Bundling EBS-Backed AMIs

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Introduction

In this Lab you will be using both the AWS Management Console as well as the EC2 Command Line Interface to bundle custom EBS-backed AMIs. You will learn how to map additional EBS and/or ephemeral volumes in your AMI. Lastly we will look at some security best practices to create AMIs that are suitable for public sharing.

What is an EBS-backed AMI?

An AMI contains all information necessary to boot an Amazon EC2 instance with your software. An AMI is like a template of a computer's root volume. For example, an AMI might contain the software to act as a web server (Linux, Apache, and your web site) or it might contain the software to act as a Hadoop node (Linux, Hadoop, and a custom application). You launch one or more instances from an AMI. An instance might be one web server within a web server cluster or one Hadoop node.

Creating your own AMI helps you make the most of Amazon EC2. Your AMI becomes the basic unit of deployment; it enables you to rapidly boot new custom instances as you need them.

All AMIs are categorized as either backed by Amazon EBS or backed by instance store. The former means that the root device for an instance launched from the AMI is an Amazon EBS volume created from an Amazon EBS snapshot. The latter means that the root device for an instance launched from the AMI is an instance store volume created from a template stored in Amazon S3. For more information, see Root Device Volume here: http://docs.amazonwebservices.com/AWSEC2/latest/UserGuide/RootDeviceStorage.html

You can implement Amazon EBS backed AMIs by creating a set of snapshots and registering an AMI that uses those snapshots. The AMI publisher controls the default size of the root device through the size of the snapshot. The default size can be increased up to 1TiB to accommodate the requirements of the application either at the time you register the EBS-backed AMI or while you launch the EBS-backed instance.

Start your *qwikLAB™*

1. Start your *qwikLAB™*
   Use the 'Start Lab' button to start your lab.
   (Hint: If you are prompted for a token, please use one you've been given or have purchased.)

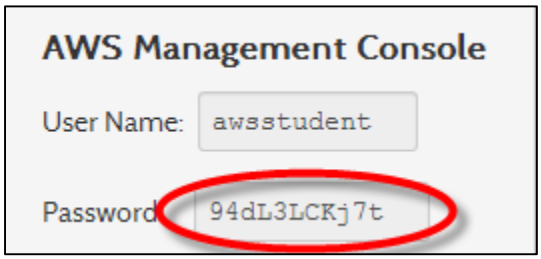
   You will see the lab creation in progress.

2. Note a few properties of the lab.

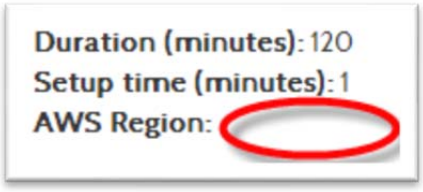
   a. **Duration -** The time the lab will run for before shutting itself down.
   b. **Setup Time -** The estimated lab creation time on starting the lab.
   c. **AWS Region** - The AWS Region the lab resources are being created in.

3. Copy the Password provided.

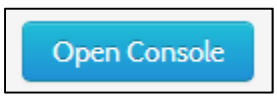
   a. Hint: selecting the value shown and using Ctrl+C works best



4. Note the AWS Region set for your lab in *qwikLAB™*



5. Click the 'Open Console' button.



6. Make sure that you are not logged into any other instances of the AWS console (in a student account or your own account), as this may cause conflicts when you open the console and log in below for this lab.

7. Login to the AWS Management Console

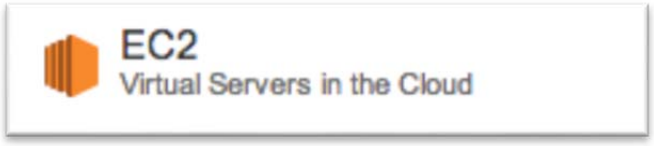
   Enter the User Name '**awsstudent**' and paste the password you copied from the lab details in *qwikLAB*™ into the Password field.

   Click on the 'Sign in using our secure server' button.

   In this step you logged into the AWS Management Console using login credentials for a user provisioned via AWS Identity Access Management in an AWS account by *qwikLAB*™.

