Main project - Using ansible

1. Install the necessary packages, which include MySQL 10.6, PHP version 8 or higher, and Nginx on your Linux server.
2. Create a user's home directory under the '/home' directory. You should set the root directory for the website to be '/home/username/websitename/public."
3. Configure SFTP (Secure File Transfer Protocol) access for the user to ensure secure file management.
4. Configure phpmyadmin access for the user to ensure secure database management.
5. Install a free SSL certificate to enable secure HTTPS access to your website.
6. Once the website is hosted, proceed to the WordPress dashboard to make necessary configurations and customizations.
7. Write a personal blog post about yourself using the WordPress content management system.

What is Ansible

Ansible is an open-source automation tool used to manage and configure systems, deploy software, and orchestrate tasks across multiple machines. It uses simple, human-readable YAML (Yet Another Markup Language) files to define automation tasks, known as "playbooks." Ansible is agentless, meaning it doesn't require any special software or agent to be installed on the managed systems, making it easy to set up and use.

Key features of Ansible:

1. **Configuration Management**: Automates the configuration of systems, ensuring they are consistent and compliant with defined policies.
2. **Application Deployment**: Facilitates the deployment of applications to multiple servers or environments.
3. **Orchestration**: Manages complex workflows, such as the orchestration of tasks across different systems and services.
4. **Security and Compliance**: Helps enforce security policies by automating system configurations and updates.
5. **Idempotency**: Ensures that tasks can be safely run multiple times without causing unintended side effects.

1. Install nginx

```
[root@ip-192-168-1-227 ~]# yum install nginx -y
Last metadata expiration check: 0:06:12 ago on Sun Jan  5 14:04:49 2025.
Dependencies resolved.
================================================================================
 Package                 Architecture       Version                  Repository          Size
================================================================================
Installing:
 nginx                   x86_64             1:1.26.2-1.amzn2023.0.1  amazonlinux         33 k
Installing dependencies:
 generic-logos-httpd     noarch             18.0.0-12.amzn2023.0.3   amazonlinux         19 k
 gperftools-libs         x86_64             2.9.1-1.amzn2023.0.3     amazonlinux        308 k
 libunwind               x86_64             1.4.0-5.amzn2023.0.2     amazonlinux         66 k
 nginx-core              x86_64             1:1.26.2-1.amzn2023.0.1  amazonlinux        670 k
 nginx-filesystem        noarch             1:1.26.2-1.amzn2023.0.1  amazonlinux        9.9 k
 nginx-mimetypes         noarch             2.1.49-3.amzn2023.0.3    amazonlinux         21 k
```

2. Start and enable nginx

```
[root@ip-192-168-1-227 ~]# systemctl start nginx.service
[root@ip-192-168-1-227 ~]# systemctl enable nginx.service
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/nginx.service.
```

3. Add a user and password

```
[root@ip-192-168-1-227 ~]# useradd vishnu
[root@ip-192-168-1-227 ~]# passwd vishnu
Changing password for user vishnu.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
```

4. Create a home directory

```
[root@ip-192-168-1-227 ~]# mkdir /home/vishnu/website
[root@ip-192-168-1-227 ~]# mkdir /home/vishnu/website/public
```

5. Create a nginx configuration file

```
[root@ip-192-168-1-227 ~]# vim /etc/nginx/conf.d/myweb.conf
```

root@ip-192-168-1-227:~

```
server {
        listen       80;
        listen       [::]:80;
        server_name  _;
        root         /home/Vishnu/website/public;

        # Load configuration files for the default server block.
        include /etc/nginx/default.d/*.conf;

        error_page 404 /404.html;
        location = /404.html {
        }

        error_page 500 502 503 504 /50x.html;
        location = /50x.html {
        }
        }
```

6. Add permission to home directory

```
[root@ip-192-168-1-227 ~]# chmod -R 755 /home/vishnu
```

7. Restart nginx

```
[root@ip-192-168-1-227 ~]# systemctl restart nginx
```

8. Create a repo file for mariadb 10.6

```
[root@ip-192-168-1-227 ~]# vim /etc/yum.repos.d/MariaDB.repo
```

```
root@ip-192-168-1-227:~
[mariadb]
name = MariaDB
baseurl = http://yum.mariadb.org/10.6/rhel9-amd64
gpgkey = https://yum.mariadb.org/RPM-GPG-KEY-MariaDB
gpgcheck = 1
enabled = 1
~
~
```

9. Install mysl and php

```
[root@ip-192-168-1-227 ~]# yum install php php-mysqlnd php-mysqli php-gd php-mbstring mariadb-server mariadb -y
MariaDB                                                         392 kB/s | 598 kB     00:01
Dependencies resolved.
================================================================================================================
 Package                    Architecture     Version                       Repository              Size
================================================================================================================
Installing:
 MariaDB-client             x86_64           10.6.20-1.el9                 mariadb                8.5 M
 MariaDB-server             x86_64           10.6.20-1.el9                 mariadb                 18 M
 php8.3                     x86_64           8.3.10-1.amzn2023.0.1         amazonlinux             10 k
 php8.3-gd                  x86_64           8.3.10-1.amzn2023.0.1         amazonlinux             43 k
 php8.3-mbstring            x86_64           8.3.10-1.amzn2023.0.1         amazonlinux            528 k
 php8.3-mysqlnd             x86_64           8.3.10-1.amzn2023.0.1         amazonlinux            147 k
```

10. Start and enable mariadb

```
[root@ip-192-168-1-227 ~]# systemctl start mariadb
[root@ip-192-168-1-227 ~]# systemctl enable mariadb
Created symlink /etc/systemd/system/multi-user.target.wants/mariadb.service → /usr/lib/systemd/system/mariadb.service.
```

11. Mariadb-secure-installation

```
[root@ip-192-168-1-227 ~]# mariadb-secure-installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer 'n'.

Switch to unix_socket authentication [Y/n]
Enabled successfully!
Reloading privilege tables..
 ... Success!
```

12. Create database

```
[root@ip-192-168-1-227 ~]# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 13
Server version: 10.6.20-MariaDB MariaDB Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> CREATE DATABASE vishnu_db;
Query OK, 1 row affected (0.000 sec)

MariaDB [(none)]> CREATE USER 'vishnu'@'localhost' IDENTIFIED BY 'redhat';
Query OK, 0 rows affected (0.001 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON vishnu_db.* TO 'vishnu'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [(none)]> FLUSH PRIVILEGES
    -> FLUSH PRIVILEGES;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corr
on for the right syntax to use near 'FLUSH PRIVILEGES' at line 2
MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.000 sec)

MariaDB [(none)]> EXIT;
Bye
```

13. Change directory

```
[root@ip-192-168-1-227 ~]# cd /home/vishnu/website/public/
[root@ip-192-168-1-227 public]#
```

14. Install wordpress

```
[root@ip-192-168-1-227 public]# wget https://wordpress.org/latest.zip
--2025-01-05 14:35:26--  https://wordpress.org/latest.zip
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: 28585184 (27M) [application/zip]
Saving to: ‘latest.zip’

latest.zip                  100%[=============================================>]  27.26M  6.44MB/s    in 5.7s

2025-01-05 14:35:33 (4.77 MB/s) - ‘latest.zip’ saved [28585184/28585184]
```

15. Unzip the file

```
[root@ip-192-168-1-227 public]# unzip latest.zip
Archive:  latest.zip
   creating: wordpress/
  inflating: wordpress/xmlrpc.php
  inflating: wordpress/wp-blog-header.php
  inflating: wordpress/readme.html
  inflating: wordpress/wp-signup.php
  inflating: wordpress/index.php
  inflating: wordpress/wp-cron.php
  inflating: wordpress/wp-config-sample.php
  inflating: wordpress/wp-login.php
  inflating: wordpress/wp-settings.php
  inflating: wordpress/license.txt
   creating: wordpress/wp-content/
   creating: wordpress/wp-content/themes/
```

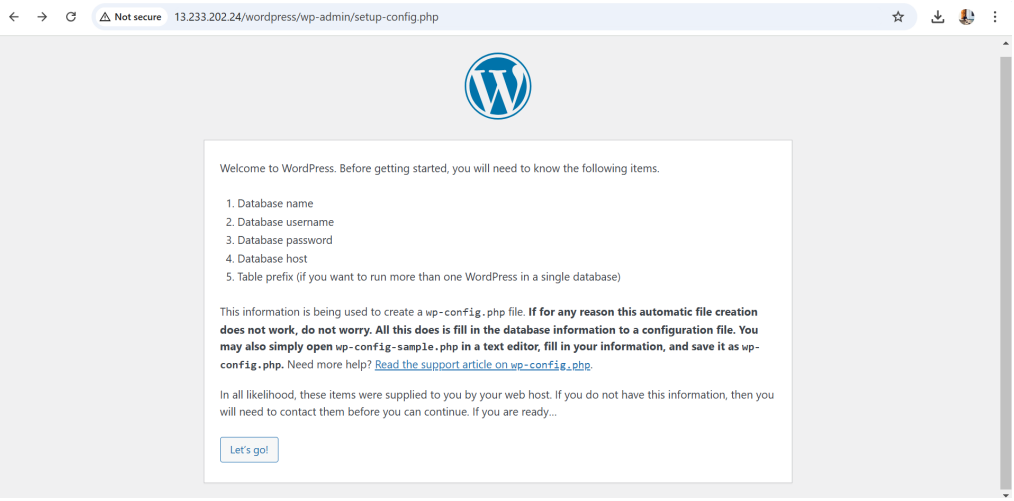
16. Remove the file

```
[root@ip-192-168-1-227 public]# rm -f latest.zip
```

