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

Monster Chan

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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.

Contents

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 free[1].

If yout 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 crate an AWS account

1. Open aws[2], and then click **Sign Up**.
2. Follow the on-sereen instruction.

Part of sign-up procedure involves receiving a phone call ad 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. Your 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 **Carete 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:

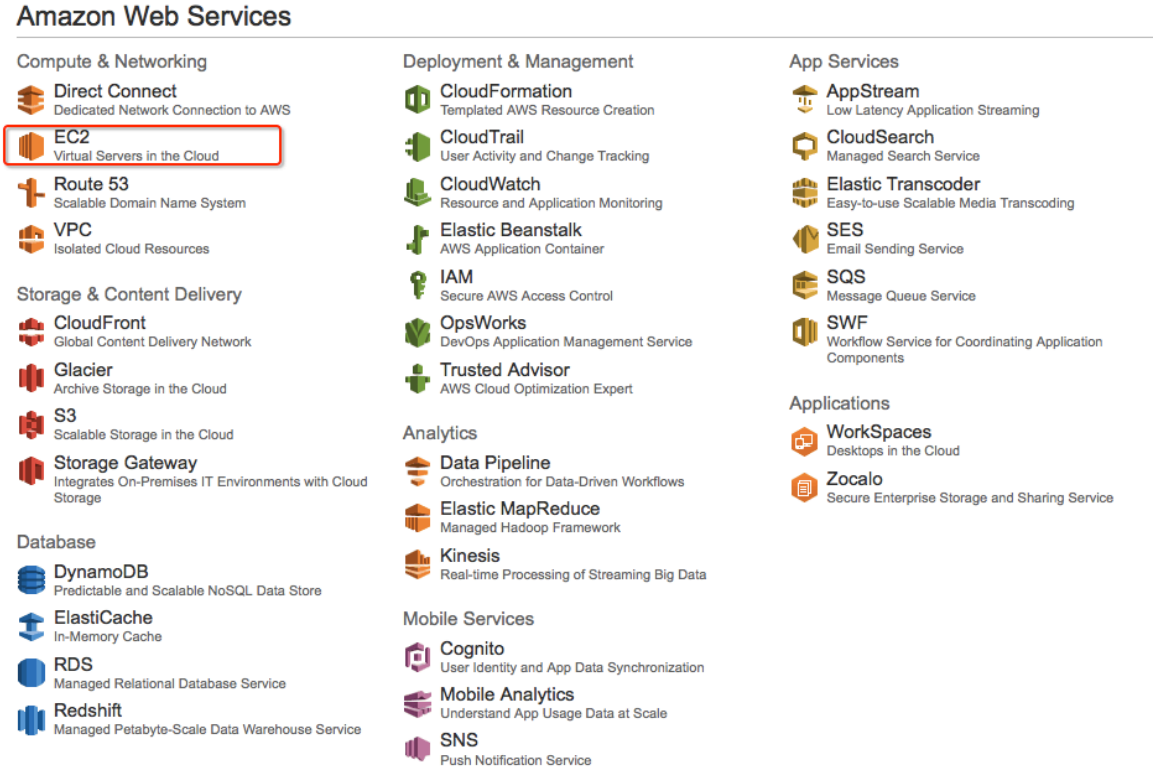
- Creating an Amazon Linux Instance from an Amazon Machine Image (AMI)
- Finding Your Instance in the Amazon Management Console
- Logging into Your Instance

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

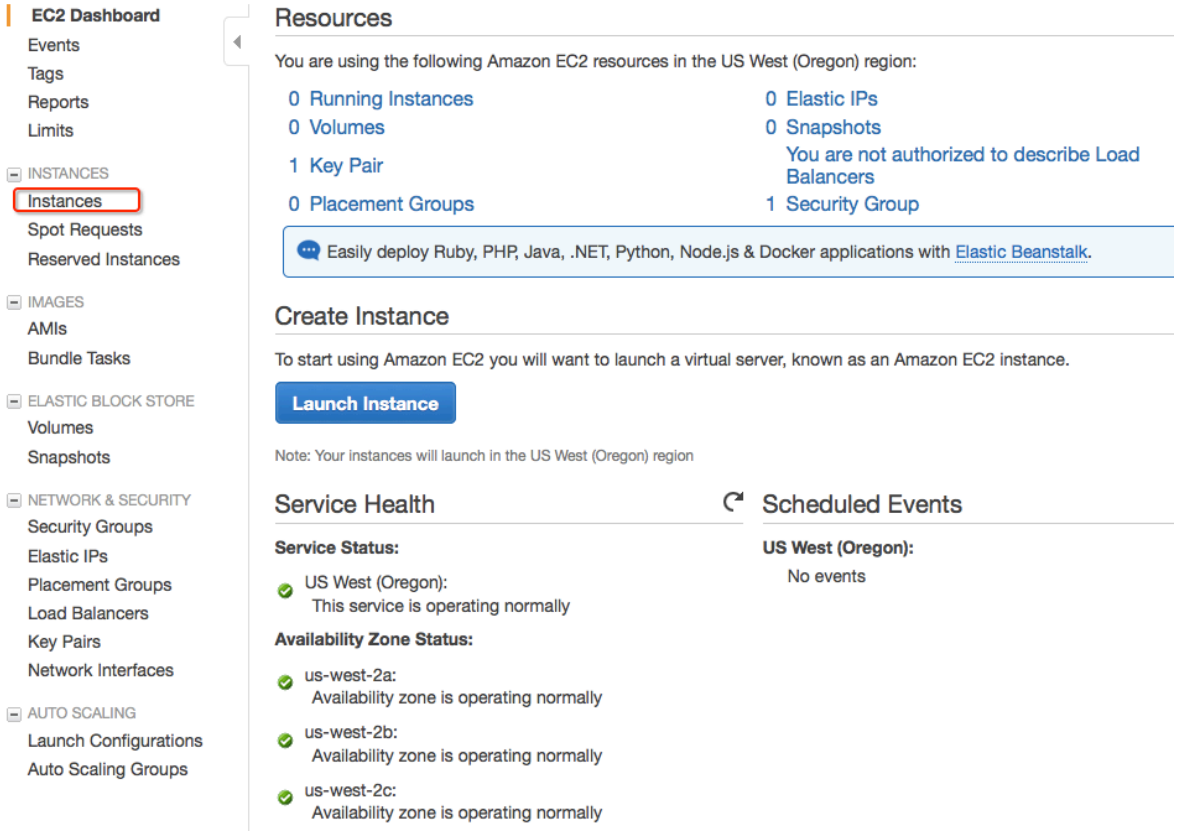
To get started creating your first Amazon instance, you will need to access the Amazon EC2 icon on the Amazon Management Console, and utilize the wizard.

