

TASK 2 - Automating CI/CD Pipeline with Jenkins

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ROLL NO:22CSR212

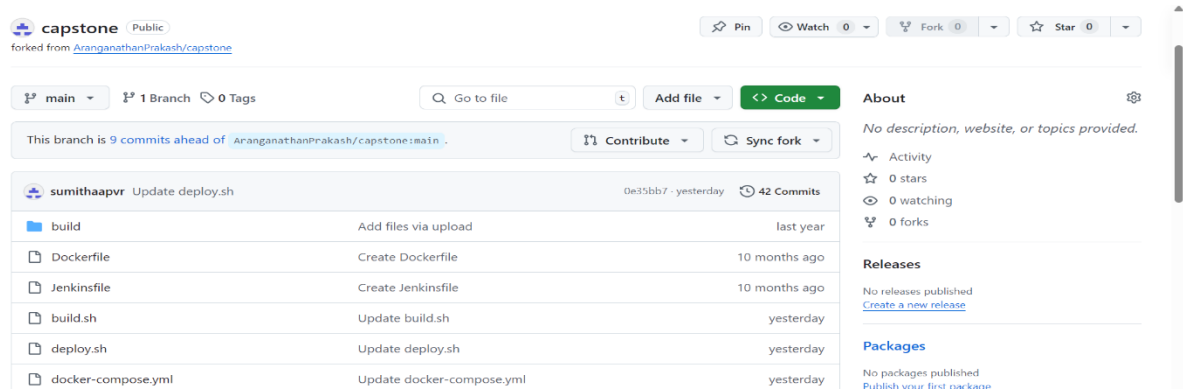
STEP 1: Installation of Docker

Install the Docker using the following commands:

- `sudo apt install docker.io`
- `docker --version`
- `sudo systemctl start docker`
- `sudo systemctl enable docker`
- `sudo systemctl status docker`

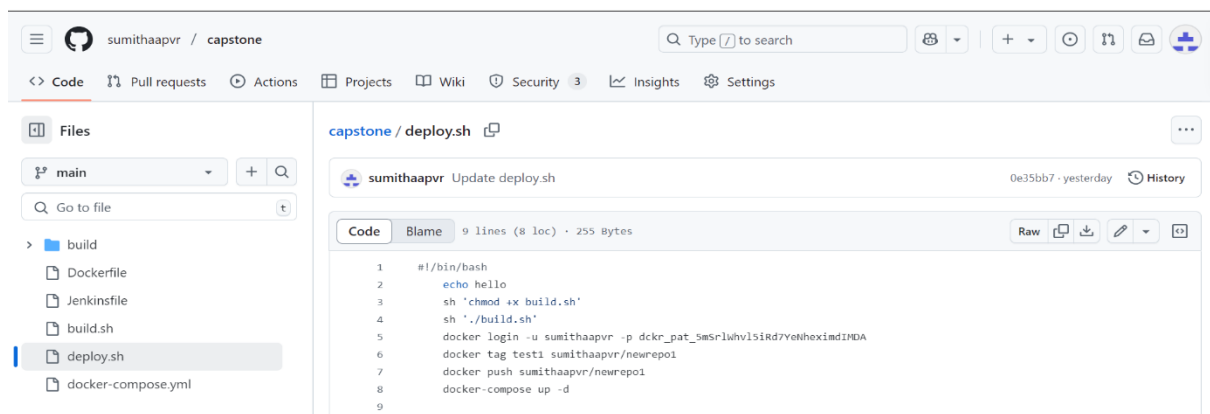
STEP 2: Fork a Github Repository

Fork a copy of a GitHub repository, which will create a clone of that repository in your own account.



STEP 3: Change the username and image name

In the deploy.sh file, update your Docker Hub username, personal access token (PAT), and change the image name to the one you created in Docker.



STEP 3: Create a Pipeline Job in the Jenkins

- In Jenkins, create a job using a pipeline.
- In the 'Definition' section, choose 'Pipeline script from SCM'.
- Under SCM, select 'Git', then paste the GitHub repository link in the 'Repository URL' field, which contains the script files for your job.
- Change the branch to match the one you're using in Git, and verify the filename.
- Finally, click 'OK' to proceed.

New Item

Enter an item name

trail

Select an item type



Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments,

OK

Dashboard > trail > Configuration

Configure



General



Triggers



Pipeline



Advanced

Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

Definition

Pipeline script from SCM

SCM ?

Git

Repositories ?

Repository URL ?

https://github.com/sumithaapvr/capstone.git

Save

Apply

Dashboard > trail > Configuration

Configure

⚙️ General

🕒 Triggers

🔗 Pipeline

🔧 **Advanced**

Branch Specifier (blank for 'any') ?

