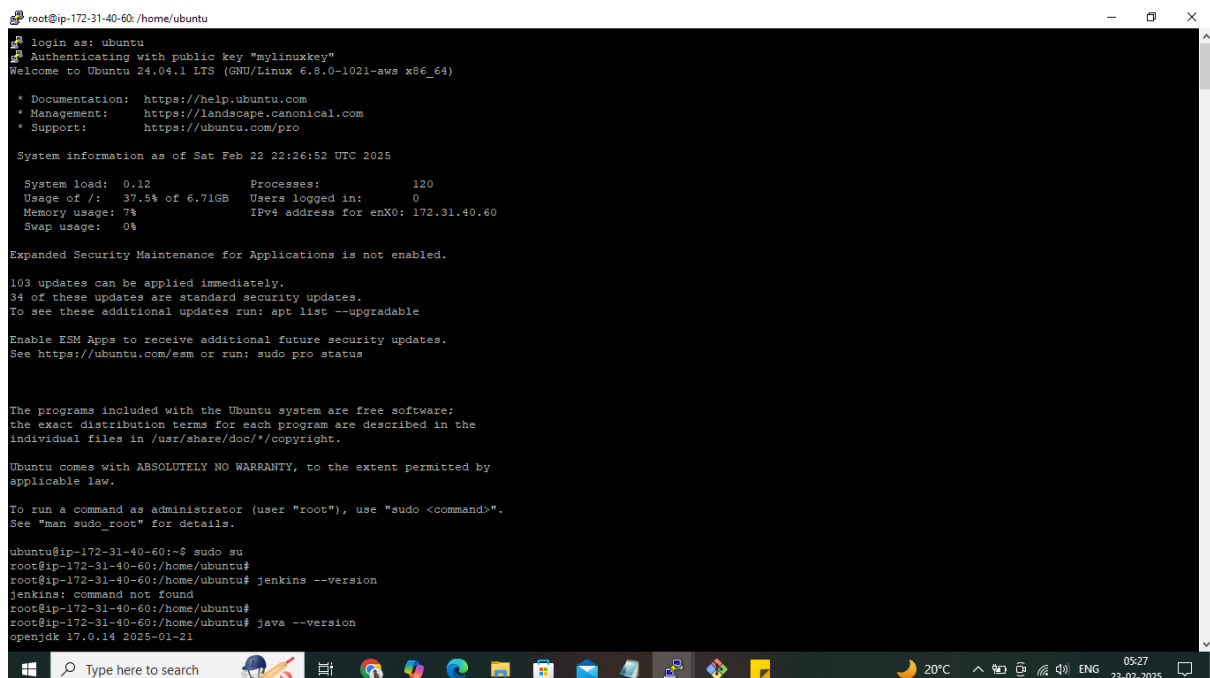
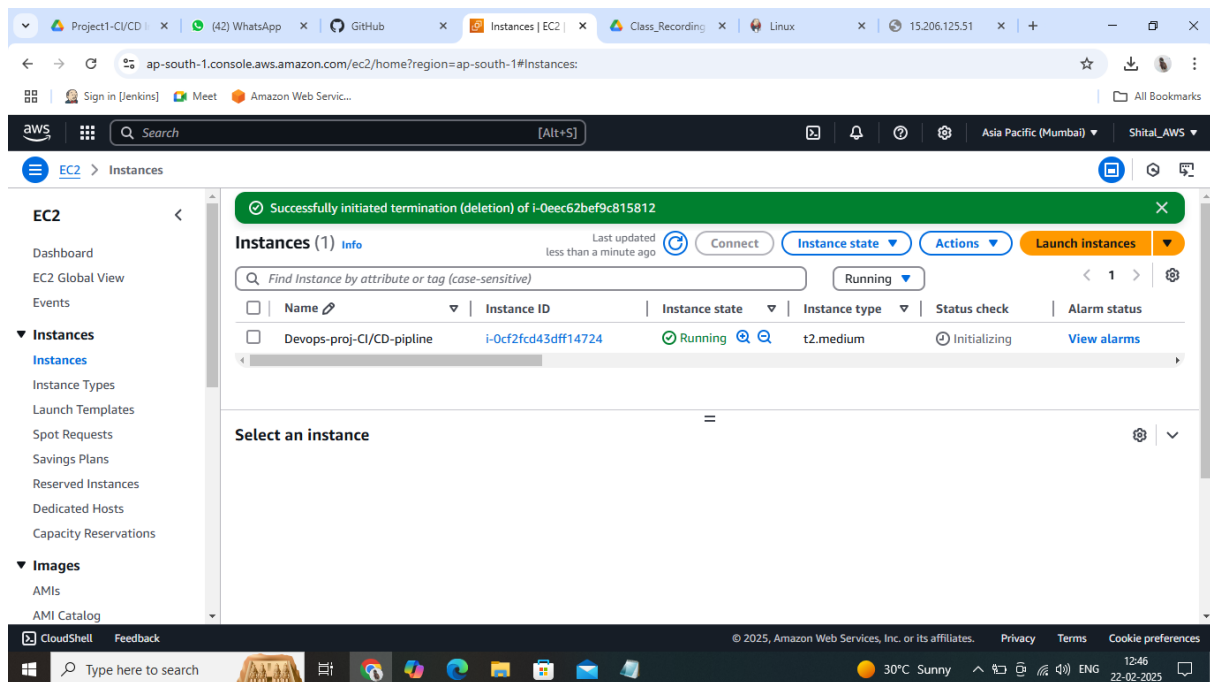
