Negin Amou

Link to webpage : http://ec2-107-22-104-204.compute-1.amazonaws.com

Or got to this ip : http://107.22.104.204/

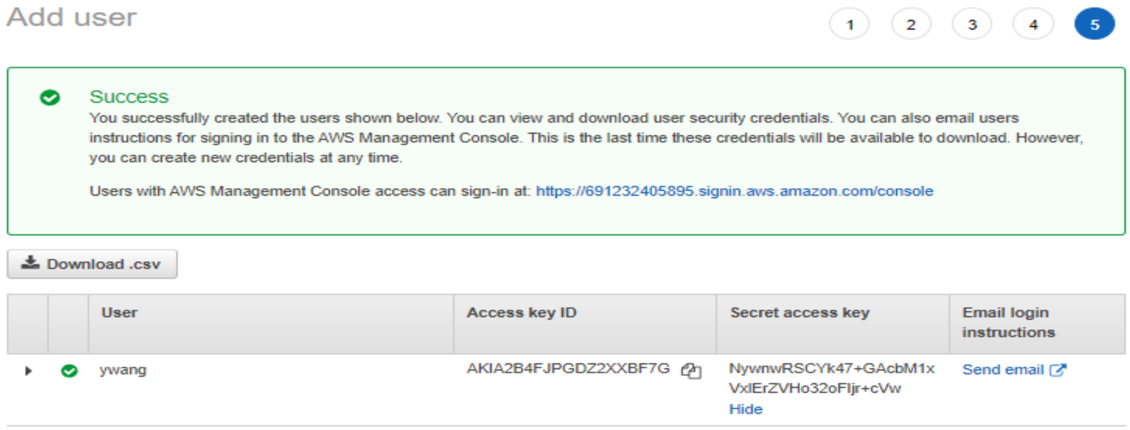
Make sure it is http not https

Account ID: 6912-3240-5895
IAM user: ywang
Password: Negin0325817

Console login:
https://691232405895.signin.aws.amazon.com/console

Access key ID : AKIA2B4FJPGDZ2XXBF7G

Secret access key
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



Add user

Success

You successfully created the users shown below. You can view and download user security credentials. You can also email users instructions for signing in to the AWS Management Console. This is the last time these credentials will be available to download. However, you can create new credentials at any time.

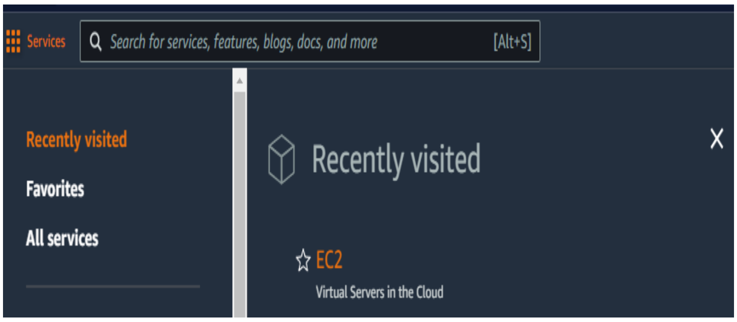
Users with AWS Management Console access can sign-in at: https://691232405895.signin.aws.amazon.com/console

		User	Access key ID	Secret access key	Email login instructions
▸	✓	ywang	AKIA2B4FJPGDZ2XXBF7G	NywnwRSCYk47+GAcbM1x VxlErZVHo32oFljr+cVw Hide	Send email

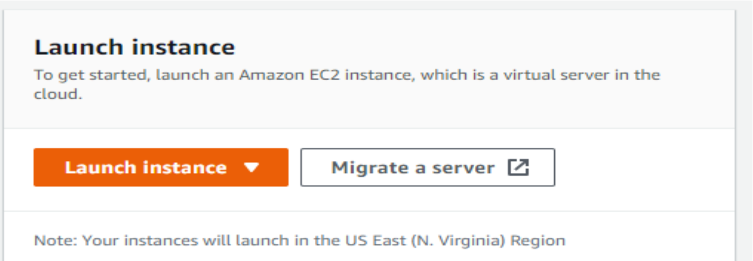
1-Create EC2 account . This step is straightforward. The documentation to follow for account set up is provided here:

Create and activate an AWS account (amazon.com)

2-Next step is creating an instance . go to services. Select Ec2. Select a region for server and launch instance .



