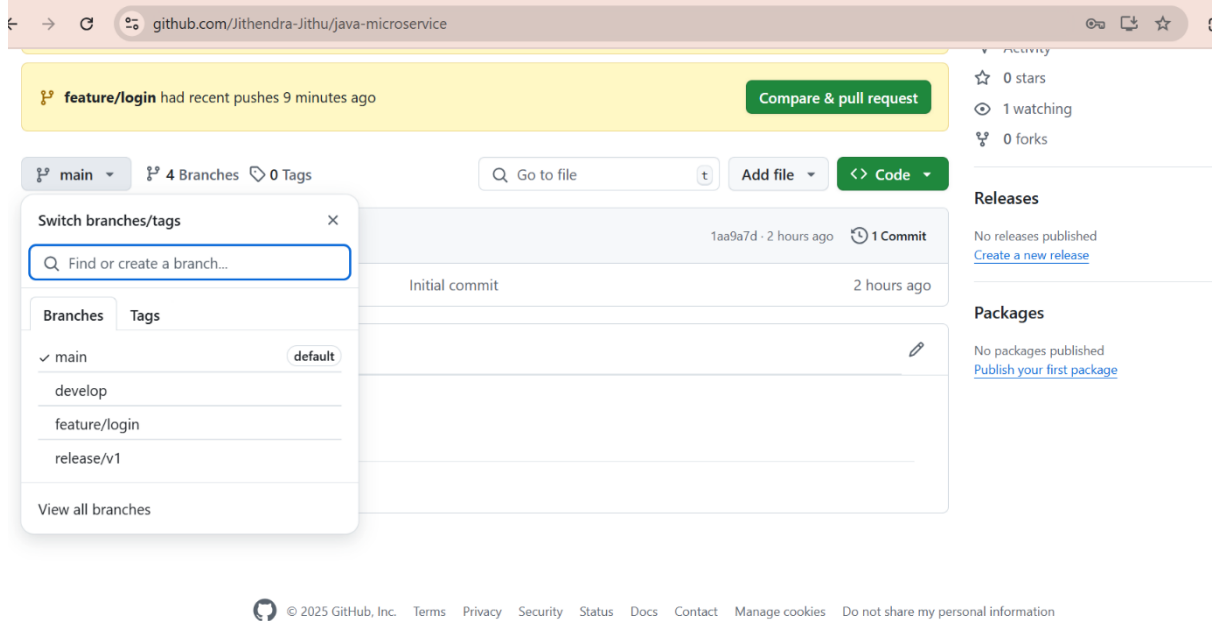
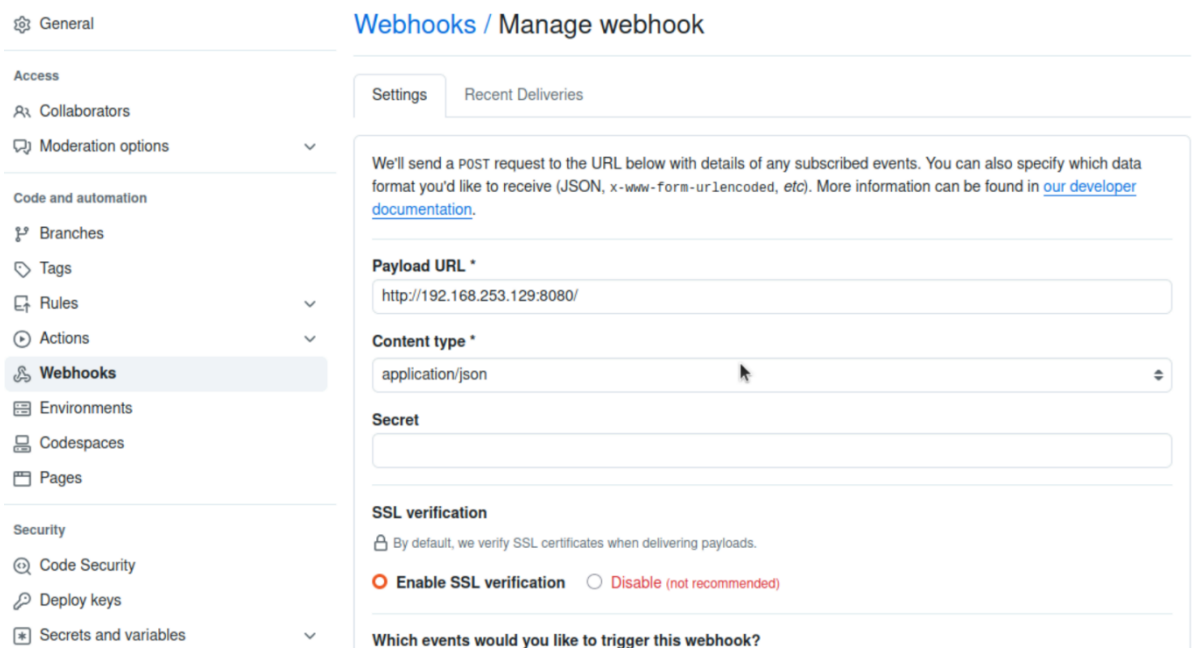


