



## **Placement Empowerment Program**

### ***Cloud Computing and DevOps Centre***

Task: Set up a Virtual Machine in the Cloud

Name: Vishnu Vardan E

Department: CSE

# Introduction

## Introduction to Setting Up a Virtual Machine in the Cloud

A **Virtual Machine (VM)** in the cloud is a computing resource that runs on a cloud provider's infrastructure. It allows users to deploy applications, test environments, or run workloads without needing physical hardware.

This **Proof of Concept (PoC)** aims to guide you through the process of setting up a virtual machine on major cloud platforms like **Amazon Web Services (AWS)**, **Microsoft Azure**, or **Google Cloud Platform (GCP)** using their **free-tier** offerings. The steps include:

1. **Creating a Cloud Account** – Sign up for a free-tier account on AWS, Azure, or GCP.
2. **Launching a Virtual Machine** – Choose an appropriate VM configuration and operating system.
3. **Connecting via SSH** – Securely access the VM using SSH from your local machine.

By the end of this PoC, you will have a running cloud-based VM that you can use for development, testing, or hosting applications.

# Overview

## Step-by-Step Overview for Setting Up a Virtual Machine in the Cloud (PoC)

### 1: Create a Cloud Account

- **Sign up for a free-tier account on one of the major cloud providers:**
  - AWS (Amazon Web Services) – [AWS Free Tier](#)
  - Azure (Microsoft Azure) – [Azure Free Account](#)
  - GCP (Google Cloud Platform) – [Google Cloud Free Tier](#)
- **Verify your email, phone number, and payment method (most providers require a credit card for verification but won't charge for free-tier usage).**

### 2: Access the Cloud Console

- **Log in to the respective cloud console:**
  - AWS Console: [AWS Management Console](#)
  - Azure Portal: [Azure Portal](#)
  - Google Cloud Console: [Google Cloud Console](#)

### 3: Launch a Virtual Machine (VM)

- **Navigate to the Compute Services section:**
  - **AWS: EC2 (Elastic Compute Cloud)**
  - **Azure: Virtual Machines**
  - **GCP: Compute Engine**
- **Click on Create Instance / Launch VM**
- **Configure the following settings:**
  - **Choose OS (Ubuntu, Windows, CentOS, etc.)**
  - **Select Machine Type (Free-tier eligible instance like AWS t2.micro, Azure B1s, or GCP e2-micro)**
  - **Configure Network & Security (Ensure SSH is enabled)**
  - **Create & Download SSH Key Pair (AWS & GCP) or set up username/password (Azure)**
  - **Launch / Deploy the VM**

#### 4: Connect to the VM via SSH

- **Once the VM is running, retrieve its public IP address**
- **Open a terminal (Linux/macOS) or use PuTTY (Windows)**
- **Connect using SSH:**
- **ssh -i your-key.pem username@public-ip**
  - **AWS: ssh -i key.pem ec2-user@public-ip**
  - **Azure: ssh username@public-ip**
  - **GCP: ssh username@public-ip (or use Google Cloud Console SSH button)**

