

# Cloud (AWS) Week 1 Task

## Description:

### Task: Deploy Application in Monolithic and Microservices Architecture

---- For Monolithic: 1 EC2 Instance, deploy Wordpress and MySQL on the same Instance.

---- For Microservices: 2 EC2 Instances, 1 for Wordpress and 1 for MySQL

---- Configure the necessary security group for the instances.

---- EC2 Instance type: t2. micro, AMI: ubuntu

## Task 1:

For Monolithic: 1 EC2 Instance, deploy Wordpress and MySQL on the same Instance.

### i) Created 1 Instance:

The screenshot displays the AWS Management Console interface. At the top, a green notification bar states "Successfully started i-05d6c9306bf8fc2e5". The left sidebar shows the navigation menu with categories like EC2 Dashboard, Images, Elastic Block Store, and Network & Security. The main content area is titled "Instances (1/1)" and shows a table with one instance: "Wordpress-MySQL" (ID: i-05d6c9306bf8fc2e5), which is in the "running" state, using the "t2.micro" instance type. Below the table, the "Instance: i-05d6c9306bf8fc2e5 (Wordpress-MySQL)" details are shown, including the "Security" tab. The "Security" tab displays the "IAM Role" as "-", the "Owner ID" as "483523048094", and the "Launch time" as "Sun Nov 05 2023 23:18:04 GMT+0530 (India Standard Time)". It also lists the "Security groups" as "sg-059ad92795f0dfa4 (launch-wizard-1)". The "Inbound rules" section shows two rules: one for port 22 (SSH) and another for port 443 (HTTPS), both allowing traffic from "0.0.0.0/0".

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
-	sgr-0075da766a0527278	22	TCP	0.0.0.0/0	launch-wizard-1	-
-	sgr-011023f8f776535b4	443	TCP	0.0.0.0/0	launch-wizard-1	-

## Cloud (AWS) Week 1 Task

ii) **Updated the server:** `sudo apt-get update`

```

AWS | Services | Search | [Alt+S] | N. Virginia | Piyali Chatterjee
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1012-aws x86_64)

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

System information as of Sun Nov  5 15:52:03 UTC 2023

System load: 0.0          Processes:           97
Usage of /: 20.5% of 7.57GB   Users logged in:       0
Memory usage: 21%          IPv4 address for eth0: 172.31.46.134
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-172-31-46-134:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit: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]
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kb]

F05d6c9306bf8fc2e5 (Wordpress)

PublicIP: 54.198.75.129 PrivateIP: 172.31.46.134

```

iii) Installing apache webserver on the instance: sudo apt install apache2

```

AWS Services Search [Alt]+S
ubuntu@ip-172-31-46-134:~$ 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 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 42 not upgraded.
Need to get 2137 kB of archives.
After this operation, 8505 kB 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-updates/main amd64 libapr1 amd64 1.7.0-Subuntu0.22.04.1 [108 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1 amd64 1.6.1-Subuntu4.22.04.2 [92.8 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-Subuntu4.22.04.2 [11.3 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-ldap amd64 1.6.1-Subuntu4.22.04.2 [9170 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblua5.3-0 amd64 5.3.6-1build1 [140 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-bin amd64 2.4.52-Subuntu6.6 [1345 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-data all 2.4.52-Subuntu4.6 [165 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-utils amd64 2.4.52-Subuntu4.6 [89.1 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mailcap all 3.70mm1Subuntu1 [23.9 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mime-support all 3.66 [3696 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-amd64 2.4.52-Subuntu4.6 [97.8 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bzip2 amd64 1.0.8-Subulu1 [44.8 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 ssl-cert all 1.1.2 [17.4 kB]
Fetched 2137 kB in 0s (28.4 MB/s)
Unpacking previously unselected package libapr1:amd64.
(Reading database ... 46726 files and directories currently installed.)
Preparing to unpack .../00-libapr1_1.7.0-Subuntu0.22.04.1_amd64.deb ...
Unpacking libapr1:amd64 (1.7.0-Subuntu0.22.04.1) ...
Selecting previously unselected package libaprutil1:amd64.
Preparing to unpack .../01-libaprutil1_1.6.1-Subuntu4.22.04.2_amd64.deb ...
Unpacking libaprutil1:amd64 (1.6.1-Subuntu4.22.04.2) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:amd64.
Preparing to unpack .../02-libaprutil1-dbd-sqlite3_1.6.1-Subuntu4.22.04.2_amd64.deb ...
Unpacking libaprutil1-dbd-sqlite3:amd64 (1.6.1-Subuntu4.22.04.2) ...
Selecting previously unselected package libaprutil1-ldap:amd64.
Preparing to unpack .../03-libaprutil1-ldap_1.6.1-Subuntu4.22.04.2_amd64.deb ...
Unpacking libaprutil1-ldap:amd64 (1.6.1-Subuntu4.22.04.2) ...

