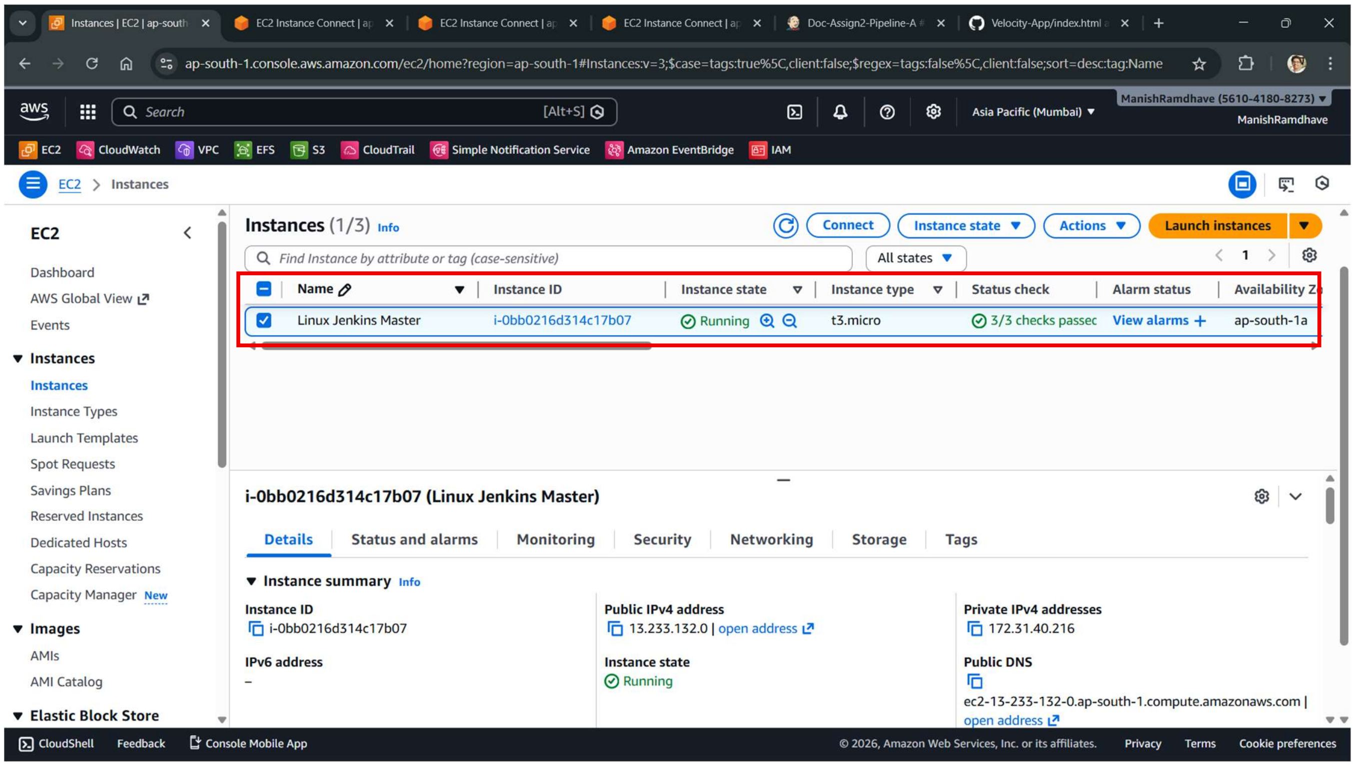
Docker Assignment 3

Step 1: Launched an instances for our **Jenkins Master:**

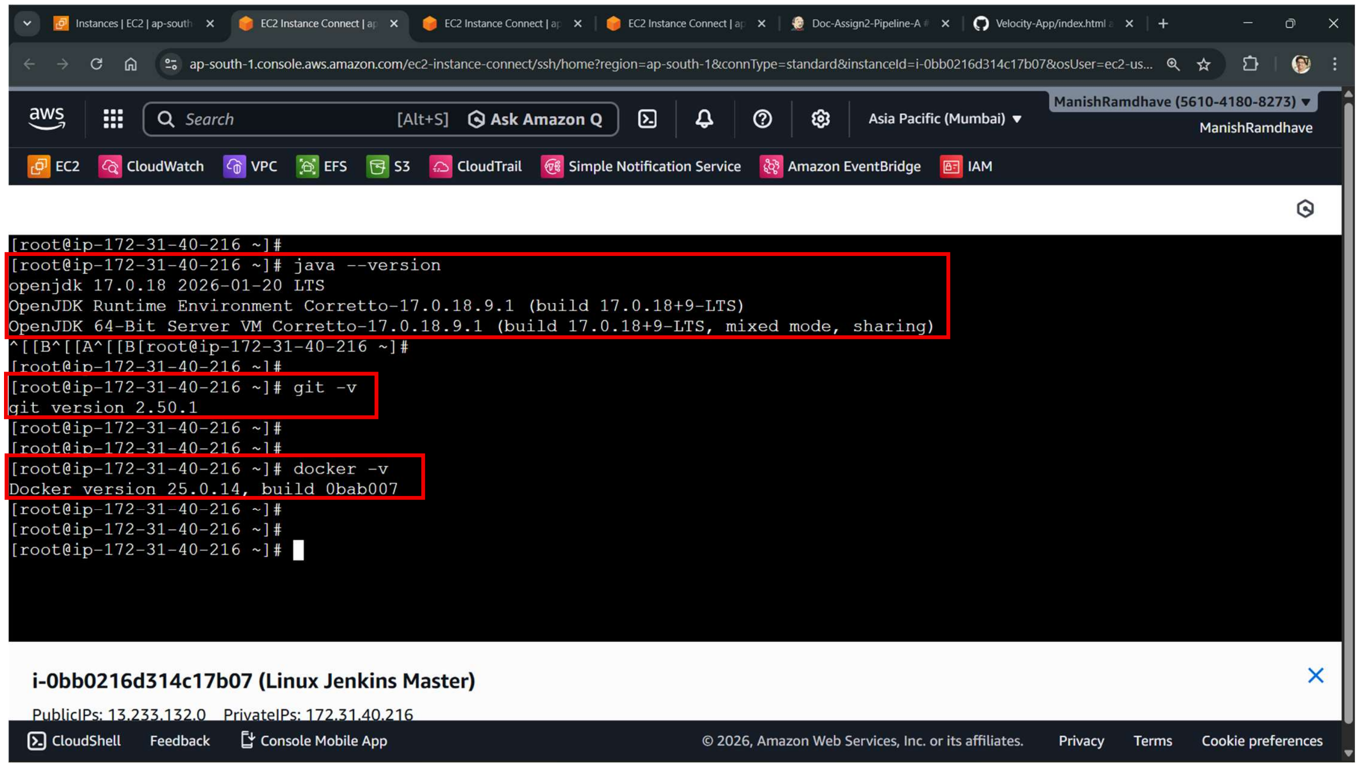


Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Z
Linux Jenkins Master	i-0bb0216d314c17b07	Running	t3.micro	3/3 checks passec	View alarms +	ap-south-1a

i-0bb0216d314c17b07 (Linux Jenkins Master)

Instance ID: i-0bb0216d314c17b07
Public IPv4 address: 13.233.132.0 | open address
Private IPv4 addresses: 172.31.40.216
IPv6 address: –
Instance state: Running
Public DNS: ec2-13-233-132-0.ap-south-1.compute.amazonaws.com | open address

Step 2: Installed **Java-17**, **Git** and **Docker on the Jenkins Master Instance**:

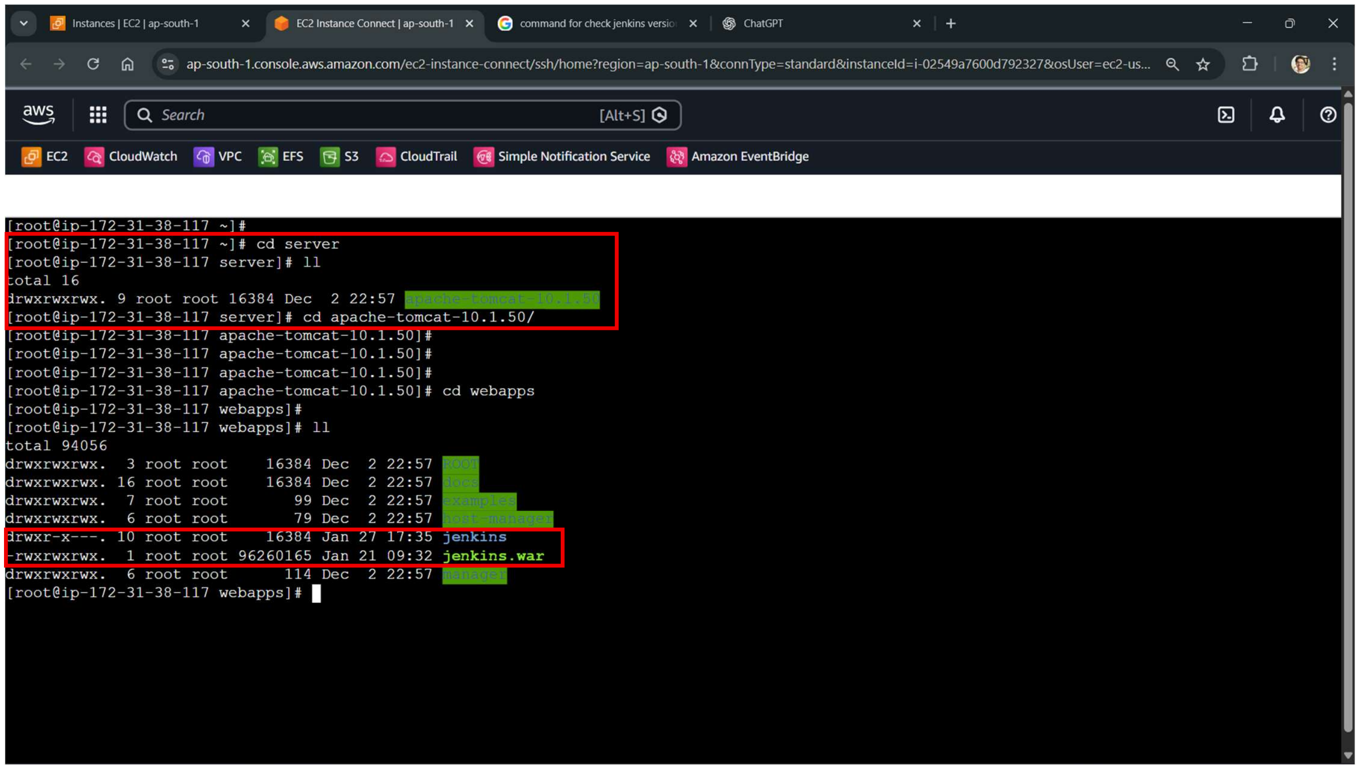


```
[root@ip-172-31-40-216 ~]#
[root@ip-172-31-40-216 ~]# java --version
openjdk 17.0.18 2026-01-20 LTS
OpenJDK Runtime Environment Corretto-17.0.18.9.1 (build 17.0.18+9-LTS)
OpenJDK 64-Bit Server VM Corretto-17.0.18.9.1 (build 17.0.18+9-LTS, mixed mode, sharing)
^[[B^[[A^[[B[root@ip-172-31-40-216 ~]#
[root@ip-172-31-40-216 ~]#
[root@ip-172-31-40-216 ~]# git -v
git version 2.50.1
[root@ip-172-31-40-216 ~]#
[root@ip-172-31-40-216 ~]#
[root@ip-172-31-40-216 ~]# docker -v
Docker version 25.0.14, build 0bab007
[root@ip-172-31-40-216 ~]#
[root@ip-172-31-40-216 ~]#
[root@ip-172-31-40-216 ~]#
```

i-0bb0216d314c17b07 (Linux Jenkins Master)

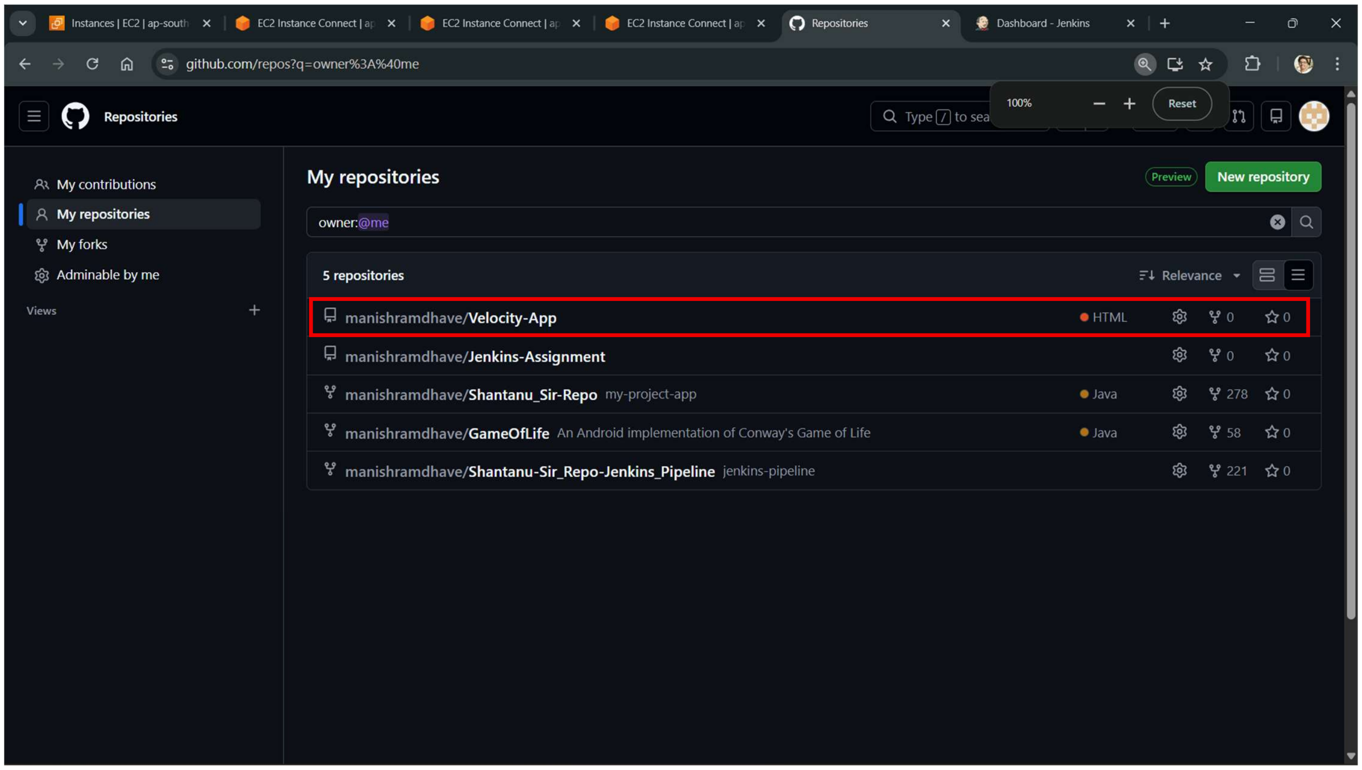
PublicIPs: 13.233.132.0 PrivateIPs: 172.31.40.216

Step 3: Installed **Apache-Tomcat-10 and Jenkins** on the **Jenkins Master Instance**:



```
[root@ip-172-31-38-117 ~]#
[root@ip-172-31-38-117 ~]# cd server
[root@ip-172-31-38-117 server]# ll
total 16
drwxrwxrwx. 9 root root 16384 Dec  2 22:57 apache-tomcat-10.1.50
[root@ip-172-31-38-117 server]# cd apache-tomcat-10.1.50/
[root@ip-172-31-38-117 apache-tomcat-10.1.50]#
[root@ip-172-31-38-117 apache-tomcat-10.1.50]#
[root@ip-172-31-38-117 apache-tomcat-10.1.50]#
[root@ip-172-31-38-117 apache-tomcat-10.1.50]# cd webapps
[root@ip-172-31-38-117 webapps]#
[root@ip-172-31-38-117 webapps]# ll
total 94056
drwxrwxrwx.  3 root root    16384 Dec  2 22:57 ROOT
drwxrwxrwx. 16 root root    16384 Dec  2 22:57 docs
drwxrwxrwx.  7 root root       99 Dec  2 22:57 examples
drwxrwxrwx.  6 root root       79 Dec  2 22:57 host-manager
drwxr-x---. 10 root root    16384 Jan 27 17:35 jenkins
-rwxrwxrwx.  1 root root 96260165 Jan 21 09:32 jenkins.war
drwxrwxrwx.  6 root root      114 Dec  2 22:57 manager
[root@ip-172-31-38-117 webapps]#
```

