Title: Docker Volume-Based Multi-Branch Deployment via Jenkins Pipeline
Assignment: Docker | 3

Author: Vinay Hinukale

Objective:

Deploy three versions of an index.html webpage, each from a separate GitHub branch (2025Q1, 2025Q2, 2025Q3), into three httpd containers using Docker volumes. These containers will be launched and managed through a Jenkins multi-branch pipeline. Each container will be exposed on a different host port: **80**, **90**, and **8001**.

Jenkins Master Configuration

1. Launch EC2 Instance (Amazon Linux 2)

2. Install Jenkins

sudo su

sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo

sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key

yum install java-17-amazon-corretto.x86_64 -y

yum install git -y

yum install jenkins -y

3. Configure Jenkins User

visudo

Add this line:

jenkins ALL=(ALL)   NOPASSWD:ALL

4. Start Jenkins and Access UI

service jenkins start

cat /var/lib/jenkins/secrets/initialAdminPassword

Go to: http://<EC2_PUBLIC_IP>:8080 and finish Jenkins setup.

Pipeline Setup

1. Create a New Pipeline Job

- Name: multi_branch_docker_deployment
- Type: Pipeline

2. Configure Pipeline Script

Paste the following script:

```
pipeline {
  agent {
    label {
      label "built-in"
    }
  }

  stages {
    stage("docker-install") {
      steps {
        sh '''
        sudo yum install docker -y
        sudo systemctl start docker
        docker stop Q1 Q2 Q3 || true
        docker rm Q1 Q2 Q3 || true
        '''
      }
    }

    stage("git-clone-b1") {
      steps {
        dir("2025Q1") {
```

```
            git url: " https://github.com/LegPro/docker-repo-1.git", branch: "2025Q1"
            sh '''
            docker run -itd --name Q1 -p 80:80  -v /home/ec2-user/jenkins/workspace/docker-multibranch-pipeline/2025Q1:/usr/local/apache2/htdocs httpd
            docker exec Q1 chmod -R 777 /usr/local/apache2/htdocs
            '''
          }
        }
      }

      stage("git-clone-b2") {
        steps {
          dir("2025Q2") {
            git url: " https://github.com/LegPro/docker-repo-1.git", branch: "2025Q2"
            sh '''
            docker run -itd --name Q2 -p 90:80 \
              -v /home/ec2-user/jenkins/workspace/docker-multibranch-pipeline/2025Q2:/usr/local/apache2/htdocs httpd
            docker exec Q2 chmod -R 777 /usr/local/apache2/htdocs
            '''
          }
        }
      }

      stage("git-clone-b3") {
        steps {
          dir("2025Q3") {
            git url: " https://github.com/LegPro/docker-repo-1.git", branch: "2025Q3"
```

```
            sh '''
            docker run -itd --name Q3 -p 8001:80 \
             -v /home/ec2-user/jenkins/workspace/docker-multibranch-pipeline/2025Q3:/usr/local/apache2/htdocs httpd
            docker exec Q3 chmod -R 777 /usr/local/apache2/htdocs
            '''
          }
        }
      }
    }
}
```

✅ Tick: **Use Groovy Sandbox**
💾 Click: **Apply** and **Save**

Expected Result:

- Jenkins clones 3 different branches.
- Each branch's index.html is deployed using Docker volume mounting.
- Containers serve on:
    - http://:80 (2025Q1)
    - http://:90 (2025Q2)
    - http://:8001 (2025Q3)

Conclusion:

This setup demonstrates Docker volume usage combined with Jenkins pipelines to automate deployment from multiple Git branches to separate container instances. This is an efficient approach to preview or test multiple versions of a website or application.