

## **Task:- Deploy application in monolithic and microservices architecture**

Here's how I completed the task of deploying WordPress in both monolithic and microservices architectures on AWS EC2 instances.

### **1.] Monolithic Architecture:-**

In the monolithic setup, WordPress and MySQL will run on the same EC2 instance.

Steps:

#### **1. Launch an EC2 Instance:**

- Go to the AWS EC2 Dashboard, choose an Ubuntu AMI, select the `t2.micro` instance type, and name it something like `monolithic-wordpress`.

- Create a security group to allow HTTP (port 80) for web access, MySQL (port 3306) from the instance itself, and SSH (port 22) from your IP.

#### **2. Install Required Software:**

- SSH into the instance, update packages, and install Apache for web server, MySQL for the database and PHP.

#### **3. Set Up MySQL:**

- Start MySQL, create a database named `wordpress`, and set up a user with access to this database.

#### **4. Install WordPress:**

- Download WordPress, move it to the web root directory (`/var/www/html/wordpress`), and configure it to connect to MySQL (using `localhost` as the database host).

#### **5. Finish Setup and Create Welcome Page:**

- Access `http://<Instance\_Public\_IP>/wordpress` in a browser to complete the WordPress setup, then log in to the dashboard, create a Welcome Page, and set it as the homepage.

The commands used are as follows:-

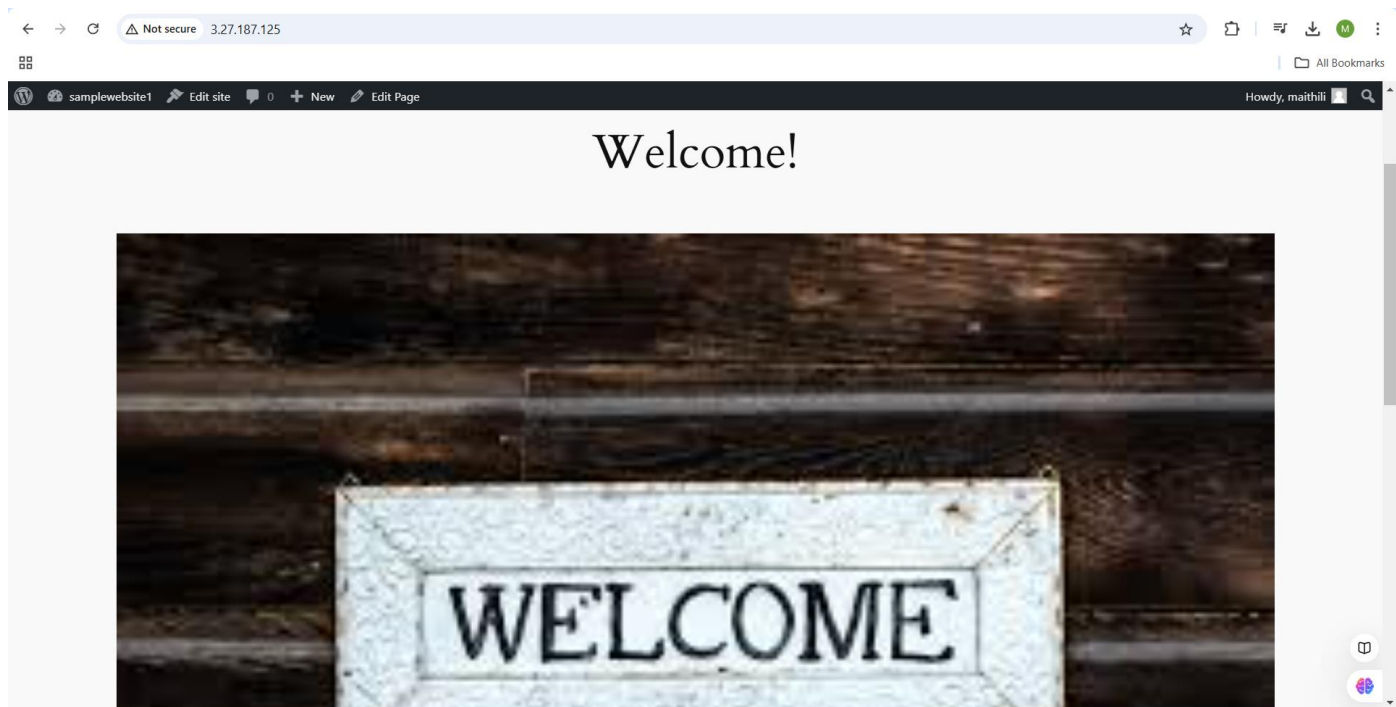
```
aws Services Search [Alt+S] Sydney devops
ubuntu@ip-172-31-8-65:/etc/apache2/sites-available$ history
1 sudo apt update && sudo apt upgrade -y
2 sudo apt install apache2 php php-mysql mysql-server -y
3 sudo systemctl start apache2
4 sudo systemctl enable apache2
5 sudo mysql_secure_installation
6 sudo mysql -u root -p
7 cd /tmp
8 wget https://wordpress.org/latest.tar.gz
9 tar -xzf latest.tar.gz
10 sudo cp -r wordpress/* /var/www/html/
11 cd /var/www/html
12 sudo cp wp-config-sample.php wp-config.php
13 sudo nano wp-config.php
14 sudo chown -R www-data:www-data /var/www/html/
15 sudo systemctl restart apache2
16 cd /var/www/html
17 sudo rm index.html
18 ls /var/www/html
19 sudo chown -R www-data:www-data /var/www/html/
20 sudo chmod -R 755 /var/www/html/
21 sudo systemctl restart apache2
22 ls /var/www/html
23 sudo tar -xzf /tmp/latest.tar.gz -C /var/www/html --strip-components=1
24 sudo chown -R www-data:www-data /var/www/html/
25 sudo chmod -R 755 /var/www/html/
26 sudo systemctl restart apache2
```

