Final Project

Application Deployment

(Deploy the given react application to a production ready state)

Application:

- Clone:
 - git clone https://github.com/sriram-R-krishnan/devops-build
- ubuntu@ip-172-31-21-12: ~/final_project

```
ubuntu@ip-172-31-21-12:~/final_project$ 11
total 16
drwxrwxr-x 4 ubuntu ubuntu 4096 Jan 11 11:45 ./
drwxr-x--- 6 ubuntu ubuntu 4096 Jan 11 13:48 ../
drwxrwxr-x 7 ubuntu ubuntu 4096 Jan 11 11:43 .git/
drwxrwxr-x 4 ubuntu ubuntu 4096 Jan 11 11:45 devops-build/
ubuntu@ip-172-31-21-12:~/final_project$
```

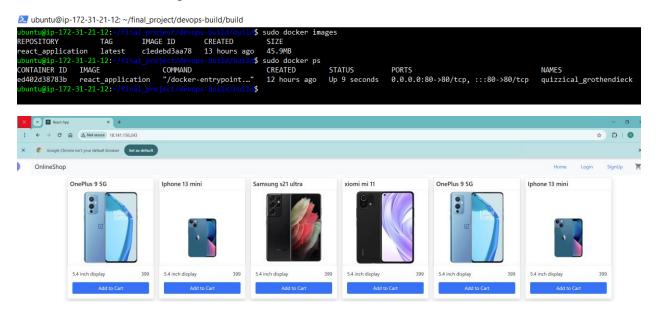
Docker:

- Dockerize the application by creating a Dockerfile
 - sudo docker build -t react application .
 - sudo docker images

```
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build
total 60
drwxrwxr-x 3 ubuntu ubuntu 4096 Jan 11 13:40 ./
drwxrwxr-x 4 ubuntu ubuntu 4096 Jan 11 11:45 ../
rw-rw-r-- 1 ubuntu ubuntu 18 Jan 11 11:45 _redirects
rw-rw-r-- 1 ubuntu ubuntu 517 Jan 11 11:45 asset-manifest.json
rw-rw-r-- 1 ubuntu ubuntu 111 Jan 11 13:40 dockerfile
rw-rw-r-- 1 ubuntu ubuntu 3870 Jan 11 11:45 favicon.ico
 rw-rw-r-- 1 ubuntu ubuntu 961 Jan 11 11:45 index.html
 rw-rw-r-- 1 ubuntu ubuntu 5347 Jan 11 11:45 logo192.png
 rw-rw-r-- 1 ubuntu ubuntu 9664 Jan 11 11:45 log
rw-rw-r-- 1 ubuntu ubuntu 492 Jan 11 11:45 manifest.json
-rw-rw-r-- 1 ubuntu ubuntu 67 Jan 11 11:45 robots.txt
drwxrwxr-x 4 ubuntu ubuntu 4096 Jan 11 11:45 static/
WORKDIR /usr/share/nginx/html
RUN rm -rf ./*
COPY . .
EXPOSE 80
CMD ["nginx", "-g", "daemon off;"]
 buntu@ip-172-31-21-12:~/final_project/devops-build/build$
```

```
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build$ sudo docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
react_application latest c1edebd3aa78 13 hours ago 45.9MB
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build$
```

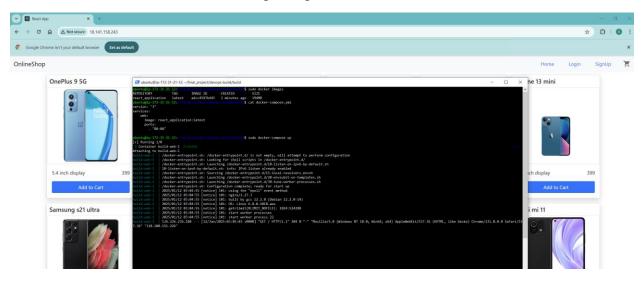
- Run the application in port 80 [HTTP]
 - o sudo docker run -dit -p 80:80 react application
 - o http://18.141.158.243:80



