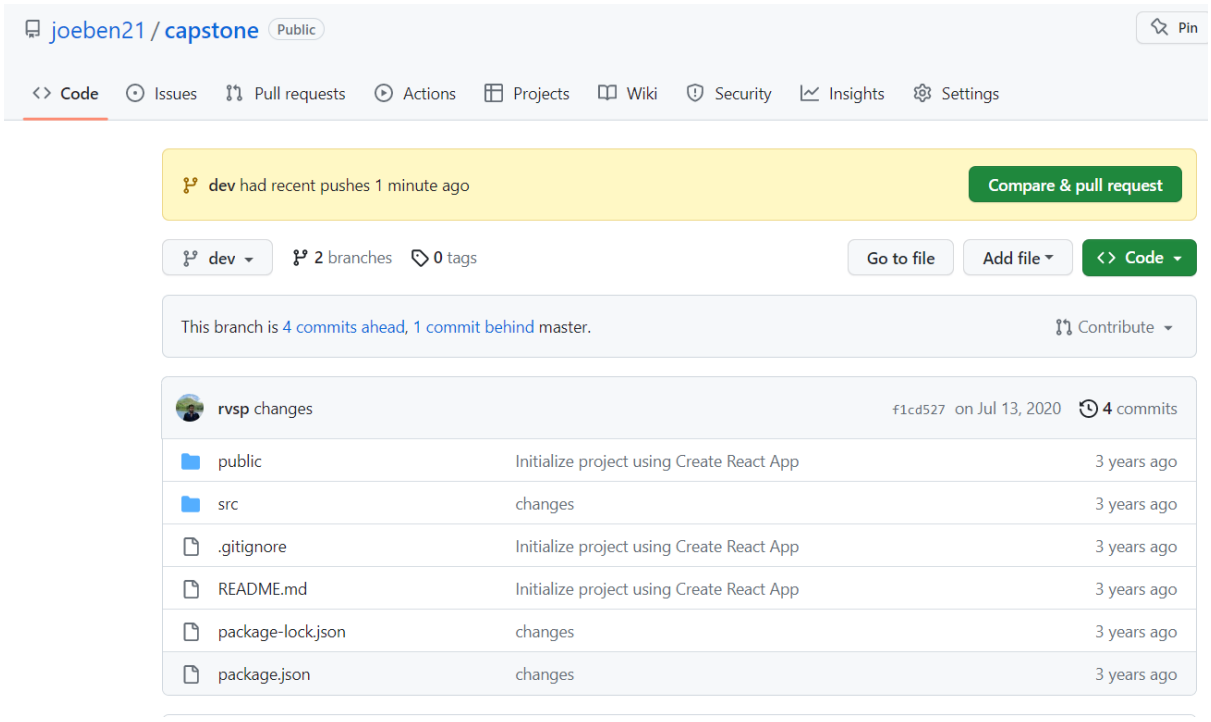
Capstone Project

Application Deployment

Step 1:

Pull the Code from Guvi Repo
Push the Source code to Github (DEV) Branch

```
210  mkdir project
211  cd project
212  git init
213  git config --global user.name "joe"
214  git config --global user.email "joebenhur.f@gmail.com"
215  git remote add upstream https://github.com/rvsp/reactjs-demo.git
216  git remote add origin https://github.com/joeben21/capstone.git
217  git remote -v
218  git pull upstream master
219  git branch dev
220  git checkout dev
221  git status
222  ls -al
223  git branch
224  git push origin dev
```



Step 2:

Create a Dockerignore ; Dockerfile; Dockercompose; Build.sh; Deploy.sh files and move it to Dev Branch in Github.

joe@Joe: ~/project

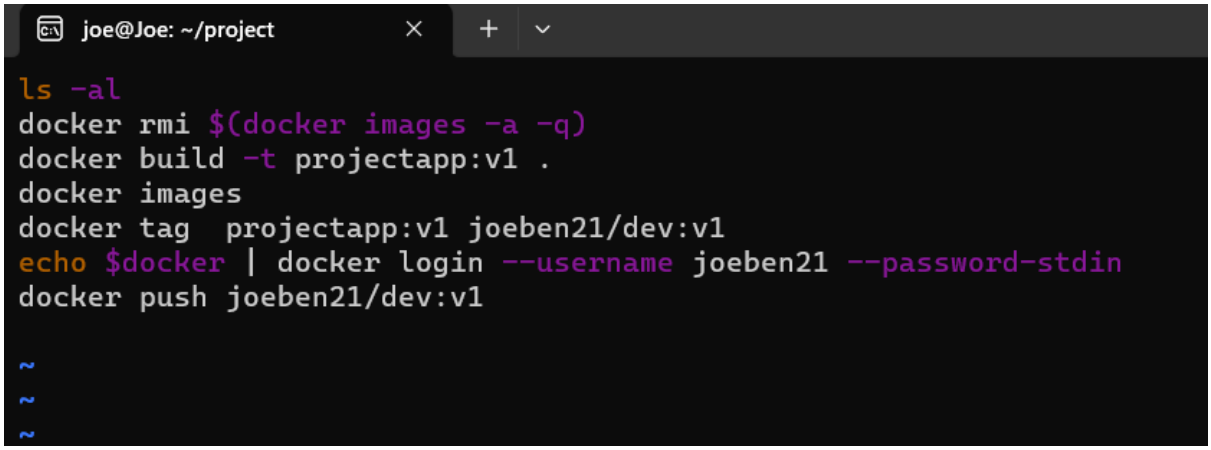
```
.git
.gitignore
/node_modules
~
~
```

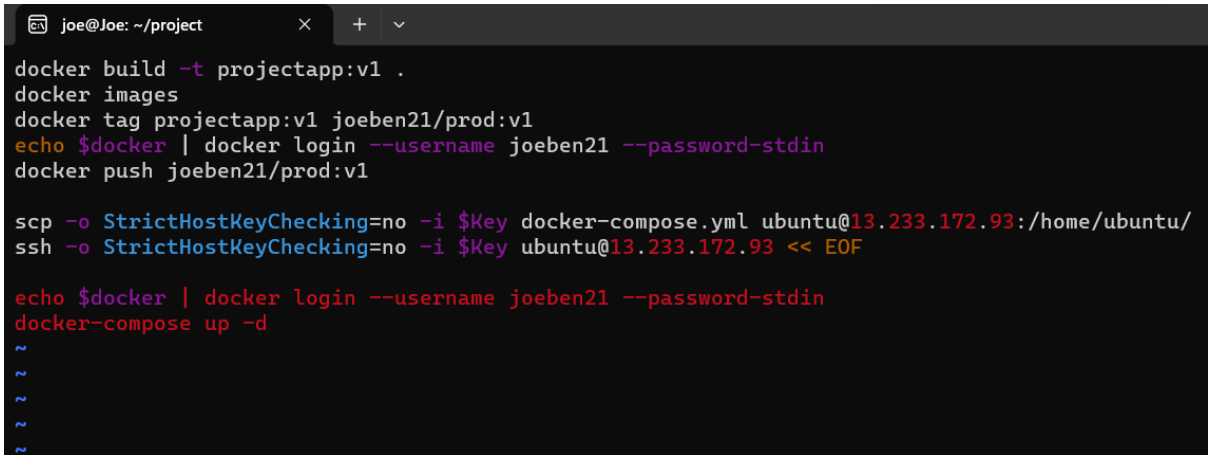
joe@Joe: ~/project

```
FROM ubuntu AS builder

WORKDIR /app
COPY . .

RUN apt update -y
RUN apt install -y npm
RUN npm install
RUN npm run build

FROM nginx:alpine
WORKDIR /usr/share/nginx/html
RUN rm -rf ./*
COPY --from=builder /app/build .
ENTRYPOINT ["nginx", "-g", "daemon off;"]

EXPOSE 80
~
~
```

joe@Joe: ~/project

```
version: '3'

services:
  app1:
    image:  joeben21/dev:v1
    ports:
      - "80:80"
~
```


joe@Joe: ~/project
ls -al
docker rmi $(docker images -a -q)
docker build -t projectapp:v1 .
docker images
docker tag projectapp:v1 joeben21/dev:v1
echo $docker | docker login --username joeben21 --password-stdin
docker push joeben21/dev:v1


joe@Joe: ~/project
docker build -t projectapp:v1 .
docker images
docker tag projectapp:v1 joeben21/prod:v1
echo $docker | docker login --username joeben21 --password-stdin
docker push joeben21/prod:v1
scp -o StrictHostKeyChecking=no -i $Key docker-compose.yml ubuntu@13.233.172.93:/home/ubuntu/
ssh -o StrictHostKeyChecking=no -i $Key ubuntu@13.233.172.93 << EOF
echo $docker | docker login --username joeben21 --password-stdin
docker-compose up -d