1. Implement a CI/CD pipeline using Jenkins multi-branch pipelines.



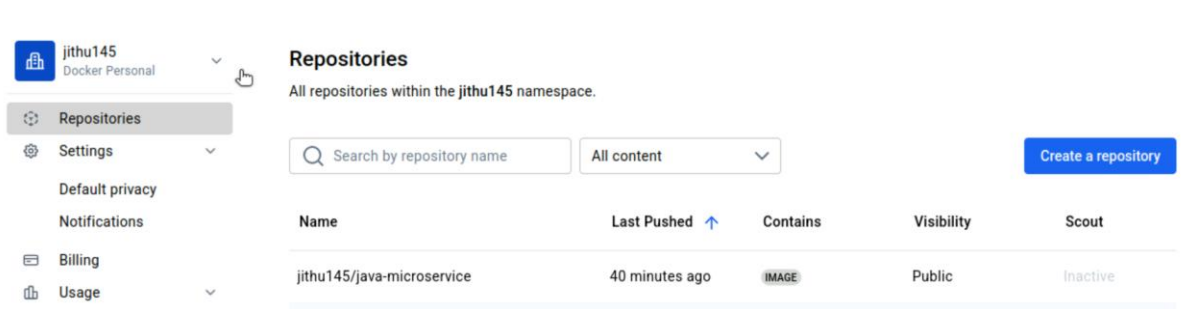
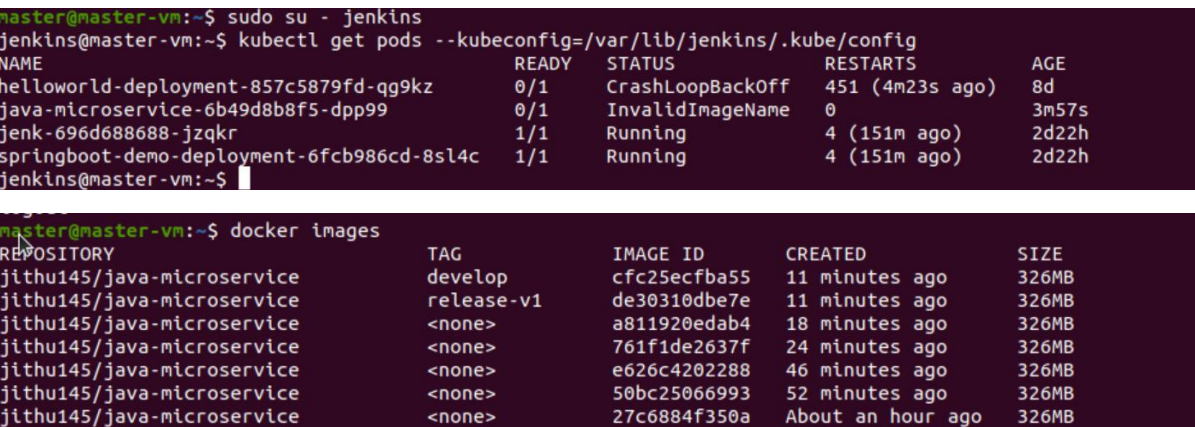
1. Triggers automatically using a GitHub webhook.



Builds and tests the Java application using maven.

