
Week 9: Pipeline Creation using script

1. Evaluation of Jenkins pipeline.
2. **WORKING ON BUILD TRIGGERS FOR LAST JENKINS PIPELINE**
3. Hands-on practice on creation of scripted Jenkins pipeline.
4. Take the screenshots for above task

Procedure

localhost:8080/view/all/newJob

Gmail






Jenkins / All / New Item

New Item

Enter an item name

Maven_Pipeline

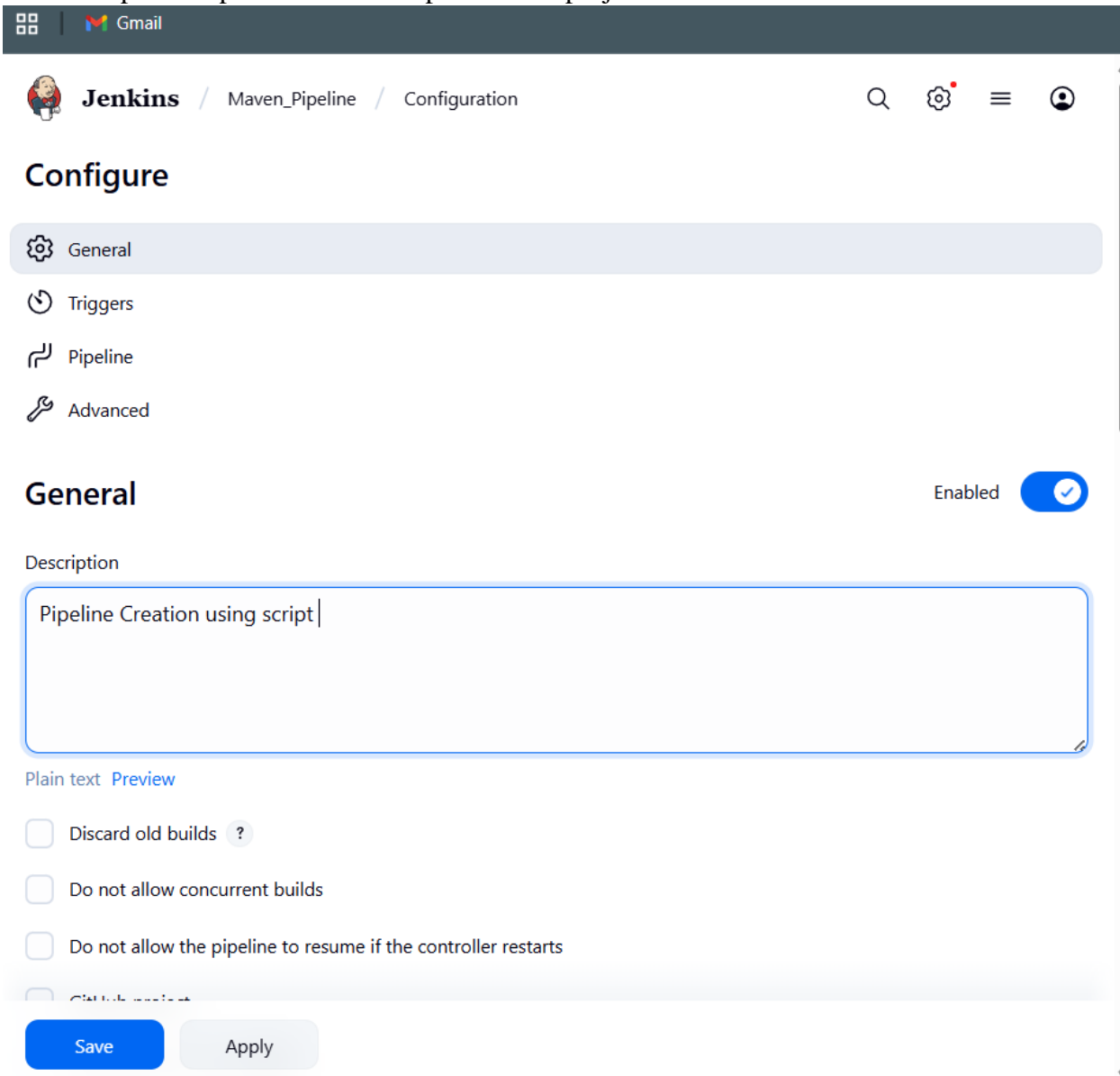
Select an item type

-  **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.
-  **Maven project**
Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.
-  **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

General :

Description :- provide the description of the project



The screenshot shows the Jenkins web interface. At the top, there's a dark header with a grid icon, a Gmail logo, and the text 'Jenkins / Maven_Pipeline / Configuration'. Below this, the 'Configure' page is displayed. On the left, there's a sidebar with four options: 'General' (selected), 'Triggers', 'Pipeline', and 'Advanced'. The 'General' section is active, showing a toggle switch for 'Enabled' which is turned on. Below this, there's a 'Description' field with a text area containing 'Pipeline Creation using script'. Underneath the text area, there are three checkboxes: 'Discard old builds' (with a help icon), 'Do not allow concurrent builds', and 'Do not allow the pipeline to resume if the controller restarts'. At the bottom, there are two buttons: 'Save' and 'Apply'.

