# Placement Empowerment Program

***Cloud Computing and DevOps Centre***

Set Up a Virtual Machine in the Cloud Create a free- tier AWS account. Launch a virtual machine and SSH into it.

Name: Shakthi Lakshmanan V Department: CSE



### **Introduction**

This Proof of Concept (POC) aims to demonstrate the process of setting up a virtual machine (VM) in the cloud using AWS Free Tier. Virtual machines are a key part of cloud computing, enabling users to deploy and manage computing resources without needing physical hardware. This POC provides a step-by-step guide for beginners to understand cloud infrastructure and use AWS EC2 to create a simple and cost-effective computing environment.

### **Overview**

This guide covers the essential steps to:

1. Create a free AWS account.
2. Launch a virtual machine using AWS EC2.
3. Configure and secure the instance with a key pair and a security group.
4. Connect to the VM using SSH from a Windows system.

This hands-on exercise helps users get familiar with AWS infrastructure, making it easier to manage cloud resources.

### **Objectives**

* **Learn AWS EC2 Basics** – Understand how to create, configure, and launch an EC2 instance.
* **Practice Secure Connections** – Use SSH to securely connect to the instance.
* **Gain Practical Experience** – Navigate the AWS Management Console and manage cloud resources.
* **Understand Free Tier Usage** – Work within the AWS Free Tier to avoid unnecessary costs.

### **Importance**

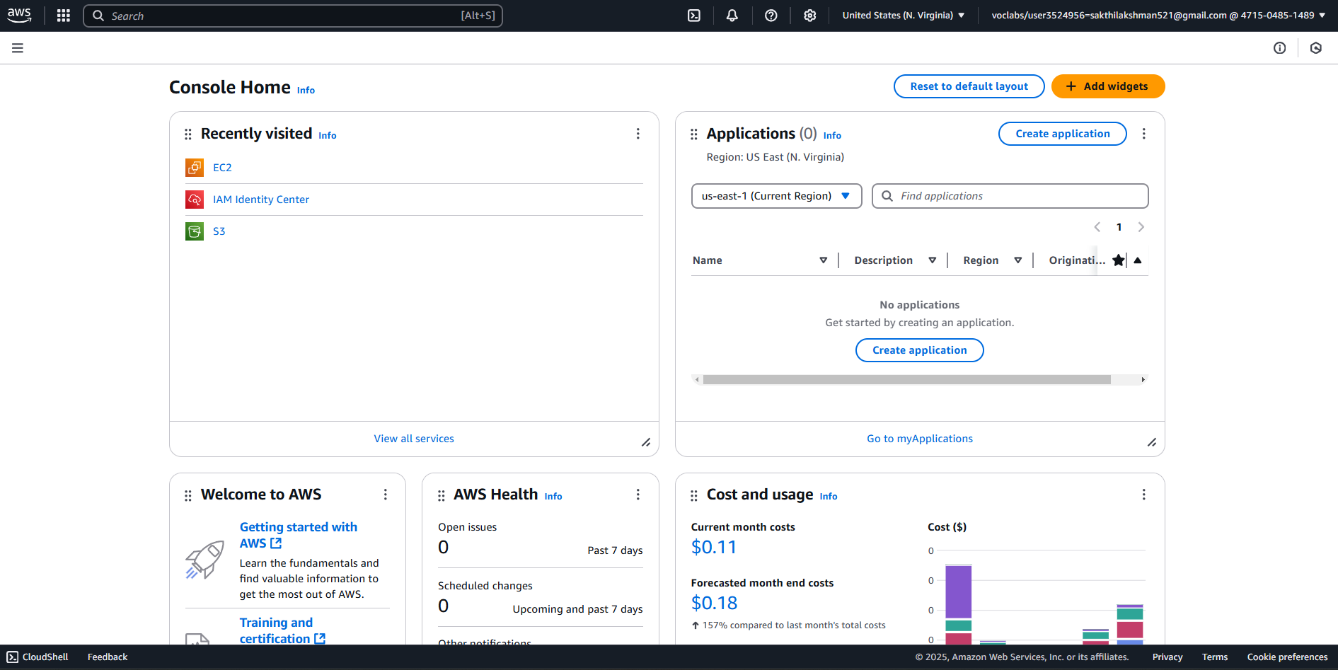
* **Foundation for Cloud Computing** – Learning to launch and manage virtual machines is a fundamental skill for cloud practitioners.
* **Hands-on Skill Development** – This POC helps users gain experience in AWS, instance management, and security settings.
* **Scalability and Flexibility** – Demonstrates how cloud computing allows rapid deployment of resources compared to traditional setups.
* **Cost-Effective Learning** – AWS Free Tier provides an opportunity to explore cloud computing without financial investment.
* **Career Growth** – Understanding AWS EC2 is valuable for IT, cloud computing, and DevOps roles.