Services
Search for services, features, blogs, docs, and more
[Alt+S]
Recently visited
Favorites
All services
Recently visited
X
EC2
Virtual Servers in the Cloud



Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

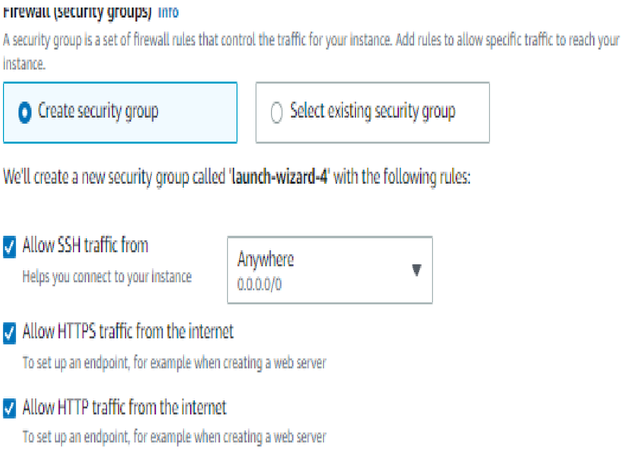
Note: Your instances will launch in the US East (N. Virginia) Region

This is how the page looks like for creating an instance. Select an OS of choice. Make sure to either create a key-pair or upload something you have created previously .

This is the last chance to download it.

At the bottom of the same page it is better to tick the options to allow http and https traffic if we plan to make a web server on that machine. This setting can also be set in the security groups where we allow any traffic from HTTP and HTTPS.

I kept the memory information as default since I wasn't going to use this instance for anything too heavy .



Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

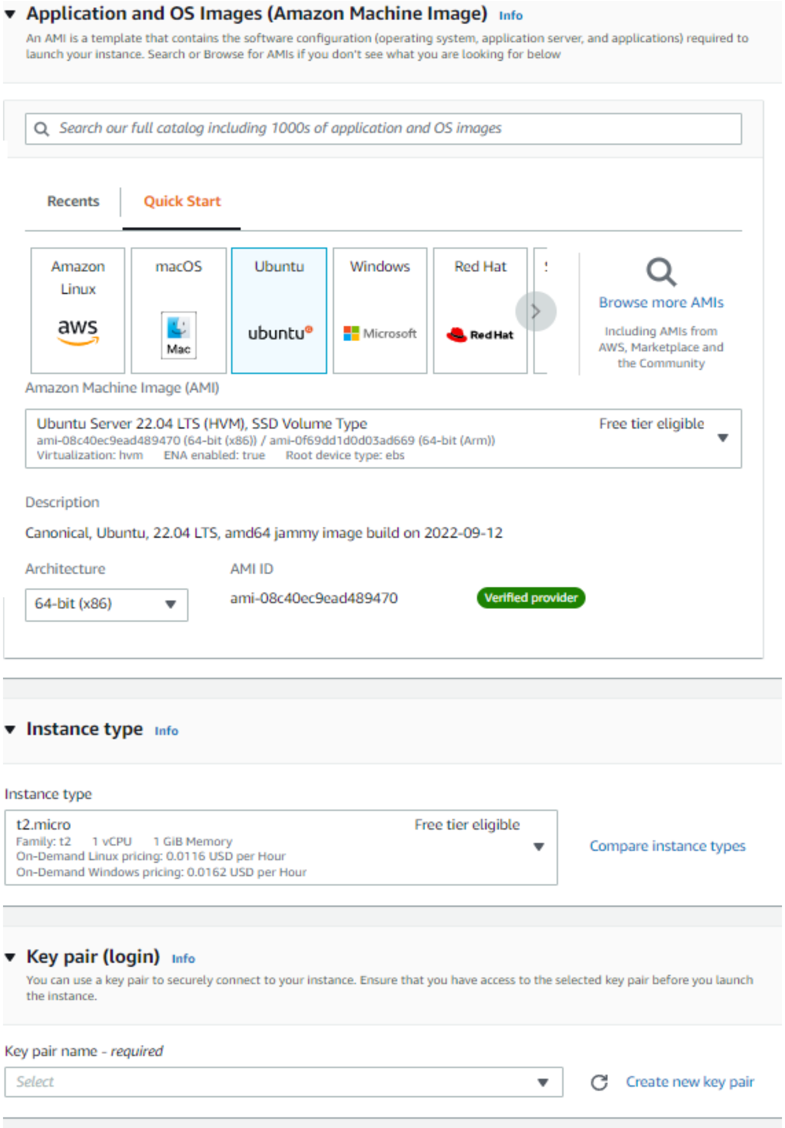
● Create security group ○ Select existing security group

