

## Step 1 - What is AWS



AWS is Amazon's **cloud** service.

It let's you

1. Rent servers
2. Manage domains
3. Upload objects (mp4 files, jpgs, mp3s ...)
4. Autoscale servers
5. Create k8s clusters

...

The offering we will be focussing on today is **Renting servers**

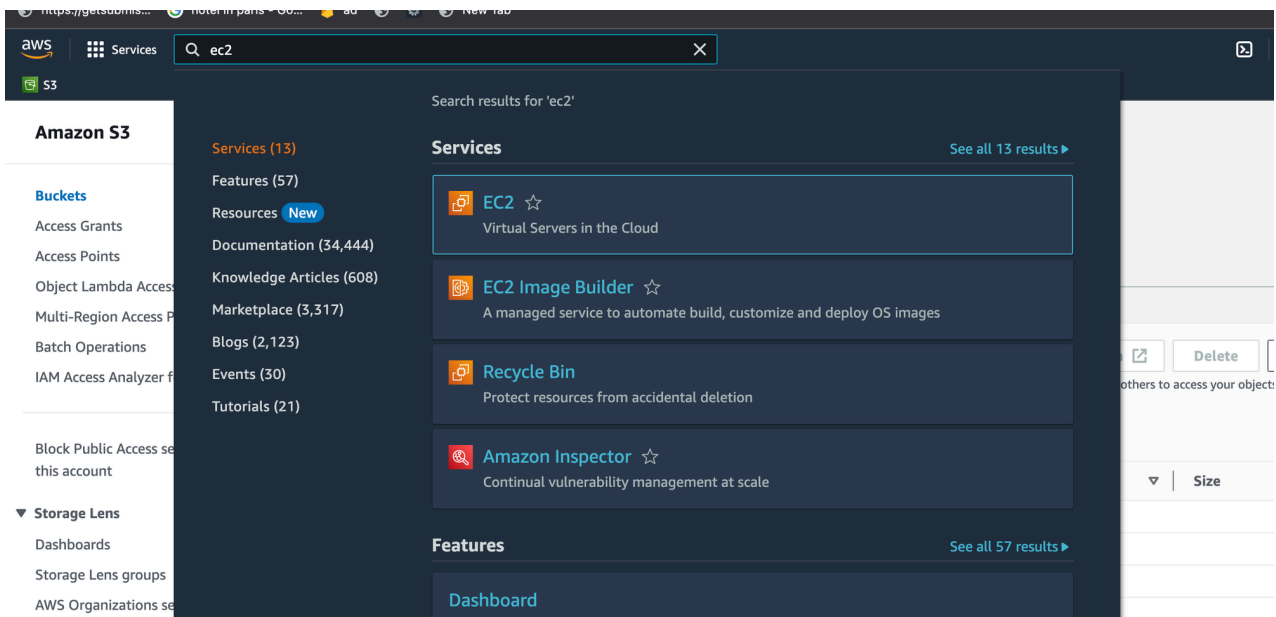
# Step 2 - EC2 servers

VMs on AWS are called **EC2 Servers**

EC2 stands for Elastic compute Version 2.

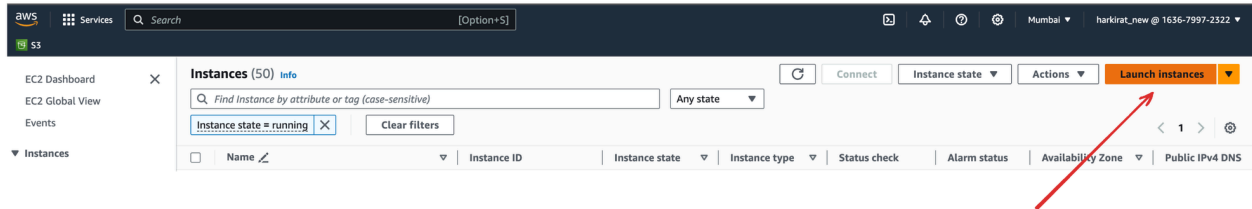
1. **Elastic** - Can increase/decrease the size of the machine
2. **Compute** - It is a machine

