

DevOps Project

Problem Statement:

Create an end-to-end CI/CD pipeline in AWS platform using Jenkins as the orchestration tool, GitHub as scm, maven as the build tool, deploy in a docker instance and create a docker image, store the docker image in ECR, Kubernetes deployment using ECR image. Build sample java web app using maven.

Approach:

Requirements:

- CI/CD pipeline System
- Git - local version control system.
- GitHub - As Distributed version control system.
- Jenkins - Continuous Integration tool.
- Maven - As a Build Tool.
- docker -Containerization
- Kubernetes - As Container Management Tool

Step-1:

- Setup CI/CD with GitHub, Jenkins, Maven & Tomcat.
- Setup Jenkins
- Setup & Configure Maven, Git.
- Setup Tomcat Server.
- Integrating GitHub, Maven, Tomcat Server with Jenkins
- Create a CI and CD Job.
- Test the Deployment

Step-2:

- Setup CI/CD with GitHub, Jenkins, Maven & Docker.
- Setting up the docker Environment.
- Create an Image and Container on Docker Host.
- Integrate Docker Host with Jenkins.
- Create CI/CD Job on Jenkins to build and deploy on container.

Step-3:

- Build and Deploy on Container.
- CI/CD with GitHub, Jenkins, Maven & Kubernetes.
- Setting up the Kubernetes (EKS).
- Write pod service and deployment manifest file.
- CI/CD Job to build code on Jenkins & Deploy it on Kubernetes.

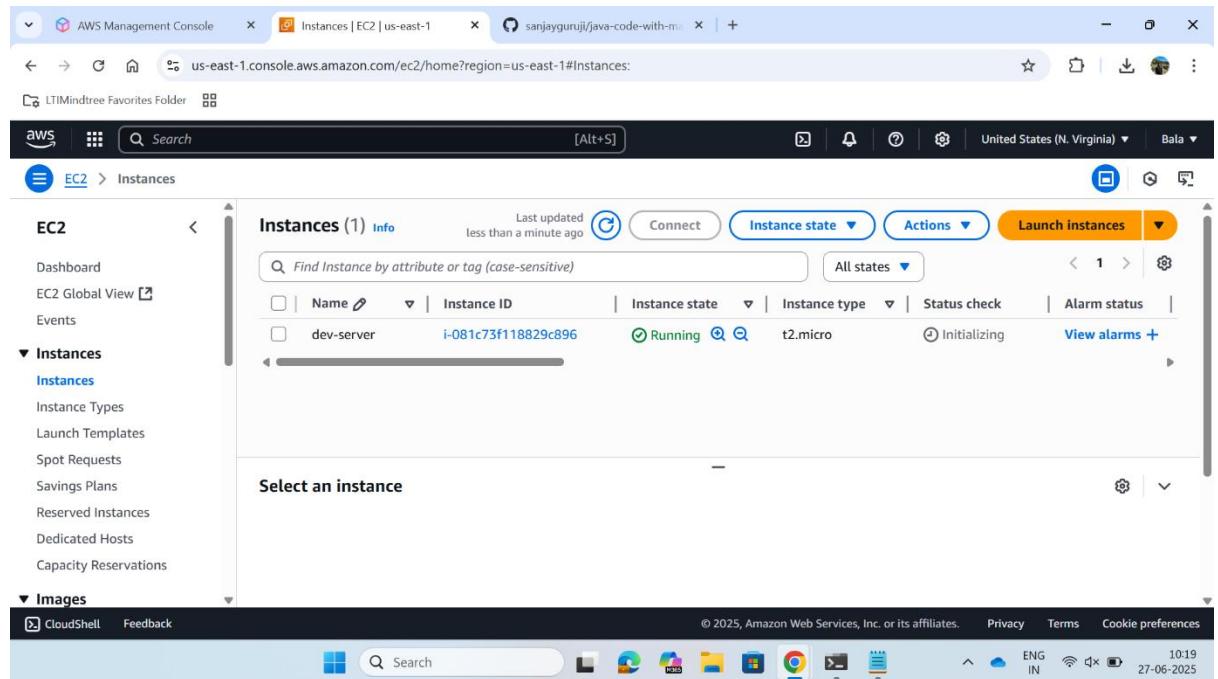
Step-4:

- Deploy artifacts on the Kubernetes
- Write codes in the artifacts of docker and Kubernetes which we want to run.
- Now build the code in Jenkins.
- Check in Kubernetes the pods are getting created or not.
- Now copy the service IP and paste it in the browser and check the output.

Solution:

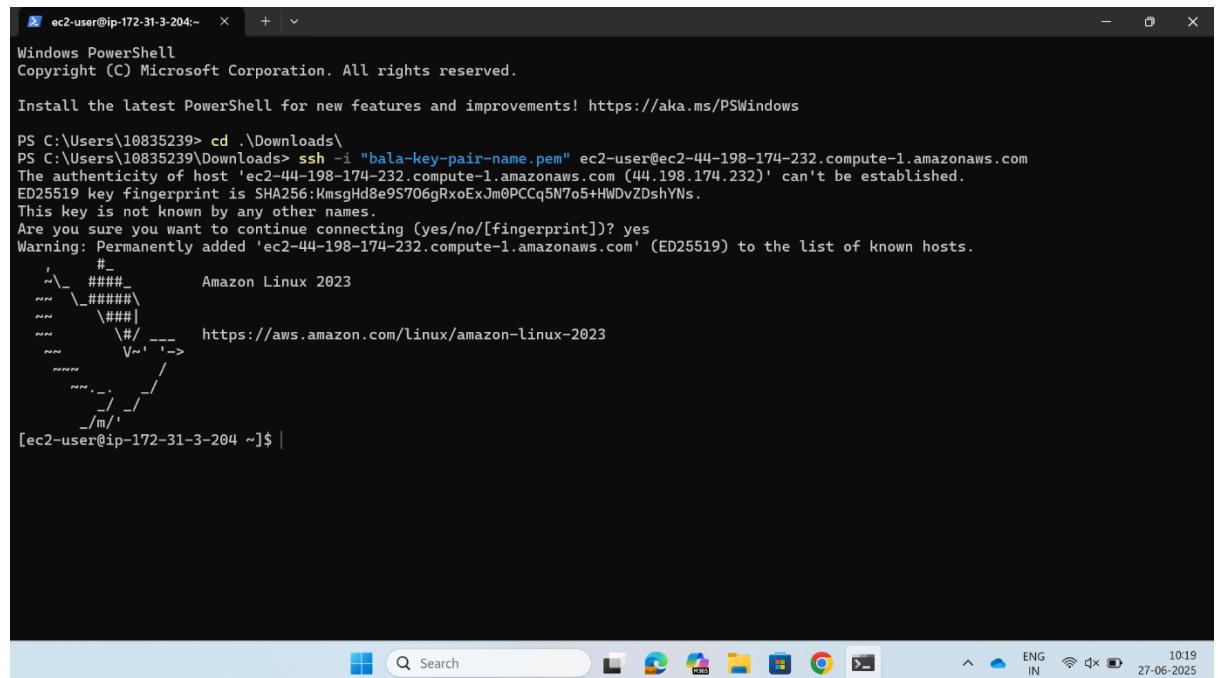
GITHUB:

→ Created an EC2 instance for git operations



The screenshot shows the AWS Management Console with the EC2 Instances page open. The left sidebar shows navigation options like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations. The main content area displays a table for 'Instances (1)'. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, and Alarm status. The single instance listed is 'dev-server' with Instance ID 'i-081c73f118829c896', Instance state 'Running', Instance type 't2.micro', Status check 'Initializing', and Alarm status 'View alarms+'. A search bar at the top allows filtering by attribute or tag. Buttons for Connect, Actions, and Launch instances are also present.

→ Connected the EC2 instance in the terminal



```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\10835239> cd .\Downloads\
PS C:\Users\10835239\Downloads> ssh -i "bala-key-pair-name.pem" ec2-user@ec2-44-198-174-232.compute-1.amazonaws.com
The authenticity of host 'ec2-44-198-174-232.compute-1.amazonaws.com (44.198.174.232)' can't be established.
ED25519 key fingerprint is SHA256:Kmsghd8e9S706gRxoExJm0PCCq5N7o5+HNdVZDshYNs.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-44-198-174-232.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

#_
`_ _###_ Amazon Linux 2023
`_ \###`_
`_ \###|_
`_ \#/ __> https://aws.amazon.com/linux/amazon-linux-2023
`_ `/_`/
`_ ./_`/
`_ /`/
[ec2-user@ip-172-31-3-204 ~]$ |
```

→ Set up the hostname for my git EC2 instance as dev-server

```
PS C:\Users\10835239> cd .\Downloads\  
PS C:\Users\10835239\Downloads> ssh -i "bala-key-pair-name.pem" ec2-user@ec2-44-198-174-232.compute-1.amazonaws.com  
The authenticity of host 'ec2-44-198-174-232.compute-1.amazonaws.com (44.198.174.232)' can't be established.  
ED25519 key fingerprint is SHA256:KmsgHd8e9S706gRxoExJm0PCCq5N7o5+HWDvZDshYNs.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added 'ec2-44-198-174-232.compute-1.amazonaws.com' (ED25519) to the list of known hosts.  
#  
~\_\_ ##### Amazon Linux 2023  
~~ \_\#\#\#\#\_\_  
~~ \#\#\#\|  
~~ \#/ \_\_\_\_ https://aws.amazon.com/linux/amazon-linux-2023  
~~ \_\_\_\_ \_\_\_\_/  
~~ \_\_\_\_ \_\_\_\_/  
~~ \_\_\_\_ \_\_\_\_/  
[ec2-user@ip-172-31-3-204 ~]$ sudo su -  
[root@ip-172-31-3-204 ~]# hostnamectl set-hostname dev-server  
[root@ip-172-31-3-204 ~]# hostnamectl set-hostname devserver.example.com  
[root@ip-172-31-3-204 ~]# bash  
[root@devserver ~]# yum install git -y  
Amazon Linux 2023 Kernel Livepatch repository  
Dependencies resolved.  
159 kB/s | 17 kB 00:00  
=====  
Package Architecture Version Repository Size  
=====  
Installing:  
=====  
[root@ip-172-31-3-204 ~]# bash  
[root@devserver ~]# yum install git -y  
Amazon Linux 2023 Kernel Livepatch repository  
Dependencies resolved.  
159 kB/s | 17 kB 00:00  
=====  
Package Architecture Version Repository Size  
=====  
Installing:  
git x86_64 2.47.1-1.amzn2023.0.3 amazonlinux 52 k  
Installing dependencies:  
git-core x86_64 2.47.1-1.amzn2023.0.3 amazonlinux 4.5 M  
git-core-doc noarch 2.47.1-1.amzn2023.0.3 amazonlinux 2.8 M  
perl-Error noarch 1:0.17029-5.amzn2023.0.2 amazonlinux 41 k  
perl-File-Find noarch 1.37-477.amzn2023.0.7 amazonlinux 25 k  
perl-Git noarch 2.47.1-1.amzn2023.0.3 amazonlinux 40 k  
perl-TermReadKey x86_64 2.38-9.amzn2023.0.2 amazonlinux 36 k  
perl-lib x86_64 0.65-477.amzn2023.0.7 amazonlinux 15 k  
Transaction Summary  
=====  
Install 8 Packages  
=====  
Total download size: 7.5 M  
Installed size: 37 M  
Downloading Packages:  
(1/8): git-2.47.1-1.amzn2023.0.3.x86_64.rpm 1.4 MB/s | 52 kB 00:00  
(2/8): perl-Error-0.17029-5.amzn2023.0.2.noarch.rpm 1.5 MB/s | 41 kB 00:00  
(3/8): git-core-2.47.1-1.amzn2023.0.3.x86_64.rpm 43 MB/s | 4.5 MB 00:00  
(4/8): perl-File-Find-1.37-477.amzn2023.0.7.noarch.rpm 580 kB/s | 25 kB 00:00  
(5/8): git-core-doc-2.47.1-1.amzn2023.0.3.noarch.rpm 20 MB/s | 2.8 MB 00:00  
(6/8): perl-Git-2.47.1-1.amzn2023.0.3.noarch.rpm 1.2 MB/s | 40 kB 00:00  
(7/8): perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64.rpm 1.1 MB/s | 36 kB 00:00  
(8/8): perl-lib-0.65-477.amzn2023.0.7.x86_64.rpm 738 kB/s | 15 kB 00:00  
=====  
10:34  
ENG IN WiFi 27-06-2025
```

→ Installed git in my dev-server

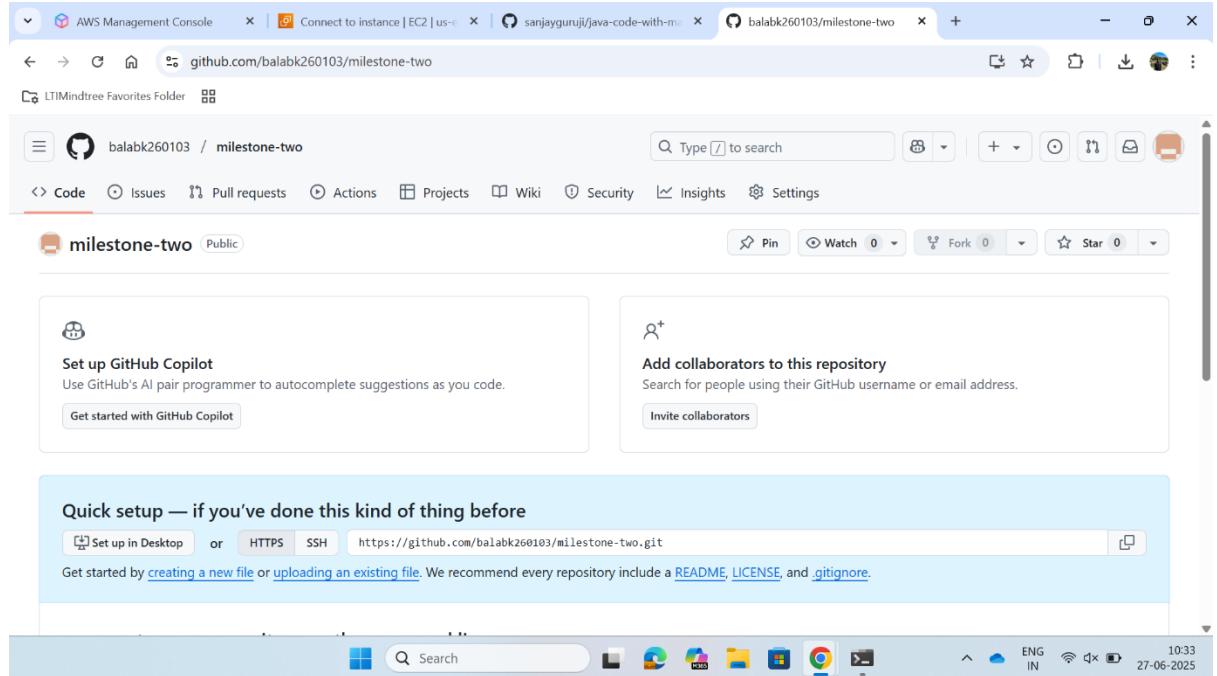
```
[root@ip-172-31-3-204 ~]# bash  
[root@devserver ~]# yum install git -y  
Amazon Linux 2023 Kernel Livepatch repository  
Dependencies resolved.  
159 kB/s | 17 kB 00:00  
=====  
Package Architecture Version Repository Size  
=====  
Installing:  
git x86_64 2.47.1-1.amzn2023.0.3 amazonlinux 52 k  
Installing dependencies:  
git-core x86_64 2.47.1-1.amzn2023.0.3 amazonlinux 4.5 M  
git-core-doc noarch 2.47.1-1.amzn2023.0.3 amazonlinux 2.8 M  
perl-Error noarch 1:0.17029-5.amzn2023.0.2 amazonlinux 41 k  
perl-File-Find noarch 1.37-477.amzn2023.0.7 amazonlinux 25 k  
perl-Git noarch 2.47.1-1.amzn2023.0.3 amazonlinux 40 k  
perl-TermReadKey x86_64 2.38-9.amzn2023.0.2 amazonlinux 36 k  
perl-lib x86_64 0.65-477.amzn2023.0.7 amazonlinux 15 k  
Transaction Summary  
=====  
Install 8 Packages  
=====  
Total download size: 7.5 M  
Installed size: 37 M  
Downloading Packages:  
(1/8): git-2.47.1-1.amzn2023.0.3.x86_64.rpm 1.4 MB/s | 52 kB 00:00  
(2/8): perl-Error-0.17029-5.amzn2023.0.2.noarch.rpm 1.5 MB/s | 41 kB 00:00  
(3/8): git-core-2.47.1-1.amzn2023.0.3.x86_64.rpm 43 MB/s | 4.5 MB 00:00  
(4/8): perl-File-Find-1.37-477.amzn2023.0.7.noarch.rpm 580 kB/s | 25 kB 00:00  
(5/8): git-core-doc-2.47.1-1.amzn2023.0.3.noarch.rpm 20 MB/s | 2.8 MB 00:00  
(6/8): perl-Git-2.47.1-1.amzn2023.0.3.noarch.rpm 1.2 MB/s | 40 kB 00:00  
(7/8): perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64.rpm 1.1 MB/s | 36 kB 00:00  
(8/8): perl-lib-0.65-477.amzn2023.0.7.x86_64.rpm 738 kB/s | 15 kB 00:00  
=====  
10:34  
ENG IN WiFi 27-06-2025
```

