

Task: Deploy application in monolithic and microservices architecture.

Description: -

- **Task 1: For monolithic** : 1 EC2 instance, deploy wordpress and MYSQL on the same instances.

Create a welcome page in wordpress that will be the homepage.

The screenshot shows the AWS Console Home dashboard. On the left, there's a sidebar with 'Recently visited' links including EC2, Billing and Cost Management, Support, S3, IAM, DynamoDB, and Lambda. To the right, there's a section titled 'Applications (0)' with a 'Create application' button. Below it, there's a message: 'No applications. Get started by creating an application.' At the bottom of the dashboard, there's a footer with weather information (26°C, Partly cloudy), a search bar, and system status icons.

Step1: Login to AWS free tier account. Search for EC2 instance in the dashboard.

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with 'EC2 Dashboard' and sections for 'Events', 'Console-to-Code', 'Instances' (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), and 'New'. The main area has a 'Resources' section showing counts for Instances (running), Auto Scaling Groups, Dedicated Hosts, Elastic IPs, Instances, Key pairs, Load balancers, Placement groups, Security groups, and Volumes. To the right, there's a 'EC2 Free Tier' section with a table showing '2 EC2 free tier offers in use', 'End of month forecast' (0 offers forecasted to exceed free tier limit), and 'Exceeds free tier' (0 offers exceeded and is now pay-as-you-go pricing). There's also a link to 'View Global EC2 resources' and a 'Offer usage (monthly)' section. At the bottom, there's a 'Launch instance' button and a 'Service health' section. The footer is similar to the previous screenshot.

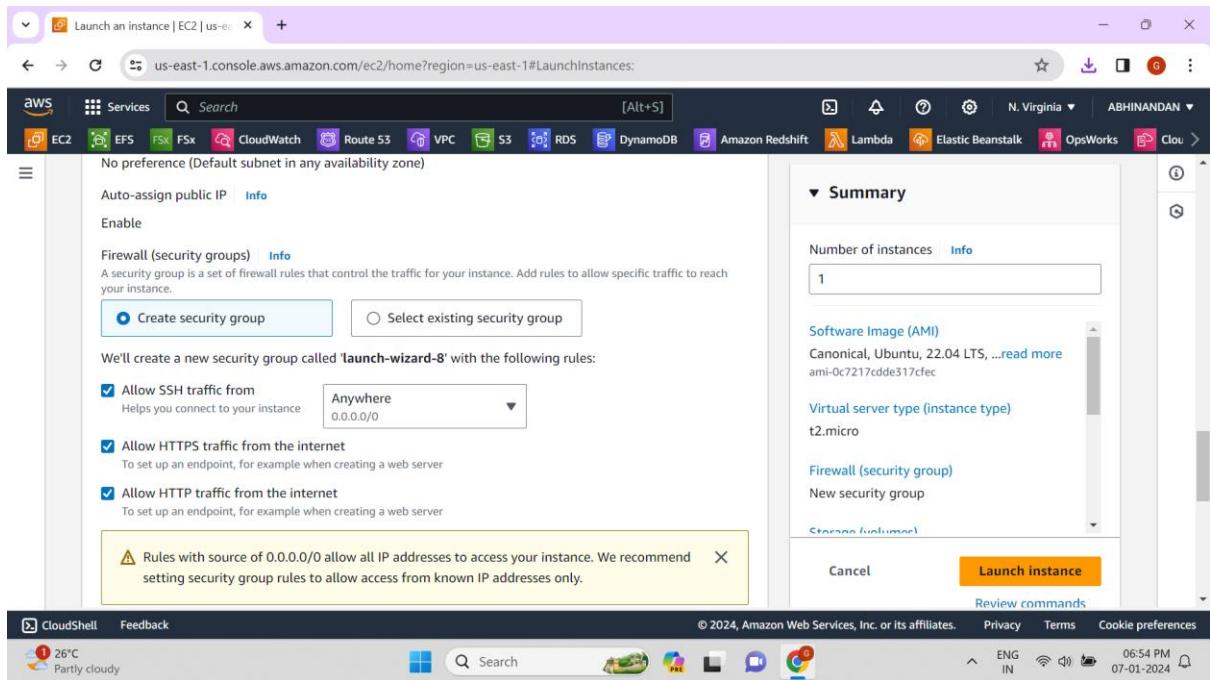
The screenshot shows the 'Launch an instance' wizard in the AWS Management Console. The current step is 'Name and tags'. The 'Name' field contains 'monolithic-website'. The 'Software Image (AMI)' section shows 'Canonical, Ubuntu, 22.04 LTS' selected. The 'Virtual server type (instance type)' is set to 't2.micro'. The 'Firewall (security group)' is 'New security group'. The 'Launch instance' button is highlighted in orange.

Instance Step 2: Create one EC2.

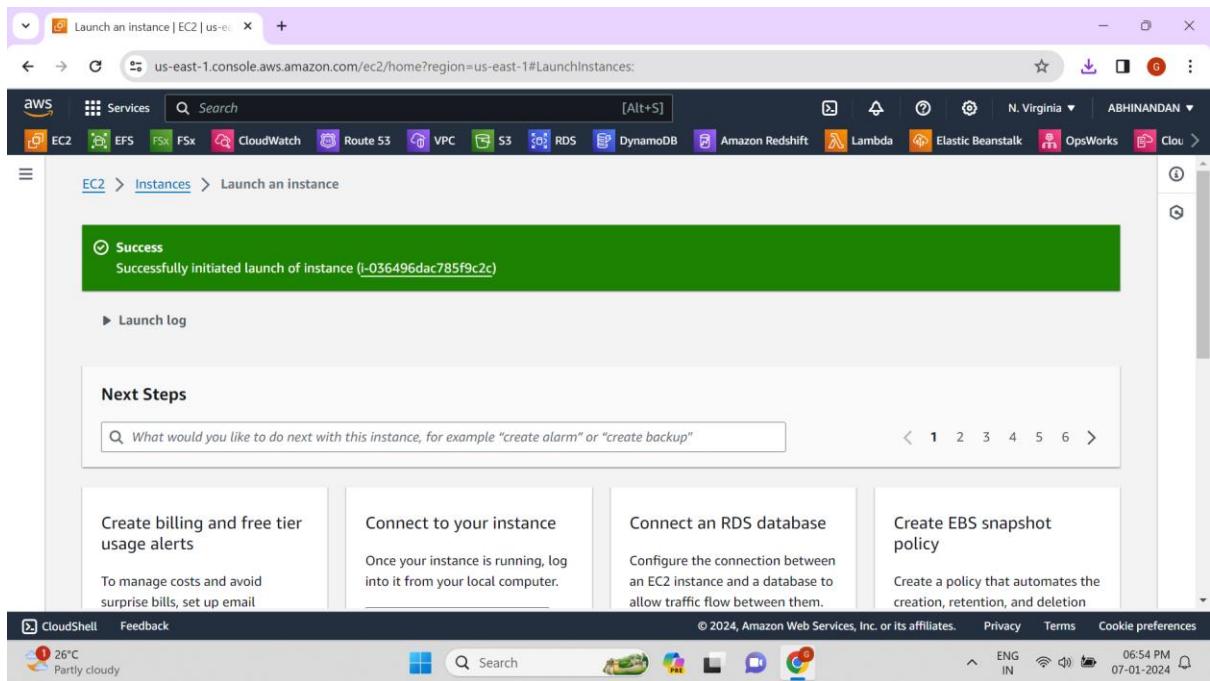
- Name: monolithec2-task1
- AMI: Ubuntu.

