

## Ex No 8

# INSTALLATION AND CONFIGURATION OF JENKINS AND CREATING A WORKSPACE

### AIM:


To install and Configure Jenkins and create a workspace

### PROCEDURE:

#### STEP 1: Download the Jenkins WAR File








To start the Jenkins installation, download the “jenkins.war” file from the official Jenkins website [jenkins.io] <https://www.jenkins.io/download/>

The screenshot shows the Jenkins website's download page. At the top, there's a navigation bar with links like Blog, Success Stories, Contributor Spotlight, Documentation, Plugins, Community, Subprojects, Security, and About. A 'Download' button is also present. Below the navigation bar, there are four numbered instructions for downloading Jenkins. The main content area is divided into two columns. The left column is for 'Download Jenkins 2.492.3 LTS for:' and the right column is for 'Download Jenkins 2.504 for:'. Each column has a list of operating systems and their corresponding download links. The left column lists: Generic Java package (.war), Docker, Kubernetes, Ubuntu/Debian, Red Hat Enterprise Linux and derivatives, Fedora, and Windows. The right column lists: Generic Java package (.war), Docker, Ubuntu/Debian, Red Hat Enterprise Linux and derivatives, Fedora, Windows, and openSUSE.








**Jenkins**  [Blog](#) [Success Stories](#) [Contributor Spotlight](#) [Documentation](#) [Plugins](#) [Community](#) [Subprojects](#) [Security](#) [About](#) [Download](#)  [en](#) [fr](#) [ko](#)

1. Before downloading, please take a moment to review the [Hardware and Software requirements](#) section of the User Handbook.
2. Select one of the packages below and follow the download instructions.
3. Once a Jenkins package has been downloaded, proceed to the [Installing Jenkins](#) section of the User Handbook.
4. You may also want to verify the package you downloaded. [Learn more about verifying Jenkins downloads.](#)

**Download Jenkins 2.492.3 LTS for:**

-  Generic Java package (.war)  
SHA-256: 90c5f556133c36fd7653ad710f00d248bf2895f9fbc26ccee0e2d3ba681b01f
-  Docker
-  Kubernetes
-  Ubuntu/Debian
-  Red Hat Enterprise Linux and derivatives
-  Fedora
-  Windows

**Download Jenkins 2.504 for:**

-  Generic Java package (.war)  
SHA-256: efc91d6be8d79dd078e7f930fca5f135602d0822a5efe9091808fdd74607d32
-  Docker
-  Ubuntu/Debian
-  Red Hat Enterprise Linux and derivatives
-  Fedora
-  Windows
-  openSUSE

#### Step 2: Run Jenkins Using the WAR File – Prerequisite, Java 17 or 21

Open a terminal or command prompt and navigate to the directory where the “jenkins.war” file is located. Execute the following command to run Jenkins:

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

This command will start Jenkins on your localhost at port 8080.

```
C:\Windows\System32\cmd.exe - java -jar jenkins.war --httpPort=9000
Microsoft Windows [Version 10.0.22000.3260]
(c) Microsoft Corporation. All rights reserved.

C:\Users\I11-51\Downloads>java -jar jenkins.war --httpPort=9000
Running from: C:\Users\I11-51\Downloads\jenkins.war
webroot: C:\Users\I11-51\jenkins\war
2025-03-28 02:39:36.468+0000 [id=1] INFO winstone.Logger#logInternal: Beginning extraction from war file
2025-03-28 02:39:37.827+0000 [id=1] WARNING o.e.j.ee9.nested.ContextHandler#setContextPath: Empty contextPath
2025-03-28 02:39:38.218+0000 [id=1] INFO org.eclipse.jetty.server.Server#doStart: jetty-12.0.16; built: 2024-12-09T21:02:54.535Z; git: c3f88bafb4e393f23204dc14dc57b042e84deb7; jvm 21.0.6+8-LTS-188
2025-03-28 02:39:45.187+0000 [id=1] INFO o.e.j.e.w.StandardDescriptorProcessor#visitServlet: NO JSP Support for /, did not find org.eclipse.jetty.ee9.jsp.JettyJspServlet
2025-03-28 02:39:45.437+0000 [id=1] INFO o.e.j.s.DefaultSessionIdManager#doStart: Session workerName=node0
2025-03-28 02:39:50.218+0000 [id=1] INFO hudson.WebAppMain#contextInitialized: Jenkins home directory: C:\Users\I11-51\jenkins found at: $user.home/.jenkins
2025-03-28 02:39:51.607+0000 [id=1] INFO o.e.j.s.handler.ContextHandler#doStart: Started oeje9n.ContextHandler$CoreContextHandler@1bd4aa23d{Jenkins v2.492.1/,b=f
ile:///C:/Users/I11-51/.jenkins/war/,a=AVAILABLE,h=oeje9n.ContextHandler$CoreContextHandler$CoreToNestedHandler@79f227a9{STARTED}}
2025-03-28 02:39:51.826+0000 [id=1] INFO o.e.j.server.AbstractConnector#doStart: Started ServerConnector@f325091{HTTP/1.1, (http/1.1)}{0.0.0.0:9000}
2025-03-28 02:39:52.139+0000 [id=1] INFO org.eclipse.jetty.server.Server#doStart: Started oejs.Server@6eda5c9{STARTING}[12.0.16,sto=0] @26209ms
2025-03-28 02:39:52.154+0000 [id=35] INFO winstone.Logger#logInternal: Winstone Servlet Engine running: controlPort=disabled
2025-03-28 02:39:53.545+0000 [id=34] INFO jenkins.model.Jenkins#<init>: Starting version 2.492.1
2025-03-28 02:39:54.403+0000 [id=41] INFO jenkins.InitReactorRunner$1#onAttained: Started initialization
2025-03-28 02:39:59.856+0000 [id=41] INFO jenkins.InitReactorRunner$1#onAttained: Listed all plugins
2025-03-28 02:40:18.928+0000 [id=43] INFO jenkins.InitReactorRunner$1#onAttained: Prepared all plugins
2025-03-28 02:40:19.407+0000 [id=46] INFO jenkins.InitReactorRunner$1#onAttained: Started all plugins
2025-03-28 02:40:19.114+0000 [id=42] INFO jenkins.InitReactorRunner$1#onAttained: Augmented all extensions
2025-03-28 02:40:20.277+0000 [id=41] INFO h.p.b.g.GlobalTimeoutConfiguration#load: global timeout not set
2025-03-28 02:40:25.028+0000 [id=46] INFO jenkins.InitReactorRunner$1#onAttained: System config loaded
2025-03-28 02:40:25.044+0000 [id=45] INFO jenkins.InitReactorRunner$1#onAttained: System config adapted
2025-03-28 02:40:25.529+0000 [id=40] INFO jenkins.InitReactorRunner$1#onAttained: Loaded all jobs
2025-03-28 02:40:25.546+0000 [id=47] INFO jenkins.InitReactorRunner$1#onAttained: Configuration for all jobs updated
2025-03-28 02:40:25.617+0000 [id=47] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
2025-03-28 02:40:25.804+0000 [id=34] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and running
```

### Step 3: Access Jenkins

Once Jenkins is up and running, open your web browser and goto“localhost:portnumber”.

You will see the Jenkins setup screen.

If the default port (8080) is busy run Jenkins using the following command:

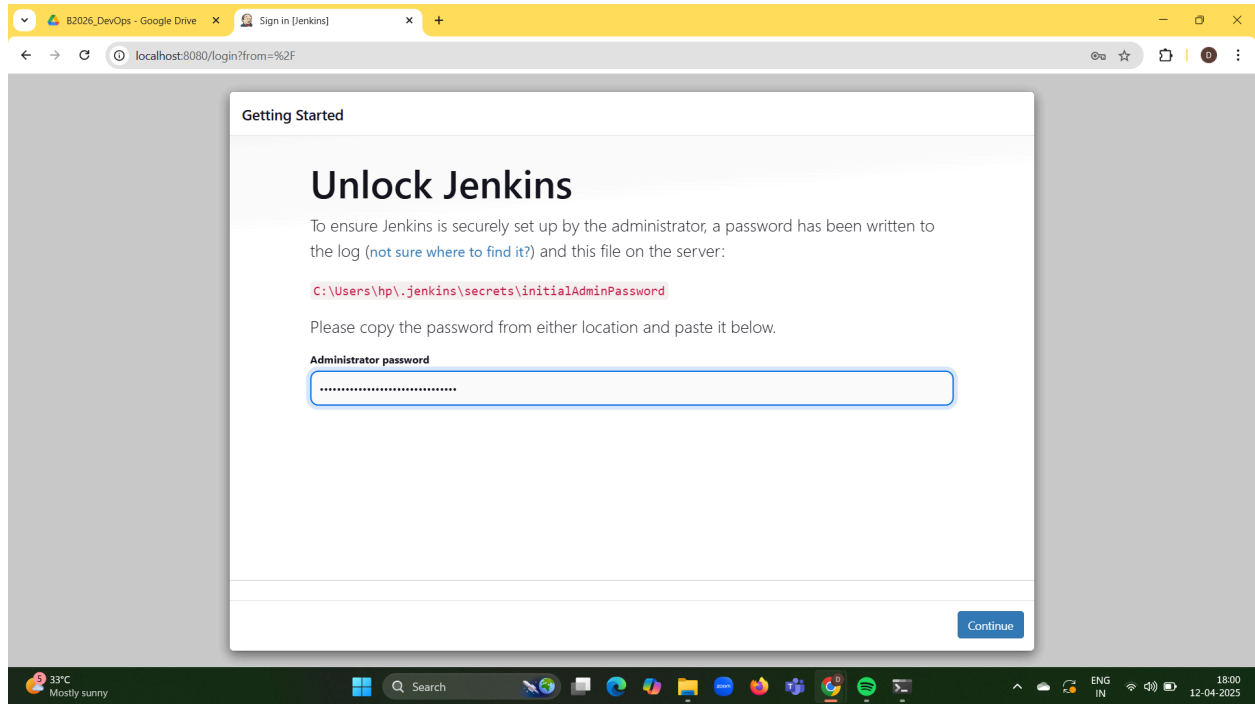
**Java -jar Jenkins.war - -httpPort=9000**

### Step 4: Unlock Jenkins

You will be prompted to unlock Jenkins using an automatically generated password. Find the initialAdminPassword file in your Jenkins home directory:

**cat ~/.jenkins/secrets/initialAdminPassword**

Copy the password and paste it into the setup screen.



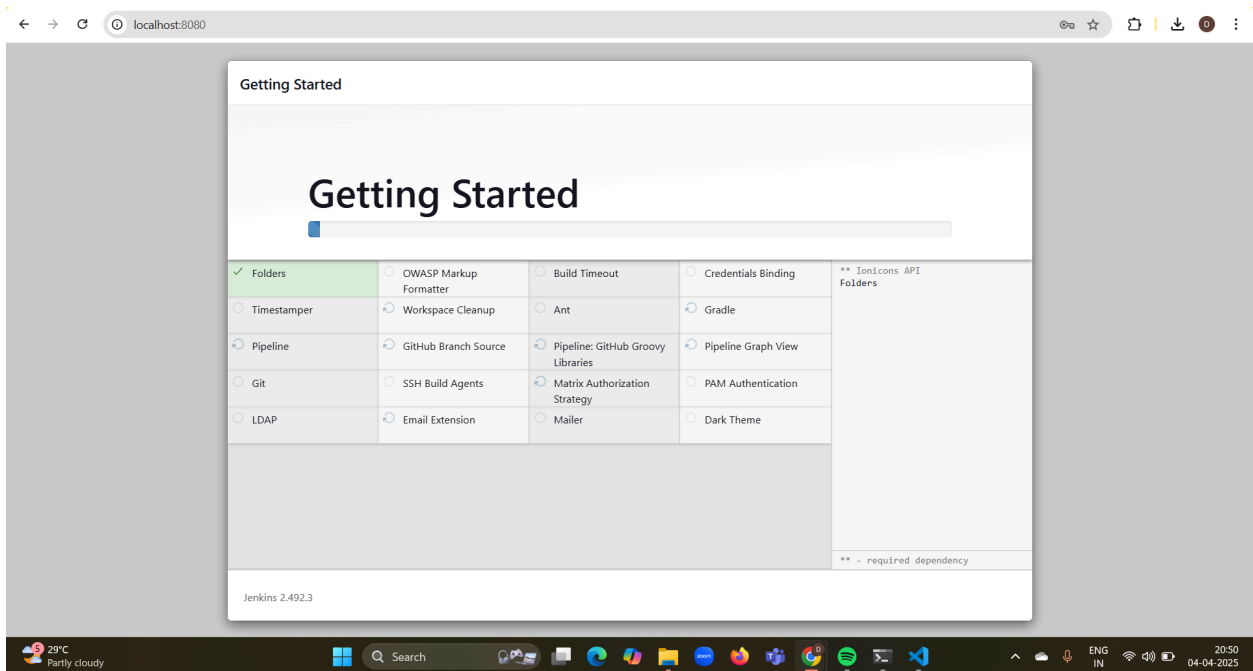
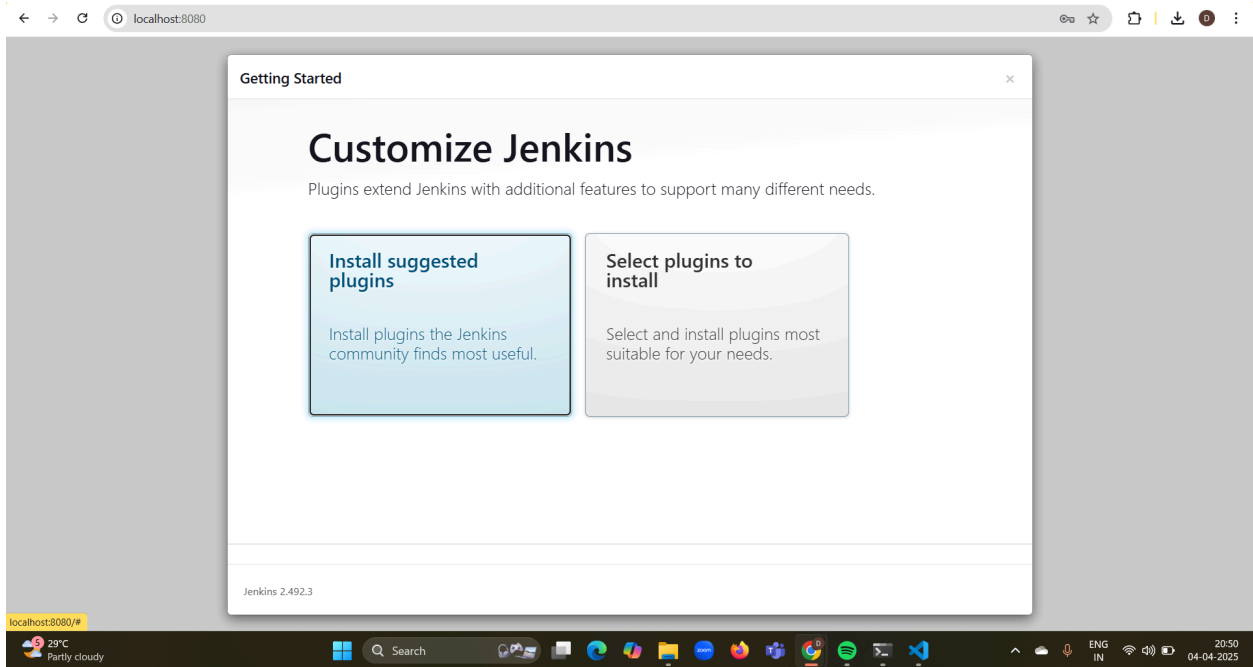
### Step 5: Install Suggested Plugins

After unlocking Jenkins, you will be asked to install plugins. Choose the option to "Install suggested plugins" to automatically install a set of recommended plugins.

### Step 6: Install Additional Plugins

To install the additional plugins such as Copy Artifact, HTML Publisher, and Build Pipeline View:

- Go to "Manage Jenkins" à "Manage Plugins".
- Click on the "Available" tab.
- Search for the desired plugins: Copy Artifact, HTML Publisher, and Build Pipeline View.
- Check the box for each plugin and click "Install without restart".



## Step 7: Create user and add configuration

The image shows two screenshots of the Jenkins installation process. The top screenshot is the 'Create First Admin User' page, and the bottom screenshot is the 'Instance Configuration' page. Both are displayed in a web browser window with the address bar showing 'localhost:8080'.

**Getting Started**

### Create First Admin User

Username:

Password:

Confirm password:

Full name:

E-mail address:

Jenkins 2.492.3

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

---

**Getting Started**

### Instance Configuration

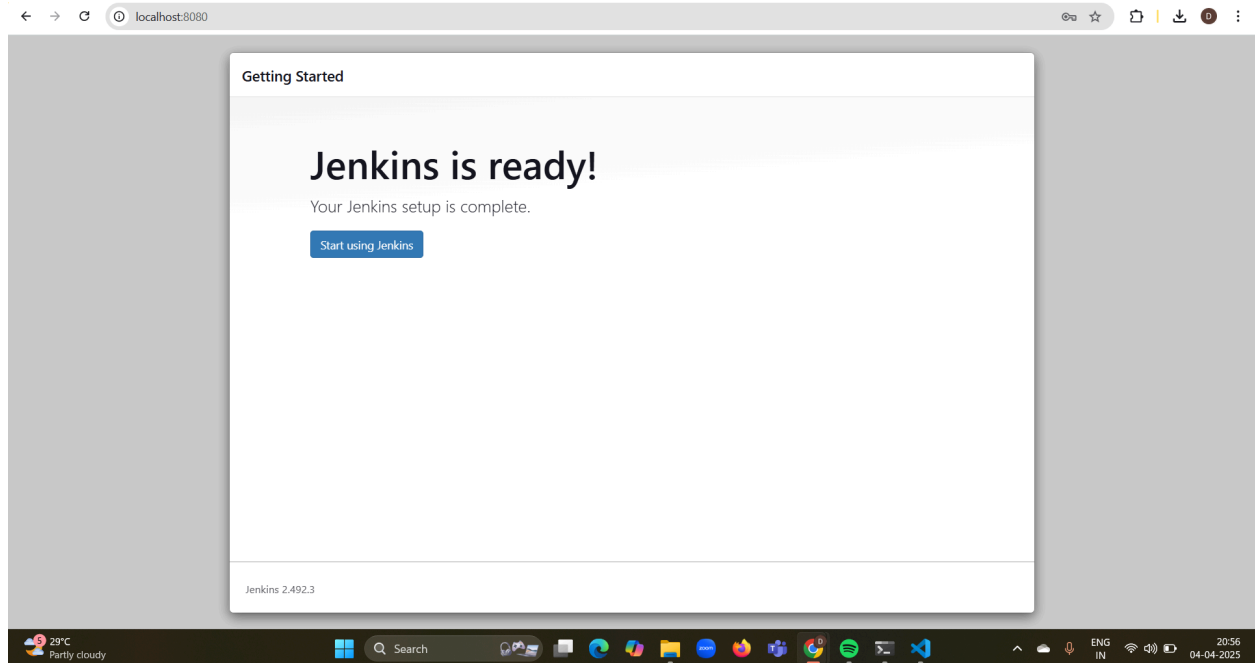
Jenkins URL:

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the BUILD\_URL environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.492.3


[Not now](#) [Save and Finish](#)



### Step 8: Create a New Jenkins Job

- From the Jenkins dashboard, click on “New Item”.
- Enter a name for your job and select “Freestyle project”, then click OK.
- Under “Source Code Management”, select “Git”.
- Enter the URL of your GitHub repository à Check the branch
- In the “Build” section, click on “Add build step” and select “Invoke top-level Maven targets”.
- Enter your Maven goals and options (e.g., clean install).


← → ↻ 🔍 localhost:8080


**Jenkins**


🔍 🔔 🛡️ 🚫 👤 Dharshini.S 📄 log out

Dashboard >

+ New Item

 Build History

 Manage Jenkins

 My Views

Build Queue

No builds in the queue.