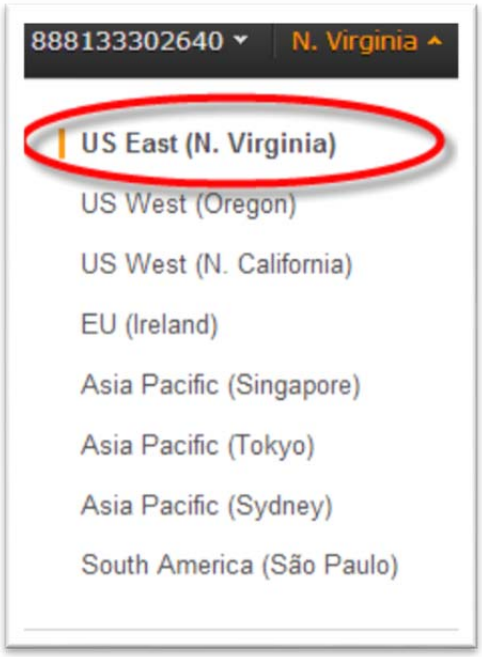
Open the AWS Management Console

1. Select "EC2" from the Console Home.



Confirm your AWS Region

2. Select or confirm that the same AWS Region is already set in the AWS Management Console



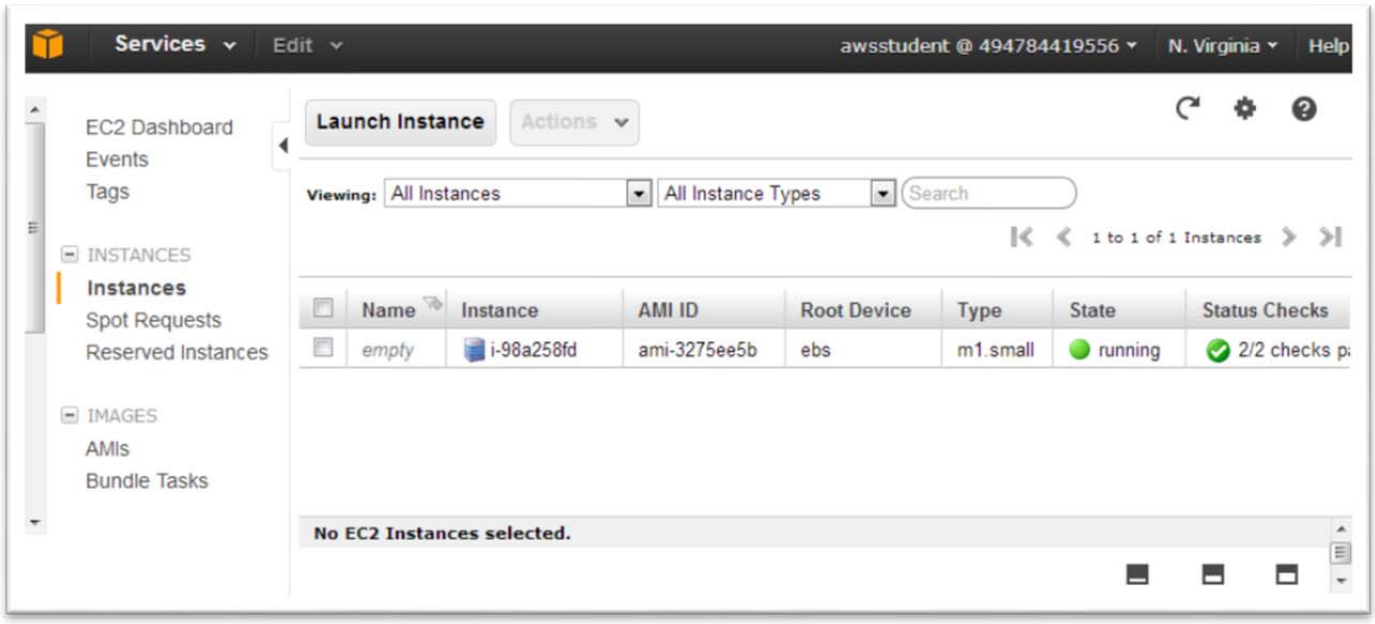
Create an AMI from a Running Instance using the Management Console

In this section we will create a new AMI from the same Linux instance through the AWS Management Console, and will add some mappings with ephemeral and EBS volumes.

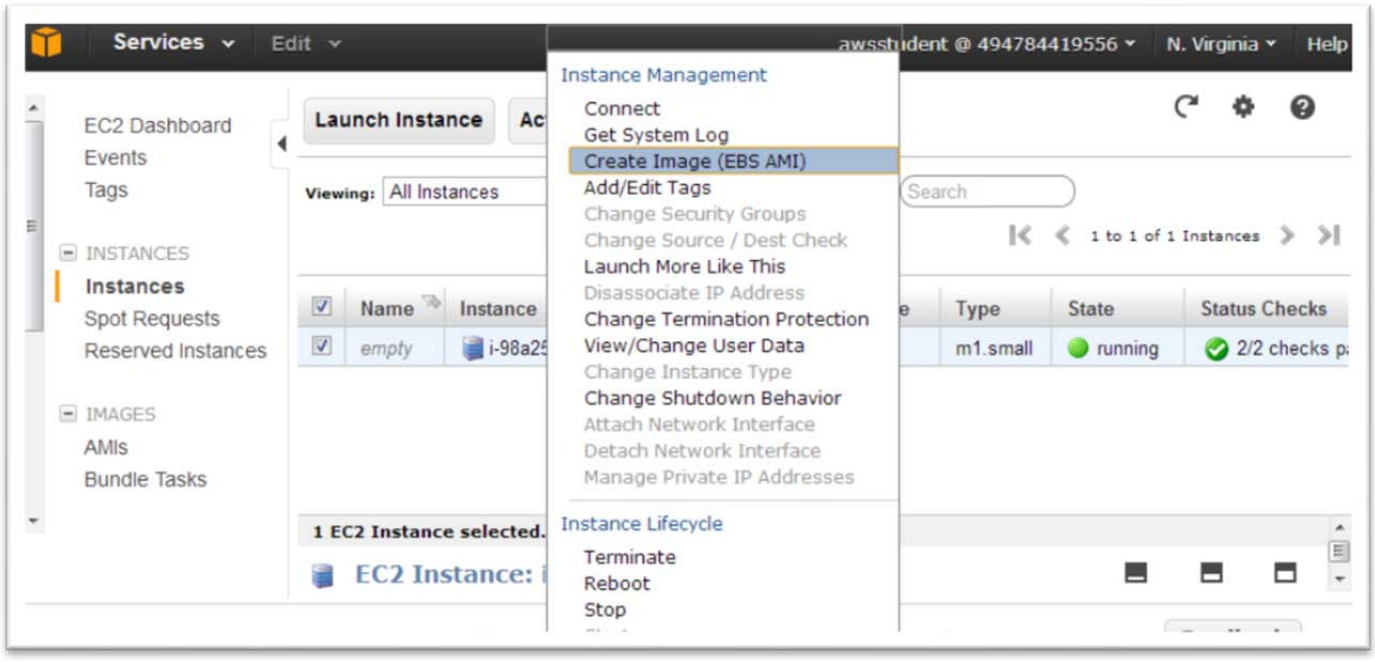
All new instances created from this new AMI will include these additional mappings.

