

TASK5

CI-CD PIPELINE

CI CD Pipeline Jenkins

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About The Project

The project involves implementing a CI/CD pipeline using Jenkins and Maven for a Java application. Jenkins will be used for continuous integration, automated testing, and continuous delivery/deployment. Maven will be used as a build tool to manage dependencies, compile, and package the application. The pipeline will involve several stages such as building the code, running tests, packaging the application, deploying to a test environment, and deploying to production. The pipeline is implemented in 2 ways, one with the direct script and other with help of scm and Git. The pipeline will automate the process of building, testing, and deploying the application, ensuring that any changes made to the code are thoroughly tested and validated before being released to production.

Steps With Results

1) Installing Jenkins

brew install jenkins

```
apple — -bash — 80x24
Nishus-MacBook-Pro:~ apple$ brew install jenkins
Running `brew update --auto-update`...
==> Auto-updated Homebrew!
Updated 3 taps (homebrew/services, homebrew/core and homebrew/cask).
==> New Formulae
dexter          mdt          streamvbyte     zpaqfranz
flavours        opal         tt
imessage-exporter openssl@3.0    typst
==> New Casks
dehelper        edrawmind     hummingbird     orbstack       zed

You have 8 outdated formulae installed.
You can upgrade them with brew upgrade
or list them with brew outdated.

==> Fetching dependencies for jenkins: glib
==> Fetching glib
==> Downloading https://ghcr.io/v2/homebrew/core/glib/manifests/2.76.1
##### 100.0%
==> Downloading https://ghcr.io/v2/homebrew/core/glib/blobs/sha256:445fed7d16e95
==> Downloading from https://pkg-containers.githubusercontent.com/ghcr1/blobs/sh
##### 100.0%
==> Fetching jenkins
==> Downloading https://ghcr.io/v2/homebrew/core/jenkins/manifests/2.397
```

brew install jenkins-lts

```
Nishus-MacBook-Pro:~ apple$ brew install jenkins-lts
==> Fetching jenkins-lts
==> Downloading https://ghcr.io/v2/homebrew/core/jenkins-lts/manifests/2.387.1
##### 100.0%
==> Downloading https://ghcr.io/v2/homebrew/core/jenkins-lts/blobs/sha256:1e51b8
==> Downloading from https://pkg-containers.githubusercontent.com/ghcr1/blobs/sh
##### 100.0%
==> Pouring jenkins-lts--2.387.1.big_sur.bottle.tar.gz
==> Caveats
Note: When using launchctl the port will be 8080.

To restart jenkins-lts after an upgrade:
  brew services restart jenkins-lts
Or, if you don't want/need a background service you can just run:
  /usr/local/opt/openjdk@17/bin/java -Dmail.smtp.starttls.enable=true -jar /usr/
local/opt/jenkins-lts/libexec/jenkins.war --httpListenAddress=127.0.0.1 --httpPo
rt=8080
==> Summary
📦 /usr/local/Cellar/jenkins-lts/2.387.1: 8 files, 97MB
==> Running `brew cleanup jenkins-lts`...
Disable this behaviour by setting HOMEBREW_NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW_NO_ENV_HINTS (see `man brew`).
Nishus-MacBook-Pro:~ apple$
```

brew services start jenkins-lts

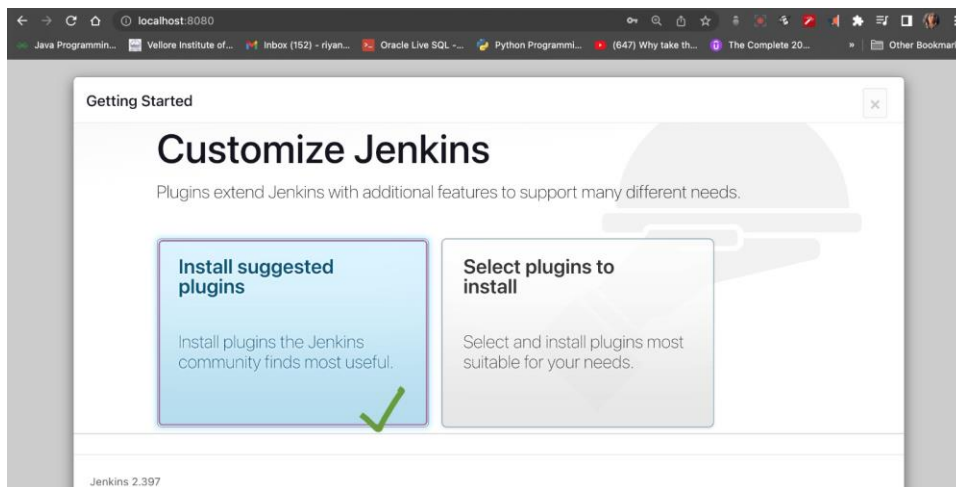
cat /Users/apple/.jenkins/secrets/initialAdminPassword

