

Introduction

Cloud computing is the on-demand availability of computer system resources, especially data storage and computing power. The term is generally used to describe data centers available to many users over the Internet. Large clouds often have functions distributed over multiple locations from central servers.

Service providers... 100s of [service providers](#), but releability and services vary greatly.

- [Vultr](#)
- [Kamatera](#)
- [Digital Ocean](#)
- ...
- [IBM Cloud](#)
- [Microsoft Azure](#)
- [Google Cloud](#)
- [Amazon Web Services](#)

Amazon Web Services (as an example)

As most of the Cloud computing provider their offer a wide varity of services: From generic "computer time" and "storage" to specilist VR or IA (machine learning)



Bioinformatics is a fast evolving fields with bispocked processes, some can be automoted (e.g. [galaxy platform](#)), many are one of and need clean enviroment and computer time.

We need a remote/virtual machine that will run nicely. Nothing less, nothing more.

1. Login to your AWS account
2. Creating and Launching your EC2 Instance
3. Access your new cloud computer (remote machine)

Login to your AWS account

- [Login](#) (or create an account [with a credit card])



Sign in ⓘ

Email address of your AWS account

Or to sign in as an IAM user, enter your account ID or account alias instead.

Next

————— New to AWS? —————

Create a new AWS account

- Access EC2 (Elastic Compute Cloud)

AWS Management Console

AWS services

Find Services

You can enter names, keywords or acronyms.

▼ All services

Compute

- EC2
- Lightsail [↗](#)
- ECR
- ECS
- EKS
- Lambda
- Batch
- Elastic Beanstalk
- Serverless Application Repository

Storage

- S3
- EFS
- FSx
- S3 Glacier
- Storage Gateway
- AWS Backup

Database

- RDS

Management & Governance

- AWS Organizations
- CloudWatch
- AWS Auto Scaling
- CloudFormation
- CloudTrail
- Config
- OpsWorks
- Service Catalog
- Systems Manager
- Trusted Advisor
- Managed Services
- Control Tower
- AWS License Manager
- AWS Well-Architected Tool
- Personal Health Dashboard [↗](#)
- AWS Chatbot

Media Services

-

Security, Identity, & Compliance

- IAM
- Resource Access Manager
- Cognito
- Secrets Manager
- GuardDuty
- Inspector
- Amazon Macie [↗](#)
- AWS Single Sign-On
- Certificate Manager
- Key Management Service
- CloudHSM
- Directory Service
- WAF & Shield
- Artifact
- Security Hub

AWS Cost Management

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Access resources on the go

 Access the Management Console using the AWS Console Mobile App. [Learn more](#) [↗](#)

Explore AWS

Register for re:Invent

Join us in Las Vegas December 2 – 6 for 2,500+ sessions, bootcamps, hackathons, workshops, and chalk talks. [View session catalog](#) [↗](#)

EC2 Spot Instances

Run fault-tolerant workloads on Spot Instances and save up to 90% on compute. [Learn more](#) [↗](#)

Amazon SageMaker

Machine learning for every developer and data scientist. [Learn more](#) [↗](#)

Run Serverless Containers with AWS Fargate

AWS Fargate runs and scales your containers without having to manage servers or clusters. [Learn more](#) [↗](#)

Creating and Launching your EC2 Instance

Step 1: Launch an Instance

You can launch a Linux instance using the AWS Management Console as described in the following procedure. This tutorial is intended to help you launch your first instance quickly, so it doesn't cover all possible options. For more information about the advanced options, see [Launching an Instance](#).

1. Open the Amazon EC2 console at <https://console.aws.amazon.com/ec2/>.
2. From the console dashboard, choose **Launch Instance**.
3. The **Choose an Amazon Machine Image (AMI)** page displays a list of basic configurations, called *Amazon Machine Images (AMIs)*, that serve as templates for your instance. Select an "Ubuntu 18.04". Notice that these AMIs are marked "Free tier eligible."
4. On the **Choose an Instance Type** page, you can select the hardware configuration of your instance. Select the `t2.micro` type, which is selected by default. Notice that this instance type is eligible for the free tier.

