TASK 5

Step 1: Clone the Git Repository

```
# Clone the repository
git clone https://github.com/original-repo/spring-framework.git

# Change to the project directory
cd spring-framework

# Add your GitHub repository as the remote
git remote set-url origin https://github.com/Harshini-Gunasekar/
spring-framework.git

# Push the project to your own repo
git push origin main
```

Step 2: Install Maven

```
# Update package lists
sudo apt update

# Install Maven
sudo apt install maven -y
mvn -version
# Remove existing Maven
sudo apt remove maven -y
```

Download the latest Maven version

cd /opt

sudo wget https://downloads.apache.org/maven/maven-3/3.9.6/binaries/apache-maven-3.9.6-bin.tar.gz

Extract and move Maven

sudo tar -xvzf apache-maven-3.9.6-bin.tar.gz

sudo mv apache-maven-3.9.6 /opt/maven

Set up environment variables

echo 'export M2_HOME=/opt/maven' | sudo tee -a /etc/profile.d/maven.sh

echo 'export PATH=$M2_HOME/bin:$PATH' | sudo tee -a /etc/profile.d/maven.sh

source /etc/profile.d/maven.sh

Verify installation:

mvn -version

which mvn

If necessary, create a symbolic link:

sudo ln -s /opt/maven/bin/mvn /usr/bin/mvn

Step 3: Build the Project with Maven

Navigate to the Jenkins workspace and build the project:

cd /var/lib/jenkins/workspace/Spring-framework

Clean and package the project (skipping tests)

mvn clean package -DskipTests

Step 4: **Set Up Jenkins Pipeline**

1. Open **Jenkins Dashboard** → Click **New Item** → Select **Pipeline**.

2. Go to **Pipeline** section and add the following script:

```
pipeline {
    agent any

    environment {
        IMAGE_NAME = "docker-user-name/my-app"
        REGISTRY = "docker.io"
        DOCKER_USER = "docker-user-name"
        DOCKER_PASS = "your-docker-password"
    }

    stages {
        stage('Checkout Code') {
            steps {
                git url: 'https://github.com/git-user-name/git-repo-name.git', branch: 'main'
            }
        }

        stage('Build Docker Image') {
            steps {
                script {
                    sh "docker build -t $IMAGE_NAME:latest ."
                }
            }
        }

        stage('Login to Docker Registry') {
```

```
steps {
            script {
               sh 'echo $DOCKER_PASS | docker login -u $DOCKER_USER --password-stdin'
            }
         }
      }

      stage('Push Image to Docker Registry') {
         steps {
            script {
               sh "docker push $IMAGE_NAME:latest"
            }
         }
      }
   }

   post {
      success {
         echo 'Pipeline executed successfully!'
      }
      failure        {
         echo 'Pipeline failed! Check the logs for errors.'
      }
   }
}
```

Step 5: Fix Permissions for Jenkins

Ensure Jenkins has the correct permissions:

sudo chown -R jenkins:jenkins /var/lib/jenkins/workspace/Spring-framework

sudo chmod -R 775 /var/lib/jenkins/workspace/Spring-framework

Restart Jenkins to apply changes:

sudo systemctl restart jenkins

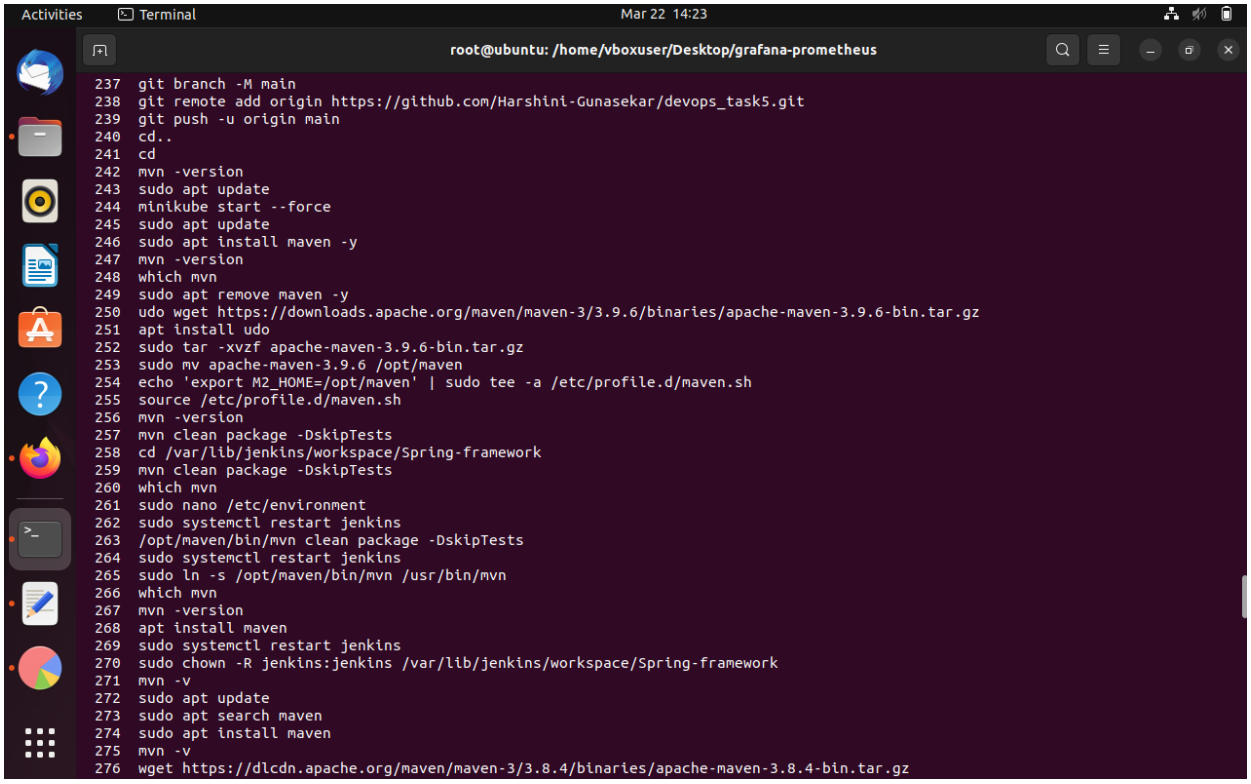
Step 6 : Run and Debug the Pipeline

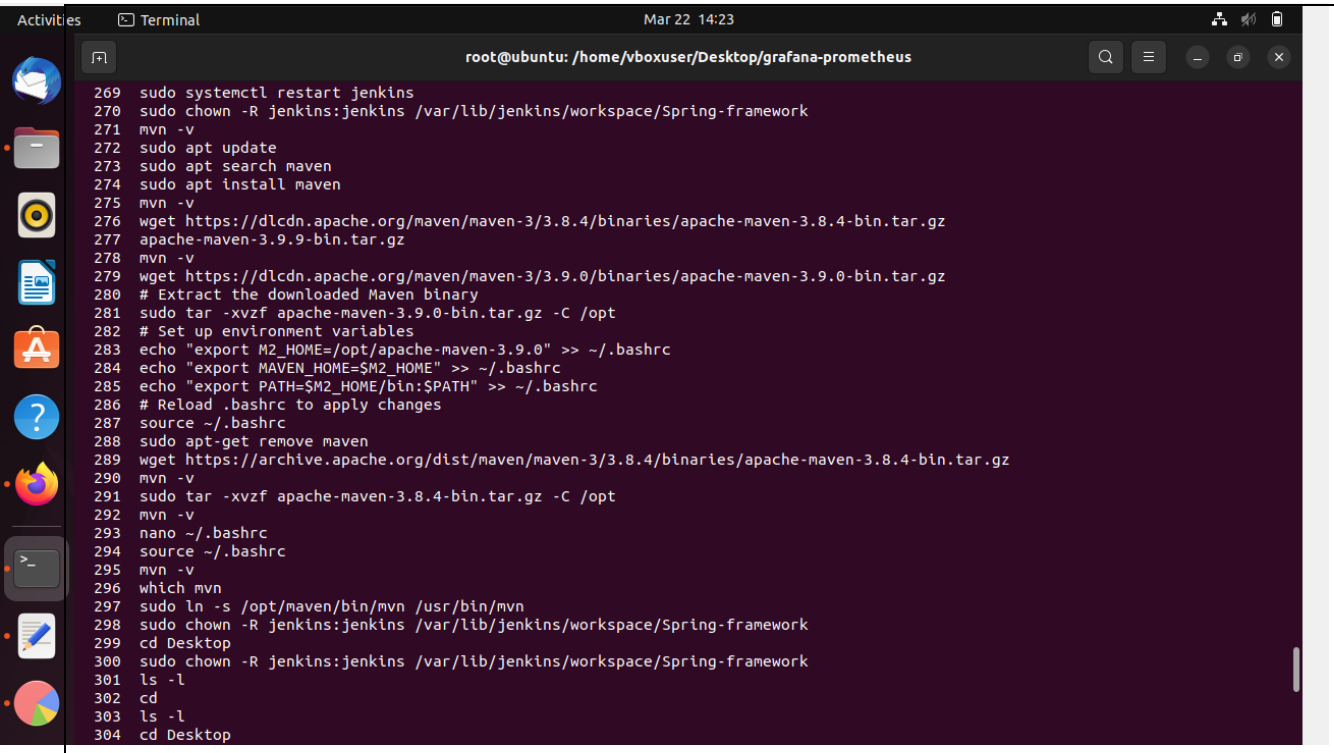
After setting up everything, go to Jenkins and **trigger the build**. If there are any errors:

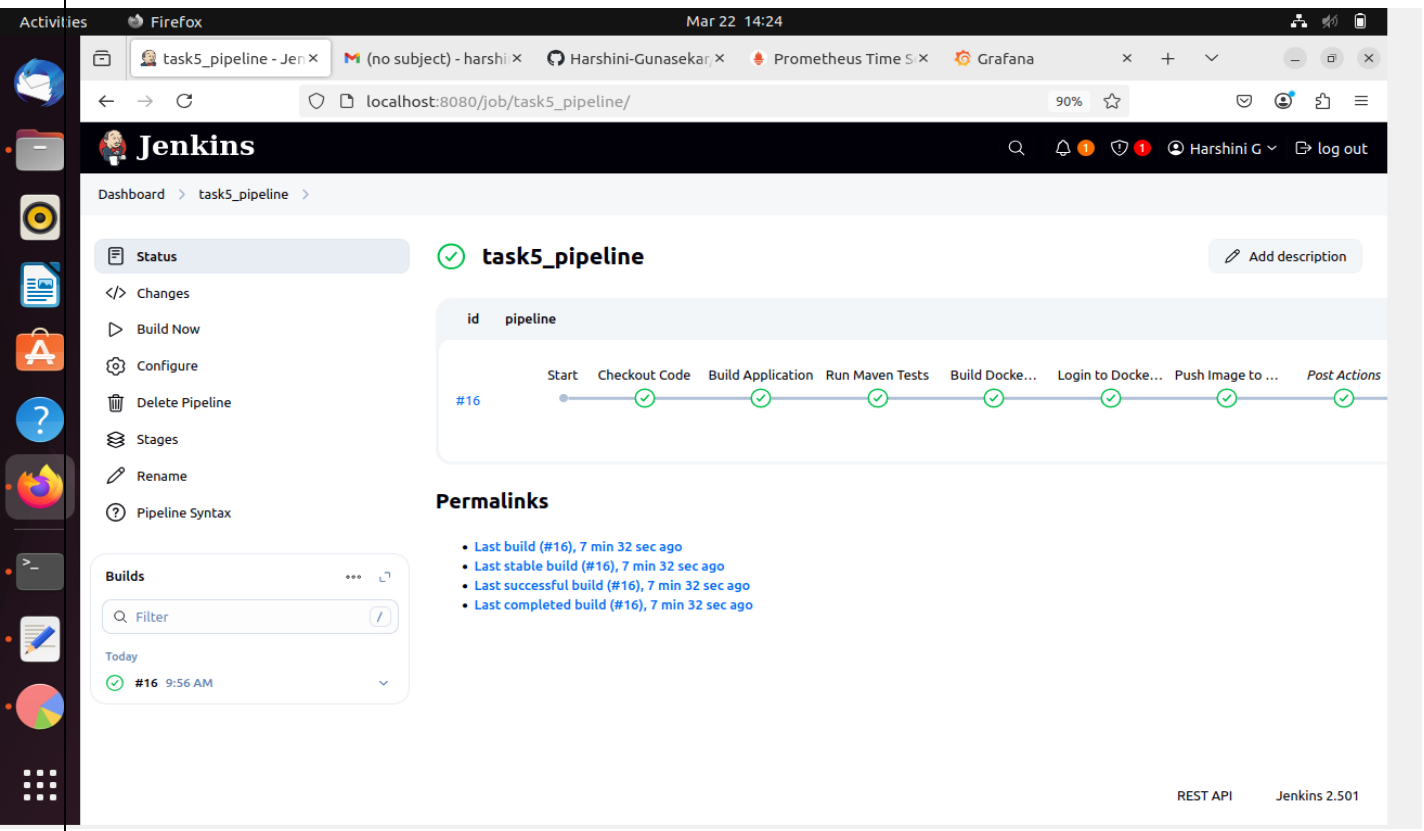
docker images   # Check if the image exists

