Module-8: Jenkins Assignment - 1

You have been asked to:

- Trigger a pipeline using Git when push on Develop branch
- Pipeline should pull git content to a folder

Module-8: Jenkins Assignment - 2

You have been asked to:

- Add 2 nodes to Jenkins master
- Create 2 jobs with the following jobs:
- o O Push to test
- o O Push to prod
- Once a push is made to test branch copy git files to test server
- Once a push is made to master branch copy git files to prod server

Module-8: Jenkins Assignment - 3

You have been asked to:

- Create a pipeline in jenkins
- Once push is made to "develop" branch in git, trigger job "test". This will copy git files to

### test node

- • If test job is successful, then prod job should be triggered
- Prod jobs should copy files to prod node

ANS

Launch 3 EC2 Instances

**Images** 

**Capacity Reservations** 

**AMIs** 

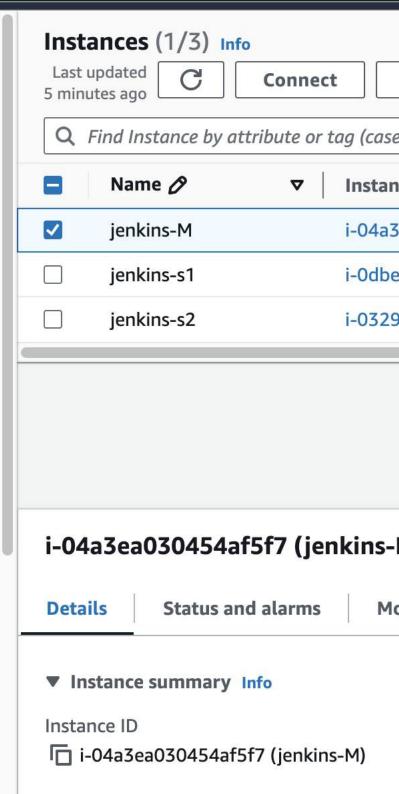
**AMI Catalog** 

#### **▼** Elastic Block Store

Volumes

Snapshots

I ifamiala Managan



IPv6 address

Run the below commands in all the three instances sudo apt update sudo apt install openjdk-11-jdk -y

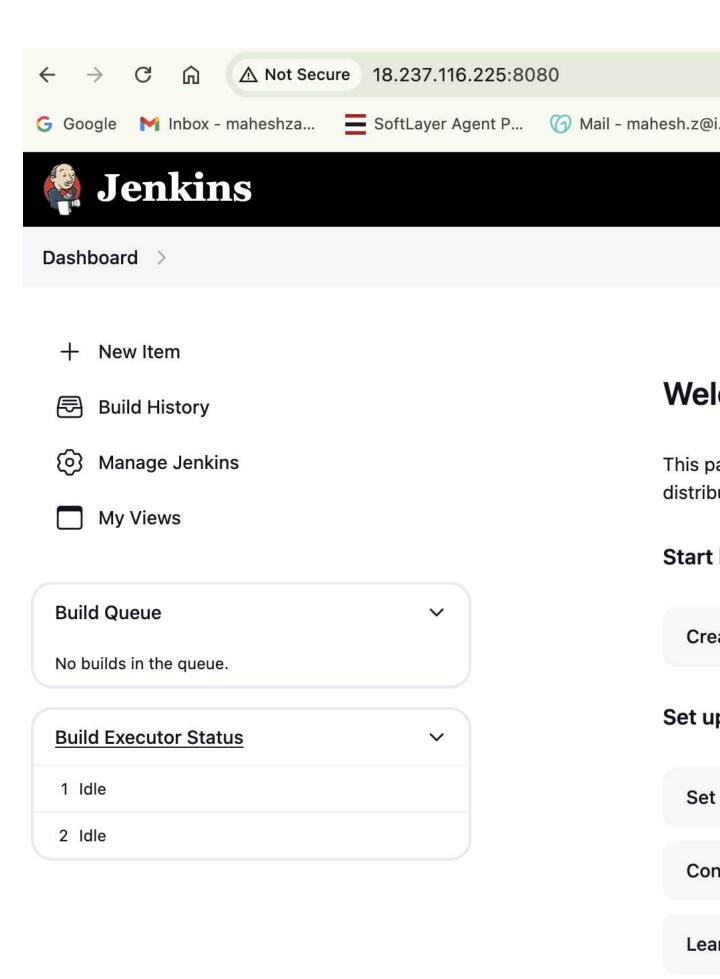
Check java installed in all the three EC2 Instances

Now Install jenking from official website

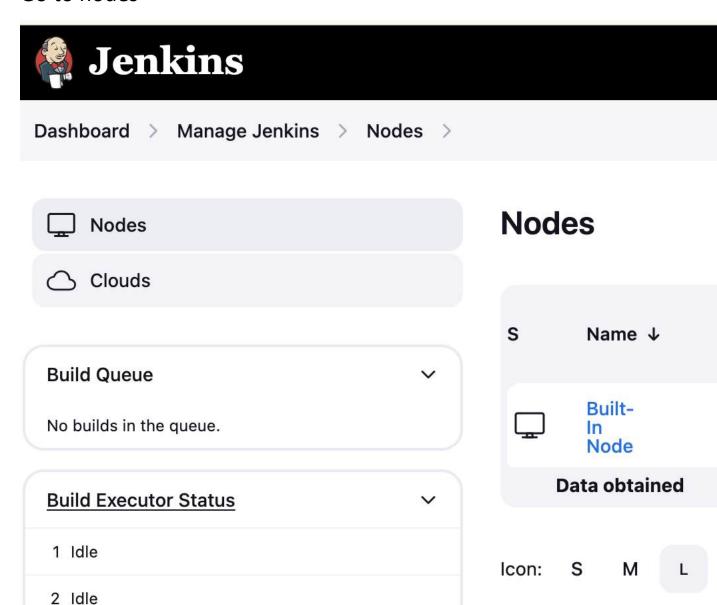
https://www.jenkins.io/doc/book/installing/linux/#debianub untu

```
sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \
https://pkg.jenkins.io/debian binary/ | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install Jenkins -y
```

copy the Jenkins-M public IP in the browser and Jenkins setup



#### Go to nodes





Dashboard > Manage Jenkins > Nodes > New node

# New node

Node name

slave1

#### Type



### Permanent Agent

Adds a plain, permanent agent to Jenkins. This is called "provide higher level of integration with these agent provisioning. Select this type if no other agent types apply you are adding a physical computer, virtual machines man

Create



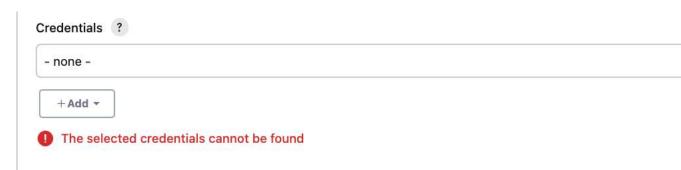
Dashboard > Manage Jenkins > Nodes > Name ? slave1 Description ? Plain text Preview Number of executors ? 1 Remote root directory ? /home/ubuntu/jenkins Labels ? Usage ? Use this node as much as possible Launch method ? Launch agents via SSH Host ? 172.31.29.247 The Host must be specified Credentials ?

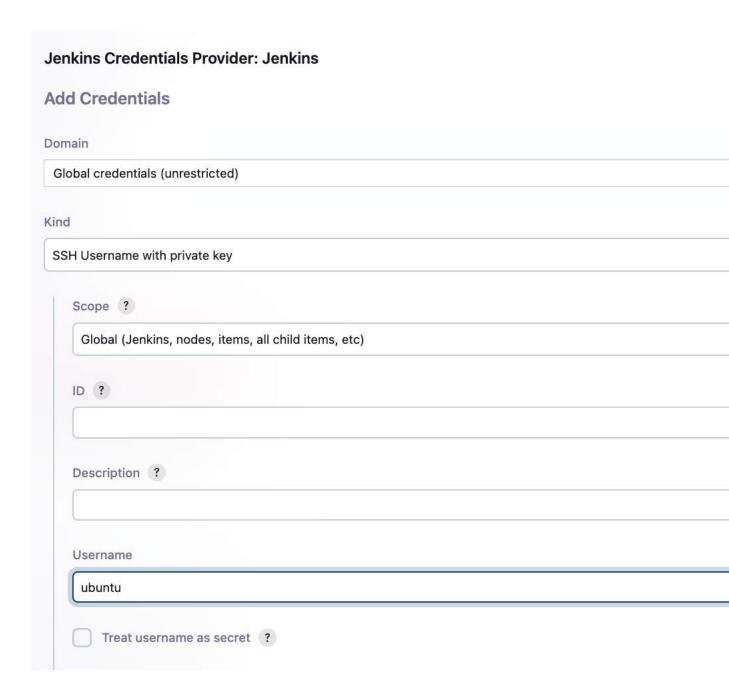
Save

### Name

### Launch method

# And host entry ( Private IP address )





Change in kind and user name

Copy .pem file content here in key section

_	pe ?
Gle	obal (Jenkins, nodes, items, all child items, etc)
ID (	?
Des	cription ?
Use	rname
ub	untu
	Treat username as secret ?
Priv	Enter directly  Key
	Enter directly

# Click on add

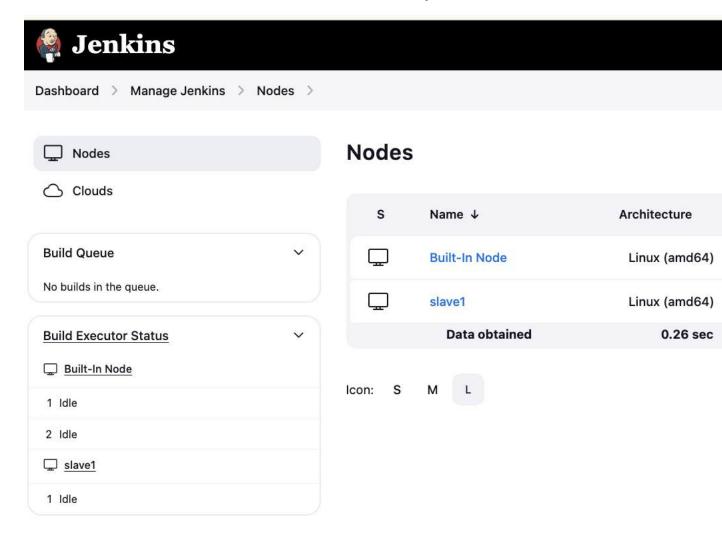


Dashboard > Ma	anage Jenkins > Nodes >
	Name 2
	Name ?
	Sidve1
	Description ?
	Plain text Preview
	Number of executors ?
	1
	Remote root directory ?
	/home/ubuntu/jenkins/
	Labels ?
	Usage ?
	Use this node as much as possible
	Launch method ?
	Launch agents via SSH
	Host ?
	172.31.29.247
	Credentials ?
	ubuntu

## Click on save

$\leftarrow  \rightarrow$	C (	a (	⚠ Not Secu	re 18.237.	116.225:80	80/manage	/compute				
G Google	M Inb	oox - m	aheshza	SoftLaye	r Agent P	Mail - n	nahesh.z@i				
Dashboard >	Manage Je	enkins )	Nodes >								
	Labels	s ?									
	Usage	e (?)									
	Use this node as much as possible  Launch method ?										
	Launch agents via SSH										
	Host ?										
	172.31.29.247										
	c	Credentia	ls ?								
	ubuntu										
		+ Add	<b>v</b>								
	F	lost Key	Verification Strat	tegy ?							
	Non verifying Verification Strategy										
	Advanced Y										
	Availability ?  Keep this agent online as much as possible  Node Properties  Disable deferred wipeout on this node ?										
	Disk Space Monitoring Thresholds										
	Environment variables										
Tool Locations											

