AWS EBS

Friday, November 22, 2024

3:21 PM

Amazon Elastic Block Store (Amazon EBS) is a scalable, high-performance block storage service designed for use with Amazon EC2 instances. EBS provides persistent block storage volumes that can be attached to EC2 instances, allowing you to store data that requires frequent updates and low-latency access.

### Key Features of Amazon EBS:

- \*\*Durability\*\*: EBS volumes are designed for 99.999% availability and automatically replicate within an Availability Zone.

- \*\*Performance\*\*: Offers a range of performance options, including SSD-backed volumes for high IOPS and throughput.

- \*\*Scalability\*\*: Easily scale storage up or down as needed.

- \*\*Snapshots\*\*: Create point-in-time snapshots of EBS volumes for backup and disaster recovery.

- \*\*Encryption\*\*: Supports encryption at rest and in transit.

### Sample Java Code to Create and Attach an EBS Volume

Below is a sample Java code that demonstrates how to create an EBS volume and attach it to an EC2 instance using the AWS SDK for Java. This example assumes you have the AWS SDK for Java set up in your project.

First, ensure you have the AWS SDK for Java dependencies in your

pom.xml

if you're using Maven:

```xml

<dependencies>

<dependency>

<groupId>software.amazon.awssdk</groupId>

<artifactId>ec2</artifactId>

<version>2.17.89</version>

</dependency>

</dependencies>

```

Here's a sample Java code that creates and attaches an EBS volume:

```java

import software.amazon.awssdk.auth.credentials.ProfileCredentialsProvider;

import software.amazon.awssdk.regions.Region;

import software.amazon.awssdk.services.ec2.Ec2Client;

import software.amazon.awssdk.services.ec2.model.CreateVolumeRequest;

import software.amazon.awssdk.services.ec2.model.CreateVolumeResponse;

import software.amazon.awssdk.services.ec2.model.AttachVolumeRequest;

import software.amazon.awssdk.services.ec2.model.VolumeType;

public class EbsExample {

public static void main(String[] args) {

Region region = Region.US\_EAST\_1;

Ec2Client ec2Client = Ec2Client.builder()

.region(region)

.credentialsProvider(ProfileCredentialsProvider.create())

.build();

String availabilityZone = "us-east-1a"; // Replace with your availability zone

String instanceId = "i-0abcdef1234567890"; // Replace with your EC2 instance ID

String volumeId = createEbsVolume(ec2Client, availabilityZone);

attachEbsVolume(ec2Client, volumeId, instanceId);

ec2Client.close();

}

private static String createEbsVolume(Ec2Client ec2Client, String availabilityZone) {

CreateVolumeRequest createVolumeRequest = CreateVolumeRequest.builder()

.availabilityZone(availabilityZone)

.size(10) // Size in GiB

.volumeType(VolumeType.GP2) // General Purpose SSD

.build();

CreateVolumeResponse createVolumeResponse = ec2Client.createVolume(createVolumeRequest);

System.out.println("EBS Volume created: " + createVolumeResponse.volumeId());

return createVolumeResponse.volumeId();

}

private static void attachEbsVolume(Ec2Client ec2Client, String volumeId, String instanceId) {

AttachVolumeRequest attachVolumeRequest = AttachVolumeRequest.builder()

.volumeId(volumeId)

.instanceId(instanceId)

.device("/dev/sdf") // Device name

.build();

ec2Client.attachVolume(attachVolumeRequest);

System.out.println("EBS Volume attached: " + volumeId + " to instance: " + instanceId);

}

}

```

In this example:

- The `Ec2Client` is created to interact with the Amazon EC2 service.

- The `createEbsVolume` method creates an EBS volume in the specified availability zone with a size of 10 GiB and a volume type of General Purpose SSD (GP2).

- The `attachEbsVolume` method attaches the created EBS volume to the specified EC2 instance.

Make sure to replace placeholder values like `"us-east-1a"` and `"i-0abcdef1234567890"` with actual values from your AWS environment. This code demonstrates how to create and attach an EBS volume programmatically using Java.