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`

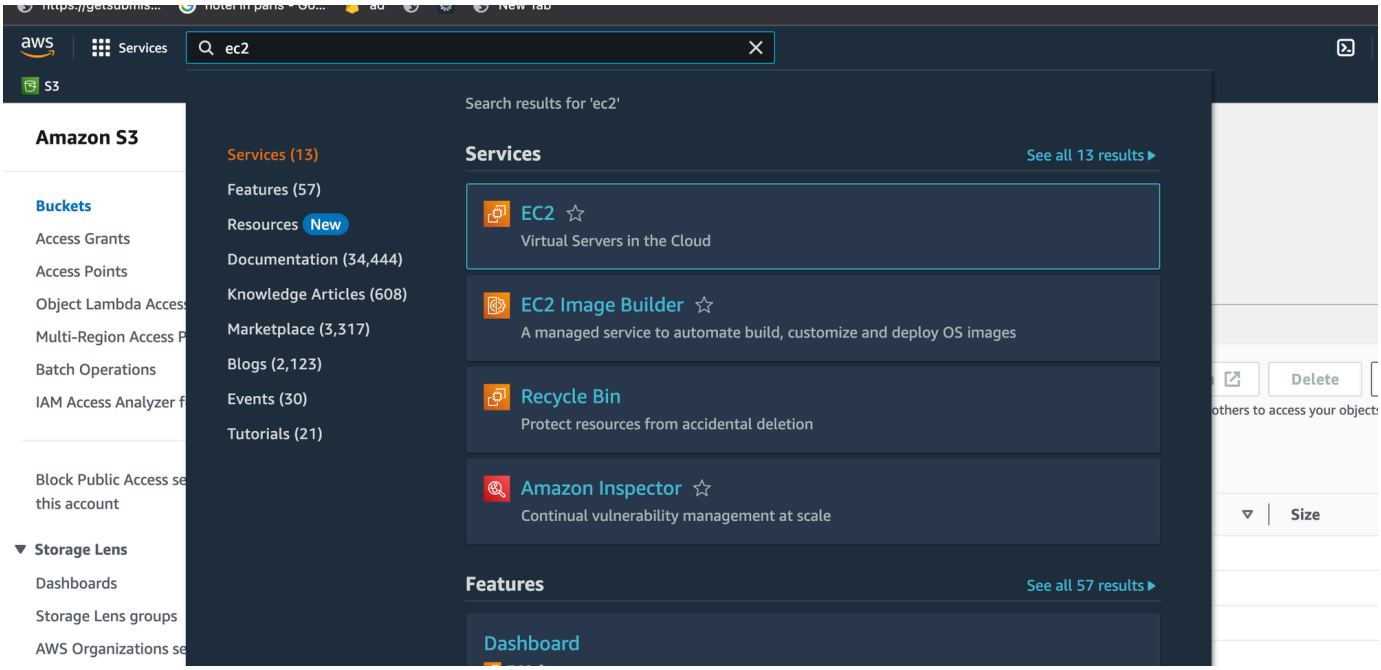
Step 2 - EC2 servers

VMs on AWS are called `EC2 Servers`

EC2 stands for Elastic compute Version 2.

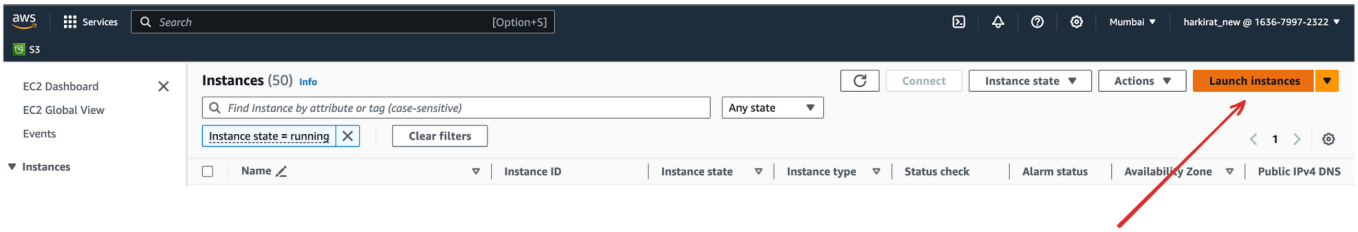
1. `Elastic` - Can increase/decrease the size of the machine
2. `Compute` - It is a machine