Step 4: Made a Private Repository named **‘Velocity-App’** in GitHub account:



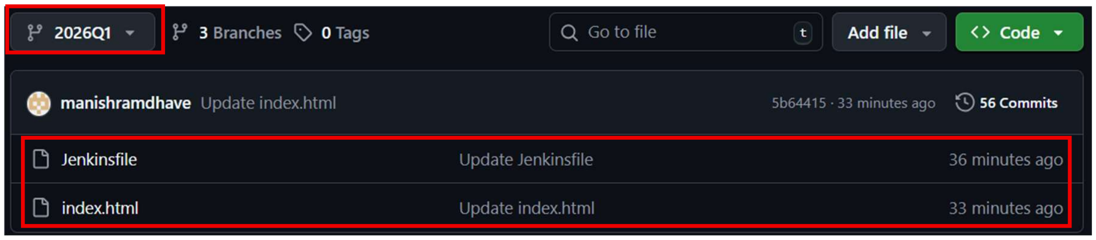
My repositories

owner:@me

5 repositories

Repository	Description	Language	Forks	Stars
manishramdhave/Velocity-App		HTML	0	0
manishramdhave/Jenkins-Assignment			0	0
manishramdhave/Shantanu_Sir-Repo	my-project-app	Java	278	0
manishramdhave/GameOfLife	An Android implementation of Conway's Game of Life	Java	58	0
manishramdhave/Shantanu-Sir_Repo-Jenkins_Pipeline	jenkins-pipeline		221	0

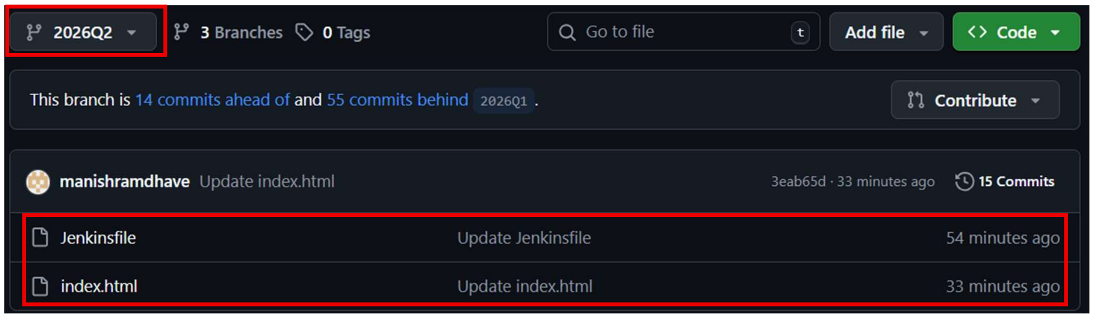
Step 5: Created three branches, **2026Q1, 2026Q2 and 2026Q3** in the '**Velocity-App**' Repository and pushed **three different 'index.html'** files and also created **three different 'Jenkinsfile'** files in respective branches:



2026Q1 · 3 Branches · 0 Tags

manishramdhave Update index.html — 5b64415 · 33 minutes ago — 56 Commits

Jenkinsfile	Update Jenkinsfile	36 minutes ago
index.html	Update index.html	33 minutes ago

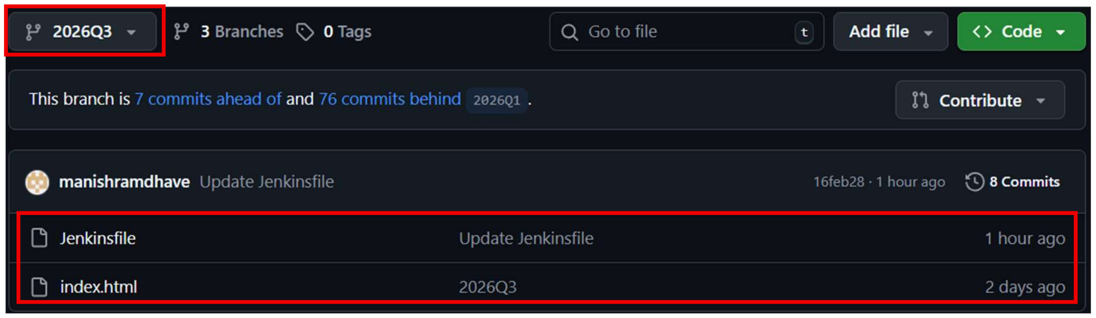


2026Q2 · 3 Branches · 0 Tags

This branch is 14 commits ahead of and 55 commits behind 2026Q1 .

manishramdhave Update index.html — 3eab65d · 33 minutes ago — 15 Commits

Jenkinsfile	Update Jenkinsfile	54 minutes ago
index.html	Update index.html	33 minutes ago



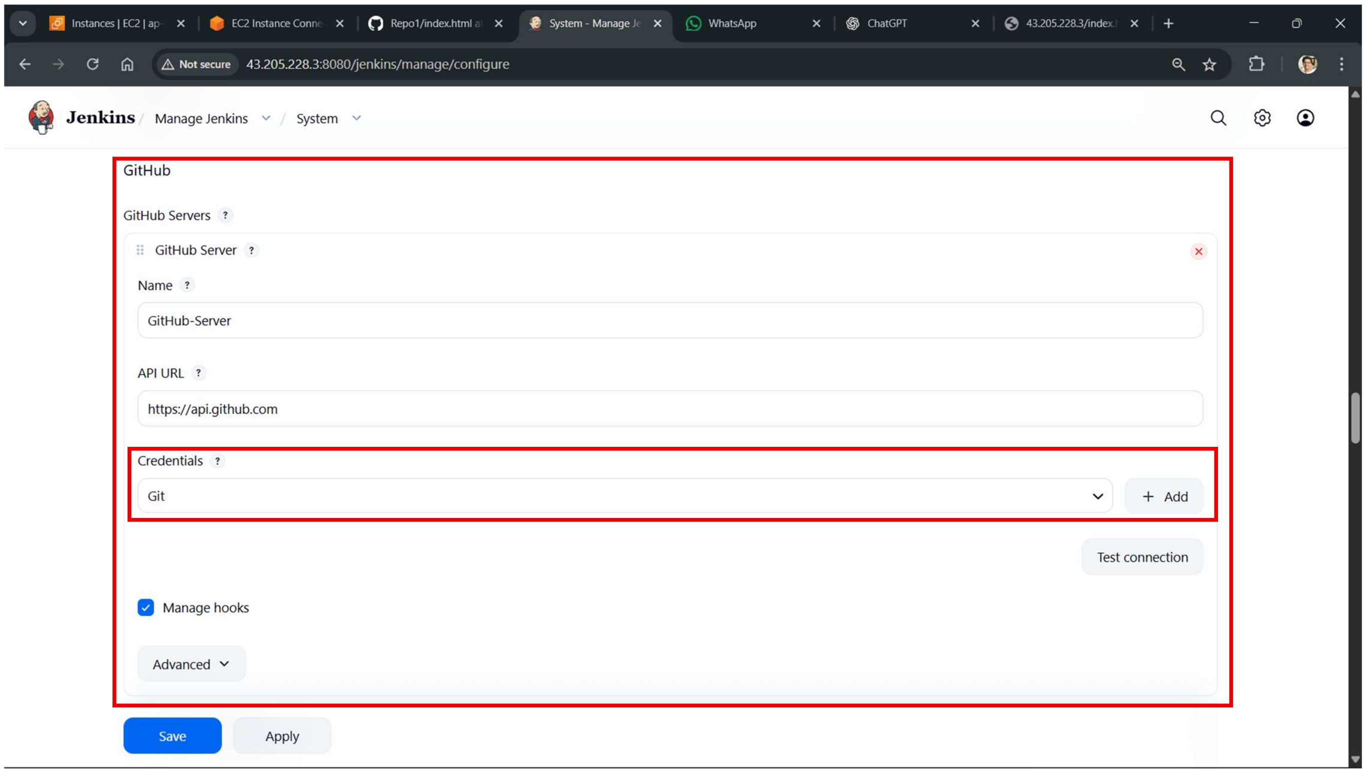
2026Q3 · 3 Branches · 0 Tags

This branch is 7 commits ahead of and 76 commits behind 2026Q1 .