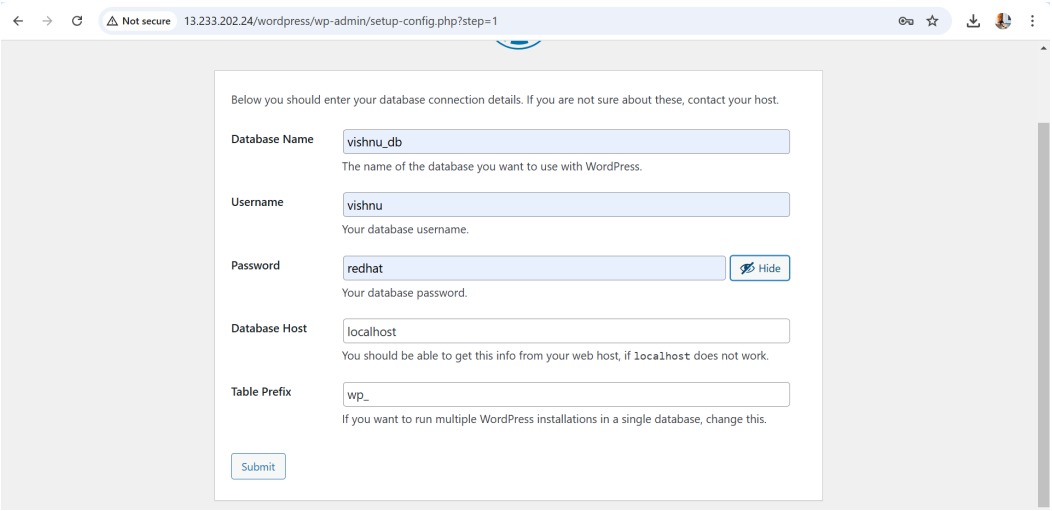
17. Add permissionto wp-content

```
[root@ip-192-168-1-227 public]# chmod -R 755 wordpress/wp-content/
```

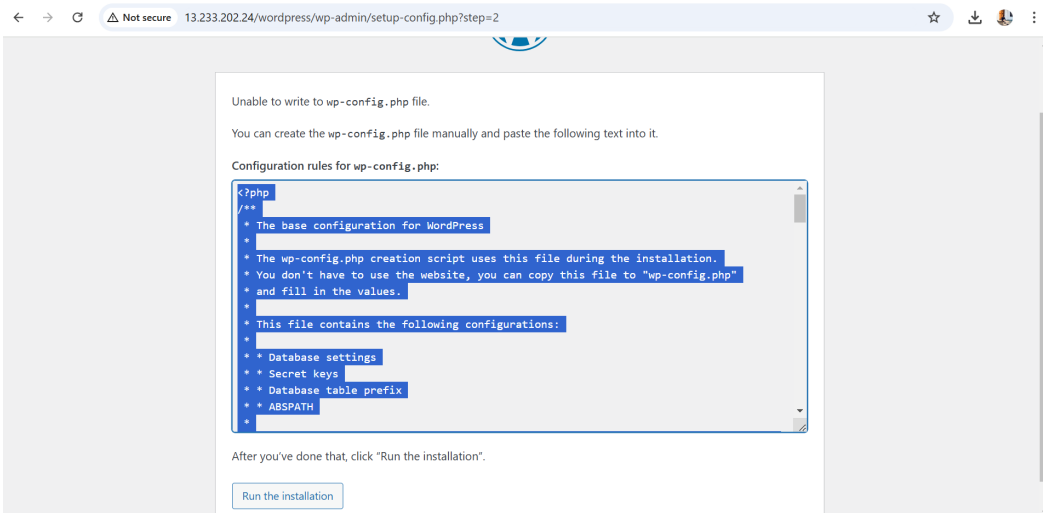
18. Open browser and search ‘IP address/wordpress’



