Week 1 Task- Cloud (AWS) Submission

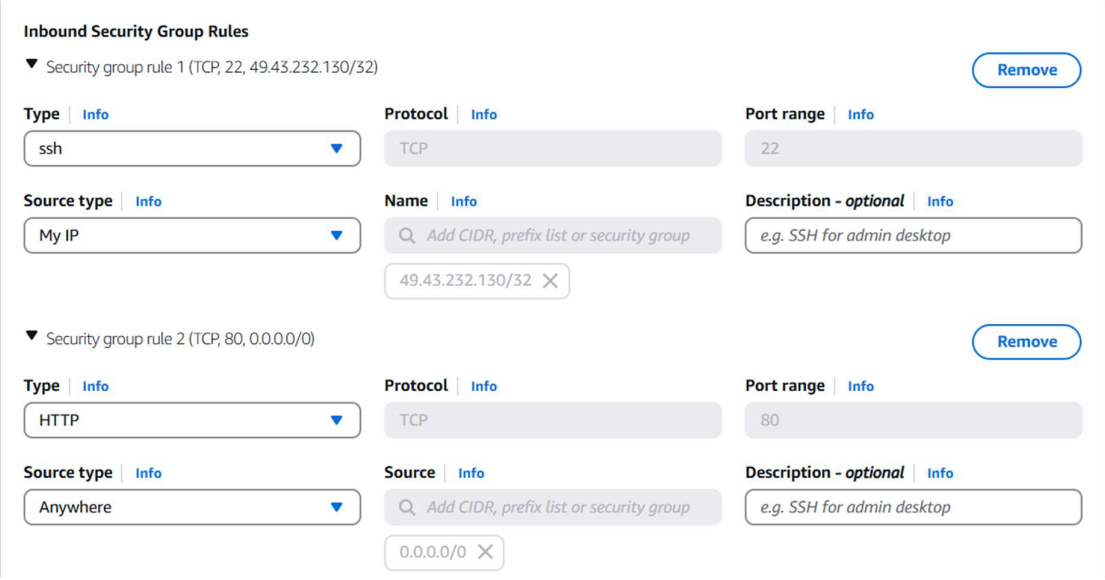
Introduction

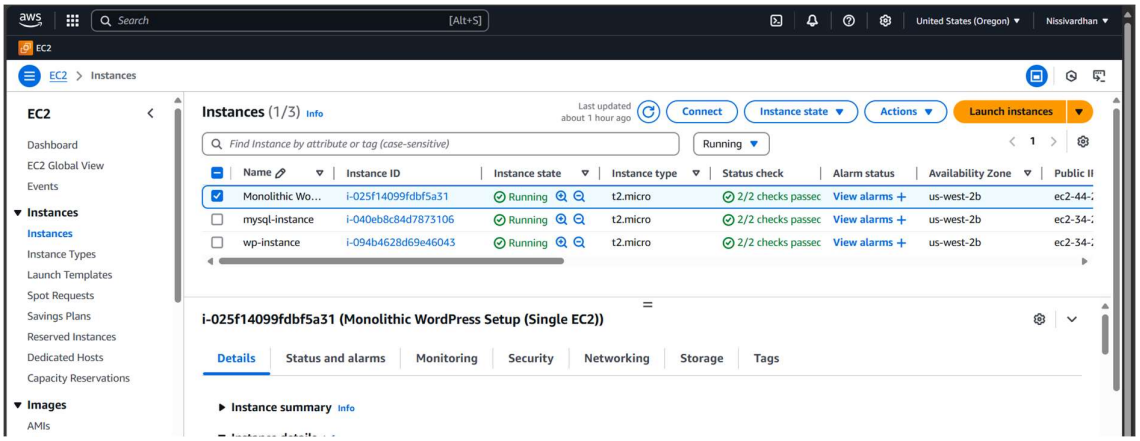
This report details the step-by-step process followed to complete the AWS-based task assigned as part of the Techplement Internship. The document includes explanations, references used, and screenshots of the AWS services configured.

