Task 1- Cloud AWS Intern

Name : Vedant Surve

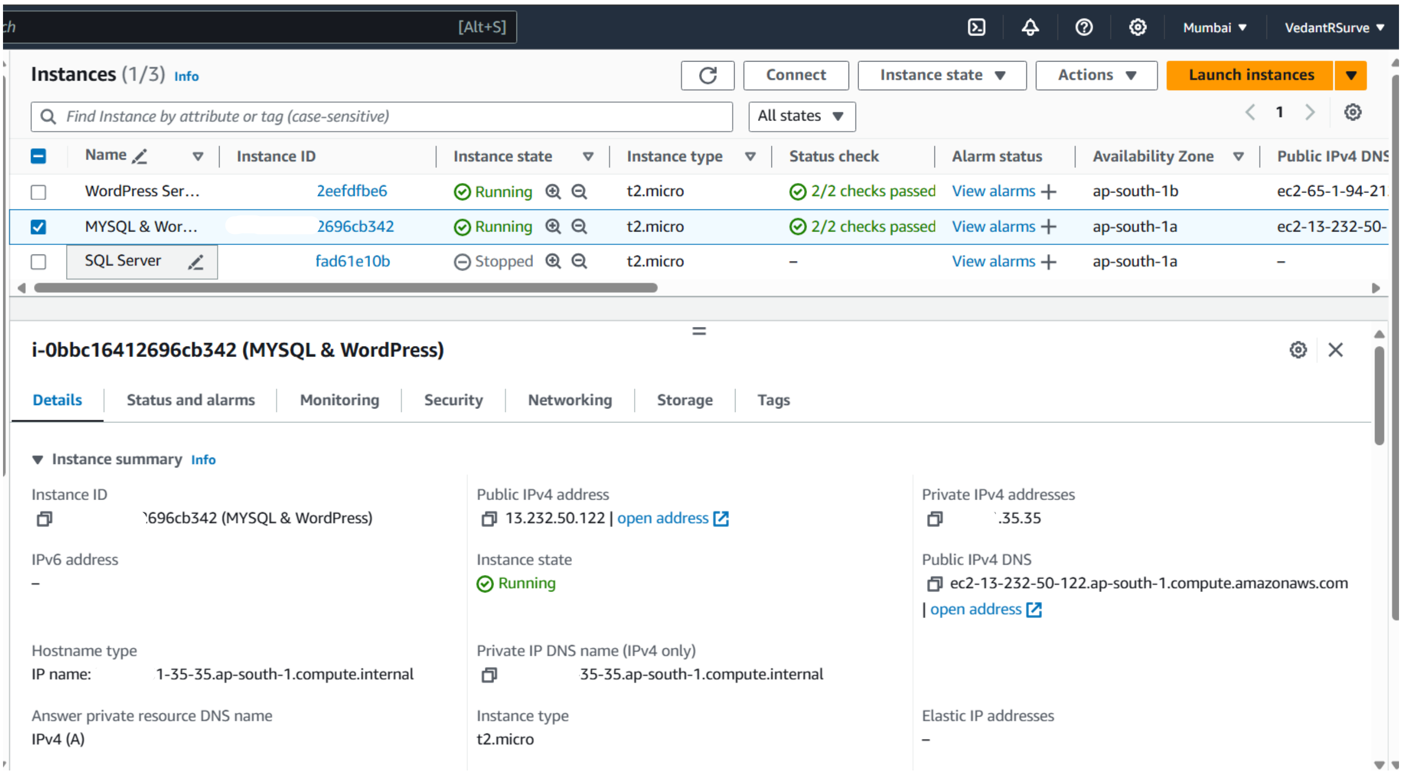
OL/TP1801

Task: Deploy application in monolithic and microservices architecture.

Monolithic Architecture: 1EC2 instance for both MYSQL and WordPress.

1. Create an EC2 instance.

`



Instances (1/3) Info

Find Instance by attribute or tag (case-sensitive)

☐	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
☐	WordPress Ser…	2eefdfbe6	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	ec2-65-1-94-21
☑	MYSQL & Wor…	2696cb342	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13-232-50-
☐	SQL Server	fad61e10b	Stopped	t2.micro	–	View alarms +	ap-south-1a	–

i-0bbc16412696cb342 (MYSQL & WordPress)

Details | Status and alarms | Monitoring | Security | Networking | Storage | Tags

▼ Instance summary Info

Instance ID
`696cb342 (MYSQL & WordPress)

Public IPv4 address
13.232.50.122 | open address

Private IPv4 addresses
.35.35

IPv6 address
–

Instance state
Running

Public IPv4 DNS
ec2-13-232-50-122.ap-south-1.compute.amazonaws.com | open address

Hostname type
IP name: 1-35-35.ap-south-1.compute.internal

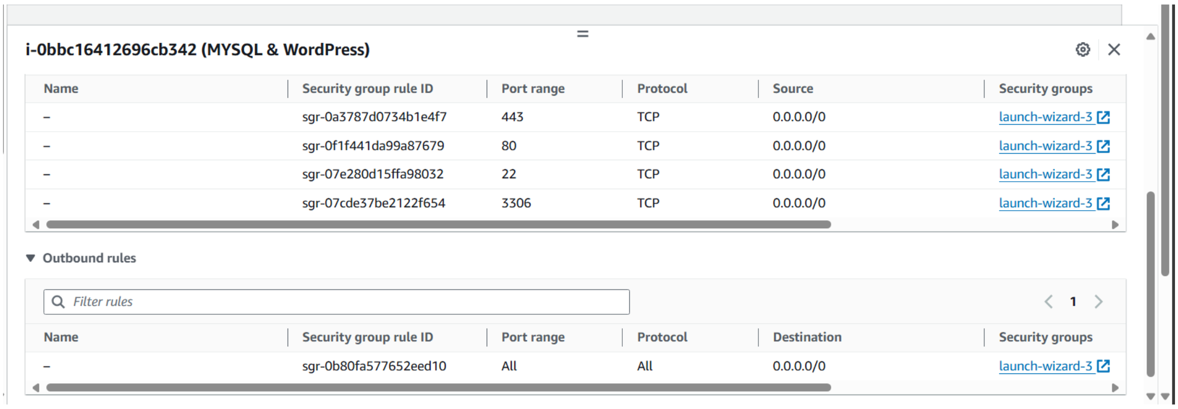
Private IP DNS name (IPv4 only)
35-35.ap-south-1.compute.internal

