Module 6: Jenkins Assignment - 3

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Course Offered: -Advanced Cloud Computing and Devops
Assignment By: -Intellipaat
Trainer: -Kumar
Date Of Submission: -23/03/2025

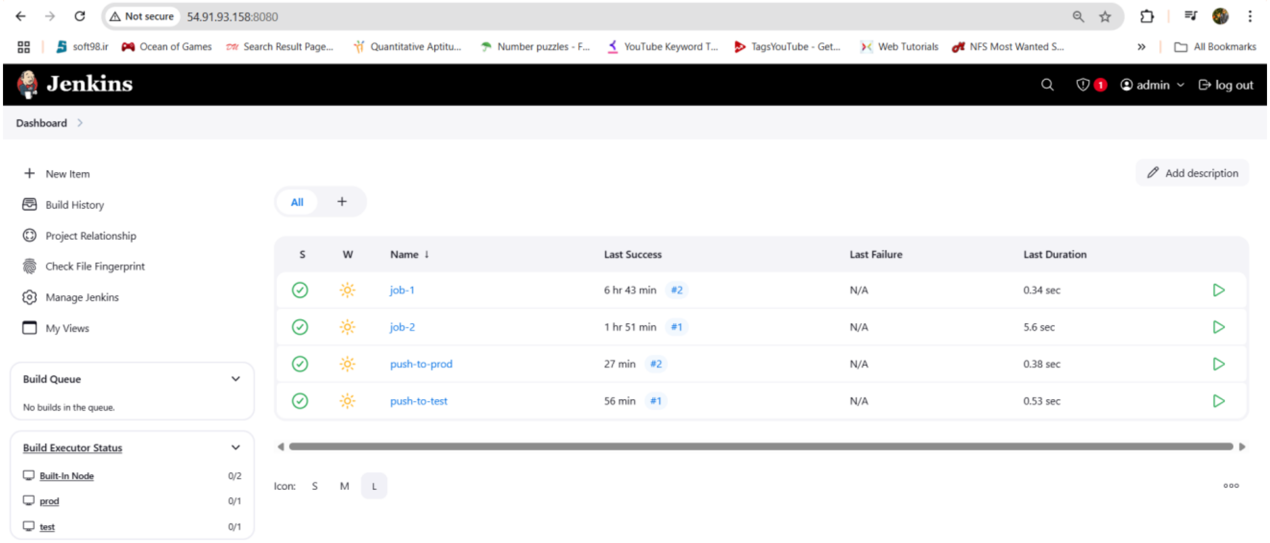
Tasks To Be Performed:

1. Create a pipeline in Jenkins.
2. Once push is made to “develop” a branch in Git, trigger job “test”. This will copy Git files to test node.
3. If test job is successful, then prod job should be triggered.
4. Prod jobs should copy files to prod node.

Answer

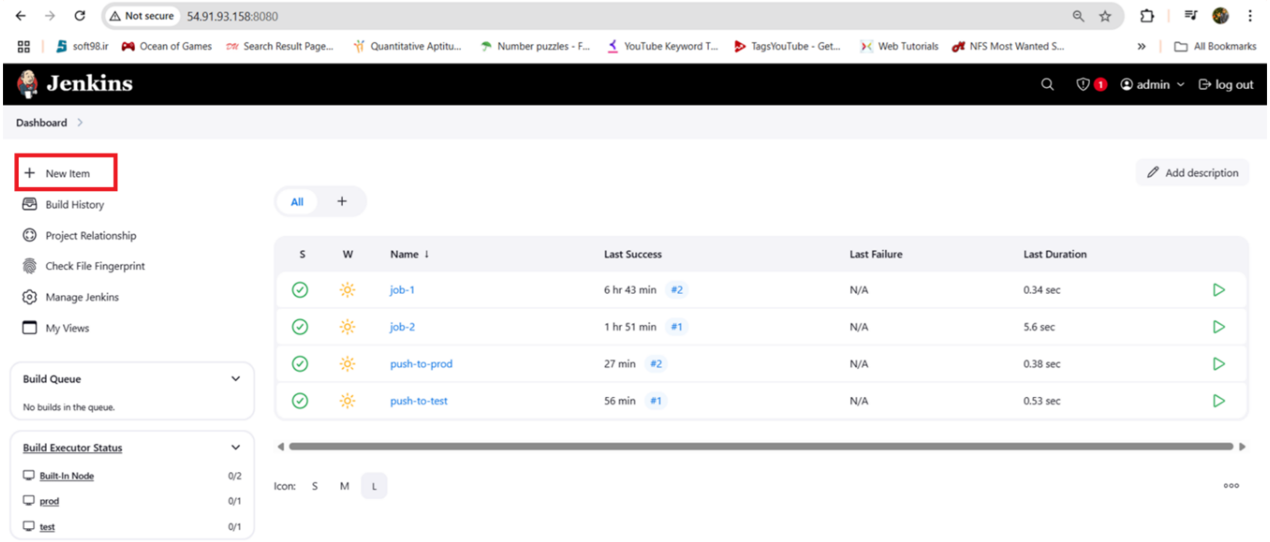
Use Previous Deployment of Jenkins.

Go to Jenkins Url.



S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	☀	job-1	6 hr 43 min #2	N/A	0.34 sec
✓	☀	job-2	1 hr 51 min #1	N/A	5.6 sec
✓	☀	push-to-prod	27 min #2	N/A	0.38 sec
✓	☀	push-to-test	56 min #1	N/A	0.53 sec

Click New Item.



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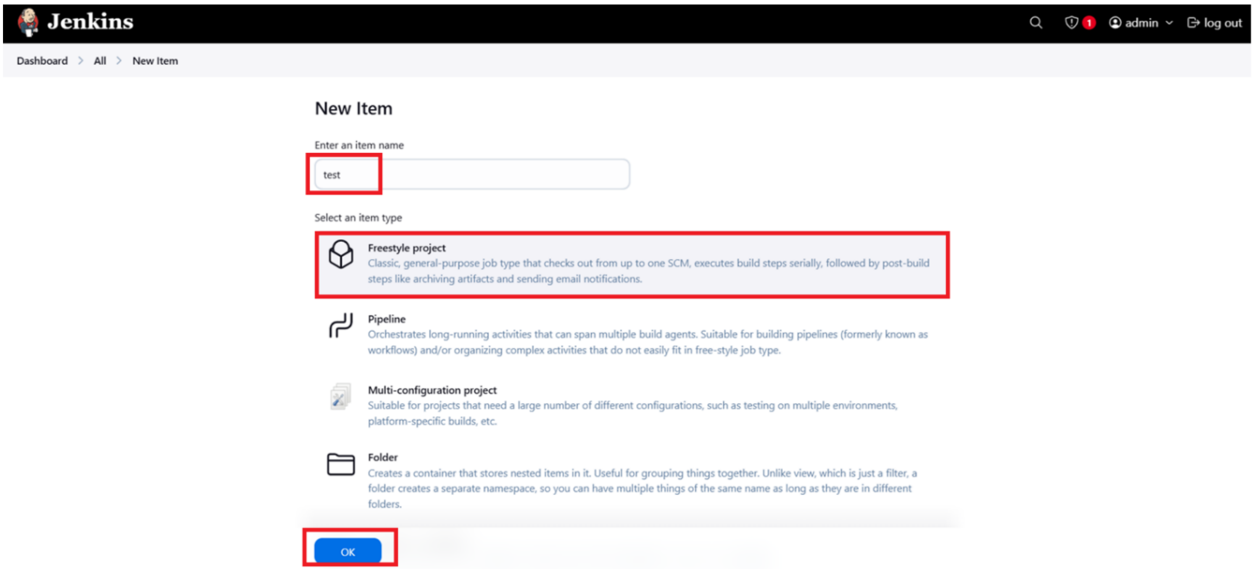
✓	☀	push-to-test	56 min #1	N/A	0.53 sec



Jenkins

admin log out

Dashboard > All > New Item

New Item

Enter an item name

test

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

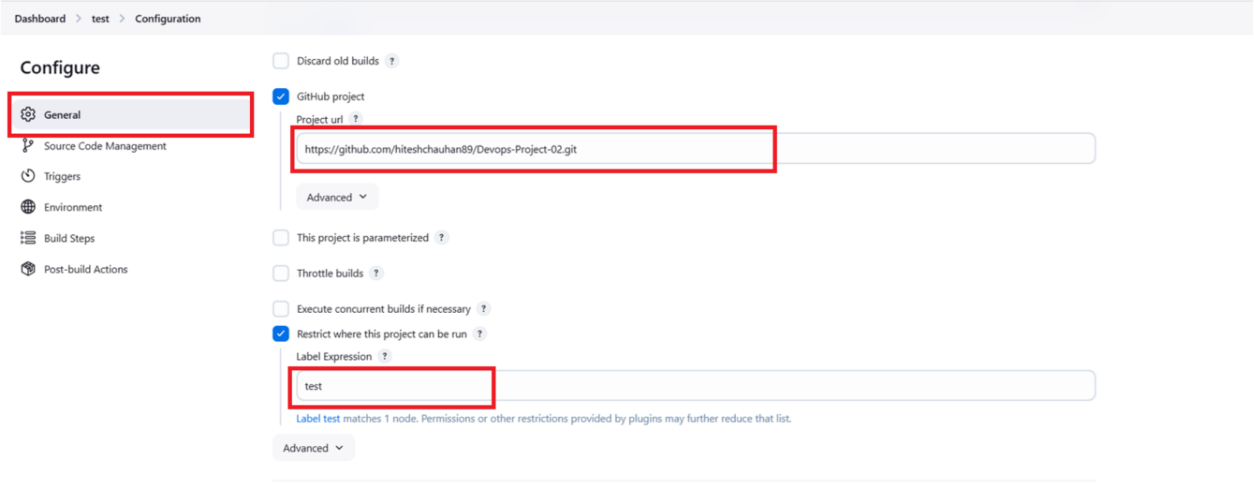
Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

OK

Choose the name like test then item type will be freestyle projects then click ok.

Now Go to general Tab and choose the Github Project.we can use same url as per previous assignment.
https://github.com/hiteshchauhan89/Devops-Project-02.git



Dashboard > test > Configuration

Configure

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

□ Discard old builds ?

☑ GitHub project

Project url ?

https://github.com/hiteshchauhan89/Devops-Project-02.git

Advanced

□ This project is parameterized ?

□ Throttle builds ?

□ Execute concurrent builds if necessary ?

☑ Restrict where this project can be run ?

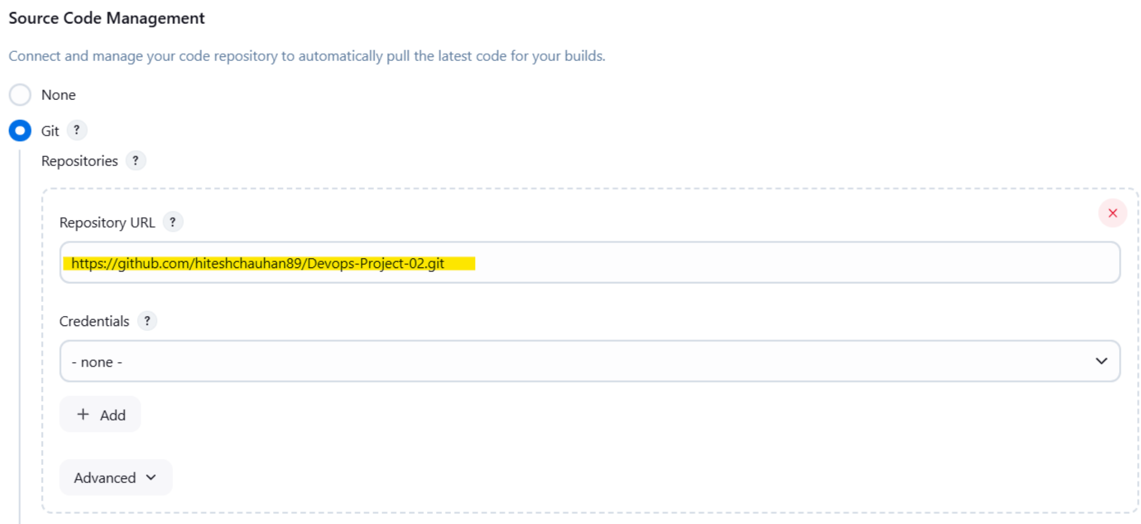
Label Expression ?

test

Label test matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Advanced

Restrict where this project can be run will be **test.**
Go to Source Code Management.
Click Git and use same url.
https://github.com/hiteshchauhan89/Devops-Project-02.git



Source Code Management

Connect and manage your code repository to automatically pull the latest code for your builds.

○ None

● Git ?

