

## TASK-20

### Jenkins and webhook pipeline

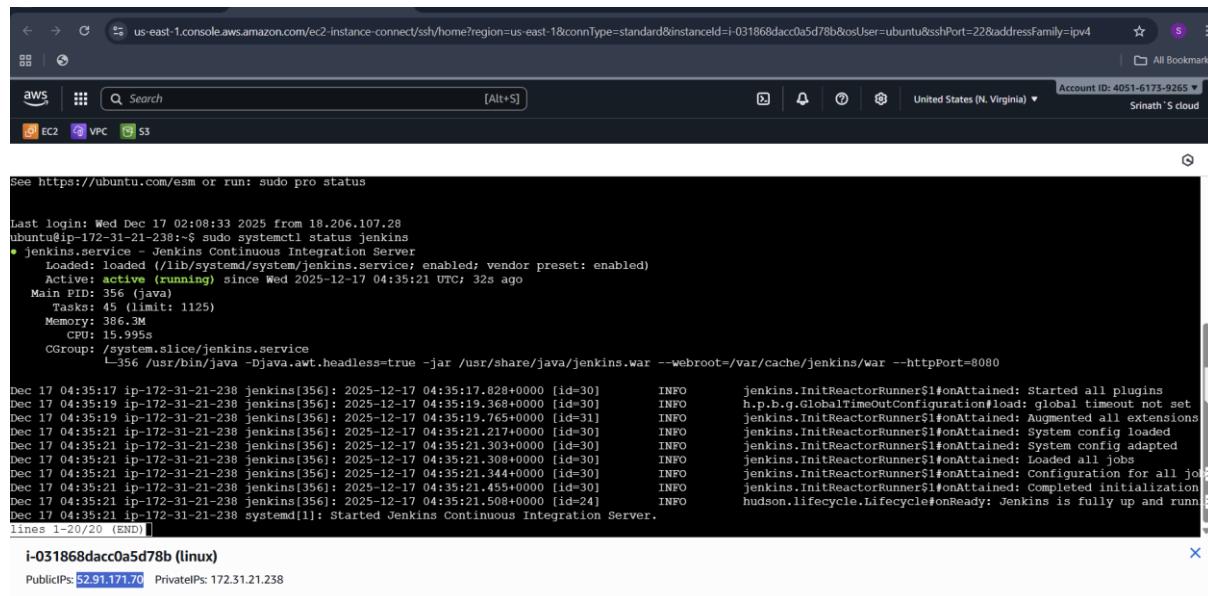
#### Jenkins:

[Jenkins](#) is an open-source automation server that helps developers automate building, testing, and deploying software, central to [Continuous Integration/Continuous Delivery](#) (CI/CD) in DevOps.

#### Webhook:

A webhook in Jenkins is an automated mechanism that allows external services, such as version control systems like GitHub or Bitbucket, to notify Jenkins about specific events in real-time. This notification, sent as an HTTP POST request to a pre-configured URL, automatically triggers Jenkins jobs (like builds and tests), thus enabling efficient Continuous Integration/Continuous Delivery (CI/CD) pipelines.

