

- Gayatri Pandit

Cloud (AWS) Week 1 Task

TASK 1: DEPLOY APPLICATION IN MONOLITHIC AND MICROSERVICES ARCHITECTURE.

- For Monolithic: 1 EC2 instance, deploy WordPress and MySQL on the same instance. Create a welcome page in WordPress that will be the homepage.

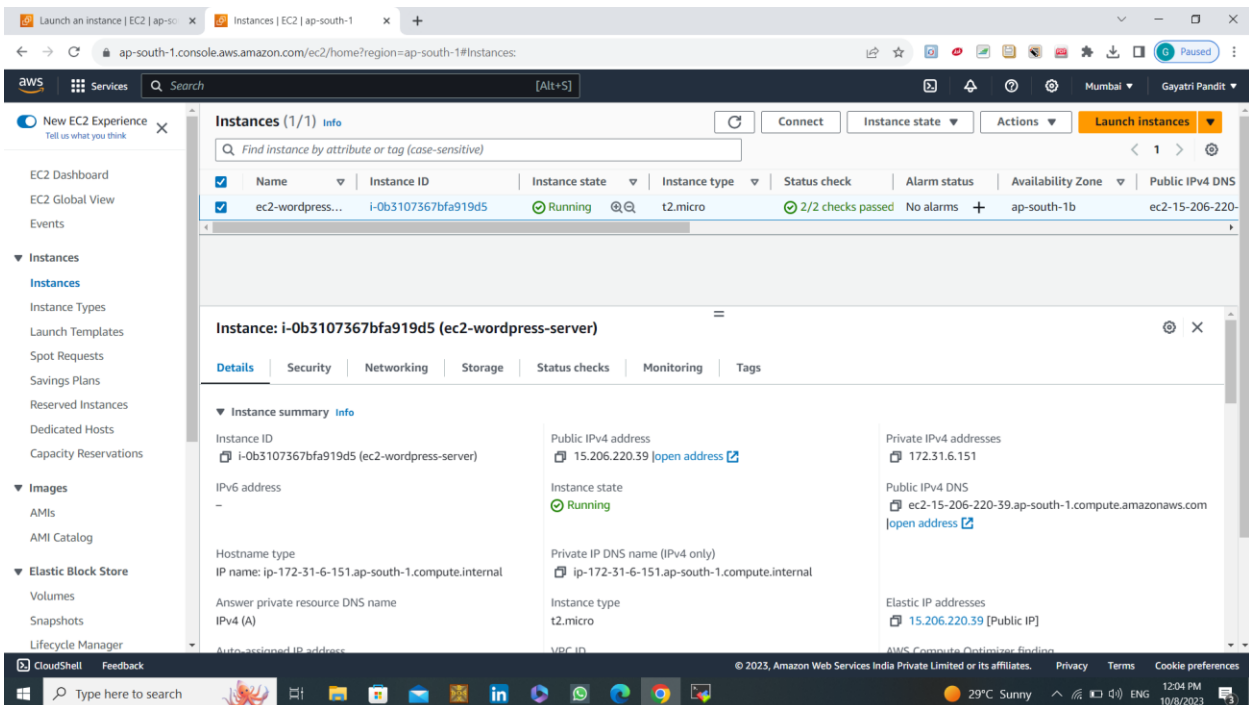
STEP 1: Create an EC2 Instance on AWS

Navigate to the Amazon EC2 Instance service in the AWS Management Console and click on Launch. Enter a unique name for your EC2 Instance (EC2 Instance name must be globally unique across all AWS accounts).

STEP 2: Enabling and Configuring the EC2 Instance

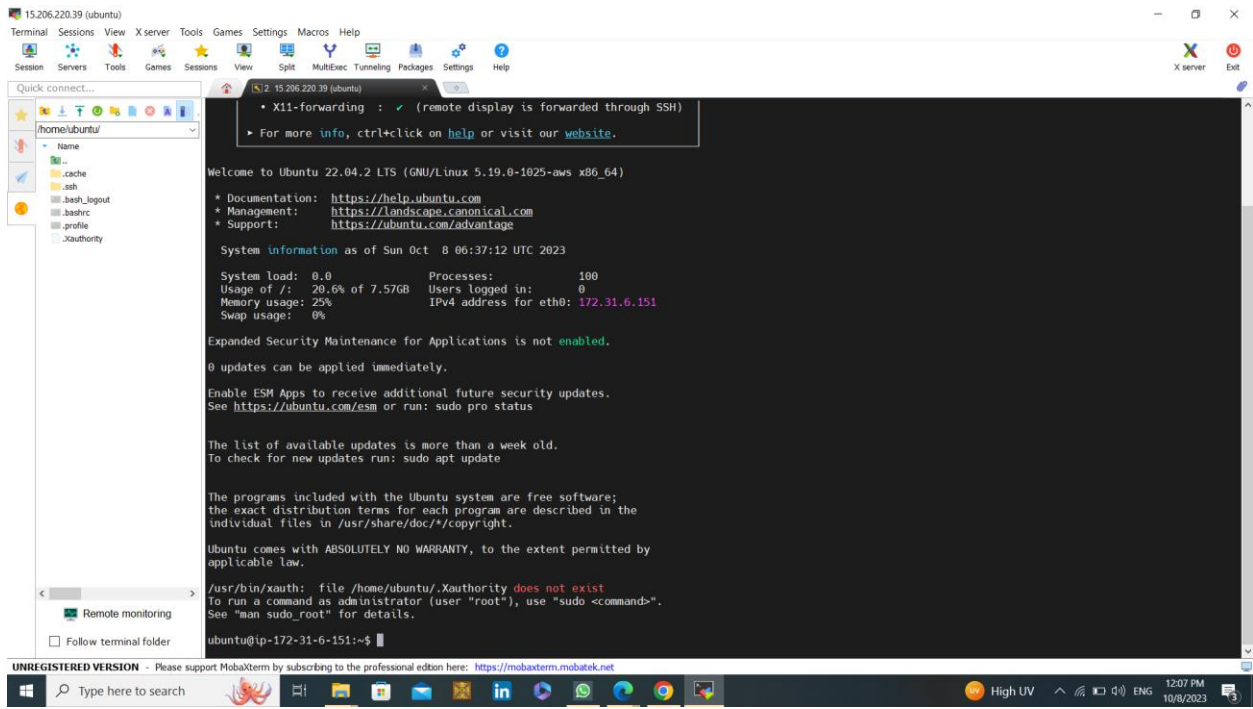
- Choose the "Ubuntu" AMI.
- Select the "t2.micro" instance type for both instances.
- In the security group settings, create a new security group or use an existing one.

Review and Launch the Instance.



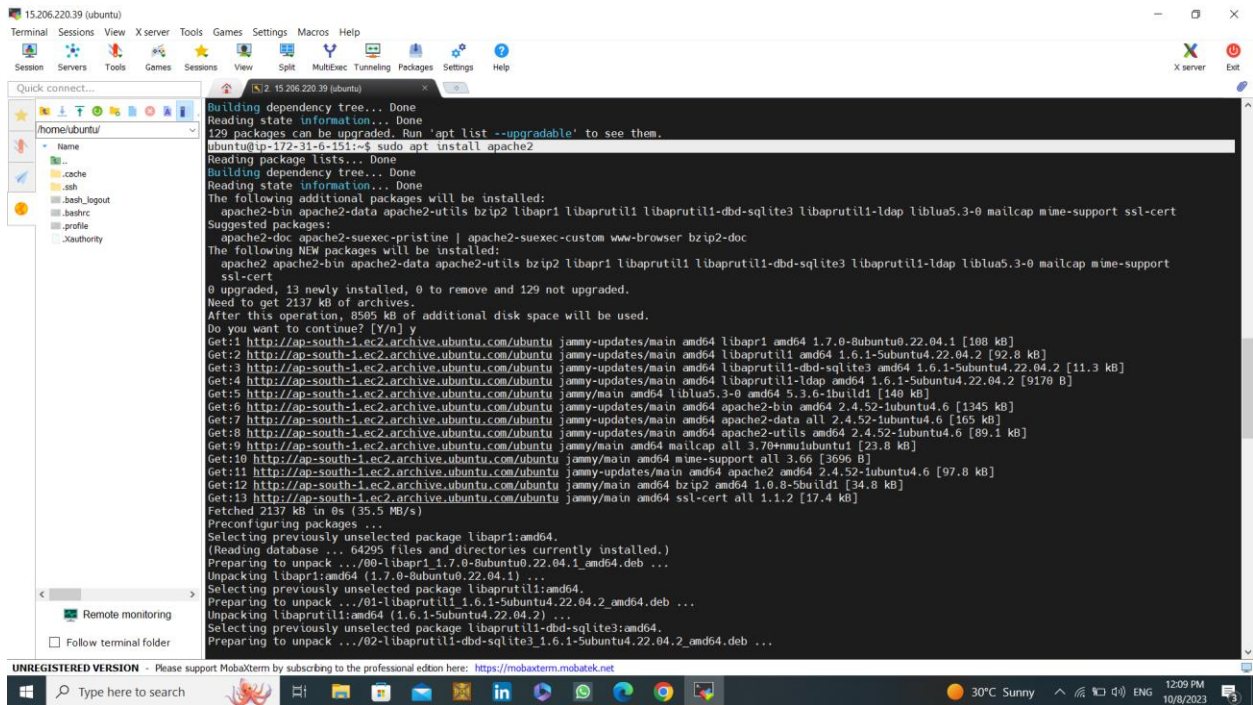
STEP 3: Access the EC2 Instance:

Once the instance is running, connect to it using SSH.

