



Urvish Jaiswal

AWS EC2

For Beginners

Learn AWS

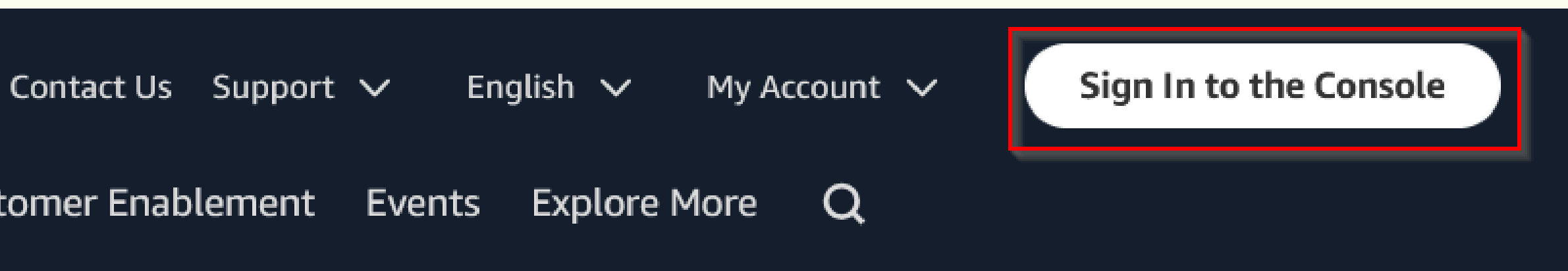
EC2 instance

With Project

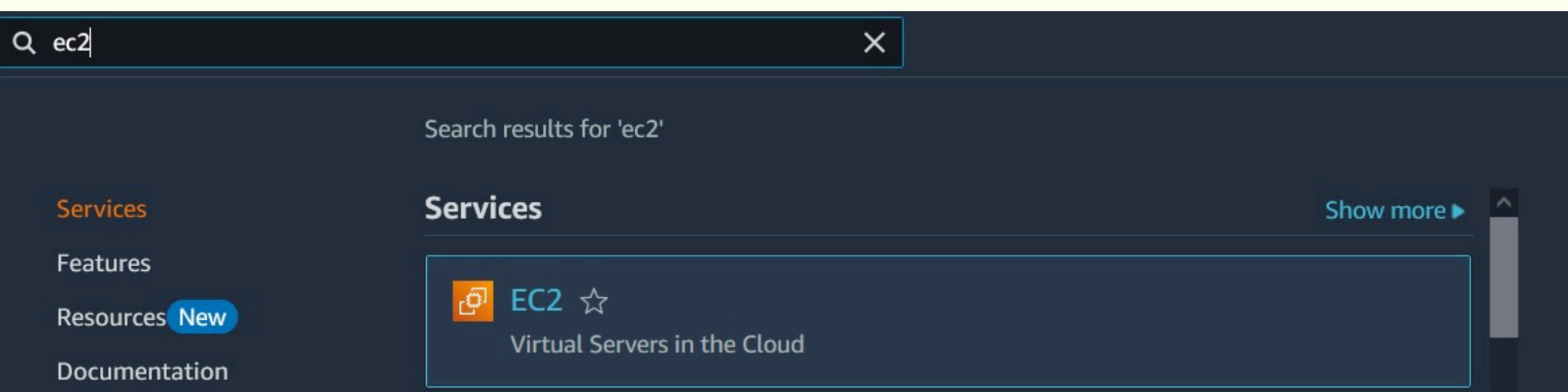
Swipe for more



Step 1: Log in to AWS Console



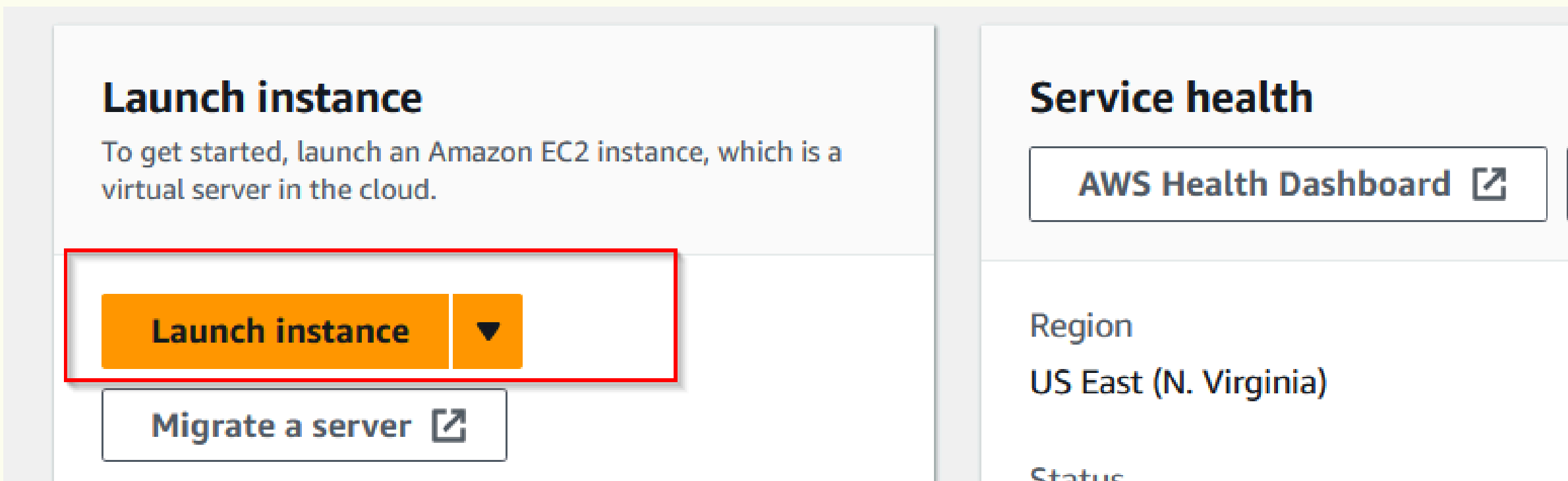
