

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.

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Introduction

The objective of this Proof of Concept (POC) is to explore the process of setting up a virtual machine in the cloud using the AWS Free Tier. A virtual machine (VM) is a crucial component in cloud computing, enabling users to deploy and manage scalable computing resources without requiring physical hardware. This POC serves as a foundational exercise for understanding cloud infrastructure and using AWS EC2 to create a simple and cost-effective computing environment.

Overview

This POC demonstrates the step-by-step process 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.
- The project covers basic tasks that are essential for beginners in cloud computing, offering hands-on experience with AWS infrastructure.

Objectives

- 1. Learn AWS EC2 Basics:** Understand how to create, configure, and launch an EC2 instance.
- 2. Practice Secure Connections:** Use SSH to securely connect to the instance.
- 3. Gain Practical Experience:** Explore the AWS Management Console to manage and interact with cloud resources.
- 4. Understand Free Tier Usage:** Work within the AWS Free Tier to avoid unnecessary costs.

Importance

1. Foundation for Cloud Computing: Understanding how to launch and manage virtual machines is a fundamental skill for cloud practitioners.

Skill Development: This POC builds hands-on skills in AWS, including instance management, security configurations, and connecting via SSH.

Scalability and Flexibility: Demonstrates how cloud infrastructure allows for rapid deployment of resources compared to traditional setups.

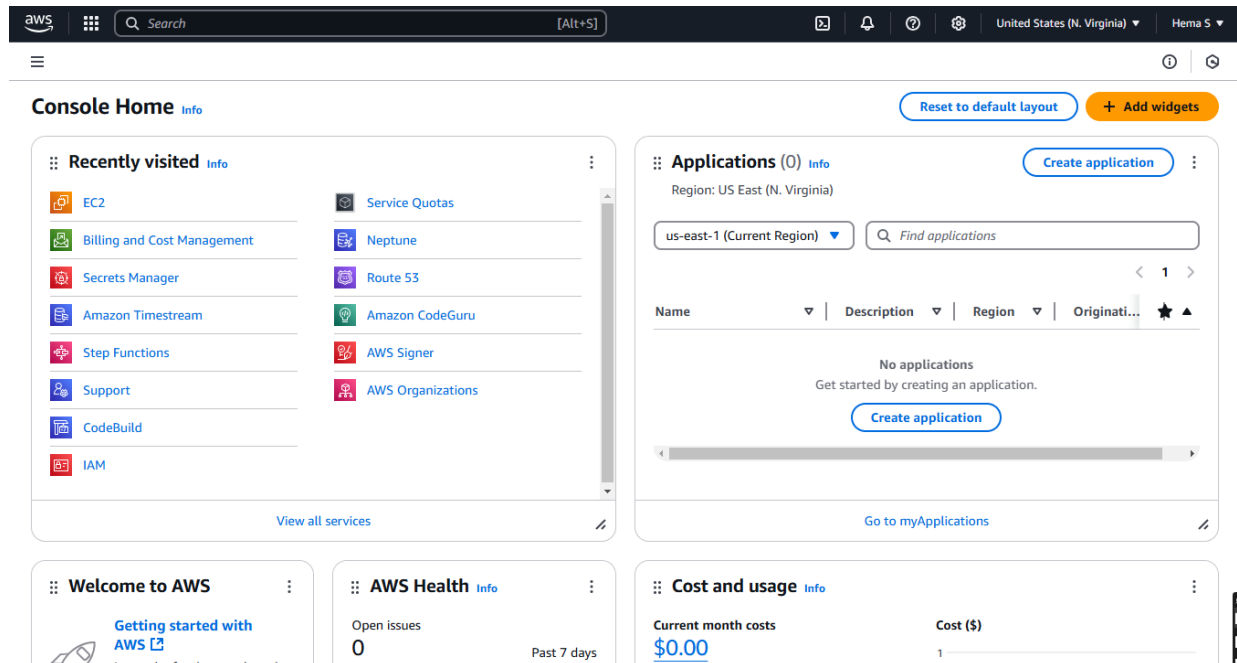
Cost-Effective Learning: Using AWS Free Tier enables users to explore cloud computing without financial investment.

Career Relevance: Knowledge of setting up virtual machines in AWS is highly valuable for careers in IT, cloud computing, and DevOps.

Step-by-Step Overview

Step 1:

1. Go to [AWS Management Console](#).
2. Enter your username and password to log in.



Step 2:

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

aws

ec2

Console

Recent

EC2

Billing

Security

Amazon

Step

Support

Code

IAM

Welcome

Services

Features

Resources New

Documentation

Knowledge articles

Marketplace

Blog posts

Events

Tutorials

Services

EC2

Virtual Servers in the Cloud

EC2 Image Builder

A managed service to automate build, customize and deploy OS images

EC2 Global View

EC2 Global View provides a global dashboard and search functionality that lets you ...