We'll create a new security group called '**launch-wizard-4**' with the following rules:

☑ Allow SSH traffic from
Helps you connect to your instance
Anywhere
0.0.0.0/0

☑ Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

☑ Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server



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

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

Amazon Machine Image (AMI)

Ubuntu Server 22.04 LTS (HVM), SSD Volume Type
ami-08c40ec9ead489470 (64-bit (x86)) / ami-0f69dd1d0d03ad669 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs
Free tier eligible

Description

Canonical, Ubuntu, 22.04 LTS, amd64 jammy image build on 2022-09-12

Architecture: 64-bit (x86)

AMI ID: ami-08c40ec9ead489470 Verified provider

Instance type Info

Instance type

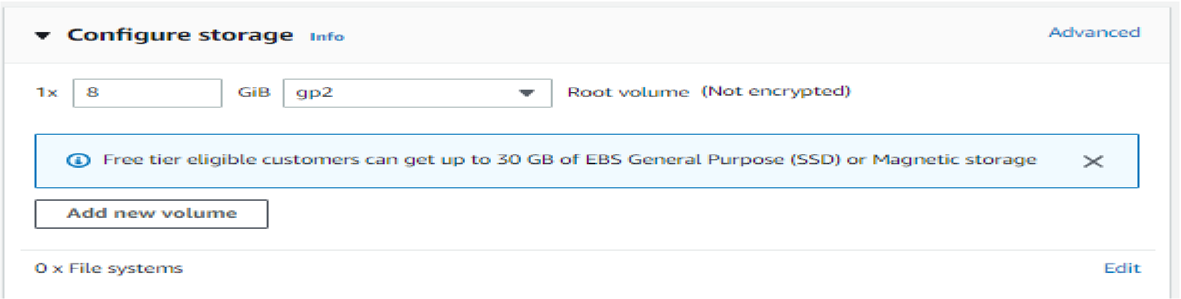
t2.micro
Family: t2 1 vCPU 1 GiB Memory
On-Demand Linux pricing: 0.0116 USD per Hour
On-Demand Windows pricing: 0.0162 USD per Hour
Free tier eligible

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



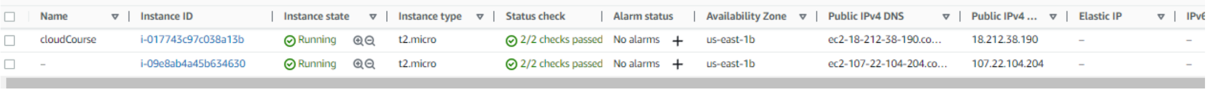
▾ Configure storage Info

1x 8 GiB gp2 Root volume (Not encrypted)

