x 4 (SSD)	-	Moderate
<input type="checkbox"/>	General purpose	m3.large	2	7.5	1 x 32 (SSD)	-	Moderate

7. Step 3: Configure Instace Details, we will leave all of the default options and chick Next: Add Storage.

Tip: It is worthwhile to note the various options here. This is the location where you would set access, network setting, monitoring, and other options.

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances

Purchasing option Request Spot Instances

Network

Subnet 4091 IP Addresses available

Auto-assign Public IP

IAM role

Shutdown behavior

Enable termination protection Protect against accidental termination

Monitoring Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy Additional charges will apply for dedicated tenancy.

▼ Network interfaces

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

8. Step 4: Add Storage, keep the default virtual hard driver. Click Next: Tag Instance.

Note: You can easily add more virtual hard drives or change the driver size here.

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination	Encrypted
Root	/dev/xvda	snap-62cf04aa	8	Magnetic	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

General Purpose (SSD) volumes provide the ability to burst to 3,000 IOPS per volume, independent of volume size, to meet the performance needs of most applications and also deliver a consistent baseline of 3 IOPS/GiB. [Set my root volume to General Purpose \(SSD\)](#).

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Cancel **Previous** **Review and Launch** **Next: Tag Instance**

9. Step 5: Tag Instance, name your instance by using the tag instance interface. You'll notice that the left hand text box is populated with "key" Name and right hand text box is empty. In the empty box, type a name such as "EC2 Lab" and click Next: Configure Security Group.

Tip: This is great place to put a name for your virtual server in the Value field...maybe something creative.

Step 5: Tag Instance

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.

Key (127 characters maximum)	Value (255 characters maximum)
Name	EC2 Lab

Create Tag (Up to 10 tags maximum)

Cancel **Previous** **Review and Launch** **Next: Configure Security Group**

10. Step 6: Configure Security Group, accept the default security group, as it shows port 22 (SSH) from anywhere to this Linux instance. Click Review and Launch.

Step 6: Configure Security Group

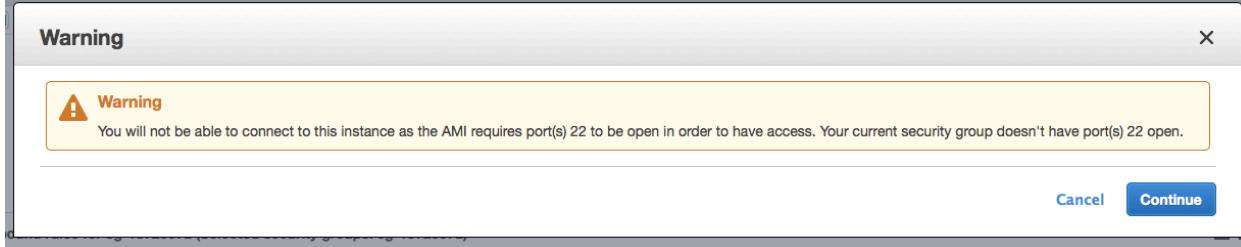
A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: Create a new security group Select an existing security group

Security Group ID	Name	Description	Actions
<input type="checkbox"/> sg-1872667a	default	default VPC security group	Copy to new

Select a security group above to view its inbound rules.

Cancel Previous **Review and Launch**



ssh

11. Step 7: With Review Instance Launch you get an overview of all setting of your instance. Click Launch to continue.

Launch Status

 **Your instance is now launching**
The following instance launch has been initiated: [i-2795542d](#) [View launch log](#)

 **Get notified of estimated charges**
Create [billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instance

Your instance is launching, and it may take a few minutes until it is in the **running** state, when it will be ready for you to use. Usage hours on your new instance will start immediately and continue to accrue until you stop or terminate your instance.

Click [View Instances](#) to monitor your instance's status. Once your instance is in the **running** state, you can [connect](#) to it from the Instances screen. [Find out](#) how to connect to your instance.