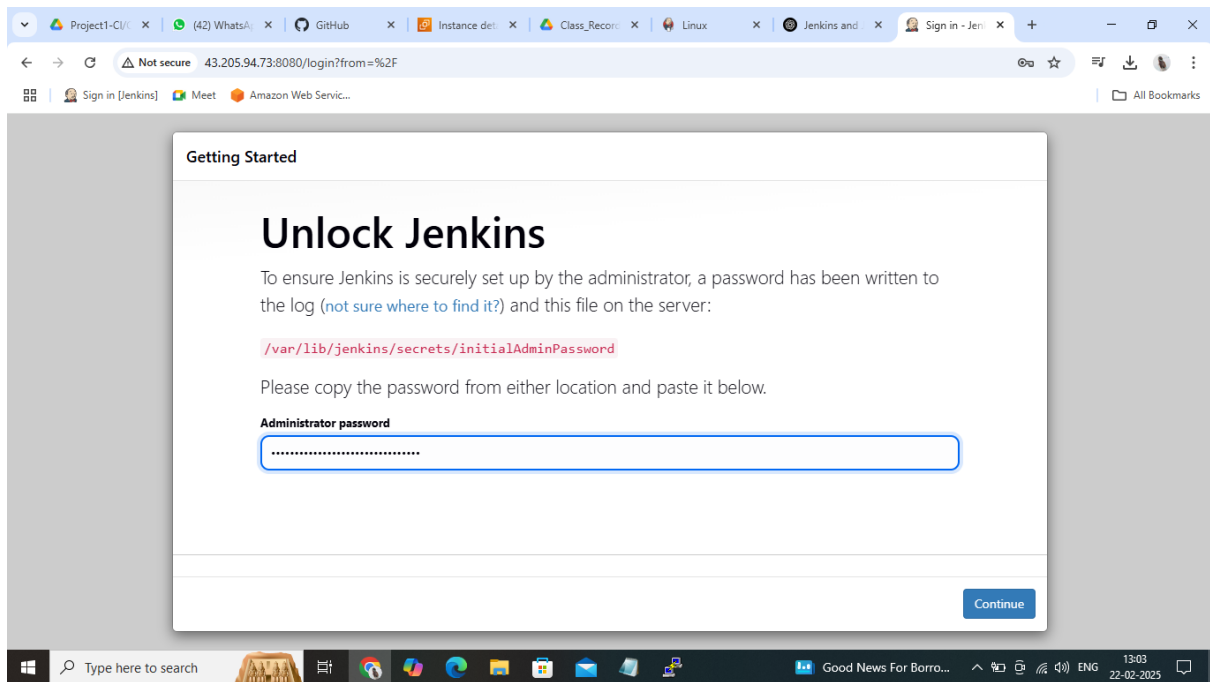