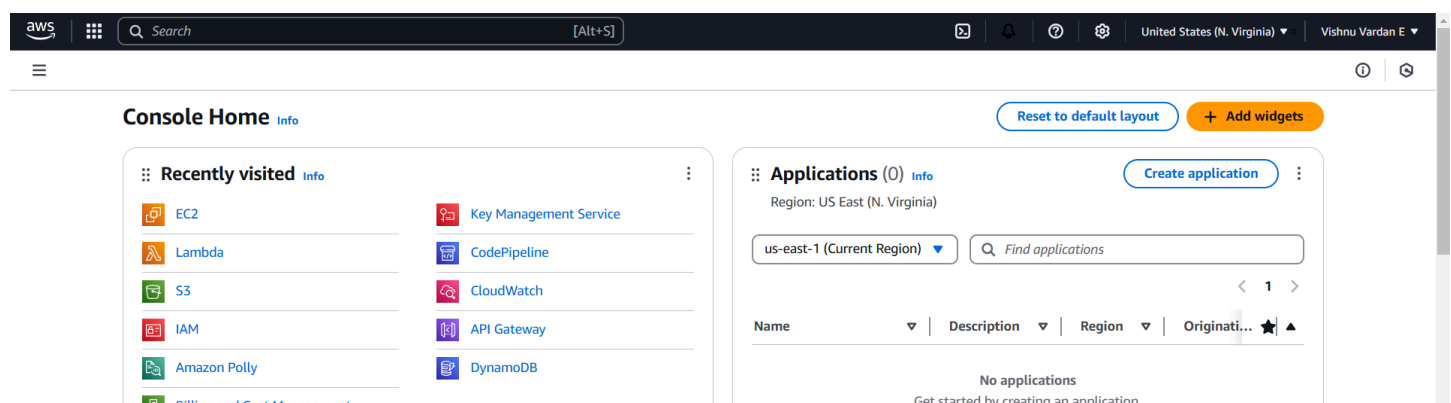
#### 5: Verify and Use Your VM

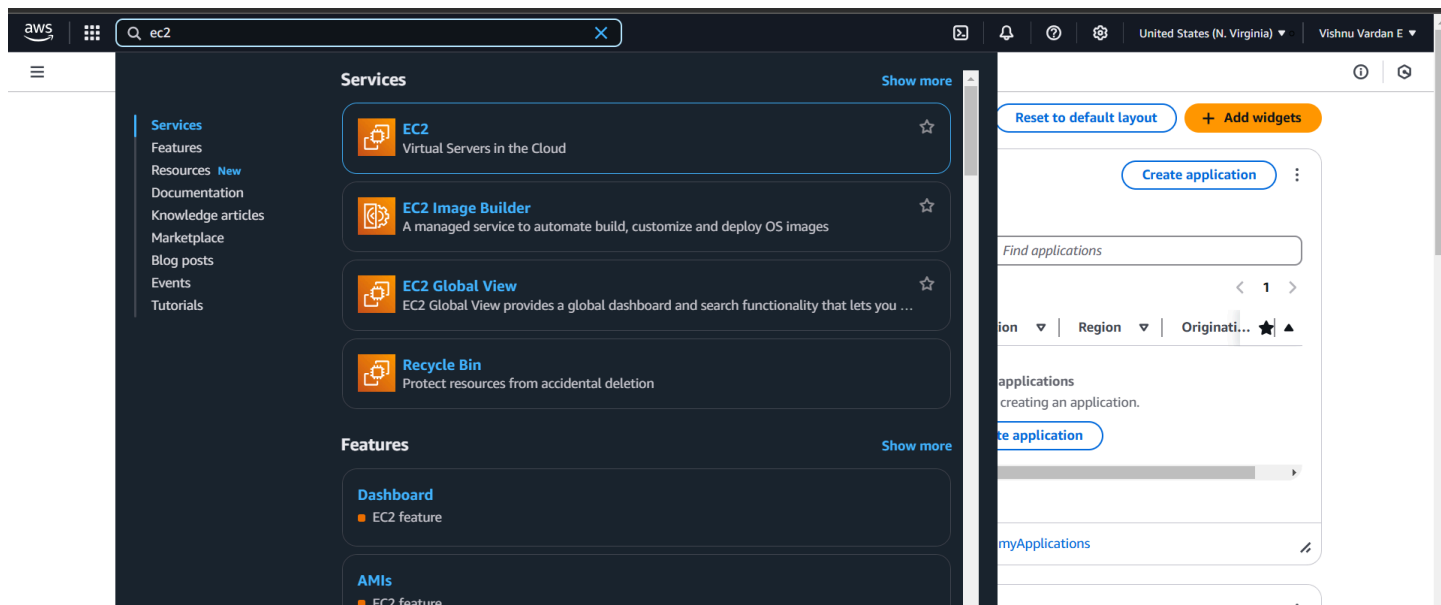
- **Run basic commands to ensure the VM is working:**
- **uname -a # Check system info**
- **df -h # Check disk usage**
- **top # Monitor processes**
- **Install required packages or deploy an application as needed**

