Placement Empowerment Program

Cloud Computing and DevOps Centre

Task:Set up a Virtual Machine in the Cloud

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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 accounton 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 Servicessection:**
  - **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)**

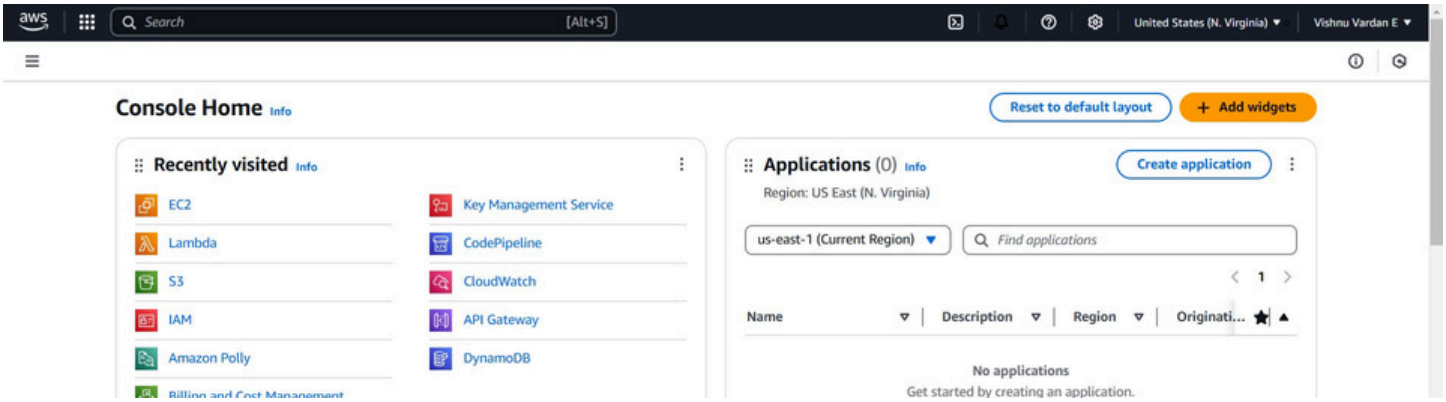
5: Verify and Use Your VM

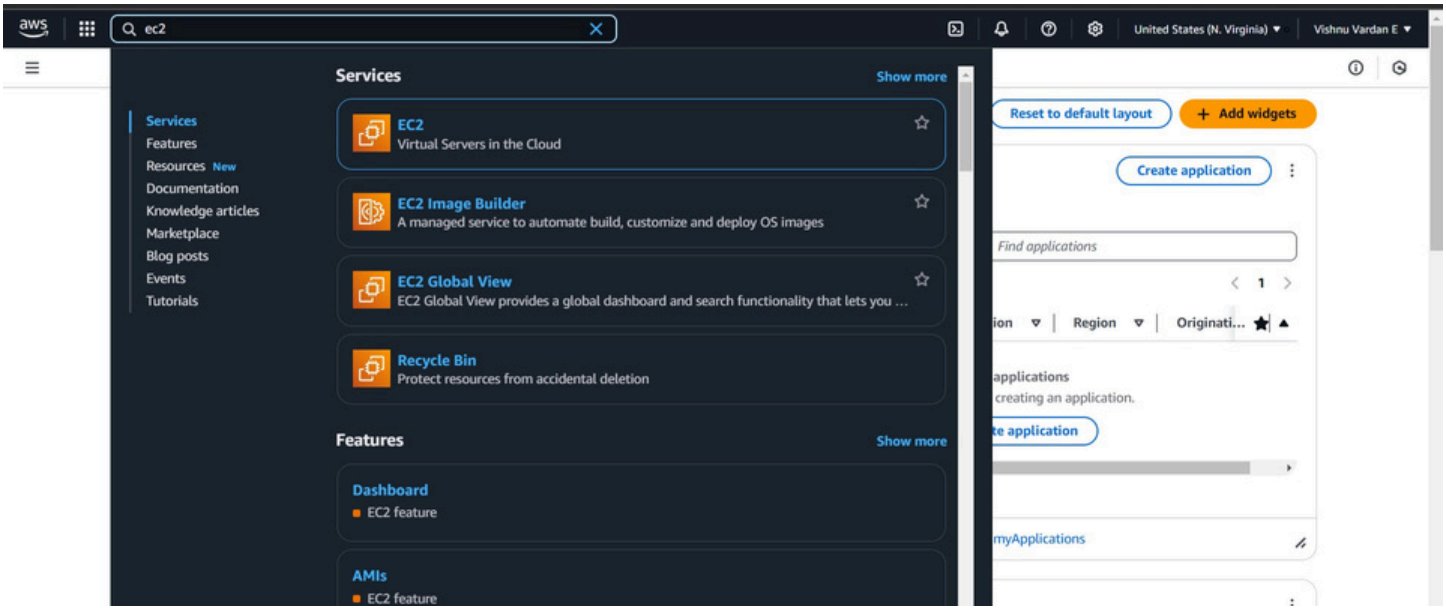
- **Run basic commands to ensure the VM is working:**
- **uname -a # Check system info**
- **df -h # Check disk usage**
- **top # Monitor processes**
- **Install required packages or deploy an application as needed**