Project 2--- CI/CD-pipeline using GitHub, Docker, node js, Kubernetes Tools

Created ec2 instance and install Jenkins using cli





Uploaded project on GitHub

```
Git CMD
warning: in the working copy of 'nodejs-app-deploy.yml', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'package.json', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'server.js', LF will be replaced by CRLF the next time Git touches it
warning: in the working copy of 'service.yml', LF will be replaced by CRLF the next time Git touches it

C:\Users\Admin\Devopsproj-ci-cd-pipeline>git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   Dockerfile.txt
        new file:   Jenkinsfile.txt
        new file:   deployment.yml
        new file:   nodejs-app-deploy.yml
        new file:   package.json
        new file:   server.js
        new file:   service.yml

C:\Users\Admin\Devopsproj-ci-cd-pipeline>git branch
* main

C:\Users\Admin\Devopsproj-ci-cd-pipeline>git commit -m "Initial commit"
[main ef36003] Initial commit
 7 files changed, 156 insertions(+)
 create mode 100644 Dockerfile.txt
 create mode 100644 Jenkinsfile.txt
 create mode 100644 deployment.yml
 create mode 100644 nodejs-app-deploy.yml
 create mode 100644 package.json
 create mode 100644 server.js
 create mode 100644 service.yml

C:\Users\Admin\Devopsproj-ci-cd-pipeline>
C:\Users\Admin\Devopsproj-ci-cd-pipeline>git push
fatal: unable to access 'https://github.com/panchalsrp/Devopsproj-ci-cd-pipeline.git/': Could not resolve host: github.com

C:\Users\Admin\Devopsproj-ci-cd-pipeline>git push
Enumerating objects: 10, done.
Counting objects: 100% (10/10), done.
Delta compression using up to 4 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (9/9), 1.97 KiB | 224.00 KiB/s, done.
Total 9 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/panchalsrp/Devopsproj-ci-cd-pipeline.git
   1807909..ef36003  main -> main

C:\Users\Admin\Devopsproj-ci-cd-pipeline>
```

Done the configuration in Jenkins

The screenshot shows the Jenkins 'New credentials' form. The 'Kind' dropdown is set to 'Username with password'. The 'Scope' dropdown is set to 'Global (Jenkins, nodes, items, all child items, etc)'. The 'Username' field contains 'shitalpanchal'. The 'Treat username as secret' checkbox is unchecked. The 'Password' field is empty. A 'Create' button is at the bottom.

Kind: Username with password

Scope: Global (Jenkins, nodes, items, all child items, etc)

Username: shitalpanchal

☐ Treat username as secret

Password:

Create

Setup k8s clusters

The screenshot shows the AWS Management Console 'Instances' page. The left sidebar shows the navigation menu with 'Instances' selected. The main content area shows a table of 3 instances. The table has columns: Name, Instance ID, Instance state, Instance type, Status check, and Alarm status. The instances are k8smaster, k8sworker1, and Devops-ci/cd-pipeline-using-j... All are in a 'Running' state. Below the table is a 'Select an instance' section.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status
k8smaster	i-08de4ed2573996bfe	Running	t2.medium	2/2 checks passed	View alarms
k8sworker1	i-08fdb5ee834e433a7	Running	t2.medium	2/2 checks passed	View alarms
Devops-ci/cd-pipeline-using-j...	i-0c10f0fd828f7468d	Running	t2.medium	2/2 checks passed	View alarms

Select an instance

```
root@k8smaster:/home/ubuntu
login as: ubuntu
Authenticating with public key "mylinuxkey"
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1021-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Sat Feb 22 23:47:25 UTC 2025

System load:  0.18      Processes:    124
Usage of /:   39.0% of 11.45GB   Users logged in:  0
Memory usage: 15%      IPv4 address for eth0: 172.31.45.254
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

All updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.2 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sat Feb 22 12:31:34 2025 from 152.57.218.216
ubuntu@k8smaster:~$
ubuntu@k8smaster:~$ sudo su
root@k8smaster:/home/ubuntu#
root@k8smaster:/home/ubuntu# vi /etc/hosts
root@k8smaster:/home/ubuntu#
root@k8smaster:/home/ubuntu# cat /etc/hosts
127.0.0.1 localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
```

```
root@k8sworker1:/home/ubuntu
login as: ubuntu
Authenticating with public key "mylinuxkey"
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1021-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Sat Feb 22 23:51:07 UTC 2025

System load:  0.04      Processes:    120
Usage of /:   32.1% of 11.45GB   Users logged in:  0
Memory usage: 6%      IPv4 address for eth0: 172.31.43.202
Swap usage:   0%

 * Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.
  https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

9 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.2 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sat Feb 22 11:54:43 2025 from 152.57.222.175
ubuntu@k8sworker1:~$
ubuntu@k8sworker1:~$ sudo su
root@k8sworker1:/home/ubuntu#
root@k8sworker1:/home/ubuntu#
root@k8sworker1:/home/ubuntu# vi /etc/hosts
root@k8sworker1:/home/ubuntu#
```

Created ci/cd pipeline

The screenshot shows the Jenkins Configuration page for a pipeline named 'nodejs-end-to-end-image-k8s-pipeline'. The left sidebar has a 'Configure' section with options: General, Triggers, Pipeline (selected), and Advanced. The main area displays a Jenkinsfile script with the following stages:

```
1 pipeline {
2   agent any
3   environment {
4     dockerhub=credentials('dockerhub')
5   }
6   stages {
7     stage('Checkout') {
8       steps {
9         checkout scmGit {
10           branches: [[name: '/main']],
11           extensions: [],
12           userRemoteConfigs: [[credentialsId: 'github', url: 'https://github.com/panchalsrp/Devopsproj-ci-cd-...']]
13         }
14       }
15     }
16     stage('Build Docker Image') {
17       steps {
18         script {
19           sh 'docker build -t myimage .'
20         }
21       }
22     }
23     stage('Tag Docker Image') {
24       steps {
25         sh 'docker tag myimage shitalpanchal/devopsproject:v1'
26       }
27     }
28     stage('Publish Artifacts To Dockerhub....') {
29       steps {
30         sh 'docker image ls'
31       }
32     }
33   }
34 }
```

At the bottom of the configuration area are 'Save' and 'Apply' buttons.

