

Hello world -war file deployment in Apache Tomact using Jenkins.

- Login to aws management console
- Navigate to ec2 dash board and select linux Amazon -AMI

The screenshot shows the AWS EC2 Management Console interface. A new instance is being created with the following details:

- Name:** jenkins-ci-cd-server
- Application and OS Images (Amazon Machine Image):** Amazon Linux 2023.0.2... (ami-0ab193018f3e9351b)
- Virtual server type (instance type):** t2.micro
- Storage (volumes):** New security group

The "Launch instance" button is highlighted in orange at the bottom right.

- open the ec2 dashboard and verify the instance status

The screenshot shows the AWS EC2 Instances dashboard. It displays one instance named "jenkins-ci-cd-s..." with the following details:

Name	Instance ID	Instance state	Instance type	Status check
jenkins-ci-cd-s...	i-0b25d750fa9e35c7d	Running	t2.micro	Initializing

The "EC2 Dashboard" link in the left sidebar is highlighted with a red box.

- Open the command shell and set the hostname for server
- apply the sudo command to become a root user
- install the pre-requisites for jenkins - like Git ,Maven and Java

```

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-25-111 ~]$ sudo su -
[root@ip-172-31-25-111 ~]# hostnamectl set-hostname jenkins-server
[root@ip-172-31-25-111 ~]# exec bash
[root@jenkins-server ~]# sudo yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No packages marked for update
[root@jenkins-server ~]# sudo yum install git maven -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
--> Package git.x86_64 0:2.39.2-1.amzn2.0.1 will be installed
--> Processing Dependency: perl-Git = 2.39.2-1.amzn2.0.1 for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: git-core-doc = 2.39.2-1.amzn2.0.1 for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: git-core = 2.39.2-1.amzn2.0.1 for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Perl::ReadKey) for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Git::I18N) for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Processing Dependency: perl(Git) for package: git-2.39.2-1.amzn2.0.1.x86_64
--> Package maven.noarch 0:3.0.5-17.amzn2 will be installed
--> Processing Dependency: java >= 1.5 for package: maven-3.0.5-17.amzn2.noarch
--> Processing Dependency: sisu-inject-plexus for package: maven-3.0.5-17.amzn2.noarch
--> Processing Dependency: sisu-inject-bean for package: maven-3.0.5-17.amzn2.noarch
--> Processing Dependency: plexus-utils for package: maven-3.0.5-17.amzn2.noarch
--> Processing Dependency: plexus-sec-dispatcher for package: maven-3.0.5-17.amzn2.noarch

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Activate Windows Go to Settings to activate Windows Show all
jenkey.pem
Type here to search WISSEN
26°C Mostly sunny 10:07 AM 5/25/2023

```

- install the Java
- Check the version of Git , Maven and java

```

Adrenalin MAX Email - Hareesh Pathipati - Outlook Connect to instance | EC2 Management Console EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0b25d750fa9e35c7d&osUser=ec2-user&sshPort=...
[Alt+S] Services Search
javamail.noarch 0:1.4.6-8.amzn2 javapackages-tools.noarch 0:3.4.1-11.amzn2
javaspell.noarch 0:3.16.1-10.amzn2 jboss-ejb-3.1-api.noarch 0:1.0.2-10.amzn2
jboss-el-3.2-api.noarch 0:1.0.3-7.20120319git49a904.amzn2 jboss-interceptors-1.1-api.noarch 0:1.0.2-0.9.20120319git49a904.amzn2
root@jenkins-server ~]# git --version
git version 2.39.2
root@jenkins-server ~]# mvn -v
Apache Maven 3.0.5 (Red Hat 3.0.5-17)
Maven home: /usr/share/maven
Java version: 17.0.7, vendor: Amazon.com Inc.
Java home: /usr/lib/jvm/java-17-amazon-corretto.x86_64
Default locale: en_US, platform encoding: UTF-8
os.name: "Linux" os.arch: "x86_64" os.version: "9.0.64" java.home: "java-17-amazon-corretto.x86_64" family: "unix"
[root@jenkins-server ~]# sudo amazon-linux-extras install java-openjdk11 -y
Installing java-11-openjdk
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Cleaning repos: amzn2-core amzn2extra-docker amzn2extra-java-openjdk11 amzn2extra-kernel-5.10
17 metadata files removed
6 sqlite files removed
0 metadata files removed
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
amzn2extra-docker
amzn2extra-java-openjdk11
amzn2extra-kernel-5.10
(1/9): amzn2-core/2/x86_64/group_gz
(2/9): amzn2-core/2/x86_64/updateinfo
(3/9): amzn2extra-java-openjdk11/2/x86_64/primary_db
(4/9): amzn2extra-kernel-5.10/2/x86_64/updateinfo
(5/9): amzn2extra-docker/2/x86_64/updateinfo
[root@jenkins-server ~]# ls
jenkey.pem
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```

- install the jenkins stable version using wget command

```

Adrenalin MAX Email - Hareesh Pathipati - Outlook EC2 Management Console EC2 Instance Connect
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0b25d750fa9e35c7d&osUser=ec2-user&sshPort=...
[Alt+S] Services Search
root@jenkins-server ~]# java --version
openjdk 17.0.7 2023-04-18 LTS
OpenJDK Runtime Environment Corretto-17.0.7.7.1 (build 17.0.7+7-LTS)
OpenJDK 64-Bit Server VM Corretto-17.0.7.7.1 (build 17.0.7+7-LTS, mixed mode, sharing)
root@jenkins-server ~]# wget https://get.jenkins.io/war-stable/2.387.1/jenkins.war
--2023-05-25 04:40:03.000 52.167.253.43 [get.jenkins.io] 52.167.253.43|443... connected.
Resolving get.jenkins.io (get.jenkins.io)... 52.167.253.43
Connecting to get.jenkins.io (get.jenkins.io)|52.167.253.43|443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://mirror.xmission.com/jenkins/war-stable/2.387.1/jenkins.war [following]
--2023-05-25 04:40:03.000 52.167.253.43|443... https://mirror.xmission.com/jenkins/war-stable/2.387.1/jenkins.war
Resolving mirror.xmission.com (mirror.xmission.com)... 198.60.22.13, 2607:fa18:0:3::13
Connecting to mirror.xmission.com (mirror.xmission.com)|198.60.22.13|443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 98336194 (94M) [application/java-archive]
Saving to: 'jenkins.war'

100%[=====] 98,336,194 35.8MB/s in 2.6s
2023-05-25 04:40:06 (35.8 MB/s) - 'jenkins.war' saved [98336194/98336194]
[root@jenkins-server ~]# java -jar jenkins.war --httpsPort=443
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```

- Note --- Here we jenkins and tomcat servers downloading same instance by default

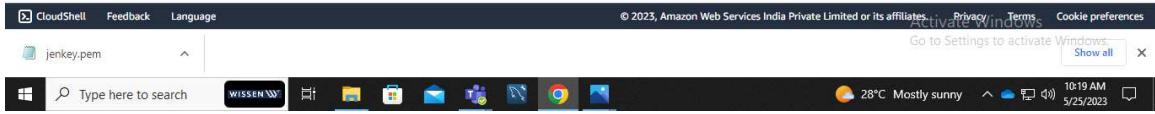
both jenkins and tomcat occupies 8080 port.