The screenshot shows the 'Launch an instance' wizard in the AWS Management Console. The current step is 'Application and OS Images (Amazon Machine Image)'. A search bar at the top right says 'Search our full catalog including 1000s of application and OS images'. Below it, there are two tabs: 'Recents' and 'Quick Start'. Under 'Quick Start', there are five cards: 'Amazon Linux' (AWS logo), 'macOS' (Mac logo), 'Ubuntu' (Ubuntu logo), 'Windows' (Windows logo), and 'Red Hat' (Red Hat logo). To the right of these cards is a 'Browse more AMIs' section with a search icon and a note: 'Including AMIs from AWS, Marketplace and the Community'. The 'Software Image (AMI)' section shows 'Canonical, Ubuntu, 22.04 LTS' selected. The 'Virtual server type (instance type)' is set to 't2.micro'. The 'Firewall (security group)' is 'New security group'. The 'Launch instance' button is highlighted in orange.

- Instance Type: t2.micro
- Key pair: monolith-key (new created)



Step 3: Allowed inbound traffic for SSH, HTTP/HTTPS (port 80 and 443) for WordPress access and port 3306 for MySQL access.



Step 4: The EC2 Instance launched Successfully->Click on connect to further process.

The screenshot shows the AWS Management Console with the URL `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:`. The top navigation bar includes tabs for Instances, Services, and CloudWatch, along with search and filter options. The main content area displays the 'Instances' section with one item listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status
monolithic-we...	i-036496dac785f9c2c	Running	t2.micro	Initializing	View alarms +

A sidebar on the left provides navigation links for EC2 services like EC2 Dashboard, Global View, Events, and Instances. The Instances section is expanded, showing sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, and a New button.

```
ubuntu@ip-172-31-31-131:~  
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1017-aws x86_64)  
  
 * Documentation: https://help.ubuntu.com  
 * Management: https://landscape.canonical.com  
 * Support: https://ubuntu.com/advantage  
  
System information as of Sun Jan  7 13:27:49 UTC 2024  
  
System load: 0.1123046875      Processes:          101  
Usage of /: 20.6% of 7.57GB    Users logged in:      0  
Memory usage: 21%              IPv4 address for eth0: 172.31.31.131  
Swap usage:  0%  
  
Expanded Security Maintenance for Applications is not enabled.  
  
0 updates can be applied immediately.  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/*copyright.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
ubuntu@ip-172-31-31-131:~$
```

```
ubuntu@ip-172-31-31-131: ~
* Support: https://ubuntu.com/advantage

System information as of Sun Jan 7 13:27:49 UTC 2024

System load: 0.1123046875 Processes: 101
Usage of /: 20.6% of 7.57GB Users logged in: 0
Memory usage: 21% IPv4 address for eth0: 172.31.31.131
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-31-131:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]

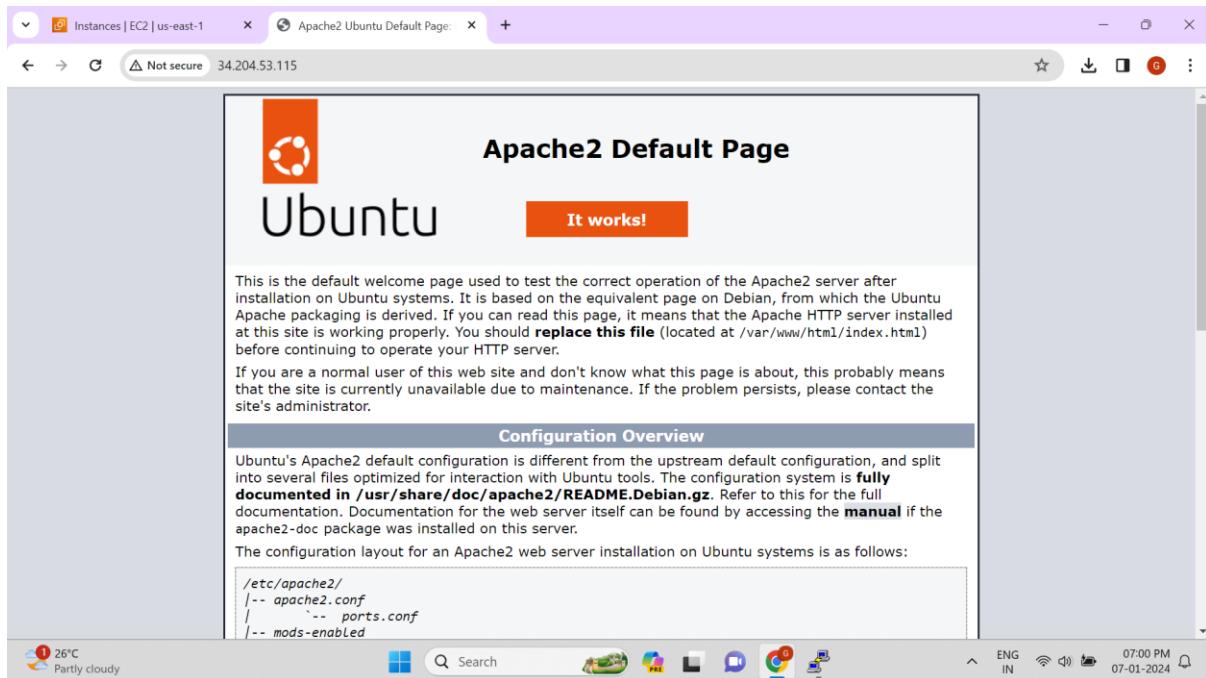
26°C Partly cloudy Search ENG IN 06:58 PM 07-01-2024
```

```
ubuntu@ip-172-31-31-131: ~
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [41.7 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [10.5 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [24.3 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [644 B]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:29 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1056 kB]
Get:30 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [200 kB]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1233 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [202 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [824 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [156 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16.8 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [36.5 kB]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7060 B]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [260 B]
Fetched 28.9 MB in 5s (5507 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-31-131:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap
  mime-support ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser bzip2-doc
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0
  mailcap mime-support ssl-cert
0 upgraded, 13 newly installed, 0 to remove and 32 not upgraded.
Need to get 2139 kB of archives.
After this operation, 8518 kB of additional disk space will be used.
Do you want to continue? [Y/n] y

26°C Partly cloudy Search ENG IN 06:59 PM 07-01-2024
```

Step 7: Installed apache2 server on Ubuntu.

sudo apt install apache2



Step 8: Now copy the public IP of the EC2 and paste on the new tab

The Apache2 Default page open means our wordpress is up and running successfully.

```
ubuntu@ip-172-31-31-131:~$ sudo mysql -u root
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
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> ALTER USER 'root'@localhost IDENTIFIED WITH mysql_native_password BY 'abhi@123';
Query OK, 0 rows affected (0.01 sec)

mysql>
```

Step 9: Intalled MySql Server.

