

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY



CONTINUOUS DELIVERY AND DEVOPS (LAB)
SUBJECT CODE- PCS217P

Submitted To:

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(Assistant Professor)

Department of Computer Science and Engineering

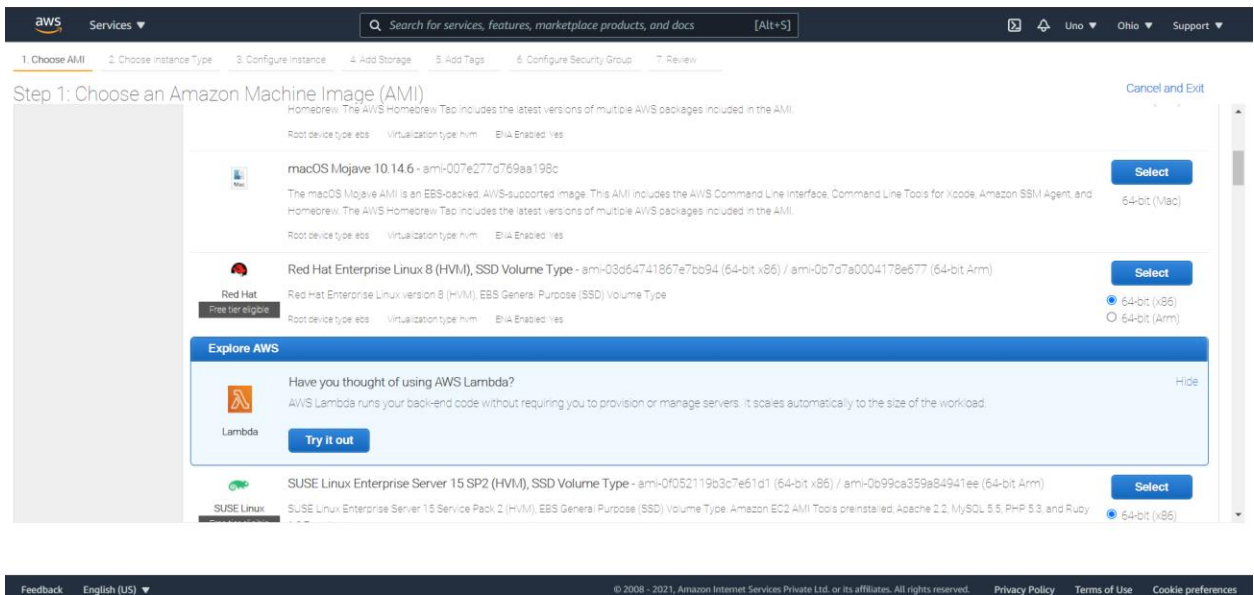
Submitted by:

Ujjwal Ahuja

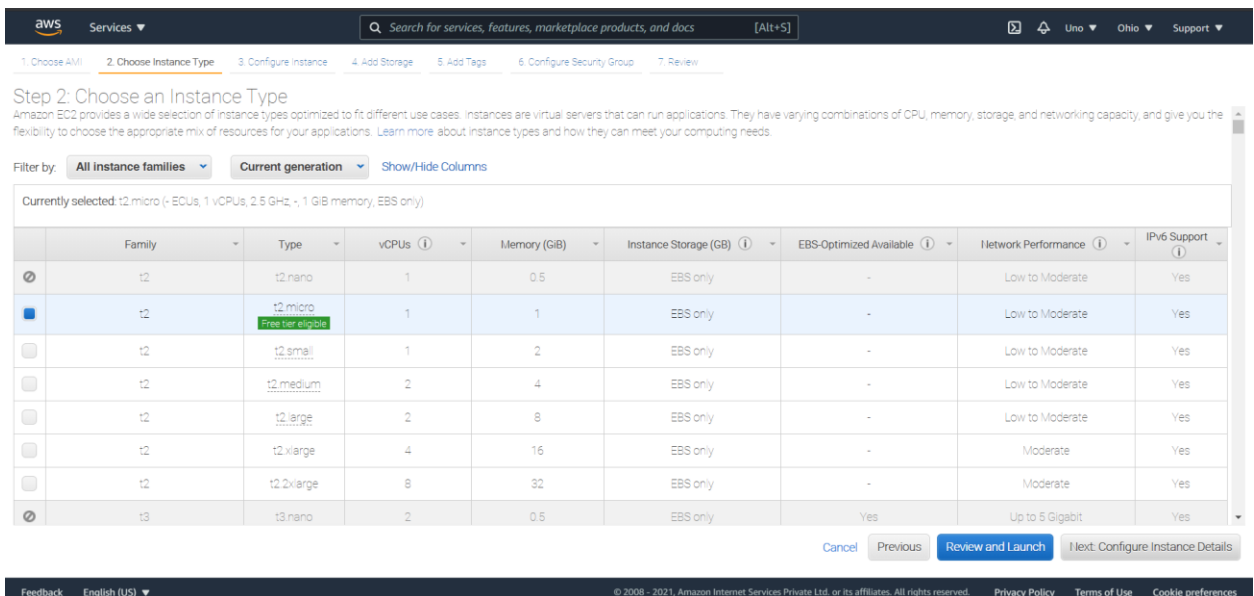
(802032055)

Project on Continuous Integration and Continuous Development through Jenkins

1. Create a free tier Amazon AWS account (Debit/credit card needed for a minimal transaction of Rs.2)
2. Create an Amazon ec2 instance



3. Choose your Instance type



4. Configure Instance Details

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

Number of instances

1

Launch into Auto Scaling Group

Purchasing option

☐ Request Spot instances

Network

vpc-3ef16455 (default)

Create new VPC

Subnet

No preference (default subnet in any Availability Zone)

Create new subnet

Auto-assign Public IP

Use subnet setting (Enable)

Placement group

☐ Add instance to placement group

Capacity Reservation

Open

Domain join directory

No directory

Create new directory

IAM role

None

Create new IAM role

Shutdown behavior

Stop

Stop - Hibernate behavior

☐ Enable hibernation as an additional stop behavior

Enable termination protection

☐ Protect against accidental termination

Cancel

Previous

Review and Launch

Next: Add Storage

Feedback

English (US)

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5. Add Storage

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/sda1	snap-0d3e8914a9f98293c	10	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Cancel

Previous

Review and Launch

Next: Add Tags

6. Configure Security Group

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instances' security. Your security group, launch-wizard-3, is open to the world. Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-03d64741867e7bb94

Free tier eligible

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type

Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups [Edit security groups](#)

Security group name: launch-wizard-3

Permissions: launch-wizard-3 created 2/20/21 04:10 PM US-OR

[Cancel](#) [Previous](#) [Launch](#)

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7. Review Instance Launch

Step 7: Review Instance Launch

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AMI Details [Edit AMI](#)

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Instance Type [Edit instance type](#)

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Security Groups [Edit security groups](#)