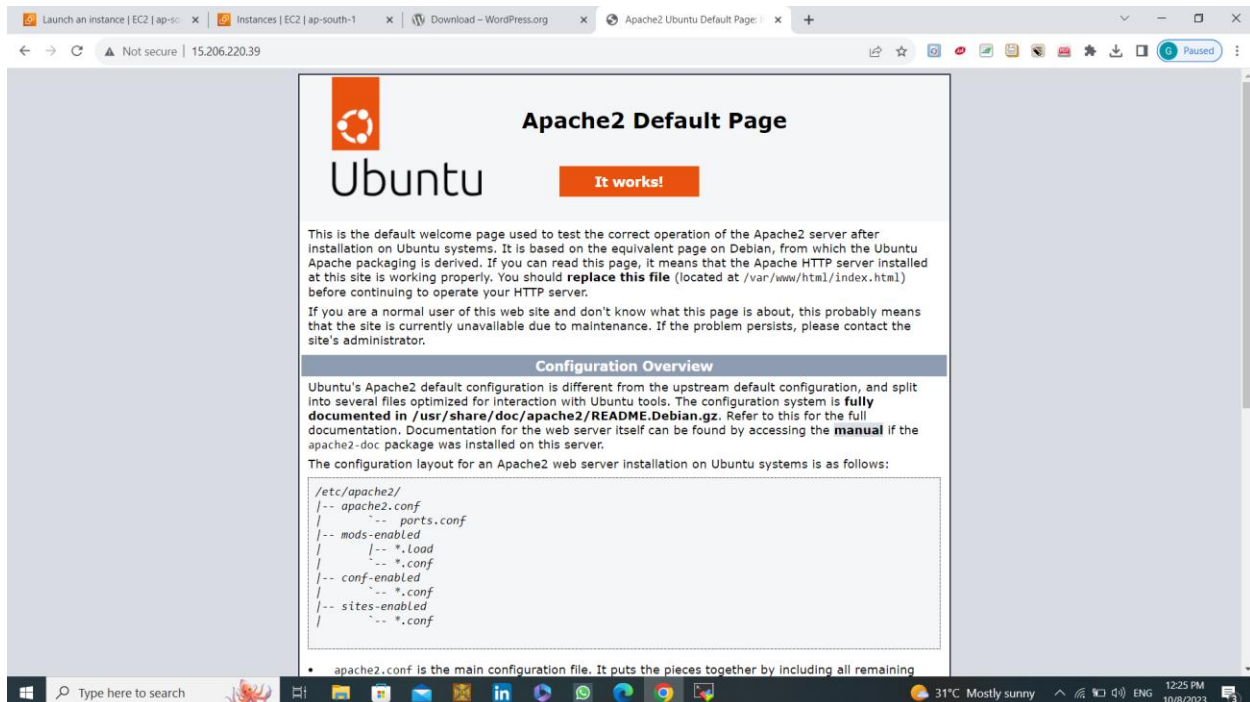


STEP 4: Install Apache web server on my instance:

#sudo apt install apache2



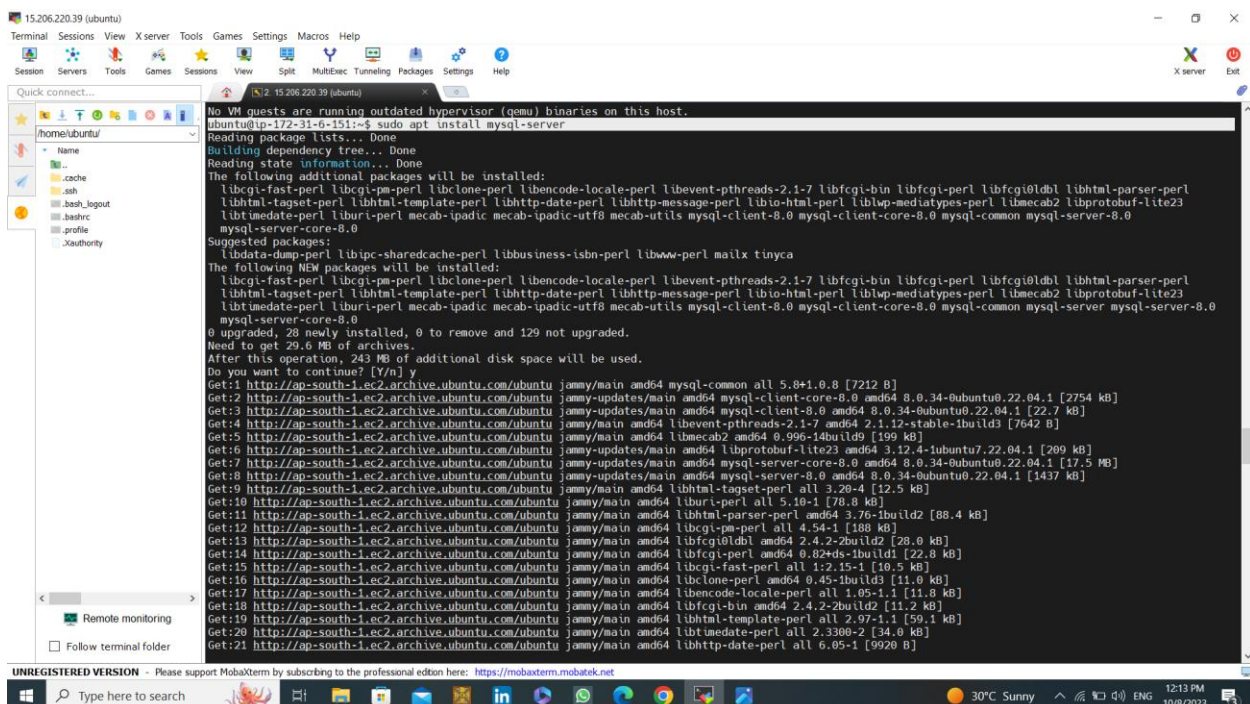
If you have to cross check your web server is running or not do http://YourIPV4 in a new tab and enter:



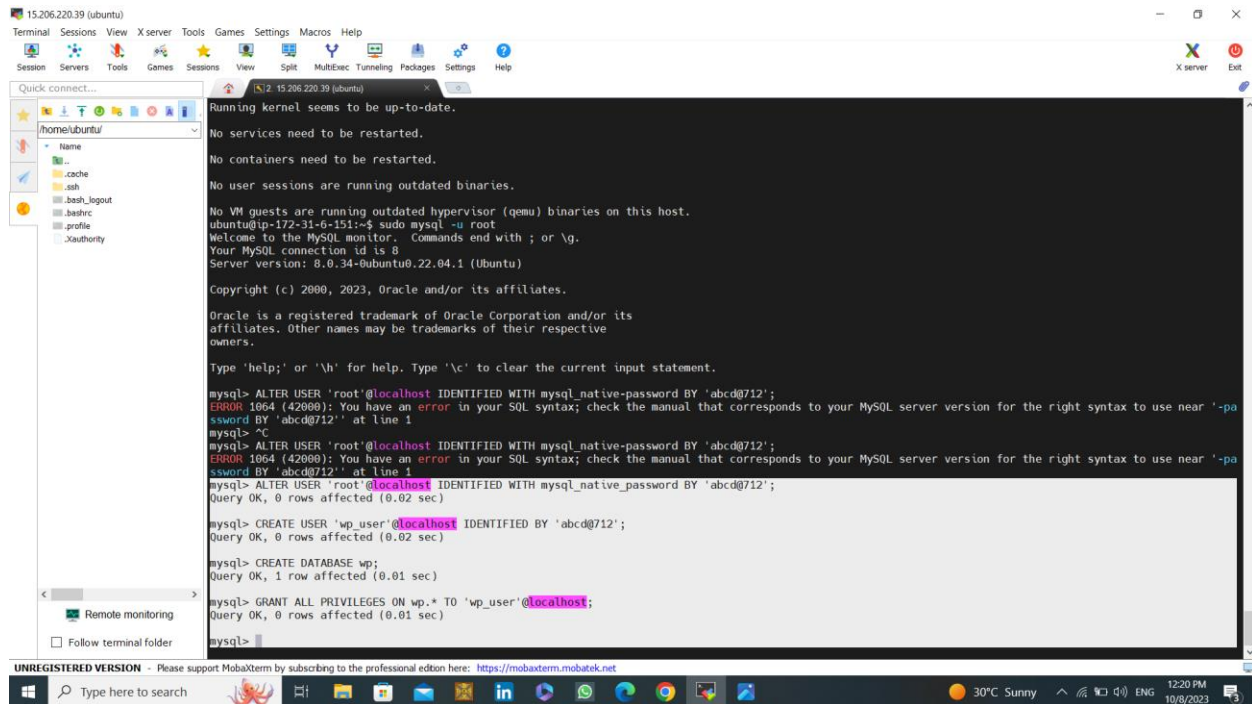
If you see a page like this its means your apache is running and install successfully.