→ Cloned the project from github to my dev-server

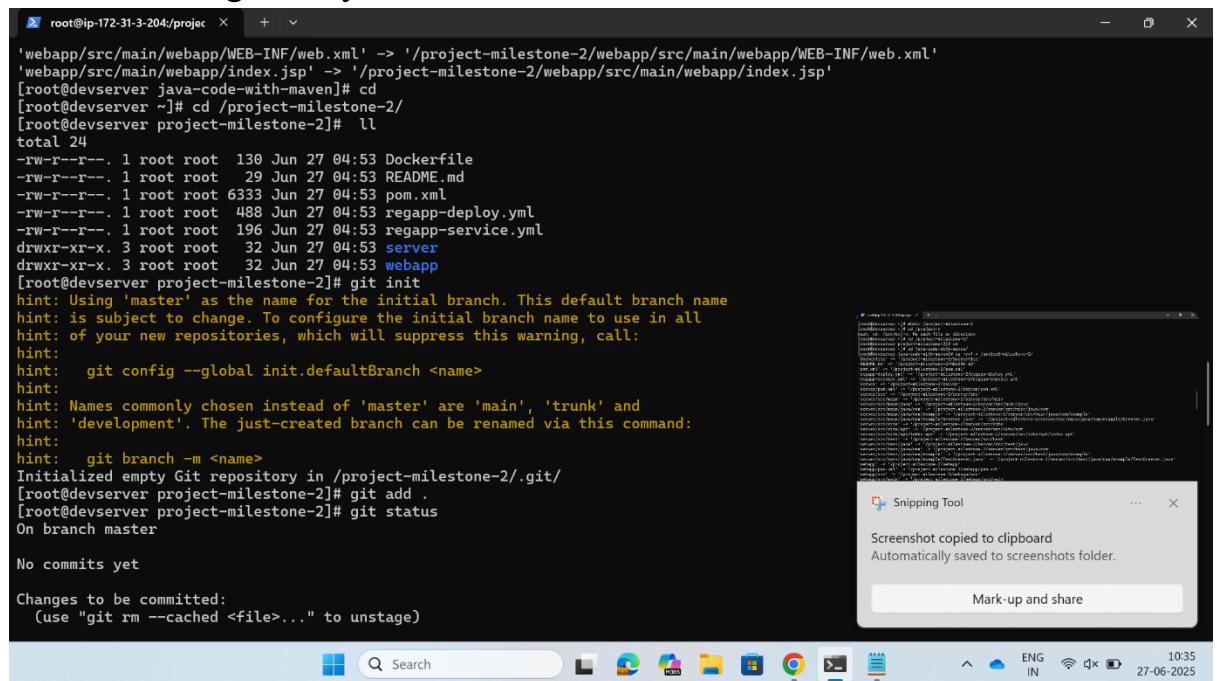
```
root@ip-172-31-3-204:project ~]# perl -Error=1:0.17029-5.amzn2023.0.2.noarch perl-File-Find-1.37-477.amzn2023.0.7.noarch perl-Git-2.47.1-1.amzn2023.0.3.noarch perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64 perl-lib-0.65-477.amzn2023.0.7.x86_64
Complete!
[root@devserver ~]# git clone https://github.com/sanjayguruji/java-code-with-maven.git
Cloning into 'java-code-with-maven'...
remote: Enumerating objects: 31, done.
remote: Counting objects: 100% (2/2), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 31 (delta 0), reused 0 (delta 0), pack-reused 29 (from 2)
Receiving objects: 100% (31/31), 4.87 KiB | 1.22 MiB/s, done.
Resolving deltas: 100% (1/1), done.
[root@devserver ~]# cd java-code-with-maven/
[root@devserver java-code-with-maven]# ll
total 24
-rw-r--r-- 1 root root 130 Jun 27 04:52 Dockerfile
-rw-r--r-- 1 root root 29 Jun 27 04:52 README.md
-rw-r--r-- 1 root root 6333 Jun 27 04:52 pom.xml
-rw-r--r-- 1 root root 488 Jun 27 04:52 regapp-deploy.yml
-rw-r--r-- 1 root root 196 Jun 27 04:52 regapp-service.yml
drwxr-xr-x 3 root root 32 Jun 27 04:52 server
drwxr-xr-x 3 root root 32 Jun 27 04:52 webapp
[root@devserver java-code-with-maven]# cd
[root@devserver ~]# mkdir /project-milestone-2
[root@devserver ~]# cd /project-x
bash: cd: /project-x: No such file or directory
[root@devserver ~]# cd /project-milestone-2/
[root@devserver project-milestone-2]# cd
[root@devserver ~]# cd java-code-with-maven/
[root@devserver java-code-with-maven]# cp -rvf * /project-milestone-2/
'Dockerfile' -> '/project-milestone-2/Dockerfile'
'README.md' -> '/project-milestone-2/README.md'
'pom.xml' -> '/project-milestone-2/pom.xml'
10:34
ENG IN Wi-Fi 27-06-2025
```

```
root@ip-172-31-3-204:project ~]# mkdir /project-milestone-2
[root@devserver ~]# cd /project-x
bash: cd: /project-x: No such file or directory
[root@devserver ~]# cd /project-milestone-2/
[root@devserver project-milestone-2]# cd
[root@devserver ~]# cd java-code-with-maven/
[root@devserver java-code-with-maven]# cp -rvf * /project-milestone-2/
'Dockerfile' -> '/project-milestone-2/Dockerfile'
'README.md' -> '/project-milestone-2/README.md'
'pom.xml' -> '/project-milestone-2/pom.xml'
'regapp-deploy.yml' -> '/project-milestone-2/regapp-deploy.yml'
'regapp-service.yml' -> '/project-milestone-2/regapp-service.yml'
'server' -> '/project-milestone-2/server'
'server/pom.xml' -> '/project-milestone-2/server/pom.xml'
'server/src' -> '/project-milestone-2/server/src'
'server/src/main' -> '/project-milestone-2/server/src/main'
'server/src/main/java' -> '/project-milestone-2/server/src/main/java'
'server/src/main/java/com' -> '/project-milestone-2/server/src/main/java/com'
'server/src/main/java/com/example' -> '/project-milestone-2/server/src/main/java/com/example'
'server/src/main/java/com/example/Greeter.java' -> '/project-milestone-2/server/src/main/java/com/example/Greeter.java'
'server/src/site' -> '/project-milestone-2/server/src/site'
'server/src/site/apt' -> '/project-milestone-2/server/src/site/apt'
'server/src/site/apt/index.apt' -> '/project-milestone-2/server/src/site/apt/index.apt'
'server/src/test' -> '/project-milestone-2/server/src/test'
'server/src/test/java' -> '/project-milestone-2/server/src/test/java'
'server/src/test/java/com' -> '/project-milestone-2/server/src/test/java/com'
'server/src/test/java/com/example' -> '/project-milestone-2/server/src/test/java/com/example'
'server/src/test/java/com/example/TestGreeter.java' -> '/project-milestone-2/server/src/test/java/com/example/TestGreeter.java'
'webapp' -> '/project-milestone-2/webapp'
'webapp/pom.xml' -> '/project-milestone-2/webapp/pom.xml'
'webapp/src' -> '/project-milestone-2/webapp/src'
'webapp/src/main' -> '/project-milestone-2/webapp/src/main'
'webapp/src/main/webapp' -> '/project-milestone-2/webapp/src/main/webapp'
10:35
ENG IN Wi-Fi 27-06-2025
```

→ Created a repository in my github account as milestone-two



→ Initialized git in my dev-server



```
root@ip-172-31-3-204:/project ~ + - X

Changes to be committed:
(use "git rm --cached <file>..." to unstage)
 new file: Dockerfile
 new file: README.md
 new file: pom.xml
 new file: regapp-deploy.yml
 new file: regapp-service.yml
 new file: server/pom.xml
 new file: server/src/main/java/com/example/Greeter.java
 new file: server/src/site/apt/index.apt
 new file: server/src/test/java/com/example/TestGreeter.java
 new file: webapp/pom.xml
 new file: webapp/src/main/webapp/WEB-INF/web.xml
 new file: webapp/src/main/webapp/index.jsp

[root@devserver project-milestone-2]# git commit -m devops -a
[master (root-commit) f11b03d] devops
Committer: root <root@devserver.example.com>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

 git config --global --edit

After doing this, you may fix the identity used for this commit with:

 git commit --amend --reset-author

12 files changed, 479 insertions(+)
create mode 100644 Dockerfile

Search ENG IN 10:35 27-06-2025
```

→ Generated Key using ssh-keygen

```
root@ip-172-31-3-204:/project ~ + - X

create mode 100644 webapp/src/main/webapp/index.jsp
[root@devserver project-milestone-2]# cd
[root@devserver ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key's randomart image is:
+---[RSA 3072]----+
| o . . =o= |
| * + +..Oo+|
| . B Oo E*o+|
| . & o=+..+|
| S B. . oo|
| . .o. . |
| . .. . |
| . . . . |
+---[SHA256]----+
[root@devserver ~]# cd .ssh/
[root@devserver .ssh]# cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAADAQABAAABgQCZV2uuq9vIYoe4yjYaH3ZXocBvV/JId000b8HyWbnk018NQxlmтуw1rggAx9hX602EmLapyEL4c5v0Llm/zqFKw3II7IvZg
vT1HK9B8xmtZ0mcx0qNq443s1xbjV0dvp2FabLD7Jbh+htsu7V046fDCzzDlp7jsTleRbtotsdBVHp1d3vOcevx21EjAmNwz15R+rJDvsLWhNpys8ARAa@0fxmZy0gi1Kz
xijj8+6YtEn/p3qlx/uuNORvU1AeSEPoawCh5+kbz2wvov8xxSB8BNR0+cmehe5HSx9NbGvS3dw/wt220mVhVlaNOD+PftmgTlqmKK7UtV/b7nDZBVNGkbBj9Jzkk0HLez8V
EoUXx3/YsmwmnsN/BowKPMQCe9xRmRelELBilw+e5DTqV130S0qroBzJKBUQerrtF01q0IbRFMbvAqNarwB1GM09XGIeQKPi6vdu8N/12YA1VJlqbR8B0WS99ByPMJeA+5mpN
FEBm27nZWVh2guXhc= root@devserver.example.com
[root@devserver .ssh]# cd
[root@devserver ~]# cd /project-milestone-2/
[root@devserver project-milestone-2]# git init

Search ENG IN 10:35 27-06-2025
```

→ Pasted my key in my github account

The screenshot shows a browser window with the AWS Management Console at the top, followed by a tab for 'Connect to instance | EC2 | us-east-1' and a tab for 'sanjayguruji/java-code-with-me'. The main content is the 'Add new SSH Key' page on GitHub. On the left, there's a sidebar with 'Public profile', 'Account', 'Appearance', 'Accessibility', 'Notifications', 'Access', 'Billing and licensing', 'Emails', 'Password and authentication', 'Sessions', 'SSH and GPG keys' (which is selected), 'Organizations', 'Enterprises', and 'Moderation'. Below the sidebar are sections for 'Code, planning, and automation' and 'Repositories'. The main area has a title 'Add new SSH Key' and a 'Title' input field containing 'devops'. Under 'Key type', it says 'Authentication Key'. The 'Key' section contains a large block of SSH public key text, starting with 'ssh-rsa' and ending with 'root@devserver.example.com'. At the bottom is a green 'Add SSH key' button.

→ Pushed the project files from my dev-server to my github repository

The screenshot shows a Windows terminal window titled 'root@ip-172-31-3-204:/project'. The terminal output shows the following steps:

```
[root@devserver ~]# cd .ssh/
[root@devserver .ssh]# cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQgQCZV2uuq9vIYoe4yjYaH3ZXocBvV/JId000b8HyWbnk018NQxImtuWlrggAx9hX602EmLapyEL4c5v0Llm/zqFKW3II7IvZg
vT1HK89B8rmT20Mcx0qnq443slxbjV0dvp2Fabld7Jbu+htsu7V046rfDCz2D1ip7jsT1eRbtotsdBVHp1d3vOcevx2iEjAmNwzi5R+xJDvsLNpYs8ARaA0fxmZ7y0gi1Kz
xij38+6YtEn/p3qlX/uuNRvU1AeSEPoawChs+kbz2wvov8xxS88NR0+cme5HSx9NbGbvS3dw/vt220mVhVlaNOD+PftmqTlgmkK7UtV/b7nDZBVGkbBj9JzK0HLez8V
yEoUxx3/YsmwmnsN/B0wKPMQCe9xRmRelELBilw+e5DtqV130S0qroBzJKBUQerrtF01q0IbRFMbvAqNarwB1GM09XGieQKPi6Vdu8N/12YA1VJlqbR8B0WS99ByPMjeA+5mpN
FEBm27nZwYhw2guXhc= root@devserver.example.com
[root@devserver .ssh]# cd /project-milestone-2/
[root@devserver project-milestone-2]# git init
Reinitialized existing Git repository in /project-milestone-2/.git/
[root@devserver project-milestone-2]# git commit -m "first commit"
On branch master
nothing to commit, working tree clean
[root@devserver project-milestone-2]# git branch -M main
[root@devserver project-milestone-2]# git remote add origin https://github.com/balabk260103/milestone-two.git
[root@devserver project-milestone-2]# git push -u origin main
Username for 'https://github.com': balabk260103
Password for 'https://balabk260103@github.com':
Enumerating objects: 31, done.
Counting objects: 100% (31/31), done.
Compressing objects: 100% (16/16), done.
Writing objects: 100% (31/31), 4.86 KiB | 996.00 KiB/s, done.
Total 31 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/balabk260103/milestone-two.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
[root@devserver project-milestone-2]# |
```

→ The project files are reflecting in my github repository.

JENKINS:

→ Created an EC2 instance for Jenkins called Jenkins-server

➔ Connected the EC2 instance in my terminal

```
PS C:\Users\10835239> cd ..\Downloads\  
PS C:\Users\10835239\Downloads> ssh -i "bala-key-pair-name.pem" ec2-user@ec2-98-82-4-70.compute-1.amazonaws.com  
The authenticity of host 'ec2-98-82-4-70.compute-1.amazonaws.com (98.82.4.70)' can't be established.  
ED25519 key fingerprint is SHA256:VARwUwb18CNmhISF1wSzDbDDzXt4f/zdKkj0SfvwkM.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added 'ec2-98-82-4-70.compute-1.amazonaws.com' (ED25519) to the list of known hosts.  
          #  
          ###_      Amazon Linux 2023  
          \####  
          \##]  
          \#/ ___ https://aws.amazon.com/linux/amazon-linux-2023  
          V~`-'>  
          /  
          /.../  
          / /  
          /m/  
[ec2-user@ip-172-31-84-127 ~]$ |
```

➔ For my EC2 instance kept the hostname as Jenkins-server

```
PS C:\Users\10835239> cd ..\Downloads\  
PS C:\Users\10835239\Downloads> ssh -i "bala-key-pair-name.pem" ec2-user@ec2-98-82-4-70.compute-1.amazonaws.com  
The authenticity of host 'ec2-98-82-4-70.compute-1.amazonaws.com (98.82.4.70)' can't be established.  
ED25519 key fingerprint is SHA256:VARwUwb18CNmhISF1wSzDbDDzXt4f/zdKkj0SfvwkM.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added 'ec2-98-82-4-70.compute-1.amazonaws.com' (ED25519) to the list of known hosts.  
          #  
          ###_      Amazon Linux 2023  
          \####  
          \##]  
          \#/ ___ https://aws.amazon.com/linux/amazon-linux-2023  
          V~`-'>  
          /  
          /.../  
          / /  
          /m/  
[ec2-user@ip-172-31-84-127 ~]$ sudo su -  
[root@ip-172-31-84-127 ~]# hostnamectl set-hostname jenkins.example.com  
[root@ip-172-31-84-127 ~]# bash  
[root@jenkins ~]# cat /etc/os-release  
NAME="Amazon Linux"  
VERSION="2023"  
ID="amzn"  
ID_LIKE="fedora"  
VERSION_ID="2023"  
PLATFORM_ID="platform:al2023"  
PRETTY_NAME="Amazon Linux 2023.7.20250623"
```

→ Started installing Jenkins in my Jenkins server

```
VENDOR_NAME="AWS"
VENDOR_URL="https://aws.amazon.com/"
SUPPORT_END="2029-06-30"
[root@jenkins ~]# sudo yum update -y
Amazon Linux 2023 Kernel Livepatch repository
No match for argument: -y
Error: No packages marked for upgrade.
[root@jenkins ~]# sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
--2025-06-27 05:11:35-- https://pkg.jenkins.io/redhat-stable/jenkins.repo
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.30.133, 2a04:4e42:79::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|146.75.30.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 85
Saving to: '/etc/yum.repos.d/jenkins.repo'

/etc/yum.repos.d/jenkins.repo    100%[=====]     85  --..KB/s   in 0s

2025-06-27 05:11:35 (1.90 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]

[root@jenkins ~]# sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
[root@jenkins ~]# sudo yum upgrade
Jenkins-stable
Dependencies resolved.
Nothing to do.
Complete!
[root@jenkins ~]# sudo yum install java-17-amazon-corretto -y
Last metadata expiration check: 0:00:08 ago on Fri Jun 27 05:12:26 2025.
Dependencies resolved.
=====
Package           Architecture      Version            Repository      Size
=====
Installing:
java-17-amazon-corretto        x86_64          1:17.0.15+6-1.amzn2023.1  amazonlinux   213 k

2025-06-27 05:11:35 (1.90 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]
```