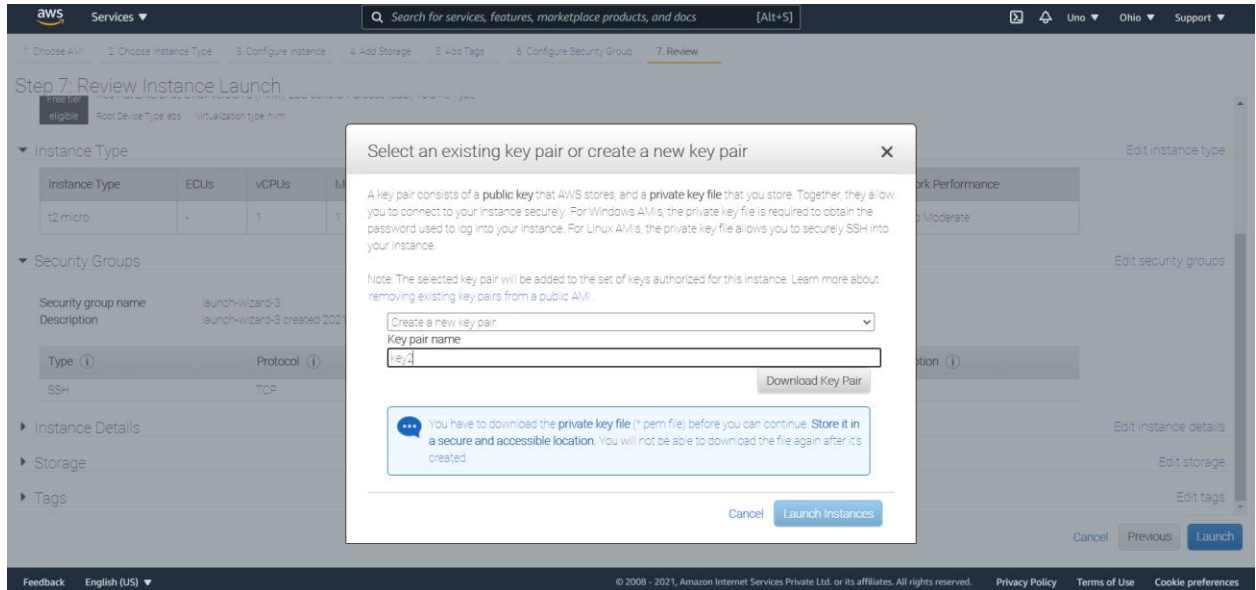
Security group name: launch-wizard-3

Permissions: launch-wizard-3 created 2/20/21 04:10 PM US-OR

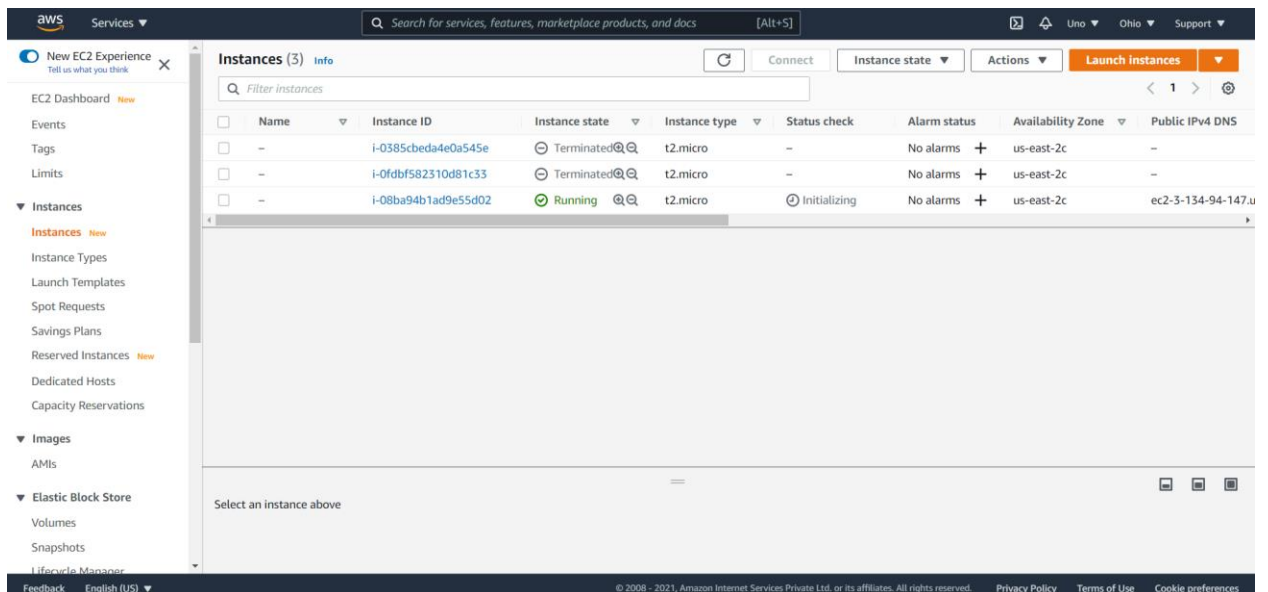
[Cancel](#) [Previous](#) [Launch](#)

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8. After clicking on launch, create a new key pair for your machine



9. Now check for instances in EC2, it may take 1-2 minute for instance to initialize.

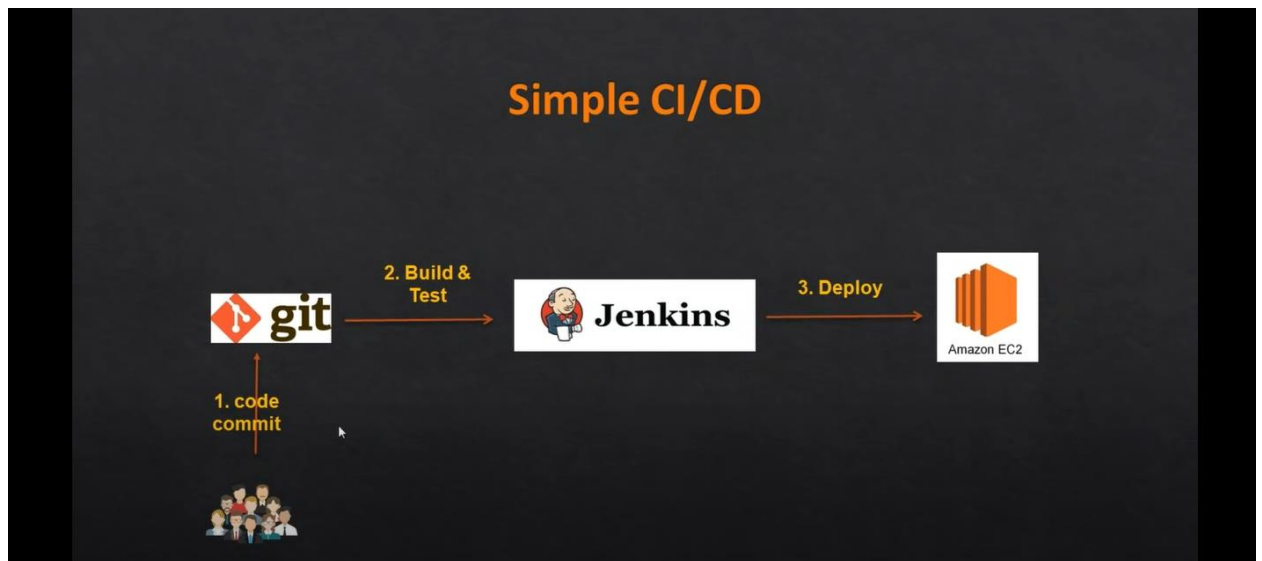


9.1.

The screenshot shows the AWS Management Console interface. On the left is a navigation menu with options like 'EC2 Dashboard', 'Events', 'Tags', 'Limits', 'Instances', 'Images', and 'Elastic Block Store'. The main area is titled 'Instances (1/3)' and contains a table of EC2 instances. Below the table, the details for the selected instance (i-08ba94b1ad9e55d02) are displayed, including tabs for 'Details', 'Security', 'Networking', 'Storage', 'Status checks', 'Monitoring', and 'Tags'.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
-	i-0385cbda4e0a545e	Terminated	t2.micro	-	No alarms	us-east-2c	-
-	i-0fdbf582310d81c33	Terminated	t2.micro	-	No alarms	us-east-2c	-
-	i-08ba94b1ad9e55d02	Running	t2.micro	2/2 checks passed	No alarms	us-east-2c	ec2-3-134-94-147.u

10. Connect to your AWS EC2 instance using git Bash



11. Connect to AWS instance


The screenshot shows the AWS Management Console interface. The breadcrumb navigation indicates the path: EC2 > Instances > i-08ba94b1ad9e55d02 > Connect to instance. The main content area is titled 'Connect to instance' with an 'Info' link. Below the title, it says 'Connect to your instance i-08ba94b1ad9e55d02 using any of these options'. There are four tabs: 'EC2 Instance Connect', 'Session Manager', 'SSH client' (which is selected), and 'EC2 Serial Console'. Under the 'SSH client' tab, the 'Instance ID' is listed as 'i-08ba94b1ad9e55d02'. A list of steps is provided: 1. Open an SSH client. 2. Locate your private key file. The key used to launch this instance is key2.pem. 3. Run this command, if necessary, to ensure your key is not publicly viewable. A code block shows 'chmod 400 key2.pem'. 4. Connect to your instance using its Public DNS: A code block shows 'ec2-3-134-94-147.us-east-2.compute.amazonaws.com'. An 'Example:' section shows a terminal command: 'ssh -i "key2.pem" ec2-user@ec2-3-134-94-147.us-east-2.compute.amazonaws.com'. A note box states: 'Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.' The footer of the console shows 'Feedback', 'English (US)', and copyright information for 2008-2021.