Sudo apt install mysql-server

Step 10: Login to MySql Server

sudo mysql -u root

```
mysql> ALTER USER 'root'@localhost IDENTIFIED WITH mysql_native_password BY 'abhi@123';
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE USER 'abhi_user'@localhost IDENTIFIED BY 'abhi@123';
Query OK, 0 rows affected (0.03 sec)

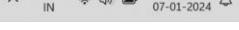
mysql>
```

Step 11: Change authentication plugin to mysql_native_password (Choose strong Password)

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

mysql> GRANT ALL PRIVILEGES ON abhi.* TO 'abhi_user'@localhost;
Query OK, 0 rows affected (0.00 sec)

mysql>
```



Step 12: Create new database user for wordpress

```
ubuntu@ip-172-31-31-131:/tmp
Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
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> ALTER USER 'root'@localhost IDENTIFIED WITH mysql_native_password BY 'abhi@l23';
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE USER 'abhi_user'@localhost IDENTIFIED BY 'abhi@l23';
Query OK, 0 rows affected (0.03 sec)

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

mysql> GRANT ALL PRIVILEGES ON abhi.* TO 'abhi_user'@localhost;
Query OK, 0 rows affected (0.00 sec)

mysql> exit
Bye
ubuntu@ip-172-31-31-131:~$ cd /tmp
ubuntu@ip-172-31-31-131:/tmp$ wget https://wordpress.org/latest.tar.gz
--2024-01-07 13:48:36-- 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: 24479697 (23M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz          100%[=====] 23.34M 36.3MB/s   in 0.6s

2024-01-07 13:48:37 (36.3 MB/s) - 'latest.tar.gz' saved [24479697/24479697]

ubuntu@ip-172-31-31-131:/tmp$
```



Step 13: Create a database for wordpress.

Step 14: Grant all Privileges on the database ‘wordpress’ to the newly created user.

```
ubuntu@ip-172-31-31-131:~$ cd /tmp
ubuntu@ip-172-31-31-131:/tmp$ wget https://wordpress.org/latest.tar.gz
--2024-01-07 13:48:36-- 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: 24479697 (23M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz          100%[=====] 23.34M 36.3MB/s   in 0.6s

2024-01-07 13:48:37 (36.3 MB/s) - 'latest.tar.gz' saved [24479697/24479697]

ubuntu@ip-172-31-31-131:/tmp$ ls
latest.tar.gz
snap-private-tmp
systemd-private-25c85eaced9a462cbd6d9466d25ed30d-apache2.service-ZBCpKT
systemd-private-25c85eaced9a462cbd6d9466d25ed30d-chrony.service-R0Sm4
systemd-private-25c85eaced9a462cbd6d9466d25ed30d-systemd-logind.service-jz4u0o
systemd-private-25c85eaced9a462cbd6d9466d25ed30d-systemd-resolved.service-2eZoka
tmp.NYDjmcBK0b
ubuntu@ip-172-31-31-131:/tmp$
```



Step 15: on terminal type command as:

```
cd /tmp
```

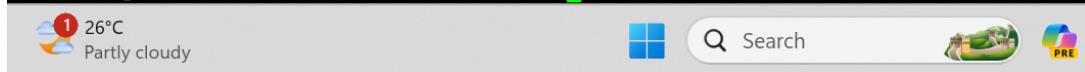
```
wget https://wordpress.org/latest.tar.gz
```

Step 16: Extract the zip file.

Step 17: Now WordPress is successfully installed.

```
ls
```

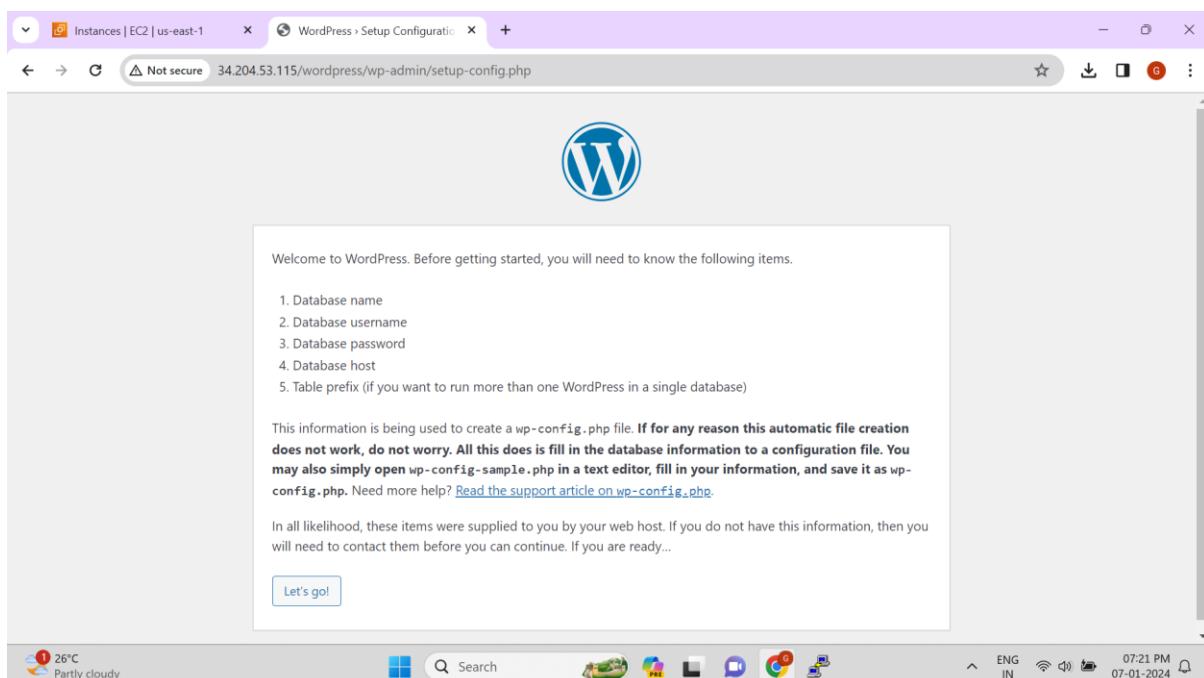
```
ubuntu@ip-172-31-31-131:/tmp$ sudo mv wordpress/ /var/www/html/
ubuntu@ip-172-31-31-131:/tmp$ cd /var/www/html/
ubuntu@ip-172-31-31-131:/var/www/html$ ls
index.html  wordpress
ubuntu@ip-172-31-31-131:/var/www/html$
```



Step 18: wordpress file contain index.html

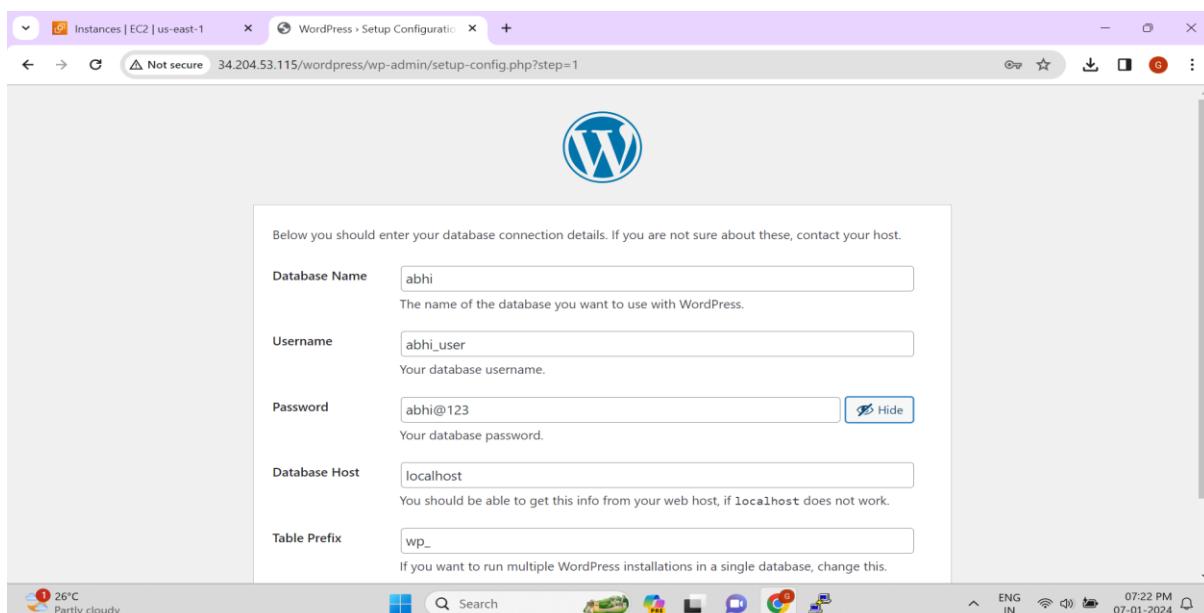
Step 19: Now copy the public IP of the EC2 and paste on the new tab as below,

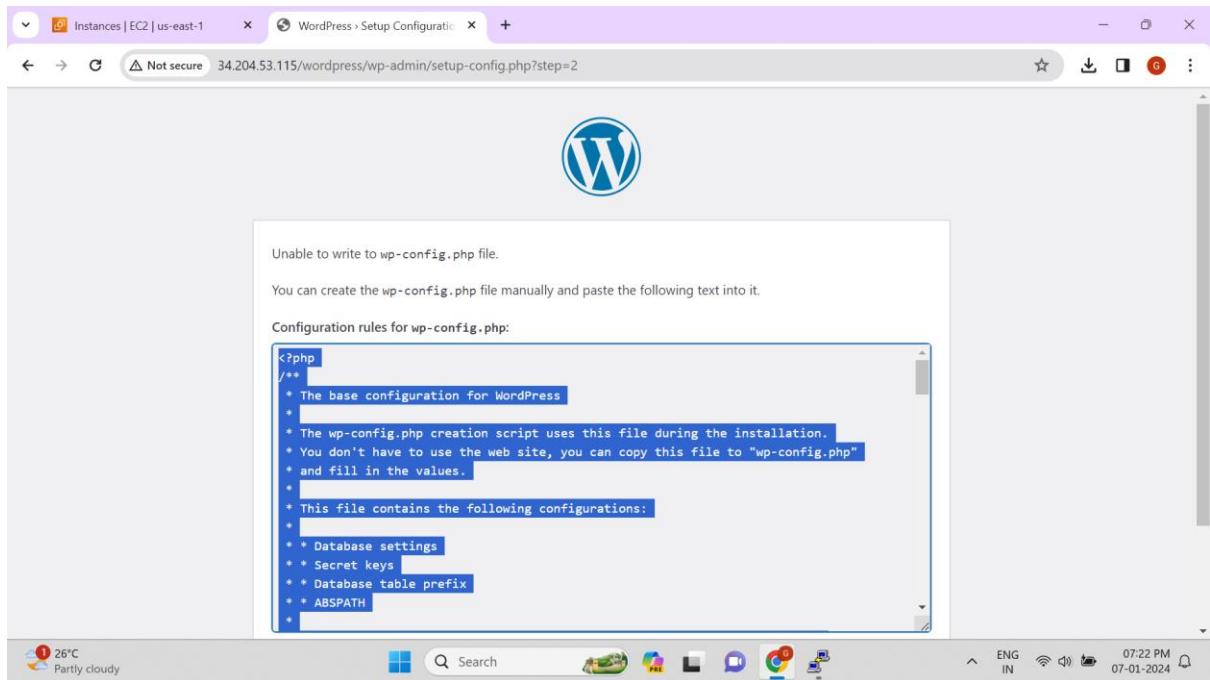
<http://<public-ip-of-ec2>/wordpress>



Step 20: go to next step and fill all details – database name, username & password.

Click on submit.





Step 21: wp-config.php error occur to fix it copy the code below.

