**vProfile CI/CD Pipeline Documentation**

**Overview**

This project demonstrates a CI/CD pipeline for the vProfile application using Jenkins, Maven, SonarQube, Nexus, Docker, AWS ECR, and ECS. The pipeline automates the process of building, testing, analyzing, containerizing, and deploying the application.

**Technologies Used**

* **Jenkins**: CI/CD automation
* **Maven**: Build and dependency management
* **SonarQube**: Code quality analysis
* **Checkstyle**: Static code analysis
* **Nexus**: Artifact repository
* **Docker**: Containerization
* **AWS ECR**: Docker image registry
* **AWS ECS**: Container orchestration

**CI/CD Pipeline Workflow**

1. **Fetch Code**: Clone the repository from GitHub.
2. **Build Application**: Compile and package the application.
3. **Run Unit Tests**: Execute automated tests.
4. **Code Analysis**:
   * Checkstyle for code formatting
   * SonarQube for code quality
5. **Quality Gate**: Enforce quality standards.
6. **Build Docker Image**: Create a container image.
7. **Push Image to AWS ECR**: Upload the built image to AWS Elastic Container Registry.
8. **Deploy to AWS ECS**: Update the ECS service with the new image.

**Pipeline Script (Jenkinsfile)- Attached**

**Setup Instructions**

1. **Install Jenkins** and required plugins (Maven, SonarQube, Docker, AWS CLI, Pipeline, Git and many more).
2. **Configure AWS credentials** in Jenkins for ECR and ECS.
3. **Set up SonarQube** server and connect it with Jenkins.
4. **Push the Pipeline Script** to Jenkins and trigger the build.

**Images & Screenshots**

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**Repository**

GitHub: https://github.com/maheshkoheda/Docker-ECS-CICD

**Conclusion**

This project successfully implements a CI/CD pipeline automating the entire build, test, analysis, and deployment process using Jenkins and AWS services. It demonstrates practical DevOps skills applicable to real-world projects.