Overview

This guide provides step-by-step instructions to set up a Jenkins Continuous Integration (CI) pipeline for a Maven-based Java project on a Windows system. The pipeline builds the project and deploys the artifact using Ansible via Windows Subsystem for Linux (WSL).

Prerequisites

Ensure the following tools and environments are installed and configured on your Windows system:- Jenkins (Installed on Windows)- Maven- Java JDK- Git- WSL (Windows Subsystem for Linux)- Ubuntu (Installable from Microsoft Store)

Step-by-Step Instructions

Step 1: Install Jenkins on Windows

1. Download Jenkins Installer: https://www.jenkins.io/download/
2. Install Jenkins and start the Jenkins service.
3. Access Jenkins at http://localhost:8080
4. Install suggested plugins.
5. Install Git Plugin and Pipeline Plugin from Manage Plugins

Step 2: Create a Maven Project on GitHub

1. Create a new GitHub repository (e.g., maven-sample).
2. Include a valid pom.xml and Java file (App.java) in src/main/java/.
3. Push the project to GitHub. (or use this, https://github.com/SauravSarkar-CodersArcade/MVN-ANS-JEN-CICD.git)

Step 3: Configure Jenkins Pipeline

1. Open Jenkins Dashboard and create a new Pipeline project.
2. In the Pipeline section, use Pipeline script with the following:

```
pipeline {
  agent any
  stages {
    stage('Checkout') {
      steps {
        git 'https://github.com/SauravSarkar-CodersArcade/MVN-ANS-JEN-CICD.git'
      }
    }
    stage('Build') {
      steps {
        bat 'mvn clean install'
      }
    }
    stage('Archive Artifact') {
      steps {
        archiveArtifacts artifacts: 'target/*.jar', fingerprint: true
      }
    }
  }
}
```

Step 4: Install Ansible via WSL

1. Enable WSL using PowerShell:
   wsl --install

2. Enter username and password (something like username: admin, password: admin).

3. Install Ansible**:**

   sudo apt update

   sudo apt install ansible -y

Step 5: Create Ansible Playbook

In WSL, create deploy.yaml with the following:-
Using
nano deploy.yml
(inside the deploy.yml, use ctrl+x, then y, then enter to save changes)

```
- name: Deploy Maven Artifact
  hosts: localhost
  tasks:
    - name: Copy JAR to deploy directory
      copy:
        src: /mnt/c/ProgramData/Jenkins/.jenkins/jobs/ansible-test/builds/1/archive/target/MVN-ANSIBLE-JENKINS-CI-CD-1.0-SNAPSHOT.jar
        dest: /home/your-ubuntu-username /deploy/
```

(if u cannot find the src after building it in jenkins, look for it here,
C:\ProgramData\Jenkins\.jenkins\jobs\ansible-test\builds)

Step 6: Run Ansible Deployment

Run the playbook in WSL: ansible-playbook deploy.yaml

Step 7: Final run

-ls /home/srinivas/deploy (test to see if jar file is saved)

-sudo apt install openjdk-21-jre-headless # version 21.0.6+7-1~24.04.1 (install java on ubuntu)

-java -jar /home/srinivas/deploy/MVN-ANSIBLE-JENKINS-CI-CD-1.0-SNAPSHOT.jar (final output)

Final Outcome- Jenkins builds the Maven project.- The artifact is archived.- Ansible deploys the artifact via WSL.