STEP 5: Installing MySQL:

#sudo apt install mysql-server



During installation, you'll be prompted to set a MySQL root password, Change the authentication plugin to following commands:



The screenshot shows a terminal window titled '15.206.220.39 (ubuntu)' with a menu bar (Terminal, Sessions, View, X server, Tools, Games, Settings, Macros, Help) and a toolbar. On the left is a file explorer showing the home directory of 'ubuntu'. The terminal output shows the following sequence of commands and responses:

```
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-151:~$ sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.34-0ubuntu0.22.04.1 (Ubuntu)

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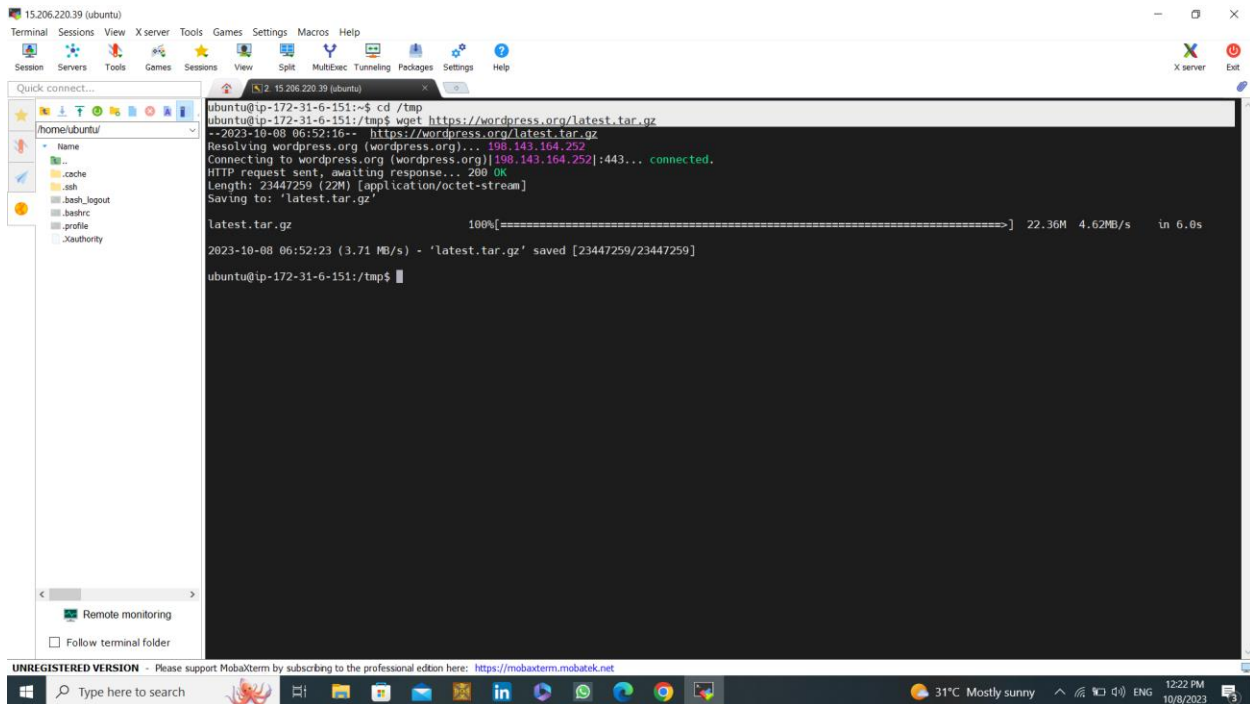
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> ALTER USER 'root'@localhost IDENTIFIED WITH mysql_native_password BY 'abcd@712';
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '-pa
ssword BY 'abcd@712'' at line 1
mysql> ^C
mysql> ALTER USER 'root'@localhost IDENTIFIED WITH mysql_native_password BY 'abcd@712';
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '-pa
ssword BY 'abcd@712'' at line 1
mysql> ALTER USER 'root'@localhost IDENTIFIED WITH mysql_native_password BY 'abcd@712';
Query OK, 0 rows affected (0.02 sec)
mysql>
mysql> CREATE USER 'wp_user'@localhost IDENTIFIED BY 'abcd@712';
Query OK, 0 rows affected (0.02 sec)
mysql>
mysql> CREATE DATABASE wp;
Query OK, 1 row affected (0.01 sec)
mysql>
mysql> GRANT ALL PRIVILEGES ON wp.* TO 'wp_user'@localhost;
Query OK, 0 rows affected (0.01 sec)
mysql>
```

- ✓ Now configuration of MySQL server to login : `#sudo mysql -u root`
- ✓ `#ALTER USER 'root'@localhost IDENTIFIED WITH mysql_native_password BY 'YourPassword';` (Use a strong Password that harder to guess)
- ✓ `#After that create a new user : CREATE USER 'wp_user'@localhost IDENTIFIED BY 'YourPassword';`
- ✓ Create a database : `#CREATE DATABASE wp;`
- ✓ Assign all the privileges, use : `#GRANT ALL PRIVILEGES ON wp.* TO 'wp_user'@localhost;`

STEP 6 : Installing WordPress:

- ✓ Copy the download link from:
[wordpress.org] (<https://wordpress.org/download/>)
- ✓ Come to the tmp directory: `#cd /tmp`
- ✓ Download the WordPress file, use
`#wget(https://wordpress.org/latest.tar.gz)`



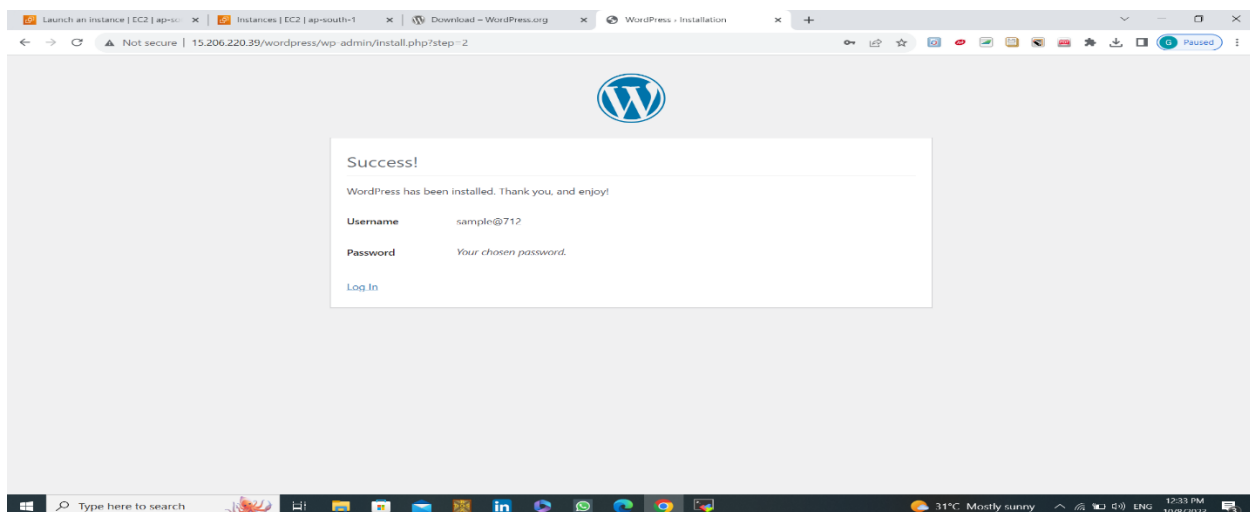
```
ubuntu@ip-172-31-6-151:~$ cd /tmp
ubuntu@ip-172-31-6-151:/tmp$ wget https://wordpress.org/latest.tar.gz
--2023-10-08 06:52:16-- https://wordpress.org/latest.tar.gz
Resolving wordpress.org (wordpress.org)... 198.143.164.252
Connecting to wordpress.org (wordpress.org)|198.143.164.252|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 23447259 (22M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz                               100%[=====] 22.36M  4.62MB/s   in 6.0s
2023-10-08 06:52:23 (3.71 MB/s) - 'latest.tar.gz' saved [23447259/23447259]

ubuntu@ip-172-31-6-151:/tmp$
```