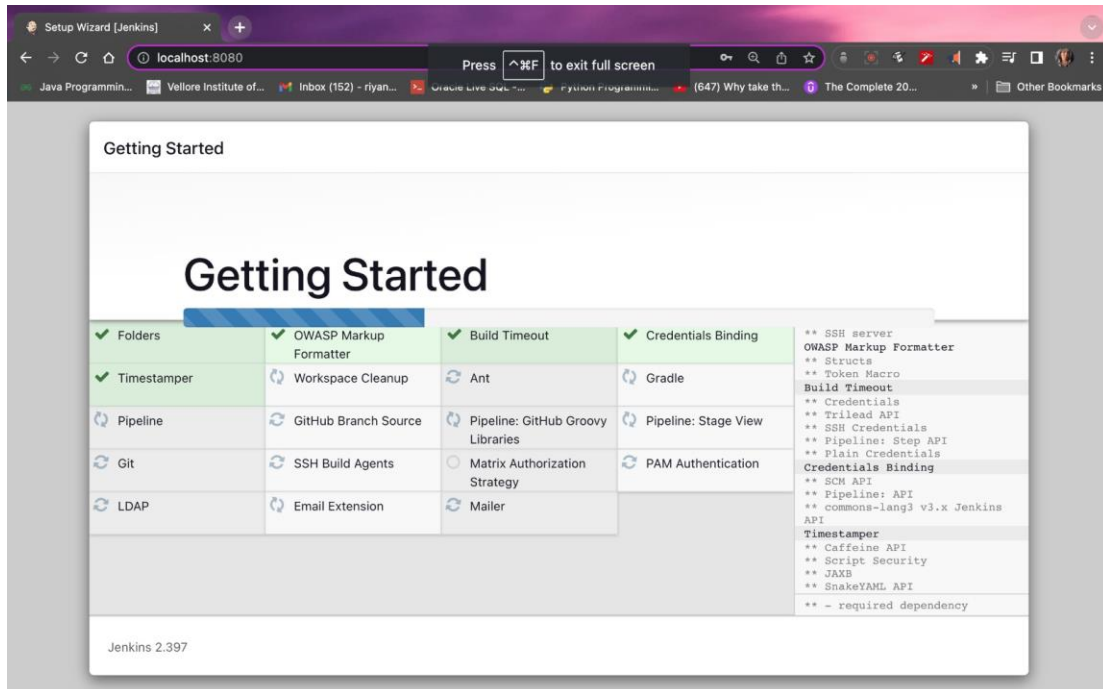
```
Nishus-MacBook-Pro:~ apple$ brew services start jenkins-lts
Nishus-MacBook-Pro:~ apple$ cat /Users/apple/.jenkins/secrets/initialAdminPassword
6a4443f2788d42c68ec2977d14ffd3dd
Nishus-MacBook-Pro:~ apple$
```