Create a new AMI using the Console

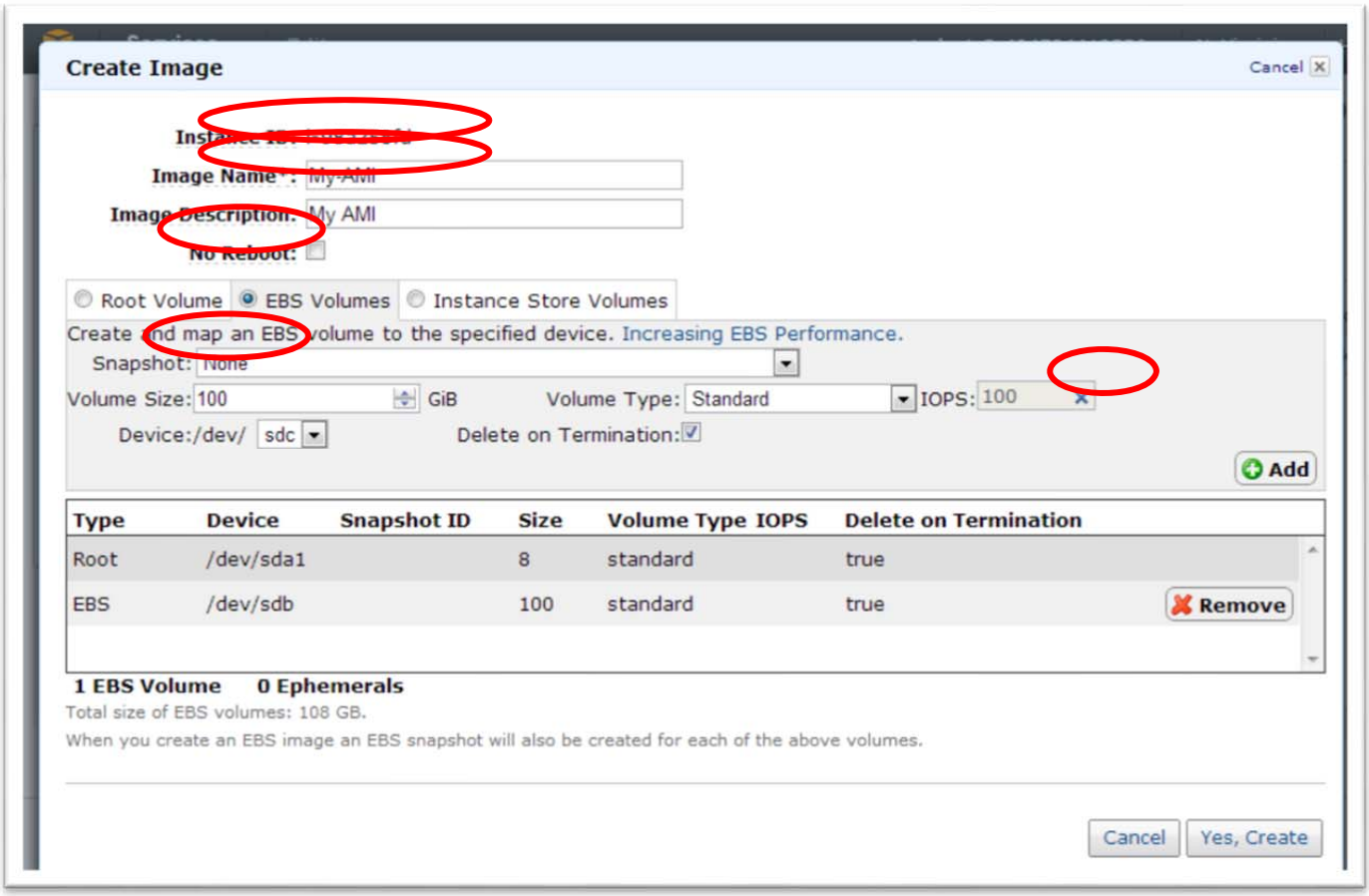
1. Go to the Instances section of the EC2 Console.
2. Click on the instance and locate your instance id. Click on “Instance Actions”.