Steps Followed for monolithic

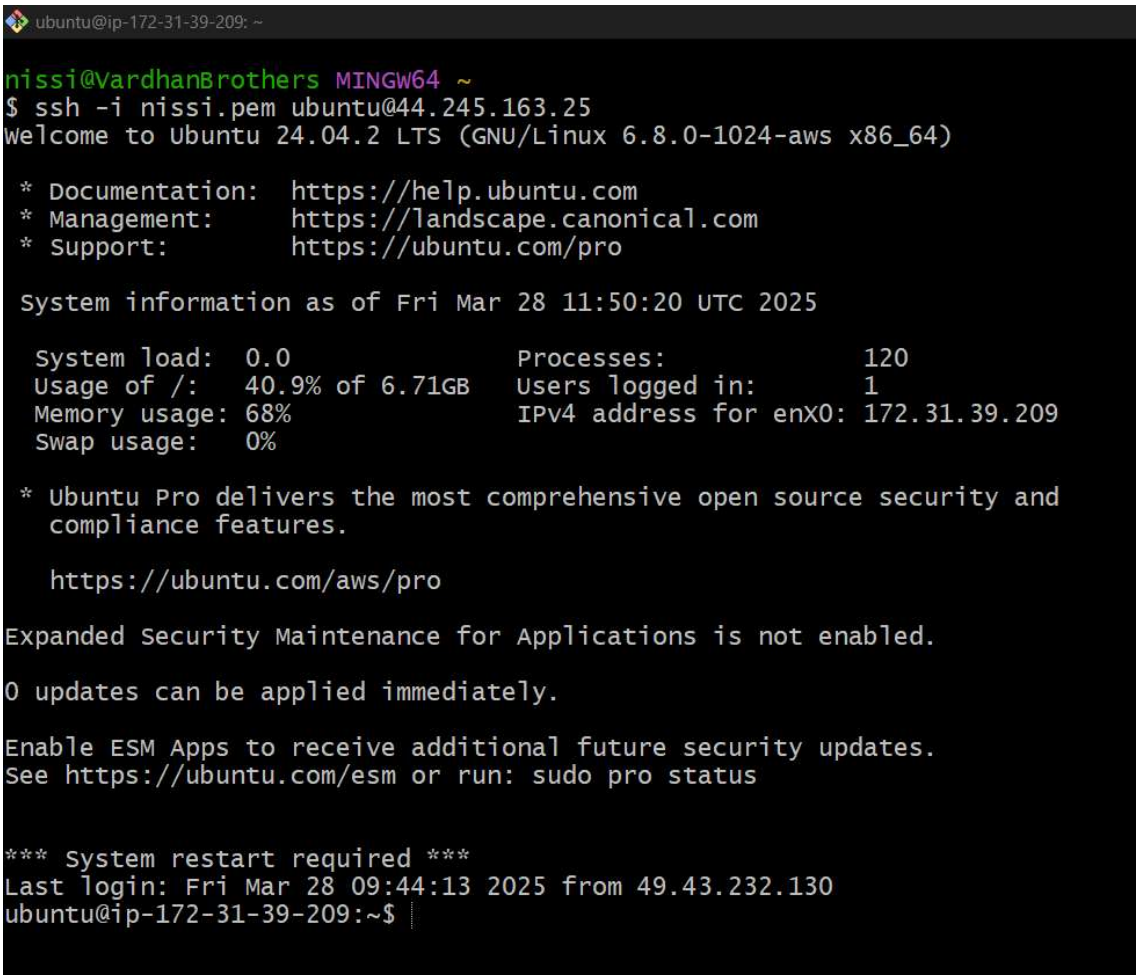
Step 1: Setting Up the Environment

- Created an AWS account and configured IAM roles.
- Launched an EC2 instance (Ubuntu) and set up the security groups.





- Connected to the instance via SSH.

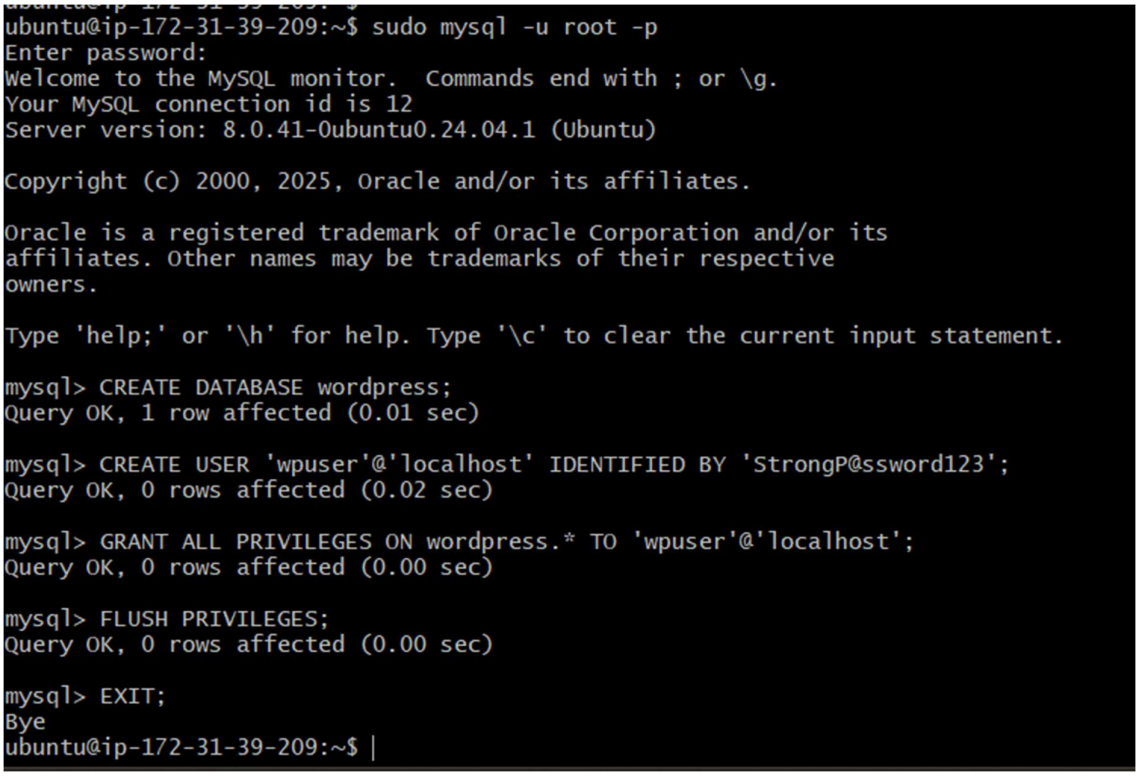


Installing Required Packages

- Installed Apache2 web server and MySQL database.
- Configured necessary firewall rules.