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.

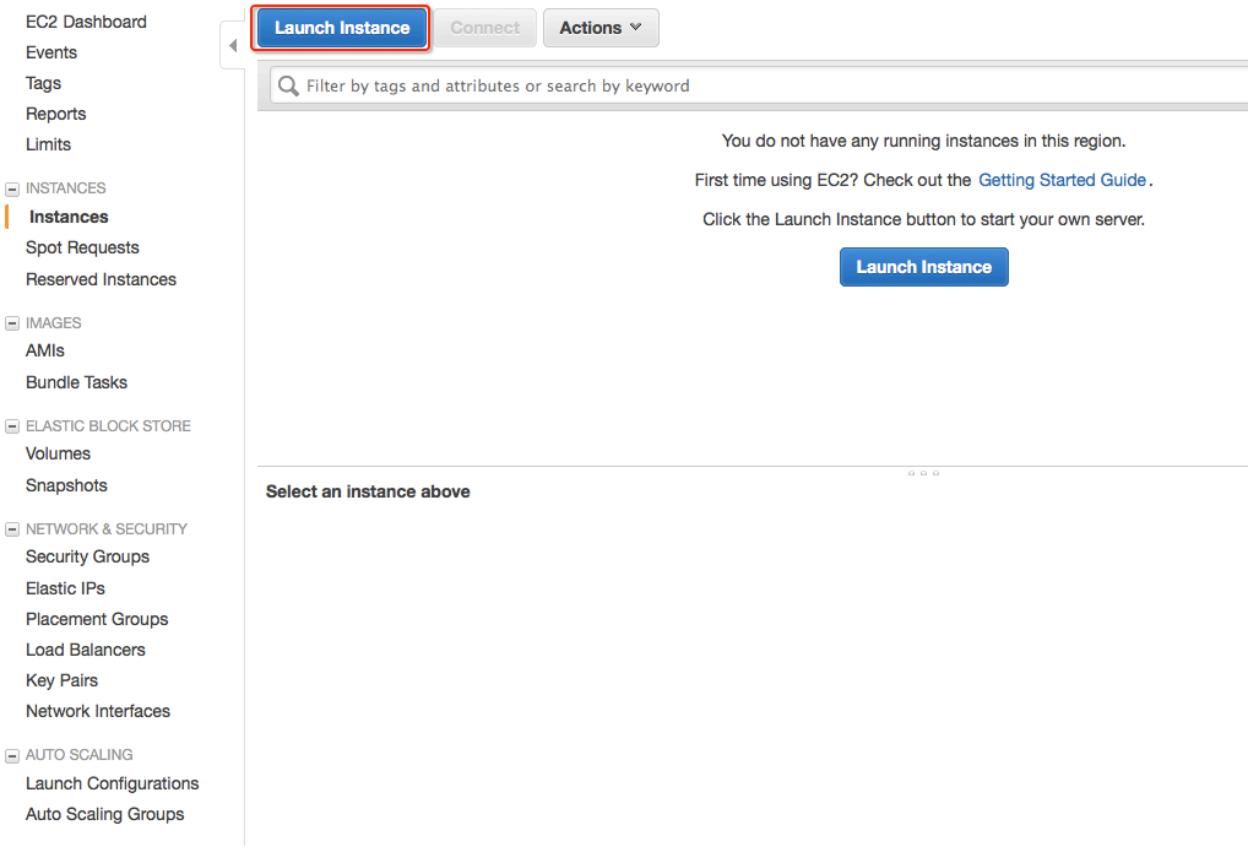


3. Click the Instances link to create an instance.

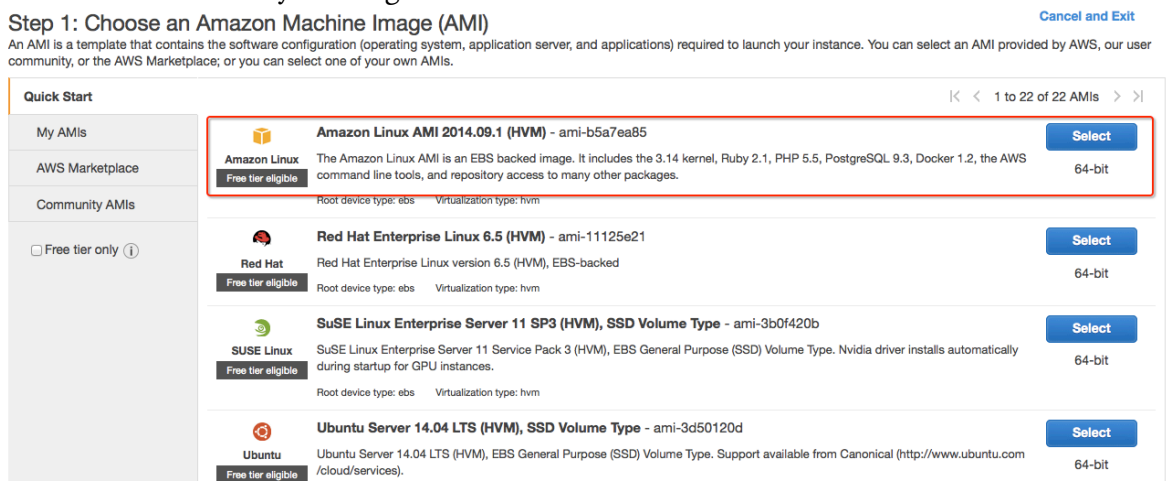


4. Click Launch Instance button, to begin the process.

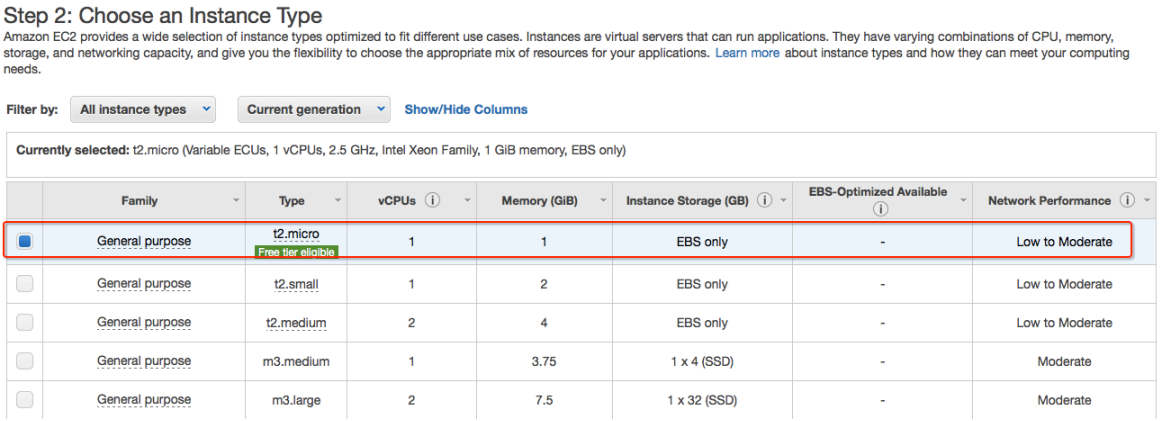
