

# How to create an EC2 instance on AWS

## Introduction

AWS is today's biggest cloud provider, providing more than 240 services. Today, we will look at one of the most popular services, Amazon EC2. With an EC2 instance, you can host your virtual server in the cloud for a cheap price. What makes EC2 such a nice option is its array of options to customize your virtual server from OS to memory to CPU and more as we will see today. With an EC2 instance, you can use it to host applications, use it as a database, and more.

These instructions will be laid out for anyone with no technical background required. However, it would be best to have some technical knowledge to customize your virtual server for your needs. In this tutorial, I will customize my server based on the needs of a standard virtual server

## List of Tools

- A laptop or computer with access to the internet
- Browser of your choice

## Prerequisites

- Ensure you have an SSH Client installed, which can be checked by running ssh in your command prompt. If not, you can install OpenSSH for Windows [here](#)

## Warnings

- If you create an EC2 instance and don't intend to use it, don't forget to turn off your EC2 instance so as not to get billed
- This tutorial is shown using a Windows machine, but all the instructions should remain the same

## Quick Start Guide

- Create AWS account
- Create EC2 instance
- Verify EC2 instance is up and running
- Terminating EC2 instance

## Glossary

- **Amazon Machine Image (AMI):** software used to setup an EC2 instance. For more information refer to this [article](#)

- **Instance Type:** refers to different kinds of instances with different CPU, memory, storage, networking capacity, and resources. For more information, refer to this [article](#)



**Explore Free Tier products with a new AWS account.**

To learn more, visit [aws.amazon.com/free](https://aws.amazon.com/free).



## Sign up for AWS

Root user email address

Used for account recovery and some administrative functions

AWS account name

Choose a name for your account. You can change this name in your account settings after you sign up.

Verify email address

OR

Sign in to an existing AWS account

## Create AWS Account

1. Go to this [link](#) to create an AWS account
2. Enter your email address and choose an AWS account name
3. Press “Verify email address”
4. Enter the verification code sent to your email

### Sign up for AWS

Root user email address

Used for account recovery and some administrative functions

AWS account name

Choose a name for your account. You can change this name in your account settings after you sign up.

Golden

Verify email address

OR

Sign in to an existing AWS account

### Sign up for AWS

**Confirm you are you**

Making sure you are secure -- it's what we do.

We sent an email with a verification code to

██████████@gmail.com.(not you?)

Enter it below to confirm your email.

Verification code

Verify

Resend Code 58

Didn't get the code?

- Codes can take up to 5 minutes to arrive.
- Check your spam folder.

5. Create your password and press “Continue”
6. Enter your contact information and press “Agree and Continue”
7. Enter your billing information and press “Verify and continue
8. Enter your phone number to confirm your identity and press “Send SMS”
9. Enter your verification code sent to your phone
10. Select the “Basic support - Free” plan and press “Complete sign up”

## Sign up for AWS

### Create your password

✓ It's you! Your email address has been successfully verified. ✕

Your password provides you with sign in access to AWS, so it's important we get it right.

Root user password

.....

Confirm root user password

.....

**Continue (step 1 of 5)**

OR

**Sign in to an existing AWS account**

## Sign up for AWS

### Contact Information

How do you plan to use AWS?

- ☐ Business - for your work, school, or organization
- ☒ Personal - for your own projects

Who should we contact about this account?

Full Name

.....

Country Code Phone Number

+1 .....

Country or Region

United States ▾

Address line 1

.....

Address line 2

.....

City

.....

State, Province, or Region

.....

Postal Code

.....

☒ I have read and agree to the terms of the [AWS Customer Agreement](#).

**Agree and Continue (step 2 of 5)**

# Sign up for AWS

## Billing Information

### Billing country

Your billing country determines the payment methods available to you to pay for AWS services.

United States ▼

### Credit or Debit card number



AWS accepts most major credit and debit cards. To learn more about payment options, review our [FAQ](#)

### Expiration date

### Security code ⓘ

### Cardholder's name

### Billing address

☒ Use my contact address

☐ Use a new address

**Verify and continue (step 3 of 5)**

You might be redirected to your bank's website to authorize the verification charge.

# Sign up for AWS

## Confirm your identity

Before you can use your AWS account, you must verify your phone number. When you continue, the AWS automated system will contact you with a verification code.

How should we send you the verification code?

- ☒ Text message (SMS)  
☐ Voice call

Country or region code

United States (+1) ▼

Mobile phone number

**Send SMS (step 4 of 5)**

# Sign up for AWS

## Confirm your identity


Verify code




**Continue (step 4 of 5)**

Having trouble? Sometimes it takes up to 10 minutes to retrieve a verification code. If it's been longer than that, [return to the previous page](#) and try again.