→ Installed java in my Jenkins server

```
2025-06-27 05:11:35 (1.90 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]

[root@jenkins ~]# sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
[root@jenkins ~]# sudo yum upgrade
Jenkins-stable
Dependencies resolved.
Nothing to do.
Complete!
[root@jenkins ~]# sudo yum install java-17-amazon-corretto -y
Last metadata expiration check: 0:00:08 ago on Fri Jun 27 05:12:26 2025.
Dependencies resolved.
=====
Package           Architecture      Version            Repository      Size
=====
Installing:
java-17-amazon-corretto        x86_64          1:17.0.15+6-1.amzn2023.1  amazonlinux   213 k
Installing dependencies:
alsa-lib                  x86_64          1.2.7.2-1.amzn2023.0.2    amazonlinux   504 k
cairo                     x86_64          1.18.0-4.amzn2023.0.1     amazonlinux   718 k
dejavu-sans-fonts          noarch         2.37-16.amzn2023.0.2     amazonlinux   1.3 M
dejavu-sans-mono-fonts     noarch         2.37-16.amzn2023.0.2     amazonlinux   467 k
dejavu-serif-fonts         noarch         2.37-16.amzn2023.0.2     amazonlinux   1.0 M
fontconfig                 x86_64          2.13.94-2.amzn2023.0.2    amazonlinux   273 k
fonts-filesystem           noarch         1:2.0.5-12.amzn2023.0.2   amazonlinux   9.5 k
freetype                   x86_64          2.13.2-5.amzn2023.0.1     amazonlinux   423 k
giflib                     x86_64          5.2.1-9.amzn2023.0.1     amazonlinux   49 k
google-noto-fonts-common   noarch         20201206-2.amzn2023.0.2   amazonlinux   15 k
google-noto-sans-vf-fonts  noarch         20201206-2.amzn2023.0.2   amazonlinux   492 k
graphite2                  x86_64          1.3.14-7.amzn2023.0.2     amazonlinux   97 k
harfbuzz                   x86_64          7.0.0-2.amzn2023.0.2     amazonlinux   873 k
java-17-amazon-corretto-headless  x86_64          1:17.0.15+6-1.amzn2023.1  amazonlinux   91 M
javapackages-filesystem    noarch         6.0.0-7.amzn2023.0.6     amazonlinux   12 k

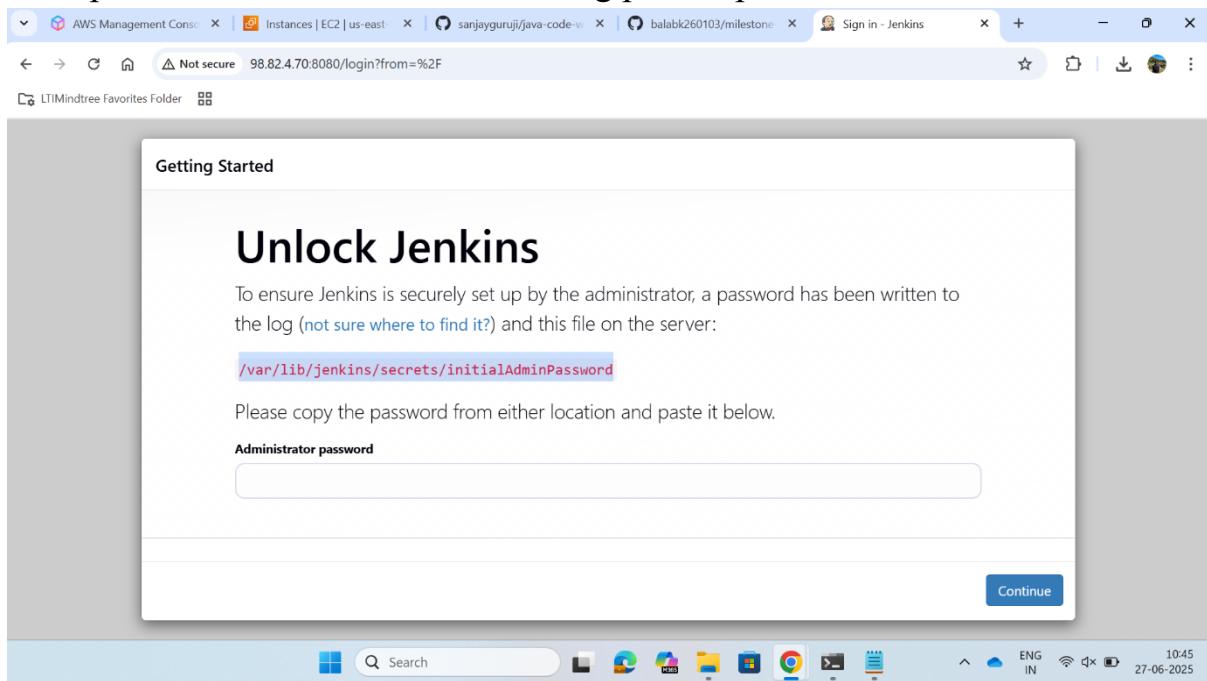
2025-06-27 05:11:35 (1.90 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]
```

→ Installed Jenkins in my Jenkins server

```
alsa-lib-1.2.7.2-1.amzn2023.0.2.x86_64
dejavu-sans-fonts-2.37-16.amzn2023.0.2.noarch
dejavu-serif-fonts-2.37-16.amzn2023.0.2.noarch
fonts-filesystem-1.2.0.5-12.amzn2023.0.2.noarch
giflib-5.2.1-9.amzn2023.0.1.x86_64
google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
harfbuzz-7.0.0-2.amzn2023.0.2.x86_64
java-17-amazon-corretto-headless-1:17.0.15+6-1.amzn2023.1.x86_64
langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
libSM-1.2.4-3.amzn2023.0.1.x86_64
libX11-common-1.8.10-2.amzn2023.0.1.noarch
libXext-1.3.6-1.amzn2023.0.1.x86_64
libXinerama-1.1.5-6.amzn2023.0.1.x86_64
libXrender-0.9.11-6.amzn2023.0.1.x86_64
libXtst-1.2.5-1.amzn2023.0.1.x86_64
libjpeg-turbo-2.1.4-2.amzn2023.0.5.x86_64
libxcb-1.17.0-1.amzn2023.0.1.x86_64
xml-common-0.6.3-56.amzn2023.0.2.noarch

Complete!
[root@jenkins ~]# sudo yum install jenkins -y
Last metadata expiration check: 0:00:30 ago on Fri Jun 27 05:12:26 2025.
Dependencies resolved.
=====
Transaction Summary
=====
Installing : jenkins                               2.504.3-1.1           jenkins               90 M
Transaction Summary
=====
Install 1 Package
```

→ Opened Jenkins in the browser using public ip



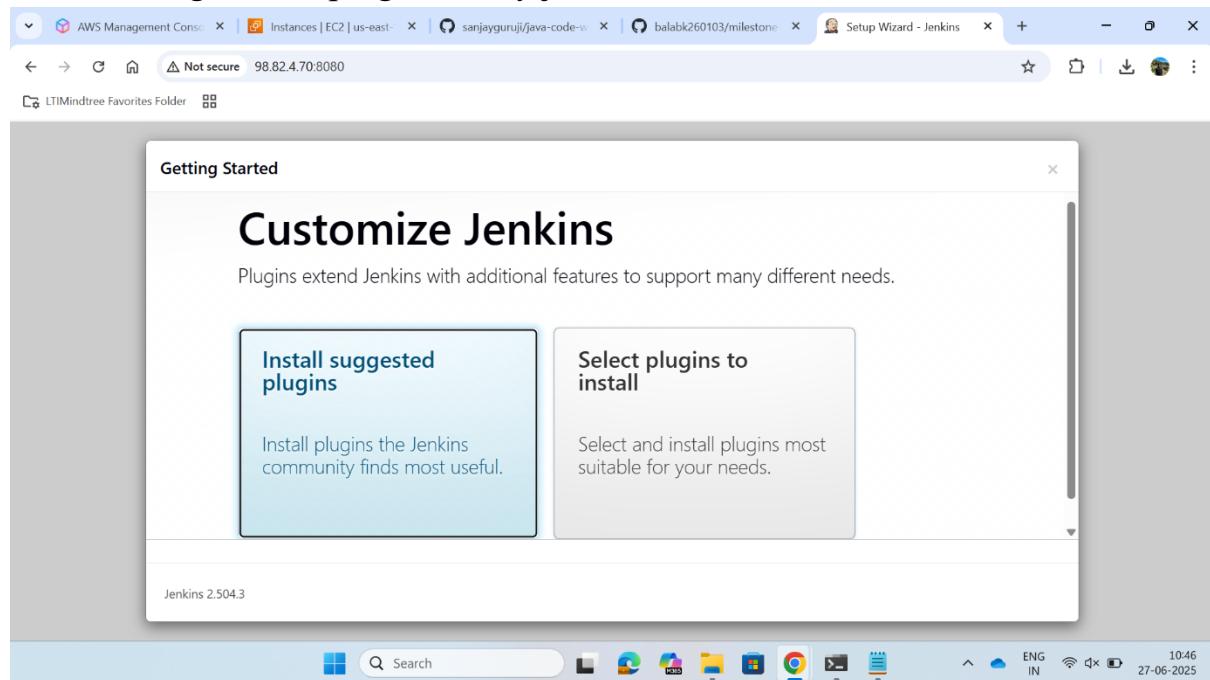
→ Copied the administrator password

```
Complete!
[root@jenkins ~]# sudo systemctl enable jenkins
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /usr/lib/systemd/system/jenkins.service.
[root@jenkins ~]# sudo systemctl start jenkins
[root@jenkins ~]# sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
    Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: disabled)
      Active: active (running) since Fri 2025-06-27 05:13:25 UTC; 2s ago
        Main PID: 26291 (java)
          Tasks: 47 (limit: 4656)
            Memory: 646.8M
              CPU: 17.854s
            CGroup: /system.slice/jenkins.service
                    └─26291 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --http

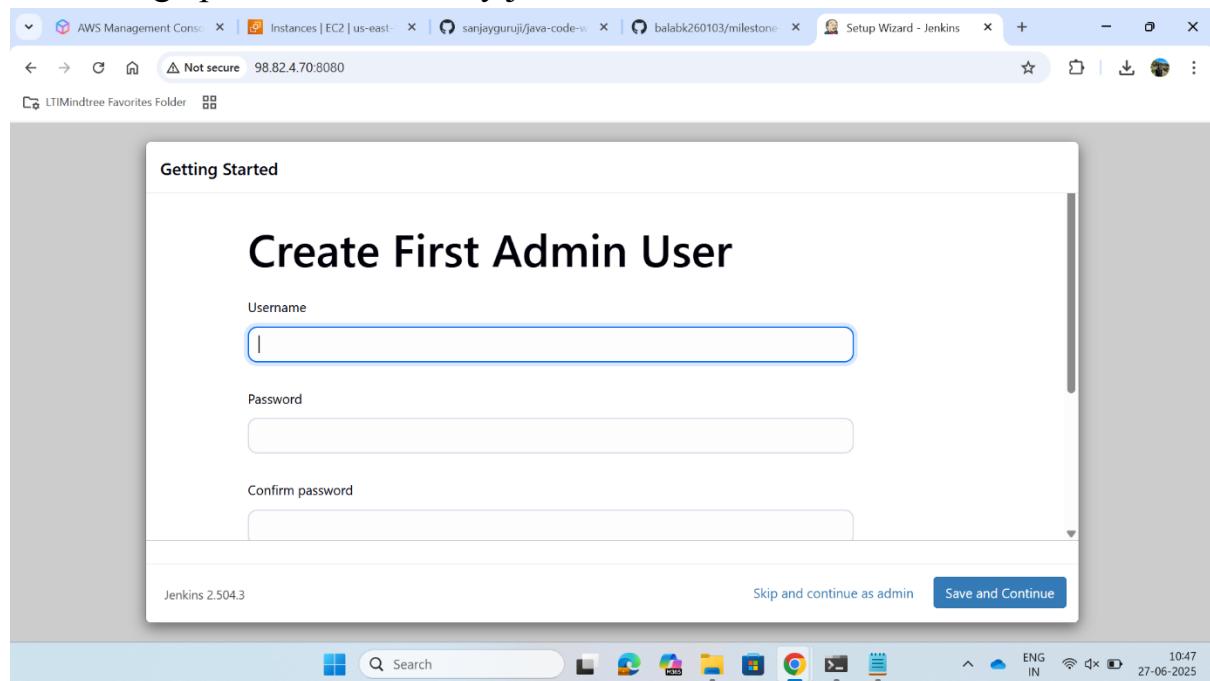
Jun 27 05:13:21 jenkins.example.com jenkins[26291]: 9d4f0557da954b0896f68173f737534e
Jun 27 05:13:21 jenkins.example.com jenkins[26291]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Jun 27 05:13:21 jenkins.example.com jenkins[26291]: ****
Jun 27 05:13:21 jenkins.example.com jenkins[26291]: ****
Jun 27 05:13:21 jenkins.example.com jenkins[26291]: ****
Jun 27 05:13:25 jenkins.example.com jenkins[26291]: 2025-06-27 05:13:25.246+0000 [id=30] INFO jenkins.InitReactorRunner>
Jun 27 05:13:25 jenkins.example.com jenkins[26291]: 2025-06-27 05:13:25.282+0000 [id=23] INFO hudson.lifecycle.Lifecyc>
Jun 27 05:13:25 jenkins.example.com systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
Jun 27 05:13:25 jenkins.example.com jenkins[26291]: 2025-06-27 05:13:25.500+0000 [id=49] INFO h.m.DownloadService$Down>
Jun 27 05:13:25 jenkins.example.com jenkins[26291]: 2025-06-27 05:13:25.501+0000 [id=49] INFO hudson.util.Retrier#star>
Jun 27 05:13:25 jenkins.example.com jenkins[26291]: 2025-06-27 05:13:25.501+0000 [id=49] INFO hudson.util.Retrier#star>

[root@jenkins ~]# /var/lib/jenkins/secrets/initialAdminPassword
bash: /var/lib/jenkins/secrets/initialAdminPassword: Permission denied
[root@jenkins ~]# cd /var/lib/jenkins/secrets/initialAdminPassword
bash: cd: /var/lib/jenkins/secrets/initialAdminPassword: Not a directory
[root@jenkins ~]# cat /var/lib/jenkins/secrets/initialAdminPassword
9d4f0557da954b0896f68173f737534e
[root@jenkins ~]# |
```

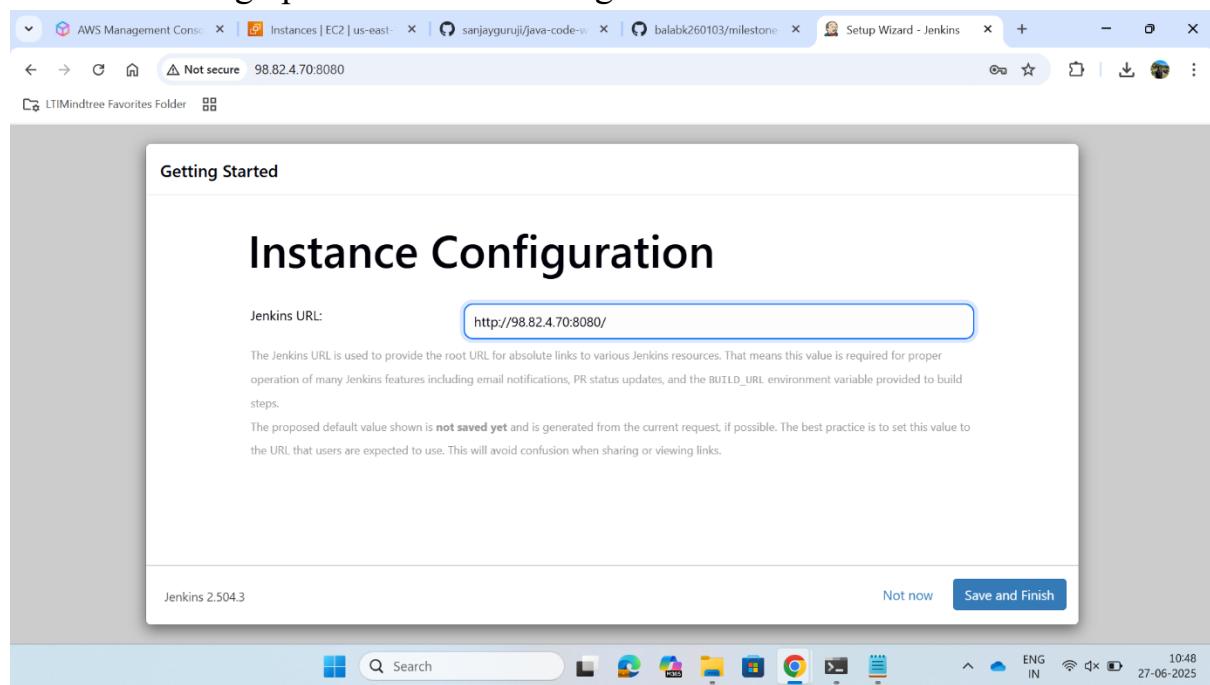
→ Installing default plugins in my jenkins