Configuring MySQL Server

- Created a MySQL database for WordPress.
- Created a user and granted privileges.



Deploying WordPress

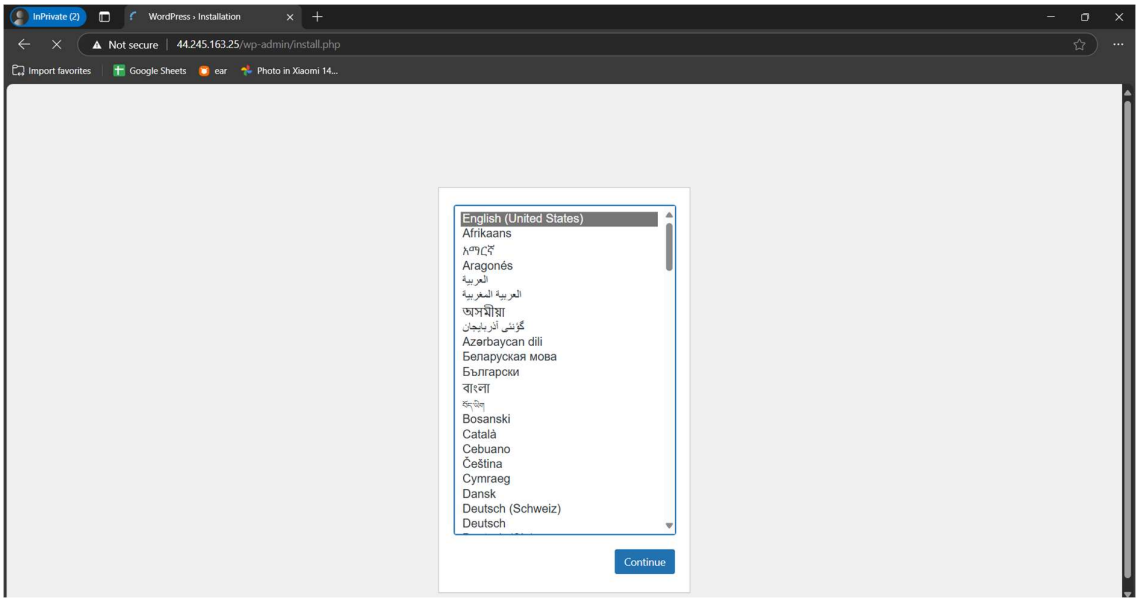
- Downloaded and extracted WordPress.
- Configured the wp-config.php file to connect to the database.

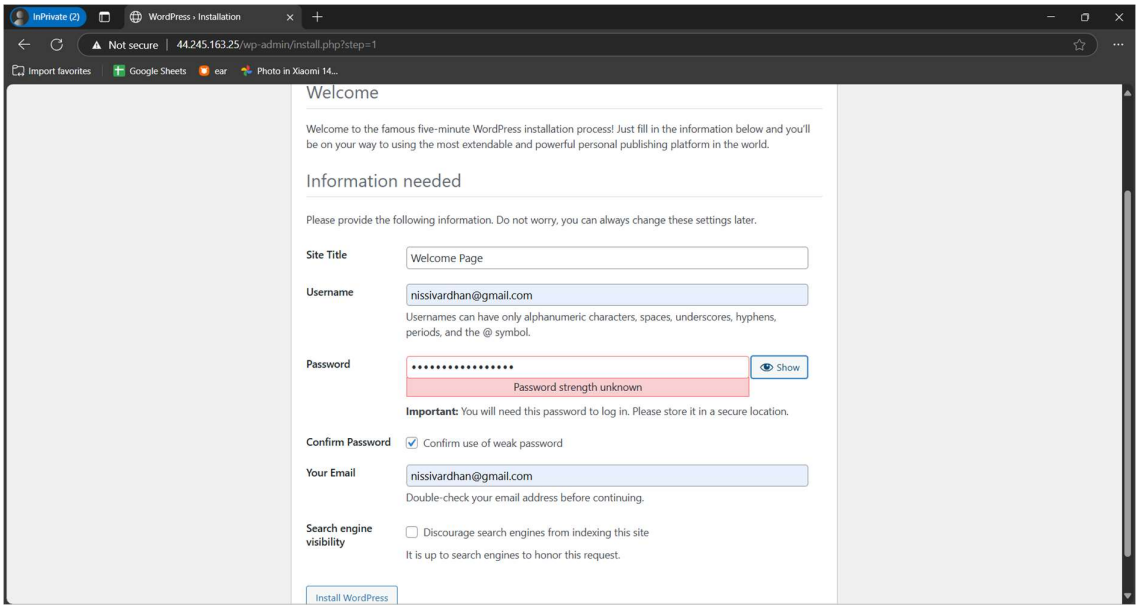
```
// ** Database settings - You can get this info from your web host ** //
/** The name of the database for WordPress */
define( 'DB_NAME', 'wordpress' );

/** Database username */
define( 'DB_USER', 'wpuser' );

/** Database password */
define( 'DB_PASSWORD', 'StrongP@ssword123' );

/** Database hostname */
define( 'DB_HOST', 'localhost' );
```

