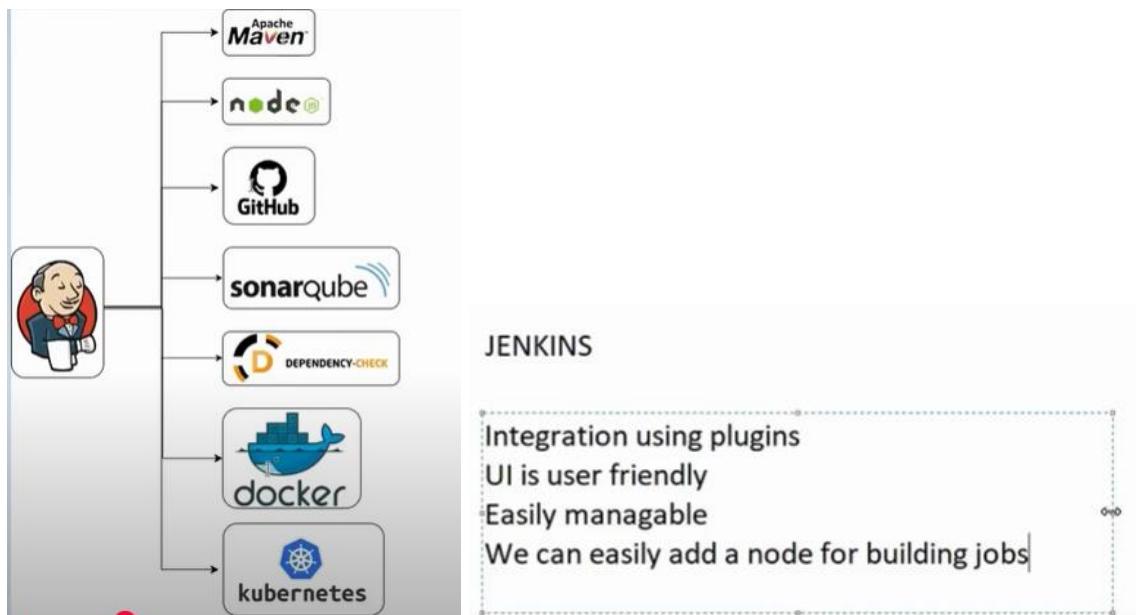


30 Days Of DevOps | Zero To Hero | Day-4

-Devops Shack

Jenkins | CI CD Pipeline



Java & Jenkins are installed.

Screenshot of the Jenkins plugin manager interface:

Left sidebar:

- Updates
- Available plugins** (selected)
- Installed plugins
- Advanced settings
- Download progress

Main content area:

Search bar: docker

Name	Version	Released
Eclipse Temurin installer	1.6	28 days ago
openJDK-native-plugin	1.8	1 yr 3 mo ago
OWASP Dependency-Track	6.0.0	1 mo 1 day ago
Docker	1.9.0	24 days ago
Docker Commons	445.v6b_646c962a_94	3 mo 13 days ago
Docker Pipeline	596.v3e6972b_46b_e2	12 hr ago

Bottom status bar:

- 26°C Mostly cloudy
- Search bar
- Icons for various applications (File Explorer, Task View, File History, OneDrive, Google Chrome, Microsoft Edge, Mail, Photos, OneNote, Word, Excel, Powerpoint, Teams, etc.)
- Language: ENG IN
- Date: 19-02-2025
- Time: 14:06

Instances | EC2 | us-east-1 Available plugins - Plugins - Jenkins

Not secure 3.236.221.236:8080/manage/pluginManager/available

Dashboard > Manage Jenkins > Plugins

Plugins

Updates Available plugins Installed plugins Advanced settings Download progress

Search: docker

Docker Commons 445.v6b_646c962a_94 Library plugins (for use by other plugins) docker Provides the common shared functionality for various Docker-related plugins. 3 mo 13 days ago

Docker Pipeline 596.v3e6972b_46b_e2 pipeline DevOps Deployment docker Build and use Docker containers from pipelines. 12 hr ago

Docker API 3.4.1-96.v77147a_de67f8 Library plugins (for use by other plugins) docker This plugin provides docker-java API for other plugins. 2 mo 7 days ago

docker-build-step 2.12 Build Tools docker This plugin allows to add various docker commands to your job as build steps. Warning: This plugin version may not be safe to use. Please review the following security notices: • CSRF vulnerability and missing permission check 8 mo 27 days ago

CloudBees Docker Build and Publish 1.4.0 Build Tools docker This plugin enables building Dockerfile based projects, as well as publishing of the built images/repos to the docker 2 yr 6 mo ago

26°C Mostly cloudy Search ENG IN 14:05 19-02-2025

Instances | EC2 | us-east-1 Available plugins - Plugins - Jenkins

Not secure 3.236.221.236:8080/manage/pluginManager/available

Dashboard > Manage Jenkins > Plugins

Plugins

Updates Available plugins Installed plugins Advanced settings Download progress

Search: maven

Maven Integration 3.25 Build Tools This plugin provides a deep integration between Jenkins and Maven. It adds support for automatic triggers between projects depending on SNAPSHOTS as well as the automated configuration of various Jenkins publishers such as JUnit. 12 days ago

Config File Provider 982.vb_a_e458a_37021 Groovy-related External Site/Tool Integrations Maven Ability to provide configuration files (e.g. settings.xml for maven, XML, groovy, custom files,...) loaded through the UI which will be copied to the job workspace. 25 days ago

Jira 3.13 External Site/Tool Integrations Maven jira This plugin integrates Jenkins to Atlassian Jira. 11 mo ago

Pipeline Maven Integration 1485.v9a_5a_116d6fb_0 pipeline Maven This plugin provides integration with Pipeline, configures maven environment to use within a pipeline job by calling sh mvn or bat mvn. The selected maven installation will be configured and prepended to the path. 8 days 0 hr ago

Artifactory 4.0.8 pipeline This plugin allows your build jobs to deploy artifacts and resolve dependencies to and from Artifactory, and then have them linked to the build job that created them. The plugin includes a vast collection of features, including a rich pipeline API library and release management for Maven and Gradle builds with Staging and Promotion. 7 mo 12 days ago

26°C Mostly cloudy Search ENG IN 14:06 19-02-2025

The screenshot shows the Jenkins plugin manager interface. On the left, a sidebar menu includes 'Updates', 'Available plugins' (which is selected), 'Installed plugins', 'Advanced settings', and 'Download progress'. The main area is titled 'Plugins' and contains a search bar with the query 'maven'. Below the search bar, a table lists several Jenkins plugins:

Plugin	Description	Last Updated
Jira 3.13	Ability to provide configuration files (e.g. settings.xml for maven, XML, groovy, custom files,...) loaded through the UI which will be copied to the job workspace.	11 mo ago
Pipeline Maven Integration 1485.v9a_5a_116d6fb_0	This plugin provides integration with Pipeline, configures maven environment to use within a pipeline job by calling sh mvn or bat mvn. The selected maven installation will be configured and prepended to the path.	8 days 0 hr ago
Artifactory 4.0.8	This plugin allows your build jobs to deploy artifacts and resolve dependencies to and from Artifactory, and then have them linked to the build job that created them. The plugin includes a vast collection of features, including a rich pipeline API library and release management for Maven and Gradle builds with Staging and Promotion.	7 mo 12 days ago
Pipeline Maven Plugin API 1485.v9a_5a_116d6fb_0	Pipeline Maven Plugin API	8 days 0 hr ago
Cobertura 1.17	This plugin integrates Cobertura coverage reports to Jenkins.	3 yr 3 mo ago

The screenshot shows the Jenkins plugin manager interface with a search query 'owas' entered in the search bar. The results table has columns for 'Install', 'Name', and 'Released'. One plugin is selected for installation:

Install	Name	Released
<input checked="" type="checkbox"/>	OWASP Dependency-Check 5.6.0	2 mo 8 days ago
<input type="checkbox"/>	Official OWASP ZAP 1.1.0	

Details for the selected plugin:

OWASP Dependency-Check 5.6.0
This plug-in can independently execute a [Dependency-Check](#) analysis and visualize results. Dependency-Check is a utility that identifies project dependencies and checks if there are any known, publicly disclosed, vulnerabilities.

Official OWASP ZAP 1.1.0
The [Official OWASP ZAP Jenkins Plugin](#) extends the functionality of the [ZAP](#) security tool into a CI Environment.

Warning: This plugin version may not be safe to use. Please review the following security notices.

Download progress

Preparation	
Ionicons API	Success
Folders	Success
OWASP Markup Formatter	Success
ASM API	Success
JSON Path API	Success
Structs	Success
Pipeline: Step API	Success
Token Macro	Success
Build Timeout	Success
bouncycastle API	Success
Credentials	Success

JDK installations

Add JDK

≡ **JDK** X

Name

Install automatically ?

≡ **Install from adoptium.net** ? X

Version ?

Add Installer ▾

Dashboard > Manage Jenkins > Tools
Maven installations

Add Maven

≡ **Maven** X

Name

Install automatically ?

≡ **Install from Apache**

Version

Add Installer ▾

Dependency-Check

Name

DP

Install automatically ?

≡ **Install from github.com**

Version

Add Installer ▾

Docker

Name

docker

Install automatically ?

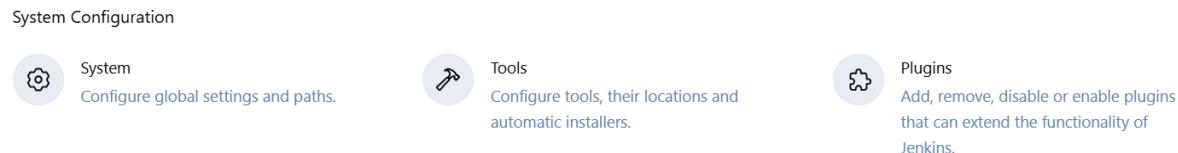
≡ **Download from docker.com**

Docker version ?

Add Installer ▾

Add Docker

-jenkins usage.



-add plugins.

-manage jenkins-> tools -> configured them like what type of version need to download and where it should be downloaded.

- manage jenkins-> System ->configure the server like sonar server,SMTP gmail,maven, apache..