Step-by-Step Overview

Step 1:

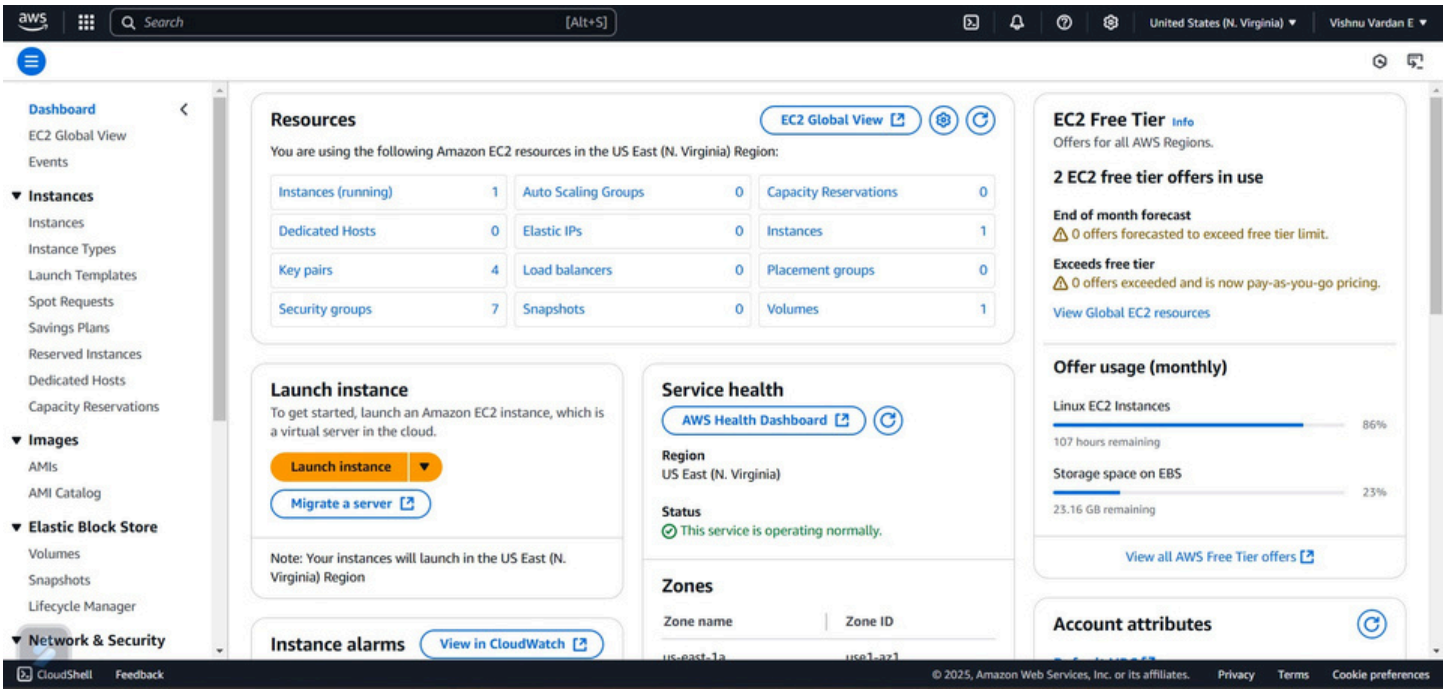
Navigate to the aws console and search ec2