▼ Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Discussion Forum](#)

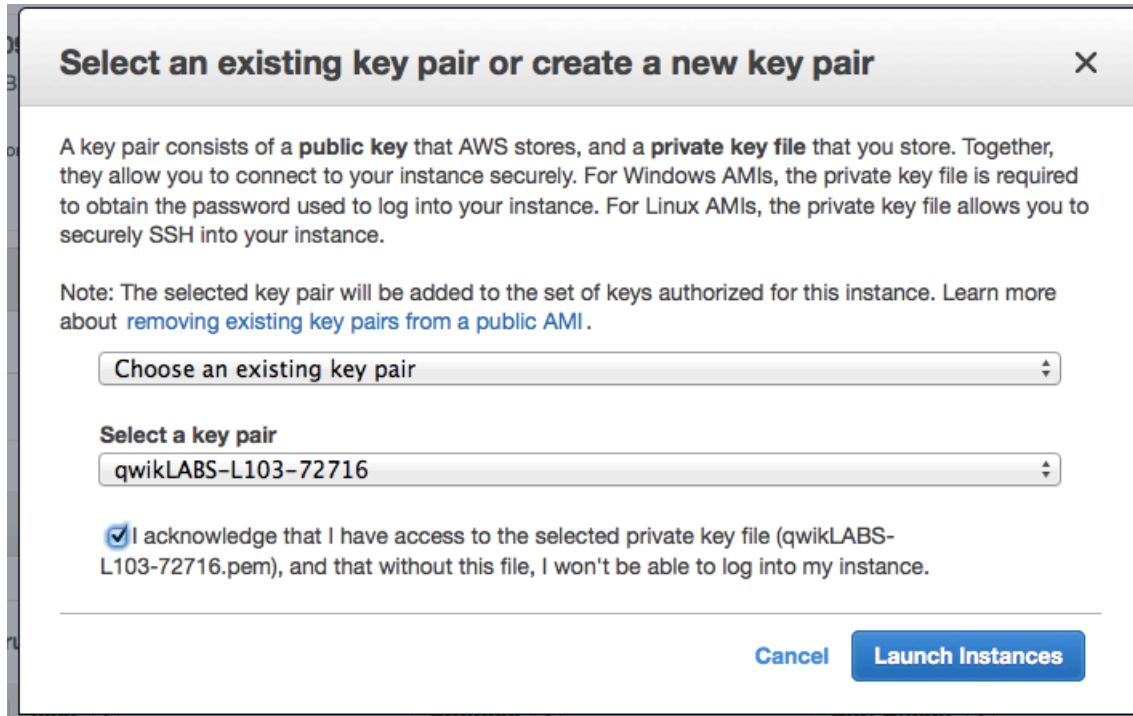
While your instances are launching you can also

[Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)
[Create and attach additional EBS volumes](#) (Additional charges may apply)
[Manage security groups](#)

[View Instances](#)

12. A key pair, which can be created in **Setting up**, should auto-populate in the second drop down box.
13. Click the **acknowledgment!** checkbox stating that you have access to the private key.
14. Now, click **Launch Instance!**

Tip: Key pair are known you access your instance after it is created. If you do not have a key pair. You will NOT be able to access the Instance.



15. Click View instance to take a look at the new instance.

Tip: Did you know that this can all be done via the command line.

Complete! Once the instance state has changed to running. Your instance will be ready to use! Now, you will look at logging into instance.

2.3 Logging In to Your Instance

Now that you have launched your EC2 instance. It is time to log into it.

1. As you are already at the instance view with the Amazon EC2 dashboard, click the selection box next to your instance Name (ie. EC2 Lab).
2. Find your Public DNS name on the screen, which look something like the following:

Tip: Use everything to the right of "Public DNS:" as a connection string to connect to this instance.

The screenshot shows the AWS EC2 Instances page. On the left, a sidebar lists navigation options: EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES, Instances, Spot Requests, Reserved Instances, IMAGES, AMIs, Bundle Tasks, ELASTIC BLOCK STORE, Volumes, Snapshots, and NETWORK & SECURITY, which includes Security Groups, Elastic IPs, Placement Groups, Load Balancers, Key Pairs, and Network Interfaces. The main content area displays a table of instances. A search bar at the top says 'Filter by tags and attributes or search by keyword'. The table has columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. One instance is listed: 'EC2 Lab' (Instance ID i-2795542d, t2.micro, us-west-2a, running, 2/2 checks, Loading..., ec2-54-68-206-137). Below the table, a detailed view for 'Instance: i-2795542d (EC2 Lab)' is shown. It includes tabs for Description, Status Checks, Monitoring, and Tags. The 'Description' tab is active, showing fields: Instance ID (i-2795542d), Instance state (running), Instance type (t2.micro), Private DNS (ip-172-31-39-197.us-west-2.compute.internal), Private IPs (172.31.39.197), Secondary private IPs, VPC ID (vpc-b7303bd5), Public DNS (ec2-54-68-206-137.us-west-2.compute.amazonaws.com), Public IP (54.68.206.137), Elastic IP (-), Availability zone (us-west-2a), Security groups (default, view rules), Scheduled events (No scheduled events), and AMI ID (amzn-ami-hvm-2014.09.1.x86_64-ebs (ami-b5a7ea85)).

