

TASK-20

Jenkins and webhook pipeline

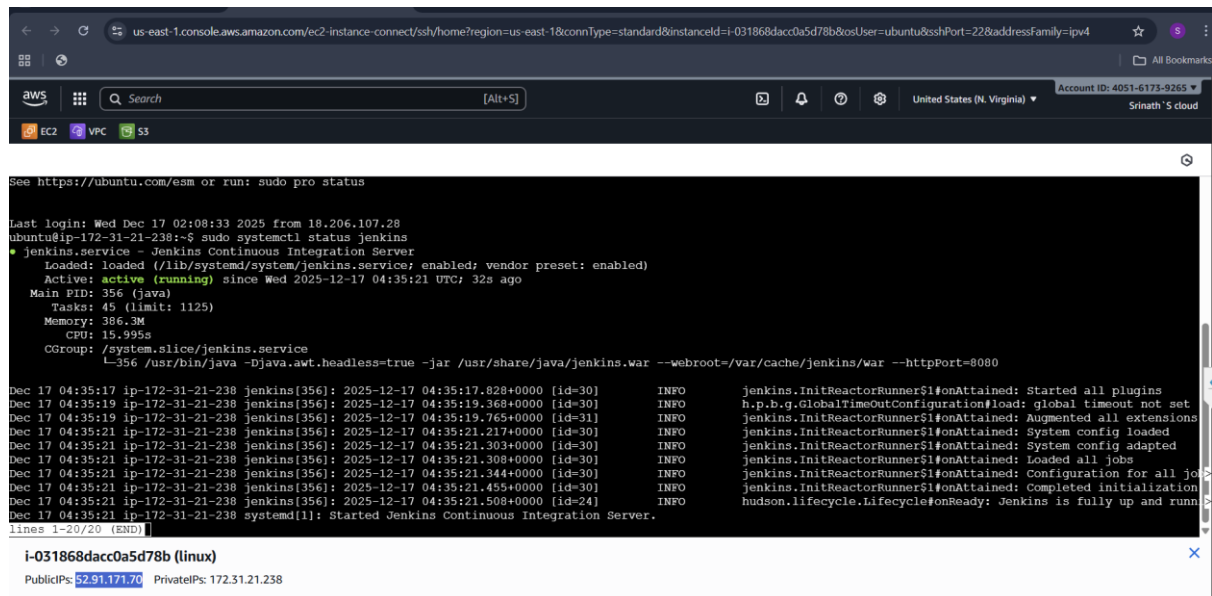
Jenkins:

[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:



```
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?region=us-east-1&connType=standard&instanceId=i-031868dacc0a5d78b&osUser=ubuntu&sshPort=22&addressFamily=ipv4
AWS
Search [Alt+S]
United States (N. Virginia) Account ID: 4051-6173-9265 Srinath's cloud
EC2 VPC S3

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

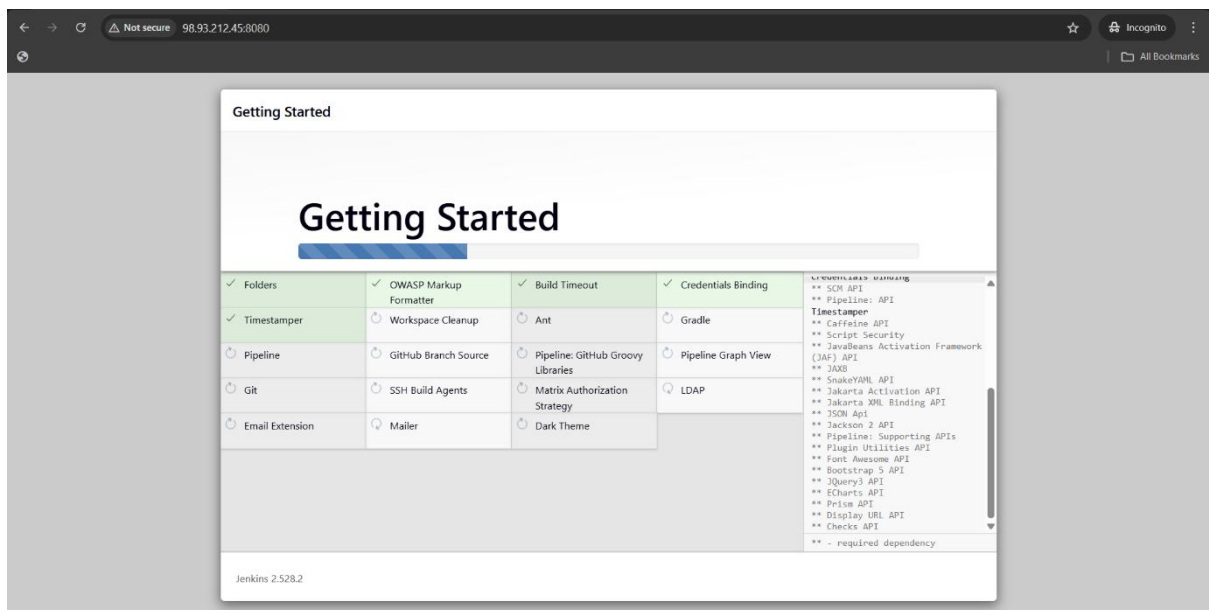
Dec 17 04:35:17 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:17.828+0000 [id=30] INFO jenkins.InitReactorRunner$1#onAttained: Started all plugins
Dec 17 04:35:19 ip-172-31-21-238 jenkins[356]: 2025-12-17 04:35:19.368+0000 [id=30] INFO h.p.b.g.GlobalTimeoutConfiguration#load: global timeout not set
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)
```