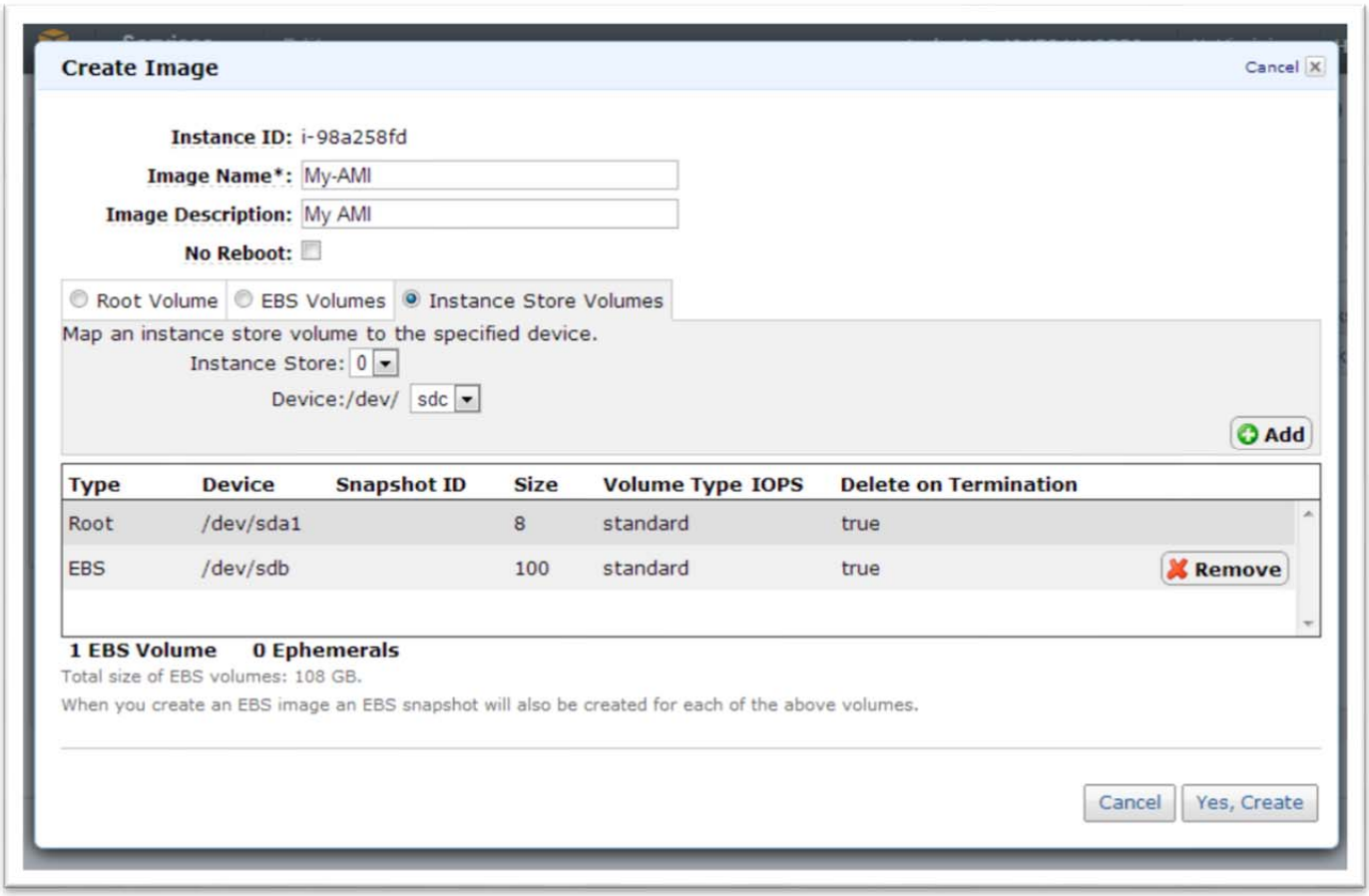
3. In the menu, click on “Create Image (EBS AMI)”.



4. First enter the new AMI name “My-AMI” and the AMI description “My AMI”. Then click on “EBS Volumes” tab. We will add a 100 GiB EBS volume to the AMI. Enter “100” in the Volume Size field and click on “Add”.

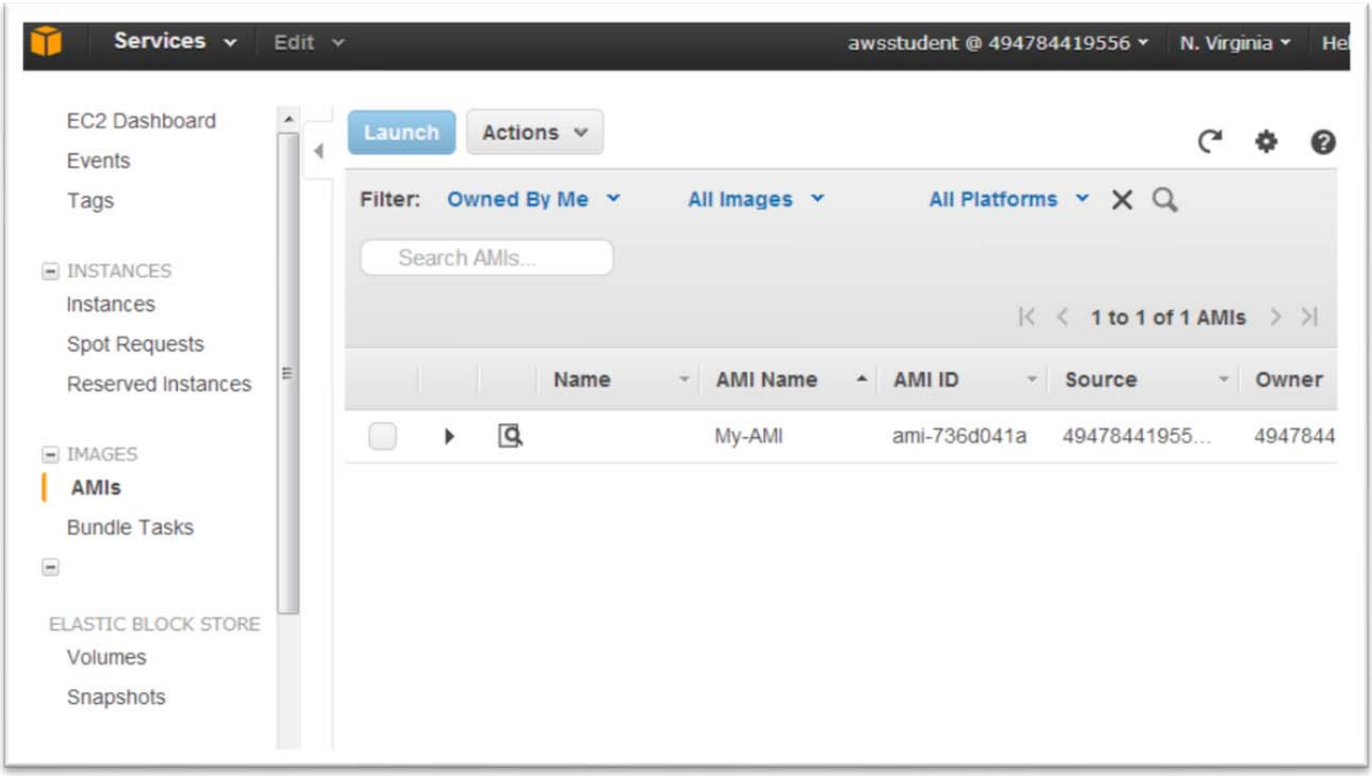


5. Then click on the “Instance Store Volumes” tab. Let the default values “Instance store” at 0 (this refers to the first volume). Click the “Add” button. Click the “Yes, Create” button.

