

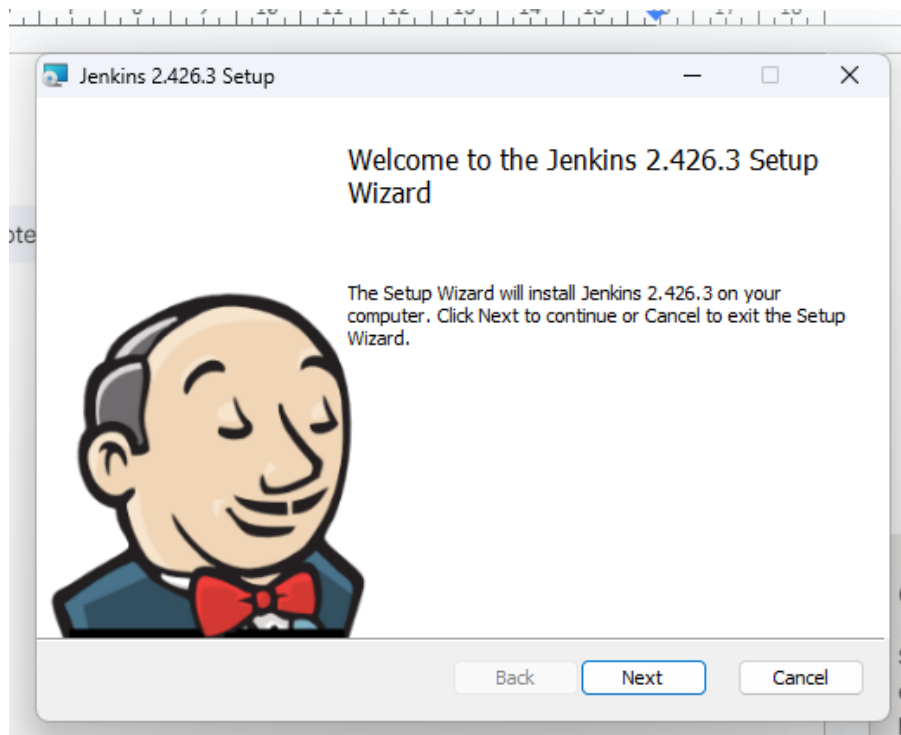
EXPERIMENT – 4

AIM - To understand Continuous Integration, install and configure Jenkins with Maven/Ant/Gradle to setup a build Job

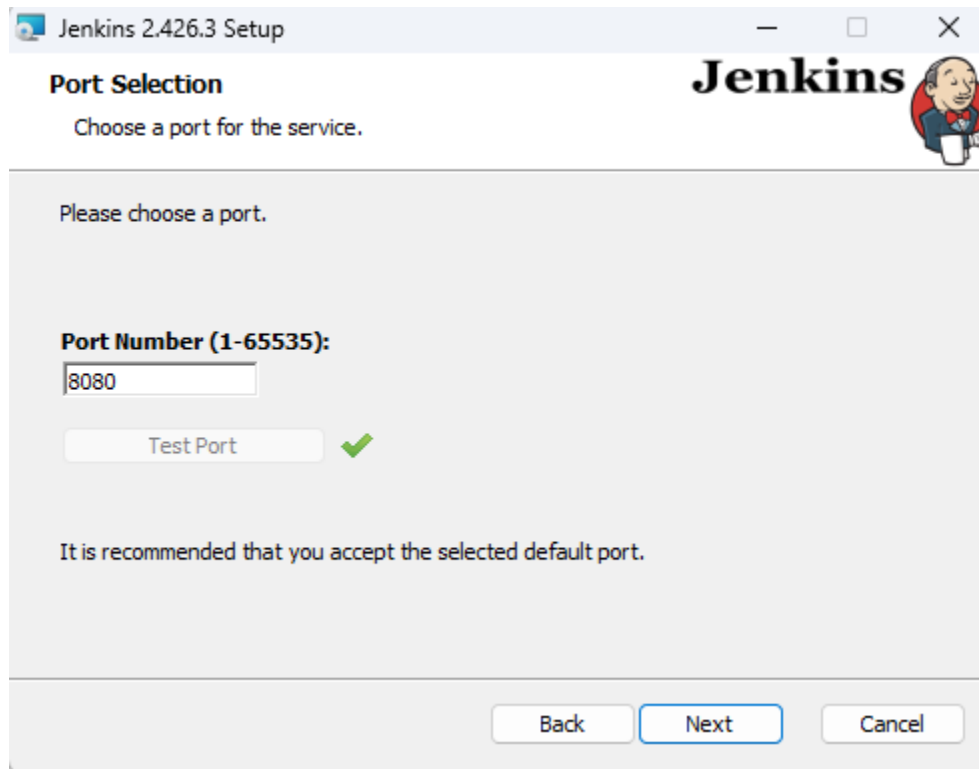
THEORY:

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 many testing and deployment technologies.

Step 1: Install Jenkins from website



Step 2: Select the desired options



The screenshot shows the 'Jenkins 2.426.3 Setup' window with the 'Port Selection' tab. The window title bar includes standard Windows window controls. The Jenkins logo and name are in the top right. The main text says 'Choose a port for the service.' Below this, it says 'Please choose a port.' A text box labeled 'Port Number (1-65535):' contains the value '8080'. To the right of the text box is a 'Test Port' button with a green checkmark icon. At the bottom, a message states 'It is recommended that you accept the selected default port.' Navigation buttons 'Back', 'Next', and 'Cancel' are at the bottom right.

Jenkins 2.426.3 Setup

Port Selection

Choose a port for the service.

Please choose a port.

Port Number (1-65535):

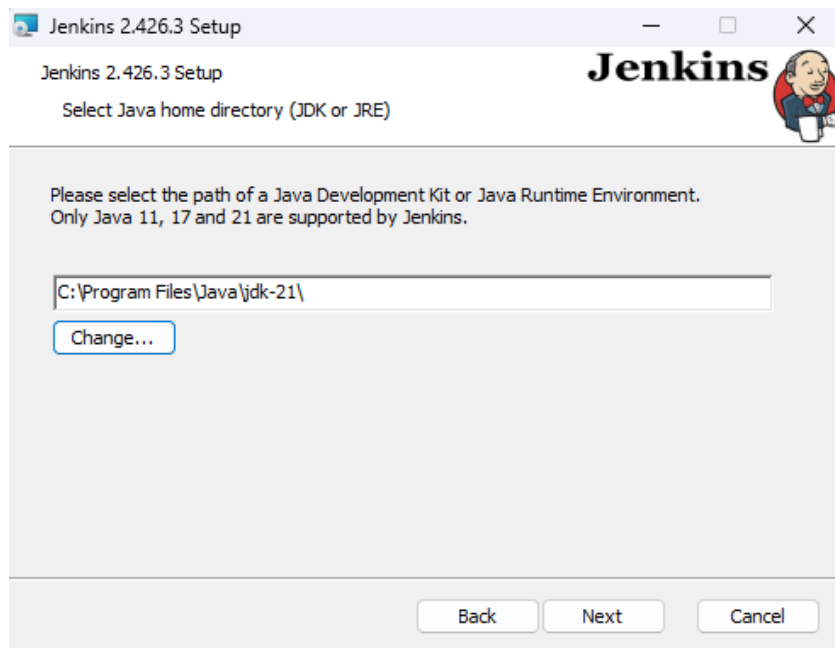
8080

Test Port ✓

It is recommended that you accept the selected default port.