You can spin up a new EC2 instance from the aws dashboard

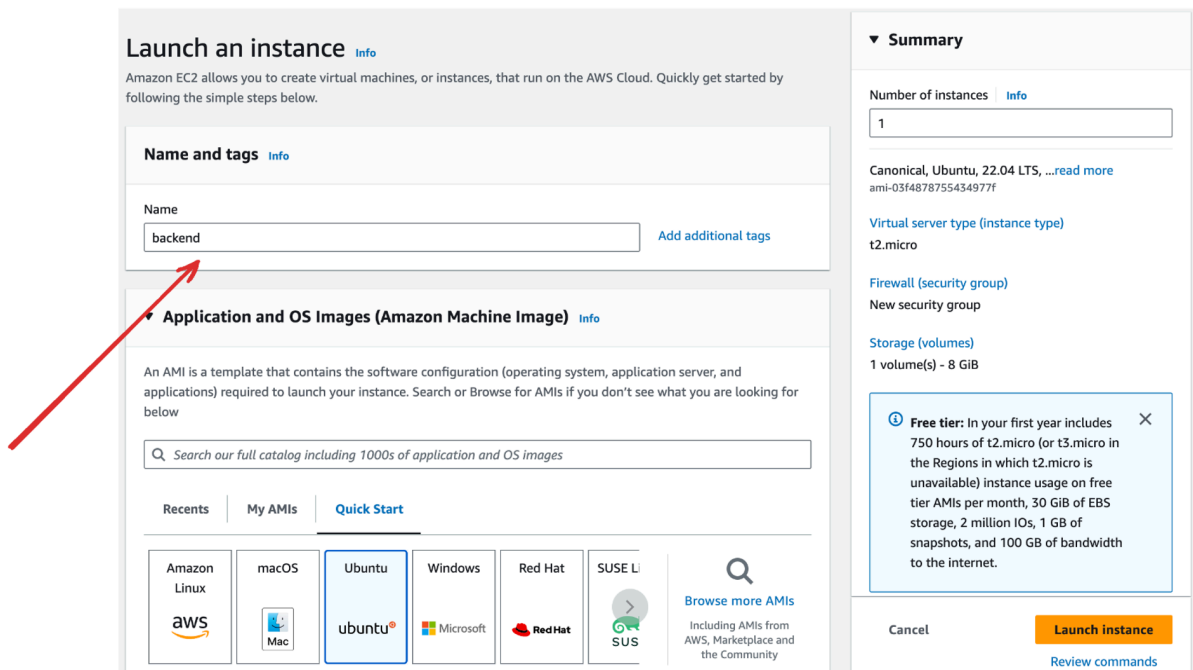


# Step 3 - Creating a new EC2 server

## 1. Click on **Launch a new instance**



## 2. Give a name



## 3. Select an OS

Hold Cmd and Double-click or press Cmd + Enter to edit points

## 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  
backend [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

Recents | My AMIs | **Quick Start**

Amazon Linux  
aws

macOS  
Mac

**Ubuntu**

Windows  
Microsoft

Red Hat  
Red Hat

SUSE Linux  
SUS

[Browse more AMIs](#)  
Including AMIs from AWS, Marketplace and the Community

### ▼ Summary

Number of instances [Info](#)  
1

Canonical, Ubuntu, 22.04 LTS, ...[read more](#)  
ami-03f4878755434977f

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, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel [Launch instance](#) [Review commands](#)

#### 4. Select size

### Instance type

t2.micro **Free tier eligible**

Family: t2 1 vCPU 1 GiB Memory Current generation: true  
On-Demand Linux base pricing: 0.0124 USD per Hour  
On-Demand Windows base pricing: 0.017 USD per Hour  
On-Demand RHEL base pricing: 0.0724 USD per Hour  
On-Demand SUSE base pricing: 0.0124 USD per Hour

Get advice on instance type selection...

