

# Cloud (AWS) Week 1 Task

## Deploy Application in monolithic and Microservices Architecture

### \*Description:

**Task 1:** For Microservices: 2 EC2 instances, 1 for Wordpress and EC2 instances, 1 for MYSQL.

**Task 2:** For Monolithic: 1 EC2 instance, deploy Wordpress and MYSQL on the same instance.

-Configure the necessary security group for the instances

-EC2 instance type:t2 micro, AMI-Ubuntu-\*

### Task 1

#### For Microservices: 2 EC2 instances, 1 for Wordpress and 1 EC2 instances, 1 for MYSQL

##### a) 1 EC2 instance for wordpress

#### Create a wordpress instance launch

The screenshot displays the AWS Management Console interface. The top navigation bar shows the AWS logo, a search bar, and the current region (N. Virginia) and user (Karpoorapu.Sindu Sri). The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, and Snapshots.

The main content area shows the 'Instances (1/1)' page. A table lists the instance 'My Wordpress ...' with ID 'i-0f93335473cee8aca', state 'Running', type 't2.micro', and public IPv4 DNS 'ec2-54-166-188-198.compute-1.amazonaws.com'. Below the table, the 'Details' tab for the instance 'i-0f93335473cee8aca (My Wordpress Server)' is expanded, showing the following information:

Instance summary Info	
Instance ID	i-0f93335473cee8aca (My Wordpress Server)
Public IPv4 address	54.166.188.198 <a href="#">open address</a>
Private IPv4 addresses	172.31.36.198
Instance state	Running
Public IPv4 DNS	ec2-54-166-188-198.compute-1.amazonaws.com <a href="#">open address</a>
Private IP DNS name (IPv4 only)	in-172-31-36-198.pr2.internal

```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0f9335473cee8aca&osUser=ubuntu&sshPort=22#/  
aws Services Search [Alt+S]  
* Documentation: https://help.ubuntu.com  
* Management: https://landscape.canonical.com  
* Support: https://ubuntu.com/advantage  
  
System information as of Sun Oct 8 10:39:04 UTC 2023  
  
System load: 0.080078125 Processes: 109  
Usage of /: 38.9% of 7.57GB Users logged in: 0  
Memory usage: 69% IPv4 address for eth0: 172.31.36.198  
Swap usage: 0%  
  
* Ubuntu Pro delivers the most comprehensive open source security and  
compliance features.  
  
https://ubuntu.com/aws/pro  
  
Expanded Security Maintenance for Applications is not enabled.  
  
99 updates can be applied immediately.  
To see these additional updates run: apt list --upgradable  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
*** System restart required ***  
Last login: Sat Oct 7 16:03:27 2023 from 18.206.107.27  
ubuntu@ip-172-31-36-198:~$  
  
i-0f9335473cee8aca (My Wordpress Server)  
PublicIPs: 54.166.188.198 PrivateIPs: 172.31.36.198  
  
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```

## b) 1 EC2 instance for MYSQL

### Create MySQL Server instance launch

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#instancesv=3;\$case=tag:true%5C,client:false;\$regex=tags:false%5C,client:false;instance-state-local=!%5C,terminated;sort=...

aws Services Search [Alt+S]

New EC2 Experience Tell us what you think

EC2 Dashboard  
EC2 Global View  
Events

▼ Instances

Instances

Instance Types  
Launch Templates  
Spot Requests  
Savings Plans  
Reserved Instances  
Dedicated Hosts  
Capacity Reservations

▼ Images

AMIs  
AMI Catalog

▼ Elastic Block Store

Volumes  
Snapshots  
Lifecycle Manager

Instances (1/2) Info

Find Instance by attribute or tag (case-sensitive)

Instance state (client) != terminated X Clear filters

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
<input type="checkbox"/>	My Wordpress Server	i-0f9335473cee8aca	Running	t2.micro	2/2 checks passed	No alarms +	us-east-1c	ec2-54-166-188-198
<input checked="" type="checkbox"/>	MySQL_Server	i-01330f8025d633e25	Running	t2.micro	2/2 checks passed	No alarms +	us-east-1c	ec2-67-202-61-75

Instance: i-01330f8025d633e25 (MySQL\_Server)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary Info

Instance ID i-01330f8025d633e25 (MySQL_Server)	Public IPv4 address 67.202.61.75 <a href="#">open address</a>	Private IPv4 addresses 172.31.39.37
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-67-202-61-75.compute-1.amazonaws.com <a href="#">open address</a>
Hostname type IP name: ip-172-31-39-37.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-39-37.ec2.internal	

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## Commands:

sudo apt update

sudo apt install mysql-server

sudo systemctl status mysql

sudo mysql

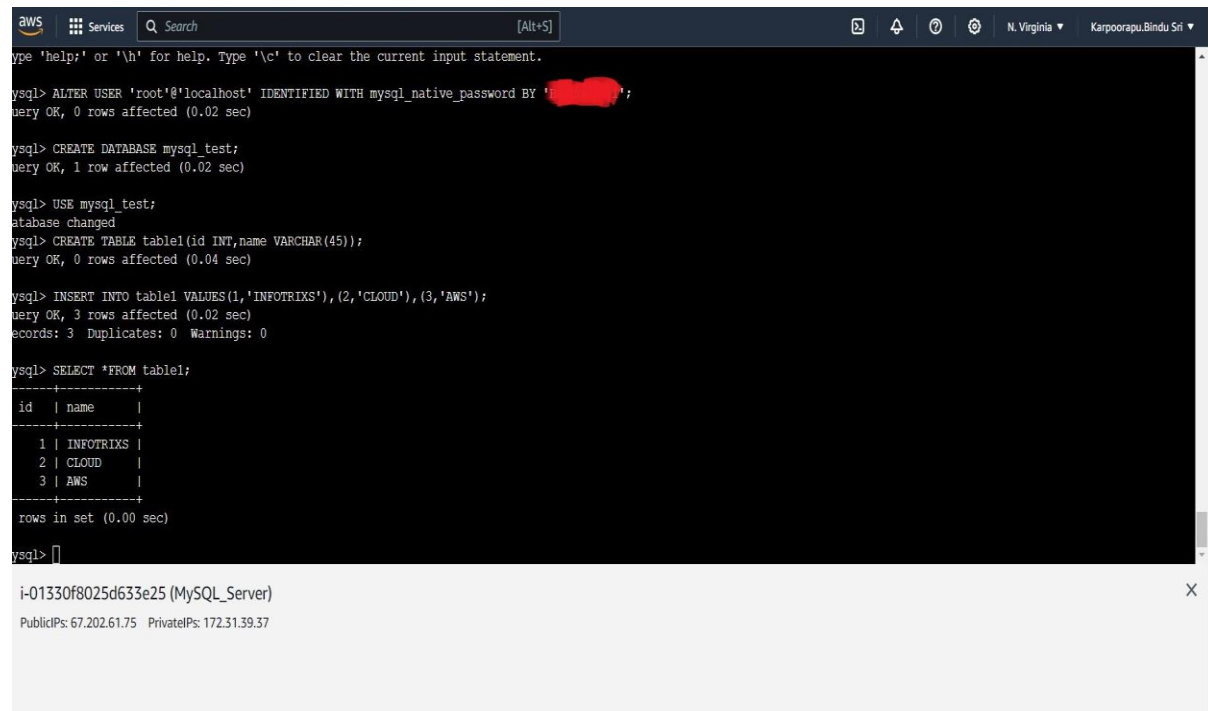
ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql\_native\_password BY '██████████';

CREATE DATABASE mysql\_test;

USE mysql\_test;

CREATE TABLE table1 ( id INT, name VARCHAR(45)); INSERT INTO table1 VALUES(1, 'INFOTRIXS'), (2,'CLOUD'), (3,'AWS');

SELECT \*FROM table1;



The screenshot shows an AWS CloudShell terminal window with the following content:

```
aws Services Q Search [Alt+S] N. Virginia Karpoorapu.Bindu Sri
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY '██████████';
mysql> CREATE DATABASE mysql_test;
mysql> USE mysql_test;
mysql> CREATE TABLE table1(id INT,name VARCHAR(45));
mysql> INSERT INTO table1 VALUES(1,'INFOTRIXS'), (2,'CLOUD'), (3,'AWS');
mysql> SELECT *FROM table1;
```

id	name
1	INFOTRIXS
2	CLOUD
3	AWS

The terminal window also displays status messages for each command, such as "Query OK, 0 rows affected (0.02 sec)" and "Query OK, 3 rows affected (0.02 sec)". At the bottom, the instance ID "i-01330f8025d633e25 (MySQL\_Server)" and IP addresses are visible.

## Task -2

### 1) For Monolithic : 1 EC2 instances, deploy wordpress and MYSQL, on the same instance.

The screenshot shows the AWS Management Console 'Instances' page. The instance 'My Wordpress Server' (i-0f93335473cee8aca) is in the 'Running' state. The instance details show it is a t2.micro instance in the us-east-1c availability zone. The public IPv4 address is 54.166.188.198 and the public IPv4 DNS is ec2-54-166-188-198.compute-1.amazonaws.com.

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

System information as of Sun Oct 8 10:39:04 UTC 2023

System load: 0.080078125   Processes:      109
Usage of /: 38.9% of 7.57GB   Users logged in: 0
Memory usage: 69%          IPv4 address for eth0: 172.31.36.198
Swap usage: 0%

* Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.

https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

9 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

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

*** System restart required ***
Last login: Sat Oct 7 16:03:27 2023 from 18.206.107.27
ubuntu@ip-172-31-36-198:~$
```

i-0f93335473cee8aca (My Wordpress Server)

PublicIPs: 54.166.188.198 PrivateIPs: 172.31.36.198

## Commands:

### 1. Install Apache server on Ubuntu

**sudo apt install apache2**



### 2. Install php runtime and php mysql connector

**sudo apt install php libapache2-mod-php php-mysql**

### 3. Install MySQL server

**sudo apt install mysql-server**

### 4. Login to MySQL server

**sudo mysql -u root**

### 5. Change authentication plugin to mysql\_native\_password (change the password to something strong)

**ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql\_native\_password by [REDACTED];**

### 6. Create a new database user for wordpress (change the password to something strong)

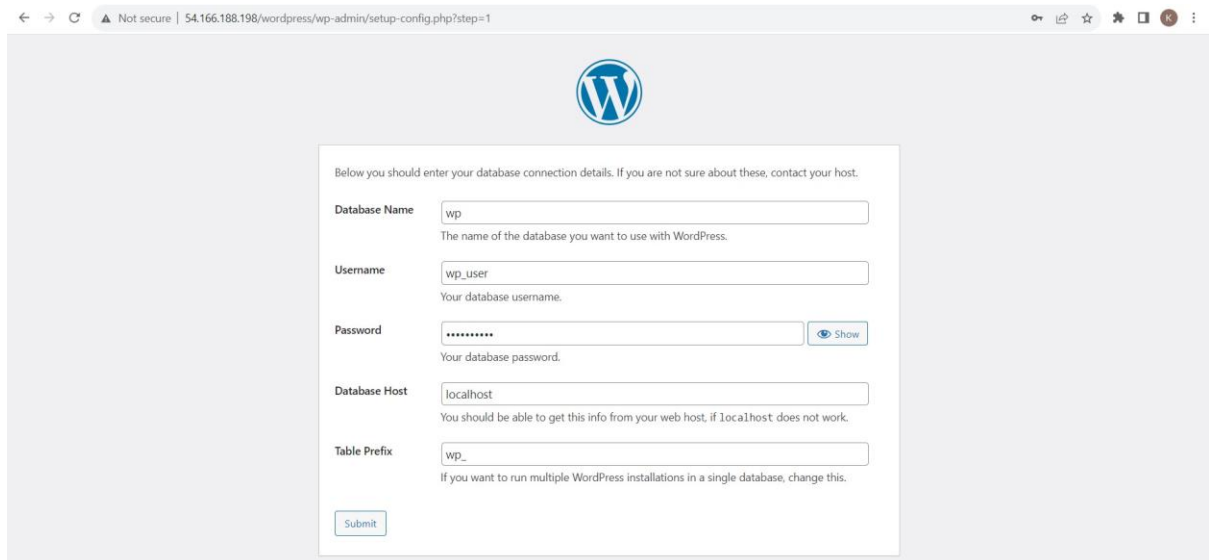
**CREATE USER 'wp\_user'@localhost IDENTIFIED BY [REDACTED];**

### 7. Create a database for wordpress

**CREATE DATABASE wp;**

8. Grant all privileges on the database 'wp' to the newly created user

**GRANT ALL PRIVILEGES ON wp.\* TO 'wp\_user'@localhost;**



The screenshot shows a web browser window with the URL `54.166.188.198/wordpress/wp-admin/setup-config.php?step=1`. The page features the WordPress logo at the top. Below it, a form titled "Below you should enter your database connection details. If you are not sure about these, contact your host." contains the following fields: "Database Name" (wp), "Username" (wp\_user), "Password" (masked with dots, with a "Show" button), "Database Host" (localhost), and "Table Prefix" (wp\_). Each field has a descriptive subtitle. A "Submit" button is located at the bottom left of the form.