- Create Docker compose file to use the above image
 - vi docker-compose.yml

```
💹 ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build
ubuntu@ip-172-31-21-12:~/final project/devops-build/build$ sudo docker images
REPOSITORY
                    TAG
                               IMAGE ID
                                              CREATED
                                                               SIZE
                               adcc4597b44f
                    latest
                                              3 minutes ago
react_application
ubuntu@ip-172-31-21-12:~/final_project/devops-build/build$ cat docker-compose.yml
version: "3"
services:
   web:
      image: react_application:latest
      ports:
        - "80:80"
ubuntu@ip-172-31-21-12:~/final_project/devops-build/build$
```

o sudo docker-compose up



Bash Scripting

- build.sh for building docker images
 - remove existing image
 - build the image
 - verify the image

```
ubuntu@ip-172-31-21-12:~/final_project/devops-build/build$ cat build.sh
#!/bin/bash
#
#Remove any existing image
sudo docker rmi -f react_application
#docker build command#
sudo docker build -t react_application .
#varify the image#
sudo docker images
```

ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build

```
ubuntu@ip-172-31-21-12:~/final_project/devops-build/build$ ./build.sh
Untagged: react_application:latest
Deleted: sha256:b3ed0e96fc627cbccd09ff7e1fb830af5a78cc3d770e5481b9c7eb1553ab4944
[+] Building 2.1s (9/9) FINISHED

-> [internal] load build definition from dockerfile
-> -> transferring dockerfile: 1488
-> [internal] load metadata for docker.io/library/nginx:latest
-> [internal] load .dockerignore
-> -> transferring context: 28
-> [1/4] FROM docker.io/library/nginx:latest@sha256:42e917aaa1b5bb40dd0f6f7f4f857490ac7747d7ef73b391c774a41a8b994f15
-> [internal] load build context
-> -> transferring context: 1.15kB
-> CACHED [2/4] MORKDIR /usr/share/nginx/html
-> CACHED [3/4] RUN rm -rf ./*
-> [4/4] COPY .
-> exporting to image
-> -> writing image sha256:e616939d2a24e2917839c120e4dfb5995f5f612b87a4621e22aeec314466fe1d
-> naming to docker.io/library/react_application
REPOSITORY TAG IMAGE ID CREATED SIZE
react_application latest e616939d2a24 Less than a second ago 194MB
ubuntu@ip-172-31-21-12:~/final_project/devops-build/build$
```

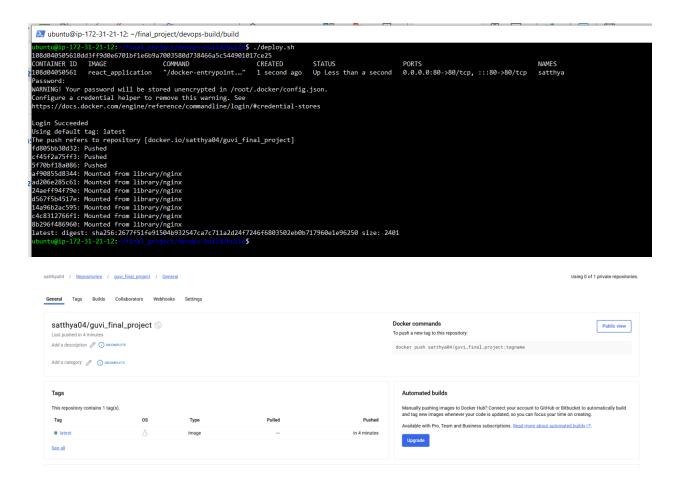
- deploy.sh for deploying the image to server
 - o login to docker hub
 - o deploy the container
 - o verify the container
 - o upload the image to docker hub

```
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build$ cat deploy.sh #!/bin/bash

#Deploy the image to container# sudo docker run -dit -p 80:80 --name satthya react_application

#Confirm the running container# sudo docker ps -a #docker login# sudo docker login -u satthya04 #push the image to repo# ssudo docker tag react_application:latest satthya04/guvi_final_project sudo docker push satthya04/guvi_final_project

# ubuntu@ip-172-31-21-12:~/final_project/devops-build/build$
```



