Linux Academy

Hands-On Training

Resizing and Changing a Root EBS Volume

Contents

Introduction

This lab will cover resizing root volume devices, as well as changing the root volume type between a General Purpose (SSD) and Provisioned IOPS volume. This lab will cover doing this on a root volume on an EC2 instance, which has been created within the AWS Console for this lab.

Scenario

Your CloudWatch alarms are alerting you to performance issues on your instance's root volume. It is drastically decreasing the performance of your application, making for unhappy customers. To solve this problem, you need to change the root volume (`/dev/xvda`) size from 8 GiB to 20 GiB, increasing your IOPS to 60 IOPS. This needs to be done with minimal downtime, and without creating an AMI of the image.

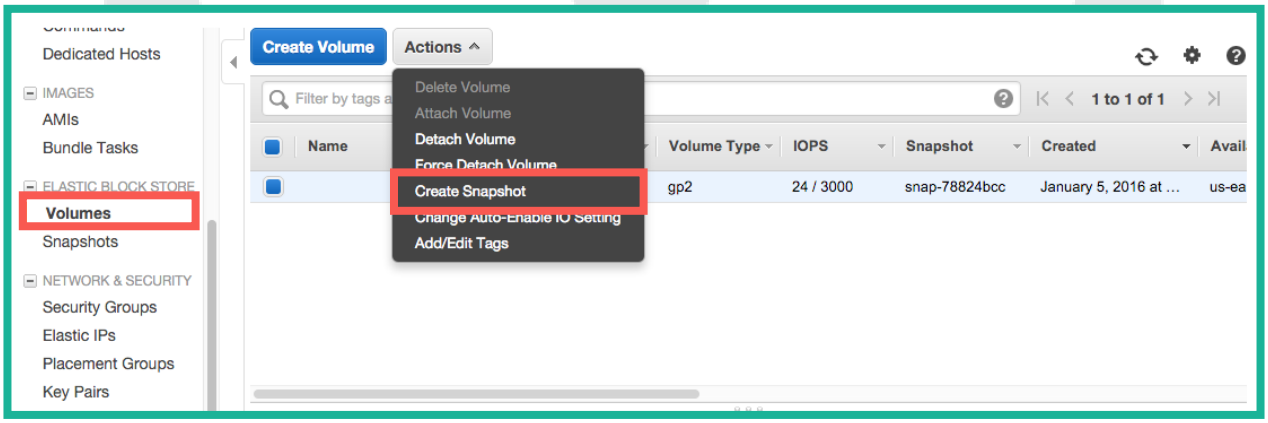
It is encouraged that you try to complete the scenario yourself before referencing the walkthrough in this Live! Lab.

Creating an EBS Snapshot

Please connect to the AWS console using the given credentials.

We first need to create a snapshot of our current root device. This will allow us to retrieve its current state with all our system configurations and information intact.

At the **EC2 Dashboard**, select **Volumes** (under **Elastic Block Store**), and select the available volume. From the **Actions** menu, click **Create Snapshot**.

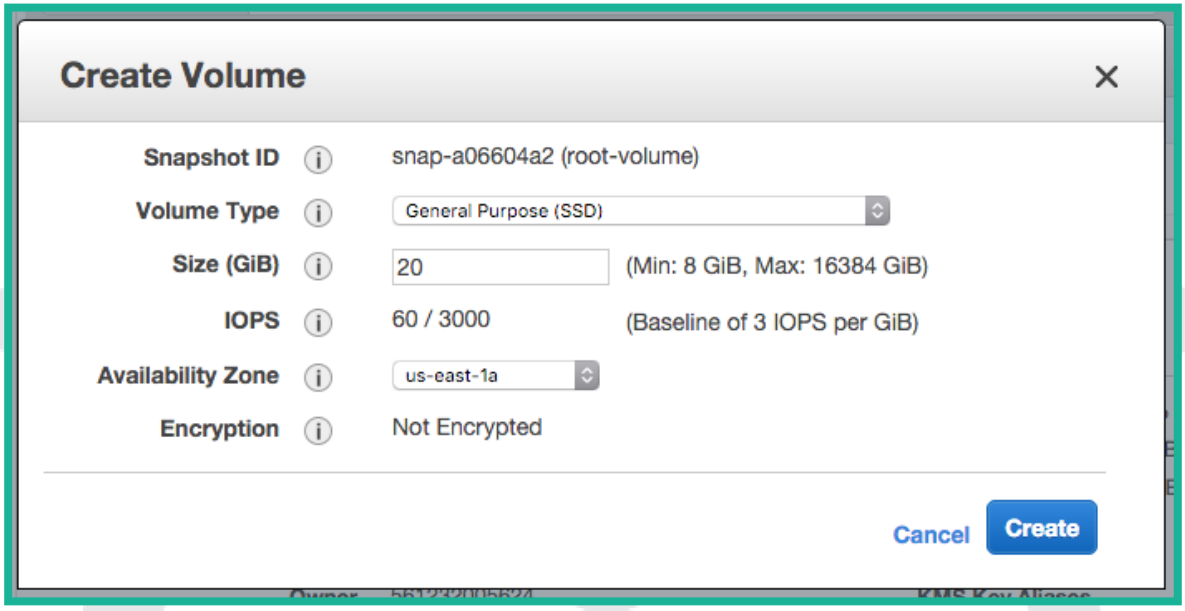


We named our snapshot *root-volume* with a description of *root volume for resize*. Create the snapshot, and then navigate to the **Snapshot** area of the dashboard. You will see the snapshot that was just created.

Creating a Volume from the Snapshot

We will be building a new volume from the snapshot, and not technically resizing the volume itself.

From the **Actions** menu, with your snapshot selected, click **Create Volume**.



We now have the option to change the volume type, size, and availability zone for the volume. For the scenario given above, we will be keeping the **Type** set to *General Purpose (SSD)*, with a **Size** of *20 GiB*. As you increase the size, you should see an increase in IOPS as well. Remember, that for each GiB of space, there is a base level of 3 IOPS. For every second that it is not running above base level, it accumulates burst-able credits.

Replacing the Current EBS Volume

With our new volume created, it needs to be attached to our EC2 instance, replacing the old root volume; however, since this volume is meant to be root, we must stop our EC2 instance first.

From your **Instances** page, select your instance and **Stop** it. When the instance has successfully stopped, return to your volumes.

From here, select your 8 GiB volume and choose **Detach Volume** from the **Actions** menu. Detach the volume.

Next, select the new 20 GiB volume, and choose **Attach Volume** from the **Actions** menu. Attach it to your instance, and change **Device** to */dev/sda1*, to make this the root volume.

Verifying Changes and Troubleshooting

After the device has attached to your instance, start your instance again. Once booted, make note of your IP address.

SSH into the server with the username of *linuxacademy* and the password of *123456*.

From the terminal, run either `lsblk` or `df -h` to view your storage devices or mount points. You should see the 20 GiB volume that we swapped in.

In the situation that you are not changing a root device, there is no need to shut down the instance. Instead, you can run `resize2fs /dev/xvda1` to update the resized volumes. Replace `/dev/xvda1` with the location of your volume.