#### Create EC2 instance with 20 gb and run the Jenkins:



The screenshot shows a terminal window within the AWS CloudWatch interface. The title bar indicates the session is connected via SSH to an EC2 instance in the us-east-1 region. The terminal displays the Jenkins startup logs. The logs show the Jenkins service being loaded and started, with the command: `sudo systemctl status jenkins`. It details the service status as active (running) since the previous day, with a main PID of 356. The log also includes memory and CPU usage statistics. The Jenkins service starts by executing the command: `/usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080`. Subsequent log entries show the Jenkins reactor runner initializing various components like GlobalTimeOutConfiguration, extensions, and jobs. The final message indicates Jenkins is fully up and running.

```
See https://ubuntu.com/esm or run: sudo pro status

Last login: Wed Dec 17 02:08:33 2025 from 18.206.107.28
ubuntu@ip-172-31-21-238:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
  Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
  Active: active (running) since Wed 2025-12-17 04:35:21 UTC; 32s ago
    Main PID: 356 (java)
   Tasks: 45 (limit: 1125)
     Memory: 386.3M
        CPU: 15.995s
      CGroup: /system.slice/jenkins.service
             └─356 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

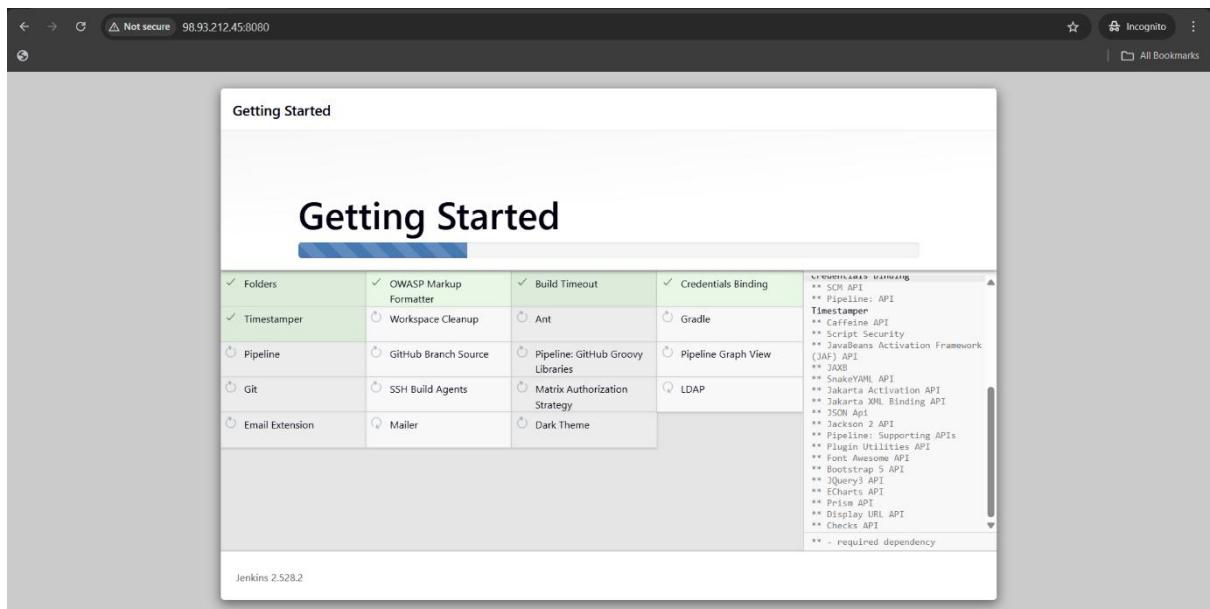
Dec 17 04:35:17 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:17.828+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: Started all plugins
Dec 17 04:35:19 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:19.368+0000 [id=30] INFO h.p.b.q.GlobalTimeOutConfiguration#load: global timeout not set
Dec 17 04:35:19 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:19.765+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Augmented all extensions
Dec 17 04:35:21 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:21.217+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: System config loaded
Dec 17 04:35:21 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:21.303+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: System config adapted
Dec 17 04:35:21 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:21.308+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: Loaded all jobs
Dec 17 04:35:21 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:21.344+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: Configuration for all jobs
Dec 17 04:35:21 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:21.455+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
Dec 17 04:35:21 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:21.508+0000 [id=24] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and running
Dec 17 04:35:21 ip-172-31-21-238 systemd[1]: Started Jenkins Continuous Integration Server.
lines 1-20/20 (END) [x]

i-031868dacc0a5d78b (linux)
PublicIPs: 52.91.171.70 PrivateIPs: 172.31.21.238
```