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

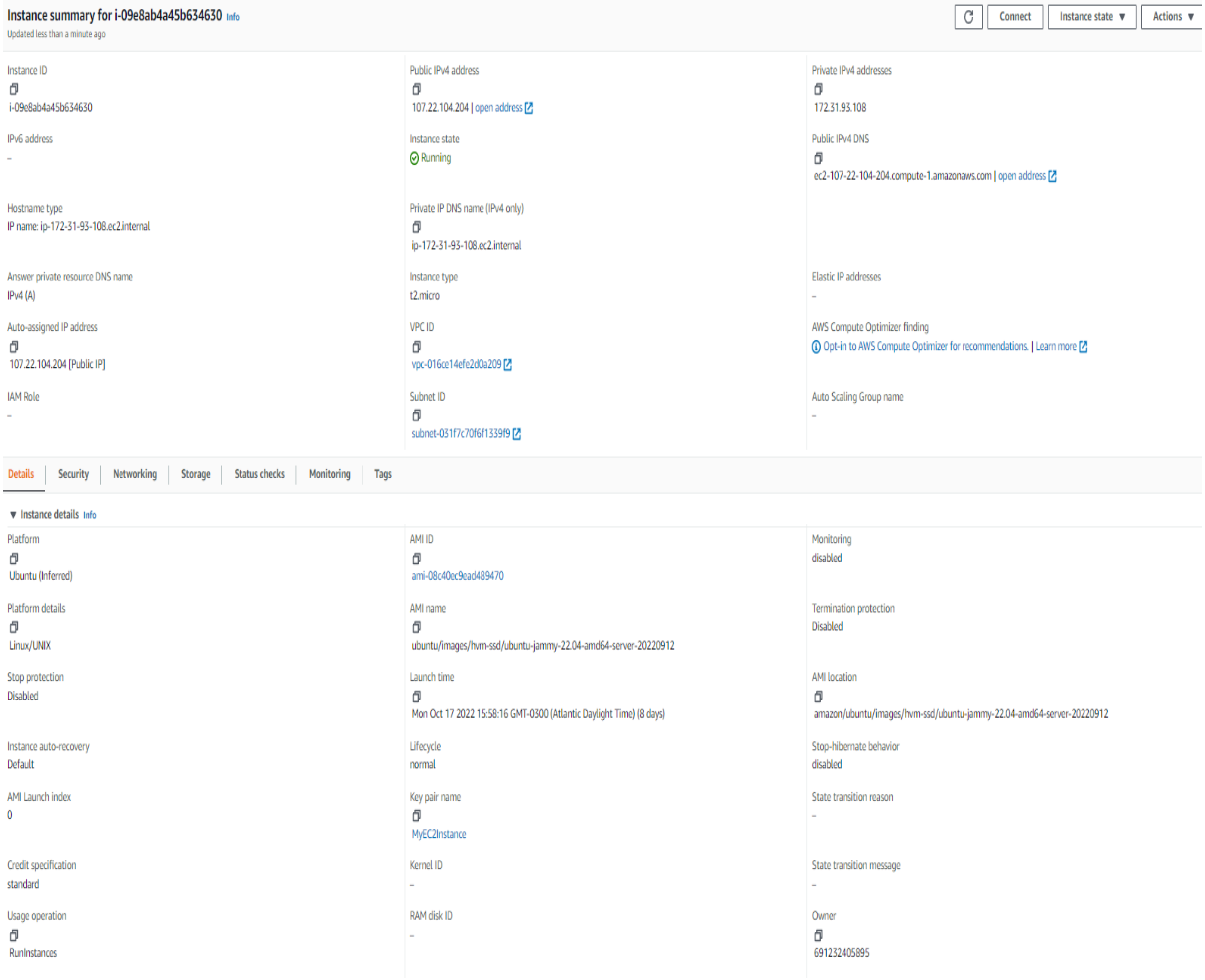
0 x File systems

If the steps are done successfully we should be able to see the machines in running state.