227 history
228 vi .dockerignore
229 vi Dockerfile
230 vi docker-compose.yml
231 vi build.sh
232 vi .dockerignore
233 vi Dockerfile
234 vi docker-compose.yml
235 vi build.sh
236 vi deploy.sh
237 git push origin dev
238 ls -al
239 git branch
240 git add .
241 git commit -m "First commit"
242 git status
243 git push origin dev
244 history

Step 3:

Installation of Jenkins via EC2

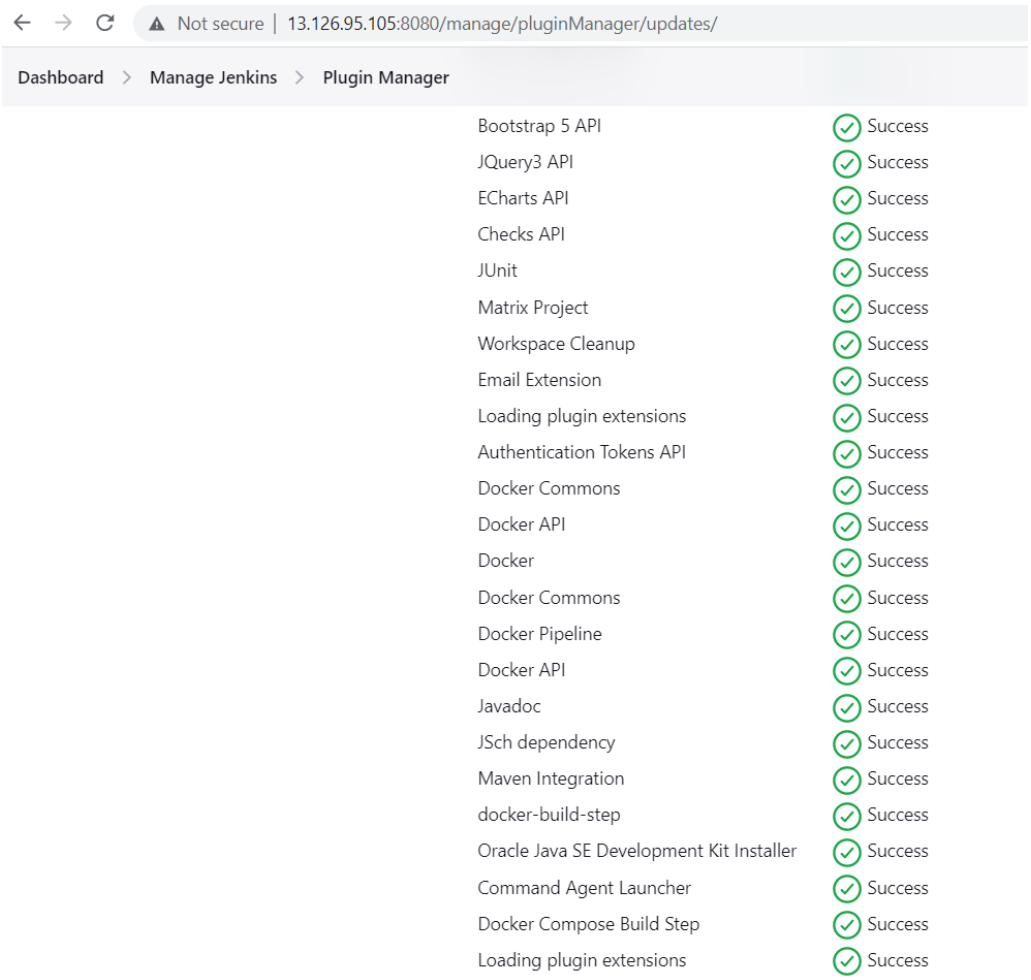
```
ubuntu@ip-172-31-8-134:~$ history
    1  sudo apt update -y
    2  sudo apt install docker.io -y
    3  sudo usermod -aG docker jenkins
    4  sudo apt install openjdk-8-jdk
    5  curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key | sudo tee   /usr/share/keyrings/jenkins-keyring.asc
    6  echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]   https://pkg.jenkins.io/debian-stable binary/ | sudo tee
null
    7  sudo apt-get update
    8  sudo apt-get install fontconfig openjdk-11-jre
    9  sudo apt-get install jenkins
   10  sudo systemctl start jenkins
   11  sudo systemctl status jenkins
   12  sudo apt install docker.io -y
   13  sudo usermod -aG docker jenkins
   14  sudo systemctl restart jenkins
   15  exit
   16  history
   17  sudo systemctl status jenkins
   18  docker images
   19  sudo usermod -aG docker jenkins
   20  exit
   21  docker images
   22  sudo apt install docker.io -y
   23  sudo usermod -aG docker jenkins
   24  docker images
   25  sudo usermod -aG docker ubuntu
   26  exit
```

i-0c8be71b991a05194 (Jenkins)

PublicIPs: 13.126.95.105 PrivateIPs: 172.31.8.134

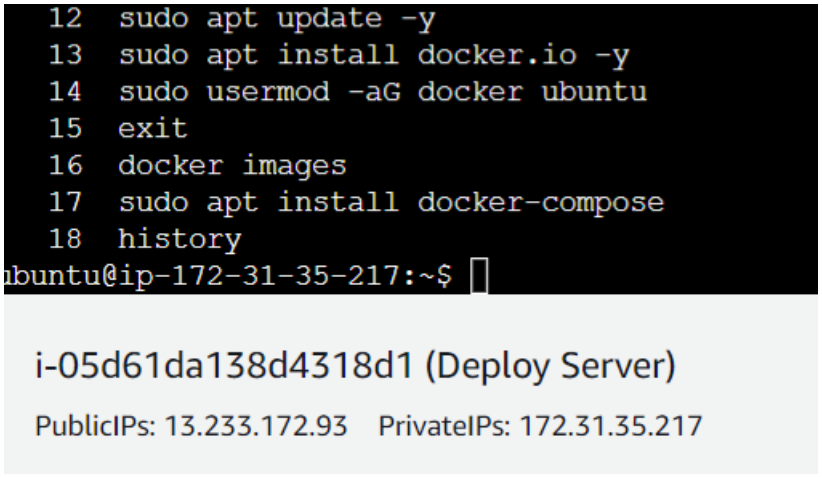
Step 4:

Installation of plugins in Jenkins to support Docker functions



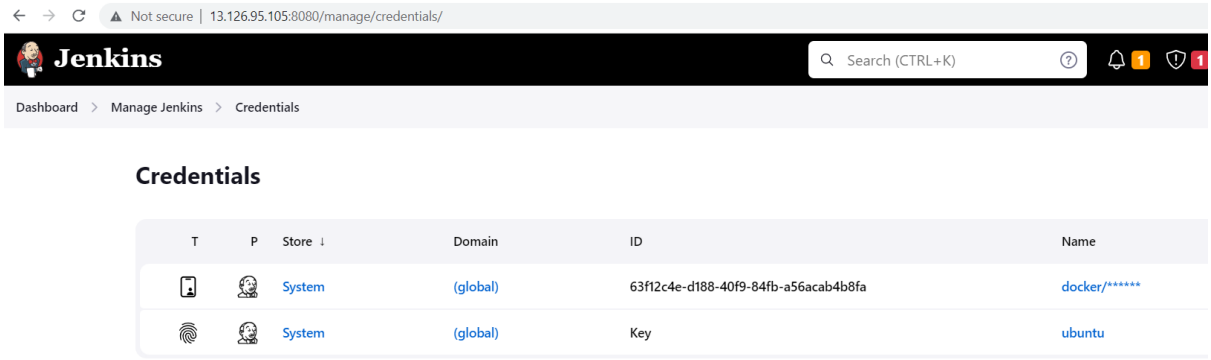
Step 5:

Creating Deploy Server in EC2 with Key & installing docker to it



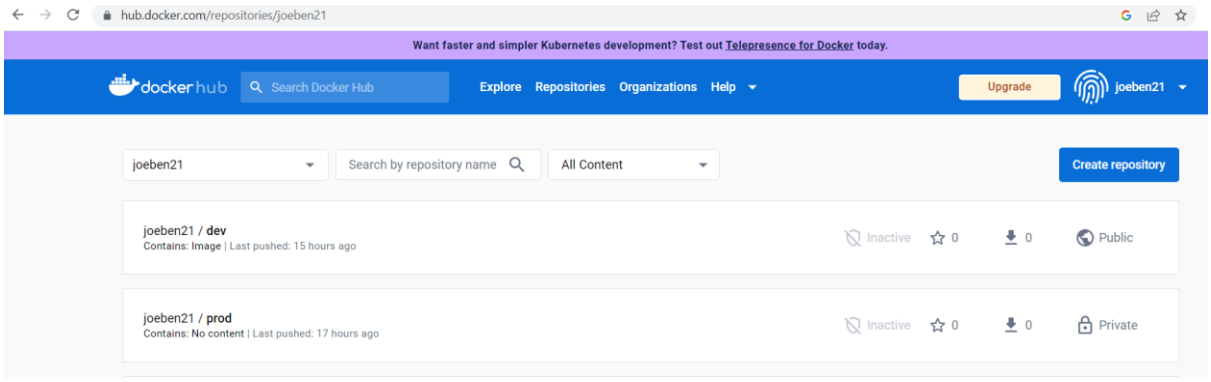
Step 6:

Adding Docker Credentials & Deploy Server Key in Jenkins



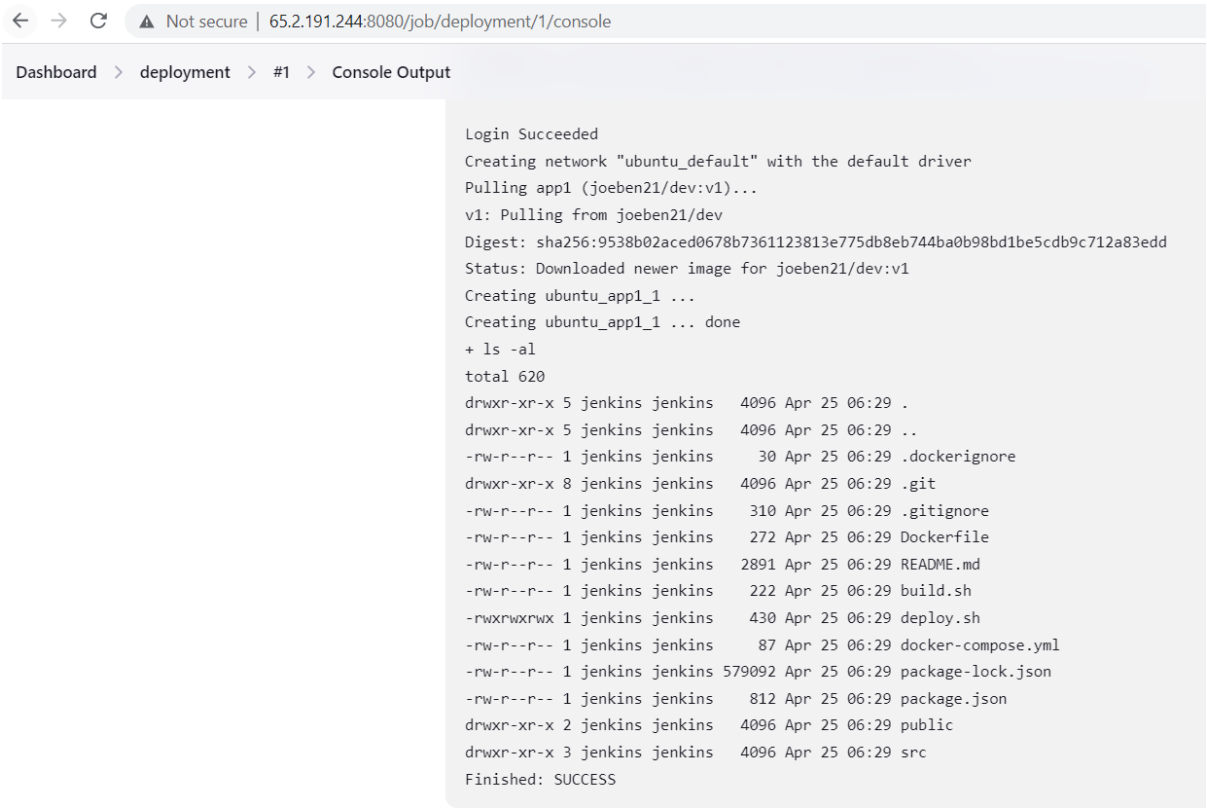
Step 7:

Create 2 repos – dev & prod

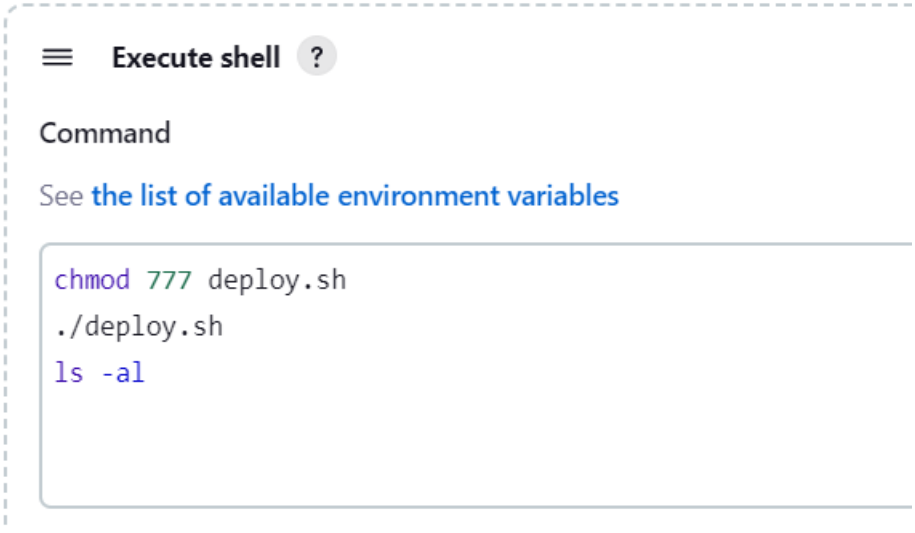


Step 8:

Create 2 workspace – development (git pull); deployment (git merge)


Not secure | 65.2.191.244:8080/job/deployment/1/console
Dashboard > deployment > #1 > Console Output
Login Succeeded
Creating network "ubuntu_default" with the default driver
Pulling app1 (joeben21/dev:v1)...
v1: Pulling from joeben21/dev
Digest: sha256:9538b02aced0678b7361123813e775db8eb744ba0b98bd1be5cdb9c712a83edd
Status: Downloaded newer image for joeben21/dev:v1
Creating ubuntu_app1_1 ...
Creating ubuntu_app1_1 ... done
+ ls -al
total 620
drwxr-xr-x 5 jenkins jenkins 4096 Apr 25 06:29 .
drwxr-xr-x 5 jenkins jenkins 4096 Apr 25 06:29 ..
-rw-r--r-- 1 jenkins jenkins 30 Apr 25 06:29 .dockerignore
drwxr-xr-x 8 jenkins jenkins 4096 Apr 25 06:29 .git
-rw-r--r-- 1 jenkins jenkins 310 Apr 25 06:29 .gitignore
-rw-r--r-- 1 jenkins jenkins 272 Apr 25 06:29 Dockerfile
-rw-r--r-- 1 jenkins jenkins 2891 Apr 25 06:29 README.md
-rw-r--r-- 1 jenkins jenkins 222 Apr 25 06:29 build.sh
-rwxrwxrwx 1 jenkins jenkins 430 Apr 25 06:29 deploy.sh
-rw-r--r-- 1 jenkins jenkins 87 Apr 25 06:29 docker-compose.yml
-rw-r--r-- 1 jenkins jenkins 579092 Apr 25 06:29 package-lock.json
-rw-r--r-- 1 jenkins jenkins 812 Apr 25 06:29 package.json
drwxr-xr-x 2 jenkins jenkins 4096 Apr 25 06:29 public
drwxr-xr-x 3 jenkins jenkins 4096 Apr 25 06:29 src
Finished: SUCCESS

Build Steps


Execute shell
Command
See the list of available environment variables
chmod 777 deploy.sh
./deploy.sh
ls -al