Step 2: Open EC2 Dashboard



Swipe for more



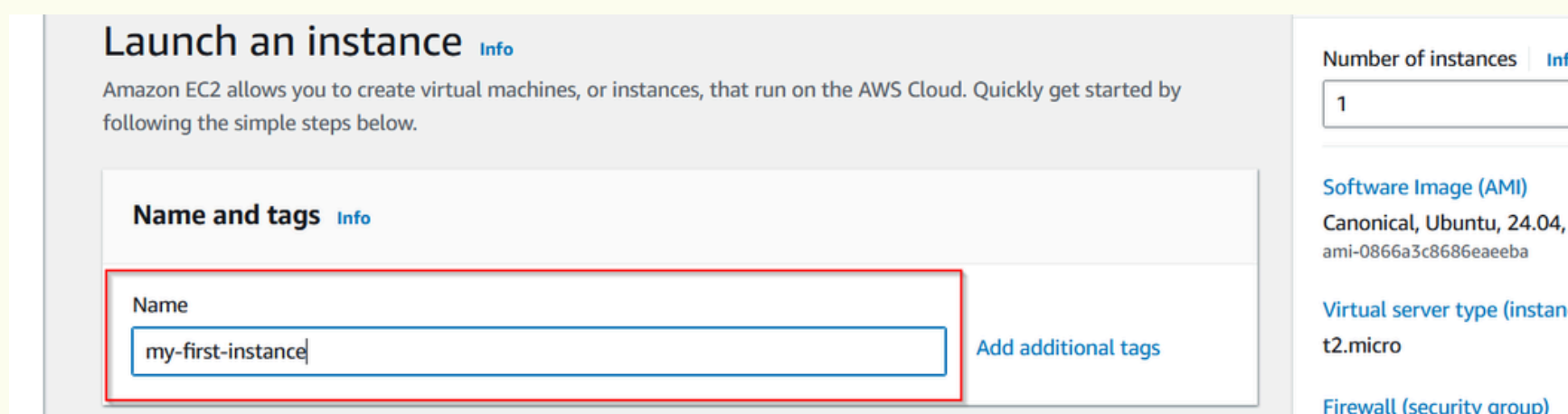
Step 3: Click “Launch Instance”



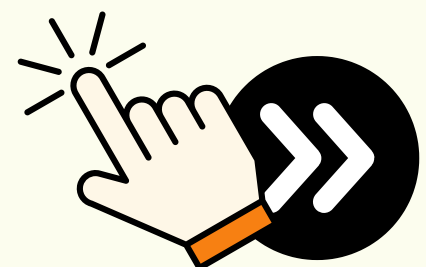
You will find these option just after logging into or EC2