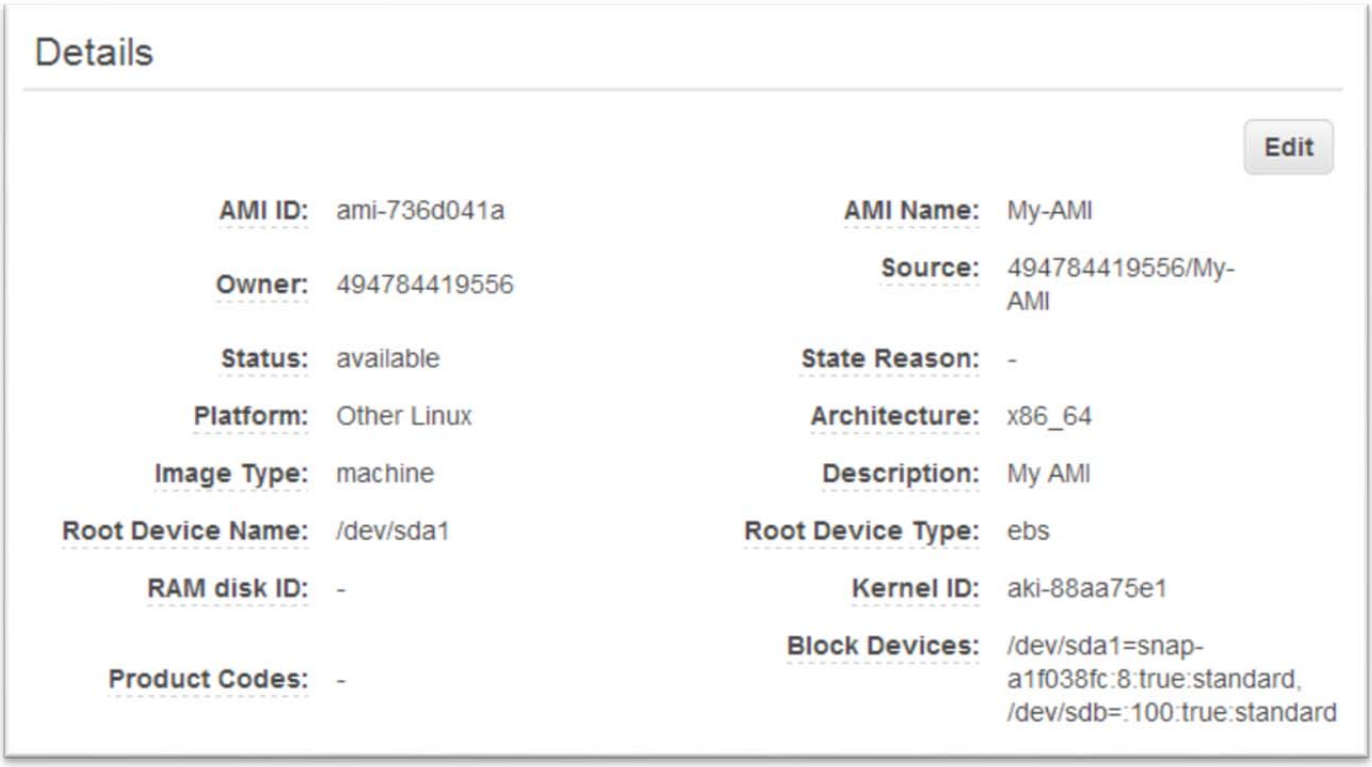

Create Image
Cancel
Instance ID: i-98a258fd
Image Name*: My-AMI
Image Description: My AMI
No Reboot:
Root Volume
EBS Volumes
Instance Store Volumes
Map an instance store volume to the specified device.
Instance Store: 0
Device:/dev/ sdc
Add
Type Device Snapshot ID Size Volume Type IOPS Delete on Termination
Root /dev/sda1 8 standard true
EBS /dev/sdb 100 standard true
Remove
1 EBS Volume 0 Ephemerals
Total size of EBS volumes: 108 GB.
When you create an EBS image an EBS snapshot will also be created for each of the above volumes.
Cancel
Yes, Create

6. Then wait for a few minutes. The instance will be rebooted, a snapshot created and the new AMI packaged.

7. After a few minutes, you will see your newly created AMI by navigating to the AMIs left menu. On the newly created AMI, Click on the Go to Details icon.