Click on save and node is now successfully connected



Clik on the slave1 EC2 and go to the log



Dashboard > Nodes > slave1 > Log

☐ Status

☐ Delete Agent

☐ Configure

☐ Build History

✓ Load Statistics

☐ Script Console

☐ Log

☐ Log

☐ System Information

☒ Disconnect

☐ Build Executor Status

✓ 1 Idle

SSHLauncher{host='172.31.29.247', port=22, credent launchTimeoutSeconds=60, maxNumRetries=10, retryWa tcpNoDelay=true, trackCredentials=true} [10/03/24 11:47:50] [SSH] Opening SSH connection t [10/03/24 11:47:50] [SSH] WARNING: SSH Host Keys a [10/03/24 11:47:50] [SSH] Authentication successfu [10/03/24 11:47:51] [SSH] The remote user's enviro BASH=/usr/bin/bash BASHOPTS=checkwinsize:cmdhist:complete\_fullquote:e :sourcepath BASH\_ALIASES=() BASH\_ARGC=([0]="0") BASH\_ARGV=() BASH\_CMDS=() BASH\_EXECUTION\_STRING=set BASH\_LINENO=() BASH\_LOADABLES\_PATH=/usr/local/lib/bash:/usr/lib/b BASH\_SOURCE=() BASH\_VERSINFO=([0]="5" [1]="2" [2]="21" [3]="1" [4 BASH\_VERSION='5.2.21(1)-release' DBUS\_SESSION\_BUS\_ADDRESS=unix:path=/run/user/1000/ EUID=1000 GROUPS=() HOME=/home/ubuntu

HOSTNAME=ip-172-31-29-247

HUCLTADE-ASE EV

Agent is successfully connected.

M ∧ Not Secure

18.237.116.225:8080/computer/slave1/le

G Google

M Inbox - maheshza...

SoftLayer Agent P... Mail - mahesh.z@i.

Dashboard > Nodes > slave1 > Log

TERM=dumb UID=1000 USER=ubuntu XDG\_RUNTIME\_DIR=/run/user/1000 XDG\_SESSION\_CLASS=user XDG\_SESSION\_ID=15 XDG\_SESSION\_TYPE=tty \_=']'

Checking Java version in the PATH openjdk version "11.0.24" 2024-07-16

OpenJDK Runtime Environment (build 11.0.24+8-post-U OpenJDK 64-Bit Server VM (build 11.0.24+8-post-Ubun [10/03/24 11:47:51] [SSH] Checking java version of Couldn't figure out the Java version of /home/ubunt bash: line 1: /home/ubuntu/jenkins/jdk/bin/java: No

[10/03/24 11:47:51] [SSH] Checking java version of [10/03/24 11:47:51] [SSH] java -version returned 11 [10/03/24 11:47:51] [SSH] Starting sftp client. [10/03/24 11:47:51] [SSH] Remote file system root / [10/03/24 11:47:51] [SSH] Copying latest remoting.j [10/03/24 11:47:51] [SSH] Copied 1,393,029 bytes.

Expanded the channel window size to 4MB

[10/03/24 11:47:51] [SSH] Starting agent process: c /home/ubuntu/jenkins/remoting/jarCache

Oct 03, 2024 11:47:52 AM org.jenkinsci.remoting.eng INFO: Using /home/ubuntu/jenkins/remoting as a remo Oct 03, 2024 11:47:52 AM org.jenkinsci.remoting.eng INFO: Both error and output logs will be printed to <===[JENKINS REMOTING CAPACITY]===>channel started

Launcher: SSHLauncher

Communication Protocol: Standard in/out

Remoting version: 3248.3250.v3277a\_8e88c9b\_

This is a Unix agent

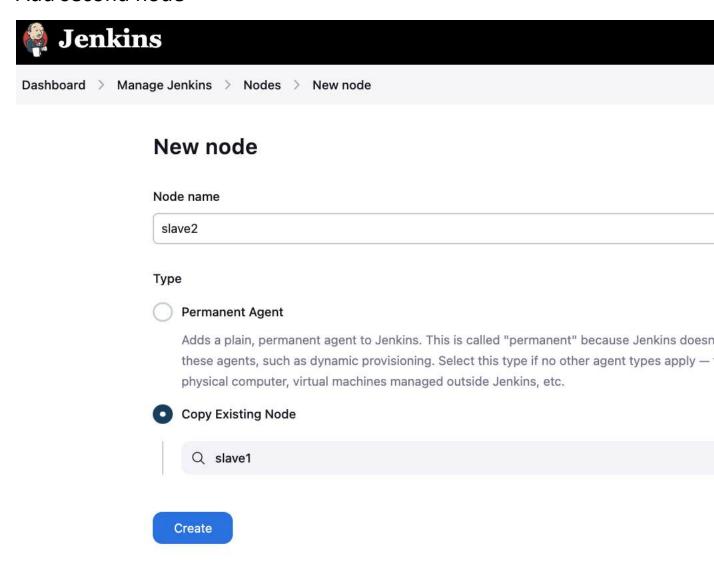
WARNING: An illegal reflective access operation has WARNING: Illegal reflective access by jenkins.slave WARNING: Please consider reporting this to the main

WARNING: Use --illegal-access=warn to enable warnin WARNING: All illegal access operations will be deni

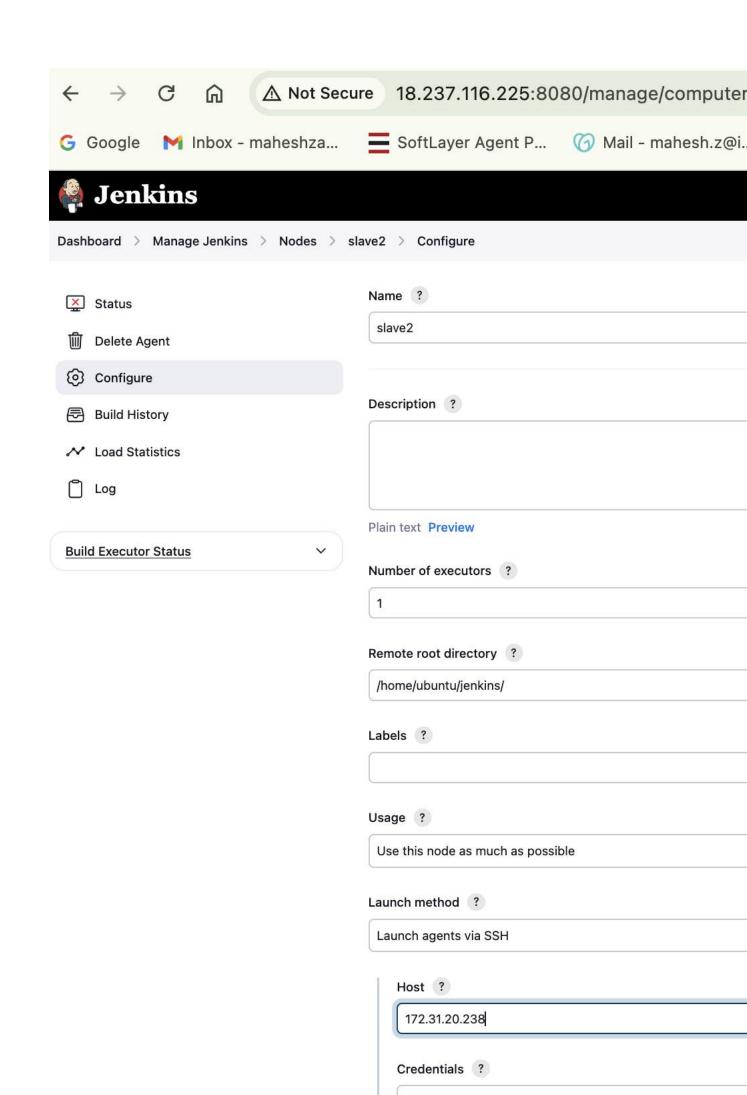
Evacuated stdout

Agent successfully connected and online

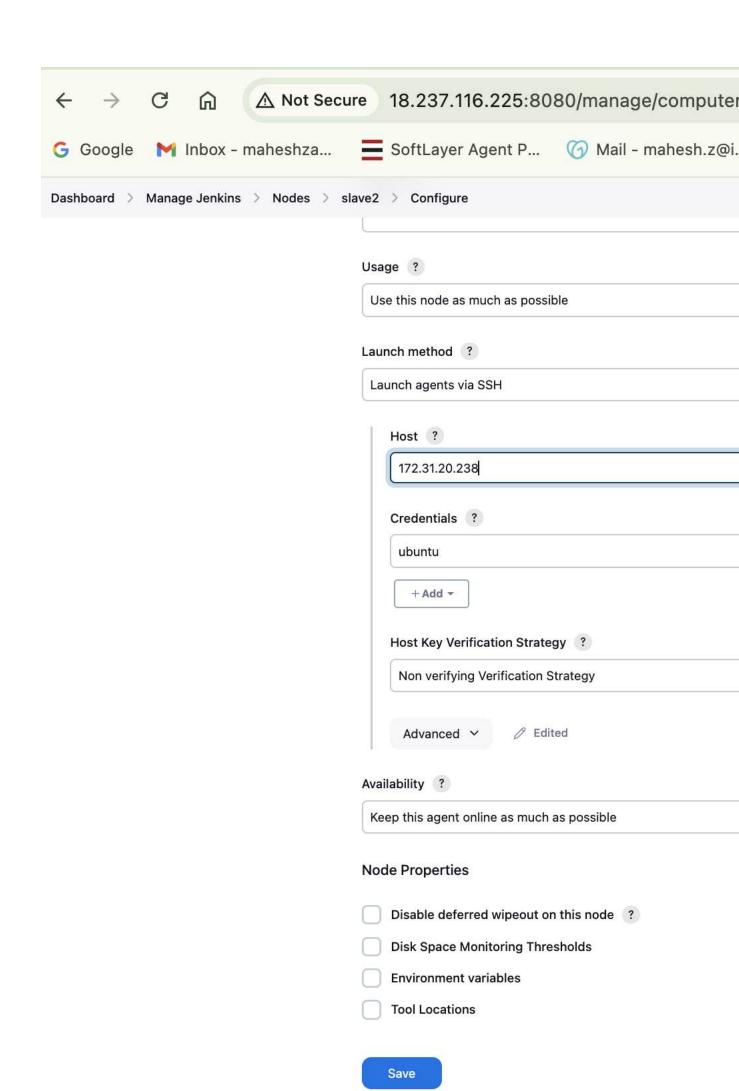
#### Add second node

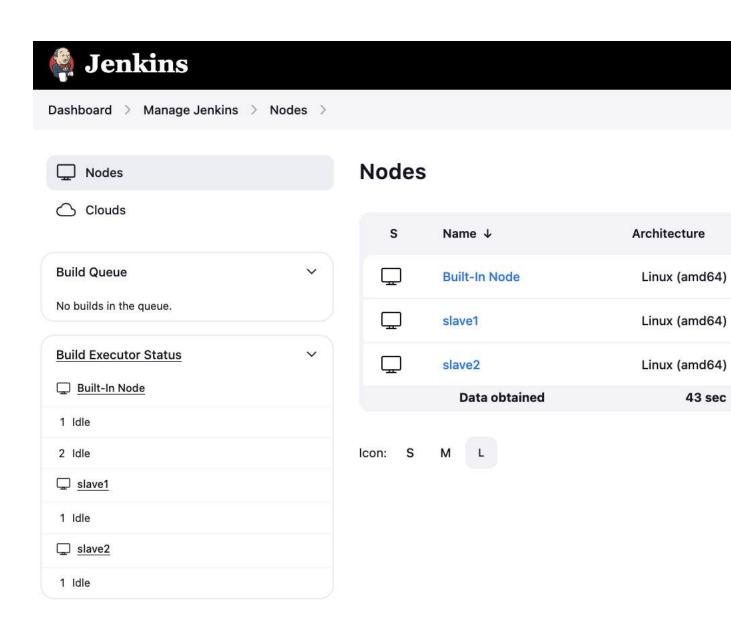


Only private IP address needs to be changed



## And click on save





Click on slave2 node and check the logs

∧ Not Secure 18.237.116.225:8080/computer/slave2/I

G Google

M Inbox - maheshza...