Version Control

- push the code to github to dev branch (use .dockerignore & .gitignore files)
 - git branch -M dev
 - git switch dev
 - git branch
 - git add.
 - git commit -m "final project"
 - git remote add origin https://github.com/satthya/Guvi Demo.git
 - git push -u origin dev

```
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build$ ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build$ git switch dev Already on 'dev'
Your branch is up to date with 'origin/main'.
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build$ git branch
* dev
ubuntu@ip-172-31-21-12: ~/final_project/devops-build/build$
```

```
ec2-user@ip-172-31-29-205:-/devops-build/build

dockerfile

nothing added to commit but untracked files present (use "git add" to track)

[ec2-user@ip-172-31-29-205 build]$ git status

On branch master

No commits yet

Changes to be committed:

(use "git rm --cached cfile>..." to unstage)

mee file: gitingnoe

mee file: build:sh

mee file: build:sh

mee file: build:sh

mee file: decker-compose.yml

mee file: docker-compose.yml

create mode 180555 build]$ git commit -m "guvi project"

[master (root-commit) 3f19ffa] guvi project

5 files changed, 41 insertions(+)

create mode 180555 build]$ git branch dev

[ec2-user@ip-172-31-29-205 build]$ git branch dev

[ec2-user@ip-172-31-29-205 build]$ git branch dev

[ec2-user@ip-172-31-29-205 build]$ git switch dev

suster

[ec2-user@ip-172-31-29-205 build]$ git status

On branch dev

master

[ec2-user@ip-172-31-29-205 build]$ git push -u origin dev https://github.com/satthya/Guvi_Demo.git

feal: invalid refspec 'https://github.com/satthya/Guvi_Demo.git

feal: user@ip-172-31-29-205 build]$ git push -u origin dev https://github.com/satthya/Guvi_Demo.git

feal: user@ip-172-31-29-205 build]$ git push -u origin dev https://github.com/satthya/Guvi_Demo.git

feal: user@ip-172-31-29-205 build]$ git push -u origin dev https://github.com/satthya/Guvi_Demo.git

feal: user@ip-172-31-29-205 build]$ git push -u origin dev https://github.com/satthya/Guvi_Demo.git

feal: user@ip-172-31-29-205 build]$ git push -u origin dev https://github.com/satthya/Guvi_Demo.git

feal: invalid refspec 'https://github.com/satthya/Guvi_Demo.git

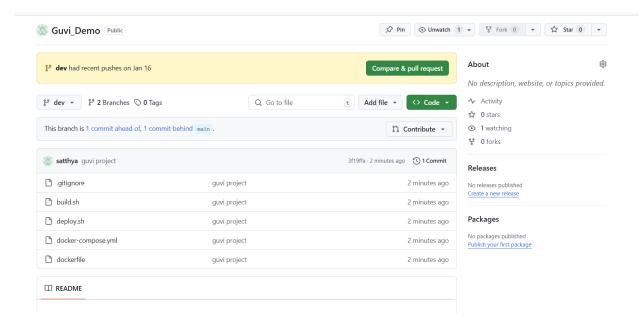
feal: user@ip-172-31-29-205 build]$ git push -u origin dev

Seenman for 'https://github.com/satthya/Guvi_Demo.git

feal: user@ip-172-31-29-205 build]$ git remote and origin https://github.com/satthya/Guvi_Demo.git

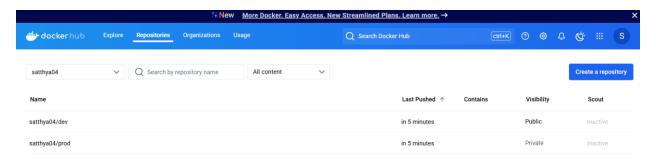
feal: user@ip-172-31-29-205 build]$ git push -u origin dev

Seenman for '
```