   Note: There are many, different operating systems to leverage.



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.

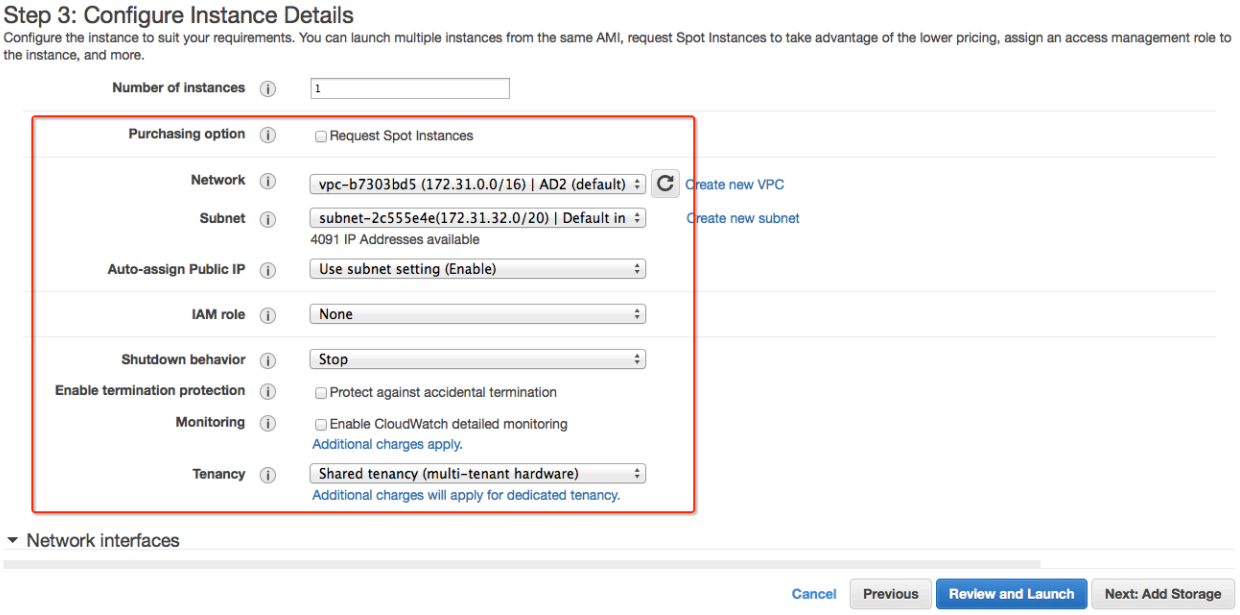


6. Step 2: Leave the instance type set to the default, which is t1.micro. To continue, click Next: Configure Instance Details.