9. Download wordpress

**cd /tmp**

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

10. Unzip

**tar -xvf latest.tar.gz**

11. Move wordpress folder to apache document root

**sudo mv wordpress/ /var/www/html**

**cd /var/www/html/**

**ls**

**cd wordpress**

**nano wp-config.php**

← → ↻ ⚠ Not secure | 54.166.188.198/wordpress/wp-admin/install.php?language=en\_US

## Welcome

Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.

### Information needed

Please provide the following information. Do not worry, you can always change these settings later.

**Site Title**

**Username**   
Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.

**Password**  [Show](#)  

Strong


**Important:** You will need this password to log in. Please store it in a secure location.

**Your Email**   
Double-check your email address before continuing.

**Search engine visibility** ☐ Discourage search engines from indexing this site  
It is up to search engines to honor this request.

[Install WordPress](#)

← → ↻ ⚠ Not secure | 54.166.188.198/wordpress/wp-login.php



Username or Email Address

Password

 [Show](#)

☐ Remember Me [Log In](#)

[Lost your password?](#)

[Go to my sample website](#)

my sample website

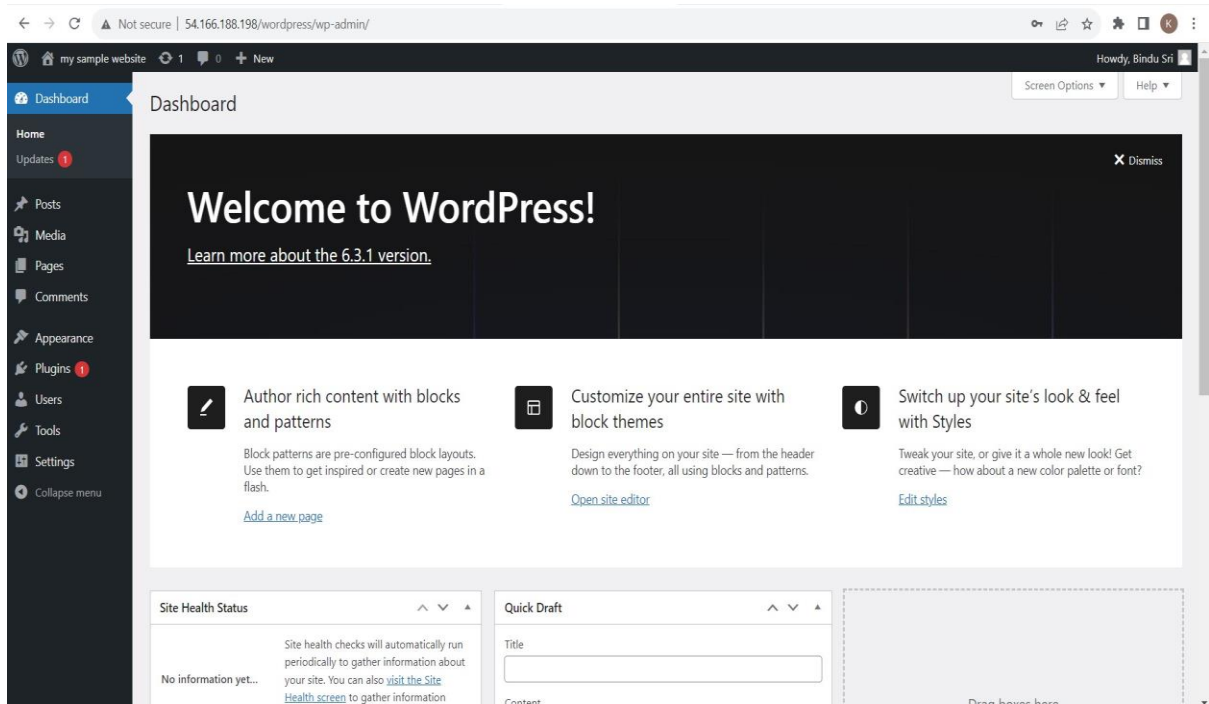
Sample Page

# Mindblown: a blog about philosophy.

Hello world!

Welcome to WordPress. This is your first post.  
Edit or delete it, then start writing!

October 7, 2023



## Adding Security groups to instances