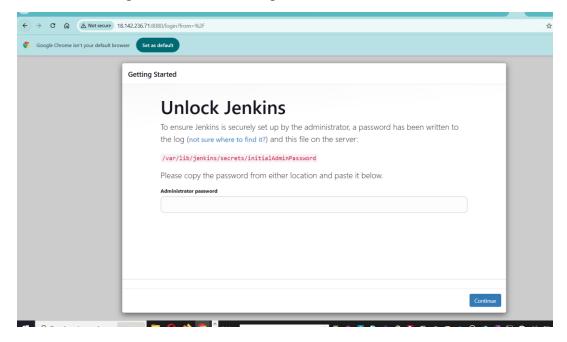
Docker Hub

Create 2 repos "dev" and "prod" to push images
 "prod" repo must be private and "dev" repo can be public

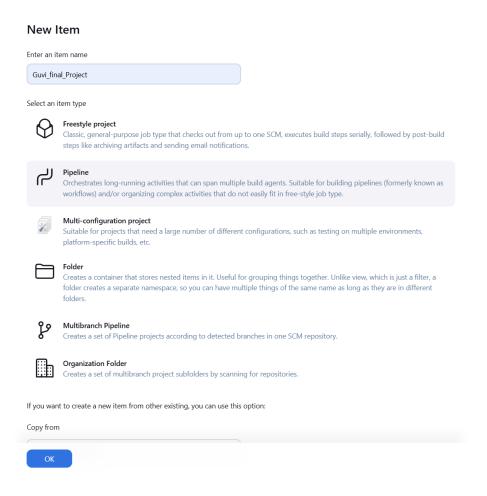


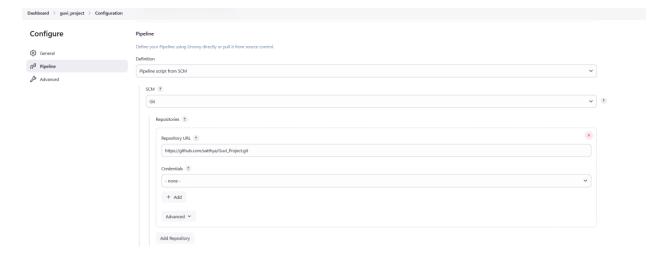
Jenkins

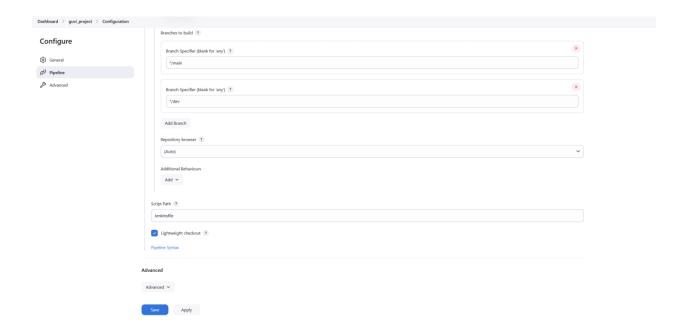
- Login Page
- Enter the admin password and set new password.