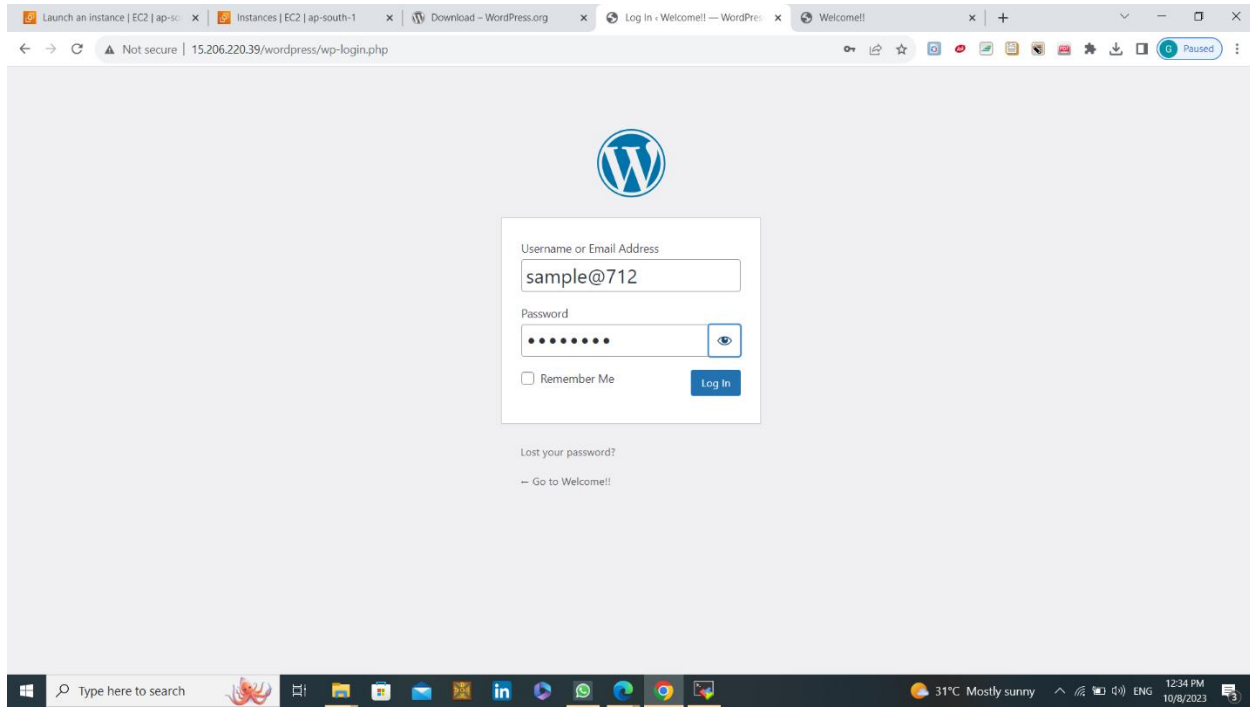
- ✓ unzip the folder use command : `#tar -xvf latest.tar.gz`

WordPress is installed successfully:

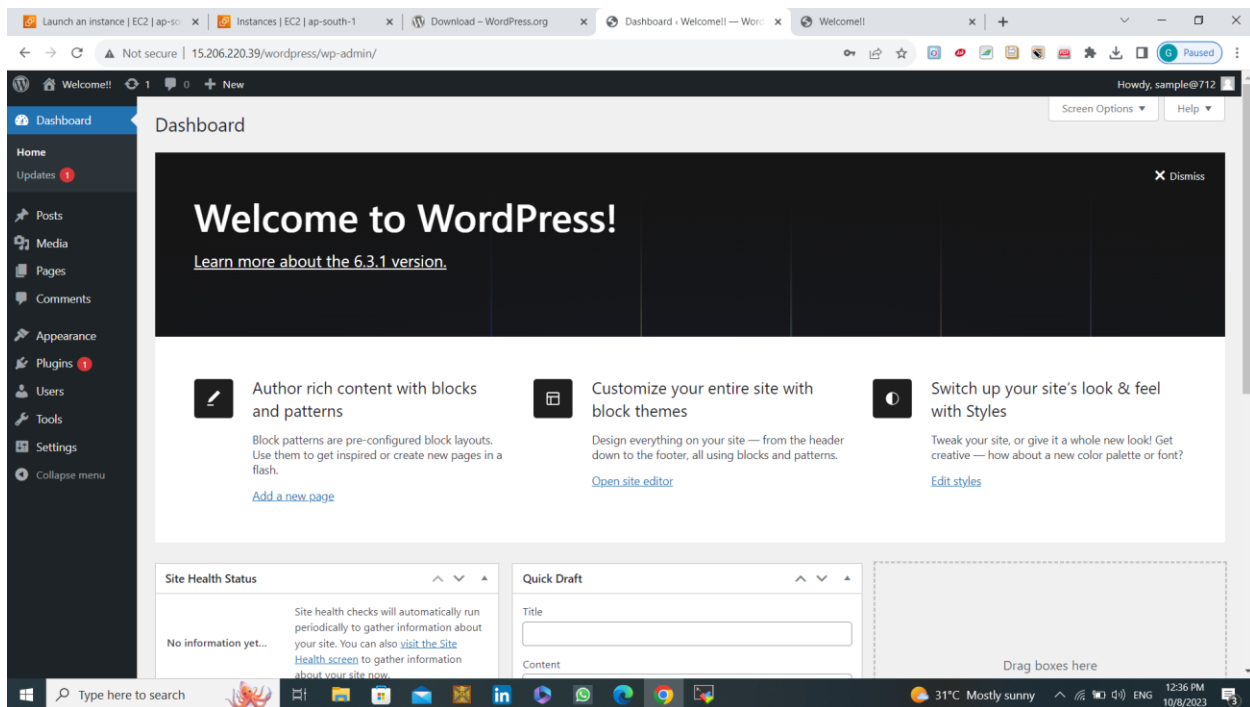


STEP 6: Log into WordPress Admin:

Access your WordPress dashboard by going to your website's URL followed by "/wp-admin" (e.g., IPV4/wp-admin). Log in using your credentials.



WordPress is installed on your EC2 instance:



STEP 7: Create a New Page:

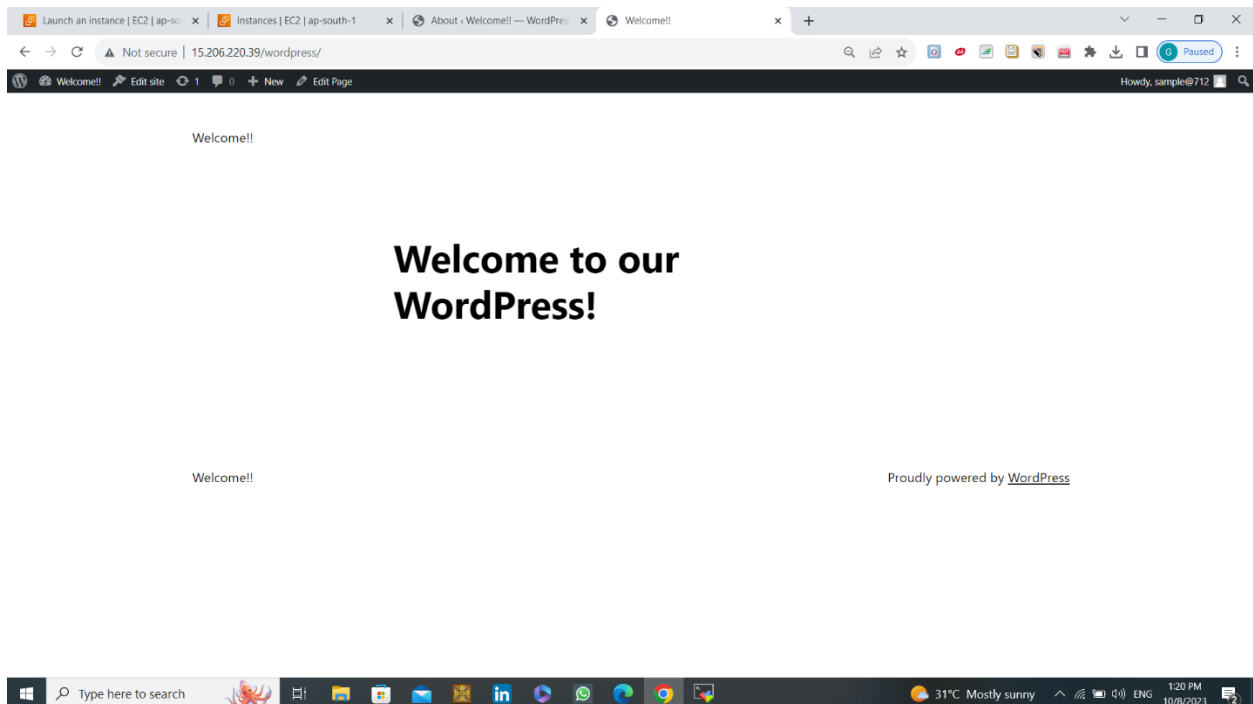
- In the WordPress dashboard, go to "Pages" and click on "Add New" to create a new page.-
- Add a Title: Enter a title for your welcome page. For example, you can use "Welcome to Our Website."