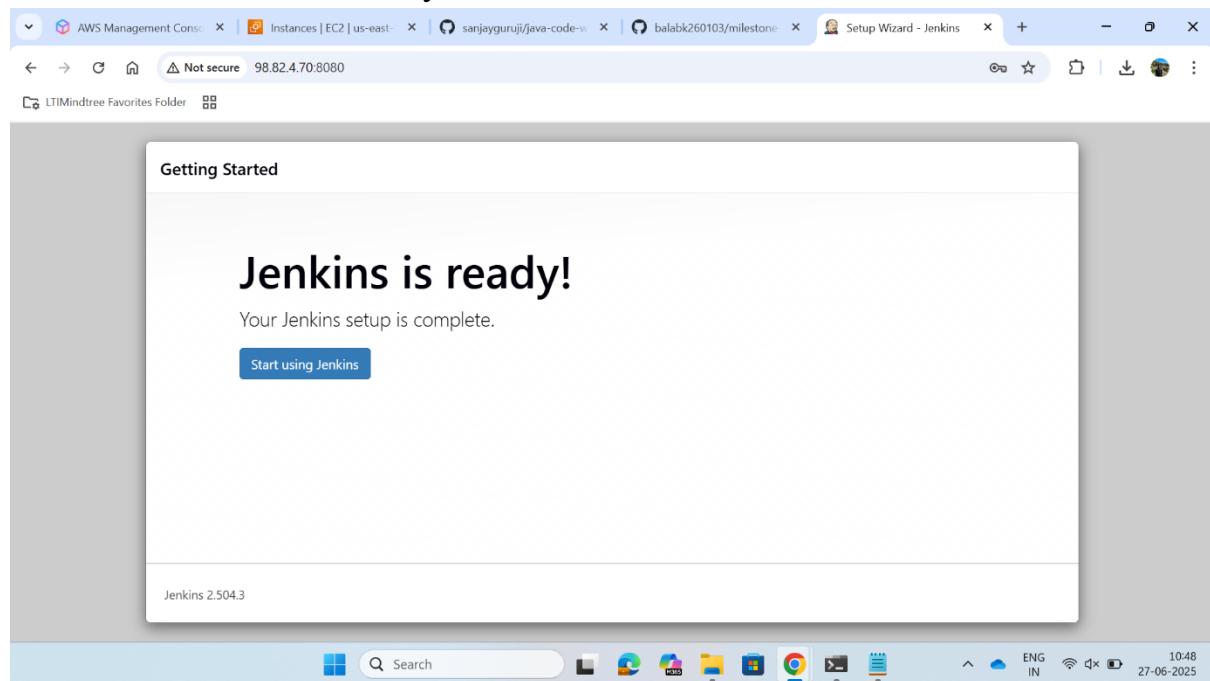
→ Setting up credentials for my jenkins



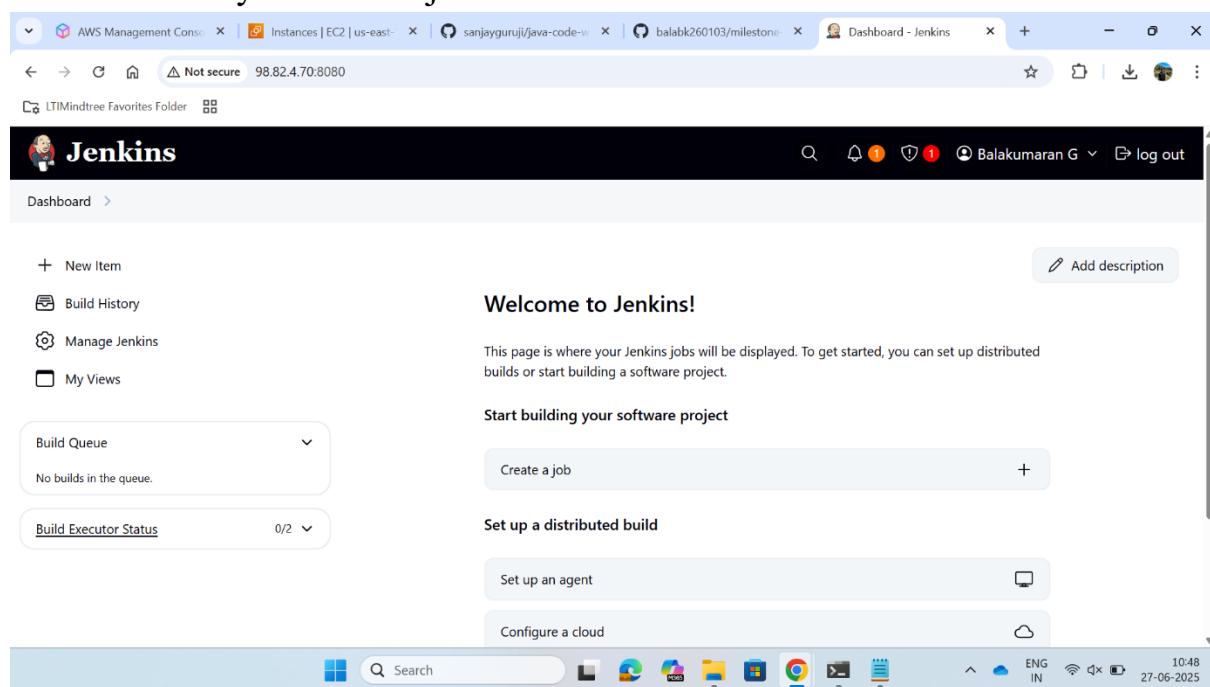
→ After setting up credentials we can get the Jenkins URL



→ Now the Jenkins is ready to use



→ Successfully started the jenkins



- Now we need to set up connection between Jenkins and github project using webhooks
- In the settings of our Jenkins in the security we can see API token

The screenshot shows the Jenkins Security page under the 'Security' tab. On the left sidebar, 'Security' is highlighted. The main area is titled 'API Token' with a sub-section 'Current token(s) ?'. A message states 'There are no registered tokens for this user.' Below this is a button 'Add new Token'. At the bottom of the page are 'Save' and 'Apply' buttons.

- Generated a API token

The screenshot shows the Jenkins Security page under the 'Security' tab. On the left sidebar, 'Security' is highlighted. The main area is titled 'API Token' with a sub-section 'Current token(s) ?'. A text input field contains 'test' and a generated token '11bb30c3eaf0c24cf7cbc894c456074fc'. Below the token is a warning message: '⚠ Copy this token now, because it cannot be recovered in the future.' At the bottom of the page are 'Save' and 'Apply' buttons.

→ Created a webhook in my project repository and pasted my API token

The screenshot shows the GitHub 'Webhooks' configuration page for a repository named 'balabk260103/milestone-two'. The 'Payload URL' field contains 'http://98.82.4.70:8080/github-webhook/'. The 'Content type' is set to 'application/json'. A 'Secret' is provided: '11bb30c3eaf0c24cf7cbc894c456074fc'. Under 'SSL verification', 'Enable SSL verification' is selected. In the 'Which events would you like to trigger this webhook?' section, 'Just the push event.' is selected. The left sidebar shows options like 'Access', 'Collaborators', 'Moderation options', 'Code and automation', 'Branches', 'Tags', 'Rules', 'Actions', 'Models', and 'Webhooks' (which is currently selected). The bottom right corner shows system status: ENG IN, 10:51, 27-06-2025.

→ Successfully created a webhook

The screenshot shows the GitHub 'Webhooks' configuration page for the same repository. A message at the top states: 'Okay, that hook was successfully created. We sent a ping payload to test it out! Read more about it at https://docs.github.com/webhooks/#ping-event.' Below this, the 'Webhooks' section lists the newly created webhook with the URL 'http://98.82.4.70:8080/github-webhook...' and the event type '(push)'. There are 'Edit' and 'Delete' buttons next to the entry. The left sidebar and system status at the bottom right are identical to the previous screenshot.

➔ Installed following plugins

The screenshot shows the Jenkins plugin manager interface. On the left, there's a sidebar with options: Updates, Available plugins (which is selected), Installed plugins, Advanced settings, and Download progress. The main area has a search bar at the top with the query "deploy". Below it, a table lists installed plugins. The columns are "Install", "Name", and "Released". Three plugins are listed with checkboxes checked:

| Install | Name | Released |
|-------------------------------------|--|------------------|
| <input checked="" type="checkbox"/> | Maven Integration 3.26 Build Tools | 2 mo 1 day ago |
| <input checked="" type="checkbox"/> | GitHub Integration 0.7.2 email-ext Build Triggers | 5 mo 13 days ago |
| <input checked="" type="checkbox"/> | Deploy to container 1.17 Artifact Uploaders | 1 mo 14 days ago |
| <input type="checkbox"/> | Docker Pipeline 621.va_73f881d923e | |

➔ After installing the plugins restarted the jenkins

The screenshot shows the Jenkins restart page. At the top, there's a header with tabs: AWS Management Console, Instances | EC2 | us-east..., sanjayguruji/java-code-w, Webhooks - Settings - ba, and Restarting Jenkins. Below the header, there's a message: "Jenkins is restarting". A note below says: "Your browser will reload automatically when Jenkins is ready." At the bottom, a green button labeled "Safe Restart" with the subtext "Builds on agents can usually continue." is visible.



➔ Installed maven in my Jenkins-server

```
[root@jenkins ~]# cat /var/lib/jenkins/secrets/initialAdminPassword
9d4f0557da954b0896f68173f737534e
[root@jenkins ~]# yum install maven
Last metadata expiration check: 0:13:50 ago on Fri Jun 27 05:12:26 2025.
Dependencies resolved.
=====
Package           Architecture   Version      Repository  Size
=====
Installing:
maven             noarch        1:3.8.4-3.amzn2023.0.5    amazonlinux 18 k
Installing dependencies:
apache-commons-cli          noarch        1.5.0-3.amzn2023.0.3    amazonlinux 76 k
apache-commons-codec         noarch        1.15-6.amzn2023.0.3    amazonlinux 303 k
apache-commons-io            noarch        1:2.8.0-7.amzn2023.0.5    amazonlinux 283 k
apache-commons-lang3         noarch        3.12.0-7.amzn2023.0.3    amazonlinux 559 k
atinject              noarch        1.0.5-3.amzn2023.0.3    amazonlinux 23 k
cdi-api                noarch        2.0.2-6.amzn2023.0.3    amazonlinux 54 k
google-guice            noarch        4.2.3-8.amzn2023.0.6    amazonlinux 473 k
guava                  noarch        31.0.1-3.amzn2023.0.6    amazonlinux 2.4 M
httpcomponents-client       noarch        4.5.13-4.amzn2023.0.4    amazonlinux 657 k
httpcomponents-core         noarch        4.4.13-6.amzn2023.0.3    amazonlinux 632 k
jakarta-annotations        noarch        1.3.5-13.amzn2023.0.3    amazonlinux 46 k
jansi                  x86_64       2.4.0-3.amzn2023.0.3    amazonlinux 113 k
java-17-amazon-corretto-devel x86_64       1:17.0.15+6-1.amzn2023.1    amazonlinux 142 k
jcl-over-slf4j            noarch        1.7.32-3.amzn2023.0.4    amazonlinux 25 k
jsoup                  noarch        1.16.1-4.amzn2023.0.2    amazonlinux 433 k
jsr-305                 noarch        3.0.2-5.amzn2023.0.4    amazonlinux 32 k
maven-amazon-corretto17    noarch        1:3.8.4-3.amzn2023.0.5    amazonlinux 9.4 k
maven-lib                noarch        1:3.8.4-3.amzn2023.0.5    amazonlinux 1.5 M
maven-resolver            noarch        1:1.7.3-3.amzn2023.0.4    amazonlinux 557 k
maven-shared-utils         noarch        3.3.4-4.amzn2023.0.3    amazonlinux 152 k
maven-wagon               noarch        3.4.2-6.amzn2023.0.4    amazonlinux 113 k
plexus-cipher             noarch        1.8-3.amzn2023.0.3    amazonlinux 27 k
```

→ Installed git in my Jenkins-server

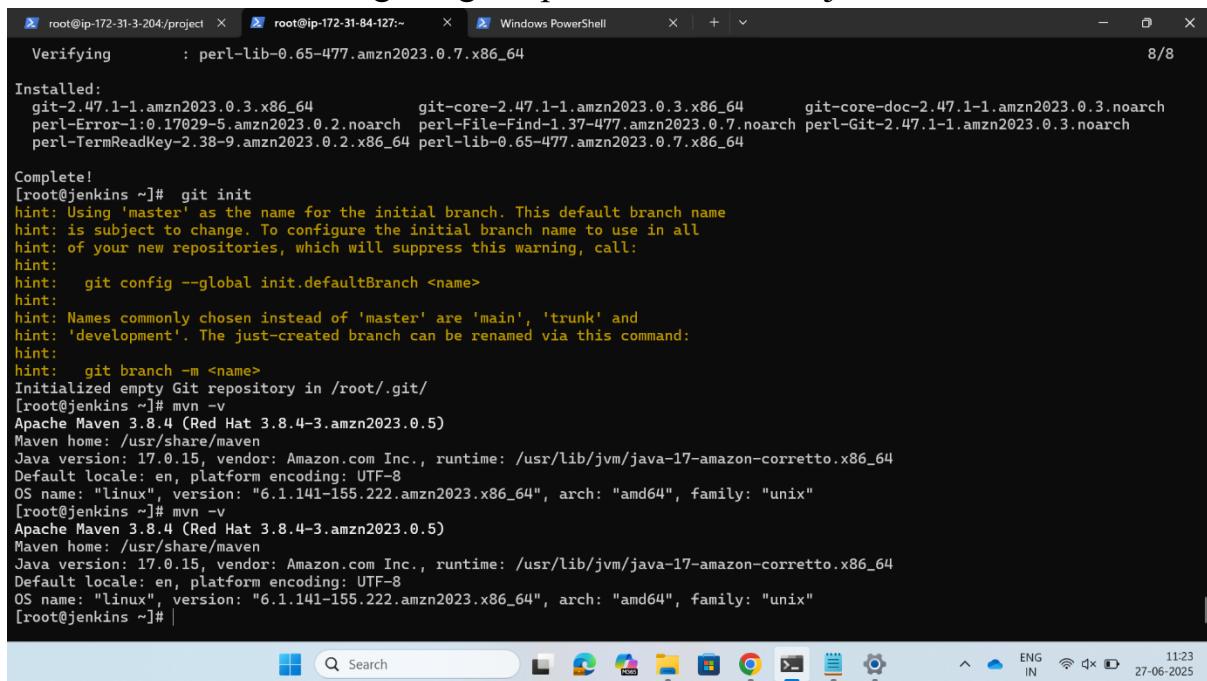
```
root@ip-172-31-3-204:/project x root@ip-172-31-84-127:- x Windows PowerShell x + - 
plexus-cipher=1.8-3.amzn2023.0.3.noarch plexus-classworlds=2.6.0-10.amzn2023.0.4.noarch
plexus-containers-component-annotations=2.1.0-9.amzn2023.0.4.noarch plexus-interpolation=1.26-10.amzn2023.0.4.noarch
plexus-sec-dispatcher=2.0-3.amzn2023.0.3.noarch plexus-utils=3.3.0-9.amzn2023.0.4.noarch
publicsuffixfix-list=20240212-61.amzn2023.noarch sisu=1:0.3.4-9.amzn2023.0.4.noarch
slf4j=1.7.32-3.amzn2023.0.4.noarch

Complete!
[root@jenkins ~]# yum install git -
Last metadata expiration check: 0:14:04 ago on Fri Jun 27 05:12:26 2025.
Dependencies resolved.
=====
Package           Architecture   Version      Repository    Size
=====
Installing:
git              x86_64        2.47.1-1.amzn2023.0.3  amazonlinux  52 k
Installing dependencies:
git-core          x86_64        2.47.1-1.amzn2023.0.3  amazonlinux  4.5 M
git-core-doc      noarch        2.47.1-1.amzn2023.0.3  amazonlinux  2.8 M
perl-Error        noarch        1:0.17029-5.amzn2023.0.2  amazonlinux  41 k
perl-File-Find    noarch        1.37-477.amzn2023.0.7   amazonlinux  25 k
perl-Git          noarch        2.47.1-1.amzn2023.0.3   amazonlinux  40 k
perl-TermReadKey x86_64        2.38-9.amzn2023.0.2     amazonlinux  36 k
perl-lib          x86_64        0.65-477.amzn2023.0.7   amazonlinux  15 k

Transaction Summary
=====
Install 8 Packages

Total download size: 7.5 M
Installed size: 37 M
Downloading Packages:
(1/8): git-2.47.1-1.amzn2023.0.3.x86_64.rpm          1.7 MB/s | 52 kB    00:00
(2/8): perl-Error-0.17029-5.amzn2023.0.2.noarch.rpm  1.7 MB/s | 41 kB    00:00
27-06-2025 11:22
```

