

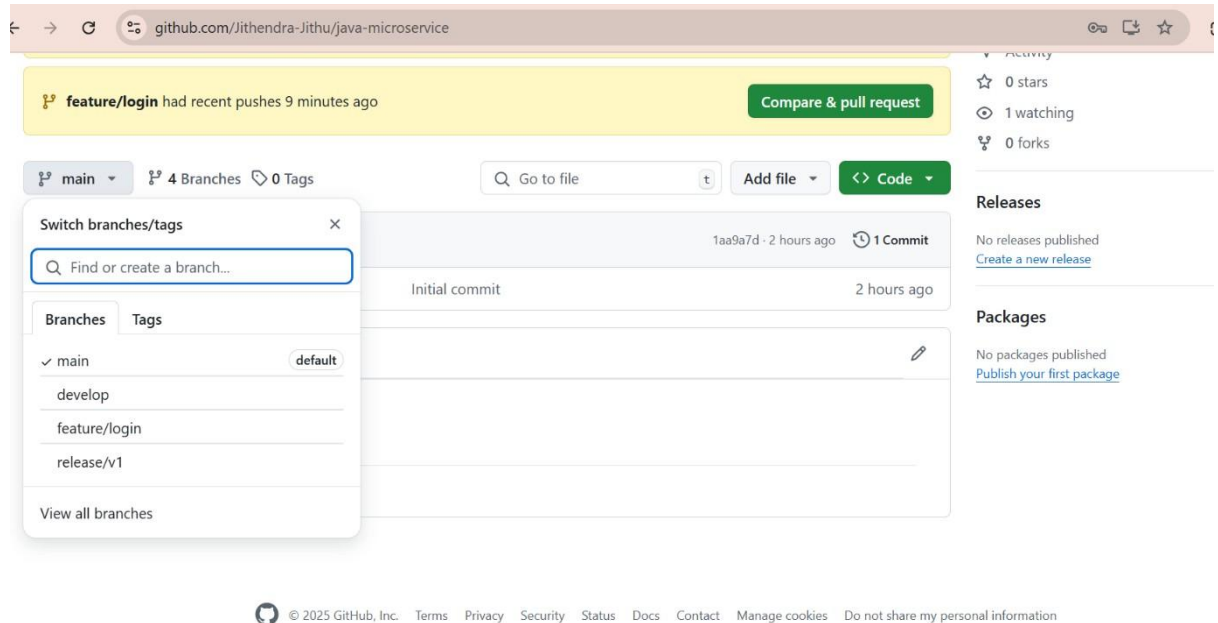
Implement a CI/CD pipeline using Jenkins multi-branch pipelines.

This github contains three branches:

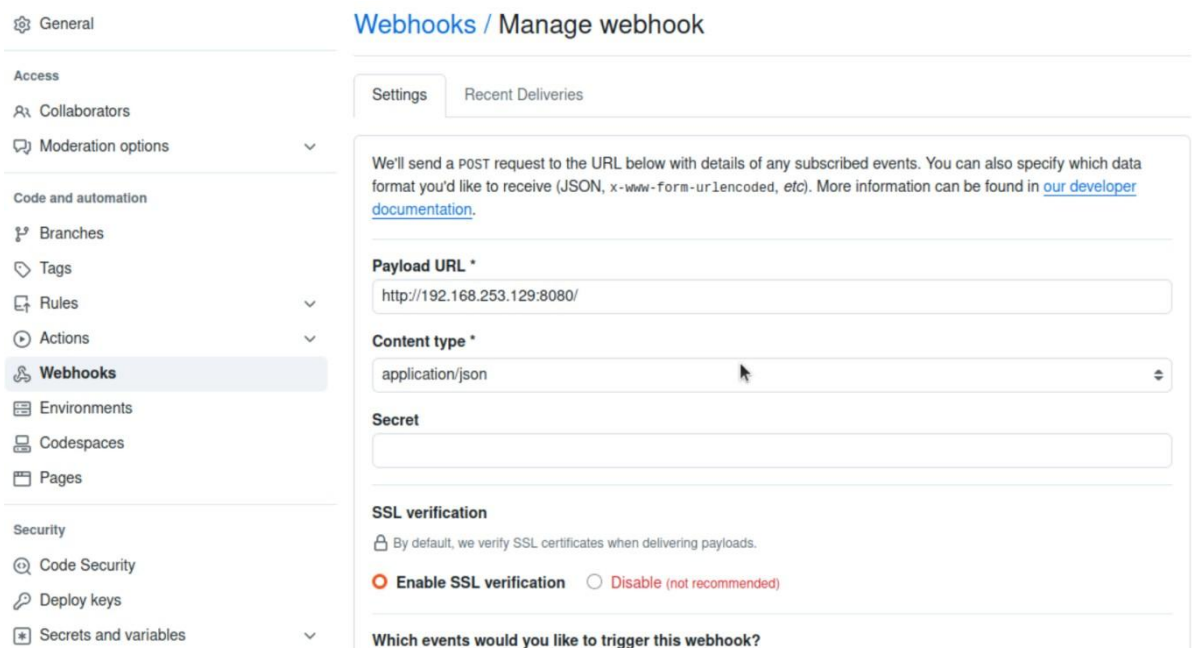
Develop

Feature/login

Release/v1



Triggers automatically using a GitHub webhook.



Builds and tests the Java application using maven.