11.1.

```
ec2-user@ip-172-31-32-234:~  
  
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2  
$ ssh -i "key2.pem" ec2-user@ec2-3-134-94-147.us-east-2.compute.amazonaws.com  
The authenticity of host 'ec2-3-134-94-147.us-east-2.compute.amazonaws.com (3.134.94.147)' can't be established.  
ED25519 key fingerprint is SHA256:9gxut2ZydfUOneCDucRhvsMUKM8HQCGeC6tkpc8vhr0.  
This key is not known by any other names  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added 'ec2-3-134-94-147.us-east-2.compute.amazonaws.com' (ED25519) to the list of known hosts.  
[ec2-user@ip-172-31-32-234 ~]$
```

12. We need to deploy war file so we need tomcat server

13. Steps to configure EC2 instance on tomcat server:



Steps to install Tomcat on Linux

1. Launch a RedHat Linux server
2. Install java and set path

```
# yum install java-1.8.*
# export JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-1.8.0.161-0.b14.el7_4.x86_64
edit /etc/profile file to set JAVA_HOME path permanently for all users.
```
3. Download tomcat package from <https://tomcat.apache.org/download-80.cgi>
4. Copy and extract gz file under to /opt/tomcat directory
5. Add below users to tomcat-user.xml file under conf directory in tomcat

```
<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"/>
```
6. Change default port number (8080) to 8090. Because Jenkins also port 8080. none of the ports in a same in one Environment.
7. Start tomcat services by using startup.sh under bin directory

14. First we need to install java

```
root@ip-172-31-32-234:/home/ec2-user
[ec2-user@ip-172-31-32-234 ~]$ sudo su
[root@ip-172-31-32-234 ec2-user]# yum install java-1.8.*
Red Hat Update Infrastructure 3 Client Configuration Server 8
Red Hat Enterprise Linux 8 for x86_64 - AppStream from RHUI (RPMs)
Red Hat Enterprise Linux 8 for x86_64 - BaseOS from RHUI (RPMs)
```


14.1.

```
root@ip-172-31-32-234:/home/ec2-user
Verifying : nss-3.53.1-17.el8_3.x86_64
Verifying : nss-sysinit-3.53.1-17.el8_3.x86_64
Verifying : nss-softoken-freebl-3.53.1-17.el8_3.x86_64
Verifying : pkgconf-1.4.2-1.el8.x86_64
Verifying : libmodman-2.0.1-17.el8.x86_64
Verifying : tkscpt-tools-1.0.18-3.el8.x86_64
Verifying : pkgconf-m4-1.4.2-1.el8.noarch
Verifying : fontconfig-2.13.1-3.el8.x86_64
Verifying : dejavu-sans-mono-fonts-2.35-6.el8.noarch
Verifying : libpkgconf-1.4.2-1.el8.x86_64
Verifying : dejavu-fonts-common-2.35-6.el8.noarch
Verifying : glib-networking-2.56.1-1.1.el8.x86_64
Verifying : libproxy-0.4.15-5.2.el8.x86_64
Verifying : avahi-libs-0.7.19.el8.x86_64
Verifying : fontpackages-filesystem-1.44-22.el8.noarch
Verifying : libusb-0.3.0-1.el8.x86_64
Verifying : pkgconf-pkg-config-1.4.2-1.el8.x86_64
Verifying : gdk-pixbuf2-2.36.12-5.el8.x86_64
Verifying : gsettings-desktop-schemas-3.32.0-5.el8.x86_64
Verifying : libsoup-2.62.3-2.el8.x86_64
Verifying : cups-libs-1.2.2-6-38.el8.x86_64

Installed:
abattis-cantarell-fonts-0.0.25-4.el8.noarch
alsa-lib-1.2.3-2-1.el8.x86_64
atk-2.28-1.el8.x86_64
cairo-gobject-1.15.12-1.el8.x86_64
cups-libs-1.2.2-6-38.el8.x86_64
dejavu-sans-mono-fonts-2.35-6.el8.noarch
frididi-1.0.4-8.el8.x86_64
glib-5.1.4-3.el8.x86_64
gsettings-desktop-schemas-3.32.0-5.el8.x86_64
gtk3-3.22.30-6.el8.x86_64
jasper-libs-2.0.14-4.el8.x86_64
java-1.8.0-openjdk-demo-11.8.0.282.b08-2.el8_3.x86_64
java-1.8.0-openjdk-javadoc-11.8.0.282.b08-2.el8_3.noarch
java-atk-wrapper-0.33.2-6.el8.x86_64
jcm2-2.9-2.el8.x86_64
libX11-cb-1.6.8-3.el8.x86_64
libXcursor-1.1.15-3.el8.x86_64
libXfixes-5.0.3-7.el8.x86_64
libXinerama-1.1.4-1.el8.x86_64
libXtst-1.2.3-7.el8.x86_64
libXxf86misc-1.0.4-1.el8.x86_64
libdmx-1.1.4-3.el8.x86_64
libgusb-0.3.0-1.el8.x86_64
libpkgconf-1.4.2-1.el8.x86_64
libthai-0.1.27-2.el8.x86_64
libwayland-cursor-1.17.0-1.el8.x86_64
tkscpt-tools-1.0.18-3.el8.x86_64
nss-3.53.1-17.el8_3.x86_64
nss-sysinit-3.53.1-17.el8_3.x86_64
pixman-0.38.4-1.el8.x86_64
pkgconf-pkg-config-1.4.2-1.el8.x86_64
tzdata-java-2021a-1.el8.noarch
xorg-x11-utils-7.5-28.el8.x86_64

adwaita-cursor-theme-3.28.0-2.el8.noarch
at-spi2-atk-2.26.2-1.el8.x86_64
avahi-libs-0.7.19.el8.x86_64
colord-libs-1.4.2-1.el8.x86_64
dconf-0.28.0-3.el8.x86_64
fontconfig-2.13.1-3.el8.x86_64
gdk-pixbuf2-2.36.12-5.el8.x86_64
glib-networking-2.56.1-1.1.el8.x86_64
gtk-update-icon-cache-3.22.30-6.el8.x86_64
harfbuzz-1.7.5-3.el8.x86_64
java-1.8.0-openjdk-11.8.0.282.b08-2.el8_3.x86_64
java-1.8.0-openjdk-devel-11.8.0.282.b08-2.el8_3.x86_64
java-1.8.0-openjdk-javadoc-zip-11.8.0.282.b08-2.el8_3.noarch
java-packages-filesystem-5.3.0-1.module+el8+244746f5d9a6.noarch
libX11-1.6.8-3.el8.x86_64
libXau-1.0.9-3.el8.x86_64
libXdamage-1.1.4-4.el8.x86_64
libXft-2.3.3-1.el8.x86_64
libXrandr-1.5.2-1.el8.x86_64
libXv-1.0.11-7.el8.x86_64
libXxf86-1.1.4-5.el8.x86_64
libepoxy-1.5.3-1.el8.x86_64
libjpeg-turbo-1.5.3-10.el8.x86_64
libproxy-0.4.15-5.2.el8.x86_64
libtiff-4.0.9-18.el8.x86_64
libwayland-egl-1.17.0-1.el8.x86_64
lua-5.3.4-11.el8.x86_64
nss-softoken-3.53.1-17.el8_3.x86_64
nss-util-3.53.1-17.el8_3.x86_64
pkgconf-1.4.2-1.el8.x86_64
rest-0.8.1-2.el8.x86_64
xorg-x11-font-util-1.7.5-40.el8.x86_64

adwaita-icon-theme-3.28.0-2.el8.noarch
at-spi2-core-2.28.0-1.el8.x86_64
cairo-1.15.12-3.el8.x86_64
copy-jdk-configs-3.7-4.el8.noarch
dejavu-fonts-common-2.35-6.el8.noarch
fontpackages-filesystem-1.44-22.el8.noarch
gdk-pixbuf2-modules-2.36.12-5.el8.x86_64
graphite2-1.3.10-10.el8.x86_64
gtk2-2.24.32-4.el8.x86_64
hicolor-icon-theme-0.17-2.el8.noarch
java-1.8.0-openjdk-accessibility-11.8.0.282.b08-2.el8_3.x86_64
java-1.8.0-openjdk-headless-11.8.0.282.b08-2.el8_3.x86_64
java-1.8.0-openjdk-src-11.8.0.282.b08-2.el8_3.x86_64
jbigkit-libs-2.1-14.el8.x86_64
libX11-common-1.6.8-3.el8.noarch
libXcomposite-0.4.4-14.el8.x86_64
libXext-1.3.4-1.el8.x86_64
libXl-1.7.10-1.el8.x86_64
libXrender-0.9.10-7.el8.x86_64
libXxf86dga-1.1.5-1.el8.x86_64
libdatrie-0.2.9-7.el8.x86_64
libfontenc-1.1.3-8.el8.x86_64
libmodman-2.0.1-17.el8.x86_64
libsoup-2.62.3-2.el8.x86_64
libwayland-client-1.17.0-1.el8.x86_64
libxkb-1.13.1-1.el8.x86_64
npr-4.23.0-2.el8.2.x86_64
nss-softoken-freebl-3.53.1-17.el8_3.x86_64
pango-1.42.4-6.el8.x86_64
pkgconf-m4-1.4.2-1.el8.noarch
ttkfdr-3.0.9-54.el8.x86_64
xorg-x11-fonts-Type1-7.5-19.el8.noarch

Complete!
[root@ip-172-31-32-234 ec2-user]#
```

14.2. Check Version

```
root@ip-172-31-32-234:/home/ec2-user
[root@ip-172-31-32-234 ec2-user]# java -version
openjdk version "1.8.0_282"
OpenJDK Runtime Environment (build 1.8.0_282-b08)
OpenJDK 64-Bit Server VM (build 25.282-b08, mixed mode)
[root@ip-172-31-32-234 ec2-user]#
```