```

iv) Install php runtime and php mysql connector: `sudo apt install php libapache2-mod-php php-mysql`

## Cloud (AWS) Week 1 Task

```
BWS [Alt+S]
ubuntu@ip-172-31-46-134:~$ sudo apt install php libapache2-mod-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 42 not upgraded.
Need to get 5265 kB of archives.
After this operation, 21.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
set1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 php-common all 2:9.2ubuntu1 [12.4 KB]
set2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-common amd64 8.1.2-lubuntu2.14 [1127 kB]
set3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-opcache amd64 8.1.2-lubuntu2.14 [363 KB]
set4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-readline amd64 8.1.2-lubuntu2.14 [13.6 KB]
set5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-cli amd64 8.1.2-lubuntu2.14 [1834 kB]
set6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapache2-mod-php8.1 amd64 8.1.2-lubuntu2.14 [3766 KB]
set7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libapache2-mod-php all 2:8.1+92ubuntu1 [289B B]
set8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1 all 8.1.2-lubuntu2.14 [915B B]
set9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 php all 2:8.1+92ubuntu1 [2756 B]
set10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 php8.1-mysql amd64 8.1.2-lubuntu2.14 [130 KB]
set11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 php-mysql all 2:8.1+92ubuntu1 [1834 B]
Fetched 5265 kB in 6s (841.4 MB/s)
Selecting previously unselected package php-common.
(Reading database ... 65495 files and directories currently installed.)
Preparing to unpack ././00-php-common_2:9.2ubuntu1_all.deb ...
Unpacking php-common (2:9.2ubuntu1) ...
Selecting previously unselected package php8.1-common.
Preparing to unpack ././01-php8.1-common_8.1.2-lubuntu2.14_amd64.deb ...
Unpacking php8.1-common (8.1.2-lubuntu2.14) ...
Selecting previously unselected package php8.1-opcache.
Preparing to unpack ././02-php8.1-opcache_8.1.2-lubuntu2.14_amd64.deb ...
Unpacking php8.1-opcache (8.1.2-lubuntu2.14) ...
Selecting previously unselected package php8.1-readline.
Preparing to unpack ././03-php8.1-readline_8.1.2-lubuntu2.14_amd64.deb ...
Unpacking php8.1-readline (8.1.2-lubuntu2.14) ...
Selecting previously unselected package php8.1-cli.

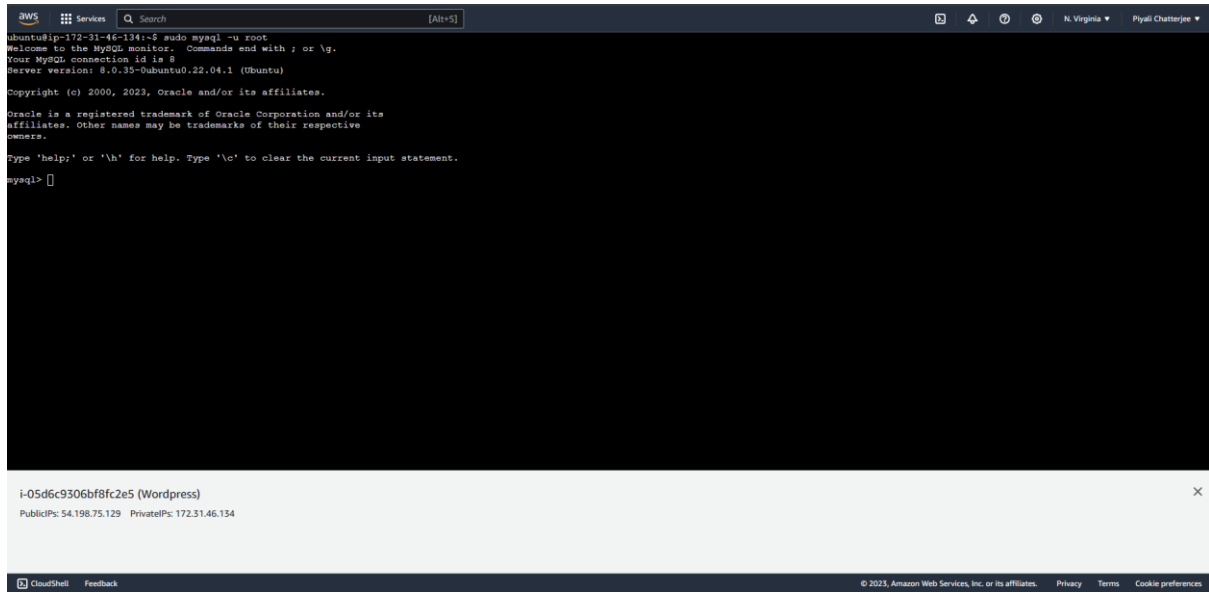
```

