Experiment 04

Aim: To understand continuous integration, install and configure Jenkins with maven/ant/gradle to set up a build job.

Theory:

To install Jenkins following software packages are required:

1) GIT (git-scm.com)

2) Notepad++ (https://notepad-plus-plus.org/downloads/)

3) Latest Java development kit (JDK)

4) Jenkins

5) Apache Maven (Optional)

Step 1-: Install GIT

Step 2 -: Install Notepad++

Step 3 -: Install Java

Step 4 -: Install Jenkins

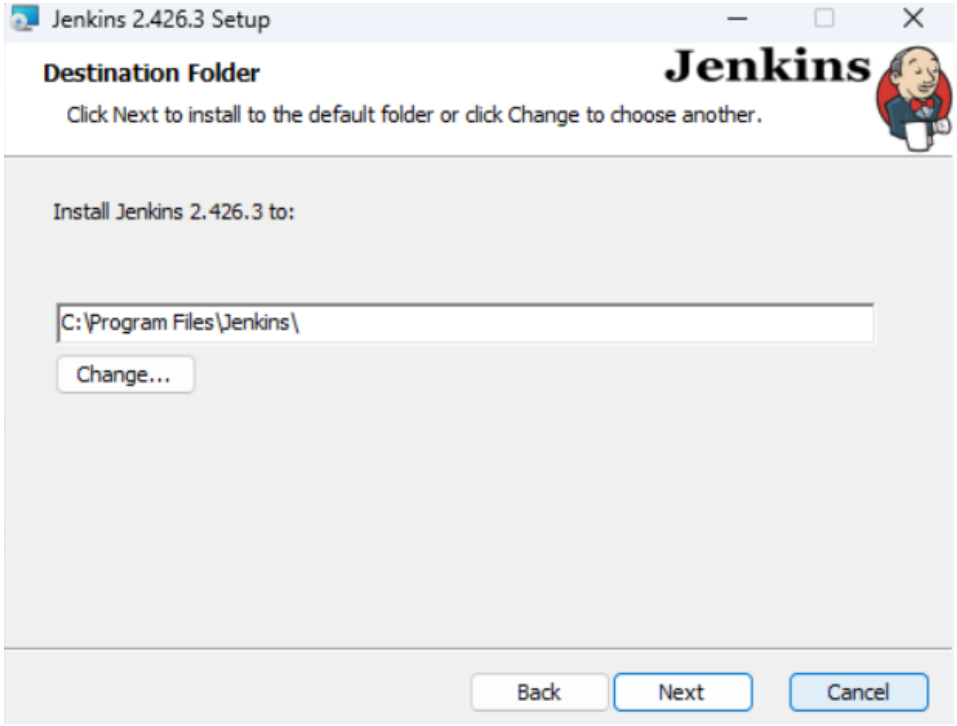
Step 5 -: Install Maven

Jenkins is an open source automation tool written in Java with plugins built for Continuous Integration purpose. Jenkins is used to build and test your software projects continuously making it easier for developers to integrate changes to the project, and making it easier for users to obtain a fresh build. It also allows you to continuously deliver your software by integrating with a large number of testing and deployment technologies.

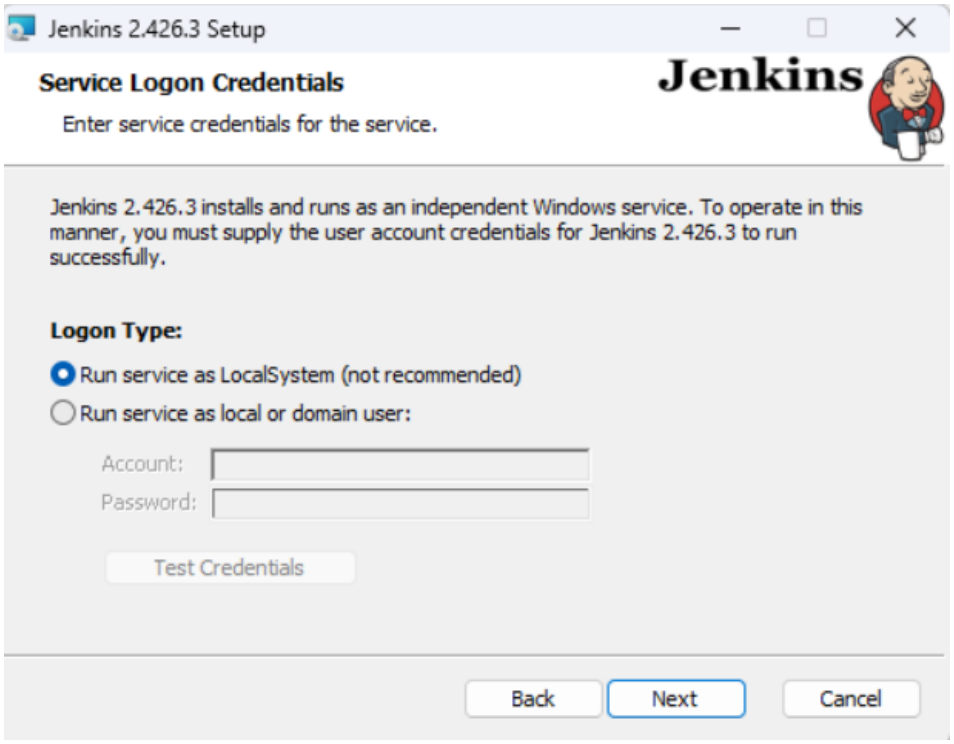
Step 1-: Open https://www.jenkins.io/doc/book/installing/windows/ and install Jenkins.

