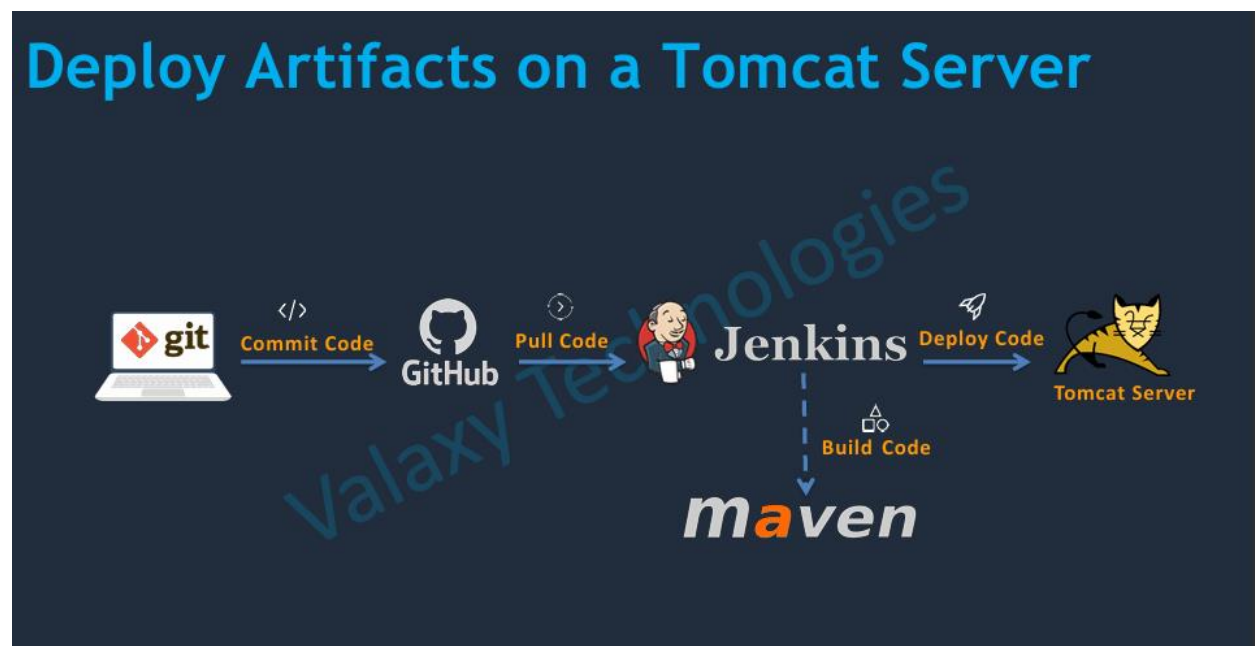We have seen how to build our code.

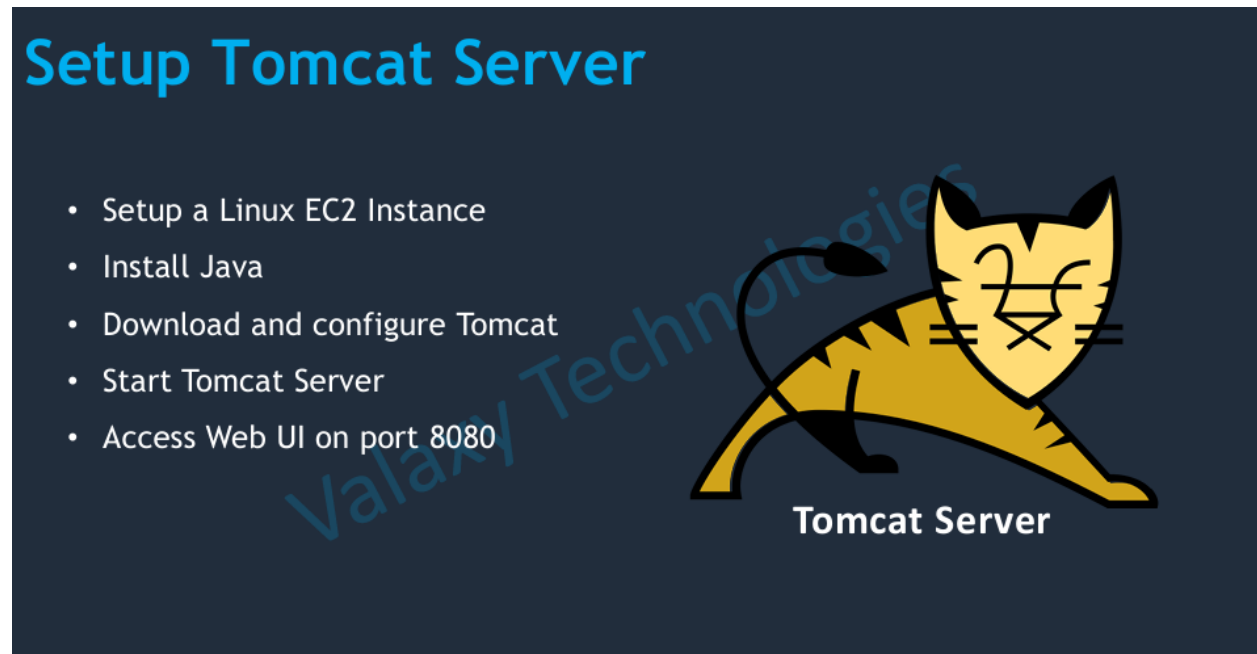Now, we can see how to deploy our code in a target environment.