*/main

Add Branch

Repository browser ?

(Auto)

Additional Behaviours

Add ▾

Script Path ?

Jenkinsfile

Save

Apply

STEP 4: Built Now

After creating the job, build it. The console output will be displayed, and the Docker image will be built and pushed to your Docker Hub repository.

Jenkins

sumithapvr

log out

Dashboard > task2 > #7

Status

Changes

Console Output

Edit Build Information

Timings

Git Build Data

Pipeline Overview

Pipeline Console

Thread Dump

Pause/resume

Console Output

Download

Copy

View as plain text

Started by user sumithapvr

Obtained Jenkinsfile from git <https://github.com/sumithapvr/capstone.git>

[Pipeline] Start of Pipeline

[Pipeline] node

Running on Jenkins in /var/lib/jenkins/workspace/task2

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Declarative: Checkout SCM)

[Pipeline] checkout

Selected Git installation does not exist. Using Default

The recommended git tool is: NONE

No credentials specified

> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/task2/.git # timeout=10

Fetching changes from the remote Git repository

> git config remote.origin.url <https://github.com/sumithapvr/capstone.git> # timeout=10

1287fbecdfcc: Waiting

03d9365bc5dc: Layer already exists

d26dc06ef910: Layer already exists

d98dcc720ae0: Layer already exists

aa82c57cd9fe: Layer already exists

7920683f3d87: Layer already exists

135f786ad046: Layer already exists

ad2f08e39a9d: Layer already exists

1287fbecdfcc: Layer already exists

latest: digest: sha256:471b701f4c71384c1990238823b0db750177477b87826034f57da3747c1d962f size: 1988

Creating network "task2_default" with the default driver

Creating task2_react-capstone_1 ...

