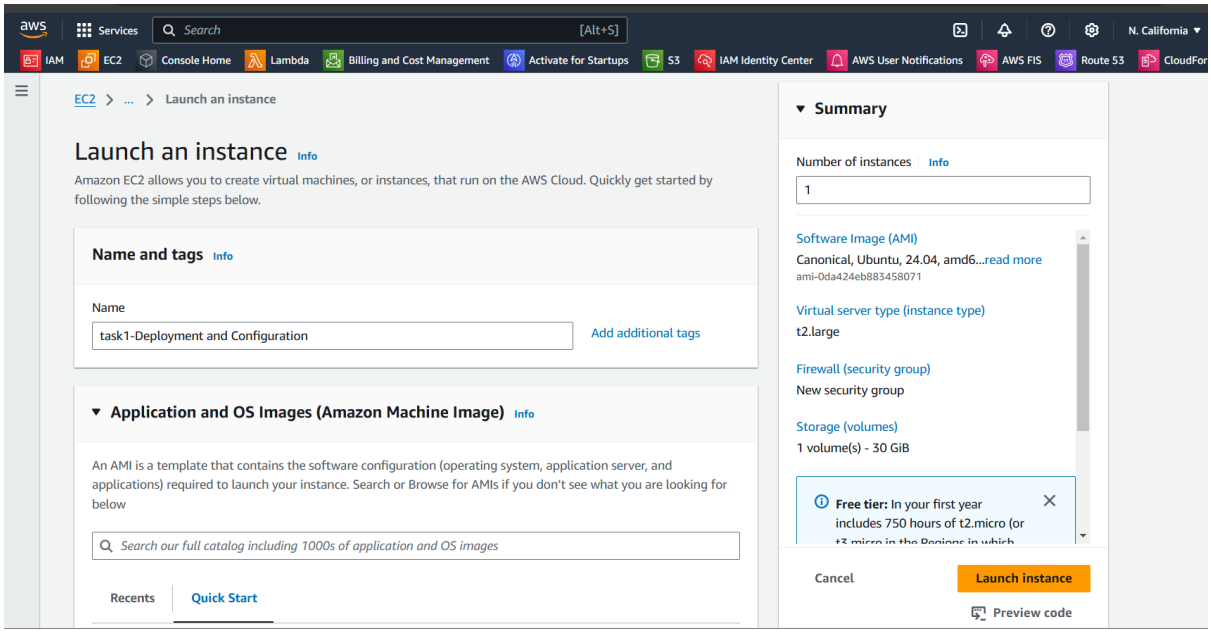
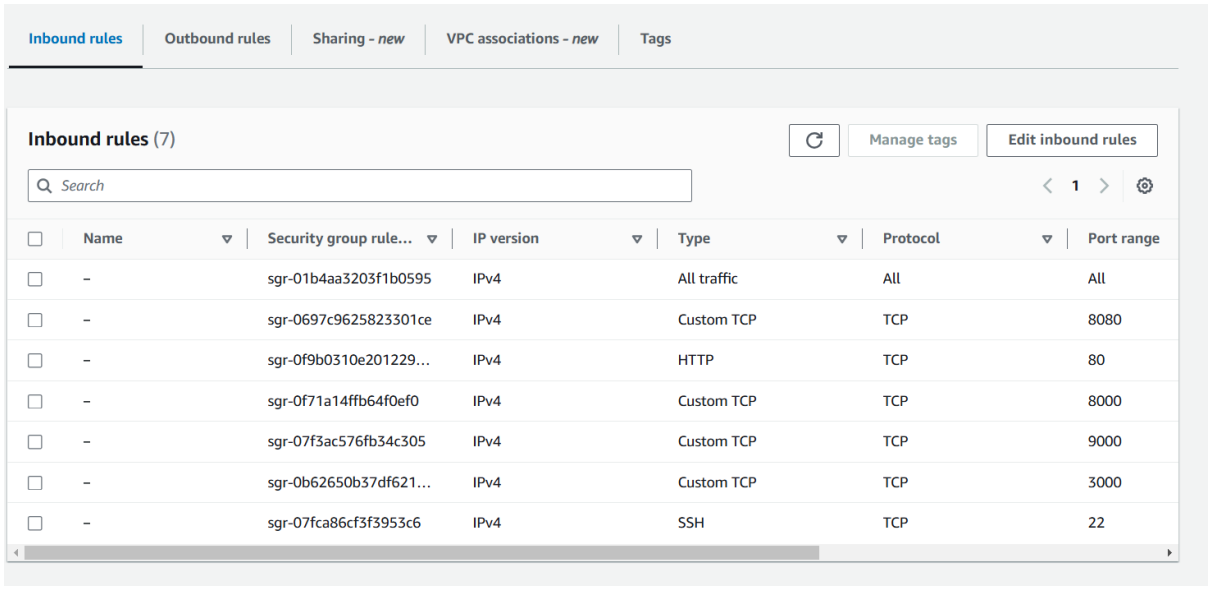
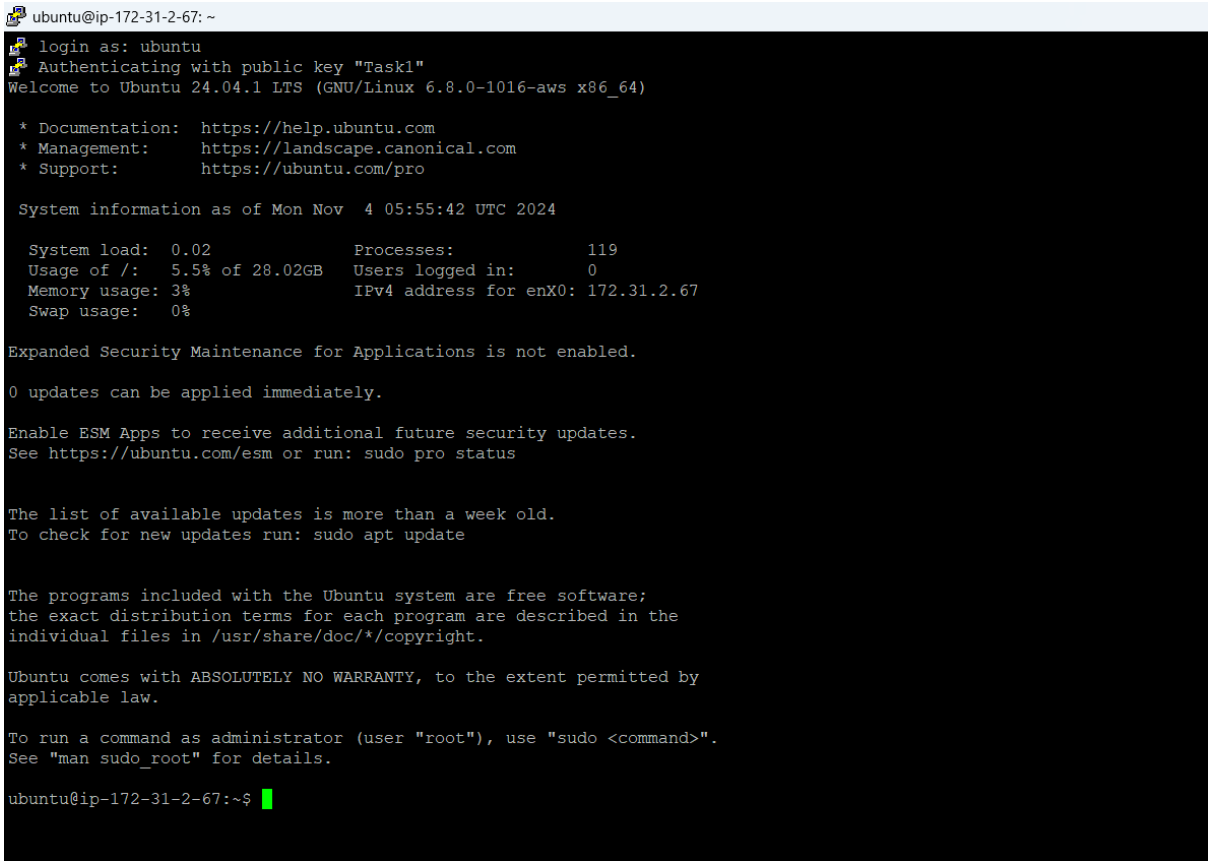
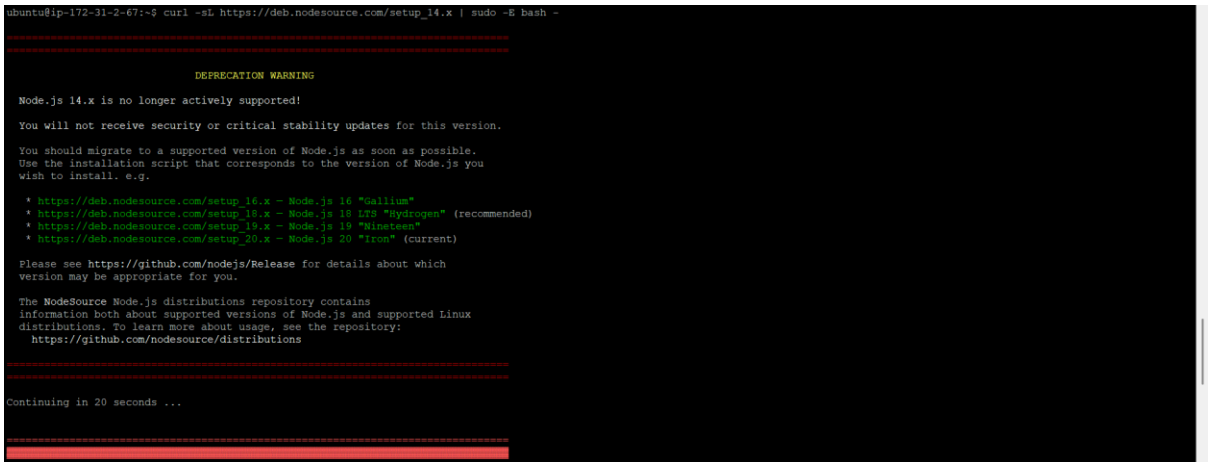
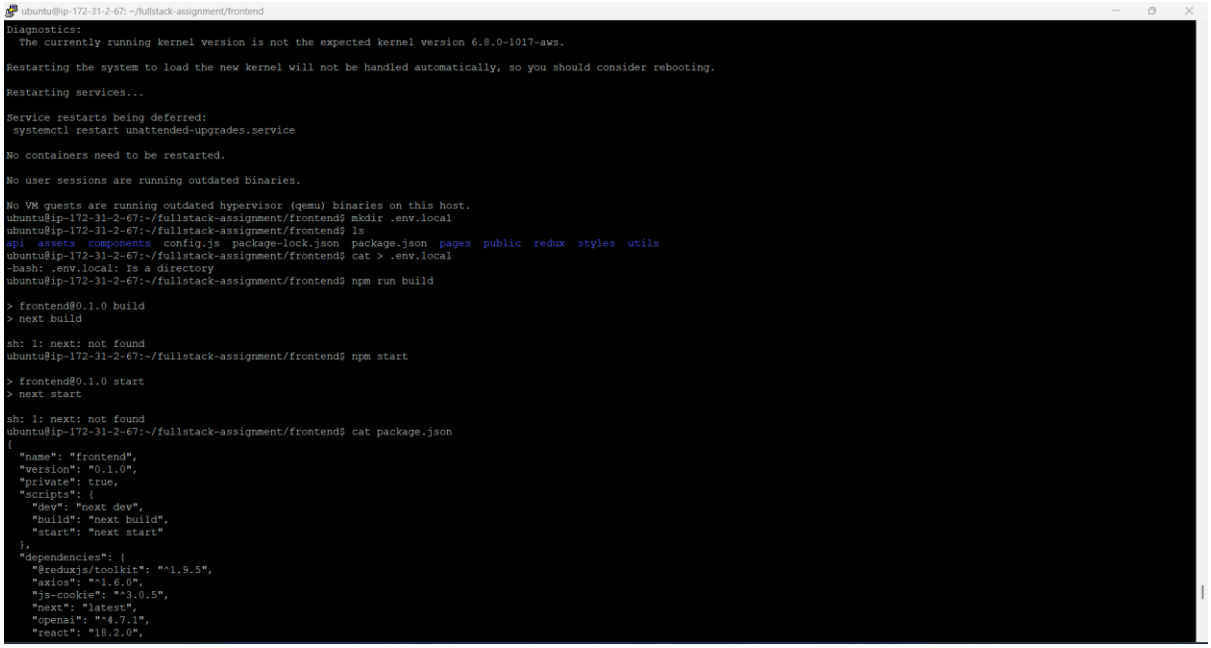
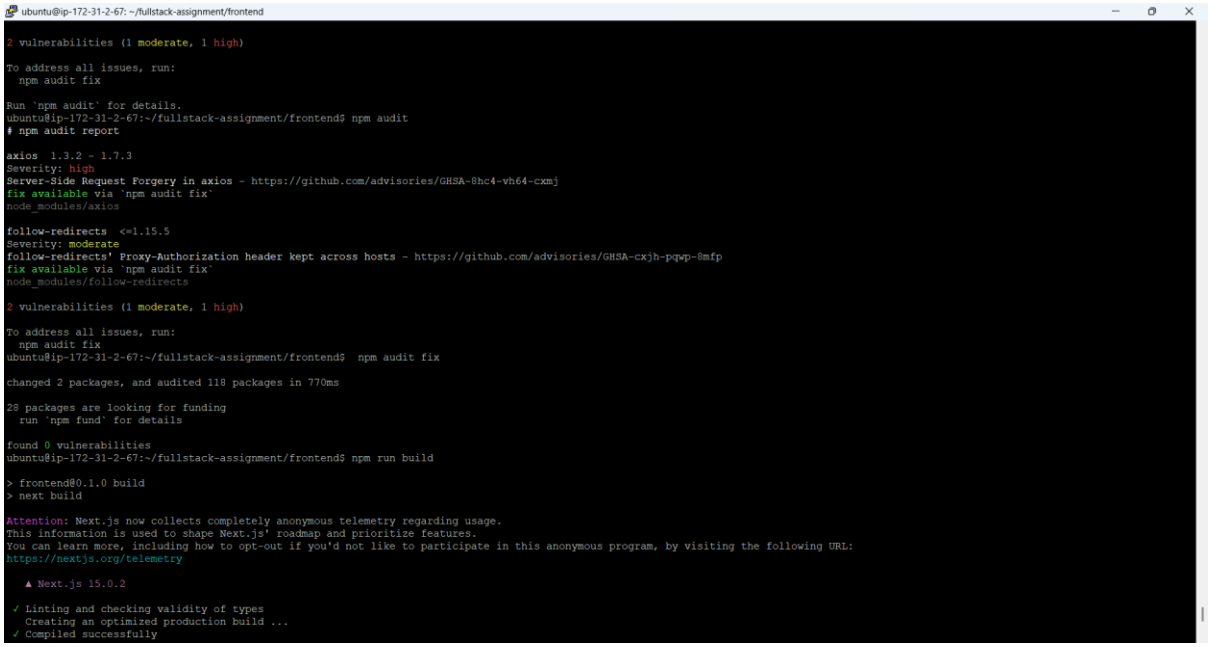

