

PROJECT

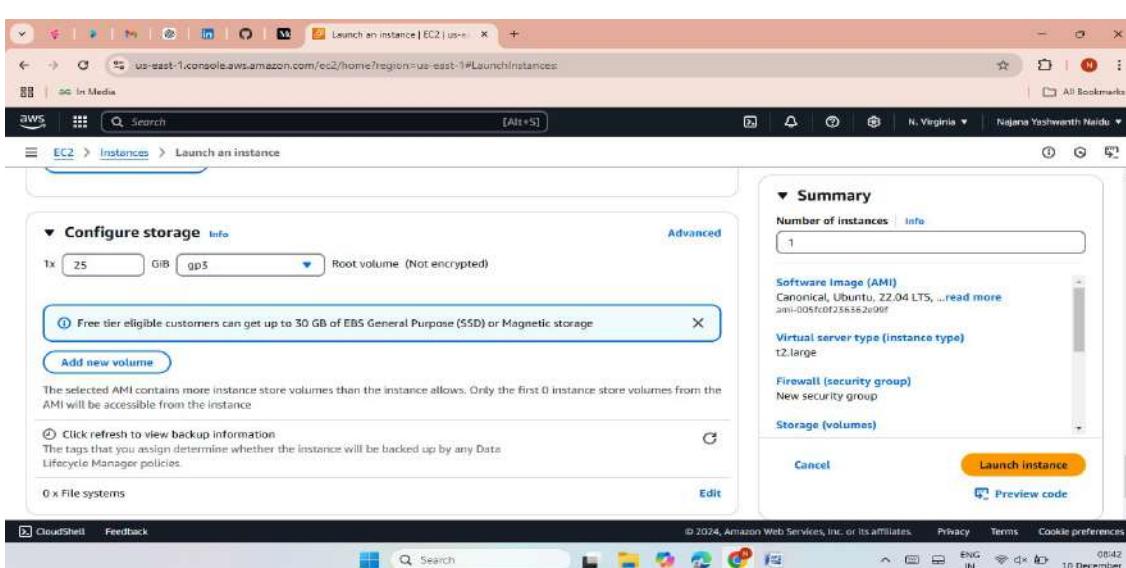
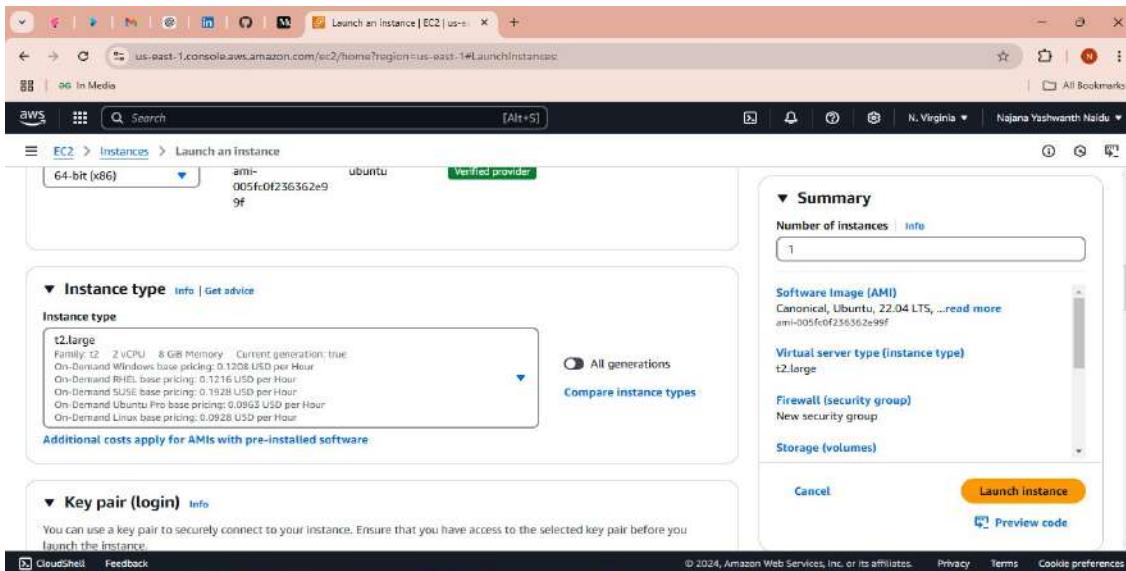
Yashwanth Naidu

DEPLOY NETFLIX APPLICATION

PHASE-1

Deploy Netflix Application Locally on EC2 Instances.

- Launch an EC2 instances along with t2.large and required ports.



Instances (1/1) Info

Last updated less than a minute ago

Find Instance by attribute or tag (case-sensitive)

Connect Instance state Actions Launch instances

Instance ID: i-0541c00456ae1484c | Instance state: Running | Instance type: t2.large | Status check: Initializing | Alarm status: View alarms | Availability zone: us-east-1

i-0541c00456ae1484c (yash-netflix-deploy)

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary

Instance ID: i-0541c00456ae1484c | Public IPv4 address: 52.54.84.220 | Private IPv4 addresses: 172.31.28.82

➤ Connect to locally with the Gitbash.

```

ubuntu@ip-172-31-28-82:~ 
ED25519 key fingerprint is SHA256:NRWEsdqgQzcfx928ycE9jeBQgSJ/+YtLKObR0Bu66Pk.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-52-54-84-220.compute-1.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1015-aws x86_64)

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

System information as of Tue Dec 10 03:13:54 UTC 2024

System load: 0.44      Processes: 121
Usage of /: 6.6% of 24.05GB  Users logged in: 0
Memory usage: 2%          IPv4 address for eth0: 172.31.28.82
Swap usage: 0%

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-172-31-28-82:~$ 

```

- Now update the ubuntu.
- Now clone the Netflix application from github.