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

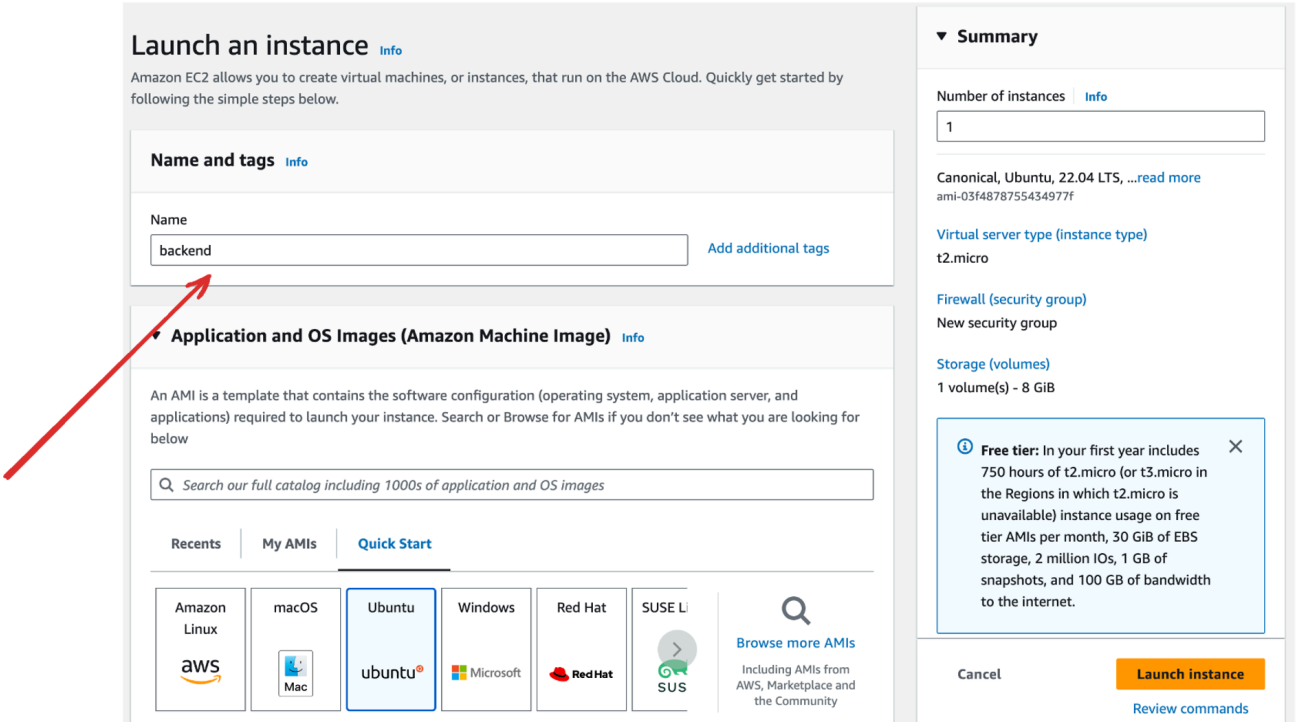


Step 3 - Creating a new EC2 server

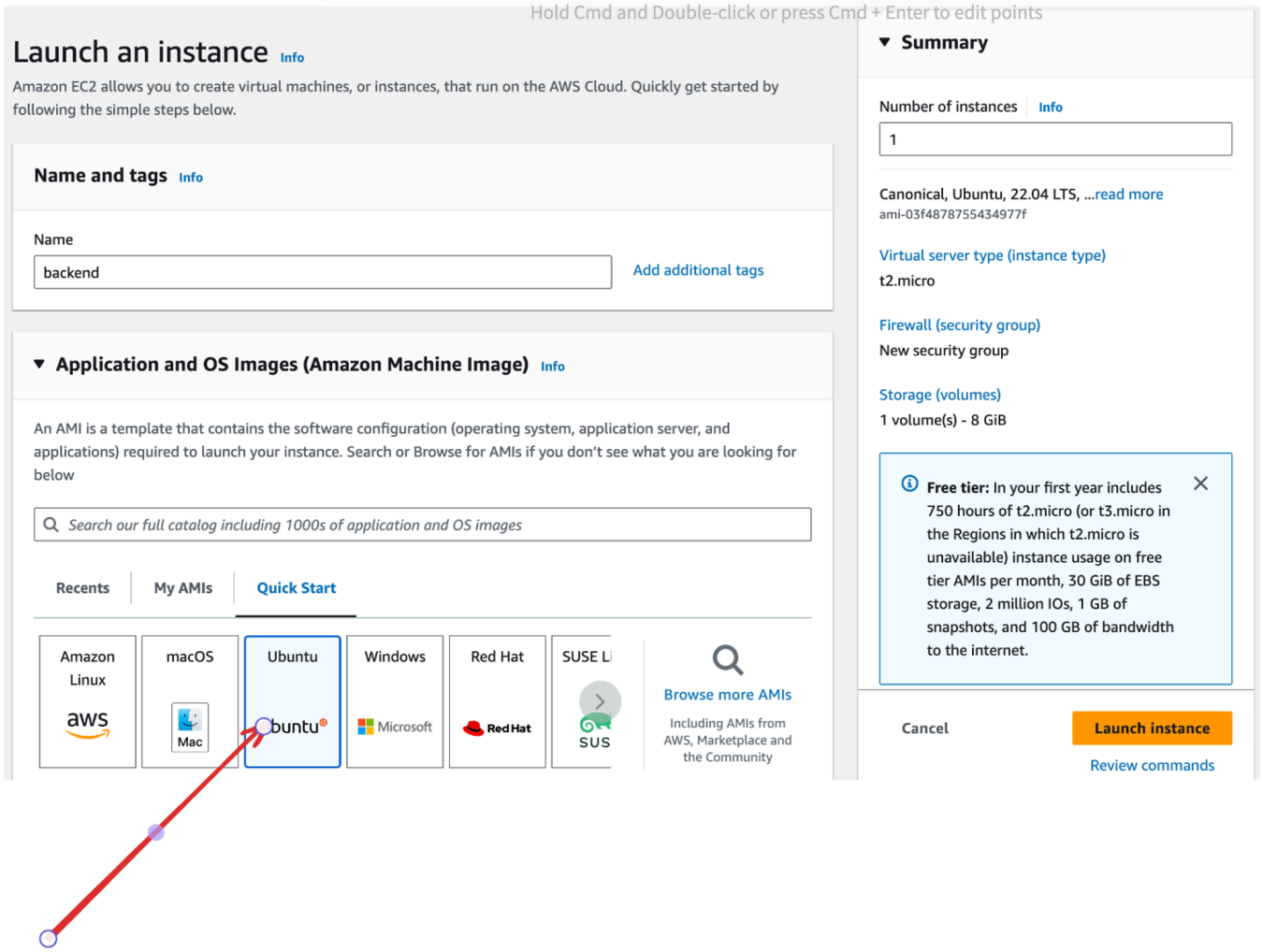
1. Click on `Launch a new instance`



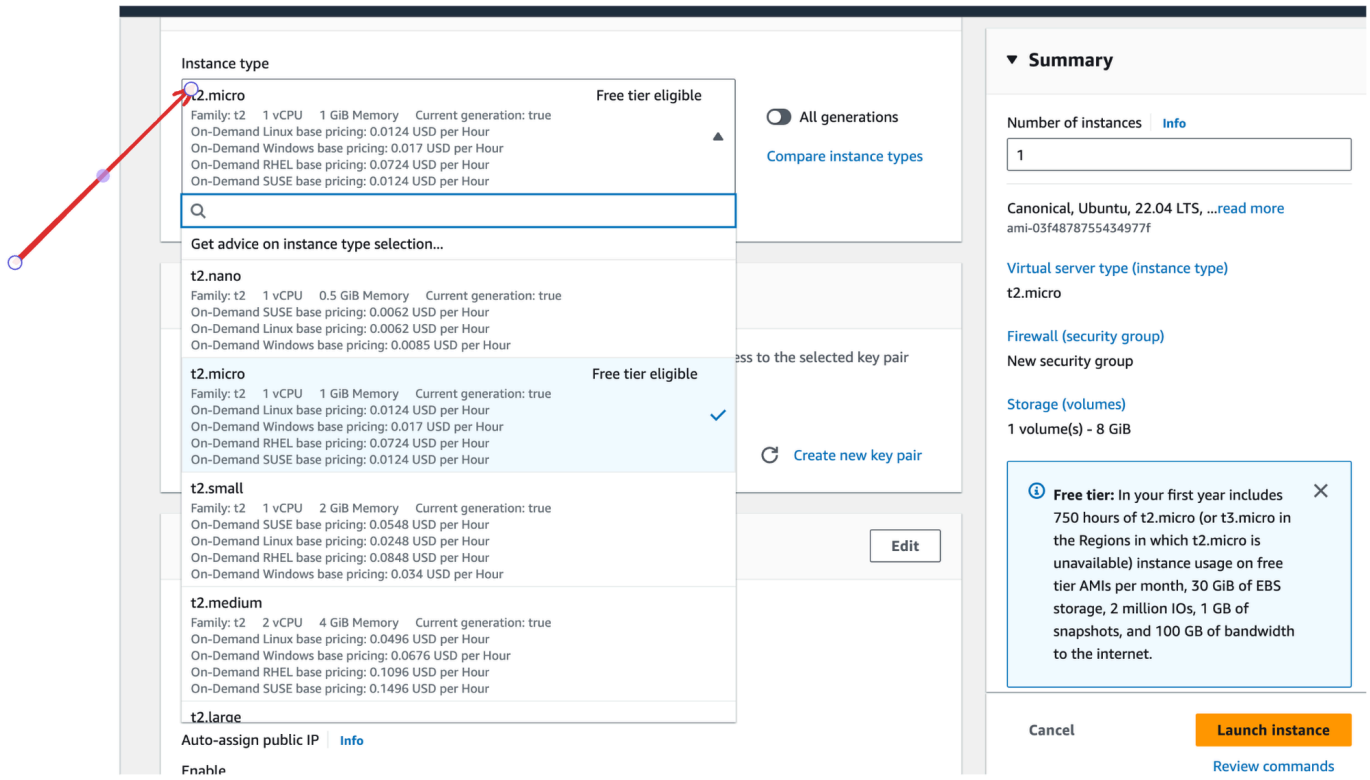