15. wget install command : yum install wget-y

```
root@ip-172-31-32-234/opt
[root@ip-172-31-32-234 ec2-user]# pwd
/home/ec2-user
[root@ip-172-31-32-234 ec2-user]# sudo su
[root@ip-172-31-32-234 ec2-user]# pwd
/home/ec2-user
[root@ip-172-31-32-234 ec2-user]# cd /opt
[root@ip-172-31-32-234 opt]# ls
[root@ip-172-31-32-234 opt]# yum install wget -y
Last metadata expiration check: 0:03:46 ago on Sun 18 Apr 2021 04:57:58 PM UTC.
Dependencies resolved.
Package Architecture Version Repository Size
Installing:
wget x86_64 1.19.5-10.el8 rhel-8-appstream-rhui-rpms 734 k
Transaction Summary
Install 1 Package
Total download size: 734 k
Installed size: 2.8 M
Downloading Packages:
wget-1.19.5-10.el8.x86_64.rpm 4.4 MB/s | 734 kB 00:00
Total 3.5 MB/s | 734 kB 00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing :
Installing : wget-1.19.5-10.el8.x86_64 1/1
Running scriptlet: wget-1.19.5-10.el8.x86_64 1/1
Verifying : wget-1.19.5-10.el8.x86_64 1/1
Installed:
wget-1.19.5-10.el8.x86_64
Complete!
[root@ip-172-31-32-234 opt]# ls
[root@ip-172-31-32-234 opt]#
```

16. Download tomcat

First change the path

See on which path you are using 'pwd' command. (It will probably be /root)

Change the path to 'cd /opt'

```
root@ip-172-31-32-234/opt
[root@ip-172-31-32-234 opt]# wget https://mirrors.estointernet.in/apache/tomcat/tomcat-8/v8.5.65/bin/apache-tomcat-8.5.65.tar.gz
--2021-04-18 17:02:43-- https://mirrors.estointernet.in/apache/tomcat/tomcat-8/v8.5.65/bin/apache-tomcat-8.5.65.tar.gz
Resolving mirrors.estointernet.in (mirrors.estointernet.in)... 43.255.166.254, 2403:8940:3::1:f
Connecting to mirrors.estointernet.in (mirrors.estointernet.in)|43.255.166.254|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 10523269 (10M) [application/octet-stream]
Saving to: 'apache-tomcat-8.5.65.tar.gz'

apache-tomcat-8.5.65.tar.gz 100%[=====] 10.04M 2.07MB/s in 5.9s

2021-04-18 17:02:50 (1.70 MB/s) - 'apache-tomcat-8.5.65.tar.gz' saved [10523269/10523269]

[root@ip-172-31-32-234 opt]#
```

16.1. Then untar and unzip using tar command “tar -zxvf apache-tomcat-8.5.64.tar.gz”

```
root@ip-172-31-32-234:opt
apache-tomcat-8.5.65/webapps/examples/jsp/xml/xml.jsp.html
apache-tomcat-8.5.65/webapps/examples/jsp/xml/xml.jsp.html
apache-tomcat-8.5.65/webapps/examples/servlets/cookies.html
apache-tomcat-8.5.65/webapps/examples/servlets/helloWorld.html
apache-tomcat-8.5.65/webapps/examples/servlets/images/code.gif
apache-tomcat-8.5.65/webapps/examples/servlets/images/execute.gif
apache-tomcat-8.5.65/webapps/examples/servlets/images/return.gif
apache-tomcat-8.5.65/webapps/examples/servlets/index.html
apache-tomcat-8.5.65/webapps/examples/servlets/nonblocking/bytecounter.html
apache-tomcat-8.5.65/webapps/examples/servlets/reqheaders.html
apache-tomcat-8.5.65/webapps/examples/servlets/reqinfo.html
apache-tomcat-8.5.65/webapps/examples/servlets/reqparams.html
apache-tomcat-8.5.65/webapps/examples/servlets/sessions.html
apache-tomcat-8.5.65/webapps/examples/websocket/chat.xhtml
apache-tomcat-8.5.65/webapps/examples/websocket/draboard.xhtml
apache-tomcat-8.5.65/webapps/examples/websocket/echo.xhtml
apache-tomcat-8.5.65/webapps/examples/websocket/index.xhtml
apache-tomcat-8.5.65/webapps/examples/websocket/snake.xhtml
apache-tomcat-8.5.65/webapps/host-manager/META-INF/context.xml
apache-tomcat-8.5.65/webapps/host-manager/WEB-INF/jsp/401.jsp
apache-tomcat-8.5.65/webapps/host-manager/WEB-INF/jsp/403.jsp
apache-tomcat-8.5.65/webapps/host-manager/WEB-INF/jsp/404.jsp
apache-tomcat-8.5.65/webapps/host-manager/WEB-INF/manager.xml
apache-tomcat-8.5.65/webapps/host-manager/WEB-INF/web.xml
apache-tomcat-8.5.65/webapps/host-manager/css/manager.css
apache-tomcat-8.5.65/webapps/host-manager/images/asf-logo.svg
apache-tomcat-8.5.65/webapps/host-manager/images/tomcat.svg
apache-tomcat-8.5.65/webapps/host-manager/index.jsp
apache-tomcat-8.5.65/webapps/manager/META-INF/context.xml
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/401.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/403.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/404.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/connectorCerts.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/connectorCiphers.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/connectorTrustedCerts.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/sessionDetail.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/jsp/sessionsList.jsp
apache-tomcat-8.5.65/webapps/manager/WEB-INF/web.xml
apache-tomcat-8.5.65/webapps/manager/css/manager.css
apache-tomcat-8.5.65/webapps/manager/images/asf-logo.svg
apache-tomcat-8.5.65/webapps/manager/images/tomcat.svg
apache-tomcat-8.5.65/webapps/manager/index.jsp
apache-tomcat-8.5.65/webapps/manager/status.xsd
apache-tomcat-8.5.65/webapps/manager/xforn.xsl
apache-tomcat-8.5.65/bin/catalina.sh
apache-tomcat-8.5.65/bin/ciphers.sh
apache-tomcat-8.5.65/bin/configtest.sh
apache-tomcat-8.5.65/bin/daemon.sh
apache-tomcat-8.5.65/bin/digest.sh
apache-tomcat-8.5.65/bin/setclasspath.sh
apache-tomcat-8.5.65/bin/shutdown.sh
apache-tomcat-8.5.65/bin/startup.sh
apache-tomcat-8.5.65/bin/tool-wrapper.sh
apache-tomcat-8.5.65/bin/version.sh
[root@ip-172-31-32-234 opt]# ls
apache-tomcat-8.5.65  apache-tomcat-8.5.65.tar.gz
[root@ip-172-31-32-234 opt]# cd apache-tomcat-8.5.65
[root@ip-172-31-32-234 apache-tomcat-8.5.65]# ls
bin  BUILDING.txt  conf  CONTRIBUTING.md  lib  LICENSE  logs  NOTICE  README.md  RELEASE-NOTES  RUNNING.txt  temp  webapps  work
[root@ip-172-31-32-234 apache-tomcat-8.5.65]# cd bin/
[root@ip-172-31-32-234 bin]# ls
bootstrap.jar  catalina-tasks.xml  commons-daemon.jar  configtest.sh  digest.sh  shutdown.bat  startup.sh  tool-wrapper.bat  version.sh
catalina.bat  ciphers.sh  commons-daemon-native.tar.gz  daemon.sh  digest.bat  shutdown.sh  tomcat-juli.jar  tool-wrapper.sh
catalina.sh  ciphers.sh  configtest.bat  digest.sh  setclasspath.sh  startup.bat  tomcat-native.tar.gz  version.bat
[root@ip-172-31-32-234 bin]# ps -ef | grep tomcat
root      13690   13330  0 17:06 pts/0    00:00:00 grep  --color=auto tomcat
[root@ip-172-31-32-234 bin]#
```

16.2. To check if tomcat is running or not (not)

```
root@ip-172-31-32-234:opt/apache-tomcat-8.5.65/bin
[root@ip-172-31-32-234 opt]# ls apache-tomcat-8.5.65
bin  BUILDING.txt  conf  CONTRIBUTING.md  lib  LICENSE  logs  NOTICE  README.md  RELEASE-NOTES  RUNNING.txt  temp  webapps  work
[root@ip-172-31-32-234 opt]# cd bin
bash: cd: bin: No such file or directory
[root@ip-172-31-32-234 opt]# ls
apache-tomcat-8.5.65  apache-tomcat-8.5.65.tar.gz
[root@ip-172-31-32-234 opt]# cd apache-tomcat-8.5.65
[root@ip-172-31-32-234 apache-tomcat-8.5.65]# ls
bin  BUILDING.txt  conf  CONTRIBUTING.md  lib  LICENSE  logs  NOTICE  README.md  RELEASE-NOTES  RUNNING.txt  temp  webapps  work
[root@ip-172-31-32-234 apache-tomcat-8.5.65]# cd bin/
[root@ip-172-31-32-234 bin]# ls
bootstrap.jar  catalina-tasks.xml  commons-daemon.jar  configtest.sh  digest.sh  shutdown.bat  startup.sh  tool-wrapper.bat  version.sh
catalina.bat  ciphers.sh  commons-daemon-native.tar.gz  daemon.sh  digest.bat  shutdown.sh  tomcat-juli.jar  tool-wrapper.sh
catalina.sh  ciphers.sh  configtest.bat  digest.sh  setclasspath.sh  startup.bat  tomcat-native.tar.gz  version.bat
[root@ip-172-31-32-234 bin]# ps -ef | grep tomcat
root      13690   13330  0 17:06 pts/0    00:00:00 grep  --color=auto tomcat
[root@ip-172-31-32-234 bin]#
```