Step 4: EC2 instance Config

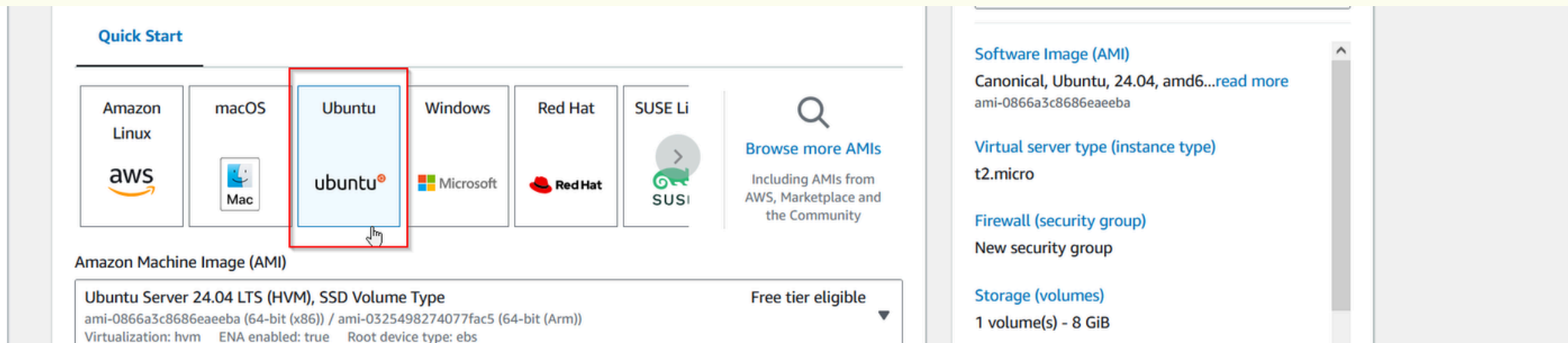
4.1: Name the instance



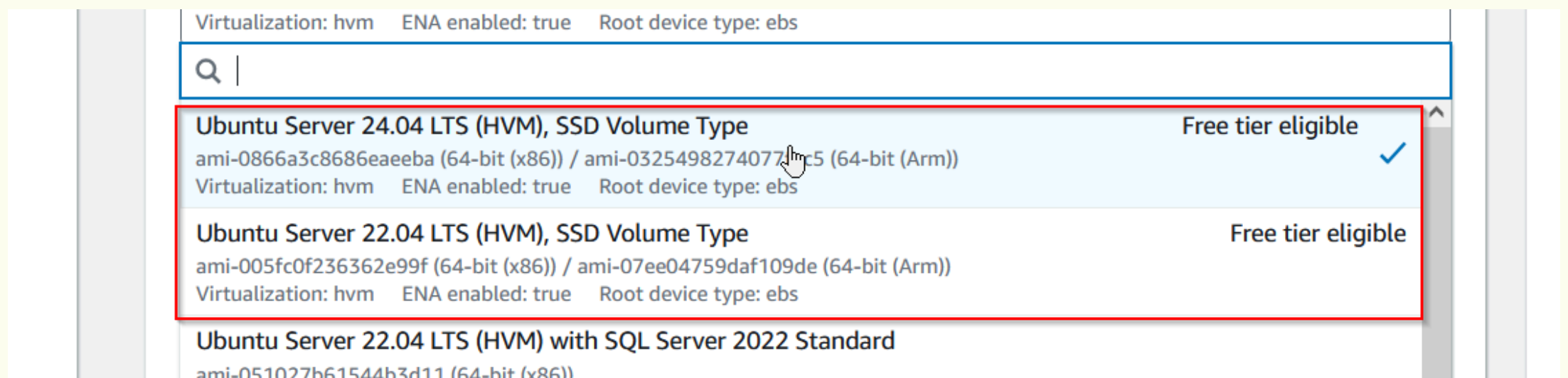
Swipe for more



4.2: Choose an AMI (Amazon Machine Image)



Since we're using the free tier, it's important to select a lightweight OS. I recommend Ubuntu, but feel free to choose one that suits your needs best.



Here we can select any LTS version of Ubuntu which falls under free tier

Swipe for more



4.3: Select an Instance Type

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 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](#)

Here we can select any LTS version of Ubuntu which falls under free tier

4.4: Select an 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*

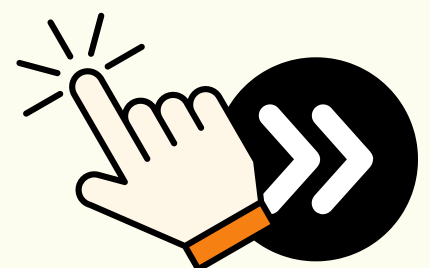
Select



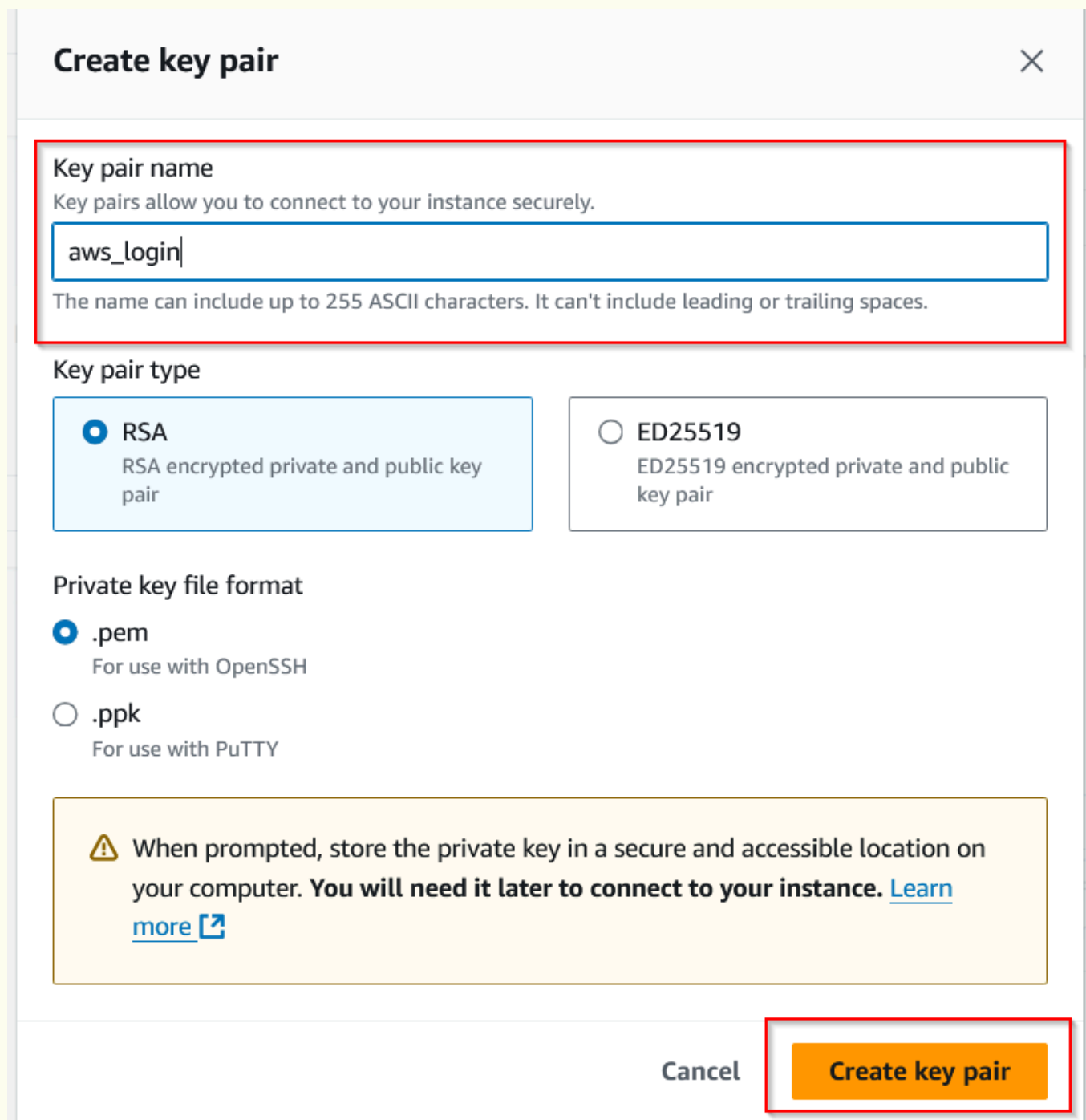
[Create new key pair](#)