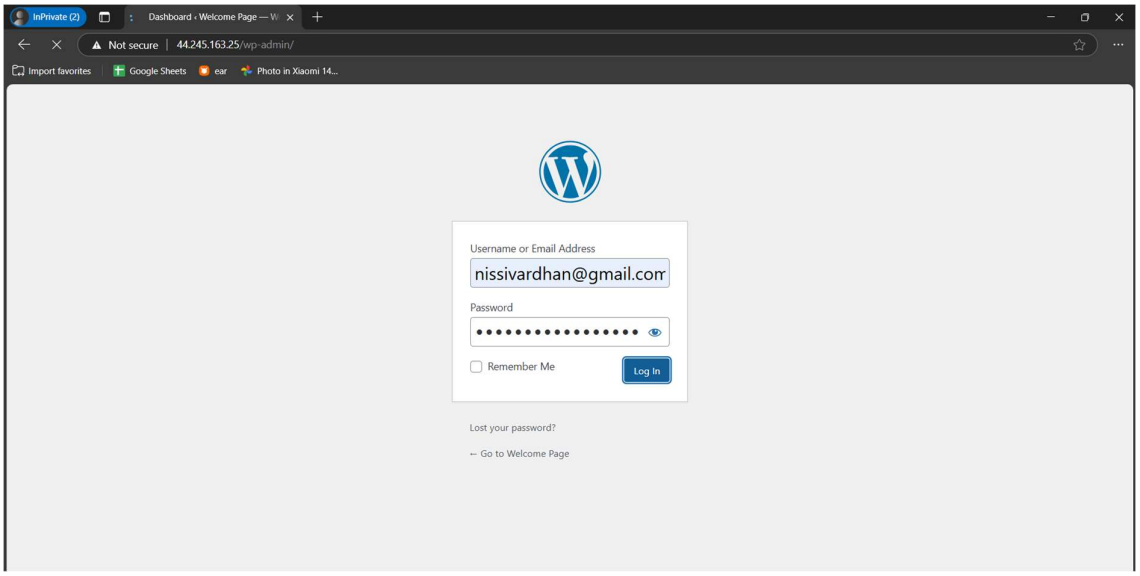
History of commands used on Single Instance

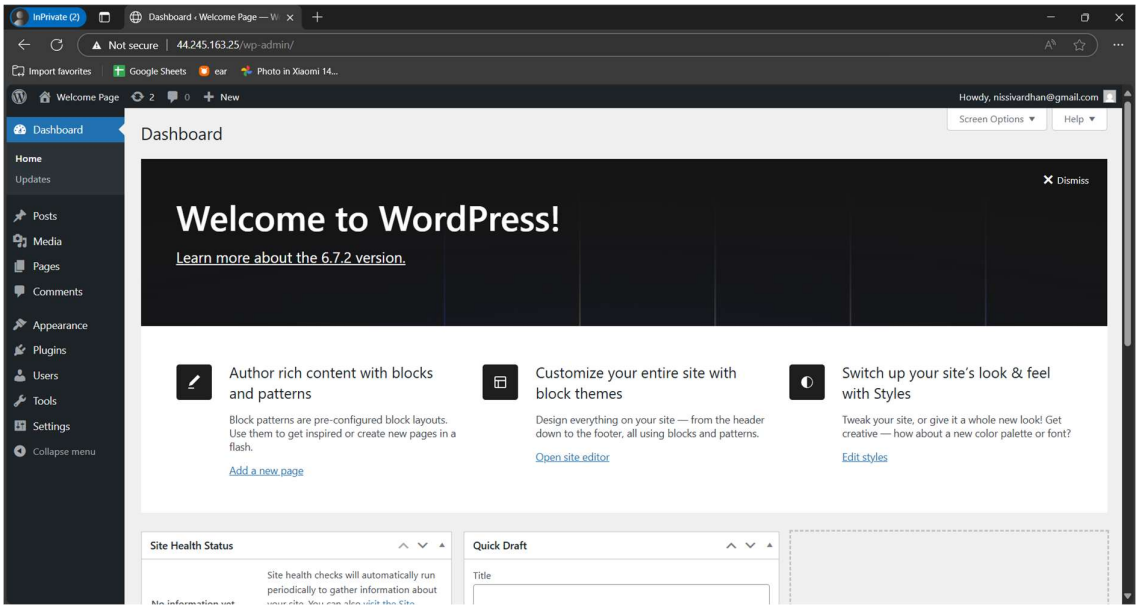
```
ubuntu@ip-172-31-39-209: /var/www/html
ubuntu@ip-172-31-39-209:/var/www/html$ history
    1  clear
    2  sudo apt update && sudo apt upgrade -y
    3  sudo apt install apache2 -y
    4  sudo apt install mysql-server -y
    5  sudo apt install php php-mysql libapache2-mod-php -y
    6  sudo mysql_secure_installation
    7  sudo mysql -u root -p
    8  cd /var/www/html
    9  sudo rm index.html
   10  sudo wget https://wordpress.org/latest.tar.gz
   11  sudo tar -xvzf latest.tar.gz
   12  sudo mv wordpress/* .
   13  sudo rm -rf wordpress latest.tar.gz
   14  sudo chown -R www-data:www-data /var/www/html
   15  sudo chmod -R 755 /var/www/html
   16  sudo cp wp-config-sample.php wp-config.php
   17  sudo nano wp-config.php
   18  sudo systemctl restart apache2
   19  clear
   20  history
ubuntu@ip-172-31-39-209:/var/www/html$
```

