

EXPERIMENT – 4

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

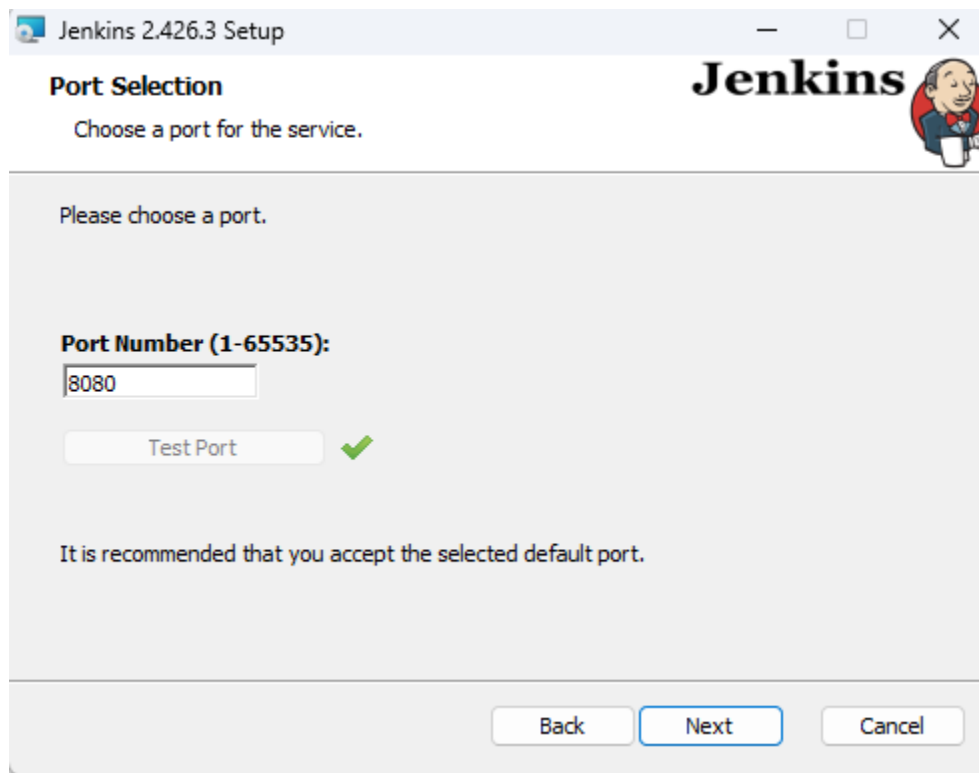
THEORY:

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 title bar includes standard window controls. The header area contains the 'Jenkins' logo and a cartoon character. The main content area has the text 'Please choose a port.' followed by a label 'Port Number (1-65535):' and a text input field containing '8080'. Below the input field is a 'Test Port' button with a green checkmark to its right. At the bottom, there is a message: 'It is recommended that you accept the selected default port.' and three buttons: 'Back', 'Next' (highlighted with a blue border), and 'Cancel'.

Jenkins 2.426.3 Setup

Port Selection

Choose a port for the service.

Please choose a port.

Port Number (1-65535):