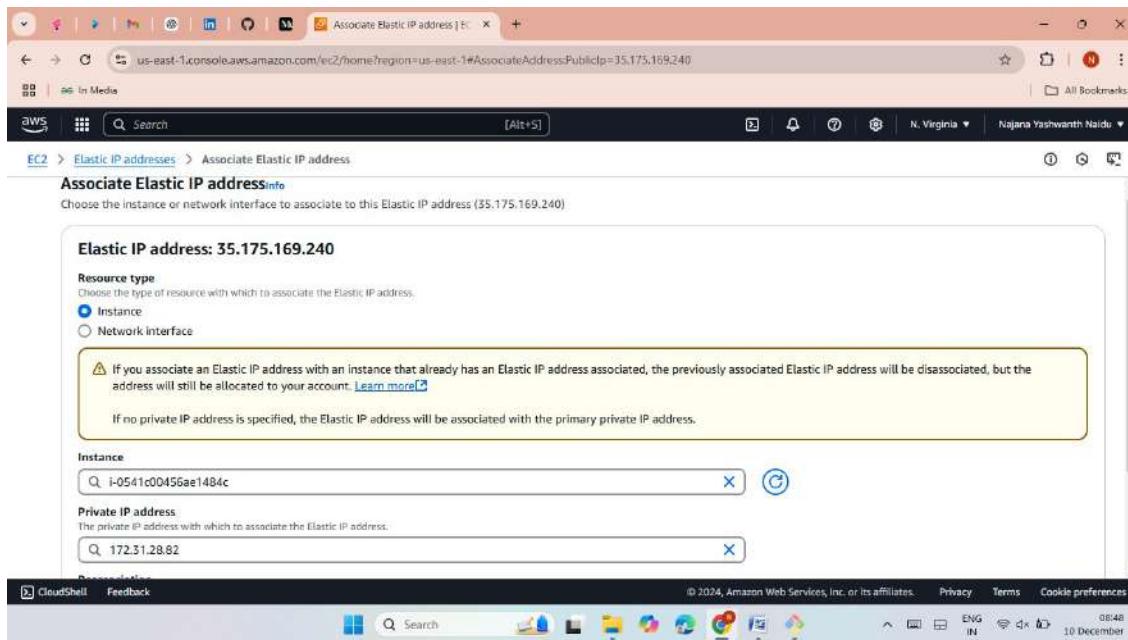
```

ubuntu@ip-172-31-28-82:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2182 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [372 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [17.9 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2711 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [470 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [612 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1179 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [287 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [26.4 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [44.5 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [11.5 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [440 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.7 kB]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [11.1 kB]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.9 kB]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [672 kB]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 kB]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1960 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [313 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [13.3 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2617 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [453 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [580 kB]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [958 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [204 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [19.5 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [224 kB]
Fetched 34.8 MB in 1s (327 kB/s)
Reading package lists... done
Building dependency tree... done
Reading state information... done
31 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-28-82:~$
```

```

Cloning into 'Netflix'...
remote: Enumerating objects: 773, done.
remote: Counting objects: 100% (773/773), done.
remote: Compressing objects: 100% (308/308), done.
remote: Total 773 (delta 438), reused 768 (delta 436), pack-reused 0 (from 0)
Receiving objects: 100% (773/773), 13.47 MiB | 33.72 MiB/s, done.
Resolving deltas: 100% (438/438), done.
ubuntu@ip-172-31-28-82:~$ ls
Netflix
ubuntu@ip-172-31-28-82:~$
```

- Generate Elastic IP and then attach to the instance.



- Now run the following command to set up docker.

```
sudo apt-get install docker.io
sudo chmod 666 /var/run/docker.sock
sudo usermod -aG docker ubuntu
sudo newgrp docker
exit
newgrp docker
sudo systemctl start docker
sudo systemctl enable docker
sudo systemctl status docker
```

```
ubuntu@ip-172-31-28-82:~$ sudo apt-get install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifdown aufs-tools cgroups-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 31 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2-22.04.1 [8405 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2-22.04.1 [37.8 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dns-root-data all 2023112702-ubuntu0.22.04.1 [5136 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.90-0ubuntu0.22.04.1 [374 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 docker.io amd64 24.0.7-0ubuntu2-22.04.1 [28.6 MB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 75.5 MB in 1s (78.8 MB/s)
Preconfiguring packages...
Selecting previously unselected package pigz.
(Reading database ... 65783 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.7-1ubuntu3_amd64.deb ...
Unpacking bridge-utils (1.7-1ubuntu3) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.1.12-0ubuntu2-22.04.1_amd64.deb ...
Unpacking runc (1.1.12-0ubuntu2-22.04.1) ...
Selecting previously unselected package containerd.
Preparing to unpack .../3-containerd_1.7.12-0ubuntu2-22.04.1_amd64.deb ...
Unpacking containerd (1.7.12-0ubuntu2-22.04.1) ...
Selecting previously unselected package dns-root-data.
```

```
ubuntu@ip-172-31-28-82:~$ Processing triggers for dbus (1.12.20-2ubuntu4.1) ...
Processing triggers for man-db (2.10.2-1) ...
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-172-31-28-82:~$ sudo chmod 666 /var/run/docker.sock
ubuntu@ip-172-31-28-82:~$ sudo systemctl start docker
ubuntu@ip-172-31-28-82:~$ sudo systemctl enable docker
ubuntu@ip-172-31-28-82:~$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2024-12-10 03:20:30 UTC; 1min 54s ago
     TriggeredBy: ● docker.socket
     Docs: https://docs.docker.com
      Main PID: 2304 (dockerd)
        Tasks: 8
       Memory: 26.5M
          CPU: 250ms
         CGroup: /system.slice/docker.service
                   └─2304 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

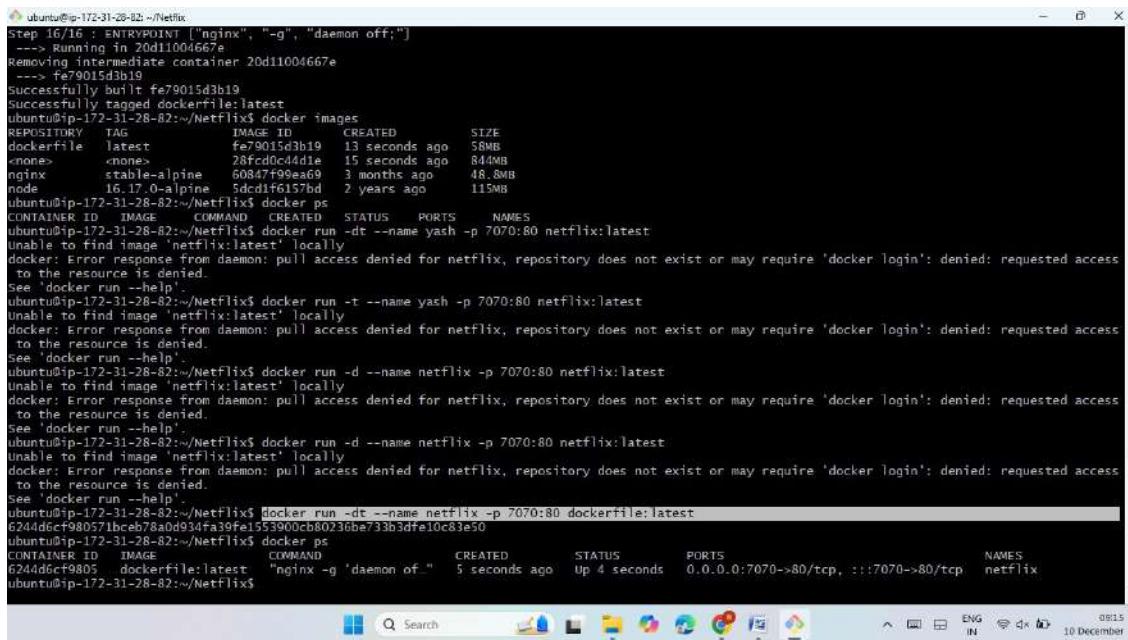
Dec 10 03:20:30 ip-172-31-28-82 systemd[1]: Starting Docker Application Container Engine...
Dec 10 03:20:30 ip-172-31-28-82 dockerd[2304]: time="2024-12-10T03:20:30.361681323Z" level=info msg="starting up"
Dec 10 03:20:30 ip-172-31-28-82 dockerd[2304]: time="2024-12-10T03:20:30.362549942Z" level=info msg="detected 127.0.0.53 nameserver, assuming system"
Dec 10 03:20:30 ip-172-31-28-82 dockerd[2304]: time="2024-12-10T03:20:30.447236423Z" level=info msg="Loading containers: start."
Dec 10 03:20:30 ip-172-31-28-82 dockerd[2304]: time="2024-12-10T03:20:30.685195701Z" level=info msg="Loading containers: done."
Dec 10 03:20:30 ip-172-31-28-82 dockerd[2304]: time="2024-12-10T03:20:30.699351496Z" level=info msg="Docker daemon" commit="24.0.7-0ubuntu2-22.04.1"
Dec 10 03:20:30 ip-172-31-28-82 dockerd[2304]: time="2024-12-10T03:20:30.699440803Z" level=info msg="Daemon has completed initialization"
Dec 10 03:20:30 ip-172-31-28-82 dockerd[2304]: time="2024-12-10T03:20:30.732794123Z" level=info msg="API Listen on /run/docker.sock"
Dec 10 03:20:30 ip-172-31-28-82 systemd[1]: Started Docker Application Container Engine.
[lines 1-21/21 (END)]
```