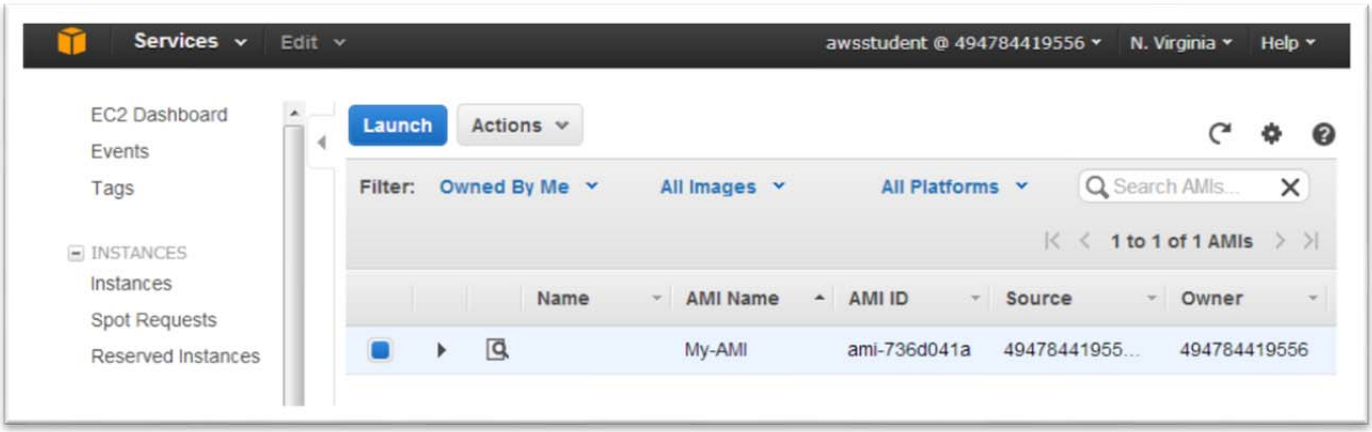


8. Select the AMI, and then click the Details Icon ( ).
9. Inspect the Block Devices.

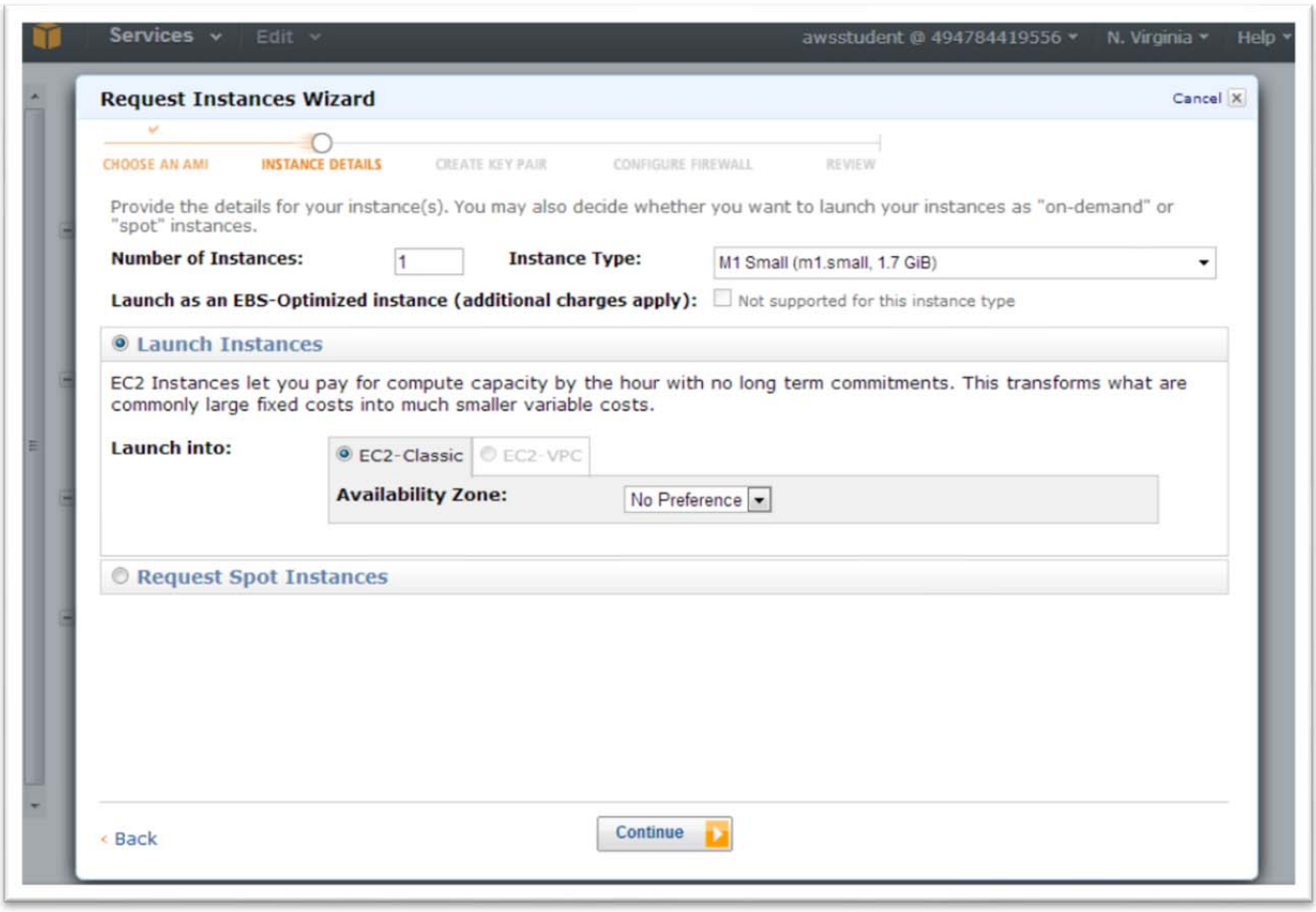


Launch a new instance from your AMI

1. Click on the AMIs left menu and click on your custom AMI.
2. Click on the Launch button.

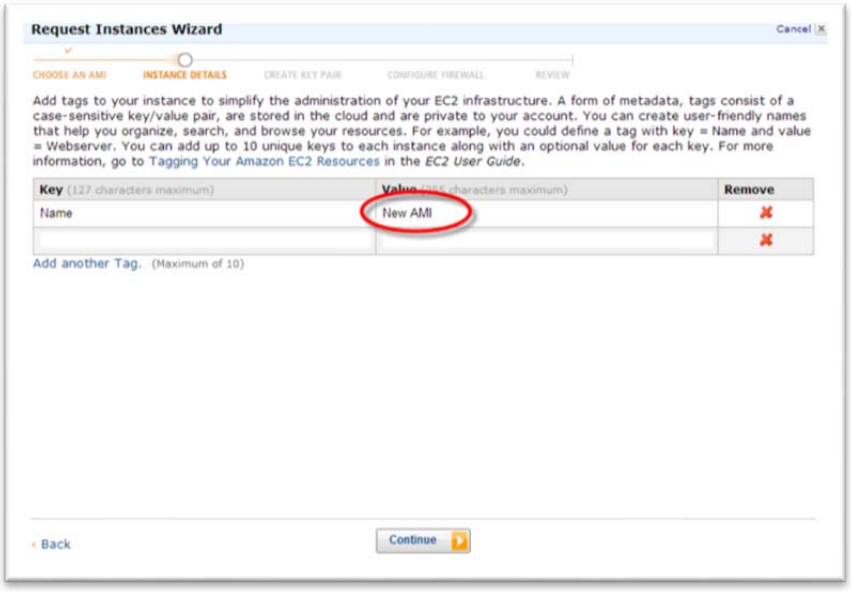


3. Choose the “M1 Small (m1.small, 1.7 GiB)” instance type, click Continue.