2) Configure Jenkins

```
Nishus-MacBook-Pro:~ apple$ /usr/local/opt/jenkins/bin/jenkins --httpListenAddress=127.0.0.1 --httpPort=8080
Running from: /usr/local/Cellar/jenkins/2.397/libexec/jenkins.war
webroot: /Users/apple/.jenkins/war
2023-03-29 12:55:38.338+0000 [id=1] INFO winstone.Logger#logInternal: Beginning extraction from war file
2023-03-29 12:55:41.965+0000 [id=1] WARNING o.e.j.s.handler.ContextHandler#setContextPath: Empty contextPath
2023-03-29 12:55:42.086+0000 [id=1] INFO org.eclipse.jetty.server.Server#doStart: jetty-10.0.13; built:
2022-12-07T20:13:20.134Z; git: 1c2636ea05c0ca8delffd6ca7f3a98ac084c766d; jvm 17.0.6+0
2023-03-29 12:55:42.672+0000 [id=1] INFO o.e.j.w.StandardDescriptorProcessor#visitServlet: NO JSP Support
for /, did not find org.eclipse.jetty.jsp.JettyJspServlet
2023-03-29 12:55:42.793+0000 [id=1] INFO o.e.j.s.s.DefaultSessionIdManager#doStart: Session workerName=none
2023-03-29 12:55:43.839+0000 [id=1] INFO hudson.WebAppMain#contextInitialized: Jenkins home directory: /
Users/apple/.jenkins found at: $user.home/.jenkins
2023-03-29 12:55:45.354+0000 [id=1] INFO o.e.j.s.handler.ContextHandler#doStart: Started w.@76c52298{Jen
kins v2.397,,file:///Users/apple/.jenkins/war/,AVAILABLE}{/Users/apple/.jenkins/war}
2023-03-29 12:55:45.390+0000 [id=1] INFO o.e.j.server.AbstractConnector#doStart: Started ServerConnector
@6304101a{HTTP/1.1,(http/1.1)}{127.0.0.1:8080}
2023-03-29 12:55:45.442+0000 [id=1] INFO org.eclipse.jetty.server.Server#doStart: Started Server@225129c
{STARTING}[10.0.13,sto=0] @7890ms
2023-03-29 12:55:45.445+0000 [id=27] INFO winstone.Logger#logInternal: Winstone Servlet Engine running: c
ontrolPort=disabled
2023-03-29 12:55:45.900+0000 [id=34] INFO jenkins.InitReactorRunner$1#onAttained: Started initialization
2023-03-29 12:55:46.007+0000 [id=33] INFO hudson.PluginManager#loadDetachedPlugins: Upgrading Jenkins. Th
```