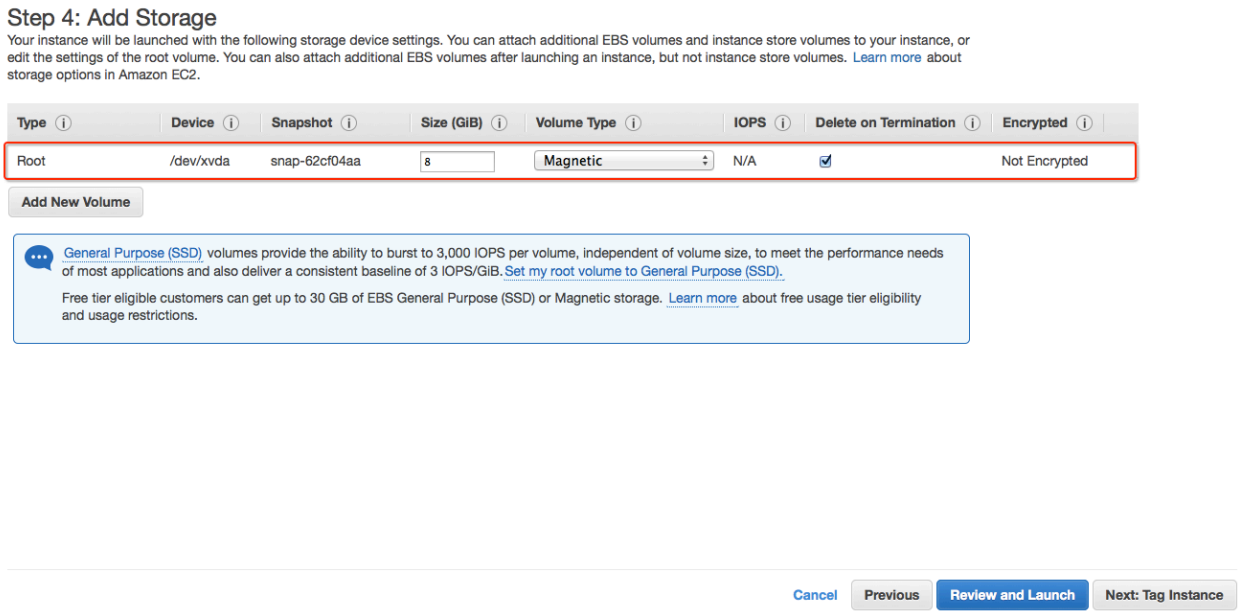
7. Step 3: Configure Instace Details, we will leave all of the default options and chick Next: Add Storage.

   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.



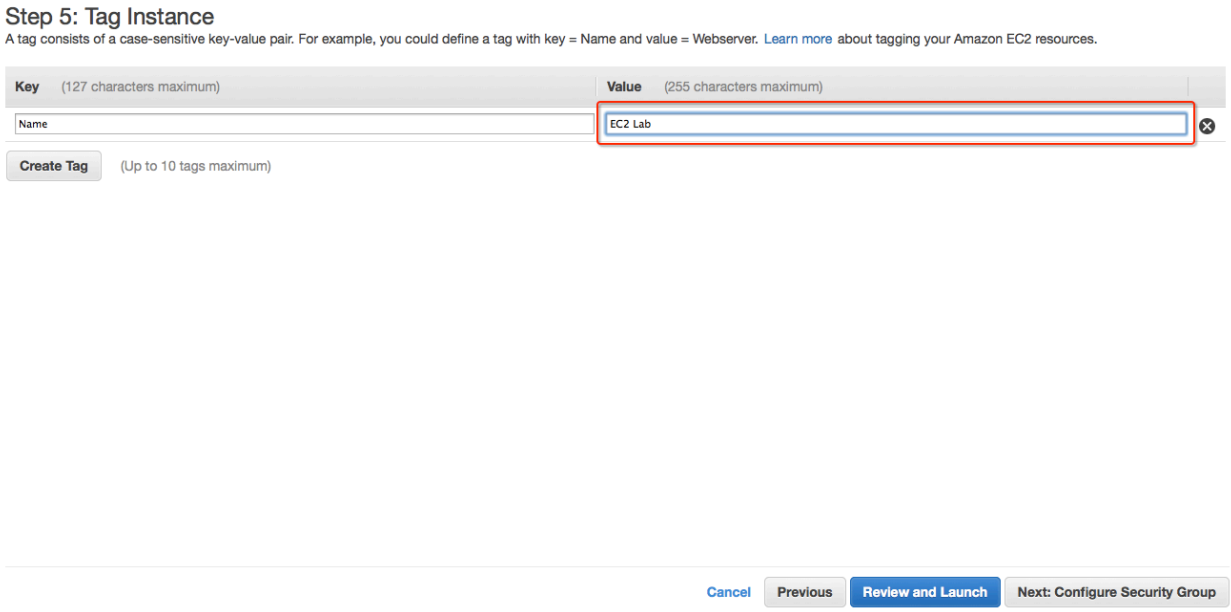
8. Step 4: Add Storage, keep the default virtual hard driver. Click Next: Tag Instance.