As a target environment we are going to use tomcat server.

So, I will setup ec2 instance and on top of that one we will install tomcat

Then we are going to set up Jenkins' job which is going to deploy the code onto the Tomcat server.

1. Setup Tomcat server

1.1 Setup a Linux EC2 Instance with port number 8080

1.2 install Java.

amazon-linux-extras

amazon-linux-extras install java-openjdk11

java –version

1.3 Download and configure Tomcat

For tomcat download

Apache Tomcat® - Apache Tomcat 9 Software Downloads

Now we need to access tomcat.

So, click on Manager App

The above error showing this, you can access your browser from ec2 machine terminal.

It's accessible by your local host.

So, I need to modify context.html.

vim /opt/tomcat/webapps/host-manager/META-INF/context.xml

vim /opt/tomcat/webapps/manager/META-INF/context.xml

```xml
<?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+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" /> -->
  <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|
</Context>
```

Then no restart tomcat service so first shutdown it ,Then after starting the service.

```
[root@tomcat tomcat]#
[root@tomcat tomcat]# ls
bin  BUILDING.txt  conf  CONTRIBUTING.md  lib  LICENSE  logs  NOTICE  README.md  RELEASE-NOTES  RUNNING.txt  temp  webapps  work
[root@tomcat tomcat]#
[root@tomcat tomcat]# cd bin/
[root@tomcat bin]# ls
bootstrap.jar  catalina-tasks.xml  commons-daemon.jar            configtest.sh  digest.sh   setclasspath.bat  shutdown.sh  tomc
catalina.bat   ciphers.bat         commons-daemon-native.tar.gz  daemon.sh      makebase.bat  setclasspath.sh   startup.bat  tomc
catalina.sh    ciphers.sh          configtest.bat                digest.bat     makebase.sh   shutdown.bat      startup.sh   tool
[root@tomcat bin]#
[root@tomcat bin]# ./shutdown.sh
Using CATALINA_BASE:   /opt/tomcat
Using CATALINA_HOME:   /opt/tomcat
Using CATALINA_TMPDIR: /opt/tomcat/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/tomcat/bin/bootstrap.jar:/opt/tomcat/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-op
t=ALL-UNNAMED --add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED
[root@tomcat bin]#
[root@tomcat bin]# ./startup.sh
Using CATALINA_BASE:   /opt/tomcat
Using CATALINA_HOME:   /opt/tomcat
Using CATALINA_TMPDIR: /opt/tomcat/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /opt/tomcat/bin/bootstrap.jar:/opt/tomcat/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
[root@tomcat bin]#
[root@tomcat bin]#
```

Check on web URL go to manager app.

Now it's asked for credentials. Earlier it's giving error you should not be able to login

That is where again user.xml comes into the picture.
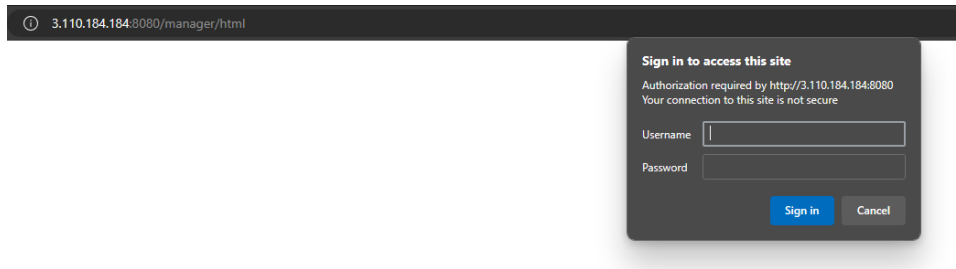
Now we need to create user

vim /opt/tomcat/conf/tomcat-users.xml

```
[root@tomcat tomcat]# find / -name tomcat-users.xml
/opt/tomcat/conf/tomcat-users.xml
[root@tomcat tomcat]#
[root@tomcat tomcat]# vim /opt/tomcat/conf/tomcat-users.xml
[root@tomcat tomcat]#
```

Update users' information in the tomcat-users.xml file goto tomcat home directory and add below users to conf/tomcat-users.xml file

```
<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"/>
 <user username="tomcat" password="s3cret" roles="manager-gui"/>
```

create link files for tomcat startup.sh and shutdown.sh

ln -s /opt/tomcat/bin/startup.sh /usr/local/bin/tomcatup

ln -s /opt/tomcat/bin/shutdown.sh /usr/local/bin/tomcatdown

Enter username password

Now you can able to login successfully in your tomcat server.