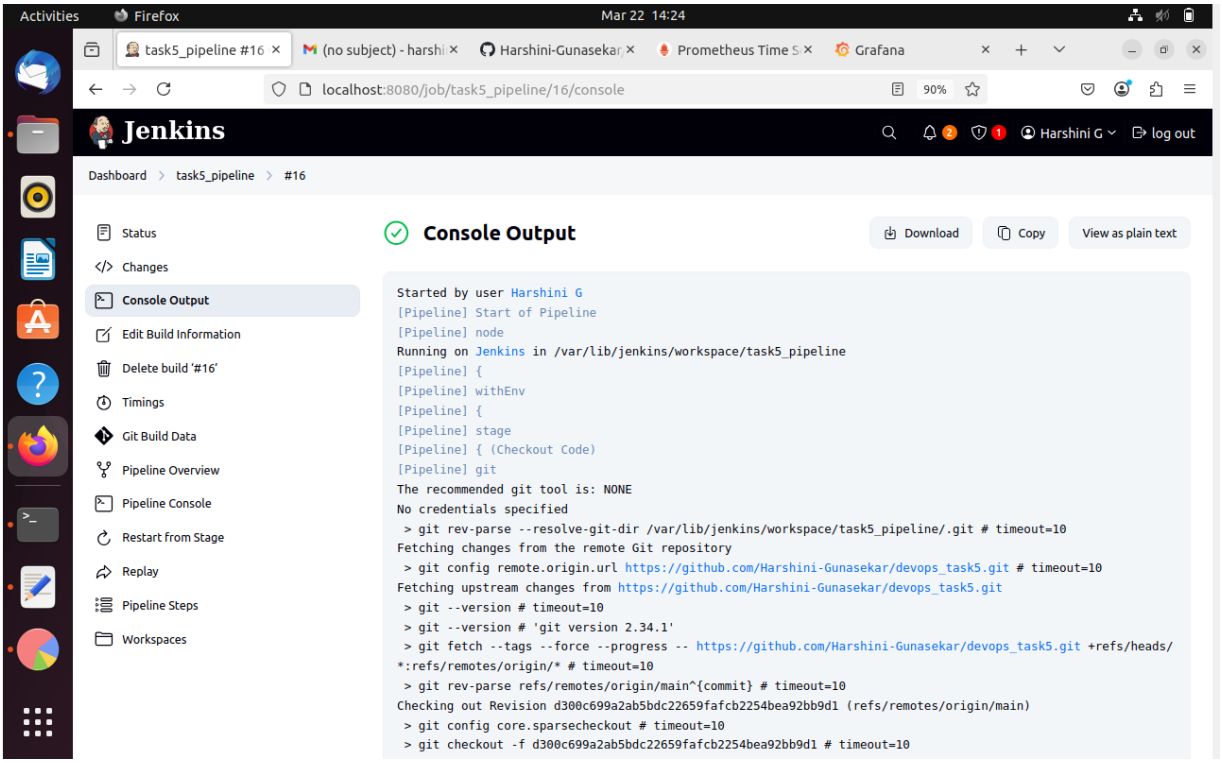
docker ps -a   # Check running containers