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

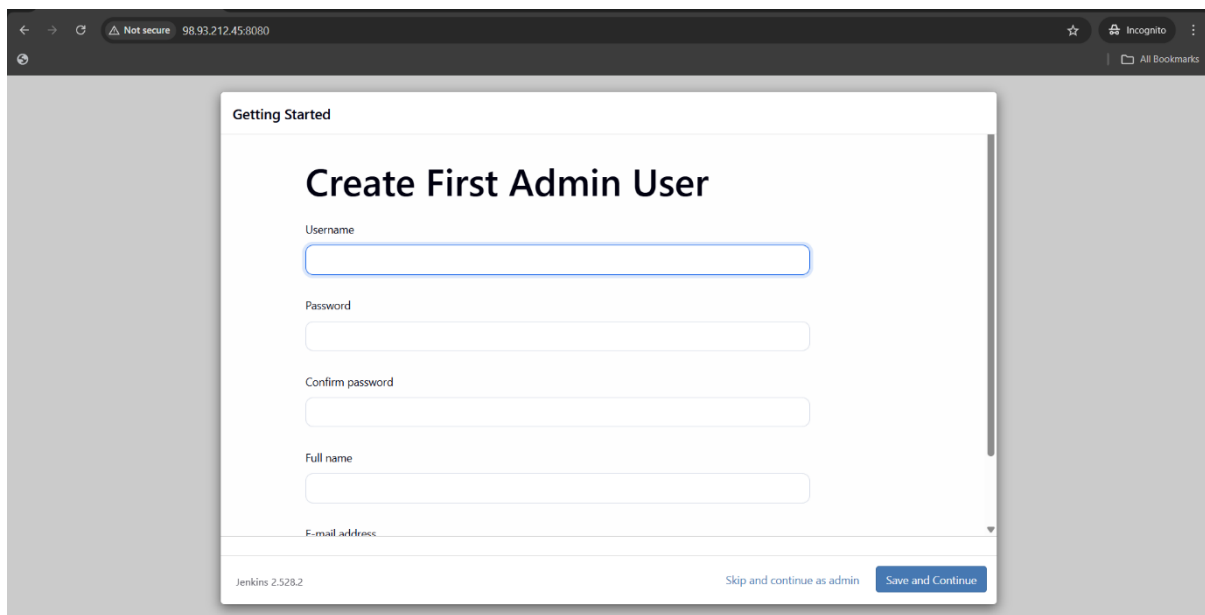
Extract the password from local server:



Install Plugins:



Create Admin user:



The screenshot shows a web browser window with the address bar displaying "Not secure 98.93.212.45:8080". The page is titled "Getting Started" and "Create First Admin User". It contains five input fields: "Username", "Password", "Confirm password", "Full name", and "E-mail address". At the bottom, there is a "Skip and continue as admin" link and a "Save and Continue" button. The Jenkins version "Jenkins 2.528.2" is noted in the bottom left corner.