2. Give a name



3. Select an OS

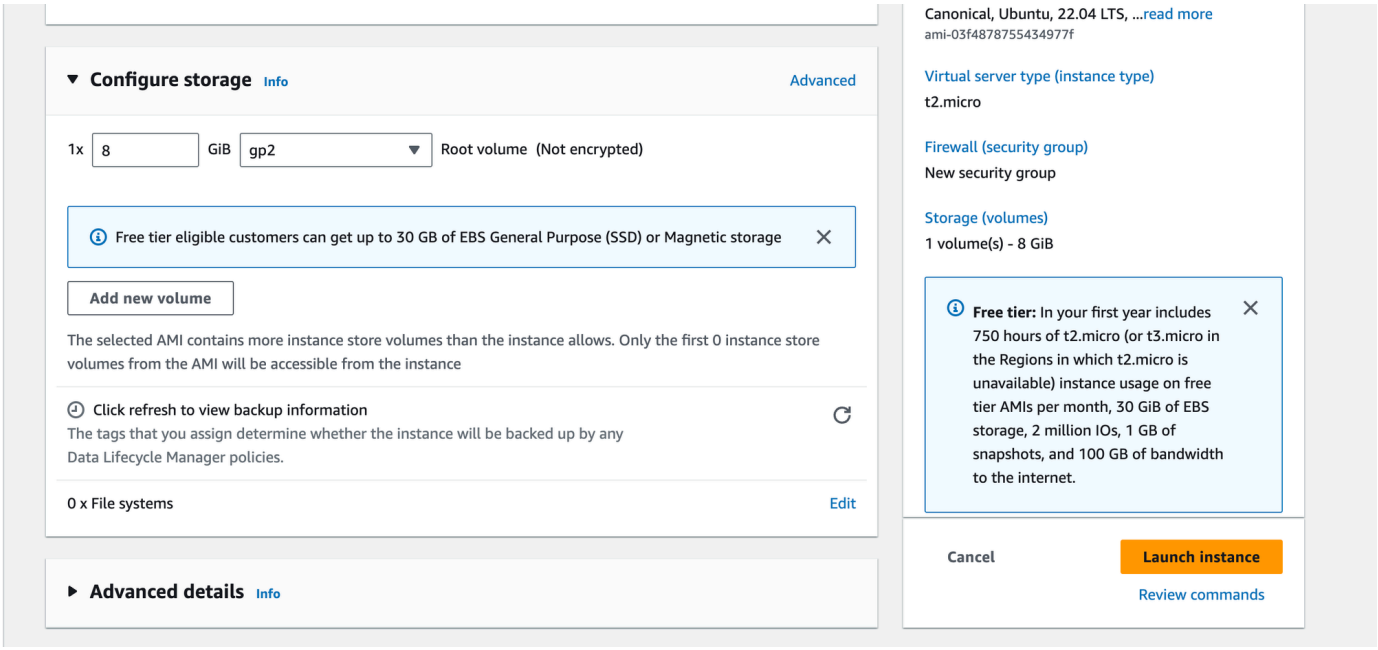


4. Select size

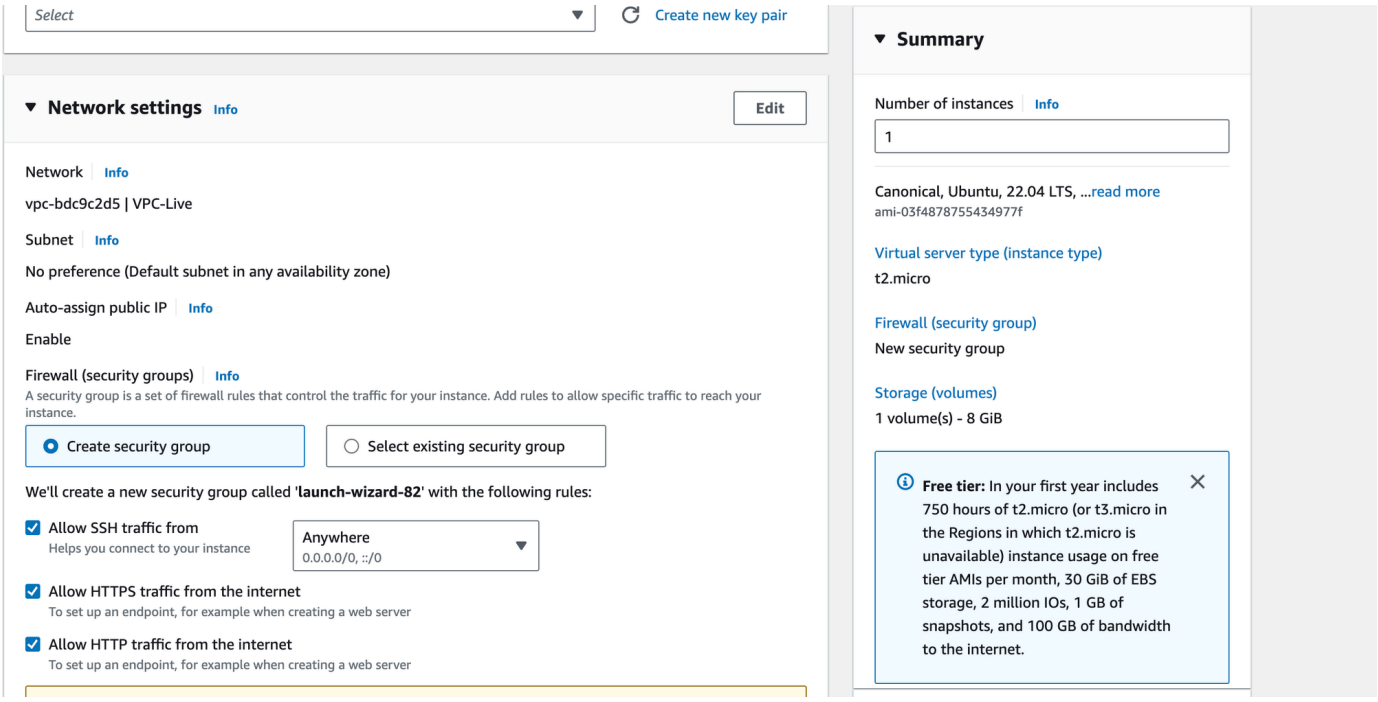


5. Create a new Key pair

6. Select Size



7. Allow traffic on http/https



Step 4 - SSH into server

1. Give ssh key permissions

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

Copy

2. ssh into machine

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

Copy

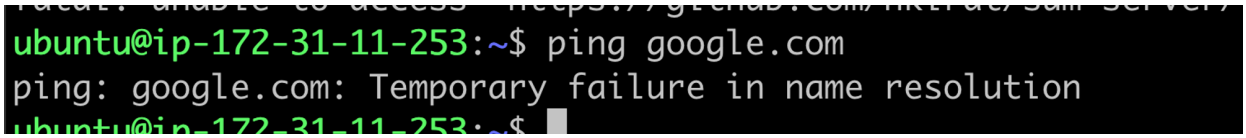
3. Clone repo

```
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
```