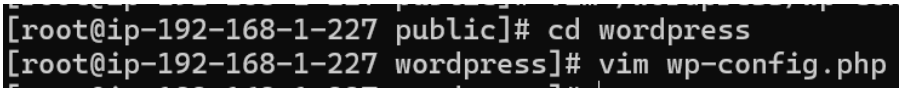
19. Fill the database details

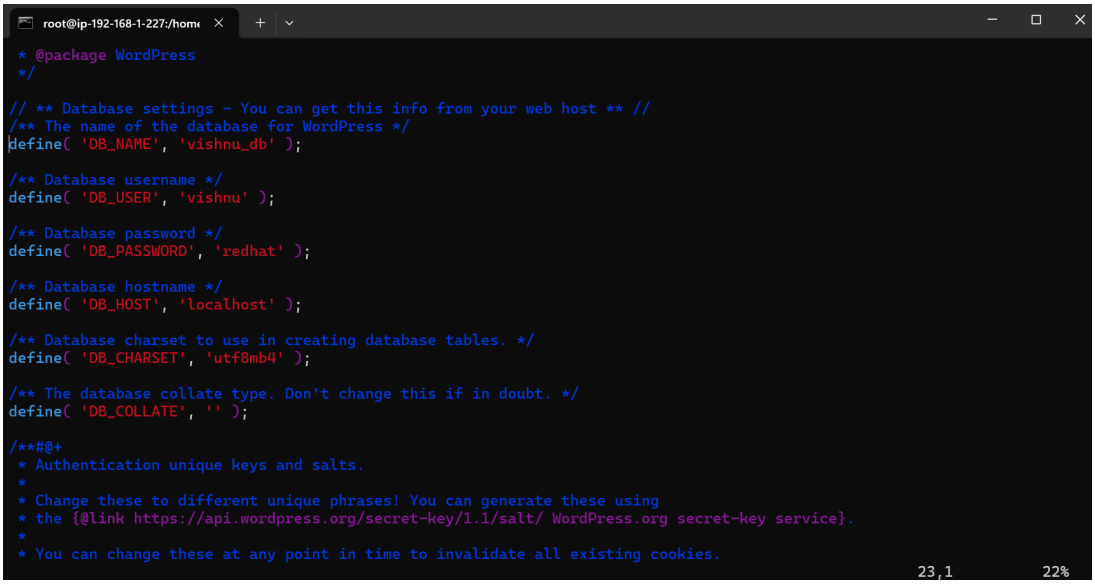


20. Copy the configuration file details

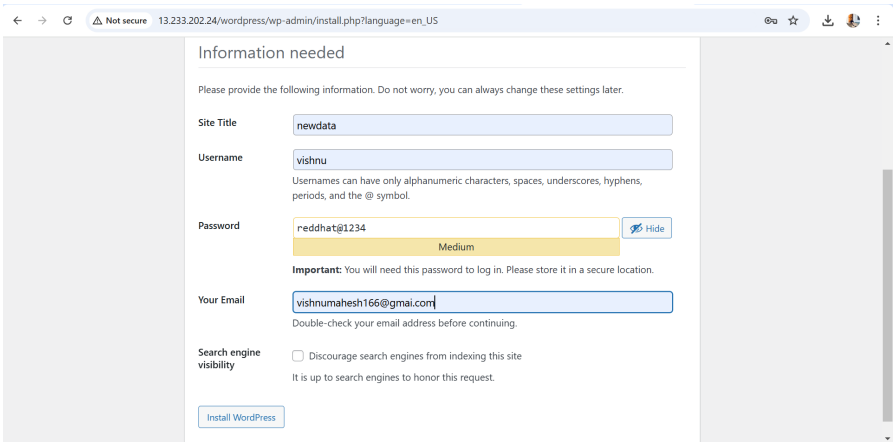


21. Create wp-config.php file and paste the configuration details

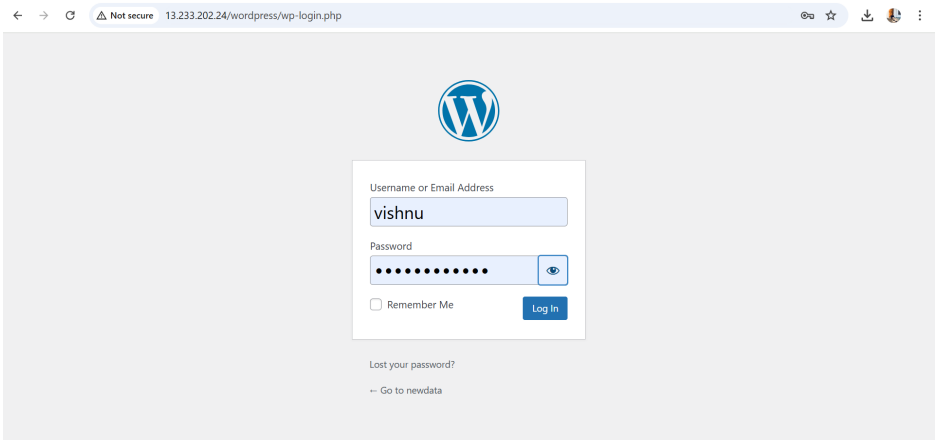




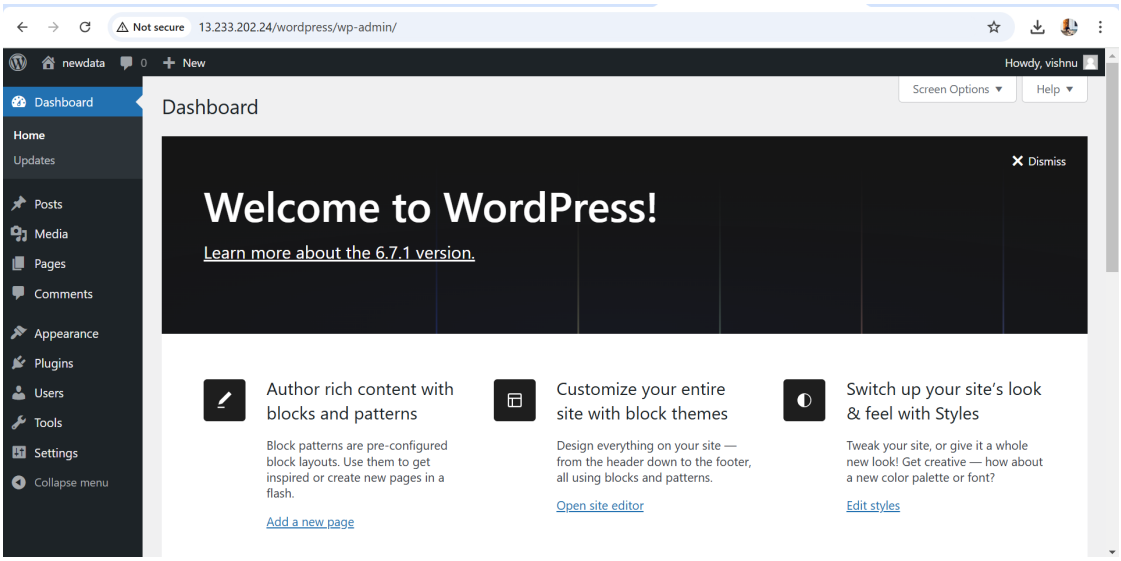
22. Create user and site



23. Log in to wordpress user



24. Output



25. Change directory

```
[root@ip-192-168-1-227 wordpress]# cd /home/vishnu/website/public
```

26. Install phpMyAdmin

```
[root@ip-192-168-1-227 public]# wget https://files.phpmyadmin.net/phpMyAdmin/5.2.1/phpMyAdmin-5.2.1-all-languages.zip
--2025-01-05 15:09:13--  https://files.phpmyadmin.net/phpMyAdmin/5.2.1/phpMyAdmin-5.2.1-all-languages.zip
Resolving files.phpmyadmin.net (files.phpmyadmin.net)... 89.187.163.111, 89.187.162.13, 79.127.235.8, ...
Connecting to files.phpmyadmin.net (files.phpmyadmin.net)|89.187.163.111|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 15096155 (14M) [application/zip]
Saving to: ‘phpMyAdmin-5.2.1-all-languages.zip’

phpMyAdmin-5.2.1-all-language 100%[=================================================>]  14.40M  14.8MB/s    in 1.0s

2025-01-05 15:09:14 (14.8 MB/s) - ‘phpMyAdmin-5.2.1-all-languages.zip’ saved [15096155/15096155]
```

27. Unzip the file

```
[root@ip-192-168-1-227 public]# unzip phpMyAdmin-5.2.1-all-languages.zip
Archive:  phpMyAdmin-5.2.1-all-languages.zip
   creating: phpMyAdmin-5.2.1-all-languages/
 extracting: phpMyAdmin-5.2.1-all-languages/.rtlcssrc.json
  inflating: phpMyAdmin-5.2.1-all-languages/CONTRIBUTING.md
  inflating: phpMyAdmin-5.2.1-all-languages/ChangeLog
  inflating: phpMyAdmin-5.2.1-all-languages/LICENSE
  inflating: phpMyAdmin-5.2.1-all-languages/README
 extracting: phpMyAdmin-5.2.1-all-languages/RELEASE-DATE-5.2.1
 extracting: phpMyAdmin-5.2.1-all-languages/babel.config.json
  inflating: phpMyAdmin-5.2.1-all-languages/composer.json
  inflating: phpMyAdmin-5.2.1-all-languages/composer.lock
  inflating: phpMyAdmin-5.2.1-all-languages/config.sample.inc.php
```

28. Copy the file to phpMyAdmin

```
[root@ip-192-168-1-227 public]# cp -r phpMyAdmin-5.2.1-all-languages phpMyAdmin
```

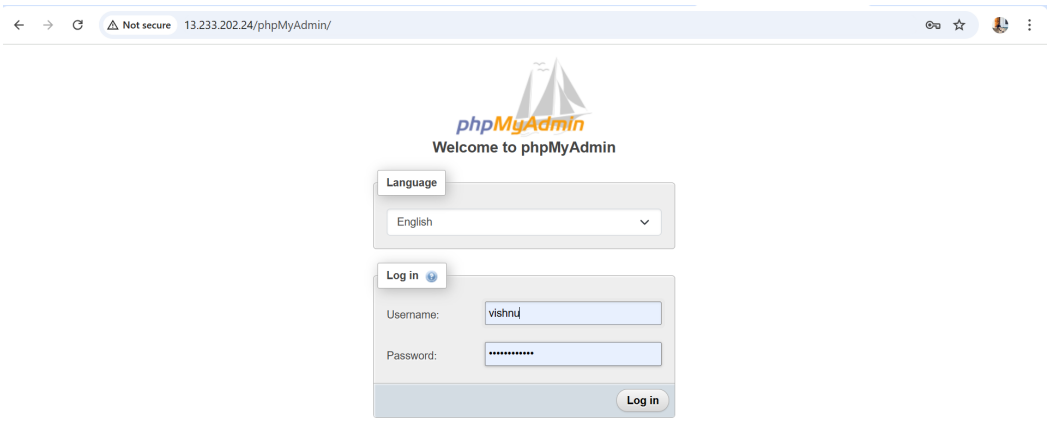
29. Remove the files

```
[root@ip-192-168-1-227 public]# rm -rf phpMyAdmin-5.2.1-all-languages
```

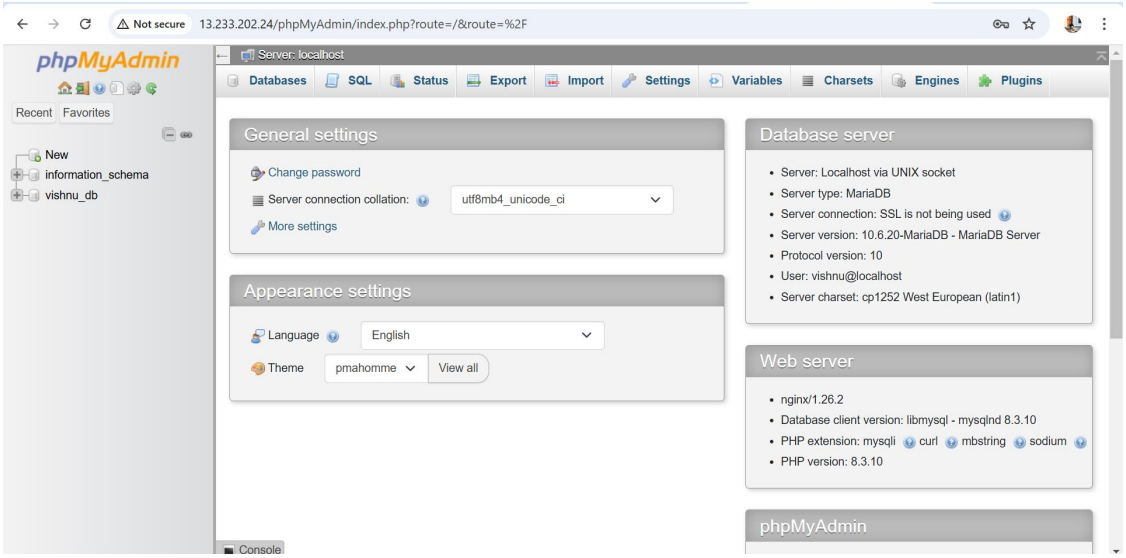
```
[root@ip-192-168-1-227 public]# rm -rf phpMyAdmin-5.2.1-all-languages.zip
```

30. Open browser and search ‘IP address/phpMyAdmin’

Enter the user name and password



31. Output



32. Edit to add ssh configuration file

```
[root@ip-192-168-1-227 wordpress]# vim /etc/ssh/sshd_config
```

```
Match User vishnu
    ForceCommand internal-sftp
    PasswordAuthentication yes
"/etc/ssh/sshd_config" 137L, 3935B
```

