

CI/CD Pipeline for Node.js Weather App

Overview:

This project demonstrates a CI/CD pipeline for a simple Node.js weather application using Jenkins, Docker, SonarQube, and AWS EC2. The goal is to automate testing, containerization, and deployment of a Node.js app in a real-world DevOps environment.

Tools & Technologies:

- Jenkins (CI/CD pipeline orchestration)
- Docker (containerization)
- SonarQube (static code analysis)
- AWS EC2 (deployment server)
- GitHub (source code management)
- Node.js + Express (application stack)

Pipeline Stages:

1. Clone the GitHub repository.
2. Install dependencies using npm.
3. Run basic test cases.
4. Analyze code quality using SonarQube.
5. Build a Docker image for the app.
6. Push the image to Docker Hub.
7. Deploy the image to an AWS EC2 instance using SSH.

Architecture Flow:

GitHub -> Jenkins -> SonarQube -> DockerHub -> AWS EC2

Project Customization:

The base app was forked and customized from an open-source Node.js weather app. DevOps automation and enhancements were applied to make the project original. Files were updated and custom deployment instructions were implemented.

Conclusion:

This project serves as a beginner-friendly demonstration of CI/CD best practices with full automation. It is scalable and can be enhanced with monitoring, Helm, Terraform, or Kubernetes in the future.

Submitted by:

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