A key pair in AWS EC2 is a security credential (a combination of a public and private key) used to securely connect to your instance. You'll need the private key to access your server via SSH or RDP.

Swipe for more



4.4.1: Name Your Key Pair



Create key pair [X]

Key pair name
Key pairs allow you to connect to your instance securely.

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

Warning: 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](#)

Buttons: Cancel, **Create key pair**

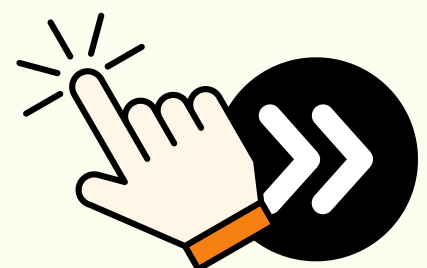
Step 1: Name Your Key Pair: Give your key pair a name (e.g., "aws_login").

Step 2: Select Key Format: Choose the format for the private key file—PEM for SSH (Linux) or PPK for PuTTY (Windows).

Step 3: Download Key Pair: Click Create key pair, and the private key file will be automatically downloaded. Store it securely.

Saving your private key is crucial because without it, you can't access your EC2 instance, and AWS won't let you download it again. Keep it safe and secure!

Swipe for more



4.5: Launch Your Instance

After downloading the key pair, click Launch Instances. Your EC2 instance is now being created!

Cancel

Launch instance

 Preview code

○ Launching instance
Launch initiation

79%

► Details

Please wait while we launch your instance.

Do not close your browser while this is loading.

Congratulations 🎉!!!! If you followed me along properly you would see the interface like me. That means your EC2 instance created successfully

✓ Success

Successfully initiated launch of instance ([i-014ebcc29ca2bdfe6](#))

► Launch log

Next Steps

🔍 What would you like to do next with this instance, for example "create alarm" or "create backup"

< 1 2 3 4 5 6 >

Create billing and free tier usage alerts

To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.

Create billing alerts [↗](#)

Connect to your instance

Once your instance is running, log into it from your local computer.

Connect to instance [↗](#)

[Learn more](#) [↗](#)

Connect an RDS database

Configure the connection between an EC2 instance and a database to allow traffic flow between them.

Connect an RDS database [↗](#)

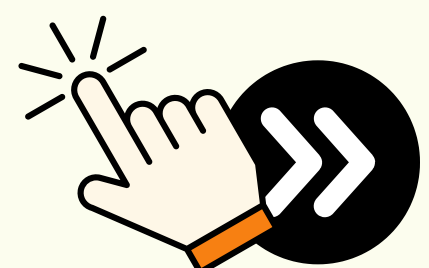
[Create a new RDS database](#) [↗](#)

Create EBS snapshot policy

Create a policy that automates the creation, retention, and deletion of EBS snapshots