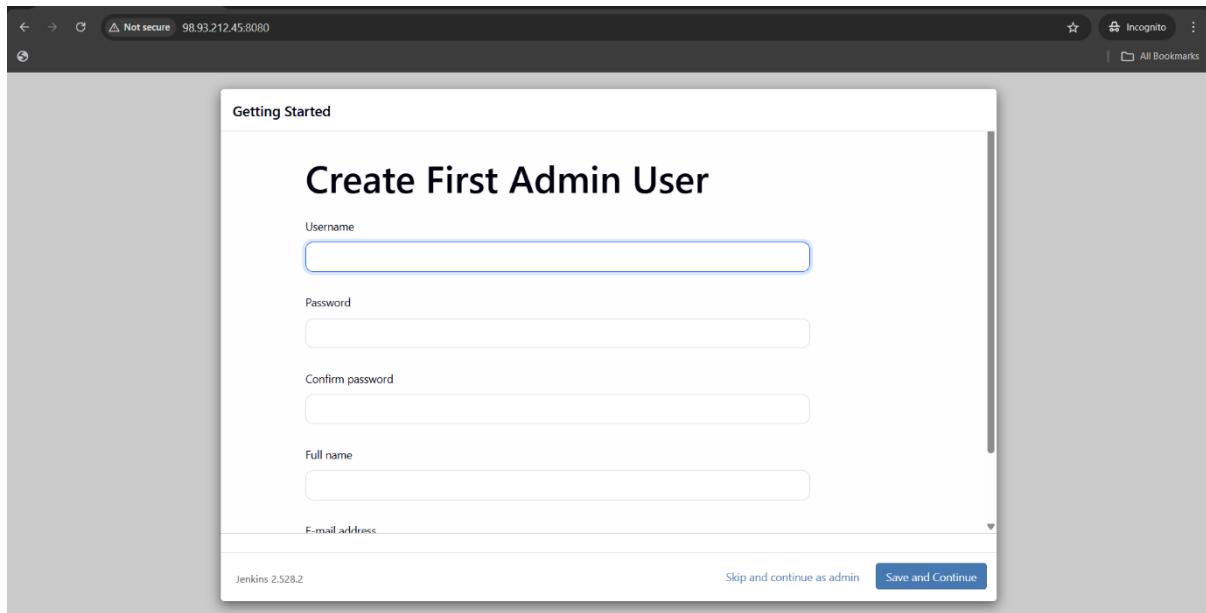
## Extract the password from local server:



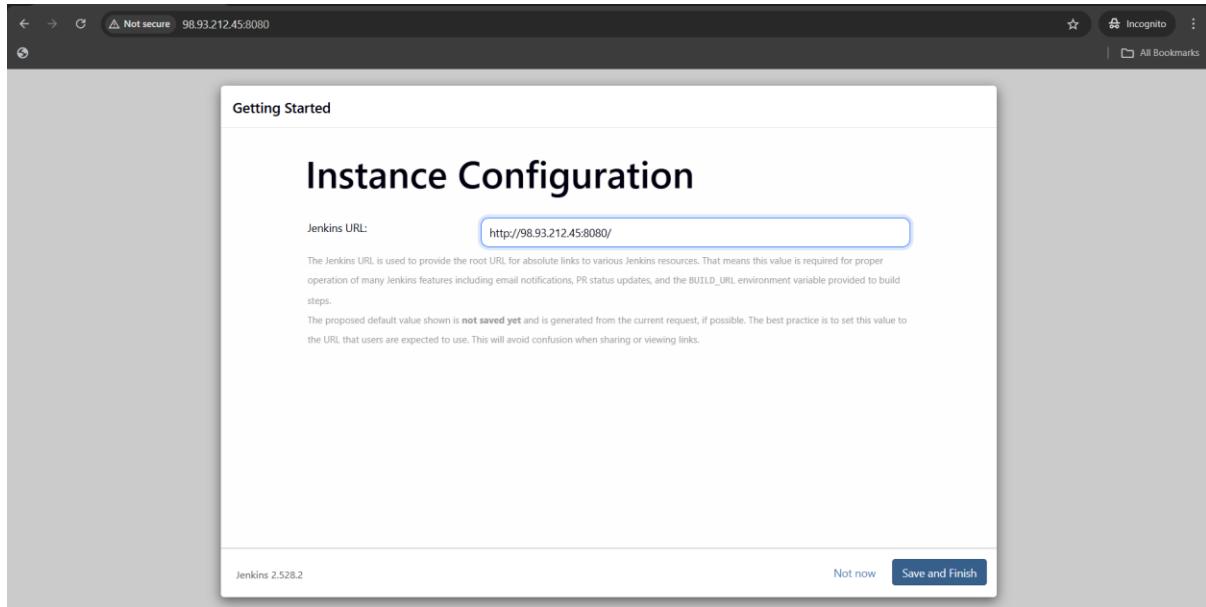
## Install Plugins:



## Create Admin user:



## Instance Configuration:



## Home Page of Jenkins:

The screenshot shows the Jenkins home page. At the top, there's a header bar with a back arrow, forward arrow, refresh button, and a 'Not secure' warning. The URL is 98.93.212.45:8080. On the right of the header are icons for Incognito mode, bookmarks, and other browser controls.