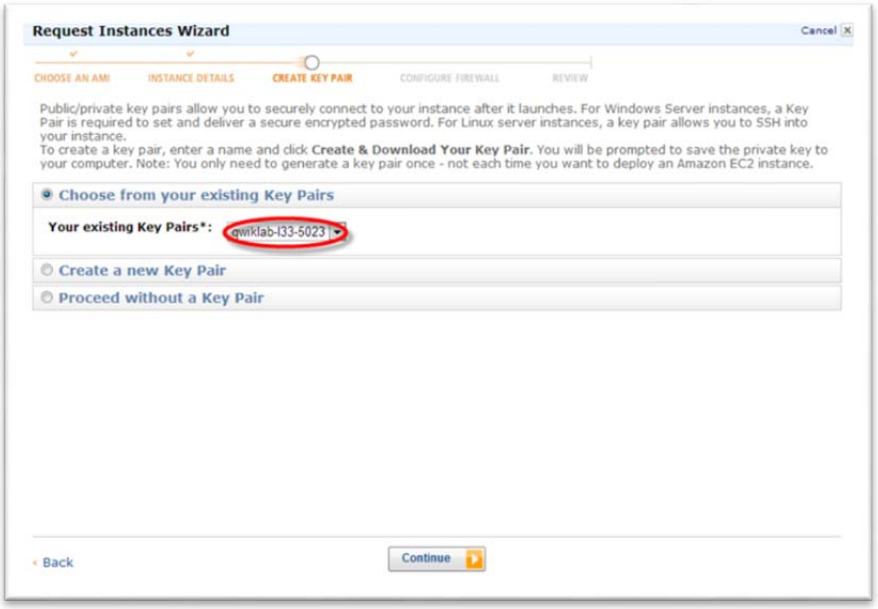


4. Click Continue on the “Launch Instances” screen.
5. Click Continue on the “Advanced Instance Options” screen.
6. Click Continue on the “Storage Device Configuration” screen.

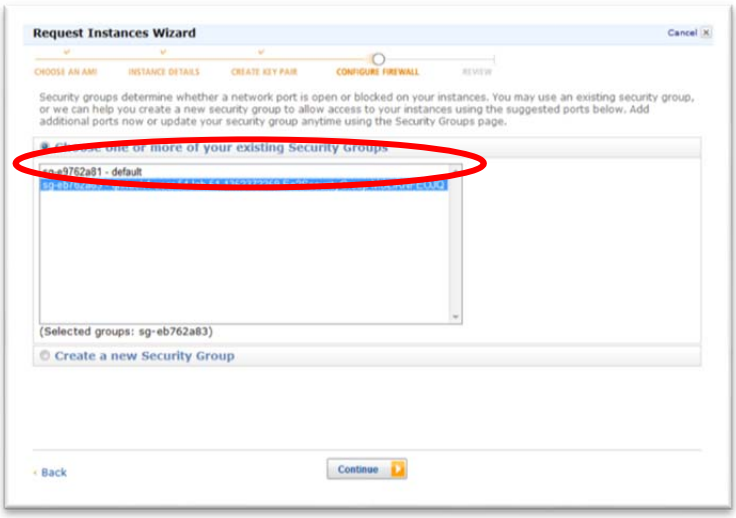
7. Enter New AMI for the Name tag and click Continue.



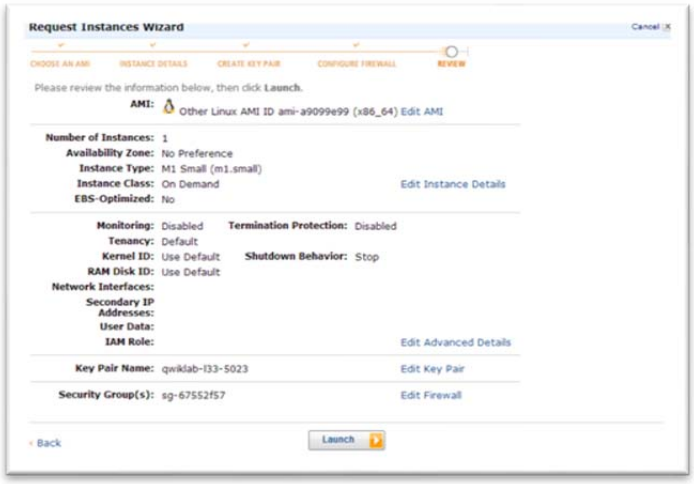
8. The default *qwik*LAB™ EC2 Key Pair will be selected. Click Continue.