33. Change ownership

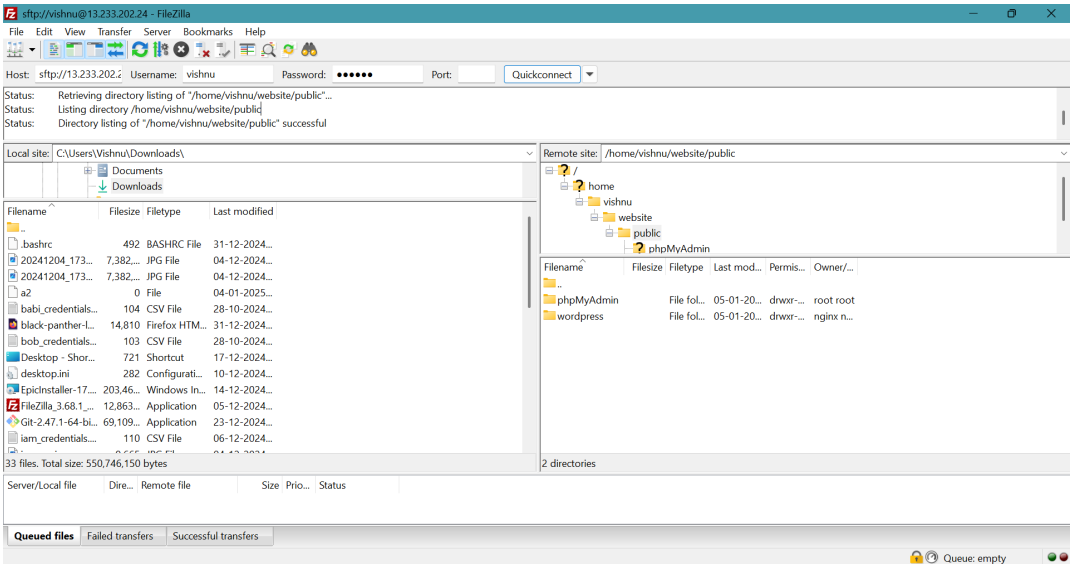
```
[root@ip-192-168-1-227 wordpress]# chown root:root /home/vishnu
```

```
[root@ip-192-168-1-227 wordpress]# chown vishnu:vishnu /home/vishnu/website/public
```

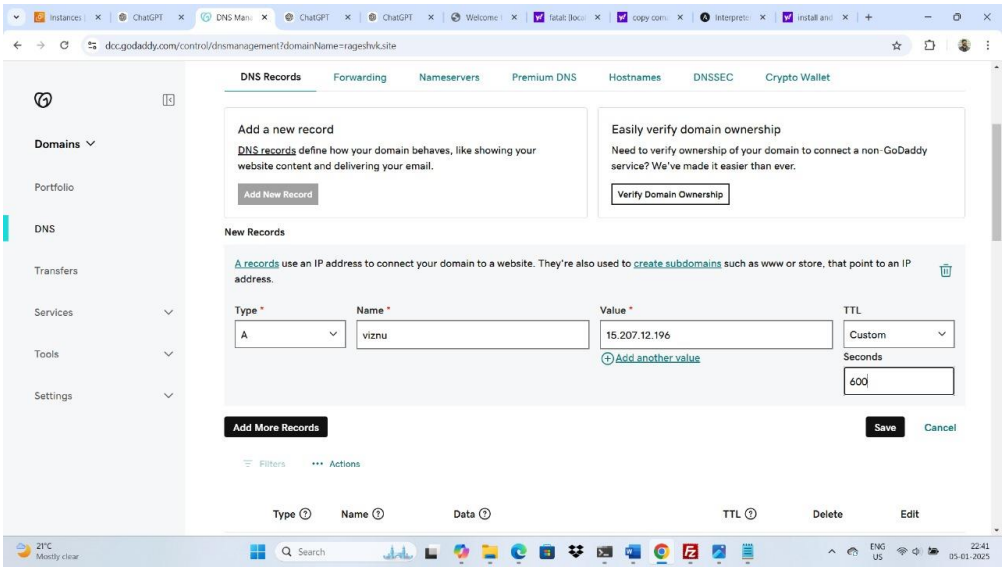
34. Restart sshd

```
[root@ip-192-168-1-227 wordpress]# systemctl restart sshd
```

35. Open filezila



36. GoDaddy assigns domain name to IP address



37. Install certbot

```
[root@ip-192-168-1-227 wordpress]# yum install certbot python3-certbot-nginx -y
Last metadata expiration check: 1:04:39 ago on Sun Jan  5 14:27:33 2025.
Dependencies resolved.
================================================================================
 Package                 Architecture      Version                 Repository      Size
================================================================================
Installing:
 certbot                 noarch            2.6.0-4.amzn2023.0.1    amazonlinux     49 k
 python3-certbot-nginx   noarch            2.6.0-4.amzn2023.0.1    amazonlinux    158 k
Installing dependencies:
 fontawesome-fonts       noarch            1:4.7.0-11.amzn2023.0.2 amazonlinux    205 k
 python3-acme            noarch            2.6.0-4.amzn2023.0.1    amazonlinux    161 k
 python3-certbot         noarch            2.6.0-4.amzn2023.0.1    amazonlinux    677 k
 python3-configargparse  noarch            1.7-1.amzn2023          amazonlinux     45 k
 python3-josepy          noarch            1.13.0-6.amzn2023       amazonlinux     61 k
 python3-parsedatetime   noarch            2.6-10.amzn2023         amazonlinux     80 k
 python3-pyOpenSSL       noarch            21.0.0-1.amzn2023.0.2   amazonlinux     92 k
 python3-pyparsing       noarch            2.4.7-6.amzn2023.0.2    amazonlinux    152 k
 python3-pyrfc3339       noarch            1.1-16.amzn2023         amazonlinux     19 k
```

38. Edit to add server name in /etc/nginx/conf.d/myweb.conf

```
[root@ip-192-168-1-227 wordpress]# vim /etc/nginx/conf.d/myweb.conf
```

```
root@ip-192-168-1-227:/home
server {
        listen       80;
        listen       [::]:80;
        server_name  Vishnu.rageshvk.site;
        root         /home/vishnu/website/public;

        # Load configuration files for the default server block.
        include /etc/nginx/default.d/*.conf;

        error_page 404 /404.html;
        location = /404.html {
        }

        error_page 500 502 503 504 /50x.html;
        location = /50x.html {
        }
        }
~
```

39. Test the Nginx configuration syntax

```
[root@ip-192-168-1-227 wordpress]# nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
```

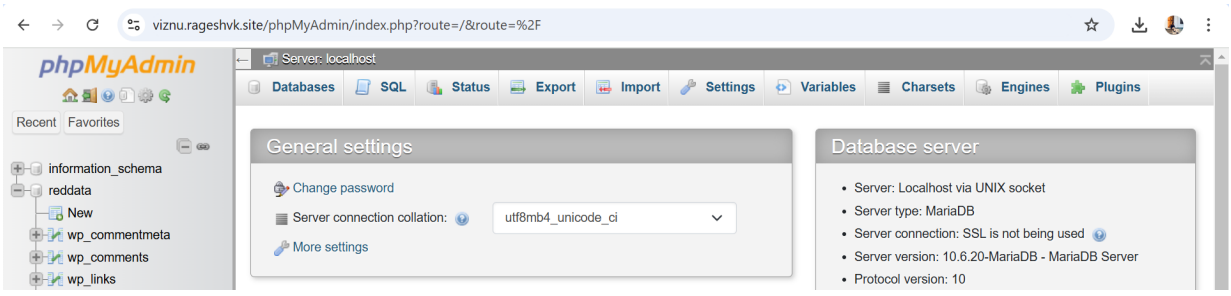
40. Restart nginx

```
[root@ip-192-168-1-227 wordpress]# systemctl restart nginx
[root@ip-192-168-1-227 wordpress]#
```

41. Create SSL certificate

```
[root@ip-192-168-1-136 public]# certbot --nginx -d viznu.rageshvk.site
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Enter email address (used for urgent renewal and security notices)
 (Enter 'c' to cancel): vishnumahesh166@gmai.com

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Please read the Terms of Service at
https://letsencrypt.org/documents/LE-SA-v1.4-April-3-2024.pdf. You must agree in
order to register with the ACME server. Do you agree?
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
(Y)es/(N)o: y

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Would you be willing, once your first certificate is successfully issued, to
share your email address with the Electronic Frontier Foundation, a founding
partner of the Let's Encrypt project and the non-profit organization that
develops Certbot? We'd like to send you email about our work encrypting the web,
EFF news, campaigns, and ways to support digital freedom.
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
(Y)es/(N)o: y
Account registered.
Requesting a certificate for viznu.rageshvk.site

Successfully received certificate.
Certificate is saved at: /etc/letsencrypt/live/viznu.rageshvk.site/fullchain.pem
Key is saved at:         /etc/letsencrypt/live/viznu.rageshvk.site/privkey.pem
This certificate expires on 2025-04-05.
These files will be updated when the certificate renews.
Certbot has set up a scheduled task to automatically renew this certificate in the background.

Deploying certificate
Successfully deployed certificate for viznu.rageshvk.site to /etc/nginx/conf.d/mydata.conf
Congratulations! You have successfully enabled HTTPS on https://viznu.rageshvk.site
```

42. Search domain name



Credentials:

- SFTP Credentials:

- Host: viznu.rageshvk.site

- Username: vishnu

- Password: redhat

- phpMyAdmin Credentials:

- URL: viznu.rageshvk.site/phpMyAdmin

- Username: viz

- Password: 1234

- WordPress Credentials:

- WordPress Admin URL: viznu.rageshvk.site/wordpress/wp-admin

- Username: vishnu

- Password: redhat@vishnu

- personal Blog: viznu.rageshvk.site/wordpress

USING ANSIBLE

1. Install ANSIBLE

```
[root@ip-192-168-1-87 ~]# yum install ansible -y
Last metadata expiration check: 0:08:16 ago on Mon Jan  6 17:31:34 2025.
Dependencies resolved.
================================================================================
 Package                 Architecture            Version                 Repository                  Size
================================================================================
Installing:
 ansible                 noarch                  8.3.0-1.amzn2023.0.1    amazonlinux                 32 M
Installing dependencies:
 ansible-core            x86_64                  2.15.3-1.amzn2023.0.4   amazonlinux                2.5 M
 git-core                x86_64                  2.40.1-1.amzn2023.0.3   amazonlinux                4.3 M
 sshpass                 x86_64                  1.09-6.amzn2023.0.1     amazonlinux                 28 k

Transaction Summary
================================================================================
Install  4 Packages
```

2. Create Inventory file

```
[root@ip-192-168-1-87 ~]# vim inventory
```

Add instance public IP Address

```
root@ip-192-168-1-190:~
15.206.93.101
```

3. Create template for wp-config.php file and its steps

```
[root@ip-192-168-1-87 ~]# vim wp-config.php.j2
```

```
root@ip-192-168-1-190:~   root@ip-192-168-1-87:~
<?php
// ** MySQL settings ** //
define('DB_NAME', 'vishnu_DB');
define('DB_USER', 'vishnu');
define('DB_PASSWORD', 'redhat');
define('DB_HOST', 'localhost');

// ** Authentication unique keys and salts. ** //
define('AUTH_KEY',         'your-auth-key');
define('SECURE_AUTH_KEY',  'your-secure-auth-key');
define('LOGGED_IN_KEY',    'your-logged-in-key');
define('NONCE_KEY',        'your-nonce-key');
define('AUTH_SALT',        'your-auth-salt');
define('SECURE_AUTH_SALT', 'your-secure-auth-salt');
define('LOGGED_IN_SALT',   'your-logged-in-salt');
define('NONCE_SALT',       'your-nonce-salt');

// ** WordPress Database Table prefix. ** //
$table_prefix = 'wp_';

// For developers: WordPress debugging mode.
define('WP_DEBUG', false);

/* That's all, stop editing! Happy publishing. */
define('ABSPATH', dirname(__FILE__) . '/');
require_once(ABSPATH . 'wp-settings.php');
~
```

```
<? php // ** MySQL settings ** //
 define( 'DB_NAME', 'vishnu_DB' ) ;
 define('DB_USER', 'vishnu' );
 define('DB_PASSWORD', 'redhat') ;
 define( 'DB_HOST', 'localhost');
 // ** Authentication unique keys and salts. ** //
define ( 'AUTH_KEY' , 'your-auth-key') ;
define ( ' SECURE_AUTH_KEY' 'your-secure-auth-key') ;
define( 'LOGGED_IN_KEY' , 'your-logged-in-key' );
define ( 'NONCE_KEY' , 'your-nonce-key' ) ;
define ( ' AUTH_SALT', 'your-auth-salt');
define( 'SECURE_AUTH_SALT', 'your-secure-auth-salt');
define( 'LOGGED_IN_SALT' , 'your-logged-in-salt');
define( ' NONCE_SALT', 'your-nonce-salt');
// ** WordPress Database Table prefix. ** //
 $table_prefix = 'wp_' ;
 // For developers: WordPress debugging mode.
define( 'WP_DEBUG', false);
/* That's all, stop editing! Happy publishing. * /
define( 'ABSPATH' , dirname( __ FILE __ ) . '/');
require_once (ABSPATH . 'wp-settings . php' );
```