i-0534fa6a61a6e9676 (monolithic)

```
aws Services Search [Alt+S] Sydney devops
16 cd /var/www/html
17 sudo rm index.html
18 ls /var/www/html
19 sudo chown -R www-data:www-data /var/www/html/
20 sudo chmod -R 755 /var/www/html/
21 sudo systemctl restart apache2
22 ls /var/www/html
23 sudo tar -xzf /tmp/latest.tar.gz -C /var/www/html --strip-components=1
24 sudo chown -R www-data:www-data /var/www/html/
25 sudo chmod -R 755 /var/www/html/
26 sudo systemctl restart apache2
27 sudo nano /var/www/html/wp-config.php
28 sudo systemctl status mysql
29 mysql -u wpuser -p
30 sudo mysql -u root
31 sudo nano /var/www/html/wp-config.php
32 sudo systemctl restart apache2
33 nano wp-config.php
34 cd /etc/apache2/sites-available/
35 ls
36 nano 000-default.conf
37 sudo nano 000-default.conf
38 sudo systemctl restart apache2
39 sudo nano 000-default.conf
40 sudo systemctl restart apache2
41 history
ubuntu@ip-172-31-8-65:/etc/apache2/sites-available$
```

i-0534fa6a61a6e9676 (monolithic)

It appears like this:-



## 2.] Microservices Architecture

For the microservices setup, WordPress and MySQL will run on separate EC2 instances.

Steps:

### 1. Launch EC2 Instances:

- Start two instances:
  - One for MySQL with a security group that allows inbound MySQL connections (port 3306) from the WordPress instance's private IP.
  - One for WordPress with a security group that allows HTTP (port 80) for public web access and SSH (port 22) from your IP.

### 2. Install MySQL on the MySQL Instance:

- SSH into the MySQL instance, install MySQL, and configure it to accept remote connections. Create a `wordpress` database and a user for the WordPress instance to connect.

### 3. Install WordPress on the WordPress Instance:

- SSH into the WordPress instance, install Apache and PHP, download WordPress, and configure it to connect to the MySQL instance by using the MySQL instance's private IP.

#### 4. Finish Setup and Create Welcome Page:

- Go to `http://<WordPress\_Instance\_Public\_IP>/wordpress` in a browser, complete the WordPress setup, create a Welcome Page, and set it as the homepage.

The commands used are as follows:-

For MySQL instance:-

```
ubuntu@ip-172-31-17-76:~$ history
 1  sudo apt update
 2  sudo apt install mysql-server -y
 3  sudo mysql
 4  sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
 5  sudo systemctl restart mysql
 6  history
ubuntu@ip-172-31-17-76:~$
```

For Wordpress instance:-

```
ubuntu@ip-172-31-24-160:/var/www/html$ history
 1  sudo mv /var/www/html/wordpress/* /var/www/html/
 2  cd /var/www/html/
 3  sudo rm /var/www/html/index.html
 4  sudo chown -R www-data:www-data /var/www/html
 5  sudo chmod -R 755 /var/www/html
 6  sudo systemctl restart apache2
 7  history
ubuntu@ip-172-31-24-160:/var/www/html$
```

It appears like this:-



- Resources referred to complete the task include:- YouTube tutorial-  
<https://youtu.be/8Uofkq718n8?si=GgaeV5LoFh9U19hR>