By following this POC, beginners can build confidence in working with AWS and develop essential cloud computing skills. 🚀

# Step-by-Step Overview

## Step 1:

1. Go to [AWS Management Console](https://aws.amazon.com/console/).
2. Enter your username and password to log in.



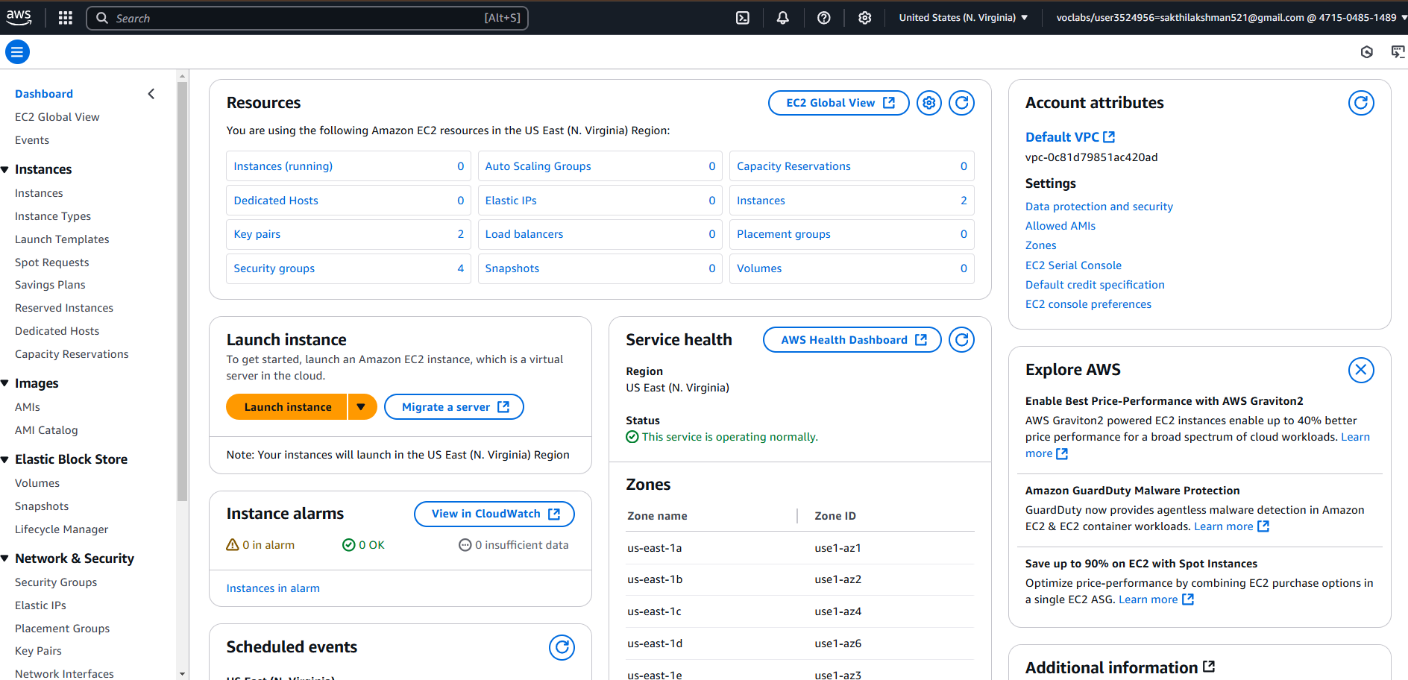
## Step 2:

## Navigate to the AWS Management Console and search for **EC2**.

## 

## Step 3:

Click **Launch Instances**.