aws
Services
Search
[Alt+S]
N. California
IAM
EC2
Console Home
Lambda
Billing and Cost Management
Activate for Startups
S3
IAM Identity Center
AWS User Notifications
AWS FIS
Route 53
EC2 > ... > Launch an instance
Launch an instance Info
Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.
Name and tags Info
Name
task1-Deployment and Configuration
Add additional tags
Application and OS Images (Amazon Machine Image) Info
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below
Search our full catalog including 1000s of application and OS images
Recents
Quick Start
Summary
Number of instances Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04, amd6...read more
ami-0da424eb883458071
Virtual server type (instance type)
t2.large
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 30 GiB
Free tier: In your first year includes 750 hours of t2.micro (or
Cancel
Launch instance
Preview code


Inbound rules
Outbound rules
Sharing - new
VPC associations - new
Tags
Inbound rules (7)
Manage tags
Edit inbound rules
Search
1
Name
Security group rule...
IP version
Type
Protocol
Port range
- sgr-01b4aa3203f1b0595 IPv4 All traffic All All
- sgr-0697c9625823301ce IPv4 Custom TCP TCP 8080
- sgr-0f9b0310e201229... IPv4 HTTP TCP 80
- sgr-0f71a14ffb64f0ef0 IPv4 Custom TCP TCP 8000
- sgr-07f3ac576fb34c305 IPv4 Custom TCP TCP 9000
- sgr-0b62650b37df621... IPv4 Custom TCP TCP 3000
- sgr-07fca86cf3f3953c6 IPv4 SSH TCP 22