Open the installed .exe setup

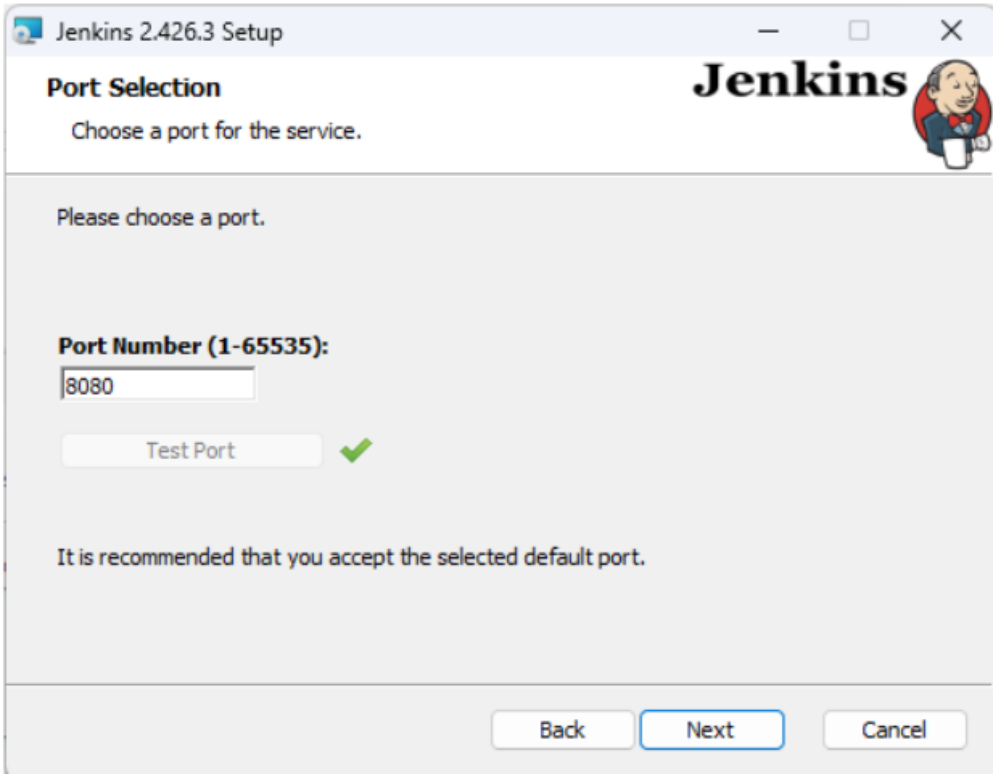
Step 2: Locate the folder where you want to install Jenkins in the location path:



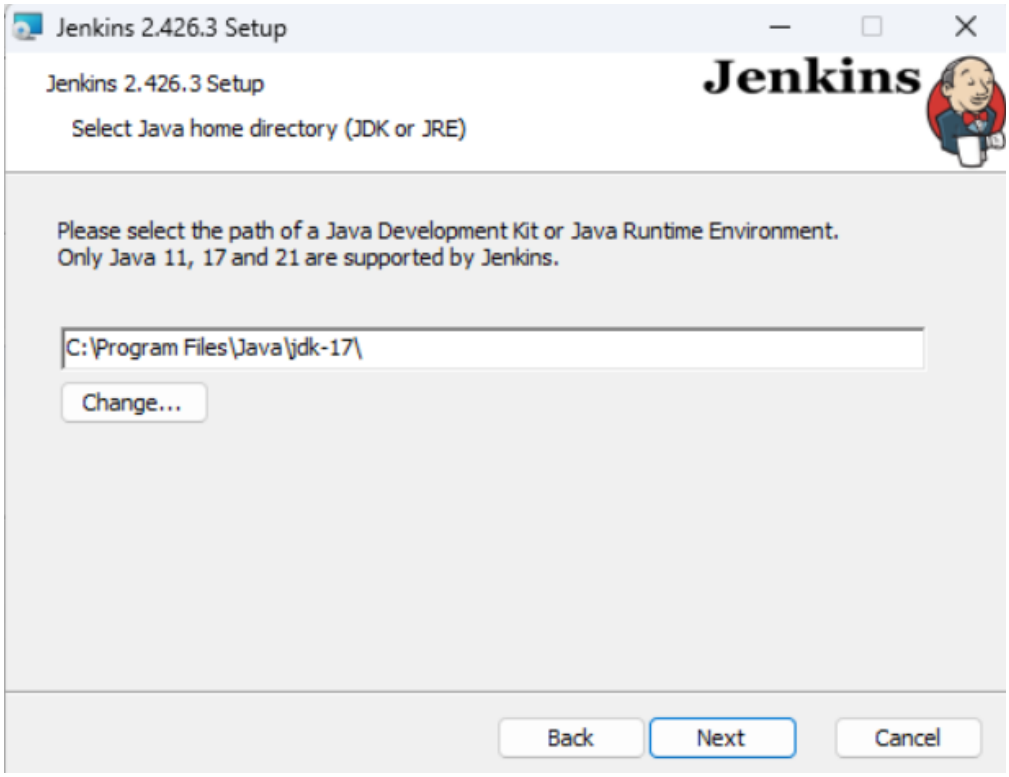
Step 3: Select service as Local System and proceed to Next.



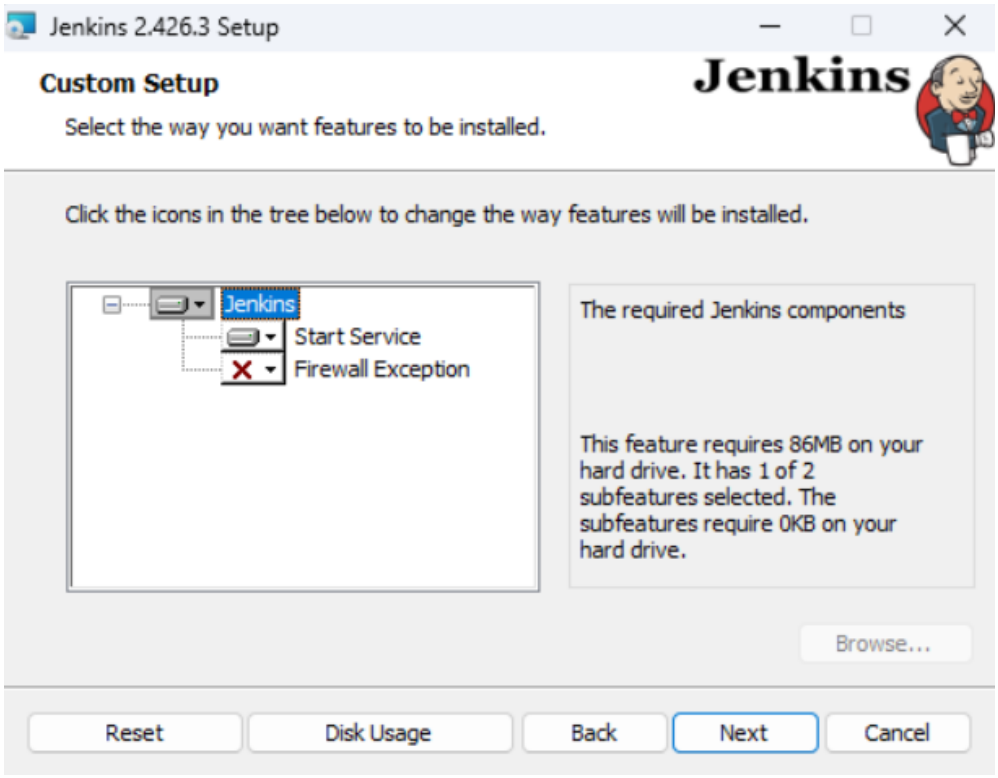
Step 4: Select the port 8080 and click Test Port button. The green tick will appear after which you can proceed to Next.

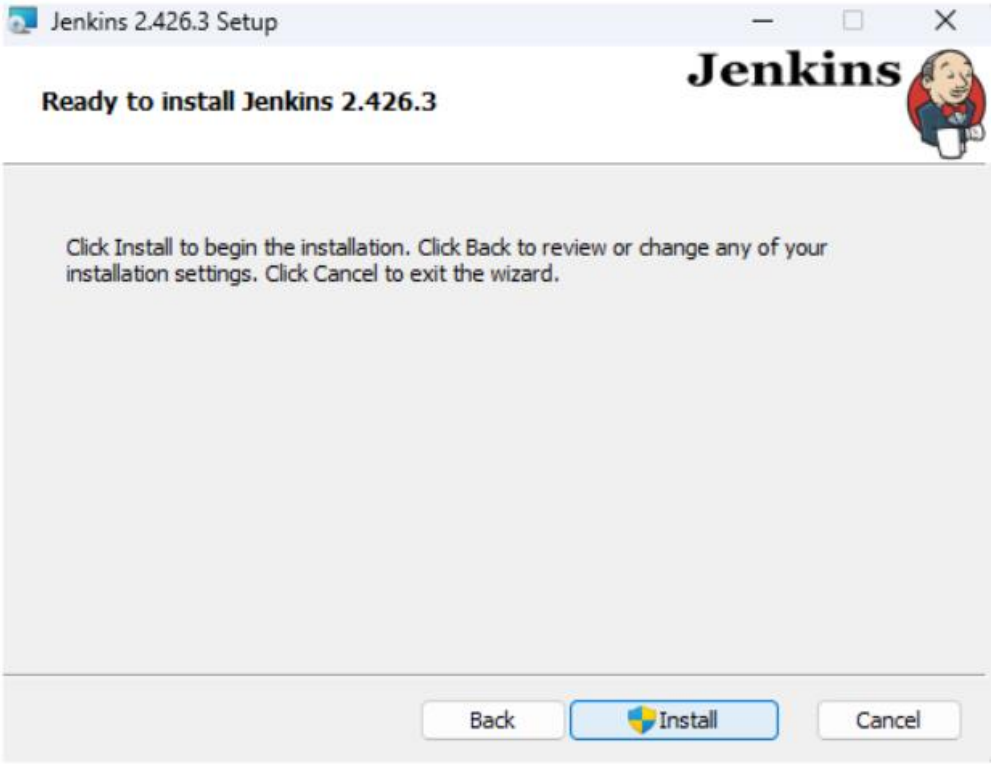


Step 5: Locate the folder where you have installed JDK in the location path:



Proceed to Next

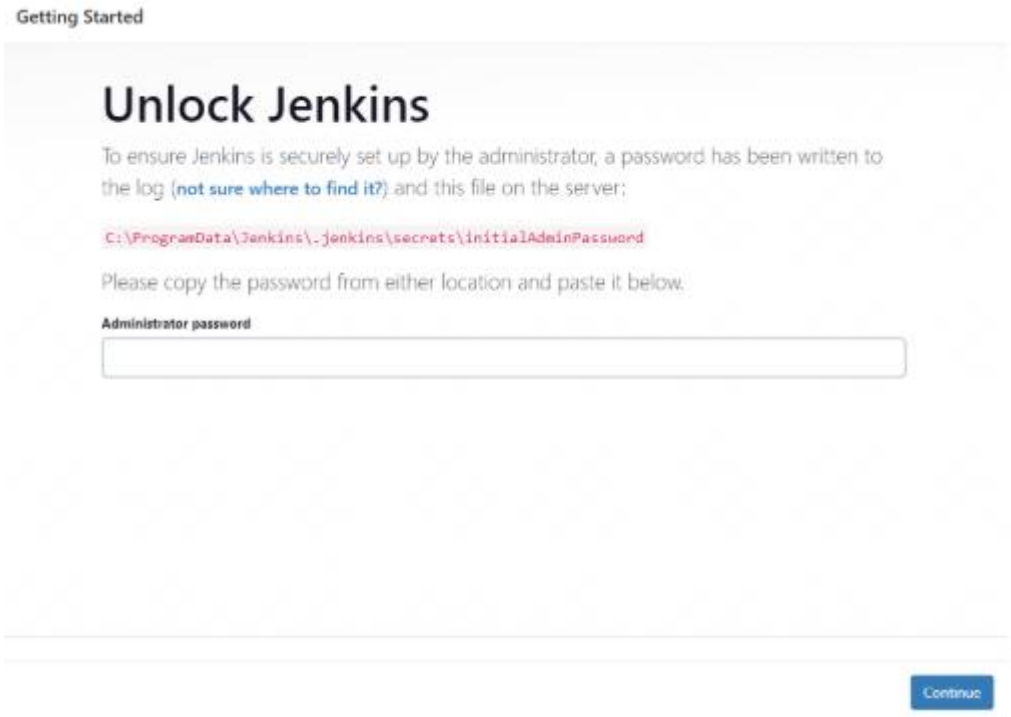




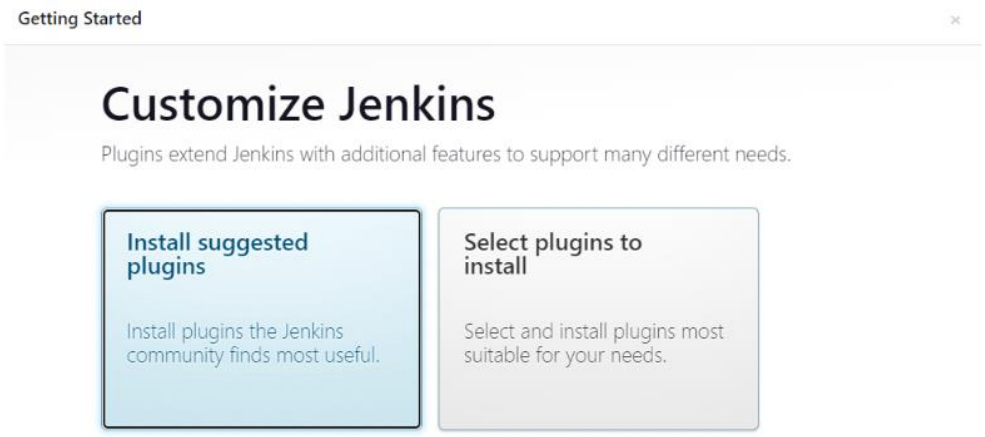
On clicking ‘Install’, installation is finished.

Step 6: Once Installation is done, you can test the Jenkins on http://localhost:8080 on the browser.

First time, when you open Jenkins portal it will ask to put admin default password which is stored in /var/lib/jenkins/secrets/initialAdminPassword file.