The main content area has a dark header 'Jenkins' with a logo. Below it are two buttons: '+ New Item' and 'Build History'. A large central heading says 'Welcome to Jenkins!'. Below this, a message states: 'This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.' There are three sections: 'Start building your software project', 'Set up a distributed build', and 'Create a job'. Under 'Create a job', there are three buttons: 'Create a job' (with a '+' icon), 'Set up an agent' (with a monitor icon), and 'Configure a cloud' (with a cloud icon). A link 'Learn more about distributed builds' with a help icon is also present. At the bottom right, there are links for 'REST API' and 'Jenkins 2.528.2'.

## Create a Pipe Line:

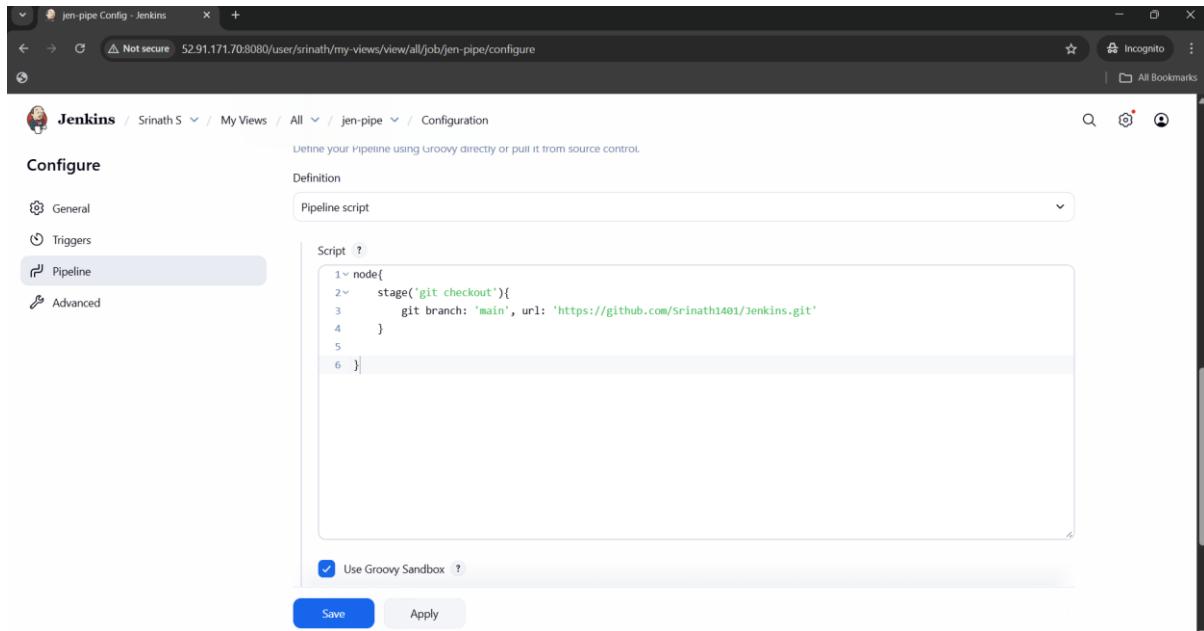
The screenshot shows the 'New Item' dialog in Jenkins. The title bar says 'Not secure' and the URL is 52.91.171.70:8080/user/srinath/my-views/view/all/newJob. The navigation bar includes 'Jenkins', 'Srinath S', 'My Views', 'All', and 'New Item'.

The main form has a title 'New Item' and a text input field 'Enter an item name' containing 'jen-pip'. Below it is a section 'Select an item type' with four options:

- Freestyle project**: Described as a classic general-purpose job type.
- Pipeline**: Described as orchestrating long-running activities across multiple build agents.
- Multi-configuration project**: Described as suitable for projects with many configurations.
- Folder**: Described as creating a container for nested items.