Repositories ?

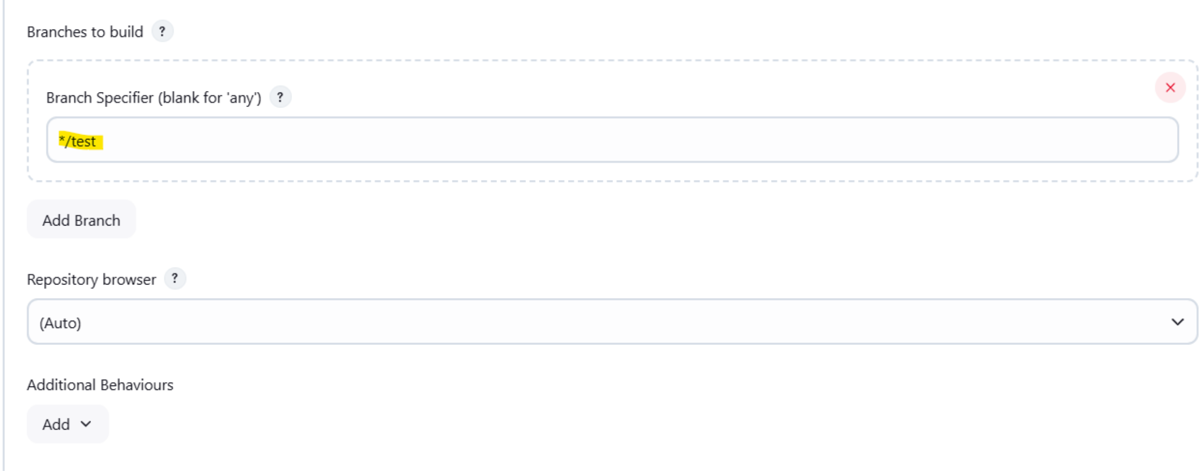
Repository URL ?

https://github.com/hiteshchauhan89/Devops-Project-02.git

Credentials ?

- none -

Then Branches to build As per question we need to specifier branch like ***/test.**



Branches to build ?

Branch Specifier (blank for 'any') ?

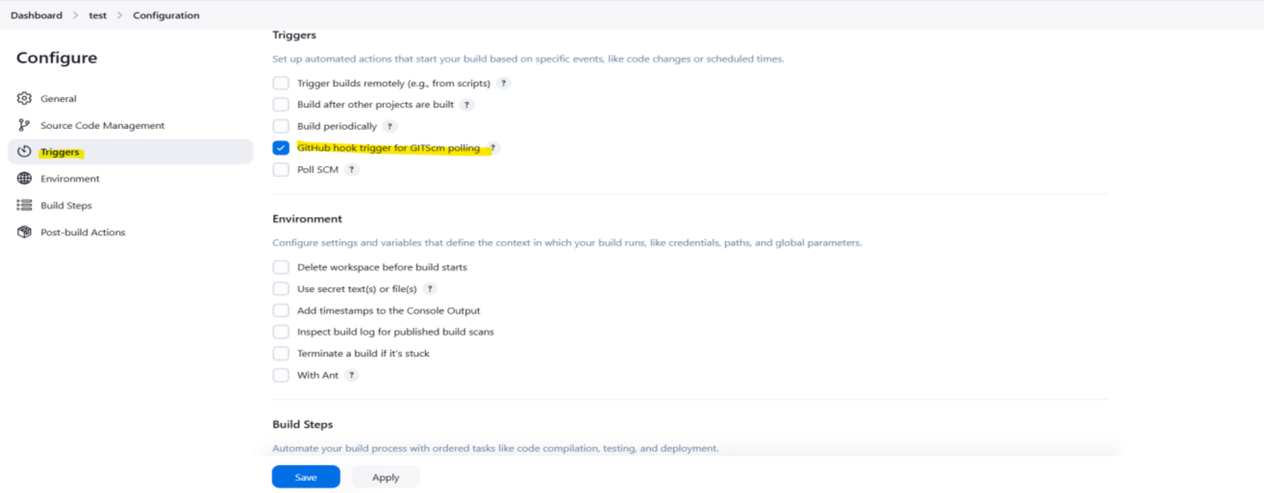
*/test

Repository browser ?

(Auto)

Additional Behaviours

In Triggers We need to specify the tick the check box to **Github hook trigger for GITScm polling.**



Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

□ Trigger builds remotely (e.g., from scripts) ?

□ Build after other projects are built ?

□ Build periodically ?

☑ GitHub hook trigger for GITScm polling ?

□ Poll SCM ?

Environment

Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.

□ Delete workspace before build starts

□ Use secret text(s) or file(s) ?

□ Add timestamps to the Console Output

□ Inspect build log for published build scans

□ Terminate a build if it's stuck

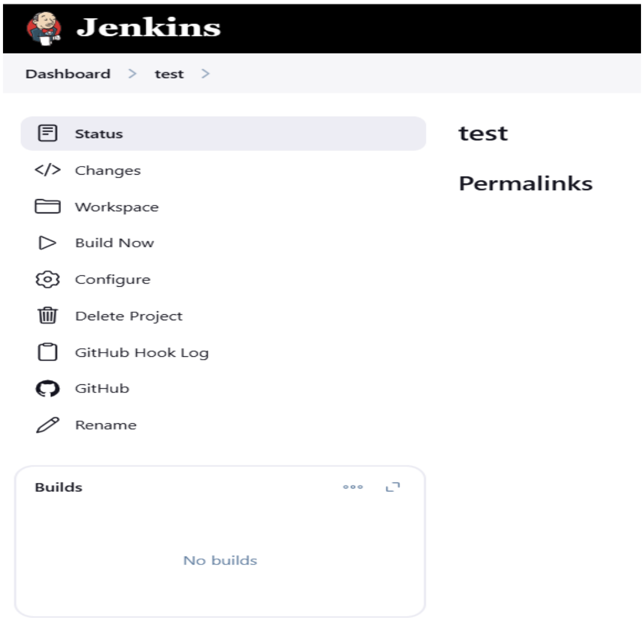
□ With Ant ?

Build Steps

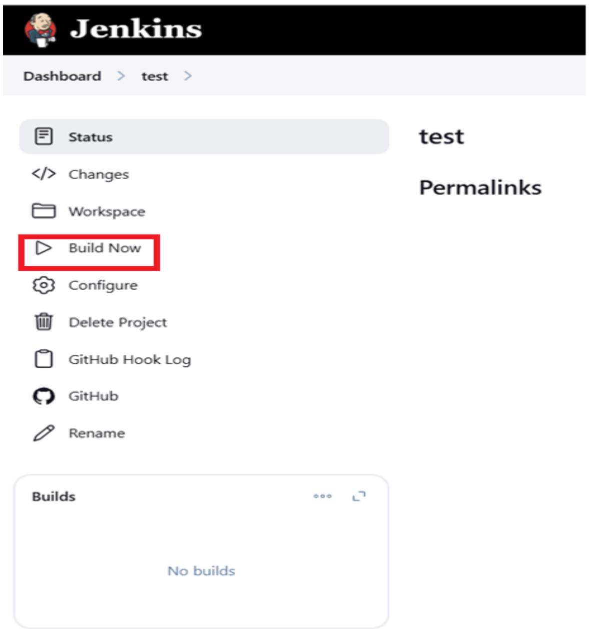
Automate your build process with ordered tasks like code compilation, testing, and deployment.

Then Click Save.

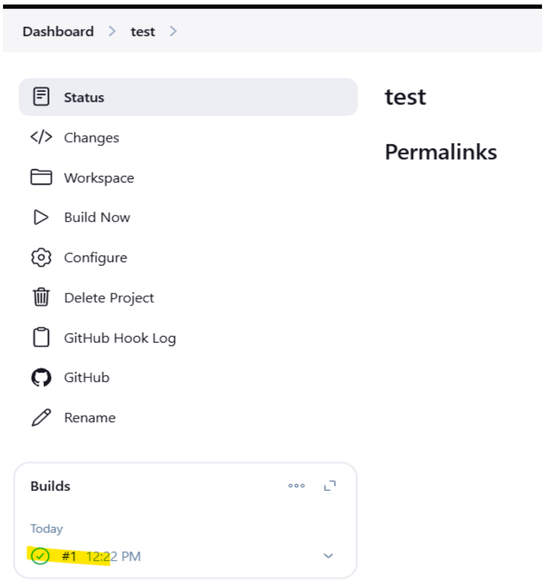
Now Job has been created.



Now Click The Build Now.



Now Build is successfully.



Dashboard > test >

Status

Changes

Workspace

Build Now

Configure

Delete Project

GitHub Hook Log

GitHub

Rename

test

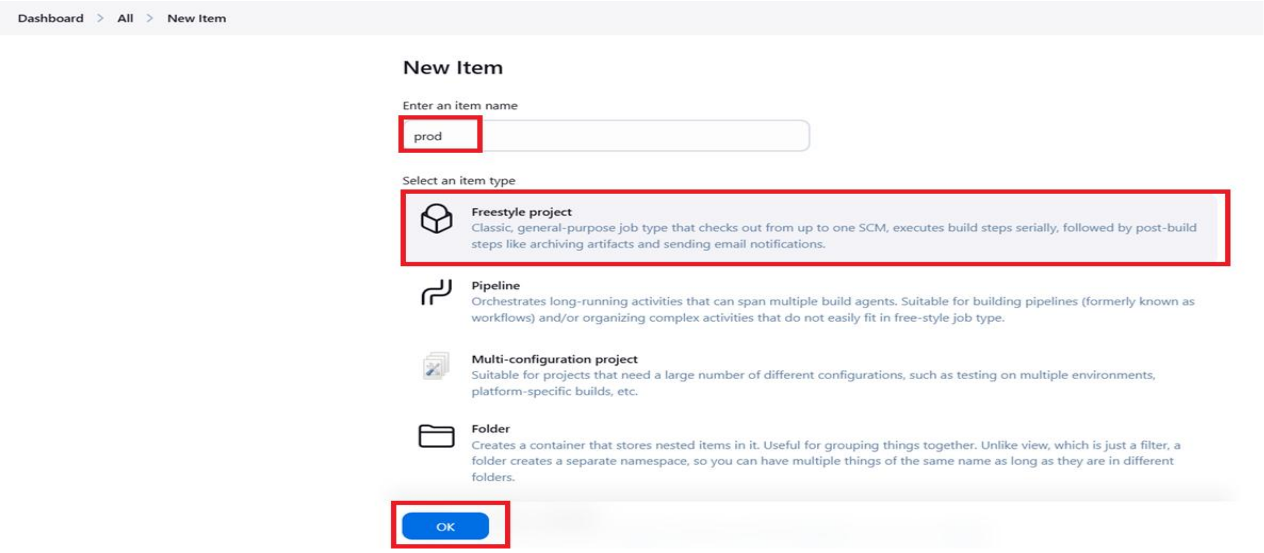
Permalinks

Builds

Today

✓ #1 12:22 PM

Now Go to Jenkins Dashboard and click new item.



Dashboard > All > New Item

New Item

Enter an item name

prod

Select an item type

Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

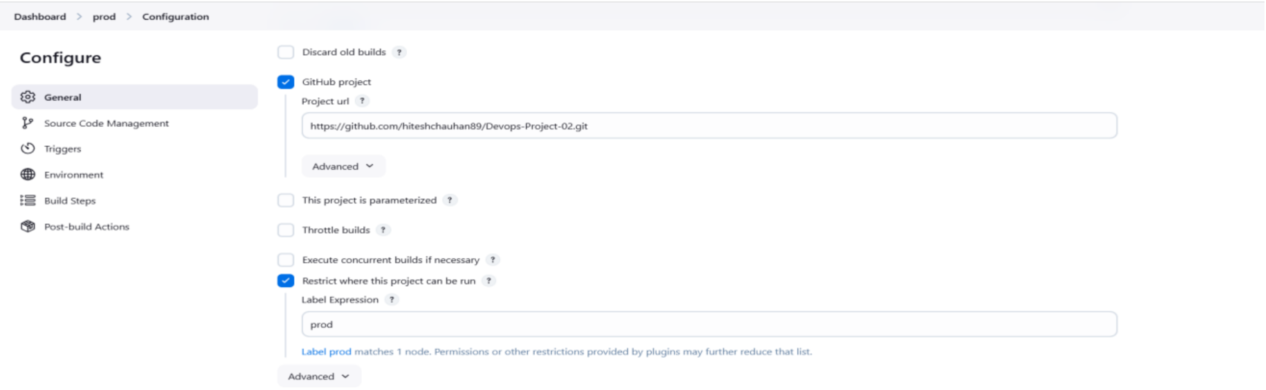
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

OK

Use Same url for GitHub Project https://github.com/hiteshchauhan89/Devops-Project-02.git.