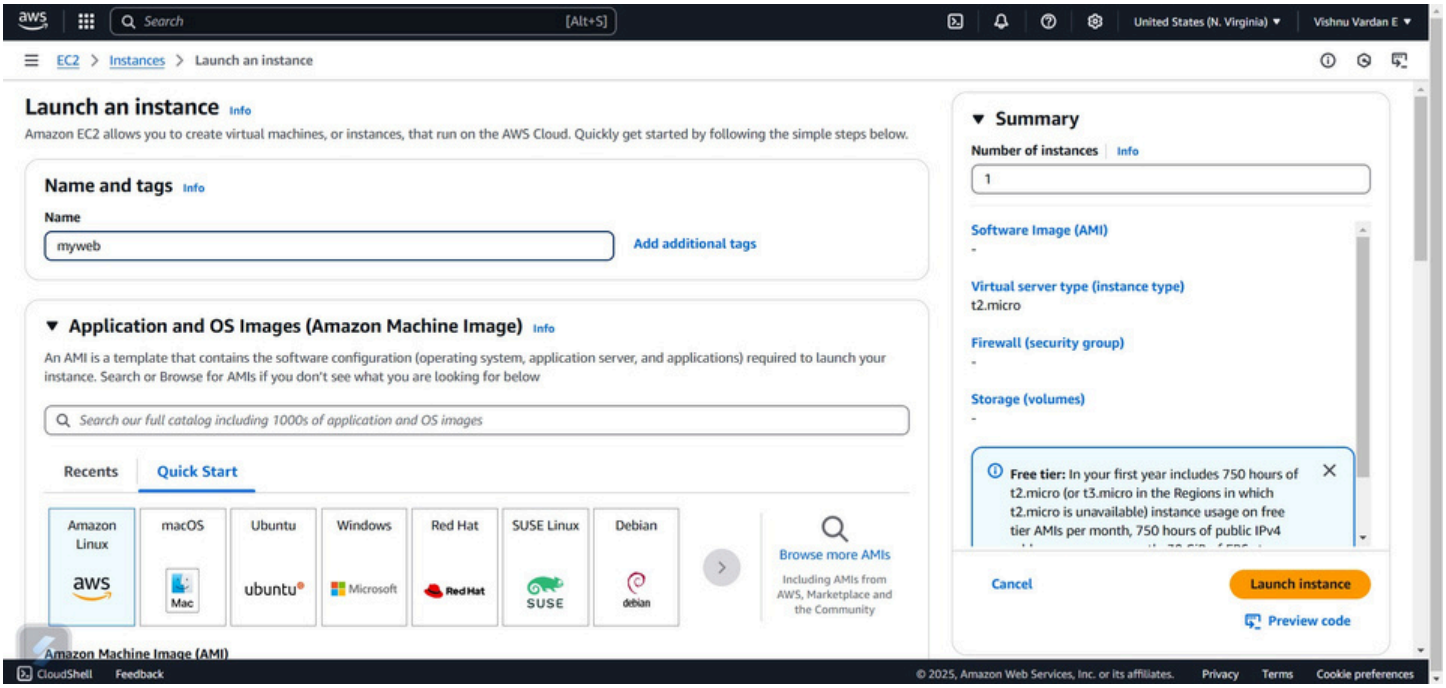
Step 2

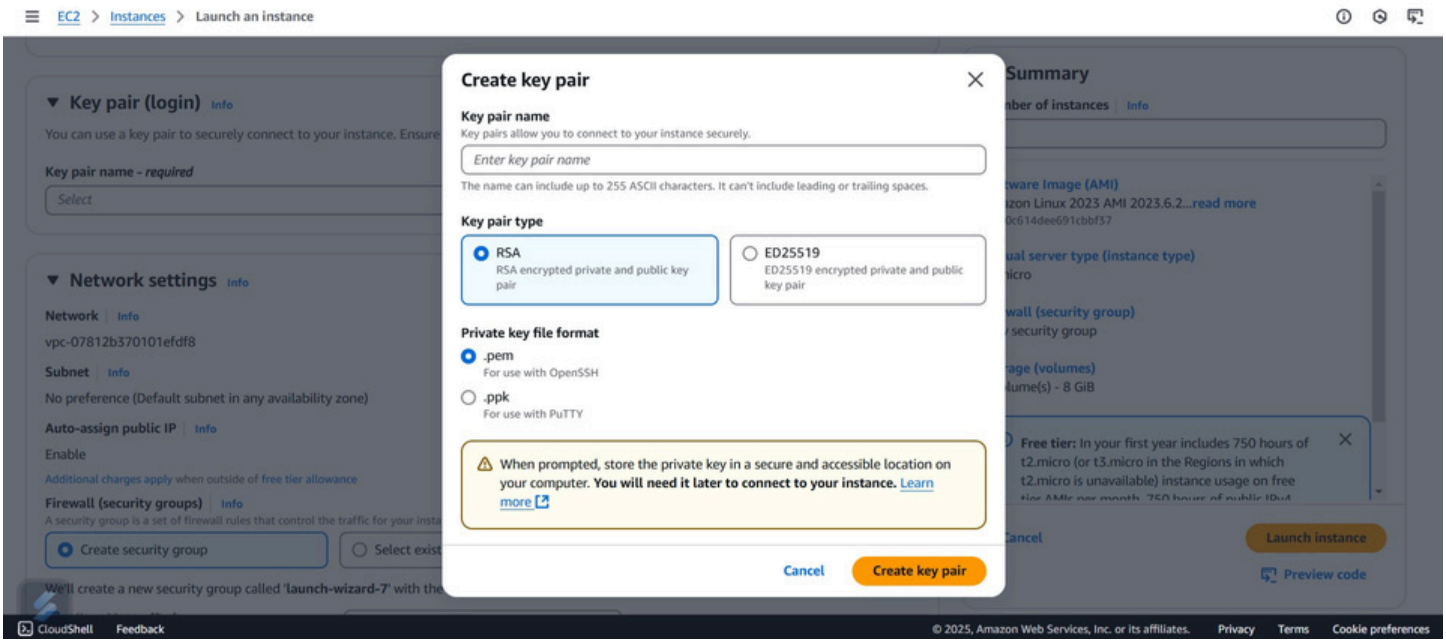
Now click the ec2 and launch an instance