Answer private resource DNS name
IPv4 (A)

Instance type
t2.micro

Elastic IP addresses
–

2. Configure proper security group to allow HTTP/HTTPS and SSH access.



i-0bbc16412696cb342 (MYSQL & WordPress)

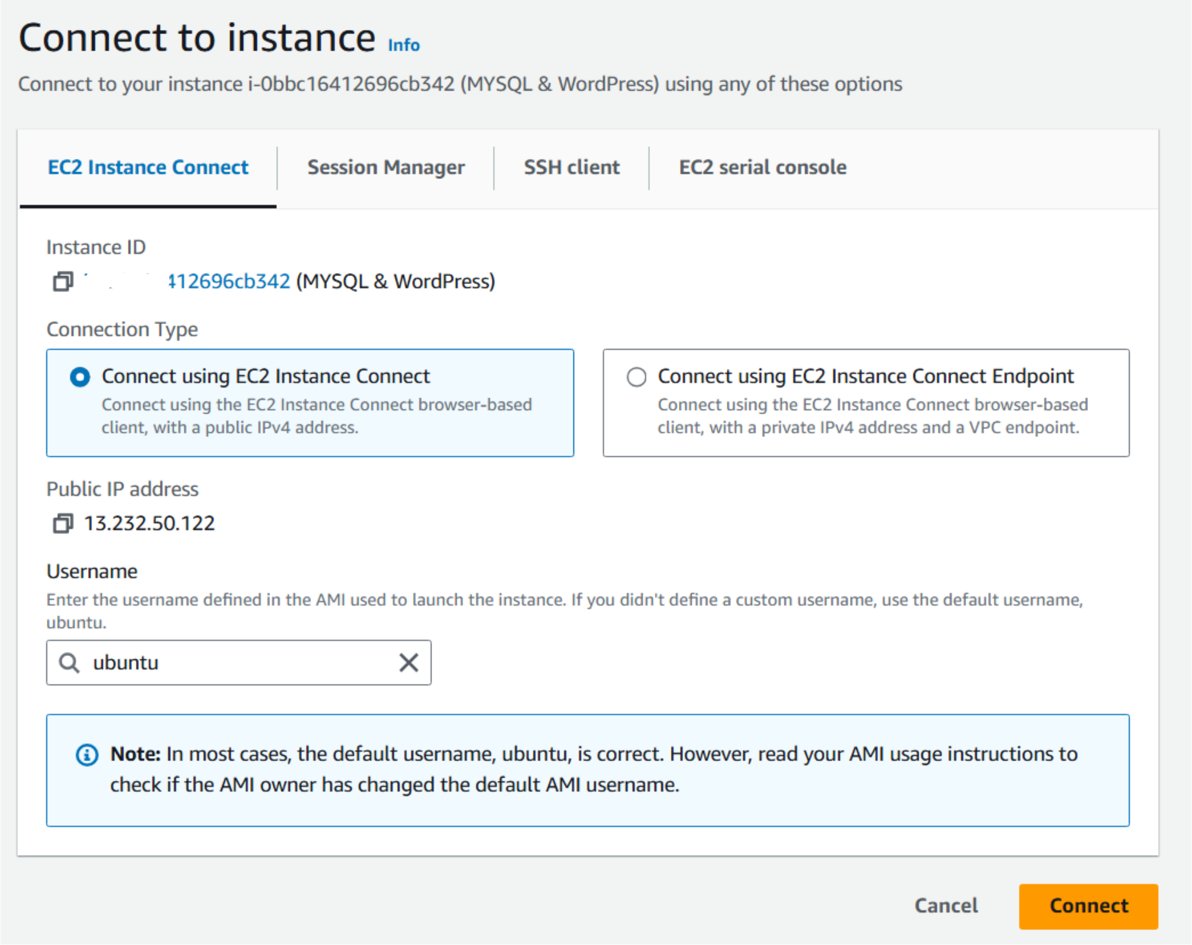
Name	Security group rule ID	Port range	Protocol	Source	Security groups
–	sgr-0a3787d0734b1e4f7	443	TCP	0.0.0.0/0	launch-wizard-3
–	sgr-0f1f441da99a87679	80	TCP	0.0.0.0/0	launch-wizard-3
–	sgr-07e280d15ffa98032	22	TCP	0.0.0.0/0	launch-wizard-3
–	sgr-07cde37be2122f654	3306	TCP	0.0.0.0/0	launch-wizard-3

▼ Outbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Destination	Security groups
–	sgr-0b80fa577652eed10	All	All	0.0.0.0/0	launch-wizard-3

3. Connect to your instance



Connect to instance

Connect to your instance i-0bbc16412696cb342 (MYSQL & WordPress) using any of these options

Instance ID

412696cb342 (MYSQL & WordPress)

Connection Type

● Connect using EC2 Instance Connect
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.