17. To access default tomcat page first access services under bin directory here is startup.sh and shutdown.sh file:

17.1. Give a permission to startup.sh and shutdown.sh:

```
root@ip-172-31-38-55:/opt/apache-tomcat-10.0.5/bin
[root@ip-172-31-38-55 apache-tomcat-10.0.5]# ls
bin BUILDING.txt conf CONTRIBUTING.md lib LICENSE logs NOTICE README.md RELEASE-NOTES RUNNING.txt temp webapps work
[root@ip-172-31-38-55 apache-tomcat-10.0.5]# cd bin
[root@ip-172-31-38-55 bin]# ps -ef | grep tomcat
root      13904   13882   0 13:00 pts/0    00:00:00 grep  --color=auto tomcat
[root@ip-172-31-38-55 bin]# ls -ltr
total 880
-rwxr-x---. 1 root root  1908 Mar 30 08:19 version.sh
-rw-r-----. 1 root root  2026 Mar 30 08:19 version.bat
-rwxr-x---. 1 root root  5540 Mar 30 08:19 tool-wrapper.sh
-rw-r-----. 1 root root  4574 Mar 30 08:19 tool-wrapper.bat
-rw-r-----. 1 root root 423606 Mar 30 08:19 tomcat-native.tar.gz
-rw-r-----. 1 root root  46593 Mar 30 08:19 tomcat-juli.jar
-rwxr-x---. 1 root root  1904 Mar 30 08:19 startup.sh
-rw-r-----. 1 root root  2022 Mar 30 08:19 startup.bat
-rwxr-x---. 1 root root  1902 Mar 30 08:19 shutdown.sh
-rw-r-----. 1 root root  2020 Mar 30 08:19 shutdown.bat
-rwxr-x---. 1 root root  3708 Mar 30 08:19 setclasspath.sh
-rw-r-----. 1 root root  3460 Mar 30 08:19 setclasspath.bat
-rwxr-x---. 1 root root  1970 Mar 30 08:19 migrate.sh
-rw-r-----. 1 root root  2096 Mar 30 08:19 migrate.bat
-rwxr-x---. 1 root root  3382 Mar 30 08:19 makebase.sh
-rw-r-----. 1 root root  3606 Mar 30 08:19 makebase.bat
-rwxr-x---. 1 root root  1965 Mar 30 08:19 digest.sh
-rw-r-----. 1 root root  2091 Mar 30 08:19 digest.bat
-rwxr-x---. 1 root root  8836 Mar 30 08:19 daemon.sh
-rwxr-x---. 1 root root  1922 Mar 30 08:19 configtest.sh
-rw-r-----. 1 root root  2040 Mar 30 08:19 configtest.bat
-rw-r-----. 1 root root 207420 Mar 30 08:19 commons-daemon-native.tar.gz
-rw-r-----. 1 root root  25357 Mar 30 08:19 commons-daemon.jar
-rwxr-x---. 1 root root  1997 Mar 30 08:19 ciphers.sh
-rw-r-----. 1 root root  2123 Mar 30 08:19 ciphers.bat
-rw-r-----. 1 root root  1664 Mar 30 08:19 catalina-tasks.xml
-rwxr-x---. 1 root root 24814 Mar 30 08:19 catalina.sh
-rw-r-----. 1 root root 16266 Mar 30 08:19 catalina.bat
-rw-r-----. 1 root root  34727 Mar 30 08:19 bootstrap.jar
[root@ip-172-31-38-55 bin]# chmod +x startup.sh
[root@ip-172-31-38-55 bin]# chmod +x shutdown.sh
[root@ip-172-31-38-55 bin]#
```

18. By default it will work on port no. 22 so in security group we need to add port 8090:

sg-0dbdcd91de70acbc1 - launch-wizard-3

Actions

Details

Security group name launch-wizard-3	Security group ID sg-0dbdcd91de70acbc1	Description launch-wizard-3 created 2021-04-18T22:16:15.388+05:30	VPC ID vpc-3ef16455
Owner 222084151355	Inbound rules count 3 Permission entries	Outbound rules count 1 Permission entry	

Inbound rules

Outbound rules

Tags

Inbound rules (3)

Edit inbound rules

Type	Protocol	Port range	Source	Description - optional
SSH	TCP	22	0.0.0.0/0	-
Custom TCP	TCP	8090	0.0.0.0/0	-
Custom TCP	TCP	8090	::/0	-

19. To access tomcat in a browser, copy the public ip of your aws instance and add '8090' at the end.

For example: <http://3.21.162.39:8090/>

20. If we want to access these manager file then it will access from the same machine as tomcat but we access it from other so we need to edit the context.xml file

403 Access Denied

You are not authorized to view this page.

By default the Manager is only accessible from a browser running on the same machine as Tomcat. If you wish to modify this restriction, you'll need to edit the Manager's `context.xml` file.

If you have already configured the Manager application to allow access and you have used your browser's back button, used a saved book-mark or similar then you may have triggered the cross-site request forgery (CSRF) protection that has been enabled for the HTML interface of the Manager application. You will need to reset this protection by returning to the `main/Manager.sage`. Once you return to this page, you will be able to continue using the Manager application's HTML interface normally. If you continue to see this access denied message, check that you have the necessary permissions to access this application.

If you have not changed any configuration files, please examine the file `conf/tomcat-users.xml` in your installation. That file must contain the credentials to let you use this webapp.

For example, to add the `manager-gui` role to a user named `tomcat` with a password of `s3cret`, add the following to the config file listed above.

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

Note that for Tomcat 7 onwards, the roles required to use the manager application were changed from the single `manager` role to the following four roles. You will need to assign the role(s) required for the functionality you wish to access.

- `manager-gui` - allows access to the HTML GUI and the status pages
- `manager-script` - allows access to the text interface 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 HTML interface is protected against CSRF but the text and JMX interfaces are not. To maintain the CSRF protection:

- Users with the `manager-gui` role should not be granted either the `manager-script` or `manager-jmx` roles.
- If the text or jmx interfaces are accessed through a browser (e.g. for testing since these interfaces are intended for tools not humans) then the browser must be closed afterwards to terminate the session.

For more information - please see the [Manager App How-To](#).

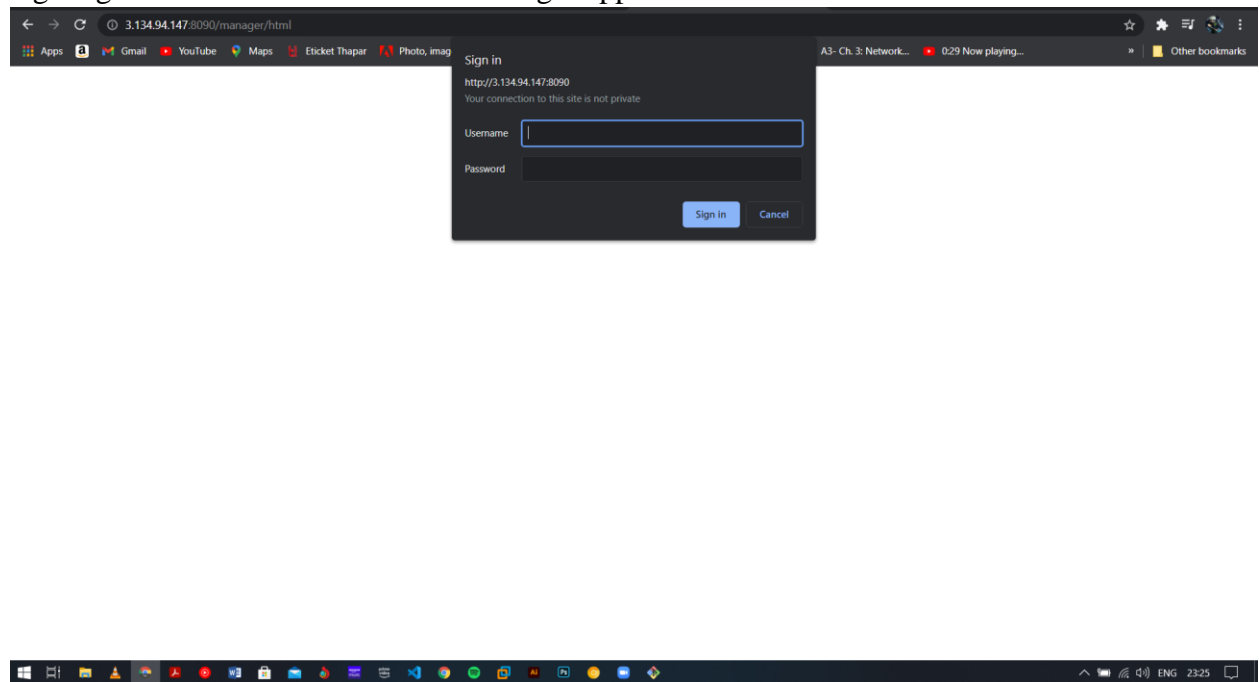
21. Search context.xml file via find command if will give the location