Copy

6. Start backend

```
node index.js
```

Copy

Step 5 - Install the repo

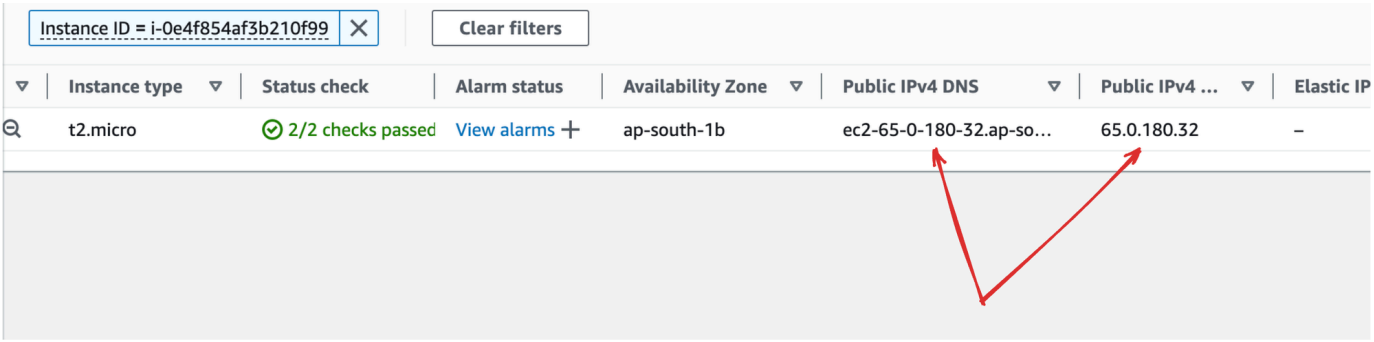
Clone the repo

```
https://github.com/hkirat/sum-se
```

Copy

Step 6 - Try hitting the server

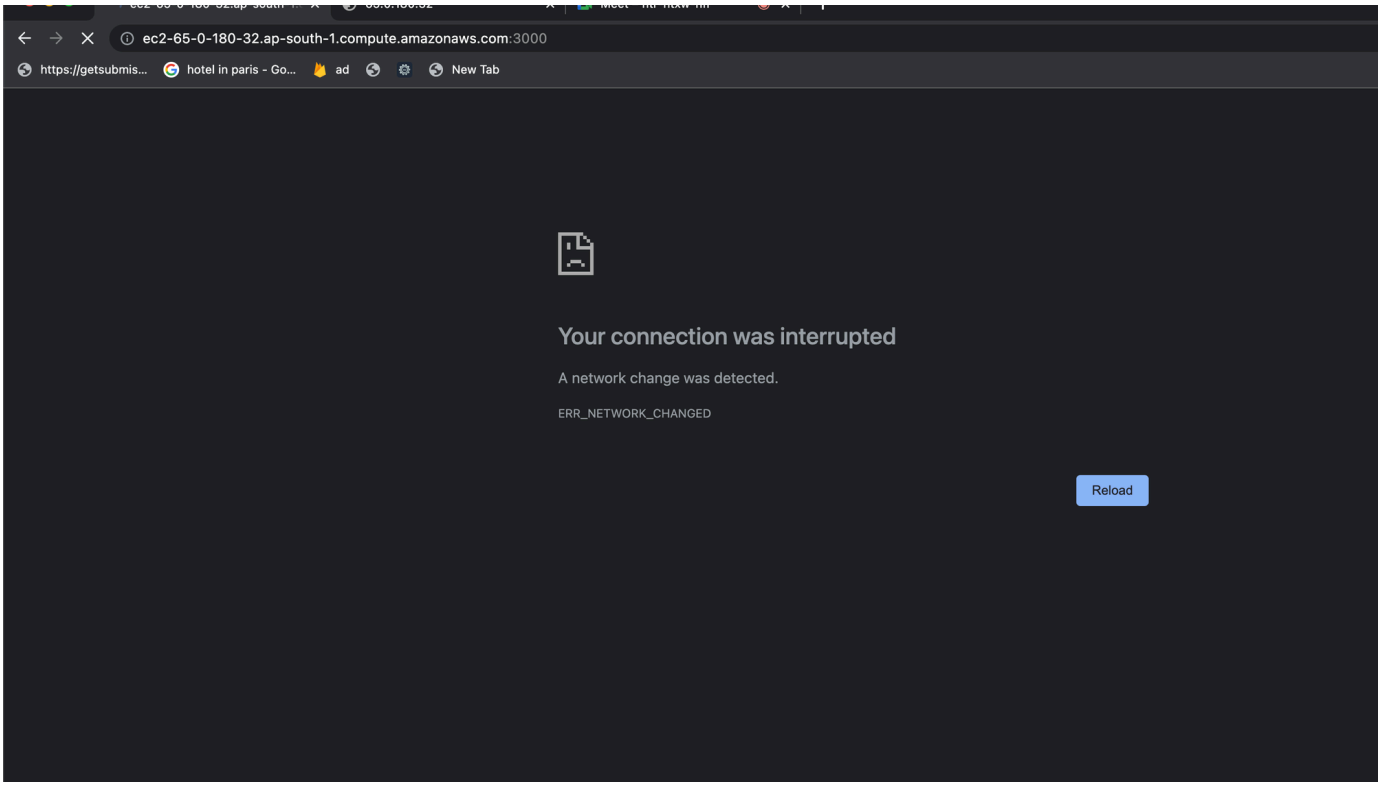
You have an ip/DNS that you can hit to access your ec2 server