manishramdhave Update Jenkinsfile — 16feb28 · 1 hour ago — 8 Commits

Jenkinsfile	Update Jenkinsfile	1 hour ago
index.html	2026Q3	2 days ago

Step 6: Created an **API Connection between Jenkins to GitHub** Repositories in 'Manage Jenkins' by creating **a Secret Text (Credential)** using a GitHub Token in Jenkins:



43.205.228.3:8080/jenkins/manage/configure

Jenkins / Manage Jenkins / System

GitHub

GitHub Servers

GitHub Server

Name: GitHub-Server

API URL: https://api.github.com

Credentials: Git

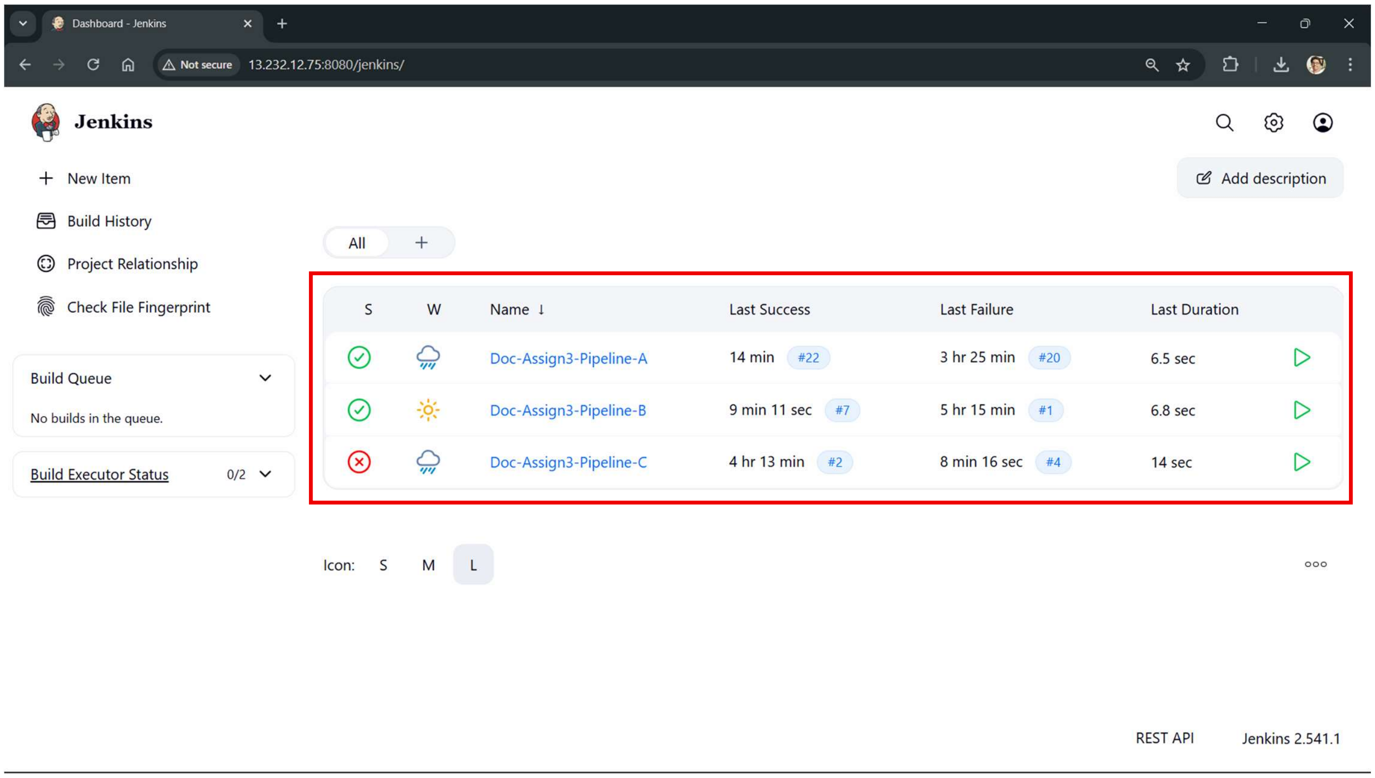
Test connection

☑ Manage hooks

Advanced

Save Apply

Step 7: Launched the Jenkins and created three different Pipeline Jobs:



Dashboard - Jenkins

Not secure 13.232.12.75:8080/jenkins/

Jenkins

New Item
Build History
Project Relationship
Check File Fingerprint

Build Queue
No builds in the queue.

Build Executor Status 0/2

Add description

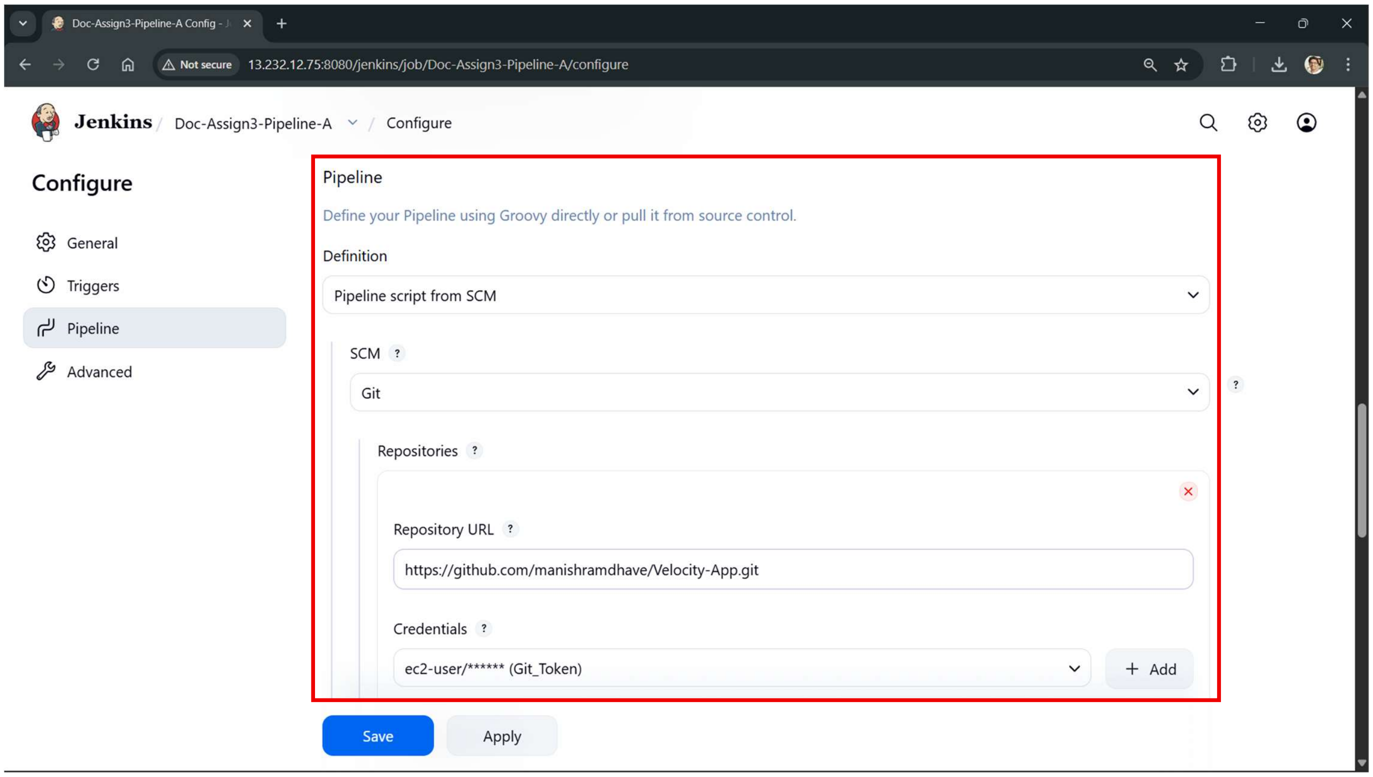
All +

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	🌧	Doc-Assign3-Pipeline-A	14 min #22	3 hr 25 min #20	6.5 sec
✓	☀	Doc-Assign3-Pipeline-B	9 min 11 sec #7	5 hr 15 min #1	6.8 sec
✗	🌧	Doc-Assign3-Pipeline-C	4 hr 13 min #2	8 min 16 sec #4	14 sec

Icon: S M L

REST API Jenkins 2.541.1

Step 9: Used **'Pipeline script from SCM'** and selected the SCM as a **'Git'** which will follow the Jenkins pipeline script by using the **'Jenkinsfile'** in the repository **in each pipeline job**:



Doc-Assign3-Pipeline-A Config

Not secure 13.232.12.75:8080/jenkins/job/Doc-Assign3-Pipeline-A/configure

Jenkins / Doc-Assign3-Pipeline-A / Configure

Configure

General
Triggers
Pipeline
Advanced

Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

Definition: Pipeline script from SCM

SCM: Git

Repositories

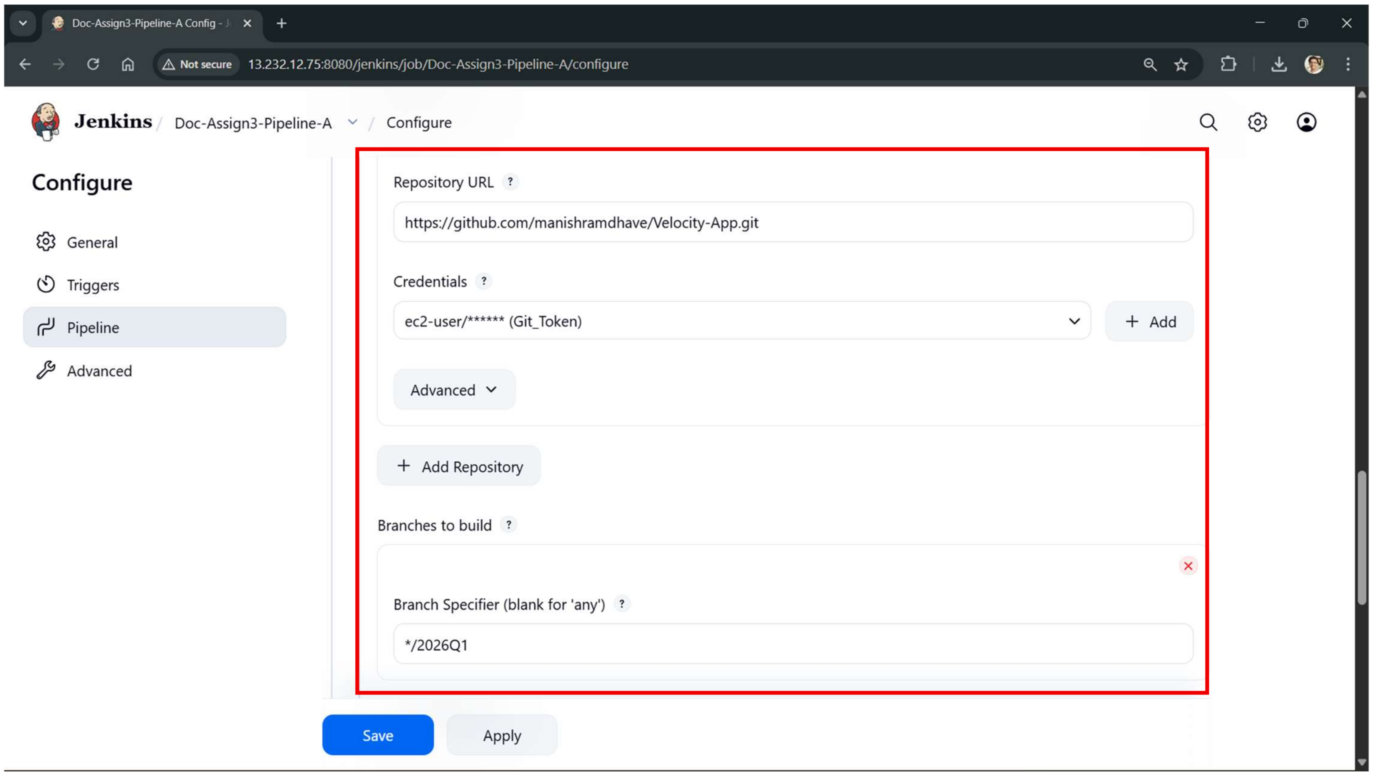
Repository URL: https://github.com/manishramdhave/Velocity-App.git

Credentials: ec2-user/****** (Git_Token)

+ Add

Save Apply

Step 10: Integrated all Git branches, 2026Q1, 2026Q2 and 2026Q3 with Jenkins by creating 'Credentials' by using the Git Token **on both the pipeline Job-A and Job-B** respectively:


Doc-Assign3-Pipeline-A Config
Not secure 13.232.12.75:8080/jenkins/job/Doc-Assign3-Pipeline-A/configure
Jenkins / Doc-Assign3-Pipeline-A / Configure
Configure
General
Triggers
Pipeline
Advanced
Add Repository
Save
Apply

Repository URL
https://github.com/manishramdhave/Velocity-App.git

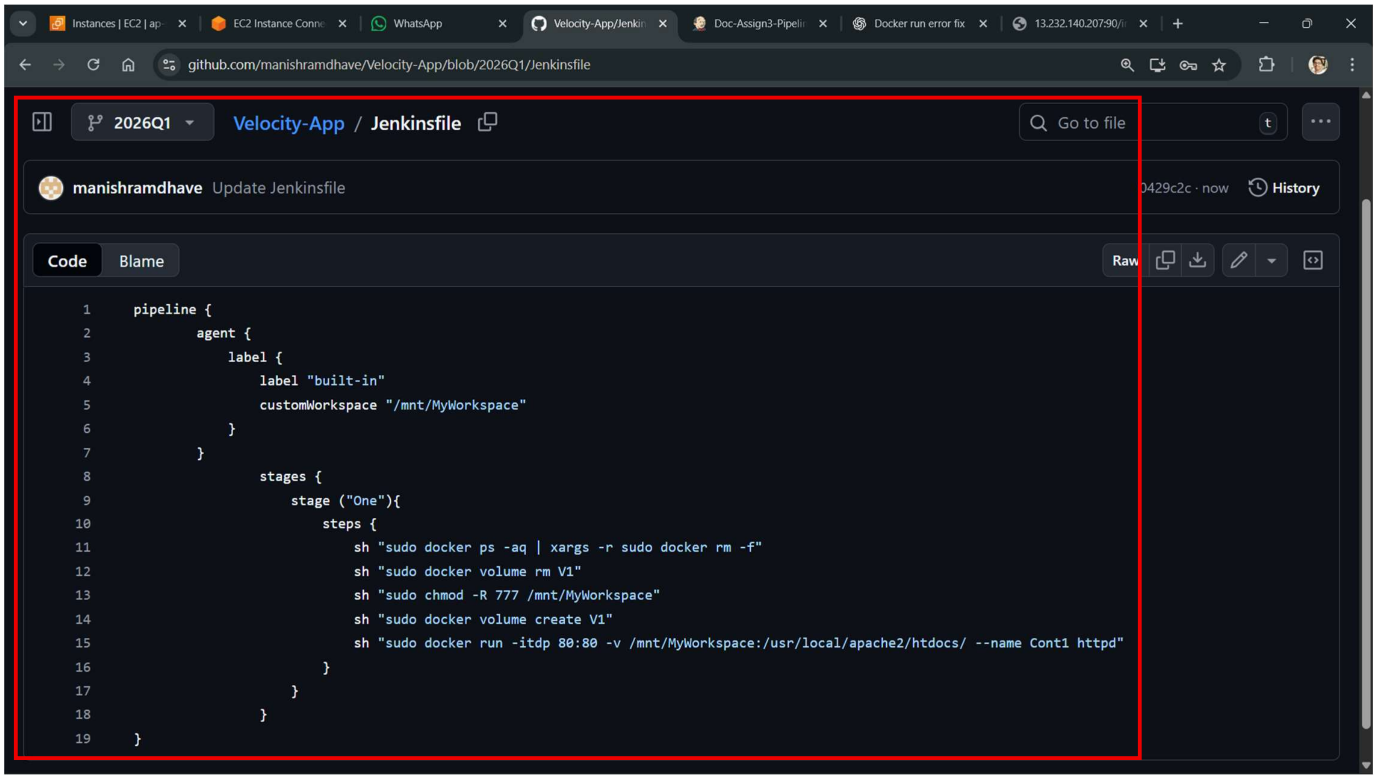
Credentials
ec2-user/****** (Git_Token)