Dashboard > prod > Configuration

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

□ Discard old builds ?

☑ GitHub project

Project url ?

https://github.com/hiteshchauhan89/Devops-Project-02.git

Advanced ⌄

□ This project is parameterized ?

□ Throttle builds ?

□ Execute concurrent builds if necessary ?

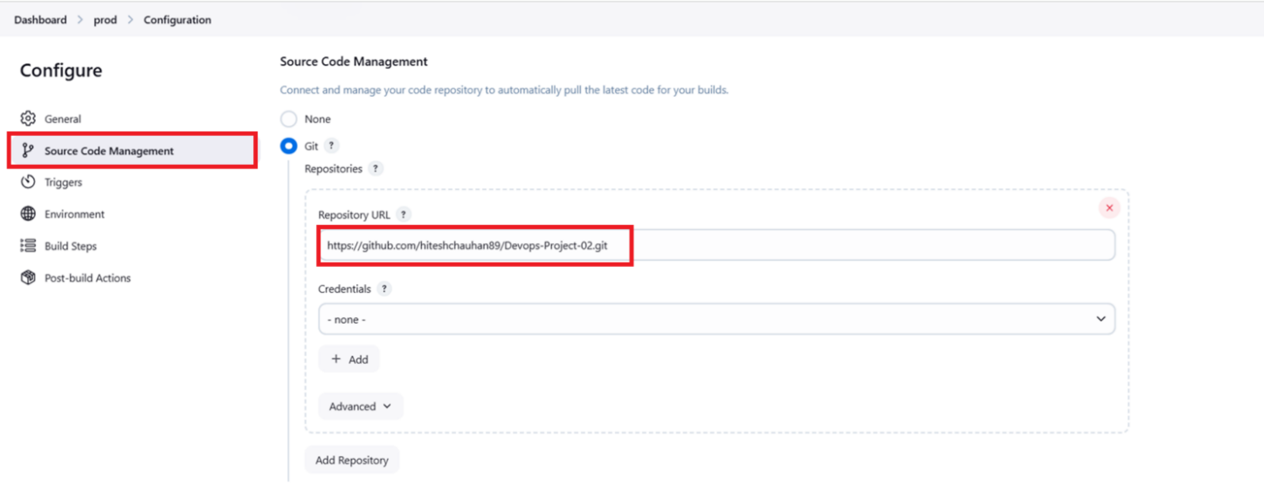
☑ Restrict where this project can be run ?

Label Expression ?

prod

Label prod matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Advanced ⌄



Dashboard > prod > Configuration

Configure

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

Source Code Management

Connect and manage your code repository to automatically pull the latest code for your builds.

○ None

● Git ?

Repositories ?

Repository URL ?

https://github.com/hiteshchauhan89/Devops-Project-02.git

Credentials ?

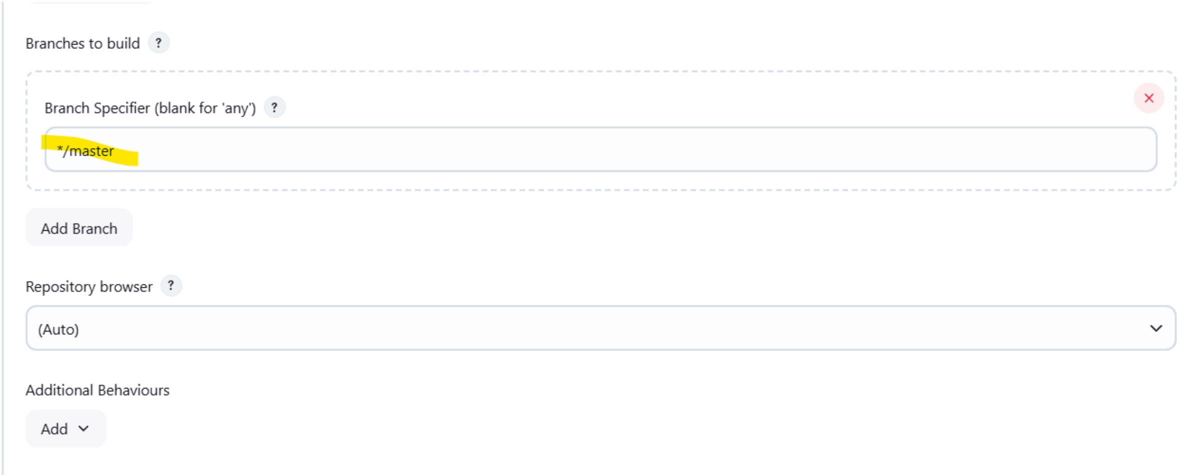
- none -

+ Add

Advanced

Add Repository

Branches To Build Should be master as per the question no mentioned branch.



Branches to build ?

Branch Specifier (blank for 'any') ?

*/master

Add Branch

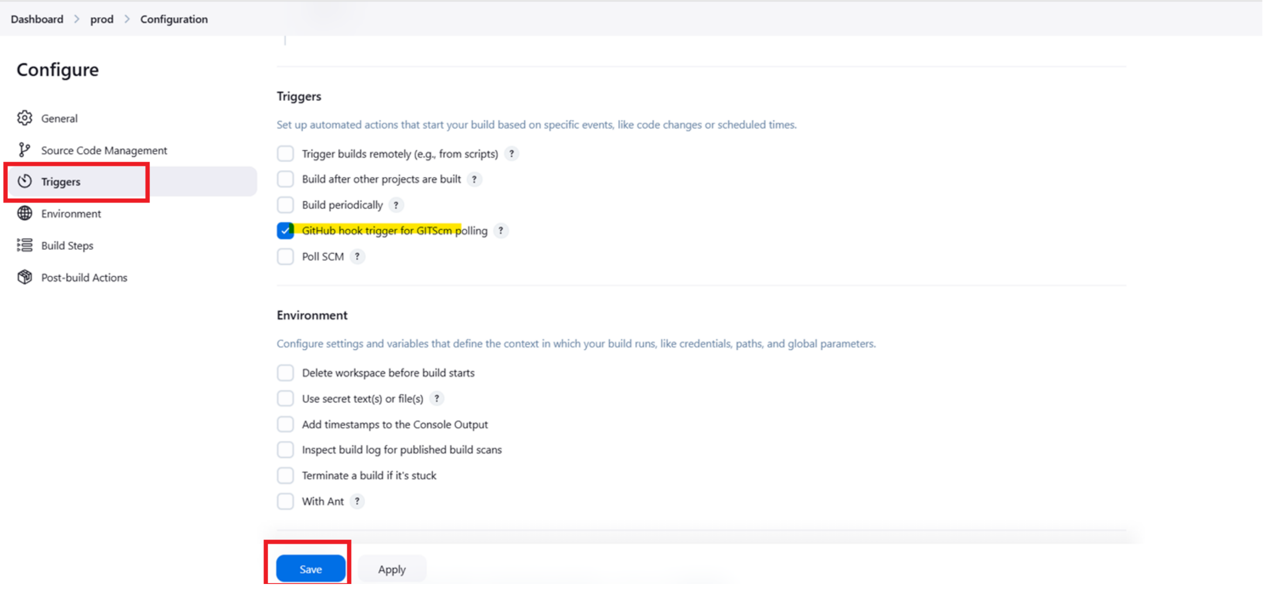
Repository browser ?

(Auto)

Additional Behaviours

Add

Triggers will be the github hook trigger tick the check box.



Dashboard > prod > Configuration

Configure

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

Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

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□ Build periodically ?

☑ GitHub hook trigger for GITScm polling ?

□ Poll SCM ?

Environment

Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.

□ Delete workspace before build starts

□ Use secret text(s) or file(s) ?

□ Add timestamps to the Console Output

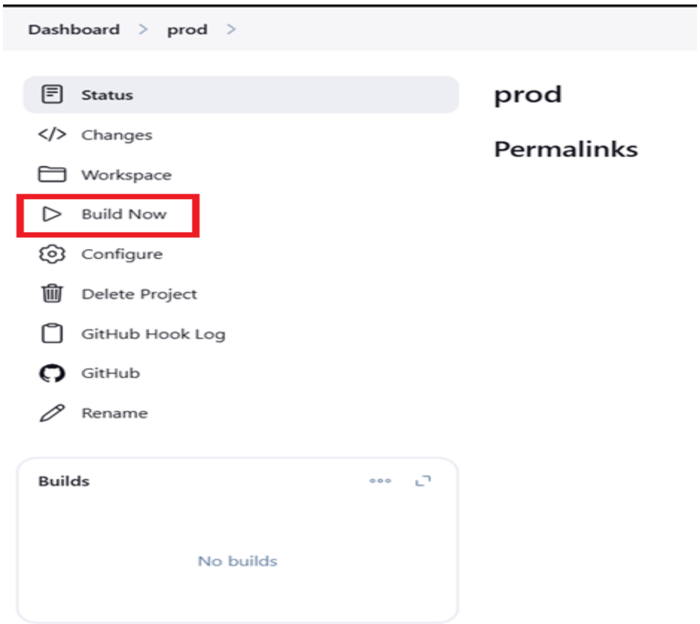
□ Inspect build log for published build scans

□ Terminate a build if it's stuck

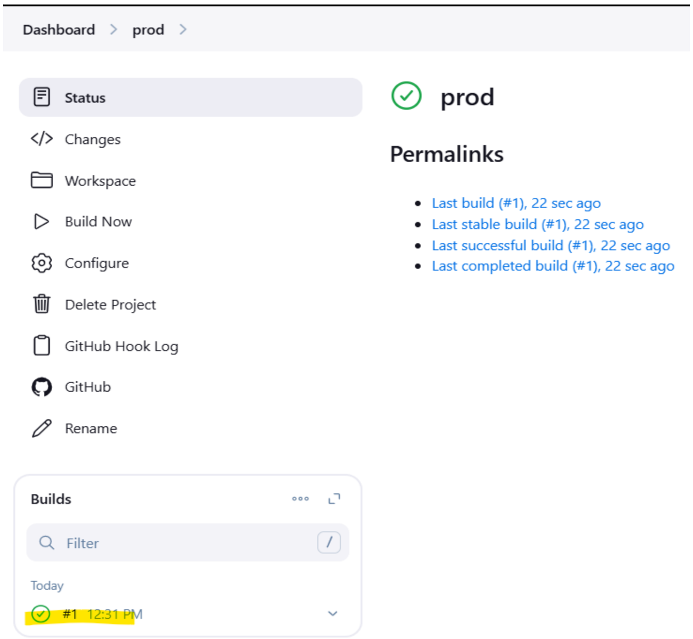
□ With Ant ?

Save Apply

Now Click The Build Now Button

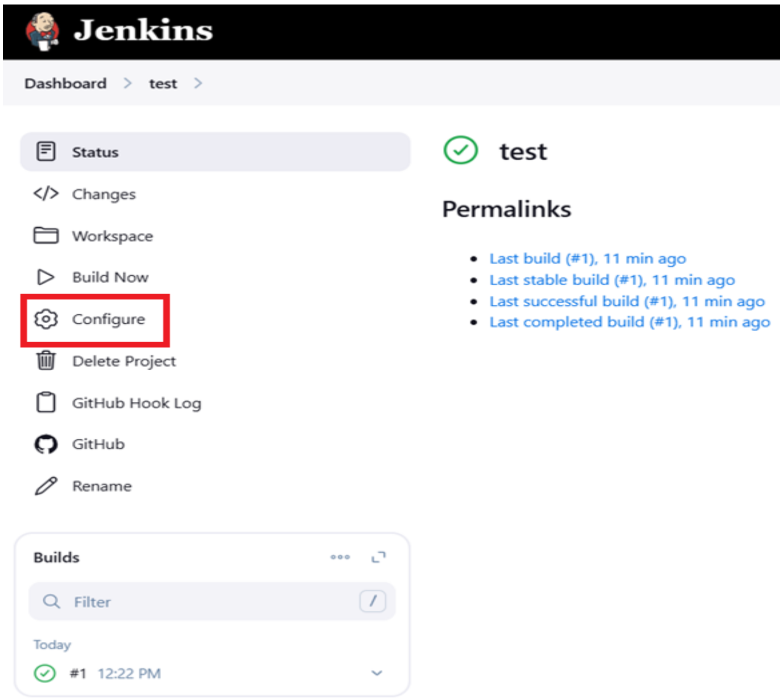


Now Here Build has been successfully done.



- Last build (#1), 22 sec ago
- Last stable build (#1), 22 sec ago
- Last successful build (#1), 22 sec ago
- Last completed build (#1), 22 sec ago

Now we need to configure the test job.go to test job and click configure.