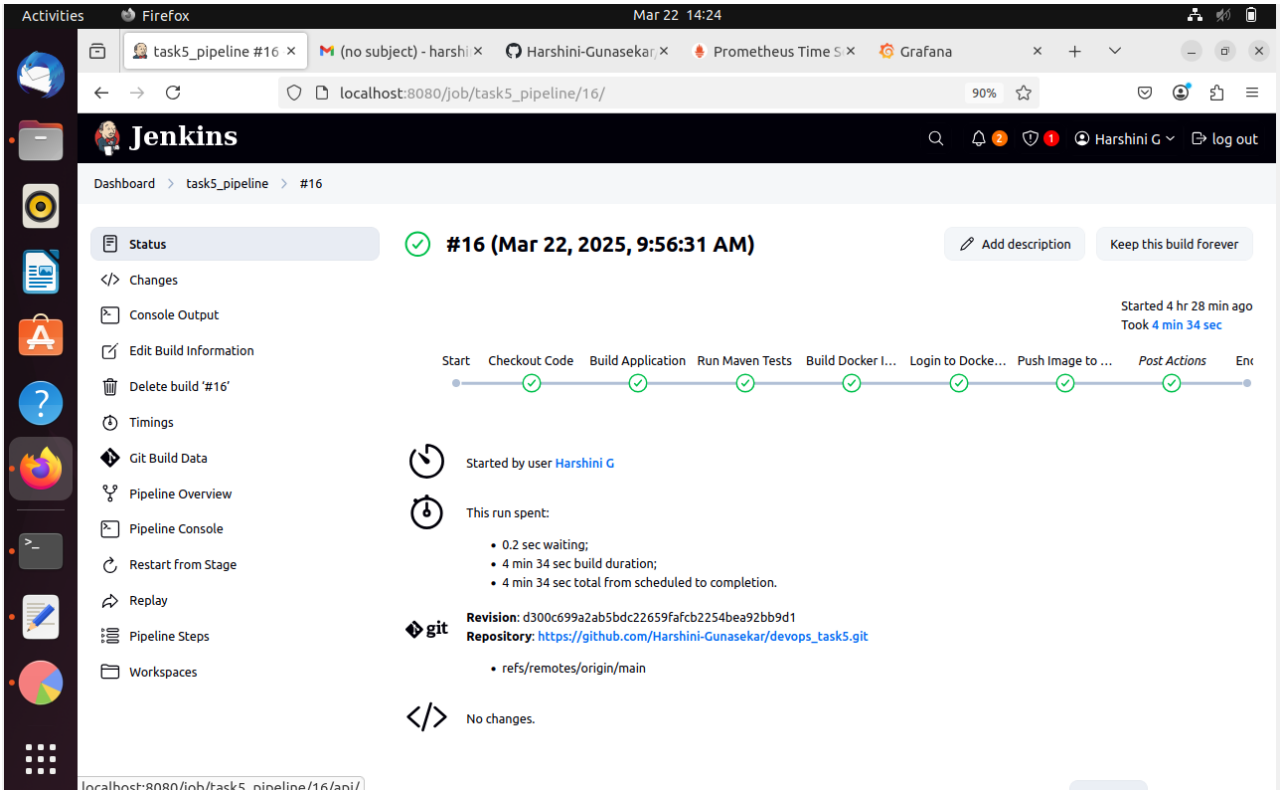
docker logs <container_id> # View container logs




Activities
Terminal
Mar 22 14:23
root@ubuntu: /home/vboxuser/Desktop/grafana-prometheus
269 sudo systemctl restart jenkins
270 sudo chown -R jenkins:jenkins /var/lib/jenkins/workspace/Spring-framework
271 mvn -v
272 sudo apt update
273 sudo apt search maven
274 sudo apt install maven
275 mvn -v
276 wget https://dlcdn.apache.org/maven/maven-3/3.8.4/binaries/apache-maven-3.8.4-bin.tar.gz
277 apache-maven-3.9.9-bin.tar.gz
278 mvn -v
279 wget https://dlcdn.apache.org/maven/maven-3/3.9.0/binaries/apache-maven-3.9.0-bin.tar.gz
280 # Extract the downloaded Maven binary
281 sudo tar -xvzf apache-maven-3.9.0-bin.tar.gz -C /opt
282 # Set up environment variables
283 echo "export M2_HOME=/opt/apache-maven-3.9.0" >> ~/.bashrc
284 echo "export MAVEN_HOME=$M2_HOME" >> ~/.bashrc
285 echo "export PATH=$M2_HOME/bin:$PATH" >> ~/.bashrc
286 # Reload .bashrc to apply changes
287 source ~/.bashrc
288 sudo apt-get remove maven
289 wget https://archive.apache.org/dist/maven/maven-3/3.8.4/binaries/apache-maven-3.8.4-bin.tar.gz
290 mvn -v
291 sudo tar -xvzf apache-maven-3.8.4-bin.tar.gz -C /opt
292 mvn -v
293 nano ~/.bashrc
294 source ~/.bashrc
295 mvn -v
296 which mvn
297 sudo ln -s /opt/maven/bin/mvn /usr/bin/mvn
298 sudo chown -R jenkins:jenkins /var/lib/jenkins/workspace/Spring-framework
299 cd Desktop
300 sudo chown -R jenkins:jenkins /var/lib/jenkins/workspace/Spring-framework
301 ls -l
302 cd
303 ls -l
304 cd Desktop