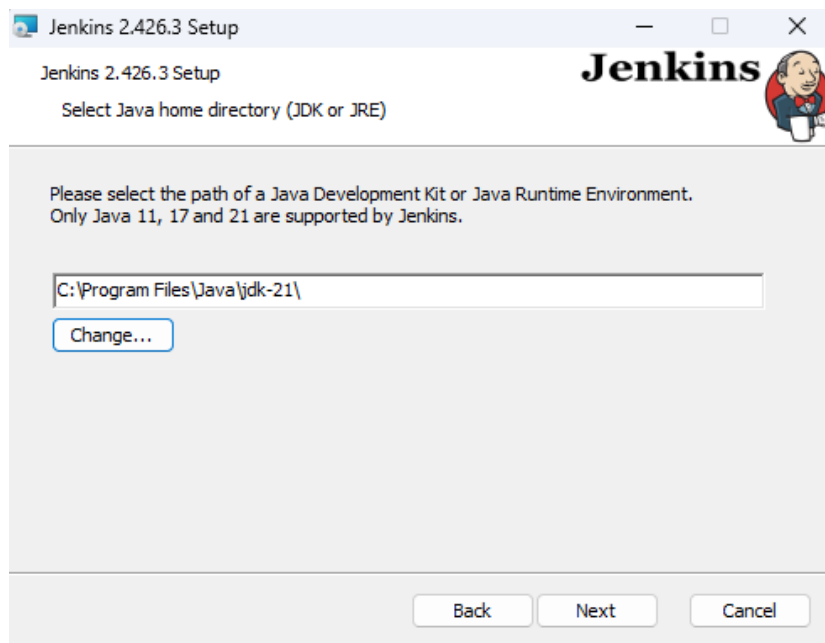
8080

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 title bar includes standard window controls. The header area contains the 'Jenkins' logo and a cartoon character. The main content area has the text 'Please select the path of a Java Development Kit or Java Runtime Environment. Only Java 11, 17 and 21 are supported by Jenkins.' followed by a text input field containing 'C:\Program Files\Java\jdk-21\'. Below the input field is a 'Change...' button. At the bottom, there are three buttons: 'Back', 'Next' (highlighted with a blue border), and 'Cancel'.

Jenkins 2.426.3 Setup

Jenkins 2.426.3 Setup

Select Java home directory (JDK or JRE)

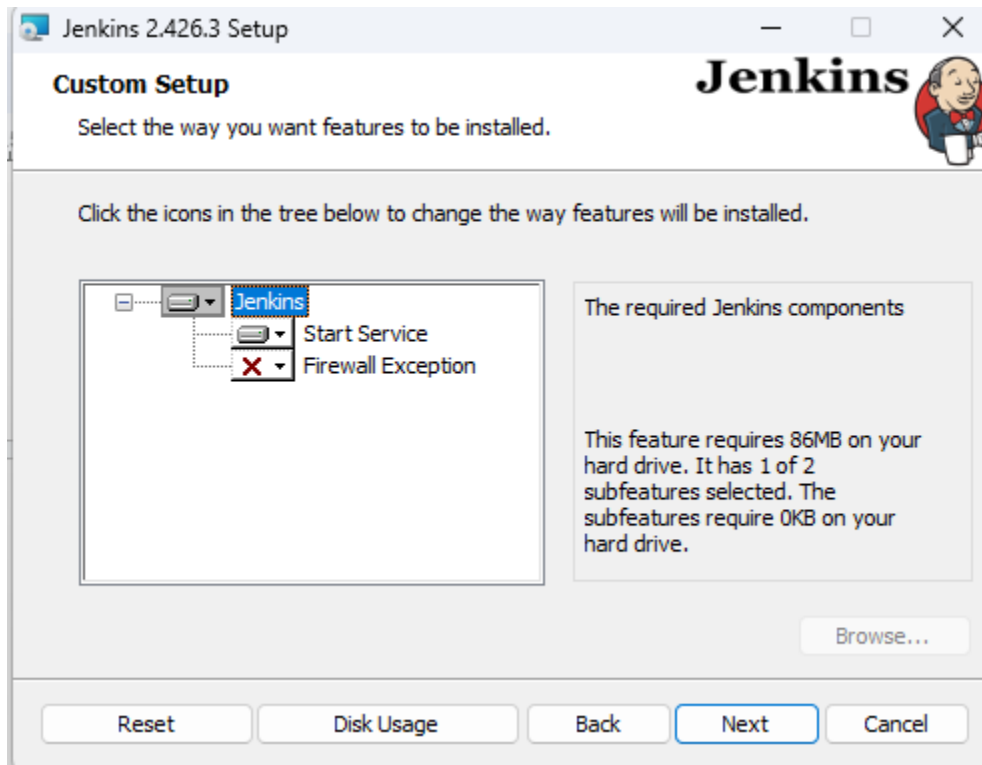
Please select the path of a Java Development Kit or Java Runtime Environment.
Only Java 11, 17 and 21 are supported by Jenkins.

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

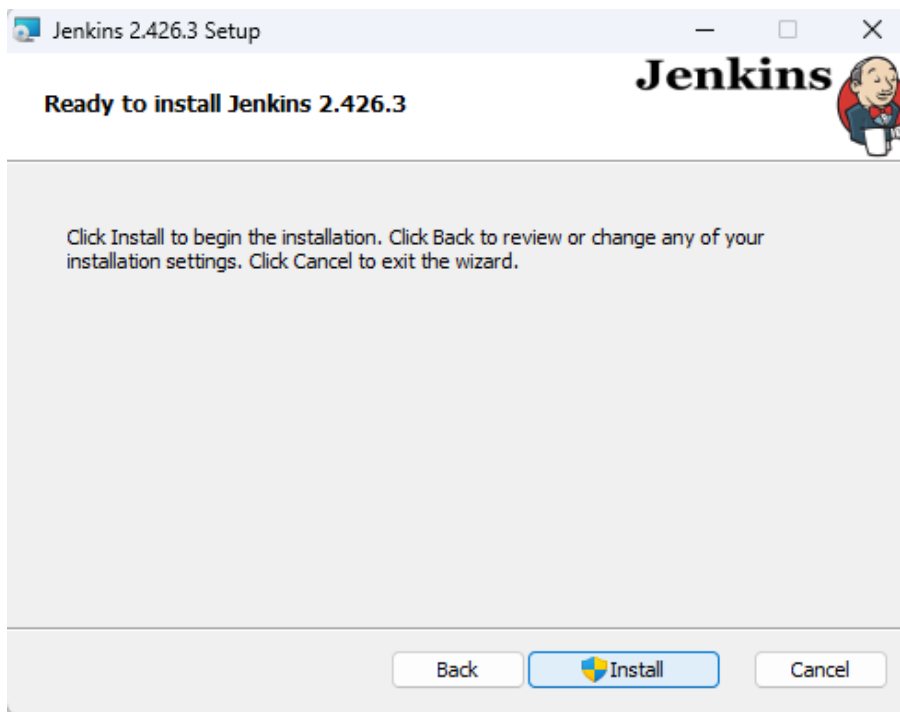
Change...