v) Install mysql-server: `sudo apt install mysql-server`

```
AWS Services Search [Alt+5]
ubuntu@ip-172-31-46-134:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libbfgi-fast-perl libbfgi-perl libbcode-locale-perl libevent-pthreads-2.1-7 libfio-bin libfio-perl libfio10d1 liblhtal-parser-perl liblhtal-tagset-perl liblhtal-template-perl
  liblhtal-date-perl liblhtal-message-perl libio-html-perl liblwp-mediatypes-perl liblsm22 libprotobuf-lite23 libtime-date-perl liburi-perl mcab-ipcadic mcab-ipcadic-utf8 mcab-util5 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 libbpc-sharedcache-perl libbussiness-lahn-perl libbww-perl mailx tinytex
The following NEW packages will be installed:
  libbfgi-fast-perl libbfgi-perl libbcode-locale-perl libevent-pthreads-2.1-7 libfio-bin libfio-perl libfio10d1 liblhtal-parser-perl liblhtal-tagset-perl liblhtal-template-perl
  liblhtal-date-perl liblhtal-message-perl libio-html-perl liblwp-mediatypes-perl liblsm22 libprotobuf-lite23 libtime-date-perl liburi-perl mcab-ipcadic mcab-ipcadic-utf8 mcab-util5 mysql-client-8.0
  mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0
0 upgraded, 28 newly installed, 0 to remove and 42 not upgraded.
Need to get 29.6 KB 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://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mysql-common all 5.8+1.0.8 (7212 B)
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/update/main amd64 mysql-client-core-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [2692 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/update/main amd64 mysql-client-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [22.7 kB]
Get:4 http://us-east-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://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbcode2 amd64 0.96-4build4 [139 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/update/main amd64 libprotobuf-lite23 amd64 3.12.4-1ubuntu7.22.04.1 [209 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-update/main amd64 mysql-server-core-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [17.6 MB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-update/main amd64 mysql-server-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [1438 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblhtal-tagset-perl all 3.20-4 [12.5 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liburi-perl all 5.10-1 [78.8 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblhtal-parser-perl amd64 3.76-1build2 [86.4 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbfgi-fast-perl all 4.54-1 [188 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libfio10d1 amd64 2.4.2-2build2 [28.0 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libfio-perl amd64 0.27-2-build1 [22.8 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbfgi-fast-perl all 1.12-1-1 [10.5 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbcode-locale-perl amd64 0.45-1build3 [11.0 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbcode-locale-perl perl 1.05-1 [11.8 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbfgi-bin amd64 2.4.2-2build2 [11.2 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblhtal-template-perl perl 2.97-1 [59.1 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libtime-date-perl all 2.3006-2 [34.0 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblhtal-date-perl all 6.005-1 [1950 B]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libio-html-perl all 1.004-2 [15.4 kB]
```

## Cloud (AWS) Week 1 Task

vi) **Login to MySQL server:** `sudo mysql -u root`



The screenshot shows an AWS CloudShell terminal window. The top bar includes the AWS logo, a 'Services' menu, a search bar, and a '[Alt+S]' shortcut. The terminal output shows the user 'ubuntu@ip-172-31-46-134:~\$' running the command 'sudo mysql -u root'. The prompt changes to 'mysql>' after successful authentication. The terminal displays the MySQL welcome message, connection ID (8), server version (8.0.35-0ubuntu0.22.04.1), and copyright information. The bottom status bar shows the instance ID 'i-05d6c9306bf8fc2e5 (Wordpress)' and public/private IP addresses. The footer contains 'CloudShell', 'Feedback', and copyright information for Amazon Web Services.

```
ubuntu@ip-172-31-46-134:~$ 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>
```

vii) **Change authentication plugin to mysql\_native\_password: ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql\_native\_password by 'Testpassword@123';**

# Cloud (AWS) Week 1 Task

```
AWS Services Search [Alt+F5]
ubuntu@ip-172-31-46-134:~$ 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 'Testpassword@123';
      ^C
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password by 'Testpassword@123';
Query OK, 0 rows affected (0.02 sec)

mysql>
```

i-05d6c9306bf8fc2e5 (Wordpress)  
PublicIP: 54.198.75.129 PrivateIP: 172.31.46.134

CloudShell Feedback © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

viii) Create a new database user for Wordpress: CREATE USER 'wp\_user'@'localhost' IDENTIFIED BY 'Testpassword@123';

```
AWS Services Search [Alt+F5]
ubuntu@ip-172-31-46-134:~$ 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 'Testpassword@123';
      ^C
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password by 'Testpassword@123';
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE USER 'wp_user'@localhost IDENTIFIED BY 'Testpassword@123';
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 ''Testpassword@12' at line 1
mysql> CREATE USER 'wp_user'@'localhost' IDENTIFIED BY 'Testpassword@123';
Query OK, 0 rows affected (0.03 sec)

mysql>
```

i-05d6c9306bf8fc2e5 (Wordpress)  
PublicIP: 54.198.75.129 PrivateIP: 172.31.46.134

CloudShell Feedback © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

ix) Create a database for Wordpress: CREATE DATABASE WP;