## Step 4:

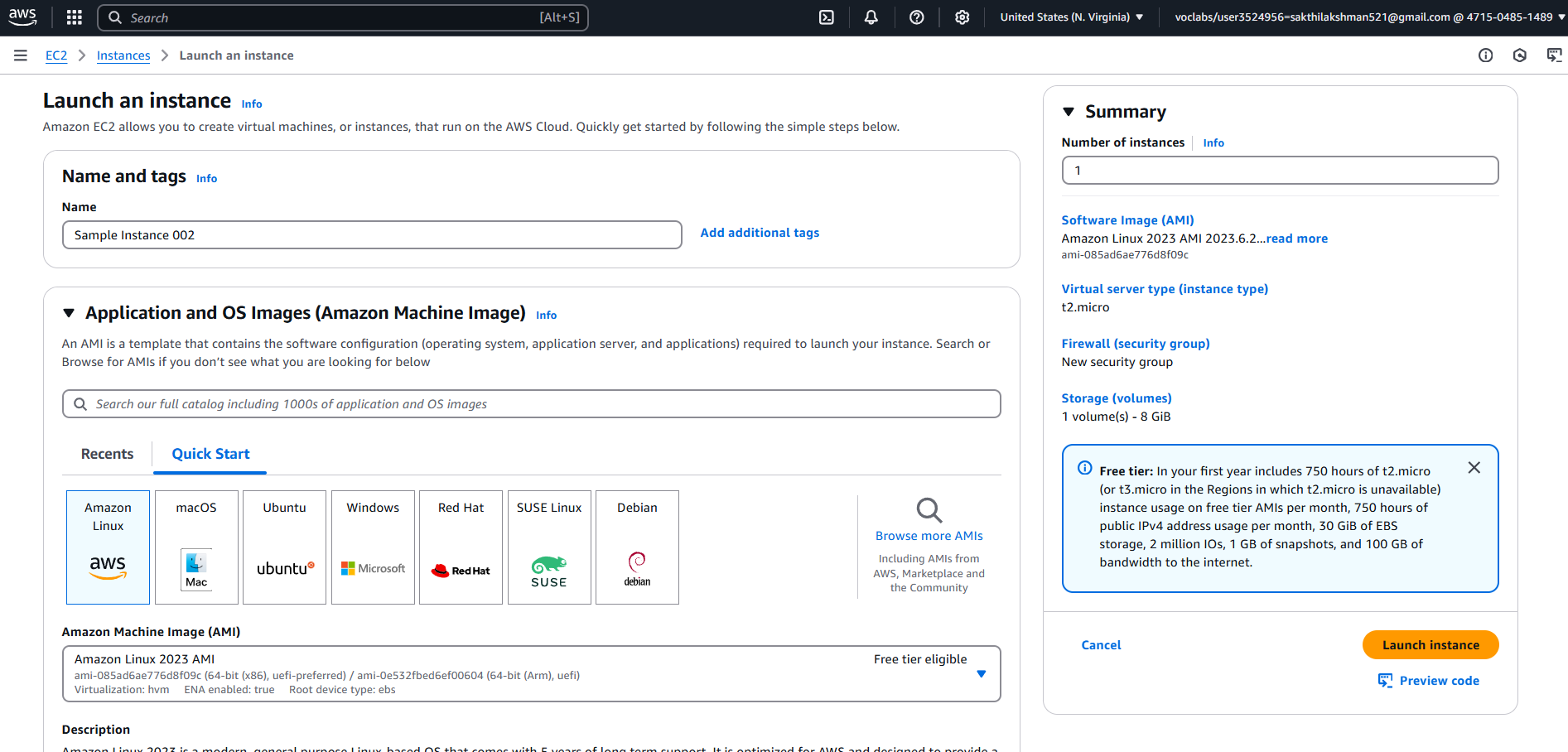
1. Choose **Amazon Linux 2023 Free Tier AMI** or **Ubuntu Free Tier AMI**.
2. Select the **t2.micro** instance type (free tier).
3. Configure security group:

Allow **SSH** (Port 22) from your IP.