Advanced

Branches to build

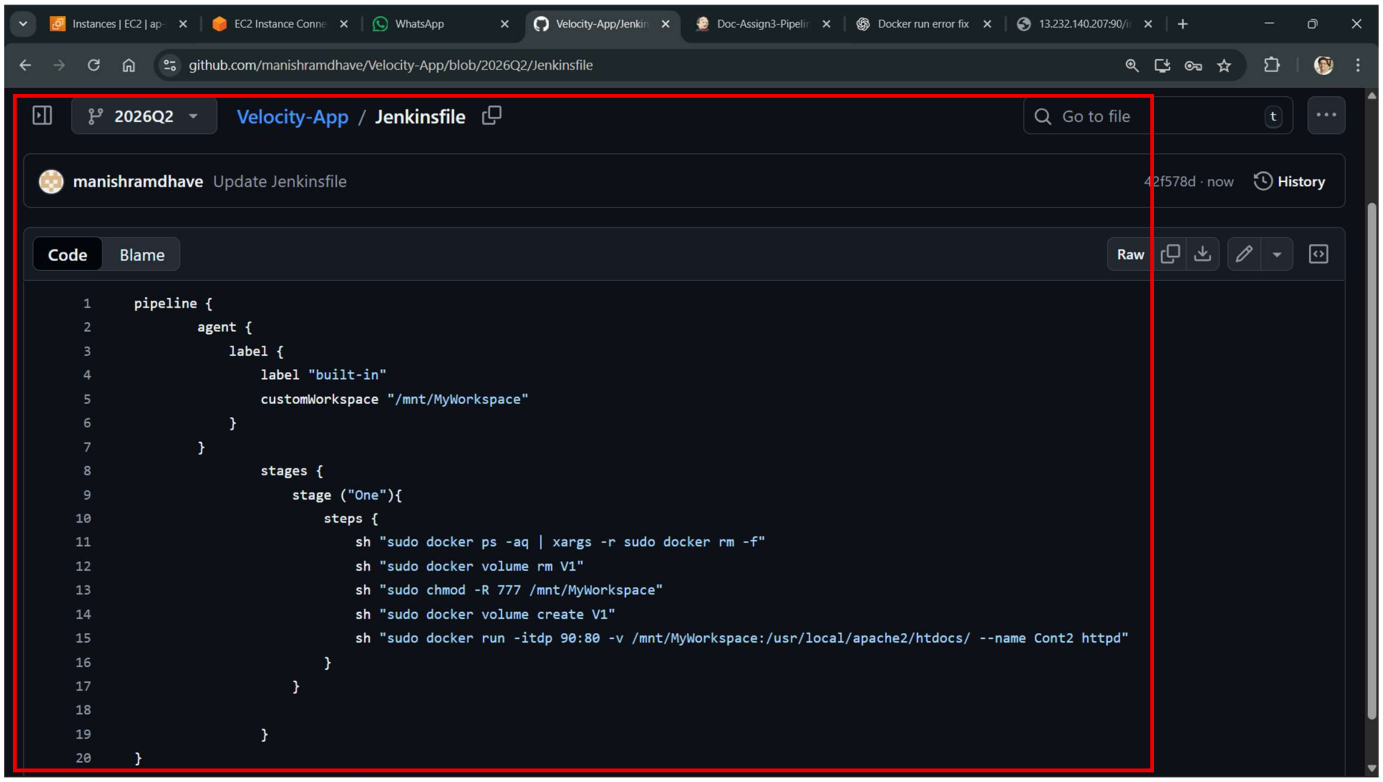
Branch Specifier (blank for 'any')
*/2026Q1

Step 11: Created a **'Jenkinsfile' on 2026Q1 branch** in which the script is mentioned. First, it will create a **'Docker Volume'** and then it will directly bind the two paths from **MyWorkspace to Deployment Folder of a Container 'Cont1'**:


github.com/manishramdhave/Velocity-App/blob/2026Q1/Jenkinsfile
2026Q1
Velocity-App / Jenkinsfile
Go to file
manishramdhave Update Jenkinsfile
0429c2c · now
History
Code
Blame
Raw

```
pipeline {
        agent {
            label {
                label "built-in"
                customWorkspace "/mnt/MyWorkspace"
            }
        }
                stages {
                    stage ("One"){
                        steps {
                            sh "sudo docker ps -aq | xargs -r sudo docker rm -f"
                            sh "sudo docker volume rm V1"
                            sh "sudo chmod -R 777 /mnt/MyWorkspace"
                            sh "sudo docker volume create V1"
                            sh "sudo docker run -itdp 80:80 -v /mnt/MyWorkspace:/usr/local/apache2/htdocs/ --name Cont1 httpd"
                        }
                    }
                }
}
```

Step 12: Created a **'Jenkinsfile' on 2026Q2 branch** in which the script is mentioned. First, it will create a **'Docker Volume'** and then it will directly bind the two paths from **MyWorkspace to Deployment Folder of a Container 'Cont2'**:



github.com/manishramdhave/Velocity-App/blob/2026Q2/Jenkinsfile

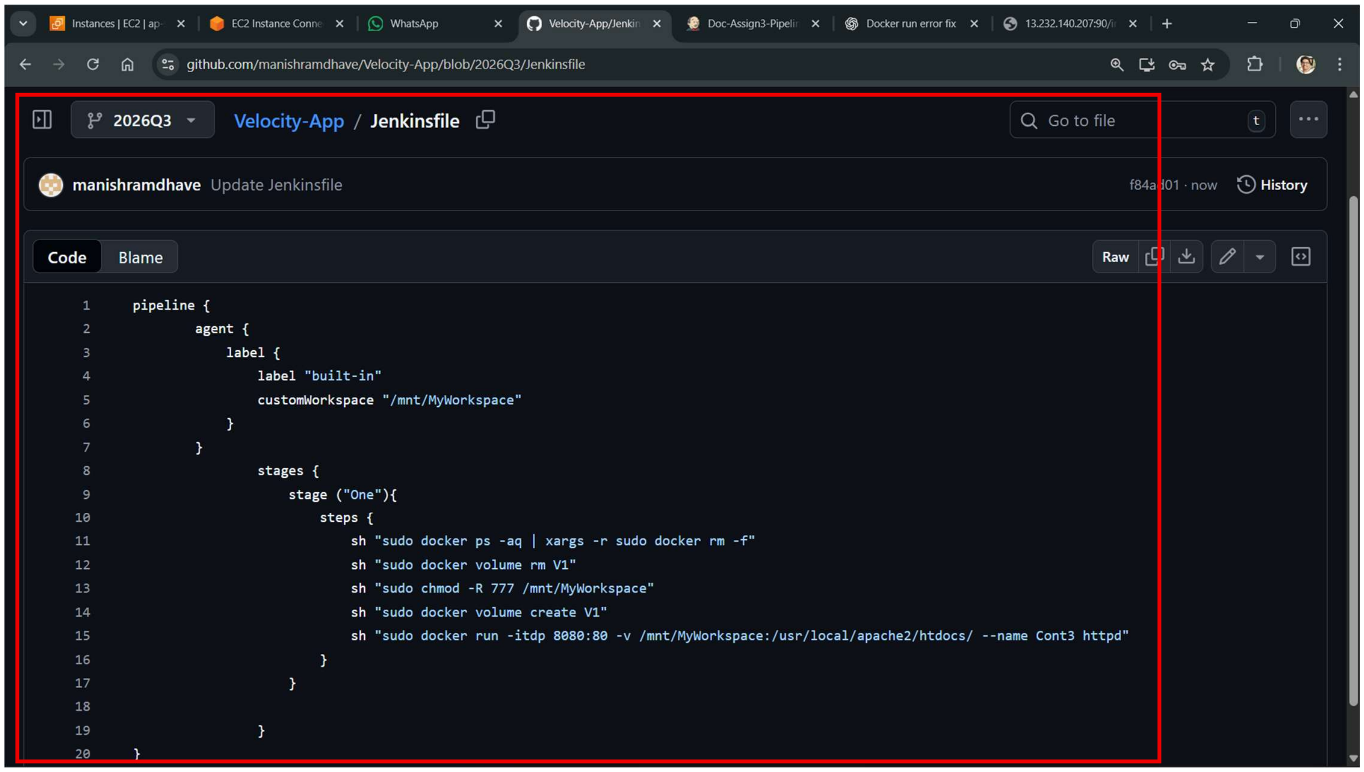
2026Q2 Velocity-App / Jenkinsfile

manishramdhave Update Jenkinsfile 42f578d · now History

```
pipeline {
        agent {
            label {
                label "built-in"
                customWorkspace "/mnt/MyWorkspace"
            }
        }
                stages {
                    stage ("One"){
                        steps {
                            sh "sudo docker ps -aq | xargs -r sudo docker rm -f"
                            sh "sudo docker volume rm V1"
                            sh "sudo chmod -R 777 /mnt/MyWorkspace"
                            sh "sudo docker volume create V1"
                            sh "sudo docker run -itdp 90:80 -v /mnt/MyWorkspace:/usr/local/apache2/htdocs/ --name Cont2 httpd"
                        }
                    }

                }
}
```

