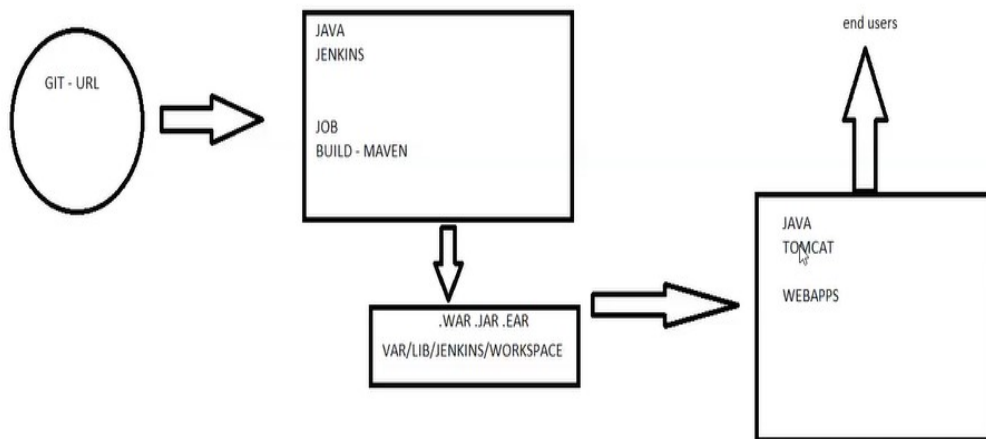


CICD PROJECT

Continuous Integration and Continuous Deployment



SERVER 1:(UBUNTU machine)

Deploy application from server .

Tomcat is used for hosting dynamic web applications.

Tomcat PORT NO. :8080 same as Jenkins

Instances (1/1) Info								Launch instances
Find instance by attribute or tag (case-sensitive)								< 1 >
<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability	
<input checked="" type="checkbox"/>	Tomcat	i-06ffe4831eaabf11d	Running	t2.micro	-	No alarms	ap-northea	

***To communicate with jenkins we need java so install java.**

apt install openjdk-11-jdk

```
root@ip-172-31-7-142:~# java -version
openjdk version "11.0.19" 2023-04-18
OpenJDK Runtime Environment (build 11.0.19+7-post-Ubuntu-0ubuntu122.04.1)
OpenJDK 64-Bit Server VM (build 11.0.19+7-post-Ubuntu-0ubuntu122.04.1, mixed mode, sharing)
```

***update server if required**

apt update

***install tomcat from tomcat website.**

**defaultly tomcat is placed in the path /opt
so install in /opt path**

cd /opt

go to tomcat website [zip and tar are for ubuntu/linux] copy the tar link

we get copied tomcat TAR link

check by giving cmd ls to see tomcat file

***unzip the tar file**

tar -xvzf apache-tomcat-9.0.70.tar.gz

```
apache-tomcat-9.0.76  apache-tomcat-9.0.76.tar.gz
root@ip-172-31-7-142:/opt# ls -lrta
total 11416
-rw-r--r--  1 root root 11677655 Jun  5 07:32 apache-tomcat-9.0.76.tar.gz
drwxr-xr-x 19 root root    4096 Jun 12 13:16 ..
drwxr-xr-x  3 root root    4096 Jun 12 13:29 .
drwxr-xr-x  9 root root    4096 Jun 12 13:29 apache-tomcat-9.0.76
```

***start tomcat**

so change to tomcat directory

cd apache-tomcat-9.0.70

file name	uses
bin	start/stop tomcat

conf user configuration [like IAM]

webapps to host applications

change to bin directory

cd bin

```
root@ip-172-31-7-142:/opt# cd apache-tomcat-9.0.76/
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76# ls
BUILDING.txt      LICENSE  README.md  RUNNING.txt  conf  logs  webapps
CONTRIBUTING.md  NOTICE  RELEASE-NOTES  bin         lib   temp  work
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76# cd bin/
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/bin# ls
bootstrap.jar      ciphers.sh          daemon.sh            setclasspath.bat   startup.sh           version.bat
catalina-tasks.xml commons-daemon-native.tar.gz digest.bat          setclasspath.sh    tomcat-juli.jar     version.sh
catalina.bat       commons-daemon.jar  digest.sh            shutdown.bat        tomcat-native.tar.gz
catalina.sh        configtest.bat      makebase.bat        shutdown.sh         tool-wrapper.bat
ciphers.bat        configtest.sh       makebase.sh         startup.bat         tool-wrapper.sh
```