General Enabled

Description

Pipeline Creation using script

Plain text [Preview](#)

☐ Discard old builds ?

☐ Do not allow concurrent builds

☐ Do not allow the pipeline to resume if the controller restarts

☐ [Click to expand](#)

[Save](#) [Apply](#)

Build triggers: here we can provide with build triggers of you choice

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 ?

Schedule ?

No schedules so will only run due to SCM changes if triggered by a post-commit hook

- ☐ Ignore post-commit hooks ?
- ☐ Trigger builds remotely (e.g., from scripts) ?

Pipeline

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

Save

Apply

Advance project option:

Definition:

Choose pipeline script

localhost:8080/job/Maven_Pipeline/configure

Jenkins / Maven_Pipeline / Configuration

☐ trigger builds remotely (e.g., from scripts) ?

Pipeline

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

Definition

Pipeline script

Script ?

```
1 pipeline {
2   agent any
3   tools{
4     maven 'MAVEN-HOME'
5   }
6   stages {
7     stage('git repo & clean') {
8       steps {
9         bat "git clone https://github.com/Rudrangi-Vaishnavi/MavenJava.git"
10        bat "mvn clean -f MavenJava"
11      }
12    }
13    stage('install') {
14      steps {
15        bat "mvn install -f MavenJava"
16      }
17    }
18  }
19 }
```

try sample Pipeline... ▾

☒ Use Groovy Sandbox ?

Save Apply

Here code for pipeline -script

Copy the code there

```
pipeline {
  agent any
  tools{
    maven 'MAVEN-HOME'
  }
}
```

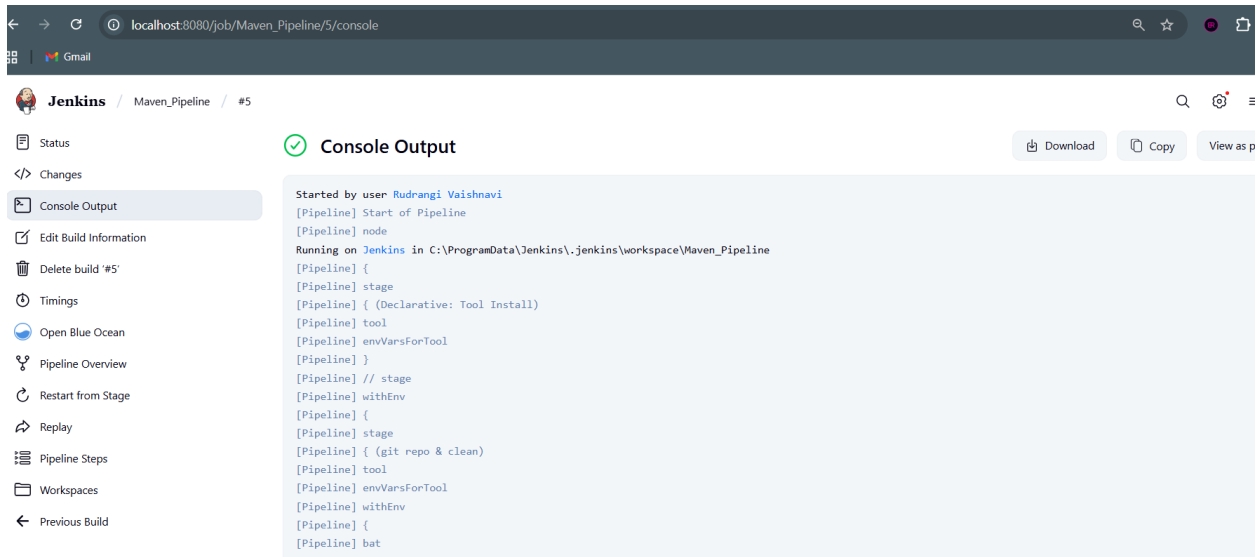
```

stages {
  stage('git repo & clean') {
    steps {
      //bat "rmdir /s /q mavenjava"
      bat "git clone provide your github link"
      bat "mvn clean -f mavenjava"
    }
  }
  stage('install') {
    steps {
      bat "mvn install -f mavenjava" #project name#
    }
  }
  stage('test') {
    steps {
      bat "mvn test -f mavenjava"
    }
  }
  stage('package') {
    steps {
      bat "mvn package -f mavenjava"
    }
  }
}