A blue 'OK' button is at the bottom of the dialog.

## Write the Code:

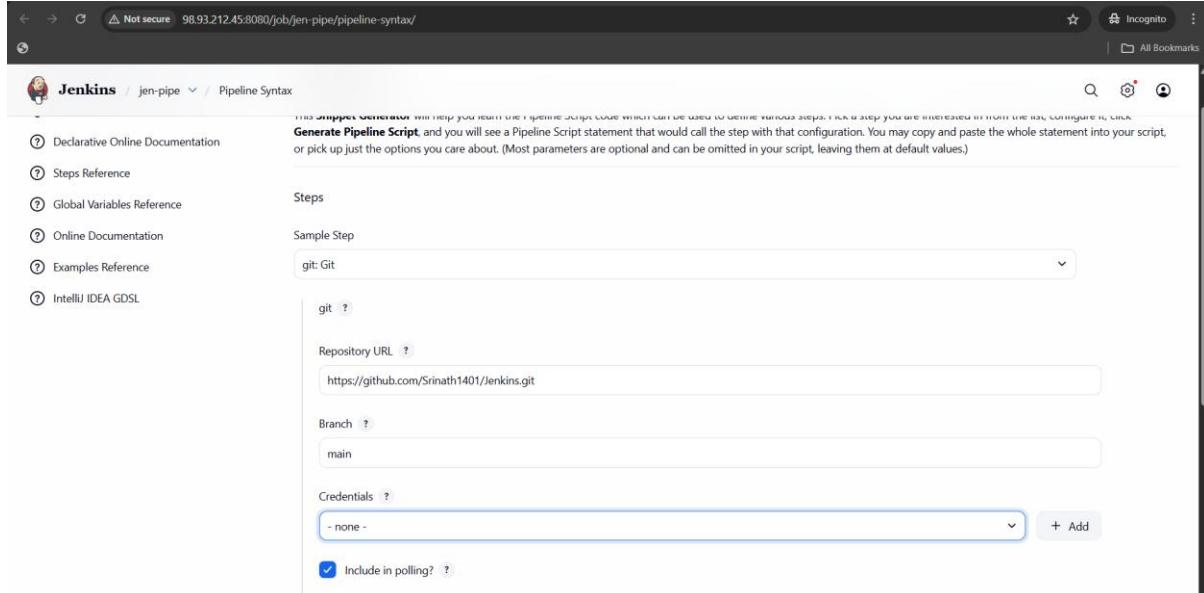


The screenshot shows the Jenkins Pipeline configuration page for a job named 'jen-pipe'. The 'Pipeline' tab is selected in the left sidebar. The main area contains a 'Script' editor with the following Groovy code:

```
1~ node{
2~   stage('git checkout'){
3~     git branch: 'main', url: 'https://github.com/Srinath1401/Jenkins.git'
4~   }
5~ }
6 }
```

Below the editor, there is a checkbox labeled 'Use Groovy Sandbox' which is checked. At the bottom are 'Save' and 'Apply' buttons.