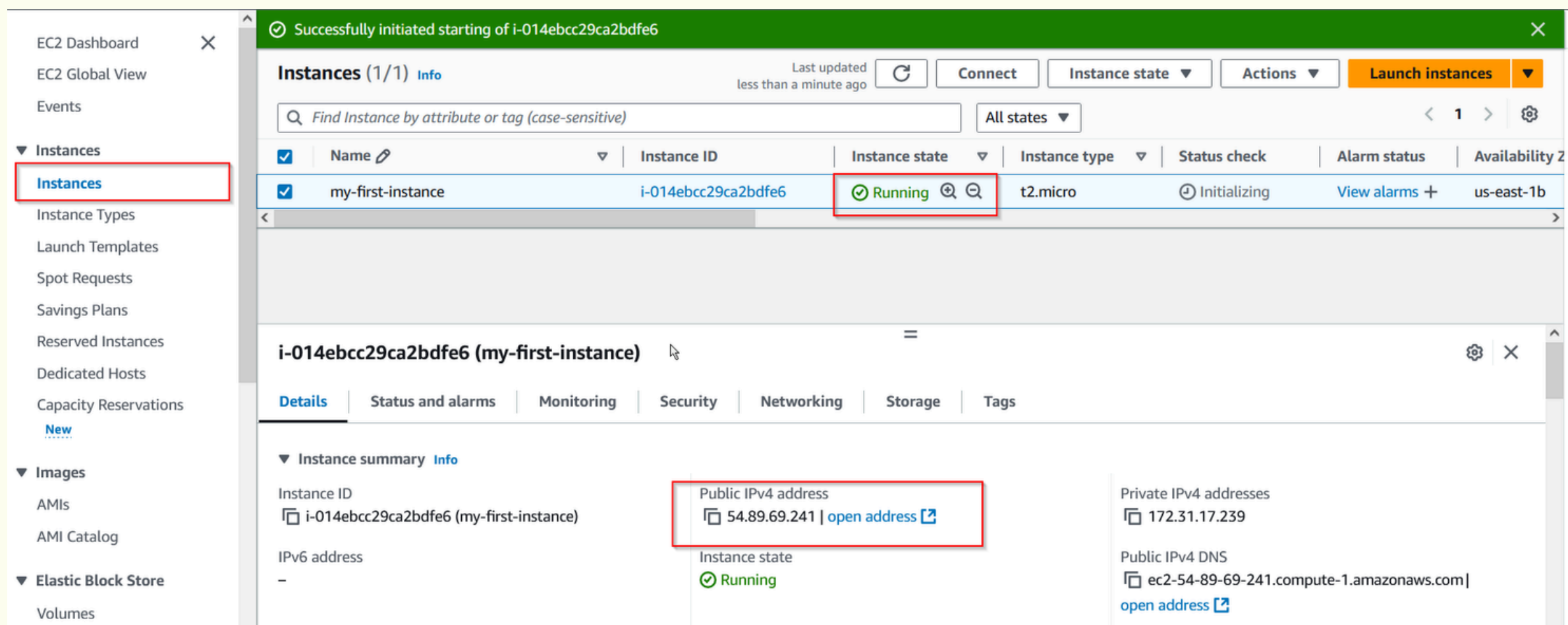
Create EBS snapshot policy [↗](#)

Swipe for more



4.6: Connect with Your Instance and install Jenkins

Step1 : Copy the Public IPv4 address we need it in our next Step



The screenshot shows the AWS Management Console interface. On the left, the 'Instances' menu is highlighted. The main panel displays a list of instances with the following details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
my-first-instance	i-014ebcc29ca2bdfe6	Running	t2.micro	Initializing	View alarms +	us-east-1b

Below the table, the details for the selected instance 'i-014ebcc29ca2bdfe6 (my-first-instance)' are shown. The 'Public IPv4 address' is highlighted as '54.89.69.241' with a link to 'open address'.

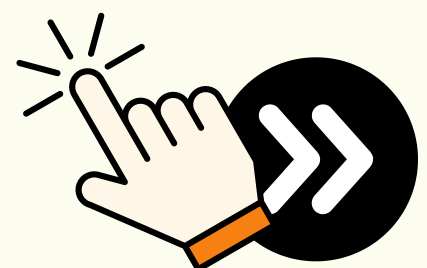
If you're a Windows user, I recommend using Git Bash to log into the instance we created via SSH. Alternatively, you can also use PuTTY.

Step2 : Using CMD go to the folder where you kept your keys. In my case its underneath of Downloads folder

Step3 : Use Command “ssh -i keyname image_name@copied ipv4 address”

```
Urvish Jaiswal@MUSS408 MINGW64 ~/OneDrive/Pictures/project/Downloads
$ ssh -i aws_login.pem ubuntu@18.206.173.203
The authenticity of host '18.206.173.203 (18.206.173.203)' can't be established.
ED25519 key fingerprint is SHA256:5G6ZfgLvN065VW69qqU1tFK7d9uNjCN5mpbb2WCOBks.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes|
```

Swipe for more



Note : During ssh login we would going to face these issue of not login

```
Urvish Jaiswal@MUSS408 MINGW64 ~/OneDrive/Pictures/project/Downloads
ssh -i aws_login.pem ubuntu@18.206.173.203
The authenticity of host '18.206.173.203 (18.206.173.203)' can't be established.
ED25519 key fingerprint is SHA256:5G6ZfgLvN065VW69qqU1tFK7d9uNjCN5mpbb2WCOBks.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '18.206.173.203' (ED25519) to the list of known hosts.
Connection closed by 18.206.173.203 port 22
```