Back Next Cancel

Step 3: Select the files where jdk 21 is installed



The screenshot shows the 'Jenkins 2.426.3 Setup' window with the 'Select Java home directory (JDK or JRE)' tab. The window title bar includes standard Windows window controls. The Jenkins logo and name are in the top right. The main text says 'Select Java home directory (JDK or JRE)'. Below this, it says 'Please select the path of a Java Development Kit or Java Runtime Environment. Only Java 11, 17 and 21 are supported by Jenkins.' A text box contains the path 'C:\Program Files\Java\jdk-21\'. Below the text box is a 'Change...' button. Navigation buttons 'Back', 'Next', and 'Cancel' are at the bottom right.

Jenkins 2.426.3 Setup

Select Java home directory (JDK or JRE)

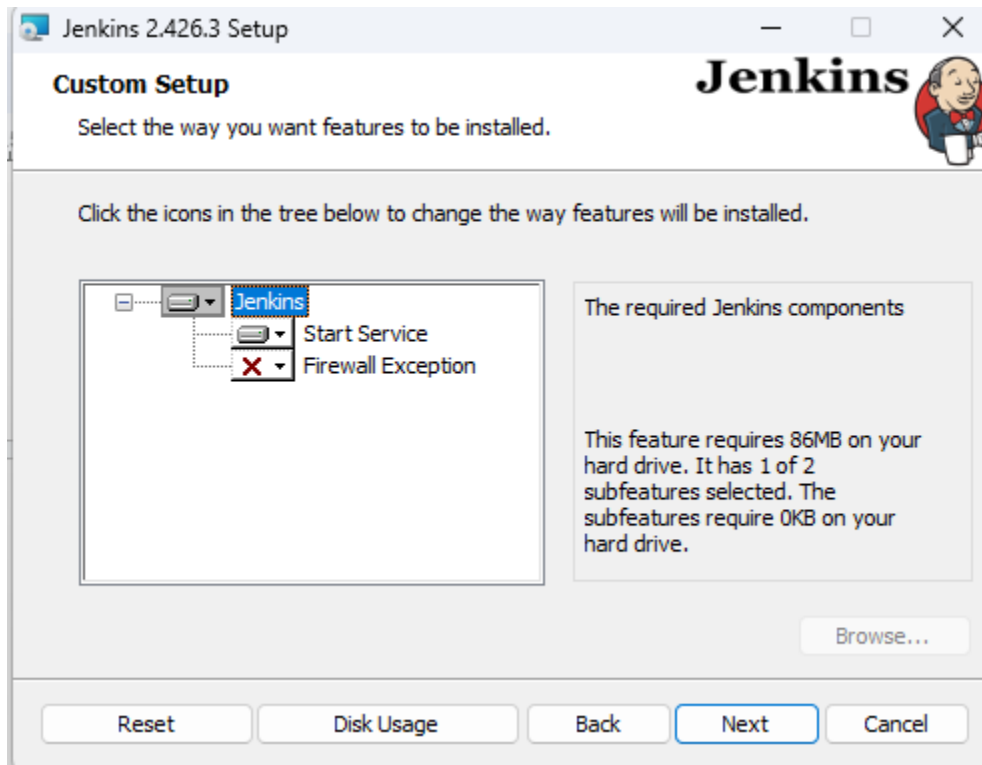
Please select the path of a Java Development Kit or Java Runtime Environment. Only Java 11, 17 and 21 are supported by Jenkins.