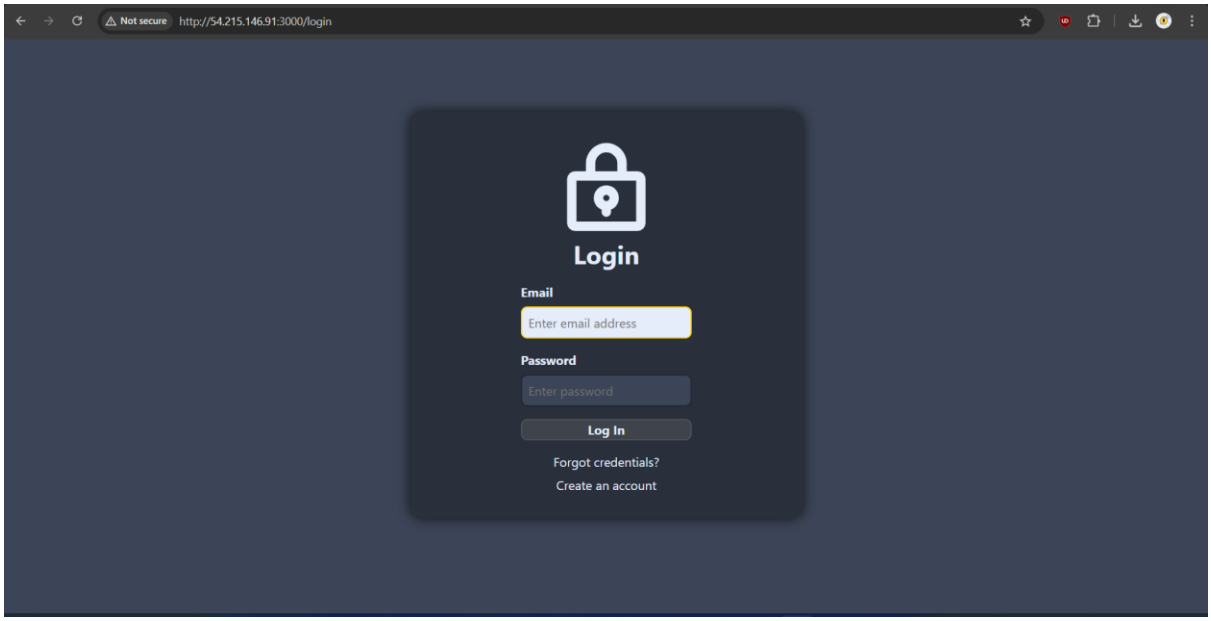

ubuntu@ip-172-31-2-67: ~
login as: ubuntu
Authenticating with public key "Task1"
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro
System information as of Mon Nov 4 05:55:42 UTC 2024
System load: 0.02
Usage of /: 5.5% of 28.02GB
Memory usage: 3%
Swap usage: 0%
Processes: 119
Users logged in: 0
IPv4 address for enX0: 172.31.2.67
Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-2-67:~$

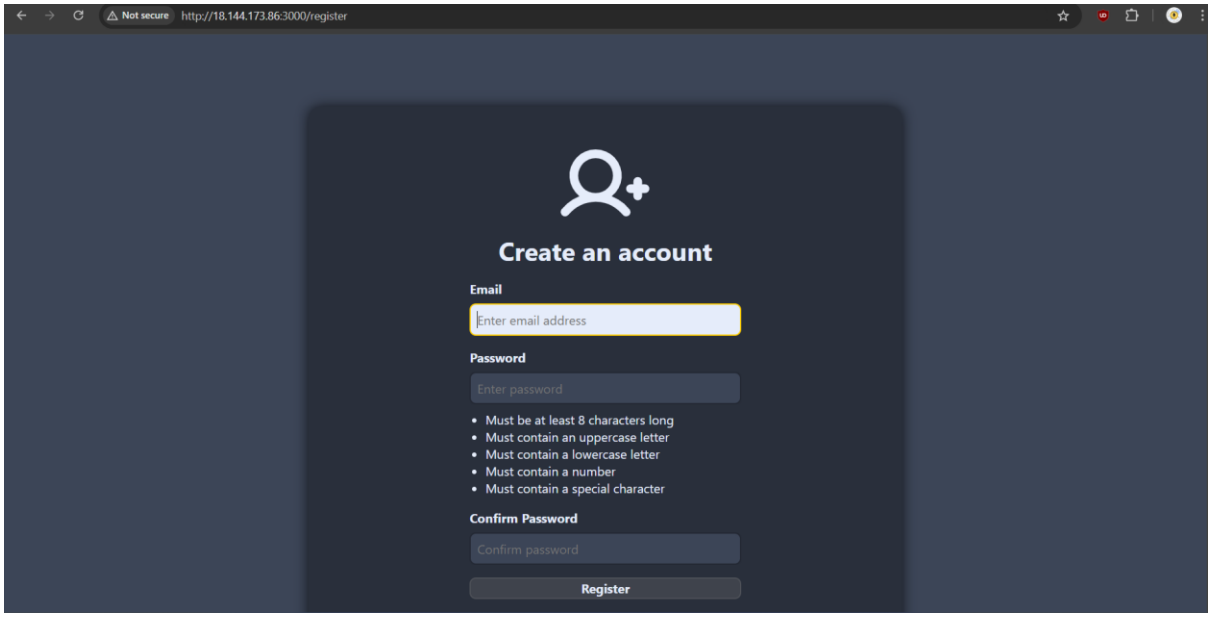

ubuntu@ip-172-31-2-67:~$ curl -sL https://deb.nodesource.com/setup_14.x | sudo -E bash -
DEPRECATION WARNING
Node.js 14.x is no longer actively supported!
You will not receive security or critical stability updates for this version.
You should migrate to a supported version of Node.js as soon as possible.
Use the installation script that corresponds to the version of Node.js you
wish to install. e.g.
* https://deb.nodesource.com/setup_16.x — Node.js 16 "Gallium"
* https://deb.nodesource.com/setup_18.x — Node.js 18 LTS "Hydrogen" (recommended)
* https://deb.nodesource.com/setup_19.x — Node.js 19 "Nineteen"
* https://deb.nodesource.com/setup_20.x — Node.js 20 "Iron" (current)
Please see https://github.com/nodejs/Release for details about which
version may be appropriate for you.
The NodeSource Node.js distributions repository contains
information both about supported versions of Node.js and supported Linux
distributions. To learn more about usage, see the repository:
https://github.com/nodesource/distributions
Continuing in 20 seconds ...


ubuntu@ip-172-31-2-67: ~/fullstack-assignment/frontend
Diagnostics:
The currently running kernel version is not the expected kernel version 6.8.0-1017-aws.
Restarting the system to load the new kernel will not be handled automatically, so you should consider rebooting.
Restarting services...
Service restarts being deferred:
systemctl restart unattended-upgrades.service
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ mkdir .env.local
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ ls
api assets components config.js package-lock.json package.json pages public redux styles utils
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ cat > .env.local
-bash: .env.local: Is a directory
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ npm run build
> frontend@0.1.0 build
> next build
sh: 1: next: not found
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ npm start
> frontend@0.1.0 start
> next start
sh: 1: next: not found
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ cat package.json
{
"name": "frontend",
"version": "0.1.0",
"private": true,
"scripts": {
"dev": "next dev",
"build": "next build",
"start": "next start"
},
"dependencies": {
"@reduxjs/toolkit": "^1.9.5",
"axios": "^1.6.0",
"js-cookie": "^3.0.5",
"next": "latest",
"openai": "^4.7.1",
"react": "18.2.0",


ubuntu@ip-172-31-2-67: ~/fullstack-assignment/frontend
2 vulnerabilities (1 moderate, 1 high)
To address all issues, run:
npm audit fix
Run `npm audit` for details.
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ npm audit
npm audit report
axios 1.3.2 - 1.7.3
Severity: high
Server-Side Request Forgery in axios - https://github.com/advisories/GHSA-8hc4-vh64-cxmj
fix available via `npm audit fix`
node_modules/axios
follow-redirects <=1.15.5
Severity: moderate
follow-redirects' Proxy-Authorization header kept across hosts - https://github.com/advisories/GHSA-cxjh-pqwp-8mfp
fix available via `npm audit fix`
node_modules/follow-redirects
2 vulnerabilities (1 moderate, 1 high)
To address all issues, run:
npm audit fix
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ npm audit fix
changed 2 packages, and audited 118 packages in 770ms
28 packages are looking for funding
run `npm fund` for details
found 0 vulnerabilities
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ npm run build
> frontend@0.1.0 build
> next build
Attention: Next.js now collects completely anonymous telemetry regarding usage.
This information is used to shape Next.js' roadmap and prioritize features.
You can learn more, including how to opt-out if you'd not like to participate in this anonymous program, by visiting the following URL:
https://nextjs.org/telemetry
▲ Next.js 15.0.2
✓ Linting and checking validity of types
Creating an optimized production build ...
✓ Compiled successfully

```
found 0 vulnerabilities
ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ npm run build

> frontend@0.1.0 build
> next build

Attention: Next.js now collects completely anonymous telemetry regarding usage.
This information is used to shape Next.js' roadmap and prioritize features.
You can learn more, including how to opt-out if you'd not like to participate in this anonymous program, by visiting the following URL:
https://nextjs.org/telemetry

   ▲ Next.js 15.0.2

 ✓ Linting and checking validity of types
   Creating an optimized production build ...
 ✓ Compiled successfully
 ✓ Collecting page data
 ✓ Generating static pages (2/2)
 ✓ Collecting build traces
 ✓ Finalizing page optimization

Route (pages)                             Size     First Load JS
┌ ƒ /                                     252 kB          375 kB
├   └ css/02d2bc1e30bbbb65.css             2.73 kB
├   /_app                                  0 B             120 kB
├ o /404                                  190 B           120 kB
├ ƒ /login                                7.92 kB         131 kB
└ ƒ /register                             8.31 kB         131 kB
+ First Load JS shared by all             121 kB
  ├ chunks/framework-69e2831d2e155e1e.js   44.8 kB
  ├ chunks/main-4f103e5964143be1.js        33.2 kB
  ├ chunks/pages/_app-c0bcdad89d2e6a23.js  41.4 kB
  └ other shared chunks (total)            1.29 kB

o  (Static)   prerendered as static content
ƒ  (Dynamic)  server-rendered on demand

ubuntu@ip-172-31-2-67:~/fullstack-assignment/frontend$ npm start

> frontend@0.1.0 start
> next start

   ▲ Next.js 15.0.2
   - Local:        http://localhost:3000

 ✓ Starting...
 ✓ Ready in 619ms
```






```
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ pip install -r requirements.txt
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ pip install gunicorn psycopg2-binary
Collecting gunicorn
  Downloading gunicorn-23.0.0-py3-none-any.whl.metadata (4.4 kB)
Collecting psycopg2-binary
  Downloading psycopg2_binary-2.9.10-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (4.9 kB)
Collecting packaging (from gunicorn)
  Downloading packaging-24.1-py3-none-any.whl.metadata (3.2 kB)
Downloading gunicorn-23.0.0-py3-none-any.whl (85 kB)
   ---------------------------------------- 85.0/85.0 kB 4.4 MB/s eta 0:00:00
Downloading psycopg2_binary-2.9.10-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.0 MB)
   ---------------------------------------- 3.0/3.0 MB 17.2 MB/s eta 0:00:00
Downloading packaging-24.1-py3-none-any.whl (53 kB)
   ---------------------------------------- 54.0/54.0 kB 5.0 MB/s eta 0:00:00
Installing collected packages: psycopg2-binary, packaging, gunicorn
Successfully installed gunicorn-23.0.0 packaging-24.1 psycopg2-binary-2.9.10
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$
```

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo systemctl start postgresql
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo systemctl enable postgresql
Synchronizing state of postgresql.service with SysV service script with /usr/lib/systemd/systemd-sysv-inst
Executing: /usr/lib/systemd/systemd-sysv-install enable postgresql
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo systemctl status postgresql
● postgresql.service - PostgreSQL RDBMS
     Loaded: loaded (/usr/lib/systemd/system/postgresql.service; enabled; preset: enabled)
     Active: active (exited) since Mon 2024-11-04 07:36:24 UTC; 44s ago
   Main PID: 21002 (code=exited, status=0/SUCCESS)
        CPU: 2ms

Nov 04 07:36:24 ip-172-31-2-67 systemd[1]: Starting postgresql.service - PostgreSQL RDBMS...
Nov 04 07:36:24 ip-172-31-2-67 systemd[1]: Finished postgresql.service - PostgreSQL RDBMS.
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$
```

```
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 3,974 B of archives.
After this operation, 35.8 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu noble/universe amd64 apt-transport-https all 2.7.14build2 [3,974 B]
Fetched 3,974 B in 1s (5,005 B/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 232903 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.7.14build2_all.deb ...
Unpacking apt-transport-https (2.7.14build2) ...
Setting up apt-transport-https (2.7.14build2) ...
Get:1 https://deb.nodesource.com/node_18.x nodistro InRelease [12.1 kB]
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu noble InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease
Get:5 https://deb.nodesource.com/node_18.x nodistro/main amd64 Packages [10.4 kB]
Hit:6 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease
Fetched 22.5 kB in 3s (8,452 B/s)
Reading package lists... Done
2024-11-05 16:31:29 - Repository configured successfully.
2024-11-05 16:31:29 - To install Node.js, run: apt-get install nodejs -y
2024-11-05 16:31:29 - You can use N|solid Runtime as a node.js alternative
2024-11-05 16:31:29 - To install N|solid Runtime, run: apt-get install nsolid -y
```

```
Nov 04 07:36:24 ip-172-31-2-67 systemd[1]: Starting postgresql.service - PostgreSQL RDBMS...
Nov 04 07:36:24 ip-172-31-2-67 systemd[1]: Finished postgresql.service - PostgreSQL RDBMS.
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo -u postgres psql -c "CREATE DATABASE fullstack_db;"
CREATE DATABASE
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo -u postgres psql -c "CREATE USER fullstack_user WITH PASSWORD 'you
CREATE ROLE
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo -u postgres psql -c "ALTER ROLE fullstack_user SET client_encodinc
ALTER ROLE
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo -u postgres psql -c "ALTER ROLE fullstack_user SET default_transac
ALTER ROLE
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo -u postgres psql -c "ALTER ROLE fullstack_user SET timezone TO 'UT
ALTER ROLE
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ sudo -u postgres psql -c "GRANT ALL PRIVILEGES ON DATABASE fullstack_db
GRANT
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ cat > .env << EOL
> DEBUG=False
> SECRET_KEY='your-secret-key-here'
ALLOWED_HOSTS=localhost,127.0.0.1
DATABASE_URL=postgresql://fullstack_user:your_password@localhost:5432/fullstack_db
> ALLOWED_HOSTS=localhost,127.0.0.1
> DATABASE_URL=postgresql://fullstack_user:your_password@localhost:5432/fullstack_db
> EOL
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$
```