Reason behind that is simple we need to change the permissions of key file which we have downloaded previously to chmod 600

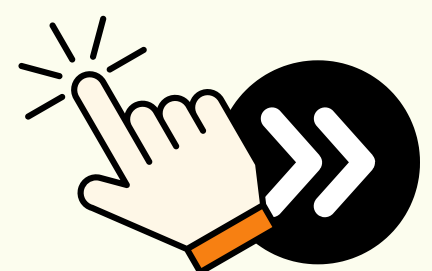
```
Urvish Jaiswal@MUSS408 MINGW64 ~/OneDrive/Pictures/project/Downloads
$ chmod 600 aws_login.pem
```

Step4 : If changed the permission you would easily be able to login as a ubuntu user

Step5 : We are going to install JDK. Its important to have before we install jenkins. In order to install any software we need to update apt in Ubuntu.

```
root@ip-172-31-17-239:~# apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
```

Swipe for more



Step6 : Now install JDK-11

```
ubuntu@ip-172-31-17-239:/$ sudo apt install openjdk-11-jdk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
```

Confirm by checking the version

```
ubuntu@ip-172-31-17-239:/$ java --version
openjdk 11.0.24 2024-07-16
OpenJDK Runtime Environment (build 11.0.24+8-post-Ubuntu-1ubuntu324.04.1)
OpenJDK 64-Bit Server VM (build 11.0.24+8-post-Ubuntu-1ubuntu324.04.1, mixed mode, sharing)
ubuntu@ip-172-31-17-239:/$ |
```

Step7 : Now install Jenkins follow the command

```
ubuntu@ip-172-31-17-239:/$ sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \
https://pkg.jenkins.io/debian binary/ | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
--2024-10-21 02:59:06-- https://pkg.jenkins.io/debian/jenkins.io-2023.key
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.34.133, 2a04:4e42:79::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|146.75.34.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3175 (3.1K) [application/pgp-keys]
Saving to: '/usr/share/keyrings/jenkins-keyring.asc'

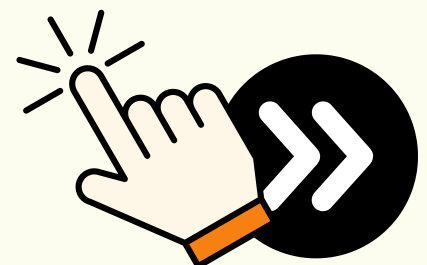
/usr/share/keyrings/jenkins-keyring.asc          100%[=====
```

Step8 : Enable the service and check the status of Jenkins

```
172-31-17-239:~$ sudo systemctl enable jenkins
Enabling state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
/usr/lib/systemd/systemd-sysv-install enable jenkins
172-31-17-239:~$ sudo systemctl status jenkins
service - Jenkins Continuous Integration Server
Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
State: active (running) since Mon 2024-10-21 03:29:43 UTC; 1min 1s ago
Main PID: 6058 (java)
Tasks: 43 (limit: 1130)
Memory: 314.1M (peak: 348.7M)
CPU: 14.759s
CGroup: /system.slice/jenkins.service
└─6058 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

29:37 ip-172-31-17-239 jenkins[6058]: 7341934f722245b39ac978a00b8b677f
29:37 ip-172-31-17-239 jenkins[6058]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
29:37 ip-172-31-17-239 jenkins[6058]: *****
29:37 ip-172-31-17-239 jenkins[6058]: *****
29:37 ip-172-31-17-239 jenkins[6058]: *****
29:42 ip-172-31-17-239 jenkins[6058]: 2024-10-21 03:29:42.992+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
29:43 ip-172-31-17-239 jenkins[6058]: 2024-10-21 03:29:43.034+0000 [id=23] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and running
29:43 ip-172-31-17-239 jenkins[6058]: 2024-10-21 03:29:43.090+0000 [id=46] INFO h.m.DownloadService$Downloadable#load: Obtained the updated data file for hudson.tasks.Maven
29:43 ip-172-31-17-239 jenkins[6058]: 2024-10-21 03:29:43.092+0000 [id=46] INFO hudson.util.Retrier#start: Performed the action check updates server successfully at the att
/20 (END)
```