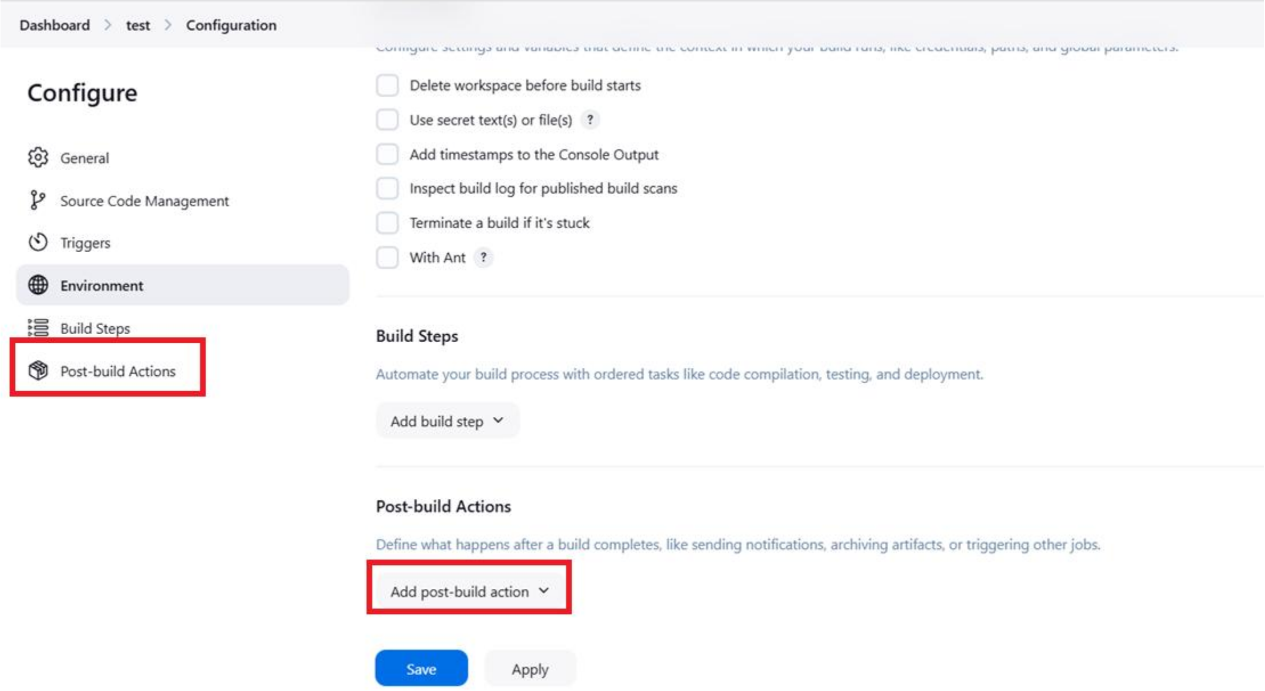


test

Permalinks

- Last build (#1), 11 min ago
- Last stable build (#1), 11 min ago
- Last successful build (#1), 11 min ago
- Last completed build (#1), 11 min ago

Then Click Post-Build Action option.



Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.

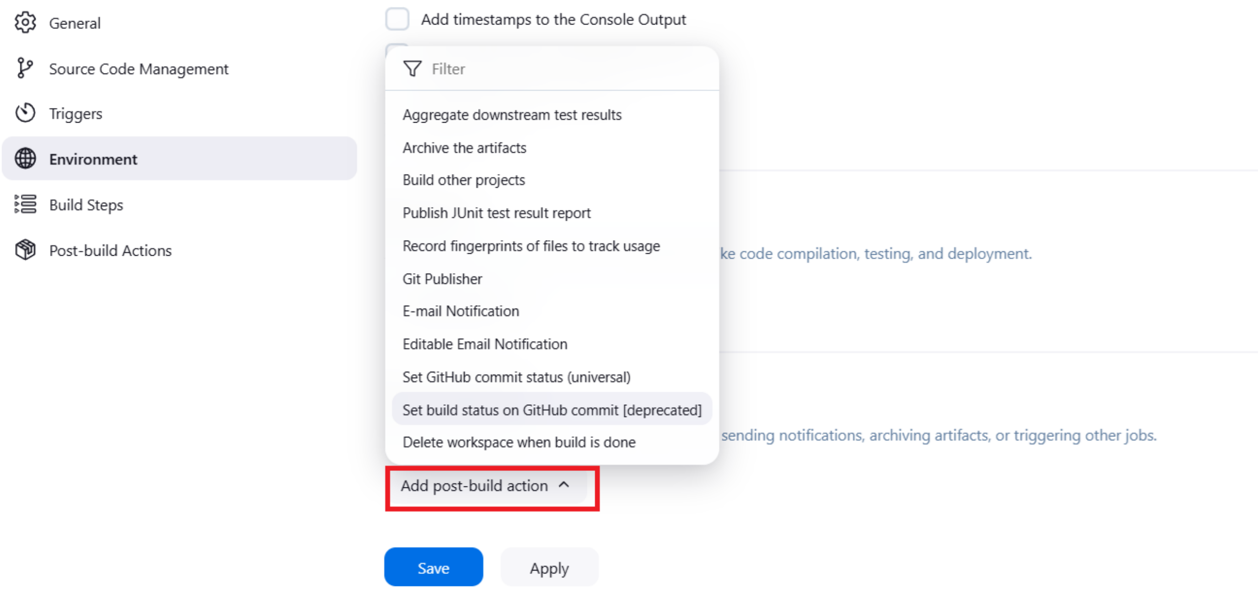
□ Delete workspace before build starts
□ Use secret text(s) or file(s) ?
□ Add timestamps to the Console Output
□ Inspect build log for published build scans
□ Terminate a build if it's stuck
□ With Ant ?

Build Steps

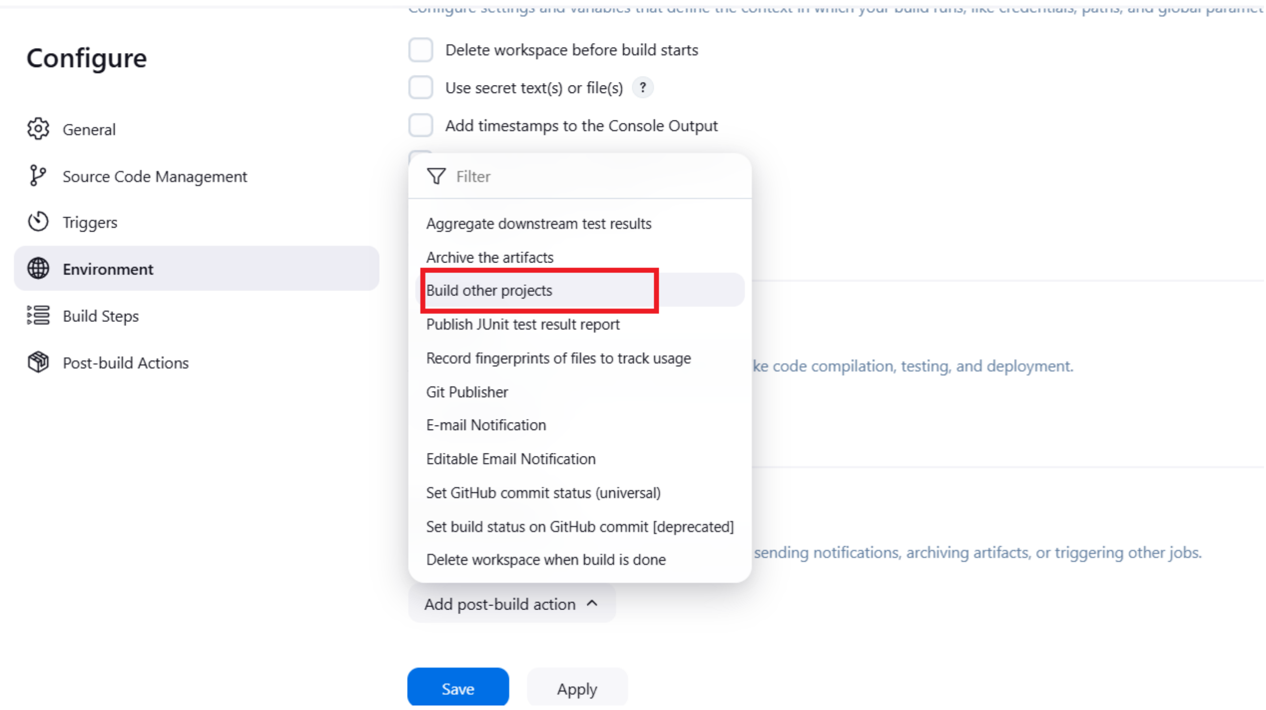
Automate your build process with ordered tasks like code compilation, testing, and deployment.

Post-build Actions

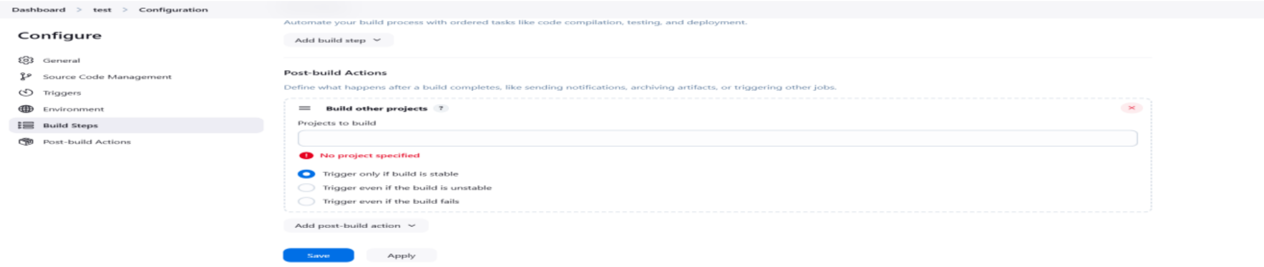
Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.


General
Source Code Management
Triggers
Environment
Build Steps
Post-build Actions
□ Add timestamps to the Console Output
Filter
Aggregate downstream test results
Archive the artifacts
Build other projects
Publish JUnit test result report
Record fingerprints of files to track usage
Git Publisher
E-mail Notification
Editable Email Notification
Set GitHub commit status (universal)
Set build status on GitHub commit [deprecated]
Delete workspace when build is done
ke code compilation, testing, and deployment.
sending notifications, archiving artifacts, or triggering other jobs.
Add post-build action ^
Save
Apply

Go to Post-build Actions option and choose build other projects.


Configure
General
Source Code Management
Triggers
Environment
Build Steps
Post-build Actions
□ Delete workspace before build starts
□ Use secret text(s) or file(s) ?
□ Add timestamps to the Console Output
Filter
Aggregate downstream test results
Archive the artifacts
Build other projects
Publish JUnit test result report
Record fingerprints of files to track usage
Git Publisher
E-mail Notification
Editable Email Notification
Set GitHub commit status (universal)
Set build status on GitHub commit [deprecated]
Delete workspace when build is done
ke code compilation, testing, and deployment.
sending notifications, archiving artifacts, or triggering other jobs.
Add post-build action ^
Save
Apply

Open new window build other project.



Automate your build process with ordered tasks like code compilation, testing, and deployment.

Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.