Getting Started

Create First Admin User

Username

Password

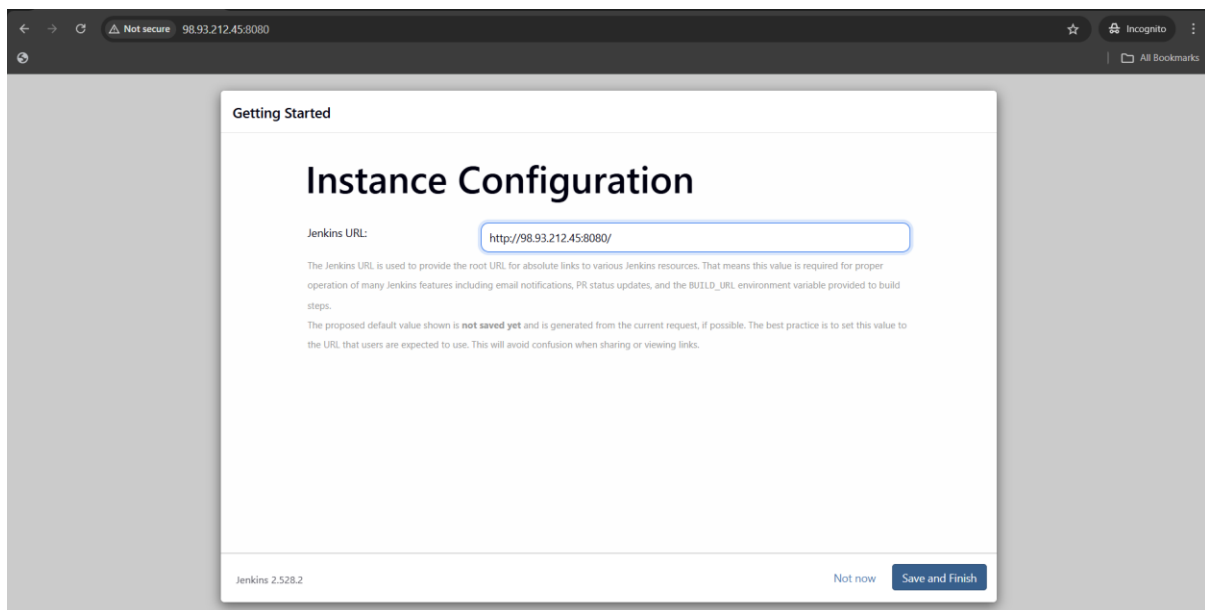
Confirm password

Full name

E-mail address

Jenkins 2.528.2 [Skip and continue as admin](#) [Save and Continue](#)

Instance Configuration:



The screenshot shows a web browser window with the address bar displaying "Not secure 98.93.212.45:8080". The page is titled "Getting Started" and "Instance Configuration". It features a "Jenkins URL:" label and a text input field containing "http://98.93.212.45:8080/". Below the input field, there is explanatory text about the Jenkins URL and a "Save and Finish" button. The Jenkins version "Jenkins 2.528.2" is noted in the bottom left corner.