```
Ubuntu@ip-172-31-31-131:~/var/www/html/wordpress
GNU nano 6.2                               wp-config.php *
*/
define( 'WP_DEBUG', false );

/* Add any custom values between this line and the "stop editing" line. */

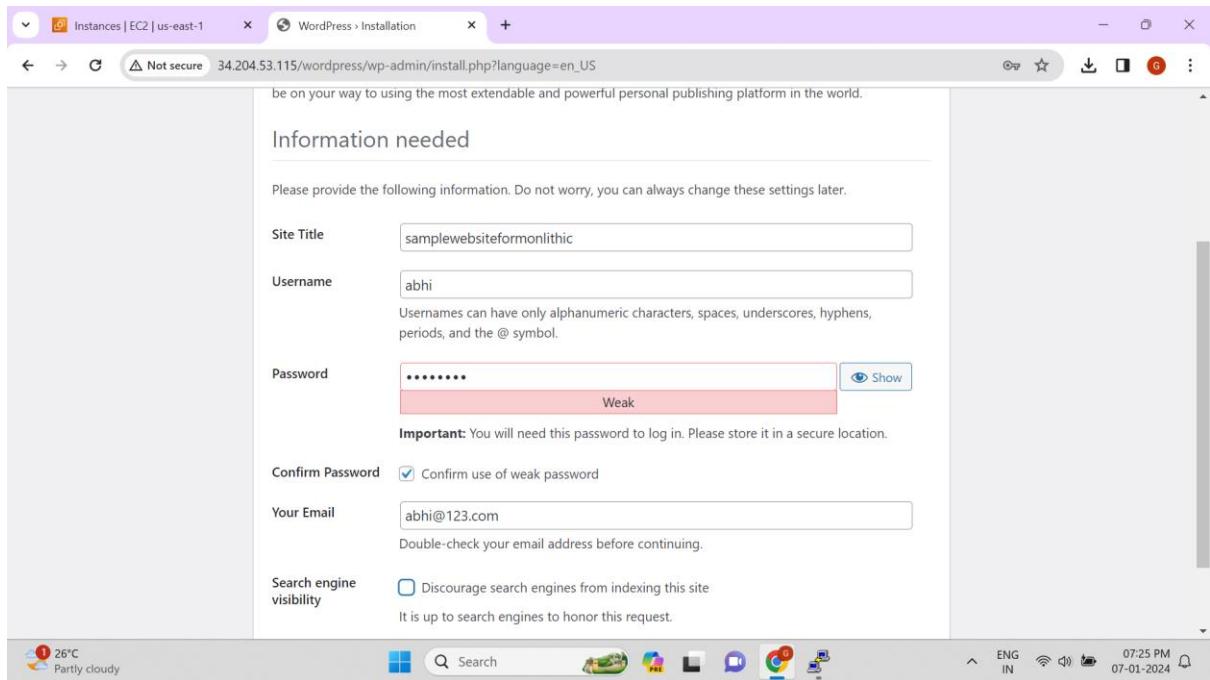
/* That's all, stop editing! Happy publishing. */

/** Absolute path to the WordPress directory. */
if ( ! defined( 'ABSPATH' ) ) {
    define( 'ABSPATH', __DIR__ . '/' );
}