-Under credentials we add other tools credentials like secrete text and password like docker,sonar,mail,

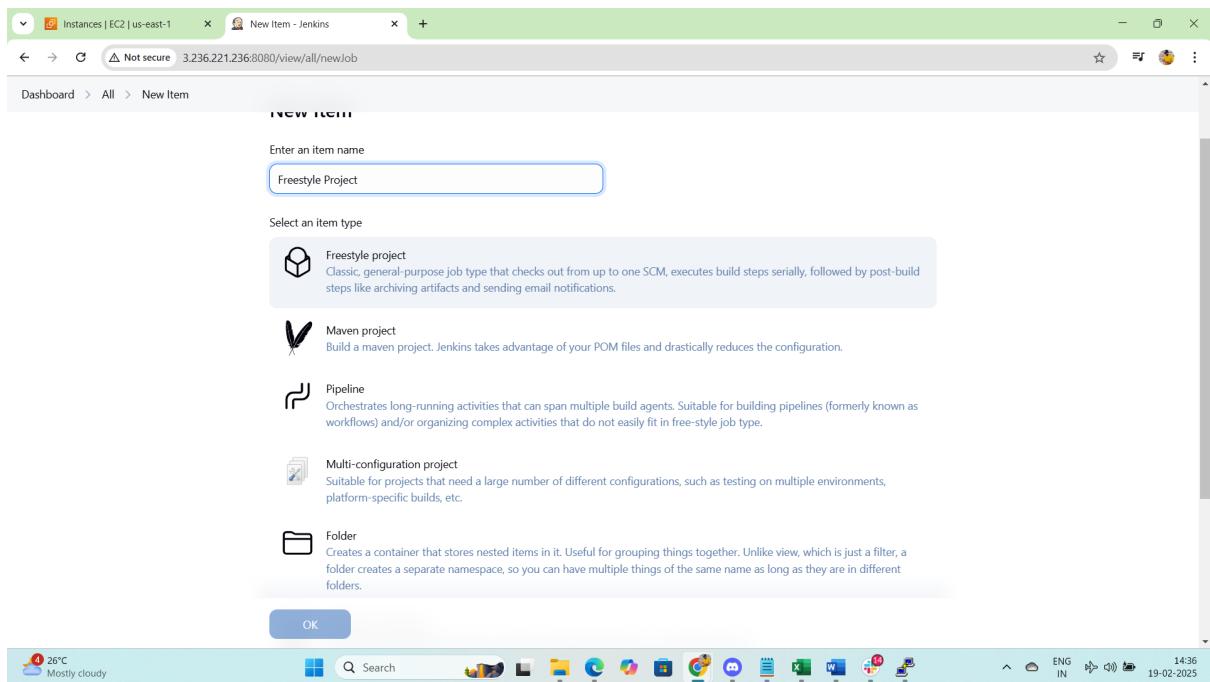
Docker credentials are added.

The screenshot shows the 'Global credentials (unrestricted)' page. It lists a single credential entry: 'docker-cred' (ID: docker-cred, Name: Maheshbabuk/******/ (docker-cred), Kind: Username with password, Description: docker-cred). A blue '+ Add Credentials' button is visible at the top right.

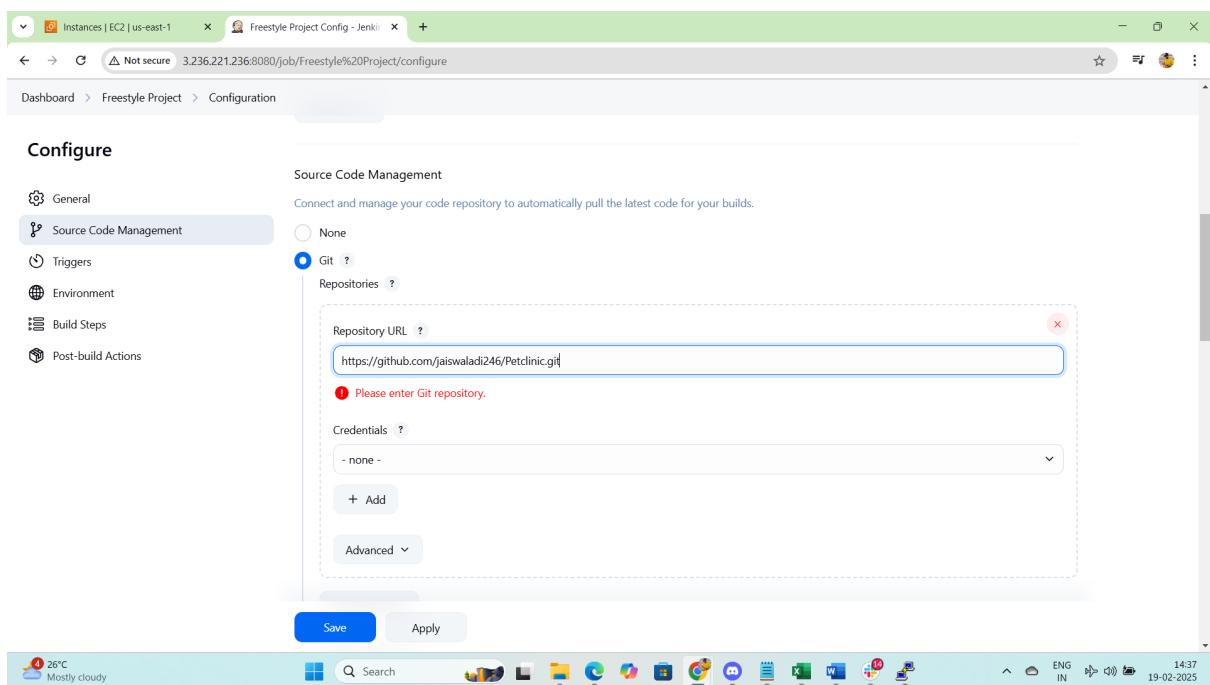
-User we can add an user and gave like to access to other person.

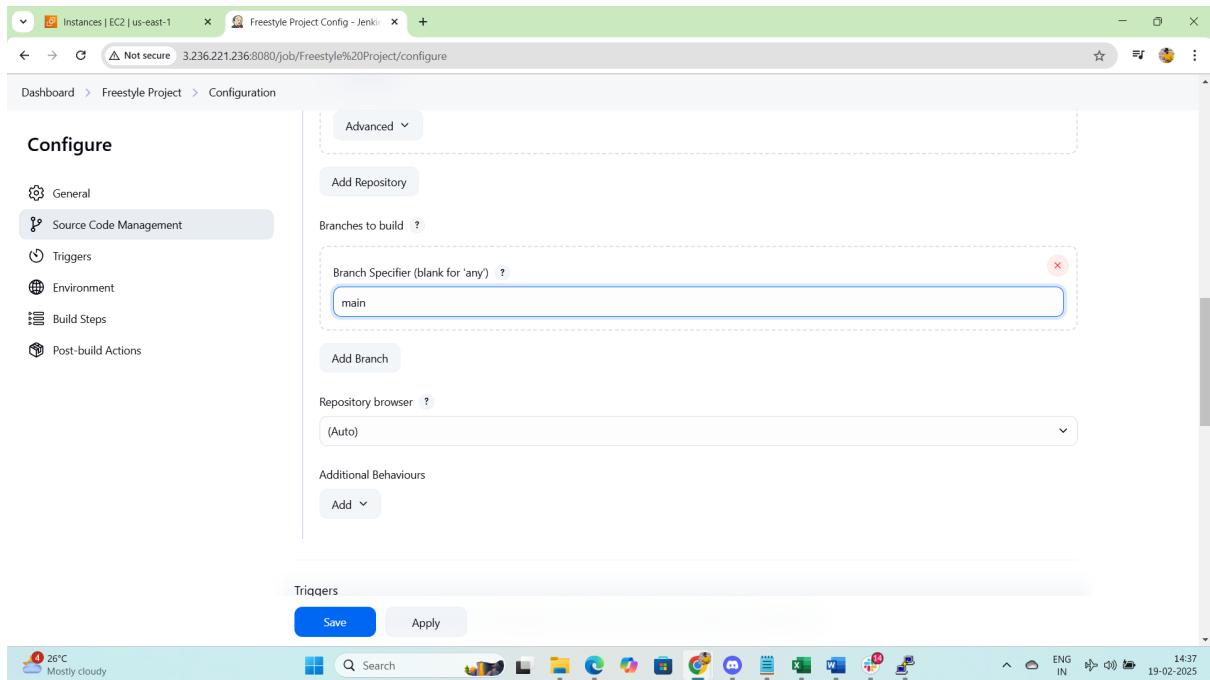
The screenshot shows the 'Users' page. It lists a single user entry: 'admin' (User ID: admin, Name: Devops). A blue '+ Create User' button is visible at the top right.

Now we explore it from starting and basics.



Add git source code line as shown.





If it is private repository we have to configured the credentials.

A screenshot of the Jenkins Build Steps configuration page. It shows sections for 'Build Steps' (Automate your build process) and 'Post-build Actions' (Define what happens after a build completes). Buttons for 'Save' and 'Apply' are visible at the bottom.

we have build steps

we can use this to build the stages.

The screenshot shows the Jenkins Freestyle Project Configuration page. The left sidebar has 'Build Steps' selected. Two 'Invoke top-level Maven targets' steps are present. The first step has 'maven3' in the Maven Version dropdown and 'clean compile' in the Goals dropdown. The second step also has 'maven3' in the Maven Version dropdown and 'clean package' in the Goals dropdown. Buttons for 'Save' and 'Apply' are at the bottom.

Configure

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Advanced ▾

Invoke top-level Maven targets ?

Maven Version: maven3

Goals: clean compile

Advanced ▾

Invoke top-level Maven targets ?

Maven Version: maven3

Goals: clean package

Advanced ▾

Save Apply

Instances | EC2 | us-east-1 Not secure 3.236.221.236:8080/job/Freestyle%20Project/configure

Dashboard > Freestyle Project > Configuration

Configure

Build Steps

Advanced ▾

Invoke top-level Maven targets ?

Maven Version: maven3

Goals: clean package

Advanced ▾

Add build step ▾

Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.

Add post-build action ▾

Save Apply

Instances | EC2 | us-east-1 Not secure 3.236.221.236:8080/job/Freestyle%20Project/configure

Dashboard > Freestyle Project > Configuration

We also have the post build action we use as we want.

The screenshot shows the Jenkins Freestyle Project Configuration page. The left sidebar lists project settings: General, Source Code Management, Triggers, Environment, Build Steps, and Post-build Actions. The 'Post-build Actions' section is currently selected. A dropdown menu titled 'Add post-build action' is open, displaying various actions such as 'Archive the artifacts', 'Build other projects', and 'E-mail Notification'. At the bottom right of the page, there are links for 'REST API' and 'Jenkins 2.498'.

The screenshot shows the Jenkins Freestyle Project dashboard. The top navigation bar includes a weather icon (26°C, Mostly cloudy), a search bar, and system status indicators (ENG IN). The main content area displays the project name 'Freestyle Project' and its status as 'Last build (#1), 35 sec ago'. Below this, there are links for Status, Changes, Workspace, Build Now, Configure, Delete Project, and Rename. A 'Builds' table is shown with one entry: '#1 5:12 AM'. The bottom right corner shows 'REST API' and 'Jenkins 2.498'.