# Sign up for AWS


## Select a support plan

Choose a support plan for your business or personal account. [Compare plans and pricing examples](#) . You can change your plan anytime in the AWS Management Console.

<p><input checked="" type="radio"/> <b>Basic support - Free</b></p> <ul style="list-style-type: none"><li>• Recommended for new users just getting started with AWS</li><li>• 24x7 self-service access to AWS resources</li><li>• For account and billing issues only</li><li>• Access to Personal Health Dashboard &amp; Trusted Advisor</li></ul> 	<p><input type="radio"/> <b>Developer support - From \$29/month</b></p> <ul style="list-style-type: none"><li>• Recommended for developers experimenting with AWS</li><li>• Email access to AWS Support during business hours</li><li>• 12 (business)-hour response times</li></ul> 	<p><input type="radio"/> <b>Business support - From \$100/month</b></p> <ul style="list-style-type: none"><li>• Recommended for running production workloads on AWS</li><li>• 24x7 tech support via email, phone, and chat</li><li>• 1-hour response times</li><li>• Full set of Trusted Advisor best-practice recommendations</li></ul> 
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### Need Enterprise level support?

From \$15,000 a month you will receive 15-minute response times and concierge-style experience with an assigned Technical Account Manager. [Learn more](#) 

**Complete sign up**

## Creating EC2 Instance

### Prereq

- You should have created an AWS account

### Steps

1. Go to this [link](#) to open the AWS EC2 console
2. (Optional) Click on the dropdown in the top right corner that specifies a location and choose a location. This will determine where you want your virtual server to

be stored. For me, I will choose the server closest to me which is “United States (N. Virginia)”.

3. Click “Launch instance”
4. Provide a descriptive name for your EC2 instance
5. Under Application and OS Images (Amazon Machine Image)
  - a. Choose your preferred Operating System (I chose Amazon Linux)
  - b. Select your preferred Amazon Machine Image (AMI) (I chose Amazon Linux 2023 AMI as it’s part of the free tier)
6. Under Instance type, select an instance type that best suits your needs (I chose t2.micro as it’s part of the free tier)
7. Key pair (login)
  - a. Select “Create new key pair”
  - b. Enter your key pair name
  - c. Select .pem if you are on Linux/macOS, otherwise select .ppk if you are on Windows
  - d. Select “Create key pair”
  - e. Download the key to somewhere secure so you can access your EC2 instance with the key later
8. You can change any values under Network settings and Configure storage, but it is not necessary. (I will not be changing any values.)
9. Preview your summary to make sure everything is as you selected and select “Launch instance”

Now you have successfully launched your EC2 instance

The screenshot shows the AWS Management Console for the United States (N. Virginia) region. The left sidebar contains navigation links for Dashboard, Instances, Images, Elastic Block Store, Network & Security, and Load Balancing. The main content area is divided into several sections:

- Resources:** A table showing the number of EC2 resources in the region. The 'Instances (running)' count is 0.
- Launch instance:** A section with a 'Launch instance' button (highlighted with a red box) and a 'Migrate a server' button. Below it, a note states: 'Note: Your instances will launch in the United States (N. Virginia) Region'.
- Instance alarms:** A section showing '0 in alarm' and '0 OK'.
- Scheduled events:** A section showing 'No scheduled events'.
- Service health:** A section showing the status of the 'United States (N. Virginia)' region as 'This service is operating normally'.
- Zones:** A table listing the available zones in the region.
- EC2 Free Tier:** A section showing '0 EC2 free tier offers in use' and 'End of month forecast'.
- Account attributes:** A section showing the 'Default VPC' and 'Settings'.
- Explore AWS:** A section showing 'Enable Best Price-Performance with AWS Graviton2'.

The bottom of the console shows the footer with copyright information and links to Privacy, Terms, and Cookie preferences.

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

Demo Server

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

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

Quick Start

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Linux

SUSE

Debian

debian

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-053a45ff0a704a47 (64-bit (x86), uefi-preferred) / ami-0c518311db5640eff (64-bit (Arm), uefi)

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to develop and run your cloud applications.