# Cloud (AWS) Week 1 Task

```
AWS Services Search [Alt+5]
ubuntu@ip-172-31-46-134:~$ 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 'Testpassword@123';
^C
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password by 'Testpassword@123';
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE USER 'wp_user'@localhost IDENTIFIED BY 'Testpassword@12';
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 ''Testpassword@12' at line 1
mysql> CREATE USER 'wp_user'@'localhost' IDENTIFIED BY 'Testpassword@123';
Query OK, 0 rows affected (0.03 sec)

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

mysql>
```

i-05d6c9306bf8fc2e5 (Wordpress)  
PublicIP: 54.198.75.129 PrivateIP: 172.31.46.134

CloudShell Feedback © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

x) **Grant all privileges on the database WP to the newly created user: GRANT ALL PRIVILEGES ON WP.\* TO 'wp\_user'@'localhost';**

```
AWS Services Search [Alt+5]
ubuntu@ip-172-31-46-134:~$ 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 'Testpassword@123';
^C
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password by 'Testpassword@123';
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE USER 'wp_user'@localhost IDENTIFIED BY 'Testpassword@12';
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 ''Testpassword@12' at line 1
mysql> CREATE USER 'wp_user'@'localhost' IDENTIFIED BY 'Testpassword@123';
Query OK, 0 rows affected (0.03 sec)

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

mysql> GRANT ALL PRIVILEGES ON WP.* TO 'wp_user'@'localhost';
^C
mysql> GRANT ALL PRIVILEGES ON WP.* TO 'wp_user'@'localhost';
^C
mysql> GRANT ALL PRIVILEGES ON WP.* TO 'wp_user'@'localhost';
Query OK, 0 rows affected (0.01 sec)

mysql>
```

i-05d6c9306bf8fc2e5 (Wordpress)  
PublicIP: 54.198.75.129 PrivateIP: 172.31.46.134

CloudShell Feedback © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

xi) **Download Wordpress: cd /tmp**

**Wget <https://wordpress.org/latest.tar.gz>**

## Cloud (AWS) Week 1 Task

```
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 'Testpassword@123';
^> ^C
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password by 'Testpassword@123';
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE USER 'wp_user'@localhost IDENTIFIED BY 'Testpassword@12';
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 ''Testpassword@12' at line 1
mysql> CREATE USER 'wp_user'@'localhost' IDENTIFIED BY 'Testpassword@123';
Query OK, 0 rows affected (0.03 sec)

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

mysql> GRANT ALL PRIVILEGES ON WP.* TO 'wp_user'@'localhost';
^> ^C
mysql> GRANT ALL PRIVILEGES ON WP.* TO 'wp_user'@'localhost';
^> ^C
mysql> GRANT ALL PRIVILEGES ON WP.* TO 'wp_user'@'localhost';
Query OK, 0 rows affected (0.01 sec)

mysql> ^DBys
ubuntu@ip-172-31-46-134:~$ cd /tmp
ubuntu@ip-172-31-46-134:~$ tmp$ wget https://wordpress.org/latest.tar.gz
--2023-11-05 16:22:58-- 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: 23465047 (22M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz           100%[=====] 22.38M  32.5MB/s   in 0.7s

2023-11-05 16:22:58 (32.5 MB/s) - 'latest.tar.gz' saved [23465047/23465047]

ubuntu@ip-172-31-46-134:~$ tmp$ []

i-05d6c9306bf8fc2e5 (Wordpress)
PublicIP: 54.198.75.129 PrivateIPs: 172.31.46.134
```