3. Copy that connection string to your clipboard.

Mac and Linux instructions

4. On a Mac or Linux computer, modify the permissions of the downloaded PEM file to tighten the access (security) of the file. Be sure to use the correct path to the location that you saved your `.pem` file earlier. Your command line should look similar to: `chmod 600 xxx/xxx.pem`
5. On a mac or Linux computer, use terminal to SSH to your instance connection string using the SSH identity file noted earlier with the user name `use-user`. Be sure to use correct Public DNS and the correct path to your `.pem` file. Your SSH line will look similar to this:

```
KingyeungChendeMacBook-Air:Desktop KingyeungChen$ ssh -i qwikLABS-L103-72716.pem ec2-user@54.68.206.137
The authenticity of host '54.68.206.137 (54.68.206.137)' can't be established.
RSA key fingerprint is dd:f4:77:ac:0b:74:12:c8:2a:9d:a0:23:dd:a4:d8:aa.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '54.68.206.137' (RSA) to the list of known hosts.

  _\ _ )  
 _ ( _ /  Amazon Linux AMI  
 _\ \_ |_ |  
  
https://aws.amazon.com/amazon-linux-ami/2014.09-release-notes/  
[ec2-user@ip-172-31-39-197 ~]$
```

6. Ensure you accept the authenticity statement.
7. Connected!

WIndows instructions

8. Download [PuTTY³](#) to a location of your choice using the following URL (unless you already have PuTTY).
9. Double-click putty.exe(your download copy or your existing copy).

³<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

10. Type ec2-user@ into the Host Name field, then paste the Connection string you copied to your clipboard into the Host Name input in PuTTY (using CTRL+V). Your full Host Name field will look something like this:

ec2-user@54.68.206.137

Note: if you didn't copy your Public DNS name earlier, you can find it in the AWS Management Console Services > EC2 > Instances. Check the box next to your instance and the Public DNS should appear on the page.

11. Expand the SSH category by clicking on the word "Auth" (not the + symbol next to the word "Auth").
12. Click Browse.
13. Navigate to the location where you saved the .ppk file earlier in the lab.
14. Select the .ppk file you downloaded.
15. Click Open.
16. In the PuTTY client, click Open.
17. When prompted, click YES to allow PuTTY to cache the server's host key.
18. You are presented with a connected instance! Easy!