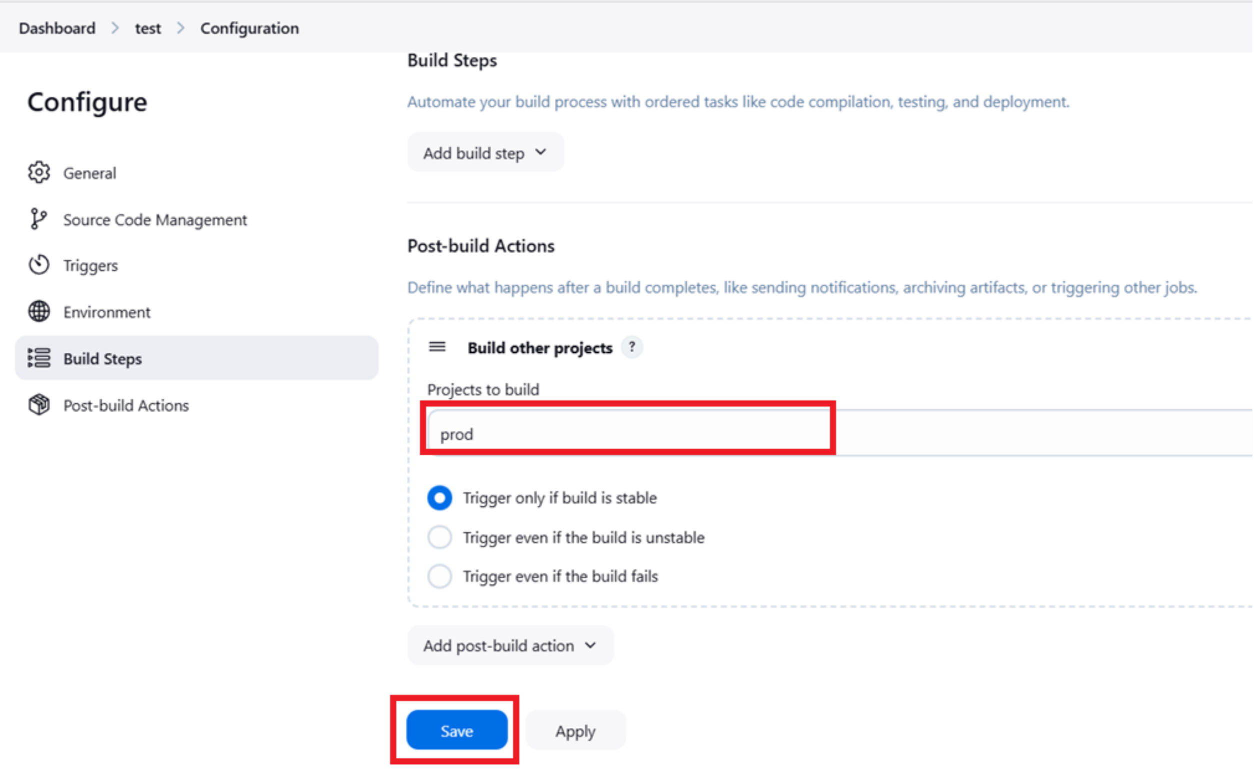
Build other projects ?

Projects to build

No project specified

● Trigger only if build is stable
○ Trigger even if the build is unstable
○ Trigger even if the build fails

Here in build other project mentioned prod and choose trigger only if build is stable then save.



Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Post-build Actions

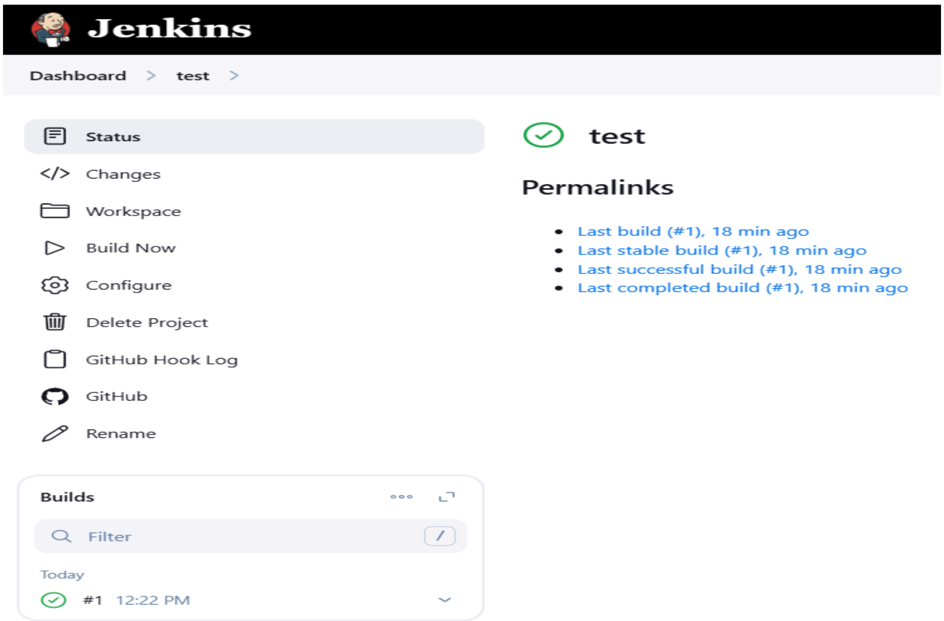
Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.

Build other projects ?

Projects to build: prod

● Trigger only if build is stable
○ Trigger even if the build is unstable
○ Trigger even if the build fails

After Go to test job and click the build now



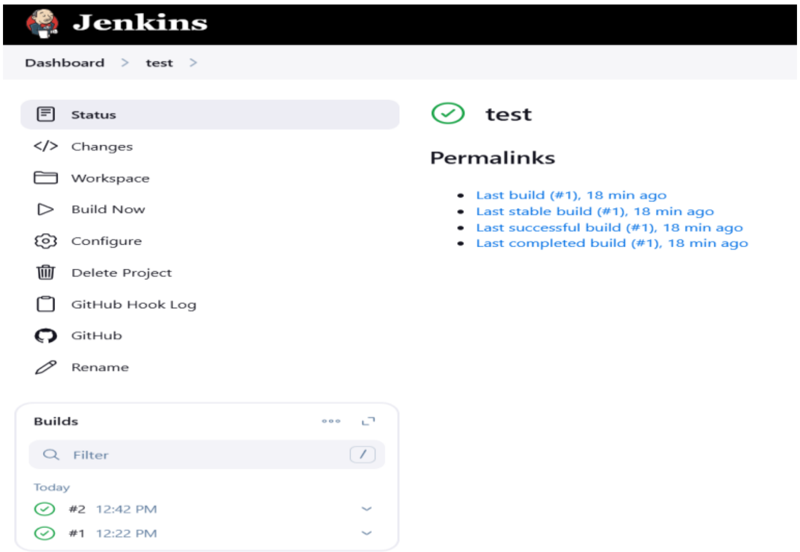
test

Permalinks

- Last build (#1), 18 min ago
- Last stable build (#1), 18 min ago
- Last successful build (#1), 18 min ago
- Last completed build (#1), 18 min ago

Today
#1 12:22 PM

The Job has been created successfully.



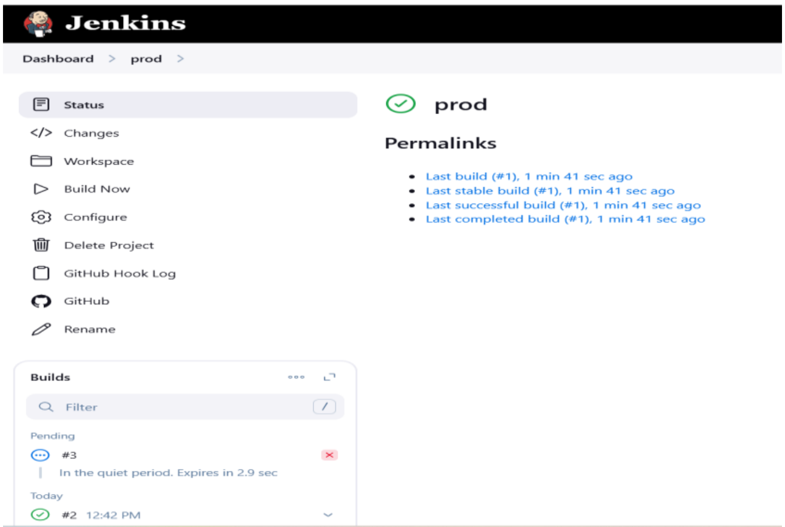
test

Permalinks

- Last build (#1), 18 min ago
- Last stable build (#1), 18 min ago
- Last successful build (#1), 18 min ago
- Last completed build (#1), 18 min ago

Today
#2 12:42 PM
#1 12:22 PM

Go to Prod job you will see the job no #3 is still running.



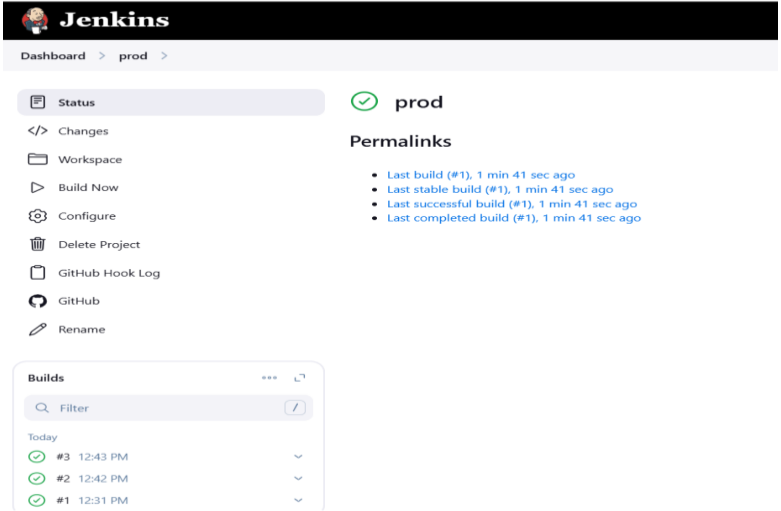
prod

Permalinks

- Last build (#1), 1 min 41 sec ago
- Last stable build (#1), 1 min 41 sec ago
- Last successful build (#1), 1 min 41 sec ago
- Last completed build (#1), 1 min 41 sec ago

Pending
#3
In the quiet period. Expires in 2.9 sec
Today
#2 12:42 PM

Here job #3 is completed.



prod

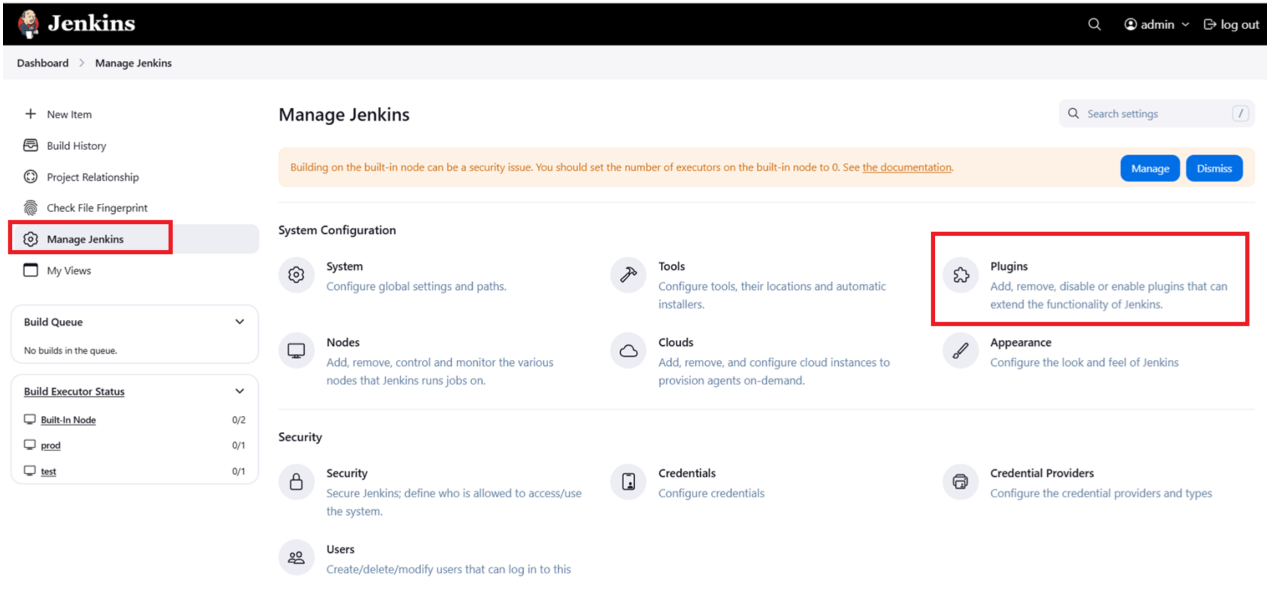
Permalinks

- Last build (#1), 1 min 41 sec ago
- Last stable build (#1), 1 min 41 sec ago
- Last successful build (#1), 1 min 41 sec ago
- Last completed build (#1), 1 min 41 sec ago

Today
#3 12:43 PM
#2 12:42 PM
#1 12:31 PM

Means As per task has been successfully configured.

Now Go to Manage Jenkins>Choose Plugins.



Jenkins

admin log out

Dashboard > Manage Jenkins

- 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	0/2
prod	0/1
test	0/1

Manage Jenkins

Search settings

Building on the built-in node can be a security issue. You should set the number of executors on the built-in node to 0. See the documentation.

Manage Dismiss

System Configuration

System
Configure global settings and paths.

Tools
Configure tools, their locations and automatic installers.

Plugins
Add, remove, disable or enable plugins that can extend the functionality of Jenkins.

Nodes
Add, remove, control and monitor the various nodes that Jenkins runs jobs on.

Clouds
Add, remove, and configure cloud instances to provision agents on-demand.