➤ Now build the docker image.

```
ubuntu@ip-172-31-28-82:~/Netflix
See 'docker build --help'.
ubuntu@ip-172-31-28-82:~/Netflix$ docker build -t dockerfile .
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/
Sending build context to Docker daemon 8.218MB
Step 1/16 : FROM node:16.17.0-alpine as builder
16.17.0-alpine: Pulling from library/node
213ec9aee27d: Pull complete
86db973d1bf7: Pull complete
80fe61ad56f5: Pull complete
e3887ab559e6: Pull complete
Digest: sha256:2c405ed2fcfd6aaebe5730042640450e5ec030bada7617beac88f742b6997b
Status: Downloaded newer image for node:16.17.0-alpine
--> 5cdcf16157bd
Step 2/16 : WORKDIR /app
--> 4e517b645617
Removing intermediate container 4e517b645617
--> e096d320be89
Step 3/16 : COPY ./package.json .
--> e19a25c7534b
Step 4/16 : COPY ./yarn.lock .
--> 8f66fb03f9f8
Step 5/16 : RUN yarn install
--> Running in 8cccf8176fe5
yarn install v1.22.19
[1/4] Resolving packages...
[2/4] Fetching packages...
[3/4] Linking dependencies...
warning "emotion/react > emotion/babel-plugin@11.10.5" has unmet peer dependency "@babel/core@^7.0.0".
warning "emotion/react > emotion/babel-plugin > @babel/plugin-syntax-jsx@7.18.6" has unmet peer dependency "@babel/core@^7.0.0-0".
warning " > slick-carousel@1.8.1" has unmet peer dependency "jquery@>=1.8.0".
[4/4] Building fresh packages...
success Saved lockfile.
Done in 46.47s.
Removing intermediate container 8cccf8176fe5
--> 68c26d819121
Step 6/16 : COPY . .
--> 26f420a40fd4
```

```
ubuntu@ip-172-31-28-82:~/Netflix
da9cb072f52: Pull complete
068b4536fb82: Pull complete
9301b75a59e7: Pull complete
f69e73dd210e: Pull complete
6715a1066dac: Pull complete
a19f1e837fdf: Pull complete
a6ecdc11b305: Pull complete
10e76302afc6: Pull complete
Digest: sha256:35e2238f2f0925a505d5d697df9a9148db9a0c78e89fd2e253919047b3cec824
Status: Downloaded newer image for nginx:stable-alpine
--> 60847f99ea69
Step 12/16 : WORKDIR /usr/share/nginx/html
--> 87179cb0e6c4
Removing intermediate container 87179cb0e6c4
--> cbddf8987ba8
Step 13/16 : RUN rm -rf ./*
--> Running in a9dc9df8b0aa
Removing intermediate container a9dc9df8b0aa
--> bf20d0121fb5
Step 14/16 : COPY --from=builder /app/dist .
--> a474956290b
Step 15/16 : EXPOSE 80
--> Running in 33bc507b6e58
Removing intermediate container 33bc507b6e58
--> ca1c94b6d207
Step 16/16 : ENTRYPOINT ["nginx", "-g", "daemon off;"]
--> Running in 20d11004667e
Removing intermediate container 20d11004667e
--> fe79015db19
Successfully built fe79015db19
Successfully tagged dockerfile:latest
ubuntu@ip-172-31-28-82:~/Netflix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
dockerfile latest fe79015db19 13 seconds ago 58MB
<none> <none> 28fcfd0c44d1e 15 seconds ago 844MB
nginx stable-alpine 60847f99ea69 3 months ago 48.8MB
node 16.17.0-alpine 5cdcf16157bd 2 years ago 115MB
ubuntu@ip-172-31-28-82:~/Netflix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ubuntu@ip-172-31-28-82:~/Netflix$
```

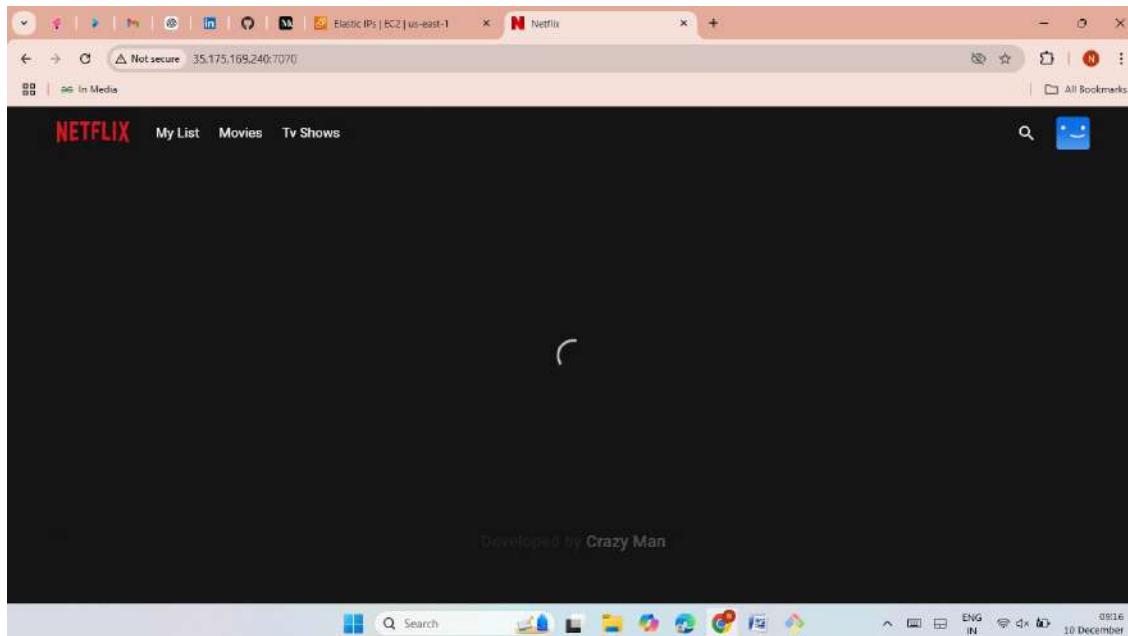
- Now run the docker image to create container.