1. Add a key pair:

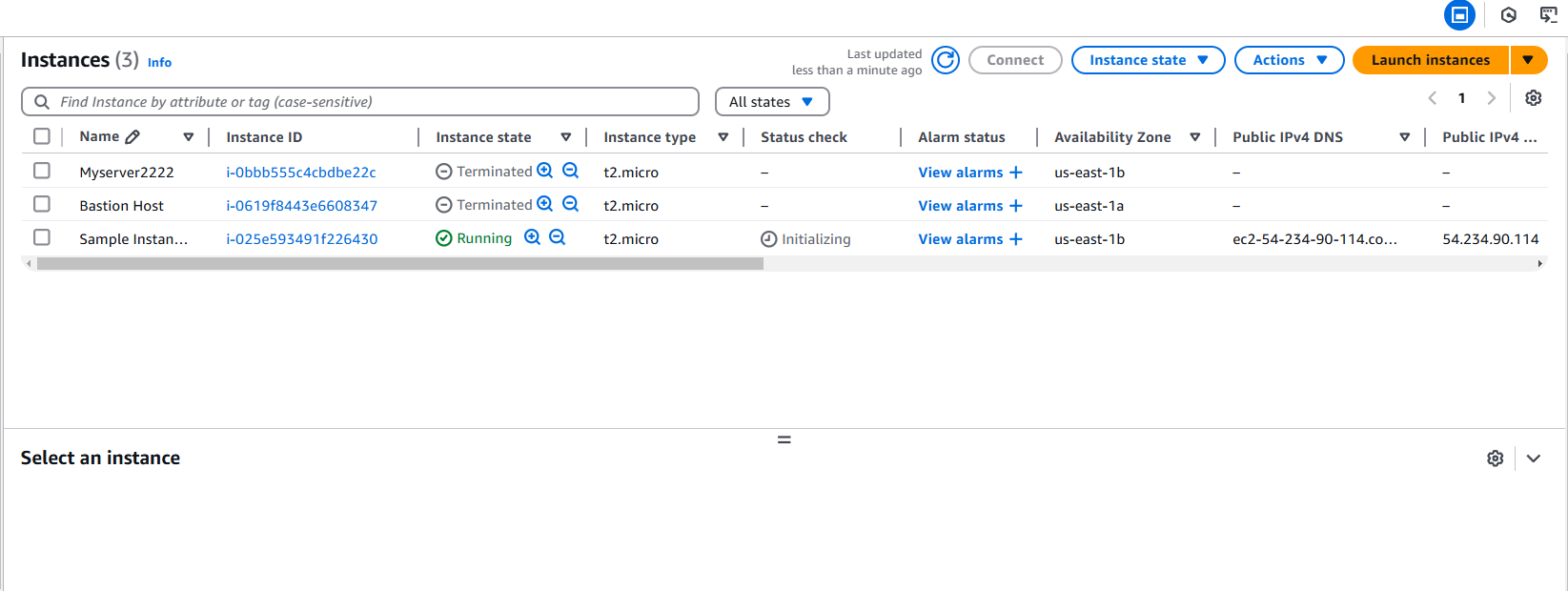
If you don’t have one, create a new key pair and download it as a .pem file.

1. Click **Launch Instance**.



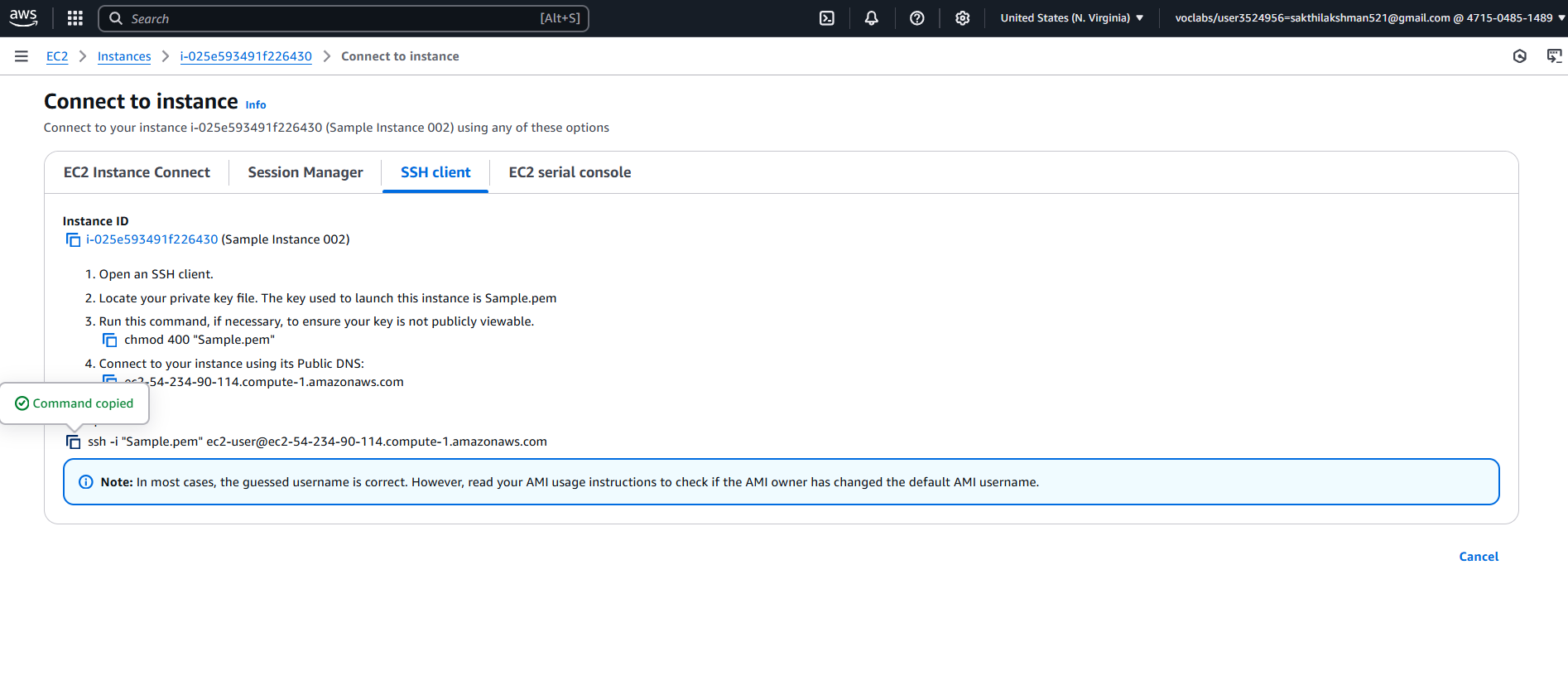
## Step 5:

Check your running instance in the Instances section . Select your Instance and click the Connect Option.



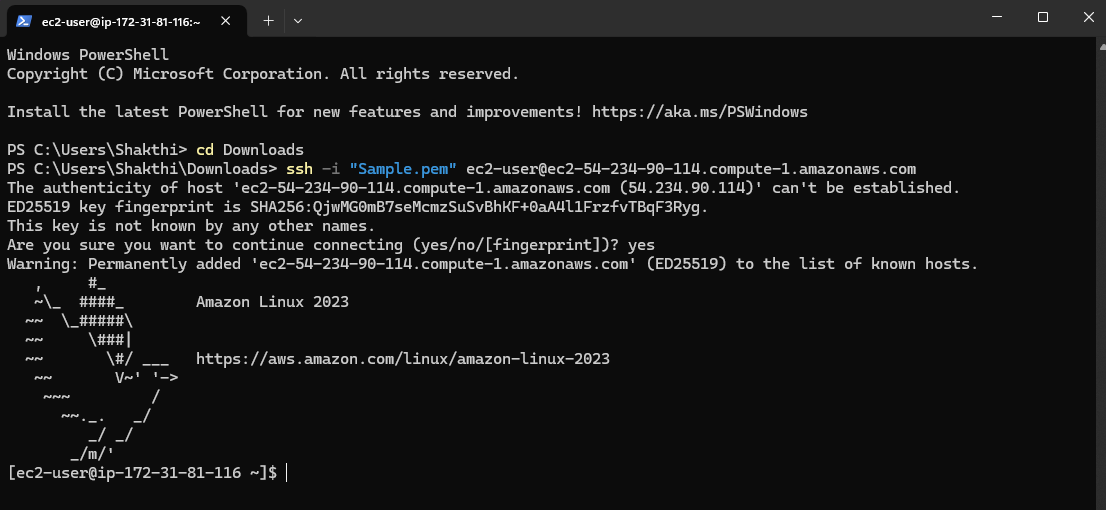
## Step 6:

Go to the SSH client section, and copy the command provided under the 'Example' section.



## Step 7:

Open PowerShell, navigate to the Downloads folder. Run the SSH command from the EC2 Connect section, replace the key name with your downloaded key (e.g., sample.pem), press Enter, and type yes when prompted.



Successfully completed the setup of a virtual machine in AWS.

# Outcome

By completing this PoC of setting up a virtual machine in AWS, you will:

1. Create and configure a free AWS account to use cloud resources within the Free Tier.
2. Launch an EC2 instance with Amazon Linux or Ubuntu as the operating system.
3. Generate and manage a secure key pair for SSH access to your EC2 instance.
4. Configure a security group to allow SSH connections to your instance from your IP address.
5. Successfully connect to the EC2 instance via SSH using the public IP address.
6. Gain hands-on experience with AWS EC2 and foundational cloud computing concepts.