**Lesson 03 Lesson-end Project**

**Vertical Scaling of EBS Volume for a Linux VM**

**Project agenda:** To do vertical scaling of EBS volume for a Linux VM

**Description:** Your company is experiencing business growth where solution deployment is happening with limited resources. In this case, the vertical scalability feature of AWS can be used to create a cost-optimised architecture.

**Tools required:** AWS account

**Prerequisites:** A running EC2 Instance

**Expected deliverables:** EBS volume storage using EC2 Instance

**Steps to be followed:**

1. Creating an EC2 Instance
2. Identifying the EBS volume that is created
3. Creating a snapshot
4. Creating a new volume
5. Detaching the existing volume from the EC2 Instance
6. Attaching a new volume to the EC2 Instance

**Step 1:** **Creating an EC2 Instance**

* 1. Navigate to the AWS Management Console, search for EC2, and click on **Launch Instances** as shown in the below screenshots:

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application

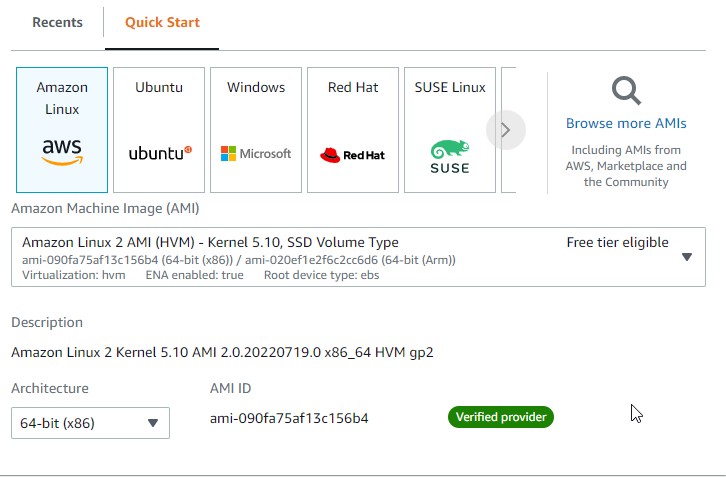
Description automatically generated

1.2 Enter a name for the **Instance**.

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* 1. Select an **Amazon Linux** VM.



* 1. Create a **key pair** if one has not been created already.

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The EC2 Instance has been successfully launched.

Shape

Description automatically generated with medium confidence

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**Step 2:** **Identifying the EBS volume that is created**

* 1. Navigate to the **Elastic Block Store** and click on **Volumes**.

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* 1. Identify the **Volume** and edit the **Volume** name as shown in the below screenshot:

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**Step 3:** **Creating a snapshot**

3.1 **Create a** **snapshot** by clicking on the **Actions tab** of **Old volume**.

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3.2 Enter a description and click on **Create snapshot**.

Graphical user interface, text, application, email

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The snapshot has been successfully created.

Graphical user interface, application, website

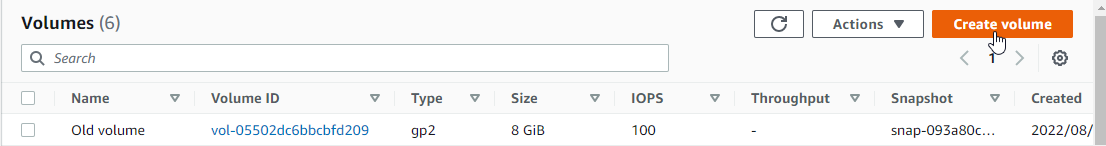
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**Step 4:** **Creating a new volume**

* 1. Create a new volume by clicking on **Create volume**.



* 1. Enter the details as shown in the below screenshot:

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**Note**: The Availability Zone should be provided as the same as the EC2 instance created.

* 1. Click on **Create volume**.

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* 1. Edit the name as **New Volume** as the volume has been successfully created.

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* 1. Connect to the **AWS Linux** VM by selecting the **Instance** and clicking on the **Connect** button.

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* 1. Click on **Connect**.

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Successfully connected to the Amazon Linux VM.

Text

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* 1. Enter the below command to view the EBS volumes created:

**lsblk**

A screenshot of a computer

Description automatically generated with medium confidence

**Step 5:** **Detaching the existing volume from the EC2 Instance**

5.1 Navigate to the instance **my-ebs-volume** and select **Stop instance** from the **Instance state** tab.

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5.2 Click on **Stop**.

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5.3 Select the **Old volume**, and under the **Actions** tab, click on **Detach volume**.

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5.4 Click on **Detach**.

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Description automatically generated

The Old volume has been successfully detached.

Graphical user interface

Description automatically generated with medium confidence

5.5 Now, try to connect to the Instance by clicking on the **Instance state** tab and starting the Instance.

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**Note**: It shows as failed to start instance as there is no volume attached.

**Step 6:** **Attaching the new volume to the EC2 Instance**

* 1. Now select the **New Volume** and click on **Attach volume** under the **Actions** tab.

Graphical user interface, application, Word

Description automatically generated

* 1. Select the **instance my-ebs-volume** and click on **Attach volume**.

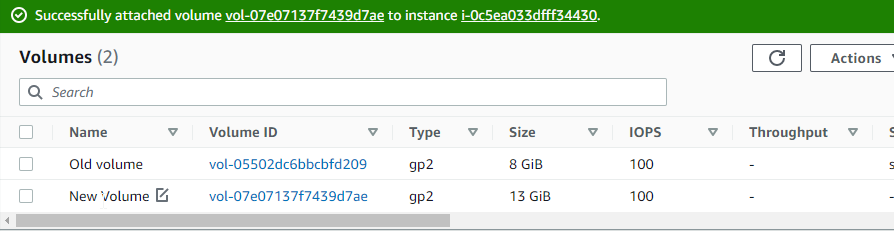
Graphical user interface, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

The New Volume with 13 GiB has been successfully attached.



Text, calendar

Description automatically generated with medium confidence

6.3 Now, navigate to the Instance and click on **Start Instance**.

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Graphical user interface, text, application, email

Description automatically generated

The EC2 Instance has been successfully started after attaching the volume to it. This attachment and detachment of volumes shows the vertical scalability of the Amazon Linux VM.