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

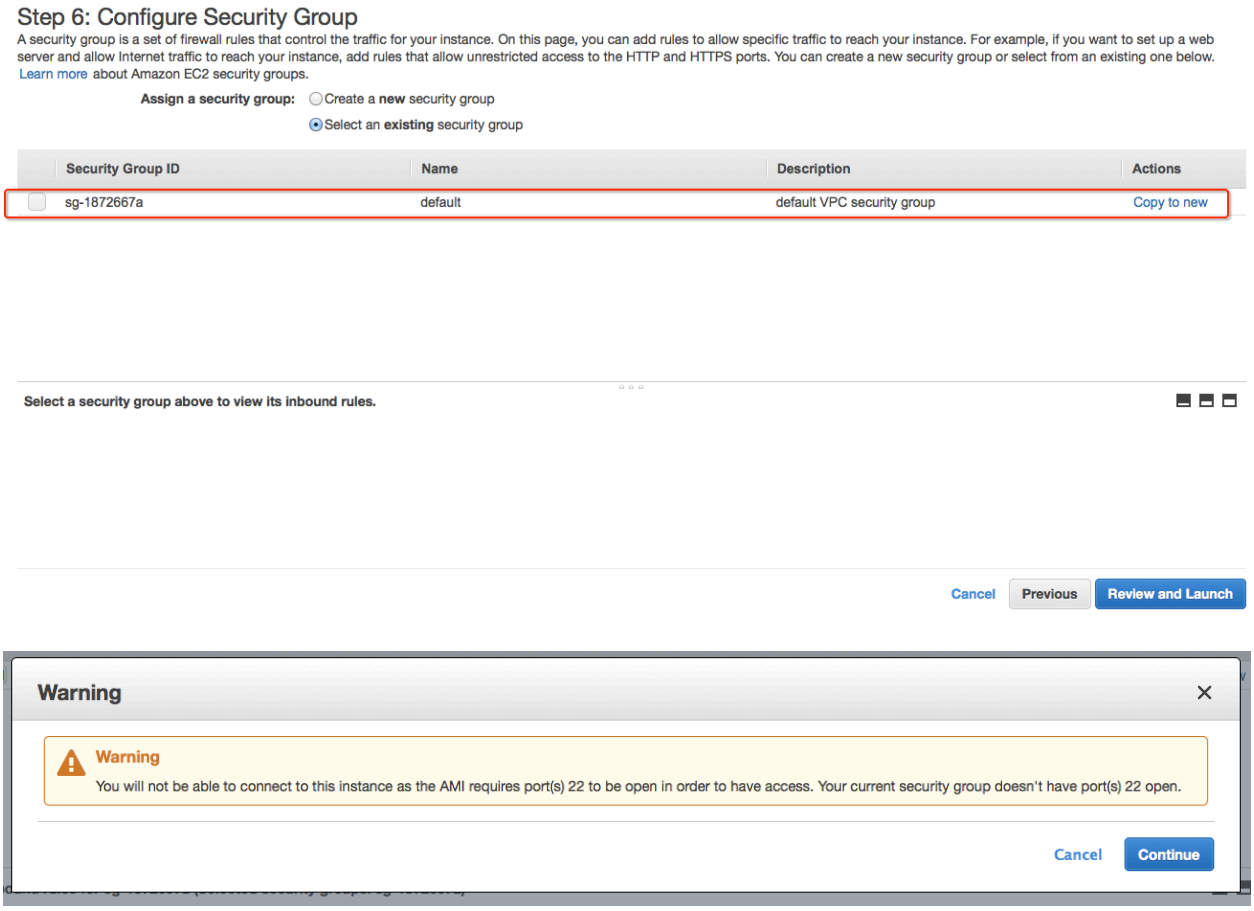


9. Step 5: Tag Instace, name your instance by using the tag instance interface. You'll notice that the left hand text box is populated with "key" Name and right hand text box is empty. In the empty box, type a name such as "EC2 Lab" and click Next: Configure Security Group.

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

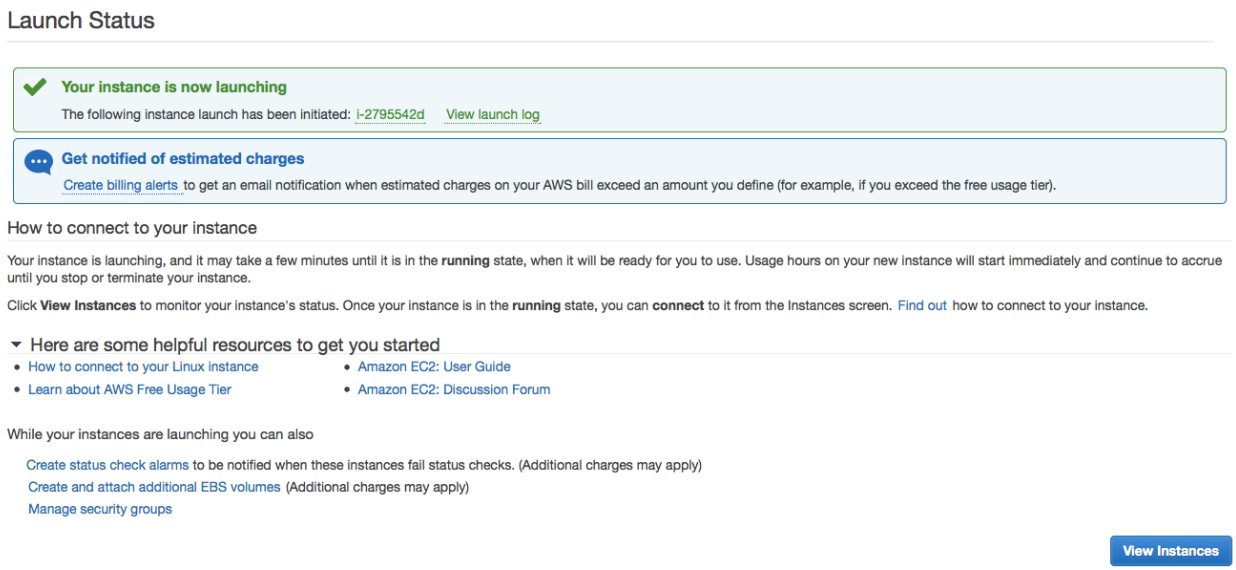


10. Step 6: Configure Security Group, accept the default security group, as it shows port 22 (SSH) from anywhere to this Linux instance. CLick Review and Launch.