We can build now

The screenshot shows the Jenkins Freestyle Project #1 Console Output. The top navigation bar includes a weather icon (26°C, Mostly cloudy), a search bar, and system status indicators (ENG IN). The main content area displays the build log for job #1. The log shows the progress of downloading a file from central Maven repository and the successful assembly and packaging of a web application war file. The log concludes with 'Finished: SUCCESS'. The bottom right corner shows 'REST API' and 'Jenkins 2.498'.

Now we install tomcat server.

```
Last login: Wed Feb 19 06:19:30 2025 from 49.205.103.217
ubuntu@ip-172-31-76-253:~$ sudo su
root@ip-172-31-76-253:/home/ubuntu# cd /opt
root@ip-172-31-76-253:/opt# sudo wget https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.65/bin/apache-tomcat-9.0.65.tar.gz
--2025-02-19 09:15:54-- https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.65/bin/apache-tomcat-9.0.65.tar.gz
Resolving archive.apache.org (archive.apache.org)... 65.108.204.189, 2a01:4f9:1a:084::2
Connecting to archive.apache.org (archive.apache.org)|65.108.204.189|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 11593900 (11M) [application/x-gzip]
Saving to: 'apache-tomcat-9.0.65.tar.gz'

apache-tomcat-9.0.65.tar.gz      7%[==>]   882.70K   320KB/s
```

```
Last login: Wed Feb 19 06:19:30 2025 from 49.205.103.217
ubuntu@ip-172-31-76-253:~$ sudo su
root@ip-172-31-76-253:/home/ubuntu# cd /opt
root@ip-172-31-76-253:/opt# sudo wget https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.65/bin/apache-tomcat-9.0.65.tar.gz
--2025-02-19 09:15:54-- https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.65/bin/apache-tomcat-9.0.65.tar.gz
Resolving archive.apache.org (archive.apache.org)... 65.108.204.189, 2a01:4f9:1a:084::2
Connecting to archive.apache.org (archive.apache.org)|65.108.204.189|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 11593900 (11M) [application/x-gzip]
Saving to: 'apache-tomcat-9.0.65.tar.gz'

apache-tomcat-9.0.65.tar.gz      100%[=====] 11.06M  291KB/s  in 37s
2025-02-19 09:16:32 (304 KB/s) - 'apache-tomcat-9.0.65.tar.gz' saved [11593900/11593900]
root@ip-172-31-76-253:/opt#
```

```
apache-tomcat-9.0.65/bin/version.sh
root@ip-172-31-76-253:/opt# ls
apache-tomcat-9.0.65  apache-tomcat-9.0.65.tar.gz
root@ip-172-31-76-253:/opt#
```

```
root@ip-172-31-76-253:/opt# apache-tomcat-9.0.65  apache-tomcat-9.0.65.tar.gz
root@ip-172-31-76-253:/opt# cd /opt/apache-tomcat-9.0.65/conf
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf#
```

```
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf
<?xml version="1.0" encoding="UTF-8"?>
<!--
  XML Schema Instance declarations for this document.
  See the schema located at "http://tomcat.apache.org/xml tomcat-users.xsd".
  Version 1.0.

  By default, no user is included in the "manager-gui" role required
  to operate the "/manager/html" web application. If you wish to use this app,
  you must define such a user - the username and password are arbitrary.

  Built-in Tomcat manager roles:
  - manager-gui      - allows access to the HTML GUI and the status pages
  - manager-script   - allows access to the HTTP API and the status pages
  - manager-jmx      - allows access to the JMX proxy and the status pages
  - manager-status   - allows access to the status pages only

  The users below are wrapped in a comment and are therefore ignored. If you
  wish to configure one or more of these users for use with the manager web
  application, do not forget to remove the <!-- .. --> that surrounds them. You
  will also need to set the passwords to something appropriate.
-->
<!--
  <user username="admin" password="" roles="manager-gui"/>
  <user username="robot" password="" roles="manager-script"/>
-->
<!--
  The sample user and role entries below are intended for use with the
  examples web application. They are wrapped in a comment and thus are ignored
  when reading this file. If you wish to configure these users for use with the
  examples web application, do not forget to remove the <!-- .. --> that surrounds
  them. You will also need to set the passwords to something appropriate.
-->
<!--
  <role rolename="tomcat"/>
  <role rolename="role1"/>
  <user username="tomcat" password="" roles="tomcat"/>
  <user username="both" password="" roles="tomcat,role1"/>
  <user username="role1" password="" roles="role1"/>
--><user username="admin" password="admin1234" roles="admin-gui, manager-gui"/>
</tomcat-users>
-- INSERT --
```



```

root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://tomcat.apache.org/xml tomcat-users.xsd"
    version="1.0">
<!--
  By default, no user is included in the "manager-gui" role required
  to operate the "/manager/html" web application. If you wish to use this app,
  you must define such a user - the username and password are arbitrary.

  Built-in Tomcat manager roles:
  - manager-gui - allows access to the HTML GUI and the status pages
  - manager-script - allows access to the HTTP API and the status pages
  - manager-jmx - allows access to the JMX proxy and the status pages
  - manager-status - allows access to the status pages only

  The users below are wrapped in a comment and are therefore ignored. If you
  wish to configure one or more of these users for use with the manager web
  application, do not forget to remove the <!-- ... --> that surrounds them. You
  will also need to set the passwords to something appropriate.
-->
<!--
<user username="admin" password=<must-be-changed> roles="manager-gui"/>
<user username="robot" password=<must-be-changed> roles="manager-script"/>
-->
<!--
  The sample user and role entries below are intended for use with the
  examples web application. They are wrapped in a comment and thus are ignored
  when reading this file. If you wish to configure these users for use with the
  examples web application, do not forget to remove the <!-- ... --> that surrounds
  them. You will also need to set the passwords to something appropriate.
-->
<!--
<role rolename="tomcat"/>
<role rolename="role1"/>
<user username="tomcat" password=<must-be-changed> roles="tomcat"/>
<user username="both" password=<must-be-changed> roles="tomcat,role1"/>
<user username="role1" password=<must-be-changed> roles="role1"/>
--><user username="admin" password="admin1234" roles="admin-gui, manager-gui"/>
</tomcat-users>
:wg

```

26°C Mostly cloudy

Search

ENG IN 14:49 19-02-2025

```

root@ip-172-31-76-253:~#
apache-tomcat-9.0.65 apache-tomcat-9.0.65.tar.gz
root@ip-172-31-76-253:/opt# cd /opt/apache-tomcat-9.0.65/conf
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo vi tomcat-users.xml
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo ln -s /opt/apache-tomcat-9.0.65/bin/startup.sh /usr/bin/startTomcat
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo ln -s /opt/apache-tomcat-9.0.65/bin/shutdown.sh /usr/bin/stopTomcat
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf#

```

Comment

```

root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf
<?xml version="1.0" encoding="UTF-8"?>
<!--
  Licensed to the Apache Software Foundation (ASF) under one or more
  contributor license agreements. See the NOTICE file distributed with
  this work for additional information regarding copyright ownership.
  The ASF licenses this file to You under the Apache License, Version 2.0
  (the "License"); you may not use this file except in compliance with
  the License. You may obtain a copy of the License at

      http://www.apache.org/licenses/LICENSE-2.0

  Unless required by applicable law or agreed to in writing, software
  distributed under the License is distributed on an "AS IS" BASIS,
  WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
  See the License for the specific language governing permissions and
  limitations under the License.
-->
<Context antiResourceLocking="false" privileged="true" >
  <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
  <!--><Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow="127\.\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}" />-->
  <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|Number|String)|org\.apache\.catalina\.filters\.Csr
fPreventionFilter\$LruCache(?:\$)?|java\.util\.(?:Linked)?HashMap"/>
</Context>
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --

```

26°C Mostly cloudy

Search

ENG IN 14:52 19-02-2025


```
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf
apache@ip-172-31-76-253:/opt# cd /opt/apache-tomcat-9.0.65/conf
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo vi tomcat-users.xml
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo ln -s /opt/apache-tomcat-9.0.65/bin/startup.sh /usr/bin/startTomcat
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo ln -s /opt/apache-tomcat-9.0.65/bin/shutdown.sh /usr/bin/stopTomcat
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo vi /opt/apache-tomcat-9.0.65/webapps/manager/META-INF/context.xml
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo vi /opt/apache-tomcat-9.0.65/webapps/host-manager/META-INF/context.xml
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo stopTomcat
Using CATALINA_BASE:          /opt/apache-tomcat-9.0.65
Using CATALINA_HOME:          /opt/apache-tomcat-9.0.65
Using CATALINA_TMPDIR:        /opt/apache-tomcat-9.0.65/temp
Using JRE_HOME:               /usr
Using CLASSPATH:              /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
NOTE: Picked up JDK JAVA OPTIONS: --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.rmi=sun.rmi.transport=ALL-UNNAMED
Feb 19, 2025 9:23:48 AM org.apache.catalina.startup.Catalina stopServer
SEVERE: Could not contact [localhost:8005] (base port [8005] and offset [0]). Tomcat may not be running.
Feb 19, 2025 9:23:48 AM org.apache.catalina.startup.Catalina stopServer
SEVERE: Error stopping Catalina
java.net.ConnectException: Connection refused
    at java.base/sun.nio.ch.Net.connect0(Native Method)
    at java.base/sun.nio.ch.Net.connect(Net.java:579)
    at java.base/sun.nio.ch.Net.connect(Net.java:568)
    at java.base/sun.nio.ch.NioSocketImpl.connect(NioSocketImpl.java:593)
    at java.base/java.net.SocksSocketImpl.connect(SocksSocketImpl.java:327)
    at java.base/java.net.Socket.connect(Socket.java:633)
    at java.base/java.net.Socket.connect(Socket.java:583)
    at java.base/java.net.Socket.<init>(Socket.java:507)
    at java.base/java.net.Socket.<init>(Socket.java:287)
    at org.apache.catalina.startup.Catalina.stopServer(Catalina.java:667)
    at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:77)
    at java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.base/java.lang.reflect.Method.invoke(Method.java:569)
    at org.apache.catalina.startup.Bootstrap.stopServer(Bootstrap.java:391)
    at org.apache.catalina.startup.Bootstrap.main(Bootstrap.java:481)

root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf#
```

```
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# 
Using CATALINA_BASE: /opt/apache-tomcat-9.0.65
Using CATALINA_HOME: /opt/apache-tomcat-9.0.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.65/temp
Using JRE HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
NOTE: Picked up JDK JAVA_OPTS: --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED
Feb 19, 2025 9:23:48 AM org.apache.catalina.startup.Catalina stopServer
SEVERE: Could not contact [localhost:8005] (base port [8005] and offset [0]). Tomcat may not be running.
Feb 19, 2025 9:23:48 AM org.apache.catalina.startup.Catalina stopServer
SEVERE: Error stopping Catalina
java.net.ConnectException: Connection refused
        at java.base/sun.nio.ch.Net.connect0(Native Method)
        at java.base/sun.nio.ch.Net.connect(Net.java:579)
        at java.base/sun.nio.ch.NioSocketImpl.connect(NioSocketImpl.java:593)
        at java.base/java.net.SocksSocketImpl.connect(SocksSocketImpl.java:327)
        at java.base/java.net.Socket.connect(Socket.java:633)
        at java.base/java.net.Socket.connect(Socket.java:583)
        at java.base/java.net.Socket.<init>(Socket.java:507)
        at java.base/java.net.Socket.<init>(Socket.java:287)
        at org.apache.catalina.startup.Catalina.stopServer(Catalina.java:667)
        at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
        at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:77)
        at java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
        at java.base/java.lang.reflect.Method.invoke(Method.java:569)
        at org.apache.catalina.startup.Bootstrap.stopServer(Bootstrap.java:391)
        at org.apache.catalina.startup.Bootstrap.main(Bootstrap.java:481)

root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo startTomcat
Using CATALINA_BASE: /opt/apache-tomcat-9.0.65
Using CATALINA_HOME: /opt/apache-tomcat-9.0.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.65/temp
Using JRE HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.

root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf#
```