## Step-by-Step Overview

### Step 1:

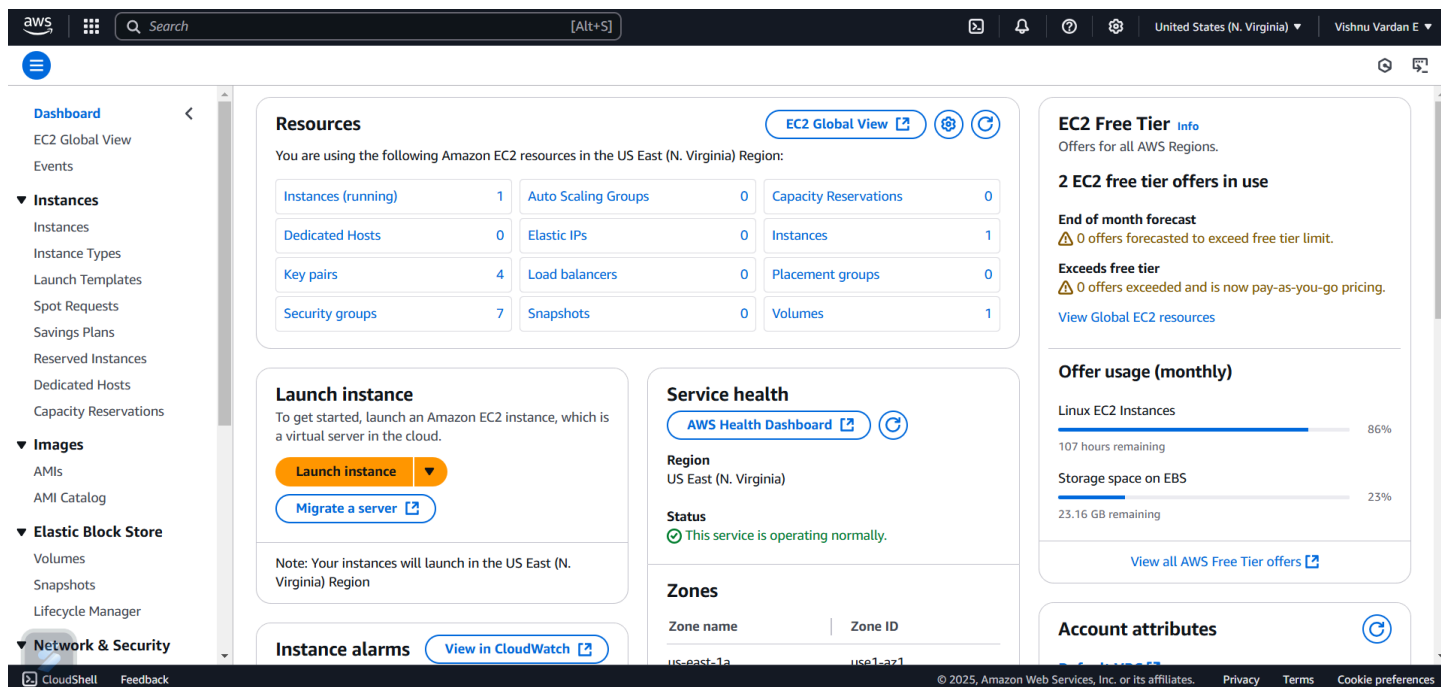
Navigate to the aws console and search ec2





## Step 2

Now click the ec2 and launch an instance



## Step 3:

# Name the instance and create an new key pair name

**Launch an instance** [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

**Name and tags** [Info](#)

Name  
myweb [Add additional tags](#)

**Application and OS Images (Amazon Machine Image)** [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Recents **Quick Start**

Amazon Linux macOS Ubuntu Windows Red Hat SUSE Linux Debian

[Browse more AMIs](#)  
Including AMIs from AWS, Marketplace and the Community

**Summary**

Number of instances [Info](#)  
1

Software Image (AMI)  
Amazon Linux 2023.6.2...read more

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
Default security group

Storage (volumes)  
Volume(s) - 8 GiB

**Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 750 hours of public IPv4

[Cancel](#) [Launch instance](#) [Preview code](#)

**Create key pair**

**Key pair name**  
Key pairs allow you to connect to your instance securely.  
Enter key pair name  
The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