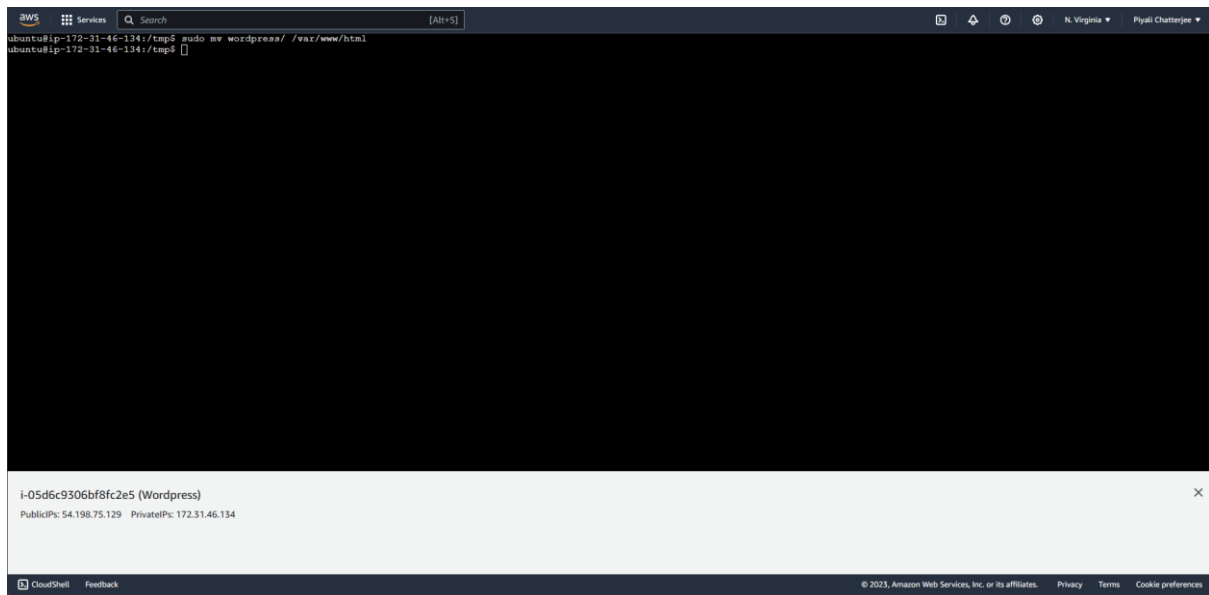
### xii) Unzip: tar -xvf latest.tar.gz

```
wordpress/wp-includes/js/dist/router.min.js
wordpress/wp-includes/js/dist/preferences.min.js
wordpress/wp-includes/js/dist/redux-routine.js
wordpress/wp-includes/js/dist/reusable-blocks.min.js
wordpress/wp-includes/js/dist/primitives.js
wordpress/wp-includes/js/dist/block-editor.js
wordpress/wp-includes/js/dist/warning.min.js
wordpress/wp-includes/js/dist/escape-html.js
wordpress/wp-includes/js/dist/lib.min.js
wordpress/wp-includes/js/dist/rich-text.min.js
wordpress/wp-includes/js/dist/api-fetch.min.js
wordpress/wp-includes/js/dist/viewport.min.js
wordpress/wp-includes/js/dist/redux-routine.min.js
wordpress/wp-includes/js/dist/warning.js
wordpress/wp-includes/js/dist/notice.min.js
wordpress/wp-includes/js/dist/autop.min.js
wordpress/wp-includes/js/dist/data-controls.js
wordpress/wp-includes/js/dist/blob.min.js
wordpress/wp-includes/js/dist/block-library.js
wordpress/wp-includes/js/dist/token-list.min.js
wordpress/wp-includes/js/dist/plugins.js
wordpress/wp-includes/js/dist/editor.js
wordpress/wp-includes/js/dist/html-entities.js
wordpress/wp-includes/js/dist/deprecated.js
wordpress/wp-includes/js/dist/data.js
wordpress/wp-includes/js/dist/viewport.js
wordpress/wp-includes/js/dist/compose.js
wordpress/wp-includes/js/dist/rux.min.js
wordpress/wp-includes/js/dist/block-directory.min.js
wordpress/wp-includes/js/dist/commands.js
wordpress/wp-includes/js/dist/shortcode.min.js
wordpress/wp-includes/js/dist/widgets.js
wordpress/wp-includes/js/dist/blocks.min.js
wordpress/wp-includes/js/dist/customize-widgets.min.js
wordpress/wp-includes/js/dist/development/
wordpress/wp-includes/js/dist/development/react-refresh-runtime.js
wordpress/wp-includes/js/dist/development/react-refresh-entry.min.js
wordpress/wp-includes/js/dist/development/react-refresh-runtime.min.js
wordpress/wp-includes/js/dist/development/react-refresh-entry.js
wordpress/wp-includes/js/dist/rux.js

i-05d6c9306bf8fc2e5 (Wordpress)
PublicIP: 54.198.75.129 PrivateIPs: 172.31.46.134
```