- For that above case here we changing jenkins port number while running jenkins server

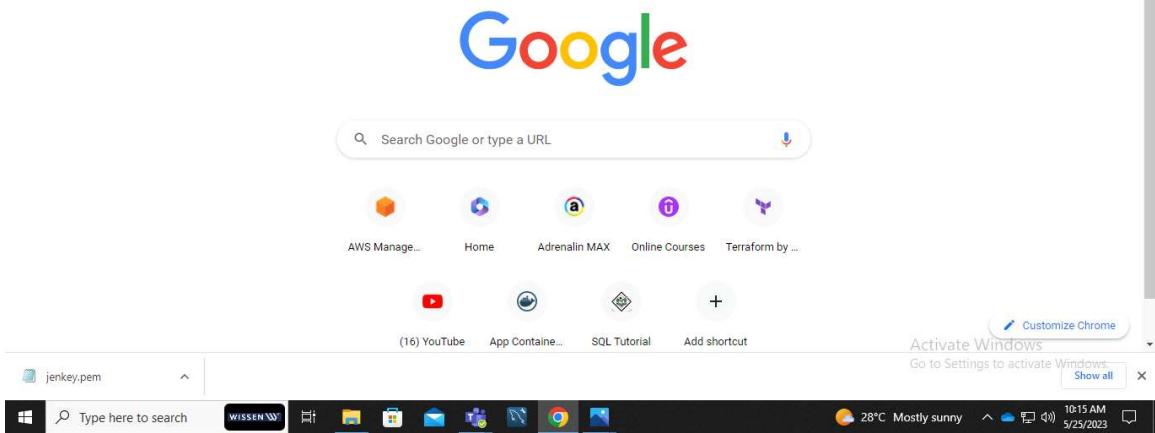
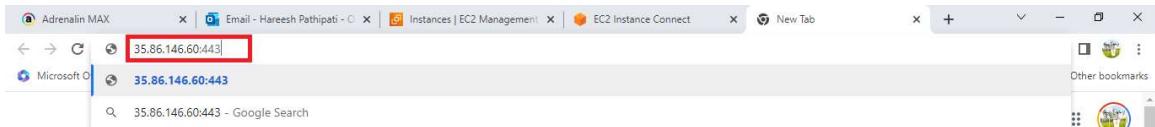
```

root@jenkins-server ~]# java -jar jenkins.war --httpPort=443
Running from: /root/jenkins.war
webroot: /root/.jenkins/war
2023-05-25 04:48:29.379+0000 [id=1] INFO winstone.Logger#logInternal: Beginning extraction from war file
2023-05-25 04:48:29.573+0000 [id=1] WARNING o.e.j.s.handler.ContextHandler#setContextPath: Empty contextPath
2023-05-25 04:48:29.726+0000 [id=1] INFO org.eclipse.jetty.server.Server#doStart: jetty-10.0.13; built: 2022-12-07T20:13:20.134z; git: 1c2636ea
05cc0a8delffd6caf/f3a98ac084c766d; jvm 17.0.7+7-LTS
2023-05-25 04:48:30.338+0000 [id=1] INFO o.e.j.w.StandardDescriptorProcessor#visitServlet: NO JSP Support for /, did not find org.eclipse.jetty.jsp.JettyJspServlet
2023-05-25 04:48:30.479+0000 [id=1] INFO o.e.j.s.DefaultSessionIdManager#doStart: Session workerName=node0
2023-05-25 04:48:31.530+0000 [id=1] INFO hudson.WebAppMain#contextInitialized: Jenkins home directory: /root/.jenkins
2023-05-25 04:48:31.861+0000 [id=1] INFO o.e.j.s.handler.ContextHandler#doStart: Started w.05949eba8[Jenkins v2.387.1,/,file:///root/.jenkins/war/,AVAILABLE]{/root/.jenkins/war}
2023-05-25 04:48:31.925+0000 [id=1] INFO o.e.j.server.AbstractConnector#doStart: Started ServerConnector@1b60b9a4[HTTP/1.1, {http/1.1}]{0.0.0.0:443}
2023-05-25 04:48:31.966+0000 [id=1] INFO org.eclipse.jetty.server.Server#doStart: Started Server@691a7f0f{STARTING}[10.0.13,sto=0] @3753ms
2023-05-25 04:48:31.974+0000 [id=25] INFO winstone.Logger#logInternal: Winstone Servlet Engine running; controlPort=disabled
2023-05-25 04:48:32.550+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Started initialization
2023-05-25 04:48:32.777+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Listed all plugins
2023-05-25 04:48:34.798+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Prepared all plugins
2023-05-25 04:48:34.804+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Started all plugins
2023-05-25 04:48:34.884+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Augmented all extensions
2023-05-25 04:48:35.644+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: System config loaded
2023-05-25 04:48:35.645+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: System config adapted
2023-05-25 04:48:35.645+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Loaded all jobs
2023-05-25 04:48:35.646+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Configuration for all jobs updated
2023-05-25 04:48:35.815+0000 [id=30] INFO jenkins.install.SetupWizard#init:

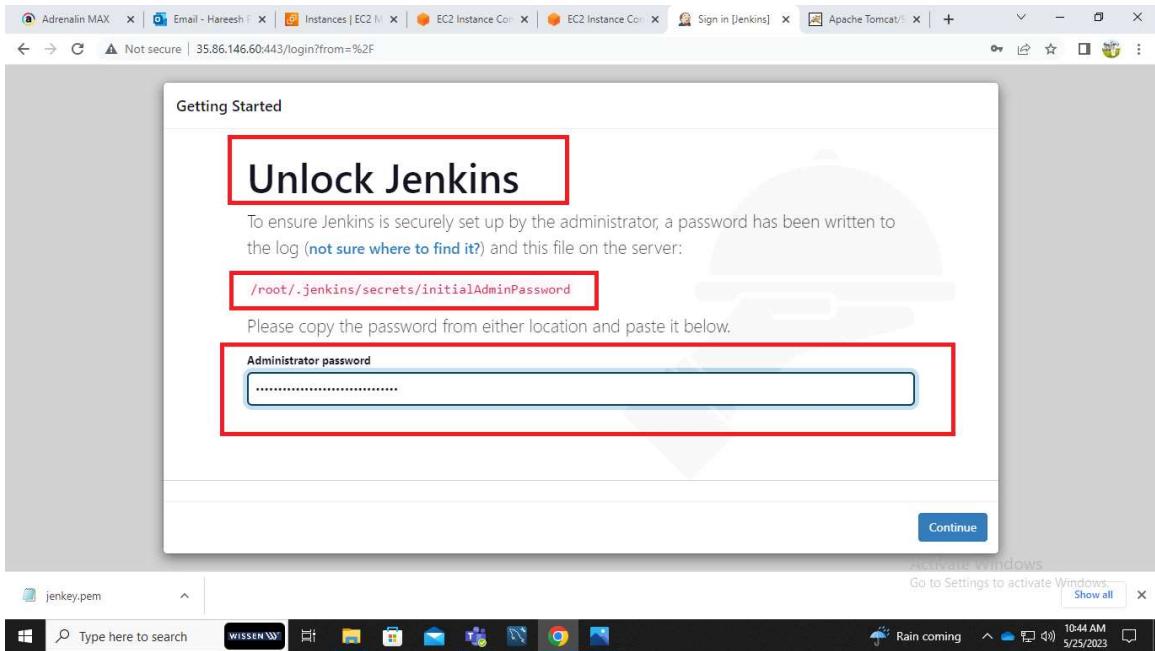
```



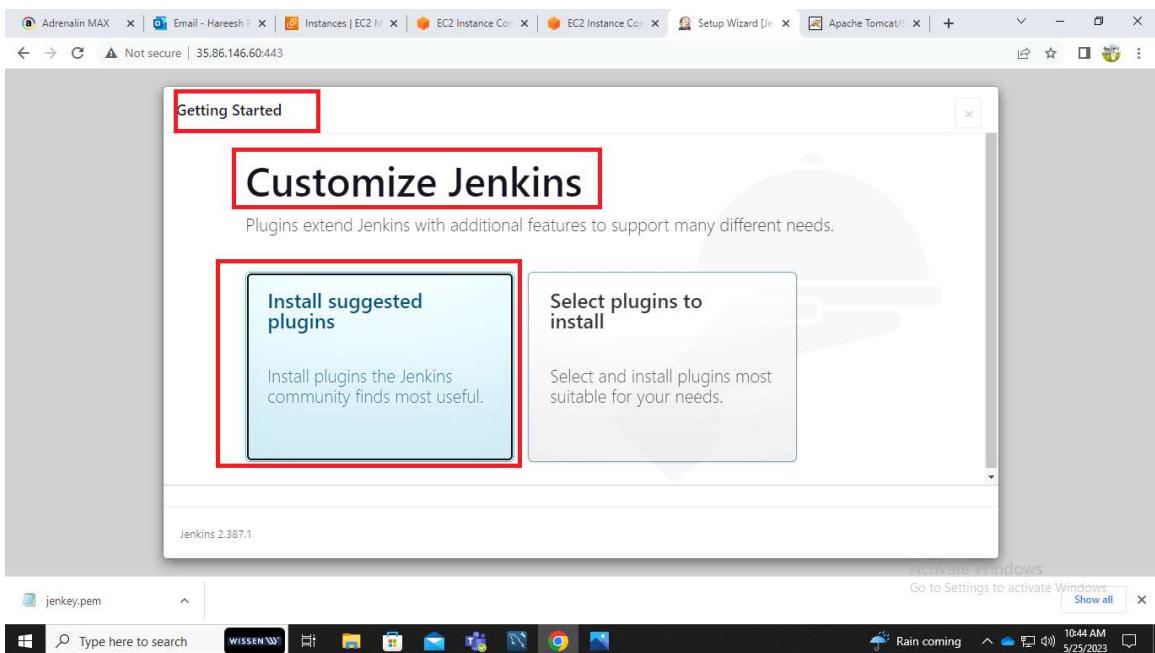
- Take the public IP of jenkins server and paste on the browser using accessing port number.