STEP 8: Publish the Page:

- Click the "Publish" button on the right side of the page editor to make your welcome page live.

STEP 9: Set as Homepage:

To do this, go to "Settings" > "Reading" and choose "A static page" under "Front page displays." Select the welcome page you created from the drop-down menu.

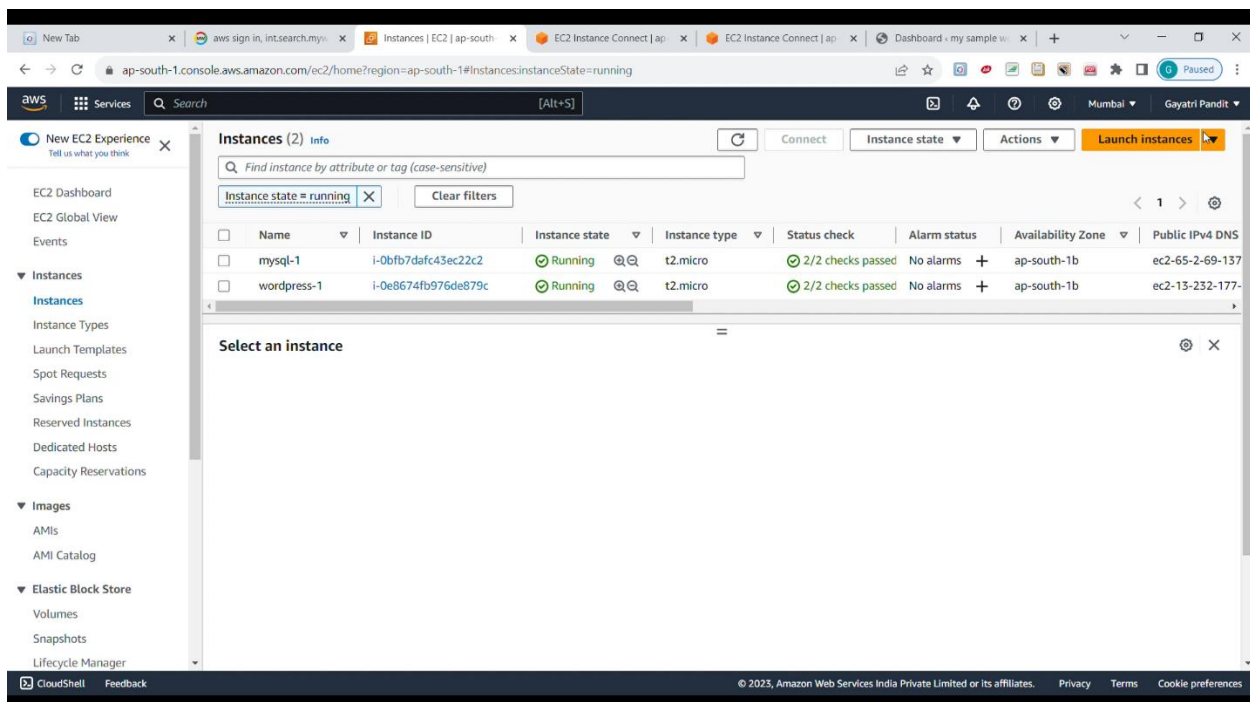


That's it! I am deploying a simple welcome page in WordPress on AWS EC2 instance successfully. You can further enhance and customize it by exploring various plugins and themes to meet your website's specific needs.

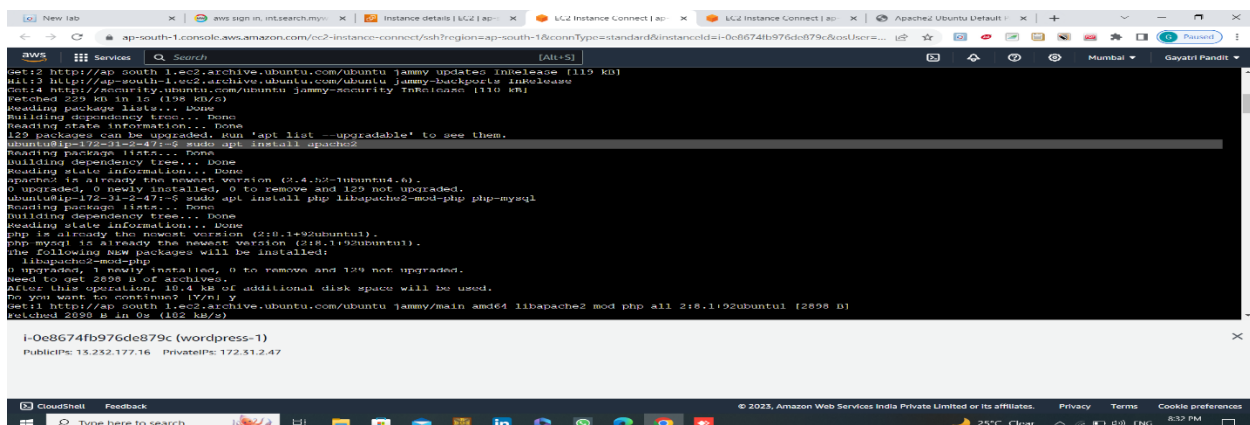
➤ MICROSERVICE:- 2 EC2 INSTANCES, ONE FOR WORDPRESS AND ONE FOR MYSQL

STEP 1: Create an 2 EC2 Instance on AWS

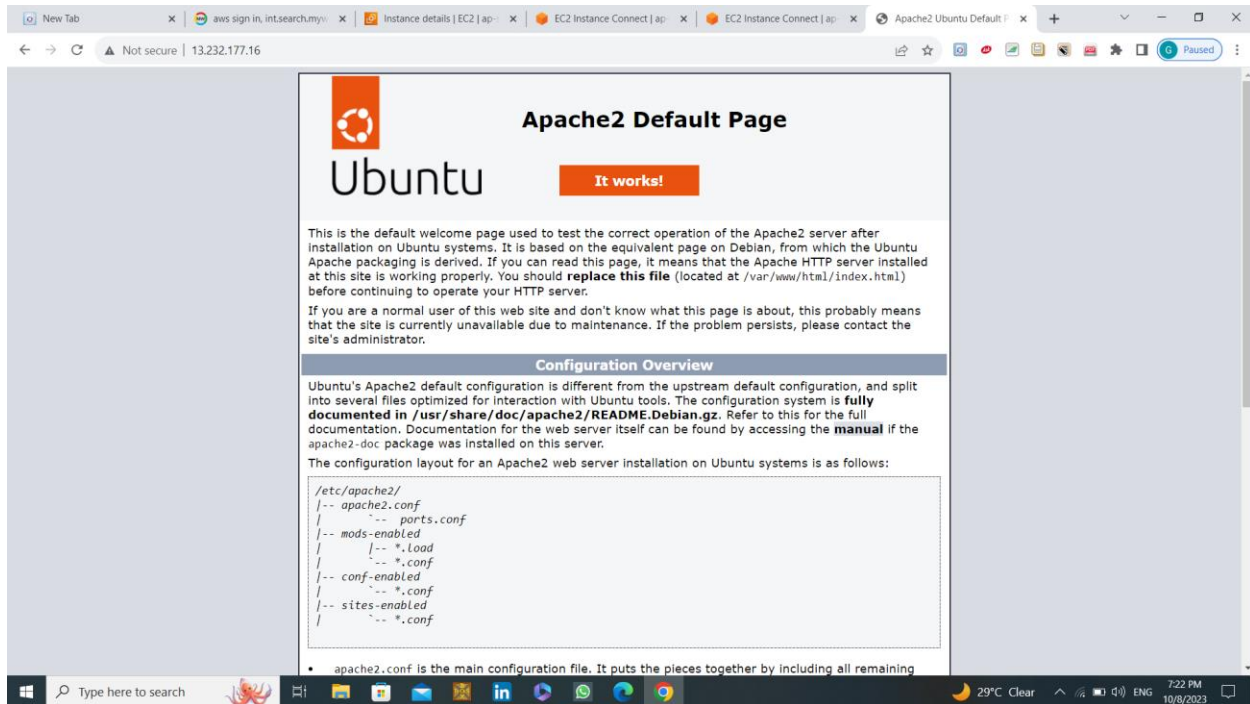
- 1 instance For WordPress and 1 instance for MySQL.
 - Choose the "Ubuntu" AMI.
 - Select the "t2.micro" instance type for both instances.
1. I have created wordpress-1 to deploy the WordPress application.
 2. I have created mysql-1 instance to deploy the MySQL server.