Build Executor Status

0/2

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 2.492.3

🌤️ 29°C Partly cloudy

🔍 Search



⬆️ 🌐 ENG IN 🔊 🔋 20:56 04-04-2025

← → ↻ 🔍 localhost:8080/view/all/newJob


Dashboard > All > New Item


New Item


Enter an item name


demo

Select an item type

**Freestyle project**  
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

**Pipeline**  
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.


**Multi-configuration project**  
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

**Folder**  
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

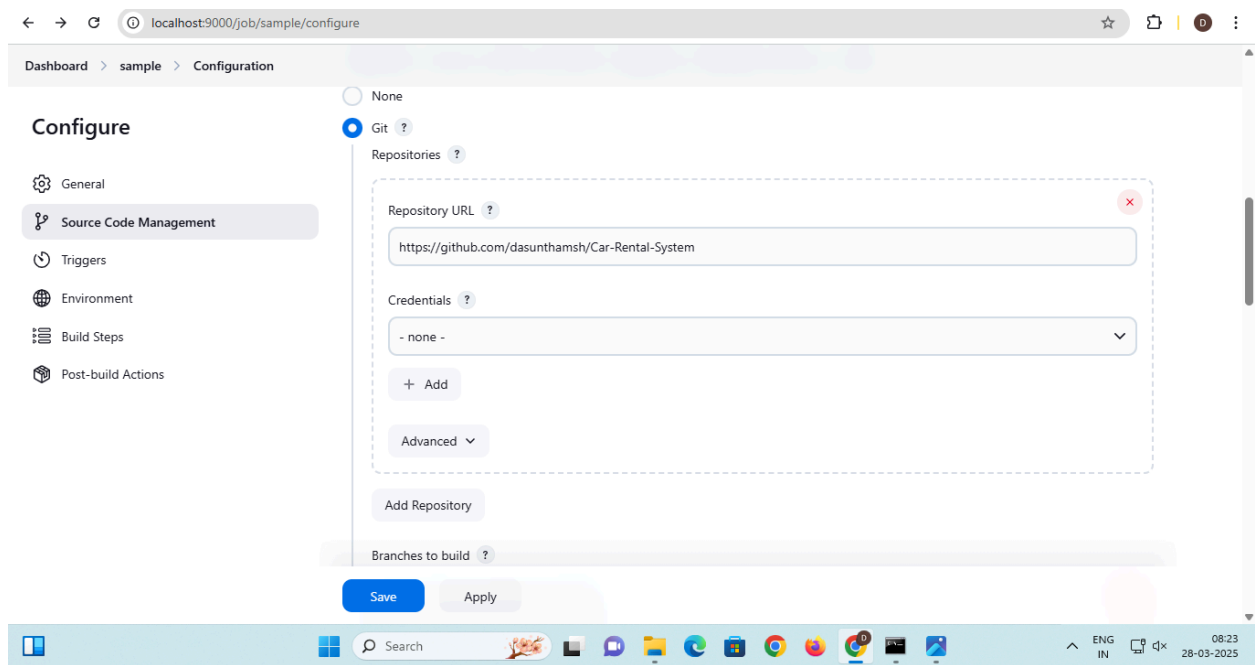
OK

🌐 NZ - PAK In 7 hours

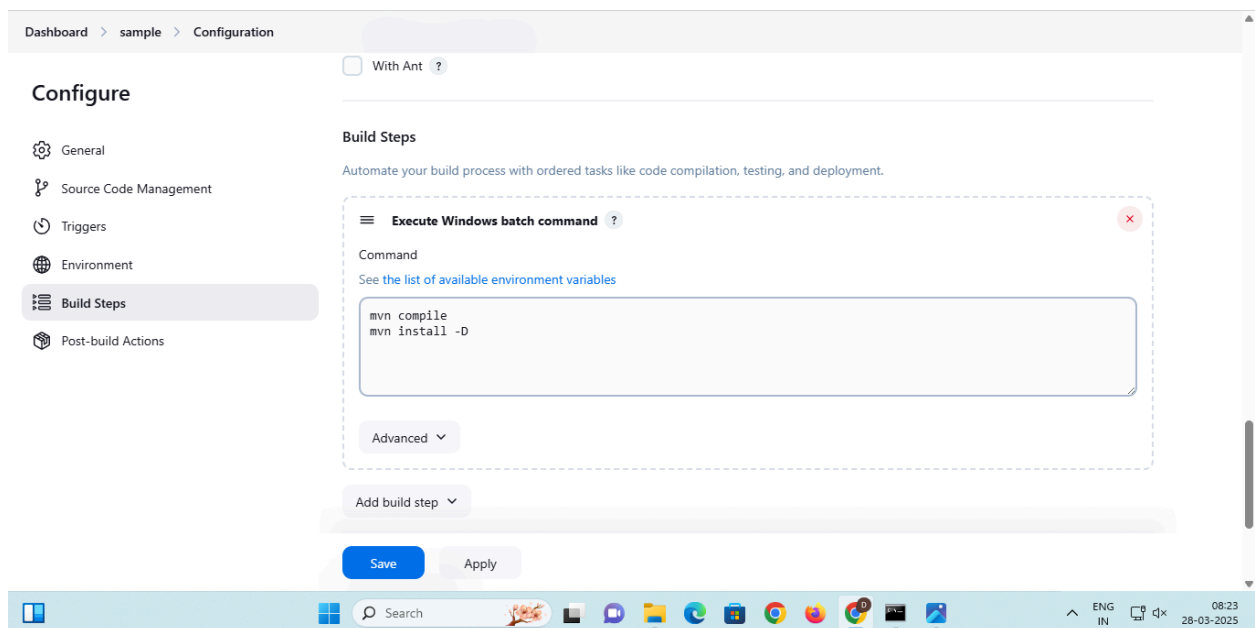
🔍 Search



⬆️ 🌐 ENG IN 🔊 🔋 20:58 04-04-2025



## Step 9. Add build step and execute some maven commands and save





## Step 10: Build the job and now you can view the output in console

The screenshot displays the Jenkins web interface for a job named 'sample'. The 'Console Output' tab is selected, showing the build's progress and logs. The build was initiated by user 'jenifer' and is running as 'SYSTEM'. It is building in the workspace 'C:\Users\111-51\.jenkins\workspace\sample'. The logs show the following steps:

- Started by user jenifer
- Running as SYSTEM
- Building in workspace C:\Users\111-51\.jenkins\workspace\sample
- The recommended git tool is: NONE
- No credentials specified
- Git commands executed:
  - `> git.exe rev-parse --resolve-git-dir C:\Users\111-51\.jenkins\workspace\sample\.git # timeout=10`
  - Fetching changes from the remote Git repository
  - `> git.exe config remote.origin.url https://github.com/jitpack/maven-simple # timeout=10`