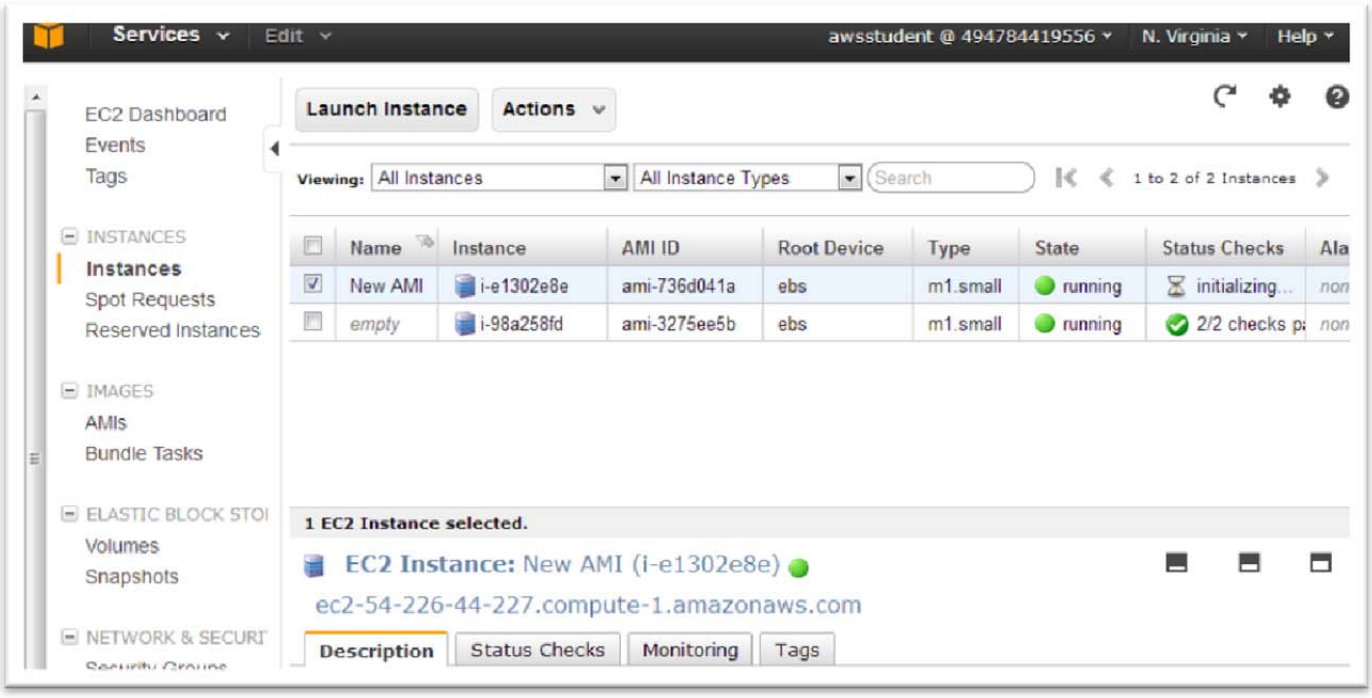
9. Select the Lab's EC2 Security Group, click Continue.



10. Click Launch.



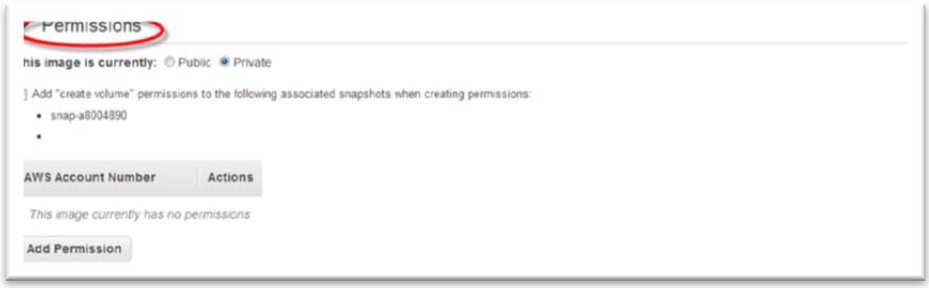
11. After around 1-2 minutes, the new instance is ready to go.



Share your AMI or make it public

AMIs are private by default. You can share AMIs to other AWS accounts or make them public.

1. Click the AMIs link to return to the AMI screen.
2. Select your AMI and click the Details Icon ( ).
3. Expand the Permissions section. Notice that you can keep an AMI private, share it with one or more AWS accounts, or make it public to anyone.



You can find additional information about AMI sharing in the EC2 online documentation:
http://docs.amazonwebservices.com/AWSEC2/latest/UserGuide/AESDG-chapter-sharingamis.html

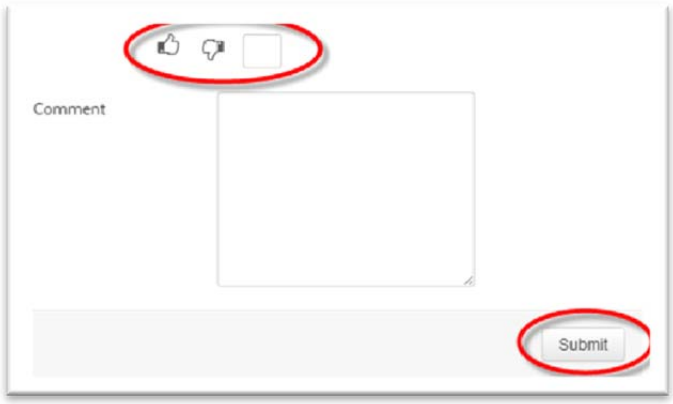
> Important: If you plan to share publicly AMIs, we strongly recommend that you read and apply all recommendations from the EC2 documentation and from the following article:
>
> **Public AMI Publishing: Hardening and Clean-up Requirements**
>
> http://aws.amazon.com/articles/Amazon-EC2/9001172542712674

End Lab

Sign-out of the AWS Management Console.

Click the End Lab button in *qwikLAB*™.

Give the lab a thumbs-up/down, or enter a comment and click Submit



Any errors in this document can be reported to aws-course-feedback@amazon.com.