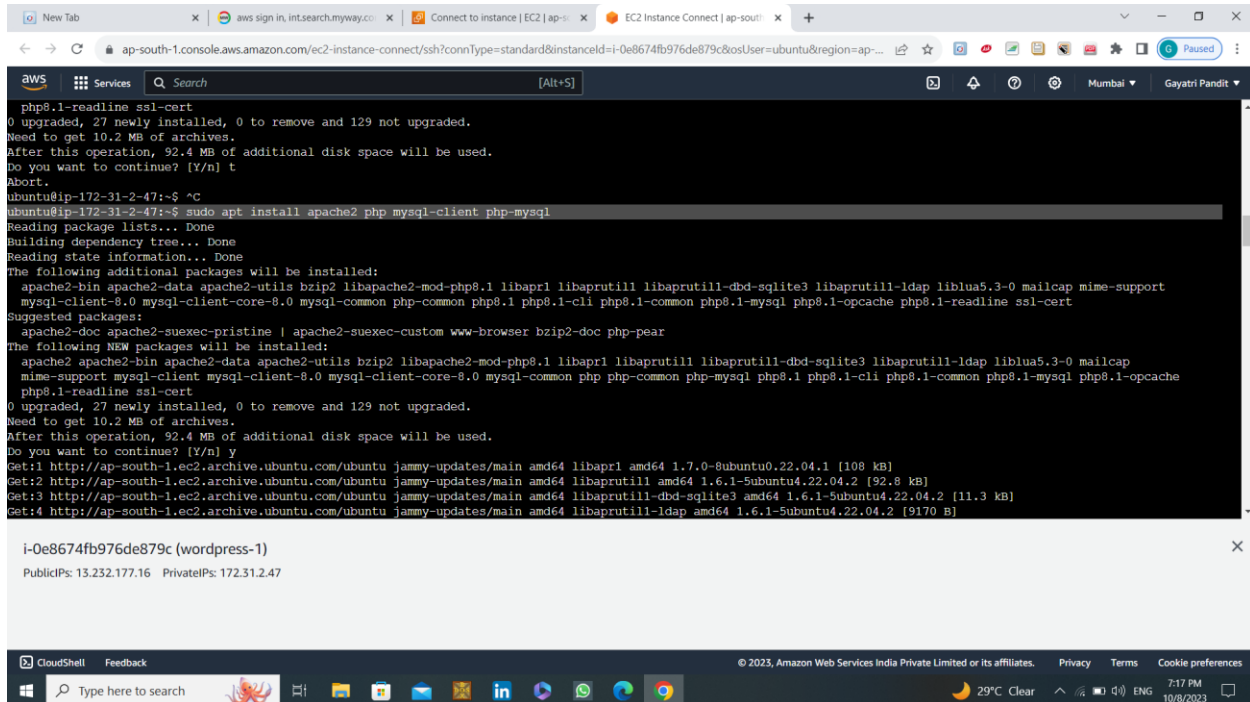
STEP 2: Deploying Wordpress in the created EC2 instance i.e wordpress-1



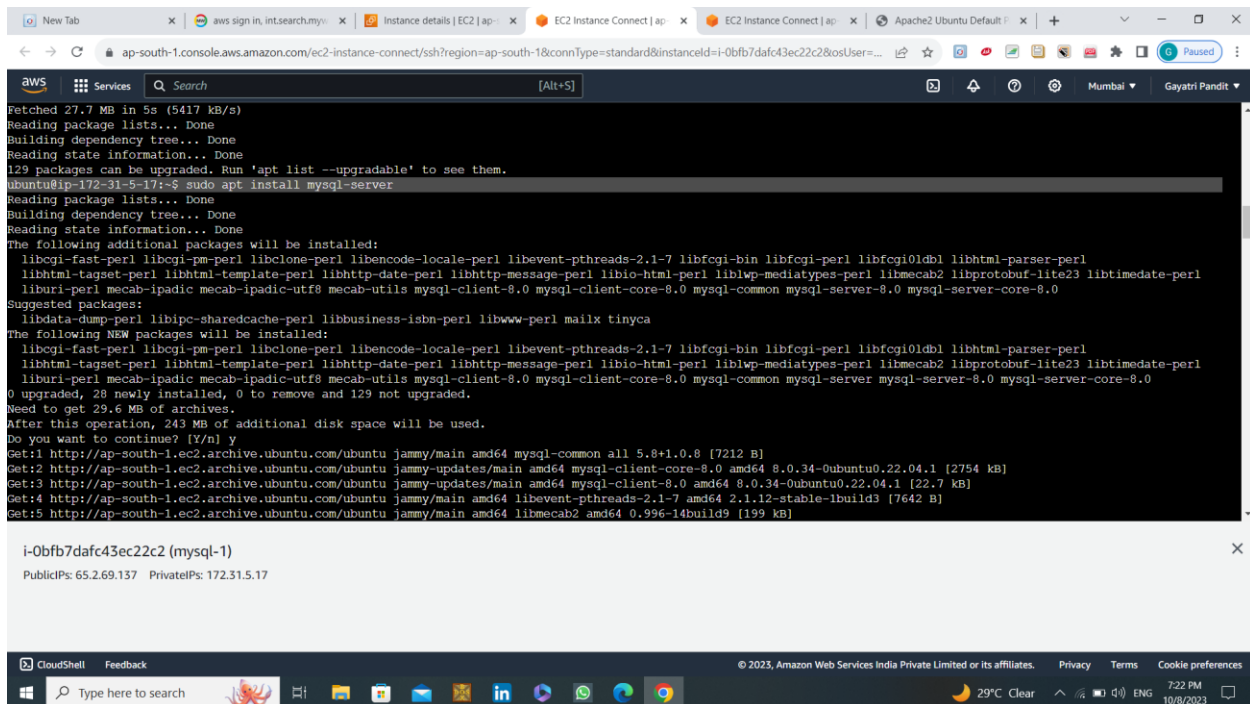
- By browsing the Public IP we can load the web page of the apache2:



- Now we have to **install php**:



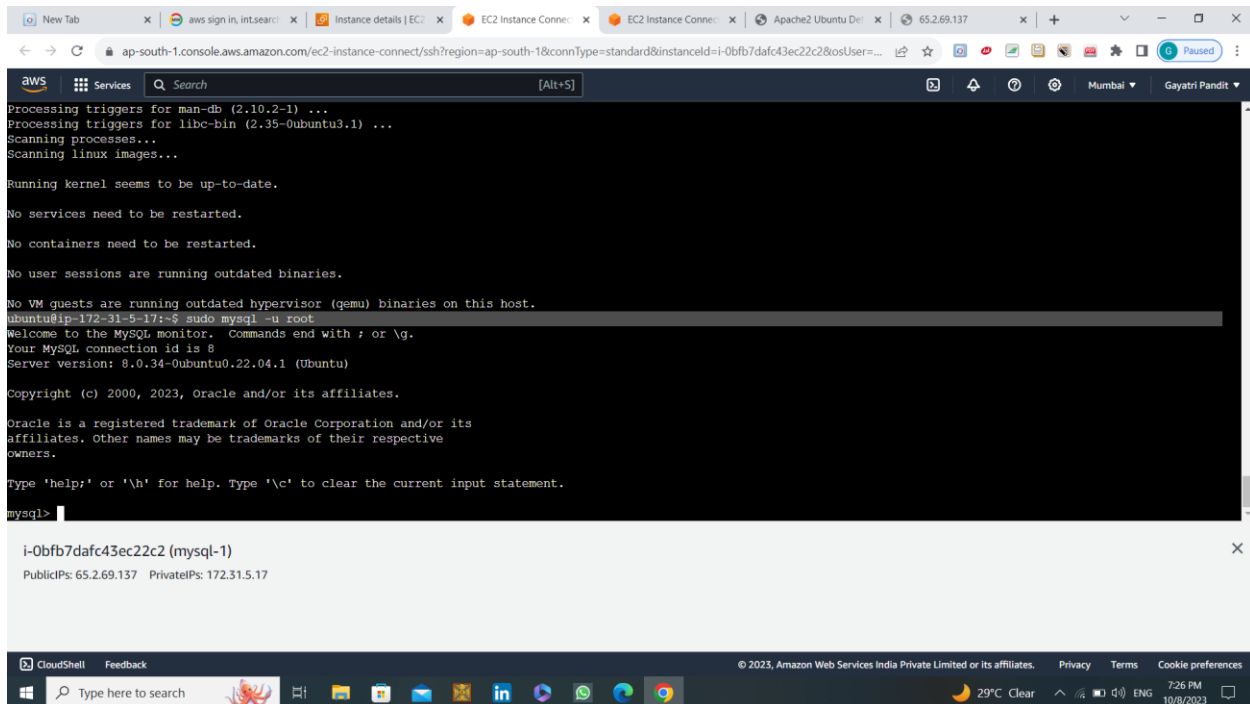
STEP 3: Install MySQL in EC2- Instance: i.e (mysql-1)



```
aws
Services
Search [Alt+S]
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Fetched 27.7 MB in 5s (5417 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
129 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-5-17:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libbcoi-fast-perl libbcoi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl libfcgi0ldbl libhtml-parser-perl
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libmecab2 libprotobuf-lite23 libtimedate-perl
  liburi-perl mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
  libdata-dump-perl libipc-sharedcache-perl libbusiness-isbn-perl libwww-perl mailx tinyca
The following NEW packages will be installed:
  libbcoi-fast-perl libbcoi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl libfcgi0ldbl libhtml-parser-perl
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libmecab2 libprotobuf-lite23 libtimedate-perl
  liburi-perl mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server mysql-server-8.0 mysql-server-core-8.0
0 upgraded, 28 newly installed, 0 to remove and 129 not upgraded.
Need to get 29.6 MB of archives.
After this operation, 243 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mysql-common all 5.8+1.0.8 [7212 B]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-client-core-8.0 amd64 8.0.34-0ubuntu0.22.04.1 [2754 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-client-8.0 amd64 8.0.34-0ubuntu0.22.04.1 [22.7 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libevent-pthreads-2.1-7 amd64 2.1.12-stable-1build3 [7642 B]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libmecab2 amd64 0.996-14build9 [199 kB]
i-0bfb7dafc43ec22c2 (mysql-1)
PublicIPs: 65.2.69.137 PrivateIPs: 172.31.5.17
```