 $\bigcirc$ 

SoftLayer Agent P... Mail - mahesh.z@i.

Dashboard > Nodes > slave2 > Log

TERM=dumb UID=1000

USER=ubuntu

XDG\_RUNTIME\_DIR=/run/user/1000

XDG\_SESSION\_CLASS=user

XDG\_SESSION\_ID=16

XDG\_SESSION\_TYPE=tty

\_=']'

Checking Java version in the PATH

openjdk version "11.0.24" 2024-07-16

OpenJDK Runtime Environment (build 11.0.24+8-post-U

OpenJDK 64-Bit Server VM (build 11.0.24+8-post-Ubun [10/03/24 12:02:03] [SSH] Checking java version of

Couldn't figure out the Java version of /home/ubunt

bash: line 1: /home/ubuntu/jenkins/jdk/bin/java: No

[10/03/24 12:02:03] [SSH] Checking java version of

[10/03/24 12:02:03] [SSH] java -version returned 11

[10/03/24 12:02:03] [SSH] Starting sftp client.

[10/03/24 12:02:03] [SSH] Remote file system root /

[10/03/24 12:02:03] [SSH] Copying latest remoting.j

[10/03/24 12:02:04] [SSH] Copied 1,393,029 bytes.

Expanded the channel window size to 4MB

[10/03/24 12:02:04] [SSH] Starting agent process: c

/home/ubuntu/jenkins/remoting/jarCache

Oct 03, 2024 12:02:04 PM org.jenkinsci.remoting.eng

INFO: Using /home/ubuntu/jenkins/remoting as a remo

Oct 03, 2024 12:02:04 PM org.jenkinsci.remoting.eng

INFO: Both error and output logs will be printed to

<===[JENKINS REMOTING CAPACITY]===>channel started

Remoting version: 3248.3250.v3277a\_8e88c9b\_

Launcher: SSHLauncher

Communication Protocol: Standard in/out

This is a Unix agent

WARNING: An illegal reflective access operation has

WARNING: Illegal reflective access by jenkins.slave

WARNING: Please consider reporting this to the main

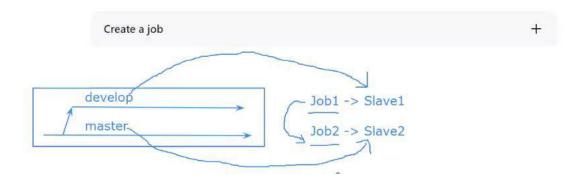
WARNING: Use --illegal-access=warn to enable warnin

WARNING: All illegal access operations will be deni

Evacuated stdout

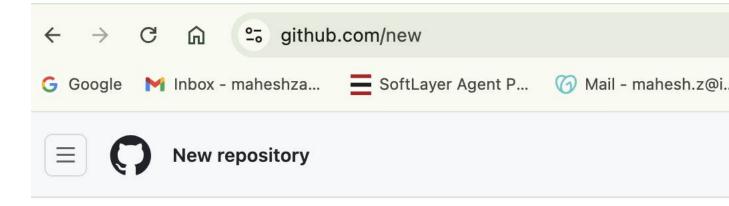
Agent successfully connected and online

# We have create the below jobs



For all 3 assignmnets

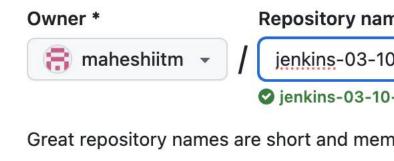
Now we have to create github repository



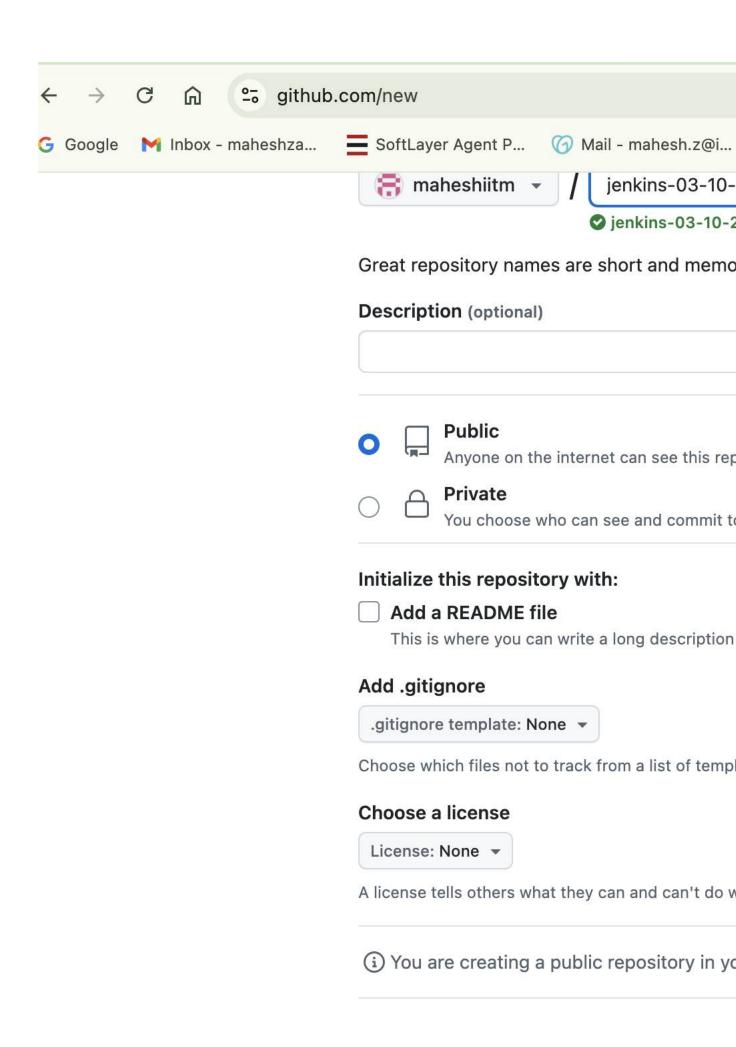
# Create a new repository

A repository contains all project files, inclue elsewhere? <u>Import a repository.</u>

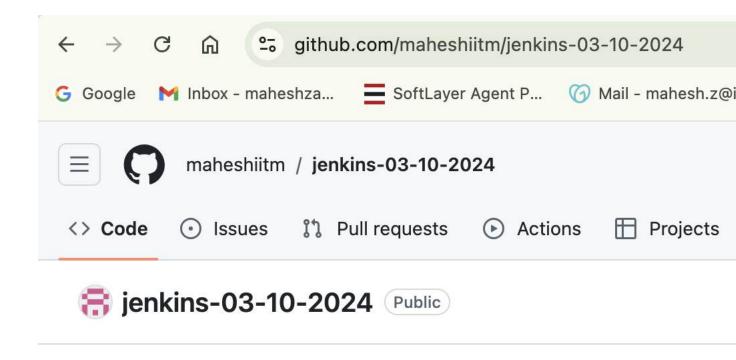
Required fields are marked with an asterisk



**Description** (optional)



Respository created in github account





### Set up GitHub Copilot

Use GitHub's Al pair programmer to autocomplete suggestions as you co

Get started with GitHub Copilot

# Quick setup — if you've done this kind of thing befo

Set up in Desktop

or HTTPS

SSH

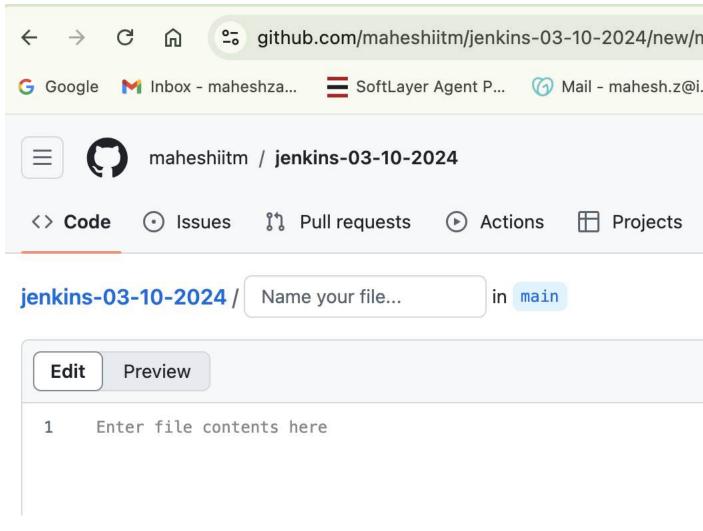
git@github.com:mahe

Get started by creating a new file or uploading an existing file. We recom

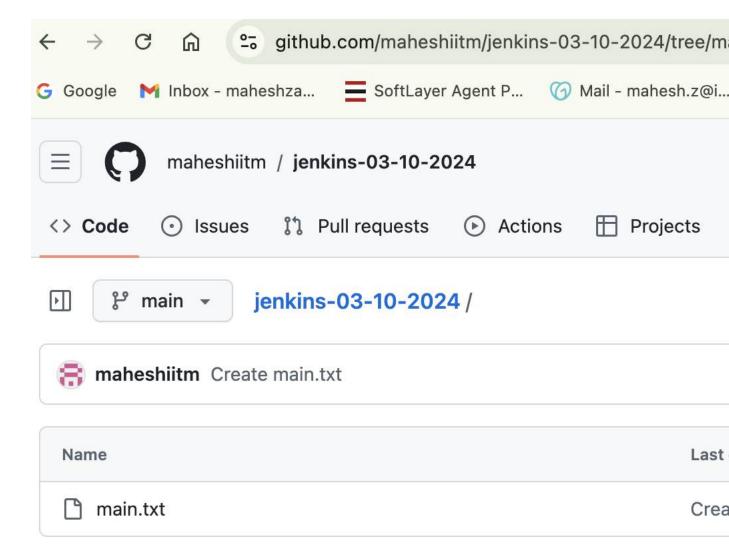
# ...or create a new repository on the command line

```
echo "# jenkins-03-10-2024" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
```