t2.nano  
Family: t2 1 vCPU 0.5 GiB Memory Current generation: true  
On-Demand SUSE base pricing: 0.0062 USD per Hour  
On-Demand Linux base pricing: 0.0062 USD per Hour  
On-Demand Windows base pricing: 0.0085 USD per Hour

t2.micro **Free tier eligible** ✓  
Family: t2 1 vCPU 1 GiB Memory Current generation: true  
On-Demand Linux base pricing: 0.0124 USD per Hour  
On-Demand Windows base pricing: 0.017 USD per Hour  
On-Demand RHEL base pricing: 0.0724 USD per Hour  
On-Demand SUSE base pricing: 0.0124 USD per Hour

t2.small  
Family: t2 1 vCPU 2 GiB Memory Current generation: true  
On-Demand SUSE base pricing: 0.0548 USD per Hour  
On-Demand Linux base pricing: 0.0248 USD per Hour  
On-Demand RHEL base pricing: 0.0848 USD per Hour  
On-Demand Windows base pricing: 0.034 USD per Hour

t2.medium  
Family: t2 2 vCPU 4 GiB Memory Current generation: true  
On-Demand Linux base pricing: 0.0496 USD per Hour  
On-Demand Windows base pricing: 0.0676 USD per Hour  
On-Demand RHEL base pricing: 0.1096 USD per Hour  
On-Demand SUSE base pricing: 0.1496 USD per Hour

t2.large

Auto-assign public IP [Info](#)

Enable

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Canonical, Ubuntu, 22.04 LTS, ...[read more](#)  
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Cancel [Launch instance](#) [Review commands](#)


#### 5. Create a new Key pair


☰

▼ 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](#)

 Please choose a key pair or choose the option to proceed with a key pair

▼ Summary

Number of instances [Info](#)

Canonical, Ubuntu, 22.04 LTS, ...[read more](#)

ami-03f4878755434977f

[Virtual server type \(instance type\)](#)

t2.micro

## 6. Select Size

▼ **Configure storage** [Info](#)

Advanced

1x  GiB  ▼ Root volume (Not encrypted)

Free tier eligible customers can get up to 30 GiB of EBS General Purpose (SSD) or Magnetic storage

Add new volume

ⓘ Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems

Edit

► **Advanced details** [Info](#)

Canonical, Ubuntu, 22.04 LTS, ...[read more](#)

ami-03f4878755434977f

Virtual server type (instance type)

t2.micro

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Cancel

Launch instance

[Review commands](#)

## 7. Allow traffic on http/https

## Step 4 - SSH into server

## 1. Give ssh key permissions

```
chmod 700 kirat-class.pem
```

## 2. ssh into machine

```
ssh -i kirat-class.pem ubuntu@ec2-65-0-180-32.ap-south-1.compute.amazonaws.com
```

Copy

### 3. Clone repo

```
git clone https://github.com/hkirat/sum-server
```

Copy



If your aws machine shows you the following error, your aws machine doesn't have access to the internet

Solution - <https://www.tecmint.com/resolve-temporary-failure-in-name-resolution/>

### 4. Install Node.js



<https://www.digitalocean.com/community/tutorials/how-to-install-node-js-on-ubuntu-20-04>

### 5. Install all dependencies

```
cd sum-server  
npm install
```

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### 6. Start backend

```
node index.js
```

Copy

## Step 5 - Install the repo

Clone the repo

<https://github.com/hkirat/sum-server>

Copy

## Step 6 - Try hitting the server

You have an ip/DNS that you can hit to access your ec2 server

## Try visiting the backend

```
your_domain:3000
```

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Notice you **can't** visit the website during this time

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## Security group

You can either open port 8080, or process on port **80**

```
http://your_domain:8080
```

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## Step 7 - nginx

<https://www.nginx.com/resources/glossary/nginx/>



## What is a reverse proxy?

### Installing nginx

```
sudo apt update  
sudo apt install nginx
```

Copy

This should start a **nginx server** on port 80

Try visiting the website

### Create reverse proxy

```
sudo rm sudo vi /etc/nginx/nginx.conf  
sudo vi /etc/nginx/nginx.conf
```

Copy

```
events {  
    # Event directives...  
}
```

Copy

```
http {  
    server {  
        listen 80;  
        server_name be1.100xdevs.com;
```

```
location / {  
    proxy_pass http://localhost:8080;  
    proxy_http_version 1.1;  
    proxy_set_header Upgrade $http_upgrade;  
    proxy_set_header Connection 'upgrade';  
    proxy_set_header Host $host;  
    proxy_cache_bypass $http_upgrade;  
}  
}
```

```
sudo nginx -s reload
```

Copy

## Start the Backend server

```
node index.js
```

Copy

## Visit the website

```
https://be1.100xdevs.com/
```

Copy

# Step 8 - Certificate management

Use <https://certbot.eff.org/>