Command: find / -name context.xml

21.1. Edit the context.xml file using vi command

```
[root@ip-172-31-32-234 conf]# find / -name context.xml
/opt/apache-tomcat-8.5.65/conf/context.xml
/opt/apache-tomcat-8.5.65/webapps/examples/META-INF/context.xml
/opt/apache-tomcat-8.5.65/webapps/host-manager/META-INF/context.xml
/opt/apache-tomcat-8.5.65/webapps/manager/META-INF/context.xml
[root@ip-172-31-32-234 conf]# vi /opt/apache-tomcat-8.5.65/webapps/host-manager/META-INF/context.xml
[root@ip-172-31-32-234 conf]# vi /opt/apache-tomcat-8.5.65/webapps/manager/META-INF/context.xml
[root@ip-172-31-32-234 conf]# tomcatdown
Using CATALINA_BASE: /opt/apache-tomcat-8.5.65
Using CATALINA_HOME: /opt/apache-tomcat-8.5.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-8.5.65/temp
Using JRE_HOME: /
Using CLASSPATH: /opt/apache-tomcat-8.5.65/bin/bootstrap.jar:/opt/apache-tomcat-8.5.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
[root@ip-172-31-32-234 conf]# wocmatup
bash: wocmatup: command not found
[root@ip-172-31-32-234 conf]# tomcatup
Using CATALINA_BASE: /opt/apache-tomcat-8.5.65
Using CATALINA_HOME: /opt/apache-tomcat-8.5.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-8.5.65/temp
Using JRE_HOME: /
Using CLASSPATH: /opt/apache-tomcat-8.5.65/bin/bootstrap.jar:/opt/apache-tomcat-8.5.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
[root@ip-172-31-32-234 conf]#
```

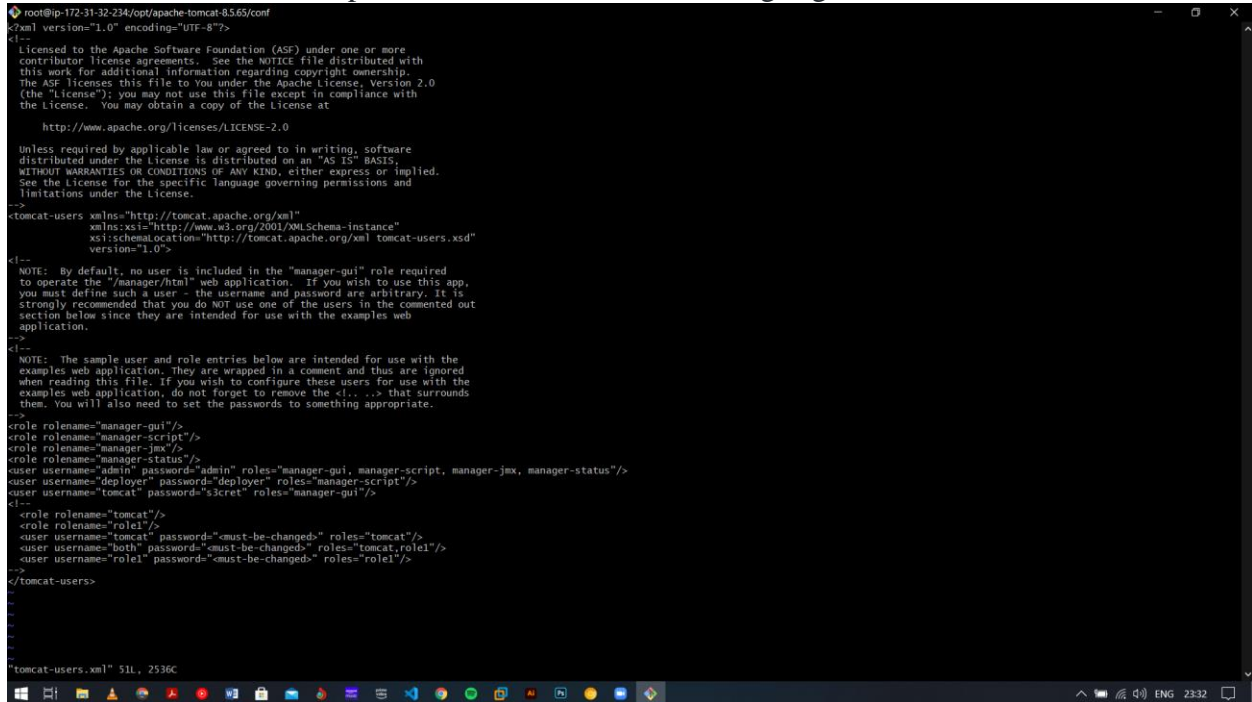
22. Again go back to server and access manager apps then it ask for credential



23. In conf there is a file call tomcat.users.xml , here we need to add user and role

23.1. User and role are given below add in between tomcat users:

```
<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"/>
```



```
root@ip-172-31-32-234/opt/apache-tomcat-8.5.65/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.
-->
<tomcat-users xmlns="http://tomcat.apache.org/xml"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://tomcat.apache.org/xml tomcat-users.xsd"
  version="1.0">
  <!--
  NOTE: 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.  It is
  strongly recommended that you do NOT use one of the users in the commented out
  section below since they are intended for use with the examples web
  application.
  -->
  <!--
  NOTE: 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"/>
  <user username="tomcat" password="s3cret" roles="manager-gui"/>
  <!--
  <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"/>
  -->
</tomcat-users>

"tomcat-users.xml" 51L, 2536C
```


24. Again refresh tomcat server and access manager app sign in with username and password it look like:

The screenshot shows the Tomcat Web Application Manager interface in a web browser. The browser's address bar shows the URL `3.134.94.147:8090/manager/html`. The page features the Apache Software Foundation logo and the title "Tomcat Web Application Manager". Below the title, there is a "Message:" field with the text "OK". The main content area is divided into several sections: "Manager" with links for "List Applications", "HTML Manager Help", "Manager Help", and "Server Status"; "Applications" which contains a table of deployed applications; and "Deploy" which includes a section for "Deploy directory or WAR file located on server".

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/docs	None specified	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/host-manager	None specified	Tomcat Host Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

25. Project is cloned where we saved our AWS key.

Link:

<https://github.com/ujjahul398/Monday/blob/main/webapp/src/main/webapp/index.jsp>

26. Open Jenkins and create a new project

The screenshot shows the Jenkins dashboard with the "Enter an item name" dialog open. The dialog has a search bar containing "hello-world" and a red error message: "A job already exists with the name 'hello-world'". Below the dialog, there are four project type options: "Freestyle project", "Maven project", "Pipeline", and "Multi-configuration project". Each option has a brief description of its capabilities. At the bottom of the dialog, there is a "Folder" option with a description: "Folder is a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a namespace, so you can have multiple things of the same name as long as they are in different folders." There are "OK" and "Cancel" buttons at the bottom of the dialog.

27. Set your git url path

Dashboard > hello-world >

General Source Code Management Build Triggers Build Environment Pre Steps Build Post Steps Build Settings

Post-build Actions

Source Code Management

☐ None
☒ Git

Repositories

Repository URL
https://github.com/ujahu1398/Monday.git

Credentials
- none - Add

Advanced...
Add Repository

Branches to build

Branch Specifier (blank for 'any')
*/main

Save Apply Add Branch

28. Set the goal that means clean old build and just install the maven package

Dashboard > hello-world >

General Source Code Management Build Triggers Build Environment Pre Steps Build Post Steps Build Settings

Post-build Actions

☐ With Ant

Pre Steps

Add pre-build step

Build

Root POM
pom.xml

Goals and options
clean install package

Advanced...