4. Create Ansible play-book

Vim ansible,yml

```yaml
---
- name: Set up MariaDB, PHP, Nginx, and configure website
  hosts: localhost
  become: yes
  tasks:
    - name: Ensure /etc/yum.repos.d directory exists
      file:
        path: /etc/yum.repos.d
        state: directory

    - name: Create MariaDB repository file
      copy:
        dest: /etc/yum.repos.d/MariaDB.repo
        content: |
          [mariadb]
          name = MariaDB
          baseurl = http://yum.mariadb.org/10.6/rhel9-amd64
          gpgkey = https://yum.mariadb.org/RPM-GPG-KEY-MariaDB
          gpgcheck = 1

    - name: Ensure python3-pip is installed
      yum:
        name: python3-pip
        state: present

    - name: Install passlib library
      pip:
        name: passlib
        state: present

    - name: Install PHP, MariaDB server, and required PHP extensions
      yum:
        name:
          - php
          - php-mysqlnd
          - php-mysqli
          - php-gd
          - php-mbstring
          - mariadb-server
          - mariadb
        state: present

    - name: Install Nginx
      yum:
        name: nginx
        state: present

    - name: Start and enable MariaDB service
```

```yaml
  - name: Start and enable MariaDB service
    systemd:
      name: mariadb
      enabled: yes
      state: started

  - name: Start and enable Nginx service
    systemd:
      name: nginx
      enabled: yes
      state: started

  - name: Create a user named vishnu
    user:
      name: vishnu
      password: "{{ 'redhat' | password_hash('sha512') }}"
      create_home: yes

  - name: Create website directory for vishnu
    file:
      path: /home/vishnu/website/public
      state: directory
      owner: vishnu
      group: vishnu
      mode: '0755'

  - name: Configure Nginx server block for vishnu
    copy:
      dest: /etc/nginx/conf.d/mydata.conf
      content: |
        server {
            listen 80;
            listen [::]:80;
            server_name _;  # Default server name

            root /home/vishnu/website/public;

            # Load configuration files for the default server block.
            include /etc/nginx/default.d/*.conf;

            error_page 404 /404.html;
            location = /404.html {
            }

            error_page 500 502 503 504 /50x.html;
            location = /50x.html {
            }
        }
```

```
        }

  - name: Test Nginx configuration
    command: nginx -t
    register: nginx_test_result
    failed_when: "'syntax is okay' not in nginx_test_result.stderr and 'test is successful' not in nginx_test_result.stderr"

  - name: Reload Nginx to apply changes
    systemd:
      name: nginx
      state: reloaded

  - name: Set permissions for /home/vishnu
    command: chmod -R 755 /home/vishnu/
    become: yes

  - name: Change ownership for /home/vishnu/website
    command: chown -R nginx:nginx /home/vishnu/website/
    become: yes

  - name: Navigate to the website public directory
    shell: cd /home/vishnu/website/public
    args:
      chdir: /home/vishnu/website/public
    become: yes

  - name: Download WordPress latest.zip
    get_url:
      url: https://wordpress.org/latest.zip
      dest: /home/vishnu/website/public/latest.zip

  - name: Unzip the WordPress archive
    unarchive:
      src: /home/vishnu/website/public/latest.zip
      dest: /home/vishnu/website/public/
      remote_src: yes

  - name: Remove the downloaded zip file
    file:
      path: /home/vishnu/website/public/latest.zip
      state: absent

  - name: Set permissions for wp-content directory
    command: chmod -R 755 /home/vishnu/website/public/wordpress/wp-content
    become: yes

  - name: Change ownership of wp-content directory
    command: chown -R nginx:nginx /home/vishnu/website/public/wordpress/wp-content
```

```yaml
- name: Change ownership of wp-content directory
  command: chown -R nginx:nginx /home/vishnu/website/public/wordpress/wp-content
  become: yes

# Secure MariaDB installation using SQL commands, only if root password is not set
- name: Check if MariaDB root password is set
  command: mysqladmin -u root status
  register: mariadb_root_check
  failed_when: false
  changed_when: false

- name: Secure MariaDB installation
  shell: |
    mysql --user=root <<EOF
    ALTER USER 'root'@'localhost' IDENTIFIED BY 'redhat';
    DELETE FROM mysql.user WHERE User='';
    DROP DATABASE IF EXISTS test;
    DELETE FROM mysql.db WHERE Db='test' OR Db='test\\_%';
    FLUSH PRIVILEGES;
    EOF
  args:
    executable: /bin/bash
  when: "'Access denied' not in mariadb_root_check.stderr"

# Create database and user
- name: Create database and user in MariaDB
  shell: |
    mysql --user=root --password=redhat <<EOF
    CREATE DATABASE vishnu_DB;
    CREATE USER 'vishnu'@'localhost' IDENTIFIED BY 'redhat';
    GRANT ALL PRIVILEGES ON vishnu_DB.* TO 'vishnu'@'localhost';
    FLUSH PRIVILEGES;
    EOF
  args:
    executable: /bin/bash

  register: db_creation_result
  failed_when: db_creation_result.rc != 0 and "exists" not in db_creation_result.stderr
  changed_when: "'CREATE DATABASE' in db_creation_result.stdout or 'GRANT' in db_creation_result.stdout"

- name: Copy wp-config.php
  template:
    src: /root/wp-config.php.j2  # Make sure this path is correct
    dest: /home/vishnu/website/public/wordpress/wp-config.php

- name: Navigate to the website public directory
  shell: cd /home/vishnu/website/public
  args:
```

```
  args:
    chdir: /home/vishnu/website/public
  become: yes

- name: Download phpMyAdmin zip
  get_url:
    url: https://files.phpmyadmin.net/phpMyAdmin/5.2.1/phpMyAdmin-5.2.1-all-languages.zip
    dest: /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages.zip

- name: Unzip phpMyAdmin zip
  unarchive:
    src: /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages.zip
    dest: /home/vishnu/website/public/
    remote_src: yes

- name: Copy extracted phpMyAdmin to a new folder
  command: cp -r /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages /home/vishnu/website/public/phpMyAdmin

- name: Remove the extracted phpMyAdmin folder
  file:
    path: /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages
    state: absent

- name: Remove the phpMyAdmin zip file
  file:
    path: /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages.zip
    state: absent

- name: Add Match User vishnu block to /etc/ssh/sshd_config
  blockinfile:
    path: /etc/ssh/sshd_config
    block: |
      Match User vishnu
        ForceCommand internal-sftp
        PasswordAuthentication yes
  notify: Restart SSH service

- name: Change ownership of /home/vishnu
  command: chown root:root /home/vishnu
  become: yes

- name: Change ownership of /home/vishnu/website/public
  command: chown vishnu:vishnu /home/vishnu/website/public
  become: yes

- name: Restart SSH service
  service:
    name: sshd
```

```
  service:
    name: sshd
    state: restarted

- name: Install Certbot and Nginx plugin
  yum:
    name:
      - certbot
      - python3-certbot-nginx
    state: present
  become: yes

- name: Configure Nginx server block for vizhnu
  copy:
    dest: /etc/nginx/conf.d/myweb.conf
    content: |
      server {
          listen 80;
          listen [::]:80;
          server_name vizhnu.rageshvk.site;  # Default server name

          root /home/vishnu/website/public;

          # Load configuration files for the default server block.
          include /etc/nginx/default.d/*.conf;

          error_page 404 /404.html;
          location = /404.html {
          }

          error_page 500 502 503 504 /50x.html;
          location = /50x.html {
          }
      }
  become: yes

- name: Test Nginx configuration
  command: nginx -t
  register: nginx_test_result
  failed_when: "'syntax is okay' not in nginx_test_result.stderr and 'test is successful' not in nginx_test_result.stderr"
  become: yes

- name: Restart Nginx to apply changes
  systemd:
    name: nginx
    state: restarted
  become: yes
```

```
- name: Restart Nginx to apply changes
  systemd:
    name: nginx
    state: restarted
  become: yes

- name: Obtain SSL certificate using Certbot
  command: certbot --nginx -d vizhnu.rageshvk.site --non-interactive --agree-tos --email vishnumahesh166@gmail.com
  register: certbot_result
  failed_when: certbot_result.rc != 0
  changed_when: "'Congratulations' in certbot_result.stdout or 'Certbot' in certbot_result.stderr"


- name: Reload Nginx after SSL setup
  systemd:
    name: nginx
    state: reloaded
```

```
---

- name: Set up MariaDB, PHP, Nginx, and configure website
  hosts: localhost
  become: yes
  tasks:
  - name: Ensure /etc/yum.repos.d directory exists
    file:
        path: /etc/yum.repos.d
        state: directory
  - name: Create MariaDB repository file
    copy:
        dest: /etc/yum.repos.d/MariaDB.repo
        content: | [mariadb] name = MariaDB baseurl =
        http://yum.mariadb.org/10.6/rhel9-amd64 gpgkey =
        https://yum.mariadb.org/RPM-GPG-KEY-MariaDB
        gpgcheck = 1
  - name: Ensure python3-pip is installed
    yum:
        name: python3-pip
        state: present
  - name: Install passlib library
    pip:
        name: passlib
        state: present
  - name: Install PHP, MariaDB server, and required PHP extensions
    yum:

       name:
        - php - php-mysqlnd
        - php-mysqli
        - php-gd
        - php-mbstring
        - mariadb-server
```

```
        - mariadb
      state: present
- name: Install Nginx
  yum:
      name: nginx
      state: present
- name: Start and enable MariaDB service
  systemd:
      name: mariadb
      enabled: yes
      state: started
- name: Start and enable Nginx service
  systemd:
      name: nginx
      enabled: yes
      state: started
- name: Create a user named vishnu
  user:
      name: vishnu
      password: "{{ 'redhat' | password_hash('sha512') }}"
      create_home: yes
- name: Create website directory for vishnu
  file:
      path: /home/vishnu/website/public
      state: directory
      owner: vishnu
      group: vishnu
      mode: '0755'
- name: Configure Nginx server block for vishnu
  copy:
      dest: /etc/nginx/conf.d/mydata.conf
      content: |
          server {
          listen 80;
```

```
        listen [::]:80;
        server_name _; # Default server name
        root /home/vishnu/website/public;
        # Load configuration files for the default server block.
        include /etc/nginx/default.d/*.conf;
        error_page 404 /404.html;
        location = /404.html {
        }
        error_page 500 502 503 504 /50x.html;
        location = /50x.html {
        }
    }
- name: Test Nginx configuration
  command: nginx -t
  register: nginx_test_result
  failed_when: "'syntax is okay' not in nginx_test_result.stderr and 'test is
  successful' not in nginx_test_result.stderr"

- name: Reload Nginx to apply changes
  systemd:
      name: nginx
      state: reloaded

- name: Set permissions for /home/vishnu
  command: chmod -R 755 /home/vishnu/
  become: yes

- name: Change ownership for /home/vishnu/website
  command: chown -R nginx:nginx /home/vishnu/website/
  become: yes

- name: Navigate to the website public directory
  shell: cd /home/vishnu/website/public
  args:
```

```
        chdir: /home/vishnu/website/public
    become: yes

- name: Download WordPress latest.zip
  get_url:
        url: https://wordpress.org/latest.zip
        dest: /home/vishnu/website/public/latest.zip

- name: Unzip the WordPress archive
  unarchive:
        src: /home/vishnu/website/public/latest.zip
        dest: /home/vishnu/website/public/
        remote_src: yes

- name: Remove the downloaded zip file
  file:
        path: /home/vishnu/website/public/latest.zip
        state: absent

- name: Set permissions for wp-content directory
  command: chmod -R 755 /home/vishnu/website/public/wordpress/wp-content
  become: yes

- name: Change ownership of wp-content directory
  command: chown -R nginx:nginx /home/vishnu/website/public/wordpress/wp-content
  become: yes

# Secure MariaDB installation using SQL commands, only if root password is not set

- name: Check if MariaDB root password is set
  command: mysqladmin -u root status
  register: mariadb_root_check
```

```
    failed_when: false
    changed_when: false

- name: Secure MariaDB installation
  shell: |
        mysql --user=root <<EOF
        ALTER USER 'root'@'localhost' IDENTIFIED BY 'redhat';
        DELETE FROM mysql.user WHERE User='';
        DROP DATABASE IF EXISTS test;
        DELETE FROM mysql.db WHERE Db='test' OR Db='test\_%';
        FLUSH PRIVILEGES;
        EOF
  args:
        executable: /bin/bash
  when: "'Access denied' not in mariadb_root_check.stderr"

  #Create database and user

- name: Create database and user in MariaDB
  shell: |
        mysql --user=root --password=redhat <<EOF
        CREATE DATABASE vishnu_DB;
        CREATE USER 'vishnu'@'localhost' IDENTIFIED BY 'redhat';
        GRANT ALL PRIVILEGES ON vishnu_DB.* TO
        'vishnu'@'localhost'; FLUSH PRIVILEGES;
        EOF
  args:
        executable: /bin/bash

  register: db_creation_result

  failed_when: db_creation_result.rc != 0 and "exists" not in
  db_creation_result.stderr

  changed_when: "'CREATE DATABASE' in db_creation_result.stdout or
  'GRANT' in db_creation_result.stdout"
```

```
- name: Copy wp-config.php
  template:
        src: /root/wp-config.php.j2 # Make sure this path is correct
        dest: /home/vishnu/website/public/wordpress/wp-config.phP
- name: Navigate to the website public directory
  shell: cd /home/vishnu/website/public
  args:
        chdir: /home/vishnu/website/public
  become: yes

- name: Download phpMyAdmin zip
  get_url:
        url: https://files.phpmyadmin.net/phpMyAdmin/5.2.1/phpMyAdmin-5.2.1-all-languages.zip
        dest: /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages.zip

- name: Unzip phpMyAdmin zip
  unarchive:
        src: /home/vishnu/website/public/phpMyAdmin-5.2.1-all languages.zip
        dest: /home/vishnu/website/public/
        remote_src: yes

- name: Copy extracted phpMyAdmin to a new folder
  command: cp -r /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages /home/vishnu/website/public/phpMyAdmin

- name: Remove the extracted phpMyAdmin folder
  file:
        path: /home/vishnu/website/public/phpMyAdmin-5.2.1-all-languages
        state: absent

- name: Remove the phpMyAdmin zip file
```

```
    file:
        path: /home/vishnu/website/public/phpMyAdmin-5.2.1-all-
        languages.zip
        state: absent

- name: Add Match User vishnu block to /etc/ssh/sshd_config
  blockinfile:
        path: /etc/ssh/sshd_config
        block: |
        Match User vishnu
           ForceCommand internal-sftp
           PasswordAuthentication yes
  notify: Restart SSH service

- name: Change ownership of /home/vishnu
  command: chown root:root /home/vishnu
  become: yes

- name: Change ownership of /home/vishnu/website/public
  command: chown vishnu:vishnu /home/vishnu/website/public
  become: yes

- name: Restart SSH service
  service:
        name: sshd
        state: restarted

- name: Install Certbot and Nginx plugin
  yum:
        name:
          - certbot
          - python3-certbot-nginx
        state: present
  become: yes
```