```
ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ source venv/bin/activate
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$ pip show django
Name: Django
Version: 5.1.2
Summary: A high-level Python web framework that encourages rapid development and clean, pragmatic design.
Home-page: https://www.djangoproject.com/
Author:
Author-email: Django Software Foundation <foundation@djangoproject.com>
License: BSD-3-Clause
Location: /home/ubuntu/fullstack-assignment/backend/venv/lib/python3.12/site-packages
Requires: asgiref, sqlparse
Required-by: django-cors-headers, djangorestframework
(venv) ubuntu@ip-172-31-2-67:~/fullstack-assignment/backend$
```

Create an account

Email

gollarambabu000@gmail.com

Password

•••••••••

- Must be at least 8 characters long
- Must contain an uppercase letter
- Must contain a lowercase letter
- Must contain a number
- Must contain a special character

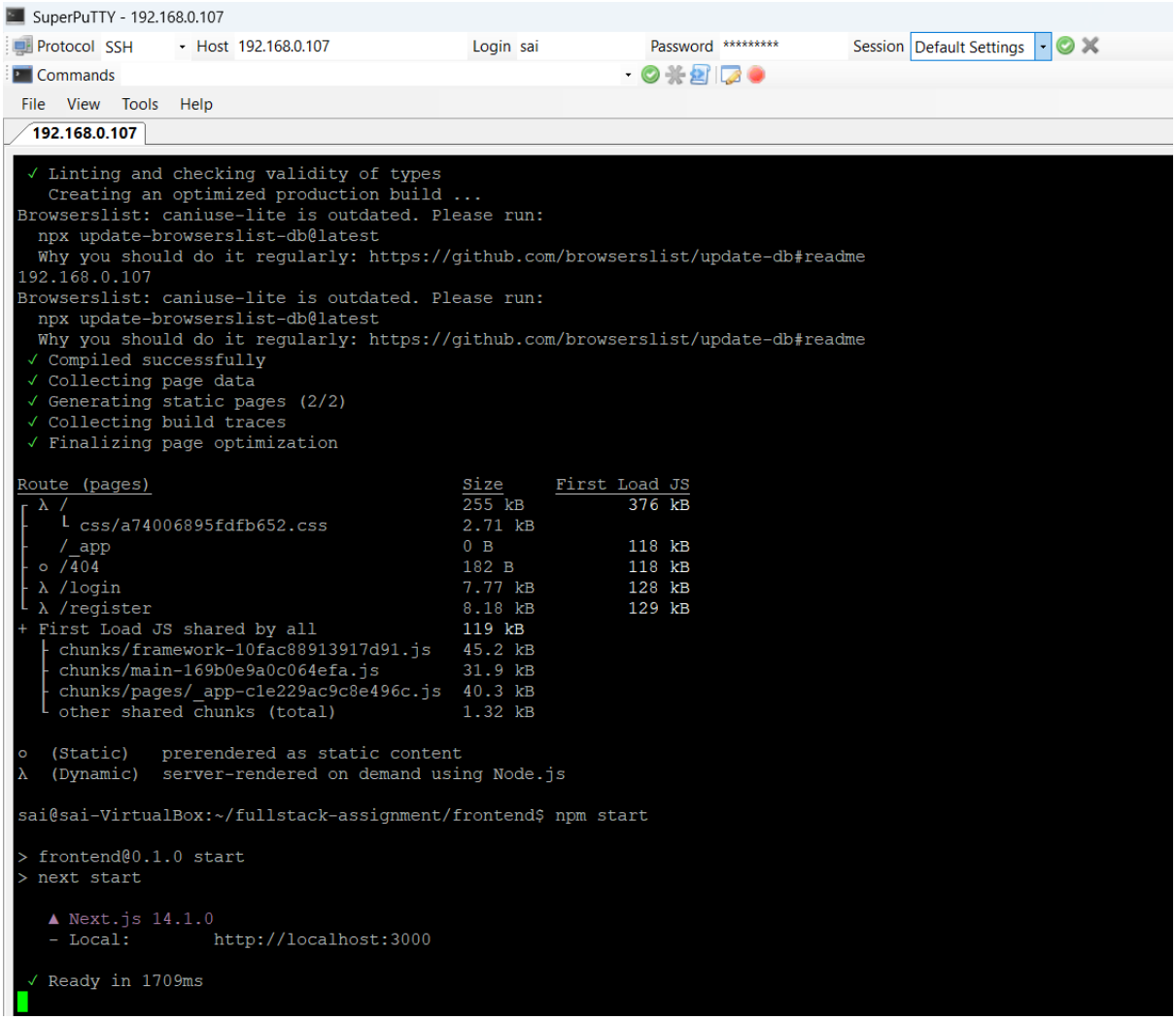
Confirm Password

•••••••••

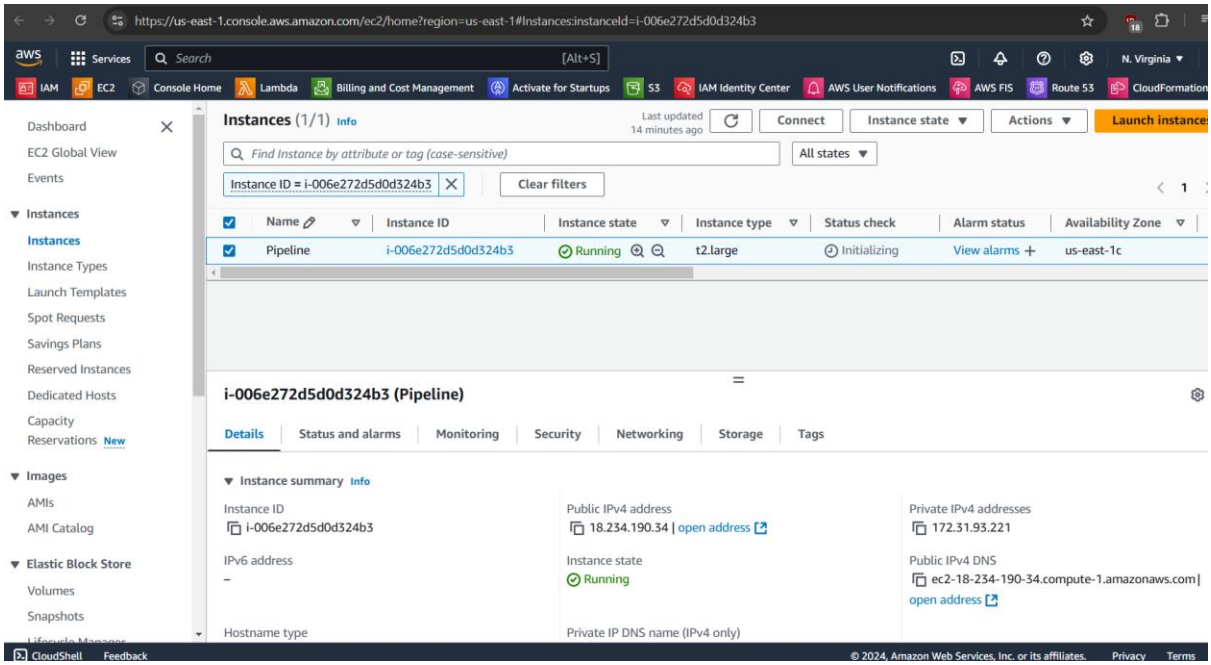
Register

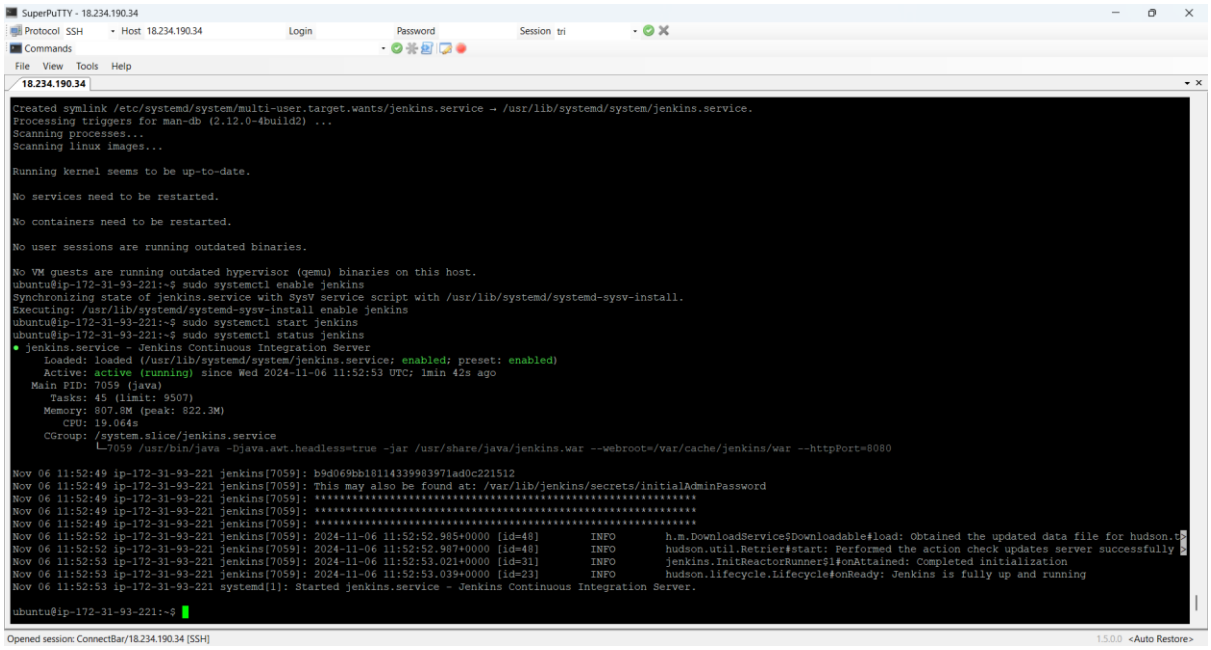
An error occurred while registering. Please try again.

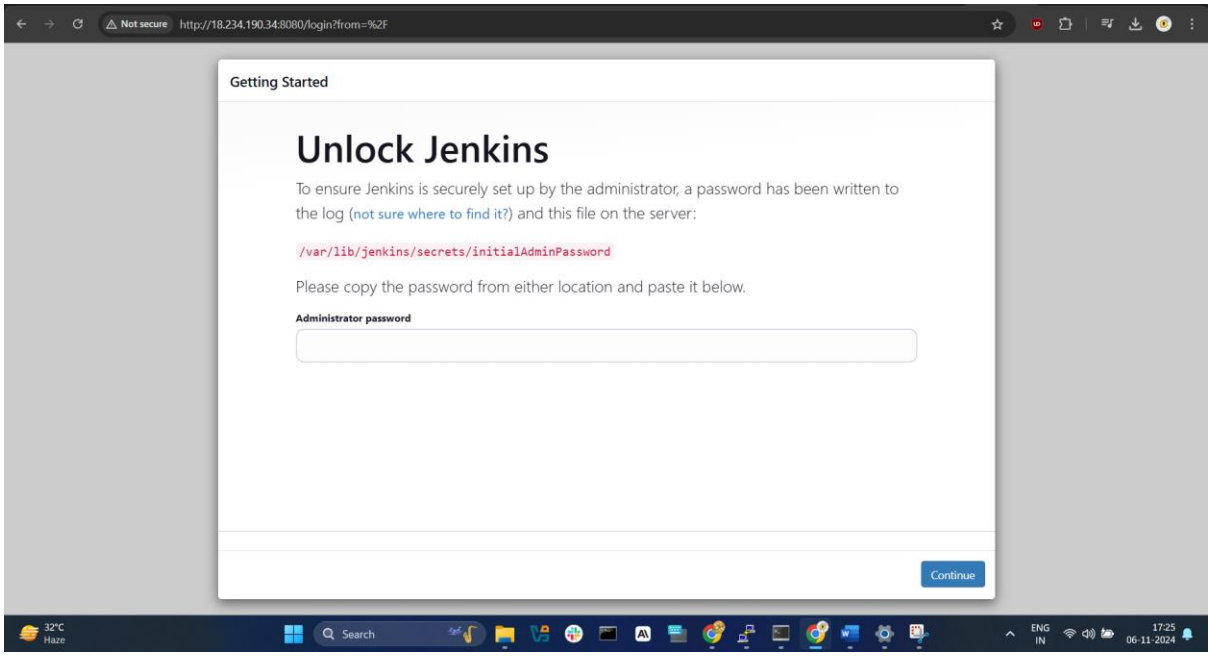
Back

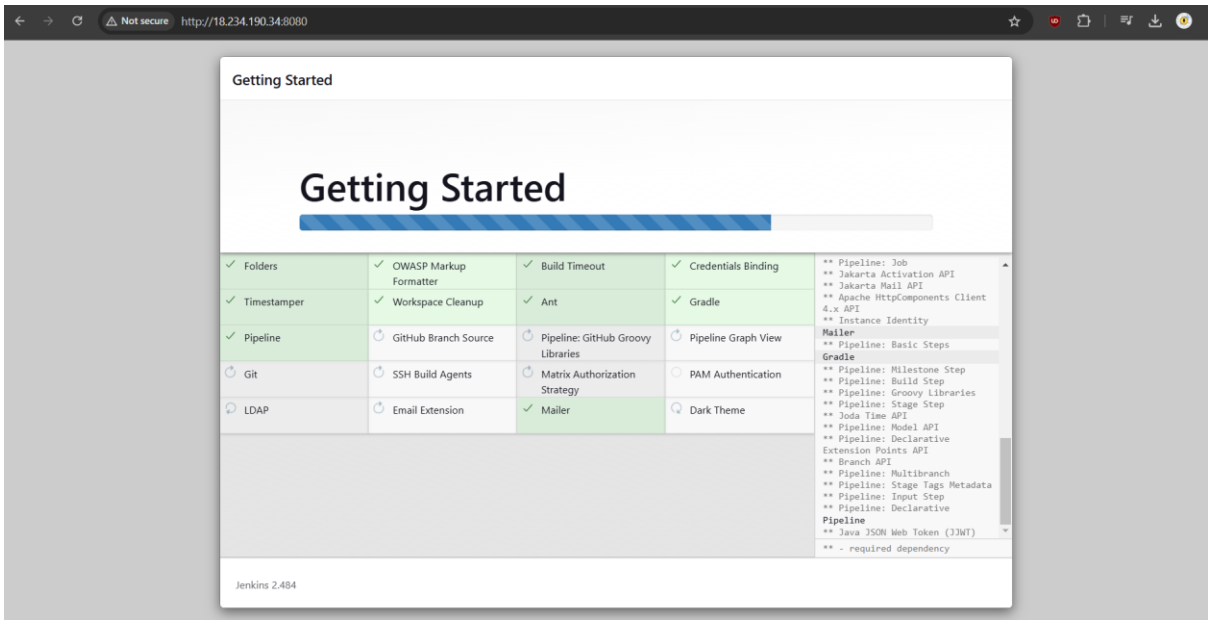

SuperPuTTY - 192.168.0.107
Protocol SSH
Host 192.168.0.107
Login sai
Password *********
Session Default Settings
Commands
File View Tools Help
192.168.0.107
✓ Linting and checking validity of types
Creating an optimized production build ...
Browserslist: caniuse-lite is outdated. Please run:
npx update-browserslist-db@latest
Why you should do it regularly: https://github.com/browserslist/update-db#readme
192.168.0.107
Browserslist: caniuse-lite is outdated. Please run:
npx update-browserslist-db@latest
Why you should do it regularly: https://github.com/browserslist/update-db#readme
✓ Compiled successfully
✓ Collecting page data
✓ Generating static pages (2/2)
✓ Collecting build traces
✓ Finalizing page optimization
Route (pages) Size First Load JS
┌ λ / 255 kB 376 kB
├ └ css/a74006895fdfb652.css 2.71 kB
├ /_app 0 B 118 kB
├ o /404 182 B 118 kB
├ λ /login 7.77 kB 128 kB
└ λ /register 8.18 kB 129 kB
+ First Load JS shared by all 119 kB
├ chunks/framework-10fac88913917d91.js 45.2 kB
├ chunks/main-169b0e9a0c064efa.js 31.9 kB
├ chunks/pages/_app-c1e229ac9c8e496c.js 40.3 kB
└ other shared chunks (total) 1.32 kB
o (Static) prerendered as static content
λ (Dynamic) server-rendered on demand using Node.js
sai@sai-VirtualBox:~/fullstack-assignment/frontend$ npm start
> frontend@0.1.0 start
> next start
▲ Next.js 14.1.0
- Local: http://localhost:3000
✓ Ready in 1709ms

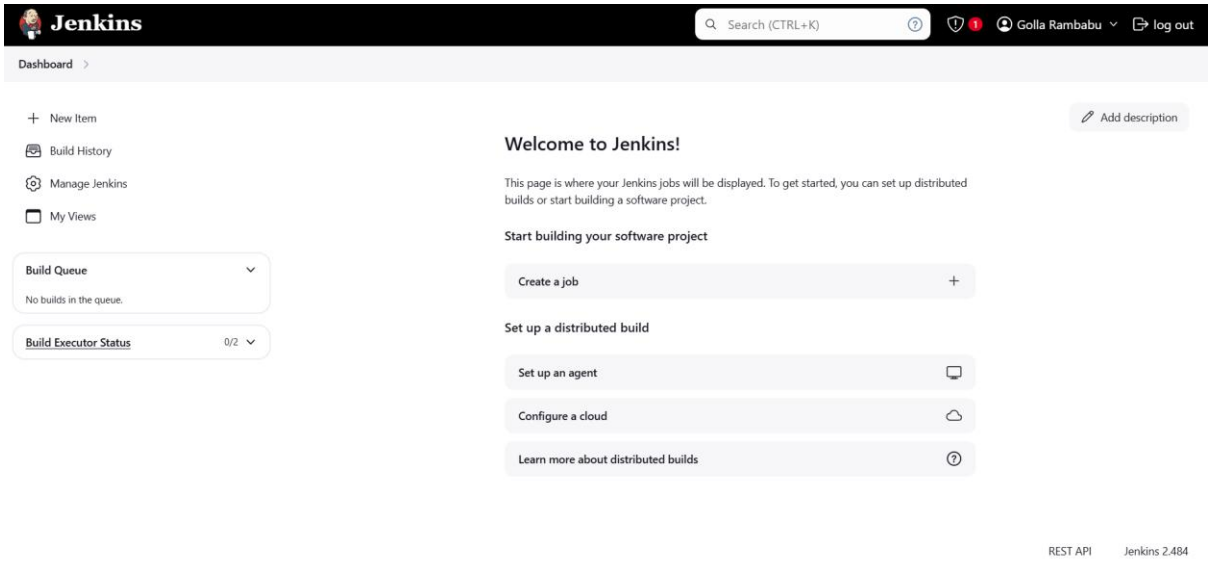
Task-2

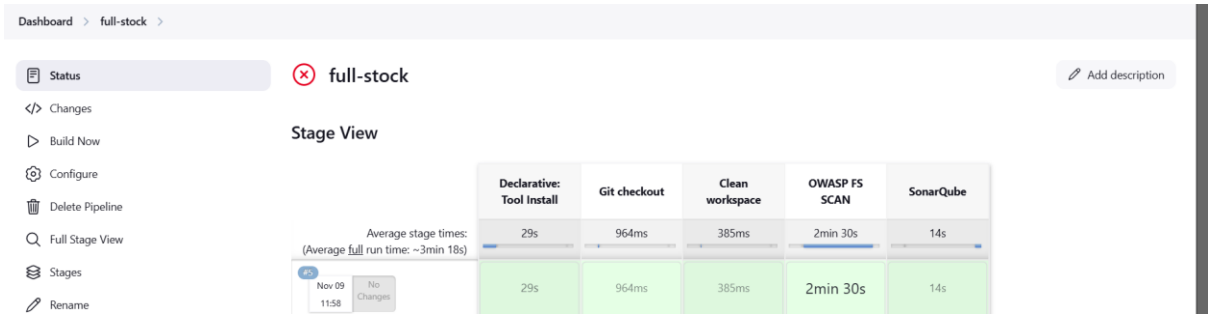

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceId=i-006e272d5d0d324b3
Services
Search
[Alt+S]
N. Virginia
IAM
EC2
Console Home
Lambda
Billing and Cost Management
Activate for Startups
S3
IAM Identity Center
AWS User Notifications
AWS FIS
Route 53
CloudFormation
Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Instances (1/1) Info
Last updated 14 minutes ago
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Instance ID = i-006e272d5d0d324b3
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Pipeline
i-006e272d5d0d324b3
Running
t2.large
Initializing
View alarms
us-east-1c
i-006e272d5d0d324b3 (Pipeline)
Details
Status and alarms
Monitoring
Security
Networking
Storage
Tags
Instance summary Info
Instance ID
i-006e272d5d0d324b3
Public IPv4 address
18.234.190.34 | open address
Private IPv4 addresses
172.31.93.221
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-18-234-190-34.compute-1.amazonaws.com | open address
Hostname type
Private IP DNS name (IPv4 only)
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms

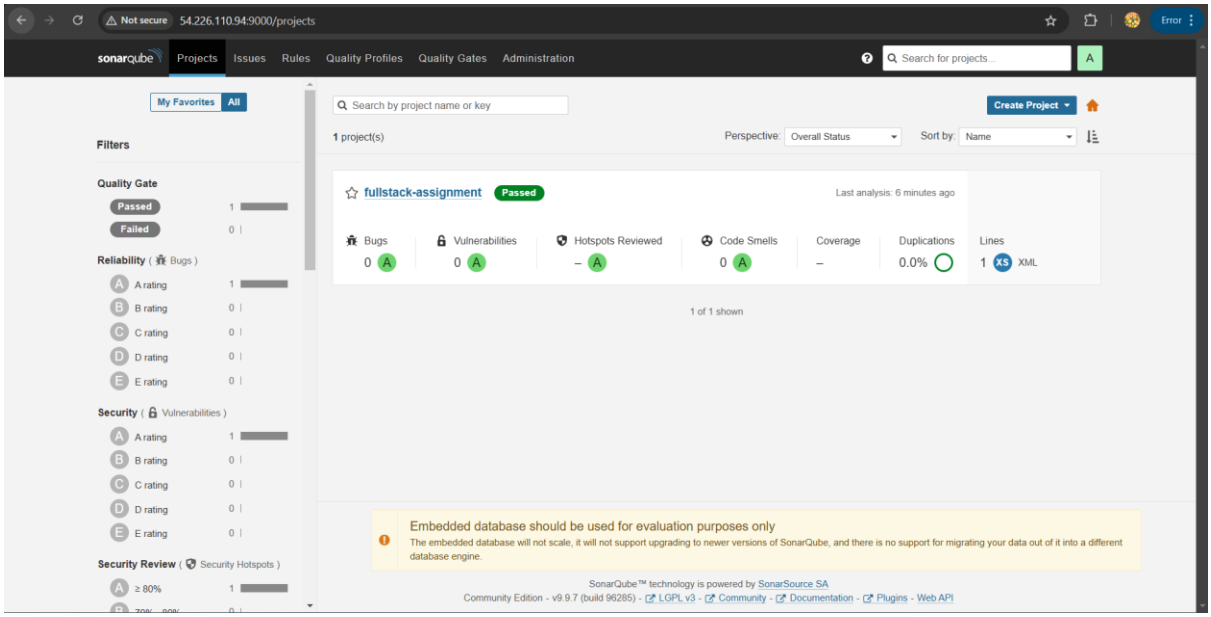

SuperPuTTY - 18.234.190.34
Protocol SSH
Host 18.234.190.34
Login
Password
Session tri
Commands
File View Tools Help
18.234.190.34
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /usr/lib/systemd/system/jenkins.service.
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning linux images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-93-221:~$ sudo systemctl enable jenkins
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
ubuntu@ip-172-31-93-221:~$ sudo systemctl start jenkins
ubuntu@ip-172-31-93-221:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
Active: active (running) since Wed 2024-11-06 11:52:53 UTC; 1min 42s ago
Main PID: 7059 (java)
Tasks: 45 (limit: 9507)
Memory: 807.8M (peak: 822.3M)
CPU: 19.064s
CGroup: /system.slice/jenkins.service
└7059 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080
Nov 06 11:52:49 ip-172-31-93-221 jenkins[7059]: b9d069bb18114339983971ad0c221512
Nov 06 11:52:49 ip-172-31-93-221 jenkins[7059]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Nov 06 11:52:49 ip-172-31-93-221 jenkins[7059]: **
Nov 06 11:52:49 ip-172-31-93-221 jenkins[7059]: **
Nov 06 11:52:49 ip-172-31-93-221 jenkins[7059]: **
Nov 06 11:52:52 ip-172-31-93-221 jenkins[7059]: 2024-11-06 11:52:52.985+0000 [id=48] INFO h.m.DownloadService$Downloadable#load: Obtained the updated data file for hudson.t
Nov 06 11:52:52 ip-172-31-93-221 jenkins[7059]: 2024-11-06 11:52:52.987+0000 [id=48] INFO hudson.util.Retrier#start: Performed the action check updates server successfully
Nov 06 11:52:53 ip-172-31-93-221 jenkins[7059]: 2024-11-06 11:52:53.021+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
Nov 06 11:52:53 ip-172-31-93-221 jenkins[7059]: 2024-11-06 11:52:53.039+0000 [id=23] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and running
Nov 06 11:52:53 ip-172-31-93-221 systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
ubuntu@ip-172-31-93-221:~$
Opened session: ConnectBar/18.234.190.34 [SSH]
1.5.0.0 <Auto Restore>


Not secure
http://18.234.190.34:8080/login?from=%2F
Getting Started
Unlock Jenkins
To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:
/var/lib/jenkins/secrets/initialAdminPassword
Please copy the password from either location and paste it below.
Administrator password
Continue
32°C
Haze
Search
ENG
IN
17:25
06-11-2024


Not secure
http://18.234.190.34:8080
Getting Started
Getting Started
Folders
OWASP Markup Formatter
Build Timeout
Credentials Binding
Timestamper
Workspace Cleanup
Ant
Gradle
Pipeline
GitHub Branch Source
Pipeline: GitHub Groovy Libraries
Pipeline Graph View
Git
SSH Build Agents
Matrix Authorization Strategy
PAM Authentication
LDAP
Email Extension
Mailer
Dark Theme
** Pipeline: Job
** Jakarta Activation API
** Jakarta Mail API
** Apache HttpComponents Client 4.x API
** Instance Identity
Mailer
** Pipeline: Basic Steps
Gradle
** Pipeline: Milestone Step
** Pipeline: Build Step
** Pipeline: Groovy Libraries
** Pipeline: Stage Step
** Joda Time API
** Pipeline: Model API
** Pipeline: Declarative Extension Points API
** Branch API
** Pipeline: Multibranch
** Pipeline: Stage Tags Metadata
** Pipeline: Input Step
** Pipeline: Declarative
Pipeline
** Java JSON Web Token (JJWT)
** - required dependency
Jenkins 2.484


Jenkins
Search (CTRL+K)
Golla Rambabu
log out
Dashboard
New Item
Build History
Manage Jenkins
My Views
Build Queue
No builds in the queue.
Build Executor Status 0/2
Add description
Welcome to Jenkins!
This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.
Start building your software project
Create a job
Set up a distributed build
Set up an agent
Configure a cloud
Learn more about distributed builds
REST API
Jenkins 2.484


Dashboard
full-stock
Status
Changes
Build Now
Configure
Delete Pipeline
Full Stage View
Stages
Rename
full-stock
Add description
Stage View
Declarative: Tool Install
Git checkout
Clean workspace
OWASP FS SCAN
SonarQube
Average stage times:
(Average full run time: ~3min 18s)
29s
964ms
385ms
2min 30s
14s
Nov 09
11:58
No Changes


Not secure
54.226.110.94:9000/projects
Error
sonarqube
Projects
Issues
Rules
Quality Profiles
Quality Gates
Administration
Search for projects...
A
My Favorites
All
Search by project name or key
Create Project
1 project(s)
Perspective: Overall Status
Sort by: Name
Filters
Quality Gate
Passed
Failed
Reliability (Bugs)
Security (Vulnerabilities)
Security Review (Security Hotspots)
fullstack-assignment
Passed
Last analysis: 6 minutes ago
Bugs
Vulnerabilities
Hotspots Reviewed
Code Smells
Coverage
Duplications
Lines
0.0%
1 XML
1 of 1 shown
Embedded database should be used for evaluation purposes only
The embedded database will not scale, it will not support upgrading to newer versions of SonarQube, and there is no support for migrating your data out of it into a different database engine.
SonarQube™ technology is powered by SonarSource SA
Community Edition - v9.9.7 (build 96285) - LGPL v3 - Community - Documentation - Plugins - Web API