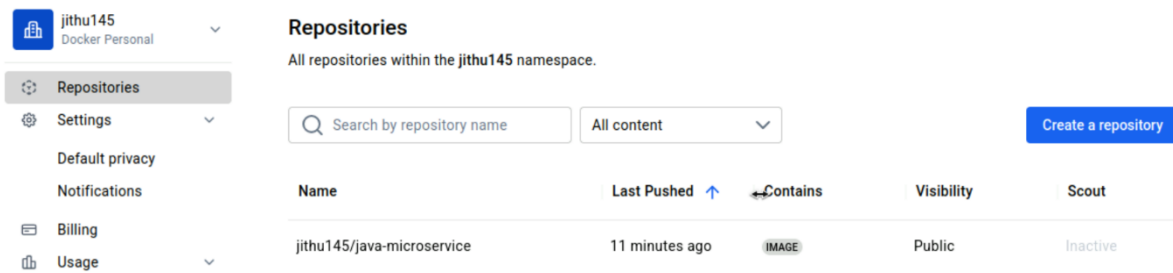


4. Packages the application into a Docker container and pushes it to an image registry.



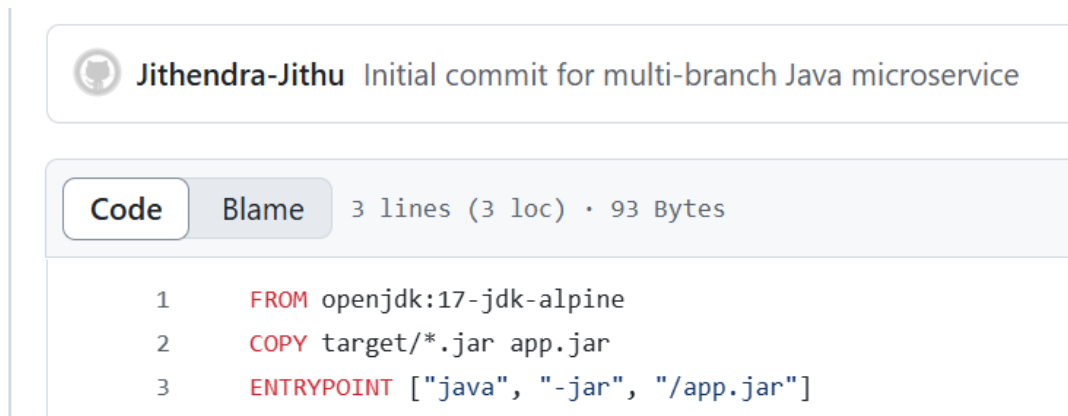
5. Deploys the application to a Kubernetes cluster using YAML manifests.

V. Docker Containerization and Image Push



The screenshot shows the Docker Hub interface for user 'jithu145'. On the left is a sidebar with navigation links: Repositories (selected), Settings, Default privacy, Notifications, Billing, and Usage. The main area is titled 'Repositories' and shows 'All repositories within the jithu145 namespace.' Below this is a search bar and a dropdown for 'All content'. A 'Create a repository' button is in the top right. A table lists the repositories:

Name	Last Pushed	Contains	Visibility	Scout
jithu145/java-microservice	11 minutes ago	IMAGE	Public	Inactive



The screenshot shows a GitHub commit page for user 'Jithendra-Jithu'. The commit message is 'Initial commit for multi-branch Java microservice'. Below the message are tabs for 'Code' (selected) and 'Blame'. The code statistics show '3 lines (3 loc) · 93 Bytes'. The code content is as follows:

```
1 FROM openjdk:17-jdk-alpine
2 COPY target/*.jar app.jar
3 ENTRYPOINT ["java", "-jar", "/app.jar"]
```

VI. Kubernetes Deployment

- i. deployment.yaml (Defines the app deployment and replicas).
- ii. service.yaml (Exposes the application internally).
- b. Add Kubernetes apply command to Jenkinsfile to enable deployment.

Go to file

▼ k8s

deployment.yaml

service.yaml

> src

Dockerfile

Jenkinsfile

pom.xml

sonar-project.properties

CodeBlame

19 lines (19 loc) · 360 Bytes

```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: java-microservice
5  spec:
6    replicas: 1
7    selector:
8      matchLabels:
9        app: java-microservice
10   template:
11     metadata:
12       labels:
13         app: java-microservice
14     spec:
15       containers:
16       - name: java-microservice
17         image: IMAGE_PLACEHOLDER
18         ports:
19         - containerPort: 8080
```

java-microservice / k8s / service.yaml

 **Jithendra-Jithu** Initial commit for multi-branch Java microservice

CodeBlame

12 lines (12 loc) · 194 Bytes

```
1  apiVersion: v1
2  kind: Service
3  metadata:
4    name: java-microservice
5  spec:
6    selector:
7      app: java-microservice
8    ports:
9      - protocol: TCP
10        port: 80
11        targetPort: 8080
12    type: NodePort
```