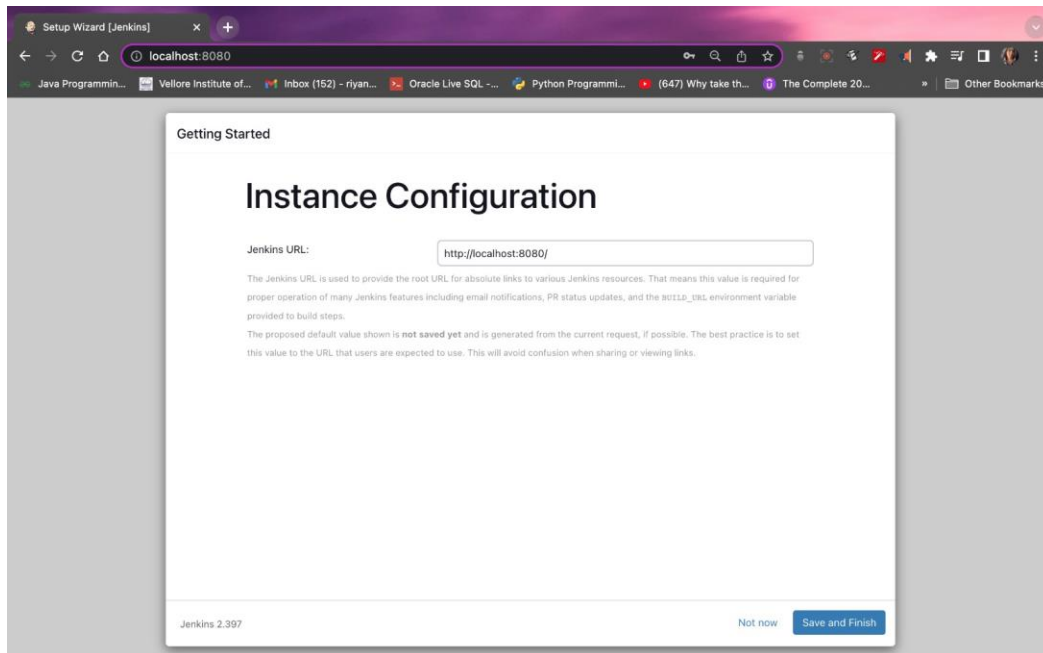
3) Install suggested plugins



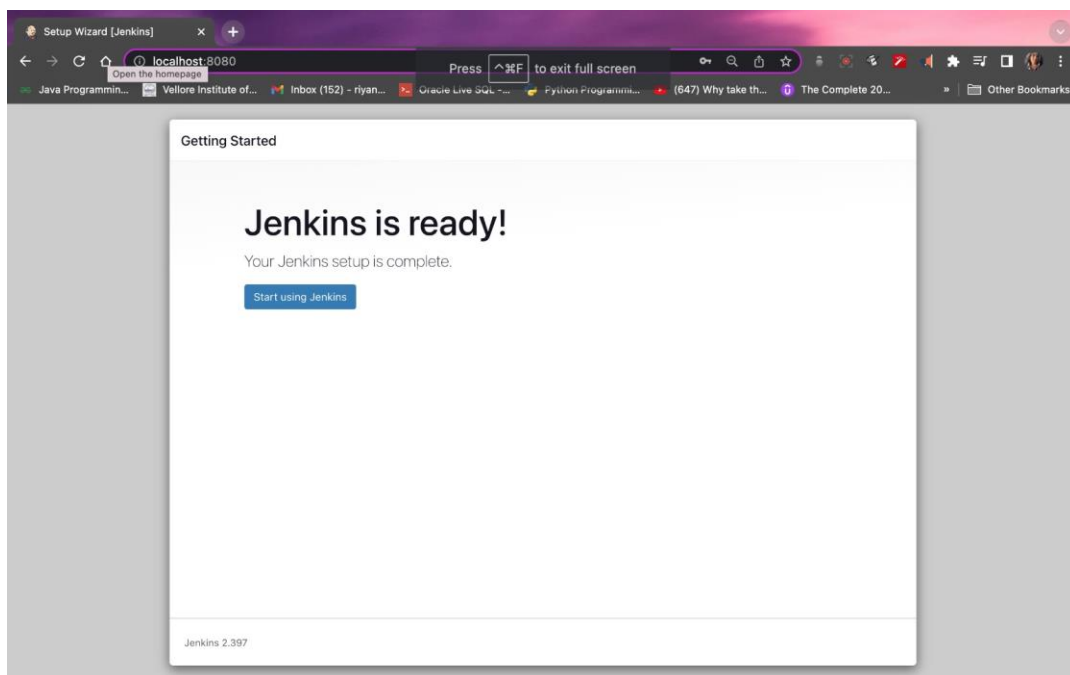


4) Create first admin user

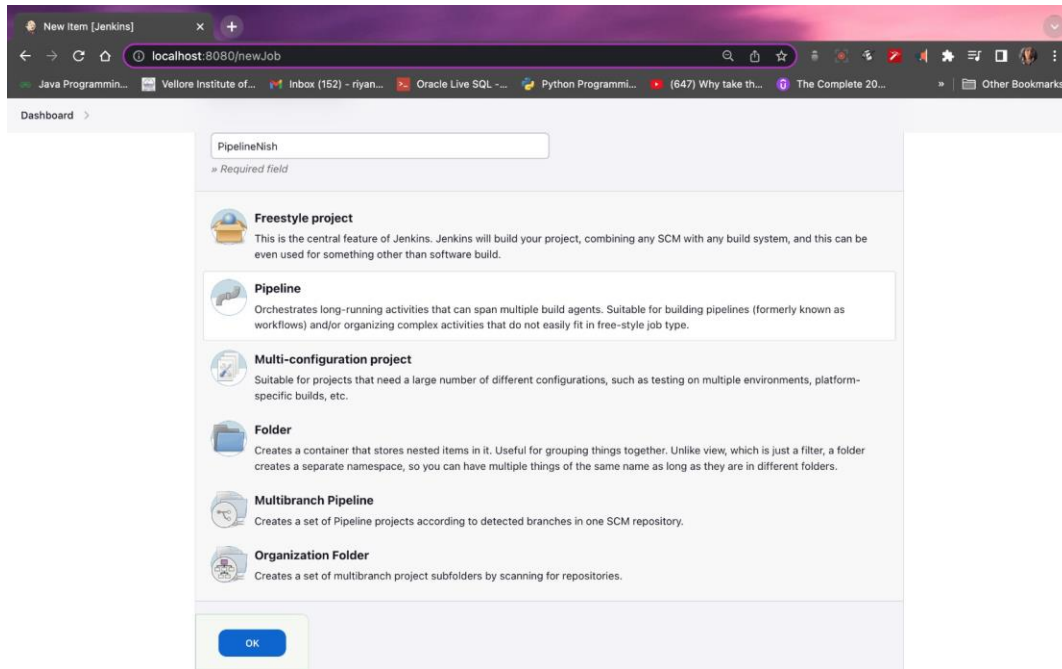
The screenshot shows the Jenkins Setup Wizard interface in a web browser. The title bar indicates the browser is 'Setup Wizard [Jenkins]' and the address bar shows 'localhost:8080'. The main heading is 'Create First Admin User'. Below the heading, there are five input fields: 'Username', 'Password', 'Confirm password', 'Full name', and 'E-mail address'. The 'Username' field contains the text 'admin'. The 'Password' field contains six dots. The 'Confirm password' field contains six dots. The 'Full name' field contains the text 'Nishtha Singh'. The 'E-mail address' field contains the text 'riyanishtha@gmail.com'. At the bottom left, it says 'Jenkins 2.397'. At the bottom right, there are two buttons: 'Skip and continue as admin' and 'Save and Continue'.



Setup is complete



5) Now create a job



PIPELINE WITH DIRECT SCRIPT

GITHUB REPO USED:-

<https://github.com/NishthaSingh7/BasicJavaMavenApp>

Dashboard > PipelineNish > Configuration

Configure

- General
- Advanced Project Options
- Pipeline**

Pipeline script

Script ?

```
1 pipeline {
2   agent any
3
4   stages {
5     stage('Hello') {
6       steps {
7         echo 'Hello everone, this is my pipeline script.'
8       }
9     }
10  }
11 }
12
```

Hello World

☒ Use Groovy Sandbox ?

[Pipeline Syntax](#)

Save

Apply

REST API Jenkins

Jenkins

Search (%+K)

2 1 Nishtha Singh log out

Dashboard > PipelineNish >

Status

</> Changes

▶ Build Now

⚙️ Configure

🗑️ Delete Pipeline

🔍 Full Stage View

✎ Rename

🔍 Pipeline Syntax

Pipeline PipelineNish

Add description

Disable Project

Stage View

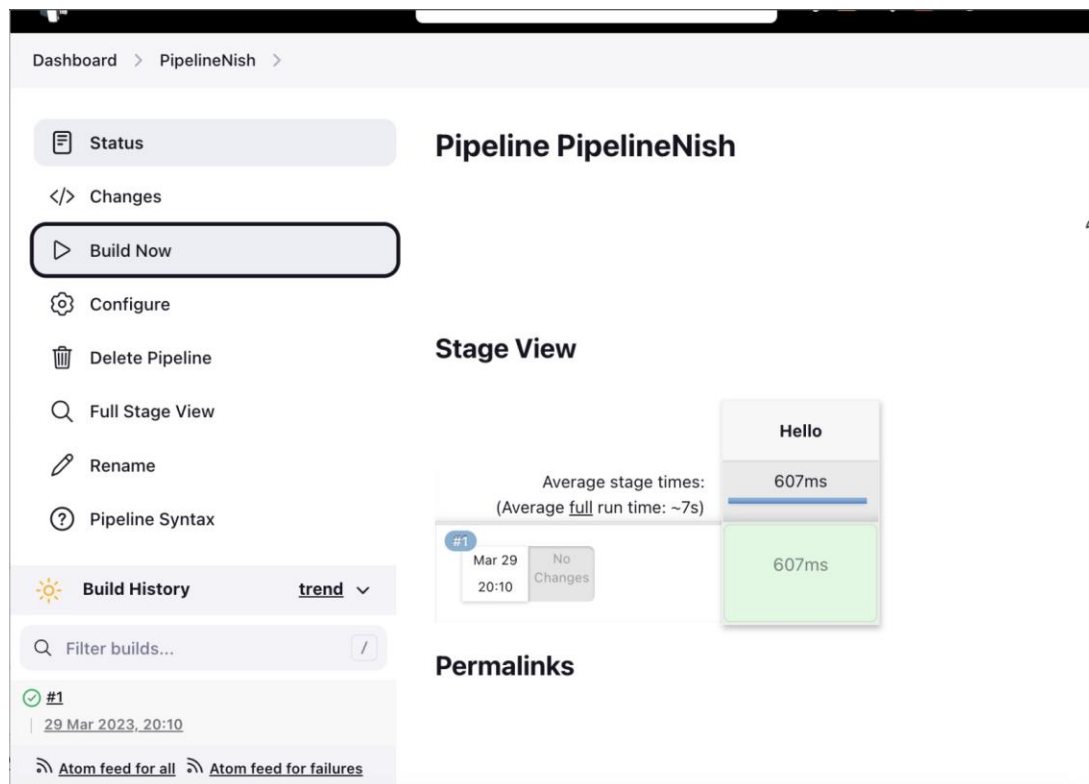
No data available. This Pipeline has not yet run.

Permalinks

Build History trend

Filter builds... /

No builds



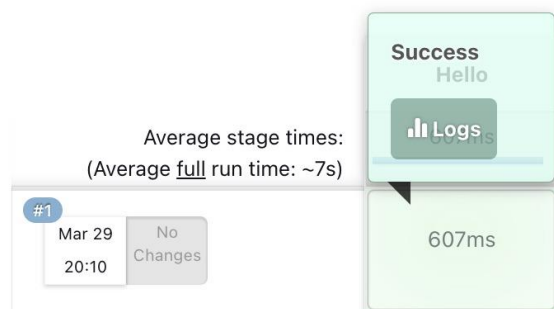
CHECK LOG FOR STAGE MESSAGES

Pipeline PipelineNish

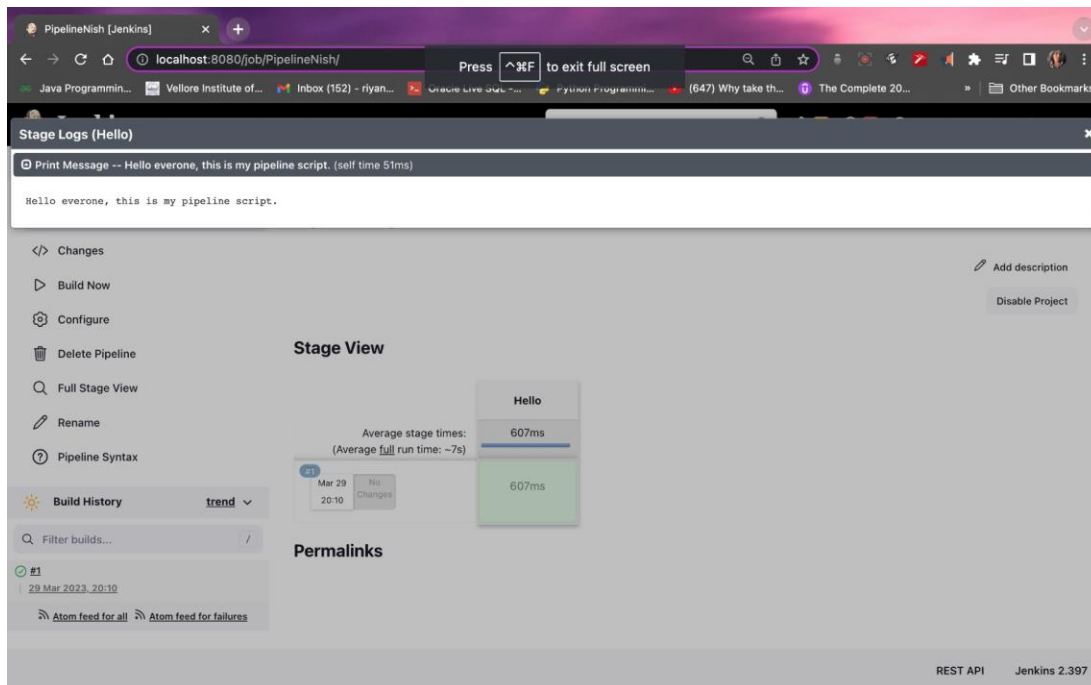
[Add description](#)

[Disable Project](#)

Stage View



Permalinks



Pipeline PipelineNish

[Add description](#)

[Disable Project](#)

Stage View



Permalinks

- Last build (#1), 8 min 24 sec ago
- Last stable build (#1), 8 min 24 sec ago
- Last successful build (#1), 8 min 24 sec ago
- Last completed build (#1), 8 min 24 sec ago

PIPELINE WITH SCM SCRIPT USING GITHUB REPO

The image consists of two screenshots. The top screenshot shows a GitHub repository named 'BasicJava_maven_app' by user 'NishthaSingh7'. The repository contains a 'jenkins' directory, a 'src' directory, a 'README.md' file, and a 'pom.xml' file. The 'README.md' file contains the following text:

simple-java-maven-app


This repository is for the [Build a Java app with Maven](#) tutorial in the [Jenkins User Documentation](#).

The repository contains a simple Java application which outputs the string "Hello world!" and is accompanied by a couple of unit tests to check that the main application works as expected. The results of these tests are saved to a JUnit XML report.




The `jenkins` directory contains an example of the `Jenkinsfile` (i.e. Pipeline) you'll be creating yourself during the tutorial and the `jenkins/scripts` subdirectory contains a shell script with commands that are executed when Jenkins processes the "Deliver" stage of

The bottom screenshot shows the Jenkins 'Configure' page for a pipeline named 'PipelineNish'. The 'Definition' is set to 'Pipeline script from SCM'. The 'SCM' is set to 'Git'. The 'Repository URL' is 'https://github.com/NishthaSingh7/Basicjava_maven_app'. The 'Credentials' are set to '- none -'. The 'Advanced' options are expanded, showing 'Repository' and 'Credentials' fields. The 'Save' button is highlighted.

BUILD NOW IS CREATING SOME PROBLEM

 **Jenkins**

Search (⌘+K) ?

 1  1  Nishtha Singh

Dashboard > adminNish > #8

Status

Changes

Console Output

View as plain text

Edit Build Information


Delete build '#8'

Replay

Pipeline Steps

Workspaces

Previous Build

 **Console Output**

Started by user [Nishtha Singh](#)

hudson.plugins.git.GitException: Command "git fetch --tags --force --progress --prune -- origin +refs/heads/master:refs/remotes/origin/master" returned status code 128:

stdout:

stderr: fatal: couldn't find remote ref refs/heads/master

```
at org.jenkinsci.plugins.gitlient.CliGitAPIImpl.launchCommandIn(CliGitAPIImpl.java:2732)
at org.jenkinsci.plugins.gitlient.CliGitAPIImpl.launchCommandWithCredentials(CliGitAPIImpl.java:2109)
at org.jenkinsci.plugins.gitlient.CliGitAPIImpl$1.execute(CliGitAPIImpl.java:623)
at jenkins.plugins.git.GitSCMFileSystem$BuilderImpl.build(GitSCMFileSystem.java:406)
at jenkins.scm.api.SCMFileSystem.of(SCMFileSystem.java:219)
at org.jenkinsci.plugins.workflow.cps.CpsScmFlowDefinition.create(CpsScmFlowDefinition.java:118)
at org.jenkinsci.plugins.workflow.cps.CpsScmFlowDefinition.create(CpsScmFlowDefinition.java:70)
at org.jenkinsci.plugins.workflow.job.WorkflowRun.run(WorkflowRun.java:312)
at hudson.model.ResourceController.execute(ResourceController.java:101)
at hudson.model.Executor.run(Executor.java:442)
```

Finished: FAILURE