□	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IPv6
□	cloudCourse	i-017743c97c038a13b	✓ Running	t2.micro	✓ 2/2 checks passed	No alarms +	us-east-1b	ec2-18-212-38-190.co...	18.212.38.190	–	–
□	–	i-09e8ab4a45b634630	✓ Running	t2.micro	✓ 2/2 checks passed	No alarms +	us-east-1b	ec2-107-22-104-204.co...	107.22.104.204	–	–

Click on any of the instances we want to see further details. Information to take note are public ip, elastic ip and Public IPv4 DNS. These are the addresses we can use to navigate to a running web page using apache.



Instance summary for i-09e8ab4a45b634630 Info

Updated less than a minute ago

Instance ID
i-09e8ab4a45b634630

IPv6 address
–

Hostname type
IP name: ip-172-31-93-108.ec2.internal

Answer private resource DNS name
IPv4 (A)

Auto-assigned IP address
107.22.104.204 [Public IP]

IAM Role
–

Public IPv4 address
107.22.104.204 | open address

Instance state
✓ Running

Private IP DNS name (IPv4 only)
ip-172-31-93-108.ec2.internal

Instance type
t2.micro

VPC ID
vpc-016ce14efe2d0a209

Subnet ID
subnet-031f7c70f6f1339f9

Private IPv4 addresses
172.31.93.108

Public IPv4 DNS
ec2-107-22-104-204.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
–

▾ Instance details Info

Platform
Ubuntu (Inferred)

Platform details
Linux/UNIX

Stop protection
Disabled

Instance auto-recovery
Default

AMI Launch index
0

Credit specification
standard

Usage operation
RunInstances

AMI ID
ami-08c40ec9ead489470

AMI name
ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-20220912

Launch time
Mon Oct 17 2022 15:58:16 GMT-0300 (Atlantic Daylight Time) (8 days)

Lifecycle
normal

Key pair name
MyEC2Instance

Kernel ID
–

RAM disk ID
–

Monitoring
disabled

Termination protection
Disabled

AMI location
amazon/ubuntu/images/hvm-ssd/ubuntu-jammy-22.04-amd64-server-20220912