Appearance
Configure the look and feel of Jenkins

Security

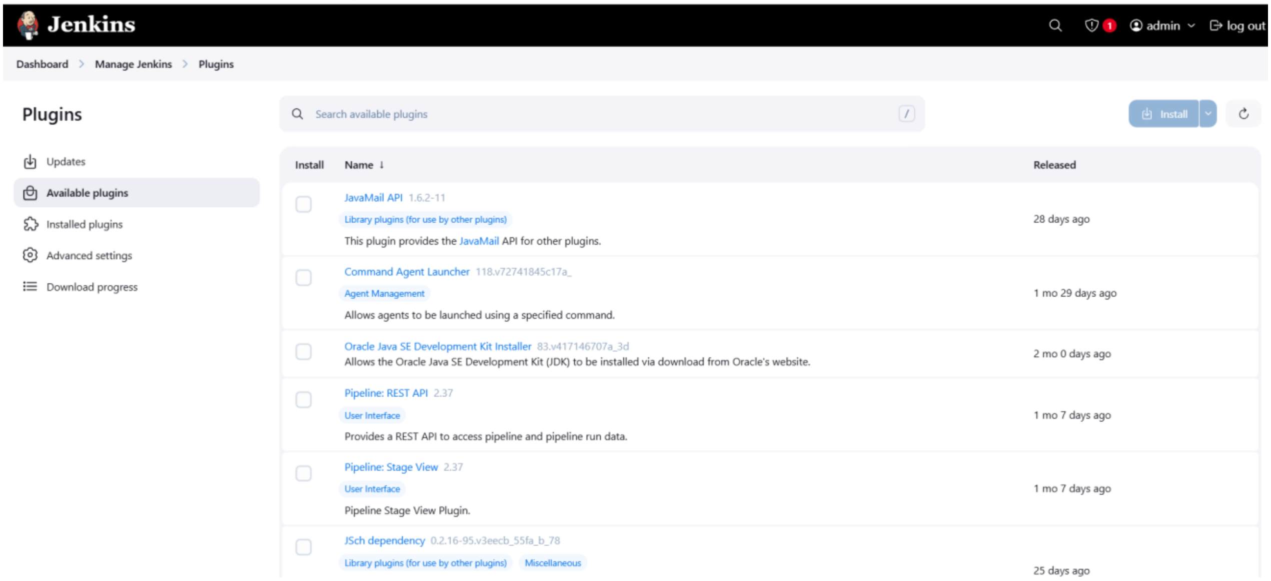
Security
Secure Jenkins; define who is allowed to access/use the system.

Credentials
Configure credentials

Credential Providers
Configure the credential providers and types

Users
Create/delete/modify users that can log in to this

This is the default plugins.



Jenkins

1 admin log out

Dashboard > Manage Jenkins > Plugins

Plugins

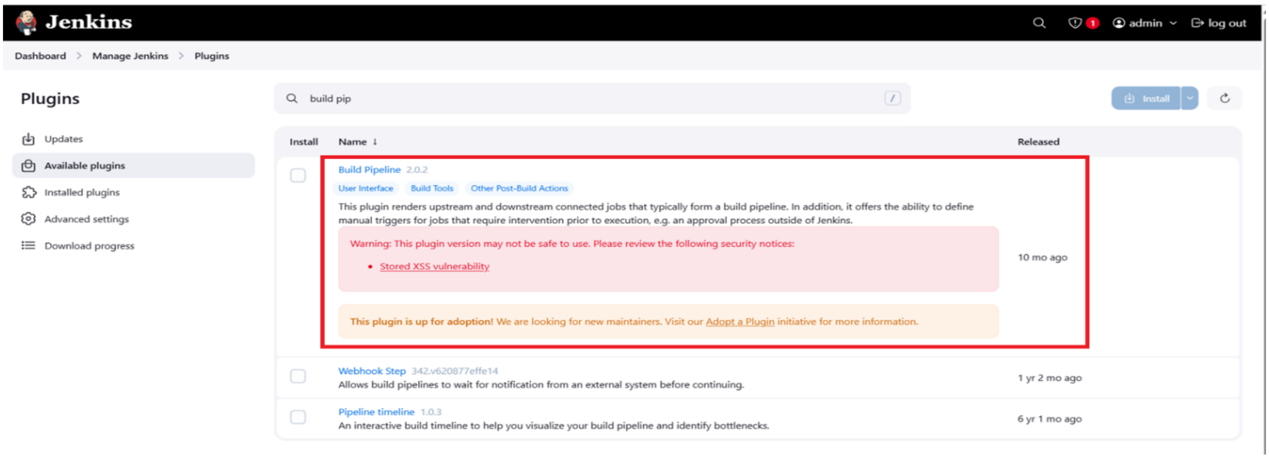
- Updates
- Available plugins
- Installed plugins
- Advanced settings
- Download progress

Search available plugins

Install

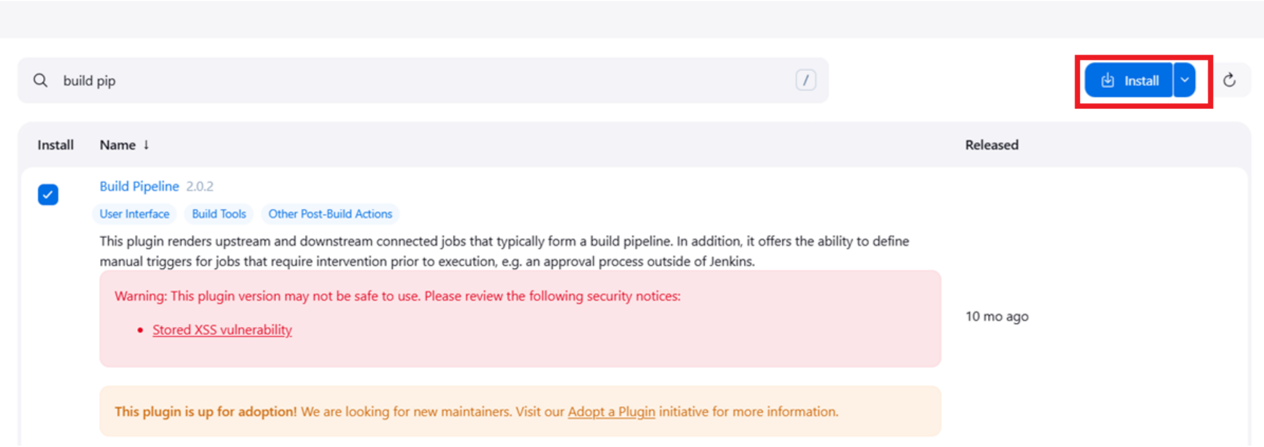
Install	Name ↓	Released
□	JavaMail API 1.6.2-11 Library plugins (for use by other plugins) This plugin provides the JavaMail API for other plugins.	28 days ago
□	Command Agent Launcher 118.v72741845c17a_ Agent Management Allows agents to be launched using a specified command.	1 mo 29 days ago
□	Oracle Java SE Development Kit Installer 83.v417146707a_3d Allows the Oracle Java SE Development Kit (JDK) to be installed via download from Oracle's website.	2 mo 0 days ago
□	Pipeline: REST API 2.37 User Interface Provides a REST API to access pipeline and pipeline run data.	1 mo 7 days ago
□	Pipeline: Stage View 2.37 User Interface Pipeline Stage View Plugin.	1 mo 7 days ago
□	JSch dependency 0.2.16-95.v3eecb_55fa_b_78 Library plugins (for use by other plugins) Miscellaneous	25 days ago

Now We need to search the Build Pipeline Plugins and install this plugins in jenkin url.



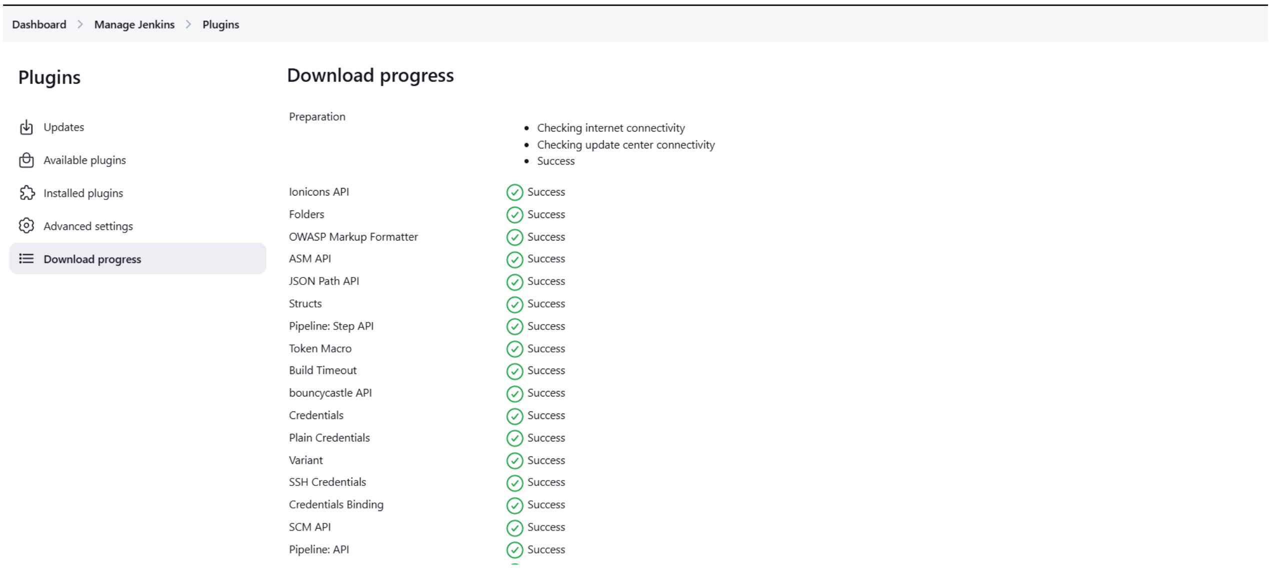
Install	Name ↓	Released
□	Build Pipeline 2.0.2 User Interface Build Tools Other Post-Build Actions This plugin renders upstream and downstream connected jobs that typically form a build pipeline. In addition, it offers the ability to define manual triggers for jobs that require intervention prior to execution, e.g. an approval process outside of Jenkins. Warning: This plugin version may not be safe to use. Please review the following security notices: • Stored XSS vulnerability This plugin is up for adoption! We are looking for new maintainers. Visit our Adopt a Plugin initiative for more information.	10 mo ago
□	Webhook Step 342.v620877effe14 Allows build pipelines to wait for notification from an external system before continuing.	1 yr 2 mo ago
□	Pipeline timeline 1.0.3 An interactive build timeline to help you visualize your build pipeline and identify bottlenecks.	6 yr 1 mo ago

Choose Build pipeline and click the install.



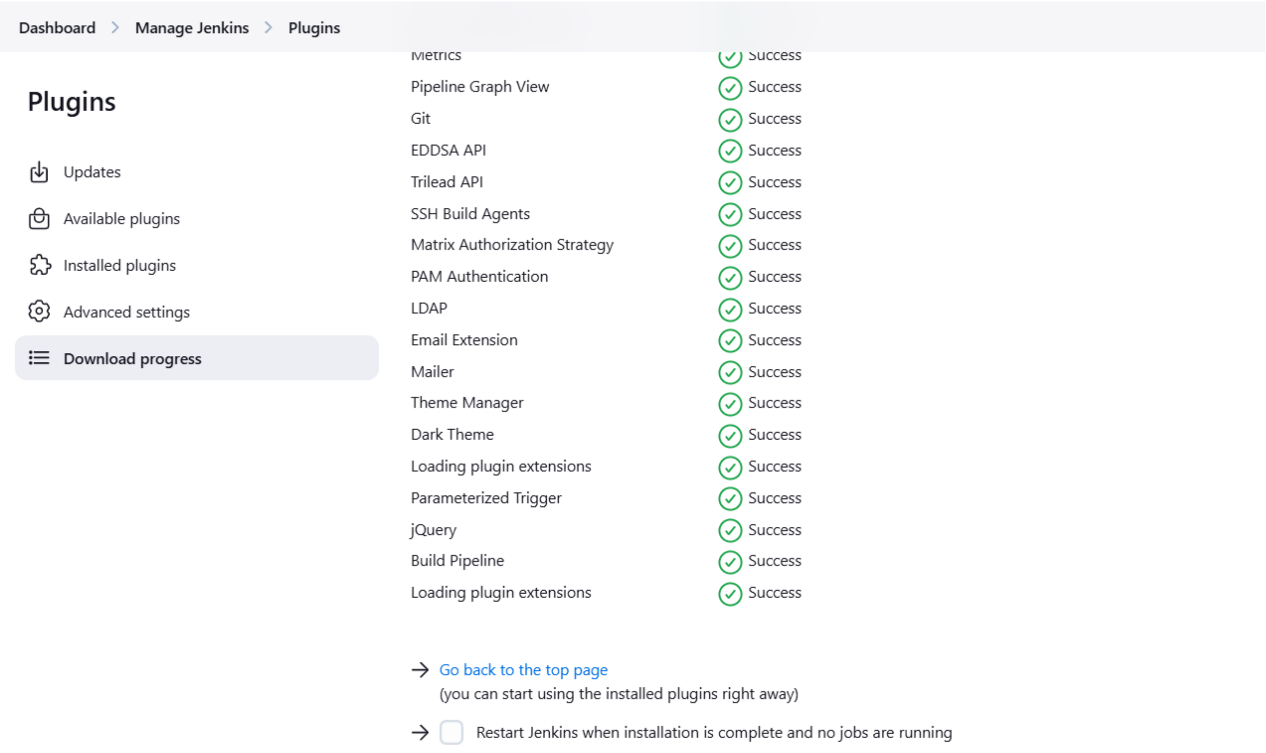
Install	Name ↓	Released
☑	Build Pipeline 2.0.2 User Interface Build Tools Other Post-Build Actions This plugin renders upstream and downstream connected jobs that typically form a build pipeline. In addition, it offers the ability to define manual triggers for jobs that require intervention prior to execution, e.g. an approval process outside of Jenkins. Warning: This plugin version may not be safe to use. Please review the following security notices: • Stored XSS vulnerability This plugin is up for adoption! We are looking for new maintainers. Visit our Adopt a Plugin initiative for more information.	10 mo ago

The Install has been successfully plugin.