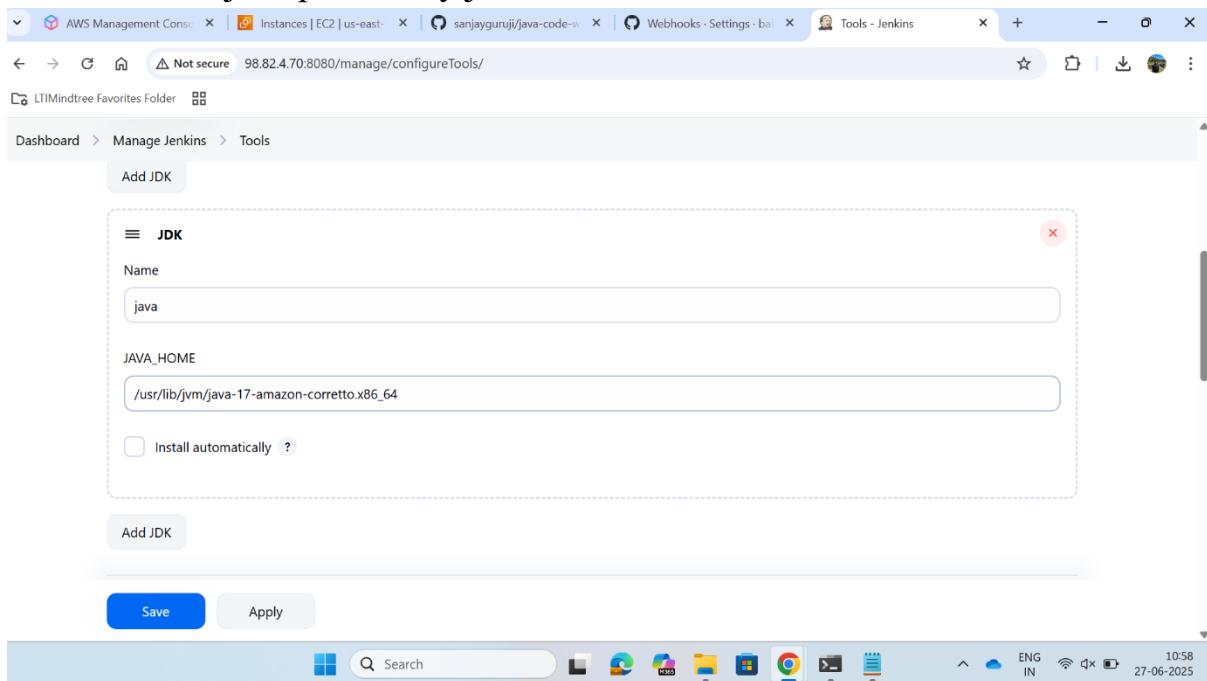
→ After all installation getting the path of maven and java



```
Verifying      : perl-lib-0.65-477.amzn2023.0.7.x86_64          8/8
Installed:
git-2.47.1-1.amzn2023.0.3.x86_64      git-core-2.47.1-1.amzn2023.0.3.x86_64      git-core-doc-2.47.1-1.amzn2023.0.3.noarch
perl-Error-1:0.17029-5.amzn2023.0.2.noarch perl-File-Find-1.37-477.amzn2023.0.7.noarch perl-Git-2.47.1-1.amzn2023.0.3.noarch
perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64 perl-lib-0.65-477.amzn2023.0.7.x86_64

Complete!
[root@jenkins ~]# git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /root/.git/
[root@jenkins ~]# mvn -v
Apache Maven 3.8.4 (Red Hat 3.8.4-3.amzn2023.0.5)
Maven home: /usr/share/maven
Java version: 17.0.15, vendor: Amazon.com Inc., runtime: /usr/lib/jvm/java-17-amazon-corretto.x86_64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.1.141-155.222.amzn2023.x86_64", arch: "amd64", family: "unix"
[root@jenkins ~]# mvn -v
Apache Maven 3.8.4 (Red Hat 3.8.4-3.amzn2023.0.5)
Maven home: /usr/share/maven
Java version: 17.0.15, vendor: Amazon.com Inc., runtime: /usr/lib/jvm/java-17-amazon-corretto.x86_64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.1.141-155.222.amzn2023.x86_64", arch: "amd64", family: "unix"
[root@jenkins ~]#
```

→ Added the java path in my jenkins



The screenshot shows the Jenkins 'Tools' configuration page. The URL is `98.82.4.70:8080/manage/configureTools/`. The page is titled 'Manage Jenkins > Tools'. A sub-section titled 'Add JDK' is open, showing a form to add a Java Development Kit. The 'Name' field contains 'java' and the 'JAVA_HOME' field contains '/usr/lib/jvm/java-17-amazon-corretto.x86_64'. There is also an unchecked checkbox for 'Install automatically'. At the bottom of the form are 'Save' and 'Apply' buttons.

→ Added the maven path in my jenkins

The screenshot shows the Jenkins 'Manage Jenkins' interface with the 'Tools' configuration page selected. A new Maven tool is being added with the name 'maven' and MAVEN_HOME set to '/usr/share/maven'. The 'Install automatically' checkbox is unchecked. Below the form are 'Save' and 'Apply' buttons. The status bar at the bottom right shows the date and time as 27-06-2025.

→ Created a new maven project and named it as java project

The screenshot shows the Jenkins 'New Item' dialog. An item named 'java project' is being created. The 'Maven project' option is selected, described as 'Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.' Below the selection are 'OK' and 'Cancel' buttons. The status bar at the bottom right shows the date and time as 27-06-2025.

→ Added my github repository

The screenshot shows the Jenkins configuration interface for a Java project. The left sidebar lists configuration tabs: General, Source Code Management (selected), Triggers, Environment, Pre Steps, Build, Post Steps, Build Settings, and Post-build Actions. The main panel is titled 'Configure' and contains a section for managing code repositories. It shows a 'Repository URL' field with the value `https://github.com/balabk260103/milestone-two.git`. Below it is a 'Credentials' dropdown set to '- none -'. There is also a '+ Add' button and an 'Advanced' dropdown. At the bottom are 'Save' and 'Apply' buttons.

The screenshot shows the Jenkins configuration interface for a Java project. The left sidebar lists configuration tabs: General, Source Code Management (selected), Triggers (selected), Environment, Pre Steps, Build, Post Steps, Build Settings, and Post-build Actions. The main panel is titled 'Configure' and contains a section for 'Triggers'. It shows a 'Branch Specifier (blank for 'any')' field with the value `*/main`. Below it is an 'Add Branch' button. There is also a 'Repository browser' dropdown set to '(Auto)' and an 'Additional Behaviours' dropdown. At the bottom are 'Save' and 'Apply' buttons.

→ Build was successful

The screenshot shows a Jenkins console output page. The left sidebar has a 'Console Output' tab selected. The main area displays the build logs:

```
Started by user Balakumaran G
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/java project
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/balabk260103/milestone-two.git
> git init /var/lib/jenkins/workspace/java project # timeout=10
Fetching upstream changes from https://github.com/balabk260103/milestone-two.git
> git --version # timeout=10
> git --version # 'git version 2.47.1'
> git fetch --tags --force --progress -- https://github.com/balabk260103/milestone-two.git
+refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/balabk260103/milestone-two.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
```

The status bar at the bottom right shows the date as 27-06-2025.

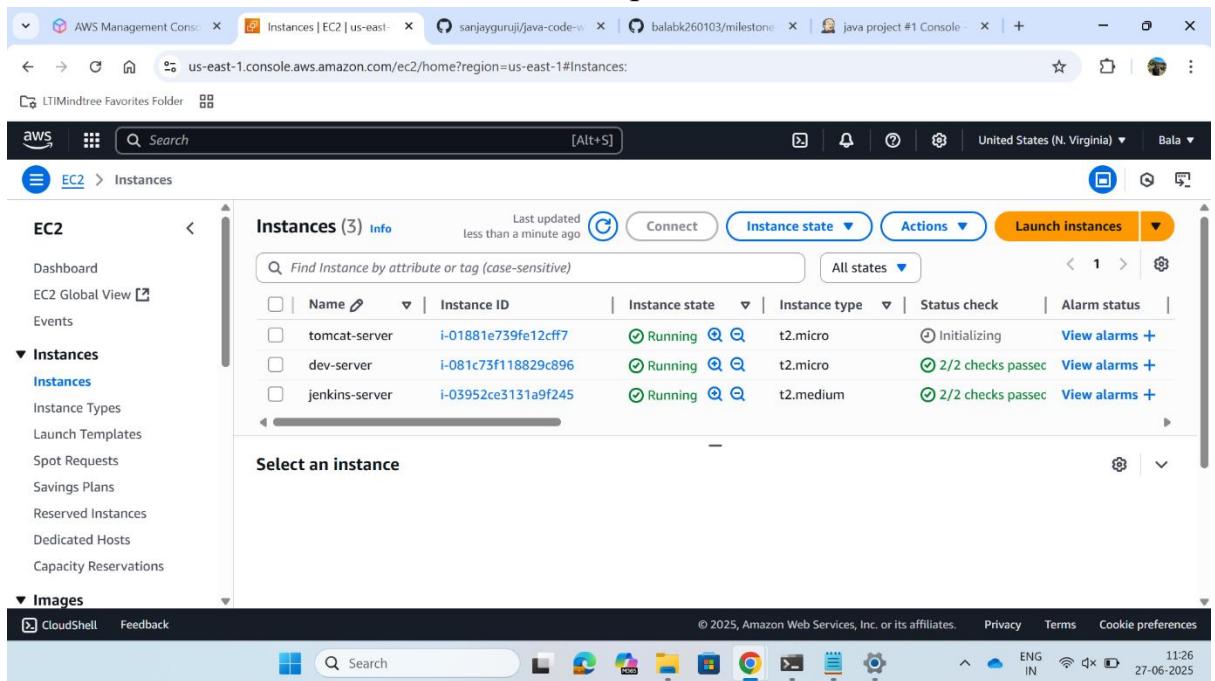
The screenshot shows a Jenkins console output page. The left sidebar has a 'Console Output' tab selected. The main area displays the build logs, which include detailed Maven archiving steps:

```
[INFO] Total time: 11.855 s
[INFO] Finished at: 2025-06-27T05:31:06Z
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving /var/lib/jenkins/workspace/java project/webapp/pom.xml to com.example.maven-project/webapp/1.0-SNAPSHOT/webapp-1.0-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/java project/webapp/target/webapp.war to com.example.maven-project/webapp/1.0-SNAPSHOT/webapp-1.0-SNAPSHOT.war
[JENKINS] Archiving /var/lib/jenkins/workspace/java project/server/pom.xml to com.example.maven-project/server/1.0-SNAPSHOT/server-1.0-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/java project/server/target/server.jar to com.example.maven-project/server/1.0-SNAPSHOT/server-1.0-SNAPSHOT.jar
[JENKINS] Archiving /var/lib/jenkins/workspace/java project/pom.xml to com.example.maven-project/maven-project/1.0-SNAPSHOT/maven-project-1.0-SNAPSHOT.pom
channel stopped
Finished: SUCCESS
```

The status bar at the bottom right shows the date as 27-06-2025.

TOMCAT:

→ Created an EC2 instance for Tomcat apache



→ Connected the EC2 instance in my terminal

```
root@ip-172-31-3-204:/project  x  root@ip-172-31-84-127:~  x  ec2-user@ip-172-31-5-112:~  x  +  ~

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\10835239> cd .\Downloads\
PS C:\Users\10835239\Downloads> ssh -i "bala-key-key-pair-name.pem" ec2-user@ec2-44-193-78-133.compute-1.amazonaws.com
The authenticity of host 'ec2-44-193-78-133.compute-1.amazonaws.com (44.193.78.133)' can't be established.
ED25519 key fingerprint is SHA256:gVEJcvPwXDNoop5gDdjNFs3NoTOiJDNwFeP3SmmCgyE.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-44-193-78-133.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

          _#
         /###\      Amazon Linux 2023
        /####\_
       /##| |
      /#/  ____ https://aws.amazon.com/linux/amazon-linux-2023
     /`>
    /`/
   /`/
  /`/
 [ec2-user@ip-172-31-5-112 ~]$ |
```

- Changed the hostname of my EC2 instance as tomcat server and installed java in it

→ Installed Tomcat and unzipped it

```
xmvn-core-4.0.0-8.amzn2023.0.3.noarch
xmvn-tools-4.0.0-8.amzn2023.0.3.noarch
xprop-1.2.7-1.amzn2023.x86_64

Complete!
[root@tomcatserver ~]# yum install wget
Last metadata expiration check: 0:05:11 ago on Fri Jun 27 05:58:15 2025.
Package wget-1.21.3-1.amzn2023.0.4.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@tomcatserver ~]# wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.106/bin/apache-tomcat-9.0.106.tar.gz
--2025-06-27 06:04:21-- https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.106/bin/apache-tomcat-9.0.106.tar.gz
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: 13007554 (12M) [application/x-zip]
Saving to: 'apache-tomcat-9.0.106.tar.gz'

apache-tomcat-9.0.106.tar.gz      100%[=====] 12.40M  --.-KB/s   in 0.09s

2025-06-27 06:04:21 (142 MB/s) - 'apache-tomcat-9.0.106.tar.gz' saved [13007554/13007554]

[root@tomcatserver ~]# ll
total 12704
-rw-r--r--. 1 root root 13007554 Jun  5 20:55 apache-tomcat-9.0.106.tar.gz
[root@tomcatserver ~]# tar -xvf apache-tomcat-9.0.106.tar.gz
apache-tomcat-9.0.106/conf/
apache-tomcat-9.0.106/conf/catalina.policy
apache-tomcat-9.0.106/conf/catalina.properties
apache-tomcat-9.0.106/conf/context.xml
apache-tomcat-9.0.106/conf/jaspic-providers.xml
apache-tomcat-9.0.106/conf/jaspic-providers.xsd
```

→ Changed the following files

```
root@ip-172-31-3-204:/project ~ x root@ip-172-31-84-127:~ x root@ip-172-31-5-112:~/apache-tomcat-9.0.106 bin/ version.sh
[root@tomcatserver ~]# cd apache-tomcat-9.0.106/
[root@tomcatserver apache-tomcat-9.0.106]# cd bin/
[root@tomcatserver bin]# chmod +x startup.sh
[root@tomcatserver bin]# chmod +x shutdown.sh
[root@tomcatserver bin]# cd ..
[root@tomcatserver apache-tomcat-9.0.106]# find -name context.xml
./conf/context.xml
./webapps/docs/META-INF/context.xml
./webapps/examples/META-INF/context.xml
./webapps/host-manager/META-INF/context.xml
./webapps/manager/META-INF/context.xml
[root@tomcatserver apache-tomcat-9.0.106]# vi ./webapps/examples/META-INF/context.xml
[root@tomcatserver apache-tomcat-9.0.106]# vi ./webapps/host-manager/META-INF/context.xml
[root@tomcatserver apache-tomcat-9.0.106]# vi ./webapps/manager/META-INF/context.xml
[root@tomcatserver apache-tomcat-9.0.106]# cd conf
[root@tomcatserver conf]# vi tomcat-users.xml
[root@tomcatserver conf]# vi ./webapps/examples/META-INF/context.xml

[1]+  Stopped                  vi ./webapps/examples/META-INF/context.xml
[root@tomcatserver conf]# vi ./webapps/examples/META-INF/context.xml
[root@tomcatserver conf]#
[root@tomcatserver conf]# cd ..
[root@tomcatserver ~]# cd apache-tomcat-9.0.106/
[root@tomcatserver apache-tomcat-9.0.106]# cd /bin
[root@tomcatserver bin]# vi ./webapps/examples/META-INF/context.xml

[2]+  Stopped                  vi ./webapps/examples/META-INF/context.xml
[root@tomcatserver bin]# cd ..
[root@tomcatserver ~]# cd apache-tomcat-9.0.106/
[root@tomcatserver apache-tomcat-9.0.106]# vi ./webapps/examples/META-INF/context.xml
[root@tomcatserver apache-tomcat-9.0.106]# vi ./webapps/host-manager/META-INF/context.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

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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|0:0:0:0:0:1" /> -->
    <Manager sessionAttributeValueClassNameFilter="java\\.lang\\.\\{Boolean|Integer|Long|Number|String}|org\\.apache\\.catalina\\.filters\\.C
sifPreventionFilter\\$LruCache\\{\\$1}|java\\.util\\.\\{Linked\\}HashMap"/>
</Context>
~
~
~
~
~
~
~
~
~>

./webapps/manager/META-INF/context.xml" 24L, 1356B
```

```

root@ip-172-31-3-204:/project1 ~ root@ip-172-31-84-127:~ root@ip-172-31-5-112:~/apach ~ + - x
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"/>
-->
<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"/>
</tomcat-users>
63,1 Bot

```

Search

ENG IN 12:50 27-06-2025

→ Started the Tomcat

```
[root@tomcatserver ~]# cd apache-tomcat-9.0.106/
[root@tomcatserver apache-tomcat-9.0.106]# cd bin/
[root@tomcatserver bin]# ./startup.sh
Using CATALINA_BASE: /root/apache-tomcat-9.0.106
Using CATALINA_HOME: /root/apache-tomcat-9.0.106
Using CATALINA_TMPDIR: /root/apache-tomcat-9.0.106/temp
Using JRE_HOME: /usr
Using CLASSPATH: /root/apache-tomcat-9.0.106/bin/bootstrap.jar:/root/apache-tomcat-9.0.106/bin/tomcat-juli.jar
Using CATALINA_OPTS:
Tomcat started.
```

→ Tomcat is online

If you're seeing this, you've successfully installed Tomcat. Congratulations!

 APACHE SOFTWARE FOUNDATION <http://www.apache.org/>

Developer Quick Start

- [Tomcat Setup](#)
- [First Web Application](#)
- [Realms & AAA](#)
- [JDBC DataSources](#)
- [Examples](#)
- [Servlet Specifications](#)
- [Tomcat Versions](#)

Managing Tomcat
For security, access to the [manager webapp](#) is restricted. Users are defined in: [\\$CATALINA_HOME/conf/tomcat-users.xml](#)
In Tomcat 9.0 access to the manager webapp is controlled by the [manager-gui](#) role.