ll/ls

to start : ./startup.sh

. =present directory

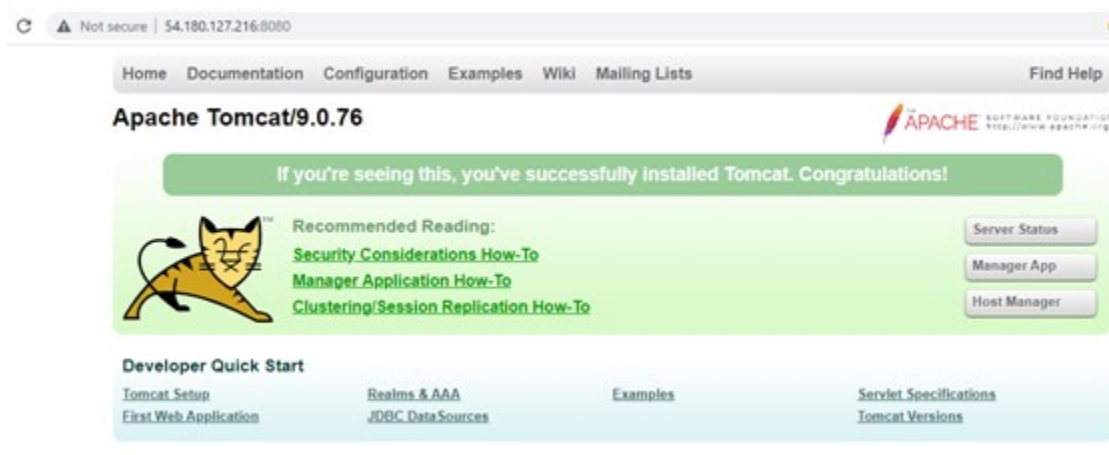
/=next directory

./=to start an application in linux [linux command]

```
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/bin# ./startup.sh
Using CATALINA_BASE:   /opt/apache-tomcat-9.0.76
Using CATALINA_HOME:   /opt/apache-tomcat-9.0.76
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.76/temp
Using JRE_HOME:        /usr
Using CLASSPATH:        /opt/apache-tomcat-9.0.76/bin/bootstrap.jar:/opt/apache-tomcat-9.0.76/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/bin#
```

[To stop: ./shutdown.sh]

tomcat login serverpublicip:8080



***Now configure tomcat:**

cd .. [out from bin]

cd conf

ls/ll

```
BUILDING.txt      LICENSE  README.md      RUNNING.txt  conf  logs  webapps
CONTRIBUTING.md  NOTICE  RELEASE-NOTES  bin          lib   temp  work
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76# cd conf
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/conf# ls
Catalina          catalina.properties  jaspic-providers.xml  logging.properties  tomcat-users.xml  web.xml
catalina.policy   context.xml          jaspic-providers.xsd  server.xml           tomcat-users.xsd
```

Go to the file tomcat-users.xml to give the credentials.

That file must contain the credentials to let you use the webapp.

-Server status

-Manager app

-Host Manager

vi tomcat-users.xml

INSERT MODE

go to

roles rolesname line

give double d in CMD mode and delete those lines and add your roles .

```
<role rolename="manager-gui"/>
```

```
<role rolename="manager-script"/>
```

```
<role rolename="manager-jmx"/>
```

```
<role rolename="manager-status"/>
```

```
<user username="admin" password="admin" roles="manager-gui,manager-script,manager-
jmx,manager-status"/>
```

```
<user username="deployer" password="deployer" roles="manager-script"/>
```

wq!

save and quit

```
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="manager-gui"/>
<role rolename="manager-script"/>
<role rolename="manager-jmx"/>
<role rolename="manager-status"/>
<user username="admin" password="admin" roles="manager-gui,manager-script,manager-jmx,manager-status"/>
<user username="deployer" password="deployer" roles="manager-script"/>
-->
</tomcat-users>
:wq!
```

since we changed the configuration file we have to a stop and start the application.