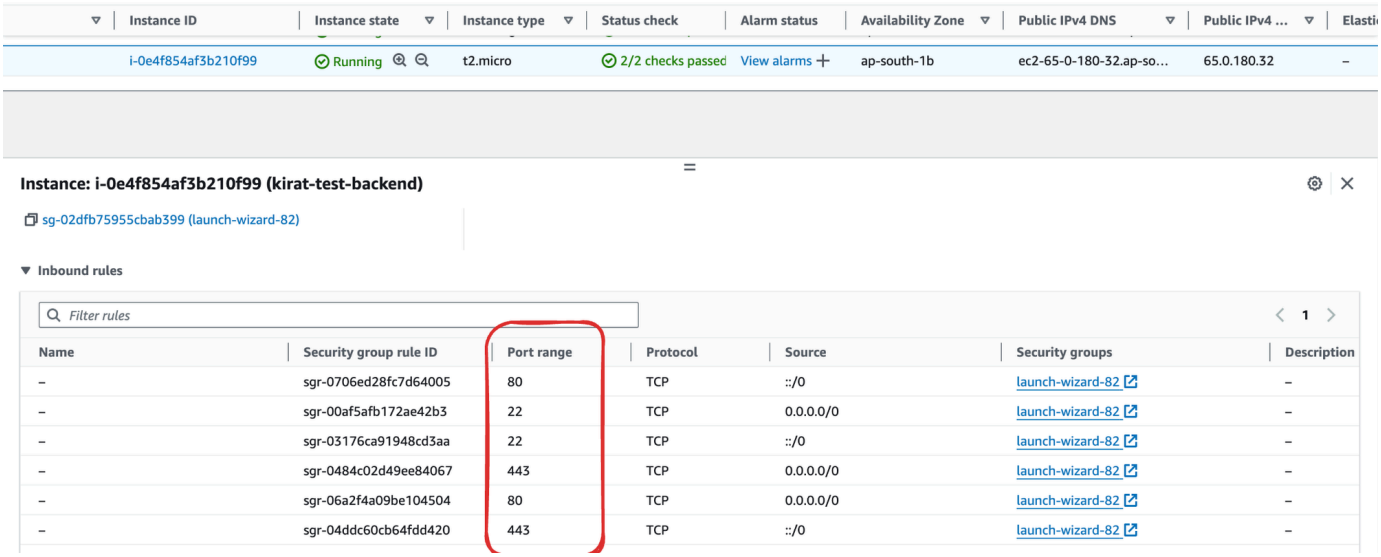
Try visiting the backend

```
your_domain:3000
```
Copy

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



Security group



Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elasti
i-0e4f854af3b210f99	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1b	ec2-65-0-180-32.ap-so...	65.0.180.32	–

Instance: i-0e4f854af3b210f99 (kirat-test-backend)

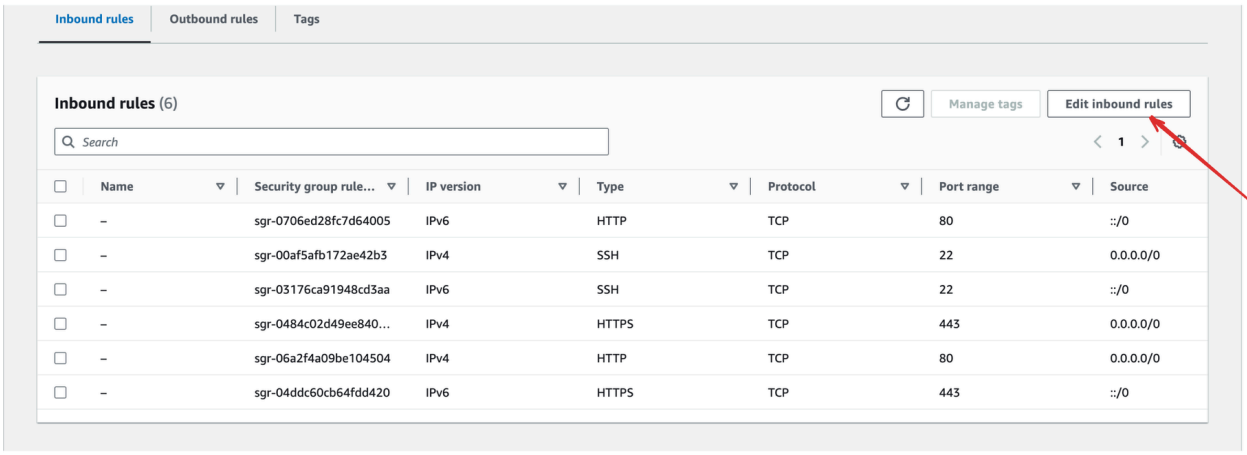
sg-02dfb75955cbab399 (launch-wizard-82)

Inbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
–	sgr-0706ed28fc7d64005	80	TCP	::/0	launch-wizard-82	–
–	sgr-00af5afb172ae42b3	22	TCP	0.0.0.0/0	launch-wizard-82	–
–	sgr-03176ca91948cd3aa	22	TCP	::/0	launch-wizard-82	–
–	sgr-0484c02d49ee84067	443	TCP	0.0.0.0/0	launch-wizard-82	–
–	sgr-06a2f4a09be104504	80	TCP	0.0.0.0/0	launch-wizard-82	–
–	sgr-04ddc60cb64fdd420	443	TCP	::/0	launch-wizard-82	–

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



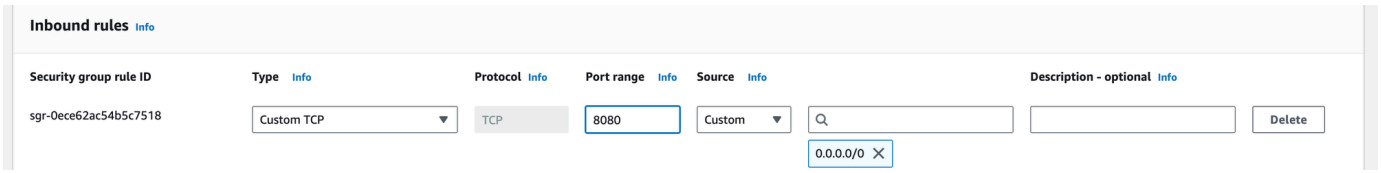
Inbound rules | Outbound rules | Tags

Inbound rules (6)