**Key pair type**

☒ RSA  
RSA encrypted private and public key pair

☐ ED25519  
ED25519 encrypted private and public key pair

**Private key file format**

☒ .pem  
For use with OpenSSH

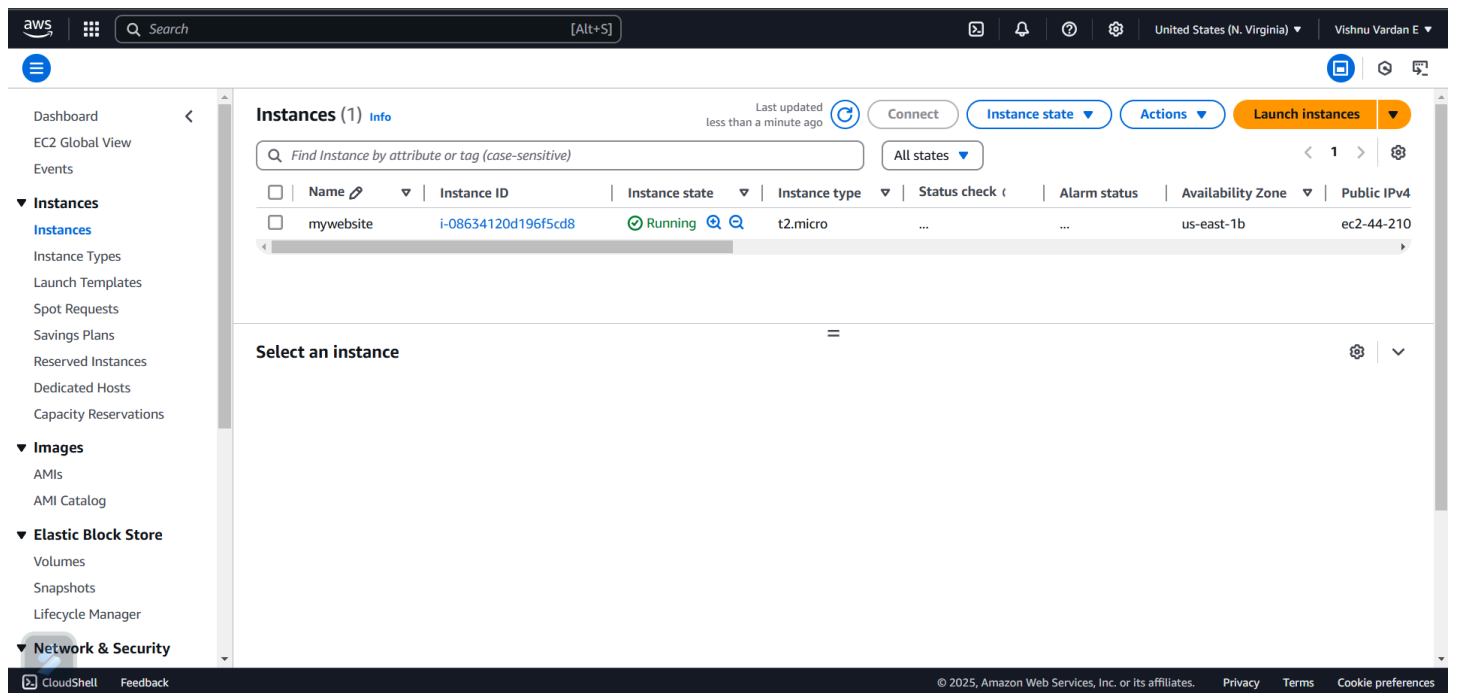
☐ .ppk  
For use with PuTTY

**Warning:** When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance. [Learn more](#)

[Cancel](#) [Create key pair](#)

## Step 4:

Click to launch instance button and your instance has been launched



The screenshot shows the AWS Management Console interface for the EC2 Instances page. The top navigation bar includes the AWS logo, a search bar, and the user's name 'Vishnu Vardan E'. The left sidebar contains a navigation menu with categories like 'Instances', 'Images', 'Elastic Block Store', and 'Network & Security'. The main content area displays a table of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4. A single instance named 'mywebsite' is listed with ID 'i-08634120d196f5cd8' and is in the 'Running' state. Below the table, there is a 'Select an instance' section.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
mywebsite	i-08634120d196f5cd8	Running	t2.micro	...	...	us-east-1b	ec2-44-210

## Expected Outcome

After completing these steps, you will have a **fully functional cloud-based virtual machine** that can be accessed remotely. This VM can be used for **development, hosting applications, or running workloads**.