```

Apply and save

The screenshot displays the Jenkins web interface for a build named 'Maven_Pipeline' with ID '#5'. The build status is 'Success' (indicated by a green checkmark). The build was started on '8 Oct 2025, 10:45:02' by user 'Rudrangi Vaishnavi'. The console output shows the build steps and their durations: 34 ms waiting, 41 sec build duration, and 41 sec total from scheduled to completion. The build is currently in the 'No changes' state. The interface includes a sidebar with navigation links such as 'Status', 'Changes', 'Console Output', 'Edit Build Information', 'Delete build '#5'', 'Timings', 'Open Blue Ocean', 'Pipeline Overview', 'Restart from Stage', 'Replay', 'Pipeline Steps', 'Workspaces', and 'Previous Build'. The top right corner shows the 'REST API' and 'Jenkins 2.516.3' version.



SBQ's:

1. Your manager asks you to clean the workspace before building — which stage in this pipeline takes care of it?
 - A. The git repo & clean stage cleans the workspace before building.
2. The GitHub repository link is missing in the script — where exactly do you provide it?
 - A. Inside the git repo & clean stage in the line: bat "git clone https://github.com/yourname/repo.git"
3. If Maven is not configured globally in Jenkins, which section of the pipeline will fail first?
 - A. The tools { maven 'MAVEN_HOME' } section — Jenkins cannot find the Maven installation.
4. A teammate complains the pipeline is not creating .war files — which stage is responsible?
 - A. The package stage (mvn package) creates .jar or .war files.
5. Your test cases failed, but the pipeline still continued — how will Jenkins behave in the test stage?
 - A. Jenkins will mark the stage as failed, and by default the pipeline stops unless configured with catchError.
6. Instead of running nightly builds, you want this pipeline to trigger only when GitHub changes occur — where will you configure it?
 - A. In the Build Triggers section — enable “GitHub hook trigger for GITScm polling.”
7. If you replace mvn clean with mvn compile, what difference will it make to the project build?
 - A. mvn clean deletes old build files and mvn compile just compiles the code without cleaning.
8. The project folder name is not mavenjava but studentapp — which parts of the script must you edit?

A. All Maven commands with `-f mavenjava` → change to `-f studentapp`.

9. If the install stage fails, will the test and package stages still run in this pipeline?

A. No, Jenkins stops execution at the first failed stage.

10. A student asks where to add deployment steps to Tomcat after packaging — which is the best place in this script?

A. Add a new stage('deploy') after the package stage.

11. Why is `tools { maven 'MAVEN-HOME' }` used in this pipeline?

A. It tells Jenkins which Maven installation to use for running Maven commands.

12. If GitHub credentials are private, how can you secure them in the git repo & clean stage?

A. Store credentials in Jenkins Credentials Manager and use them with the credentials block.

13. Which Jenkins plugin is needed to recognize the pipeline `{ ... }` structure in this script?

A. The Pipeline Plugin (Workflow Plugin).

14. In Windows, the script uses `bat` commands — what change would you make if Jenkins runs on Linux?

A. Replace all `bat` with `sh`

15. How will you modify the pipeline to stop execution if the GitHub clone command fails?

Your project lead asks you to print a welcome message in Jenkins to confirm the pipeline is working — how would you script it?

A. Jenkins already stops on failure by default, but to be explicit, use:
`bat "git clone <repo>" || error('Git clone failed!')`

16. A teammate forgot to pull the latest GitHub code before building; how can you fix this in your pipeline?

A. Use `git pull` or always clean and re-clone in the git repo & clean stage to fetch the latest code.

17. Your Java file `Hello.java` must be compiled every time code is committed — how will you add this step?

A. Add a compile stage:

```
stage('compile'){
  steps{
    bat "mvn compile -f Maven"
  }
}
```

18. Tests should stop the pipeline if they fail — where will you put the `mvn test` command?

- A. Inside the test stage, since any failure automatically halts later stages.
19. Every evening at 6 PM your pipeline should run automatically — how can you set this in Jenkins?
- A. In Build Triggers → Build periodically: H 18 * * *
20. You only want to package the project if compilation succeeds — how would you connect the stages?
- A. Jenkins stages already run sequentially, so package runs only if compile or install succeed.
21. Your professor wants a .jar file generated for submission — what pipeline stage will you add?
- A. Add a **jar stage** using: bat “mvn package -f Maven”
22. A Git clone step is failing due to wrong credentials — how would you secure and use them in your script?
- A. Save Git credentials in Jenkins (Manage Jenkins → Credentials) and use:
withCredentials([usernamePassword(credentialsId: 'git-creds', usernameVariable: 'USER',
passwordVariable: 'PASS')]) { bat "git clone
https://\${USER}:\${PASS}@github.com/bhavagna06/Maven.git"}
23. A teammate wants to see the build number inside console logs — how do you print it in the pipeline?
- A. echo "Running Build #\${env.BUILD_NUMBER}"