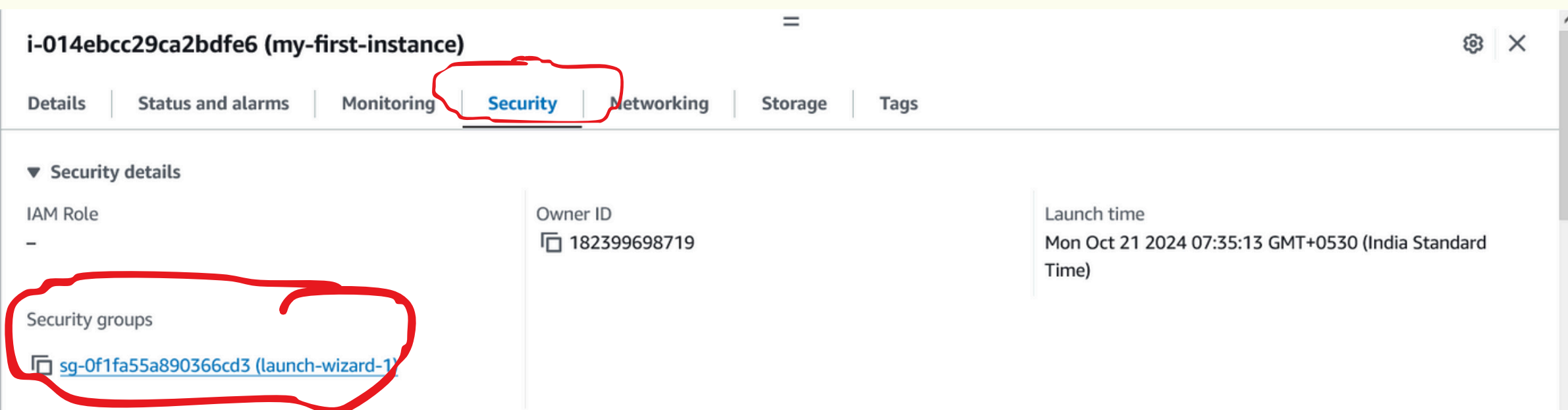
Swipe for more



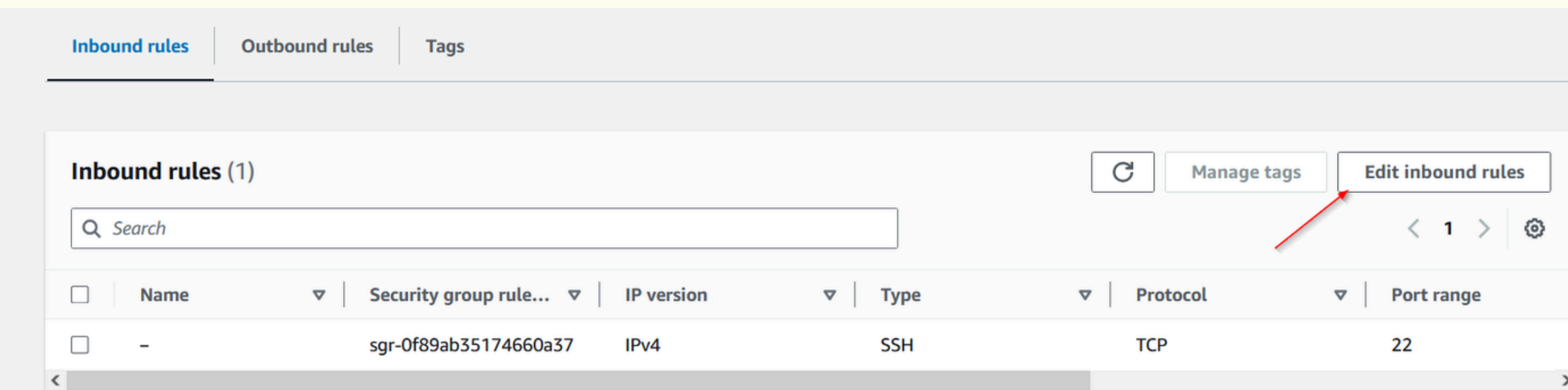
5 : Change the Security Group settings

Step1 : Go to your current running instance from Dashboard>Instance

Step2 : Select a security tab and click on security groups

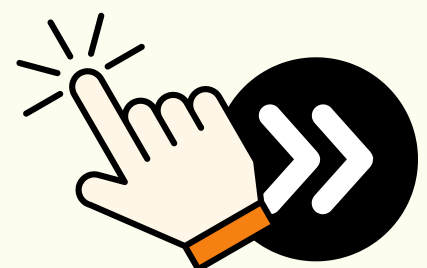


Step3 : Click on edit inbound rules



We click on "Edit Inbound Rules" to allow specific types of traffic, like HTTP or SSH, to access our server. This ensures the server can receive the right kind of connections.

Swipe for more



Step4 : Add the following inbound security rule

Edit inbound rules [Info](#)