Features

Dashboard

EC2 feature

AMIs

EC2 feature

EC2 Instances

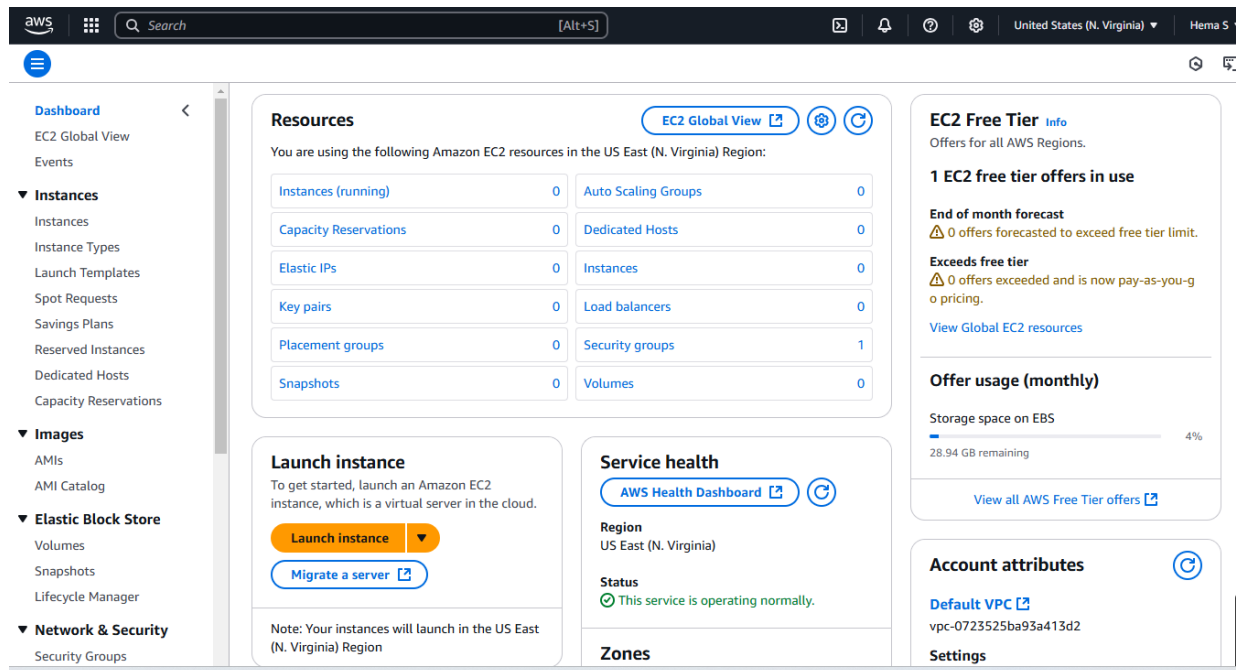
CloudWatch feature

Resources

/ for a focused search

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.

4. Add a key pair:

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

5. Click **Launch Instance**.

aws

Search

[Alt+S]

United States (N. Virginia)

Hem

EC2

Instances

Launch an instance

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

hema

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

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Linux

SUSE

De

de

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Summary

Number of instances

Info

1

Software Image (AMI)

-

Virtual server type (instance type)

t2.micro

Firewall (security group)

-

Storage (volumes)

-

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 address usage per month, 30 GiB of EBS storage,

Cancel

Launch instance

Preview code

Step 5:

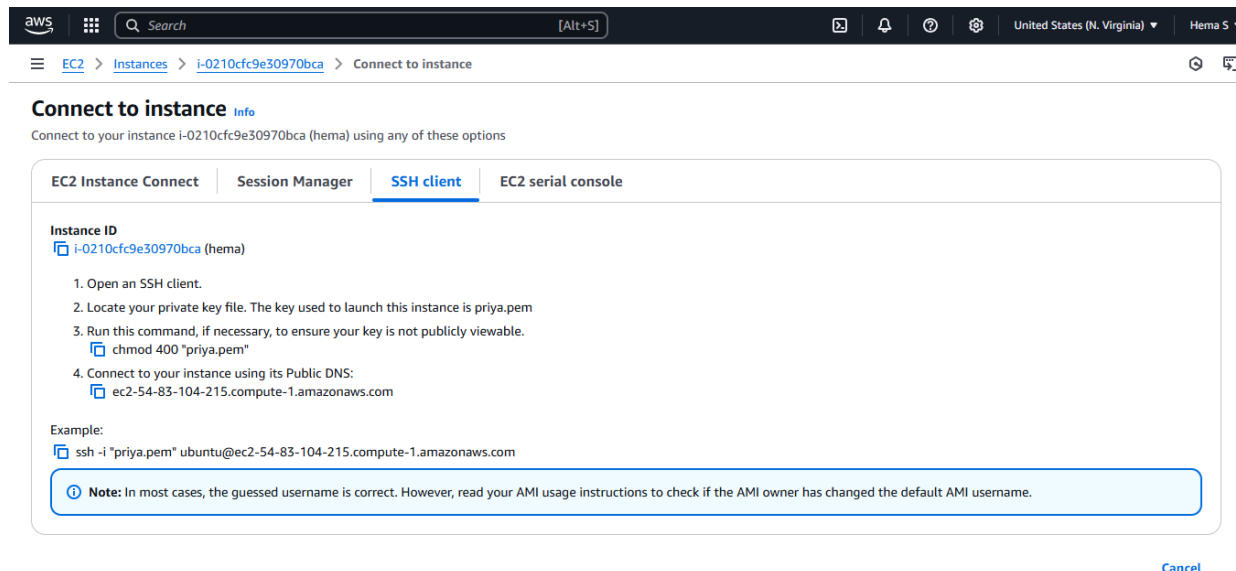
Check your running instance in the Instances section . Select your Instance and click the Connect Option.