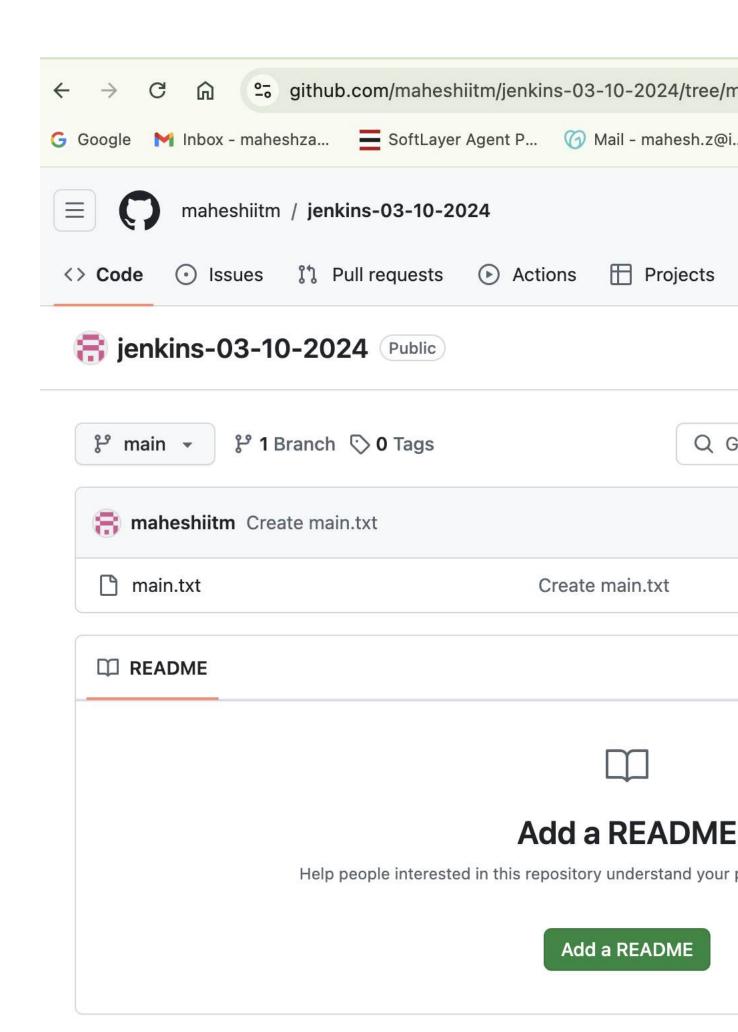
### Click on createting new file



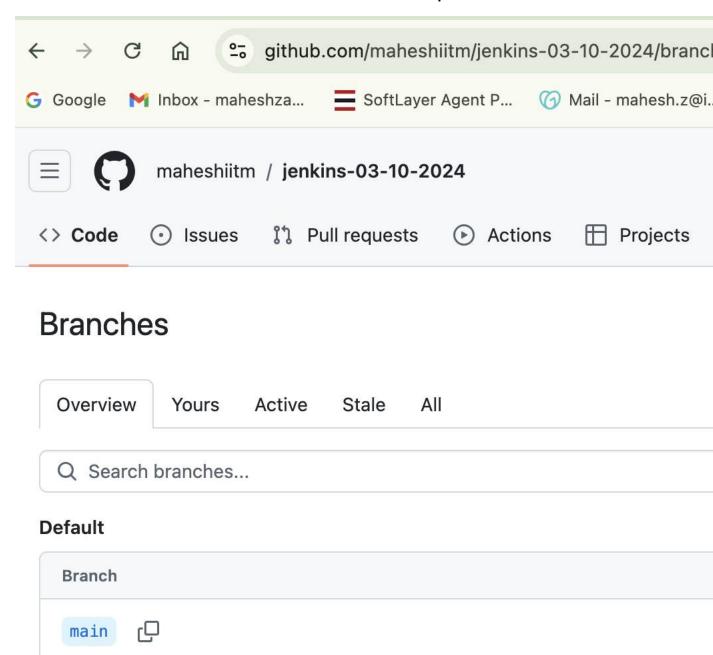
Click on commit changes



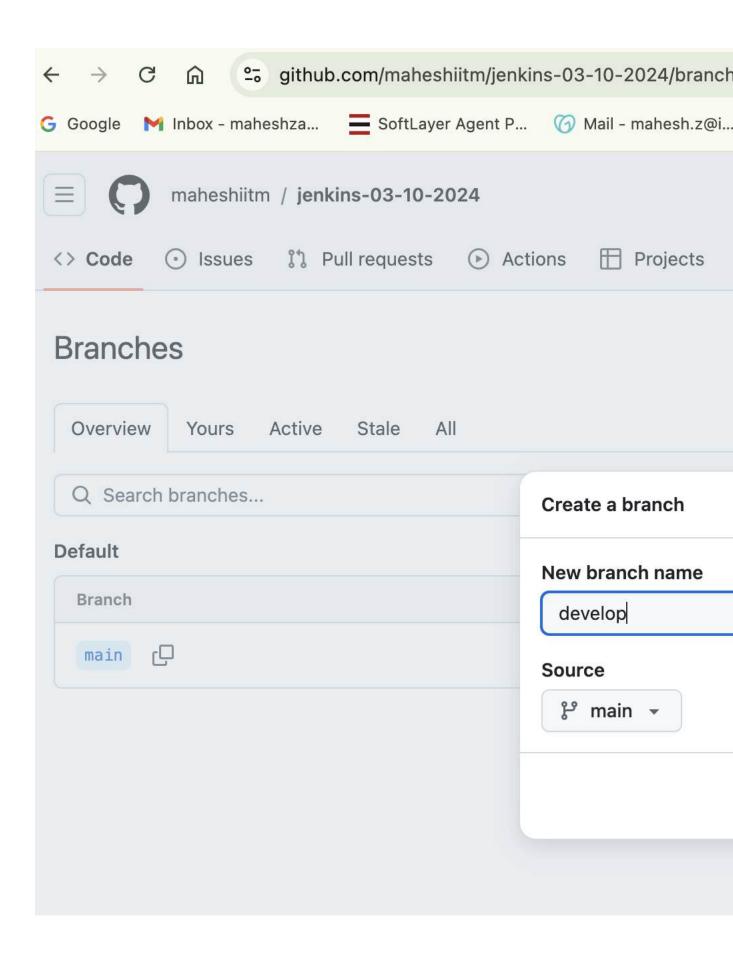
Main branch is created

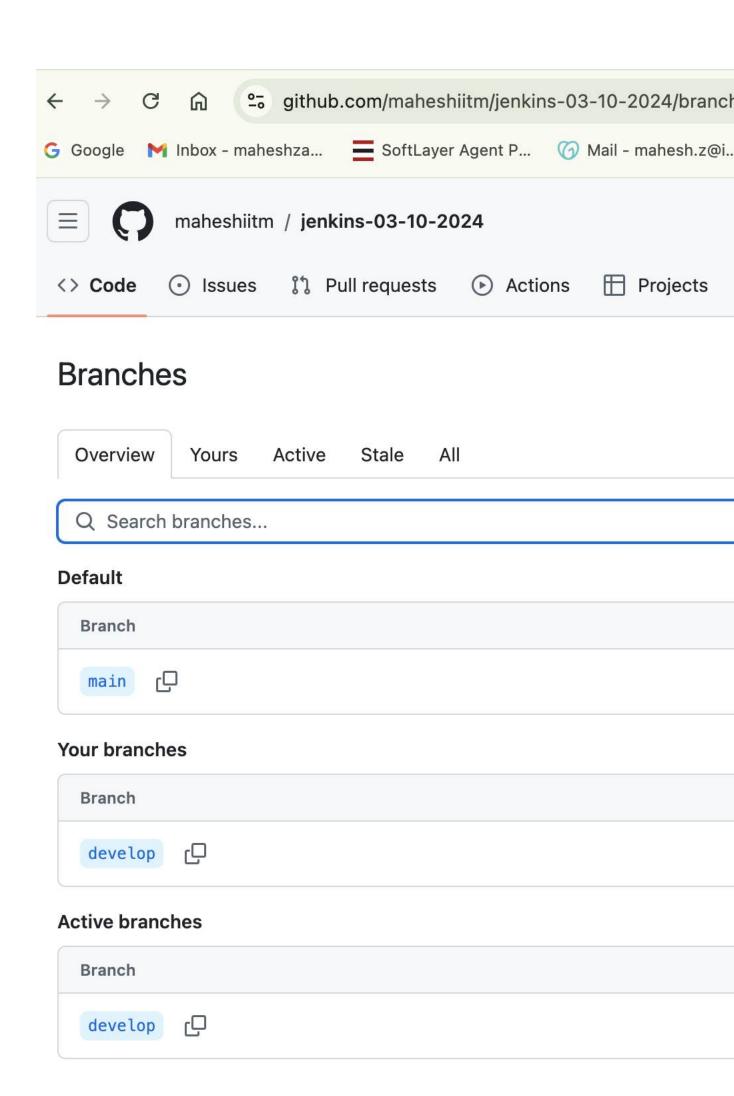


### Click on branch to create new branch Devlop

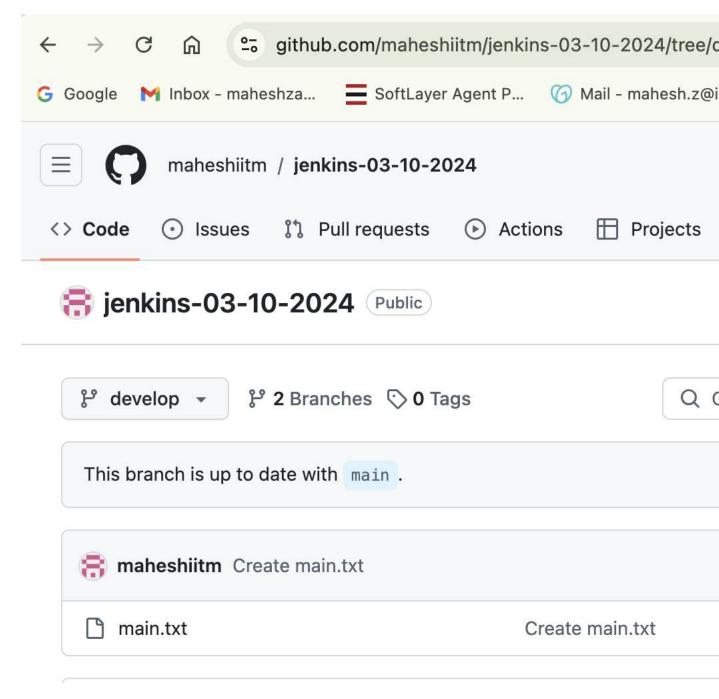


Click on new bfranch



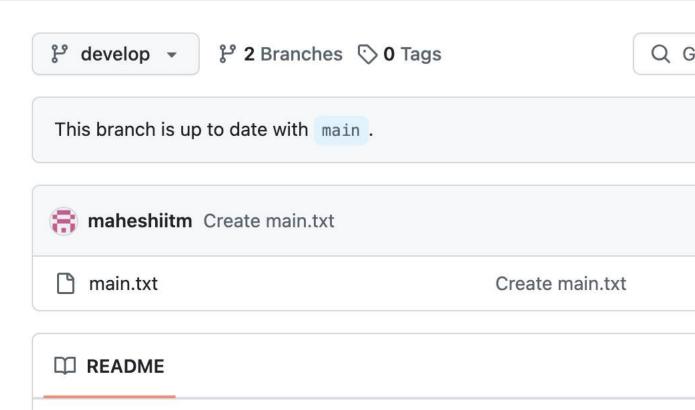


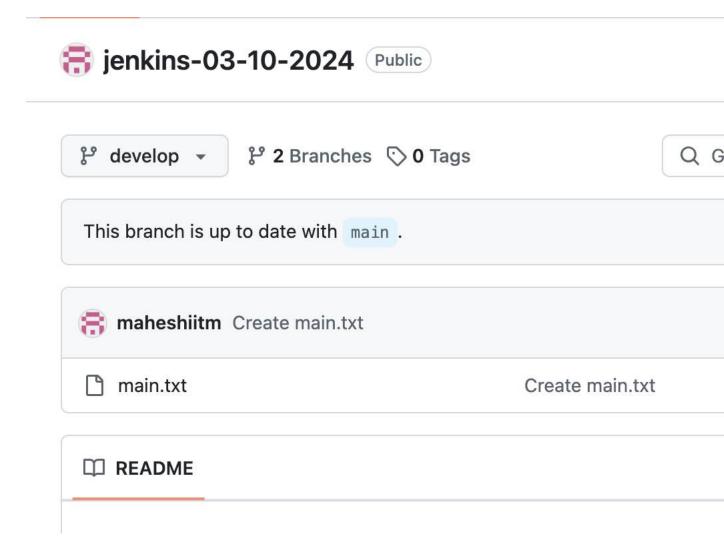
### Develop branch is created



Click on create a new file







### Commit the changes

Jenkins folder created in both slave1 and slave 2 EC2 Instance

```
OpenJDK Runtime Environment (build 11.0.24+8-post-Ubuntu-1 OpenJDK 64-Bit Server VM (build 11.0.24+8-post-Ubuntu-1 ubuntu@ip-172-31-20-238:~$ ls

jenkins
ubuntu@ip-172-31-20-238:~$

i-03295c22c94a10a9b (jenkins-s2)

PublicIPs: 35.91.227.75 PrivateIPs: 172.31.20.238
```

```
OpenJDK Runtime Environment (build 11.0.24+8-post-Ubuntu-1 OpenJDK 64-Bit Server VM (build 11.0.24+8-post-Ubuntu-1ubu ubuntu@ip-172-31-29-247:~$ ls jenkins ubuntu@ip-172-31-29-247:~$
```

# i-0dbef24397f147956 (jenkins-s1)

PublicIPs: 34.220.113.116 PrivateIPs: 172.31.29.247

```
buntu@ip-172-31-20-238:~$ ls

|enkins|
|buntu@ip-172-31-20-238:~$ cd jenkins
|buntu@ip-172-31-20-238:~/jenkins$ ls
|cemoting remoting.jar
|buntu@ip-172-31-20-238:~/jenkins$
```

# i-03295c22c94a10a9b (jenkins-s2)

PublicIPs: 35.91.227.75 PrivateIPs: 172.31.20.238

```
ubuntu@ip-172-31-29-247:~$ ls

jenkins
ubuntu@ip-172-31-29-247:~$ cd jenkins
ubuntu@ip-172-31-29-247:~/jenkins$ ls

remoting remoting.jar
ubuntu@ip-172-31-29-247:~/jenkins$
```

# i-0dbef24397f147956 (jenkins-s1)

PublicIPs: 34.220.113.116 PrivateIPs: 172.31.29.247

Once job is created workspace folder will be created

Dashboard > All > New Item

### **New Item**

#### Enter an item name

job1

#### Select an item type



#### Freestyle project

Classic, general-purpose job type post-build steps like archiving arti



#### **Pipeline**

Orchestrates long-running activitie known as workflows) and/or organ



#### Multi-configuration project

Suitable for projects that need a la platform-specific builds, etc.



#### Folder

Creates a container that stores ne a folder creates a separate names different folders.



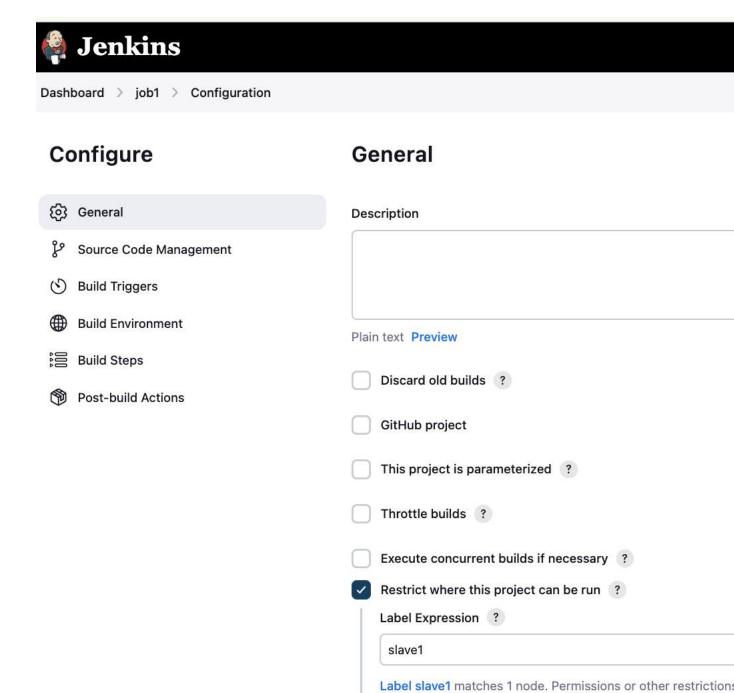
#### Multibranch Pipeline

Creates a set of Pipeline projects a



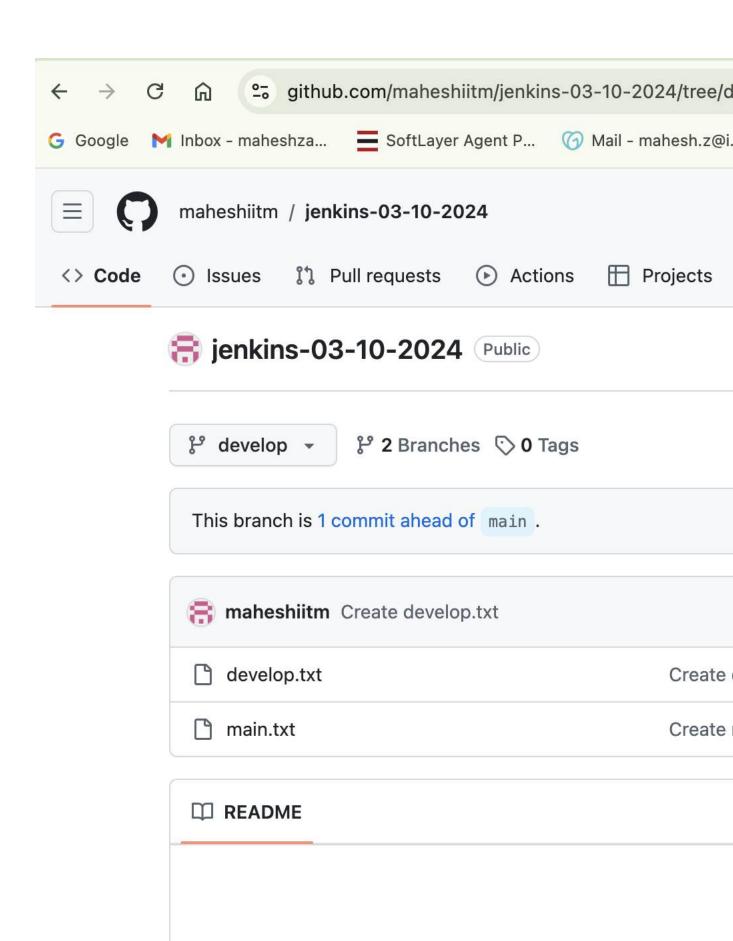
### Organization Folder

Creates a set of multibranch proje



Copy the URL from HHTS not from SSH option in the github

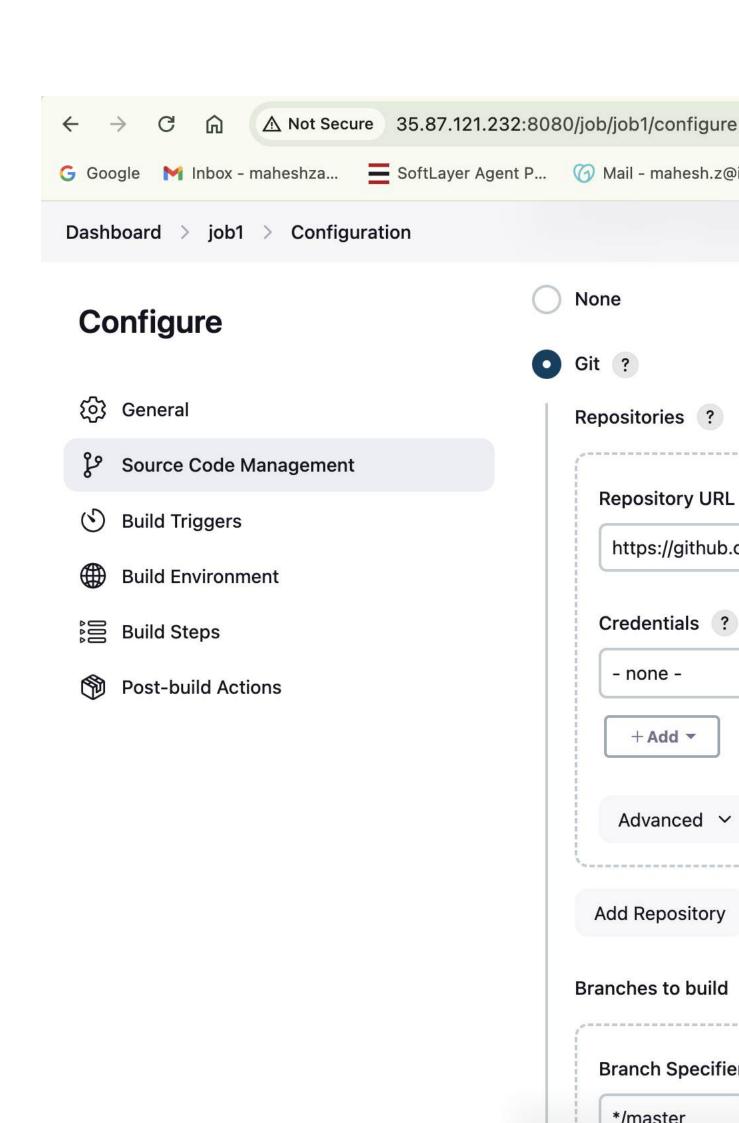
Advanced ~



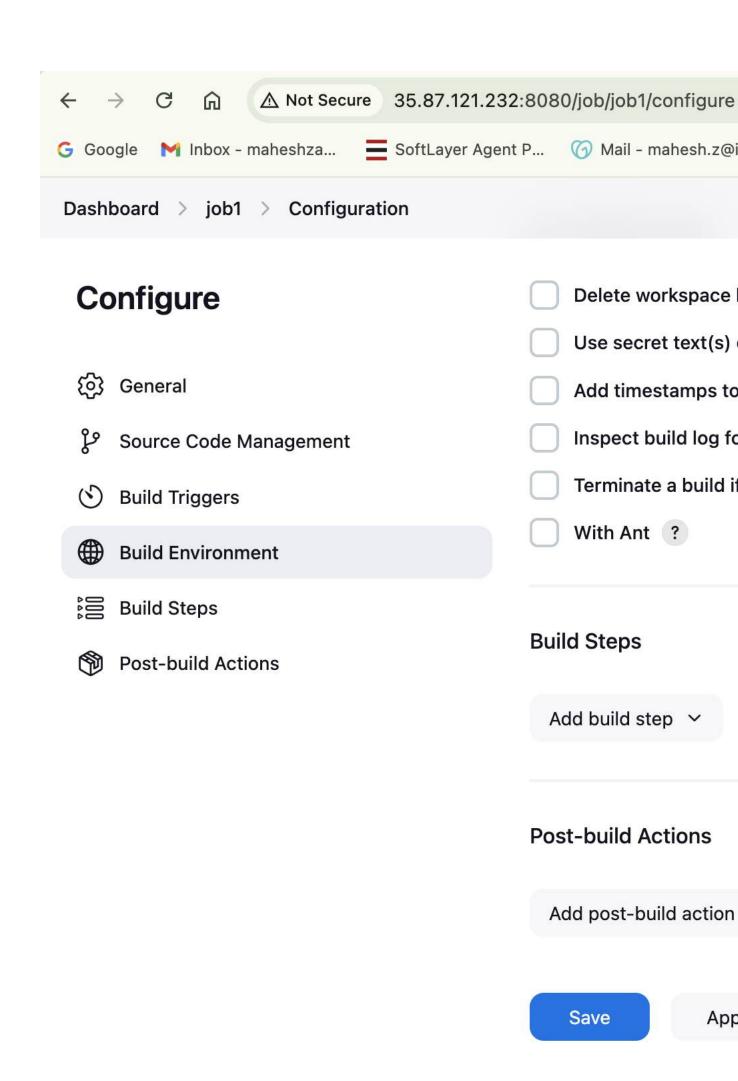
# Add a

Help people interested in this repositor

# Paste in Jenkins repository URR



# Now save it





Dashboard > job1 >

Status
 ✓/> Changes
 → Workspace
 → Build Now
 ♠ Configure

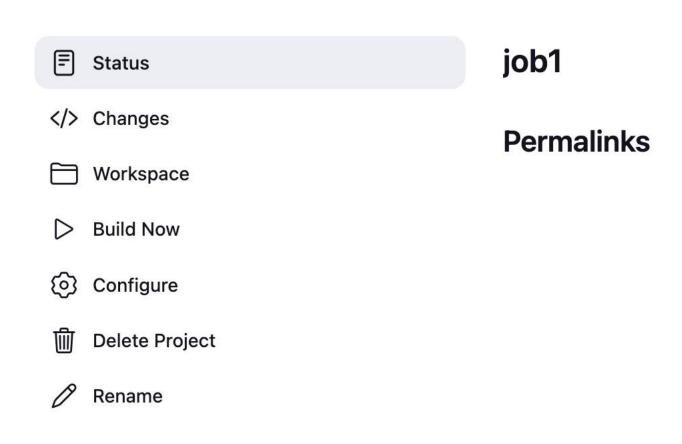
Now click on build now

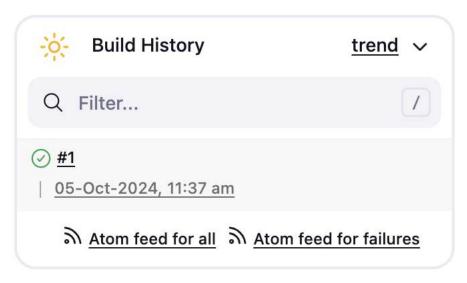
Rename

**Delete Project** 



Dashboard > job1 >





```
Last login: Thu Oct 3 11:04:07 2024 from 18.237.140.164 ubuntu@ip-172-31-29-247:~$ ls jenkins
ubuntu@ip-172-31-29-247:~$ cd jenkins/
ubuntu@ip-172-31-29-247:~/jenkins$ ls
remoting remoting.jar workspace
ubuntu@ip-172-31-29-247:~/jenkins$ cd workspace/
ubuntu@ip-172-31-29-247:~/jenkins/workspace$ ls
job1
ubuntu@ip-172-31-29-247:~/jenkins/workspace$ cd job1/
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$ ls
main.txt
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$
```

# i-0dbef24397f147956 (jenkins-s1)

PublicIPs: 54.203.174.28 PrivateIPs: 172.31.29.247

```
main.txt
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$ is
main.txt
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$ cat main
This is main.txt file in the main branch
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$
```

# i-0dbef24397f147956 (jenkins-s1)

PublicIPs: 54.203.174.28 PrivateIPs: 172.31.29.247



Dashboard > All > New Item

# **New Item**

### Enter an item name

job2

### Select an item type



### Freestyle project

Classic, general-purpose post-build steps like arch



# Pipeline

Orchestrates long-runnin known as workflows) and



# Multi-configuration proje

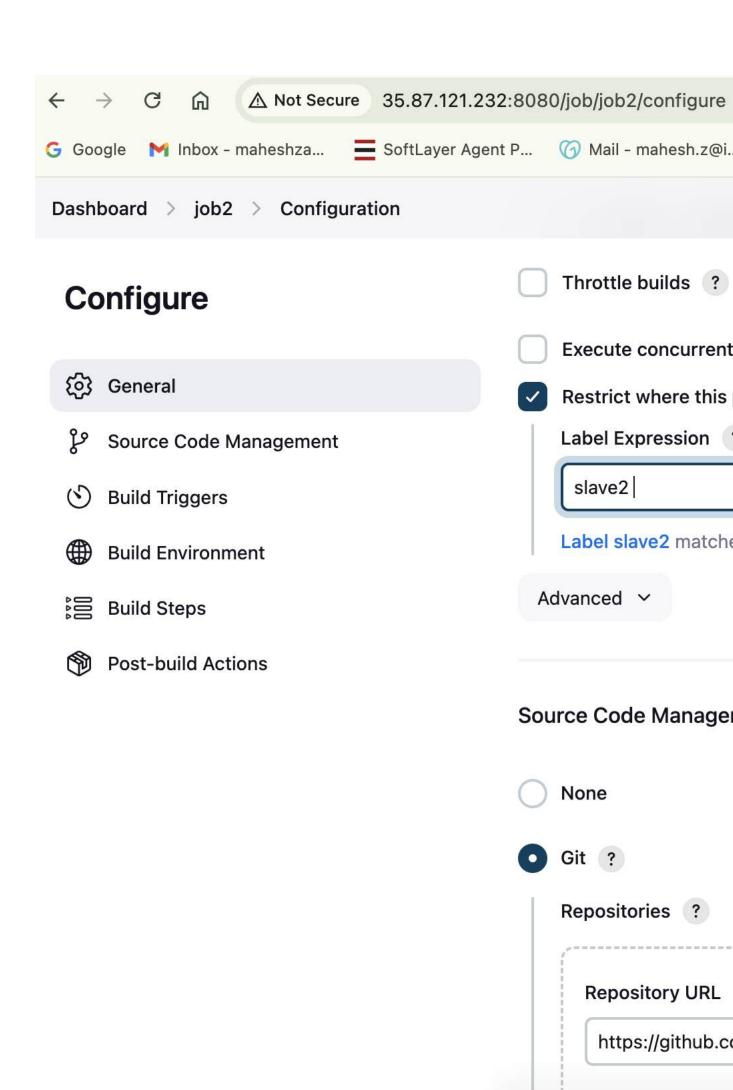
Suitable for projects that platform-specific builds,

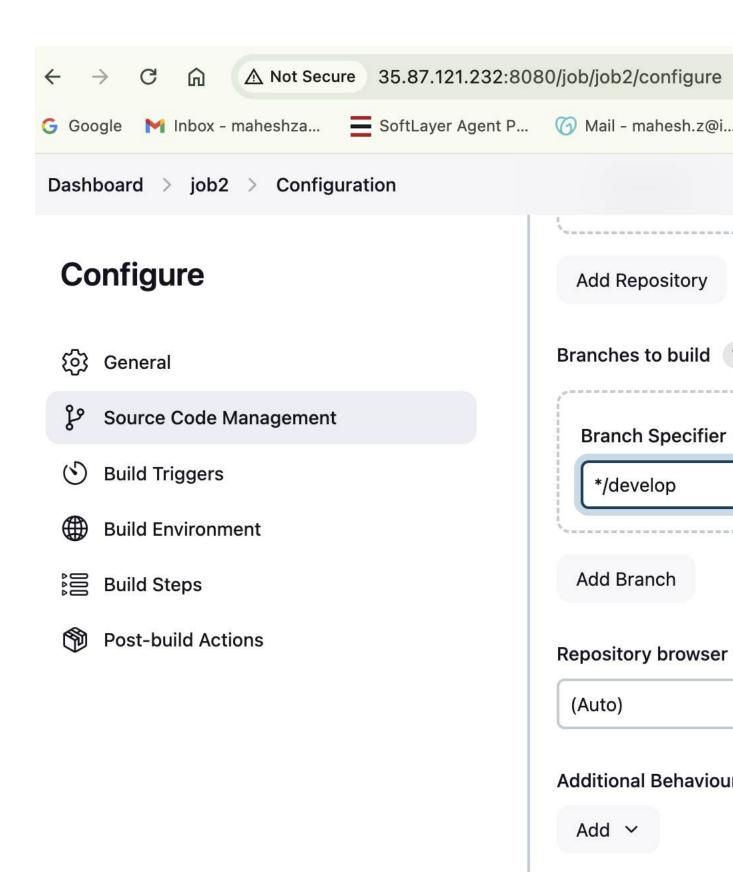


### Folder

Creates a container that s a folder creates a separat different folders.

# Click on OK

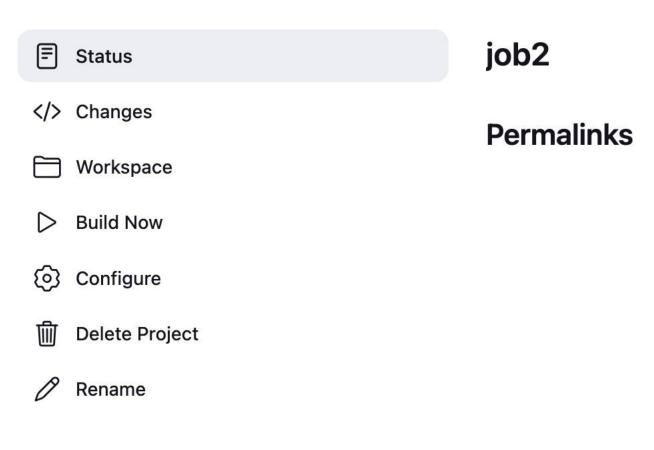


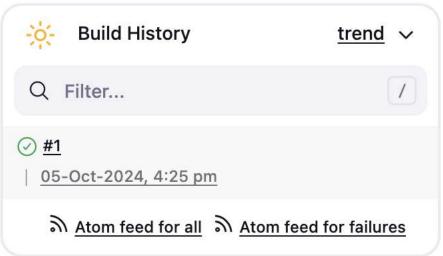


Now click on save Click on build now



Dashboard > job2 >





```
Last login: Thu Oct 3 11:04:33 2024 from 18.237.140.165 ubuntu@ip-172-31-20-238:~$ ls jenkins
ubuntu@ip-172-31-20-238:~$ cd jenkins/
ubuntu@ip-172-31-20-238:~/jenkins$ ls
remoting remoting.jar workspace
ubuntu@ip-172-31-20-238:~/jenkins$ cd workspace/
ubuntu@ip-172-31-20-238:~/jenkins/workspace$ ls job2
ubuntu@ip-172-31-20-238:~/jenkins/workspace$ cd job2/
ubuntu@ip-172-31-20-238:~/jenkins/workspace/job2$ ls develop.txt main.txt
ubuntu@ip-172-31-20-238:~/jenkins/workspace/job2$ cat deve
This is devlop.txt file
ubuntu@ip-172-31-20-238:~/jenkins/workspace/job2$
```

# i-03295c22c94a10a9b (jenkins-s2)

PublicIPs: 35.161.213.180 PrivateIPs: 172.31.20.238

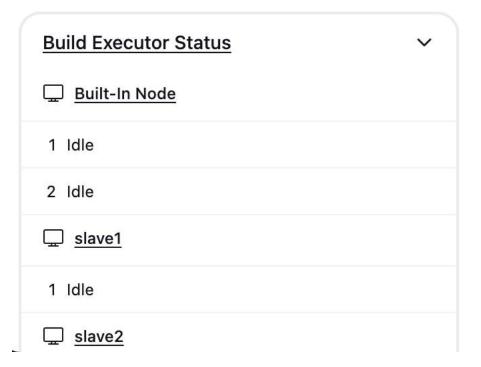
Now connect 2 jobs

Go to dashboard



### Dashboard >

+ New Item			
Build History	All	+	
Project Relationship			
Check File Fingerprint	S	W	
Manage Jenkins	$\odot$	- <u>;</u> ¢;-	
My Views	$\odot$	-; <b>ò</b> ;-	
Build Queue   V	Icon: S	М	L
No builds in the queue.			



Now click on job1 go to configure
Then click



Dashboard > job1 > Configuration

Configure	General
্রি General	Description
Source Code Management	
Build Triggers	
Build Environment	Plain text <b>Preview</b>
₿ Build Steps	Discoud ald builds
Post-build Actions	Discard old builds
	GitHub project
	This project is para
	Throttle builds ?
	Execute concurrer
	Restrict where this
	Label Expression

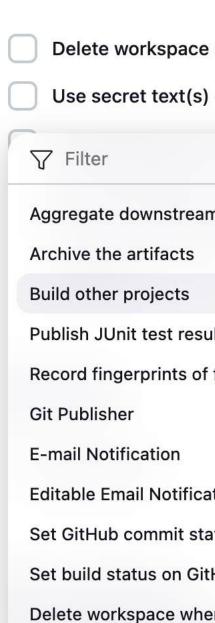
Save

Click on build other project





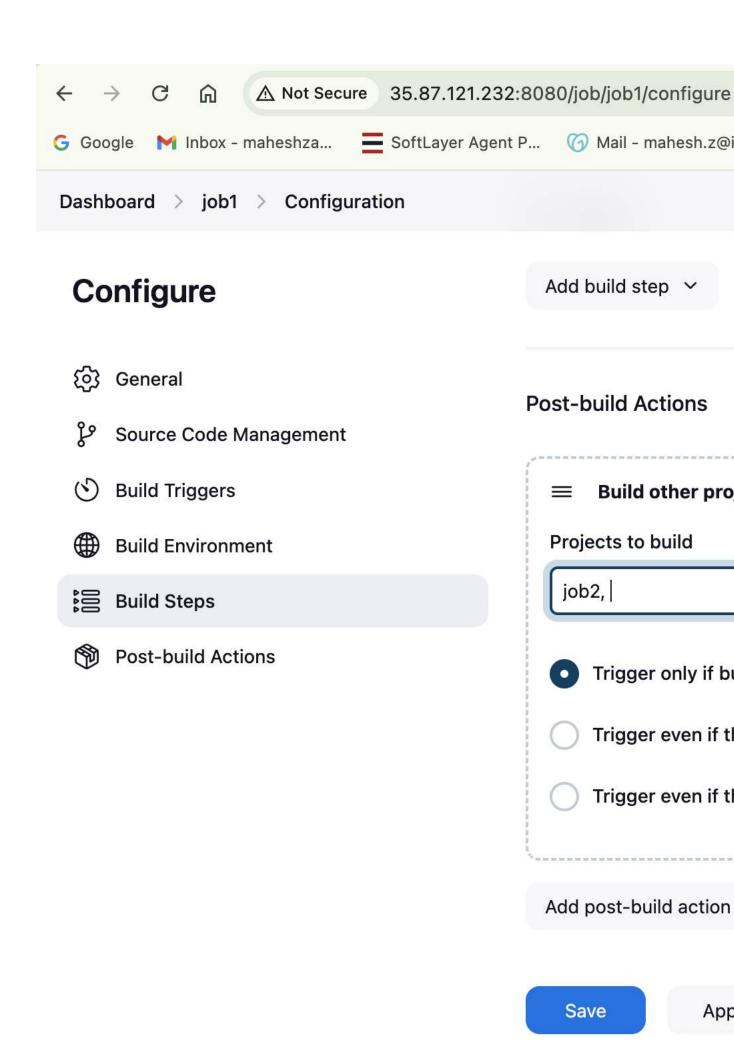
- ( General
- Source Code Management
- Build Triggers
- Build Environment
- **Build Steps**
- Post-build Actions



Save

Add post-build action

App



Type job2 and Click on save



### Dashboard >

+ New Item

Build History

- Project Relationship
- Check File Fingerprint
- Manage Jenkins
- My Views

Build Queue

No builds in the queue.

Build Executor Status

- Built-In Node
- 1 Idle
- 2 Idle
- □ slave1

AII +

s w









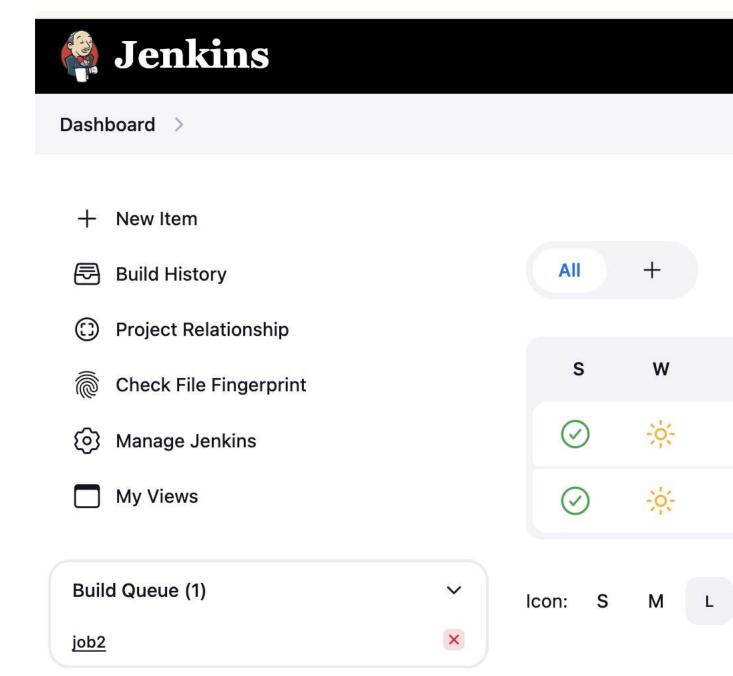
Icon:

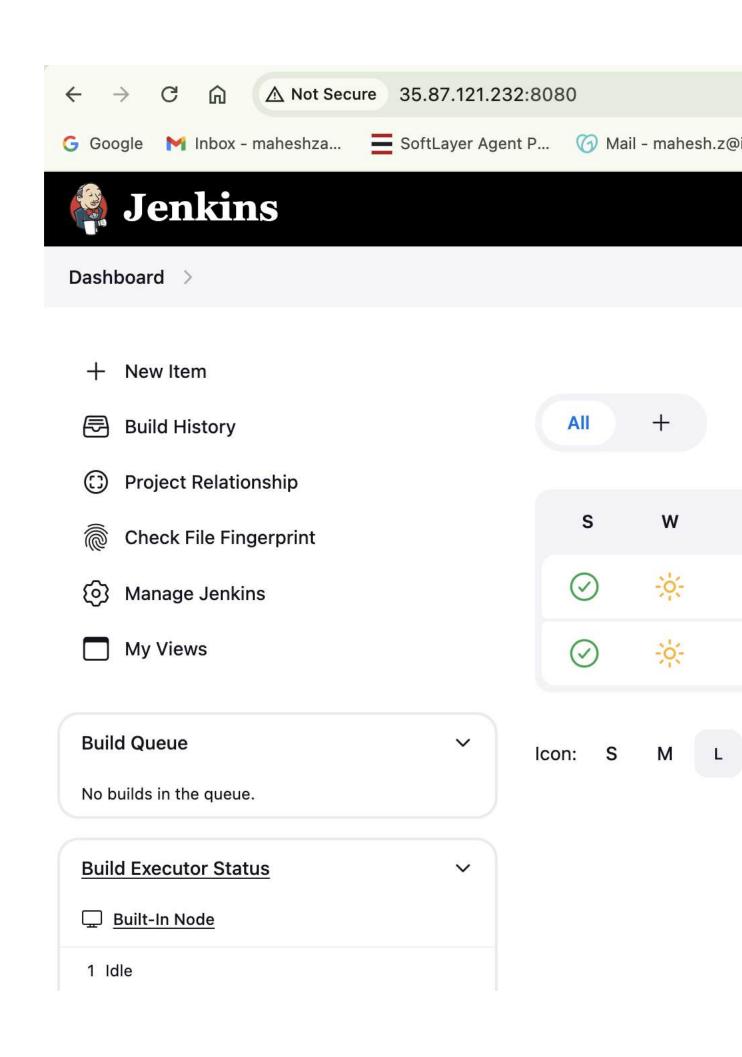
S

M

L

# Now run job 1 it will show job 2 also run



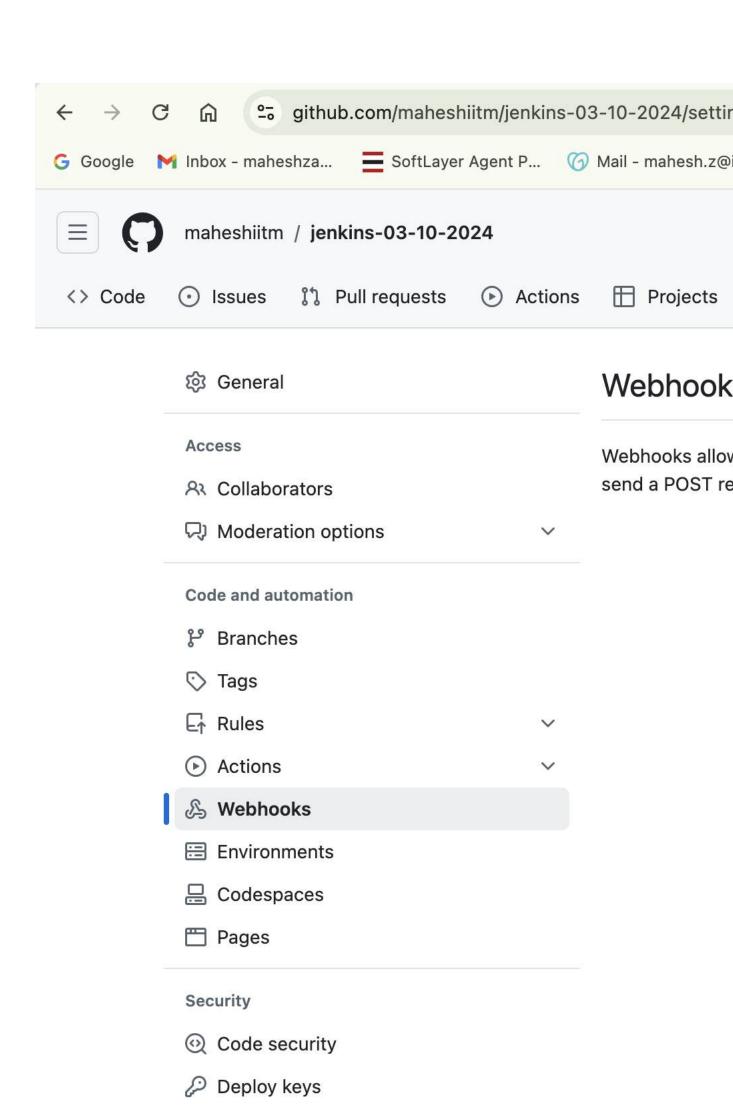


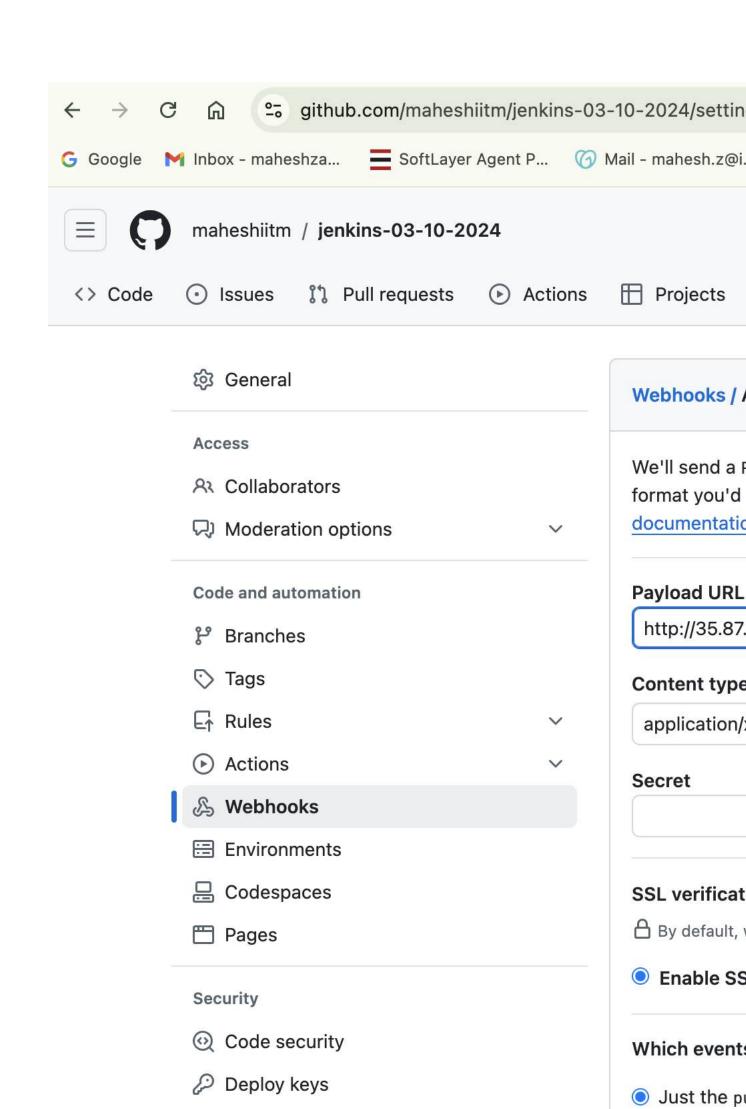
# Job executed 0.52 sec before

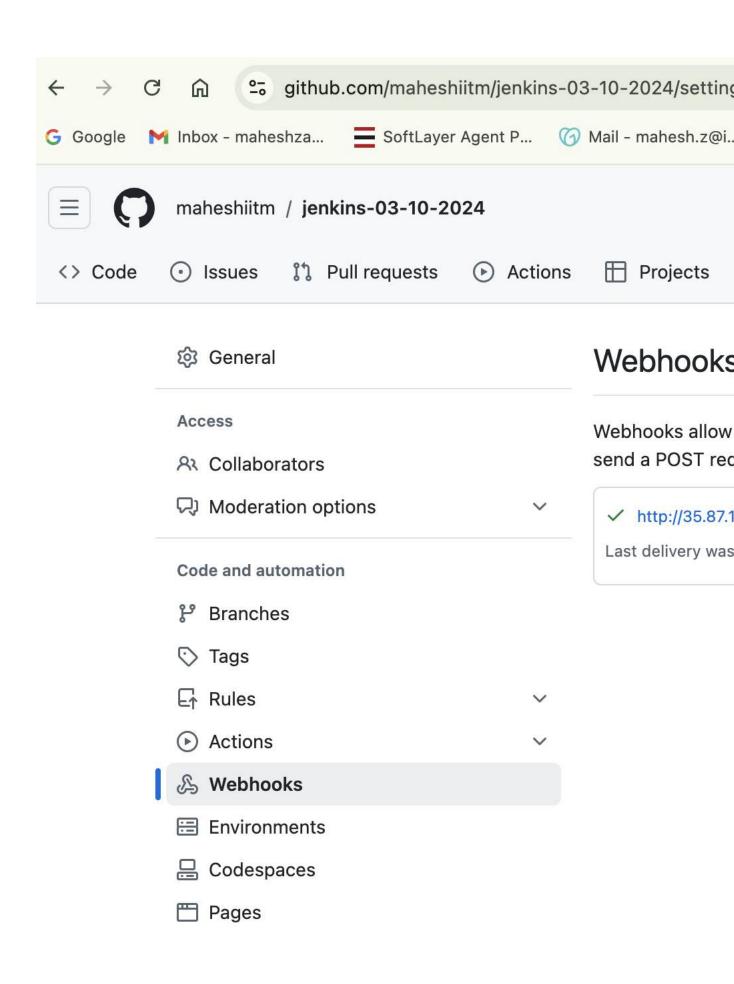
Copy Jenkins URI

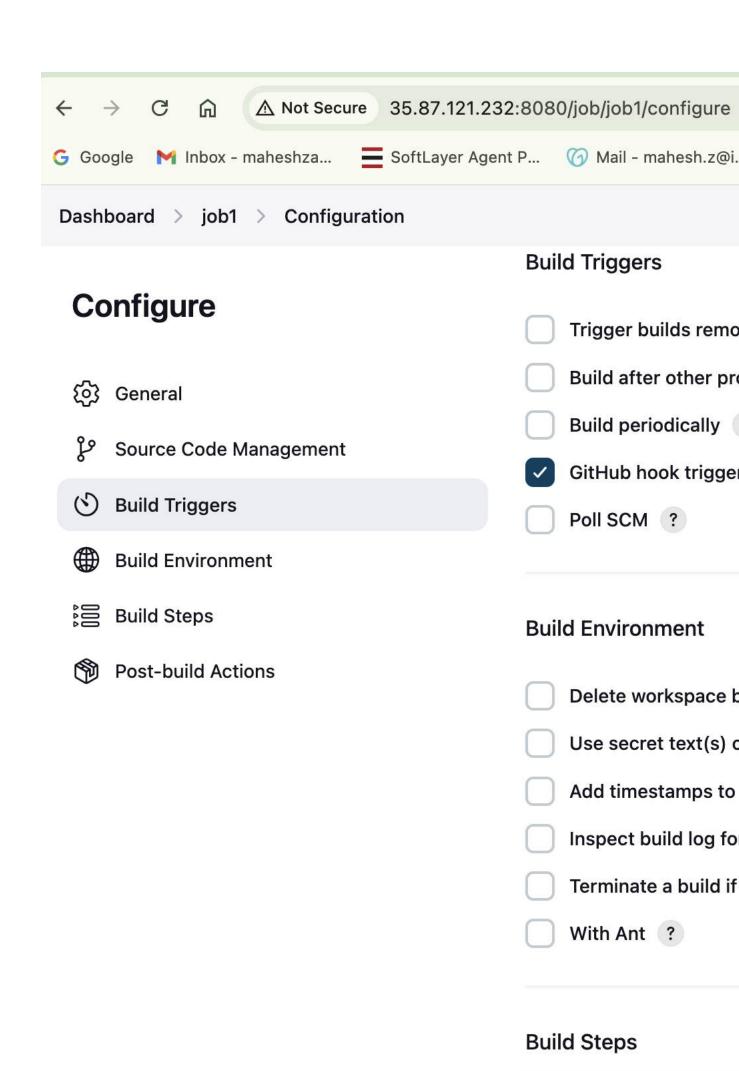
http://35.87.121.232:8080/

go to webhook

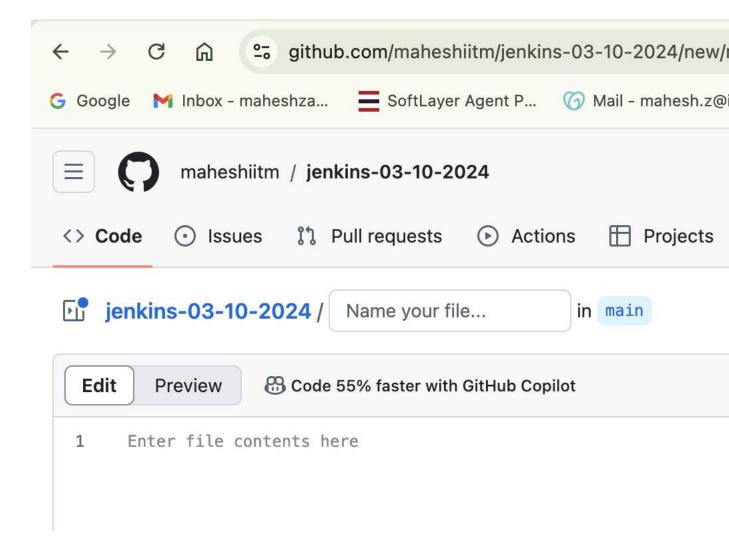


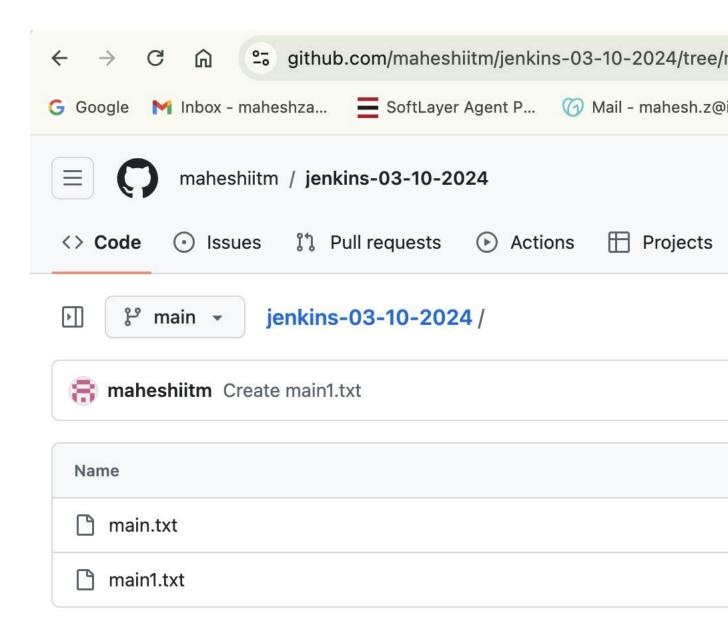






# Click on github hook trigger And click on save

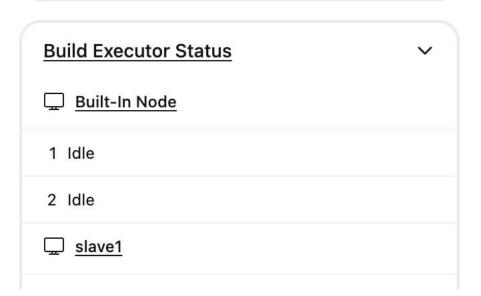






### Dashboard >

al a Massalkana			
+ New Item			
Build History	All	+	
Project Relationship			
Check File Fingerprint	S	W	
Manage Jenkins	$\odot$	-;•;-	
My Views	$\odot$		
Build Queue   V	Icon: S	М	L
No builds in the guerre			



```
Last login: Sat Oct 5 16:26:16 2024 from 18.237.140.165
ubuntu@ip-172-31-29-247:~$ ls
jenkins
ubuntu@ip-172-31-29-247:~$ jenkins/
-bash: jenkins/: Is a directory
ubuntu@ip-172-31-29-247:~$ cd jenkins/
ubuntu@ip-172-31-29-247:~/jenkins$ ls
remoting remoting.jar workspace
ubuntu@ip-172-31-29-247:~/jenkins$ cd workspace/
ubuntu@ip-172-31-29-247:~/jenkins/workspace$ ls
job1
ubuntu@ip-172-31-29-247:~/jenkins/workspace$ cd job1/
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$ ls
main.txt main1.txt
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$ cat main
ubuntu@ip-172-31-29-247:~/jenkins/workspace/job1$
```

# i-0dbef24397f147956 (jenkins-s1)

PublicIPs: 54.203.174.28 PrivateIPs: 172.31.29.247