C:\Program Files\Java\jdk-21\

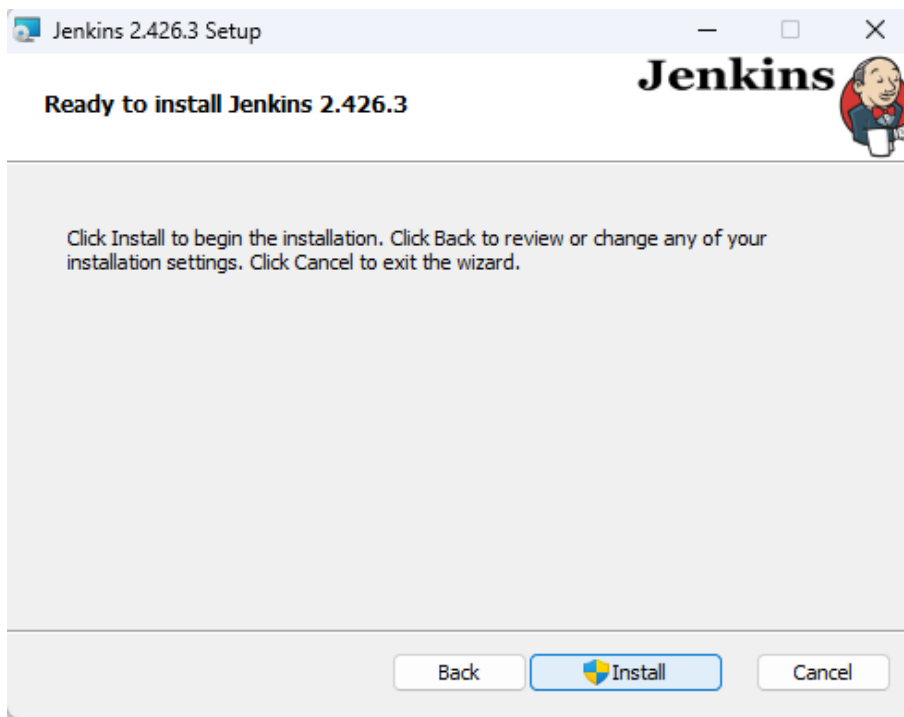
Change...