Getting Started

Instance Configuration

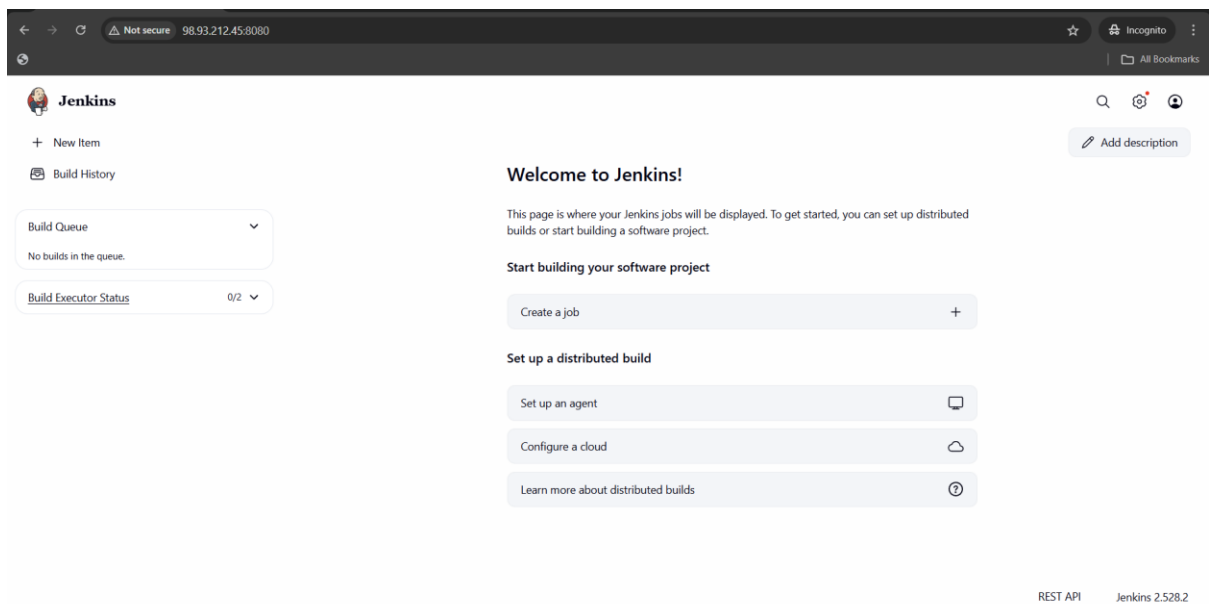
Jenkins URL:

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the BUILD_URL environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

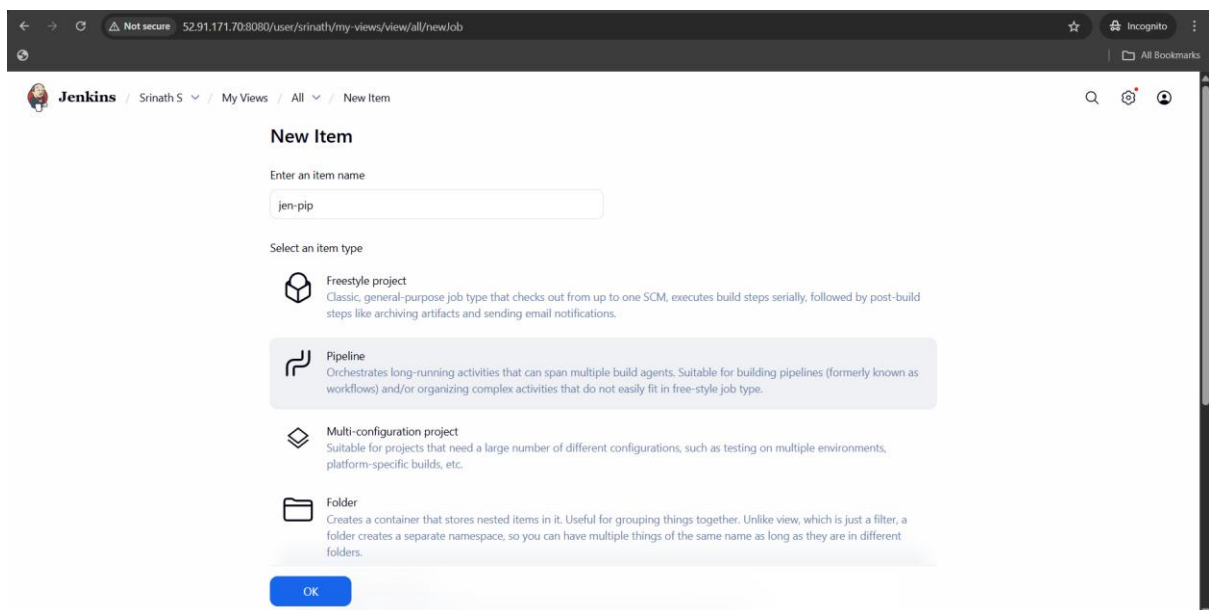
Jenkins 2.528.2 [Not now](#) [Save and Finish](#)