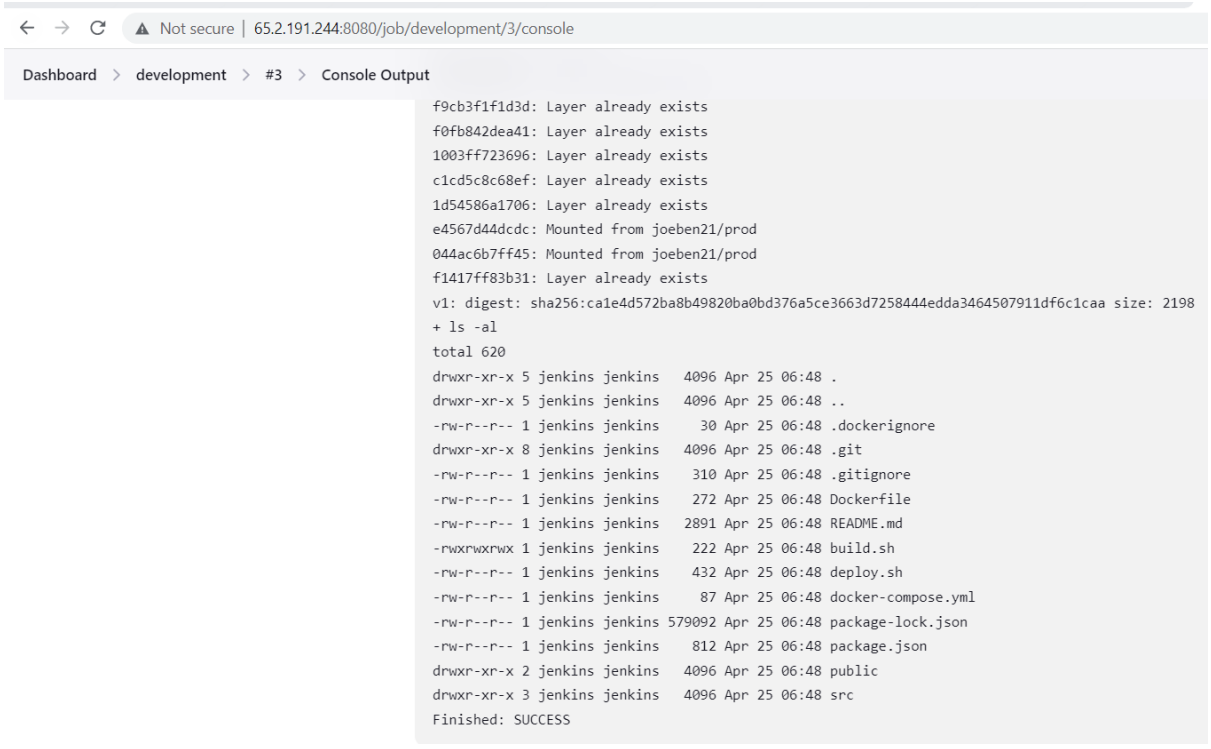
Build Steps

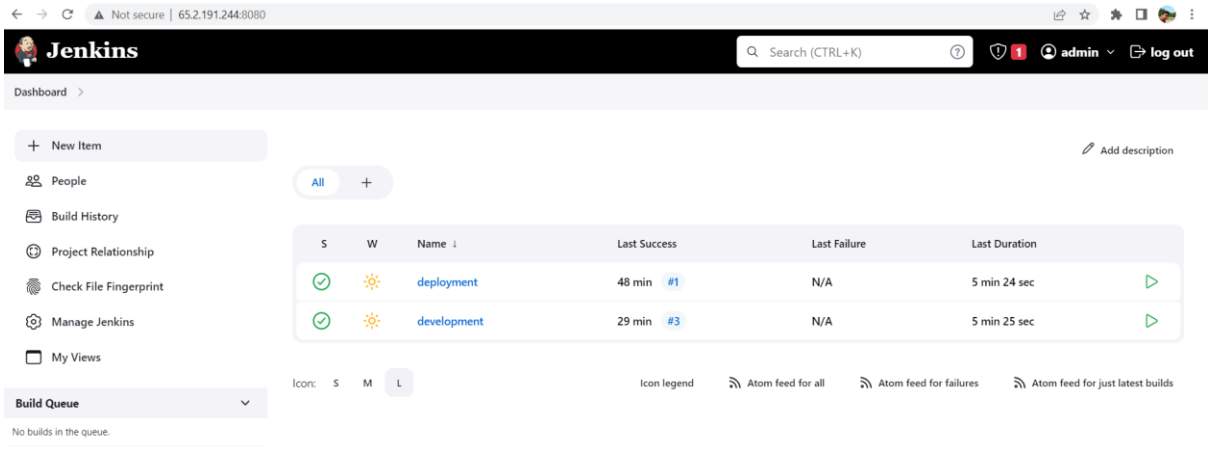
Execute shell

Command

See the list of available environment variables

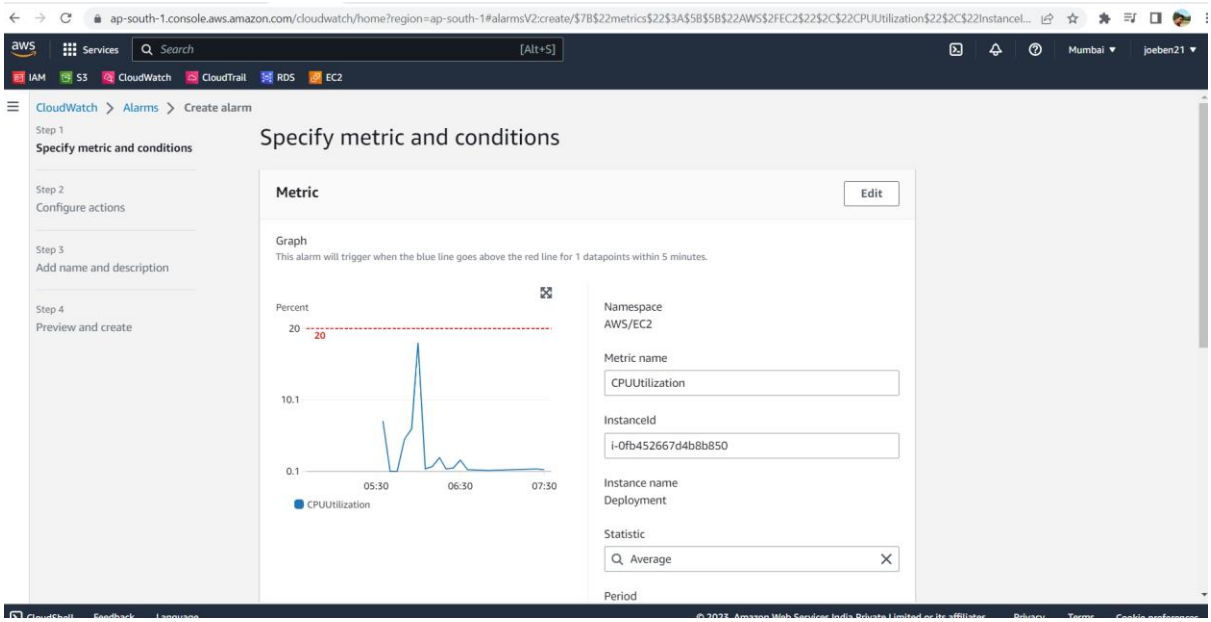
```
chmod 777 build.sh
./build.sh
ls -al
```

