WordPress Deployment with Ansible

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1 Project Overview

This project automates the deployment of a custom WordPress stack using Ansible on an Amazon EC2 instance. It includes Nginx, PHP 8+, MariaDB, Let's Encrypt SSL, phpMyAdmin, SFTP access, and full configuration within a non-standard directory (e.g., `/home/ec2-user/wordpress_project/public`).

2 Project Directory Structure

```
.
+-- ansible.cfg
+-- group_vars
|   +-- all.yml
+-- inventory
|   +-- hosts
+-- playbook.yml
+-- roles
|   +-- mariadb
|   |   +-- tasks
|   |       +-- main.yml
|   +-- nginx
|   |   +-- handlers
|   |   |   +-- main.yml
|   |   +-- tasks
|   |   |   +-- main.yml
|   |   +-- templates
|   |       +-- nginx.conf.j2
|   |       +-- wordpress.conf.j2
|   +-- php
|   |   +-- handlers
|   |   |   +-- main.yml
|   |   +-- tasks
|   |   |   +-- main.yml
|   |   +-- templates
|   |       +-- www.conf.j2
|   +-- phpmyadmin
|   |   +-- handlers
|   |   |   +-- main.yml
|   |   +-- tasks
|   |   |   +-- main.yml
|   |   +-- templates
|   |       +-- phpmyadmin.conf.j2
|   +-- project_dir
|   |   +-- tasks
|   |       +-- main.yml
|   |       +-- sftp.yml
|   +-- sftp_user
|   |   +-- handlers
|   |   |   +-- main.yml
|   |   +-- tasks
|   |       +-- main.yml
|   +-- ssl
|   |   +-- handlers
|   |   |   +-- main.yml
|   |   +-- tasks
|   |       +-- main.yml
|   +-- wordpress
|       +-- tasks
|       |   +-- db_init.yml
|       |   +-- main.yml
|       |   +-- permissions.yml
|       +-- templates
|           +-- update_wp_url.sql.j2
|           +-- wp-config.php.j2
```

3 Roles and Tasks

3.1 Role: project_dir

Creates the project directory structure, including:

- ‘/home/ec2-user/wordpress$_{p}$*roject“/public‘directoryforthewebsiteroot*

- Proper ownership and permissions

3.2 Role: mariadb

Installs MariaDB 10.6 and sets up:

- Root password
- WordPress database
- WordPress DB user with privileges

3.3 Role: php

Installs PHP 8 and required extensions for WordPress.

3.4 Role: nginx

Installs and configures Nginx:

- Removes default configuration
- Sets up WordPress virtual host

3.5 Role: wordpress

Downloads and configures WordPress:

- Copies files to '/public'
- Sets proper ownership
- Configures 'wp-config.php'

3.6 Role: ssl

Installs Certbot and configures SSL for Nginx:

- Installs Certbot
- Requests SSL certificate for domain
- Sets up auto-renewal cron job

3.7 Role: phpmyadmin

Installs phpMyAdmin under the public directory:

- Secured with HTTP basic authentication
- Accessed via '/phpmyadmin'

3.8 Role: sftp

Configures secure file uploads:

- Creates SFTP-only user
- Restricts shell access
- Sets user home to project root

3.9 Run the Playbook

```
ansible-playbook -i inventory site.yml
```

4 GitHub Repository

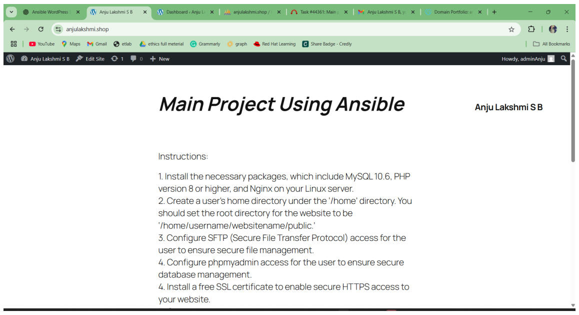
The full project is version-controlled and hosted on GitHub. To push changes:

```
cd /home/ec2–user/wordpress–ansible
git add .
git commit –m ”Initial commit”
git remote add origin https://github.com/YourUsername/wordpress–ansible.git
git push –u origin main
```

5 Access Details

- **Blog**
  - **URL:** `https://anjulakshmi.shop`
- **SFTP**
  - **Host:** `anjulakshmi.shop`
  - **Username:** `wpuser`
  - **Password:** `XXXXXX`
- **WordPress Admin**
  - **URL:** `https://anjulakshmi.shop/wp-admin`
  - **Username:** `adminAnju`
  - **Password:** `XXXXXXXXX`
- **phpMyAdmin**
  - **URL:** `https://anjulakshmi.shop/phpmyadmin`
  - **HTTP Auth Username:** `pmauser`
  - **HTTP Auth Password:** `newpass`
  - **DB Username:** `wpuser`
  - **DB Password:** `XXXXXXXX`

