

## **Placement Empowerment Program** ***Cloud Computing and DevOps Centre***

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



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## ***Introduction:***

***AWS (Amazon Web Services) offers a Free Tier that allows users to create and use virtual machines (EC2 instances) at no cost for up to 750 hours per month. This guide will walk you through setting up an EC2 instance and connecting to it using SSH.***

## ***Step 1: Create a Free-Tier AWS Account***

- ***Go to AWS Free Tier.***
- ***Click "Create an AWS Account."***
- ***Enter your email, create a password, and choose an AWS account name.***
- ***Provide billing information (AWS requires a credit card but will not charge you under the Free Tier).***
- ***Verify your phone number.***
- ***Select "Basic Support - Free" and complete the setup.***
- ***Sign in to the AWS Management Console.***

## Step 2: Launch an EC2 Virtual Machine (Instance)

The screenshot displays the AWS Management Console interface, specifically the EC2 dashboard. The left sidebar contains navigation links for EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, and Key Pairs.

The main content area shows the following sections:

- Resources:** A summary of EC2 resources in the Asia Pacific (Sydney) Region. It includes a table with the following data:

Resource	Count
Instances (running)	1
Capacity Reservations	0
Elastic IPs	0
Key pairs	2
Placement groups	0
Snapshots	0
Auto Scaling Groups	0
Dedicated Hosts	0
Instances	1
Load balancers	0
Security groups	4
Volumes	1
- Launch instance:** A section with a description and a "Launch instance" button.
- Service health:** A section showing the AWS Health Dashboard, Region (Asia Pacific (Sydney)), Status (This service is operating normally.), and Zones (ap-southeast-2a, apse2-az3).
- Offer usage (monthly):** A section showing Linux EC2 Instances (52.68222300000002 hours remaining) and Storage space on EBS (22.57 GB remaining).
- Account attributes:** A section showing the Default VPC (vpc-0d79225e1c14b0bd0).

The bottom section shows the "Instances (1/1)" list. It includes a search bar, a filter dropdown set to "All states", and a table of instances. The table has the following data:

Name	Instance ID	Instance state	Instance type	Status check
balainst	i-0f2406bc6a9da48fb	Running	t2.nano	2/2 checks passed

- **Open the AWS Management Console and go to EC2 by searching for it in the search bar.**
- **Click "Launch instance."**
- **Set up the instance:**
- **Name: Enter a name for your instance (e.g., "MyFirstVM").**
- **AMI (Amazon Machine Image): Choose Amazon Linux 2 (free-tier eligible).**
- **Instance type: Select t2.micro (1 vCPU, 1GB RAM, free-tier eligible).**
- **Create a Key Pair (For SSH Access)**
- **Click "Create a new key pair."**
- **Name it (e.g., "my-key-pair").**
- **Choose RSA as the key type.**
- **Click "Create key pair" (it will download a .pem file).**
- **Keep this .pem file safe; you will need it to connect via SSH.**
- **Security Group Configuration:**
- **Select "Create new security group."**
- **Allow SSH traffic by adding a rule:**
- **Type: SSH**
- **Protocol: TCP**
- **Port Range: 22**
- **Source: Your IP (recommended) or Anywhere (0.0.0.0/0)**
- **Launch the instance by clicking "Launch Instance."**
- **Go to EC2 Dashboard > Instances, and wait for the instance to show the status "Running."**

## Name and tags [Info](#)

Name

balains

Add additional tag:

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

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


Q

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


Recents

Quick Start


Amazon Linux




macOS




Ubuntu




Windows



Red Hat



SUSE Linux



>

## ▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true

On-Demand SUSE base pricing: 0.0146 USD per Hour

On-Demand Linux base pricing: 0.0146 USD per Hour

On-Demand Windows base pricing: 0.0192 USD per Hour

On-Demand RHEL base pricing: 0.029 USD per Hour

On-Demand Ubuntu Pro base pricing: 0.0164 USD per Hour

☐ All generations

[Compare instance types](#)

Additional costs apply for AMIs with pre-installed software

## ▼ Summary

Number of instances [Info](#)

1

### Software Image (AMI)

Canonical, Ubuntu, 24.04, amd64...[read more](#)  
ami-09e143e99e8fa74f9

### Virtual server type (instance type)

t2.micro

### Firewall (security group)

New security group

### Storage (volumes)

1 volume(s) - 8 GiB

[Cancel](#)

[Launch instance](#)

[Preview code](#)

## Create key pair



### Key pair name

Key pairs allow you to connect to your instance securely.

bOKI

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



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 2: Launch an EC2 Virtual Machine (Instance)***

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## Step 3: Connect to Your Virtual Machine via SSH

- *For Windows (Using PowerShell or Git Bash)*
- *Open a terminal (PowerShell or Git Bash).*
- *Navigate to the folder where your .pem key file is saved.*
- *Run the following command to connect:*
- *sh*
- *CopyEdit*

```
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows  
PS C:\Users\ASUS> ssh -i "my-key-pair.pem" ec2-user@your-public-ip
```

- *Replace my-key-pair.pem with your key file name.*
- *Replace your-public-ip with the Public IPv4 address from the EC2 instance details*

## Step 4: Verify Connection

*If the connection is successful, you should see a prompt like:*

```
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows  
PS C:\Users\ASUS> [ec2-user@ip-192.168.0.0432 ~]$
```

- *Next Steps*
- *Install software using yum or apt (depending on the OS).*
- *Set up a web server (Apache, Nginx).*
- *Configure firewall settings.*



## **Conclusion:-**

***Setting up a virtual machine on AWS Free Tier is a straightforward process that allows users to explore cloud computing at no cost. By following the steps outlined—creating an AWS account, launching an EC2 instance, configuring SSH access, and connecting via the terminal—you now have a functional cloud-based server. This virtual machine can be used for various applications, such as web hosting, development, or data processing.***

***As a next step, consider securing your instance, installing necessary software, and optimizing its performance for your specific use case. AWS provides a scalable environment, making it easy to upgrade or expand your infrastructure as needed. Happy cloud computing!***