- Set up Jenkins Pipeline
- https://github.com/satthya/Guvi Project.git

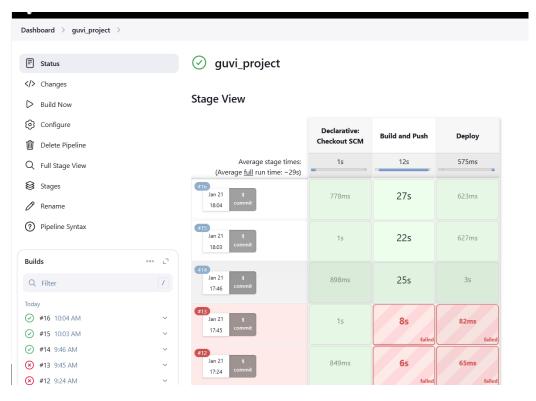






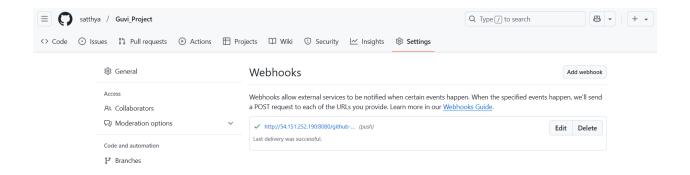
Jenkin File (Groovy Language)

- Push to the dev repository for the dev branch.
- Push to the prod repository for the main branch.

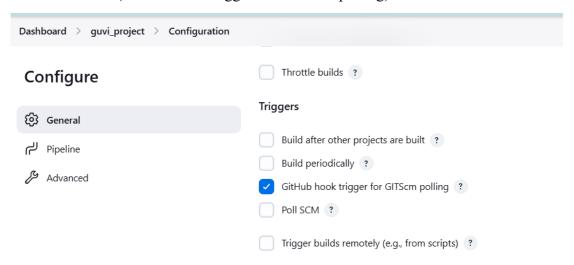




- Configure auto build trigger.
 - o Configure GitHub Webhook



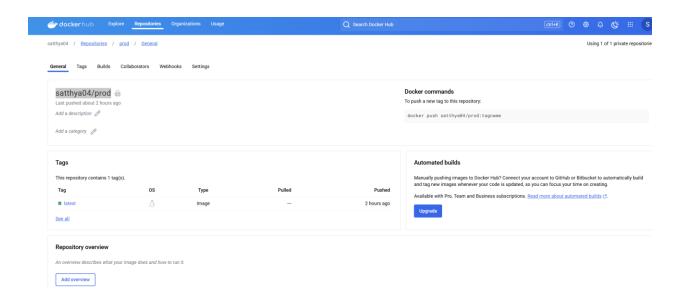
Enable Jenkin (GitHub hook trigger for GITScm polling)



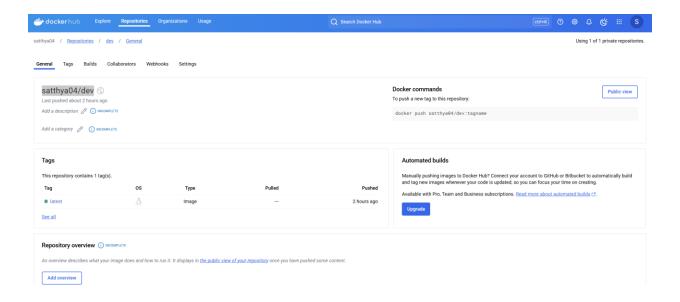
My Docker Profile

https://hub.docker.com/u/satthya04

satthya04/prod

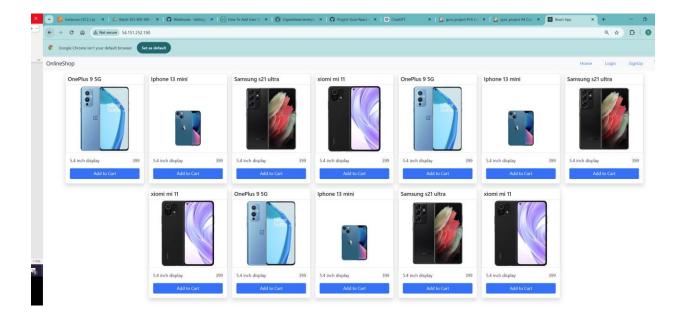


satthya04/dev



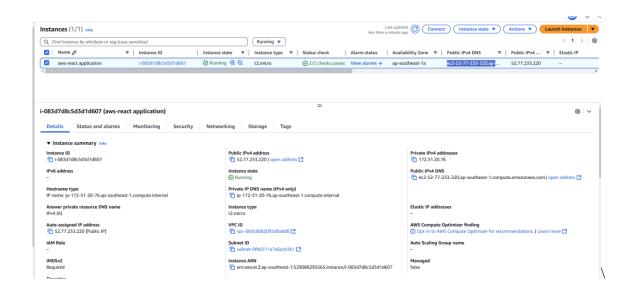
Deployed react application.