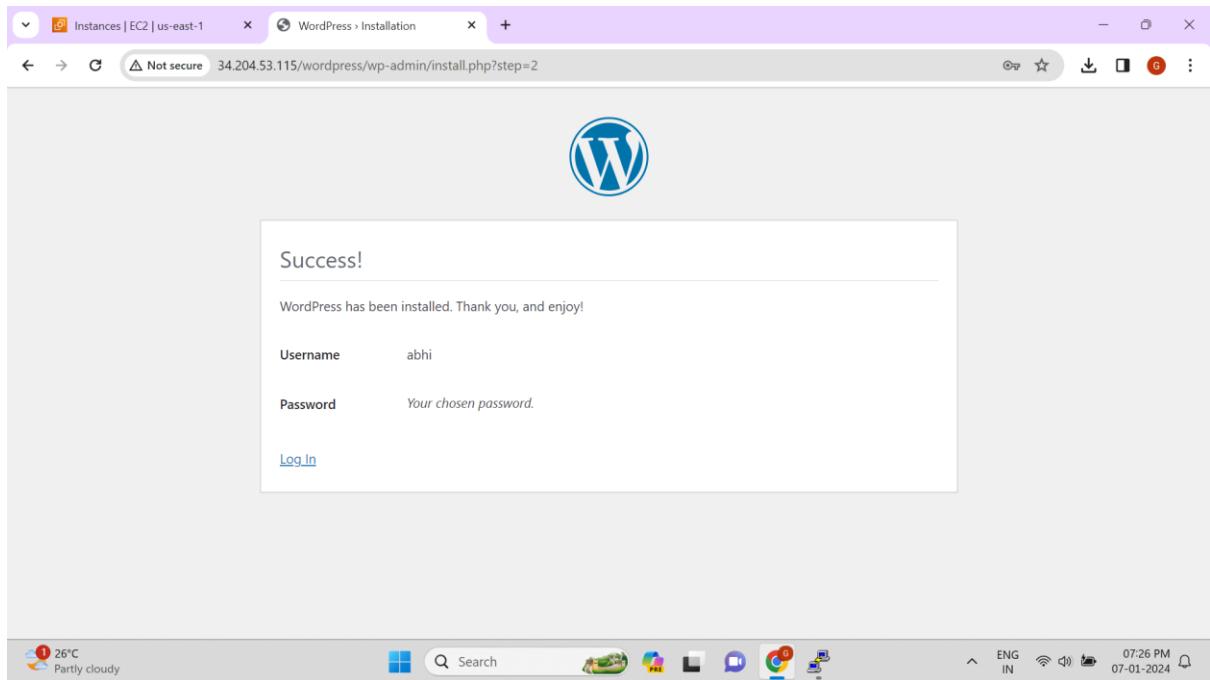
/** Sets up WordPress vars and included files. */
require_once ABSPATH . 'wp-settings.php';

```

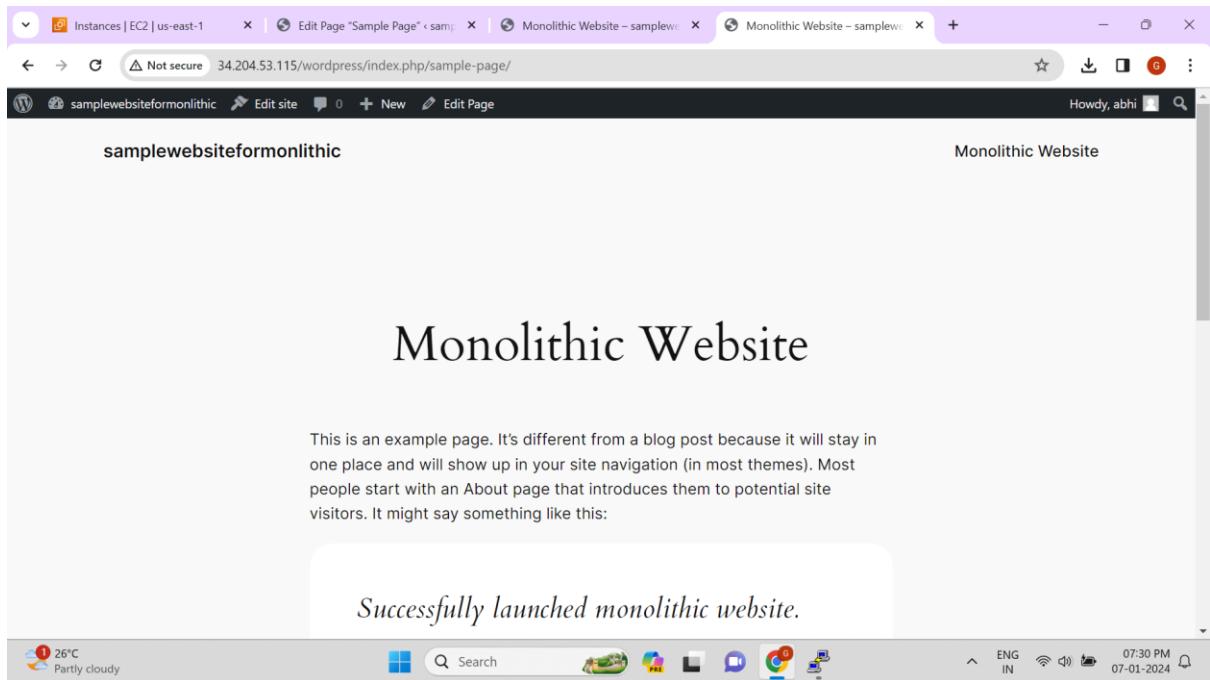
Step 22: on the terminal, inside wordpress folder-> create nano wp.config.php file and paste above copied code.



Step 23: Fill all the details to host/deploy your webpage.



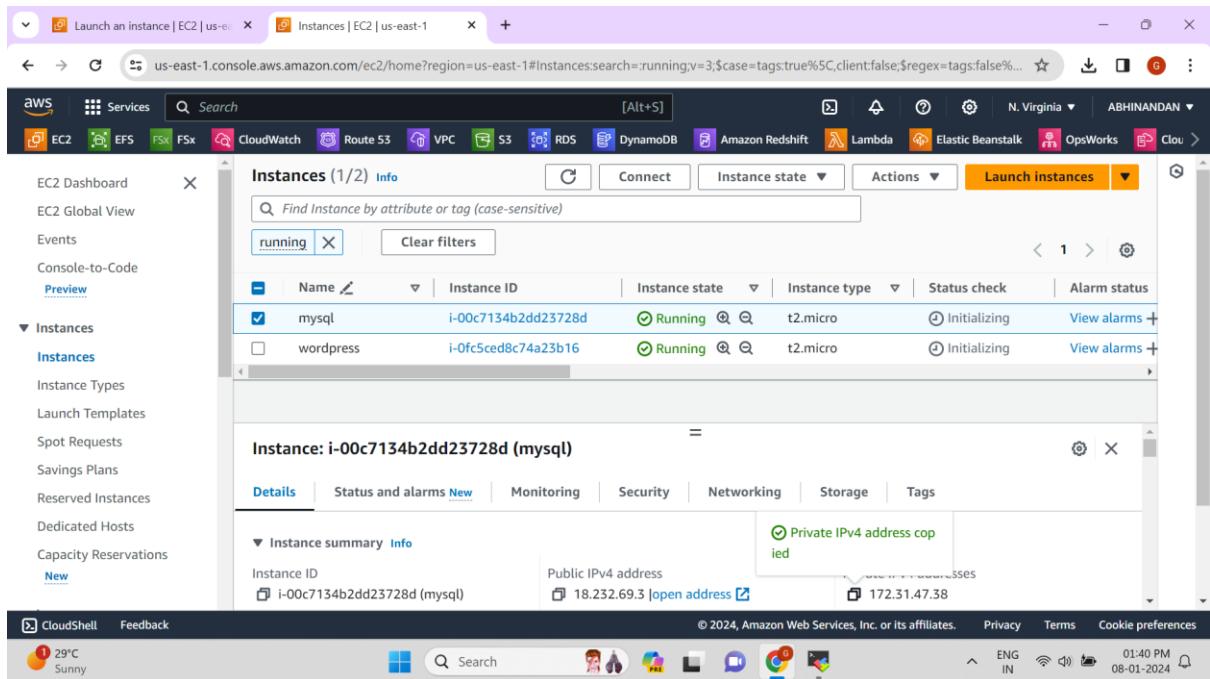
Step 24: Now install wordpress and Login with username & password.



Step 25: See your first webpage is open successfully on the wordpress.

- **Task 2: For microservices:** 2 EC2 instance, 1 for wordpress and 1 for MYSQL - Configure the necessary security group for the instances - EC2 instance type: t2-micro, AMI: ubuntu-*

Create a welcome page in wordpress that will be the homepage.



Instance Step : Create two EC2 Instances.

AMI: Ubuntu.

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with various navigation options like EC2 Dashboard, EC2 Global View, Events, and Instances. Under Instances, 'Instances' is selected. The main area displays a table of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, and Alarm status. Two instances are listed: 'wordpress' (Instance ID: i-05b3e422923760ea) and 'sqlinstance' (Instance ID: i-0336f26b119c52305). Both are shown as 'Running'. The 'sqlinstance' row has a checked checkbox next to it. Below the table, a detailed view for 'Instance: i-0336f26b119c52305 (sqlinstance)' is expanded, showing tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. The Details tab is active, showing the Instance ID as i-0336f26b119c52305 and the Public IPv4 address as 54.146.232.72.

Select mysqlinstance and copy the public ip address and connect through ssh.

The screenshot shows a terminal window titled '54.146.232.72 (ubuntu)'. It displays the MobaXterm Personal Edition v23.6 welcome message, which includes information about Direct SSH, SSH compression, SSH-browser, and X11-forwarding. Below this, the terminal shows the standard Ubuntu 22.04.3 LTS welcome message and system information. The system load is 0.00537109375, processes are at 103, and memory usage is 20%. The IPv4 address for eth0 is 172.31.27.110. The terminal also indicates that no updates can be applied immediately and encourages enabling ESM Apps for future security updates.