Activities
Firefox
Mar 22 14:24
task5_pipeline - Jen
(no subject) - harshi
Harshini-Gunasekar
Prometheus Time S
Grafana
localhost:8080/job/task5_pipeline/
90%
Jenkins
Harshini G
log out
Dashboard
task5_pipeline
Status
Changes
Build Now
Configure
Delete Pipeline
Stages
Rename
Pipeline Syntax
task5_pipeline
Add description
id
pipeline
Start
Checkout Code
Build Application
Run Maven Tests
Build Docke...
Login to Docke...
Push Image to ...
Post Actions
#16
Permalinks
Last build (#16), 7 min 32 sec ago
Last stable build (#16), 7 min 32 sec ago
Last successful build (#16), 7 min 32 sec ago
Last completed build (#16), 7 min 32 sec ago
Builds
Filter
Today
#16 9:56 AM
REST API
Jenkins 2.501


Activities
Firefox
Mar 22 14:24
task5_pipeline #16
(no subject) - harshi
Harshini-Gunasekar
Prometheus Time S
Grafana
localhost:8080/job/task5_pipeline/16/console
90%
Jenkins
Harshini G
log out
Dashboard
task5_pipeline
#16
Status
Changes
Console Output
Edit Build Information
Delete build '#16'
Timings
Git Build Data
Pipeline Overview
Pipeline Console
Restart from Stage
Replay
Pipeline Steps
Workspaces
Console Output
Download
Copy
View as plain text
Started by user Harshini G
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/task5_pipeline
[Pipeline] {
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Checkout Code)
[Pipeline] git
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/task5_pipeline/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Harshini-Gunasekar/devops_task5.git # timeout=10
Fetching upstream changes from https://github.com/Harshini-Gunasekar/devops_task5.git
> git --version # timeout=10
> git --version # 'git version 2.34.1'
> git fetch --tags --force --progress -- https://github.com/Harshini-Gunasekar/devops_task5.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision d300c699a2ab5bdc22659fafcb2254bea92bb9d1 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f d300c699a2ab5bdc22659fafcb2254bea92bb9d1 # timeout=10


Activities
Firefox
Mar 22 14:24
task5_pipeline #16
(no subject) - harshi
Harshini-Gunasekar
Prometheus Time S
Grafana
localhost:8080/job/task5_pipeline/16/
90%
Jenkins
Harshini G
log out
Dashboard
task5_pipeline
#16
Status
Changes
Console Output
Edit Build Information
Delete build '#16'
Timings
Git Build Data
Pipeline Overview
Pipeline Console
Restart from Stage
Replay
Pipeline Steps
Workspaces
#16 (Mar 22, 2025, 9:56:31 AM)
Add description
Keep this build forever
Started 4 hr 28 min ago
Took 4 min 34 sec
Start
Checkout Code
Build Application
Run Maven Tests
Build Docker I...
Login to Docke...
Push Image to ...
Post Actions
Started by user Harshini G
This run spent:
0.2 sec waiting;
4 min 34 sec build duration;
4 min 34 sec total from scheduled to completion.
git
Revision: d300c699a2ab5bdc22659fafcb2254bea92bb9d1
Repository: https://github.com/Harshini-Gunasekar/devops_task5.git
refs/remotes/origin/main
No changes.