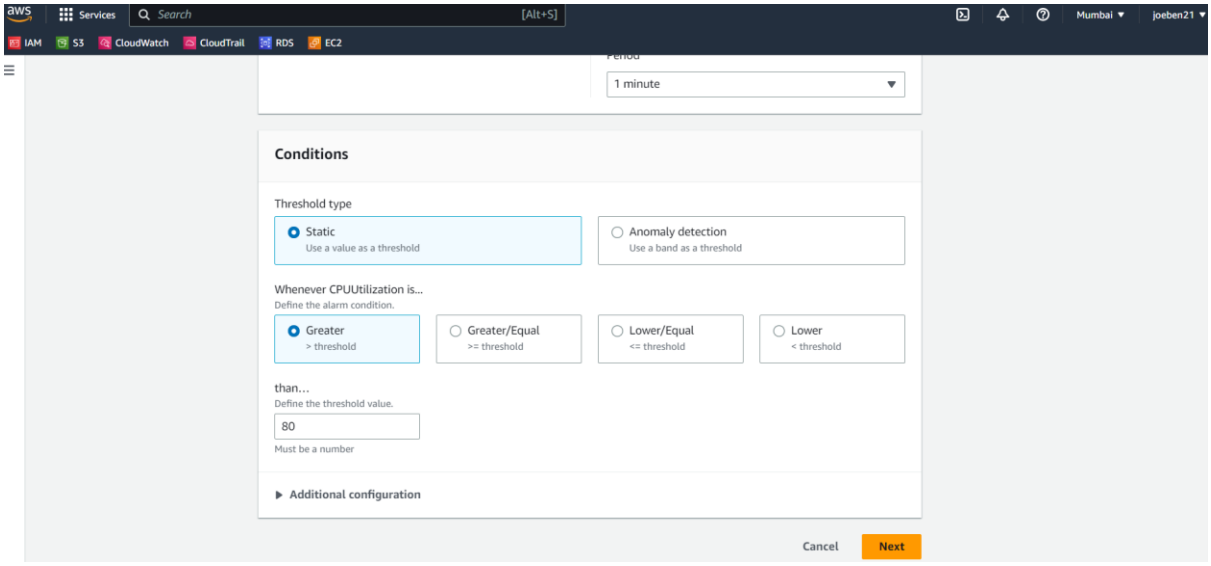


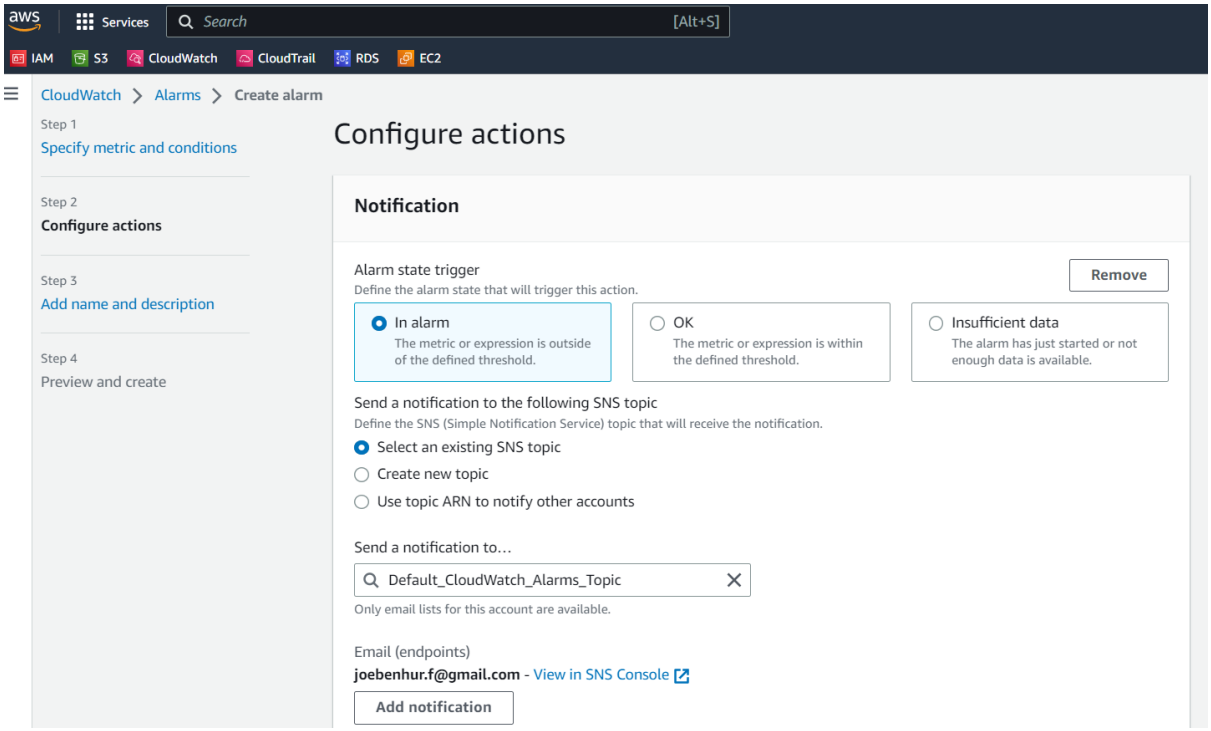


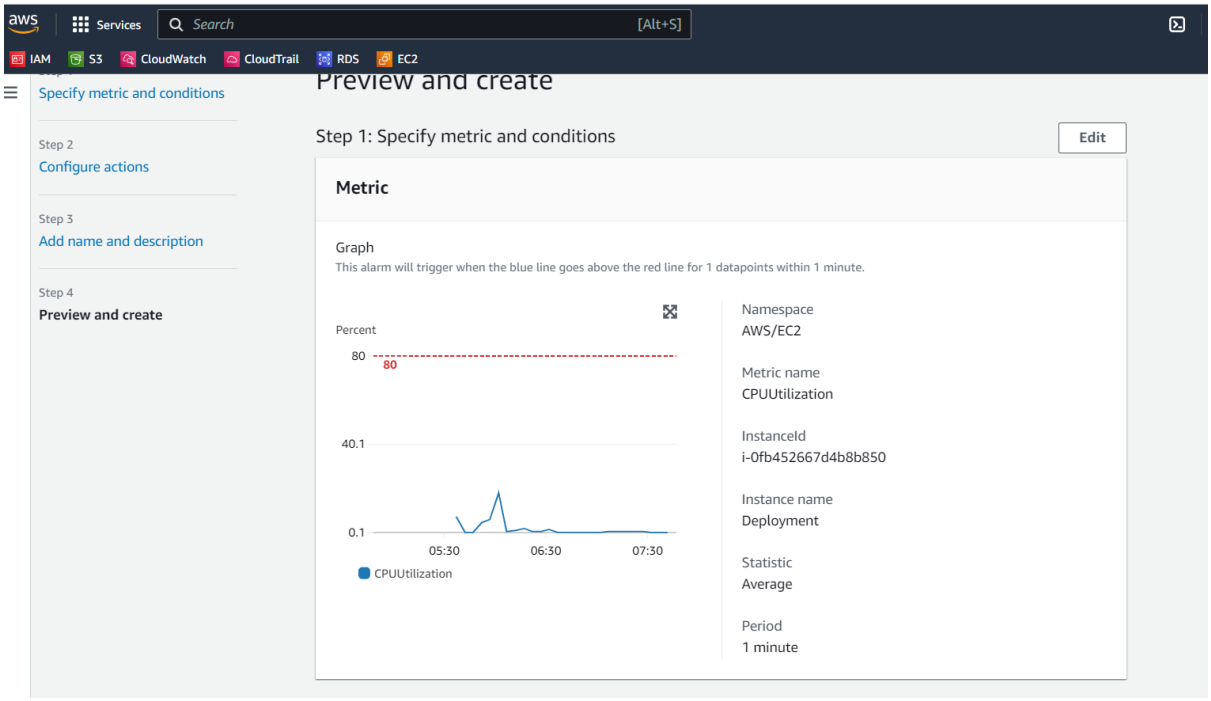
Step 9:

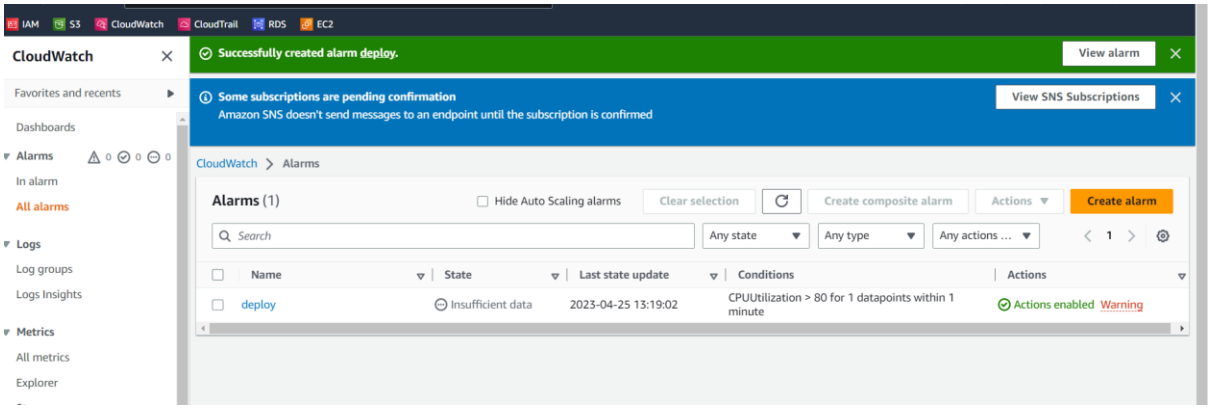
Monitoring using Cloud Watch

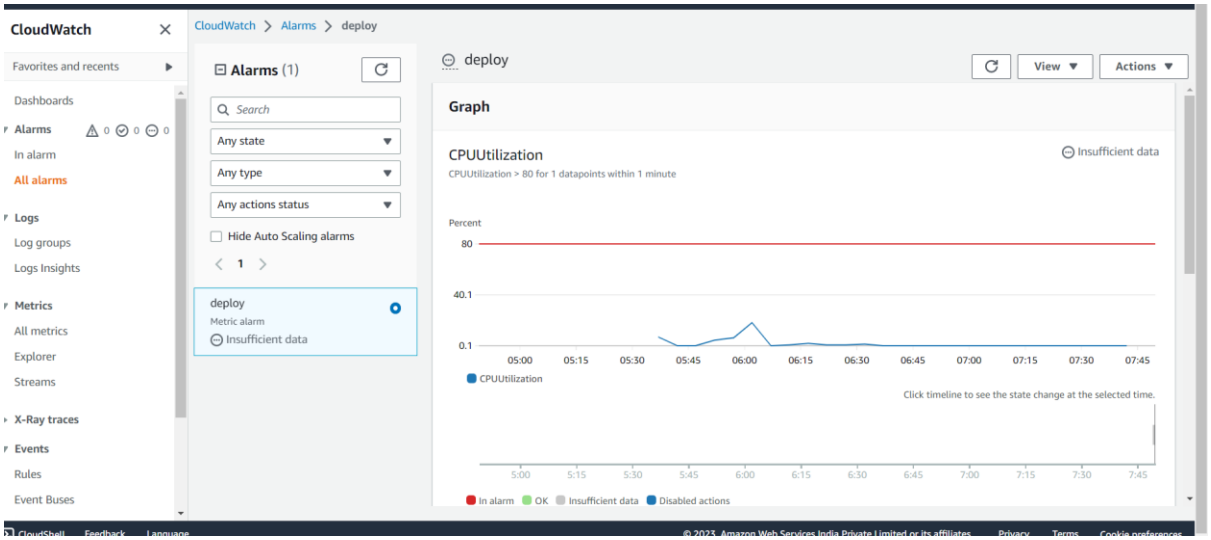




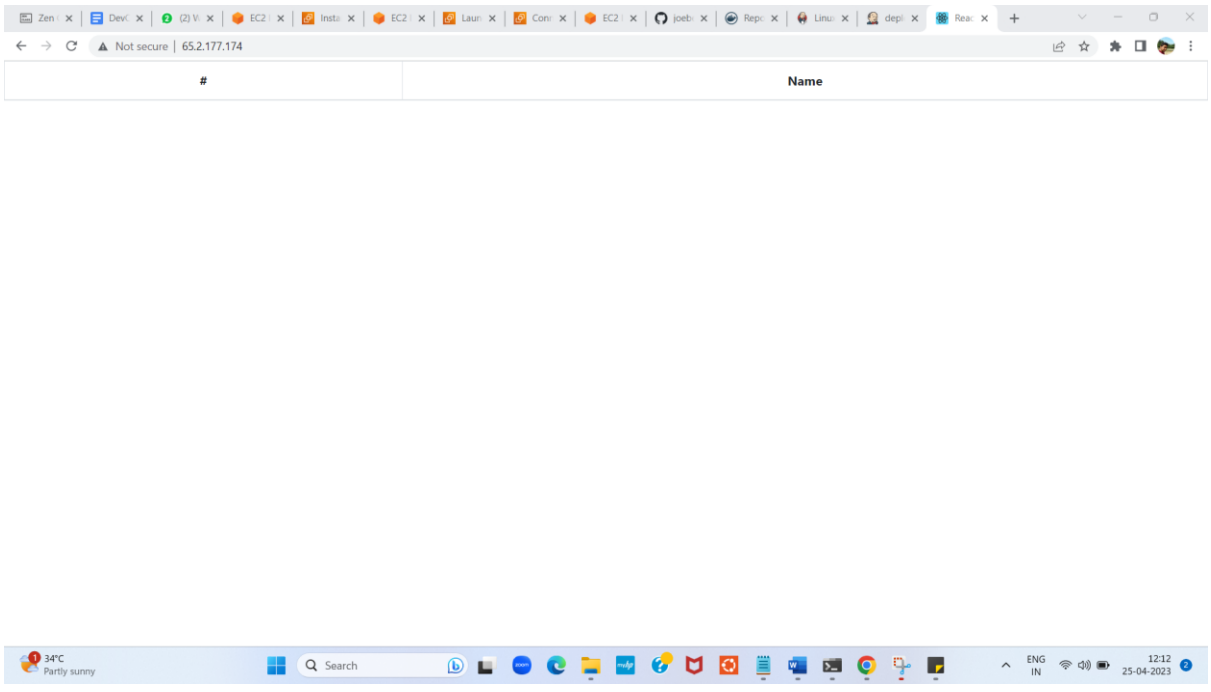

aws
Services
Search
[Alt+S]
IAM
S3
CloudWatch
CloudTrail
RDS
EC2
CloudWatch > Alarms > Create alarm
Step 1
Specify metric and conditions
Step 2
Configure actions
Step 3
Add name and description
Step 4
Preview and create
Configure actions
Notification
Alarm state trigger
Define the alarm state that will trigger this action.
Remove
In alarm
The metric or expression is outside of the defined threshold.
OK
The metric or expression is within the defined threshold.
Insufficient data
The alarm has just started or not enough data is available.
Send a notification to the following SNS topic
Define the SNS (Simple Notification Service) topic that will receive the notification.
Select an existing SNS topic
Create new topic
Use topic ARN to notify other accounts
Send a notification to...
Default_CloudWatch_Alarms_Topic
Only email lists for this account are available.
Email (endpoints)
joebenhur.f@gmail.com - View in SNS Console
Add notification

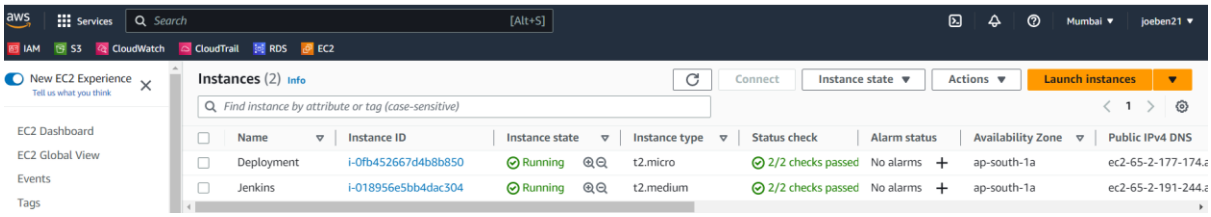

aws
Services
Search
[Alt+S]
IAM
S3
CloudWatch
CloudTrail
RDS
EC2
Specify metric and conditions
Step 2
Configure actions
Step 3
Add name and description
Step 4
Preview and create
Preview and create
Step 1: Specify metric and conditions
Edit
Metric
Graph
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 1 minute.
Percent
80
80
40.1
0.1
05:30
06:30
07:30
CPUUtilization
Namespace
AWS/EC2
Metric name
CPUUtilization
InstanceId
i-0fb452667d4b8b850
Instance name
Deployment
Statistic
Average
Period
1 minute

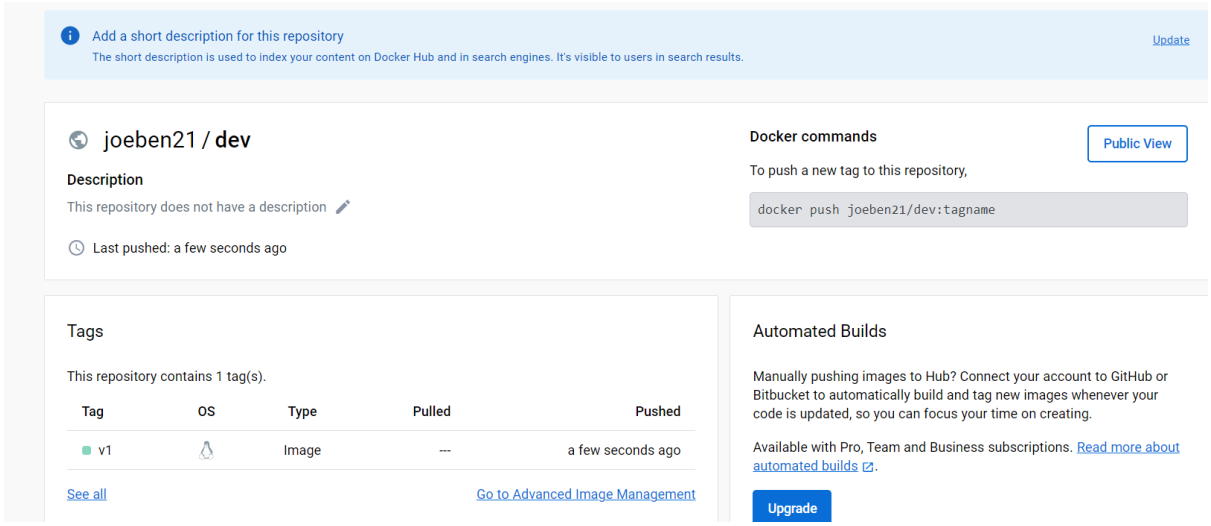

IAM
S3
CloudWatch
CloudTrail
RDS
EC2
CloudWatch
Successfully created alarm deploy.
View alarm
Some subscriptions are pending confirmation
Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed
View SNS Subscriptions
Favorites and recents
Dashboards
Alarms
In alarm
All alarms
Logs
Log groups
Logs Insights
Metrics
All metrics
Explorer
CloudWatch > Alarms
Alarms (1)
Hide Auto Scaling alarms
Clear selection
Create composite alarm
Actions
Create alarm
Search
Any state
Any type
Any actions ...
Name
State
Last state update
Conditions
Actions
deploy
Insufficient data
2023-04-25 13:19:02
CPUUtilization > 80 for 1 datapoints within 1 minute
Actions enabled
Warning