go to bin path

```
[cd  
cd /opt]
```

cd bin

stop: ./shutdown.sh

check shutdown : check the url
serverpublicip:8080[refresh]

start:./startup.sh

```
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/bin# ./shutdown.sh  
Using CATALINA_BASE:   /opt/apache-tomcat-9.0.76  
Using CATALINA_HOME:   /opt/apache-tomcat-9.0.76  
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.76/temp  
Using JRE_HOME:        /usr  
Using CLASSPATH:       /opt/apache-tomcat-9.0.76/bin/bootstrap.jar:/opt/apache-tomcat-9.0.76/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/su  
.rmi.transport=ALL-UNNAMED  
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/bin# ./startup.sh  
Using CATALINA_BASE:   /opt/apache-tomcat-9.0.76  
Using CATALINA_HOME:   /opt/apache-tomcat-9.0.76  
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.76/temp  
Using JRE_HOME:        /usr  
Using CLASSPATH:       /opt/apache-tomcat-9.0.76/bin/bootstrap.jar:/opt/apache-tomcat-9.0.76/bin/tomcat-juli.jar  
Using CATALINA_OPTS:
```

***If we log in to host manager it will ask for user id pasword untill version 7
but bug in version 9**

TO FIX IT

The problem is in webapps

cd webapps

ls

cd host-manager/

ls

cd META_INF/

ls

vi context.xml

In that file command the line which is un command

```
<Valve className="org.apache.catalina.valves.RemoteAddrValve"  
  allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:1" />
```

```
using <!--          -->
```

```
<!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
```

```
allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" /> -->
```

if you check in host manager now it asks for user-id password

For Manager

```
cd webapps
cd manager/
ls
cd META-INF/
ls
vi context.xml
```

commad the valve commands using <!--.....-->

```

        sameSiteCookies="strict" />
    <!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
        allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" />-->
    <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|Number
    .filters\.CsrfPreventionFilter\$LruCache(?:\$1)?|java\.util\.(?:Linked)?HashMap"/>
</Context>
~
~
~
~
~
~
~
~
~
: wq! □
```

if you check in manager app now it asks for user-id password

****Now start and stop in bin file since config is changed in webapps****

```
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/bin# ./shutdown.sh
Using CATALINA_BASE:   /opt/apache-tomcat-9.0.76
Using CATALINA_HOME:   /opt/apache-tomcat-9.0.76
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.76/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/apache-tomcat-9.0.76/bin/bootstrap.jar:/opt/apache-tomcat-9.0.76/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/su
.rmi.transport=ALL-UNNAMED
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/bin# ./startup.sh
Using CATALINA_BASE:   /opt/apache-tomcat-9.0.76
Using CATALINA_HOME:   /opt/apache-tomcat-9.0.76
Using CATALINA_TMPDIR: /opt/apache-tomcat-9.0.76/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/apache-tomcat-9.0.76/bin/bootstrap.jar:/opt/apache-tomcat-9.0.76/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
```