- Creating the database:



```
aws
Services
Search [Alt+S]
Mumbai Gayatri Pandit

Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-5-17:~$ sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.34-0ubuntu0.22.04.1 (Ubuntu)

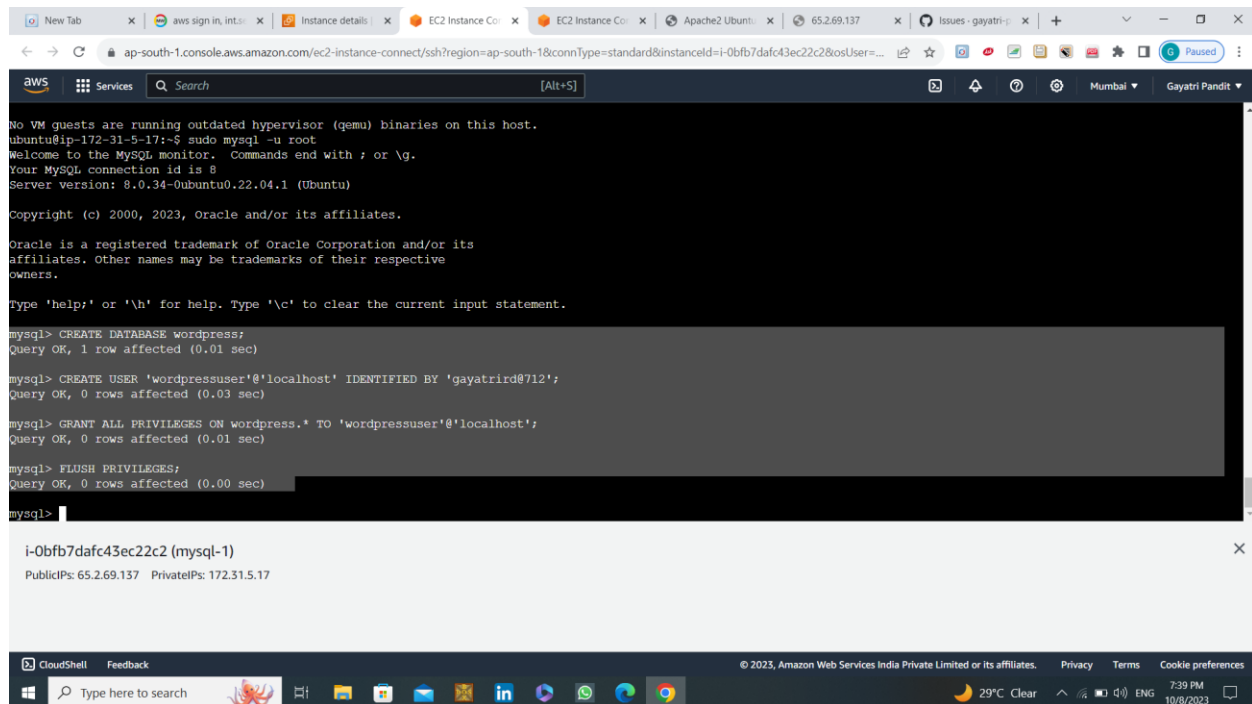
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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Use commands:



The screenshot shows an AWS CloudShell terminal window. The terminal output includes the following commands and their results:

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-5-17:~$ sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.34-0ubuntu0.22.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE wordpress;
Query OK, 1 row affected (0.01 sec)

mysql> CREATE USER 'wordpressuser'@'localhost' IDENTIFIED BY 'gayatrird8712';
Query OK, 0 rows affected (0.03 sec)

mysql> GRANT ALL PRIVILEGES ON wordpress.* TO 'wordpressuser'@'localhost';
Query OK, 0 rows affected (0.01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)

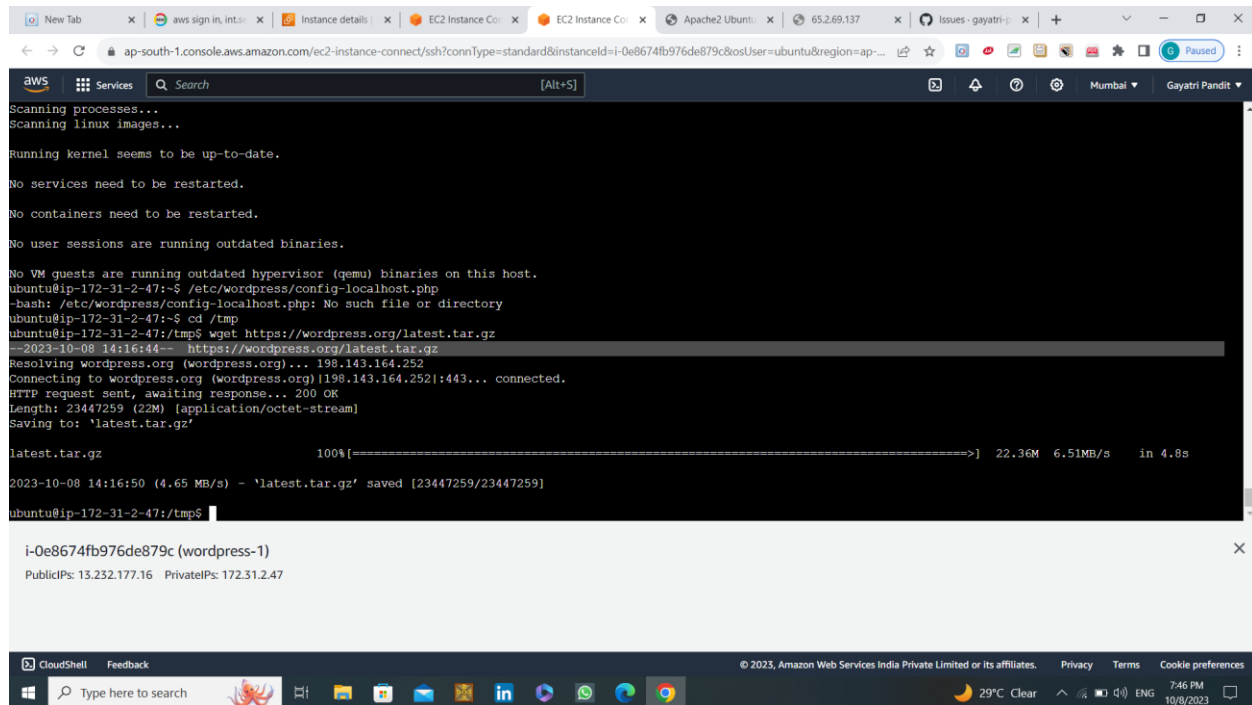
mysql>
```

Below the terminal window, the instance details are shown:

```
i-0bfb7dafc43ec22c2 (mysql-1)
PublicIPs: 65.2.69.137  PrivateIPs: 172.31.5.17
```

STEP 4 : Open the terminal of wordpress-1

- Install WordPress:



The screenshot shows an AWS CloudShell terminal window. The terminal output includes the following commands and their results:

```
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-2-47:~$ /etc/wordpress/config-localhost.php
-bash: /etc/wordpress/config-localhost.php: No such file or directory
ubuntu@ip-172-31-2-47:~$ cd /tmp
ubuntu@ip-172-31-2-47:/tmp$ wget https://wordpress.org/latest.tar.gz
--2023-10-08 14:16:44-- https://wordpress.org/latest.tar.gz
Resolving wordpress.org (wordpress.org)... 198.143.164.252
Connecting to wordpress.org (wordpress.org)[198.143.164.252]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 23447259 (22M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz      100%[=====>] 22.36M  6.51MB/s  in 4.8s

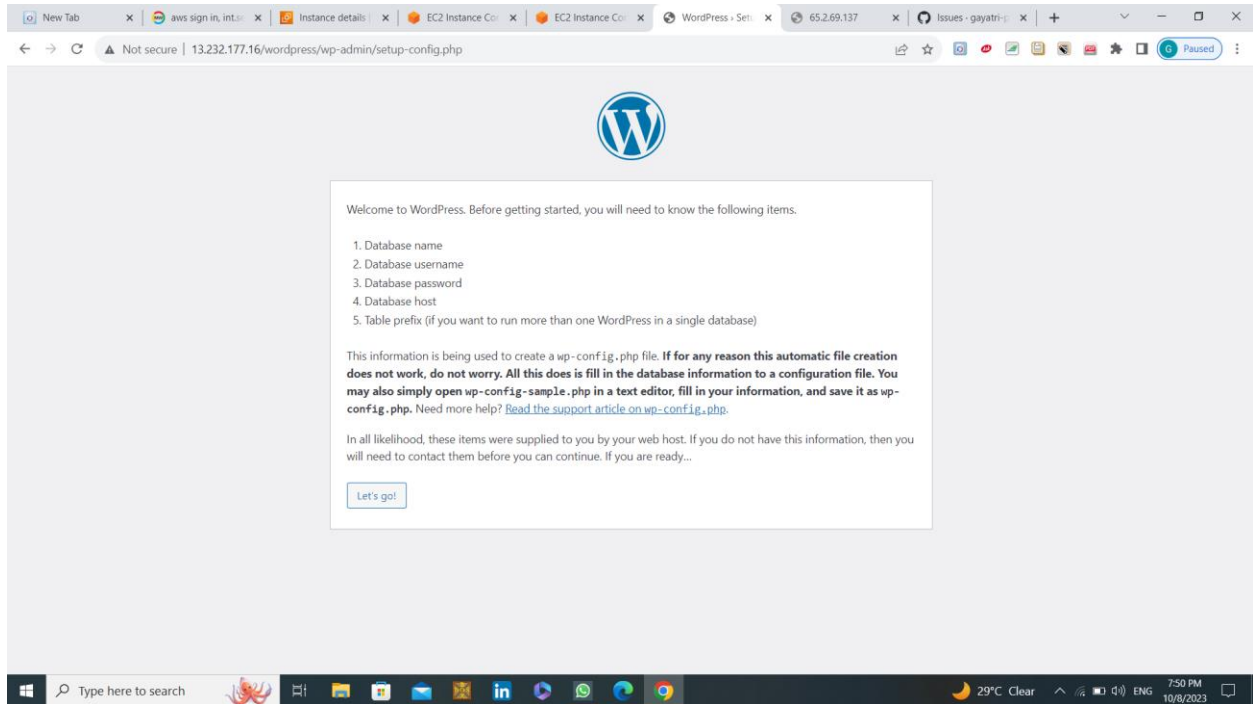
2023-10-08 14:16:50 (4.65 MB/s) - 'latest.tar.gz' saved [23447259/23447259]

ubuntu@ip-172-31-2-47:/tmp$
```

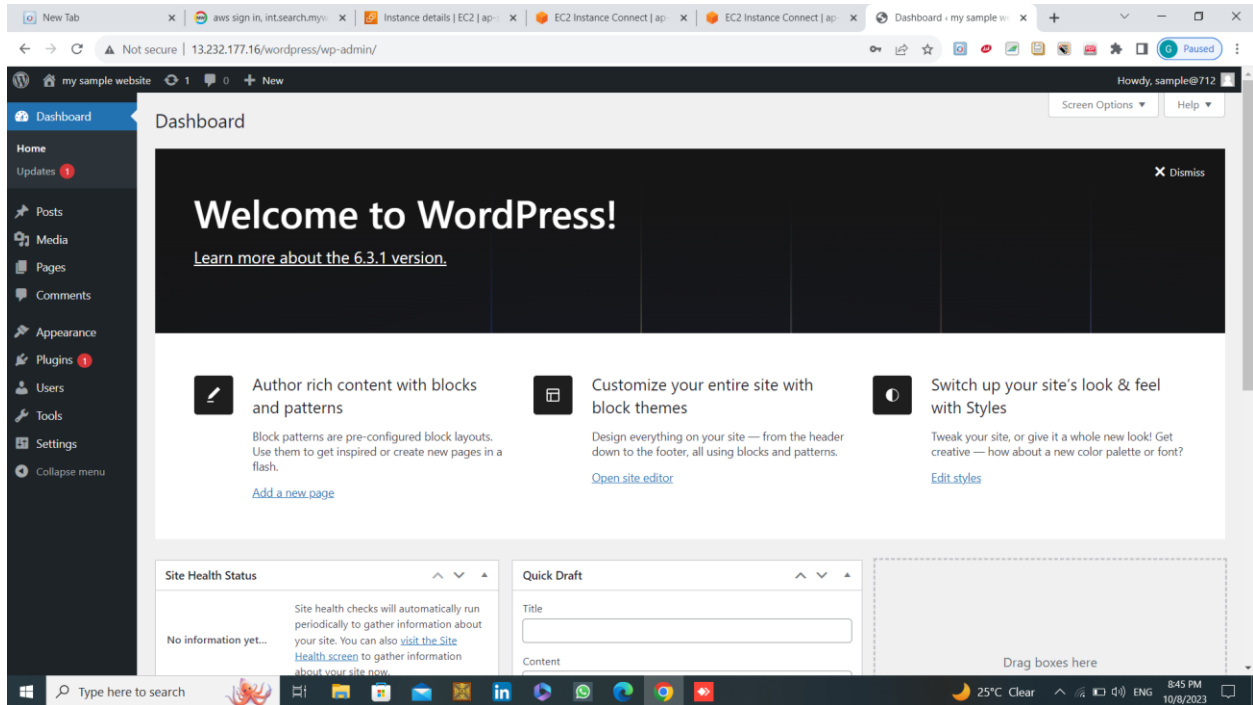
Below the terminal window, the instance details are shown:

```
i-0e8674fb976de879c (wordpress-1)
PublicIPs: 13.232.177.16  PrivateIPs: 172.31.2.47
```

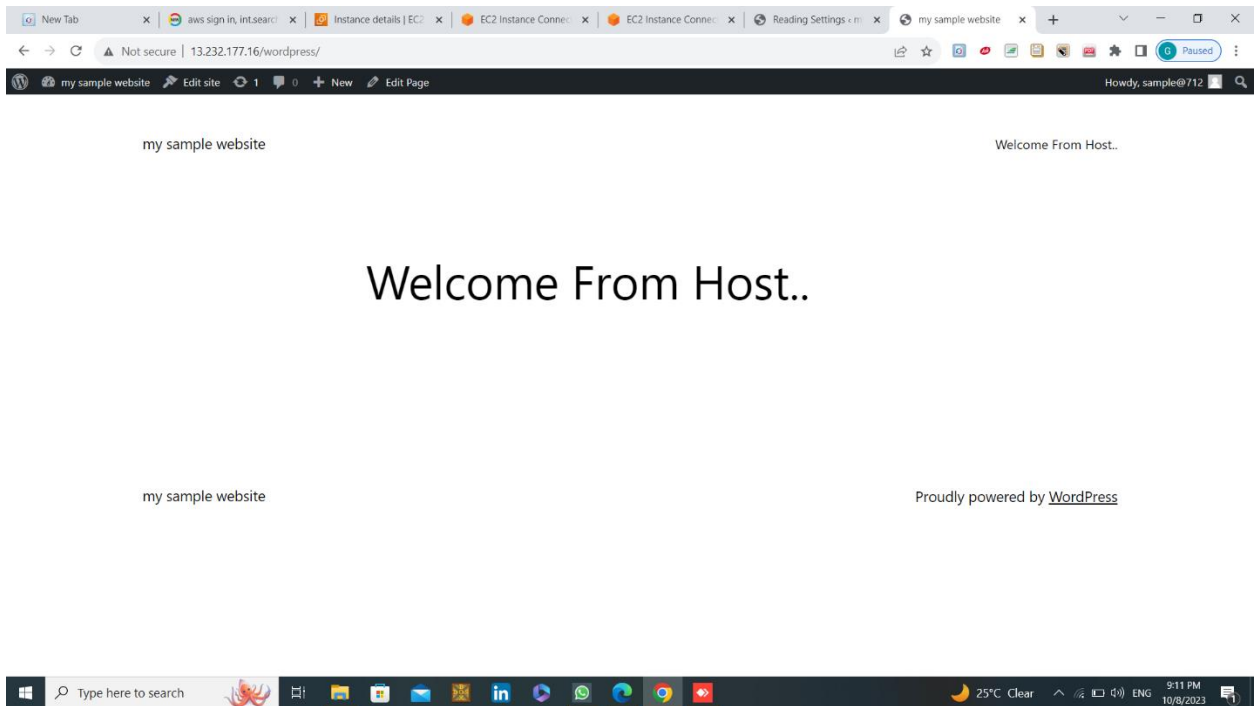
- Change the permissions of the file:
- Now copy the public IP and browse it. To load the WordPress web page.



- Click on submit and run it.
- Now WordPress is successfully installed.



- **Successfully creating a welcome page in WordPress that will be the homepage.**



THANK YOU!

#infotrixx