On general tomcat install on 8080, but we have jenkins running on 8080.

```
root@ip-172-31-76-253:/home/ubuntu
30 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Wed Feb 19 08:31:01 2025 from 49.205.103.217
ubuntu@ip-172-31-76-253:~$ sudo su
root@ip-172-31-76-253:/home/ubuntu# sudo nano /etc/default/jenkins
  GNU nano 7.2                                     /etc/default/jenkins
❶ defaults for Jenkins automation server

# pulled in from the init script; makes things easier.
NAME=jenkins

# arguments to pass to java

# Allow graphs etc. to work even when an X server is present
JAVA_ARGS="-Djava.awt.headless=true"

#JAVA_ARGS="-Xmx256m"

# make jenkins listen on IPv4 address
#JAVA_ARGS="-Djava.net.preferIPv4Stack=true"

PIDFILE=/var/run/$NAME/$NAME.pid

# user and group to be invoked as (default to jenkins)
JENKINS_USER=$NAME
JENKINS_GROUP=$NAME

# location of the jenkins war file
JENKINS_WAR=/usr/share/java/$NAME.war

# jenkins home location
JENKINS_HOME=/var/lib/$NAME

# set this to false if you don't want Jenkins to run by itself
root@ip-172-31-76-253:/home/ubuntu#
```

```
root@ip-172-31-76-253:/home/ubuntu
GNU nano 7.2                               /etc/default/jenkins
RUN_STANDALONE=true

# log location. this may be a syslog facility.priority
JENKINS_LOG=/var/log/$NAME/$NAME.log
#JENKINS_LOG=daemon.info

# Whether to enable web access logging or not.
# Set to "yes" to enable logging to /var/log/$NAME/access_log
#JENKINS_ENABLE_ACCESS_LOG="no"

# OS LIMITS SETUP
# comment this out to observe /etc/security/limits.conf
# this is on by default because http://github.com/jenkinsci/jenkins/commit/2fb288474e980d0e7ff9c4a3b768874835a3e92e
# reported that Ubuntu's PAM configuration doesn't include pam_limits.so, and as a result the # of file
# descriptors are forced to 1024 regardless of /etc/security/limits.conf
MAXOPENFILES=8192

# set the umask to control permission bits of files that Jenkins creates.
# 027 makes files read-only for group and inaccessible for others, which some security sensitive users
# might consider beneficial, especially if Jenkins runs in a box that's used for multiple purposes.
# Beware that 027 permission would interfere with sudo scripts that run on the master (JENKINS-25065.)
#
# Note also that the particularly sensitive part of $JENKINS_HOME (such as credentials) are always
# written without 'others' access. So the umask values only affect job configuration, build records,
# that sort of things.
#
# If commented out, the value from the OS is inherited, which is normally 022 (as of Ubuntu 12.04,
# by default umask comes from pam_umask(8) and /etc/login.defs

# UMASK=027

# port for HTTP connector (default 8080; disable with -1)
HTTP_PORT=8080

^G Help      ^O Write Out   ^W Where Is   ^K Cut        ^T Execute   ^C Location   M-U Undo
^X Exit      ^R Read File   ^Y Replace    ^U Paste     ^J Justify   ^Y Go To Line M-E Redo
M-A Set Mark M-6 Copy

26°C Mostly cloudy
Search
ENG IN 1504 19-02-2025
```

```
root@ip-172-31-76-253:/home/ubuntu
GNU nano 7.2                               /etc/default/jenkins *
RUN_STANDALONE=true

# log location. this may be a syslog facility.priority
JENKINS_LOG=/var/log/$NAME/$NAME.log
#JENKINS_LOG=daemon.info

# Whether to enable web access logging or not.
# Set to "yes" to enable logging to /var/log/$NAME/access_log
#JENKINS_ENABLE_ACCESS_LOG="no"

# OS LIMITS SETUP
# comment this out to observe /etc/security/limits.conf
# this is on by default because http://github.com/jenkinsci/jenkins/commit/2fb288474e980d0e7ff9c4a3b768874835a3e92e
# reported that Ubuntu's PAM configuration doesn't include pam_limits.so, and as a result the # of file
# descriptors are forced to 1024 regardless of /etc/security/limits.conf
MAXOPENFILES=8192

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# might consider beneficial, especially if Jenkins runs in a box that's used for multiple purposes.
# Beware that 027 permission would interfere with sudo scripts that run on the master (JENKINS-25065.)
#
# Note also that the particularly sensitive part of $JENKINS_HOME (such as credentials) are always
# written without 'others' access. So the umask values only affect job configuration, build records,
# that sort of things.
#
# If commented out, the value from the OS is inherited, which is normally 022 (as of Ubuntu 12.04,
# by default umask comes from pam_umask(8) and /etc/login.defs

# UMASK=027

# port for HTTP connector (default 8080; disable with -1)
HTTP_PORT=9090

^G Help      ^O Write Out   ^W Where Is   ^K Cut        ^T Execute   ^C Location   M-U Undo
^X Exit      ^R Read File   ^Y Replace    ^U Paste     ^J Justify   ^Y Go To Line M-E Redo
M-A Set Mark M-6 Copy

26°C Mostly cloudy
Search
ENG IN 1505 19-02-2025
```

```

root@ip-172-31-76-253:/home/ubuntu
GNU nano 7.2                               /etc/default/jenkins *
RUN_STANDALONE=true

# log location. this may be a syslog facility.priority
JENKINS_LOG=/var/log/$NAME/$NAME.log
#JENKINS_LOG=daemon.info

# Whether to enable web access logging or not.
# Set to "yes" to enable logging to /var/log/$NAME/access_log
JENKINS_ENABLE_ACCESS_LOG="no"

# OS LIMITS SETUP
# comment this out to observe /etc/security/limits.conf
# this is on by default because http://github.com/jenkinsci/jenkins/commit/2fb288474e980d0e7ff9c4a3b768874835a3e92e
# reported that Ubuntu's PAM configuration doesn't include pam_limits.so, and as a result the # of file
# descriptors are forced to 1024 regardless of /etc/security/limits.conf
MAXOPENFILES=8192

# set the umask to control permission bits of files that Jenkins creates.
# 027 makes files read-only for group and inaccessible for others, which some security sensitive users
# might consider beneficial, especially if Jenkins runs in a box that's used for multiple purposes.
# Beware that 027 permission would interfere with sudo scripts that run on the master (JENKINS-25065.)
#
# Note also that the particularly sensitive part of $JENKINS_HOME (such as credentials) are always
# written without 'others' access. So the umask values only affect job configuration, build records,
# that sort of things.
#
# If commented out, the value from the OS is inherited, which is normally 022 (as of Ubuntu 12.04,
# by default umask comes from pam_umask(8) and /etc/login.defs

# UMASK=027

# port for HTTP connector (default 8080; disable with -1)
HTTP_PORT=9090

Save modified buffer? [Y/N/C] C

```

Option 1: Update JENKINS_PORT in /etc/default/jenkins (Ubuntu/Debian)

Look for this line:

```
ini                                         ⌂ Copy ⌂ Edit
HTTP_PORT=8080
```

Change it to a new port, e.g., 9090:

```
ini                                         ⌂ Copy ⌂ Edit
HTTP_PORT=9090
```

Save the file (**CTRL+X**, then **Y**, then **Enter**).

Security Group	Protocol	Port Range	Action
sgr-035ee3c93d38c75bb	RDP	3389	Custom
sgr-06987982f499573ca	Custom TCP	9090	Custom
sgr-07c6ac81d9b1f10d0	Custom TCP	8000 - 900	Custom
sgr-0ac83a4c7c4cf259e	SSH	22	Custom
-	Custom TCP	9090	Anyw...

Add rule

Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

```
Last login: Wed Feb 19 09:37:12 2025 from 49.205.103.217
ubuntu@ip-172-31-76-253:~$ sudo su
root@ip-172-31-76-253:/home/ubuntu# sudo nano /etc/default/jenkins
root@ip-172-31-76-253:/home/ubuntu# sudo systemctl daemon-reload
sudo systemctl restart jenkins
```

```
root@ip-172-31-76-253:/home/ubuntu
30 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Wed Feb 19 09:37:12 2025 from 49.205.103.217
ubuntu@ip-172-31-76-253:~$ sudo su
root@ip-172-31-76-253:/home/ubuntu# sudo nano /etc/default/jenkins
root@ip-172-31-76-253:/home/ubuntu# sudo systemctl daemon-reload
sudo systemctl restart jenkins
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 9090
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 9090
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 8080
tcp6      0      0 ::*:8080                           ::*:*
LISTEN          7129/java
root@ip-172-31-76-253:/home/ubuntu# sudo ufw allow 9090/tcp
sudo ufw reload
Rules updated
Rules updated (v6)
Firewall not enabled (skipping reload)
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 9090
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 8080
tcp6      0      0 ::*:8080                           ::*:*
LISTEN          7129/java
root@ip-172-31-76-253:/home/ubuntu# cat /etc/default/jenkins | grep HTTP_PORT
HTTP_PORT=9090
# --httpPort=$HTTP_PORT (default 8080; disable with -1)
# --httpsPort=$HTTP_PORT
JENKINS_ARGS="--webroots=/var/cache/$NAME/war --httpPort=$HTTP_PORT"
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep java
tcp6      0      0 ::*:8080                           ::*:*
LISTEN          7129/java
tcp6      0      0 127.0.0.1:8005                   ::*:*
LISTEN          6640/java
root@ip-172-31-76-253:/home/ubuntu# sudo systemctl stop jenkins
root@ip-172-31-76-253:/home/ubuntu# sudo systemctl start jenkins
sudo netstat -tulnp | grep 9090
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 9090
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 8080
tcp6      0      0 ::*:8080                           ::*:*
LISTEN          7318/java
root@ip-172-31-76-253:/home/ubuntu#
```

Still jenkins running on 8080

◆ Step 3: Verify the Systemd Service File

If Jenkins is still on 8080, it means the systemd service file is overriding it.