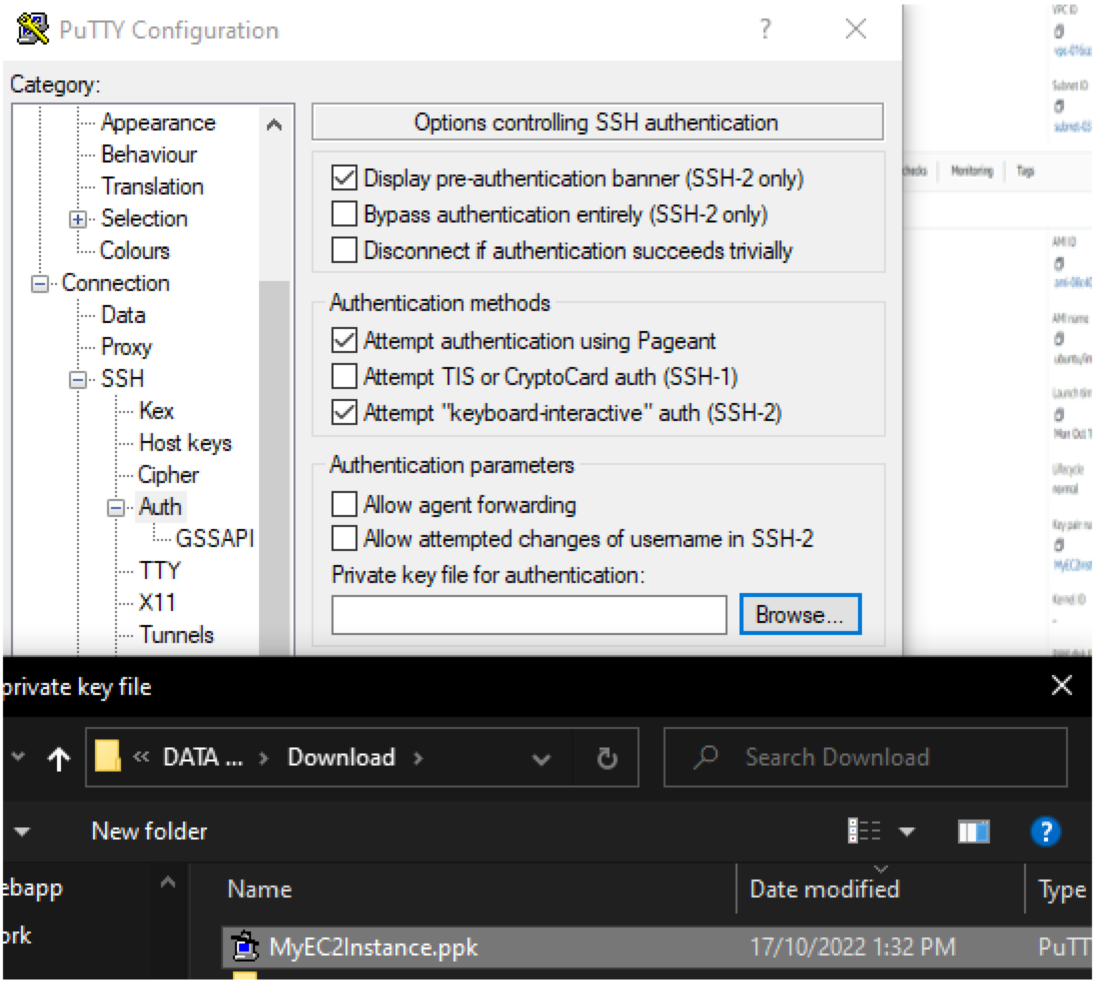
Stop-hibernate behavior
disabled

State transition reason
–

State transition message
–

Owner
691232405895

To login to Ubuntu machine we can either use putting or PowerShell. If we are using putting make sure to first load your key pair in the authentication section then add your host name which can be found from the instance details (Picture above).



PuTTY Configuration

Options controlling SSH authentication

☑ Display pre-authentication banner (SSH-2 only)
☐ Bypass authentication entirely (SSH-2 only)
☐ Disconnect if authentication succeeds trivially

Authentication methods

☑ Attempt authentication using Pageant
☐ Attempt TIS or CryptoCard auth (SSH-1)
☑ Attempt "keyboard-interactive" auth (SSH-2)

Authentication parameters

☐ Allow agent forwarding
☐ Allow attempted changes of username in SSH-2

Private key file for authentication:

rivate key file

Name	Date modified	Type
MyEC2Instance.ppk	17/10/2022 1:32 PM	PuTT

Similarly to upload files in the machine we can use WinScp and similar to putty we have to provide our key pair file.

If we want to use PowerShell we can use ssh to connect . Make sure you include the path to your key pair in the command. (note : we can convert ppk file to pem file using puttygen in case we forgot to download both format while creating the instance)

```
ssh -i "[pathToFile]/MyEC2Instance.pem" ubuntu@ec2-107-22-104-204.compute-1.amazonaws.com
```

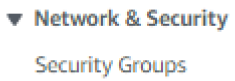
Once we are in the machine we can treat it like any ubuntu computer when we want to host a website. To host my website I installed Lampp first. Next make sure to run apache and mysql services. I followed this tutorial to install them :

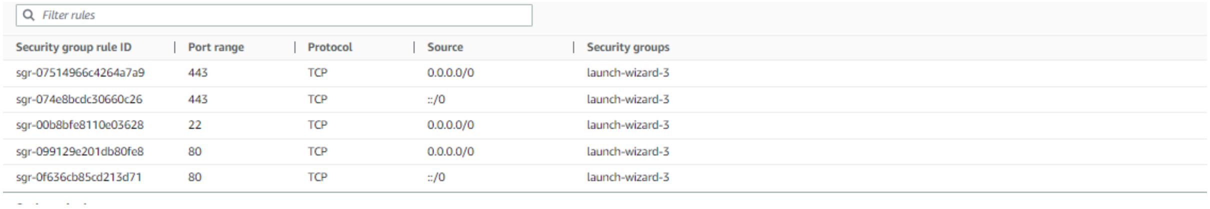
[How to install LAMP stack web server on Ubuntu 20.04 - UpCloud]