Amazon Linux 2023 AMI 2023.6.20250211.0 x86\_64 HVM kernel-6.1

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.6.2...[read more](#)

ami-053a45ff0a704a47

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 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 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch instance

Preview code

aws

Mac

ubuntu

Microsoft

Red Hat

SUSE

debian

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-053a45ff0a704a47 (64-bit (x86), uefi-preferred) / ami-0c518311db5640eff (64-bit (Arm), uefi)

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Free tier eligible

Q |

Amazon Linux 2023 AMI

ami-053a45ff0a704a47 (64-bit (x86), uefi-preferred) / ami-0c518311db5640eff (64-bit (Arm), uefi)

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Free tier eligible

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

ami-046011e3a00179928 (64-bit (x86)) / ami-0baa259d3d55047c (64-bit (Arm))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Free tier eligible

Deep Learning OSS Nvidia Driver AMI GPU PyTorch 2.5 (Amazon Linux 2023)

ami-042160b96bd17a1b (64-bit (x86))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Deep Learning OSS Nvidia Driver AMI GPU TensorFlow 2.16 (Amazon Linux 2)

ami-054c2ae2c7f0565d (64-bit (x86))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Deep Learning Base OSS Nvidia Driver GPU AMI (Amazon Linux 2023)

ami-0b84cab855d5d876 (64-bit (x86)) / ami-084ae3d3a91308e2 (64-bit (Arm))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Deep Learning AMI Neuron (Amazon Linux 2023)

ami-024504ba55d72a8c (64-bit (x86))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Amazon Linux 2 LTS with SQL Server 2019 Standard

ami-0c2f94cd481d358b2 (64-bit (x86))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Amazon Linux 2 LTS with SQL Server 2017 Standard

ami-083c1150b0f9c3cf (64-bit (x86))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Amazon Linux 2 with .NET 6, PowerShell, Mono, and MATE Desktop Environment

ami-0b8aeb1889f1a812a (64-bit (x86))

Virtualization: hvm    ENA enabled: true    Root device type: ebs

Free tier eligible

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.6.2...[read more](#)

ami-053a45ff0a704a47

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

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Cancel

Launch instance

Preview code



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

### Instance type

**t2.micro** Free tier eligible

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

On-Demand Windows base pricing: 0.0162 USD per Hour On-Demand Ubuntu Pro base pricing: 0.0134 USD per Hour

On-Demand SUSE base pricing: 0.0116 USD per Hour On-Demand RHEL base pricing: 0.026 USD per Hour

On-Demand Linux base pricing: 0.0116 USD per Hour

☐ All generations

[Compare instance types](#)

Get advice on instance type selection...

**t2.nano**

Family: t2 0.5 vCPU 0.5 GiB Memory Current generation: true On-Demand Linux base pricing: 0.0058 USD per Hour

On-Demand SUSE base pricing: 0.0058 USD per Hour On-Demand Windows base pricing: 0.0081 USD per Hour

On-Demand Ubuntu Pro base pricing: 0.0076 USD per Hour

**t2.micro** Free tier eligible

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

On-Demand Windows base pricing: 0.0162 USD per Hour On-Demand Ubuntu Pro base pricing: 0.0134 USD per Hour

On-Demand SUSE base pricing: 0.0116 USD per Hour On-Demand RHEL base pricing: 0.026 USD per Hour

On-Demand Linux base pricing: 0.0116 USD per Hour

**t2.small**

Family: t2 1 vCPU 2 GiB Memory Current generation: true On-Demand Windows base pricing: 0.032 USD per Hour

On-Demand Linux base pricing: 0.023 USD per Hour On-Demand RHEL base pricing: 0.0376 USD per Hour

On-Demand SUSE base pricing: 0.053 USD per Hour On-Demand Ubuntu Pro base pricing: 0.025 USD per Hour

You launch the instance.

[Create new key pair](#)

Edit

vpc-01ab700b9e5d16da1

## ▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

[Create new key pair](#)

## Create key pair



### Key pair name

Key pairs allow you to connect to your instance securely.

Demo-EC2-key

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

## ▼ Summary

Number of instances | [Info](#)

1

### Software Image (AMI)

Amazon Linux 2023 AMI 2023.6.2...[read more](#)  
ami-053a45fff0a704a47

### Virtual server type (instance type)


t2.micro

### Firewall (security group)

New security group

### Storage (volumes)

1 volume(s) - 8 GiB

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[Cancel](#)

**Launch instance**

 [Preview code](#)

## Connecting to your EC2 instance

### Prereq

- Launched EC2 instance
- You should be able to use the ssh command in your terminal

### Steps

1. Go to your [AWS console](#)
2. Click “Instances” located on the left-hand side of the page

3. Click on your EC2 instance
4. Click “Connect”
5. Select “SSH client”
6. Open your terminal
7. Go into your search bar and open Command Prompt
8. Go to the directory where you stored your EC2 instance key (In my case, I had it in downloads)
9. Paste the command shown in the SSH client, highlighted in the picture below into your terminal
10. Enter “yes” into your terminal when prompted “Are you sure you want to continue connecting”

You have now successfully connected to your EC2 instance!