○ Connect using EC2 Instance Connect Endpoint
Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

Public IP address

13.232.50.122

Username

Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ubuntu.

ubuntu

Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

4. Install all the necessary dependencies by writing following commands in terminal.

Update the System:

Update the package lists and upgrade the existing packages.

```
sudo apt update -y
```

```
sudo apt upgrade -y
```

Install Apache:

Install the Apache web server.

```
sudo apt install apache2 -y
```

Install MySQL:

```
sudo apt install mysql-server -y
```

Secure your MySQL installation.

```
sudo mysql_secure_installation
```

Install PHP:

Install PHP and the necessary PHP extensions.

```
sudo apt install php php-mysql libapache2-mod-php php-cli php-cgi php-gd -y
```

Restart Apache:

Restart Apache to load the PHP module.

```
sudo systemctl restart apache2
```

5. Download and Configure WordPress:

Navigate to the web root directory, download WordPress, and extract it.

```
cd /var/www/html
sudo wget https://wordpress.org/latest.tar.gz
sudo tar -xzvf latest.tar.gz
sudo rm latest.tar.gz
sudo mv wordpress/* ./
sudo rm -rf wordpress
```

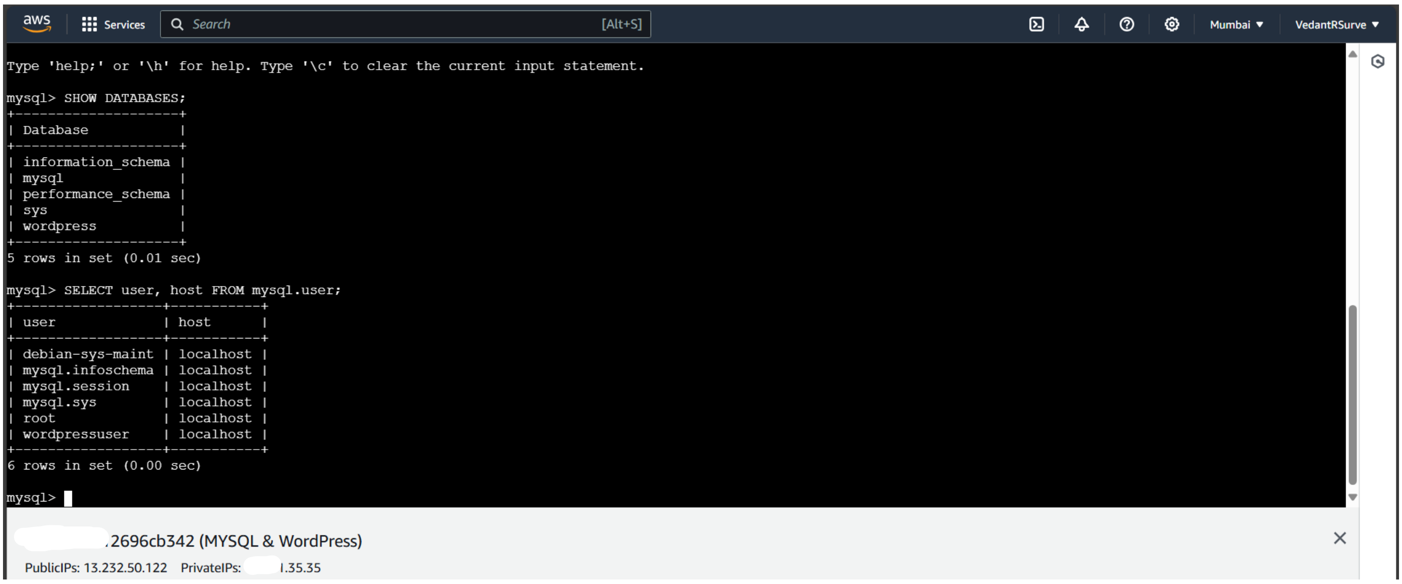
Set the correct permissions for the WordPress files.

```
sudo chown -R www-data:www-data /var/www/html
sudo chmod -R 755 /var/www/html
```

6. Create MySQL Database and User for WordPress:

Within the MySQL shell, run:

```
CREATE DATABASE wordpress;
CREATE USER 'wordpressuser'@'localhost' IDENTIFIED BY 'yourpassword';
GRANT ALL PRIVILEGES ON wordpress.* TO 'wordpressuser'@'localhost';
FLUSH PRIVILEGES;
EXIT;
```



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

mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| wordpress          |
+--------------------+
5 rows in set (0.01 sec)

mysql> SELECT user, host FROM mysql.user;
+------------------+-----------+
| user             | host      |
+------------------+-----------+
| debian-sys-maint | localhost |
| mysql.infoschema | localhost |
| mysql.session    | localhost |
| mysql.sys        | localhost |
| root             | localhost |
| wordpressuser    | localhost |
+------------------+-----------+
6 rows in set (0.00 sec)