Documentation

- [Tomcat 9.0 Documentation](#)
- [Tomcat 9.0 Configuration](#)
- [Tomcat Wiki](#)

Getting Help

FAQ and Mailing Lists
The following mailing lists are available:

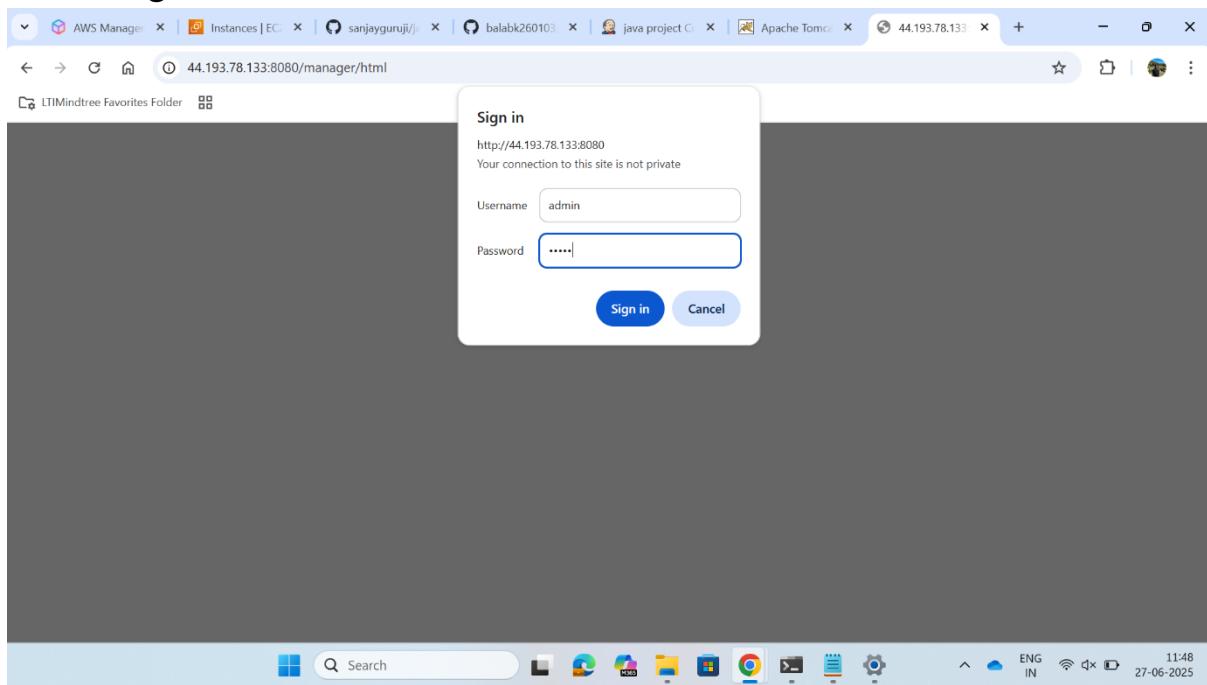
| |
|--|
| tomcat-announce |
| Important announcements, releases, security vulnerability notifications (low volume) |

Find additional important configuration

Search

ENG IN 11:48 27-06-2025

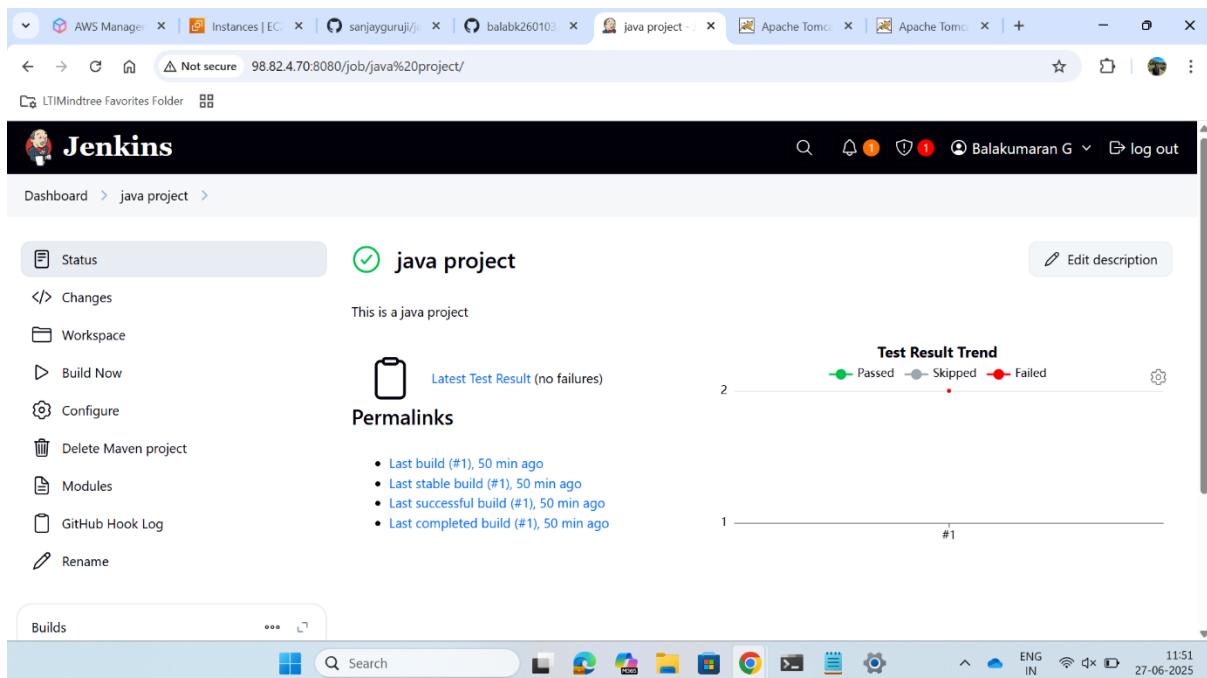
→ Giving the credentials



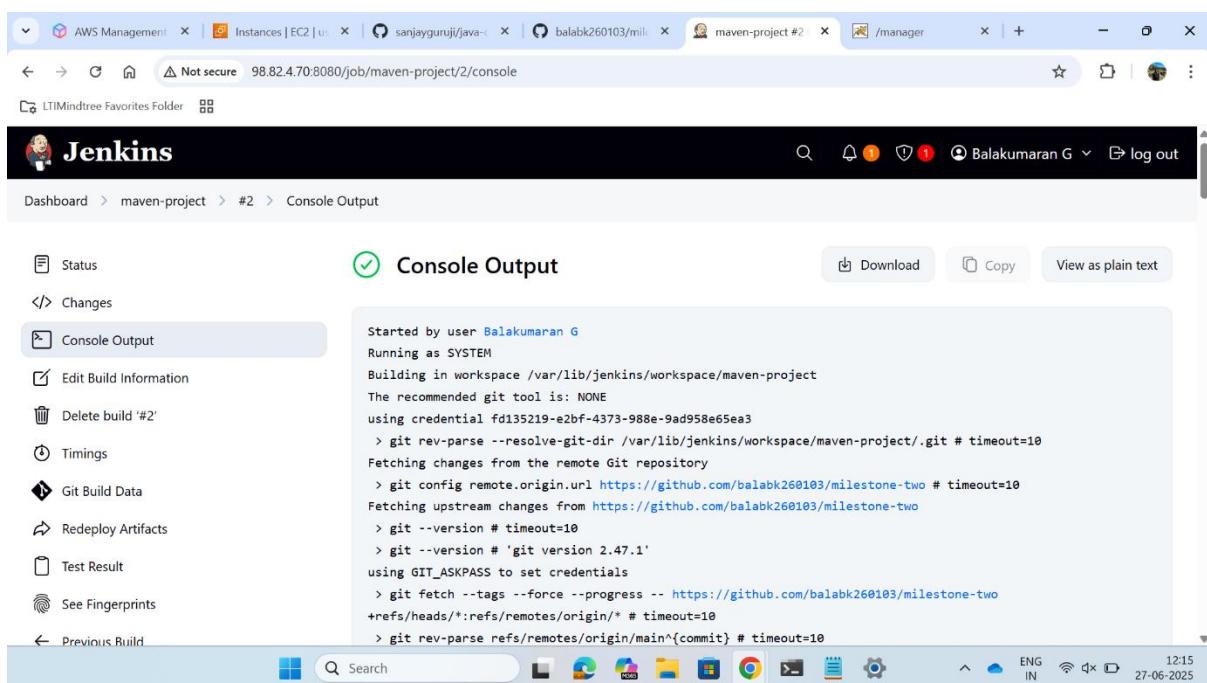
→ Added a post build action deploy a war/ear to a container and configured it in jenkins

The screenshot shows the Jenkins configuration interface for a 'java project'. The left sidebar lists various configuration sections: General, Source Code Management, Triggers, Environment, Pre Steps, Build, Post Steps, Build Settings, and Post-build Actions. The 'Post-build Actions' section is currently selected and highlighted with a blue border. On the right, there is a 'Containers' section for 'Tomcat 9.x Remote'. It contains a 'Credentials' dropdown set to 'deployer/*****', a '+ Add' button, and a 'Tomcat URL' input field containing 'http://44.193.78.133:8080/'. Below these are 'Advanced' settings and 'Save' and 'Apply' buttons. The status bar at the bottom indicates the URL is 'Not secure' and shows the Jenkins instance ID '98.82.4.70:8080/job/java%20project/configure'.

→ Build is successful



The screenshot shows a Jenkins job named "java project". The status is green with a checkmark icon, indicating a successful build. The build number is #1. The build was last run 50 minutes ago. The workspace URL is [https://sanjayguruji.java/job/java%20project/](#). The test result trend shows one passed build. The console output link leads to the Jenkins log page.



The screenshot shows the Jenkins console output for a Maven project. The build number is #2. The build was started by user Balakumaran G and is running as SYSTEM. The workspace is /var/lib/jenkins/workspace/maven-project. The git tool used is NONE. The build command includes git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/maven-project/.git # timeout=10, git config remote.origin.url https://github.com/balabk260103/milestone-two # timeout=10, and git fetch --tags --force --progress -- https://github.com/balabk260103/milestone-two +refs/heads/*:refs/remotes/origin/* # timeout=10. The build log also shows fetching upstream changes from the remote Git repository and setting credentials using GIT_ASKPASS.

The screenshot shows a web browser window with multiple tabs open. The active tab displays Jenkins console output for a Maven project build. The log message indicates the successful archiving of a war file and its deployment to a Tomcat 9.x container.

```
[JENKINS] Archiving /var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war to com.example.maven-project/webapp/1.0-SNAPSHOT/webapp-1.0-SNAPSHOT.war
[JENKINS] Archiving /var/lib/jenkins/workspace/maven-project/server/pom.xml to com.example.maven-project/server/1.0-SNAPSHOT/server-1.0-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/maven-project/server/target/server.jar to com.example.maven-project/server/1.0-SNAPSHOT/server-1.0-SNAPSHOT.jar
[JENKINS] Archiving /var/lib/jenkins/workspace/maven-project/pom.xml to com.example.maven-project/maven-project/1.0-SNAPSHOT/maven-project-1.0-SNAPSHOT.pom
channel stopped
[DeployPublisher][INFO] Attempting to deploy 1 war file(s)
[DeployPublisher][INFO] Deploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war] to container Tomcat 9.x Remote with context /
    Redeploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
    Undeploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
    Deploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
Finished: SUCCESS
```

At the bottom of the browser window, the system tray shows the Jenkins icon and the version Jenkins 2.504.3.

→ We can the website is running

The screenshot shows a web browser displaying a user registration form. The form fields include:

- Enter Name: Enter Full Name
- Enter mobile: Enter mobile number
- Enter Email: Enter Email
- Password: Enter Password
- Repeat Password: Repeat Password

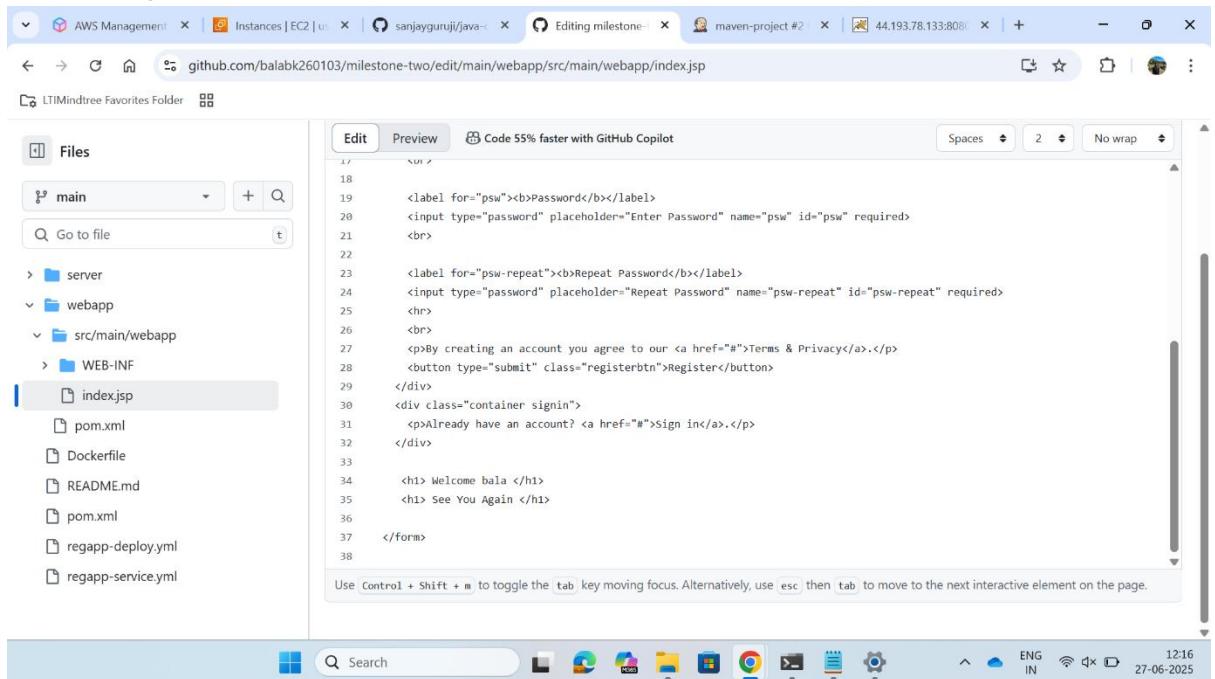
Below the form, a note states: "By creating an account you agree to our [Terms & Privacy](#)". A "Register" button is present, and a link "Already have an account? [Sign in](#)" is provided.

Thank You, Happy Learning

See You Again



→ Changed the source code

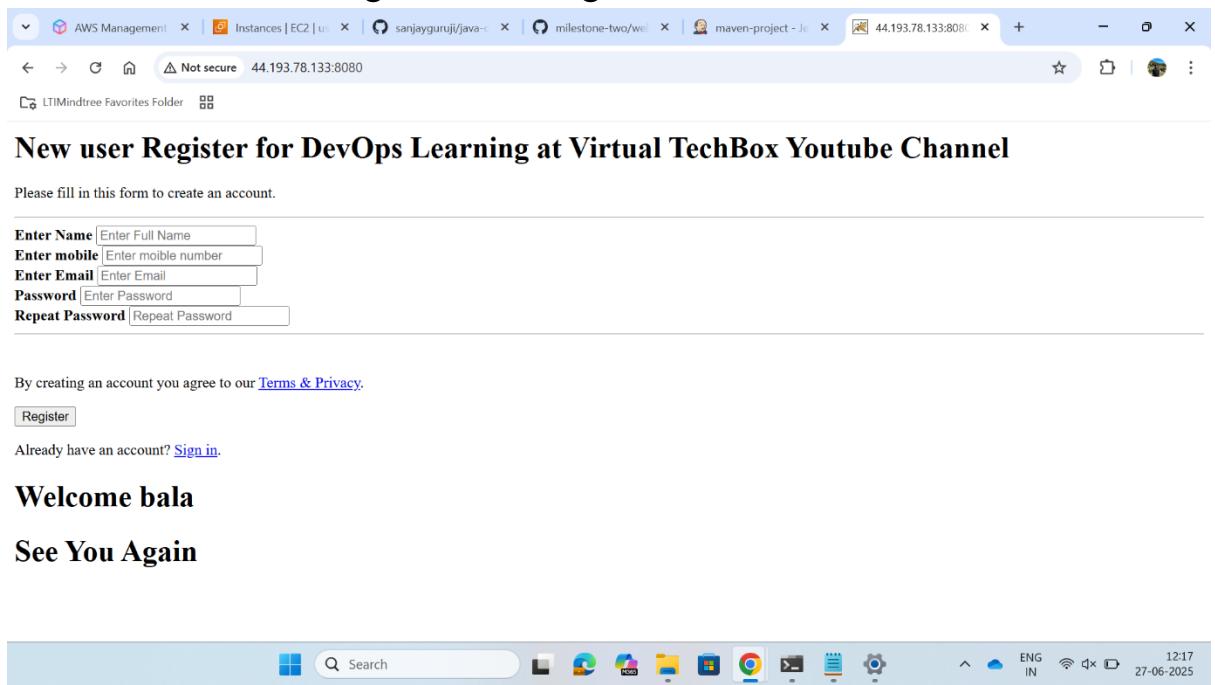


The screenshot shows a browser window with multiple tabs open. The active tab is 'index.jsp' from 'github.com/balabk260103/milestone-two/edit/main/webapp/src/main/webapp/index.jsp'. The page displays a code editor with the following content:

```
18 <label for="psw"><b>Password</b></label>
19 <input type="password" placeholder="Enter Password" name="psw" id="psw" required>
20 <br>
21 <label for="psw-repeat"><b>Repeat Password</b></label>
22 <input type="password" placeholder="Repeat Password" name="psw-repeat" id="psw-repeat" required>
23 <br>
24 <p>By creating an account you agree to our <a href="#">Terms & Privacy</a>.</p>
25 <button type="submit" class="registerbtn">Register</button>
26 </div>
27 <div class="container signin">
28 <p>Already have an account? <a href="#">Sign in</a>.</p>
29 </div>
30 <h1> Welcome bala </h1>
31 <h1> See You Again </h1>
32 </div>
33
34
35
36
37
38
```

A tooltip at the bottom of the editor says: 'Use Control + Shift + m to toggle the tab key moving focus. Alternatively, use esc then tab to move to the next interactive element on the page.'