```
Authenticating with public key "Imported-Openssh-Key"
• MobaXterm Personal Edition v23.6 •
(SSH client, X server and network tools)

> SSH session to ubuntu@54.146.232.72
• Direct SSH : ✓
• SSH compression : ✓
• SSH-browser : ✓
• X11-forwarding : ✓ (remote display is forwarded through SSH)

> For more info, ctrl+click on help or visit our website.

Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1017-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

System information as of Mon Jan 8 11:01:05 UTC 2024

System load: 0.00537109375 Processes: 103
Usage of /: 20.5% of 7.57GB Users logged in: 0
Memory usage: 20% IPv4 address for eth0: 172.31.27.110
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
```

```
ubuntu@ip-172-31-27-110:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libcgi-fast-perl libcgi-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:
  libcgi-fast-perl libcgi-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 0 not upgraded.
Need to get 29.6 MB of archives.
```

- Install MySql

Sudo apt update

sudo apt install mysql-server

Secure database server : Follow the prompts to set a root password, remove anonymous users, disallow remote root login, and remove test databases.

1. Type Y to set a password, and type a secure password twice.
2. Type Y to remove the anonymous user accounts.
3. Type N to enable the remote root login.
4. Type Y to remove the test database.
5. Type Y to reload the privilege tables and save your changes.

Create user and database for wordpress

Sudo mysql secure installation

Sudo mysql -u root -p

➔ mysql> CREATE DATABASE abhiwordpress;

Query OK, 1 row affected (0.01 sec)

➔ mysql> CREATE USER 'abhi_user'@'%' IDENTIFIED BY 'abhi@123';

Query OK, 0 rows affected (0.02 sec)

➔ mysql> GRANT ALL PRIVILEGES ON abhiwordpress.* TO 'abhi_user'@'%';

Query OK, 0 rows affected (0.00 sec)

➔ mysql> FLUSH PRIVILEGES;

Query OK, 0 rows affected (0.00 sec)

```

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-27-110:~$ sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
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> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'abhi@123';
Query OK, 0 rows affected (0.00 sec)

mysql> CREATE USER 'abhi'@'localhost' IDENTIFIED BY 'abhi@123';
Query OK, 0 rows affected (0.02 sec)

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

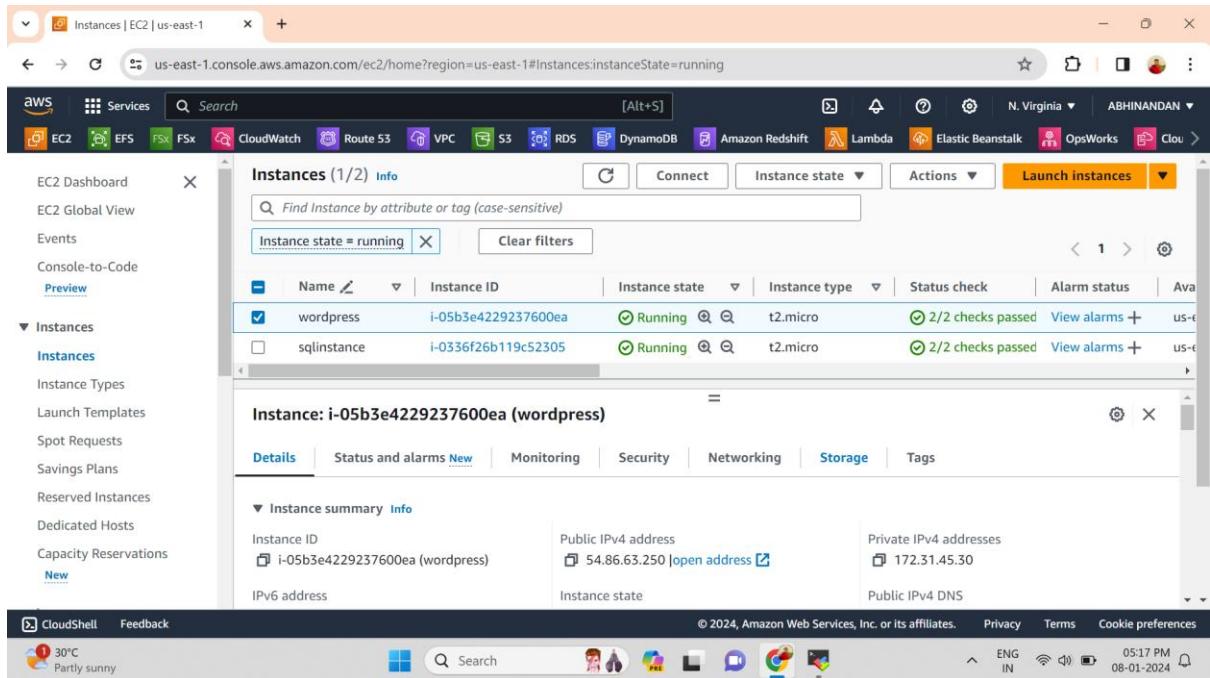
mysql> GRANT ALL ON *.* TO 'abhi'@'localhost';
Query OK, 0 rows affected (0.00 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql>

```

Connect to the WordPress instance via SSH, then install required packages such as Apache, PHP, etc.



Authenticating with public key "Imported-Openssh-Key"