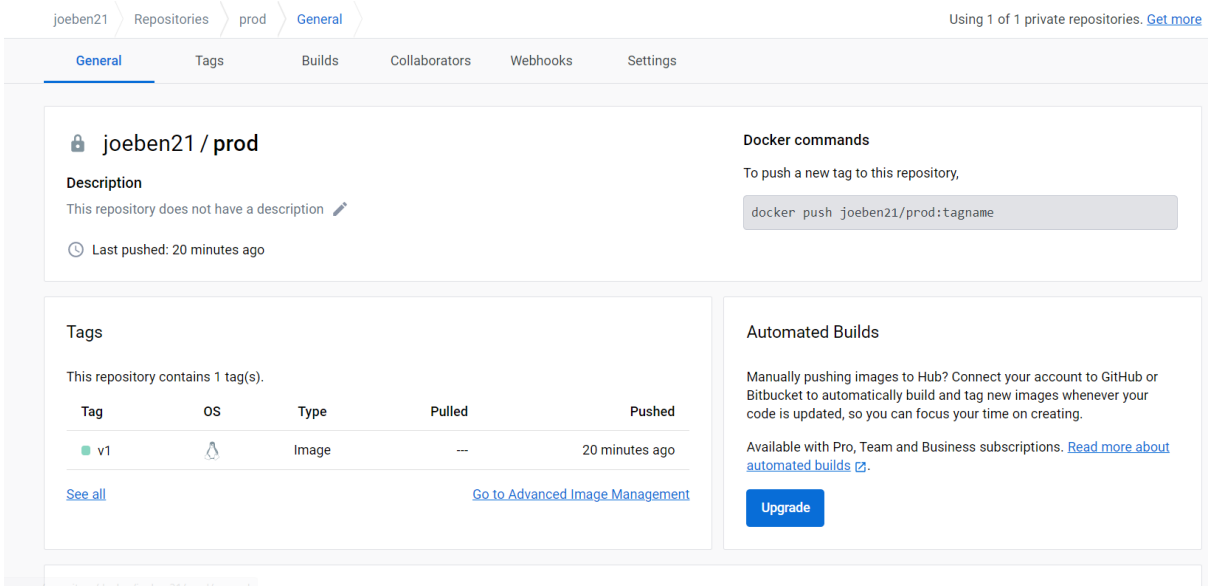

CloudWatch
CloudWatch > Alarms > deploy
Alarms (1)
deploy
View
Actions
Graph
Search
Any state
Any type
Any actions status
Hide Auto Scaling alarms
deploy
Metric alarm
Insufficient data
CPUUtilization
CPUUtilization > 80 for 1 datapoints within 1 minute
Insufficient data
Percent
80
40.1
0.1
05:00
05:15
05:30
05:45
06:00
06:15
06:30
06:45
07:00
07:15
07:30
07:45
CPUUtilization
Click timeline to see the state change at the selected time.
In alarm
OK
Insufficient data
Disabled actions

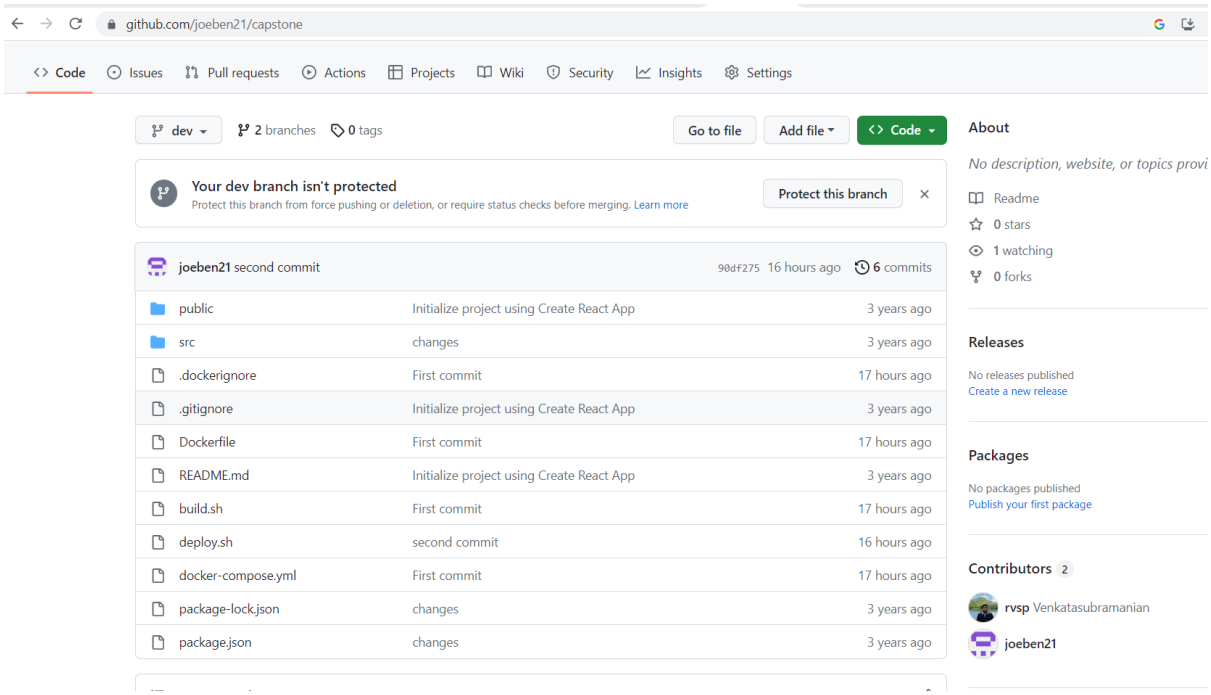
OUTPUT:

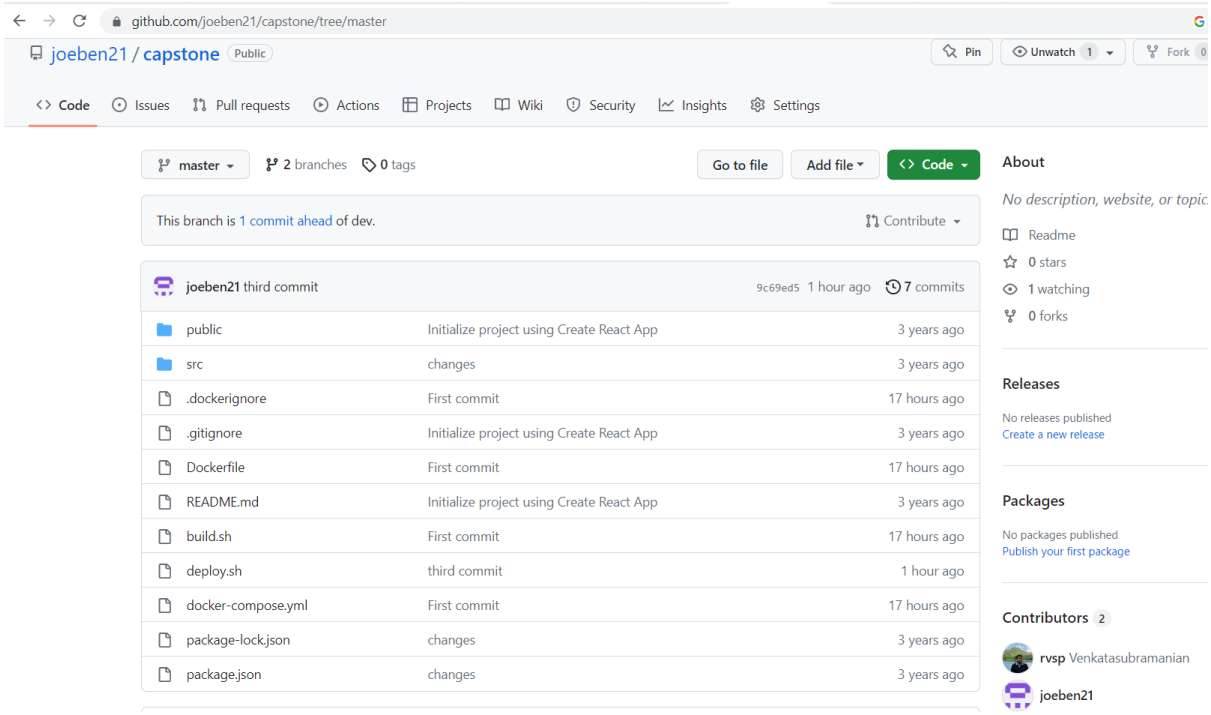

Not secure | 65.2.177.174
#
Name
34°C
Partly sunny
Search
ENG
IN
12:12
25-04-2023