mysql> 
```

[redacted].2696cb342 (MYSQL & WordPress)

PublicIPs: 13.232.50.122 PrivateIPs: [redacted]1.35.35

Configure WordPress:

Create the WordPress configuration file.

cd /var/www/html

sudo cp wp-config-sample.php wp-config.php

sudo nano wp-config.php

Modify the following lines with your database details:

define('DB_NAME', 'wordpress');

define('DB_USER', 'wordpressuser');

define('DB_PASSWORD', 'yourpassword');

define('DB_HOST', 'localhost');

7. Enable Apache Rewrite Module:

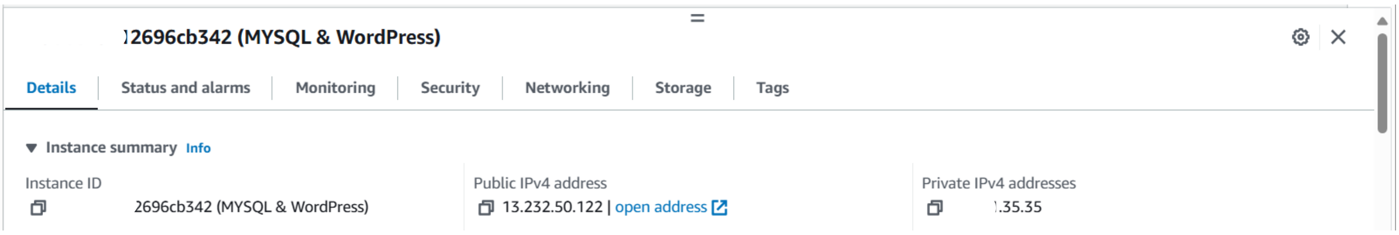
WordPress uses .htaccess files for permalinks, so enable the mod_rewrite module.

sudo a2enmod rewrite

sudo systemctl restart apache2

8. Create WordPress Page

Access the WordPress setup page by **navigating to public ip of the instance** in your web browser. Follow the installation wizard to set up WordPress.



]2696cb342 (MYSQL & WordPress)

Instance summary Info

Instance ID: 2696cb342 (MYSQL & WordPress)

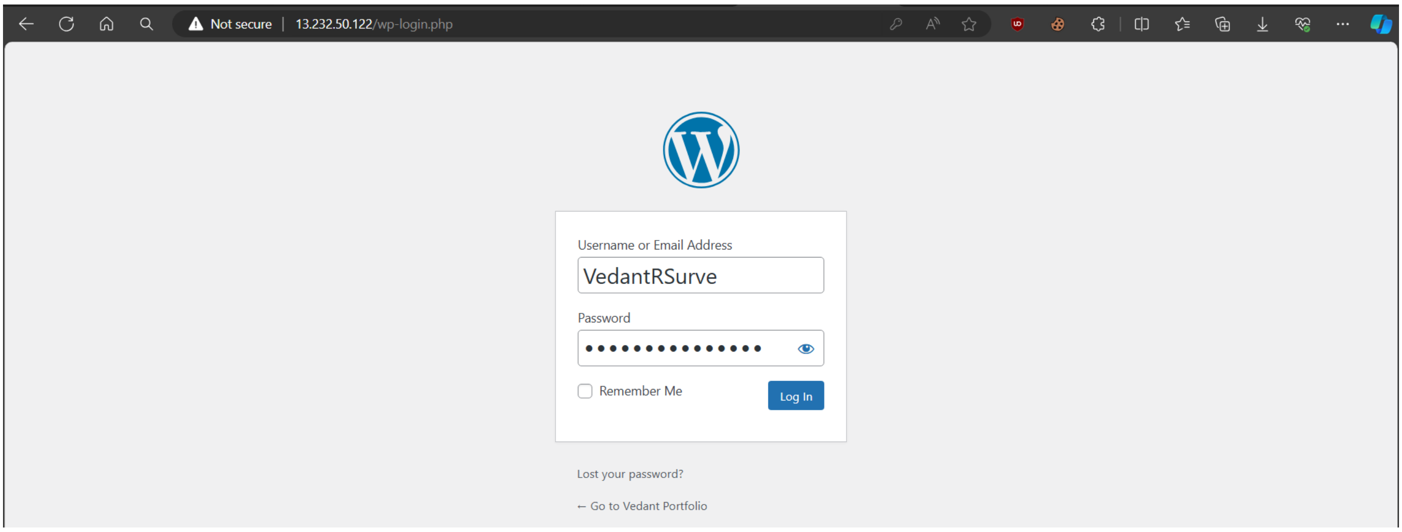
Public IPv4 address: 13.232.50.122 | open address

Private IPv4 addresses:].35.35

Go to your public IP, then a page appears which ask you to create an account and password.

Create a WordPress account and then login to create the page.