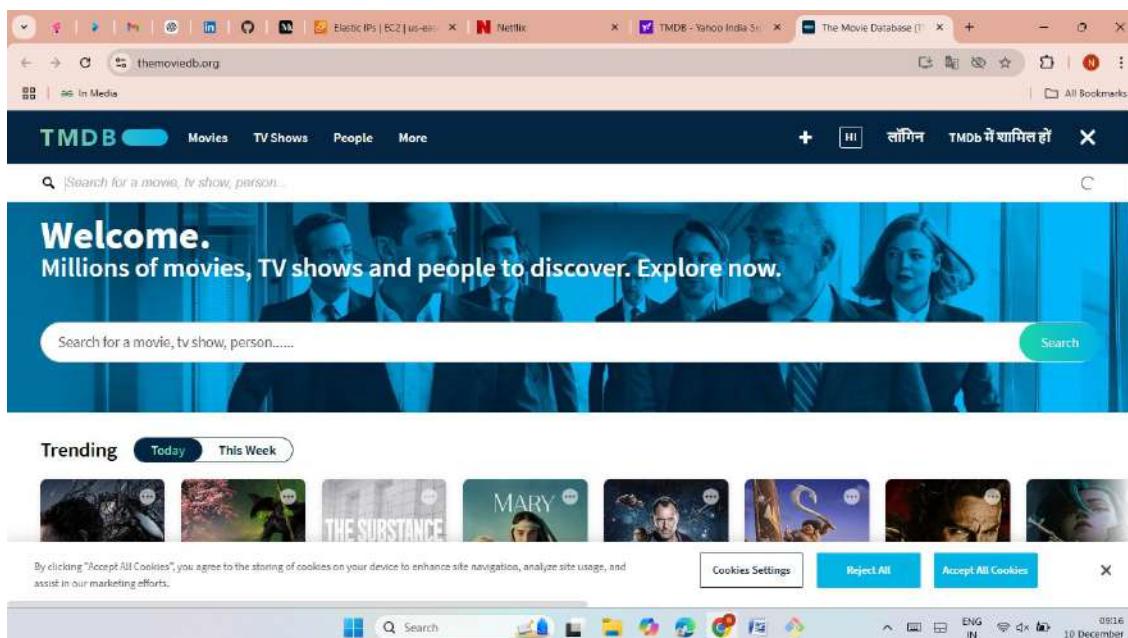
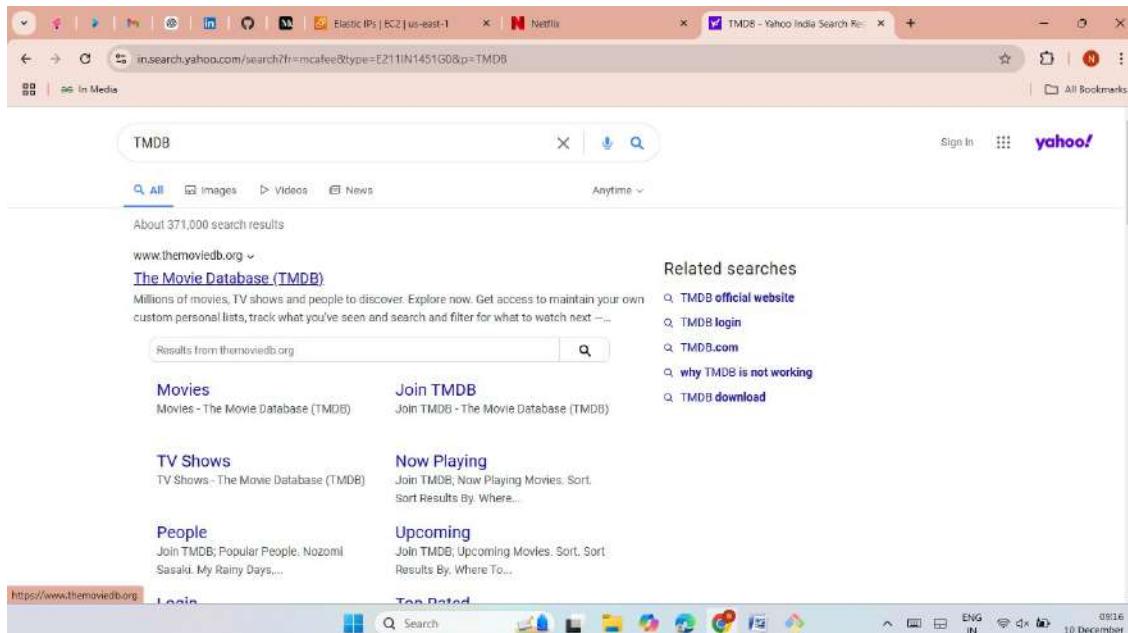
```

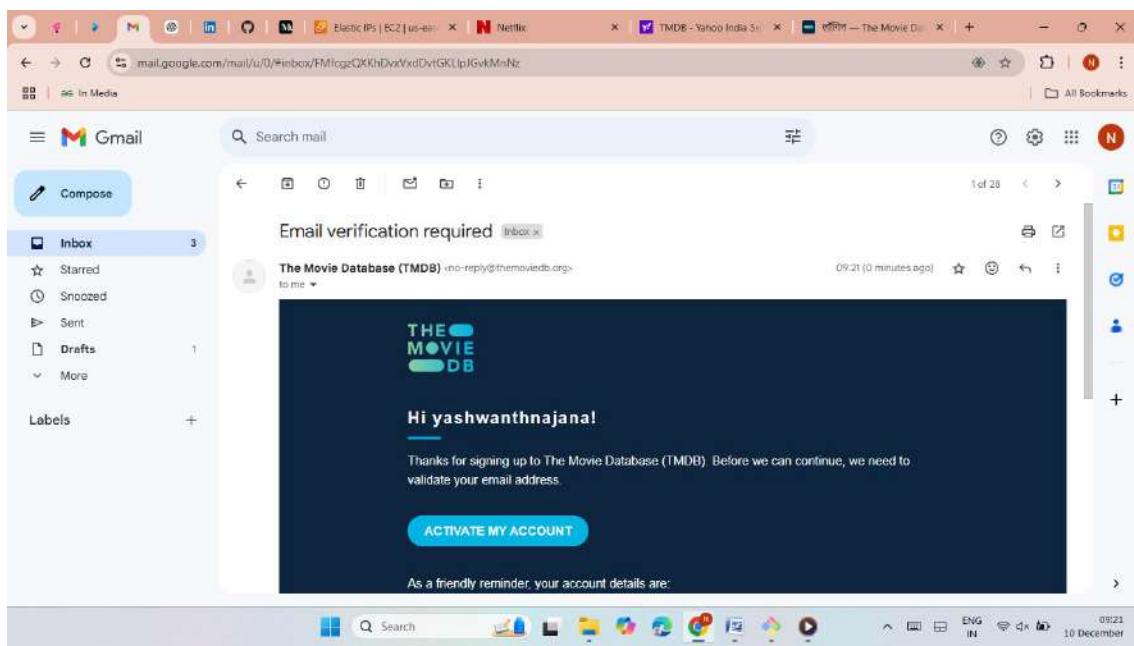
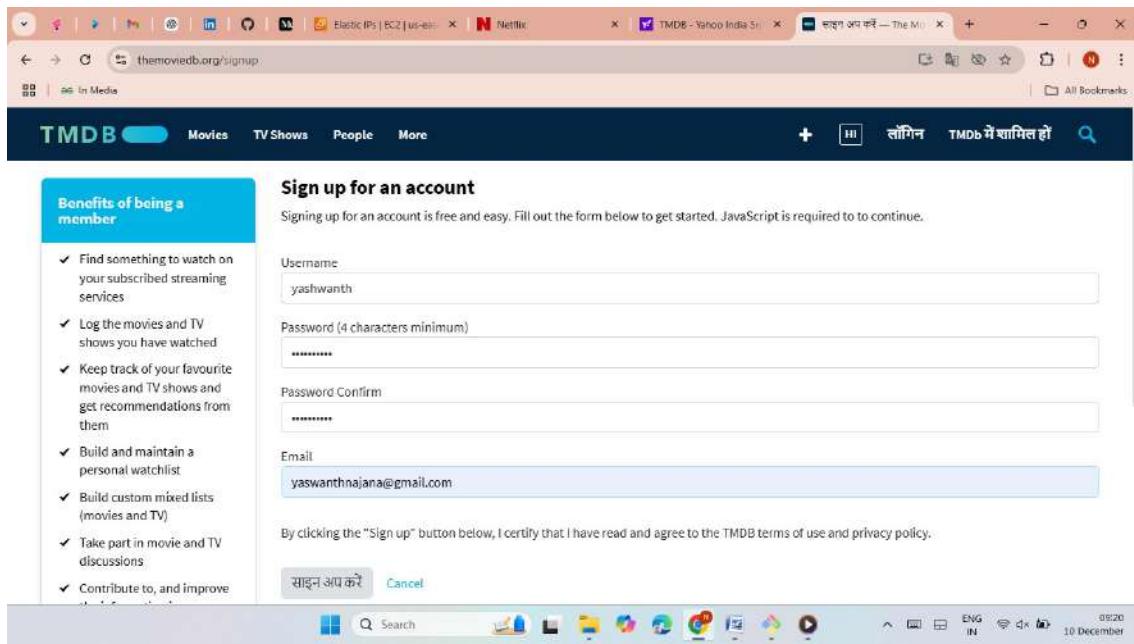
ubuntu@ip-172-31-28-82:~/NetFlix$ Step 16/16 : ENTRYPOINT ["nginx", "-g", "daemon off;"]
--> Running in 20d11004667e
Removing intermediate container 20d11004667e
--> fe79015d3b19
Successfully built fe79015d3b19
Successfully tagged dockerfile:latest
ubuntu@ip-172-31-28-82:~/NetFlix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
dockerfile latest fe79015d3b19 13 seconds ago 58MB
<none> <none> 28fcddc44d1e 15 seconds ago 84.8MB
nginx stable-alpine 60847f99ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf1f6157bd 2 years ago 115MB
ubuntu@ip-172-31-28-82:~/NetFlix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ubuntu@ip-172-31-28-82:~/NetFlix$ docker run -t --name yash -p 7070:80 netflix:latest
Unable to find image 'netflix:latest' locally
docker: Error response from daemon: pull access denied for netflix, repository does not exist or may require 'docker login': denied: requested access to the resource is denied.
See 'docker run --help'.
ubuntu@ip-172-31-28-82:~/NetFlix$ docker run -d --name yash -p 7070:80 netflix:latest
Unable to find image 'netflix:latest' locally
docker: Error response from daemon: pull access denied for netflix, repository does not exist or may require 'docker login': denied: requested access to the resource is denied.
See 'docker run --help'.
ubuntu@ip-172-31-28-82:~/NetFlix$ docker run -d --name netflix -p 7070:80 netflix:latest
Unable to find image 'netflix:latest' locally
docker: Error response from daemon: pull access denied for netflix, repository does not exist or may require 'docker login': denied: requested access to the resource is denied.
See 'docker run --help'.
ubuntu@ip-172-31-28-82:~/NetFlix$ docker run -dt --name netflix -p 7070:80 dockerfile:latest
6244dd5cf980571bce78a0d934fa39fe1533900cb80230be733b3dfe10c83e50
ubuntu@ip-172-31-28-82:~/NetFlix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
6244dd5cf9805 dockerfile:latest "nginx -g 'daemon off;'" 5 seconds ago Up 4 seconds 0.0.0.0:7070->80/tcp, :::7070->80/tcp netflix
ubuntu@ip-172-31-28-82:~/NetFlix$
```

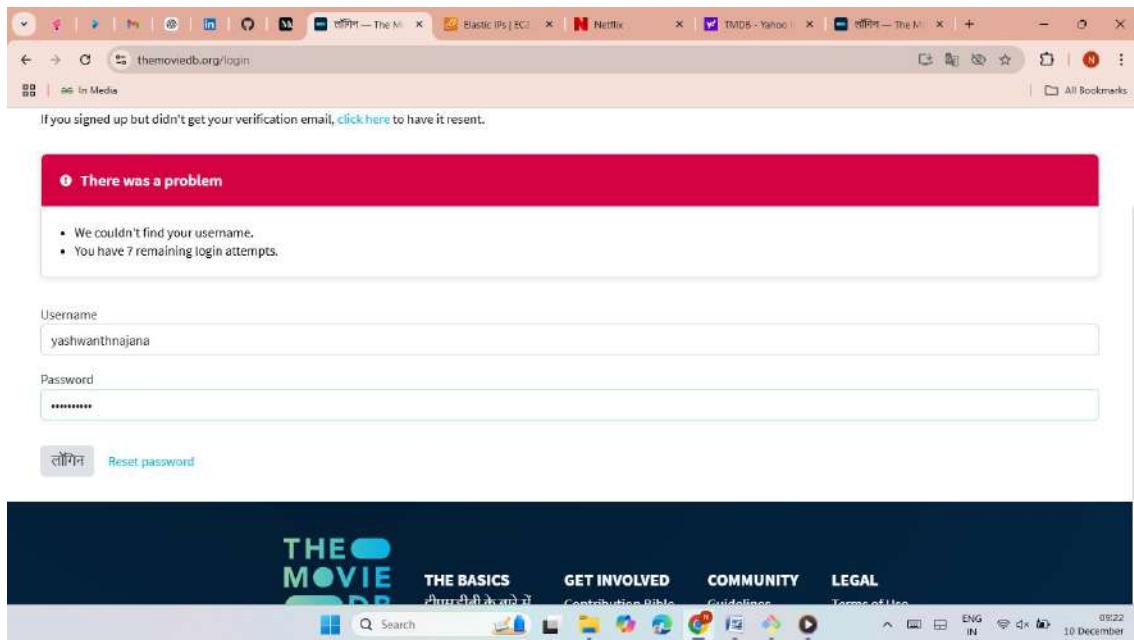
- Now host the Netflix application along with elastic ip with given port.



- Now go to TMDB website to get the API for backend database.
- Create account then login to the account.
- Now create API access token for took the API.







YashwanthNajana Member since December 2024

Average Movie Score: 0% | Average TV Score: 0%

Overview Discussions Lists Ratings Watchlist

Stats

Total Edits	Total Ratings
0	0

Rating Overview

Most Watched Genres
You haven't logged any movies or TV shows.

Upcoming From Watchlist

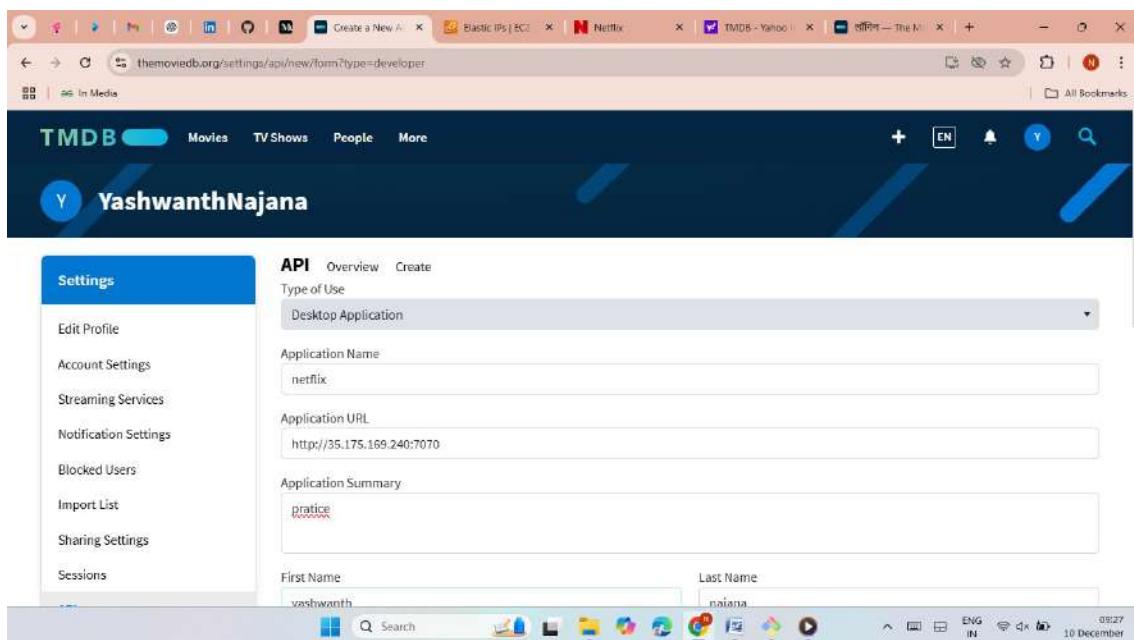
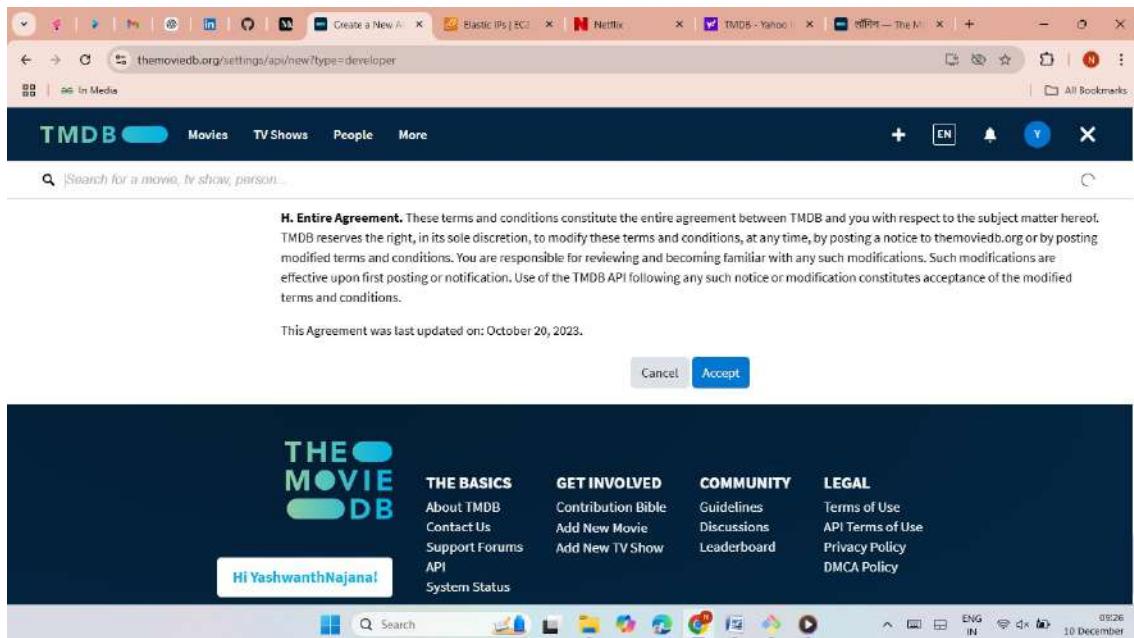
There are no upcoming movies on your watchlist.

[Go to Watchlist](#)

Windows taskbar: Search, File Explorer, Control Panel, Internet Explorer, Google Chrome, Microsoft Edge, File Manager, Task View, Taskbar settings, ENG IN, 10 December.

The screenshot shows the TMDB account settings interface. On the left, a sidebar titled 'Settings' lists various options: Edit Profile, Account Settings (which is selected), Streaming Services, Notification Settings, Blocked Users, Import List, Sharing Settings, and Sessions. The main content area is titled 'Account Settings' and includes fields for Default Language (set to English (en-US)), Fallback Language (set to None (Don't Fallback)), Country (set to India), Timezone (set to Asia - Kabul with 'Auto detect?' checked), and Include Adult Items in Search? (set to No). The top navigation bar shows the TMDB logo and links for Movies, TV Shows, People, and More. The status bar at the bottom indicates the system is ENG IN, battery level is 08:25, and the date is 10 December.

The screenshot shows the TMDB API settings interface. On the left, a sidebar titled 'Settings' lists various options, with 'API' being the selected tab. The main content area is titled 'API' and contains sections for Overview, Create, Documentation, Support, and Request an API Key. The Overview section notes that TMDB offers a powerful API service that is free to use as long as you properly attribute them as the source of the data and/or images you use. The Documentation section links to developer.themoviedb.org. The Support section encourages users to create posts on support forums if they have questions. The Request an API Key section provides a link to generate a new API key. The top navigation bar shows the TMDB logo and links for Movies, TV Shows, People, and More. The status bar at the bottom indicates the system is ENG IN, battery level is 08:25, and the date is 10 December.



The screenshot shows a web browser window with the URL themoviedb.org/settings/api/new?type=developer. The page is titled "Create a New API". On the left, there's a sidebar with options: Sessions, API (which is selected), Delete Account. The main form contains fields for First Name (yashwanth), Last Name (najana), Email Address (yashwanthnajana@gmail.com), Phone Number (9640108468), Address 1 (1-52,Dummeda), Address 2 (garividi), City (Vijaynagaram), State (Andhra Pradesh), Zip Code (535101), and Country (India). A "Submit" button is at the bottom.