### xiii) Move Wordpress folder to apache document root: sudo mv wordpress/ /var/www/html

## Cloud (AWS) Week 1 Task



### xiv) Commands to create config file:

- Cd /var/www/html
- Cd wordpress
- Nano wp-config.php

### xv) Wordpress website:



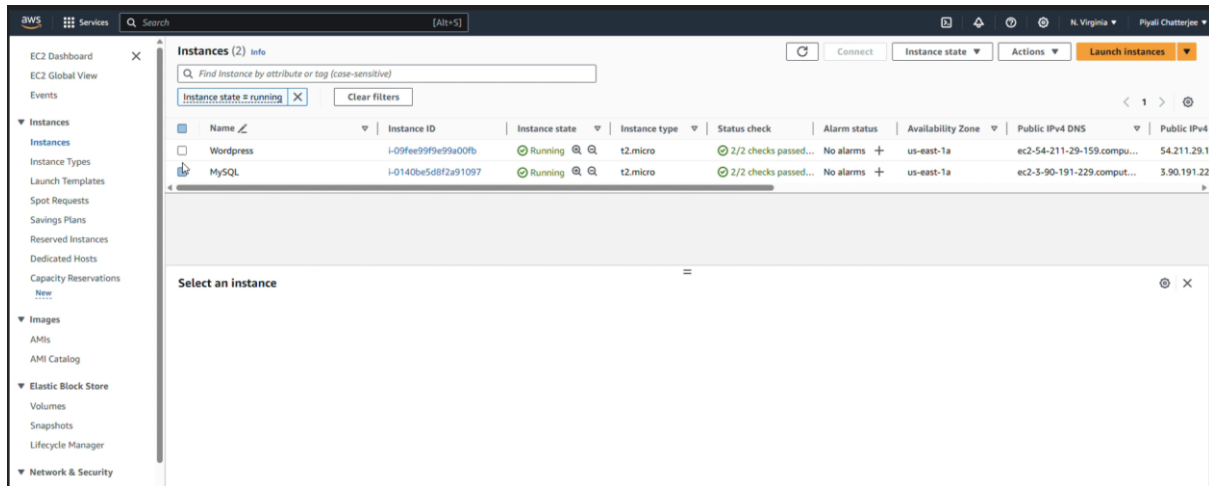


# Cloud (AWS) Week 1 Task

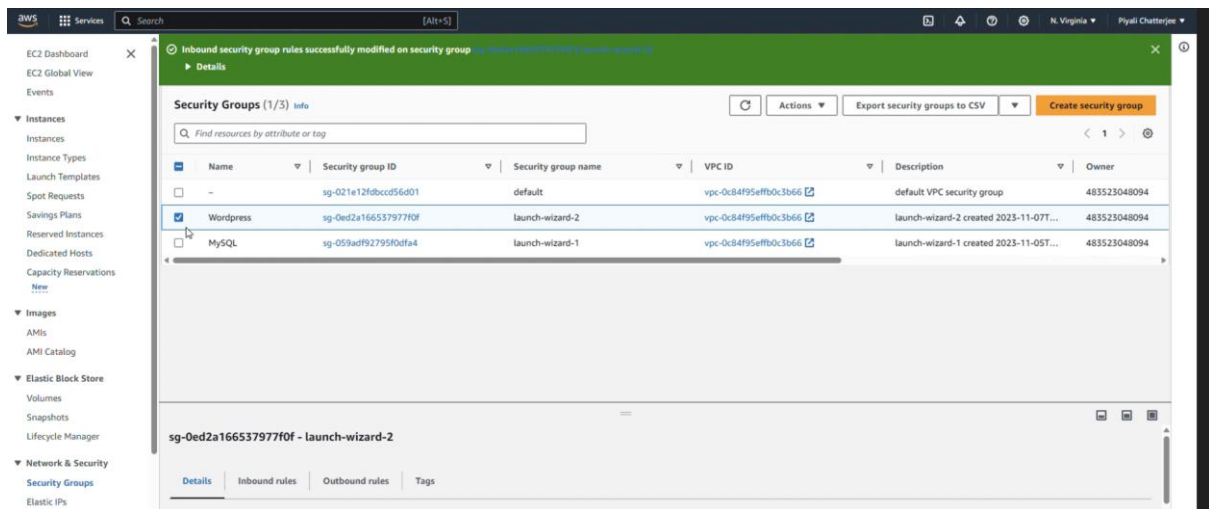
## Task 2:

For Microservices: 2 EC2 Instances, 1 for Wordpress and 1 for MySQL:

i) Created 2 EC2 Instances- 1 for Wordpress and 1 for MySQL:



ii) Configured the security groups of the instances:



## Cloud (AWS) Week 1 Task

iii) **Connected to the MySQL server and updated:**

## Command: `sudo apt update`

iv) Install php runtime and php mysql connector: `sudo apt install php libapache2-mod-php php-mysql`

```

AWS  Services  Search  [Alt+S]
ubuntu@ip-172-31-22-64:~$ 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:
  apache2 apache2-bin apache2-data apache2-utils bzip2 libapache2-mod-php8.1 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap mime-support php-common php8.1 php8.1-cli
  php8.1-common php8.1-mysql php8.1-opcache php8.1-readline ssl-cert
Suggested packages:
  apache2-doc apache2-ssl-cert apache2-ssl-cert-bin apache2-ssl-cert-dev apache2-ssl-cert-doc php-pear
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 libapache2-mod-php libapache2-mod-php8.1 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap mime-support php php-common
  php-mysql php8.1 php8.1-cli php8.1-common php8.1-mysql php8.1-opcache php8.1-readline ssl-cert
0 upgraded, 24 newly installed, 0 to remove and 49 not upgraded.
Need to get 7402 kB of archives.
After this operation, 30.3 MB of additional disk space will be used.
Do you want to continue? [Y/n]

```

v) Install mysql-server: `sudo apt install mysql-server`

```
ubuntu@172.31.22-64:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libio-fast-perl libio-pm-perl liblchown-locale-perl libevent-pthreads-2.1-7 libfio-bin libfio-perl libfio01db libhtl-parser-perl libhtl-tagset-perl libhtl-template-perl
  libhttp-date-perl libhttp-message-perl libio-html-perl liblib-mediatypes-perl liblchown libprotobuf-lite23 libtimedate-perl liburi-perl mcab-ipadic mcab-ipadic-utf8 mcab-utls 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:
  libio-fast-perl libio-pm-perl liblchown-locale-perl libevent-pthreads-2.1-7 libfio-bin libfio-perl libfio01db libhtl-parser-perl libhtl-tagset-perl libhtl-template-perl
  libhttp-date-perl libhttp-message-perl libio-html-perl liblib-mediatypes-perl liblchown libprotobuf-lite23 libtimedate-perl liburi-perl mcab-ipadic mcab-ipadic-utf8 mcab-utls mysql-client-8.0
  mysql-client-core-8.0 mysql-common mysql-server mysql-server-core-8.0 mysql-server-core-8.0
0 upgraded, 28 newly installed, 0 to remove and 49 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://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mysql-common all 5.8+1.0.8 [7212 B]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-client-core-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [2682 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-client-8.0 amd64 8.0.35-0ubuntu0.22.04.1 [22.7 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libevent-pthreads-2.1-7 amd64 2.1.12-astable-1bu1143 [7642 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblchown amd64 liblchown2 amd64 0.996-4.1bu1149 [195 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libprotobuf-lite23 amd64 3.12.4-1ubuntu7.22.04.1 [209 kB]
libevent1
```