Other extra steps to take is make sure error reporting in php.ini is on as it turns out it can be off by default in Lamp. Other steps to take is to uncomment extension=mysqli or PDO in php.ini to be able to use them in your project for database connection. To make sure mysql and apache are running test them by trying to login to mysql from machine running the following command:

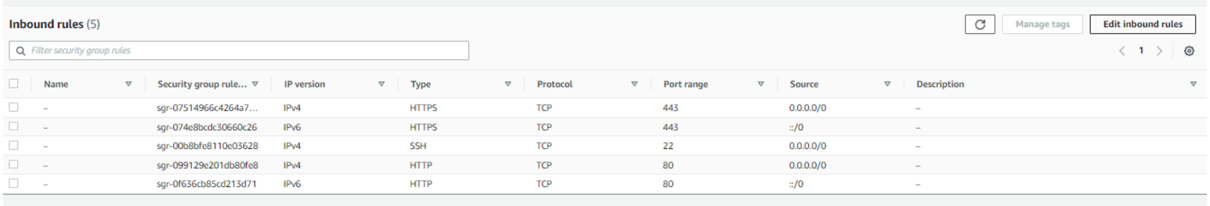
```
Mysql -u root -p
```

To check if apache2 is running correctly , try navigating to your public ip or elastic ip. If the page doesn’t load, it could be either because apache2 isnt running or in your security rules you are not allowing traffic through http or https . To allow it go to security group in side bar. Find the security group that your machine uses. In my case it is launch-wizard-3.





Security group rule ID	Port range	Protocol	Source	Security groups
sgr-07514966c4264a7a9	443	TCP	0.0.0.0/0	launch-wizard-3
sgr-074e8bcdc30660c26	443	TCP	::/0	launch-wizard-3
sgr-00b8bfe8110e03628	22	TCP	0.0.0.0/0	launch-wizard-3
sgr-099129e201db80fe8	80	TCP	0.0.0.0/0	launch-wizard-3
sgr-0f636cb85cd213d71	80	TCP	::/0	launch-wizard-3



□	Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
□	–	sgr-07514966c4264a7...	IPv4	HTTPS	TCP	443	0.0.0.0/0	–
□	–	sgr-074e8bcdc30660c26	IPv6	HTTPS	TCP	443	::/0	–
□	–	sgr-00b8bfe8110e03628	IPv4	SSH	TCP	22	0.0.0.0/0	–
□	–	sgr-099129e201db80fe8	IPv4	HTTP	TCP	80	0.0.0.0/0	–
□	–	sgr-0f636cb85cd213d71	IPv6	HTTP	TCP	80	::/0	–

Click on edit in bound rules and add http and https traffic to be allowed. (it can be allowed from anywhere or specific ips)

To add your website files , either git clone or use winscp. Load them in /var/www/html/ directly.

The basic of creating a a connection can be seen below. Note that we can use either localhost or public ip of the machine. I personally used localhost . One small details to note is that it is recommended to create a sperate database user instead of root to use in web application.

```
    $servername = "localhost";

    $username = "ngn";

    $password = "passwordHard!";

    $dbname = "ass2_cl";

   $conn = new mysqli($servername, $username, $password, $dbname);
```

Command to create a new user in mysql :

```
CREATE USER 'username'@'host' IDENTIFIED WITH authentication_plugin BY 'password';
```

Make sure to give privilege of using the database we plan to use in project to the user.

```
GRANT PRIVILEGE ON database.table TO 'username'@'host';
```

The rest of the application are web development related and doesn’t have much to do with cloud computing set up. I included the sql tables as a separate file in case grader wants to take a look at. The project is also cloneable from github in case it was to be expanded or replicated.