- Here the API access token and key.

```
eyJhbGciOiJIUzI1NiJ9eyJhdWQiOiIxZDAzMDCwODNhMGQwNmU5YzE2MGRIMDdkOWQ1
M2Q3YSIsIm5iZiI6MTczMzgwMjY3OC45MTUsInN1YiI6IjY3NTdiYWI2MzY4ODQ1OWQ3NTg
5OGFIZiI6InNjb3BlcyI6WyJhcGlfcmVhZCJdLCJ2ZXJzaW9uIjoxfQ.4TF-
aClchRTmOPccUpiP6sAkf_0IAjBd2W4uaKvq0M
```

1d0307083a0d06e9c160de07d9d53d7a

The screenshot shows a web browser window with the URL themoviedb.org/settings/api. The page title is "My API Settings". The sidebar has the same options as the previous screen: Import List, Sharing Settings, Sessions, API (selected), Delete Account. The main area displays the "API Read Access Token" which is identical to the one shown above:

```
eyJhbGciOiJIUzI1NiJ9eyJhdWQiOiIxZDAzMDCwODNhMGQwNmU5YzE2MGRIMDdkOWQ1M2Q3YSIsIm5iZiI6MTczMzgwMjY3OC45MTUsInN1YiI6IjY3NTdiYWI2MzY4ODQ1OWQ3NTg5OGFIZiI6InNjb3BlcyI6WyJhcGlfcmVhZCJdLCJ2ZXJzaW9uIjoxfQ.4TF-aClchRTmOPccUpiP6sAkf_0IAjBd2W4uaKvq0M
```

. Below it is the "API Key" field containing the value **1d0307083a0d06e9c160de07d9d53d7a**.

➤ Now delete the created images.

```
ubuntu@ip-172-31-28-82:~/Netflix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
136edf9349c7 dockerfile:latest "noinx -g 'daemon of'" 4 seconds ago Up 3 seconds 0.0.0.0:7070->80/tcp, :::7070->80/tcp netflix
ubuntu@ip-172-31-28-82:~/Netflix$ docker stop 136edf9349c7
136edf9349c7
ubuntu@ip-172-31-28-82:~/Netflix$ sudo docker rm 136edf9349c7
136edf9349c7
ubuntu@ip-172-31-28-82:~/Netflix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ubuntu@ip-172-31-28-82:~/Netflix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
dockefile latest 6b16c2d8b3f3 3 minutes ago 58MB
<none> <none> 28fcddc44de 25 minutes ago 844MB
nginx stable-alpine 60847799ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf1f6157bd 2 years ago 115MB
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi -f netflix node dockerfile
Untagged: dockerfile:latest
Deleted: sha256:6b16c2d8b3f3d97d469f570b728e54900cc7233d9f4d13f8868530211cd56f7a9
Deleted: sha256:cfcfd9d799e793c753a220b886227b912430fe002d51f5eeeb1fd82797536aa
Deleted: sha256:356fd08c7a09366de0015831011b85c56ec56ef59cb8c70bd238f0cd1f39a1
Deleted: sha256:e627b31a64973d837ddaa25dd951fd5c6gacc8eb0bf790ce00a326ae8358ef
Deleted: sha256:b0d87422e3cd302b511d067dc153b74c9103abc82fb463be563a9157d030
Deleted: sha256:cfa88ae7fd6480a5a2eef6dc0fd1f435dec79d1df4e42bb6f0ed1f68c45de7a7
Error response from daemon: no such image: netflix:latest
Error response from daemon: no such image: node:latest
ubuntu@ip-172-31-28-82:~/Netflix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
<none> <none> 28fcddc44de 26 minutes ago 844MB
nginx stable-alpine 60847799ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf1f6157bd 2 years ago 115MB
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi nginx
Error response from daemon: no such image: nginx:latest
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi -f nginx
Error response from daemon: no such image: nginx:latest
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi -f 28fcddc44de
Deleted: sha256:28fcddc44de7fda503c3fd18494afe815502168eefdc0f01e15b0e8581cb66
Deleted: sha256:7832526513b58bef4de471955d8c7970fae656c0e032075caf7a0c019d14206
Deleted: sha256:597120cc680cc1f2fdce533f12f711ea8f64a30e91c10df3d9f801678aad423de
```

```
ubuntu@ip-172-31-28-82:~/Netflix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
136edf9349c7 dockerfile:latest 6b16c2d8b3f3 3 minutes ago 58MB
<none> <none> 28fcddc44de 25 minutes ago 844MB
nginx stable-alpine 60847799ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf1f6157bd 2 years ago 115MB
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi -f netflix node dockerfile
Untagged: dockerfile:latest
Deleted: sha256:6b16c2d8b3f3d97d469f570b728e54900cc7233d9f4d13f8868530211cd56f7a9
Deleted: sha256:cfcfd9d799e793c753a220b886227b912430fe002d51f5eeeb1fd82797536aa
Deleted: sha256:356fd08c7a09366de0015831011b85c56ec56ef59cb8c70bd238f0cd1f39a1
Deleted: sha256:e627b31a64973d837ddaa25dd951fd5c6gacc8eb0bf790ce00a326ae8358ef
Deleted: sha256:b0d87422e3cd302b511d067dc153b74c9103abc82fb463be563a9157d030
Deleted: sha256:cfa88ae7fd6480a5a2eef6dc0fd1f435dec79d1df4e42bb6f0ed1f68c45de7a7
Error response from daemon: no such image: netflix:latest
Error response from daemon: no such image: node:latest
ubuntu@ip-172-31-28-82:~/Netflix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
<none> <none> 28fcddc44de 26 minutes ago 844MB
nginx stable-alpine 60847799ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf1f6157bd 2 years ago 115MB
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi nginx
Error response from daemon: no such image: nginx:latest
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi -f nginx
Error response from daemon: no such image: nginx:latest
ubuntu@ip-172-31-28-82:~/Netflix$ docker rmi -f 28fcddc44de
Deleted: sha256:28fcddc44de7fda503c3fd18494afe815502168eefdc0f01e15b0e8581cb66
Deleted: sha256:7832526513b58bef4de471955d8c7970fae656c0e032075caf7a0c019d14206
Deleted: sha256:597120cc680cc1f2fdce533f12f711ea8f64a30e91c10df3d9f801678aad423de
Deleted: sha256:ad92bafe4e97515790de0ab50829c2aa89a62b4545810adfadbc20663ef1f3f010
Deleted: sha256:d23494305cd816d0bb5f95152909f5d84671d7a784576994091ac1abe391be
Deleted: sha256:267420a40fd47babab280c70798c6397009accbc565fd949635d034a108b0d174
Deleted: sha256:f2355d300d273c4c9b9dc3270486ce1461c5c301183b9ed620e2fc00ac2e5
Deleted: sha256:68c26d81912156ed6397aef3e978a78d99b492eb0a277b105d089ddc565fd
Deleted: sha256:a461a3f03986537225409876f08a8c8eca2c7a90b0636d422aaf4e14b9c9650
Deleted: sha256:8f66fb3f978af1378baf0c32a9e1b54bc81a3f6f52de70b5bbafad547fde
Deleted: sha256:c1883c53912a54a07538e93d75947ca472d1217f50e8a272ad3b055a8f8d4e
Deleted: sha256:e19a5c7534b56605847483719d9181089ff0d39ebade75708369337e
Deleted: sha256:d7a63d137ba7db470fab5f5775c8f6001bd2829b1dd2bd0109314b74ca3b43
Deleted: sha256:e096d320be89d242b3f4c2328fb8Gfd97e6078ad1134f912f48885687f527f1
Deleted: sha256:a174b1f67b96f0c3c1b3ce828452f5e89c46a0506ac4ee58cd51a9f98e73319
```

```

ubuntu@ip-172-31-28-82:~/Netfli$ docker rmi nginx
Error response from daemon: no such image: nginx:latest
ubuntu@ip-172-31-28-82:~/Netfli$ docker rmi -f nginx
Error response from daemon: no such image: nginx:latest
ubuntu@ip-172-31-28-82:~/Netfli$ docker rmi -f 28fc0c044d1e
Deleted: sha256:28fc0c044d1e7fa503cfda18494a6e15502168eeefdc0f01e15b0c8581cb66
Deleted: sha256:7832526513b5b8ef4de471955d48c7970fiae56c0c832075caf7a0c019d14206
Deleted: sha256:597120cc680cc1f2fdce533f12711ea8f6d430e91c10df3d9f0201678aa2d1de
Deleted: sha256:ad92ba4e9e7515790eab50879c2aa89a62b454810ad7abdc20661ef13f010
Deleted: sha256:d234c94305cd81691bf95f157909f5d84671d7a78457699409a1ac4ahe394be
Deleted: sha256:26f420a40fd447babab280c70798c63970094cb555fd499635d03a108bb0d174
Deleted: sha256:f2355d2300d273c4c9b9c63270486ce1461c5c301183b9ed620e2cf00ac2e5
Deleted: sha256:68c26d81912156ed6397aef73e978e78d99b492eb1a277b105d089ddc565fd
Deleted: sha256:a4613a3f039885c17225409876f08ac8eca2c7a900636d422adaf4e34b9c9650
Deleted: sha256:8f66fb03f978af1378bafc324a9e1b54bc81a3f6f52d7e70bc5bbaaf547fde
Deleted: sha256:c1883c53912a5a07538d93d759472dca472d1217f50e8a2727d3b055a8f8d4e
Deleted: sha256:a19a75c7534b5650a84748371839d9181089ff4039ebdeade757083e69337e
Deleted: sha256:d261d137b7d87db70fab5f577c58f6001bd282911dd22bd0109314b74c3b43
Deleted: sha256:e174b1f67b96f0c3cb1ce8278452f5eb9c46a0506ac4e58cd51a9f98e73119
ubuntu@ip-172-31-28-82:~/Netfli$ docker rmi -f 60847f99ea69 5cdcdf6157hd
Untagged: nginx:stable-alpine
Untagged: nginx@sha256:3238f2f0975a505d5d697df9a9148fd9a0c7e89fd2e253919047b3cec824
Deleted: sha256:60847f99ea697d723c3c98e70276c5ba8f6072df45fc3202bf4399d77cf788e
Deleted: sha256:9fb08875b948f9979b09f6cd799f38546d8dc217179c6ab730166db1db81691
Deleted: sha256:iae3fa42c4f0e720f66e73c0d557f46fcab15501b3b1a38e305180b1ad9
Deleted: sha256:4df5b5a59641cbe968414bd43ef076e7a9c23296c0526a0cd08e9612ca60317
Deleted: sha256:f494c61257d7e8f2ca32dacead40d8512bae9698d28a942ee2a60fcab80acd
Deleted: sha256:23c0846f8b75a47de34015797a56d762bcfc6ec4df5f8700eae791ff8694a8
Deleted: sha256:31e319f9dfe2b6e70a8dd53744e34d6d6e543a6107cff69b7a23e455a76e8b6
Deleted: sha256:85020aff87e04e29ee537fcab6d2738265bc3cde79a042aee35446a0018e111156
Deleted: sha256:75650b8eeehbd3beae97271a10f57cdcb794cc91e442648544963a7e951e9558
Untagged: node:16.17.0-alpine
Untagged: node@sha256:c205ed42fc0f6aache5730042640450e5ec030bada7617beac88f742b6997b
Deleted: sha256:52d1562b20f9c21f76124ec075173aa040dc6eaed0c803c7a37f3e34a53
Deleted: sha256:4919cb732556c1cd608c2918e51fd8634fc5ab52f9e0ca235cc77efaf30315
Deleted: sha256:a9d1da03525c55bc90f979a09bb2c3e162436e8d4769bb6b00ff4f7787b115
Deleted: sha256:504221990c105330185bb1df64dc7b424a7c8063247b42555da7e28016e912ec
Deleted: sha256:994393dc58e7931862558d06e46aa2hb1748704ff670f310dffae1d2e4d1ec7
ubuntu@ip-172-31-28-82:~/Netfli$
```