Push the Image on Docker hub

The screenshot shows the Docker Hub repository page for 'shitalpanchal/devopsproject'. The page includes a header with navigation links (Explore, Repositories, Organizations, Usage) and a search bar. The repository details show it was last pushed 5 minutes ago and has a size of 337.5 MB. The 'General' tab is selected, showing a list of tags. The 'Tags' section indicates that the repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
v1		Image	less than 1 day	5 minutes

The 'Automated builds' section provides information about connecting to GitHub or Bitbucket for automated builds.

Run the pipeline

The screenshot shows the Jenkins web interface for a pipeline named 'nodejs-end-to-end-image-k8s-pipeline'. The left sidebar contains navigation links: Changes, Build Now, Configure, Delete Pipeline, Stages, Rename, Pipeline Syntax, and GitHub Hook Log. The main area displays 'Permalinks' for the last build (#8), including links for the last build, last stable build, last successful build, last failed build, last unsuccessful build, and last completed build, all from 14 minutes ago. A 'Builds' panel at the bottom left shows a list of builds with a filter input and a dropdown menu. The bottom status bar indicates the system is running on Ubuntu 22.04.5 LTS.

Deployed project successfully

The screenshot shows a terminal window with the following output:

```
root@k8smaster: /home/ubuntu
Command 'sudo' not found, did you mean:
  command 'tudu' from deb tudu (0.10.4-1)
  command 'sudo' from deb sudo (1.9.9-1ubuntu2.4)
  command 'sudo' from deb sudo-ldap (1.9.9-1ubuntu2.4)
Try: sudo apt install <deb name>
ubuntu@k8smaster:~$ vi $HOME/.kube/config
login as: ubuntu
Authenticating with public key "mylinuxkey"
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1021-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Sun Feb 23 00:12:55 UTC 2025

System load:  0.11               Processes:    164
Usage of /:   38.0% of 11.45GB   Users logged in: 1
Memory usage: 20%               IPv4 address for eth0: 172.31.45.254
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

11 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

New release '24.04.2 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sun Feb 23 00:05:14 2025 from 152.57.239.236
ubuntu@k8smaster:~$
ubuntu@k8smaster:~$ sudo su
root@k8smaster:/home/ubuntu#
root@k8smaster:/home/ubuntu# kubectl get deployment
NAME          READY  UP-TO-DATE  AVAILABLE  AGE
nginx-app    2/2    2           2          19h
nodejs-app    0/2    2           0          86s
root@k8smaster:/home/ubuntu#
```

Create a webhook on GitHub for notification

The screenshot shows the GitHub web interface for a repository named 'Devopsproj-ci-cd-pipeline'. The 'Settings' tab is selected, and the 'Webhooks' section is active. A notification banner 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>.' The left sidebar contains a navigation menu with options like General, Access, Collaborators, Moderation options, Code and automation, Branches, Tags, Rules, Actions, Webhooks (selected), Environments, and Codespaces. The main content area, titled 'Webhooks', explains that webhooks allow external services to be notified of events and provides a link to the 'Webhooks Guide'. Below this, a single webhook is listed with the URL 'http://35.154.195.76:8080/github-w...' and the events '(pull_request and push)'. The status shows a green checkmark and the message 'Last delivery was successful.' with 'Edit' and 'Delete' buttons. The browser's taskbar at the bottom shows various application icons and the system clock indicating 06:06 on 23-02-2025.

github.com/panchalsrp/Devopsproj-ci-cd-pipeline/settings/hooks

Sign in [Jenkins] Meet Amazon Web Servic...

panchalsrp / Devopsproj-ci-cd-pipeline

Type [Z] to search

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

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>.

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Rules

Actions

Webhooks

Environments

Codespaces

Webhooks

Add webhook

Webhooks allow external services to be notified when certain events happen. When the specified events happen, we'll send a POST request to each of the URLs you provide. Learn more in our [Webhooks Guide](#).

✓ <http://35.154.195.76:8080/github-w...> (pull_request and push)

Last delivery was successful.

Edit Delete

Type here to search

Gold... ^ ENG 06:06 23-02-2025