3. Amazon Elastic Block Store

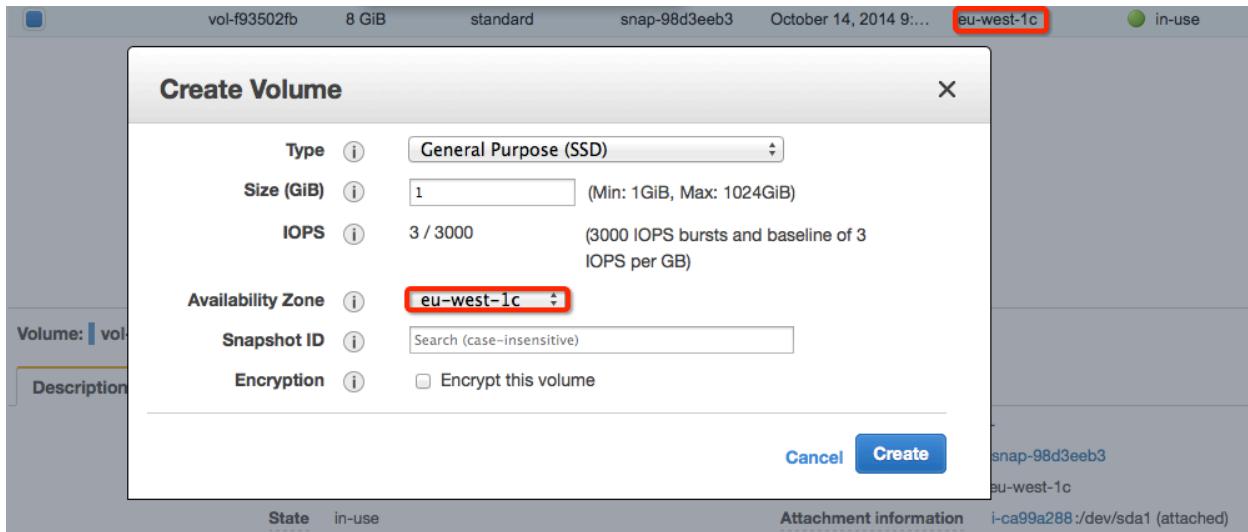
3.1 What is Amazon Elstic Block Store

Amazon Elastic BLock Store (EBS) provides block evel storage volumes for use with Amazon EC2 instances. Amazon EBS volumes are network-attached and persist independently from the life of an instance.

3.2 Createing an Elastic Block Store Volume

To get started creating your first Amazon EBS Volume, you will need to access the Amazon EC2 icon on the Amazom Management Console, and then utilize the Volumes Management Panel. EBS volumes are like hard drives in a computer. Then data on them presists through the lifetime of the volume and can be transported betweeen virtual machines as needed.

1. Click the Amazon EC2 Icon on the homepage and go to that dashboard.
2. You have to Launch a instance and all the seeting by default will be ok.
3. In the navigaton panel on the left under Elastic Block Store Click Volumes go to the EBS control panel.
4. Here you will see a volume already in use. If you do not, please wait a monent and click the refresh icon located in the upper right corner of the window. This volume exists for a server that has been created for you for this lab excise. Take note of the Availability Zone that the volume exists in, shown in the top panel.
5. Create a new volume by clicking Create Volume.
6. In the Create Volume windows, select the following:
 - a. Volume Type: Standard
 - b. Size: 1 GiB
 - c. Availability Zone: (match this from the zone noted in the previous step).



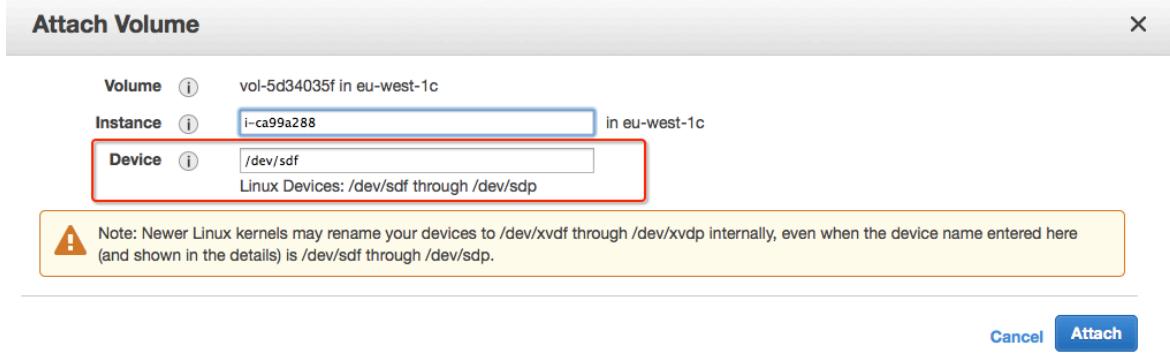
7. Click Yes, Create

Congratulations! You have a new volume ready to attach to an instance. Continue on to add that volume to your instance and manipulate the volume.

3.3 Adding an EBS Volume to an Instance

While you were creating the volume, a server instance was being prepared for you to attach volumes to.

1. From the EC2 > Elastic Block Store > Volumes window that you were just in, you should now see 2 volumes. Right-click the volume whose state is available and choose *Attach Volume*. If your volume still shows a State of creating, click the refresh icon, located in the upper right corner of the window.
2. Select the instance. If you had more than one instance, you would need to select the appropriate instance at this point. Also note that the next Device is already selected for you. Click YES, Attach.