your-public-ip/wp-login.php



Not secure | 13.232.50.122/wp-login.php

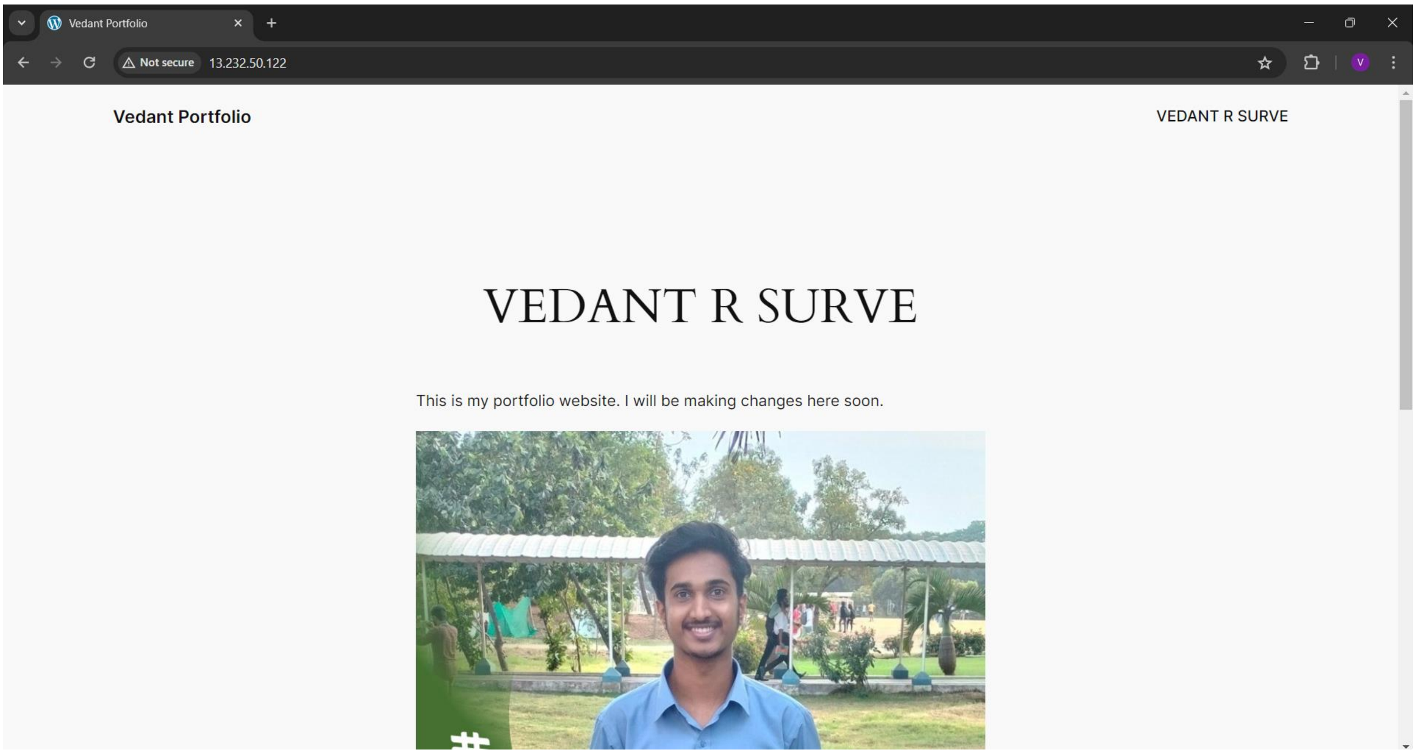
Username or Email Address: VedantRSurve

Password: •••••••••••••••

Create a page and publish it using the dashboard of WordPress.

Finally you can access your page through the **public ip address**.

My Website : http://13.232.50.122/



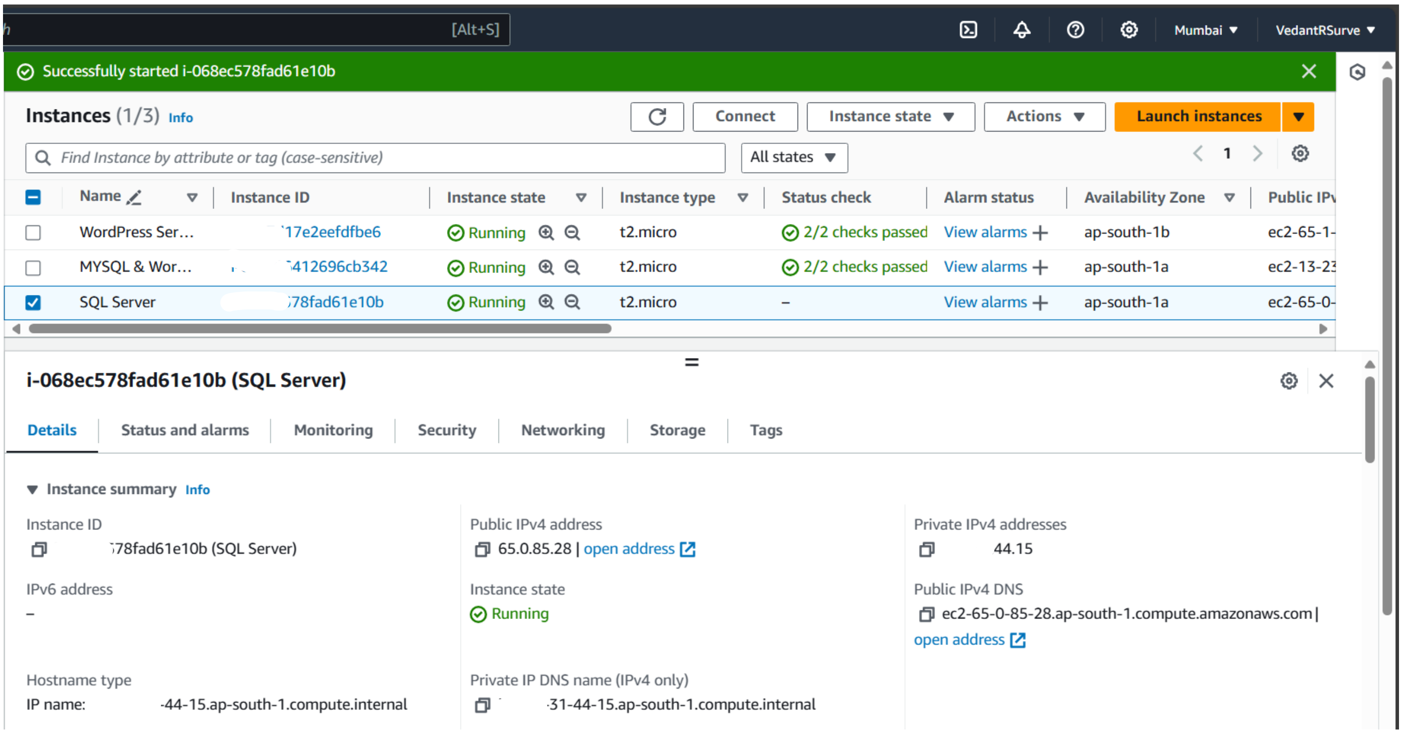
VEDANT R SURVE

This is my portfolio website. I will be making changes here soon.

Microservices Architecture : 1 EC2 instance for MYSQL and 1 EC2 instance for WordPress.

1. Create 2 EC2 instance, one for MYSQL and other for WordPress

SQL EC2 Instance



Successfully started i-068ec578fad61e10b

Instances (1/3) Info

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv
□	WordPress Ser…	`17e2eefdfbe6	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	ec2-65-1-
□	MYSQL & Wor…	412696cb342	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13-23
☑	SQL Server	78fad61e10b	Running	t2.micro	–	View alarms +	ap-south-1a	ec2-65-0-

i-068ec578fad61e10b (SQL Server)

Instance summary Info

Instance ID
78fad61e10b (SQL Server)

Public IPv4 address
65.0.85.28 | open address