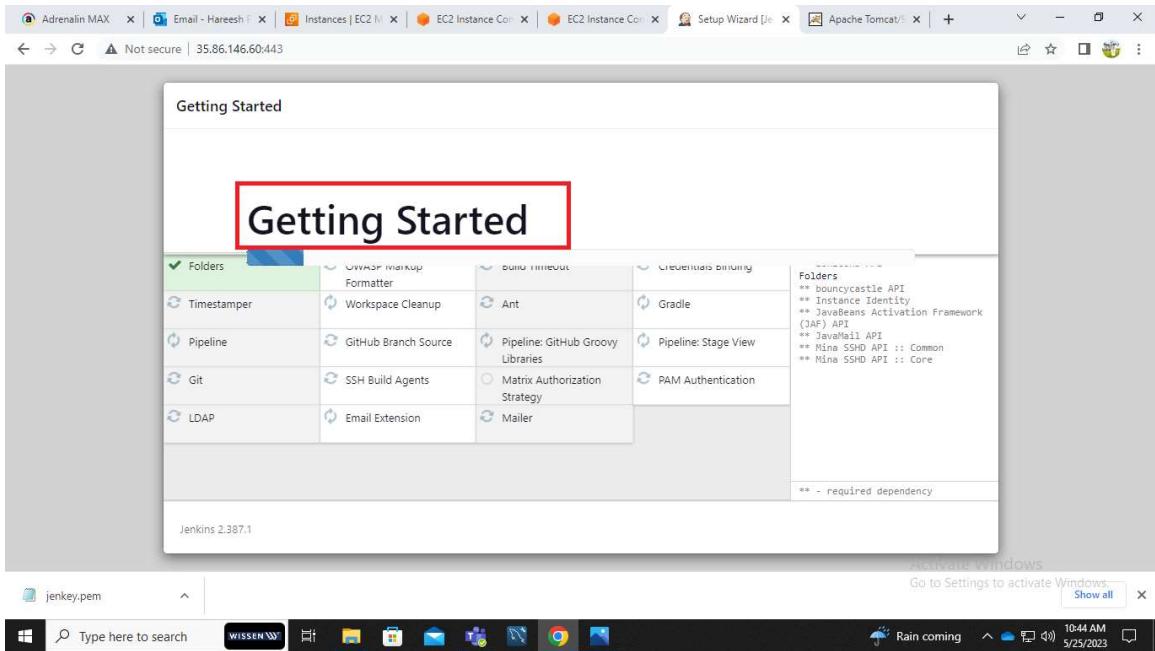
- while applying public IP we will get unlock jenkins
- here we add the password for unlock jenkins.



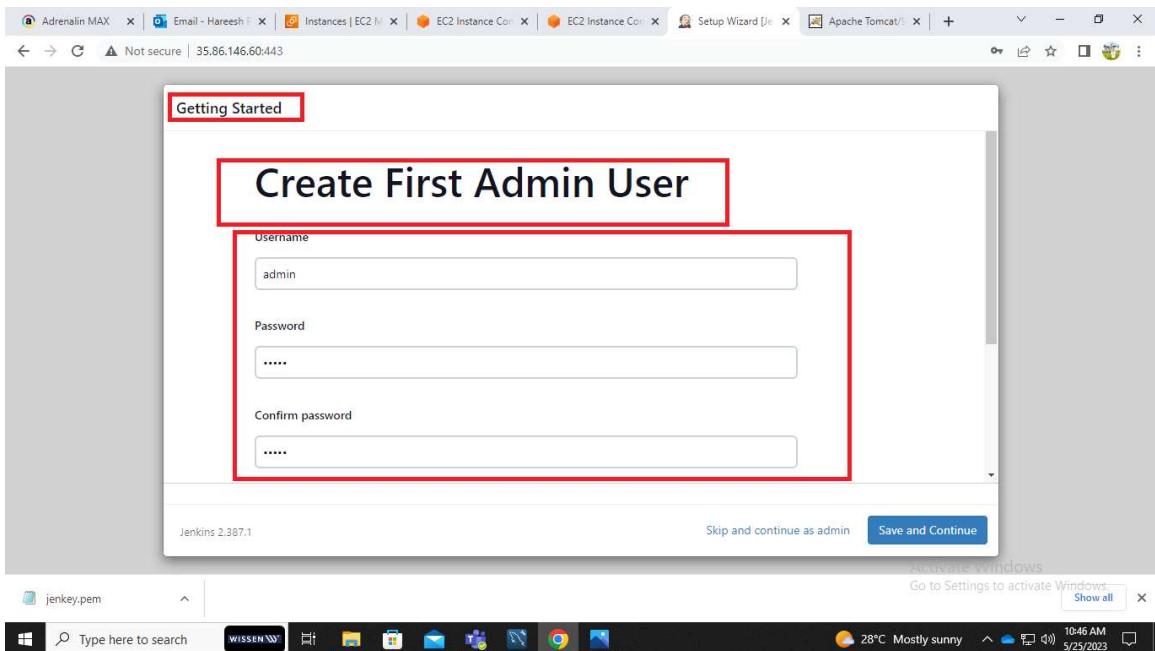
- jenkins is all about plugins for required tasks for that we have two options.
- Here we select install suggested plugins.



- After selection of plugins jenkins will started install the required plugins.



- For starting the jenkins we have to create Admin user and password.



- the below one is jenkins dash board
- **NOTE- Jenkins we can access only browser.**

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

Build Queue Create a job →
No builds in the queue.

Build Executor Status Set up a distributed build
1 Idle →
2 Idle Set up an agent →
Configure a cloud →

Activate Windows
Go to Settings to activate Windows
Show all

jenkey.pem

Windows taskbar: Type here to search, WISSEN, Rain today, 10:47 AM, 5/25/2023

- Here we have to install some plugins for project base
- For that we have navigate to -Manage jenkins - manage plugins

Building on the built-in node can be a security issue. You should set up distributed builds. See the documentation.

System Configuration

- Configure System Configure global settings and paths.
- Global Tool Configuration Configure tools, their locations and automatic installers.
- Manage Nodes and Clouds Add, remove, control and monitor the various nodes that Jenkins runs jobs on.

Manage Plugins
Add, remove, disable or enable plugins that can extend the functionality of Jenkins.

Security

Activate Windows
Go to Settings to activate Windows
Show all

jenkey.pem

Windows taskbar: Type here to search, WISSEN, Rain today, 10:47 AM, 5/25/2023

- Install the plugins from - Available plugins

- click on select for required plugins.

Available plugins

Plugin	Status
Ionic API	Success
Folders	Success
bouncycastle API	Success
Instance Identity	Success
JavaBeans Activation Framework (JAF) API	Success
JavaMail API	Success
Mina SSHD API :: Common	Success
Mina SSHD API :: Core	Success
SSH server	Success
OWASP Markup Formatter	Success
Struts	Success

Tomcat installation -

- Install the tomcat using wget command
- Here we have to move the tomcat zip file to opt directory

```

[root@jenkins-server ~]# wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.75/bin/apache-tomcat-9.0.75.zip
--2023-05-24 04:50:57-- https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.75/bin/apache-tomcat-9.0.75.zip
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42:644
Connecting to dlcdn.apache.org (dlcdn.apache.org) 151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 12188374 (12M) [application/zip]
Saving to: "apache-tomcat-9.0.75.zip"

100%[=====] 12,188,374 --.-K/s in 0.1s

2023-05-24 04:50:57 (78.0 MB/s) - 'apache-tomcat-9.0.75.zip' saved [12188374/12188374]

[root@jenkins-server ~]# ls
apache-tomcat-9.0.75.zip jenkins.war
[root@jenkins-server ~]# pwd
/root
[root@jenkins-server ~]# mv apache-tomcat-9.0.75.zip /opt/
[root@jenkins-server ~]# ls
jenkins.war
[root@jenkins-server ~]# cd /opt
[root@jenkins-server opt]# ls
apache-tomcat-9.0.75.zip aws rh
root@jenkins-server opt]#

```

- Unzip the tomcat zip file using unzip command

```

aws Services Search [Alt+S]
jenkins.war
[root@jenkins-server ~]# cd /opt
[root@jenkins-server opt]# ls
apache-tomcat-9.0.75.zip aws rh
[root@jenkins-server opt]# unzip apache-tomcat-9.0.75.zip
Archive: apache-tomcat-9.0.75.zip
      creating: apache-tomcat-9.0.75/
      creating: apache-tomcat-9.0.75/bin/
      creating: apache-tomcat-9.0.75/conf/
      creating: apache-tomcat-9.0.75/lib/
      creating: apache-tomcat-9.0.75/logs/
      creating: apache-tomcat-9.0.75/temp/
      creating: apache-tomcat-9.0.75/webapps/
      creating: apache-tomcat-9.0.75/webapps/root/
      creating: apache-tomcat-9.0.75/webapps/ROOT/WEB-INF/
      creating: apache-tomcat-9.0.75/webapps/docs/
      creating: apache-tomcat-9.0.75/webapps/docs/META-INF/
      creating: apache-tomcat-9.0.75/webapps/docs/WEB-INF/
      creating: apache-tomcat-9.0.75/webapps/docs/WEB-INF/sip/
      creating: apache-tomcat-9.0.75/webapps/docs/annotationsapi/
      creating: apache-tomcat-9.0.75/webapps/docs/api/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/sample/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/sample/docs/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/sample/src/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/sample/src/mypackage/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/sample/web/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/sample/web/WEB-INF/
      creating: apache-tomcat-9.0.75/webapps/docs/appdev/sample/web/images/

```


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- change into conf directory and made some changes in xml files

```

aws Services Search [Alt+S]
root@jenkins-server opt]# ls
apache-tomcat-9.0.75 apache-tomcat-9.0.75.zip aws rh
[root@jenkins-server opt]# cd apache-tomcat-9.0.75
[root@jenkins-server apache-tomcat-9.0.75]# ls
bin BUILDING.txt conf COMPILEDJVMING_md lib LICENSE logs NOTICE README.md RELEASE-NOTES RUNNING.txt temp webapps work
[root@jenkins-server apache-tomcat-9.0.75]# cd conf
[root@jenkins-server conf]# ls
catalina.policy context.xml jaspic-providers.xsd server.xml tomcat-users.xsd
catalina.properties jaspic-providers.xml logging.properties tomcat-users.xml web.xml
[root@jenkins-server conf]# vi server.xml

```


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- Open the server.xml file using vi editor and change the tomcat port number

Adrenalin MAX | Email - Hareesh Pathi | Connect to instance | EC2 Instance Connect | EC2 Instance Connect | Sign in [Jenkins] | +

us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&connType=standard&instanceId=i-0b25d750fa9e35c7d&osUser=ec2-user&sshPort=... | Oregon | Hareesh p

aws Services Search [Alt+S]

```
a single "Container" Note: A "Service" is not itself a "Container", so you may not define subcomponents such as "Valves" at this level.
Documentation at /docs/config/service.html

-->
<Service name="Catalina">

<!--The connectors can use a shared executor, you can define one or more named thread pools-->
<!--
<Executor name="tomcatThreadPool" namePrefix="catalina-exec-
    maxThreads="150" minSpareThreads="4"/>
-->

<!-- A "Connector" represents an endpoint by which requests are received
and responses are returned. Documentation at :
Java HTTP Connector: /docs/config/http.html
Java AJP Connector: /docs/config/ajp.html
APR (HTTP/AJP) Connector: /docs/apr.html
Define a non-SSL/TLS HTTP/1.1 Connector on port 8080

<Connector port="80" protocol="HTTP/1.1"
    connectionTimeout="20000"
    redirectPort="8443"
    maxParameterCount="1000"
    />

<!-- A "Connector" using the shared thread pool-->
<!--
<Connector executor="tomcatThreadPool"
-->
```

INSERT --

71,24 31%

- open the tomcat-users.xml and do some modifications for users and passwords

Adrenalin MAX | Email - Hareesh Pathir | Connect to instance | EC2 Instance Connect | EC2 Instance Connect | Sign in [Jenkins] | +

us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-west-2&groupName=standard&instanceId=i-0b25d750fa9e35c7d&osUser=ec2-user&sshPort=... | ↗ | ☆ | Oregon | Hareesh p

aws Services Search [Alt+S]

- 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="aws" password="aws" roles="manager-gui"/>
</comet_users>
-- INSERT --

56, 60 Bot

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jenkey.pem

Rain coming 10:29 AM 5/25/2023

- change the directory to webapps and do some modifications using below procedure

```

[root@jenkins-server apache-tomcat-9.0.75]# ls
apache-tomcat-9.0.75 apache-tomcat-9.0.75.zip aws rh
[root@jenkins-server apache-tomcat-9.0.75]# cd apache-tomcat-9.0.75/
[root@jenkins-server apache-tomcat-9.0.75]# ls
bin BUILDING.txt conf CONTRIBUTING.md lib LICENSE logs NOTICE README.md RELEASE-NOTES RUNNING.txt temp webapps work
[root@jenkins-server apache-tomcat-9.0.75]# cd conf
[root@jenkins-server conf]# ls
context.xml jaspic-providers.xsd server.xml tomcat-users.xsd
catalina.properties jaspic-providers.xml logging.properties tomcat-users.xml web.xml
[root@jenkins-server conf]# vi server.xml
[root@jenkins-server conf]# cd ..
[root@jenkins-server conf]# cd webapps
[root@jenkins-server webapps]# ls
docs examples host-manager manager ROOT
[root@jenkins-server webapps]# cd manager/
[root@jenkins-server manager]# ls
css images index.jsp META-INF status.xsd WEB-INF xform.xsl
[root@jenkins-server manager]# cd META-INF/
[root@jenkins-server META-INF]# ls
context.xml
[root@jenkins-server META-INF]#

```



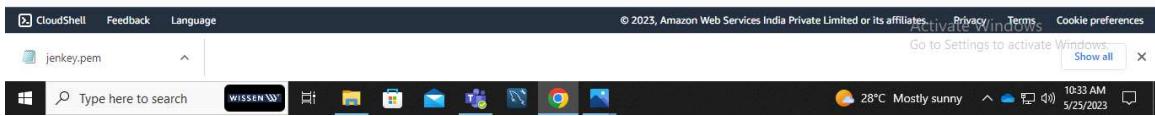
- change the directory and move to manager/ directory
- open the context.xml file using vi editor and add some content

```

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-->
<Context antiResourceLocking="false" privileged="true" >
    <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor" />
    <!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve" allow="127.\d{1,3}.\d{1,3}.\d{1,3}:\d{1,5}" /> -->
    <Manager sessionAttributeValueClassNameFilter="java.lang.(?>Boolean|Integer|Long|Number|String)|org.apache.catalina.filters.CsrfPreventionFilter$SlruCache(?>\$1)|java.util.(?>Linked)?HashMap"/>
</Context>
```
-- INSERT --

```



- change the directory and move to host manager/ directory

```

[root@jenkins-server webapps]$ cd ..
[root@jenkins-server webapps]$ ls
docs examples host-manager manager ROOT
[root@jenkins-server webapps]$ ll
total 4
drwxr-xc-x 16 root root 4096 May 4 13:04 docs
drwxr-xc-x 7 root root 99 May 4 13:04 examples
drwxr-xc-x 6 root root 79 May 4 13:04 host-manager
drwxr-xc-x 6 root root 114 May 4 13:04 manager
drwxr-xc-x 3 root root 223 May 4 13:04 ROOT
[root@jenkins-server webapps]$ cd host-manager/
[root@jenkins-server host-manager]$ ls
css images index.jsp META-INF WEB-INF
[root@jenkins-server host-manager]$ cd META-INF/
[root@jenkins-server META-INF]$ ls
context.xml
[root@jenkins-server META-INF]$ ls
context.xml
[root@jenkins-server META-INF]$ ll
total 4
-rw-r--r-- 1 root root 1374 May 4 13:04 context.xml
[root@jenkins-server META-INF]$ vi context.xml
[root@jenkins-server META-INF]$ cd ../..
[root@jenkins-server webapps]$ cd ..
[root@jenkins-server apache-tomcat-9.0.75]$

```

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- open the context.xml file using vi editor and add some content

```

<?xml version="1.0" encoding="UTF-8"?>
<!--
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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"
 ...
 ...
 <!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
 allow="127.\d{1,3}.\d{1,3}.\d{1,3}:\d{1,5}" /> -->
 <Manager sessionAttributeValueClassNameFilter="java.lang.(?:Boolean|Integer|Long|Number|String)|org.apache.catalina.filters.CsrfPreventionFilter$LruCache(?:\$1)?|java.util.(?:Linked)HashMap"/>
</Context>
~
~
-- INSERT --

```

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- For running tomcat procedure chnage the directory from pwd to bin directory

```

total 4
drwxr-xr-x 16 root root 4096 May 4 13:04 docs
drwxr-xr-x 7 root root 95 May 4 13:04 examples
drwxr-xr-x 6 root root 79 May 4 13:04 host-manager
drwxr-xr-x 6 root root 114 May 4 13:04 manager
drwxr-xr-x 3 root root 223 May 4 13:04 ROOT
[root@jenkins-server webapps]# cd host-manager/
[root@jenkins-server host-manager]# ls
css Images index.jsp META-INF WEB-INF
[root@jenkins-server host-manager]# cd META-INF/
[root@jenkins-server META-INF]# ls
context.xml
[root@jenkins-server META-INF]# context.xml
[root@jenkins-server META-INF]# 11
total 4
-rw-r--r-- 1 root root 1374 May 4 13:04 context.xml
[root@jenkins-server META-INF]# vi context.xml
[root@jenkins-server META-INF]# cd ../..
[root@jenkins-server webapps]# cd ..
[root@jenkins-server apache-tomcat-9.0.75]# ls
bin BUILDING.txt conf CONTINUATION_md lib LICENSE logs NOTICE README.md RELEASE-NOTES RUNNING.txt temp webapps work
[root@jenkins-server apache-tomcat-9.0.75]# cd bin/
[root@jenkins-server bin]# ls
bootstrap.jar ciphers.bat configtest.bat digest.sh setclasspath.sh startup.sh tool-wrapper.sh
catalina.bat ciphers.sh configtest.sh makebase.bat shutdown.bat tomcat-juli.jar version.bat
catalina.sh commons-daemon.jar daemon.sh makebase.sh shutdown.sh tomcat-native.tar.gz version.sh
catalina-tasks.xml commons-daemon-native.tar.gz digest.bat setclasspath.bat startup.bat tool-wrapper.bat
[root@jenkins-server bin]#

```

The screenshot shows a terminal window with AWS services selected. The command `ls` is run in the `bin` directory of the Jenkins server, listing files like `bootstrap.jar`, `catalina.bat`, and various configuration scripts.

- list the files and hidden files in the bin directory

```

total 904
drwxr-xr-x 2 root root 4096 May 4 13:04 .
drwxr-xr-x 9 root root 220 May 4 13:04 ..
-rw-r--r-- 1 root root 35213 May 4 13:04 bootstrap.jar
-rw-r--r-- 1 root root 16852 May 4 13:04 catalina.bat
-rw-r--r-- 1 root root 25323 May 4 13:04 catalina.sh
-rw-r--r-- 1 root root 1703 May 4 13:04 catalina-tasks.xml
-rw-r--r-- 1 root root 2123 May 4 13:04 ciphers.bat
-rw-r--r-- 1 root root 1997 May 4 13:04 ciphers.sh
-rw-r--r-- 1 root root 25765 May 4 13:04 commons-daemon.jar
-rw-r--r-- 1 root root 214019 May 4 13:04 commons-daemon-native.tar.gz
-rw-r--r-- 1 root root 2040 May 4 13:04 configtest.bat
-rw-r--r-- 1 root root 1922 May 4 13:04 configtest.sh
-rw-r--r-- 1 root root 9100 May 4 13:04 daemon.sh
-rw-r--r-- 1 root root 2091 May 4 13:04 digest.bat
-rw-r--r-- 1 root root 1965 May 4 13:04 digest.sh
-rw-r--r-- 1 root root 3606 May 4 13:04 makebase.bat
-rw-r--r-- 1 root root 3382 May 4 13:04 makebase.sh
-rw-r--r-- 1 root root 3814 May 4 13:04 setclasspath.bat
-rw-r--r-- 1 root root 4317 May 4 13:04 setclasspath.sh
-rw-r--r-- 1 root root 2020 May 4 13:04 shutdown.bat
-rw-r--r-- 1 root root 1902 May 4 13:04 shutdown.sh
-rw-r--r-- 1 root root 2022 May 4 13:04 startup.bat
-rw-r--r-- 1 root root 1904 May 4 13:04 startup.sh
-rw-r--r-- 1 root root 48970 May 4 13:04 tomcat-juli.jar

```

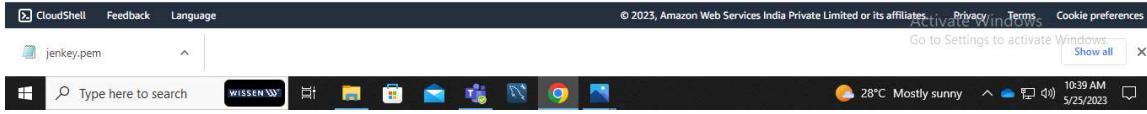
The screenshot shows a terminal window with AWS services selected. The command `ls` is run in the `bin` directory of the Jenkins server, listing files like `bootstrap.jar`, `catalina.bat`, and various configuration scripts.

- Change the permissions for files using chmod and give the execute permissions for .sh files

```

total 904
drwxr-xc-x 2 root root 4096 May 4 13:04 .
drwxr-xc-x 9 root root 220 May 4 13:04 ..
-rw-r--r-- 1 root root 35213 May 4 13:04 bootstrap.jar
-rw-r--r-- 1 root root 16852 May 4 13:04 catalina.bat
-rw-r--r-- 1 root root 25323 May 4 13:04 catalina.sh
-rw-r--r-- 1 root root 1703 May 4 13:04 catalina-tasks.xml
-rw-r--r-- 1 root root 2123 May 4 13:04 ciphers.bat
-rw-r--r-- 1 root root 1997 May 4 13:04 ciphers.sh
-rw-r--r-- 1 root root 25765 May 4 13:04 commons-daemon.jar
-rw-r--r-- 1 root root 214019 May 4 13:04 commons-daemon-native.tar.gz
-rw-r--r-- 1 root root 2040 May 4 13:04 configtest.bat
-rw-r--r-- 1 root root 1922 May 4 13:04 configtest.sh
-rw-r--r-- 1 root root 9100 May 4 13:04 daemon.sh
-rw-r--r-- 1 root root 2051 May 4 13:04 digest.bat
-rw-r--r-- 1 root root 1965 May 4 13:04 digest.sh
-rw-r--r-- 1 root root 3606 May 4 13:04 makebase.bat
-rw-r--r-- 1 root root 3382 May 4 13:04 makebase.sh
-rw-r--r-- 1 root root 3814 May 4 13:04 setclasspath.bat
-rw-r--r-- 1 root root 4317 May 4 13:04 setclasspath.sh
-rw-r--r-- 1 root root 2020 May 4 13:04 shutdown.bat
-rw-r--r-- 1 root root 1902 May 4 13:04 shutdown.sh
-rw-r--r-- 1 root root 2022 May 4 13:04 startup.bat
-rw-r--r-- 1 root root 1904 May 4 13:04 startup.sh
-rw-r--r-- 1 root root 48970 May 4 13:04 tomcat-juli.jar

```



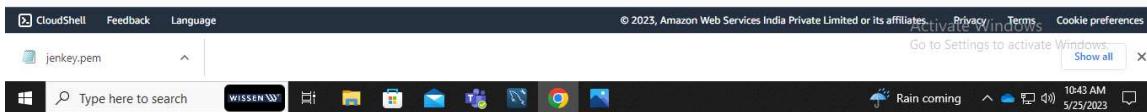
- for status of tomcat server run the .sh files apply startup and shutdown commands

```

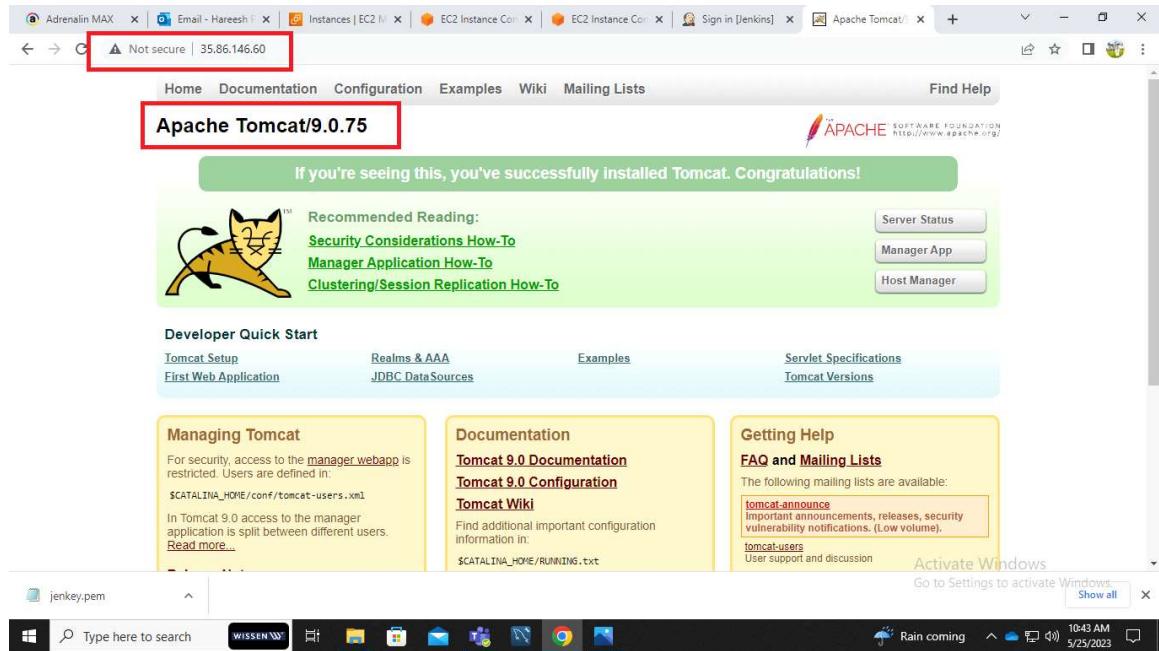
May 25, 2023 5:12:42 AM org.apache.catalina.startup.Catalina stopServer
SEVERE: Error stopping Catalina
java.net.ConnectException: Connection refused
 at java.base/sun.nio.ch.Net.connect0(Native Method)
 at java.base/sun.nio.ch.Net.connect(Net.java:579)
 at java.base/sun.nio.ch.NioSocketImpl.connect(NioSocketImpl.java:588)
 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.<init>(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:568)
 at org.apache.catalina.startup.Bootstrap.stopServer(Bootstrap.java:393)
 at org.apache.catalina.startup.Bootstrap.main(Bootstrap.java:483)

[root@jenkins-server bin]# ./startup.sh
Using CATALINA_BASE: /opt/apache-tomcat-9.0.75
Using CATALINA_HOME: /opt/apache-tomcat-9.0.75
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.75/temp
Using JRE_HOME: /usr
Using CLASSPATH: /opt/apache-tomcat-9.0.75/bin/bootstrap.jar:/opt/apache-tomcat-9.0.75/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
[root@jenkins-server bin]#