give the pasword and user-id given in config file

***Now we are launching sample.war application**

goto sample.war file copy link

got to webapps

cd webapp

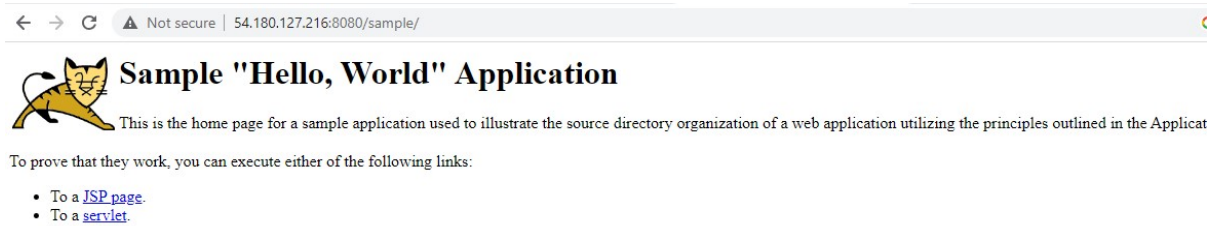
wget copiedlink

ls

[serverpublicip:8080/sample (context path) it won't work]

```
root@ip-172-31-7-142:/opt/apache-tomcat-9.0.76/webapps# wget https://tomcat.apache.org/tomcat-7.0-doc/appdev/sample/sample
.sample.war
--2023-06-12 14:15:20-- https://tomcat.apache.org/tomcat-7.0-doc/appdev/sample/sample.war
Resolving tomcat.apache.org (tomcat.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to tomcat.apache.org (tomcat.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4606 (4.5K)
Saving to: 'sample.war'

sample.war                               100%[=====] 4.50K  --.-KB/s  in 0s
```



SERVER2: [ubuntu machine]

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input type="checkbox"/>	Tomcat	i-06ffe4831eaabf11d	Running	t2.micro	2/2 checks passed	No alarms	ap-northeast-2a
<input checked="" type="checkbox"/>	JENKINS	i-01c1e6c7d45a01fce	Running	t2.micro	-	No alarms	ap-northeast-2a
<input type="checkbox"/>	Jenkins	i-0cc4ccda3c17e528c	Terminated	t2.micro	-	No alarms	ap-northeast-2a

download Jenkins from jenkins webpage

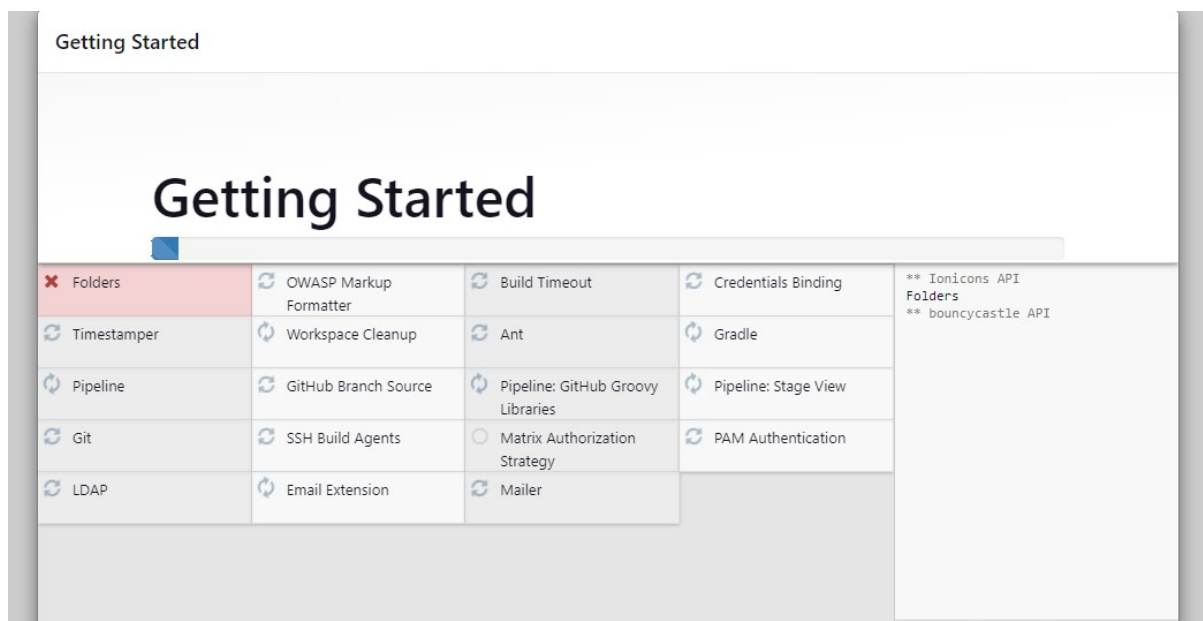
```
root@ip-172-31-4-61:~# jenkins --version
2.401.1
```

log in

to get password:

cat copiedlink

copy password and login to jenkins



For jenkins to access tomcat it needs tomcat url ,user name , password.

create job in jenkins

plug in: deployer to container . uses:- coverts the raw files from git repo to .war/.ear.
-communicates with tomcat.

built in /var/lib/jenkins/workspace [in .war .jar .ear]