Step 13: Created a **'Jenkinsfile' on 2026Q3 branch** in which the script is mentioned. First, it will create a **'Docker Volume'** and then it will directly bind the two paths from **MyWorkspace to Deployment Folder of a Container 'Cont3'**::



github.com/manishramdhave/Velocity-App/blob/2026Q3/Jenkinsfile

2026Q3 Velocity-App / Jenkinsfile

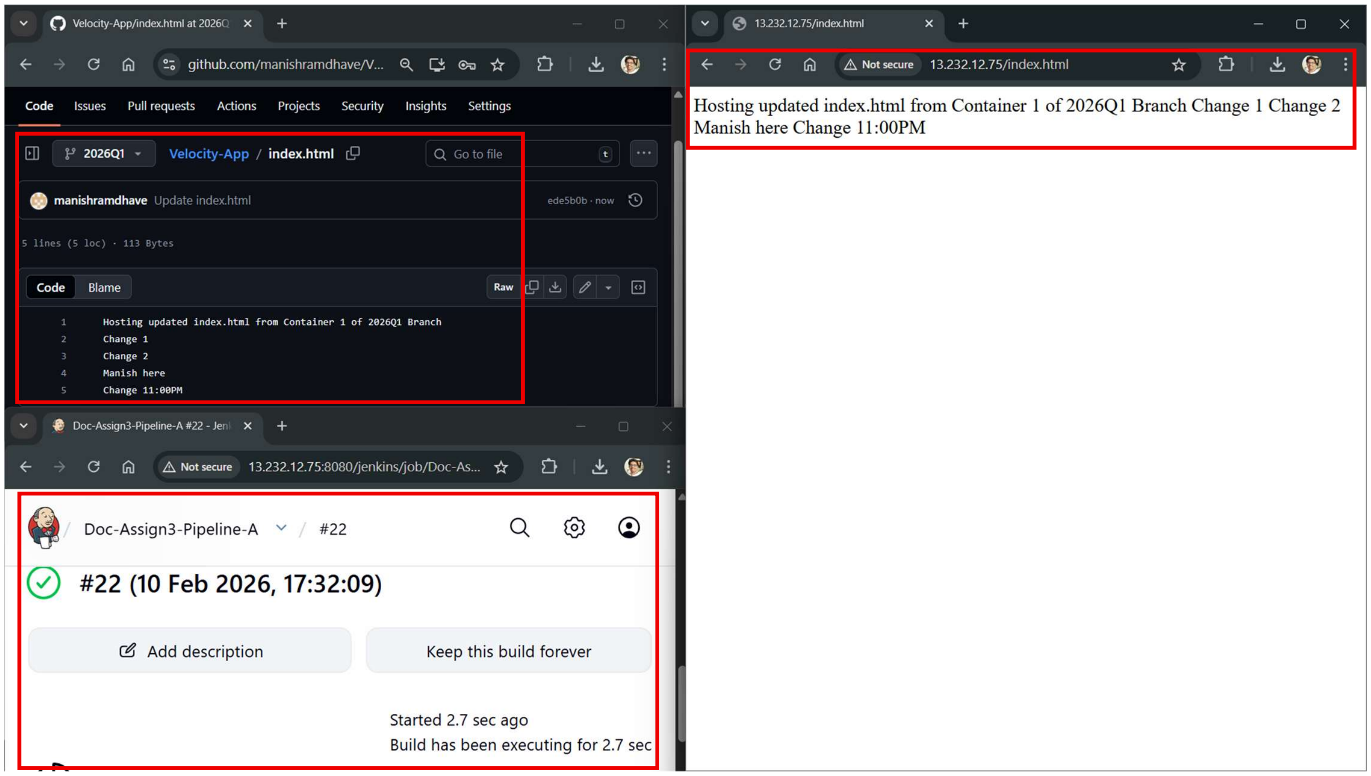
manishramdhave Update Jenkinsfile f84a[illegible]01 · now History

```
pipeline {
        agent {
            label {
                label "built-in"
                customWorkspace "/mnt/MyWorkspace"
            }
        }
                stages {
                    stage ("One"){
                        steps {
                            sh "sudo docker ps -aq | xargs -r sudo docker rm -f"
                            sh "sudo docker volume rm V1"
                            sh "sudo chmod -R 777 /mnt/MyWorkspace"
                            sh "sudo docker volume create V1"
                            sh "sudo docker run -itdp 8080:80 -v /mnt/MyWorkspace:/usr/local/apache2/htdocs/ --name Cont3 httpd"
                        }
                    }

                }
}
```

Results:

1. When changes are done in 2026Q1 branch, Build is triggered by **'Doc-Assign3-Pipeline-A'** and the updated index.html file is hosted from the **container 'Cont1'** by following the Pipeline script in the **'Jenkinsfile'** file of the same branch:


Velocity-App/index.html at 2026Q
github.com/manishramdhave/V...
Code Issues Pull requests Actions Projects Security Insights Settings
2026Q1 Velocity-App / index.html
Go to file
manishramdhave Update index.html ede5b0b · now
5 lines (5 loc) · 113 Bytes
Code Blame Raw

```
Hosting updated index.html from Container 1 of 2026Q1 Branch
Change 1
Change 2
Manish here
Change 11:00PM
```

Doc-Assign3-Pipeline-A #22 - Jenk
Not secure 13.232.12.75:8080/jenkins/job/Doc-As...
Doc-Assign3-Pipeline-A / #22

#22 (10 Feb 2026, 17:32:09)