Private IPv4 addresses
44.15

IPv6 address
–

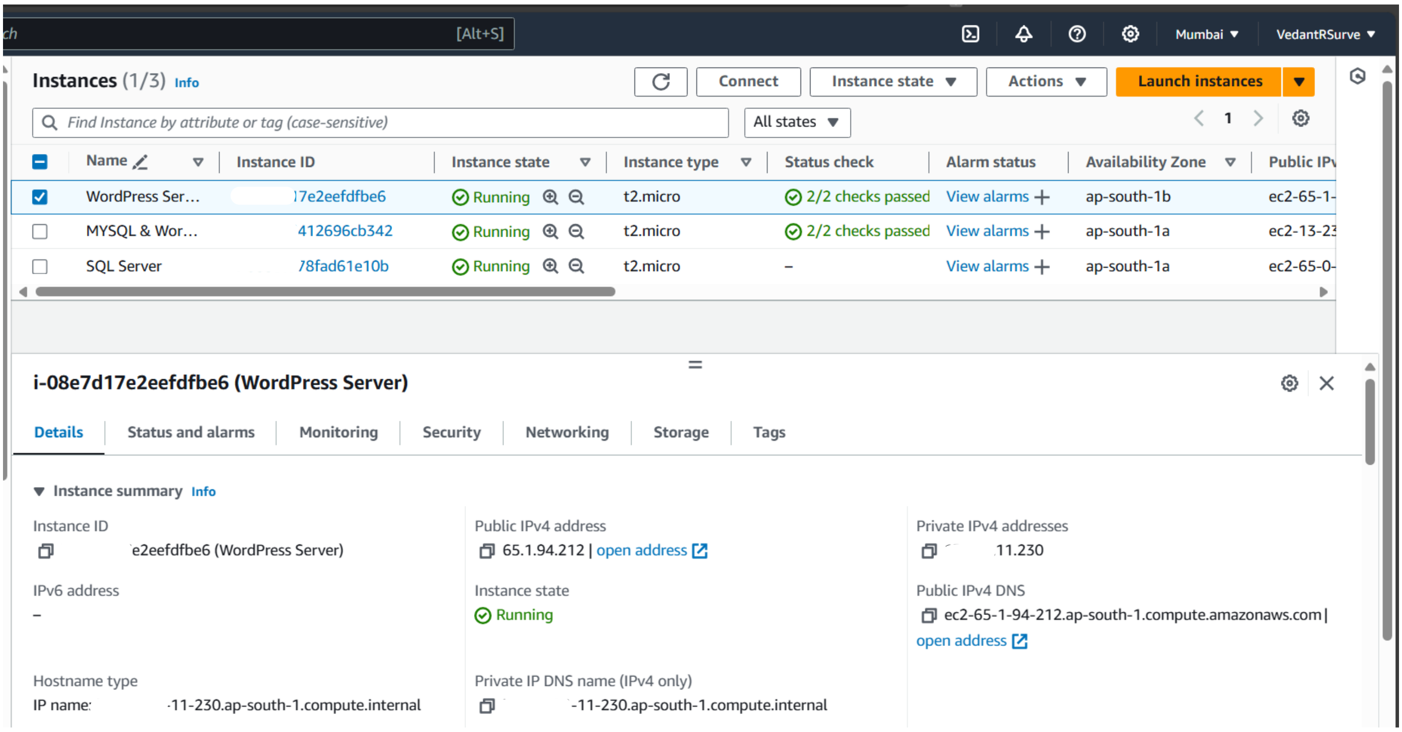
Instance state
Running

Public IPv4 DNS
ec2-65-0-85-28.ap-south-1.compute.amazonaws.com | open address

Hostname type
IP name: -44-15.ap-south-1.compute.internal

Private IP DNS name (IPv4 only)
-31-44-15.ap-south-1.compute.internal

WordPress EC2 instance



Instances (1/3) Info

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv
☑	WordPress Ser…	17e2eefdfbe6	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	ec2-65-1-
□	MYSQL & Wor…	412696cb342	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13-23
□	SQL Server	78fad61e10b	Running	t2.micro	–	View alarms +	ap-south-1a	ec2-65-0-

i-08e7d17e2eefdfbe6 (WordPress Server)

Instance summary Info

Instance ID
e2eefdfbe6 (WordPress Server)

Public IPv4 address
65.1.94.212 | open address

Private IPv4 addresses
11.230

IPv6 address
–

Instance state
Running

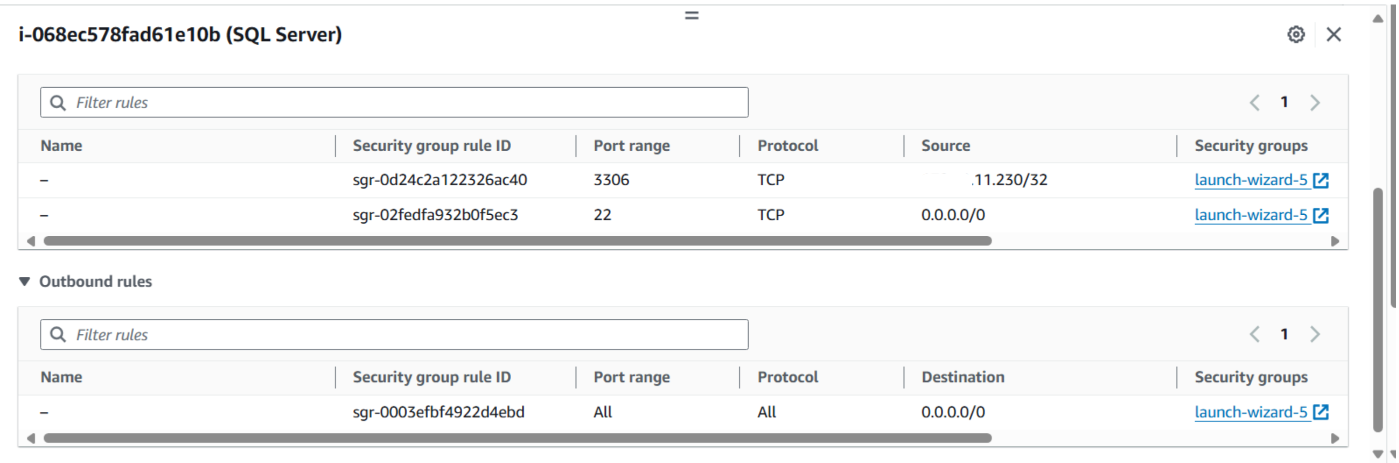
Public IPv4 DNS
ec2-65-1-94-212.ap-south-1.compute.amazonaws.com | open address

Hostname type
IP name: -11-230.ap-south-1.compute.internal

Private IP DNS name (IPv4 only)
-11-230.ap-south-1.compute.internal

2. Configure Necessary Security Groups for both Instance.