Manage tags | Edit inbound rules

Search

Name	Security group rule...	IP version	Type	Protocol	Port range	Source
–	sgr-0706ed28fc7d64005	IPv6	HTTP	TCP	80	::/0
–	sgr-00af5afb172ae42b3	IPv4	SSH	TCP	22	0.0.0.0/0
–	sgr-03176ca91948cd3aa	IPv6	SSH	TCP	22	::/0
–	sgr-0484c02d49ee840...	IPv4	HTTPS	TCP	443	0.0.0.0/0
–	sgr-06a2f4a09be104504	IPv4	HTTP	TCP	80	0.0.0.0/0
–	sgr-04ddc60cb64fdd420	IPv6	HTTPS	TCP	443	::/0



Inbound rules Info

Security group rule ID	Type Info	Protocol Info	Port range Info	Source Info		Description - optional Info	
sgr-0ece62ac54b5c7518	Custom TCP	TCP	8080	Custom	0.0.0.0/0		Delete

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

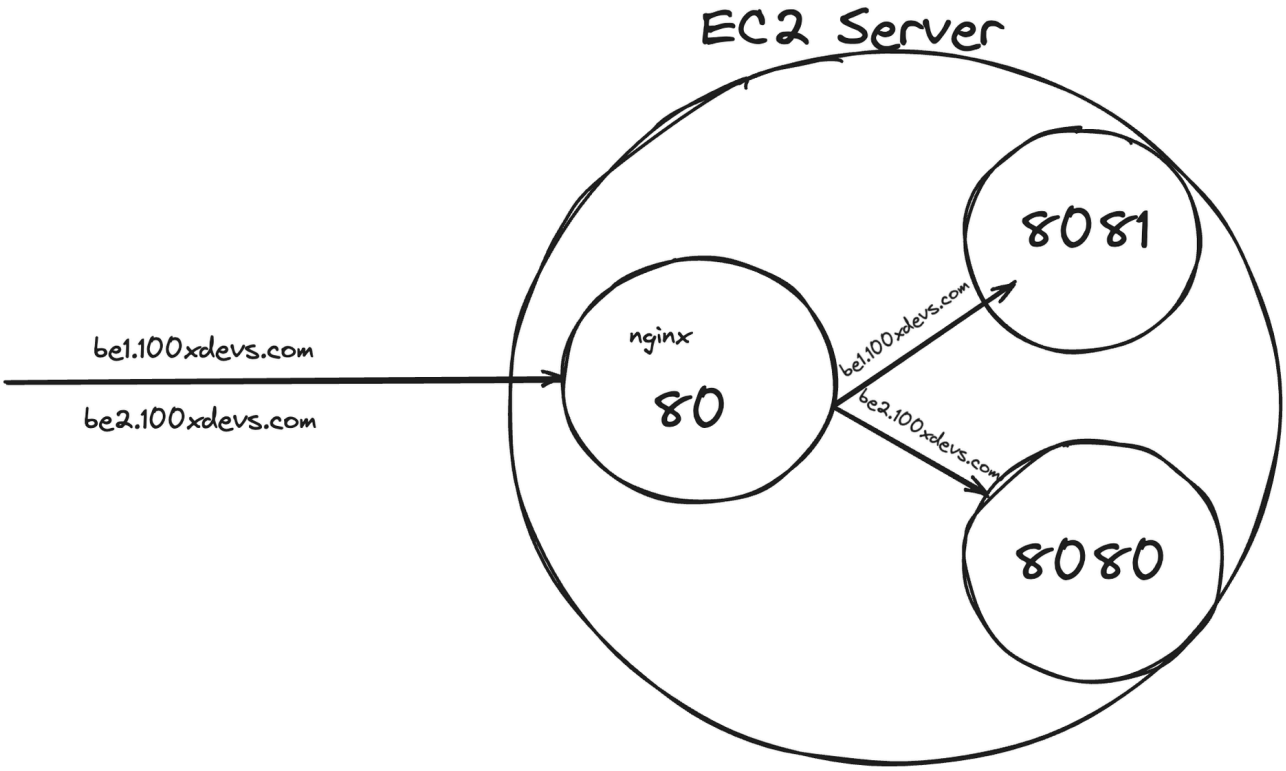
Copy

Step 7 - nginx

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

NGINX is open source software for web serving, reverse proxying, caching, load balancing, media streaming, and more. It started out as a web server designed for maximum performance and stability. In addition to its HTTP server capabilities, NGINX can also function as a proxy server for email (IMAP, POP3, and SMTP) and a reverse proxy and load balancer for HTTP, TCP, and UDP servers.

What is a reverse proxy?