- Open the systemd service file:

```
sh
sudo nano /lib/systemd/system/jenkins.service
```

- Find the `Execstart` line (it should look like this):

```
swift
Start=/usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --httpPort=8080
```

Message ChatGPT

```
root@ip-172-31-76-253:/home/ubuntu
GNU nano 7.2                               /lib/systemd/system/jenkins.service

# This file is managed by systemd(1). Do NOT edit this file manually!
# To override these settings, run:
#
#   systemctl edit jenkins
#
# For more information about drop-in files, see:
#   https://www.freedesktop.org/software/systemd/man/systemd.unit.html
#
[Unit]
Description=Jenkins Continuous Integration Server
Requires=network.target
After=network.target
StartLimitBurst=5
StartLimitIntervalSec=5m

[Service]
Type=notify
NotifyAccess=main
ExecStart=/usr/bin/jenkins
Restart=on-failure
SuccessExitStatus=143

# Configures the time to wait for start-up. If Jenkins does not signal start-up
# completion within the configured time, the service will be considered failed
# and will be shut down again. Takes a unit-less value in seconds, or a time span
# value such as "5min 20s". Pass "infinity" to disable the timeout logic.
#TimeoutStartSec=90

# Unix account that runs the Jenkins daemon
# Be careful when you change this, as you need to update the permissions of
# $JENKINS_HOME, $JENKINS_LOG, and (if you have already run Jenkins)
# $JENKINS_WEBROOT.

[Read 151 lines]
^G Help      ^O Write Out    ^W Where Is    ^K Cut          ^T Execute     ^C Location    M-U Undo
^X Exit      ^R Read File    ^Y Replace     ^U Paste        ^J Justify     ^Y Go To Line  M-E Redo
M-A Set Mark M-6 Copy

26°C Mostly cloudy
ENG IN 15:18 19-02-2025
```

```
root@ip-172-31-76-253:/home/ubuntu
GNU nano 7.2                               /lib/systemd/system/jenkins.service
#Environment="JENKINS_JAVA_CMD=/etc/alternatives/java"

# Arguments for the Jenkins JVM
Environment="JAVA_OPTS=-Djava.awt.headless=true"

# Unix Domain Socket to listen on for local HTTP requests. Default is disabled.
#Environment="JENKINS_UNIX_DOMAIN_PATH=/run/jenkins/jenkins.socket"

# IP address to listen on for HTTP requests.
# The default is to listen on all interfaces (0.0.0.0).
#Environment="JENKINS_LISTEN_ADDRESS="

# Port to listen on for HTTP requests. Set to -1 to disable.
# To be able to listen on privileged ports (port numbers less than 1024),
# add the CAP_NET_BIND_SERVICE capability to the AmbientCapabilities
# directive below.
Environment="JENKINS_PORT=8080

# IP address to listen on for HTTPS requests. Default is disabled.
#Environment="JENKINS_HTTPS_LISTEN_ADDRESS="

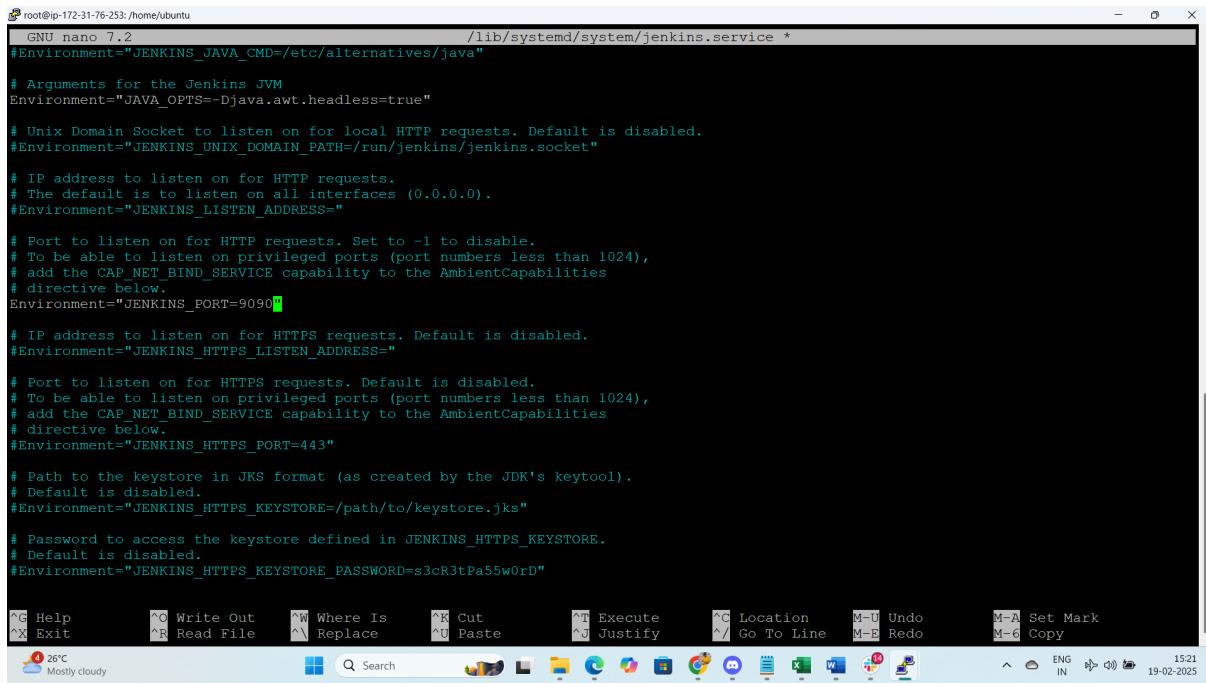
# Port to listen on for HTTPS requests. Default is disabled.
# To be able to listen on privileged ports (port numbers less than 1024),
# add the CAP_NET_BIND_SERVICE capability to the AmbientCapabilities
# directive below.
#Environment="JENKINS_HTTPS_PORT=443

# Path to the keystore in JKS format (as created by the JDK's keytool).
# Default is disabled.
#Environment="JENKINS_HTTPS_KEYSTORE=/path/to/keystore.jks"

# Password to access the keystore defined in JENKINS_HTTPS_KEYSTORE.
# Default is disabled.
#Environment="JENKINS_HTTPS_KEYSTORE_PASSWORD=s3cR3tPa55w0rD"

[Read 151 lines]
^G Help      ^O Write Out    ^W Where Is    ^K Cut          ^T Execute     ^C Location    M-U Undo
^X Exit      ^R Read File    ^Y Replace     ^U Paste        ^J Justify     ^Y Go To Line  M-E Redo
M-A Set Mark M-6 Copy

26°C Mostly cloudy
ENG IN 15:20 19-02-2025
```



```
root@ip-172-31-76-253:/home/ubuntu
GNU nano 7.2                               /lib/systemd/system/jenkins.service *
#Environment="JENKINS_JAVA_CMD=/etc/alternatives/java"
# Arguments for the Jenkins JVM
Environment="JAVA_OPTS=-Djava.awt.headless=true"

# Unix Domain Socket to listen on for local HTTP requests. Default is disabled.
#Environment="JENKINS_UNIX_DOMAIN_PATH=/run/jenkins/jenkins.socket"

# IP address to listen on for HTTP requests.
# The default is to listen on all interfaces (0.0.0.0).
#Environment="JENKINS_LISTEN_ADDRESS="

# Port to listen on for HTTP requests. Set to -1 to disable.
# To be able to listen on privileged ports (port numbers less than 1024),
# add the CAP_NET_BIND_SERVICE capability to the AmbientCapabilities
# directive below.
Environment="JENKINS_PORT=9090"

# IP address to listen on for HTTPS requests. Default is disabled.
#Environment="JENKINS_HTTPS_LISTEN_ADDRESS="

# Port to listen on for HTTPS requests. Default is disabled.
# To be able to listen on privileged ports (port numbers less than 1024),
# add the CAP_NET_BIND_SERVICE capability to the AmbientCapabilities
# directive below.
#Environment="JENKINS_HTTPS_PORT=443"

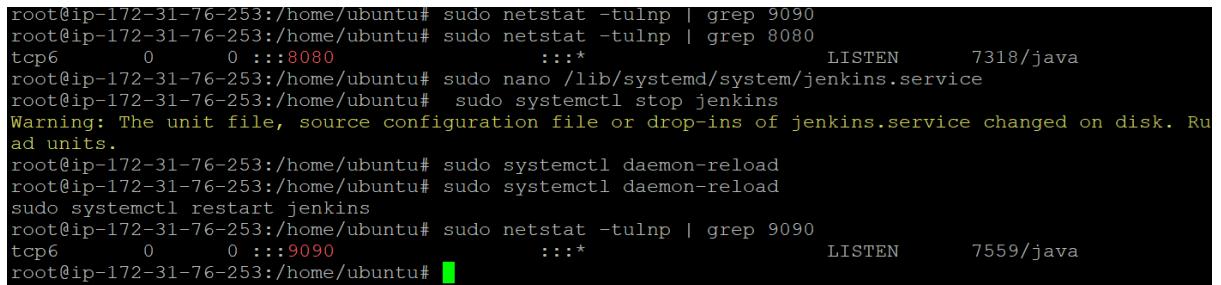
# Path to the keystore in JKS format (as created by the JDK's keytool).
# Default is disabled.
#Environment="JENKINS_HTTPS_KEYSTORE=/path/to/keystore.jks"

# Password to access the keystore defined in JENKINS_HTTPS_KEYSTORE.
# Default is disabled.
#Environment="JENKINS_HTTPS_KEYSTORE_PASSWORD=s3cR3tPa55w0rD"

^G Help      ^O Write Out   ^W Where Is   ^K Cut        ^T Execute   ^C Location   M-U Undo
^X Exit      ^R Read File   ^Y Replace    ^U Paste      ^J Justify   ^V Go To Line  M-E Redo
M-A Set Mark M-6 Copy

```

Cntrl+X y and enter.



```
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 9090
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 8080
tcp6       0      0 ::::8080          ::::*                           LISTEN      7318/java
root@ip-172-31-76-253:/home/ubuntu# sudo nano /lib/systemd/system/jenkins.service
root@ip-172-31-76-253:/home/ubuntu# sudo systemctl stop jenkins
Warning: The unit file, source configuration file or drop-ins of jenkins.service changed on disk. Run
ad units.
root@ip-172-31-76-253:/home/ubuntu# sudo systemctl daemon-reload
root@ip-172-31-76-253:/home/ubuntu# sudo systemctl daemon-reload
sudo systemctl restart jenkins
root@ip-172-31-76-253:/home/ubuntu# sudo netstat -tulnp | grep 9090
tcp6       0      0 ::::9090          ::::*                           LISTEN      7559/java
root@ip-172-31-76-253:/home/ubuntu#
```

See in the above it listen to 8080 now it listen to 9090.

The screenshot shows the Jenkins dashboard. On the left, there's a sidebar with links for 'New Item', 'Build History', 'Manage Jenkins', and 'My Views'. Below that is a 'Build Queue' section which says 'No builds in the queue.' At the bottom, there's a 'Build Executor Status' section showing '0/2' executors. The main area has a table with columns: S, W, Name (sorted by name), Last Success, Last Failure, and Last Duration. One row is visible for a 'Freestyle Project' with a green checkmark icon, a sun icon, and the details: 'Last Success' 42 min ago, 'Last Failure' N/A, and 'Last Duration' 53 sec. There are also 'Add description' and '+' buttons at the top right of the table.

S	W	Name ↓	Last Success	Last Failure	Last Duration
		Freestyle Project	42 min #1	N/A	53 sec

26°C Mostly cloudy

Search

ENG IN 19-02-2025

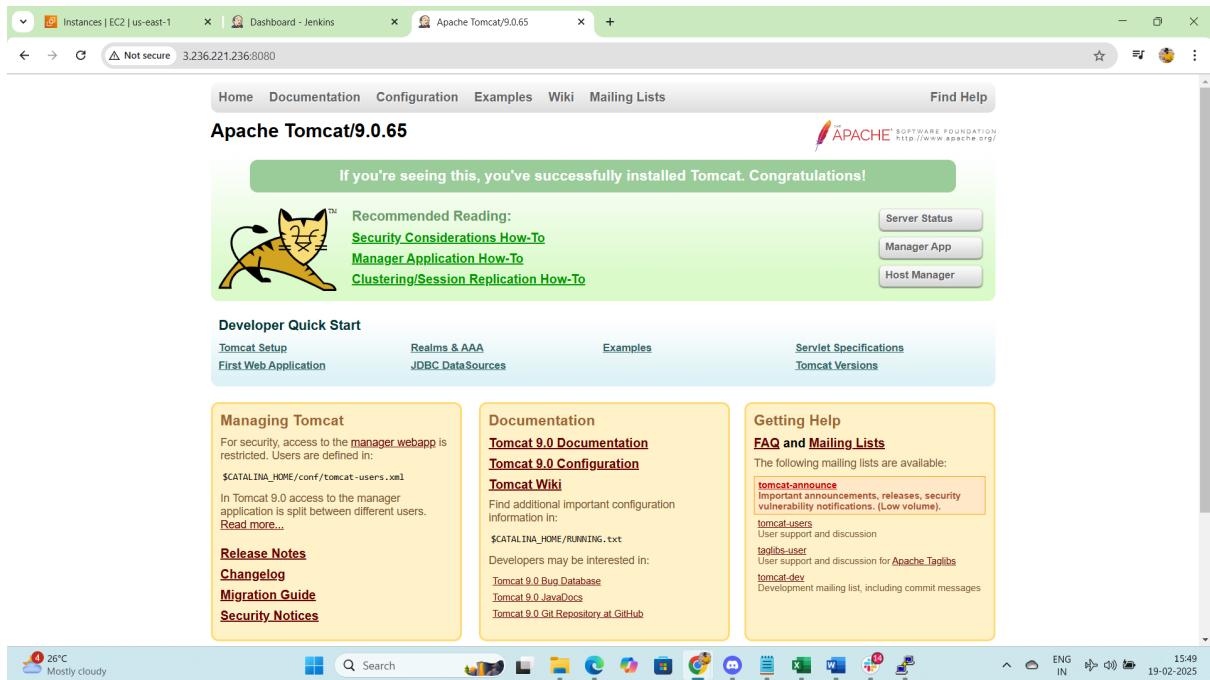
tomcat server port

```
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# Using JRE HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# apache2 -v
Command 'apache2' not found, but can be installed with:
apt install apache2-bin
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo startTomcat
Using CATALINA_BASE: /opt/apache-tomcat-9.0.65
Using CATALINA_HOME: /opt/apache-tomcat-9.0.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.65/temp
Using JRE_HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo netstat -tulpn | grep java
tcp6      0      0 :::9090          ::/*                LISTEN      7559/java
tcp6      0      0 127.0.0.1:8005  ::/*                LISTEN      6640/java
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo nano /opt/apache-tomcat-9.0.65/conf/server.xml
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo /opt/apache-tomcat-9.0.65/bin/shutdown.sh
sudo /opt/apache-tomcat-9.0.65/bin/startup.sh
Using CATALINA_BASE: /opt/apache-tomcat-9.0.65
Using CATALINA_HOME: /opt/apache-tomcat-9.0.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.65/temp
Using JRE_HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
NOTE: Picked up JDK JAVA_OPTIONS: --add-opens=java.base/java.lang=ALL-UNNAMED --add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED --add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED
Using CATALINA_BASE: /opt/apache-tomcat-9.0.65
Using CATALINA_HOME: /opt/apache-tomcat-9.0.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.65/temp
Using JRE_HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo netstat -tulpn | grep 8080
tcp6      0      0 :::8080          ::/*                LISTEN      7918/java
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf#
```

26°C Mostly cloudy

Search

ENG IN 19-02-2025



Now it is accessible.

How to send the .war file to /webapp in tomcat server.

-add a step in free style project.

```
sudo cp target/*.war /opt/apache-tomcat-9.0.65/webapps/
```

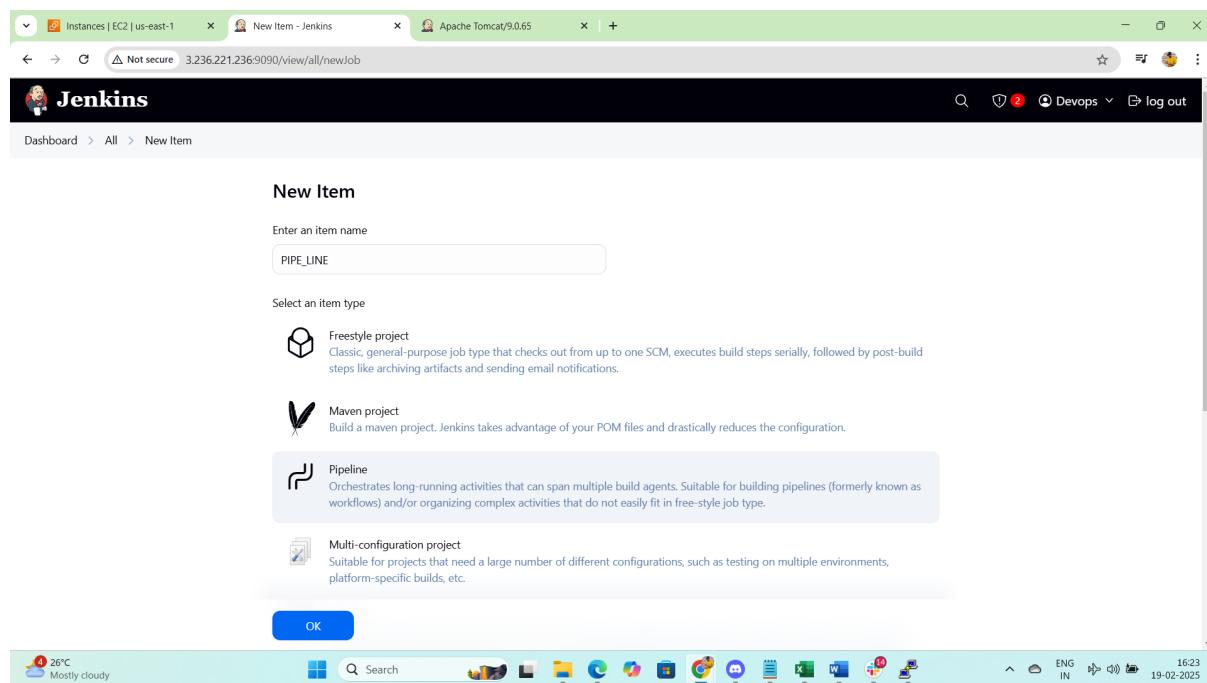
means we copy the .war file to target folder as shown and if we add the step we can access our application through tomcat server.

Now we see pipeline project

```
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# sudo netstat -tulnp | grep 8080
tcp6       0      0 :::8080          ::::*        LISTEN      7918/java
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65/conf# cd ..
root@ip-172-31-76-253:/opt/apache-tomcat-9.0.65# cd ..
root@ip-172-31-76-253:/opt# ls -lrt
total 11328
-rw-r--r-- 1 root root 11593900 Jul 14 2022 apache-tomcat-9.0.65.tar.gz
drwxr-xr-x 9 root root    4096 Feb 19 09:17 apache-tomcat-9.0.65
root@ip-172-31-76-253:/opt# chmod -R 757 apache-tomcat-9.0.65
root@ip-172-31-76-253:/opt# ls -lrt
total 11328
-rw-r--r-- 1 root root 11593900 Jul 14 2022 apache-tomcat-9.0.65.tar.gz
drwxr-xrwx 9 root root    4096 Feb 19 09:17 apache-tomcat-9.0.65
root@ip-172-31-76-253:/opt#
```

-first we gave permission to tomcat server to access to copy the file or els we get permission denied.

Now we write the jenkins file



The screenshot shows the Jenkins Pipeline configuration page for a job named 'PIPE_LINE'. The 'Pipeline' tab is selected in the left sidebar. The main area contains a Groovy script for defining the pipeline:

```
1 ~ pipeline {
2     agent any
3
4     stages {
5         stage('Git CheckOut') {
6             steps {
7                 git branch: 'main', url: 'https://github.com/jaiswalad1246/Petcclinic.git'
8             }
9         }
10    }
11 }
```

Below the script, there is a checkbox for 'Use Groovy Sandbox' which is checked. At the bottom of the page are 'Save' and 'Apply' buttons.