Accessed the WordPress site through the public IP.






InPrivate (2)
Dashboard ‹ Welcome Page — W
Not secure | 44.245.163.25/wp-admin/
Import favorites
Google Sheets
ear
Photo in Xiaomi 14...
Username or Email Address
nissivardhan@gmail.com
Password
Remember Me
Log In
Lost your password?
← Go to Welcome Page


InPrivate (2)
Dashboard ‹ Welcome Page — W
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Import favorites
Google Sheets
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Photo in Xiaomi 14...
Welcome Page
2
0
New
Howdy, nissivardhan@gmail.com
Dashboard
Home
Updates
Posts
Media
Pages
Comments
Appearance
Plugins
Users
Tools
Settings
Collapse menu
Dashboard
Screen Options
Help
Dismiss
Welcome to WordPress!
Learn more about the 6.7.2 version.
Author rich content with blocks and patterns
Block patterns are pre-configured block layouts. Use them to get inspired or create new pages in a flash.
Add a new page
Customize your entire site with block themes
Design everything on your site — from the header down to the footer, all using blocks and patterns.
Open site editor
Switch up your site's look & feel with Styles
Tweak your site, or give it a whole new look! Get creative — how about a new color palette or font?
Edit styles
Site Health Status
Site health checks will automatically run periodically to gather information about
Quick Draft
Title

Introduction

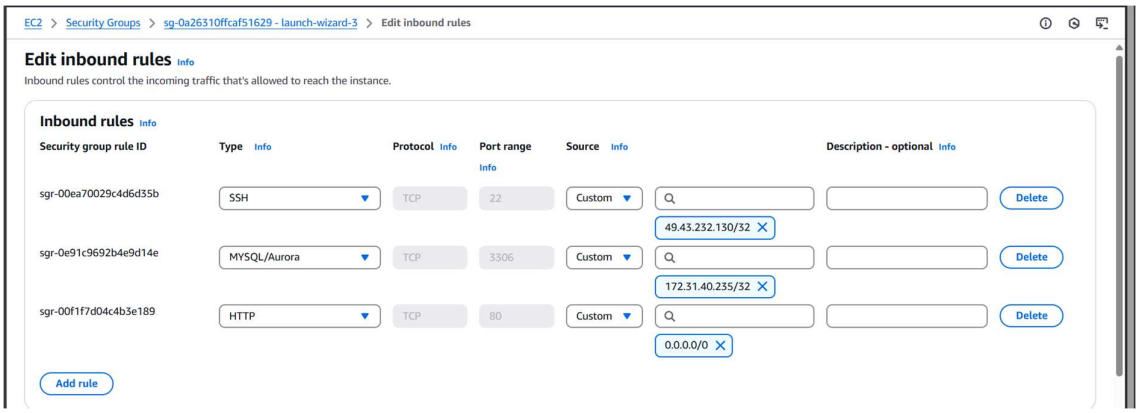
This report details the step-by-step process followed to deploy a WordPress application using a microservices architecture on AWS. The deployment is structured with separate instances handling the application, database, and other services independently.

Steps Followed

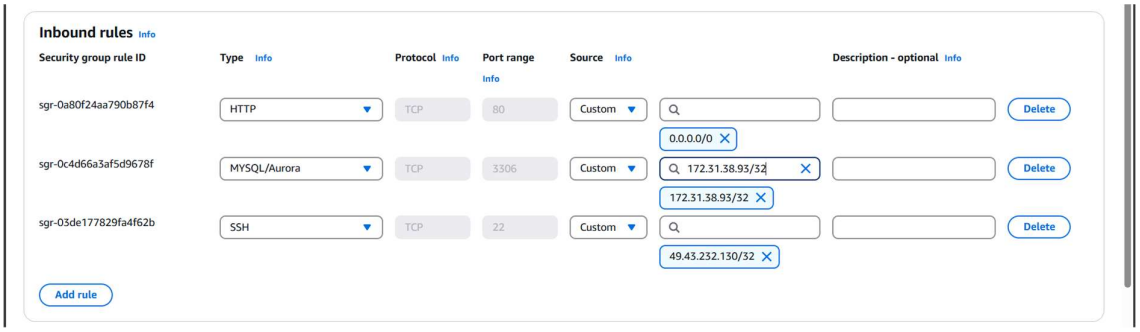
Setting Up AWS Infrastructure

- Launched multiple EC2 instances for different services:
  - **Application Server (WordPress)**
  - **Database Server (MySQL)**
- Configured Security Groups:
  - Allowed HTTP/HTTPS for the application instance.
  - Allowed MySQL port (3306) **only for the WordPress instance**.
  - Allowed SSH access **only from a specific IP** (for security).