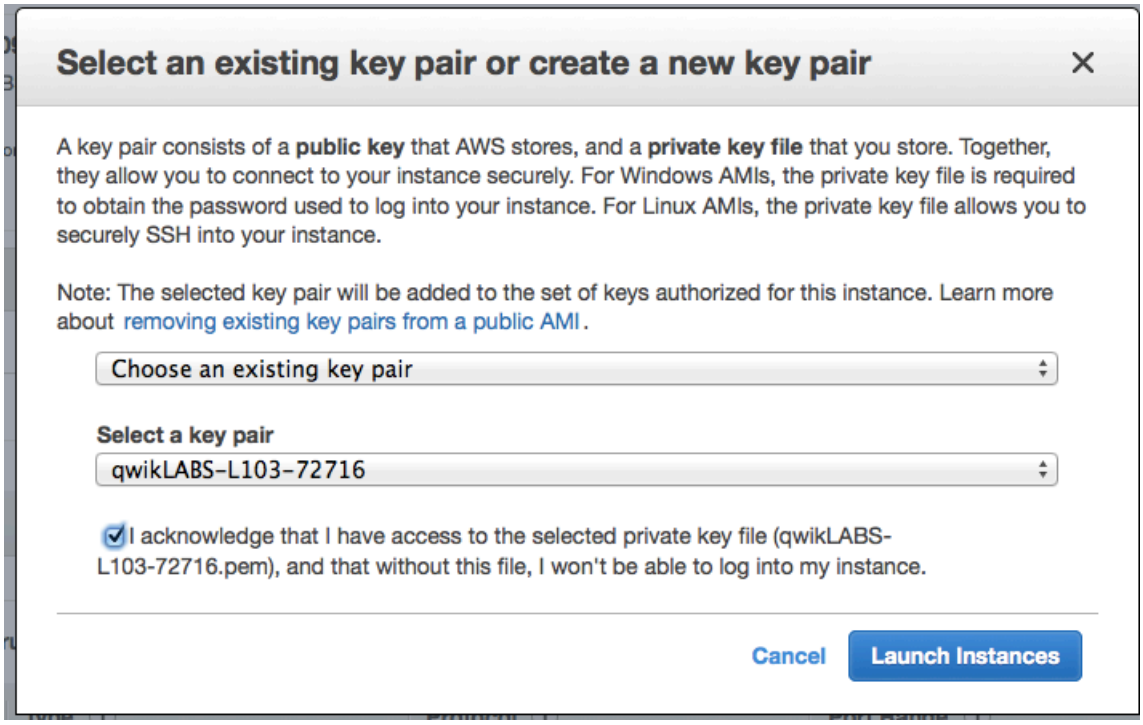
ssh

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



12. A key pair, which can 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 know 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.

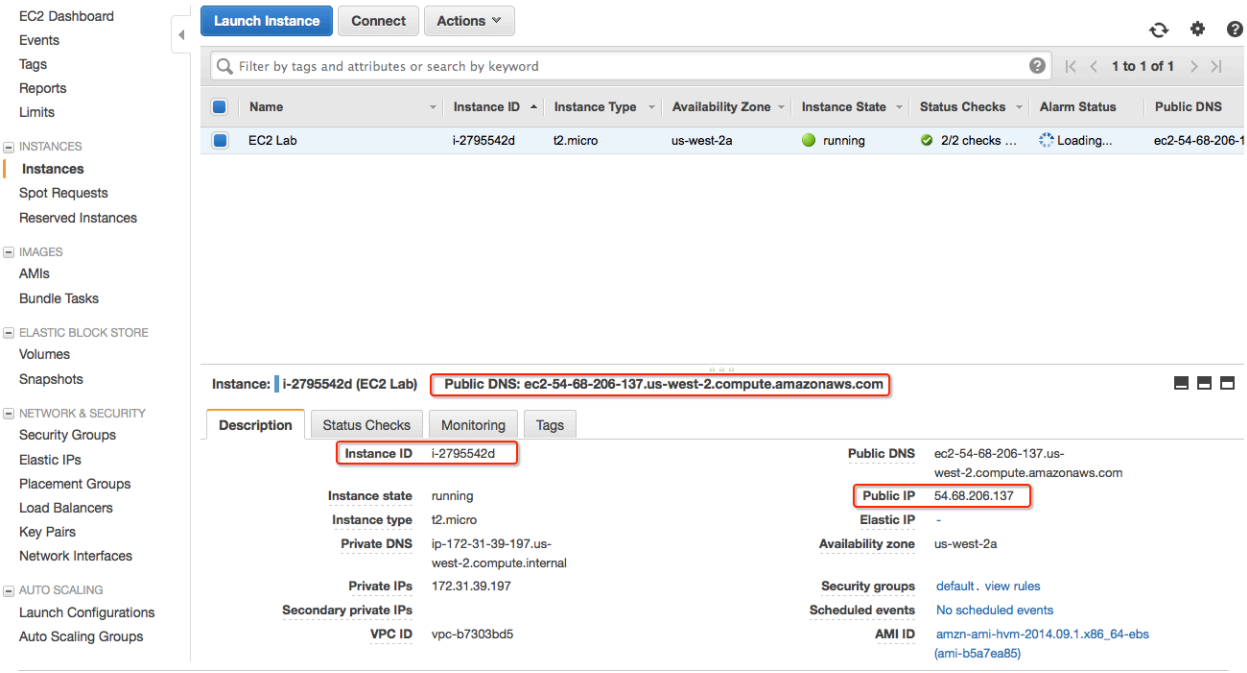
Complete! Once the instance state has changed to running.Your instance will be ready to use!Now,you will look at logging into instance.