5. Choose **Review and Launch** to let the wizard complete the other configuration settings for you.
6. On the **Review Instance Launch** page, choose **Launch**.
7. When prompted for a key pair, select **Create a new key pair**, enter a name for the key pair, and then choose **Download Key Pair**. This is the only chance for you to save the private key file, so be sure to download it. Save the private key file in a safe place. You'll need to provide the name of your key pair when you launch an instance and the corresponding private key each time you connect to the instance.

When you are ready, select the acknowledgement check box, and then choose **Launch Instances**.

8. A confirmation page lets you know that your instance is launching. Choose **View Instances** to close the confirmation page and return to the console.
9. On the **Instances** screen, you can view the status of the launch. It takes a short time for an instance to launch. When you launch an instance, its initial state is `pending`. After the instance starts, its state changes to `running` and it receives a public DNS name. (If the **Public DNS (IPv4)** column is hidden, choose **Show/Hide Columns** (the gear-shaped icon) in the top right corner of the page and then select **Public DNS (IPv4)**.)
10. It can take a few minutes for the instance to be ready so that you can connect to it. Check that your instance has passed its status checks; you can view this information in the **Status Checks** column.

Step 2: Connect to Your Instance

You can't connect to your instance unless you launched it with a key pair for which you have the `.pem` file.

The screenshot shows the AWS Management Console interface. On the left is a navigation menu with categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING, AUTO SCALING, and SYSTEMS MANAGER SERVICES. The main area displays the 'Launch Instance' page for a specific instance. At the top, there are buttons for 'Launch Instance', 'Connect' (highlighted with a red box), and 'Actions'. Below these is a table listing instances. The first instance is highlighted with a red box, showing its details: Name, Instance ID (i-05440f840c2adb8dc), Instance Type (t2.micro), Availability Zone (us-east-1d), Instance State (running), Status Checks (Initializing), and Alarm Status (None). Below the table, the 'Instance: i-05440f840c2adb8dc' details are shown, including the Public DNS (ec2-18-208-165-239.compute-1.amazonaws.com) and a tabbed interface with 'Description', 'Status Checks', 'Monitoring', and 'Tags'. The 'Description' tab is active, showing a table of instance details.

Instance ID	Public DNS (IPv4)
i-05440f840c2adb8dc	ec2-18-208-165-239.compute-1.amazonaws.com

Instance state	IPv4 Public IP
running	18.208.165.239

Instance type	IPv6 IPs
t2.micro	-

Elastic IPs	Private DNS
	ip-172-31-94-4.ec2.internal

Availability zone	Private IPs
us-east-1d	172.31.94.4

Security groups	Secondary private IPs
launch-wizard-1 . view	

1. In a terminal window, use the ssh command to connect to the instance. You specify the private key (`.pem`) file, the user name for your AMI, and the public DNS name for your instance. For example, if you used Ubuntu, the user name is `ubuntu` .

```
ssh -i /path/my-key-pair.pem ubuntu@ec2-18-208-165-239.compute-1.amazonaws.com
```

2. You see a response like the following:

```
The authenticity of host 'ec2-18-208-165-239.compute-1.amazonaws.com (10.254.142.3)
can't be established.
RSA key fingerprint is 1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:
Are you sure you want to continue connecting (yes/no)?
```

Step 3: Clean Up Your Instance

After you've finished with the instance that you created for this class, you should clean up by terminating

the instance.

Important

Terminating an instance effectively deletes it; you can't reconnect to an instance after you've terminated it.

If you launched an instance that is not within the AWS Free Tier, you'll stop incurring charges for that instance as soon as the instance status changes to `shutting down` or `terminated`.

To terminate your instance

1. In the navigation pane, choose **Instances**. In the list of instances, select the instance.
2. Choose **Actions, Instance State, Terminate**.
3. Choose **Yes, Terminate** when prompted for confirmation.

Amazon EC2 shuts down and terminates your instance. After your instance is terminated, it remains visible on the console for a short while, and then the entry is deleted.

Adapted from: Amazon [EC2 Get Started](#)