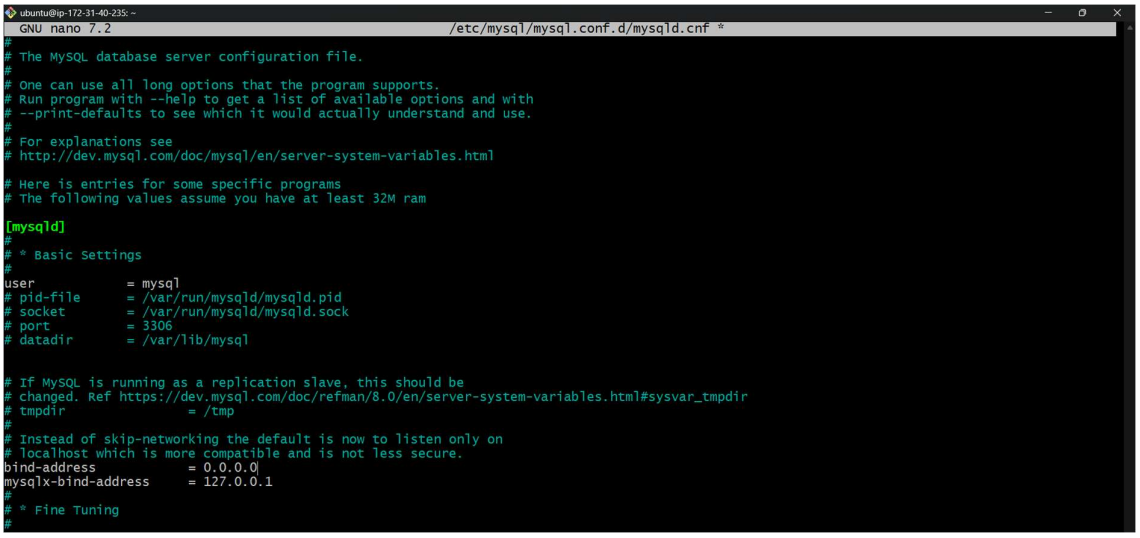
WordPress SG



MySql SG



Setting Up MySQL Server (Database Instance)



```
ubuntu@ip-172-31-40-235:~$
ubuntu@ip-172-31-40-235:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.41-0ubuntu0.24.04.1 (Ubuntu)

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

mysql> CREATE USER 'wpuser'@'%' IDENTIFIED BY 'StrongP@ssword123';
Query OK, 0 rows affected (0.03 sec)

mysql> GRANT ALL PRIVILEGES ON wordpress.* TO 'wpuser'@'%';
Query OK, 0 rows affected (0.01 sec)

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

mysql> EXIT;
Bye
ubuntu@ip-172-31-40-235:~$
```

History of commands of MySql Instance

```
ubuntu@ip-172-31-40-235: ~
ubuntu@ip-172-31-40-235:~$ history
    1  clear
    2  sudo apt update && sudo apt install mysql-server -y
    3  sudo mysql_secure_installation
    4  sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
    5  sudo mysql -u root -p
    6  sudo ufw allow 3306
    7  sudo systemctl restart mysql
    8  clear
    9  history
ubuntu@ip-172-31-40-235:~$
```

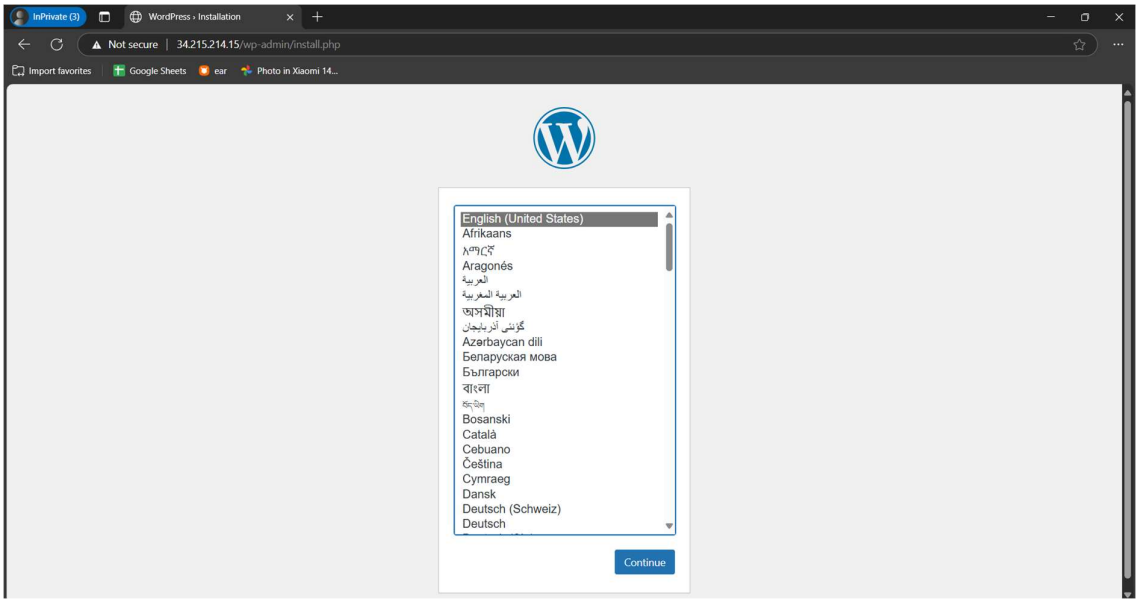
Setting Up the Application Server (WordPress Instance)