The screenshot displays the AWS Management Console interface. On the left, the navigation sidebar has the 'Instances' link highlighted. The main dashboard area shows a summary of EC2 resources in the 'us-east-1' region, including running instances, auto scaling groups, and capacity reservations. A 'Launch instance' button is prominently displayed. Below this, there's a section for 'Instance alarms' and 'Scheduled events'. The 'Zones' section lists available availability zones. On the right, there's information about the 'EC2 Free Tier' and account attributes. At the bottom, the 'Instances (1)' section shows a table with one instance: 'Demo Server' (ID: i-04a33d631f26086d0) in a 'Running' state, using a 't2.micro' instance type.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
Demo Server	i-04a33d631f26086d0	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-3-84-119-136.com...	3.84.119.136	-

### Instance summary for i-04a33d631f26086d0 (Demo Server) [Info](#)

Updated less than a minute ago

#### Instance ID

[i-04a33d631f26086d0](#)

#### IPv6 address

–

#### Hostname type

IP name: ip-172-31-85-61.ec2.internal

#### Answer private resource DNS name

IPv4 (A)

#### Auto-assigned IP address

[3.84.119.136](#) [Public IP]

#### IAM Role

–

#### IMDSv2

Required

#### Operator

–

#### Public IPv4 address

[3.84.119.136](#) | [open address](#)

#### Instance state

Running

#### Private IP DNS name (IPv4 only)

[ip-172-31-85-61.ec2.internal](#)

#### Instance type

t2.micro

#### VPC ID

[vpc-01ab700b9e5d16da1](#)

#### Subnet ID

[subnet-0e433d1113e477dc6](#)

#### Instance ARN

[arn:aws:ec2:us-east-1:354918380194:instance/i-04a33d631f26086d0](#)

#### Private IPv4 addresses

[172.31.85.61](#)

#### Public IPv4 DNS

[ec2-3-84-119-136.compute-1.amazonaws.com](#) | [open address](#)

#### Elastic IP addresses

–

#### AWS Compute Optimizer finding

[Opt-in to AWS Compute Optimizer for recommendations.](#) | [Learn more](#)

#### Auto Scaling Group name

–

#### Managed

false

### Connect to instance [Info](#)

Connect to your instance i-04a33d631f26086d0 (Demo Server) using any of these options

EC2 Instance Connect

Session Manager

**SSH client**

EC2 serial console

#### Instance ID

[i-04a33d631f26086d0](#) (Demo Server)