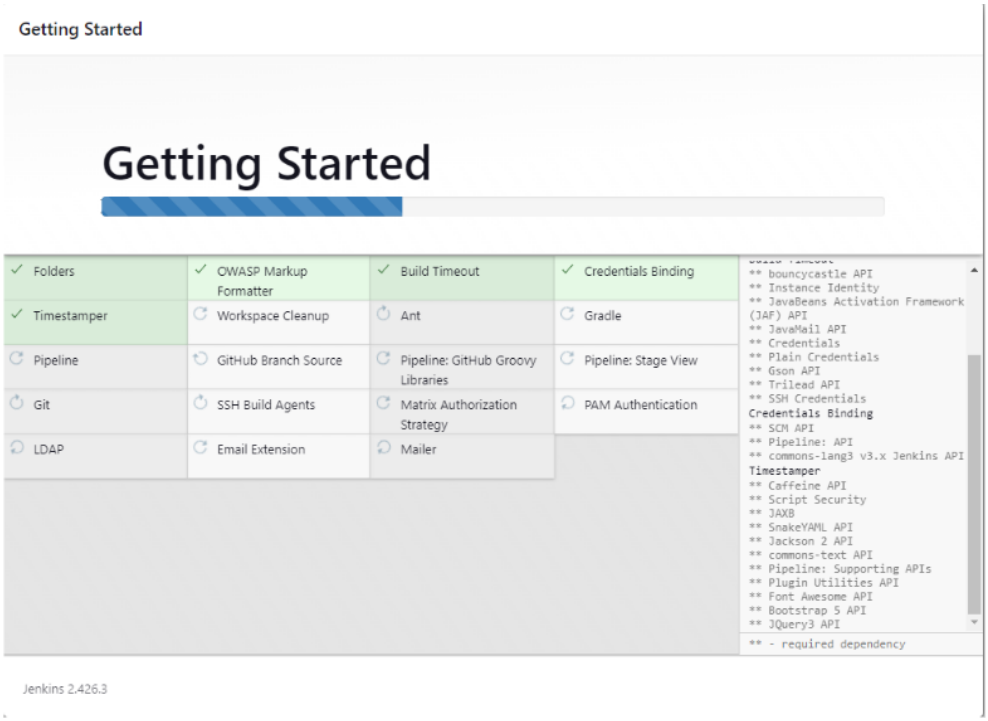


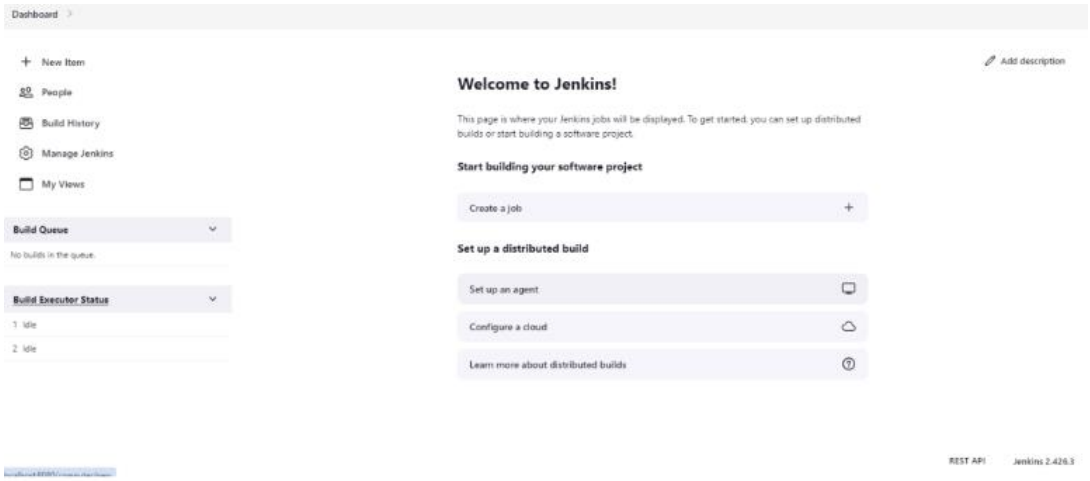
Step 7: On entering the password, you can continue to choose “Install Suggested Plugins”