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:

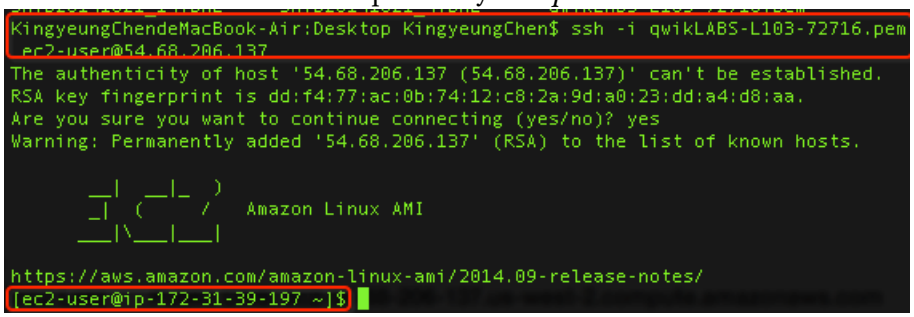
   Tip: Use everything to the right of "Public DNS:" as a connection string to connect to this instance.



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 eadlier.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 corrrect Public DNS and the correct path to your *.pem* file.YOur SSH line will look similar to this:



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

WIndows instructions

8. Download PuTTY[3] 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 Pulbic DNS name earlier,you can find it in the AWS Management Console Services > EC2 > Instance.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

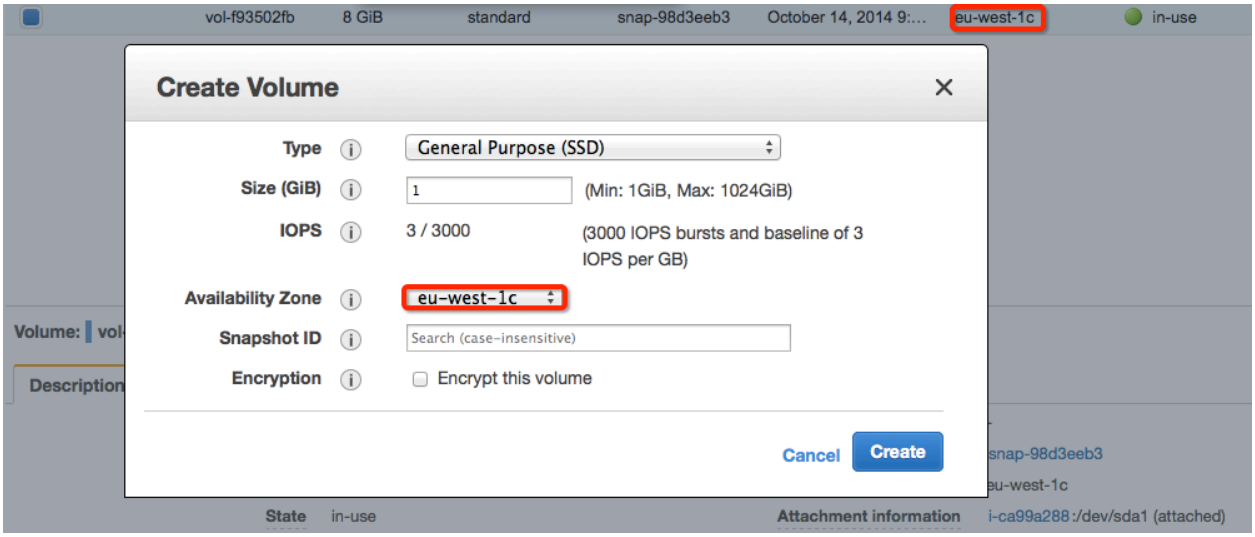
3.1 What is Amazon Elstic Block Store

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).



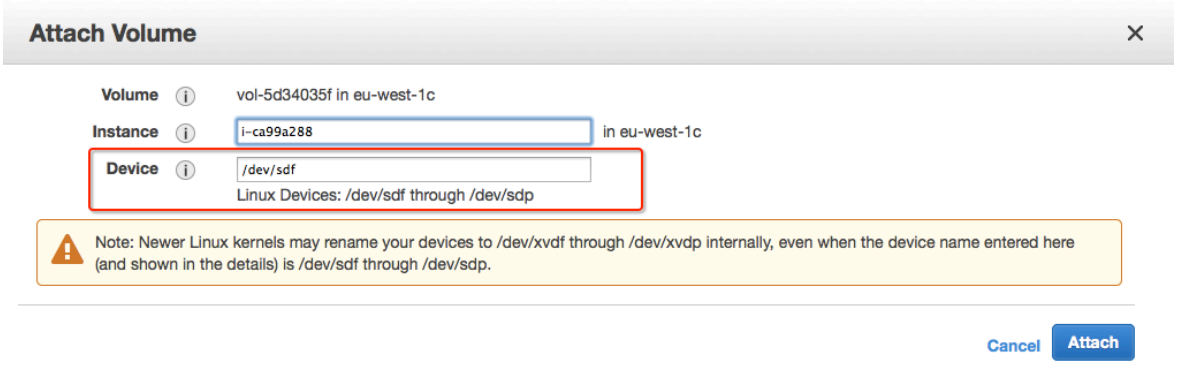
7. Click Yes, Create

Congratulations! You have a new volume ready to attached 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. Frome 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 you 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.



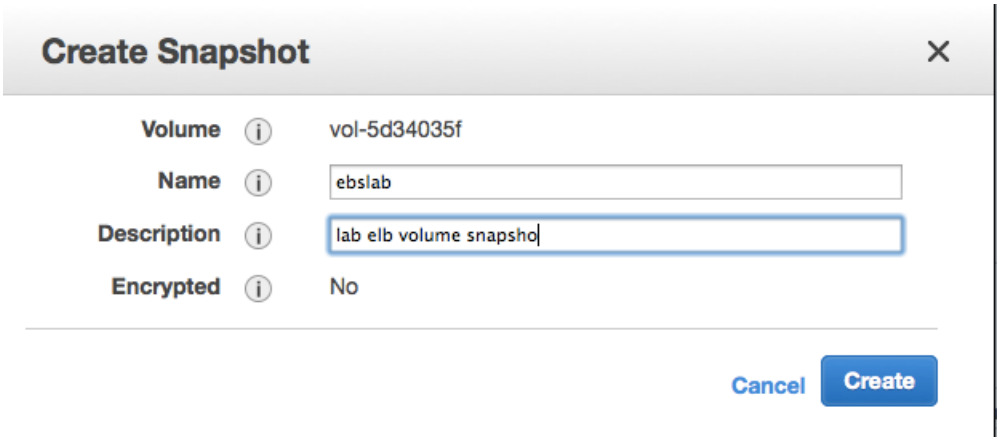
You have now connected an EBS volume to an instance, Congratulations!

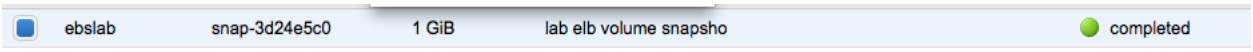
3.4 Snapshotting an EBS Volume and Increasing Performance

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.

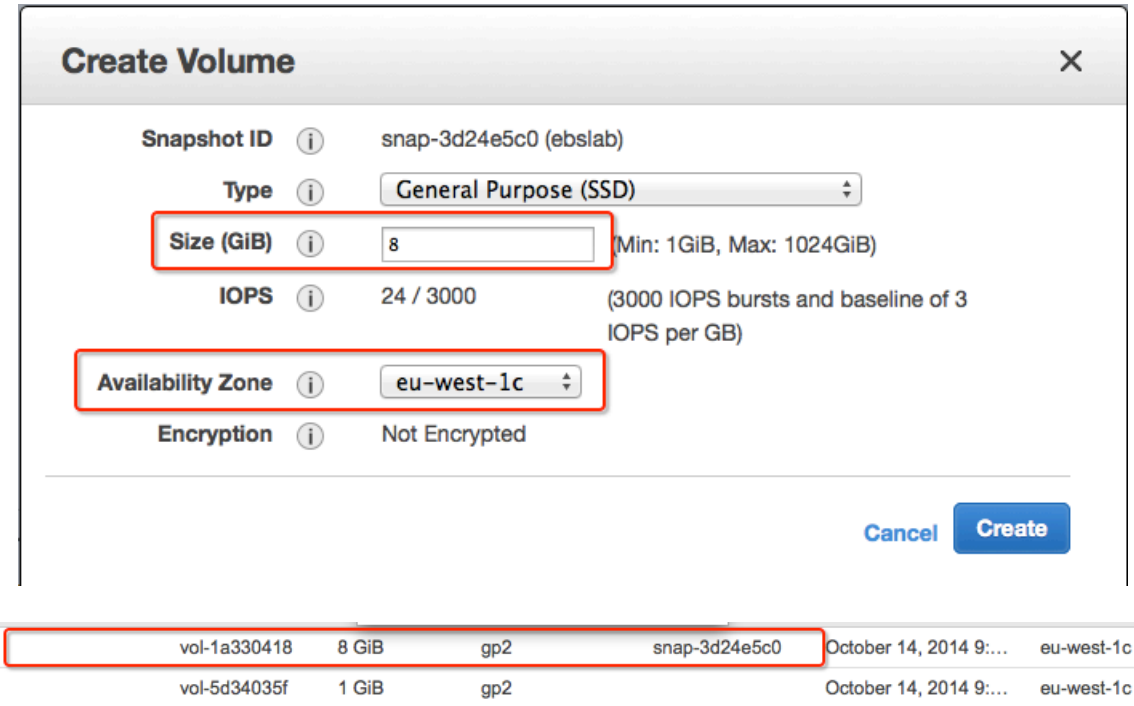
1. Back at the EC2 > Elastic Block Store > Volumes windows, right-click the 1 GiB volume you created, and choose *Force Detach.*

   Note: In procudtion, you would want to shut down your instance so you do not force deatch the drive. However, for this lab, we will choose force detch to focus more on other festures.
2. Click Yes, Froce.
3. Right-click the volume again, and choose Create Snapshot.
   a. Ensure the Volume matches the volume you created (it should by default)
   b. For the Name, input: ebslab
   c. For Descrupt, 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 preformance. 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



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.