Post Steps

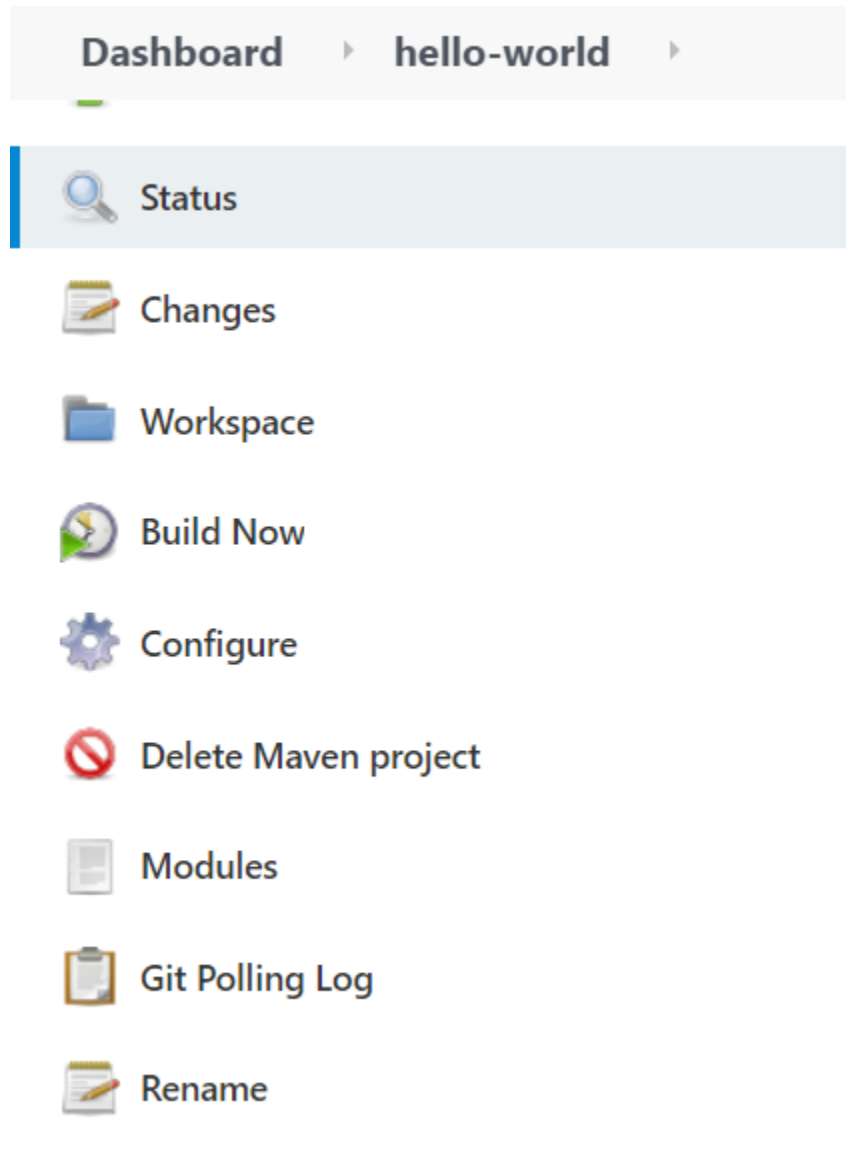
☐ Run only if build succeeds ☐ Run only if build succeeds or is unstable ☒ Run regardless of build result

Should the post-build steps run only for successful builds, etc.

Add post-build step

Save Apply

29. Then click on Build Now Manually



30. After build we need to deploy on server. First open your tomcat server, After that we need to give our tomcat credential to our Jenkins therefore we need to install the deploy plugin on Jenkins.

Go with:

Dashboard-> Manage Jenkins-> manage plugin-> Available-> Deploy to container-> Install w/o restart

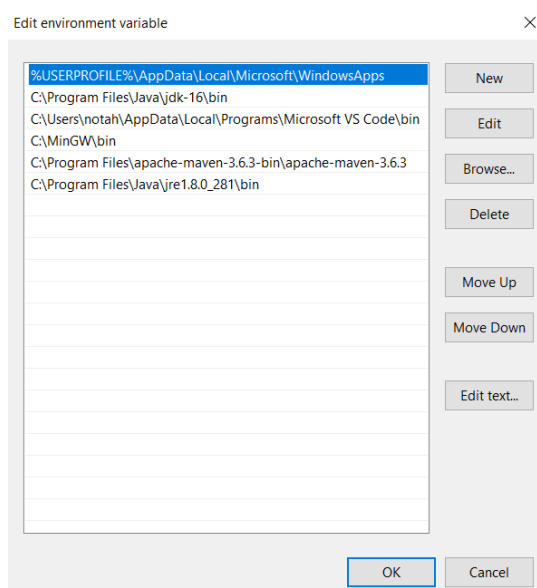
After this we need to set the credentials then,

Go with:

Manage Jenkins-> manage credentials-> global credentials-> add credential

The screenshot shows the Jenkins web interface. The top navigation bar includes the Jenkins logo, a search bar, and user information (Ujjwal Ahuja) with a log out button. The left sidebar contains a 'Dashboard' link and a 'Credentials' link. The main content area is titled 'Credentials' and displays a table of credentials. The table has columns for 'T' (type), 'P' (provider), 'Store', 'Domain', 'ID', and 'Name'. There is one credential listed: 'tomcat_credentials' of type 'string' and ID 'tomcat_credentials'. Below the table, it says 'Stores scoped to Jenkins' and shows a table of stores. The table has columns for 'P' (provider), 'Store', and 'Domains'. There is one store listed: 'Jenkins' of type 'global'.

31. Download Apache Mavin and set path in Environment Variables



32. For adding maven manually go with:
Manage Jenkins-> manage global tool configuration-> add maven

Maven

Maven installations

[Add Maven](#)

Maven

Name

maven 3.6

MAVEN_HOME

C:\Program Files\apache-maven-3.6.3-bin\apache-maven-3.6.3

☐ Install automatically

[Delete Maven](#)

[Add Maven](#)

List of Maven installations on this system

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

33. Deploy war to container:

Dashboard > hello-world >

General Source Code Management Build Triggers Build Environment Pre Steps Build Post Steps **Build Settings**

Post-build Actions

Containers

Tomcat 8.x Remote

Credentials

Aggregate downstream test results

Archive the artifacts

Build other projects

Deploy artifacts to Maven repository

Record fingerprints of files to track usage

Git Publisher

Deploy war/ear to a container

Editable Email Notification

Set GitHub commit status (universal)

Set build status on GitHub commit [deprecated]

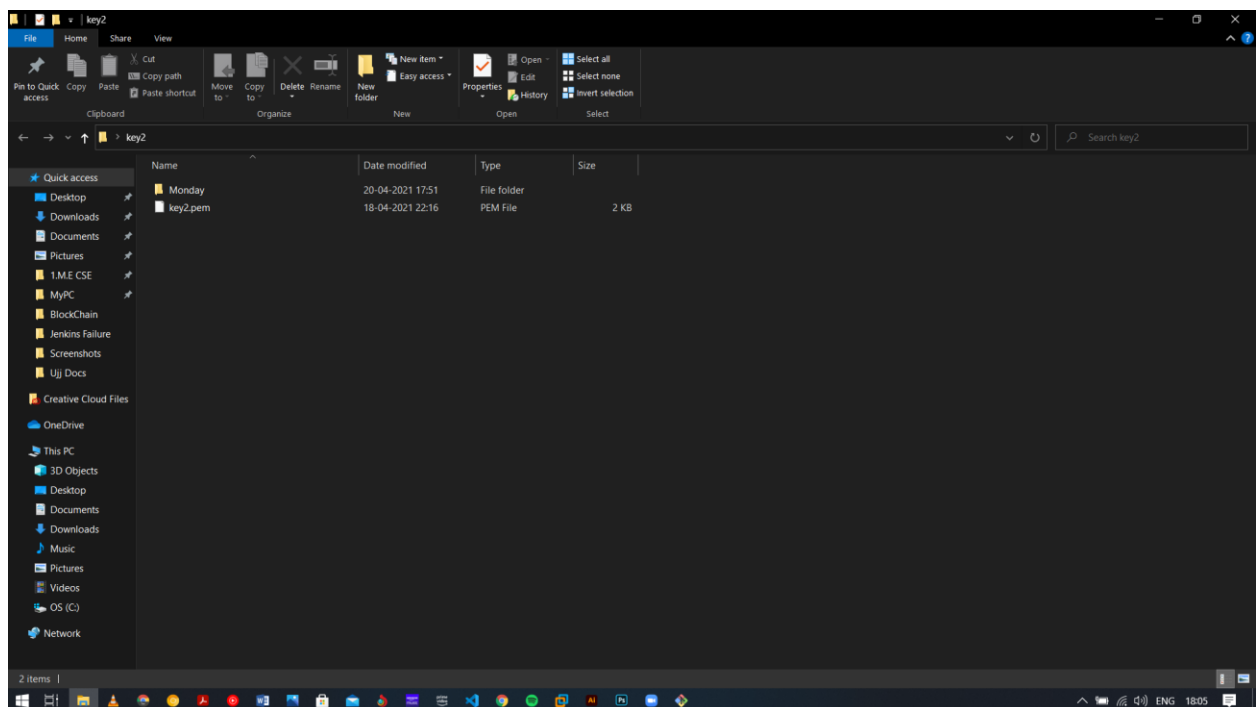
Delete workspace when build is done

[Add post-build action](#)