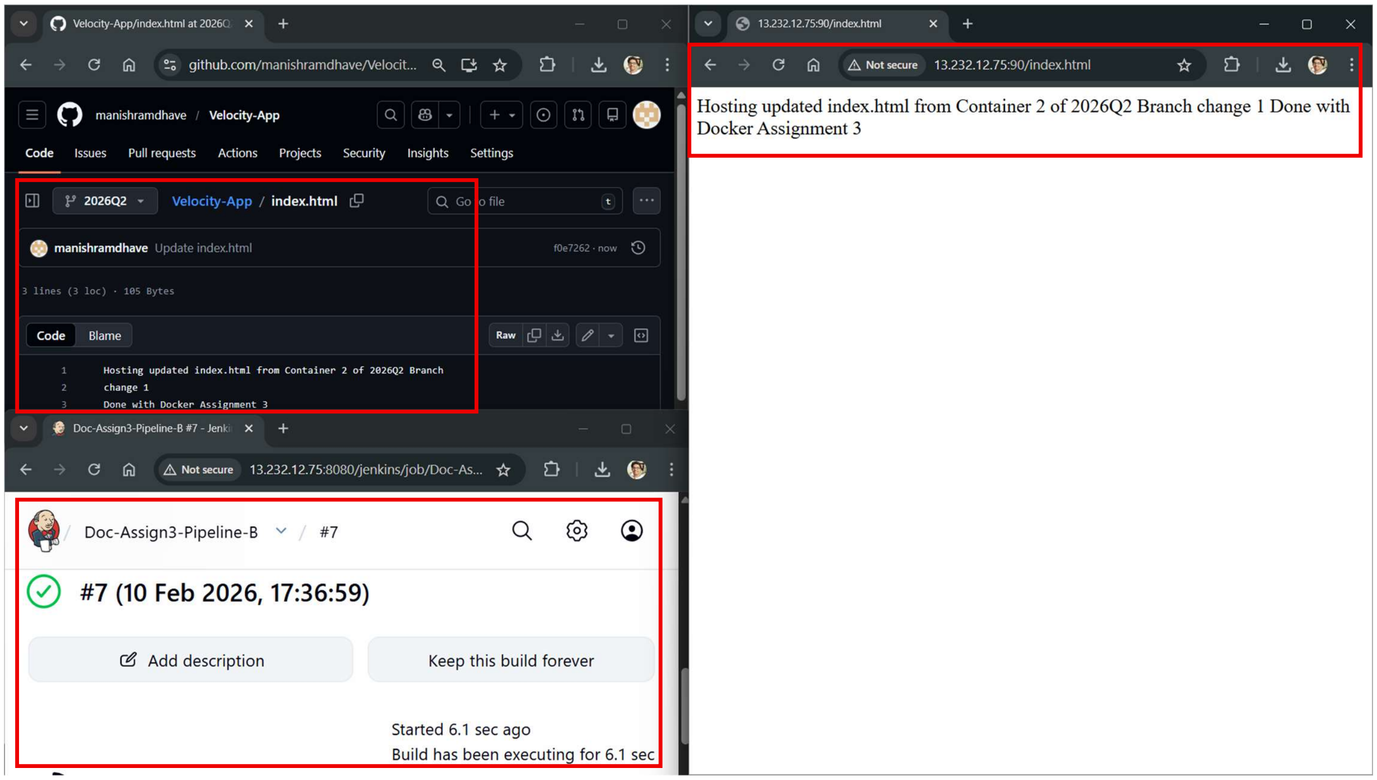
Add description
Keep this build forever

Started 2.7 sec ago
Build has been executing for 2.7 sec

13.232.12.75/index.html
Not secure 13.232.12.75/index.html

Hosting updated index.html from Container 1 of 2026Q1 Branch Change 1 Change 2 Manish here Change 11:00PM

2. When changes are done in 2026Q2 branch, Build is triggered by **'Doc-Assign3-Pipeline-B'** and the updated index.html file is hosted from the **container 'Cont2'** by following the Pipeline script in the **'Jenkinsfile'** file of the same branch:


Velocity-App/index.html at 2026Q
github.com/manishramdhave/Velocit...
manishramdhave / Velocity-App
Code Issues Pull requests Actions Projects Security Insights Settings
2026Q2 Velocity-App / index.html
Go to file
manishramdhave Update index.html f0e7262 · now
3 lines (3 loc) · 105 Bytes
Code Blame Raw

```
Hosting updated index.html from Container 2 of 2026Q2 Branch
change 1
Done with Docker Assignment 3
```

Doc-Assign3-Pipeline-B #7 - Jenk
Not secure 13.232.12.75:8080/jenkins/job/Doc-As...
Doc-Assign3-Pipeline-B / #7

#7 (10 Feb 2026, 17:36:59)

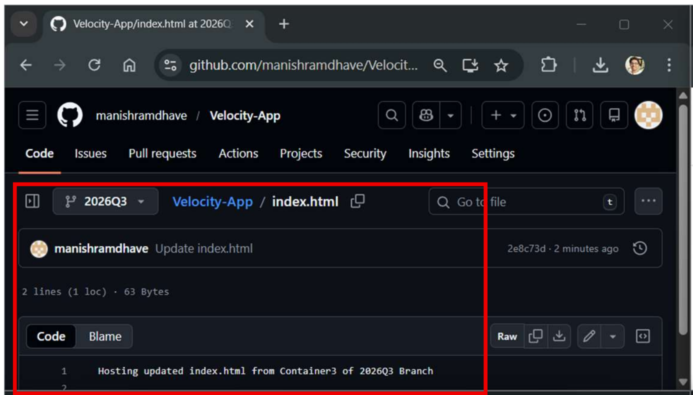
Add description
Keep this build forever

Started 6.1 sec ago
Build has been executing for 6.1 sec

13.232.12.75:90/index.html
Not secure 13.232.12.75:90/index.html

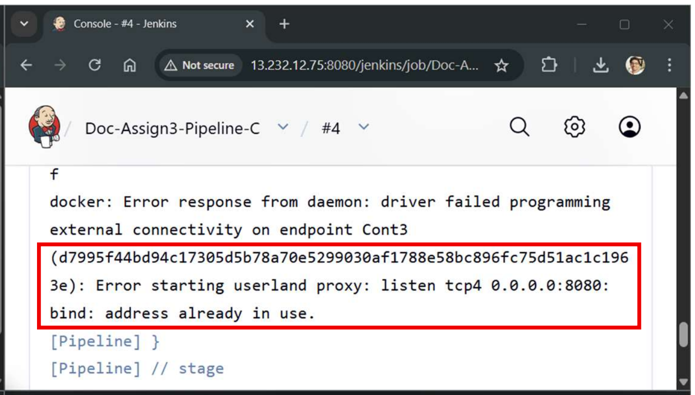
Hosting updated index.html from Container 2 of 2026Q2 Branch change 1 Done with Docker Assignment 3

3. When changes are done in 2026Q3 branch, **we have modified our index.html file to run it on ‘Port no.8080’.** Its Build should be triggered by **‘Doc-Assign3-Pipeline-C’** and the updated index.html file should be hosted from the **container ‘Cont3’** by following the Pipeline script in the ‘**Jenkinsfile**’ file of the same branch.
   But as our **Jenkins Master** is running on **Tomcat Server** whose default port no. is 8080, it is only reserved by the Jenkins and it gives the error that **‘Listen tcp4 0.0.0.0:8080:bind: address already in use.’ Hence the index.html file from 2026Q3 branch will not host from the container Q3.**



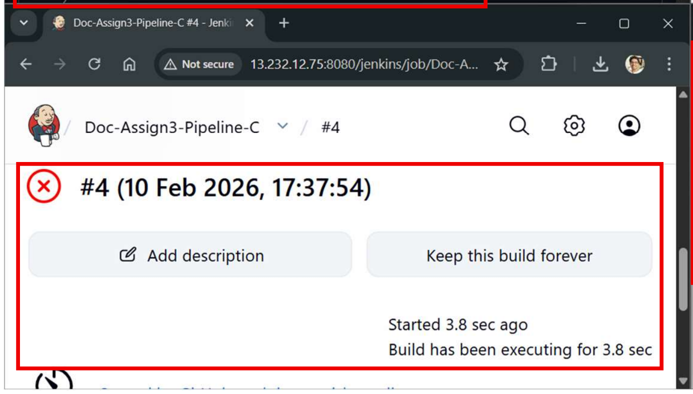
Velocity-App/index.html at 2026Q
github.com/manishramdhave/Velocit...
manishramdhave / Velocity-App
Code
Issues
Pull requests
Actions
Projects
Security
Insights
Settings
2026Q3
Velocity-App / index.html
Go to file
manishramdhave Update index.html
2e8c73d · 2 minutes ago
2 lines (1 loc) · 63 Bytes
Code
Blame
Raw

```
Hosting updated index.html from Container3 of 2026Q3 Branch
```



Console - #4 - Jenkins
Not secure
13.232.12.75:8080/jenkins/job/Doc-A...
Doc-Assign3-Pipeline-C / #4

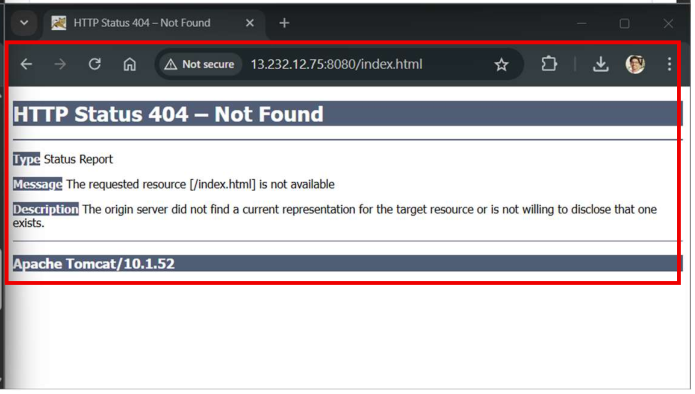
```
f
docker: Error response from daemon: driver failed programming
external connectivity on endpoint Cont3
(d7995f44bd94c17305d5b78a70e5299030af1788e58bc896fc75d51ac1c196
3e): Error starting userland proxy: listen tcp4 0.0.0.0:8080:
bind: address already in use.
[Pipeline] }
[Pipeline] // stage
```



Doc-Assign3-Pipeline-C #4 - Jenk
Not secure
13.232.12.75:8080/jenkins/job/Doc-A...
Doc-Assign3-Pipeline-C / #4
Add description
Keep this build forever

#4 (10 Feb 2026, 17:37:54)

Started 3.8 sec ago
Build has been executing for 3.8 sec



HTTP Status 404 – Not Found

Type Status Report

Message The requested resource [/index.html] is not available

Description The origin server did not find a current representation for the target resource or is not willing to disclose that one exists.

Apache Tomcat/10.1.52