**Task Description:**

Launch an EC2 instance (Linux and Windows) along with a web server. Then, create an EBS volume of 5 GB, attach it to an EC2 machine (Linux and Windows), and take a snapshot. Finally, create an EBS volume using the taken snapshot.

**Part 1: Launch Linux EC2 Instance**

1. **Log into the AWS Management Console**. A screenshot of a computer

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2. **Navigate to EC2** and click on **Launch Instance**. A screenshot of a computer

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3. **Choose an Amazon Machine Image (AMI)**:
   * Select **Amazon Linux/Ubuntu AMI** (or any other preferred Linux distribution).

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1. **Choose an Instance Type**:
   * Select an instance type, e.g., **t3.micro** (eligible for the free tier).

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1. **Configure Instance Details**:
   * You can keep the default settings or customize the configurations (e.g., VPC, subnet).
2. **Add Storage**:
   * The default root volume size is 8 GB. You can leave it as is or modify it.

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1. **Configure Security Group**:
   * Add a rule for **SSH (port 22)** and **HTTP (port 80)**.

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1. **Install Web Server on Linux EC2 Instance**:
   * Install the Apache2 web server and start the web application from this EC2 instance by adding the below bin bash script under the advanced settings -> User data-optional .

#!/bin/bash

sudo apt update -y

sudo apt install apache2 unzip -y

sudo systemctl status apache2

sudo cd /tmp

sudo wget https://www.tooplate.com/zip-templates/2136\_kool\_form\_pack.zip

sudo unzip 2136\_kool\_form\_pack.zip

sudo cp -R 2136\_kool\_form\_pack/\* /var/www/html/

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1. **Review and Launch**:
   * Choose an existing key pair or create a new one if you don't have it.
   * Click **Launch** to start the instance.

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1. **Access the Linux EC2 Instance**:
   * After the instance is running, get its **public IP**.
   * Connect to the instance via SSH:
2. **Verify the Web Server**:
   * Open a browser and enter the **public IP** of your EC2 instance. You should see the web page.

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**Part 2: Create and Attach an EBS Volume of 5 GB**

**1. Create an EBS Volume**

* In the **EC2 Console**, go to **Elastic Block Store** > **Volumes** > **Create Volume**.
* Set the **Size** to **5 GB**.
* Choose the **Availability Zone** where your EC2 instance is running (this must match the instance's AZ).
* Click **Create Volume**.

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**2. Attach the EBS Volume to the EC2 Instance**

* After the volume is created, select it, then click **Actions** > **Attach Volume**.

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* Choose the instance to attach the volume to and set the **Device Name** to /dev/xvdf (this is the typical device name for Linux EC2).
* Click **Attach**.

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**3. Mount the EBS Volume on the EC2 Instance**

* SSH into the **Ubuntu EC2 instance**.
* Verify that the volume is available:

Lsblk

* You should see a new device, typically **/dev/xvdf** or something similar.

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* Create a directory to mount the volume:

sudo mkdir /mnt/data

* Format the new EBS volume (in this case, we'll use ext4 file system):

sudo mkfs.ext4 /dev/xvdf

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* Mount the volume to the directory:

sudo mount /dev/xvdf /mnt/data



* Ensure the volume is mounted automatically on reboot by editing /etc/fstab:

sudo nano /etc/fstab

* Add the following line to the file:

/dev/xvdf /mnt/data ext4 defaults,nofail 0 0

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**Part 4: Take a Snapshot of the EBS Volume**

1. **Navigate to EBS Volumes** in the AWS console.
2. Select the **5 GB EBS volume** that you just attached.
3. Click **Actions** > **Create Snapshot**.

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1. Provide a name for the snapshot (e.g., **Snapshot-5GB-volume**).

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1. Click **Create Snapshot** to begin the snapshot process.
2. Monitor the snapshot status under **Snapshots**.

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**Part 5: Create a New EBS Volume from the Snapshot**

1. **Navigate to Snapshots** in the AWS Console.
2. Select the snapshot that you created in the previous step.
3. Click **Actions** > **Create Volume**.
4. Set the **Size** to match the snapshot size (this will be **5 GB**).
5. Select the same **Availability Zone** as your EC2 instance.
6. Click **Create Volume**.

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