The screenshot shows the AWS Management Console interface. On the left is a navigation menu with options like Dashboard, EC2 Global View, Events, Instances, Images, Elastic Block Store, and Network & Security. The main area displays the 'Instances (1/1)' page. At the top, there are buttons for 'Connect', 'Instance state', 'Actions', and 'Launch instances'. Below these is a search bar and a table of instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability. One instance, 'hema' with ID 'i-0210cfc9e30970bca', is listed with a 'Running' status. Below the table, there's a section for the selected instance 'i-0210cfc9e30970bca (hema)' with tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. The 'Details' tab is active, showing links for Instance summary, Instance details, and Host and placement group.

This screenshot shows the 'Next Steps' section of the AWS Management Console after launching an instance. At the top, a green banner indicates 'Success: Successfully initiated launch of instance (i-0210cfc9e30970bca)'. Below this is a 'Launch log' section. The 'Next Steps' section features a search bar and a list of recommended actions, each with a brief description and a 'Learn more' link. The actions include: 'Create billing and free tier usage alerts', 'Connect to your instance', 'Connect an RDS database', 'Create EBS snapshot policy', 'Manage detailed monitoring', 'Create Load Balancer', 'Create AWS budget', and 'Manage CloudWatch alarms'. The interface is clean and modern, with a clear focus on guiding the user through the next steps of their AWS journey.

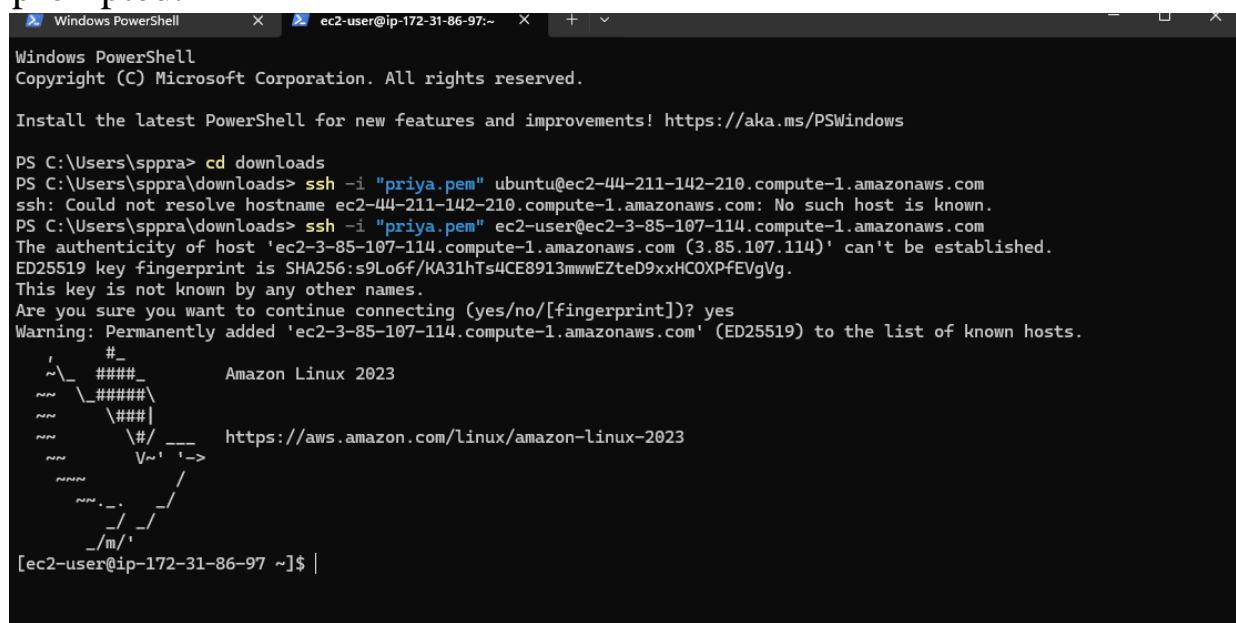
Step 6:

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., new.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.