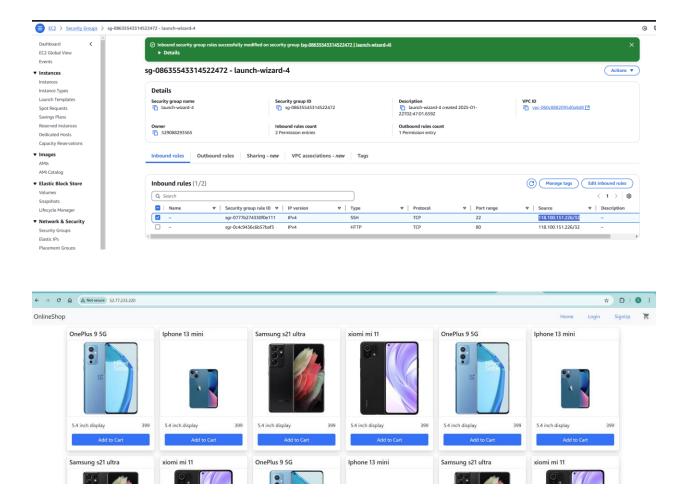
http://54.151.252.190:80



AWS

- Launch a t2.micro instance.
- Install Docker and Docker Compose on the instance.
- Configure security group (restrict login to server should be made only from my server)
- Clone the repo (https://github.com/satthya/Guvi Project.git)
- run deploy.sh to start the application.



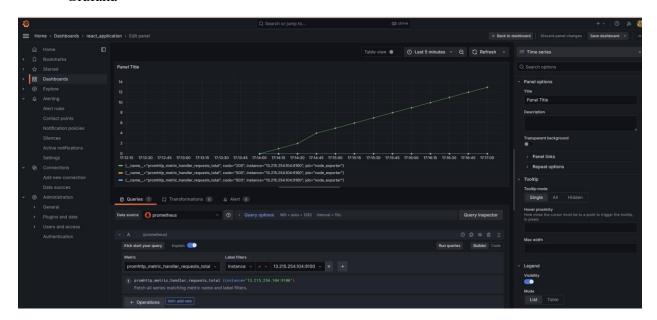


Monitoring

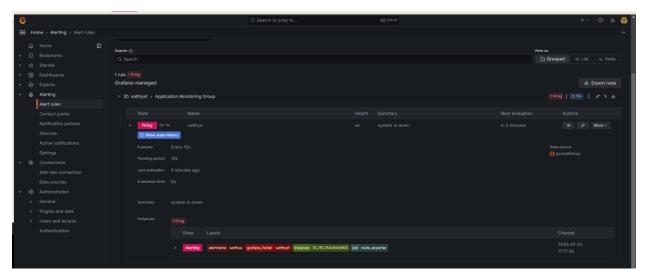
Prometheus



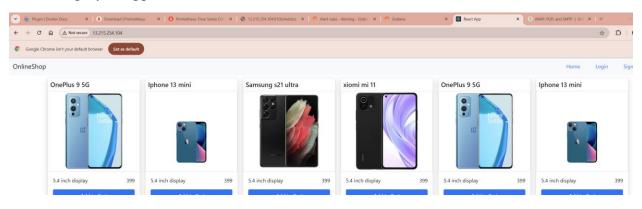
Grafana



Alert Configuration



Deployed Application



Auto alert email when instance down

[RESOLVED] DatasourceNoData satthya1 (feaq9f6mbiby8d D satthya) Inbox ×

Grafana <satthya.13@gmail.com>
to satthya13 ▼