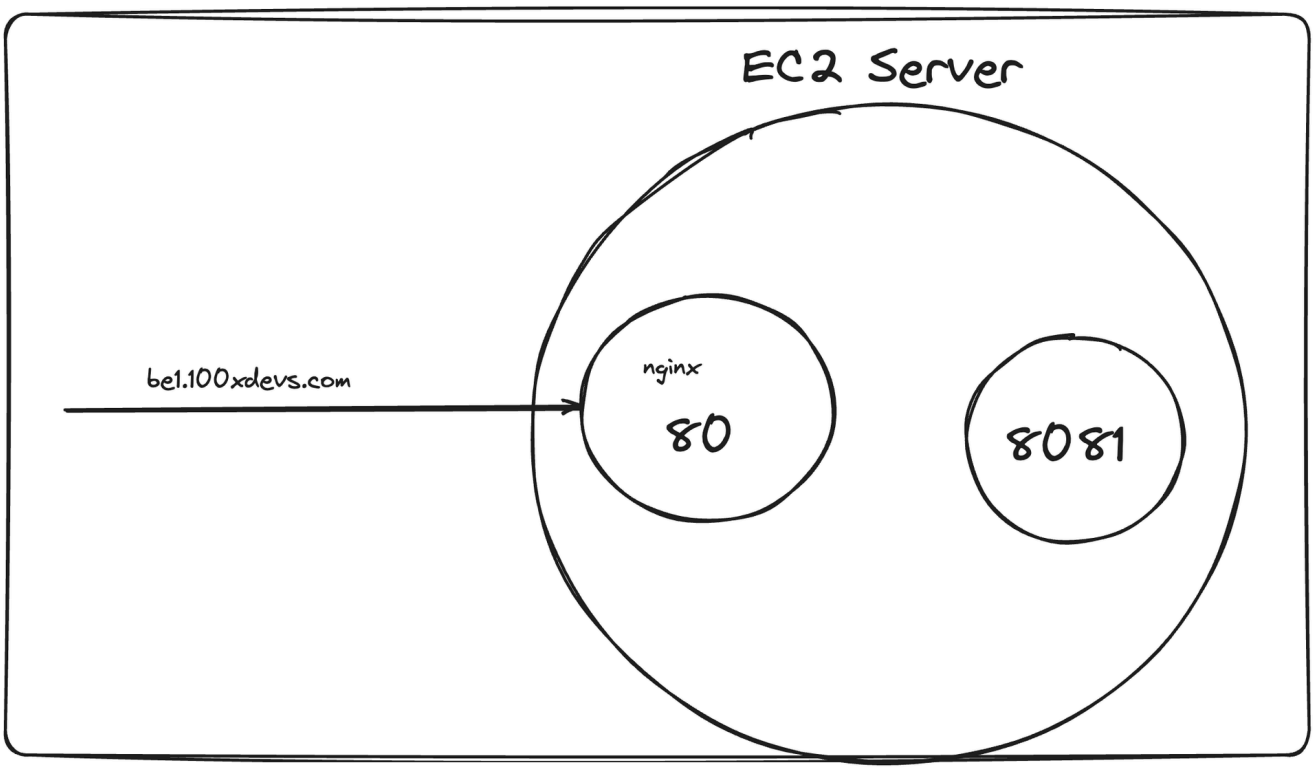
Installing nginx

```
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...
}

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;
    }
    }
}
```

Copy

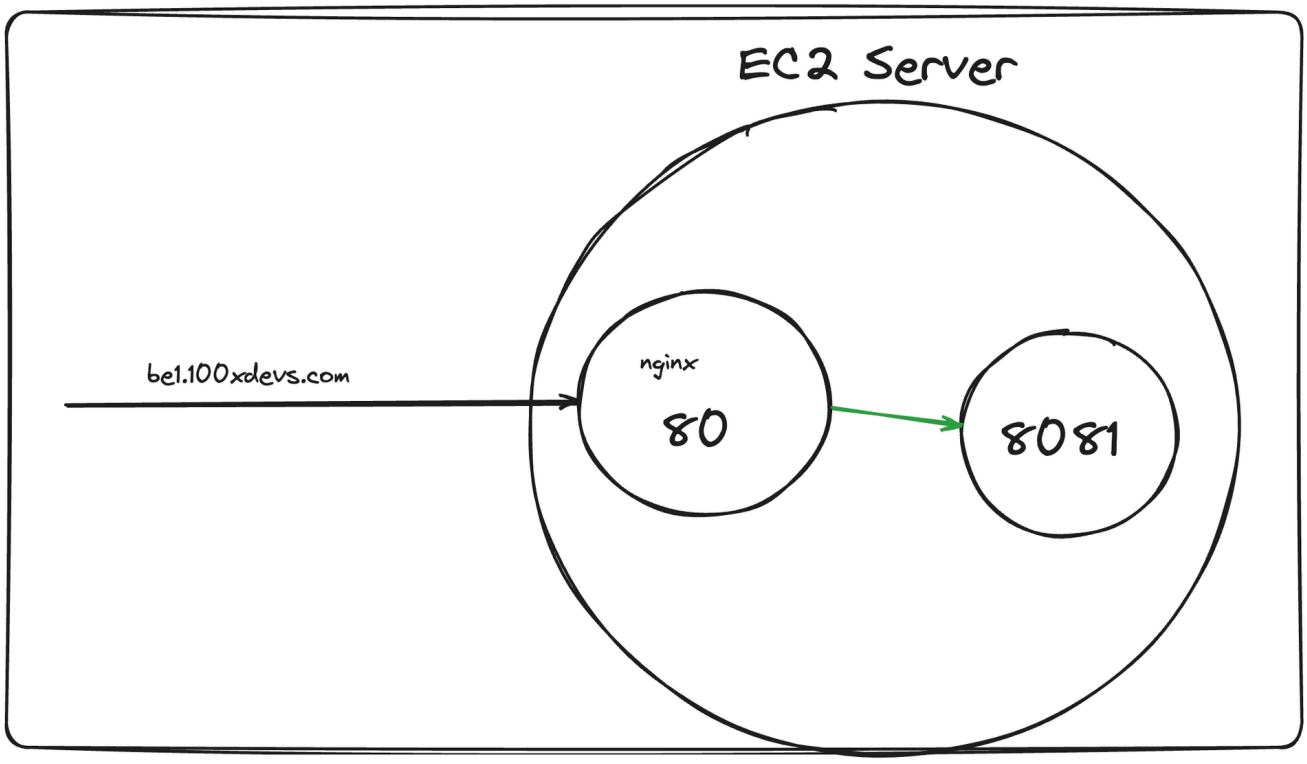
```
sudo nginx -s reload
```
Copy

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/