Creating task2_react-capstone_1 ... done

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

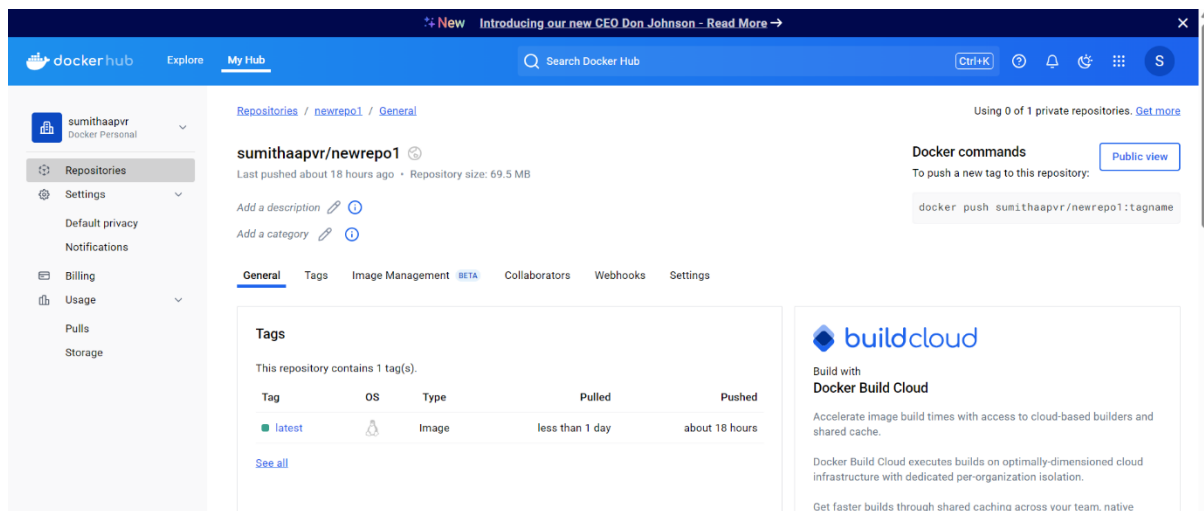
[Pipeline] // withEnv

[Pipeline] }

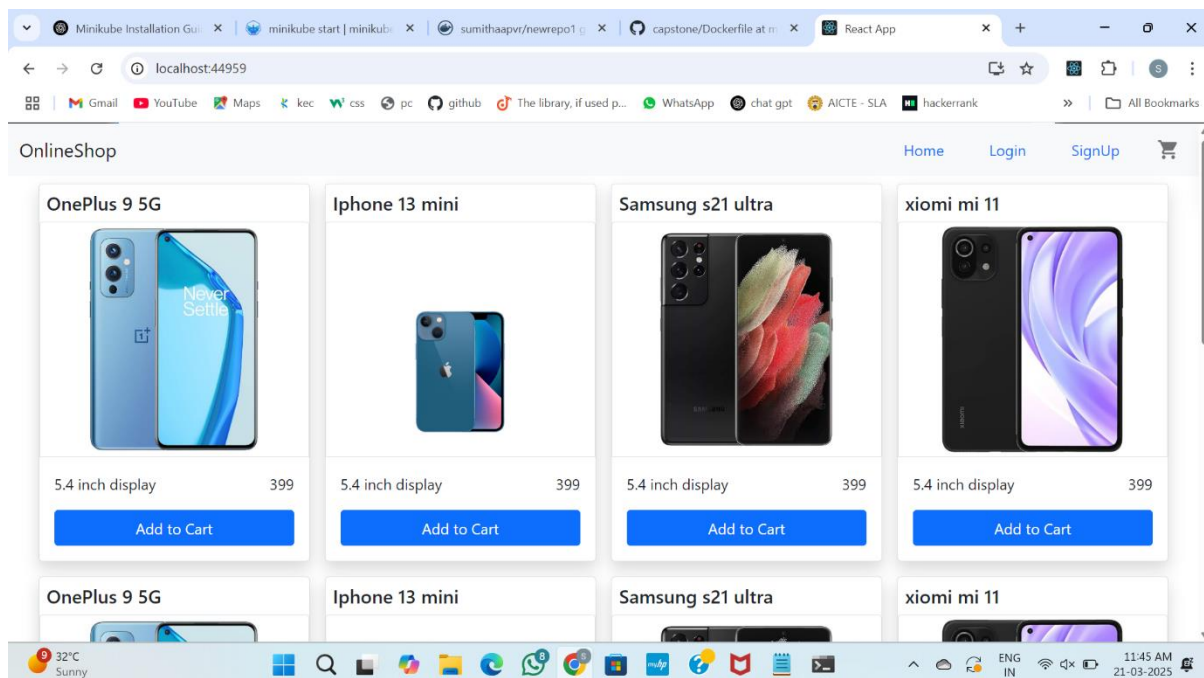
[Pipeline] // node

[Pipeline] End of Pipeline

Finished: SUCCESS



STEP 5: View the output in the browser



Setting Up a GitHub Webhook for Automatic Project Builds in Jenkins:

STEPS:

- To create a webhook in GitHub, install ngrok using the following command
sudo snap install ngrok
- Create an account on the official website, and obtain the authentication or configuration command.
- After running the command in the terminal, you will receive the webhook URL for the GitHub repository.
- Add this webhook URL to your GitHub repository for automatic builds of the project.
- Additionally, in the Jenkins configuration page, check the box labeled GitHub hook trigger for GITScm polling.

Sumithaa

Getting Started

Setup & Installation

Your Authtoken

Universal Gateway

Endpoints

Domains

TCP Addresses

TLS Certificates

Edges

Traffic Policy

Billing

Usage

Early Access

Your Authtoken

This is your personal Authtoken. Use this to authenticate the ngrok agent that you downloaded.

.....

Copy

Command Line

Authenticate your ngrok agent. You only have to do this once. The Authtoken is saved in the default configuration file.

Command Line

Show Authtoken

```
ngrok config add-authtoken $YOUR_AUTHTOKEN
```

sumithaa@sumithaaPVR: ~

ngrok

Found a bug? Let us know: <https://github.com/ngrok/ngrok>

Session Status

online

Account

Sumithaa (Plan: Free)

Version

3.21.0

Region

India (in)

Latency

118ms

Web Interface

<http://127.0.0.1:4040>

Forwarding

<https://7d0e-103-196-28-176.ngrok-free.app> -> <http://localhost:8080>

Connections

	tll	opn	rt1	rt5	p50	p90
2		0	0.00	0.00	30.31	30.56

HTTP Requests

12:15:33.571 UTC POST /github-webhook/ 200 OK

12:09:49.879 UTC POST /github-webhook/ 200 OK

sumithaapvr / capstone

Type to search

Code Pull requests Actions Projects Wiki Security 3 Insights Settings

General

Access

Collaborators

Moderation options

Code and automation

Branches

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](#).

✓ <https://7d0e-103-196-28-176.ngrok...> (push)


Last delivery was successful.


Edit Delete

Configure

 General

 Triggers

 Pipeline

 Advanced

Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

- ☐ Build after other projects are built ?
- ☐ Build periodically ?
- ☐ GitHub Branches
- ☐ GitHub Pull Requests ?
- ☒ GitHub hook trigger for GITScm polling ?
- ☐ Poll SCM ?
- ☐ Trigger builds remotely (e.g., from scripts) ?

Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

Save

Apply