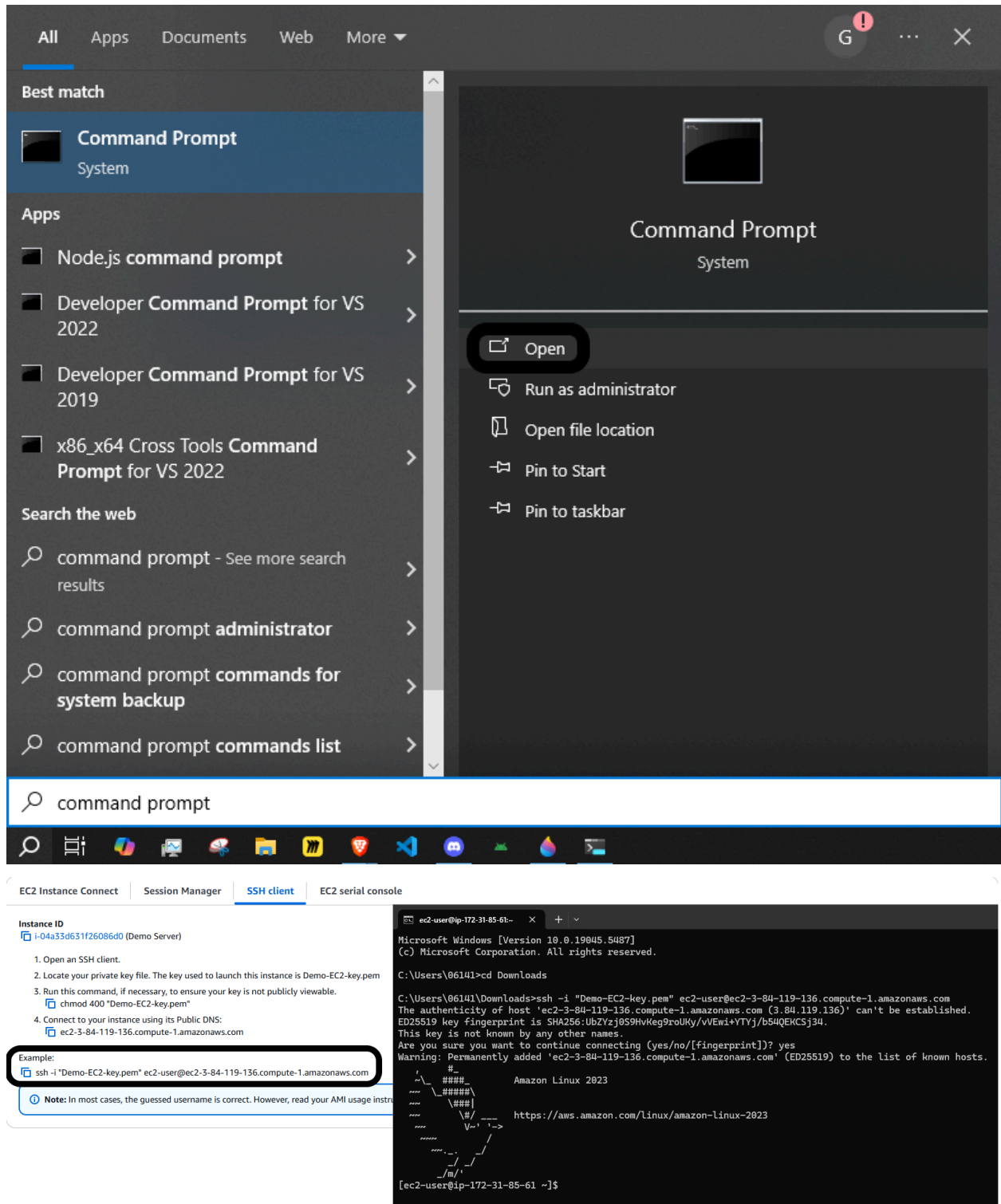
1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is Demo-EC2-key.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
[chmod 400 "Demo-EC2-key.pem"](#)
4. Connect to your instance using its Public DNS:  
[ec2-3-84-119-136.compute-1.amazonaws.com](#)

#### Example:

[ssh -i "Demo-EC2-key.pem" ec2-user@ec2-3-84-119-136.compute-1.amazonaws.com](#)

**Note:** In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

[Cancel](#)



## Terminating EC2 Instance

Prereq: Must have an EC2 instance running

1. Go to your [AWS console](#)

2. Click “Instances” located on the left-hand side of the page
  3. Select the instance(s) you want to terminate by selecting the checkbox next to the instances
  4. Click on the “Instance State” dropdown and select “Terminate (delete) instance”
- Terminating your EC2 instance(s) would ensure that you would not incur any more charges. Alternatively, you stop

The screenshot displays the AWS Management Console interface for the EC2 service. On the left-hand side, the navigation menu is visible, with the 'Instances' link highlighted. The main content area shows the 'Instances (1/1)' table, which contains one instance named 'Demo Server'. The instance is in the 'Running' state and is of type 't2.micro'. A dropdown menu is open for the 'Instance state' column, showing options: 'Stop instance', 'Start instance', 'Reboot instance', 'Hibernate instance', and 'Terminate (delete) instance'. The 'Instances' link in the left-hand navigation menu is highlighted.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
Demo Server	i-04a33d631f26086d0	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a

**i-04a33d631f26086d0 (Demo Server)**

**Instance summary**

Instance ID: i-04a33d631f26086d0

IPV6 address: -

Hostname type: IP name: ip-172-31-85-61.ec2.internal

Answer private resource DNS name: IPV4 (A)

Auto-assigned IP address: 3.84.119.136 [Public IP]

IAM Role: -

IMDSv2: Required

Public IPv4 address: 3.84.119.136 | open address

Instance state: Running

Private IP DNS name (IPv4 only): ip-172-31-85-61.ec2.internal

Instance type: t2.micro

VPC ID: vpc-01ab700b9e5d16da1

Subnet ID: subnet-0e433d1113e477dc6

Instance ARN: arn:aws:ec2:us-east-1:354018380156:instance/i-04a33d631f26086d0

Private IPv4 addresses: 172.31.85.61

Public IPv4 DNS: ec2-3-84-119-136.compute-1.amazonaws.com | open address

Elastic IP addresses: -

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Auto Scaling Group name: -

Managed: -