Download progress

Preparation	• Checking internet connectivity • Checking update center connectivity • Success
Ionicons API	✓ Success
Folders	✓ Success
OWASP Markup Formatter	✓ Success
ASM API	✓ Success
JSON Path API	✓ Success
Structs	✓ Success
Pipeline: Step API	✓ Success
Token Macro	✓ Success
Build Timeout	✓ Success
bouncycastle API	✓ Success
Credentials	✓ Success
Plain Credentials	✓ Success
Variant	✓ Success
SSH Credentials	✓ Success
Credentials Binding	✓ Success
SCM API	✓ Success
Pipeline: API	✓ Success



Dashboard > Manage Jenkins > Plugins

Plugins

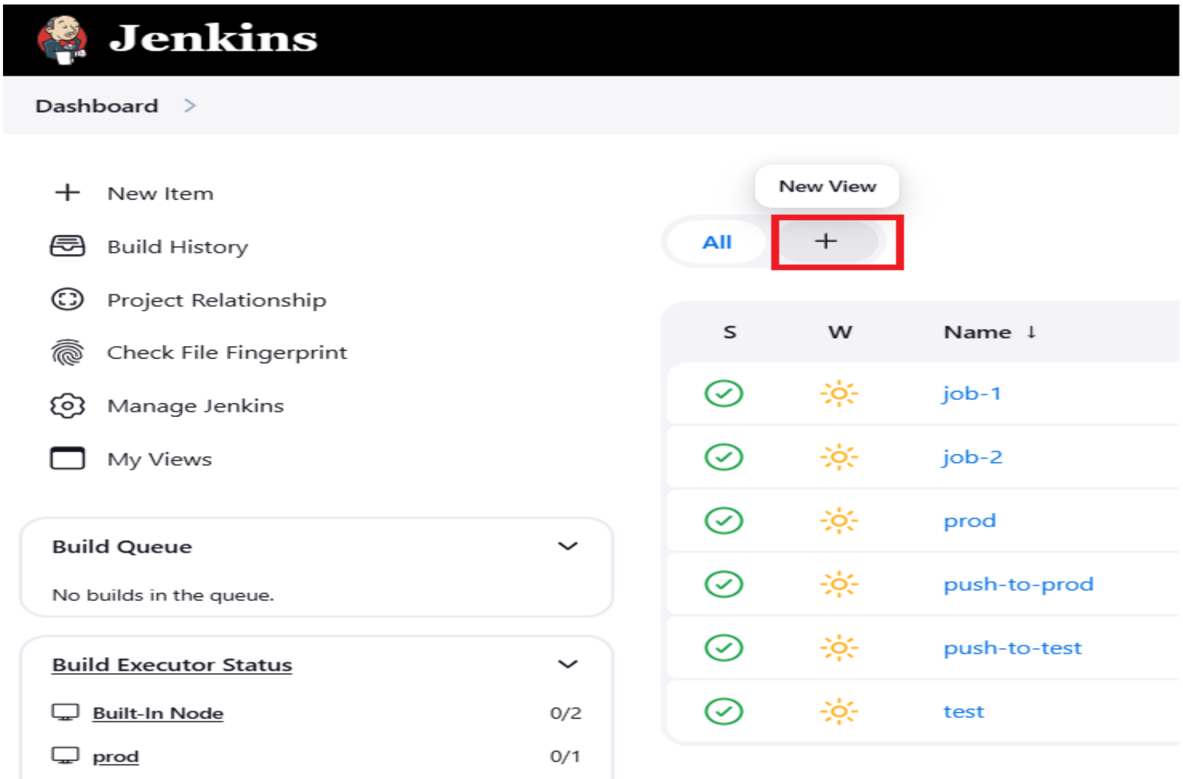
- Updates
- Available plugins
- Installed plugins
- Advanced settings
- Download progress

Metrics	✓ Success
Pipeline Graph View	✓ Success
Git	✓ Success
EDDSA API	✓ Success
Trilead API	✓ Success
SSH Build Agents	✓ Success
Matrix Authorization Strategy	✓ Success
PAM Authentication	✓ Success
LDAP	✓ Success
Email Extension	✓ Success
Mailer	✓ Success
Theme Manager	✓ Success
Dark Theme	✓ Success
Loading plugin extensions	✓ Success
Parameterized Trigger	✓ Success
jQuery	✓ Success
Build Pipeline	✓ Success
Loading plugin extensions	✓ Success

→ Go back to the top page
(you can start using the installed plugins right away)

→ □ Restart Jenkins when installation is complete and no jobs are running

Now Go to Dashboard and click New View.



Jenkins

Dashboard >

- New Item
- Build History
- Project Relationship
- Check File Fingerprint
- Manage Jenkins
- My Views

Build Queue

No builds in the queue.

Build Executor Status

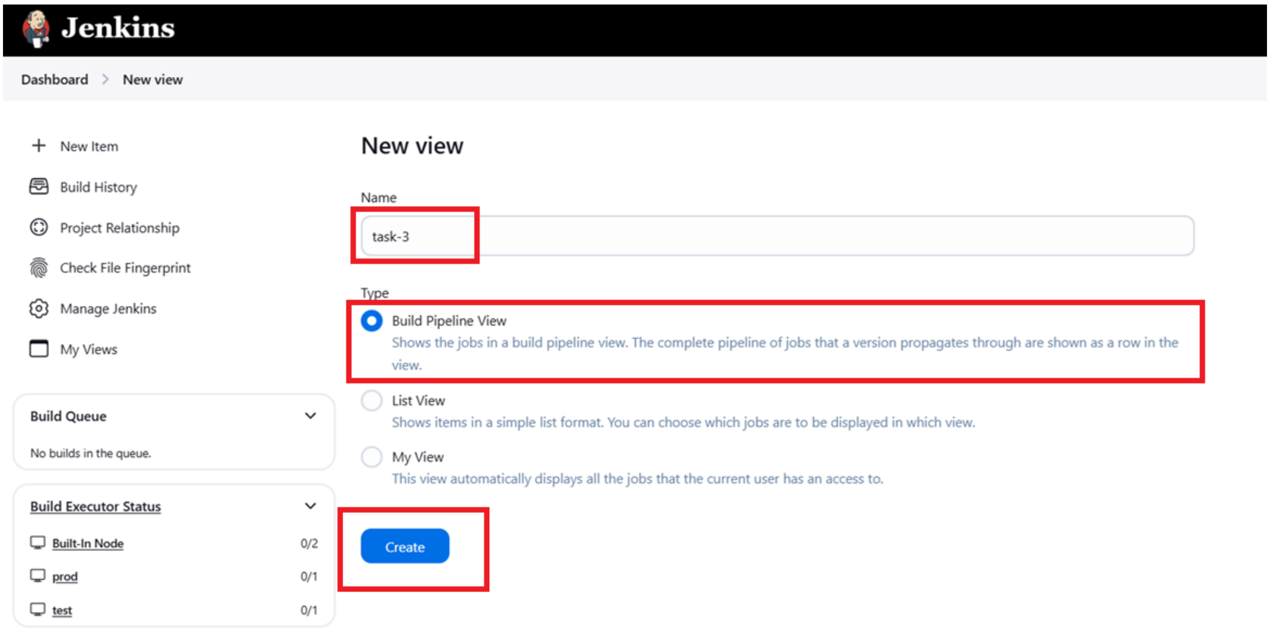
Built-In Node	0/2
prod	0/1

New View

All | +

S	W	Name ↓
✓	☼	job-1
✓	☼	job-2
✓	☼	prod
✓	☼	push-to-prod
✓	☼	push-to-test
✓	☼	test

In New View Name will be task-3 and click Build Pipeline View and click create.



New view

Name

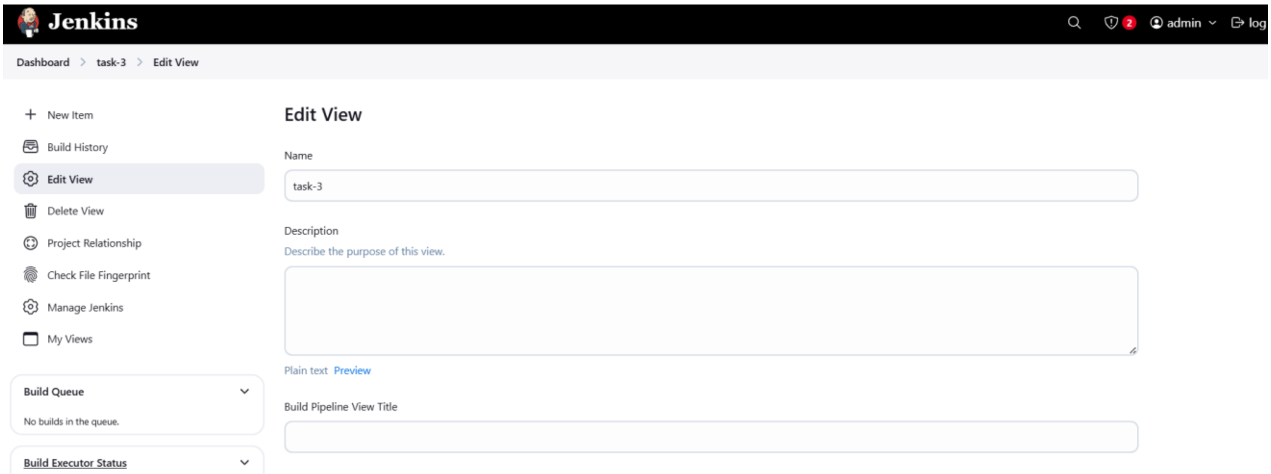
task-3

Type

● Build Pipeline View
Shows the jobs in a build pipeline view. The complete pipeline of jobs that a version propagates through are shown as a row in the view.

○ List View
Shows items in a simple list format. You can choose which jobs are to be displayed in which view.

○ My View
This view automatically displays all the jobs that the current user has an access to.



Edit View

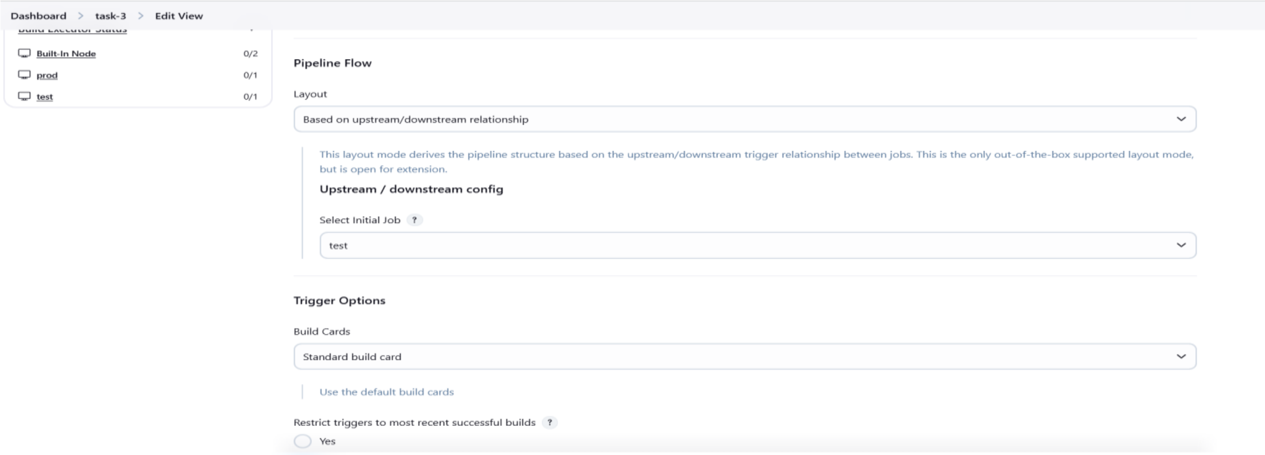
Name

task-3

Description

Describe the purpose of this view.