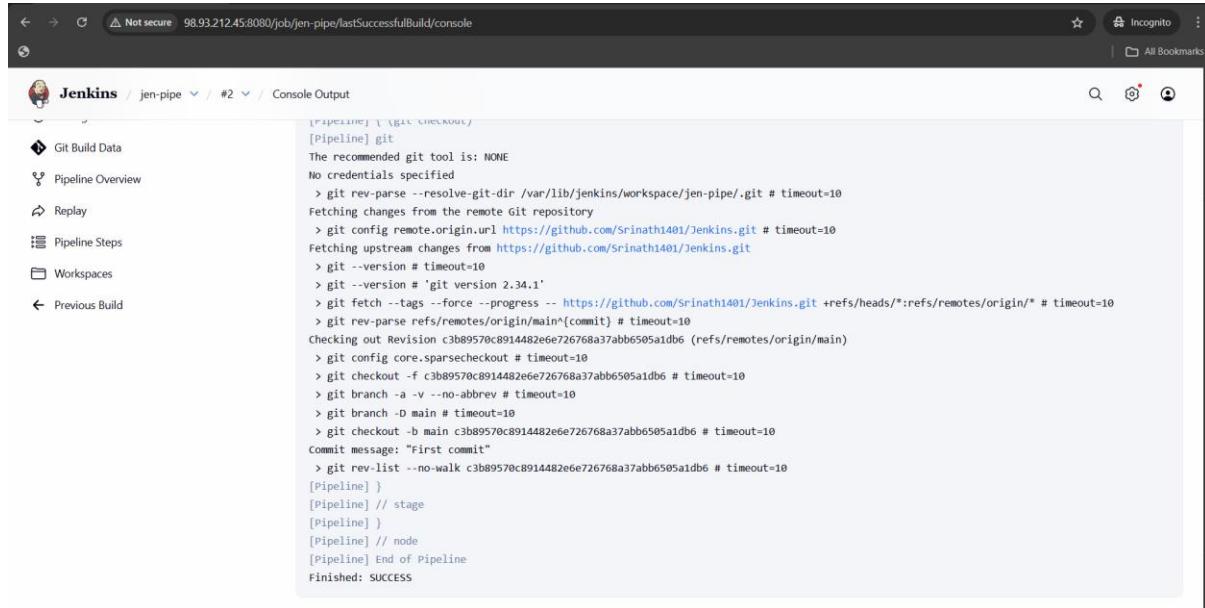
## Pipeline Syntax:



The screenshot shows the Jenkins Pipeline Syntax documentation page. On the left, there is a sidebar with links to various documentation resources. The main content area is titled 'Steps' and shows a configuration for a 'git' step. The configuration includes:

- Repository URL: `https://github.com/Srinath1401/Jenkins.git`
- Branch: `main`
- Credentials: A dropdown menu set to '`- none -`' with a '+ Add' button next to it.
- A checked checkbox labeled 'Include in polling? ?'

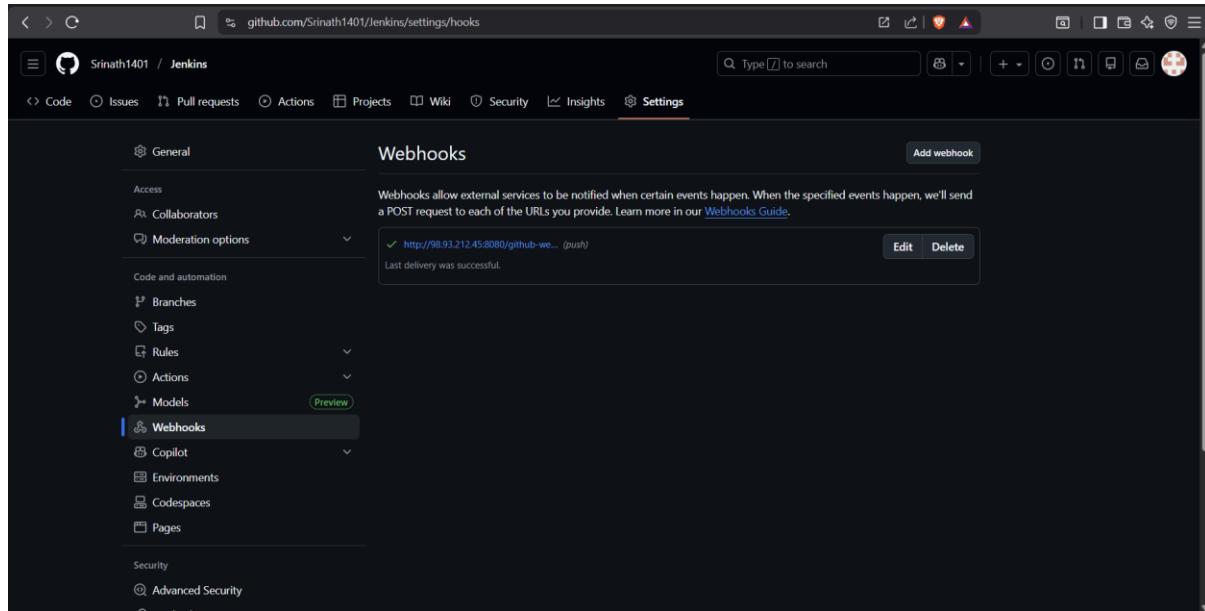
## Output:



The screenshot shows the Jenkins console output for a pipeline named 'jen-pipe'. The pipeline has completed successfully. The log output includes several git commands for cloning and fetching from a GitHub repository, committing changes, and checking out specific branches. The final message 'Finished: SUCCESS' is displayed.

```
[jen-pipe] [Pipeline] git
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/jen-pipe/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Srinath1401/Jenkins.git # timeout=10
Fetching upstream changes from https://github.com/Srinath1401/Jenkins.git
> git --version # timeout=10
> git --version # 'git version 2.34.1'
> git fetch --tags --force --progress -- https://github.com/Srinath1401/Jenkins.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision c3b89570c8914482e6e726768a37abb6505a1db6 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f c3b89570c8914482e6e726768a37abb6505a1db6 # timeout=10
> git branch -a -v --no-abbrev # timeout=10
> git branch -D main # timeout=10
> git checkout -b main c3b89570c8914482e6e726768a37abb6505a1db6 # timeout=10
Commit message: "first commit"
> git rev-list --no-walk c3b89570c8914482e6e726768a37abb6505a1db6 # timeout=10
[Pipeline]
[Pipeline] // stage
[Pipeline]
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

## Webhooks:



The screenshot shows the GitHub settings page for the 'Srinath1401/Jenkins' repository. The 'Webhooks' section is active, displaying a single webhook configuration for the Jenkins instance at 'http://98.93.212.45:8080/github-webhook/push'. The status message indicates 'Last delivery was successful.'