After executing the Jenkins multibranch pipeline:

Output:

Total pipeline output:

← → ↺

localhost:8080/job/java-microservice-ci-cd/

☆

🔍 🔔 3 🛡️ 2 👤 admin ▾ 🚪 log out

Jenkins

Dashboard > java-microservice-ci-cd >

Status

Configure

▶ Scan Multibranch Pipeline Now

📄 Scan Multibranch Pipeline Log

📄 Multibranch Pipeline Events

🗑️ Delete Multibranch Pipeline

📅 Build History

👤 Project Relationship

🔍 Check File Fingerprint

✎ Rename

❓ Pipeline Syntax

Icon: S M L

localhost:8080/job/java-microservice-ci-cd/build?delay=0

Dashboard > java-microservice-ci-cd > Scan Multibranch Pipeline

java-microservice-ci-cd

Branches (3)

S	W	Name ↓	Last Success	Last Failure	Last Duration	
✓	☁	develop	56 min #4	57 min #3	1 min 33 sec	▶
✓	☁	feature/login	1 hr 6 min #3	1 hr 22 min #1	1 min 2 sec	▶
✓	☁	release/v1	6 min 2 sec #12	8 min 50 sec #11	1 min 4 sec	▶

✓ Scan Multibranch Pipeline Log

Started by user admin
[Thu Apr 10 15:41:01 IST 2025] Starting branch indexing...
> git --version # timeout=10
> git --version # 'git version 2.25.1'
> git ls-remote --symref -- https://github.com/Jithendra-Jithu/java-microservice.git # timeout=10
> git rev-parse --resolve-git-dir /var/lib/jenkins/caches/git-3a14c6c2a63d382eee485c46a4508359/.git # timeout=10
Setting origin to https://github.com/Jithendra-Jithu/java-microservice.git
> git config remote.origin.url https://github.com/Jithendra-Jithu/java-microservice.git # timeout=10
Fetching & pruning origin...
Listing remote references...
> git config --get remote.origin.url # timeout=10
> git --version # timeout=10
> git --version # 'git version 2.25.1'
> git ls-remote -h -- https://github.com/Jithendra-Jithu/java-microservice.git # timeout=10
Fetching upstream changes from origin

java-microservice-ci-cd

6 min 12 sec log

N/A

2 sec

▶

Develop branch:

develop 4 Branches 0 Tags

Go to file t Add file <> Code

This branch is 8 commits ahead of, 1 commit behind main . Contribute

Jithendra-Jithu Update Jenkinsfile 35fc792 · 10 minutes ago 8 Commits

k8s	Initial commit for multi-branch Java microservice	2 hours ago
src/main/java/com/example	Initial commit for multi-branch Java microservice	2 hours ago
Dockerfile	Initial commit for multi-branch Java microservice	2 hours ago
Jenkinsfile	Update Jenkinsfile	10 minutes ago
pom.xml	Initial commit for multi-branch Java microservice	2 hours ago

Releases

No releases published
[Create a new release](#)

Packages

No packages published
[Publish your first package](#)

Output:

Dashboard > java-microservice-ci-cd > develop > #5

Changes

Console Output

Edit Build Information

Delete build '#5'

Timings

Git Build Data

Git Build Data

Pipeline Overview

Pipeline Console

Restart from Stage

Replay

Pipeline Steps

Workspaces

Branch indexing
> git rev-parse --resolve-git-dir /var/lib/jenkins/caches/git-3a14c6c2a63d382eee485c46a4508359/.git # timeout=10
Setting origin to https://github.com/Jithendra-Jithu/java-microservice.git
> git config remote.origin.url https://github.com/Jithendra-Jithu/java-microservice.git # timeout=10
Fetching origin...
Fetching upstream changes from origin
> git --version # timeout=10
> git --version # 'git version 2.25.1'
> git config --get remote.origin.url # timeout=10
> git fetch --tags --force --progress -- origin +refs/heads/*:refs/remotes/origin/* # timeout=10
Seen branch in repository origin/develop
Seen branch in repository origin/feature/login
Seen branch in repository origin/main
Seen branch in repository origin/release/v1
Seen 4 remote branches
Obtained Jenkinsfile from 35fc792ff94490122c8e2bec4800b005abb85361
Loading library jenkins-shared-library@main
Attempting to resolve main from remote references...
> git --version # timeout=10