Back Next Cancel

Step 4: Select the desired options



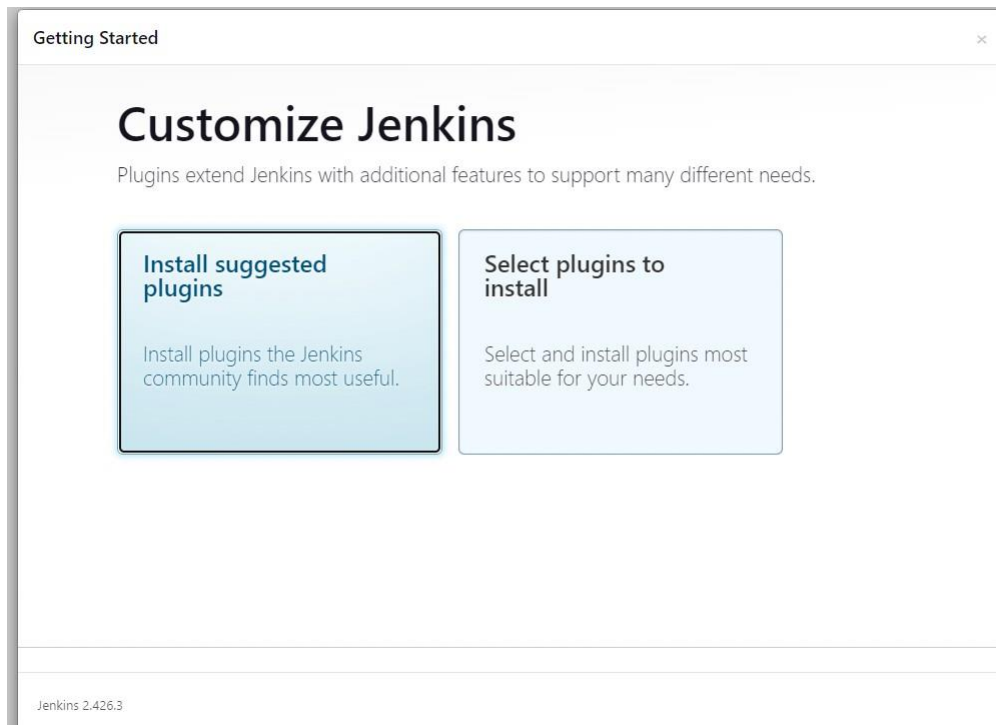
Step 5: Install the file



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

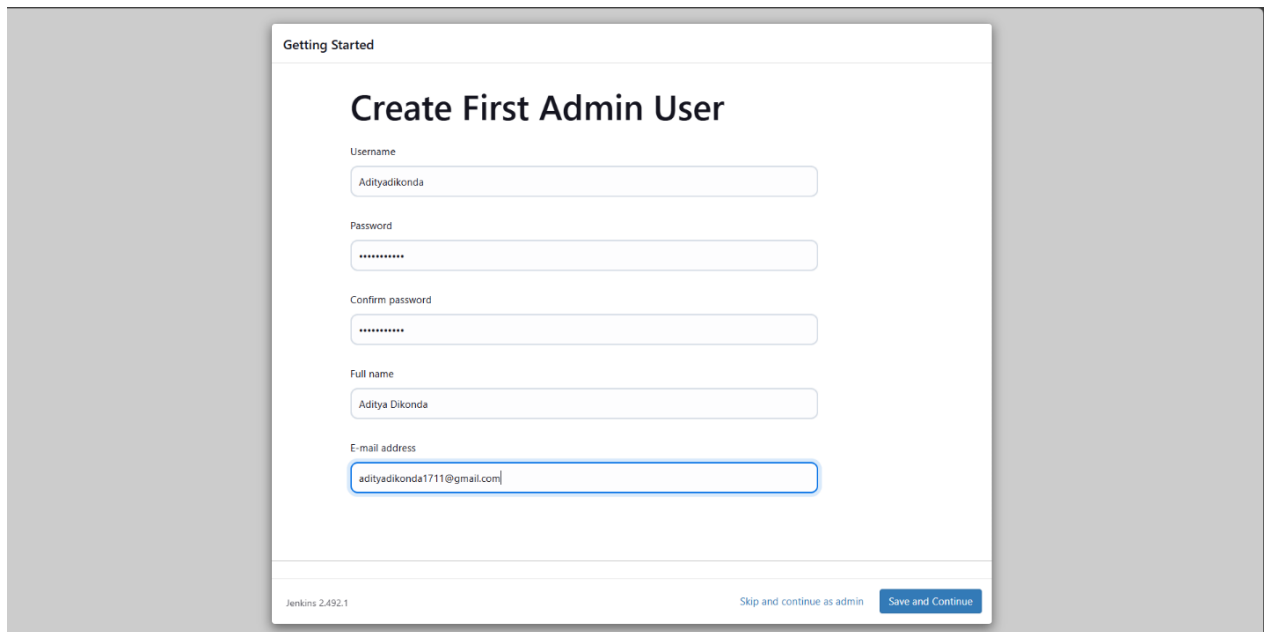
Full name

E-mail address

Jenkins 2.426.3

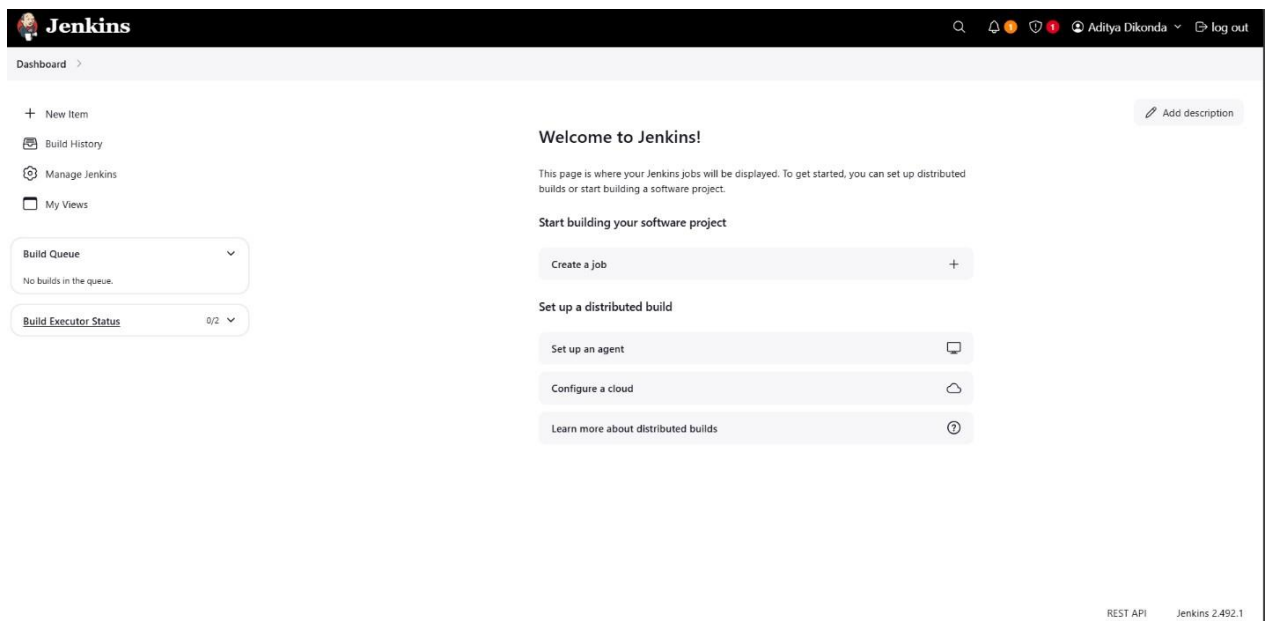
[Skip and continue as admin](#) [Save and Continue](#)

Step 10:



The screenshot shows the 'Getting Started' page in Jenkins. The main heading is 'Create First Admin User'. Below it are several input fields: 'Username' (filled with 'Adityadikonda'), 'Password' (filled with '*****'), 'Confirm password' (filled with '*****'), 'Full name' (filled with 'Aditya Dikonda'), and 'E-mail address' (filled with 'adityadikonda1711@gmail.com'). At the bottom, there are two buttons: 'Skip and continue as admin' and 'Save and Continue'. The Jenkins version '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, a bell icon, a shield icon, a user profile icon for 'Aditya Dikonda', and a 'log out' button. The main content area is divided into two columns. The left column contains a sidebar with links: '+ New Item', 'Build History', 'Manage Jenkins', and 'My Views'. Below these are two status boxes: 'Build Queue' (showing 'No builds in the queue') and 'Build Executor Status' (showing '0/2'). The right column features a 'Welcome to Jenkins!' message, followed by a paragraph explaining the dashboard's purpose. Below this, there are three sections: 'Start building your software project' with a 'Create a job' button, 'Set up a distributed build' with buttons for 'Set up an agent', 'Configure a cloud', and 'Learn more about distributed builds'. At the bottom right, there are links for 'REST API' and '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.