vi) Login to MySQL server: sudo mysql -u root

```
aws Services 🔍 Search [Alt+S] N. Virginia Pipili Chatterjee ▾
ubuntu@ip-172-31-22-64:~$ 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.

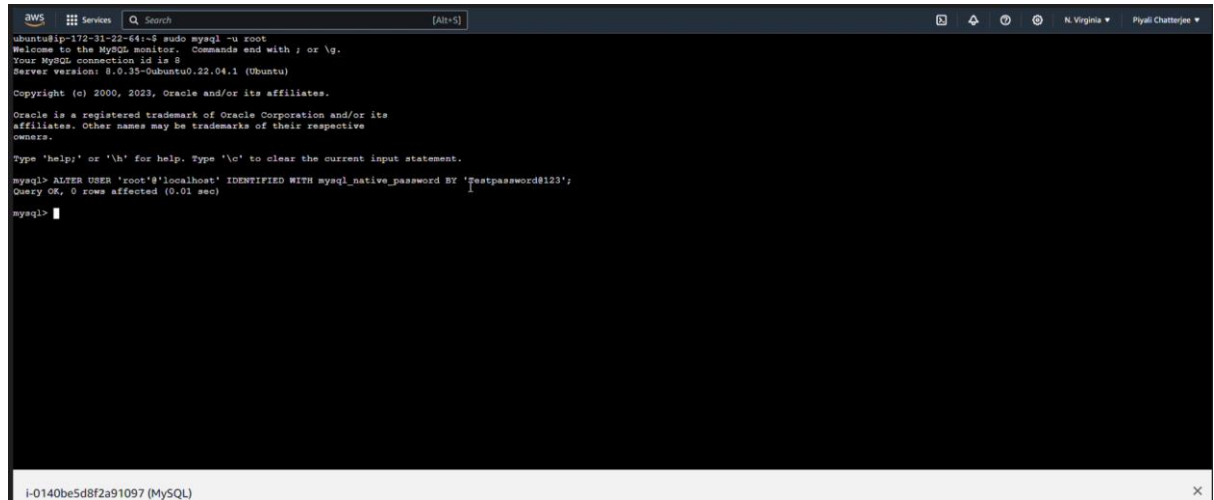
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

mysql>
```

## Cloud (AWS) Week 1 Task

- vii) **Change authentication plugin to mysql\_native\_password: ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql\_native\_password by 'Testpassword@123';**



```
ubuntu@ip-172-31-22-64:~$ 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-Ubuntu0.22.04.1 (Ubuntu)

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

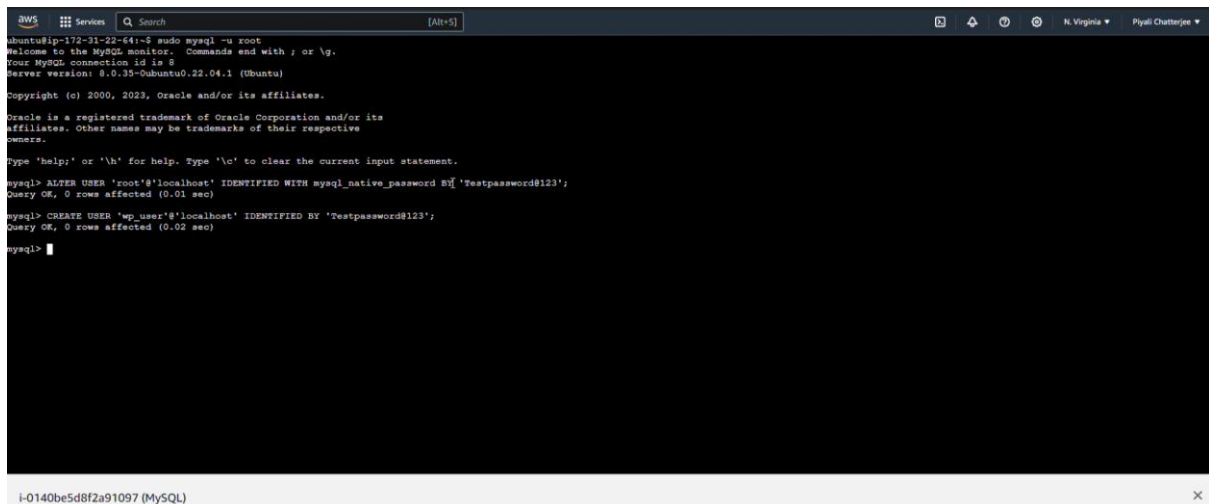
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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 'Testpassword@123';
Query OK, 0 rows affected (0.01 sec)

mysql>
```