```
• MobaXterm Personal Edition v23.6 •  
(SSH client, X server and network tools)
```

▶ SSH session to ubuntu@54.86.63.250
• Direct SSH : ✓
• SSH compression : ✓
• SSH-browser : ✓
• X11-forwarding : ✓ (remote display is forwarded through SSH)

▶ For more info, ctrl+click on help or visit our website.

Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1017-aws x86_64)

* Documentation: <https://help.ubuntu.com>
* Management: <https://landscape.canonical.com>
* Support: <https://ubuntu.com/advantage>

System information as of Mon Jan 8 11:07:24 UTC 2024

System load: 0.0 Processes: 97
Usage of /: 20.5% of 7.57GB Users logged in: 0
Memory usage: 21% IPv4 address for eth0: 172.31.45.30
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See <https://ubuntu.com/esm> or run: sudo pro status

```
HTTP request sent, awaiting response... 200 OK  
Length: 24479697 (23M) [application/octet-stream]  
Saving to: 'latest.tar.gz'
```

latest.tar.gz 100%[=====] 23.34M 31.5MB/s in 0.7s

2024-01-08 11:07:53 (31.5 MB/s) - 'latest.tar.gz' saved [24479697/24479697]

```
ubuntu@ip-172-31-45-30:~$ sudo tar -xzf latest.tar.gz  
ubuntu@ip-172-31-45-30:~$ sudo apt update  
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease  
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]  
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]  
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]  
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]  
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]  
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]  
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]  
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]  
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]  
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1268 kB]  
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [260 kB]  
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1257 kB]  
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [205 kB]  
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1021 kB]  
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [227 kB]  
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [22.1 kB]  
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [41.6 kB]  
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [9768 B]  
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [472 B]  
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [41.7 kB]  
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [10.5 kB]  
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
```

```
5 54.146.232.72 (ubuntu) 6 54.86.63.250 (ubuntu)
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-172-31-45-30:~$ sudo apt install php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php8.1 php-common php8.1 php8.1-cli php8.1-common php8.1-mysql php8.1-opcache php8.1-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php8.1 php php-common php-mysql php8.1 php8.1-cli php8.1-common php8.1-mysql
php8.1-opcache php8.1-readline
0 upgraded, 11 newly installed, 0 to remove and 32 not upgraded.
Need to get 5265 kB of archives.
After this operation, 21.8 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 php-common all 2:92ubuntu1 [12.4 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-common amd64 8.1.2-1ubuntu2.14 [1127 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-opcache amd64 8.1.2-1ubuntu2.14 [365 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-readline amd64 8.1.2-1ubuntu2.14 [13.6 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-cli amd64 8.1.2-1ubuntu2.14 [1834 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapache2-mod-php8.1 amd64 8.1.2-1ubuntu2.14 [1766 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libapache2-mod-php all 2:8.1+92ubuntu1 [2898 B]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1 all 8.1.2-1ubuntu2.14 [9158 B]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 php all 2:8.1+92ubuntu1 [2756 B]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-mysql amd64 8.1.2-1ubuntu2.14 [130 kB]
```

Once installed, download WordPress.

```
5 54.146.232.72 (ubuntu) 6 54.86.63.250 (ubuntu)
ubuntu@ip-172-31-45-30:/var/www/html$ cp wp-config-sample.php wp-config.php
cp: cannot create regular file 'wp-config.php': Permission denied
ubuntu@ip-172-31-45-30:/var/www/html$ sudo cp wp-config-sample.php wp-config.php
ubuntu@ip-172-31-45-30:/var/www/html$ sudo vim wp-config.php
ubuntu@ip-172-31-45-30:/var/www/html$ sudo vim wp-config.php
ubuntu@ip-172-31-45-30:/var/www/html$ sudo systemctl start apache2
ubuntu@ip-172-31-45-30:/var/www/html$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
ubuntu@ip-172-31-45-30:/var/www/html$ ls
index.html  readme.html  wp-blog-header.php  wp-config.php  wp-includes  wp-login.php  wp-signup.php
index.php   wp-activate.php  wp-comments-post.php  wp-content  wp-links-opml.php  wp-mail.php  wp-trackback.php
license.txt  wp-admin      wp-config-sample.php  wp-cron.php  wp-load.php    wp-settings.php  xmlrpc.php
ubuntu@ip-172-31-45-30:/var/www/html$ sudo mv wordpress/ /var/www/html/
mv: cannot stat 'wordpress/': No such file or directory
ubuntu@ip-172-31-45-30:/var/www/html$ cd ..
ubuntu@ip-172-31-45-30:/var/www$ cd ..
ubuntu@ip-172-31-45-30:$ ls
bin  dev  home  lib32  lib32   media  opt  root  sbin  srv  tmp  var
boot  etc  lib  lib64  lost+found  mnt  proc  run  snap  sys  usr
ubuntu@ip-172-31-45-30:$ cd tmp
ubuntu@ip-172-31-45-30:/tmp$ ls
snap-private-tmp
systemd-private-a15f66c0970d425e90c838dd60e58415-apache2.service-CuCnV8
systemd-private-a15f66c0970d425e90c838dd60e58415-chrony.service-FSGq0
systemd-private-a15f66c0970d425e90c838dd60e58415-systemd-logind.service-AItRC6
systemd-private-a15f66c0970d425e90c838dd60e58415-systemd-resolved.service-eOHo60
ubuntu@ip-172-31-45-30:/tmp$ cd ..
ubuntu@ip-172-31-45-30:$ cd /var/www/html
ubuntu@ip-172-31-45-30:/var/www/html$ ls
index.html  readme.html  wp-blog-header.php  wp-config.php  wp-includes  wp-login.php  wp-signup.php
index.php   wp-activate.php  wp-comments-post.php  wp-content  wp-links-opml.php  wp-mail.php  wp-trackback.php
```

The wp-config-sample.php file and rename the copy as wp-config.php to generate a fresh configuration file while preserving the original sample file.