You have now connected an EBS volume to an instance, Congratulations!

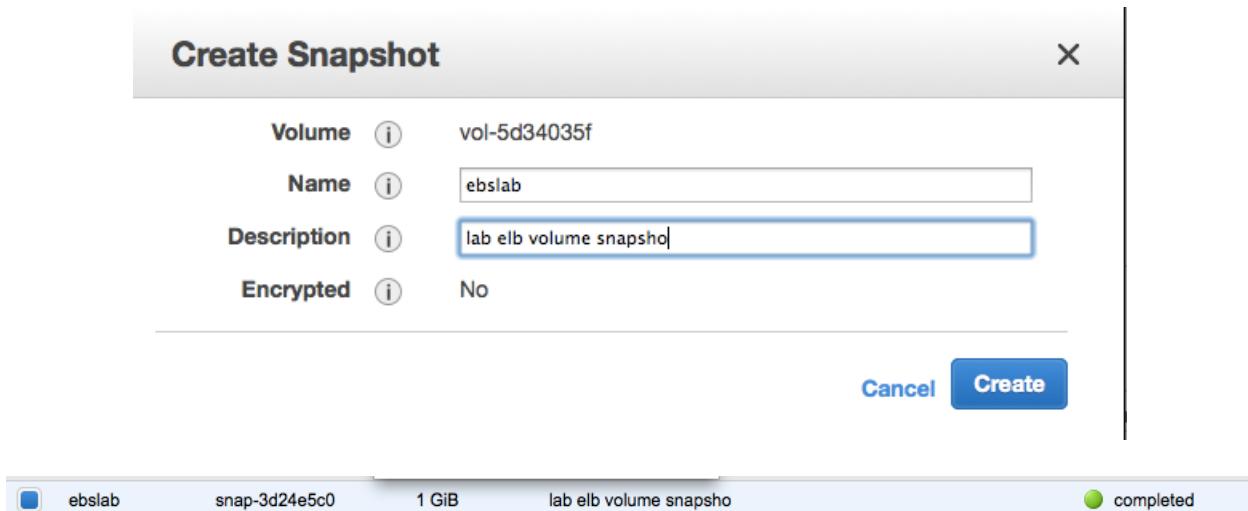
3.4 Snapshotting an EBS Volume and Increasing Performance

Creating a snapshot of volume replicates the data in the volume. It also allows you to change the properties of the volume to features like provisioned IOPS.

1. Back at the EC2 > Elastic Block Store > Volumes windows, right-click the 1 GiB volume you created, and choose *Force Detach*.

Note: In production, you would want to shut down your instance so you do not force detach the drive. However, for this lab, we will choose force detach to focus more on other features.

2. Click Yes, Force.
3. Right-click the volume again, and choose *Create Snapshot*.
 - a. Ensure the Volume matches the volume you created (it should be default)
 - b. For the Name, input: ebslab
 - c. For Description, input: lab elb volume snapshot
 - d. Click Yes, create



4. Go to EC2 > Elastic Block Store > Snapshots to view your created snapshot.
5. Right-click the snapshot, and choose *Create Volume from Snapshot*.
6. Here, you will increase the volume size enable provisioned IOPS for increased performance. Select the following setting in the Create Volume windows:
 - a. Volume Type: Provisioned IOPS
 - b. Size: 8GiB
 - c. Availability Zone: (select the availability zone you noted earlier in the lab).
 - d. Click yes, create

Create Volume

Snapshot ID: snap-3d24e5c0 (ebslab)

Type: General Purpose (SSD)

Size (GiB): 8 (Min: 1GiB, Max: 1024GiB)

IOPS: 24 / 3000 (3000 IOPS bursts and baseline of 3 IOPS per GB)

Availability Zone: eu-west-1c

Encryption: Not Encrypted

Create

	vol-1a330418	8 GiB	gp2	snap-3d24e5c0	October 14, 2014 9:...	eu-west-1c
	vol-5d34035f	1 GiB	gp2		October 14, 2014 9:...	eu-west-1c

7. Reutrn to EC2 > Elastic Block Store > Volumes to find your newly created high performance drive. This drive would contain all the data from the original drive, as well!

Congratulations! You have created a snapshotted volume that would contain all the data from the original drive, but is larger and has guaranteed IOPS.