General

Access

Collaborators

Moderation options

Code and automation

- Branches
- Tags
- Rules
- Actions
- Models
- Webhooks
- Copilot
- Environments
- Codespaces
- Pages

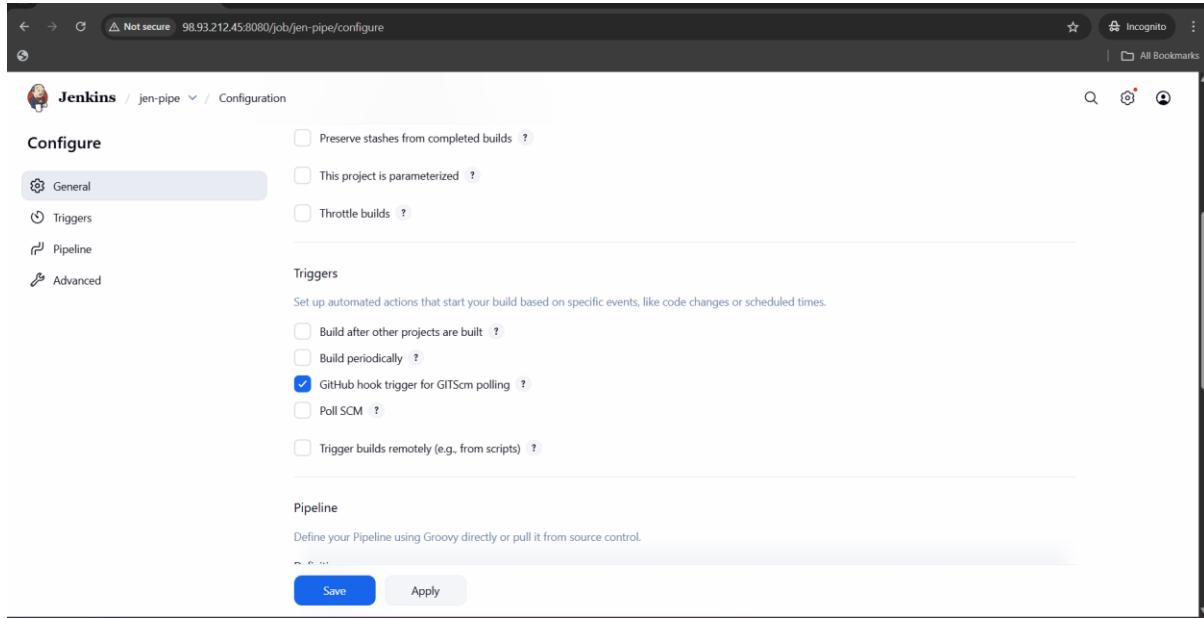
Webhooks

Add webhook

http://98.93.212.45:8080/github-webhook/push (push)

Last delivery was successful.

## Trigger the webhook:

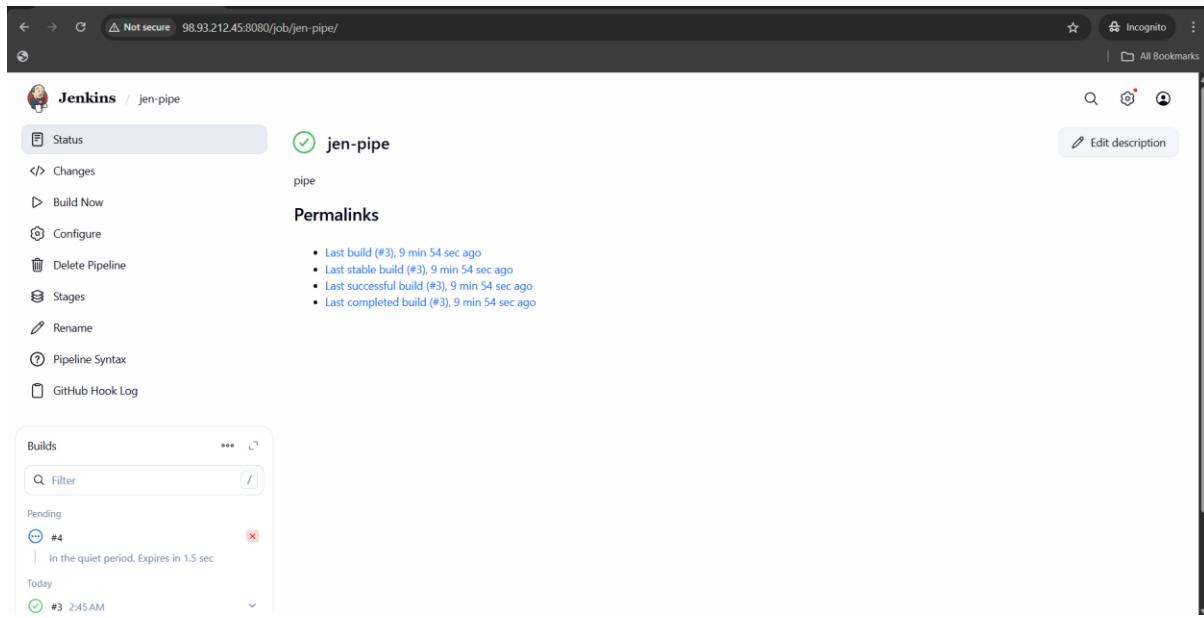


The screenshot shows the Jenkins configuration page for a job named "jen-pipe". The "Triggers" section is active, displaying several options:

- Preserve stashes from completed builds
- This project is parameterized
- Throttle builds
- Triggers**: Set up automated actions that start your build based on specific events, like code changes or scheduled times.
  - Build after other projects are built
  - Build periodically
  - GitHub hook trigger for GITScm polling
  - Poll SCM
  - Trigger builds remotely (e.g., from scripts)
- Pipeline**: Define your Pipeline using Groovy directly or pull it from source control.

At the bottom are "Save" and "Apply" buttons.

## After triggering webhook:



The screenshot shows the Jenkins status page for the "jen-pipe" job. The "Status" tab is active, showing the job is "jen-pipe" and the pipeline is "pipe".

**Permalinks**

- Last build (#3), 9 min 54 sec ago
- Last stable build (#3), 9 min 54 sec ago
- Last successful build (#3), 9 min 54 sec ago
- Last completed build (#3), 9 min 54 sec ago

**Builds**

Build #	Status	Duration
4	In the quiet period. Expires in 1.5 sec	
3	Success	9 min 54 sec ago
2	Success	9 min 54 sec ago
1	Success	9 min 54 sec ago