6 Screenshots



Main Project Using Ansible

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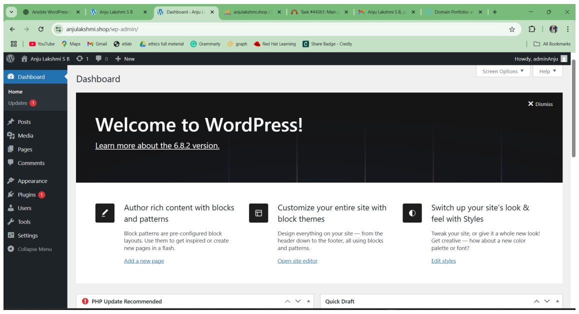
Instructions:

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.
4. Install a free SSL certificate to enable secure HTTPS access to your website.

Figure 1: Blog: `https://anjulakshmi.shop`



Dashboard

Welcome to WordPress!

Learn more about the 6.8.2 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.

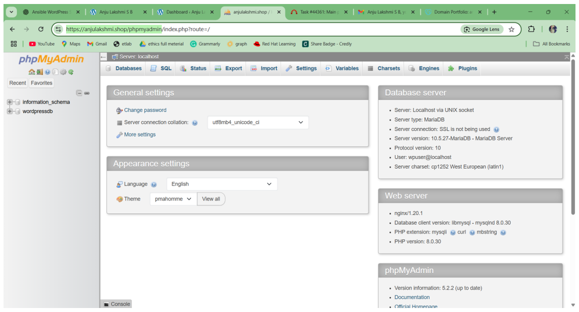
Customize your entire site with block themes

Design everything on your site — from the header down to the footer, all using blocks and patterns.

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?

Figure 2: Wordpress Dashboard `https://anjulakshmi.shop/wp-admin`



General settings

- Server connection collation: utf8mb4_unicode_ci

Appearance settings

- Language: English
- Theme: pmahomme

Database server

- Server: Localhost via UNIX socket
- Server type: MariaDB
- Server connection: SSL is not being used
- Server version: 10.5.27-MariaDB - MariaDB Server
- Protocol version: 10
- User: wpuser@localhost
- Server charset: cp1252 West European (latin1)

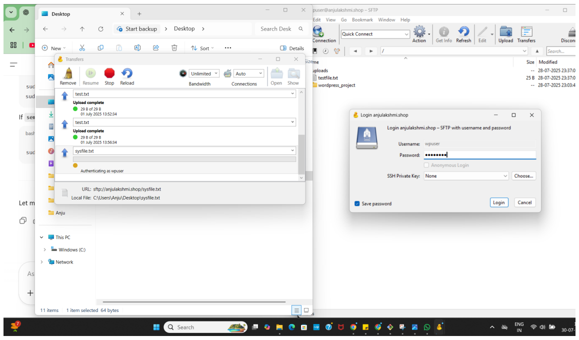
Web server

- nginx/1.20.1
- Database client version: libmysql - mysqlnd 8.0.30
- PHP extension: mysqli curl mbstring
- PHP version: 8.0.30

phpMyAdmin

- Version information: 5.2.2 (up to date)
- Documentation
- Official Homepage

Figure 3: PHPMyAdmin :`https://anjulakshmi.shop/phpmyadmin`



Unlimited
Auto

test.txt
Upload complete
29 B of 29 B
01 July 2025 13:52:34

test.txt
Upload complete
29 B of 29 B
01 July 2025 13:56:34

sysfile.txt
Authenticating as wpuser

URL: sftp://anjulakshmi.shop/sysfile.txt
Local File: C:\Users\Anju\Desktop\sysfile.txt

11 items   1 item selected 64 bytes

puser@anjulakshmi.shop – SFTP

Quick Connect

/

me	Size	Modified
uploads	--	28-07-2025 23:37:0
testfile.txt	25 B	28-07-2025 23:37:0
wordpress_project	--	28-07-2025 23:03:4

Login anjulakshmi.shop

Login anjulakshmi.shop – SFTP with username and password

Username: wpuser
Password: ••••••••
□ Anonymous Login
SSH Private Key: None Choose...
☑ Save password
Login Cancel

Figure 4: SFTP Verification using CyberDuck

7 Conclusion

This project demonstrates how to build and deploy a scalable, secure WordPress site on AWS using Ansible automation. From web server setup and SSL integration to database and user configuration, every step is reproducible and infrastructure-as-code friendly. This approach ensures easy recovery, scaling, and collaboration by integrating with GitHub and using modular Ansible roles.