→ We can see the changes is reflecting in our tomcat



The screenshot shows a browser window with the URL '44.193.78.133:8080'. The page title is 'New user Register for DevOps Learning at Virtual TechBox Youtube Channel'. The content includes a form for account creation with fields: Enter Name, Enter mobile, Enter Email, Password, and Repeat Password. Below the form is a note: 'By creating an account you agree to our [Terms & Privacy](#)'. A 'Register' button is present. A link 'Already have an account? [Sign in](#)' is also visible.

Welcome bala

See You Again

DOCKER:

→ I have created an EC2 instance for docker

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with 'EC2' selected, showing options like Dashboard, EC2 Global View, Events, Instances, and Images. The main area displays 'Instances (1/4) Info' with a search bar and filters. Three instances are listed: 'tomcat-server' (Instance ID: i-01881e759fe12c7f7, Status: Running, Type: t2.micro), 'dev-server' (Instance ID: i-081c75f118829c896, Status: Running, Type: t2.micro), and 'docker-server' (Instance ID: i-046506cbbba07efc6, Status: Running, Type: t2.micro). Below the table, a specific instance 'i-046506cbbba07efc6 (docker-server)' is selected, showing its details under tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags.

→ Connected the EC2 instance in my terminal

```
PS C:\Users\10835239\Downloads> ssh -i "bala-key-pair-name.pem" ec2-user@ec2-44-213-88-211.compute-1.amazonaws.com
Last login: Fri Jun 27 09:10:30 2025 from 103.244.155.144
[ec2-user@dockerserver ~]$ sudo su -
Last login: Fri Jun 27 09:10:34 UTC 2025 on pts/1
[root@dockerserver ~]# yum install docker* -y
Amazon Linux 2023 Kernel Livepatch repository
Dependencies resolved.
=====
Package           Architecture      Version       Repository      Size
=====
Installing:
docker            x86_64          25.0.8-1.amzn2023.0.4   amazonlinux    44 M
Installing dependencies:
container-selinux  noarch          3:2.233.0-1.amzn2023
containerd        x86_64          2.0.5-1.amzn2023.0.1   amazonlinux    25 M
iptables         x86_64          1.8.8-3.amzn2023.0.2   amazonlinux    401 k
iptables-nft     x86_64          1.8.8-3.amzn2023.0.2   amazonlinux    183 k
libcgroup        x86_64          3.0-1.amzn2023.0.1    amazonlinux    75 k
libnetfilter_conntrack x86_64          1.0.8-2.amzn2023.0.2  amazonlinux    58 k
libnftnl         x86_64          1.0.1-19.amzn2023.0.2  amazonlinux    30 k
libnftnl         x86_64          1.2.2-2.amzn2023.0.2   amazonlinux    84 k
pigz             x86_64          2.5-1.amzn2023.0.3    amazonlinux    83 k
runc             x86_64          1.2.4-2.amzn2023.0.1   amazonlinux    3.4 M
```

→ I have started and enabled docker

```
root@devserver:~| root@jenkins:~| root@tomcatserver:~| root@dockerserver:~| + - | X
Installed:
  container-selinux-3:2.233.0-1.amzn2023.noarch      containerd-2.0.5-1.amzn2023.0.1.x86_64    docker-25.0.8-1.amzn2023.0.4.x86_64
  iptables-libs-1.8.8-3.amzn2023.0.2.x86_64        iptables-nft-1.8.8-3.amzn2023.0.2.x86_64    libcgroup-3.0-1.amzn2023.0.1.x86_64
  libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64 libnfnetwork-1.0.1-19.amzn2023.0.2.x86_64   libnftnl-1.2.2-2.amzn2023.0.2.x86_64
  ping-2.5-1.amzn2023.0.3.x86_64                  runc-1.2.4-2.amzn2023.0.1.x86_64

Complete!
[root@dockerserver ~]# systemctl start docker
[root@dockerserver ~]# systemctl enable docker
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.

Client:
  Version: 25.0.8
  Context: default
  Debug Mode: false
  Plugins:
    buildx: Docker Buildx (Docker Inc.)
      Version: 0.12.1
      Path: /usr/libexec/docker/cli-plugins/docker-buildx

Server:
  Containers: 0
  Running: 0
  Paused: 0
  Stopped: 0
  Images: 0
  Server Version: 25.0.8
  Storage Driver: overlay2
  Backing Filesystem: xfs
  Supports d_type: true
  Using metacopy: false
  Native Overlay Diff: true

28-06-2025 00:17 ENG IN
```

→ Installed awscli and configured it

```
root@devserver:~| root@jenkins:~| root@tomcatserver:~| root@dockerserver:~| + - | X
Docker Root Dir: /var/lib/docker
Debug Mode: false
Experimental: false
Insecure Registries:
  127.0.0.0/8
Live Restore Enabled: false

[root@dockerserver ~]# yum install awscli -y
Last metadata expiration check: 0:01:30 ago on Fri Jun 27 11:25:19 2025.
Package awscli-2-2.25.0-1.amzn2023.0.1.noarch is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@dockerserver ~]# aws configure
AWS Access Key ID [None]: AKIAW3VLH6DPG2NIZDVG
AWS Secret Access Key [None]: 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
Default region name [None]: us-east-1
Default output format [None]: table
[root@dockerserver ~]# vim .ssh/authorized_keys
[root@dockerserver ~]# ip a s
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
  link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
      valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
      valid_lft forever preferred_lft forever
2: enX0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc fq_codel state UP group default qlen 1000
  link/ether 02:f0:cb:47:f6:15 brd ff:ff:ff:ff:ff:ff
    altname eni-0643902cd6e25c540
    altname device-number=0.0
    inet 172.31.0.127/20 metric 512 brd 172.31.15.255 scope global dynamic enX0
      valid_lft 3433sec preferred_lft 3433sec
    inet6 fe80::f0:cbff:fe47:f615/64 scope link proto kernel ll
28-06-2025 00:18 ENG IN
```

- ➔ Successfully connected Jenkins and docker we can see we can connect docker from jenkins

```
[root@jenkins ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:dMD0t1/GFYVV6MjppqXS70c05xPZn10N2kFcCzKaMivs root@jenkins.example.com
The key's randomart image is:
+---[RSA 3072]---+
| .. *oo. |
| o.o *
| +.=B .
| .=B . .
| . o$= . +
| . . = . oo. |
| . o +o oo |
| . .o*o o.o |
| .E .+=.o ..
+---[SHA256]---+
[root@jenkins ~]# vim .ssh/id_rsa.pub
[root@jenkins ~]# ssh root@172.31.0.127
The authenticity of host '172.31.0.127 (172.31.0.127)' can't be established.
ED25519 key fingerprint is SHA256:U2WgLPMnP8kGVXLGSv8foMhR7gL9tkHMlR4+eOm/Zkw.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.31.0.127' (ED25519) to the list of known hosts.

          #_
         _##_#
        _\###_# Amazon Linux 2023
       _\##_#
      _\##_#
     _\#/ ___ https://aws.amazon.com/linux/amazon-linux-2023
```

→ We can see that we can connect Jenkins from docker

```
[root@dockerserver ~]# ssh root@172.31.84.127
The authenticity of host '172.31.84.127 (172.31.84.127)' can't be established.
ED25519 key fingerprint is SHA256:VARwUuvBl8CNmhISF1wSzDbDDzXt4f/zdKjjOSfvwkM.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.31.84.127' (ED25519) to the list of known hosts.

      _#
     ~\####
    ~\###\Amazon Linux 2023
   ~\###|
   ~\###| https://aws.amazon.com/linux/amazon-linux-2023
   ~\###|_>
   ~\###|_/
   ~\###|_/
   ~\###|_/
Last login: Fri Jun 27 11:23:35 2025
[root@jenkins ~]# exit
logout
Connection to 172.31.84.127 closed.
[root@dockerserver ~]# passwd
Changing password for user root.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@dockerserver ~]# passwd root
Changing password for user root.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@dockerserver ~]# vim /etc/ssh/sshd_config
```

→ Install publish over ssh plugin in Jenkins and restart the Jenkins

The screenshot shows the Jenkins Plugins page. On the left, there's a sidebar with links: Updates, Available plugins, Installed plugins (which is selected), and Advanced settings. A search bar at the top right contains the text "publish over". The main area lists two plugins:

| Name | Enabled |
|---|---|
| Infrastructure plugin for Publish Over X 0.22 Send build artifacts somewhere. | <input checked="" type="checkbox"/> Uninstall |
| Publish Over SSH 387.vec3df0f668cd Send build artifacts over SSH Report an issue with this plugin | <input checked="" type="checkbox"/> Uninstall |

At the bottom right of the screen, the status bar shows "REST API Jenkins 2.504.3".

→ Also configured ssh server for jenkins

The screenshot shows the Jenkins System configuration page under the "System" section. It displays the "SSH Server" configuration form:

| Name | jenkins |
|------------------|---------------|
| Hostname | 172.31.84.127 |
| Username | root |
| Remote Directory | / |

At the bottom of the form are "Save" and "Apply" buttons. The status bar at the bottom right shows "ENG IN 00:27 28-06-2025".

→ Also configured ssh server for docker

The screenshot shows the Jenkins system configuration page. In the left sidebar, under 'Manage Jenkins > System', there is a section titled 'SSH Server'. It contains the following fields:

- Name: docker
- Hostname: 172.31.0.127
- Username: root
- Remote Directory: /

Below these fields is a checkbox labeled 'Avoid sending files that have not changed'. At the bottom of the form are two buttons: 'Save' and 'Apply'.

→ Added the ssh server in post build action for jenkins

The screenshot shows the Jenkins job configuration page for 'maven-project'. In the left sidebar, under 'maven-project > Configuration', there is a 'Configure' section with a sidebar of options: General, Source Code Management, Triggers, Environment, Pre Steps, Build, Post Steps, Build Settings, and Post-build Actions. The 'Post-build Actions' option is currently selected. On the right, there is a 'SSH Server' configuration panel with the following settings:

- Name: jenkins
- Advanced dropdown is open.
- Transfers section:
 - Transfer Set
 - Source files: /
 - Remove prefix: (empty)

At the bottom of the panel are 'Save' and 'Apply' buttons.

The screenshot shows the Jenkins configuration interface for a 'maven-project' job. The left sidebar lists various configuration sections: General, Source Code Management, Triggers, Environment, Pre Steps, Build, Post Steps, Build Settings, and Post-build Actions. 'Post-build Actions' is currently selected. In the main panel, under the heading 'Transfer Set', there are four input fields: 'Source files' (containing '/'), 'Remove prefix' (empty), 'Remote directory' (containing '/opt'), and 'Exec command' (containing 'rsync -avh /var/lib/jenkins/workspace/maven-project/* root@172.31.0.127:/opt'). Below these fields are 'Save' and 'Apply' buttons. The browser address bar shows the URL: 98.82.4.70:8080/job/maven-project/configure.

→ Added the ssh server in post build action for docker

This screenshot shows the same Jenkins configuration interface as the previous one, but with an additional 'SSH Server' section visible. The 'SSH Server' section includes a 'Name' field set to 'docker' and an 'Advanced' dropdown. Below it is a 'Transfers' section containing a 'Transfer Set' configuration, which is identical to the one shown in the first screenshot. The browser address bar again shows the URL: 98.82.4.70:8080/job/maven-project/configure.

The screenshot shows the Jenkins configuration interface for a Maven project. On the left, a sidebar lists various configuration sections: General, Source Code Management, Triggers, Environment, Pre Steps, Build, Post Steps, Build Settings, and Post-build Actions. The 'Post-build Actions' section is currently selected and expanded. It contains fields for 'Remote directory' and 'Exec command'. The 'Exec command' field contains the following Jenkinsfile code:

```
cd /opt
aws ecr get-login-password --region us-east-1 | docker login --username AWS --password-stdin
471731794142.dkr.ecr.us-east-1.amazonaws.com
docker build -t my-devops .
docker tag my-devops:latest 471731794142.dkr.ecr.us-east-1.amazonaws.com/my-devops:latest
docker push 471731794142.dkr.ecr.us-east-1.amazonaws.com/my-devops:latest
```

Below the command field, a note states: "All of the transfer fields (except for Exec timeout) support substitution of Jenkins environment variables". At the bottom of the configuration panel are 'Save' and 'Apply' buttons.

→ Build is successful

The screenshot shows the Jenkins console output for a successful build. The top navigation bar includes links for Status, Changes, Console Output (which is selected), Edit Build Information, Delete build '#7', Timings, Git Build Data, Redeploy Artifacts, Test Result, See Fingerprints, and Previous Build. The main content area is titled 'Console Output' and displays the build log. The log starts with:

```
Started by user Balakumaran G
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/maven-project
The recommended git tool is: NONE
using credential fd135219-e2bf-4373-988e-9ad958e65ea3
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/maven-project/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/balabk260103/milestone-two # timeout=10
Fetching upstream changes from https://github.com/balabk260103/milestone-two
> git --version # timeout=10
> git --version # 'git version 2.47.1'
using GIT_ASKPASS to set credentials
> git fetch --tags --force --progress -- https://github.com/balabk260103/milestone-two +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision 2ae9de2ec5d405c229fe1ca9912aac3029fe31 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f 2ae9de2ec5d405c229fe1ca9912aac3029fe31 # timeout=10
```

The bottom of the screen shows a Windows taskbar with various icons and system status information.

```

SNAPSHOT/maven-project-1.0-SNAPSHOT.pom
channel stopped
[DeployPublisher][INFO] Attempting to deploy 1 war file(s)
[DeployPublisher][INFO] Deploying /var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war to container Tomcat 9.x
Remote with context /
  Redeploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
  Undeploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
  Deploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
SSH: Connecting from host [jenkins.example.com]
SSH: Connecting with configuration [jenkins] ...
SSH: EXEC: completed after 1,001 ms
SSH: Disconnecting configuration [jenkins] ...
SSH: Transferred 0 file(s)
SSH: Connecting from host [jenkins.example.com]
SSH: Connecting with configuration [docker] ...
SSH: EXEC: completed after 45,230 ms
SSH: Disconnecting configuration [docker] ...
SSH: Transferred 0 file(s)
Finished: SUCCESS

```

REST API Jenkins 2.504.3

→ The image is created successfully

| Image tag | Artifact type | Pushed at | Size (MB) | Image URI | Digest | Last recorded pull time |
|-----------|---------------|-------------------------------------|-----------|--------------------------|-------------------|-------------------------|
| latest | Image | June 27, 2025, 21:54:37 (UTC+05:50) | 227.79 | Copy URI | sha256:49500d3... | - |

KUBERNETES:

→ Created an EC2 instance for kubernetes

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with options like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, and Images. The main area displays a table of instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, and Alarm status. There are 1/8 instances listed:

| Name | Instance ID | Instance state | Instance type | Status check | Alarm status |
|----------------|---------------------|----------------|---------------|-------------------|-------------------------------|
| k8s-eks-server | i-00866256edff6de2b | Running | t2.micro | 2/2 checks passed | View alarms + |
| tomcat-server | i-01881e739fe12cff7 | Running | t2.micro | 2/2 checks passed | View alarms + |
| dev-server | i-081c73f118829c896 | Running | t2.micro | 2/2 checks passed | View alarms + |
| docker-server | i-046506cbba07efc6 | Running | t2.micro | 2/2 checks passed | View alarms + |

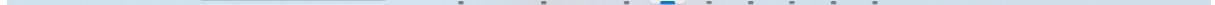
Below the table, a specific instance is selected: **i-00866256edff6de2b (k8s-eks-server)**. The Details tab is active, showing tabs for Status and alarms, Monitoring, Security, Networking, Storage, and Tags.

