This lab demonstrates the steps from *Demo: Back up an EC2 Instance Using Snapshots*
My full AWS Architect Associate course can be found here:
https://www.udemy.com/course/ultimateaws/?referralCode=7ED214B795C444141361

Lab Guide: Backing Up an EC2 Instance Using Snapshots

This lab guide walks you through the steps to back up an Amazon EC2 instance using snapshots. You will learn key concepts such as EBS volumes, snapshots, and creating AMIs based on snapshots. Follow the steps carefully to gain hands-on experience.

Lab Objectives

1. Learn how to identify and back up an EC2 instance's EBS volume.
2. Understand how snapshots store data and their use cases.
3. Create a new volume or AMI from a snapshot.
4. Launch a new EC2 instance using a snapshot or AMI.

Step 1: Access the AWS Management Console

1. Log in to your AWS account and navigate to the **EC2 Dashboard**.
2. Under the **Instances** tab, identify the EC2 instance you wish to back up.

Step 2: Locate and Rename the EBS Volume

1. Click on the EC2 instance to open its details.
2. Select the **Storage** tab to view the attached EBS volume(s).

3. Click the **Volume ID** to open the volume's details.
4. Rename the volume (optional but recommended for clarity):
    - Click the **Edit name** button.
    - Enter a meaningful name (e.g., "Kali-VM-Volume").
    - Click **Save**.

Step 3: Take a Snapshot of the EBS Volume

1. In the EBS volume details, click **Actions → Create Snapshot**.
2. Provide a description for the snapshot (e.g., "Backup of Kali VM").
3. Click **Create Snapshot** to start the process.
4. Navigate to the **Snapshots** section in the left-hand menu to monitor progress:
    - The snapshot will initially show as **Pending** while AWS copies the volume's data.
    - Once finished, it will be marked **Completed**.

Step 4: Verify the Snapshot

1. Confirm that the snapshot appears in the **Snapshots** section.
2. Review the details of the snapshot, such as size, volume ID, and creation time.

Step 5: Create a New Volume from the Snapshot

1. Select the snapshot in the **Snapshots** section.
2. Click **Actions → Create Volume**.
3. Configure the volume:
    - Volume Type: General Purpose SSD (gp2).
    - Size: Should match or exceed the original volume size.
    - Availability Zone: Ensure it matches the zone of the intended EC2 instance (e.g., `us-east-2a`).
4. Click **Create Volume** to generate the new volume.
5. Verify the new volume under the **Volumes** section.

Step 6: Create a New AMI from the Snapshot

1. Select the snapshot in the **Snapshots** section.
2. Click **Actions → Create Image**.
3. Provide details for the new AMI:
    - Name: (e.g., "KaliFromBackup").
    - Description: Same as the snapshot or customized.
4. Click **Create Image**.
5. Navigate to the **AMIs** section in the left-hand menu to monitor progress.
6. Once the AMI is marked **Available**, it is ready for use.

Step 7: Launch a New EC2 Instance Using the AMI

1. In the **AMIs** section, select the newly created AMI.
2. Click **Launch Instance**.
3. Review the instance:
    - Choose an instance type (e.g., t2.micro).
    - Select the appropriate key pair for SSH access.
    - Configure storage:
        - The root volume will be pre-configured based on the snapshot.
        - Adjust the storage size if necessary.
4. Launch the instance.

Step 8: Verify the New Instance

1. Go to the **Instances** section and confirm the new instance is running.
2. SSH into the instance to verify its functionality.
3. Confirm that the data and applications from the original instance are intact.

Key Concepts Recap

1. **EBS Volumes**: Act as virtual disks for EC2 instances, storing OS, applications, and data.
2. **Snapshots**: Point-in-time backups of EBS volumes stored in Amazon S3.
3. **Creating Volumes**: Snapshots can be used to create new volumes for recovery or expansion.
4. **AMIs**: Snapshots can also be converted into Amazon Machine Images, enabling rapid deployment of identical EC2 instances.

Lab Summary

In this lab, you backed up an EC2 instance by creating a snapshot of its EBS volume. You learned how to use snapshots to create new volumes and AMIs, which can be leveraged for disaster recovery or scaling operations. By completing this exercise, you now have the skills to secure your EC2 data and deploy backups efficiently.