Back Next Cancel

Step 4: Select the desired options



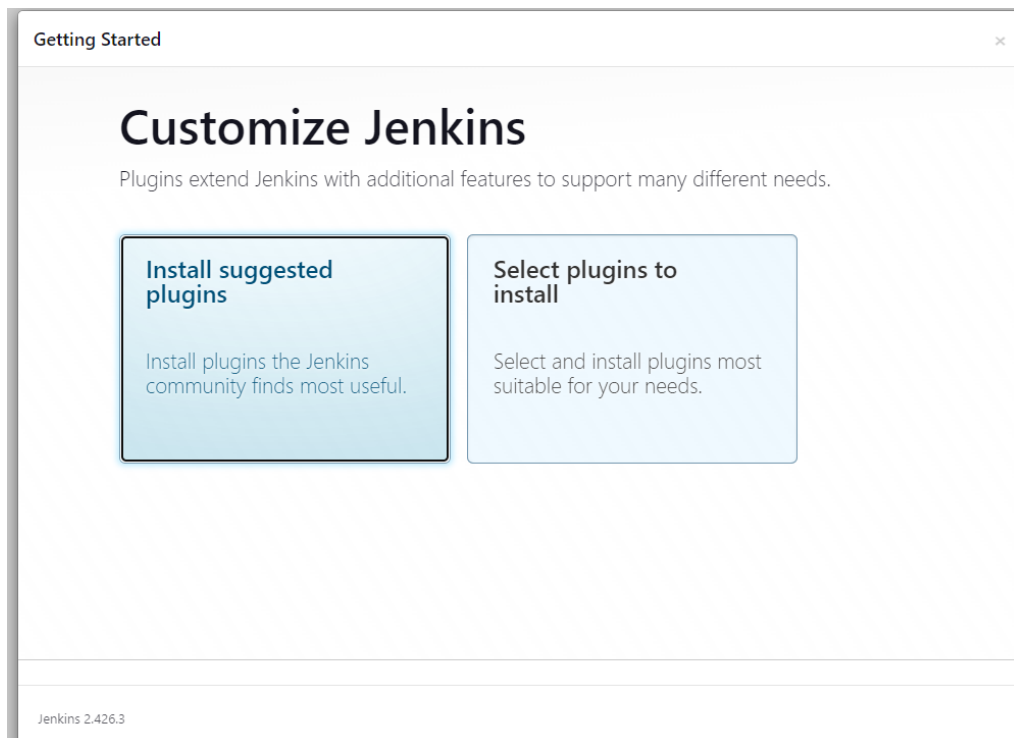
Step 5: Install the file



Step 6: Installation is finished



Step 7: Go on localhost:8080



Step 8: Select the options and wait for a few minutes

Getting Started

Getting Started

<input checked="" type="checkbox"/> Folders	<input checked="" type="checkbox"/> OWASP Markup Formatter	<input type="checkbox"/> Build Timeout	<input type="checkbox"/> Credentials Binding	** Icons API
<input type="checkbox"/> Timestampers	<input type="checkbox"/> Workspace Cleanup	<input type="checkbox"/> Ant	<input type="checkbox"/> Gradle	Folders
<input type="checkbox"/> Pipeline	<input type="checkbox"/> GitHub Branch Source	<input type="checkbox"/> Pipeline: GitHub Groovy Libraries	<input type="checkbox"/> Pipeline: Stage View	OWASP Markup Formatter
<input type="checkbox"/> Git	<input type="checkbox"/> SSH Build Agents	<input type="checkbox"/> Matrix Authorization Strategy	<input type="checkbox"/> PAM Authentication	
<input type="checkbox"/> LDAP	<input type="checkbox"/> Email Extension	<input type="checkbox"/> Mailer		

** - required dependency

Jenkins 2.426.3

Step 9: Fill the appropriate credentials

Getting Started

Create First Admin User

Username

Password

Confirm password

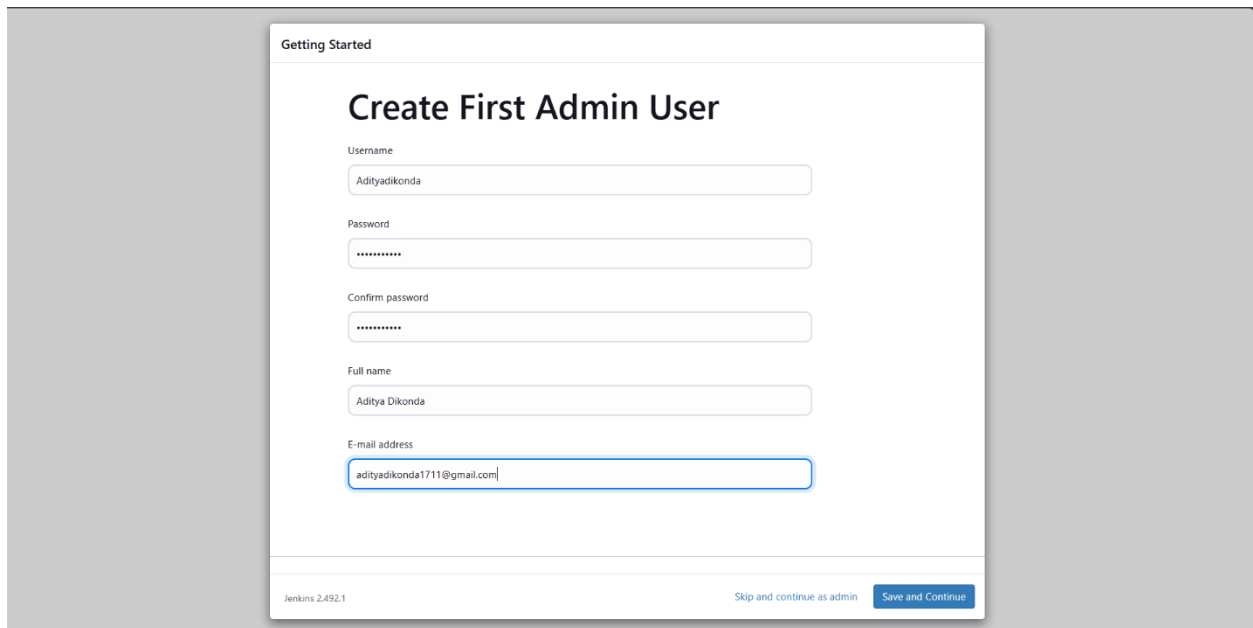
Full name

E-mail address

Jenkins 2.426.3

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

Step 10:

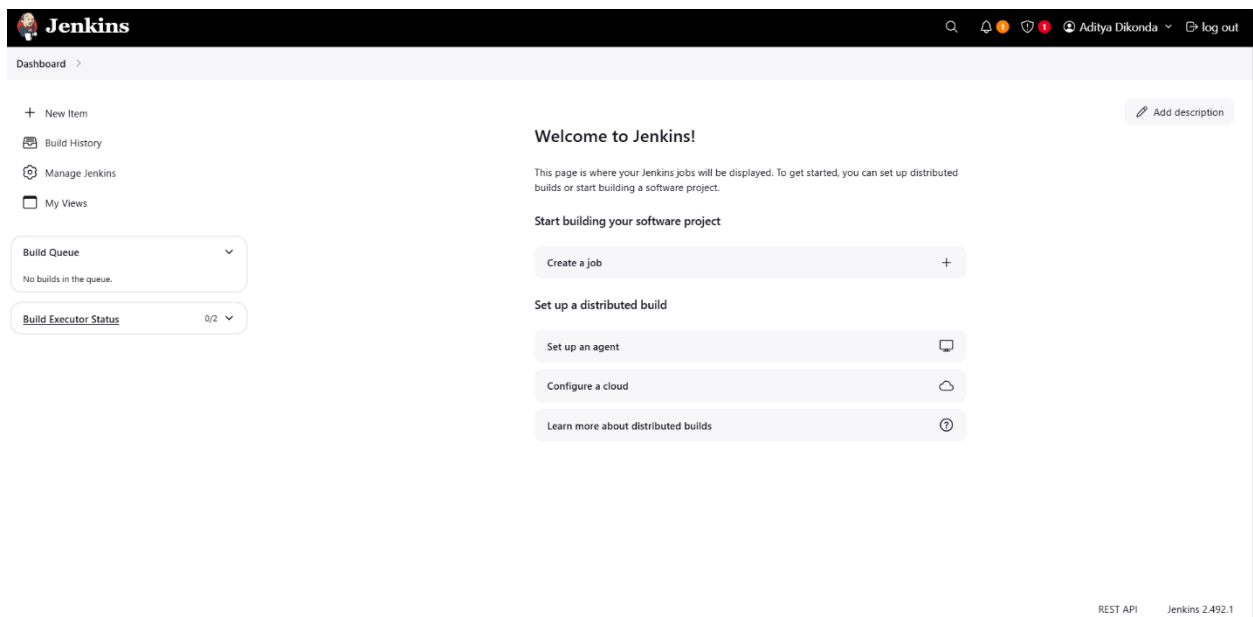


The screenshot shows the 'Getting Started' page in Jenkins. The main heading is 'Create First Admin User'. The form contains the following fields:

- Username:** Adityadikonda
- Password:** (masked with dots)
- Confirm password:** (masked with dots)
- Full name:** Aditya Dikonda
- E-mail address:** adityadikonda1711@gmail.com

At the bottom of the form, there are two buttons: 'Skip and continue as admin' and 'Save and Continue'. The Jenkins version 'Jenkins 2.492.1' is displayed in the bottom left corner.

Step 11: Congratulations! You have created your Jenkins account



The screenshot shows the Jenkins Dashboard. The top navigation bar includes the Jenkins logo, a search icon, notification icons, and the user profile 'Aditya Dikonda' with a 'log out' link. The main content area is divided into two columns.

Left Column (Dashboard):

- + New Item**
- Build History**
- Manage Jenkins**
- My Views**
- Build Queue** (No builds in the queue)
- Build Executor Status** (0/2)

Right Column (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 2.492.1

CONCLUSION:

Jenkins with Maven simplifies Continuous Integration, automating builds and improving project efficiency for faster development cycles and higher software quality.