The screenshot shows the Jenkinsfile content in a code editor. The file is named 'Jenkinsfile' and is located in the 'src' directory. The code defines a pipeline with three stages: 'Checkout', 'Build', and 'Test'. The 'Checkout' stage uses the 'checkout scm' step. The 'Build' stage uses the 'sh' step to run 'mvn clean package'. The 'Test' stage uses the 'sh' step to run 'mvn test'. The pipeline is named 'Docker Build & Push'.

```
1 pipeline {
2   agent any
3   stages {
4     stage('Checkout') {
5       steps {
6         checkout scm
7       }
8     }
9     stage('Build') {
10      steps {
11        sh 'mvn clean package'
12      }
13    }
14    stage('Test') {
15      steps {
16        sh 'mvn test'
17      }
18    }
19  }
20  stage('Docker Build & Push') {
```

Dashboard > java-microservice-ci-cd > Branches (3) > Build History

- Status
- Configure
- Scan Multibranch Pipeline Now
- Scan Multibranch Pipeline Log
- Multibranch Pipeline Events
- Build History
- Project Relationship
- Check File Fingerprint
- Rename
- Pipeline Syntax

Build History of Branches (3)

S	Build	Time Since ↑	Status
✓	java-microservice-ci-cd » feature/login #5	1 hr 49 min	stable
✓	java-microservice-ci-cd » release/v1 #13	1 hr 53 min	stable
✓	java-microservice-ci-cd » develop #5	1 hr 53 min	stable
✓	java-microservice-ci-cd » feature/login #4	1 hr 53 min	stable
✓	java-microservice-ci-cd » release/v1 #12	1 hr 59 min	back to normal
✗	java-microservice-ci-cd » release/v1 #11	2 hr 2 min	broken for a long time

Dashboard > java-microservice-ci-cd > Branches (3) > develop > #5

```
[[1;34mINFO[m] [1m--- [0;32mmaven-compiler-plugin:3.1:testCompile[m [1m(default-test-compile)[m @ [36mjava-microservice[0;1m ---[m
[[1;34mINFO[m] No sources to compile
[[1;34mINFO[m]
[[1;34mINFO[m] [1m--- [0;32mmaven-surefire-plugin:2.12.4:test[m [1m(default-test)[m @ [36mjava-microservice[0;1m ---[m
[[1;34mINFO[m] No tests to run.
[[1;34mINFO[m]
[[1;34mINFO[m] [1m--- [0;32mmaven-jar-plugin:2.4:jar[m [1m(default-jar)[m @ [36mjava-microservice[0;1m ---[m
[[1;34mINFO[m] Building jar: /var/lib/jenkins/workspace/java-microservice-ci-cd_develop/target/java-microservice-1.0-SNAPSHOT.jar
[[1;34mINFO[m] [1m-----[m
[[1;34mINFO[m] [1;32mBUILD SUCCESS[m
[[1;34mINFO[m] [1m-----[m
[[1;34mINFO[m] Total time: 4.987 s
[[1;34mINFO[m] Finished at: 2025-04-10T15:41:52+05:30
[[1;34mINFO[m] [1m-----[m
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Test)
[Pipeline] sh
+ mvn test
```

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

```
master@master-vm:~$ docker images
REPOSITORY              TAG               IMAGE ID           CREATED            SIZE
jithu145/java-microservice  develop          cfc25ecfba55      11 minutes ago    326MB
jithu145/java-microservice  release-v1       de30310dbe7e      11 minutes ago    326MB
jithu145/java-microservice  <none>           a811920edab4      18 minutes ago    326MB
jithu145/java-microservice  <none>           761f1de2637f      24 minutes ago    326MB
jithu145/java-microservice  <none>           e626c4202288      46 minutes ago    326MB
jithu145/java-microservice  <none>           50bc25066993      52 minutes ago    326MB
jithu145/java-microservice  <none>           27c6884f350a      About an hour ago  326MB
```

jithu145
Docker Personal

Repositories

All repositories within the jithu145 namespace.

Search by repository name: All content

Name	Last Pushed	Contains	Visibility	Scout
jithu145/java-microservice	40 minutes ago	IMAGE	Public	Inactive

v. Docker Containerization and Image Push

jithu145
Docker Personal

Repositories

All repositories within the jithu145 namespace.

Search by repository name: All content

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

Docker file:

Jithendra-Jithu Initial commit for multi-branch Java microservice

Code **Blame** 3 lines (3 loc) · 93 Bytes

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

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

Code

Blame

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

Code

Blame

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:

The screenshot displays the Jenkins web interface for a multibranch pipeline named 'java-microservice-ci-cd'. The top navigation bar shows the Jenkins logo, search, notifications, and user 'admin' with a 'log out' button. The breadcrumb trail is 'Dashboard > java-microservice-ci-cd > Scan Multibranch Pipeline Log'.

Left Sidebar (Actions):

- 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

Main Content Area:

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
```

Bottom Pipeline Summary:

Icon	Branch	Duration	Status	Log
☁	java-microservice-ci-cd	6 min 12 sec	N/A	2 sec

Develop branch:

develop 4 Branches 0 Tags

Go to file

Add file

Code

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

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

Add file

Code

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

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

Build

✓ 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
Seen 1 remote branches
```

Activate Windows
Go to Settings to activate Windows.

Feature/login:

feature/login 4 Branches 0 Tags Go to file Add file <> Code

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

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

Releases

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

Packages

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

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