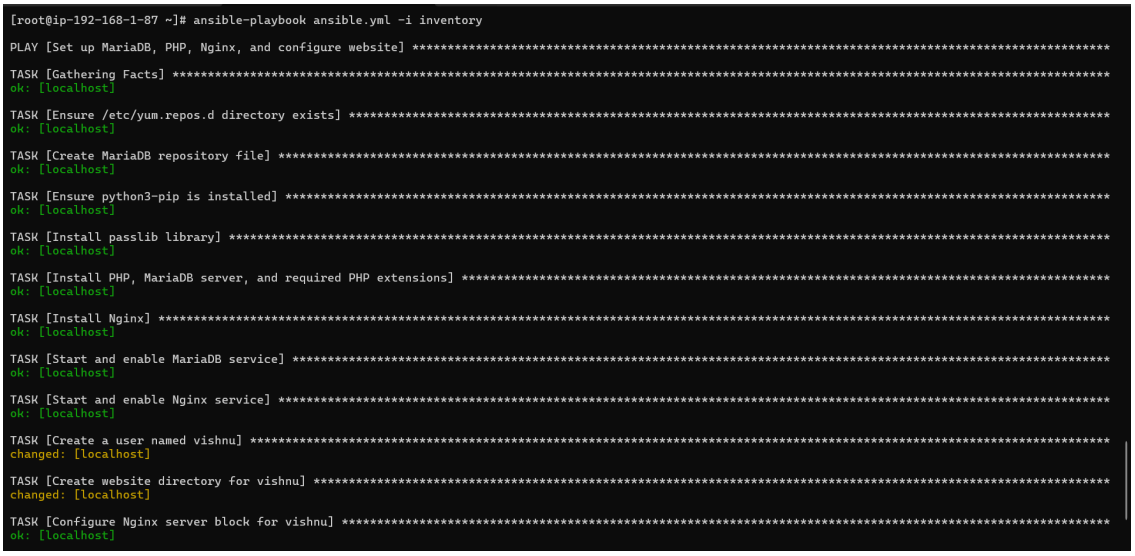
```
- name: Configure Nginx server block for vizhnu
  copy:
        dest: /etc/nginx/conf.d/myweb.conf
        content: |
            server {
                listen 80;
                listen [::]:80;
                server_name vizhnu.rageshvk.site; # Default server name
                root /home/vishnu/website/public;
                # Load configuration files for the default server block.
                include /etc/nginx/default.d/*.conf;
                error_page 404 /404.html;
                location = /404.html {
                }
                error_page 500 502 503 504 /50x.html;
                location = /50x.html {
                }
          }
  become: yes

- name: Test Nginx configuration
  command: nginx -t
  register: nginx_test_result
  failed_when: "'syntax is okay' not in nginx_test_result.stderr and 'test is
  successful' not in nginx_test_result.stderr"
  become: yes

- name: Restart Nginx to apply changes
  systemd:
        name: nginx
        state: restarted
  become: yes
```

- name: Obtain SSL certificate using Certbot
  command: certbot --nginx -d vizhnu.rageshvk.site --non-interactive --agree-tos --email vishnumahesh166@gmail.com
  register: certbot_result
  failed_when: certbot_result.rc != 0
  changed_when: "'Congratulations' in certbot_result.stdout or 'Certbot' in certbot_result.stderr"

- name: Reload Nginx after SSL setup
  systemd:
    name: nginx
    state: reloaded

5. Run The Play-book

ansible-playbook ansible.yml -i inventory



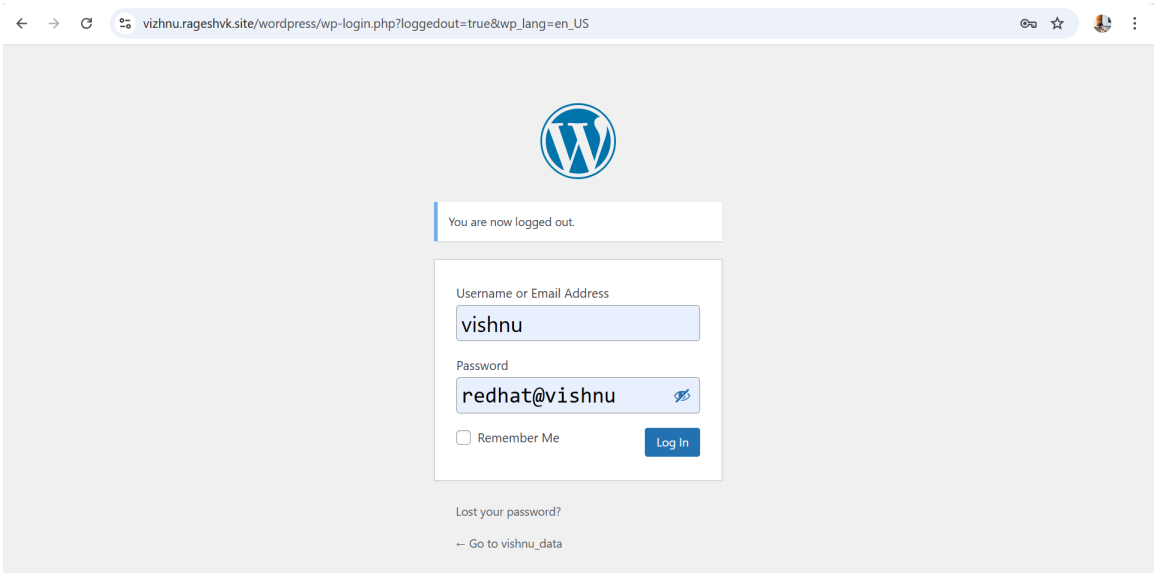
```
TASK [Configure Nginx server block for vishnu] *********************************************************************
ok: [localhost]

TASK [Test Nginx configuration] ************************************************************************************
changed: [localhost]

TASK [Reload Nginx to apply changes] *******************************************************************************
changed: [localhost]

TASK [Set permissions for /home/vishnu] ****************************************************************************
changed: [localhost]

TASK [Change ownership for /home/vishnu/website] *******************************************************************
changed: [localhost]

TASK [Navigate to the website public directory] ********************************************************************
changed: [localhost]

TASK [Download WordPress latest.zip] *******************************************************************************
changed: [localhost]

TASK [Unzip the WordPress archive] *********************************************************************************
changed: [localhost]

TASK [Remove the downloaded zip file] ******************************************************************************
changed: [localhost]

TASK [Set permissions for wp-content directory] ********************************************************************
changed: [localhost]

TASK [Change ownership of wp-content directory] ********************************************************************
changed: [localhost]

TASK [Check if MariaDB root password is set] ***********************************************************************
ok: [localhost]
```

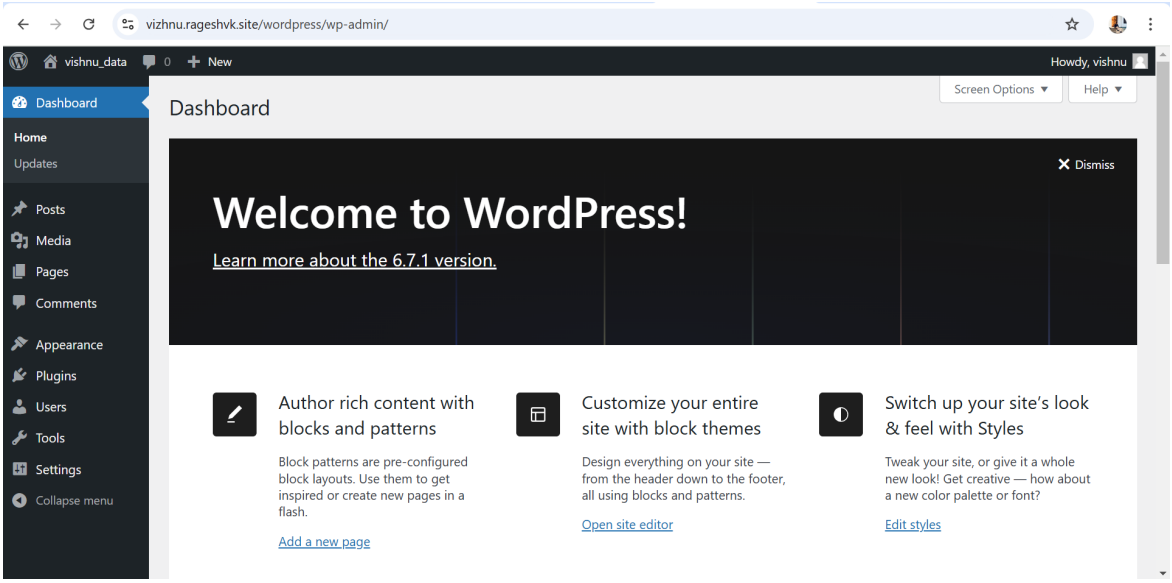
```
TASK [Secure MariaDB installation] *********************************************************************************
skipping: [localhost]

TASK [Create database and user in MariaDB] *************************************************************************
ok: [localhost]

TASK [Copy wp-config.php] ******************************************************************************************
ok: [localhost]

TASK [Navigate to the website public directory] ********************************************************************
changed: [localhost]

TASK [Download phpMyAdmin zip] *************************************************************************************
changed: [localhost]

TASK [Unzip phpMyAdmin zip] ****************************************************************************************
changed: [localhost]

TASK [Copy extracted phpMyAdmin to a new folder] *******************************************************************
changed: [localhost]

TASK [Remove the extracted phpMyAdmin folder] **********************************************************************
changed: [localhost]

TASK [Remove the phpMyAdmin zip file] ******************************************************************************
changed: [localhost]

TASK [Add Match User vishnu block to /etc/ssh/sshd_config] *********************************************************
ok: [localhost]

TASK [Change ownership of /home/vishnu] ****************************************************************************
changed: [localhost]

TASK [Change ownership of /home/vishnu/website/public] *************************************************************
changed: [localhost]
```

```
TASK [Restart SSH service] *****************************************************************************************
changed: [localhost]

TASK [Install Certbot and Nginx plugin] ****************************************************************************
ok: [localhost]

TASK [Configure Nginx server block for vizhnu] *********************************************************************
changed: [localhost]

TASK [Test Nginx configuration] ************************************************************************************
changed: [localhost]

TASK [Restart Nginx to apply changes] ******************************************************************************
changed: [localhost]

TASK [Obtain SSL certificate using Certbot] ************************************************************************
changed: [localhost]

TASK [Reload Nginx after SSL setup] ********************************************************************************
changed: [localhost]

PLAY RECAP *********************************************************************************************************
localhost                  : ok=41   changed=25   unreachable=0    failed=0    skipped=1    rescued=0    ignored=0
```