Lets run

```

[Pipeline] { (Git Checkout)
[Pipeline] git
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/jaiswaladi246/Petclinic.git
> git init /var/lib/jenkins/workspace/PIPE_LINE # timeout=10
Fetching upstream changes from https://github.com/jaiswaladi246/Petclinic.git
> git --version # timeout=10
> git -v # git version 2.43.0'
> git fetch --tags --force --progress -- https://github.com/jaiswaladi246/Petclinic.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/jaiswaladi246/Petclinic.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/main{commit} # timeout=10
Checking out Revision ec5eb4c76191f27f161c04bd4ca6c173614bd882 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f ec5eb4c76191f27f161c04bd4ca6c173614bd882 # timeout=10
> git branch -a -v --no-abbrev # timeout=10
> git checkout -b main ec5eb4c76191f27f161c04bd4ca6c173614bd882 # timeout=10
Commit message: "Repo updated"
First time build. Skipping changelog.
[Pipeline]
[Pipeline] // stage
[Pipeline]
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS

```

Configure

Pipeline

Definition

Script :

```

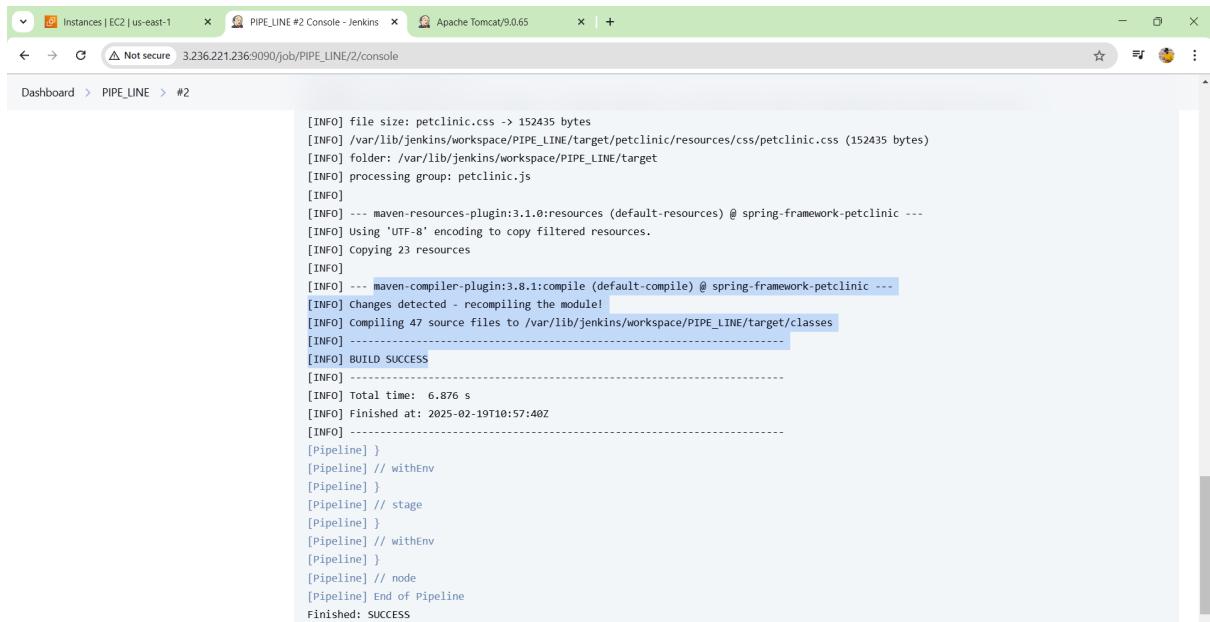
1 ~ pipeline {
2     agent any
3
4     tools {
5         jdk 'jdk17'
6         maven 'maven3'
7     }
8
9     stages {
10        stage('Git CheckOut') {
11            steps {
12                git branch: 'main', url: 'https://github.com/jaiswaladi246/Petclinic.git'
13            }
14        }
15        stage('Compile') {
16            steps {
17                sh "mvn compile"
18            }
19        }
20    }
21 }
22
23

```

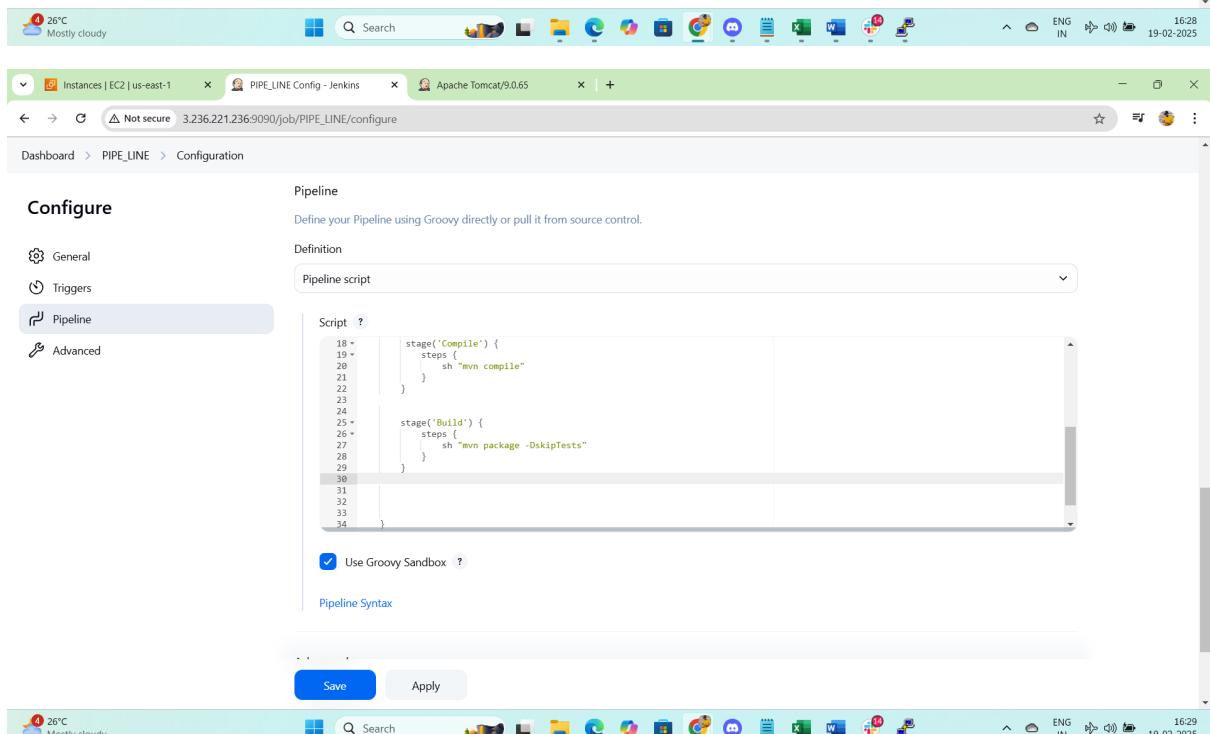
Use Groovy Sandbox ?

Save Apply

We add tools and maven compile, lets check.



```
[INFO] file size: petclinic.css -> 152435 bytes
[INFO] /var/lib/jenkins/workspace/PIPE_LINE/target/petclinic/resources/css/petclinic.css (152435 bytes)
[INFO] folder: /var/lib/jenkins/workspace/PIPE_LINE/target
[INFO] processing group: petclinic.js
[INFO]
[INFO] --- maven-resources-plugin:3.1.0:resources (default-resources) @ spring-framework-petclinic ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Copying 23 resources
[INFO]
[INFO] --- maven-compiler-plugin:3.8.1:compile (default-compile) @ spring-framework-petclinic ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 47 source files to /var/lib/jenkins/workspace/PIPE_LINE/target/classes
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 6.876 s
[INFO] Finished at: 2025-02-19T10:57:40Z
[INFO] -----
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // stage
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```



Configure

Pipeline

Definition

Script ?

```
18 ~   stage('Compile') {
19 ~     steps {
20 ~       sh "mvn compile"
21 ~     }
22 ~   }
23 ~
24 ~
25 ~   stage('Build') {
26 ~     steps {
27 ~       sh "mvn package -DskipTests"
28 ~     }
29 ~   }
30 ~
31 ~
32 ~
33 ~
34 }
```

Use Groovy Sandbox ?

[Pipeline Syntax](#)

Save Apply

Added a build step

The screenshot shows the Jenkins Pipeline configuration page. On the left, there's a sidebar with tabs: General, Triggers, Pipeline (which is selected and highlighted in grey), and Advanced. The main area has a title 'Pipeline' and a subtitle 'Configure'. It says 'Define your Pipeline using Groovy directly or pull it from source control.' Below this is a 'Definition' section with a dropdown set to 'Pipeline script'. A code editor displays the following Groovy script:

```
16 >     stage('Compile') {
17 >         steps {
18 >             sh "mvn compile"
19 >         }
20 >
21 >     }
22 >
23 >
24 >     stage('Build') {
25 >         steps {
26 >             sh "mvn package -DskipTests"
27 >         }
28 >
29 >     }
30 >
31 >
32 >
33 > }
```

Below the code editor is a checkbox labeled 'Use Groovy Sandbox ?' followed by a 'Pipeline Syntax' link. At the bottom are 'Save' and 'Apply' buttons.

Lets see

The screenshot shows the Jenkins Pipeline #3 Console. The top bar includes tabs for Instances | EC2 | us-east-1, PIPE_LINE Config - Jenkins, and Apache Tomcat/9.0.65. The main content area shows the pipeline log output:

```
[WARNING] Execution data for class org/springframework/samples/petclinic/model/Pet does not match.
[WARNING] Execution data for class org/springframework/samples/petclinic/model/Owner does not match.
[WARNING] Execution data for class org/springframework/samples/petclinic/repository/jdbc/JdbcPetVisitExtractor does not match.
[WARNING] Execution data for class org/springframework/samples/petclinic/model/Vet does not match.
[WARNING] Execution data for class org/springframework/samples/petclinic/repository/jdbc/JdbcOwnerRepositoryImpl does not match.
[INFO]
[INFO] --- maven-war-plugin:3.3.1:war (default-war) @ spring-framework-petclinic ---
[INFO] Packaging webapp
[INFO] Assembling webapp [spring-framework-petclinic] in [/var/lib/jenkins/workspace/PIPE_LINE/target/petclinic]
[INFO] Processing war project
[INFO] Copying webapp resources [/var/lib/jenkins/workspace/PIPE_LINE/src/main/webapp]
[INFO] Building war: /var/lib/jenkins/workspace/PIPE_LINE/target/petclinic.war
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.384 s
[INFO] Finished at: 2025-02-19T10:59:47Z
[INFO] -----
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // stage
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

See it is also success.

Now we move .war file to tomcat server.