→ Connected the instance in terminal

```
PS C:\Users\10835239\Downloads> ssh -i "bala-key-pair-name.pem" ec2-user@ec2-44-201-9-124.compute-1.amazonaws.com
      _#
     /###_      Amazon Linux 2023
    /####\_
   /##| |
  /#/--- https://aws.amazon.com/linux/amazon-linux-2023
 /~\ V~'-->
  / \
 /_/\_/
/_m/|_|

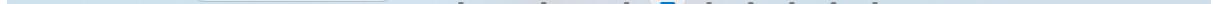
Last login: Mon Jun 30 06:20:59 2025 from 103.244.155.144
[ec2-user@k8s-eks ~]$ sudo su -
Last login: Mon Jun 30 06:21:04 UTC 2025 on pts/1
[root@k8s-eks ~]#
```

→ Generated key using ssh-keygen and connected Jenkins and kubernetes



```
Last login: Sat Jun 28 06:53:13 2025 from 103.244.155.144
[ec2-user@k8s-eks ~]$ sudo su -
Last login: Sat Jun 28 06:55:36 UTC 2025 from 172.31.84.127 on pts/2
[root@k8s-eks ~]# ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Passphrases do not match. Try again.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:gFxirHn+QStlh2Vm9NT2ByPyNhJigJ7rP4iS+1bRoc root@k8s-eks.example.com
The key's randomart image is:
+---[RSA 3072]---+
| o*oo oo. ...* |
| o.*.. .o*.oo.= |
| +.+ .+.o=.+o |
| o o+ o o +.. |
| . E.S. . ... |
| o . . . |
| . o o |
| ....+ |
| .ooo. |
+---[SHA256]---+
[root@k8s-eks ~]# cat /etc/os-release
NAME="Amazon Linux"
VERSION="2023"
ID="amzn"
ID_LIKE="fedora"
VERSION_ID="2023"
```

→ Installed awscli



```
+---[SHA256]---+
[root@k8s-eks ~]# cat /etc/os-release
NAME="Amazon Linux"
VERSION="2023"
ID="amzn"
ID_LIKE="fedora"
VERSION_ID="2023"
PLATFORM_ID="platform:al2023"
PRETTY_NAME="Amazon Linux 2023.7.20250623"
ANSI_COLOR="#3399FF"
CPE_NAME="cpe:2.3:o:amazon:amazon_linux:2023"
HOME_URL="https://aws.amazon.com/linux/amazon-linux-2023/"
DOCUMENTATION_URL="https://docs.aws.amazon.com/linux/"
SUPPORT_URL="https://aws.amazon.com/premiumsupport/"
BUG_REPORT_URL="https://github.com/amazonlinux/amazon-linux-2023"
VENDOR_NAME="AWS"
VENDOR_URL="https://aws.amazon.com/"
SUPPORT_END="2029-06-30"
[root@k8s-eks ~]# passwd root
Changing password for user root.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@k8s-eks ~]# vim /etc/ssh/sshd_config
[root@k8s-eks ~]# systemctl restart sshd
[root@k8s-eks ~]# systemctl enable sshd
[root@k8s-eks ~]# yum update -y
Amazon Linux 2023 Kernel Livepatch repository
Dependencies resolved.
Nothing to do.
Complete!
[root@k8s-eks ~]# curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
```

```

Dependencies resolved.
Nothing to do.
Complete!
[root@k8s-eks ~]# curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
  % Total    % Received % Xferd  Average Speed   Time   Time  Current
               Dload  Upload Total Spent   Left Speed
100 63.1M  100 63.1M    0     0  132M      0 --:--:-- --:--:-- --:--:-- 132M
[root@k8s-eks ~]# unzip awscliv2.zip
Archive: awscliv2.zip
  creating: aws/
  creating: aws/dist/
  inflating: aws/install
  inflating: aws/README.md
  inflating: aws/THIRD_PARTY_LICENSES
  creating: aws/dist/awscli/
  creating: aws/dist/docutils/
  creating: aws/dist/lib-dynload/
  inflating: aws/dist/aws
  inflating: aws/dist/aws_completer
  inflating: aws/dist/libpython3.13.so.1.0
  inflating: aws/dist/_awscrt.abi3.so
  inflating: aws/dist/_ruamel_yaml_cpython-313-x86_64-linux-gnu.so
  inflating: aws/dist/libz.so.1
  inflating: aws/dist/liblzma.so.5
  inflating: aws/dist/libbz2.so.1
  inflating: aws/dist/libffi.so.6
  inflating: aws/dist/libuuid.so.1
  inflating: aws/dist/libreadline.so.6
  inflating: aws/dist/libtinfo.so.5
  inflating: aws/dist/libsqlite3.so.0
  inflating: aws/dist/base_library.zip
  inflating: aws/dist/lib-dynload/_datetime.cpython-313-x86_64-linux-gnu.so
  inflating: aws/dist/lib-dynload/unicodedata.cpython-313-x86_64-linux-gnu.so

```

→ Configured aws

```

inflating: aws/dist/awscli/customizations/wizard/wizards/lambda/new-function.yml
inflating: aws/dist/awscli/customizations/wizard/wizards/events/new-rule.yml
inflating: aws/dist/awscli/customizations/sso/index.html
[root@k8s-eks ~]# sudo ./aws/install
You can now run: /usr/local/bin/aws --version
[root@k8s-eks ~]# aws --version
aws-cli/2.27.45 Python/3.13.4 Linux/6.1.141-155.222.amzn2023.x86_64 exe/x86_64.amzn.2023
[root@k8s-eks ~]# aws configure
AWS Access Key ID [None]: AKIAW3VLH6DPHNJKYLEJ
AWS Secret Access Key [None]: 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
Default region name [None]: us-east-1
Default output format [None]: table
[root@k8s-eks ~]# curl --silent --location "https://github.com/weaveworks/eksctl/releases/latest/download/eksctl_$(uname -s)_amd64.t
ar.gz" | tar xz -C /tmp
[root@k8s-eks ~]# sudo mv /tmp/eksctl /usr/local/bin
[root@k8s-eks ~]# eksctl version
0.210.0
[root@k8s-eks ~]# curl -LO https://storage.googleapis.com/kubernetes-release/release/$(curl -s https://storage.googleapis.com/kuberne
tes-release/release/stable.txt)/bin/Linux/amd64/kubectl
  % Total    % Received % Xferd  Average Speed   Time   Time  Current
               Dload  Upload Total Spent   Left Speed
100 53.7M  100 53.7M    0     0  114M      0 --:--:-- --:--:-- --:--:-- 114M
[root@k8s-eks ~]# sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl
[root@k8s-eks ~]# kubectl version --client
Client Version: v1.31.0
Kustomize Version: v5.4.2
[root@k8s-eks ~]# eksctl create cluster --name i-am-bala-cluster --region us-east-1 --version 1.32 --node-type t2.small --nodes 3 --
odes-min 2 --nodes-max 4 --ssh-access --ssh-public-key /root/.ssh/id_rsa.pub
2025-06-28 09:35:18 [i] eksctl version 0.210.0
2025-06-28 09:35:18 [i] using region us-east-1
2025-06-28 09:35:18 [i] setting availability zones to [us-east-1a us-east-1d]
2025-06-28 09:35:18 [i] subnets for us-east-1a - public:192.168.0.0/19 private:192.168.64.0/19
2025-06-28 09:35:18 [i] subnets for us-east-1d - public:192.168.32.0/19 private:192.168.96.0/19

```

→ Successfully created Kubernetes cluster

```
2025-06-28 09:43:20 [!] successfully created addon: metrics-server
2025-06-28 09:43:20 [!] recommended policies were found for "vpc-cni" addon, but since OIDC is disabled on the cluster, eksctl can't configure the requested permissions; the recommended way to provide IAM permissions for "vpc-cni" addon is via pod identity associations; after addon creation is completed, add all recommended policies to the config file, under 'addon.PodIdentityAssociations', and run 'eksctl update addon'
2025-06-28 09:43:20 [!] creating addon: vpc-cni
2025-06-28 09:43:21 [!] successfully created addon: vpc-cni
2025-06-28 09:43:21 [!] creating addon: kube-proxy
2025-06-28 09:43:21 [!] successfully created addon: kube-proxy
2025-06-28 09:43:21 [!] creating addon: coredns
2025-06-28 09:43:22 [!] successfully created addon: coredns
2025-06-28 09:45:22 [!] building managed nodegroup stack "eksctl-i-am-bala-cluster-nodegroup-ng-076c94fe"
2025-06-28 09:45:22 [!] deploying stack "eksctl-i-am-bala-cluster-nodegroup-ng-076c94fe"
2025-06-28 09:45:22 [!] waiting for CloudFormation stack "eksctl-i-am-bala-cluster-nodegroup-ng-076c94fe"
2025-06-28 09:45:52 [!] waiting for CloudFormation stack "eksctl-i-am-bala-cluster-nodegroup-ng-076c94fe"
2025-06-28 09:46:32 [!] waiting for CloudFormation stack "eksctl-i-am-bala-cluster-nodegroup-ng-076c94fe"
2025-06-28 09:48:00 [!] waiting for CloudFormation stack "eksctl-i-am-bala-cluster-nodegroup-ng-076c94fe"
2025-06-28 09:48:00 [!] waiting for the control plane to become ready
2025-06-28 09:48:01 [!] saved kubeconfig as "/root/.kube/config"
2025-06-28 09:48:01 [!] no tasks
2025-06-28 09:48:01 [!] all EKS cluster resources for "i-am-bala-cluster" have been created
2025-06-28 09:48:01 [!] nodegroup "ng-076c94fe" has 3 node(s)
2025-06-28 09:48:01 [!] node "ip-192-168-24-73.ec2.internal" is ready
2025-06-28 09:48:01 [!] node "ip-192-168-33-29.ec2.internal" is ready
2025-06-28 09:48:01 [!] node "ip-192-168-48-15.ec2.internal" is ready
2025-06-28 09:48:01 [!] waiting for at least 2 node(s) to become ready in "ng-076c94fe"
2025-06-28 09:48:01 [!] nodegroup "ng-076c94fe" has 3 node(s)
2025-06-28 09:48:01 [!] node "ip-192-168-24-73.ec2.internal" is ready
2025-06-28 09:48:01 [!] node "ip-192-168-33-29.ec2.internal" is ready
2025-06-28 09:48:01 [!] node "ip-192-168-48-15.ec2.internal" is ready
2025-06-28 09:48:01 [!] created 1 managed nodegroup(s) in cluster "i-am-bala-cluster"
2025-06-28 09:48:02 [!] kubectl command should work with "/root/.kube/config", try 'kubectl get nodes'
2025-06-28 09:48:02 [!] EKS cluster "i-am-bala-cluster" in "us-east-1" region is ready
```

The screenshot shows a terminal window with multiple tabs open, but the focus is on the last tab which displays the log output of the `eksctl` command. The log shows the successful creation of various Kubernetes addons and the managed nodegroup, culminating in the confirmation that the EKS cluster is ready.

→ It is created successfully

```
30 history
[root@k8s-eks ~]# kubectl get nodes
NAME           STATUS   ROLES    AGE    VERSION
ip-192-168-24-73.ec2.internal   Ready    <none>   26m   v1.32.3-eks-473151a
ip-192-168-33-29.ec2.internal   Ready    <none>   26m   v1.32.3-eks-473151a
ip-192-168-48-15.ec2.internal   Ready    <none>   26m   v1.32.3-eks-473151a
[root@k8s-eks ~]# cd .ssh/
[root@k8s-eks .ssh]# ssh-copy-id root@172.31.84.127
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
root@172.31.84.127's password:

Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'root@172.31.84.127'"
and check to make sure that only the key(s) you wanted were added.

[root@k8s-eks .ssh]# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enX0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc fq_codel state UP group default qlen 1000
    link/ether 02:8d:45:19:27:dd brd ff:ff:ff:ff:ff:ff
    altname eni-078bfbf702c3b89a6
    altname device-number-0.0
    inet 172.31.13.8/20 metric 512 brd 172.31.15.255 scope global dynamic enX0
        valid_lft 1887sec preferred_lft 1887sec
    inet6 fe80::8d:45ff:fe19:27dd/64 scope link proto kernel ll
        valid_lft forever preferred_lft forever
```

The screenshot shows a terminal window with multiple tabs open, but the focus is on the last tab which displays the command to copy an SSH key to a node. It also shows the output of the `ip` command to list network interfaces and their configurations.

→ Added a new ssh server in Jenkins

The screenshot shows the Jenkins system configuration page. A new SSH server named 'k8s-eks' is being added. The configuration includes:

- Name: k8s-eks
- Hostname: 172.31.13.8
- Username: root
- Remote Directory: /
- A checkbox for 'Avoid sending files that have not changed' is unchecked.

At the bottom, there are 'Save' and 'Apply' buttons.

The screenshot shows the Jenkins system configuration page. A proxy port is being added with the following configuration:

- Proxy port: 0
- Proxy user: (empty)
- Proxy password: Concealed (with a 'Change Password' button)

Below the form, a 'Success' message is displayed along with a 'Test Configuration' button. At the bottom, there are 'Add' and 'Advanced' buttons, as well as 'Save' and 'Apply' buttons.

→ Also configure it in post build action

The screenshot shows the Jenkins configuration interface for a project named "maven-project". The left sidebar lists various configuration sections: General, Source Code Management, Triggers, Environment, Pre Steps, Build, Post Steps, Build Settings, and Post-build Actions. The "Post-build Actions" section is currently selected. A main panel titled "SSH Server" is displayed, showing a configuration for an "eks-boot-strap" server. The "Transfer Set" section contains fields for "Source files" and "Remove prefix". At the bottom of the panel are "Save" and "Apply" buttons.

The screenshot shows the Jenkins configuration interface for a project named "maven-project". The left sidebar lists various configuration sections. The "Post-build Actions" section is selected. A main panel titled "Remote directory" is displayed, showing a configuration for a remote directory at "/opt". The "Exec command" field contains a series of Kubernetes commands: "cd /opt", "kubectl delete -f regapp-deploy.yaml", "kubectl apply -f regapp-deploy.yaml", and "kubectl apply -f regapp-service.yaml". Below the exec command, a note states: "All of the transfer fields (except for Exec timeout) support substitution of Jenkins environment variables". An "Advanced" dropdown is also present. At the bottom of the panel are "Save" and "Apply" buttons.

➔ Content which has to be written in the deployment.yml

```
root@devserver:~      x  root@jenkins:~      x  root@tomcatserver:~/a  x  root@dockerserver:~  x  root@k8s-eks:/opt  x  +  -  10:09
apiVersion: apps/v1
kind: Deployment
metadata:
  name: regapp-deployment
  labels:
    app: regapp

spec:
  replicas: 2
  selector:
    matchLabels:
      app: regapp

  template:
    metadata:
      labels:
        app: regapp
    spec:
      containers:
        - name: regapp
          image: 471731794142.dkr.ecr.us-east-1.amazonaws.com/my-devops:latest
          imagePullPolicy: Always
          ports:
            - containerPort: 8080
  strategy:
    type: RollingUpdate
    rollingUpdate:
      maxSurge: 1
      maxUnavailable: 1
  ~
  ~
  ~

"regapp-deploy.yml" 29L, 532B
21,76
All

```

➔ Content which has to be written in the service.yml

```
Last login: Sat Jun 28 12:39:31 2025 from 103.244.155.144
[ec2-user@k8s-eks ~]$ sudo su -
Last login: Sat Jun 28 12:39:36 UTC 2025 on pts/1
Last failed login: Sun Jun 29 20:12:51 UTC 2025 from 175.6.98.16 on ssh:noty
There were 105 failed login attempts since the last successful login.
[root@k8s-eks ~]# kubectl get svc
NAME          TYPE        CLUSTER-IP      EXTERNAL-IP
AGE           AGE
kubernetes    ClusterIP   10.100.0.1     <none>
42h
regapp-service LoadBalancer 10.100.140.223 a5aeaaf04206384cf78fb69844c9517e2-2141958420.us-east-1.elb.amazonaws.com 8080:31490
/TCP
41h
[root@k8s-eks ~]# vim regapp-deploy.yml
[root@k8s-eks ~]# vim regapp-deploy.yml
[root@k8s-eks ~]# cat regapp-deploy.yml
[root@k8s-eks ~]# cd /opt
[root@k8s-eks opt]# ll
total 8
drwxr-xr-x. 4 root root 33 Jun 20 06:56 aws
-rw-r--r--. 1 root root 532 Jun 28 10:28 regapp-deploy.yml
-rw-r--r--. 1 root root 196 Jun 28 10:28 regapp-service.yml
[root@k8s-eks opt]# vim regapp-deploy.yml
29L, 532B written
[root@k8s-eks opt]# vim regapp-service.yml
"regapp-service.yml" 15L, 196B written
[root@k8s-eks opt]# kubectl get svc
NAME          TYPE        CLUSTER-IP      EXTERNAL-IP
AGE           AGE
kubernetes    ClusterIP   10.100.0.1     <none>
42h
regapp-service LoadBalancer 10.100.140.223 a5aeaaf04206384cf78fb69844c9517e2-2141958420.us-east-1.elb.amazonaws.com 8080:31490
/TCP
42h
[root@k8s-eks opt]# |
```

→ Build is successful

The screenshot shows a Jenkins console output page for a build named 'maven-project' with build number '#15'. The title bar indicates the URL is 'Not secure 98.82.4.70:8080/job/maven-project/18/console'. The left sidebar has links for Status, Changes, Console Output (which is selected), Edit Build Information, Delete build #15, Polling Log, Timings, Git Build Data, Redeploy Artifacts, Test Result, See Fingerprints, and Previous Build. The main content area shows the build log:

```
Started by GitHub push by balabk260103
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/maven-project
The recommended git tool is: NONE
using credential fd135219-e2bf-4373-988e-9ad958e65ea3
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/maven-project/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/balabk260103/milestone-two # timeout=10
Fetching upstream changes from https://github.com/balabk260103/milestone-two
> git --version # timeout=10
> git --version # 'git version 2.47.1'
using GIT_ASKPASS to set credentials
> git fetch --tags --force --progress -- https://github.com/balabk260103/milestone-two +refs/heads/*\:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision 3be475a3c9a541e1dfaf7f59672dbc75d593 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
```

```

Redeploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
Undeploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
Deploying [/var/lib/jenkins/workspace/maven-project/webapp/target/webapp.war]
SSH: Connecting from host [jenkins.example.com]
SSH: Connecting with configuration [jenkins] ...
SSH: EXEC: completed after 828 ms
SSH: Disconnecting configuration [jenkins] ...
SSH: Transferred 0 file(s)
SSH: Connecting from host [jenkins.example.com]
SSH: Connecting with configuration [docker] ...
SSH: EXEC: completed after 2,602 ms
SSH: Disconnecting configuration [docker] ...
SSH: Transferred 0 file(s)
SSH: Connecting from host [jenkins.example.com]
SSH: Connecting with configuration [eks-boot-strap] ...
SSH: EXEC: completed after 3,202 ms
SSH: Disconnecting configuration [eks-boot-strap] ...
SSH: Transferred 0 file(s)
Finished: SUCCESS

```

REST API Jenkins 2.504.3

→ The page is working successfully

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Enter mobile Enter mobile number
Enter Email Enter Email
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By –

BALAKUMARAN G