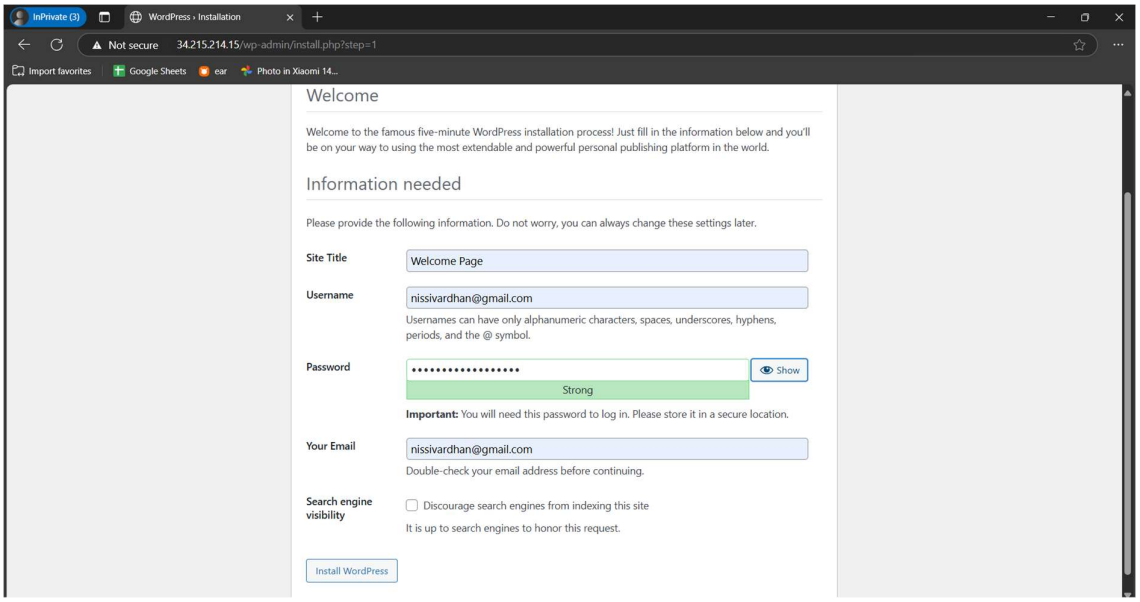
```
 */

// ** Database settings - You can get this info from your web host ** //
/** The name of the database for WordPress */
define( 'DB_NAME', 'wordpress' );

/** Database username */
define( 'DB_USER', 'wpuser' );

/** Database password */
define( 'DB_PASSWORD', 'StrongP@ssword123' );

/** Database hostname */
define( 'DB_HOST', '172.31.40.235' );

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

/** The database collate type. Don't change this if in doubt. */
```

History of commands of WordPress Instance

```
ubuntu@ip-172-31-38-93: /var/www/html
ubuntu@ip-172-31-38-93:/var/www/html$ history
    1  clear
    2  sudo apt update
    3  sudo apt install apache2 php php-mysql libapache2-mod-php -y
    4  cd /var/www/html
    5  ls
    6  sudo rm index.html
    7  ls
    8  sudo wget https://wordpress.org/latest.tar.gz
    9  sudo tar -xvzf latest.tar.gz
   10  sudo mv wordpress/* .
   11  sudo rm -rf wordpress latest.tar.gz
   12  sudo chown -R www-data:www-data /var/www/html
   13  sudo chmod -R 755 /var/www/html
   14  sudo cp wp-config-sample.php wp-config.php
   15  sudo nano wp-config.php
   16  sudo systemctl restart apache2
   17  clear
   18  mysql -u wpuser -h MYSQL-PRIVATE-IP -p
   19  sudo apt update
   20  sudo apt install mysql-client -y
   21  mysql -u wpuser -h MYSQL-PRIVATE-IP -p
   22  mysql -u wpuser -h 172.31.40.235 -p
   23  history
   24  clear
   25  history
ubuntu@ip-172-31-38-93:/var/www/html$
```

Accessed WordPress using **public IP/domain**.