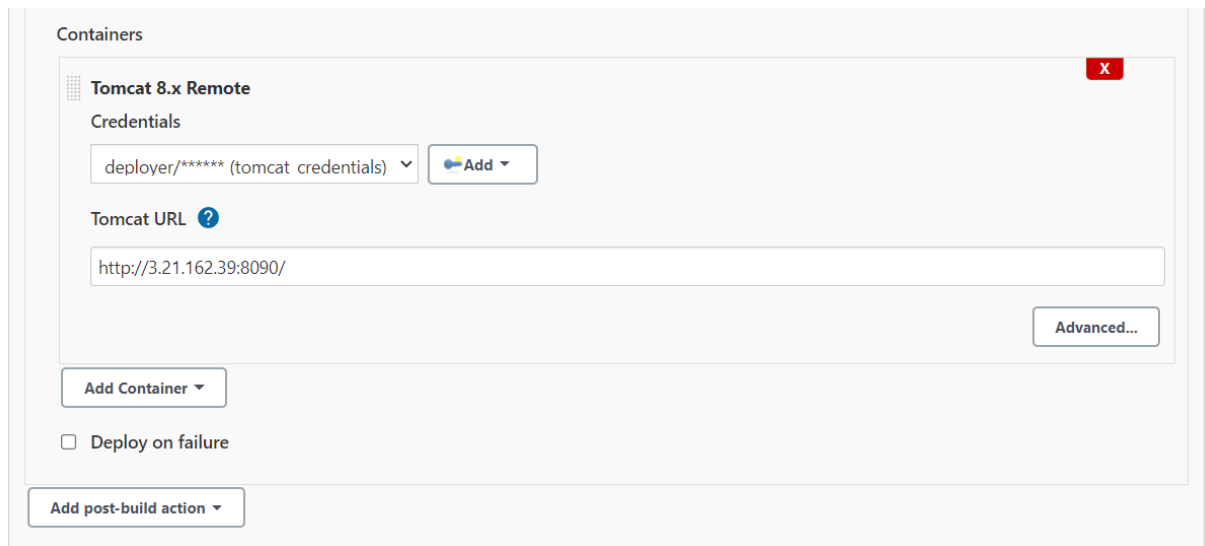
[Save](#) [Apply](#)

34. Clone the code where your key is saved:

```
MINGW64~/Users/notah/Desktop/key2/Monday/webapp/src/main/webapp
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2
$ git clone https://github.com/ujjahu1398/Monday
bash: $: command not found
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2
$ git clone https://github.com/ujjahu1398/Monday
Cloning into 'Monday'...
remote: Enumerating objects: 74, done.
remote: Counting objects: 100% (74/74), done.
remote: Compressing objects: 100% (49/49), done.
remote: Total 74 (delta 15), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (74/74), 11.12 KiB | 1.11 MiB/s, done.
Resolving deltas: 100% (15/15), done.
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2
$ ls
Monday/  key2.pem
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2
$ cd Monday/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday (main)
$ ls
Dockerfile  README.md  pom.xml  server/  webapp/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday (main)
$ cd webapp/
bash: cd: command not found
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday (main)
$ cd webapp/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday/webapp (main)
$ ls
pom.xml  src/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday/webapp (main)
$ cd src/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday/webapp/src (main)
$ ls
main/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday/webapp/src (main)
$ cd main/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday/webapp/src/main (main)
$ ls
webapp/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday/webapp/src/main (main)
$ cd webapp/
notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2/Monday/webapp/src/main/webapp (main)
$ ls
WEB-INF/  index.jsp
```

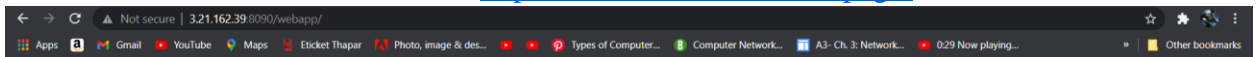


35. When we give the right credential of tomcat then only this war file will deploy on tomcat server



The screenshot shows a configuration interface for a container named 'Tomcat 8.x Remote'. It includes a 'Credentials' section with a dropdown menu showing 'deployer/***** (tomcat credentials)' and an 'Add' button. Below this is a 'Tomcat URL' field with a question mark icon, containing the text 'http://3.21.162.39:8090/'. There is an 'Advanced...' button to the right of the URL field. At the bottom of the container configuration, there is an 'Add Container' button, a checkbox for 'Deploy on failure', and an 'Add post-build action' button.

36. Then build now and check the link “<http://3.21.162.39:8090/webpage/>”



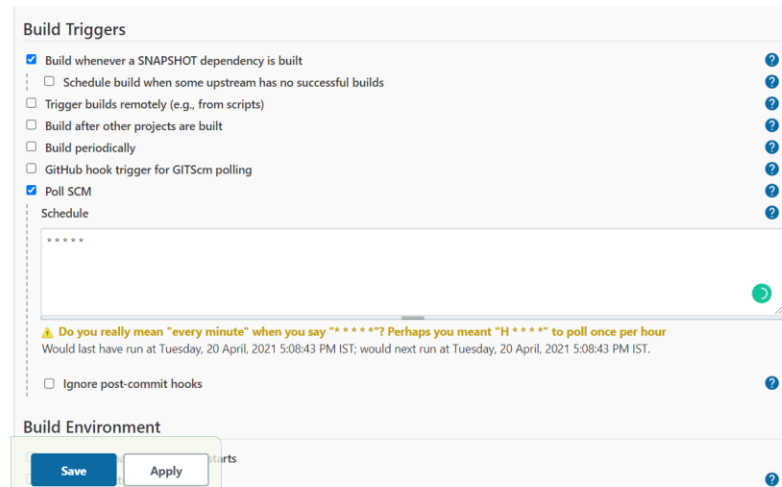
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37. Commit changes in your git repository.
38. Then build it if should able to create the war file once war file is create successfully it simply deploy to server

```
root@ip-172-31-32-234:/opt/apache-tomcat-8.5.65/webapps

notah@LAPTOP-AL9DH130 MINGW64 ~/Desktop/key2
$ ssh -i "key2.pem" ec2-user@ec2-3-21-162-39.us-east-2.compute.amazonaws.com
Last login: Tue Apr 20 12:13:29 2021 from 49.36.240.177
[ec2-user@ip-172-31-32-234 ~]$ sudo su
[root@ip-172-31-32-234 ec2-user]# tomcatup
Using CATALINA_BASE:   /opt/apache-tomcat-8.5.65
Using CATALINA_HOME:   /opt/apache-tomcat-8.5.65
Using CATALINA_TMPDIR: /opt/apache-tomcat-8.5.65/temp
Using JRE_HOME:        /
Using CLASSPATH:        /opt/apache-tomcat-8.5.65/bin/bootstrap.jar:/opt/apache-t
omcat-8.5.65/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
[root@ip-172-31-32-234 ec2-user]# pwd
/home/ec2-user
[root@ip-172-31-32-234 ec2-user]# cd /opt
[root@ip-172-31-32-234 opt]# ls
apache-tomcat-8.5.65  apache-tomcat-8.5.65.tar.gz
[root@ip-172-31-32-234 opt]# cd apache-tomcat-8.5.65
[root@ip-172-31-32-234 apache-tomcat-8.5.65]# ls
bin      conf      lib      logs     README.md  RUNNING.txt  webapps
BUILDING.txt  CONTRIBUTING.md  LICENSE  NOTICE  RELEASE-NOTES  temp        work
[root@ip-172-31-32-234 apache-tomcat-8.5.65]# cd webapps/
[root@ip-172-31-32-234 webapps]# ls
docs  examples  host-manager  manager  ROOT  webapp  webapp.war
[root@ip-172-31-32-234 webapps]#
```

39. Build automatic trigger for 1 minute.



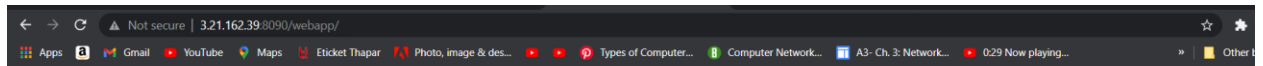
The image shows the 'Build Triggers' configuration page in Jenkins. Under the 'Build Triggers' section, the following options are visible:

- ☒ Build whenever a SNAPSHOT dependency is built
- ☐ Schedule build when some upstream has no successful builds
- ☐ Trigger builds remotely (e.g., from scripts)
- ☐ Build after other projects are built
- ☐ Build periodically
- ☐ GitHub hook trigger for GITScm polling
- ☒ Poll SCM

Below the 'Poll SCM' option, there is a 'Schedule' field with the text 'H * * * * *'. A warning message is displayed below the field: 'Do you really mean "every minute" when you say "H * * * * *"? Perhaps you meant "H * * * * *" to poll once per hour. Would last have run at Tuesday, 20 April, 2021 5:08:43 PM IST; would next run at Tuesday, 20 April, 2021 5:08:43 PM IST.'

At the bottom of the configuration, there is a 'Build Environment' section with a 'Save' button and an 'Apply' button.

40. check the link “ <http://3.21.162.39:8090/webpage/>” again:



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This is a Project on Continuous Integration and Continuous Development through Jenkins