Release branch:

release/v1 4 Branches 0 Tags

Go to file t Add file <> Code

This branch is 12 commits ahead of, 1 commit behind main . Contribute

Jithendra-Jithu Update Jenkinsfile de4f8ff · 16 minutes ago 12 Commits

k8s	Initial commit for multi-branch Java microservice	2 hours ago
src/main/java/com/example	Initial commit for multi-branch Java microservice	2 hours ago
Dockerfile	Initial commit for multi-branch Java microservice	2 hours ago
Jenkinsfile	Update Jenkinsfile	16 minutes ago
pom.xml	Initial commit for multi-branch Java microservice	2 hours ago

Releases

No releases published
[Create a new release](#)

Packages

No packages published
[Publish your first package](#)

Output:

Dashboard > java-microservice-ci-cd > release/v1 > #13

Status

Changes

Console Output

Edit Build Information

Delete build '#13'

Timings

Git Build Data

Git Build Data

Pipeline Overview

Pipeline Console

Restart from Stage

Cancel

Console Output

Download

Copy

View as plain text

Branch indexing

> git rev-parse --resolve-git-dir /var/lib/jenkins/caches/git-3a14c6c2a63d382eee485c46a4508359/.git # timeout=10

Setting origin to https://github.com/Jithendra-Jithu/java-microservice.git

> git config remote.origin.url https://github.com/Jithendra-Jithu/java-microservice.git # timeout=10

Fetching origin...

Fetching upstream changes from origin

> git --version # timeout=10

> git --version # 'git version 2.25.1'

> git config --get remote.origin.url # timeout=10

> git fetch --tags --force --progress -- origin +refs/heads/*:refs/remotes/origin/* # timeout=10

Seen branch in repository origin/develop

Seen branch in repository origin/feature/login

Seen branch in repository origin/main

Seen branch in repository origin/release/v1

Feature/login:

feature/login 4 Branches 0 Tags

Go to file

Add file

Code

Releases

No releases published

Create a new release

Contribute

Packages

No packages published

Publish your first package

This branch is 6 commits ahead of, 1 commit behind main

Jithendra-Jithu Update Jenkinsfile c5e4f5c · 40 minutes ago 6 Commits

k8s	Initial commit for multi-branch Java microservice	2 hours ago
src/main/java/com/example	Initial commit for multi-branch Java microservice	2 hours ago
Dockerfile	Initial commit for multi-branch Java microservice	2 hours ago
Jenkinsfile	Update Jenkinsfile	40 minutes ago
pom.xml	Initial commit for multi-branch Java microservice	2 hours ago
sonar-project.properties	Initial commit for multi-branch Java microservice	2 hours ago

README

Output:

Dashboard > java-microservice-ci-cd > feature/login > #5

Status

</> Changes

Console Output

Edit Build Information

Delete build '#5'

Timings

Git Build Data

Git Build Data

Pipeline Overview

Pipeline Console

Restart from Stage

✓ Console Output

Download Copy View as plain text

```
Started by user admin
> git rev-parse --resolve-git-dir /var/lib/jenkins/caches/
git-3a14c6c2a63d382eee485c46a4508359/.git # timeout=10
Setting origin to https://github.com/Jithendra-Jithu/java-microservice.git
> git config remote.origin.url https://github.com/Jithendra-Jithu/java-microservice.git #
timeout=10
Fetching origin...
Fetching upstream changes from origin
> git --version # timeout=10
> git --version # 'git version 2.25.1'
> git config --get remote.origin.url # timeout=10
> git fetch --tags --force --progress -- origin +refs/heads/*:refs/remotes/origin/* #
timeout=10
Seen branch in repository origin/develop
Seen branch in repository origin/feature/login
Seen branch in repository origin/main
Seen branch in repository origin/release/v1
```

Activate Windows
Go to Settings to activate Windows.

localhost:8080/job/java-microservice-ci-cd/job/feature%2Flogin/5/pipeline-console