InPrivate (3)
WordPress › Installation
Not secure
34.215.214.15/wp-admin/install.php?step=1
Import favorites
Google Sheets
ear
Photo in Xiaomi 14...
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
Welcome Page
Username
nissivardhan@gmail.com
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
nissivardhan@gmail.com
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

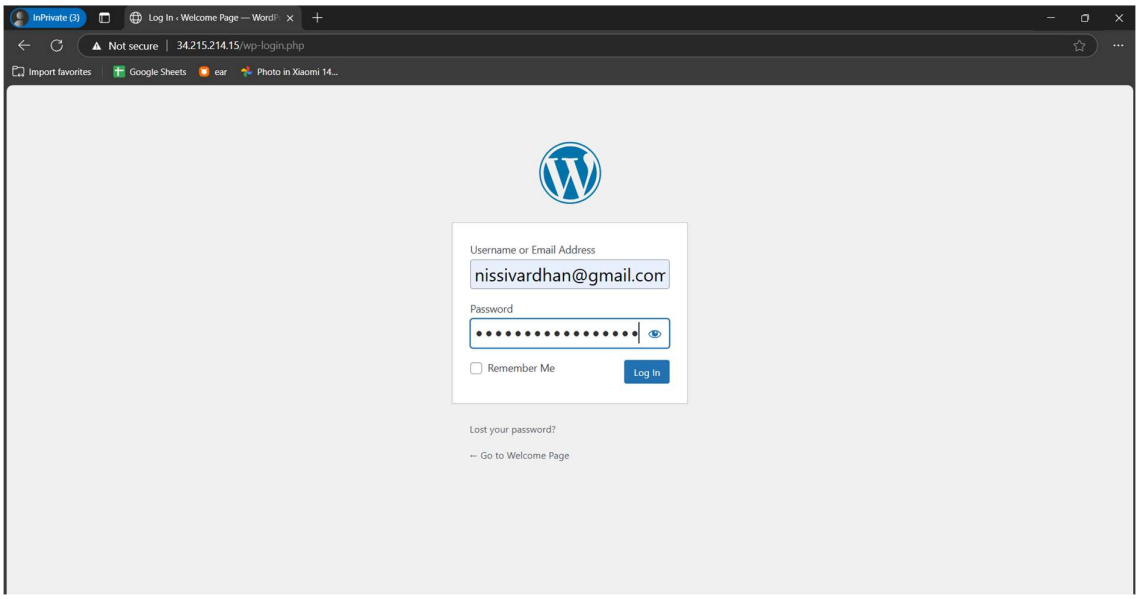

InPrivate (3)
Log In ‹ Welcome Page — WordP
Not secure
34.215.214.15/wp-login.php
Import favorites
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Photo in Xiaomi 14...
Username or Email Address
nissivardhan@gmail.com
Password
Remember Me
Log In
Lost your password?
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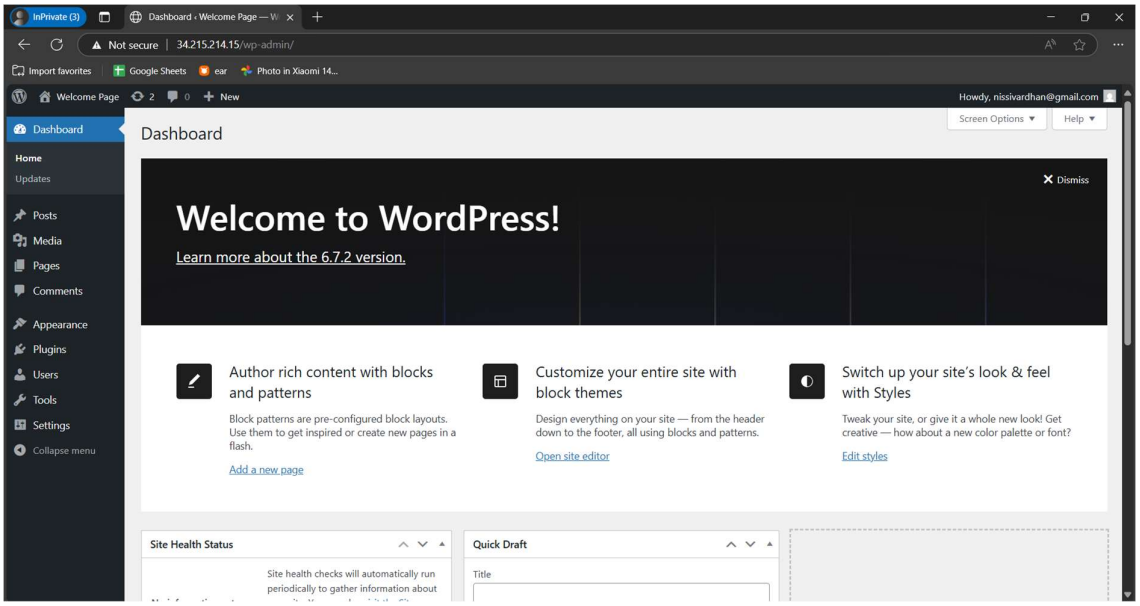

References Used

- AWS Documentation
- WordPress Setup Guide
- ChatGPT