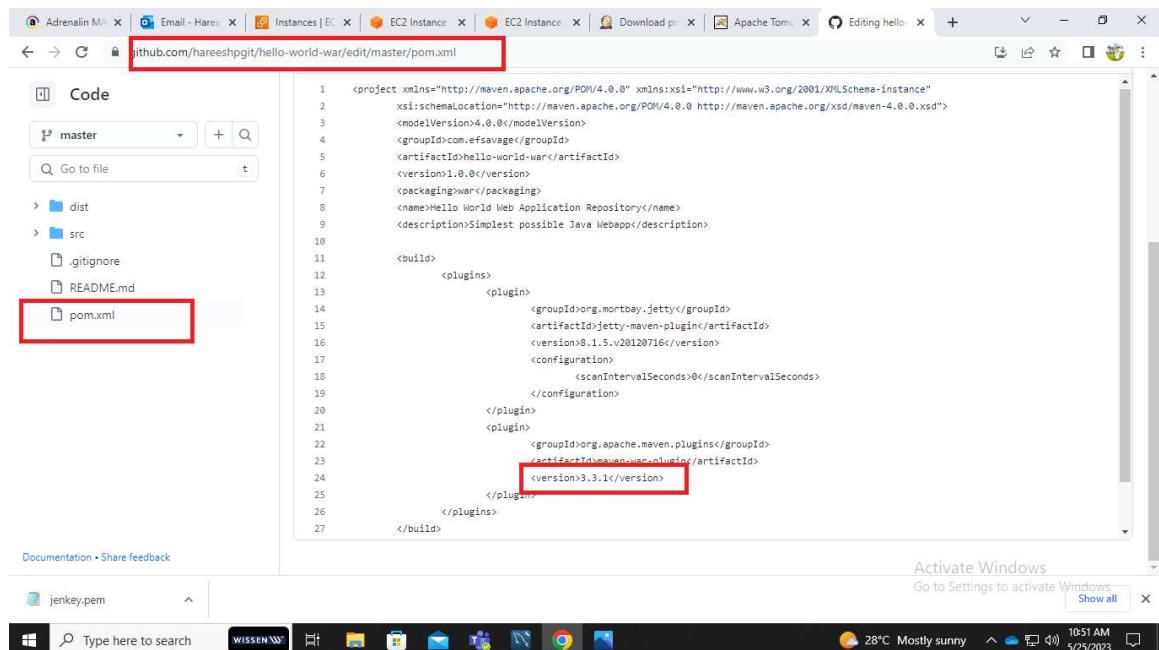
```



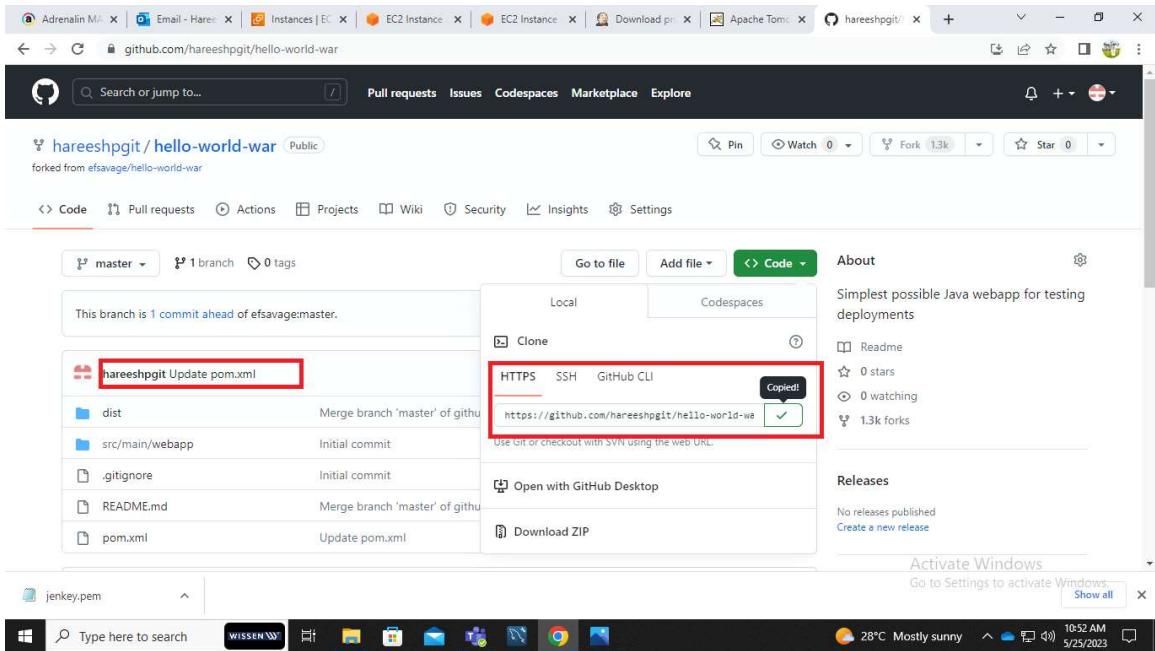
- Take the public IP of server and paste on the browser using tomcat assigned port
- Now we can access the tomcat webpage



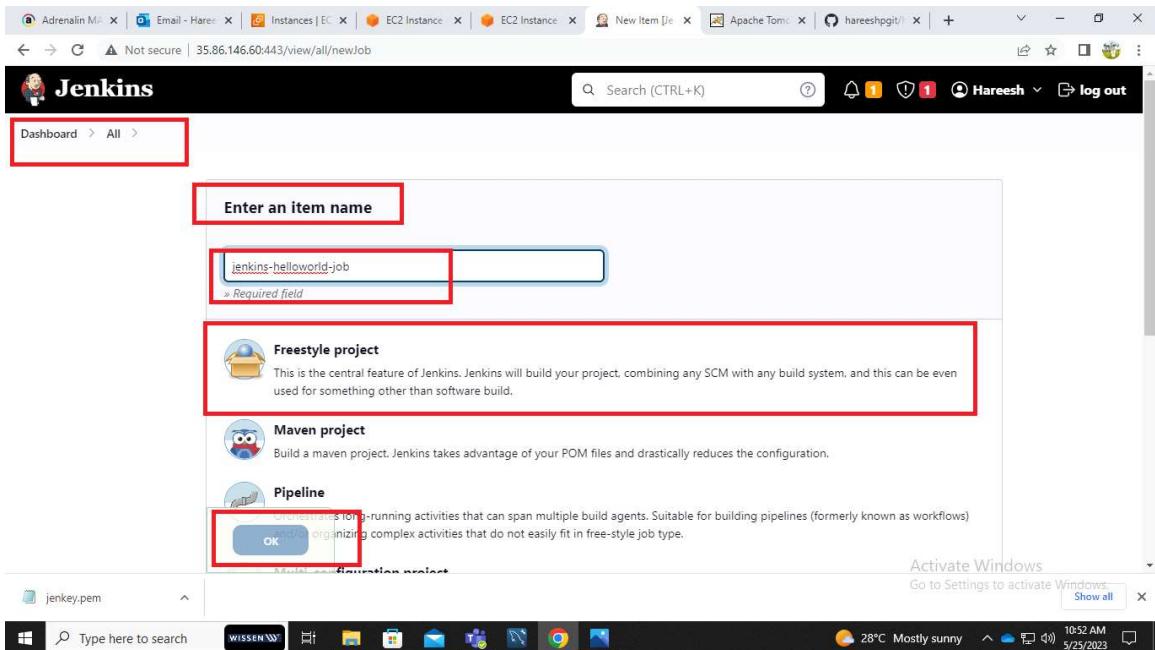
- Before step into tomcat activities
- we have to open the Github and do some changes for jenkins job
- Navigate to Github and open the pom.xml file change the version in the file.



- clone the repo from git hub and add in jenkins Git - section

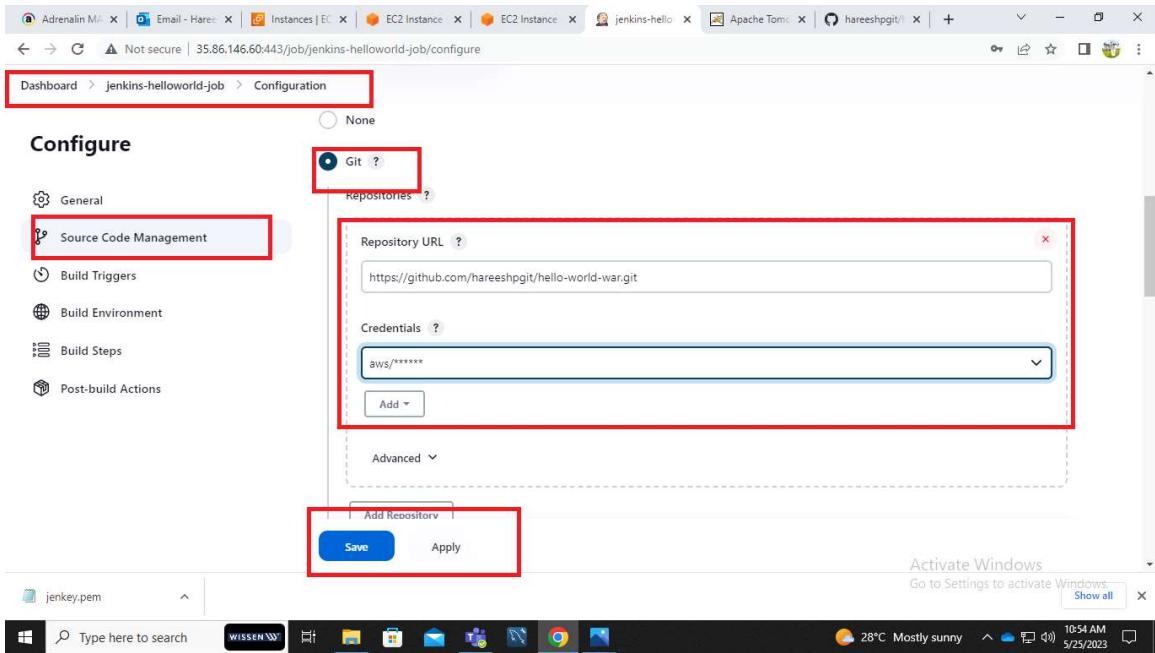


- Open the jenkins dashboard and create a Free style project
- click on OK

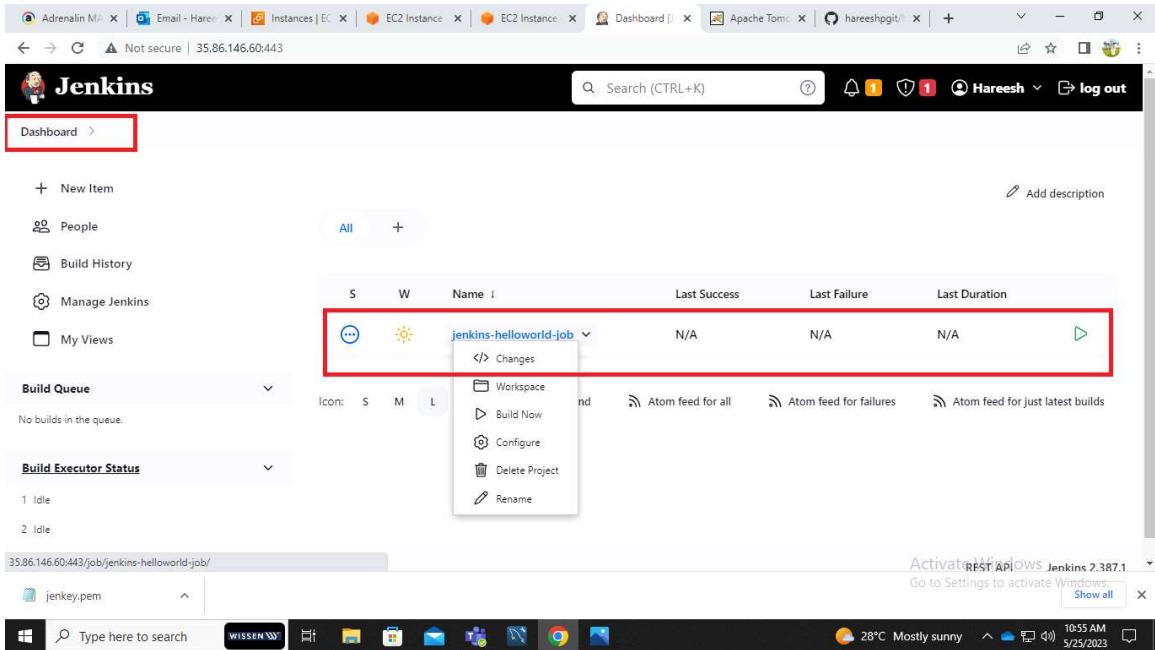


- Open the Git section (source code management) and add clone repo link
- Add credentials

- click on Apply and save



- Create a first job and add Git section and Build section



- Here we can see the first job build history
- Build was success

The screenshot shows the Jenkins dashboard with the 'Build History' section highlighted. The job 'jenkins-helloworld-job' is listed with a green checkmark icon, indicating success, and a yellow sun icon. The last build was successful 12 seconds ago. The job name is 'jenkins-helloworld-job'. The dashboard also includes sections for 'Build Queue' (empty) and 'Build Executor Status' (empty).

- If we want to do some other stages of job
- select the job and click on configure

The screenshot shows the Jenkins dashboard with the context menu for the 'jenkins-helloworld-job' job open. The 'Configure' option is highlighted with a red box. Other options in the menu include 'Workspace', 'Build Now', 'Delete Project', and 'Rename'.

- For building the war file
- select the Build steps

- select the - **Execute shell**
- In the command mode - Apply - mvn clean install ( maven goals)

The screenshot shows the Jenkins job configuration interface. The 'Build Steps' section is highlighted with a red box. Inside, there is a sub-section titled 'Execute shell' with the command 'mvn clean install' entered. The 'Build Steps' tab is also highlighted with a red box. Other tabs like 'General', 'Source Code Management', 'Build Triggers', 'Build Environment', 'Post-build Actions', and 'Advanced' are visible.

- If we want to see Build history select the build history

The screenshot shows the Jenkins job configuration interface. The 'Build History' section is highlighted with a red box. It lists two recent builds: '#2 May 25, 2023, 5:26 AM' and '#1 May 25, 2023, 5:25 AM'. The 'Build History' tab is also highlighted with a red box. Other tabs like 'Workspace', 'Build Now', 'Configure', 'Delete Project', and 'Rename' are visible.

- If we want Build history open the console output

- Here we can see console out put of job -2