6. Check the wordpress

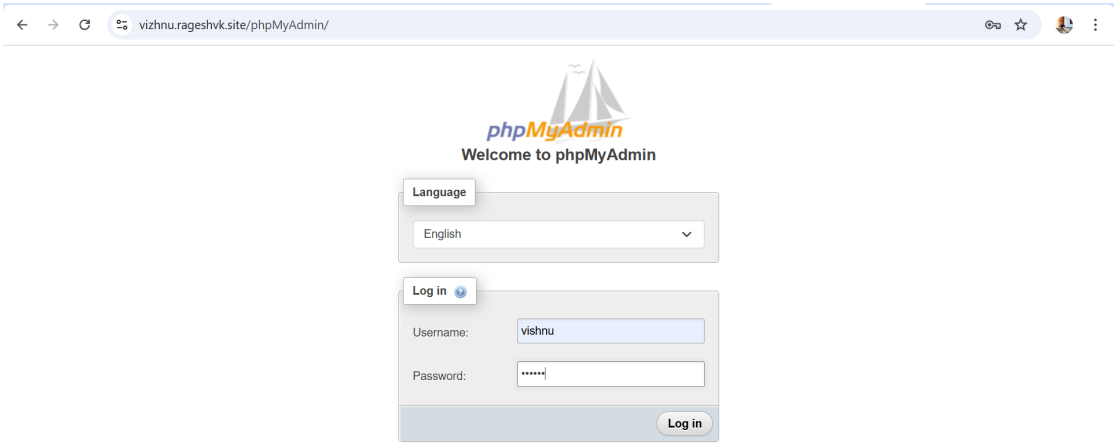
Search: vizhnu.rageshvk.site/wordpress

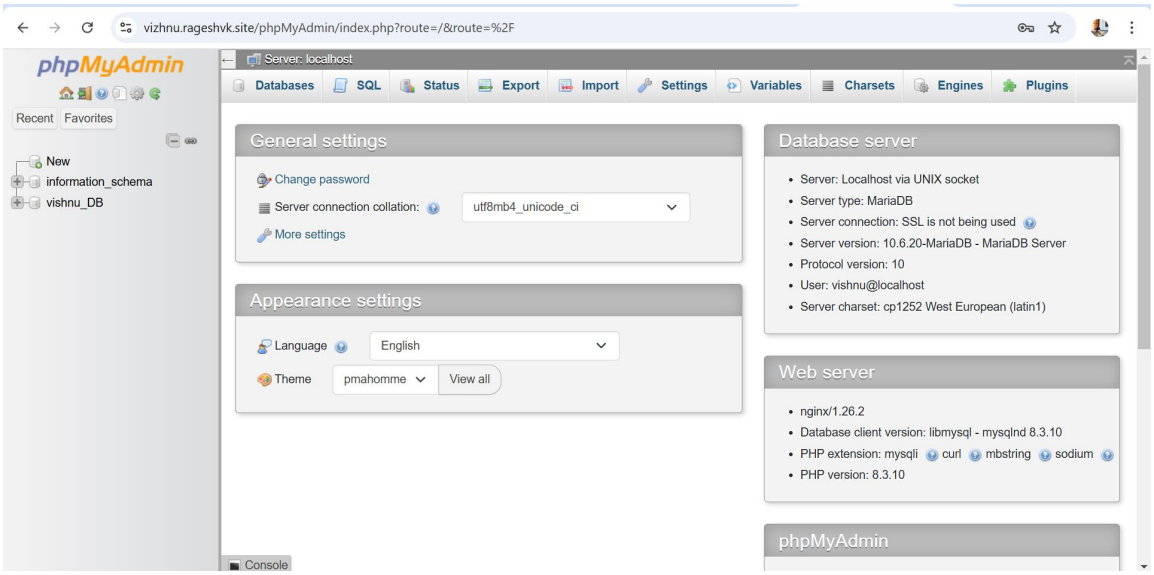




7. Check PhpMyAdmin

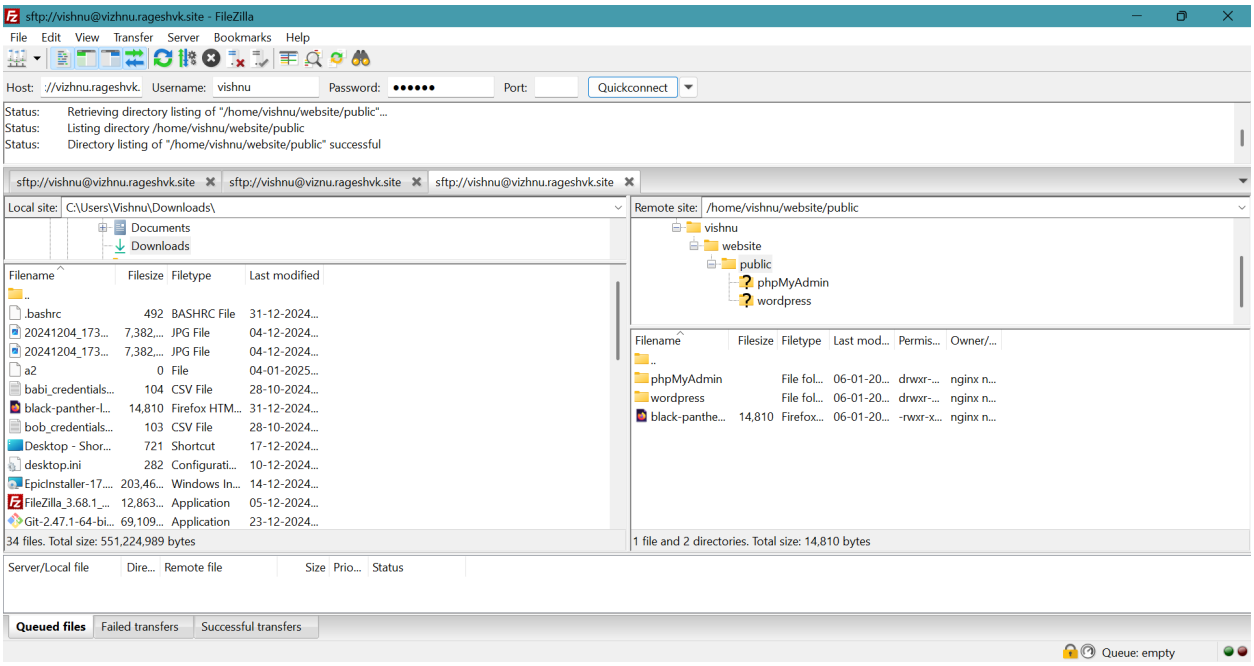
Search: vizhnu.rageshvk.site/phpMyAdmin





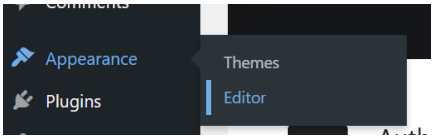
8. Check Filezilzilla

Host: vizhnu.rageshvk.site , username: vishnu , password: redhat , port: 22



9. Create personal blog in wordpress

Navigate to wordpress > Appearance > Editor



– and create a blog > save

Thean search on browser : vizhnu.rageshvk.site/wordpress

Credentials:

- SFTP Credentials:

- Host: vizhnu.rageshvk.site

- Username: vishnu

- Password: redhat

- phpMyAdmin Credentials:

- URL: vizhnu.rageshvk.site/phpMyAdmin

- Username: vishnu

- Password: redhat

- WordPress Credentials:

- WordPress Admin URL: vizhnu.rageshvk.site/wordpress/wp-admin

- Username: vishnu

- Password: redhat@vishnu

- Personal Blog: vizhnu.rageshvk.site/wordpress