

## **Abstract**

The Automated WordPress Deployment Using Ansible is an innovative automation project designed to simplify and streamline the process of setting up and managing a WordPress web server. This project addresses common challenges in manual deployment by enabling users to install and configure all necessary components—including Nginx, PHP, MySQL, and WordPress—through Ansible playbooks. By automating these tasks, the system reduces manual errors, ensures consistency, and accelerates the deployment process.

At its core, the project leverages Ansible's agentless architecture and human-readable YAML syntax to define infrastructure as code. It allows users to automatically create server environments, configure secure SFTP access, install phpMyAdmin for database management, and apply SSL certificates for secure HTTPS access. These playbooks make it possible to replicate setups easily across different systems and environments, making the solution efficient and scalable.

Key features of the system include fully automated installation of web services, secure user directory setup, database configuration, and WordPress deployment. Additionally, the integration of SSL certificates ensures encrypted connections, enhancing website security. The use of Ansible ensures that the deployment process is idempotent—meaning tasks can be safely re-run without unintended side effects—ensuring the server environment remains stable and predictable.

This project emphasizes real-world DevOps practices and cloud-readiness. It prepares students for careers in cloud computing and system administration by familiarizing them with configuration management tools and automation principles. Moreover, it supports modular customization, allowing users to extend or modify the playbooks for different web applications beyond WordPress.

Overall, this project serves as a valuable tool for learners and developers aiming to deploy web applications efficiently and securely. It reflects modern infrastructure management trends, providing a streamlined, reproducible, and professional solution for WordPress hosting using open-source technologies.