

ASSIGNMENT 2

CI/CD Pipeline Setup Using Jenkins


Task Description:

This task involves setting up a Continuous Integration and Continuous Deployment (CI/CD) pipeline using Jenkins to automate the build, test, and push process of a containerized web application. The pipeline integrates GitHub for source code management, Docker for containerization, and a container registry (such as Docker Hub) for storing the container image.

Steps to Set Up the CI/CD Pipeline:

1. **Install Jenkins:**
 - Ensure Jenkins is running and install necessary plugins (Git, Docker).
2. **Create a New Pipeline Job:**
 - Create a new Pipeline job in Jenkins to automate the build, test, and deployment process.
3. **Configure the GitHub Repository:**
 - Link your GitHub repository to Jenkins to automatically pull the latest code.
4. **Write the Pipeline Script (Jenkinsfile):**
 - Define stages in the Jenkinsfile:
 - **Clone Repository:** Pull the latest code from GitHub.
 - **Build Docker Image:** Build the image using Docker.
 - **Push Docker Image:** Push the image to a container registry (e.g., Docker Hub).
5. **Add Docker Credentials (if needed):**
 - Add Docker credentials to Jenkins if using a private registry for authentication.
6. **Trigger the Pipeline:**
 - Trigger the pipeline manually or set up GitHub webhooks for automatic triggers on code changes.

OUTPUT:

 **Jenkins**

Dashboard > task_2 > #3

Status

Changes

Console Output

Edit Build Information

Delete build '#3'

Timings

Git Build Data

Open Blue Ocean

Pipeline Overview

Pipeline Console

Restart from Stage

✓ Console Output

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Started by user [UreshVel](#)

Obtained Jenkinsfile from git <https://github.com/UreshVel>

[Pipeline] Start of Pipeline

[Pipeline] node

Running on [Jenkins](#) in /var/jenkins_home/workspace/task_2

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Declarative: Checkout SCM)

[Pipeline] checkout

Selected Git installation does not exist. Using Default

The recommended git tool is: NONE

No credentials specified

> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/task_2/.git # timeout=10

Fetching changes from the remote Git repository

> git config remote.origin.url <https://github.com/UreshVel> # timeout=10