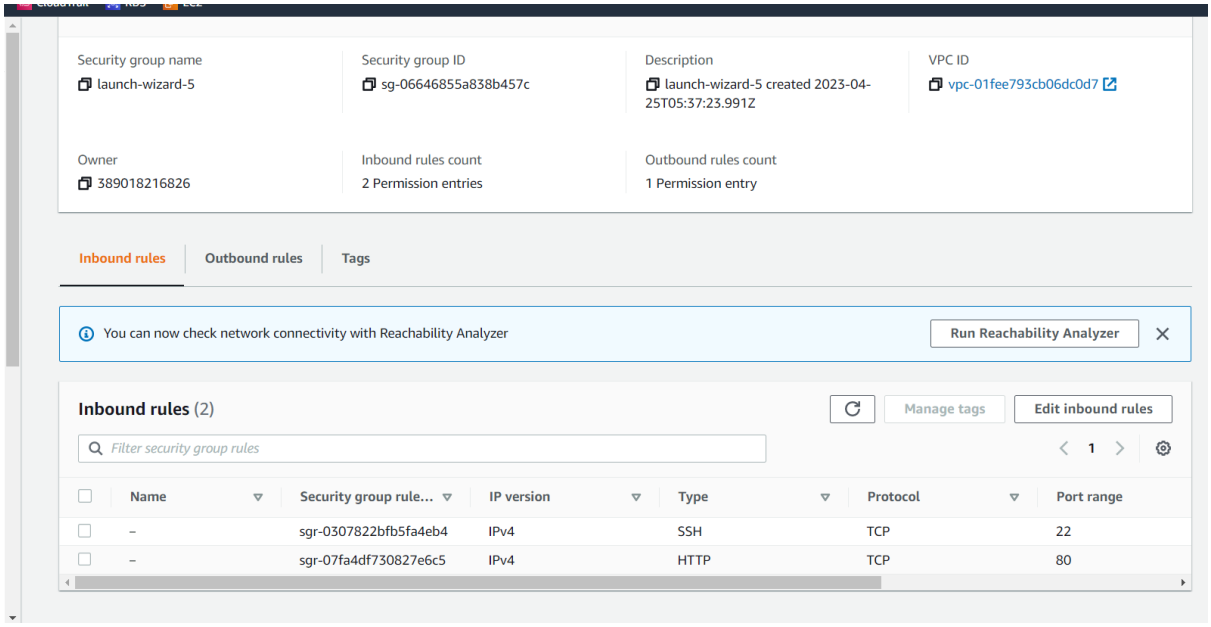

aws
Services
Search
[Alt+S]
Mumbai
joeben21
IAM
S3
CloudWatch
CloudTrail
RDS
EC2
New EC2 Experience
Tell us what you think
EC2 Dashboard
EC2 Global View
Events
Tags
Instances (2) Info
Connect
Instance state
Actions
Launch instances
Find instance by attribute or tag (case-sensitive)
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DNS
Deployment
i-0fb452667d4b8b850
Running
t2.micro
2/2 checks passed
No alarms
ap-south-1a
Jenkins
i-018956e5bb4dac304
Running
t2.medium
2/2 checks passed
No alarms
ap-south-1a

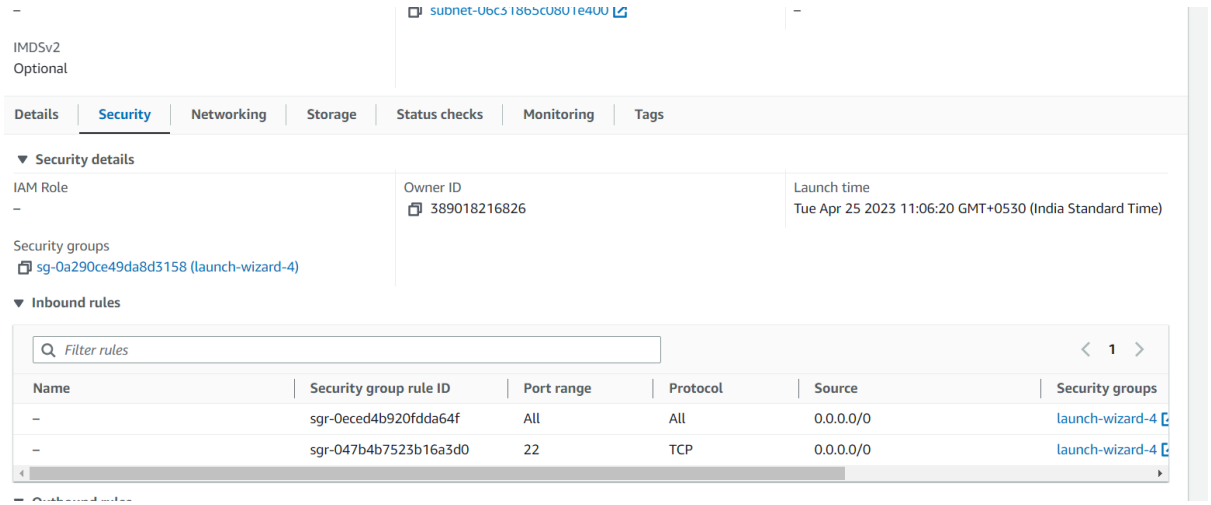

Add a short description for this repository
The short description is used to index your content on Docker Hub and in search engines. It's visible to users in search results.
Update
joeben21 / dev
Description
This repository does not have a description
Last pushed: a few seconds ago
Docker commands
Public View
To push a new tag to this repository,
docker push joeben21/dev:tagname
Tags
This repository contains 1 tag(s).
Tag
OS
Type
Pulled
Pushed
v1
Image
---
a few seconds ago
See all
Go to Advanced Image Management
Automated Builds
Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.
Available with Pro, Team and Business subscriptions. Read more about automated builds.
Upgrade


joeben21
Repositories
prod
General
Using 1 of 1 private repositories. Get more
General
Tags
Builds
Collaborators
Webhooks
Settings
joeben21 / prod
Description
This repository does not have a description
Last pushed: 20 minutes ago
Docker commands
To push a new tag to this repository,
docker push joeben21/prod:tagname
Tags
This repository contains 1 tag(s).
Tag
OS
Type
Pulled
Pushed
v1
Image
---
20 minutes ago
See all
Go to Advanced Image Management
Automated Builds
Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.
Available with Pro, Team and Business subscriptions. Read more about automated builds.
Upgrade


github.com/joeben21/capstone
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
dev
2 branches
0 tags
Go to file
Add file
Code
Your dev branch isn't protected
Protect this branch from force pushing or deletion, or require status checks before merging. Learn more
Protect this branch
joeben21 second commit
90df275 16 hours ago
6 commits
public Initialize project using Create React App 3 years ago
src changes 3 years ago
.dockerignore First commit 17 hours ago
.gitignore Initialize project using Create React App 3 years ago
Dockerfile First commit 17 hours ago
README.md Initialize project using Create React App 3 years ago
build.sh First commit 17 hours ago
deploy.sh second commit 16 hours ago
docker-compose.yml First commit 17 hours ago
package-lock.json changes 3 years ago
package.json changes 3 years ago
About
No description, website, or topics provi
Readme
0 stars
1 watching
0 forks
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
Contributors 2
rvsp Venkatasubramanian
joeben21


github.com/joeben21/capstone/tree/master
joeben21 / capstone
Public
Pin
Unwatch 1
Fork 0
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
master
2 branches
0 tags
Go to file
Add file
Code
This branch is 1 commit ahead of dev.
Contribute
joeben21 third commit
9c69ed5 1 hour ago
7 commits
public Initialize project using Create React App 3 years ago
src changes 3 years ago
.dockerignore First commit 17 hours ago
.gitignore Initialize project using Create React App 3 years ago
Dockerfile First commit 17 hours ago
README.md Initialize project using Create React App 3 years ago
build.sh First commit 17 hours ago
deploy.sh third commit 1 hour ago
docker-compose.yml First commit 17 hours ago
package-lock.json changes 3 years ago
package.json changes 3 years ago
About
No description, website, or topic
Readme
0 stars
1 watching
0 forks
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
Contributors 2
rvsp Venkatasubramanian
joeben21


Security group name
launch-wizard-5
Security group ID
sg-06646855a838b457c
Description
launch-wizard-5 created 2023-04-25T05:37:23.991Z
VPC ID
vpc-01fee793cb06dc0d7
Owner
389018216826
Inbound rules count
2 Permission entries
Outbound rules count
1 Permission entry
Inbound rules
Outbound rules
Tags
You can now check network connectivity with Reachability Analyzer
Run Reachability Analyzer
Inbound rules (2)
Manage tags
Edit inbound rules
Filter security group rules
Name
Security group rule...
IP version
Type
Protocol
Port range
sgr-0307822bfb5fa4eb4
IPv4
SSH
TCP
22
sgr-07fa4df730827e6c5
IPv4
HTTP
TCP
80


IMDSv2
Optional
Details
Security
Networking
Storage
Status checks
Monitoring
Tags
Security details
IAM Role
Owner ID
389018216826
Launch time
Tue Apr 25 2023 11:06:20 GMT+0530 (India Standard Time)
Security groups
sg-0a290ce49da8d3158 (launch-wizard-4)
Inbound rules
Filter rules
Name
Security group rule ID
Port range
Protocol
Source
Security groups
sgr-0eced4b920fdda64f
All
All
0.0.0.0/0
launch-wizard-4
sgr-047b4b7523b16a3d0
22
TCP
0.0.0.0/0
launch-wizard-4