Home Page of Jenkins:



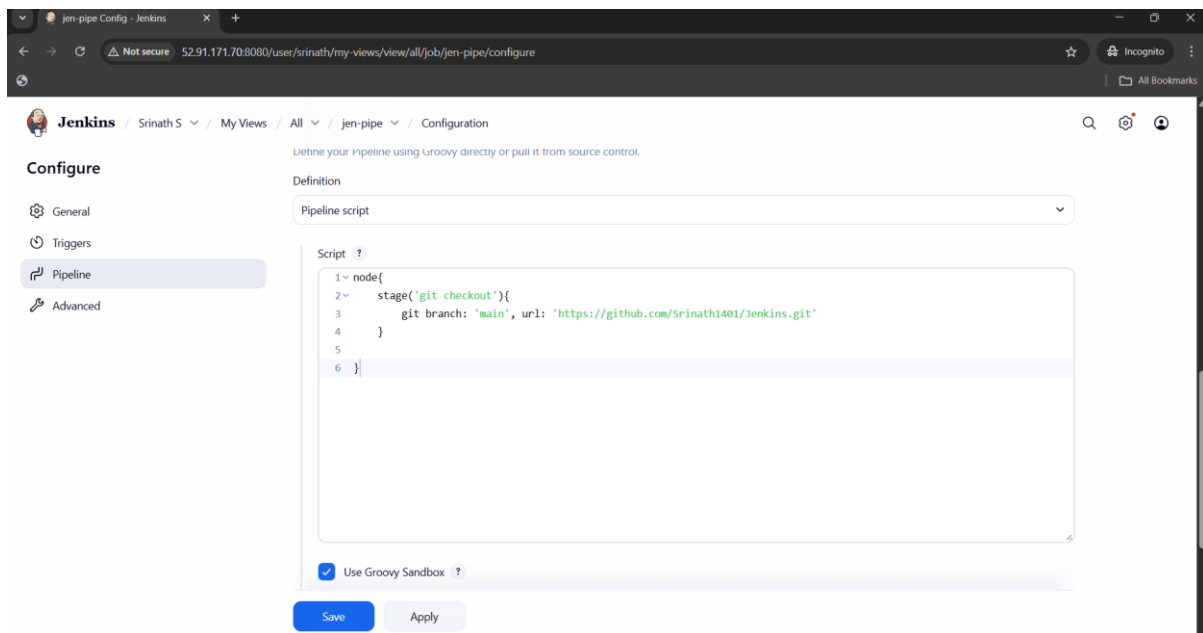
The screenshot shows the Jenkins Home Page in a web browser. The browser's address bar displays "Not secure" and the URL "98.93.212.45:8080". The Jenkins logo is in the top left, with links for "New Item" and "Build History". A "Build Queue" section shows "No builds in the queue." and a "Build Executor Status" section shows "0/2". A "Welcome to Jenkins!" message explains that this page displays Jenkins jobs and provides instructions on how to get started. Below this, there are two main sections: "Start building your software project" with a "Create a job" button, and "Set up a distributed build" with buttons for "Set up an agent", "Configure a cloud", and "Learn more about distributed builds". In the bottom right corner, the text "REST API" and "Jenkins 2.528.2" is visible.

Create a Pipe Line:



The screenshot shows the Jenkins "New Item" page. The browser's address bar displays "Not secure" and the URL "52.91.171.70:8080/user/srinath/my-views/view/all/newJob". The Jenkins logo is in the top left, with a breadcrumb trail: "Jenkins / Srinath S / My Views / All / New Item". The "New Item" section has a text input field for "Enter an item name" containing "jen-pip". Below this, there is a "Select an item type" section with four options: "Freestyle project" (Classic, general-purpose job type), "Pipeline" (Orchestrates long-running activities), "Multi-configuration project" (Suitable for projects that need a large number of different configurations), and "Folder" (Creates a container that stores nested items). The "Pipeline" option is highlighted. At the bottom, there is a blue "OK" button.