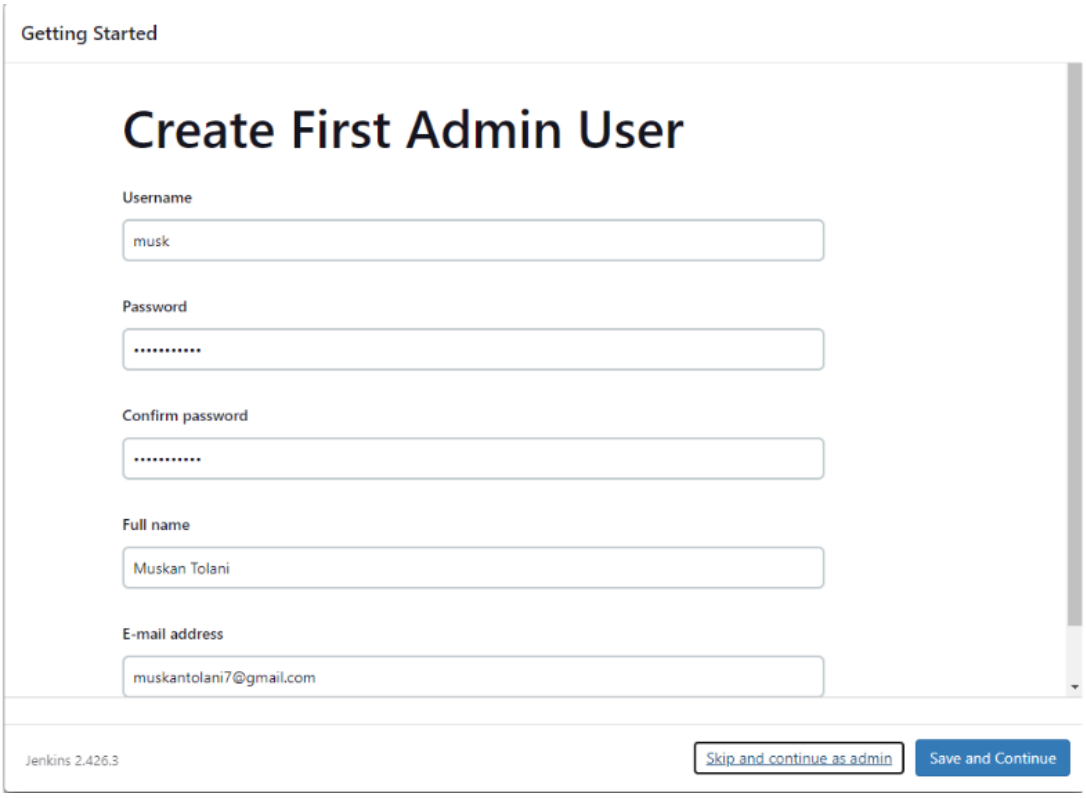


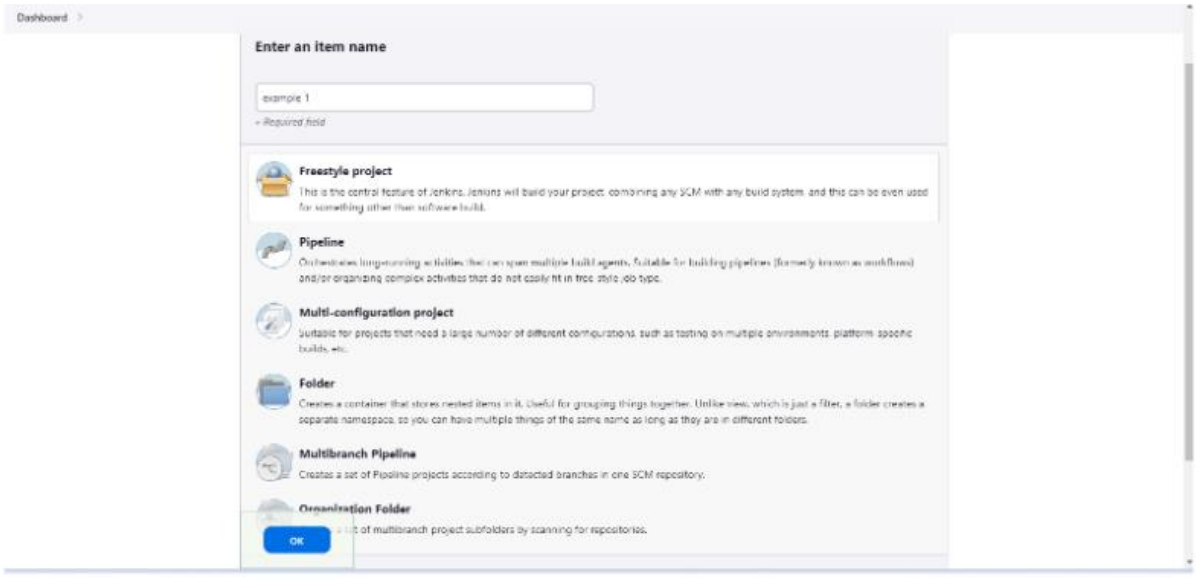
Once plugins are installed, click on next and specify the admin details along with the new password for Jenkins admin and click on finish to complete the installation.

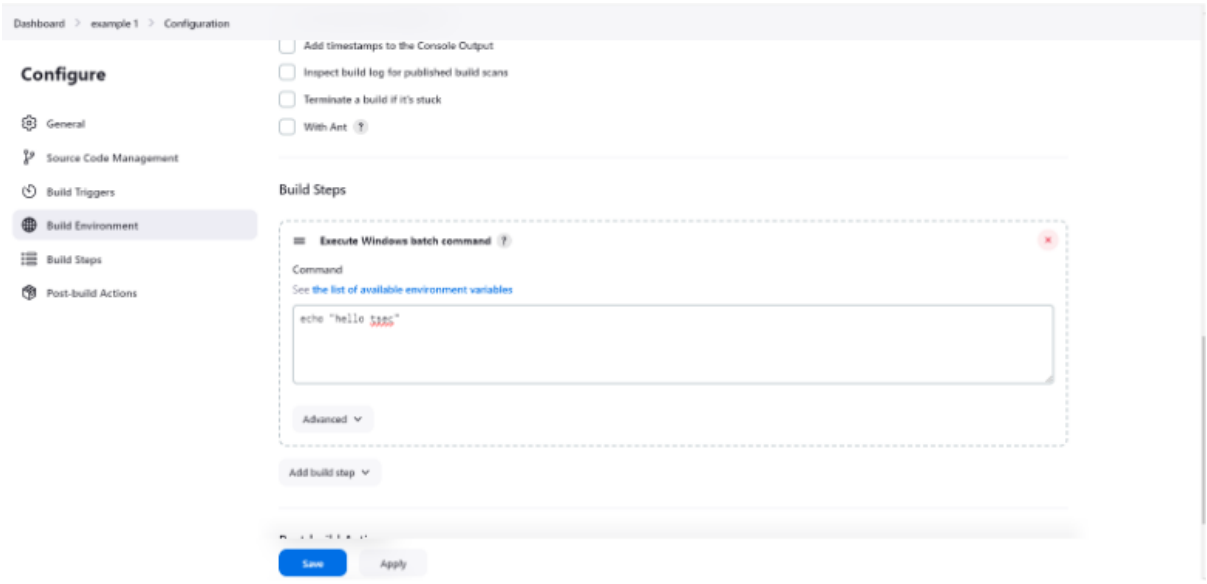
After filling the details, click on Save & Continue, you will be redirected to the dashboard.