SQL EC2 Instance



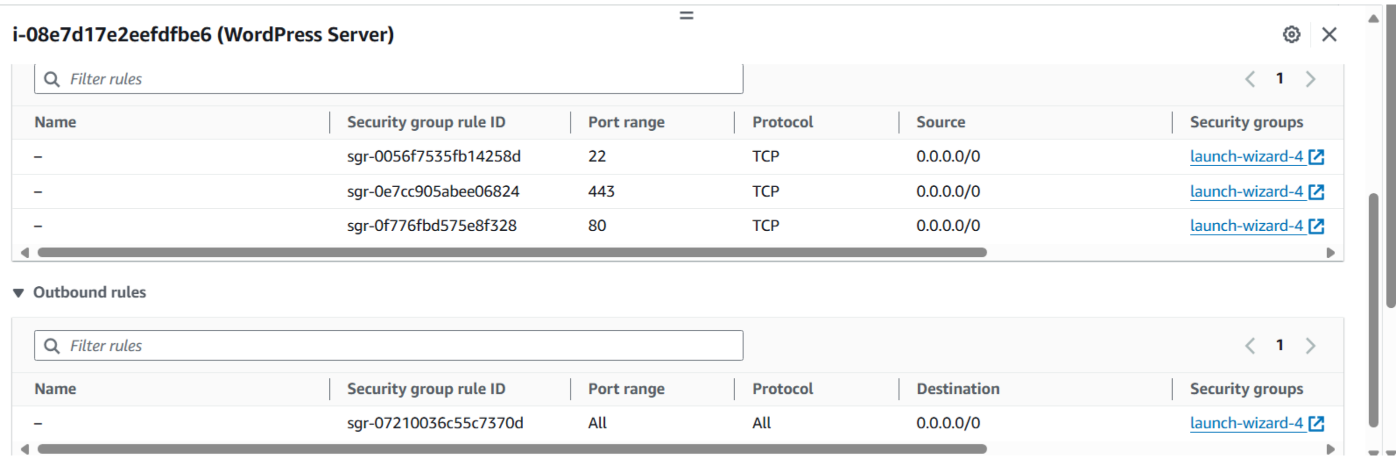
i-068ec578fad61e10b (SQL Server)

Name	Security group rule ID	Port range	Protocol	Source	Security groups
–	sgr-0d24c2a122326ac40	3306	TCP	.11.230/32	launch-wizard-5
–	sgr-02fedfa932b0f5ec3	22	TCP	0.0.0.0/0	launch-wizard-5

Outbound rules

Name	Security group rule ID	Port range	Protocol	Destination	Security groups
–	sgr-0003efbf4922d4ebd	All	All	0.0.0.0/0	launch-wizard-5

WordPress EC2 Instance



i-08e7d17e2eefdfbe6 (WordPress Server)

Name	Security group rule ID	Port range	Protocol	Source	Security groups
–	sgr-0056f7535fb14258d	22	TCP	0.0.0.0/0	launch-wizard-4
–	sgr-0e7cc905abee06824	443	TCP	0.0.0.0/0	launch-wizard-4
–	sgr-0f776fbd575e8f328	80	TCP	0.0.0.0/0	launch-wizard-4

Outbound rules

Name	Security group rule ID	Port range	Protocol	Destination	Security groups
–	sgr-07210036c55c7370d	All	All	0.0.0.0/0	launch-wizard-4

3. Connect to both the EC2 Instances

4. Setup MYSQL Server in SQL EC2 Instance

Install MySQL Server:

sudo apt update

sudo apt install mysql-server

Secure MySQL Installation:

sudo mysql_secure_installation

Create a MySQL Database and User for WordPress:

sudo mysql -u root -p

Then in the MySQL shell:

```
CREATE DATABASE wordpress;
CREATE USER 'wpuser'@'%' IDENTIFIED BY 'yourpassword';
GRANT ALL PRIVILEGES ON wordpress.* TO 'wpuser'@'%';
FLUSH PRIVILEGES;
EXIT;
```

Configure MySQL to Allow Remote Connections:

Edit the MySQL configuration file:

```
sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
```

Find the line with bind-address and change it to:

```
bind-address = 0.0.0.0
```

Restart MySQL:

```
sudo systemctl restart mysql
```

5. Setup WordPress in WordPress EC2 Instance

Install Apache, PHP, and Required Extensions:

```
sudo apt update
sudo apt install apache2
sudo apt install php libapache2-mod-php php-mysql php-gd php-xml php-mbstring
```

Download and Configure WordPress:

```
cd /tmp
curl -O https://wordpress.org/latest.tar.gz
tar xzvf latest.tar.gz
sudo cp -a /tmp/wordpress/. /var/www/html
sudo chown -R www-data:www-data /var/www/html
sudo chmod -R 755 /var/www/html
```

Configure WordPress:

Create the WordPress configuration file:

cd /var/www/html

sudo cp wp-config-sample.php wp-config.php

sudo nano wp-config.php

Update the database connection details in wp-config.php:

define('DB_NAME', 'wordpress');

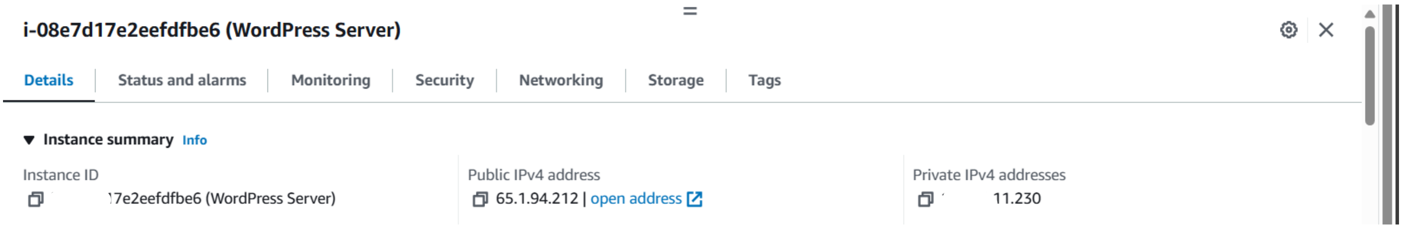
define('DB_USER', 'wpuser');

define('DB_PASSWORD', 'yourpassword');

define('DB_HOST', 'your-mysql-instance-private-ip');

6. Create WordPress Page

Access the WordPress setup page by **navigating to public ip of the WordPress EC2 instance** in your web browser. Follow the installation wizard to set up WordPress.



i-08e7d17e2eefdfbe6 (WordPress Server)

Instance ID: 7e2eefdfbe6 (WordPress Server)

Public IPv4 address: 65.1.94.212 | open address

Private IPv4 addresses: 11.230

Go to your public IP, then a page appears which ask you to create an account and password.

Create a WordPress account and then login to create the page.

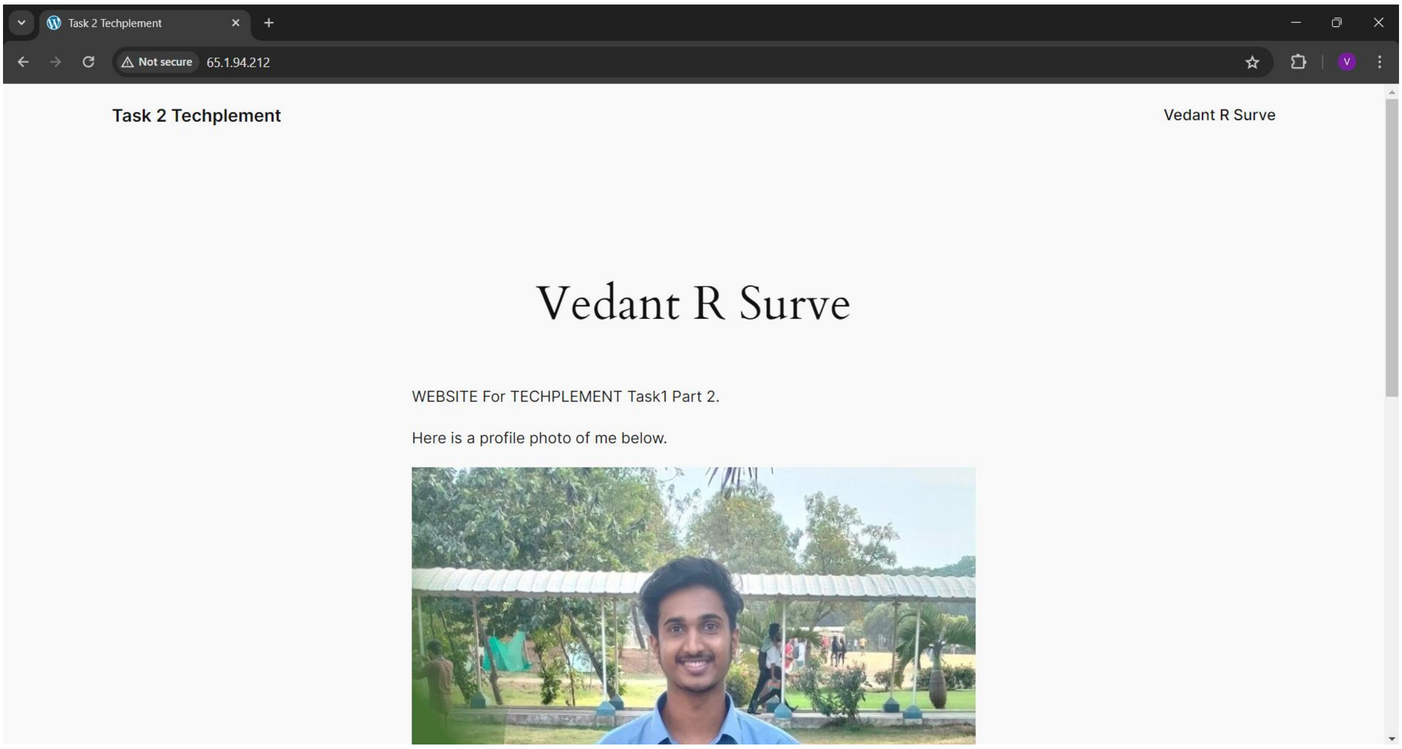
your-public-ip/wp-login.php

7. Publish the Page

Create a page and publish it using the dashboard of WordPress.

Finally you can access your page through the **public ip address**.

My Website : [**http://65.1.94.212/**](http://65.1.94.212/)



Task 2 Techplement

Vedant R Surve

Vedant R Surve

WEBSITE For TECHPLEMENT Task1 Part 2.

Here is a profile photo of me below.