

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 shows the AWS Management Console for the Asia Pacific (Sydney) Region. 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 VPC Subnets. The main content area is divided into several sections: 'Resources' showing a summary of EC2 resources (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' with a 'Launch instance' button and a 'Migrate a server' button, 'Service health' showing the AWS Health Dashboard and a status of 'This service is operating normally.', 'Zones' showing the zone name 'ap-southeast-2a' and zone ID 'apse2-az3', 'Offer usage (monthly)' showing 'Linux EC2 Instances' with 52.68222300000002 hours remaining and 'Storage space on EBS' with 22.57 GB remaining, and 'Account attributes' showing the 'Default VPC' with ID 'vpc-0d79225e1c14b0bd0'.

EC2 Global View
Events

▼ **Instances**
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
VPC Subnets

Resources
You are using the following Amazon EC2 resources in the Asia Pacific (Sydney) Region:

Instances (running)	1	Auto Scaling Groups	0
Capacity Reservations	0	Dedicated Hosts	0
Elastic IPs	0	Instances	1
Key pairs	2	Load balancers	0
Placement groups	0	Security groups	4
Snapshots	0	Volumes	1

Launch instance
To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

[Launch instance](#) ▼

[Migrate a server](#) ↗

Note: Your instances will launch in the Asia Pacific (Sydney) Region

Service health
[AWS Health Dashboard](#) ↗

Region
Asia Pacific (Sydney)

Status
✔ This service is operating normally.

Zones

Zone name	Zone ID
ap-southeast-2a	apse2-az3

Offer usage (monthly)

Linux EC2 Instances
52.68222300000002 hours remaining

Storage space on EBS
22.57 GB remaining

[View all AWS Free Tier offers](#)

Account attributes
[Default VPC](#) ↗
vpc-0d79225e1c14b0bd0

The screenshot shows the 'Instances' page in the AWS Management Console. The page title is 'Instances (1/1)' with an 'Info' link. Below the title, there is a 'Last updated' timestamp 'less than a minute ago' and a refresh button. The page contains several action buttons: 'Connect', 'Instance state' (with a dropdown arrow), 'Actions' (with a dropdown arrow), and 'Launch instances' (with a dropdown arrow). A search bar is present with the placeholder text 'Find Instance by attribute or tag (case-sensitive)'. A filter dropdown is set to 'All states'. The main content is a table with columns: 'Name', 'Instance ID', 'Instance state', 'Instance type', and 'Status check'. There is one instance listed: 'balainst' with Instance ID 'i-0f2406bc6a9da48fb', state 'Running', type 't2.nano', and status check '2/2 checks passed'.

Instances (1/1) [Info](#)

Last updated less than a minute ago [Refresh](#)

[Connect](#) [Instance state](#) ▼ [Actions](#) ▼ [Launch instances](#) ▼

[All states](#) ▼

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check
<input checked="" type="checkbox"/>	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!