```
[Pipeline] withDockerRegistry
$ /var/lib/jenkins/tools/org.jenkinsci.plugins.docker.commons.tools.DockerTool/docker/bin/docker login -u gollarambabu -p ********
https://index.docker.io/v1/
Login Succeeded
[Pipeline] {
[Pipeline] sh
+ docker build -t chatgpt .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

unable to prepare context: unable to evaluate symlinks in Dockerfile path: lstat /var/lib/jenkins/workspace/full-stock/Dockerfile: no such
file or directory
[Pipeline] }
[Pipeline] // withDockerRegistry
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
```

	Declarative: Tool Install	Git checkout	Clean workspace	OWASP FS SCAN	SonarQube	Install Dependencies	TRIVY FS SCAN	Docker Build & Push
Average stage times: (Average full run time: ~3min 18s)	7s	787ms	357ms	42s	10s	1s	1s	1s
#8 Nov 09 12:18 No Changes	208ms	624ms	329ms	6s	8s	940ms	947ms	1s failed
#7 Nov 09 12:16 No Changes	195ms	869ms	343ms	6s	9s	877ms	963ms	1s failed
#6 Nov 09 12:11 No Changes	246ms	691ms	374ms	6s	9s	1s	3s	1s failed

```
pipeline {
    agent any
    tools {
        jdk 'jdk17'
        nodejs 'node16'
```

```
    }
    environment {
        SCANNER_HOME = tool 'sonar-scanner'
    }
    stages {
        stage('Git checkout') {
            steps {
                git branch: 'main', url:
'https://github.com/soulpage/fullstack-assignment.git'
            }
        }

        stage('Clean workspace') {
            steps {
                cleanWs()
            }
        }

        stage('OWASP FS SCAN') {
            steps {
                dependencyCheck additionalArguments: '--scan ./ -
-disableYarnAudit --disableNodeAudit', odcInstallation: 'DP'
```

```
            dependencyCheckPublisher pattern:
'**/dependency-check-report.xml'
        }
    }

    stage('SonarQube') {
        steps {
            withSonarQubeEnv('sonar') {
                sh ''' $SCANNER_HOME/bin/sonar-scanner -
Dsonar.projectName=fullstack-assignment \
                    -Dsonar.projectKey=fullstack-assignment '''
            }
        }
    }

    stage('Install Dependencies') {
        steps {
            sh "npm install"
        }
    }

    stage('TRIVY FS SCAN') {
```

```
        steps {
            sh "trivy fs . > trivyfs.txt"
        }
    }

    stage("Docker Build & Push"){
        steps{
            script{
                withDockerRegistry(credentialsId: 'docker', toolName: 'docker') {
                    sh "docker build -t chatgpt ."
                    sh "docker tag chatgtp gollarambabu/chatgpt:latest "
                    sh "docker push gollarambabu/chatgpt:latest "
                }
            }
        }
    }
  }
}
```

Part 5: Documentation

1. Deployment Guide

Title: Deployment Guide for Next.js and Django Applications

Sections:

1. **Introduction**
    - **Overview of the applications being deployed (Next.js frontend, Django backend)**
    - **Environment requirements (Linux, Docker, etc.)**
2. **Prerequisites**
    - **List of software and tools (Docker, Docker Compose, Node.js, Python, etc.)**
    - **Configuration requirements (e.g., ports, permissions, environment variables)**
3. **Step-by-Step Deployment**
    - **Setting Up the Environment:**
        - **Installing required tools (include commands and versions)**
        - **Setting up necessary environment variables**
    - **Docker Setup:**
        - **Instructions to create Dockerfiles for both applications**

        - **Steps to configure Docker Compose (with sample YAML configuration)**
    - **Starting Services:**
        - **Commands to start Docker containers and verify services are running**
        - **Sample output logs/screenshots to confirm success**

4. Verification and Troubleshooting

- **How to test the deployment and verify services (URLs to check, commands)**
- **Common issues and troubleshooting tips**

---

2. Monitoring and Maintenance

Title: Monitoring and Maintenance for Deployed Applications

Sections:

1. Introduction

- **Overview of monitoring setup and goals**
- **Tools used (ELK Stack, Elastic APM, etc.)**

2. Monitoring Setup

- **Log Collection:**
    - **Configuration for centralized logging (e.g., Logstash configuration, application log setup)**

        - **Sample Logstash and Kibana setup with commands or screenshots**
    - **Metrics Monitored:**
        - **Description of key metrics (CPU usage, memory, response time, etc.)**
        - **How each metric is collected and displayed**
    - **Alerting Configuration:**
        - **Steps to configure alerts (e.g., Kibana alerting rules)**
        - **Sample alert configuration for critical metrics**

3. Routine Maintenance Tasks

- **Log Rotation and Cleanup:**
    - **Procedures for managing log size and archival**
- **System and Application Updates:**
    - **Guidelines for updating software and dependencies**
- **Backup and Restore Procedures:**
    - **Steps for regular backups (e.g., database, application configuration)**

---

3. CI/CD Pipeline

Title: CI/CD Pipeline Setup and Configuration

Sections:

1. **Introduction**
    - **Purpose of the CI/CD pipeline**
    - **Overview of the tools and technologies used (Jenkins, GitHub Actions, SonarQube, etc.)**
2. **Pipeline Setup**
    - **Tool Installation and Configuration:**
        - **Commands and steps to install CI/CD tools (e.g., Jenkins setup on Ubuntu)**
    - **Configuration Files:**
        - **Explanation of the Jenkinsfile or GitHub Actions workflow file**
        - **Sample configurations (e.g., code for each pipeline stage)**
3. **Pipeline Stages and Processes**
    - **Code Checkout: How code is pulled from the repository**
    - **Build and Test: Commands for building and running tests**
    - **Security Scanning:**
        - **Description of OWASP Dependency Check setup**
        - **Instructions for SonarQube configuration**
    - **Deployment: Steps to deploy successfully, with any environment variable settings**

4. **Troubleshooting and Best Practices**
    - **Common pipeline issues and solutions**
    - **Tips for optimizing the CI/CD process**

1. Infrastructure Setup

Tool Used: [Terraform/Ansible]
Description: Provisioned infrastructure required for the applications, including network configuration, databases, and application servers.

Commands and Scripts:

- **Initialize and provision infrastructure:**

bash

Copy code

terraform init

terraform apply -auto-approve

2. Dockerization and Orchestration

Tool Used: Docker, Docker Compose
Description: Created Dockerfiles for both Next.js and

Django, set up multi-container deployment using Docker Compose.

Commands:

bash

Copy code

docker-compose up --build

- **Dockerfiles and docker-compose.yml files are located in the respective application folders for easy configuration.**

3. CI/CD Pipeline Setup

Tool Used: Jenkins/GitHub Actions
Description: Automated CI/CD pipeline that includes testing, security scans, and deployment.

Key Stages:

- **Checkout: Pulls code from the main branch.**
- **Build and Test: Installs dependencies, builds, and tests the applications.**
- **OWASP Dependency Check: Scans for known vulnerabilities.**
- **SonarQube Analysis: Runs static code analysis for quality checks.**
- **Deployment: Automatically deploys the application to the staging/production environment.**

4. Monitoring and Logging

Tool Used: ELK Stack (Elasticsearch, Logstash, Kibana)
Description: Centralized logging and monitoring setup to collect and visualize logs from the application. Includes APM for performance monitoring.

Commands:

bash

Copy code

docker-compose -f elk-compose.yml up -d

- **Access Kibana: http://localhost:5601 for monitoring logs and setting up alerts.**

Troubleshooting Guide

- **Pipeline Issues: Common fixes for CI/CD errors in dependency check and code analysis.**
- **Logging Setup: Tips for configuring the application log to send to Logstash.**

Routine Maintenance

- **Log Rotation and Cleanup: Ensuring log files don’t consume excessive space.**
- **System and Application Updates: Regular updates for Docker images and dependencies.**
- **Backup and Restore: Database backup scripts for disaster recovery.**

Pull Request (PR) Template

In your pull request description, you could include the following summary:

Pull Request Title

Deployment and CI/CD Pipeline Setup

Pull Request Description

Overview: This PR includes a comprehensive setup for deploying a full-stack application with Next.js and Django. Key aspects include IaC, containerization, CI/CD, and monitoring.

Key Changes:

1. **Infrastructure as Code: Terraform/Ansible setup files for environment provisioning.**
2. **CI/CD Pipeline: Jenkins/GitHub Actions pipeline file to automate testing, security scanning, and deployment.**
3. **Containerization: Dockerfiles and Docker Compose configuration.**
4. **Centralized Logging and Monitoring: ELK Stack setup with Kibana for monitoring.**

Skills Demonstrated:

- **Infrastructure automation**
- **Container management**

- **CI/CD configuration and troubleshooting**
- **Monitoring and logging setup**