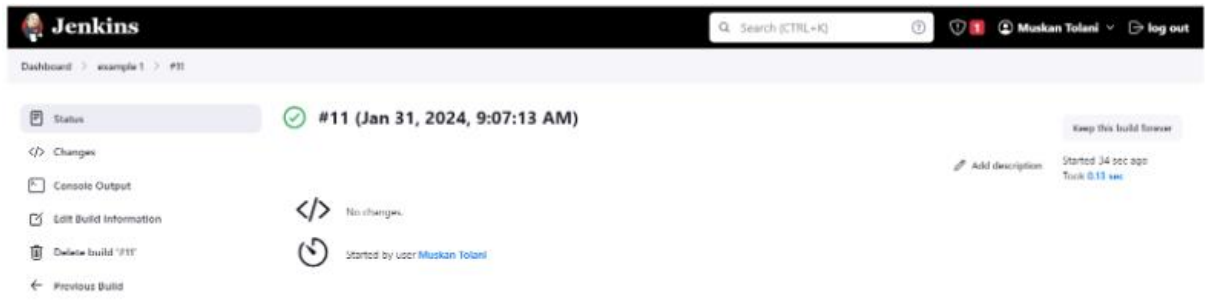

Dashboard
New Item
People
Build History
Manage Jenkins
My Views
Build Queue
No builds in the queue.
Build Executor Status
1 Idle
2 Idle
Add description
Welcome to Jenkins!
This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.
Start building your software project
Create a job
Set up a distributed build
Set up an agent
Configure a cloud
Learn more about distributed builds
REST API
Jenkins 2.426.3

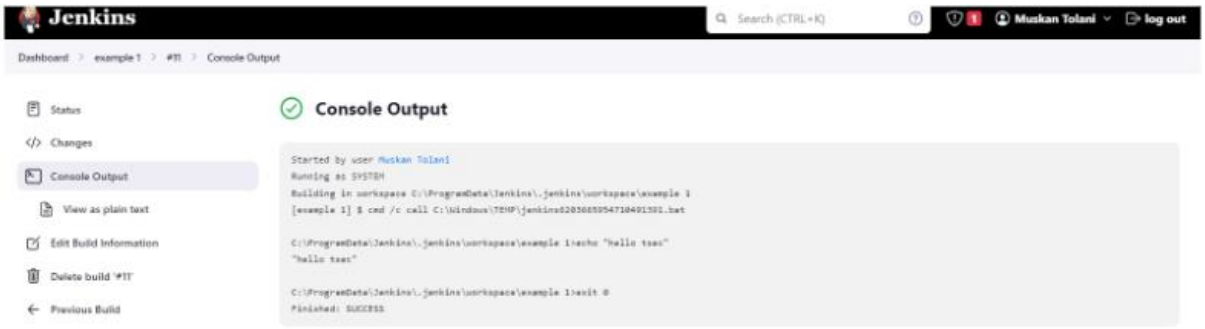

Getting Started
Create First Admin User
Username
musk
Password
Confirm password
Full name
Muskan Tolani
E-mail address
muskantolani7@gmail.com
Jenkins 2.426.3
Skip and continue as admin
Save and Continue


Dashboard
Enter an item name
example 1
» Required field
Freestyle project
Pipeline
Multi-configuration project
Folder
Multibranch Pipeline
OK


Dashboard > example 1 > Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Add timestamps to the Console Output
Inspect build log for published build scans
Terminate a build if it's stuck
With Ant
Build Steps
Execute Windows batch command
Command
See the list of available environment variables
echo "hello tsec"
Advanced
Add build step
Save
Apply


Jenkins
Search (CTRL+K)
Muskan Tolani
log out


Jenkins
Search (CTRL+K)
Muskan Tolani
log out
Dashboard > example 1 > #11
Status
Changes
Console Output
Edit Build Information
Previous Build
#11 (Jan 31, 2024, 9:07:13 AM)
Started by user Muskan Tolani



Conclusion: We have successfully installed and configured Jenkins with Maven/Ant/Gradle to setup a build Job and learnt about the implementation of Jenkins in open source continuous integration.