```

Started by user Hareesh
Running as SYSTEM
Building in workspace /root/.jenkins/workspace/jenkins-helloworld-job
The recommended git tool is: NONE
using credential fff16c1a8-4150-4ec6-8d4d-b50c64ef3579
> git rev-parse --resolve-git-dir /root/.jenkins/workspace/jenkins-helloworld-job/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/hareeshpgit/hello-world-war.git # timeout=10
Fetching upstream changes from https://github.com/hareeshpgit/hello-world-war.git
> git --version # timeout=10
> git --version # 'git version 2.39.2'
using GIT_ASKPASS to set credentials
> git fetch --tags --force --progress -- https://github.com/hareeshpgit/hello-world-war.git
+refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
> git config core.sparsecheckout # timeout=10
Checking out Revision 33309a4ccc2ba0a82a18ff0c956bf714c5e69ce8 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10

```

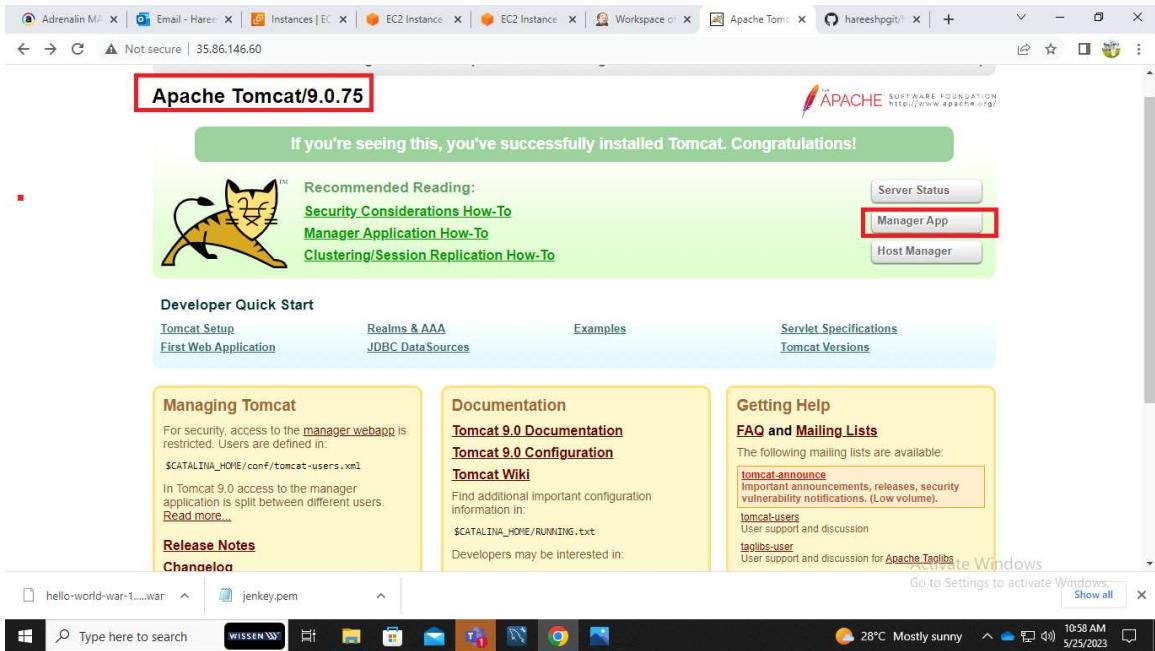
- For the war file open the workspace of jenkins and open the target folder

Workspace of jenkins-helloworld-job on Built-In Node

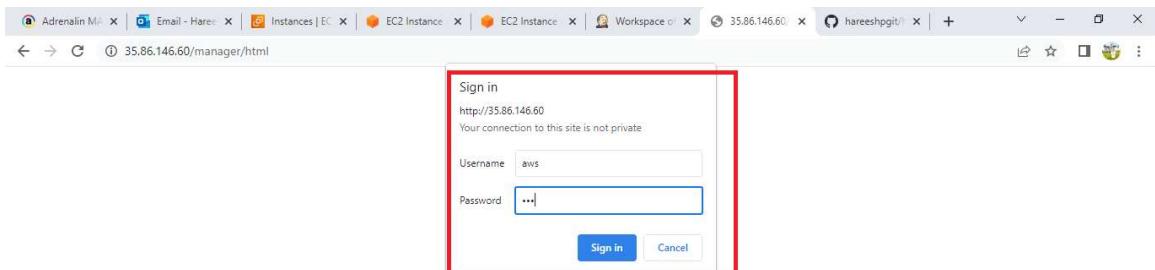
jenkins-helloworld-job / target /

- hello-world-war-1.0.0
- maven-archiver
- surefire
- hello-world-war-1.0.0.war** May 25, 2023, 5:26:45 AM 1.88 KB
- (all files in zip)

- For deployment of war file open the tomcat server
- click on the manage app



- For accessing the tomcat server give the credentials of tomcat



- For war file deploy choose the file from downloaded form jenkins workspace
- Click on Deploy

The screenshot shows the Tomcat Manager interface. In the 'Deploy' section, there are fields for Context Path, Version, XML Configuration file path, and WAR or Directory path. Below these is a 'WAR file to deploy' section with a 'Select WAR file to upload' button, which is highlighted with a red box. The 'Configuration' section follows, containing fields for TLS host name and a 'Re-read' button. The Windows taskbar at the bottom shows the file 'hello-world-war-1....war' is selected.

- After uploading the war file for deploy we will get path in Tomcat Web Application Manger
- Click the path and we will get our required OUT PUT - hello world

The screenshot shows the Tomcat Web Application Manager. The 'Applications' table lists various applications, including the deployed war file '/hello-world-war-1.0.0-(1)', which is highlighted with a red box. The table columns are Path, Version, Display Name, Running, Sessions, and Commands. The Windows taskbar at the bottom shows the file 'hello-world-war-1....war' is selected.

- Finally our war file was deployed and we see on the browser