Write the Code:

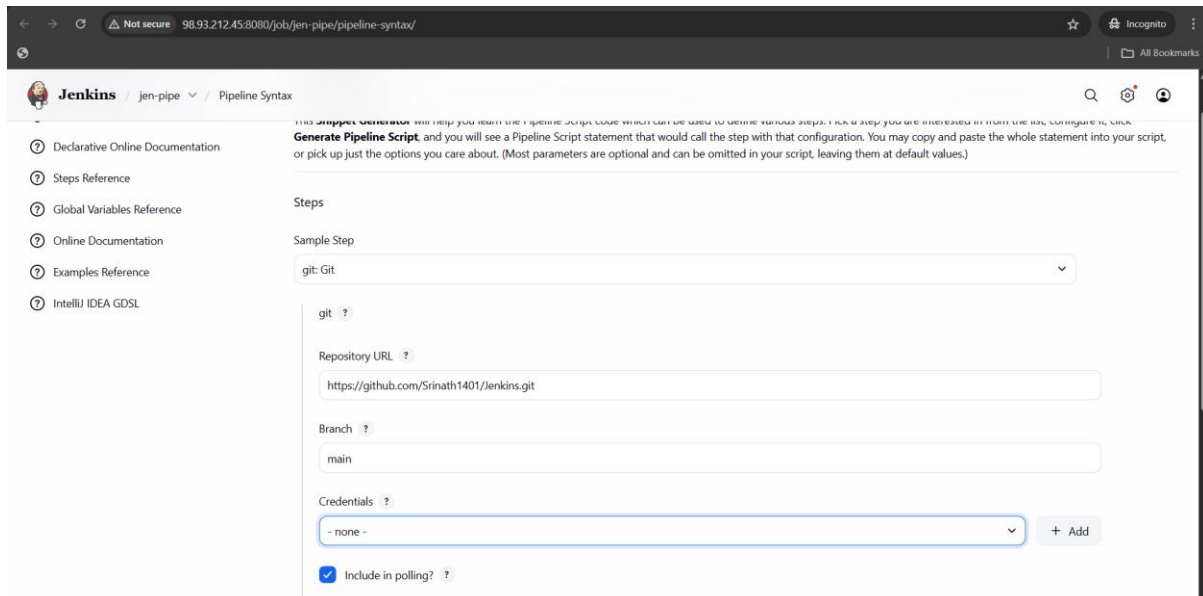


The screenshot shows the Jenkins 'Configure' page for a pipeline named 'jen-pipe'. The left sidebar has tabs for 'General', 'Triggers', 'Pipeline', and 'Advanced', with 'Pipeline' selected. The main area is titled 'Configure' and includes a sub-header 'Define your pipeline using Groovy directly or pull it from source control.' Below this is a 'Definition' dropdown set to 'Pipeline script'. A 'Script' text area contains 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 script area is a checkbox labeled 'Use Groovy Sandbox' which is checked. At the bottom are 'Save' and 'Apply' buttons.

Pipeline Syntax:



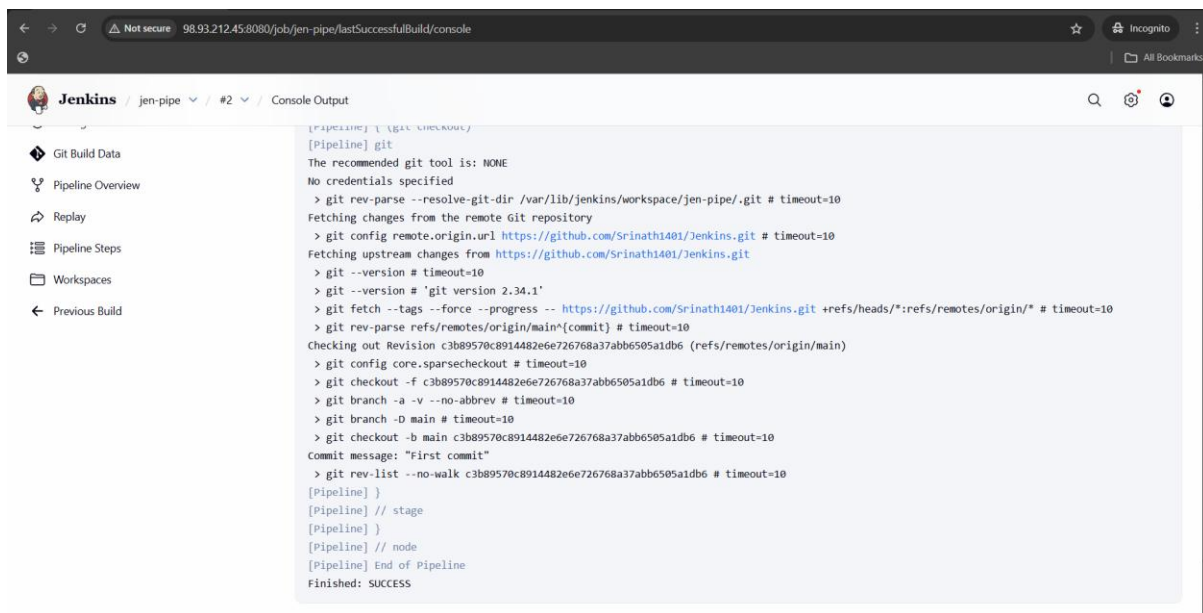
The screenshot shows the Jenkins 'Pipeline Syntax' page. The left sidebar has links for 'Declarative Online Documentation', 'Steps Reference', 'Global Variables Reference', 'Online Documentation', 'Examples Reference', and 'IntelliJ IDEA GDSDL'. The main area is titled 'Pipeline Syntax' and includes a sub-header 'This Steps Reference will help you learn the Pipeline Script Code which can be used to define various steps. Pick a step you are interested in from the list, configure it, click on the 'Generate Pipeline Script' button, and you will see a Pipeline Script statement that would call the step with that configuration. You may copy and paste the whole statement into your script, or pick up just the options you care about. (Most parameters are optional and can be omitted in your script, leaving them at default values.)

Below this is a 'Steps' section with a 'Sample Step' dropdown set to 'git: Git'. The configuration fields for 'git: Git' are:

- Repository URL: `https://github.com/Srinath1401/jenkins.git`
- Branch: `main`
- Credentials: `- none -`
- Include in polling? ☒

At the bottom right of the configuration area is a '+ Add' button.

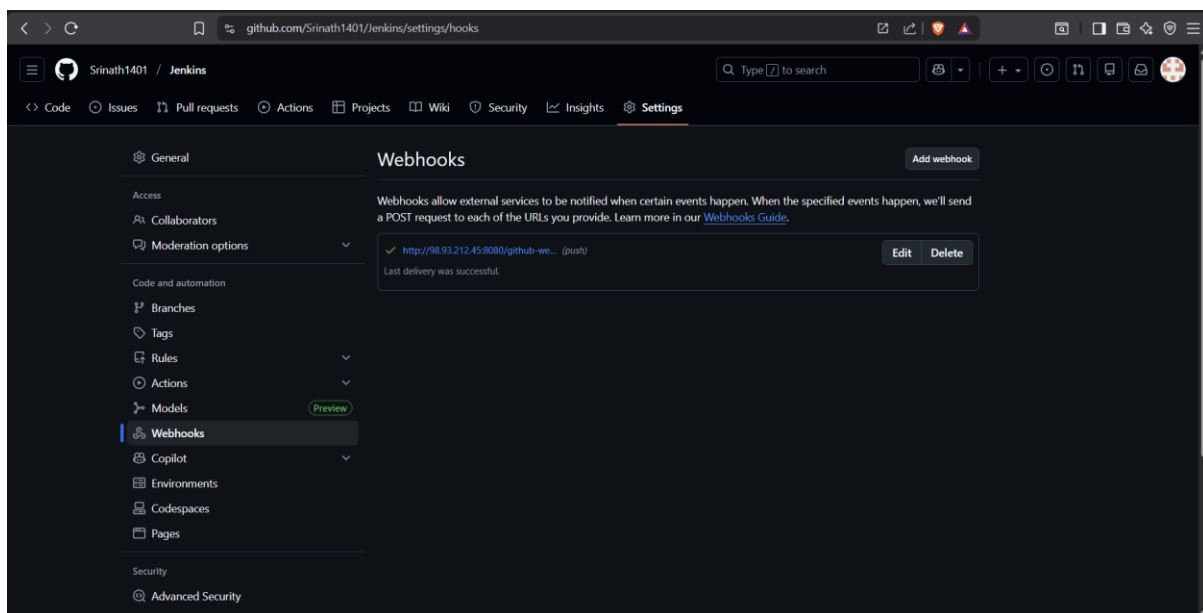
Output:



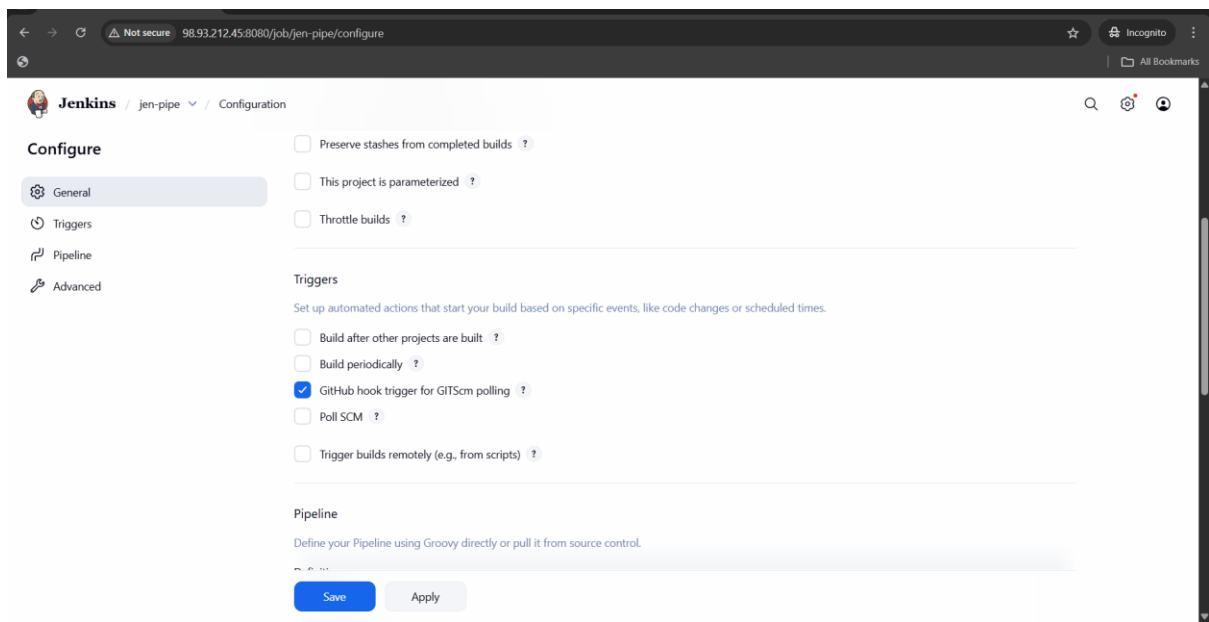
The screenshot shows the Jenkins web interface. On the left, a sidebar contains links: 'Git Build Data', 'Pipeline Overview', 'Replay', 'Pipeline Steps', 'Workspaces', and 'Previous Build'. The main area is titled 'jen-pipe / #2 / Console Output'. It displays a log of a Jenkins pipeline execution. The pipeline starts with a 'git' step, which checks out a repository. The log shows the recommended git tool is 'NONE', no credentials are specified, and the repository is fetched from 'https://github.com/Srinath1401/Jenkins.git'. The pipeline then checks out a specific revision, configures sparse checkout, and creates a new branch named 'main'. The pipeline ends with a 'Finished: SUCCESS' message.

```
[Pipeline] { (git checkout)
[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:



Trigger the webhook:



After triggering webghook:

