

Experiment-04

AIM: Jenkins Installation and Setup: Explore the Environment

Objective: To install Jenkins, perform initial setup, and explore the Jenkins environment for automation tasks.

Software Requirements

- Java installed (JDK 11 or higher)
 - Jenkins package (<https://www.jenkins.io/download/>)
 - Web browser
-

Lab Procedure

Install Java (If Not Installed)

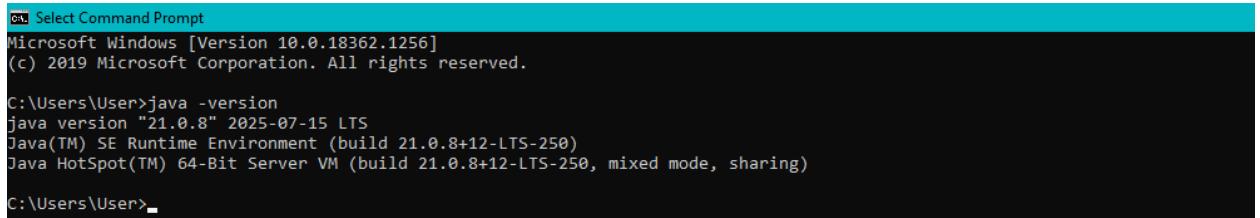
sudo apt update

sudo apt install openjdk-11-jdk

java –version

Steps to install jdk

- search for jdk download
- go to the first link of oracle and click jdk 21 and download x64 installer
- give the permissions and install it
- go to command prompt and click java –version to know the version of java



```
C:\ Select Command Prompt
Microsoft Windows [Version 10.0.18362.1256]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\User>java -version
java version "21.0.8" 2025-07-15 LTS
Java(TM) SE Runtime Environment (build 21.0.8+12-LTS-250)
Java HotSpot(TM) 64-Bit Server VM (build 21.0.8+12-LTS-250, mixed mode, sharing)

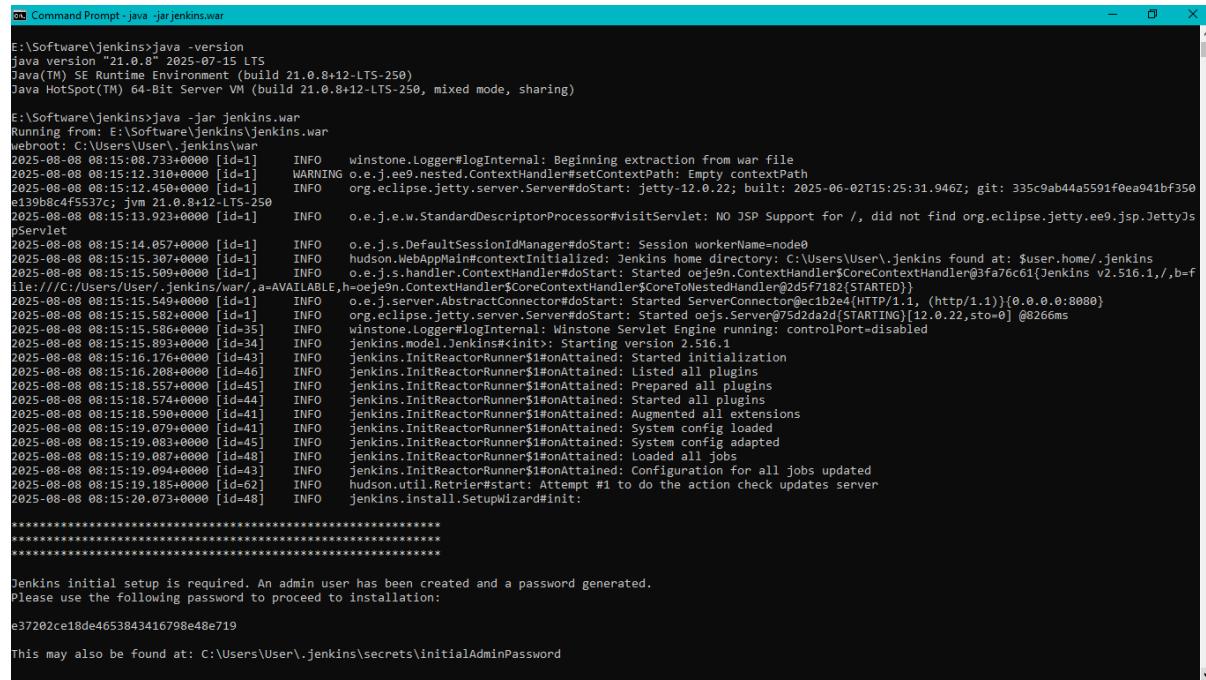
C:\Users\User>
```

Steps to install and setup Jenkins

1. search for Jenkins download
2. go to the first link ([Download and deploy \(jenkins.io\)](https://jenkins.io))

3. now click on java generic package and download it
4. Now to run Jenkins go to command prompt and navigate to the folder where Generic java package.war (Jenkins.war) is downloaded
5. Now run this command

```
java -jar jenkins.war
```



```
E:\Software\jenkins>java -version
java version "21.0.8" 2025-07-15 LTS
Java(TM) SE Runtime Environment (build 21.0.8+12-LTS-250)
Java HotSpot(TM) 64-Bit Server VM (build 21.0.8+12-LTS-250, mixed mode, sharing)

E:\Software\jenkins>java -jar jenkins.war
Running from: E:\Software\jenkins\jenkins.war
webroot: C:\Users\User\.jenkins\war
2025-08-08 08:15:08.733+0000 [id=1] INFO  winstome.Logger#logInternal: Beginning extraction from war file
2025-08-08 08:15:12.310+0000 [id=1] WARNING o.e.j.e99.nested.ContextHandler#setContextPath: Empty contextPath
2025-08-08 08:15:12.450+0000 [id=1] INFO  org.eclipse.jetty.server.Server#doStart: jetty-12.0.22; built: 2025-06-02T15:25:31.946Z; git: 335c9ab44a5591f0ea941bf350e1398c4f5537c; jvm 21.0.8+12-LTS-250
2025-08-08 08:15:13.923+0000 [id=1] INFO  o.e.j.e.w.StandardDescriptorProcessor#visitServlet: NO JSP Support for /, did not find org.eclipse.jetty.ee9.jsp.Jetty's pServlet
2025-08-08 08:15:14.057+0000 [id=1] INFO  o.e.j.s.DefaultSessionIdManager#doStart: Session workerName=node0
2025-08-08 08:15:15.307+0000 [id=1] INFO  hudson.WebAppMain#contextInitialized: Jenkins home directory: C:\Users\User\.jenkins
2025-08-08 08:15:15.509+0000 [id=1] INFO  o.e.j.s.handler.ContextHandler#doStart: Started ogle9n.ContextHandler@3fa76c61[Jenkins v2.516.1.,,b=file:///C:/Users/User/.jenkins/war/,a=AVAILABLE,h=oej9n.ContextHandlers$CoreContextHandler$CoreTolestedHandler@2d5f7182[STARTED]]
2025-08-08 08:15:15.549+0000 [id=1] INFO  o.e.j.server.AbstractConnector#doStart: Started ServerConnector@ec1b2ed4[HTTP/1.1, (http/1.1){0.0.0.0:8080}]
2025-08-08 08:15:15.582+0000 [id=1] INFO  org.eclipse.jetty.server.Server#doStart: Started oej9n.Server@75d2da2d[STARTING][12.0.22,st=0] @8266ms
2025-08-08 08:15:15.586+0000 [id=35] INFO  winstome.Logger#logInternal: Winstone Servlet Engine running: controlPort=disabled
2025-08-08 08:15:15.893+0000 [id=34] INFO  jenkins.model.Jenkins#init: Starting version 2.516.1
2025-08-08 08:15:16.176+0000 [id=43] INFO  Jenkins$InitReactorRunner$1#onAttained: Started initialization
2025-08-08 08:15:16.208+0000 [id=46] INFO  Jenkins$InitReactorRunner$1#onAttained: Listed all plugins
2025-08-08 08:15:16.557+0000 [id=45] INFO  Jenkins$InitReactorRunner$1#onAttained: Prepared all plugins
2025-08-08 08:15:16.574+0000 [id=44] INFO  Jenkins$InitReactorRunner$1#onAttained: Started all plugins
2025-08-08 08:15:16.590+0000 [id=41] INFO  Jenkins$InitReactorRunner$1#onAttained: Augmented all extensions
2025-08-08 08:15:19.079+0000 [id=41] INFO  Jenkins$InitReactorRunner$1#onAttained: System config loaded
2025-08-08 08:15:19.083+0000 [id=45] INFO  Jenkins$InitReactorRunner$1#onAttained: System config adapted
2025-08-08 08:15:19.087+0000 [id=48] INFO  Jenkins$InitReactorRunner$1#onAttained: Loaded all jobs
2025-08-08 08:15:19.094+0000 [id=43] INFO  Jenkins$InitReactorRunner$1#onAttained: Configuration for all jobs updated
2025-08-08 08:15:19.185+0000 [id=62] INFO  hudson.util.Retriler#start: Attempt #1 to do the action check updates server
2025-08-08 08:15:20.073+0000 [id=48] INFO  jenkins.install.SetupWizard#init:
*****
*****
*****
Jenkins initial setup is required. An admin user has been created and a password generated.
Please use the following password to proceed to installation:
e3720ce18de4653843416798e48e719
This may also be found at: C:\Users\User\.jenkins\secrets\initialAdminPassword
```

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6. Now a password will be generated, Copy that password
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7. Access Jenkins Web Interface

- Open a web browser and navigate to:

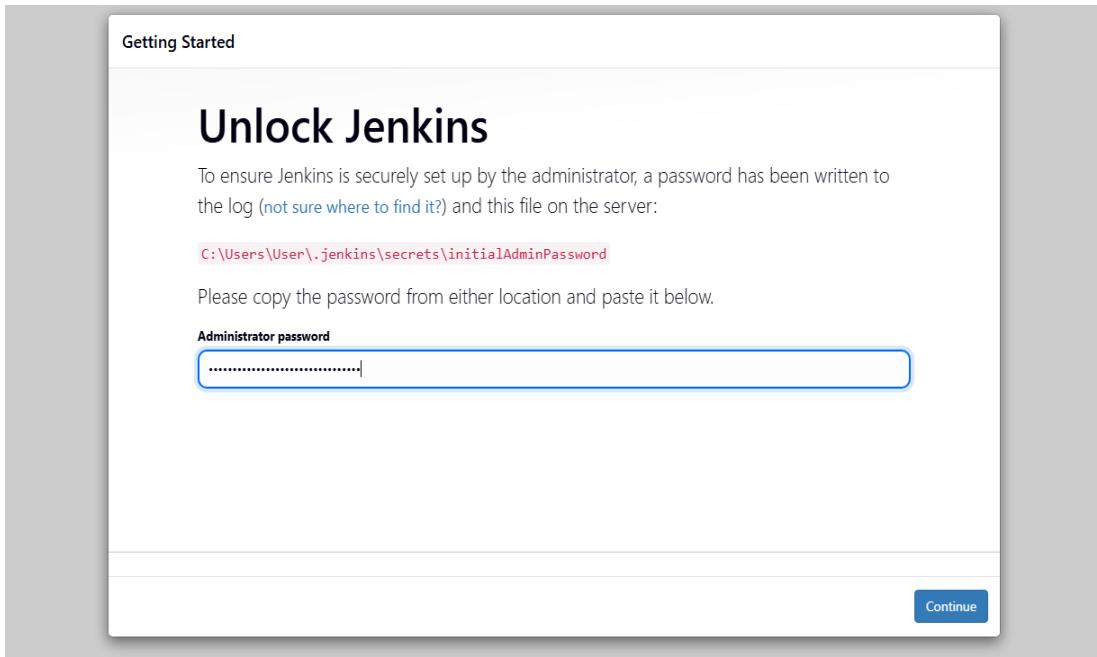
<http://localhost:8080>

8. Unlock Jenkins

- Retrieve the administrator password:

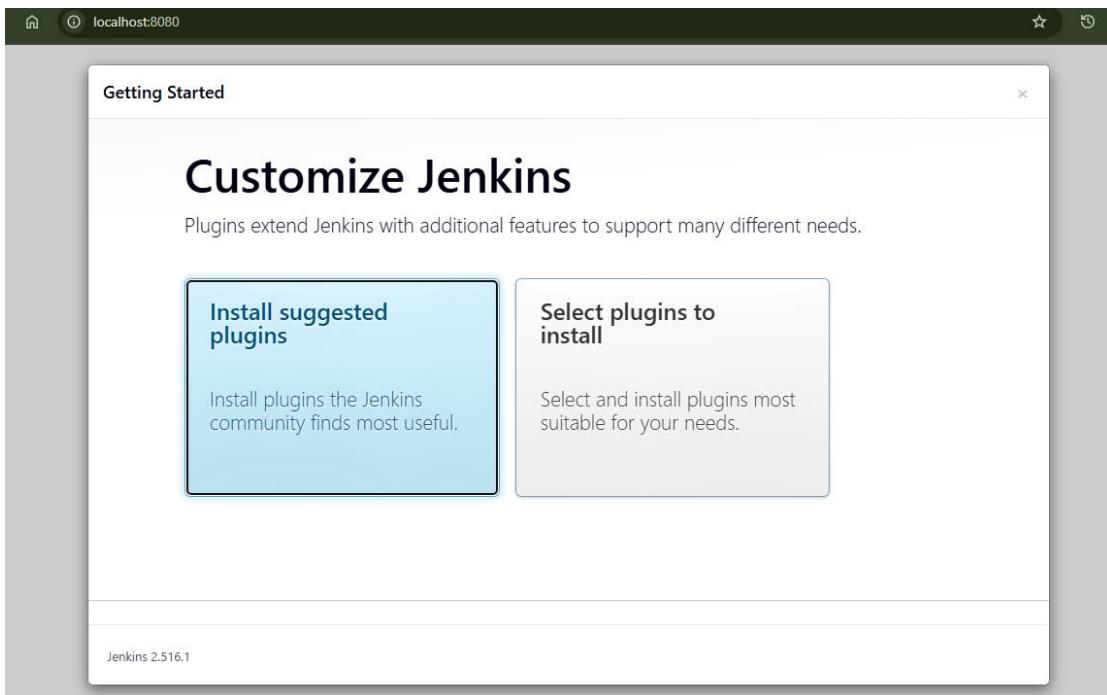
<sudo cat /var/lib/jenkins/secrets/initialAdminPassword>

- Paste the password into the Jenkins setup wizard.



9. Install Suggested Plugins

- Choose **Install suggested plugins** when prompted.
- Wait for installation to complete.



The screenshot shows two consecutive pages from the Jenkins 2.516.1 "Getting Started" wizard.

Page 1: Available Plugins

This page lists various Jenkins plugins:

✓ Folders	✓ OWASP Markup Formatter	Build Timeout	Credentials Binding
Timestamper	Workspace Cleanup	Ant	Gradle
Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	Pipeline Graph View
Git	SSH Build Agents	Matrix Authorization Strategy	LDAP
Email Extension	Mailer	Dark Theme	

A sidebar on the right provides dependency information:

```
** Commons-lang3 v3.x Jenkins API
** Ionicons API
Folders
OWASP Markup Formatter
** ASM API
```

At the bottom, it says "Jenkins 2.516.1".

Page 2: Jenkins is ready!

This page displays the message "Jenkins is ready!" and indicates that the admin user setup was skipped. It provides instructions for logging in:

You have skipped the **setup of an admin user**.
To log in, use the username: "admin" and the administrator password you used to access the setup wizard.

Your Jenkins setup is complete.

[Start using Jenkins](#)

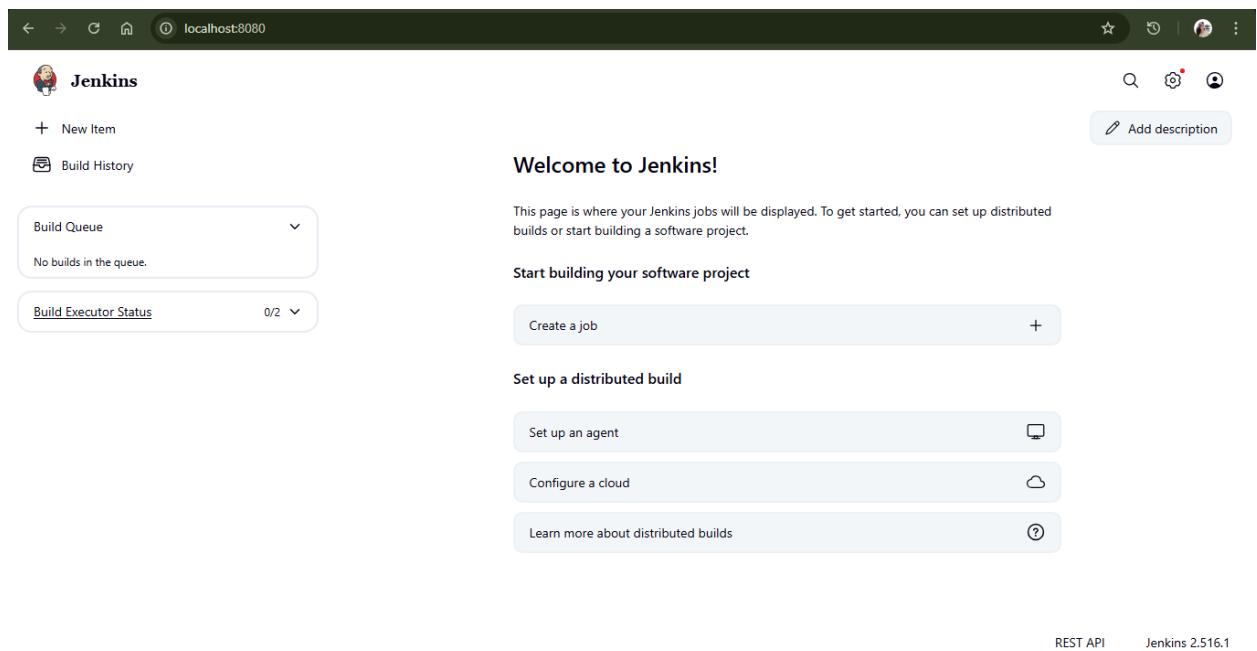
At the bottom, it says "Jenkins 2.516.1".

10. Create First Admin User

- Enter details like username, password, full name, and email address.

11. Explore Jenkins Dashboard

- View Jenkins dashboard interface.
 - Explore options like **New Item**, **Manage Jenkins**, **Build History**, and **Credentials**.
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12. Verify Installation

- Create a simple freestyle project.
 - Run the project to verify Jenkins build functionality.
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Install Jenkins

For Ubuntu/Debian:

```
wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -
sudo sh -c 'echo deb https://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'
sudo apt update
sudo apt install Jenkins
```

For RedHat/CentOS:

Follow instructions from the official Jenkins website.

Start Jenkins Service

```
sudo systemctl start jenkins  
sudo systemctl enable jenkins  
sudo systemctl status jenkins
```

Conclusion

- Students should be able to install and configure Jenkins.
 - Explore the Jenkins environment for automating builds and tasks.
 - Understand Jenkins dashboard and management interface.
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