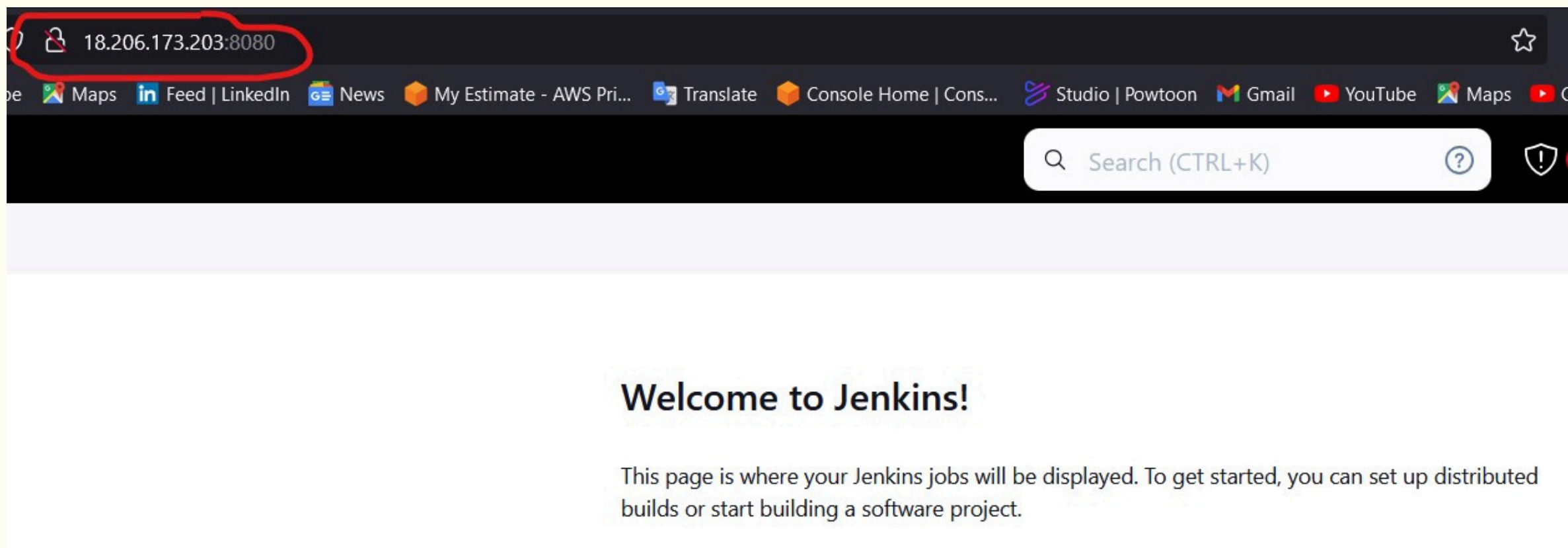
Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description - optional	
sgr-0f89ab35174660a37	SSH	TCP	22	Custom		Delete
-	Custom TCP	TCP	8080	Anywh...	0.0.0.0/0	Delete

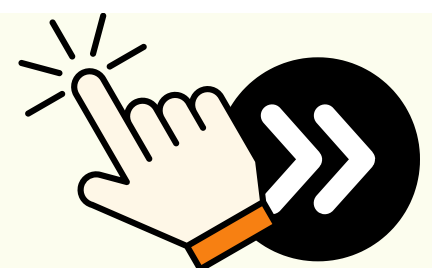
[Add rule](#)

Step5 : Save the changes

6 : Run the public IP on browser with Port 8080



Swipe for more



7 : Jenkins Config

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:



```
/var/lib/jenkins/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

Administrator password

1,536 × 720

Step1 : Go the cmd again and past the upper path

```
ubuntu@ip-172-31-17-239:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
7341934f722245b39ac978a00b8b677f
ubuntu@ip-172-31-17-239:~$
```

Step2 : Copy the pass and paste on to the Jenkins

Unlock Jenkins

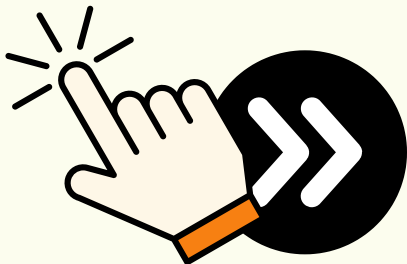
To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

```
/var/lib/jenkins/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

Administrator password

Swipe for more



Step3 : Fill up the form and click next

Getting Started

Username

urvish408

Password

.....

Confirm password

.....

Full name

Urvish Jaiswal

E-mail address

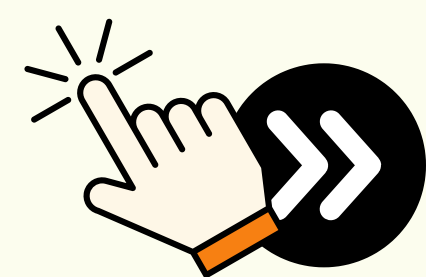
urvish408@gmail.com

Jenkins 2.481

Skip and continue as admin

Save and Continue

Swipe for more



Step4 : Confirm the instance configuration and save it

Instance Configuration

Jenkins URL:

http://18.206.173.203:8080/

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the BUILD_URL environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.481

Not now

Save and Finish

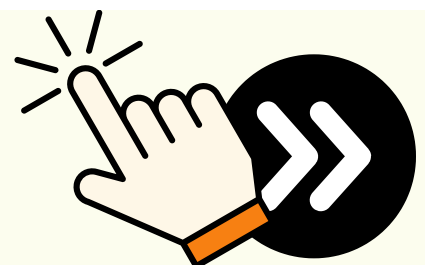
Step5: Congratulations 🎉!! you have successfully installed Jenkins on EC2 instance and configured it. This is the end of our project!

Jenkins is ready!

Your Jenkins setup is complete.

Start using Jenkins

Swipe for more



You did phenomenal job and many congratulations 🎉 on the completion of your project 🎉.

May be for someone it was their first ever project 😊.

I feel proud and you should feel it even took a minor step of opening their AWS console.. yes console after these document. Feel proud of even a single action you are taking towards your goal no matter how small it may seem. Every steps is a vote to your new identity!

Because “The Journey of thousand miles begins with a single step”

Special thanks to my AWS mentor, Abhishek Veeramalla, whose video helped me in curating this document.



Urvish Jaiswal



Help Others