```

define( 'DB_NAME', 'wordpress-db' ); // Wordpress database name

/** MySQL database username */
define( 'DB_USER', 'wordpress-user' ); //Wordpress user name

/** MySQL database password */
define( 'DB_PASSWORD', 'abc@123' ); //wordpress-user's password

/** MySQL hostname */
define( 'DB_HOST', '172.31.35.149' ); //private Ip of mysql instance

/** Database Charset to use in creating database tables. */
define( 'DB_CHARSET', 'utf8' );

/** The Database Collate type. Don't change this if in doubt. */
define( 'DB_COLLATE', '' );

```

Edit the host, database name, user and password.

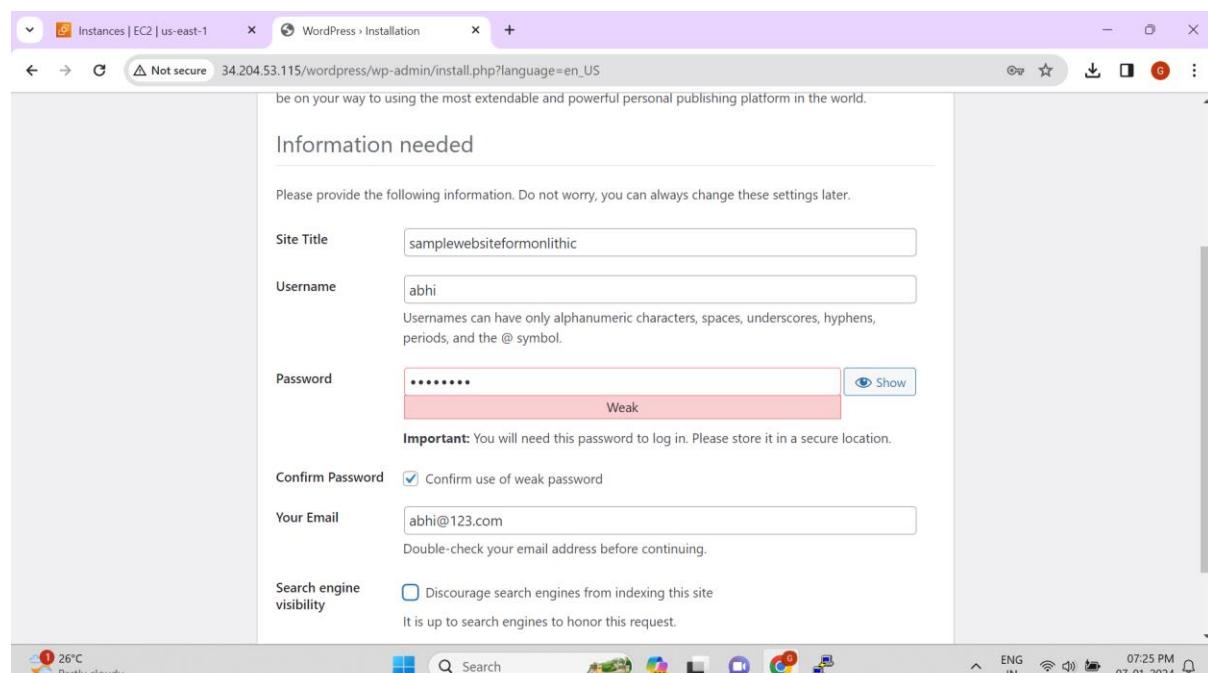
```

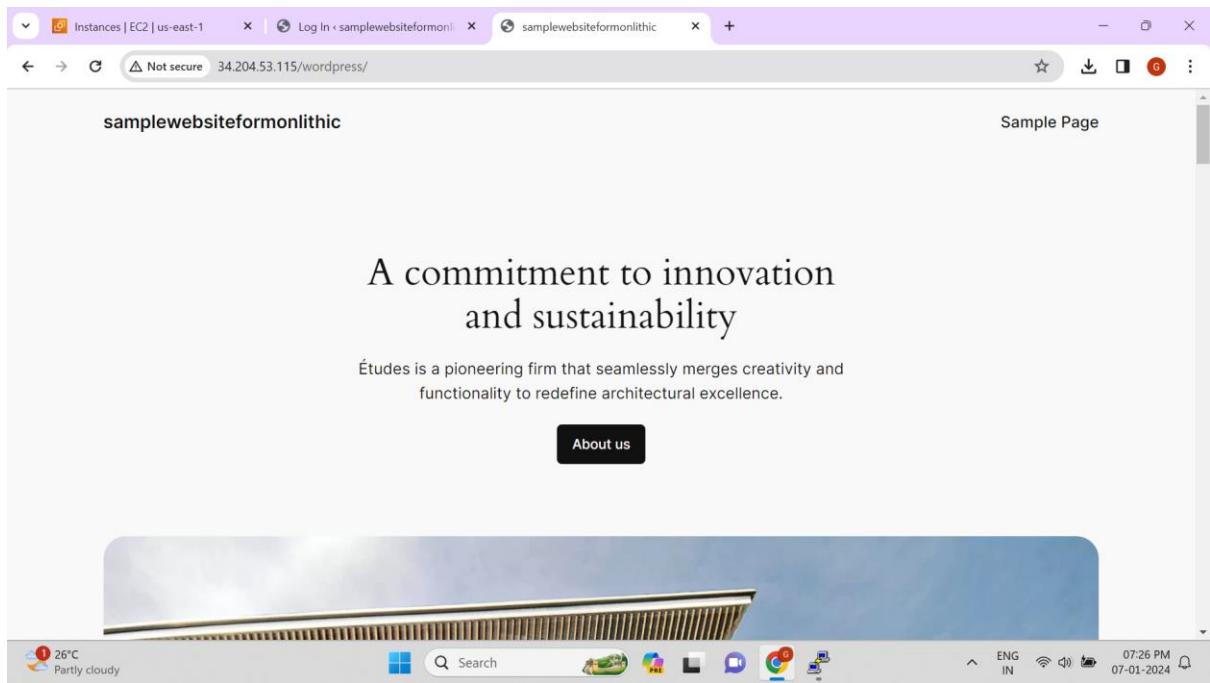
define('AUTH_KEY',      '/*|Vh{.z[lpZnC8vc3j2 [JU55|co8yMD+x`<]ueNDCH2~iR(~ T30[EeXm|pxYA');
define('SECURE_AUTH_KEY', '#8xHjQI-2Y9esX1W/2@t0W.>DksD;xhv6>iyxHA6]-sWNy&ldgt;Z{9$3%`M+JM-c4');
define('LOGGED_IN_KEY',   '}`uB(x5[1A~$I-Sz;8TUuZ4n` |{Zl^0^PiQ7Y+E!_p-9odX96w38<W&+`{})#[i'];
define('NONCE_KEY',       '3RSrimmXB;UPLfz]WF3dIO:pe$<UmXb`cer_0-|JVKdn?-;i-u(/#mwUpLFw-2,!');
define('AUTH_SALT',        'UT1DQq5+9z, oUN?f0ZJIq-Kj[?R*97DE6 Cwza40&.@~xz1X!Ne<Ko`QpXY+,fR');
define('SECURE_AUTH_SALT', '^;()Du[-vW6E5,5pkJW]qE6CJ!-h41ial}fx(S2mR>%-T>Mer/V^1rNR^@,|2Q=A');
define('LOGGED_IN_SALT',   '$|%.@FM(>p6TTcrj@o%5M4tTkC)cR*P+]0mK)pX~ph?#f:3->/==1pbJsG+S@@P');
define('NONCE_SALT',       'j>#$<5if(fp-AX_L-b-TJDY&<B8M]*5YT?Wh1u6&NBNFZ1.1D01>&#u*),n*$,ak');

```

In the same file find the section called Authentication Unique Keys and Salts.

Complete setup is now done, browse with your public IP.





And Wordpress will automatically connect to the MySQL server on another EC2.

References:

- 1) <https://youtu.be/8Uofkq718n8?si=dFSipa0FJUC2C4In>
- 2) <https://www.devart.com/dbforge/mysql/how-to-install-mysql-on-ubuntu/>
- 3) <https://ubuntu.com/tutorials/install-and-configure-wordpress#1-overview>