Screenshot of Jenkins Pipeline Configuration:

```

20
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```

Use Groovy Sandbox ?

[Pipeline Syntax](#)

[Save](#) [Apply](#)

Screenshot of Jenkins Pipeline Console Output (#6):

```

[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time:  9.939 s
[INFO] Finished at: 2025-02-20T10:58:50Z
[INFO] -----
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy to tomcat server)
[Pipeline]   tool
[Pipeline]   envVarsForTool
[Pipeline]   tool
[Pipeline]   envVarForTool
[Pipeline]   withEnv
[Pipeline] {
[Pipeline]   sh
+ sudo cp target/petclinic.war /opt/apache-tomcat-9.0.65/webapps/
sudo: a terminal is required to read the password; either use the -S option to read from standard input or configure an askpass helper
sudo: a password is required
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // stage
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // node
[Pipeline] End of Pipeline
ERROR: script returned exit code 1
Finished: FAILURE

```

`sudo chown -R jenkins:jenkins /opt/apache-tomcat-9.0.65/webapps/`

```

root@ip-172-31-73-51:/opt
at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:77)
at java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
at java.base/java.lang.reflect.Method.invoke(Method.java:569)
at org.apache.catalina.startup.Bootstrap.stopServer(Bootstrap.java:391)
at org.apache.catalina.startup.Bootstrap.main(Bootstrap.java:481)

root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65/conf# sudo startTomcat
Using CATALINA_BASE:   /opt/apache-tomcat-9.0.65
Using CATALINA_HOME:  /opt/apache-tomcat-9.0.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.65/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/apache-tomcat-9.0.65/bin/bootstrap.jar:/opt/apache-tomcat-9.0.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65/conf# cd ..
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65# cd ..
root@ip-172-31-73-51:/opt# chmod -R 757 apache-tomcat-9.0.65
root@ip-172-31-73-51:/opt# ls
apache-tomcat-9.0.65.tar.gz
root@ip-172-31-73-51:/opt# sudo cp target/*.war /opt/apache-tomcat-9.0.65/webapps/
cp: cannot stat 'target/*.war': No such file or directory
root@ip-172-31-73-51:/opt# cd apache-tomcat-9.0.65
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65# ls
BUILDING.txt CONTRIBUTING.md LICENSE NOTICE README.md RELEASE-NOTES RUNNING.txt bin conf lib logs temp webapps work
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65# pwd
/opt/apache-tomcat-9.0.65
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65# cd webapps
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65/webapps# pwd
/opt/apache-tomcat-9.0.65/webapps
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65/webapps# cd ..
root@ip-172-31-73-51:/opt/apache-tomcat-9.0.65# cd ..
root@ip-172-31-73-51:/opt# ls
apache-tomcat-9.0.65.tar.gz
root@ip-172-31-73-51:/opt# ls -lrt
total 11328
-rw-r--r-- 1 root root 11593900 Jul 14 2022 apache-tomcat-9.0.65.tar.gz
drwxr-xrwx 9 root root 4096 Feb 20 10:09 apache-tomcat-9.0.65
root@ip-172-31-73-51:/opt# sudo chown -R jenkins:jenkins /opt/apache-tomcat-9.0.65/webapps/
root@ip-172-31-73-51:/opt# 
```

Run again.

(Recommended)

Instead of using `sudo`, change the ownership of the `/opt/apache-tomcat-9.0.65/webapps/` directory to Jenkins.

Run this command **once** on your EC2 instance:

```
sh
sudo chown -R jenkins:jenkins /opt/apache-tomcat-9.0.65/webapps/
```

Then update your pipeline to:

```
groovy
stage('Deploy') {
    steps {
        sh "cp target/petclinic.war /opt/apache-tomcat-9.0.65/webapps/"
    }
}
```

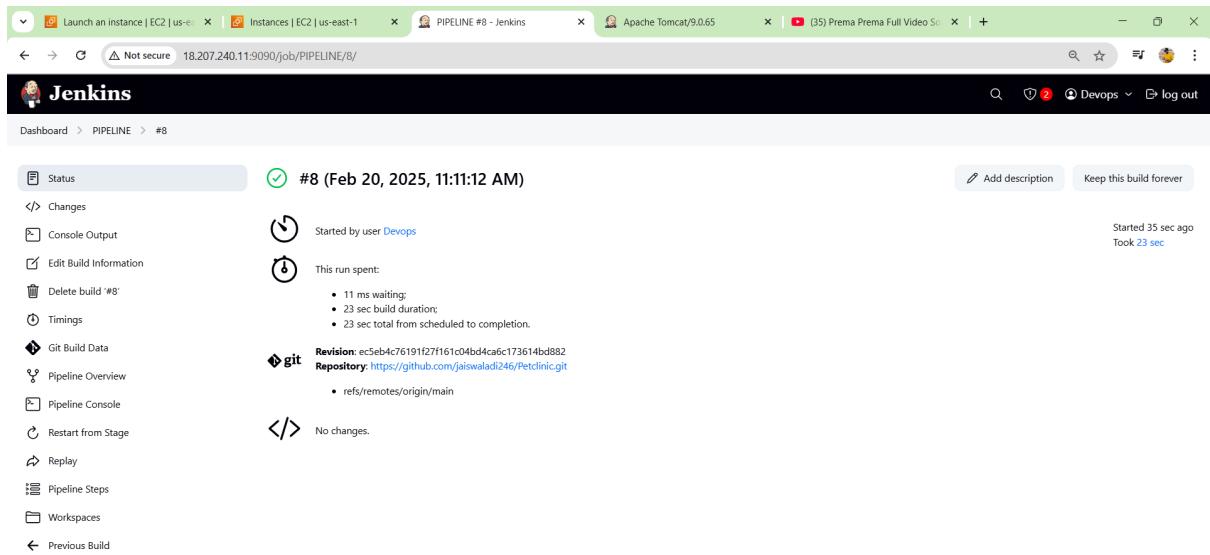
This is the most secure approach because it avoids sudo and password issues.

```

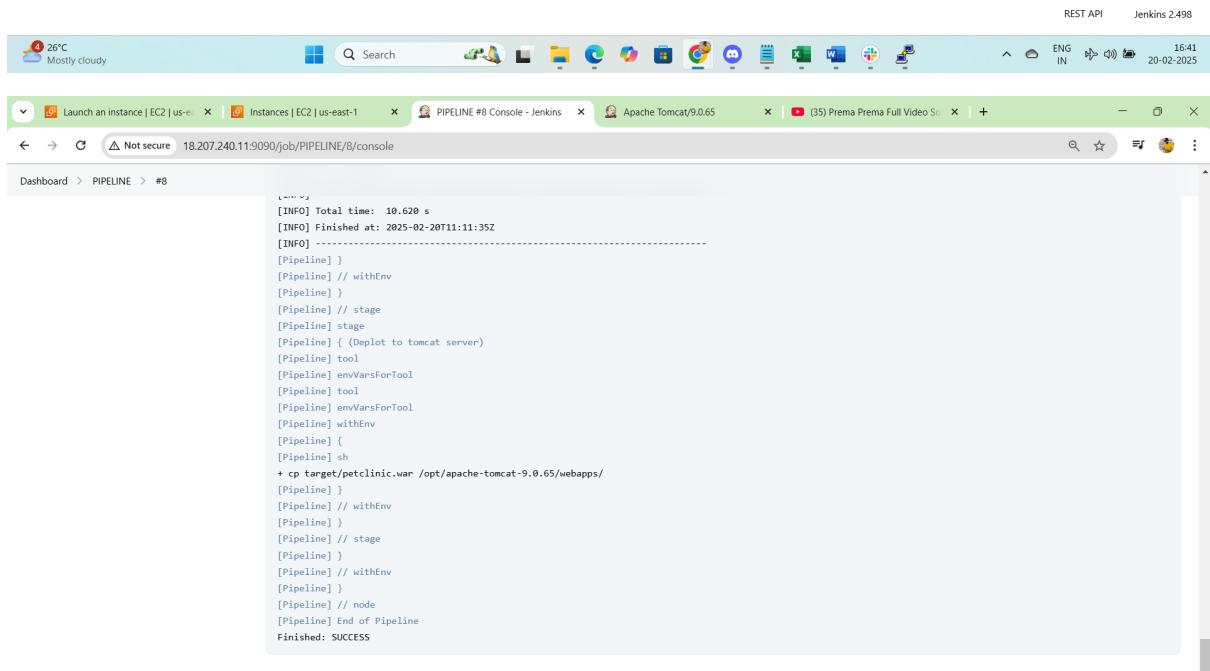
21
22
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29
30
31
32
33
34
35
36
37
38
} ] }

stage('Build') {
    steps {
        sh "mvn clean package -DskipTests"
    }
}

stage('Deploy to tomcat server') {
    steps {
        sh "[cp target/petclinic.war /opt/apache-tomcat-9.0.65/webapps/ "
    }
}
}
```



The screenshot shows the Jenkins Pipeline #8 build status page. The top navigation bar includes tabs for Launch an instance | EC2 | us-east-1, Instances | EC2 | us-east-1, PIPELINE #8 - Jenkins, Apache Tomcat/9.0.65, and (35) Prema Prema Full Video So. Below the navigation is the Jenkins logo and a search bar. The main content area displays the build number (#8), date (Feb 20, 2025, 11:11:12 AM), and a green checkmark icon indicating success. A sidebar on the left lists various pipeline management options like Status, Changes, Console Output, and Git Build Data. On the right, build details show it was started by user Devops, took 23 seconds, and includes a link to the GitHub repository (<https://github.com/jaiswaladi246/Petcclinic.git>). A note indicates no changes were made.



The screenshot shows the Jenkins Pipeline #8 console output. The top navigation bar is identical to the previous screenshot. The main content area displays the build log, which includes informational messages about the total time (10.628 s), finish time (2025-02-20T11:11:35Z), and the pipeline stages. The log ends with the message "Finished: SUCCESS". The Jenkins interface includes a weather widget showing 26°C and mostly cloudy conditions, and a system tray with various icons.

```
[INFO] Total time: 10.628 s
[INFO] Finished at: 2025-02-20T11:11:35Z
[INFO] -----
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy to tomcat server)
[Pipeline] tool
[Pipeline] envVarsForTool
[Pipeline] tool
[Pipeline] envVarsForTool
[Pipeline] withEnv
[Pipeline] {
[Pipeline] sh
+ cp target/petcclinic.war /opt/apache-tomcat-9.0.65/webapps/
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // stage
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```



Screenshot of a web browser showing the Apache Tomcat 9.0.65 homepage at 18.207.240.11:8080/petclinic.

The page displays a success message: "If you're seeing this, you've successfully installed Tomcat. Congratulations!"

Key sections include:

- Developer Quick Start:** Includes links to Tomcat Setup, First Web Application, Realms & AAA, JDBC DataSources, Examples, Servlet Specifications, and Tomcat Versions.
- Managing Tomcat:** Discusses security access for the manager webapp, mentioning `$CATALINA_HOME/conf/tomcat-users.xml`. It also links to `$CATALINA_HOME RUNNING.txt`.
- Documentation:** Links to Tomcat 9.0 Documentation, Configuration, and Wiki.
- Getting Help:** Lists FAQ and Mailing Lists, including `tomcat-announce`, `tomcat-user`, `taglibs-user`, and `tomcat-dev`.

At the bottom, there's a navigation bar with links to Other Downloads, Other Documentation, Get Involved, Miscellaneous, and Apache Software Foundation.

Screenshot of a web browser showing the PetClinic application running on Apache Tomcat 9.0.65 at 18.207.240.11:8080/petclinic.

The page has a header with the Spring logo and navigation links for HOME, FIND OWNERS, VETERINARIANS, and ERROR.

The main content area features a "Welcome" message and a photo of a brown puppy and a white kitten lying together.

At the bottom, there's a footer with the Spring logo and the text "by Pivotal".