  - Fetching upstream changes from <https://github.com/jitpack/maven-simple>
  - `> git.exe --version # timeout=10`
  - `> git --version # 'git version 2.47.1.windows.2'`
  - `> git.exe fetch --tags --force --progress -- https://github.com/jitpack/maven-simple +refs/heads/*:refs/remotes/origin/* # timeout=10`
  - `> git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10`
  - Checking out Revision 1cd9e66a9be5037f3e5d9b2c9be92ecf82087c66 (refs/remotes/origin/master)
  - `> git.exe config core.sparsecheckout # timeout=10`
  - `> git.exe checkout -f 1cd9e66a9be5037f3e5d9b2c9be92ecf82087c66 # timeout=10`
  - Commit message: "Update pom.xml"

The build progress shows several steps, each with a progress bar indicating the amount of data downloaded or processed. The final output shows the build was successful:

```
Progress (1): 554/640 kB
Progress (1): 570/640 kB
Progress (1): 587/640 kB
Progress (1): 603/640 kB
Progress (1): 620/640 kB
Progress (1): 636/640 kB
Progress (1): 640 kB

Downloaded from central: https://repo.maven.apache.org/maven2/com/google/collections/google-collections/1.0/google-collections-1.0.jar (640 kB at 2.0 MB/s)
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to C:\Users\111-51\.jenkins\workspace\sample\target\classes
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 11.526 s
[INFO] Finished at: 2025-03-28T08:40:45+05:30
[INFO] -----
Finished: SUCCESS
```

The Jenkins interface also shows the 'Previous Build' link and the 'Console Output' tab. The browser address bar shows the URL 'localhost:9000/job/sample/9/console'.

## RESULT:

Thus installation and configuration of Jenkins is successful.