Build Pipeline View Title



Pipeline Flow

Layout

Based on upstream/downstream relationship

This layout mode derives the pipeline structure based on the upstream/downstream trigger relationship between jobs. This is the only out-of-the-box supported layout mode, but is open for extension.

Upstream / downstream config

Select Initial Job ?

test

Trigger Options

Build Cards

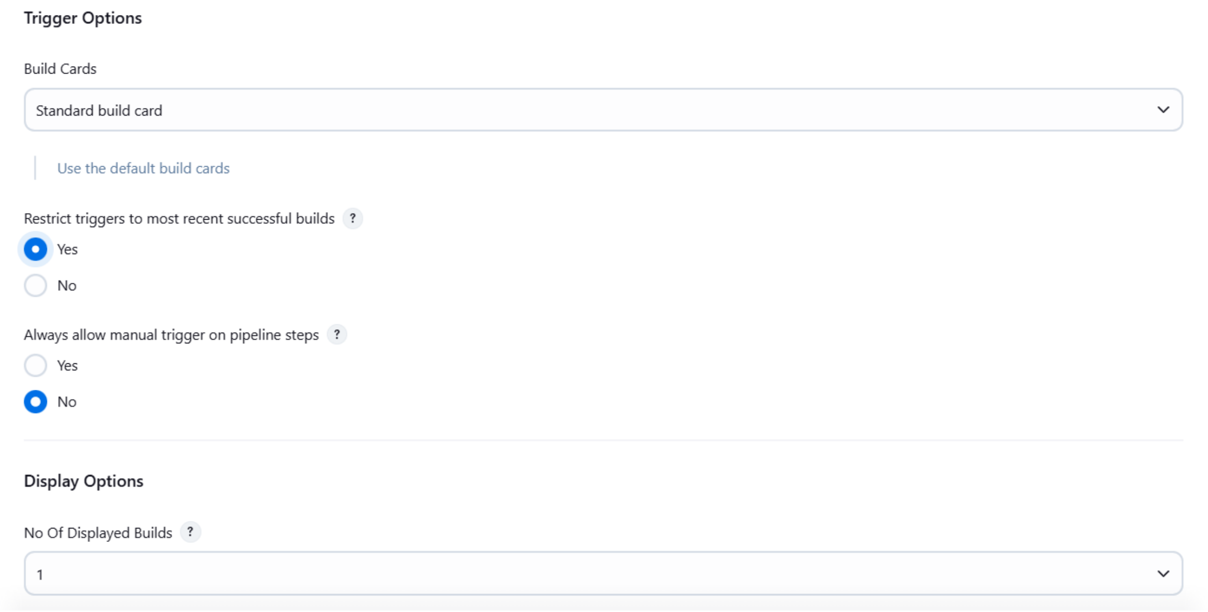
Standard build card

Use the default build cards

Restrict triggers to most recent successful builds ?

○ Yes

Here Need to change is Build card,Restrict triggers to most recent successful builds will be yes.



Trigger Options

Build Cards

Standard build card

Use the default build cards

Restrict triggers to most recent successful builds ?

● Yes

○ No

Always allow manual trigger on pipeline steps ?

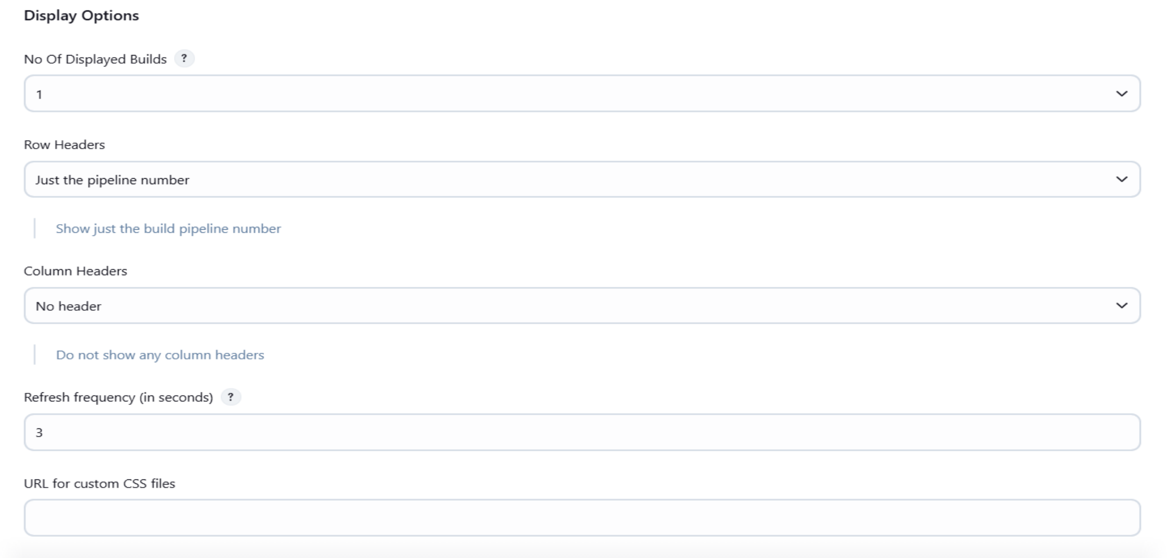
○ Yes

● No

Display Options

No Of Displayed Builds ?

1



Display Options

No Of Displayed Builds ?

1

Row Headers

Just the pipeline number

Show just the build pipeline number

Column Headers

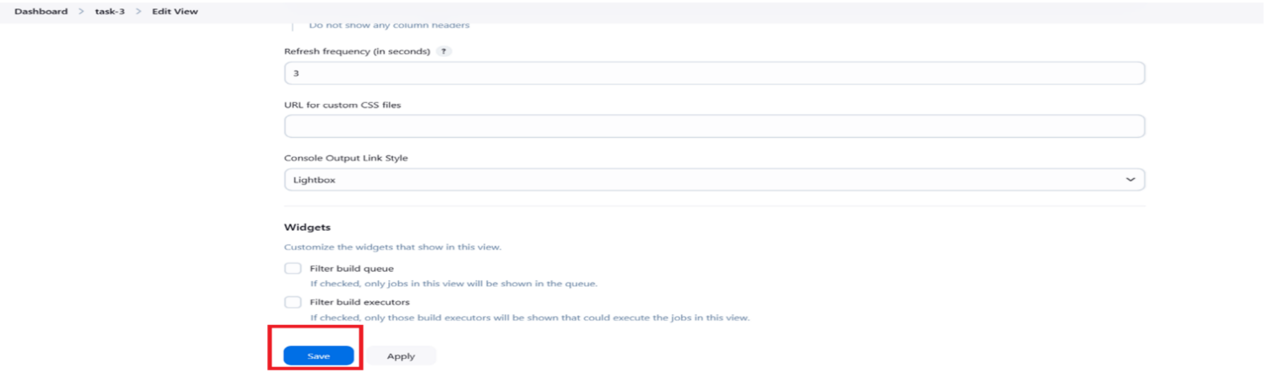
No header

Do not show any column headers

Refresh frequency (in seconds) ?

3

URL for custom CSS files



Dashboard > task-3 > Edit View

Do not show any column headers

Refresh frequency (in seconds) ?

3

URL for custom CSS files

Console Output Link Style

Lightbox

Widgets

Customize the widgets that show in this view.

□ Filter build queue

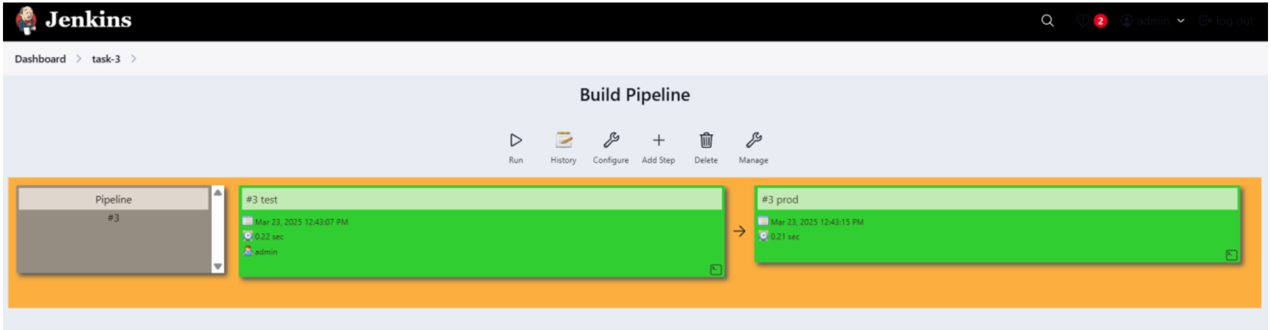
If checked, only jobs in this view will be shown in the queue.

□ Filter build executors

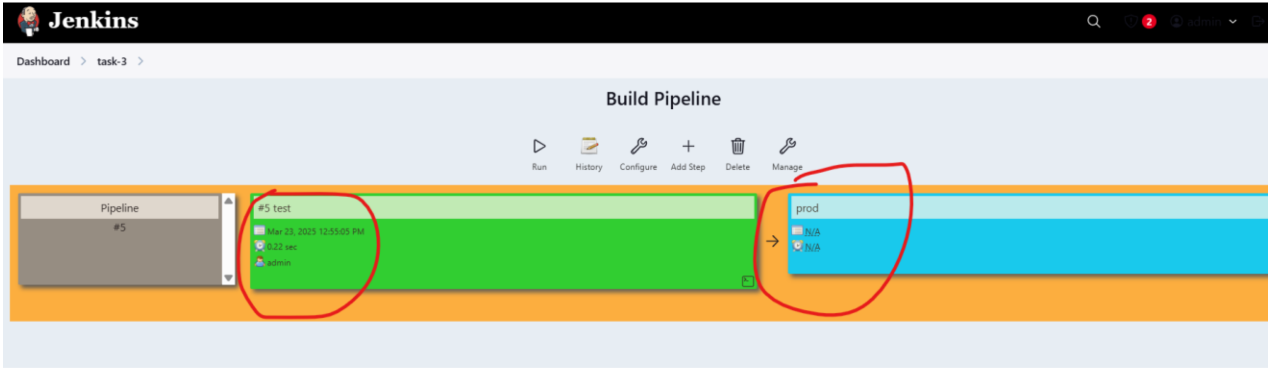
If checked, only those build executors will be shown that could execute the jobs in this view.

Then Click Save.

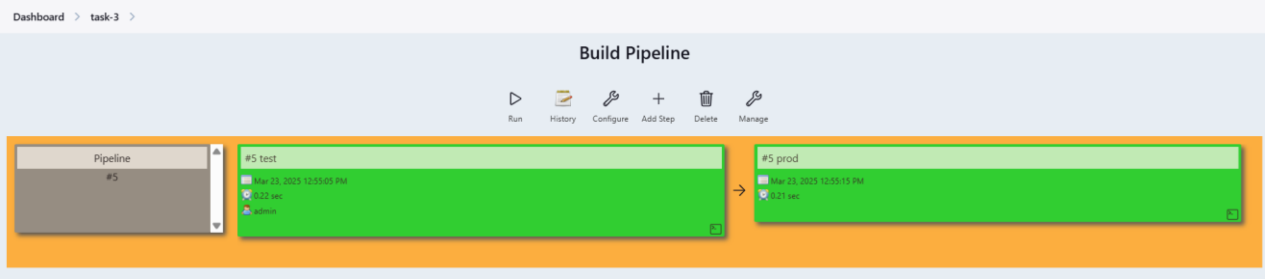
After Click Save.you will see the build pipeline view in Jenkins.



Now Click the Run Button,you will see the pipeline view in job.



Now job has been successful created.


Dashboard > task-3 >
Build Pipeline
Run
History
Configure
Add Step
Delete
Manage
Pipeline
#5
#5 test
Mar 23, 2025 12:55:05 PM
0.22 sec
admin
#5 prod
Mar 23, 2025 12:55:15 PM
0.21 sec