Step 3:

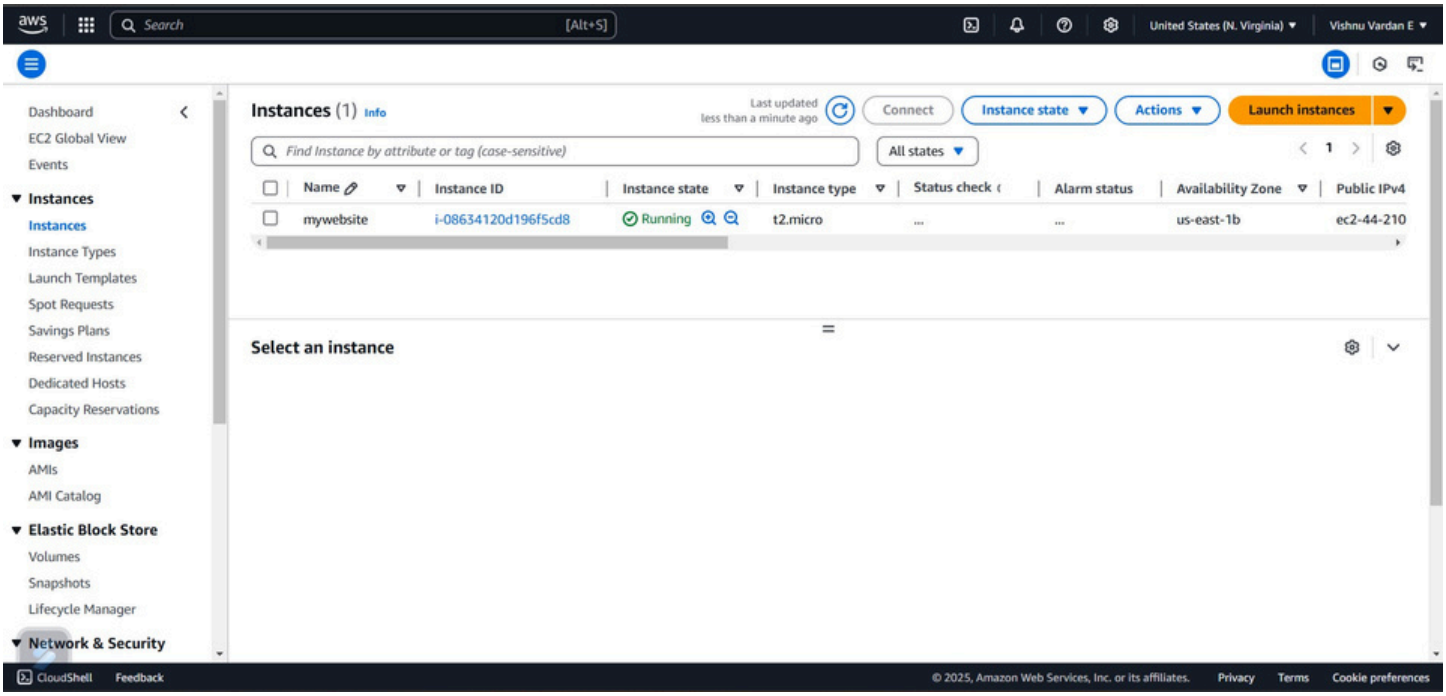
Name the instance and create an new key pair name





Step 4:

Click to launch instance button and your instance has been launched



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**.