- viii) **Create a new database user for Wordpress: CREATE USER 'wp\_user'@'localhost' IDENTIFIED BY 'Testpassword@123';**



```
ubuntu@ip-172-31-22-64:~$ 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-Ubuntu0.22.04.1 (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 'Testpassword@123';
Query OK, 0 rows affected (0.01 sec)

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

mysql>
```

- ix) **Create a database for Wordpress: CREATE DATABASE wp;**

# Cloud (AWS) Week 1 Task

```
aws
Services
Search
[Alt+5]
N. Virginia
Piyali Chatterjee

ubuntu@ip-172-31-22-64:~$ 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 'Testpassword@123';
Query OK, 0 rows affected (0.01 sec)

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

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

- x) **Grant all privileges on the database wp to the newly created user: GRANT ALL PRIVILEGES ON wp.\* TO 'wp\_user'@'localhost';**

```
aws
Services
Search
[Alt+5]
N. Virginia
Piyali Chatterjee

ubuntu@ip-172-31-22-64:~$ 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 'Testpassword@123';
Query OK, 0 rows affected (0.01 sec)

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

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

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

mysql>
```

- xi) **Connected to the Wordpress server and updated:**

**Command: sudo apt update**

- xii) **Installing apache webserver on the instance: sudo apt install apache2**

```
ubuntu@ip-172-31-29-33:~$ sudo apt install apache2 -y
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 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 49 not upgraded.
Need to get 2137 kB of archives.
After this operation, 8303 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libapr1 amd64 1.7.0-Subuntu0.22.04.1 [108 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1 amd64 1.6.1-Subuntu4.22.04.2 [92.8 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-Subuntu4.22.04.2 [11.3 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libaprutil1-ldap amd64 1.6.1-Subuntu4.22.04.2 [9170 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 liblua5.3-0 amd64 5.3.6-1build1 [140 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-bin amd64 2.4.52-1ubuntu4.6 [1345 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-data all 2.4.52-1ubuntu4.6 [165 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-utils amd64 2.4.52-1ubuntu4.6 [89.1 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mailcap all 3.70~mm1ubuntu1 [23.6 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 mime-support all 3.66 [3696 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2 amd64 2.4.52-1ubuntu4.6 [97.8 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bzip2 amd64 1.0.8-5build1 [34.8 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 ssl-cert all 1.1.2 [17.4 kB]
Fetched 2137 kB in 0s (24.8 MB/s)

```

- xiii) **Install php runtime and php mysql connector: sudo apt install php libapache2-mod-php php-mysql**

## Cloud (AWS) Week 1 Task

```
aws
Services Search [Alt+S]
N. Virginia Piyali Chatterjee
ubuntu@ip-172-31-29-33:~$ 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-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 49 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
```

xiv) Download Wordpress: cd /tmp

Sudo wget <https://wordpress.org/latest.tar.gz>

```
ubuntu@ip-172-31-29-33:/tmp$ sudo wget https://wordpress.org/latest.tar.gz
--2023-11-07 20:24:29-- https://wordpress.org/latest.tar.gz
Resolving wordpress.org (wordpress.org)... 198.143.164.252
Connecting to wordpress.org (wordpress.org):443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 24480560 (23M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz 100%[=====] 23.35M 21.4MB/s in 1.1s
2023-11-07 20:24:32 (21.4 MB/s) - 'latest.tar.gz' saved [24480560/24480560]

ubuntu@ip-172-31-29-33:/tmp$
```

xv) Move Wordpress folder to apache document root: sudo mv wordpress/  
/var/www/html

```
aws
Services Search [Alt+S]
N. Virginia Piyali Chatterjee
ubuntu@ip-172-31-29-33:/tmp$ sudo mv latest.tar.gz /var/www/html
ubuntu@ip-172-31-29-33:/tmp$
```

xvi) \_Unzip: tar -xvf latest.tar.gz

```
aws
Services Search [Alt+S]
N. Virginia Piyali Chatterjee
ubuntu@ip-172-31-29-33:/tmp$ sudo mv latest.tar.gz /var/www/html
ubuntu@ip-172-31-29-33:/tmp$ cd /var/www/html
ubuntu@ip-172-31-29-33:/var/www/html$ ls
index.html latest.tar.gz
ubuntu@ip-172-31-29-33:/var/www/html$ sudo tar -xvf latest.tar.gz
```

## Cloud (AWS) Week 1 Task

### xvii) Commands to create config file:

- Cd /var/www/html
- Cd wordpress
- Nano wp-config.php

### xviii) Wordpress website:



**Thank you!!**

## Cloud (AWS) Week 1 Task