➤ Now create another image with the access key.

```

ubuntu@ip-172-31-28-82:~/Netfli$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu@ip-172-31-28-82:~/Netfli$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ubuntu@ip-172-31-28-82:~/Netfli$ docker build -t netflix:latest --build-arg TMDB_V3_API_KEY=1d0307083a0d06e9c160de07d9d53d7a .
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/
unknown flag: --build-arg
See 'docker build --help'.
ubuntu@ip-172-31-28-82:~/Netfli$ docker build -t netflix:latest --build-arg TMDB_V3_API_KEY=1d0307083a0d06e9c160de07d9d53d7a .
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/
Sending build context to Docker daemon 8.218MB
Step 1/16 : FROM node:16.17.0-alpine as builder
16.17.0-alpine: Pulling from library/node
213ec9aee27d: Pull complete
864b973d1bfc: Pull complete
80fe61ad56f5: Pull complete
e3887ab559e6: Pull complete
Digest: sha256:2c405ed42fc0f6aache5730042640450e5ec030bada7617beac88f742b6997b
Status: Downloaded newer image for node:16.17.0-alpine
--> 5cdcd1f6157bd
Step 2/16 : WORKDIR /app
--> Running in b110fa277bf0
Removing intermediate container b110fa277bf0
--> 3ef74fffee614
Step 3/16 : COPY ./package.json .
--> dfab3b72d0b72
Step 4/16 : COPY ./yarn.lock .
--> 3918e2e64cab
Step 5/16 : RUN yarn install
--> Running in 5bc5a5fc524c
yarn install v1.22.19
[1/4] Resolving packages...
[2/4] Fetching packages...
[3/4] Linking dependencies...
```

```

ubuntu@ip-172-31-28-82:~/Netflix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
netflix latest d4fc3c371eb8b 5 seconds ago 58MB
<none> <none> 6d1e14f34e52 8 seconds ago 844MB
nginx stable-alpine 50847f99ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf16157bd 2 years ago 115MB

ubuntu@ip-172-31-28-82:~/Netflix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
```

➤ Now run the created images to create container.

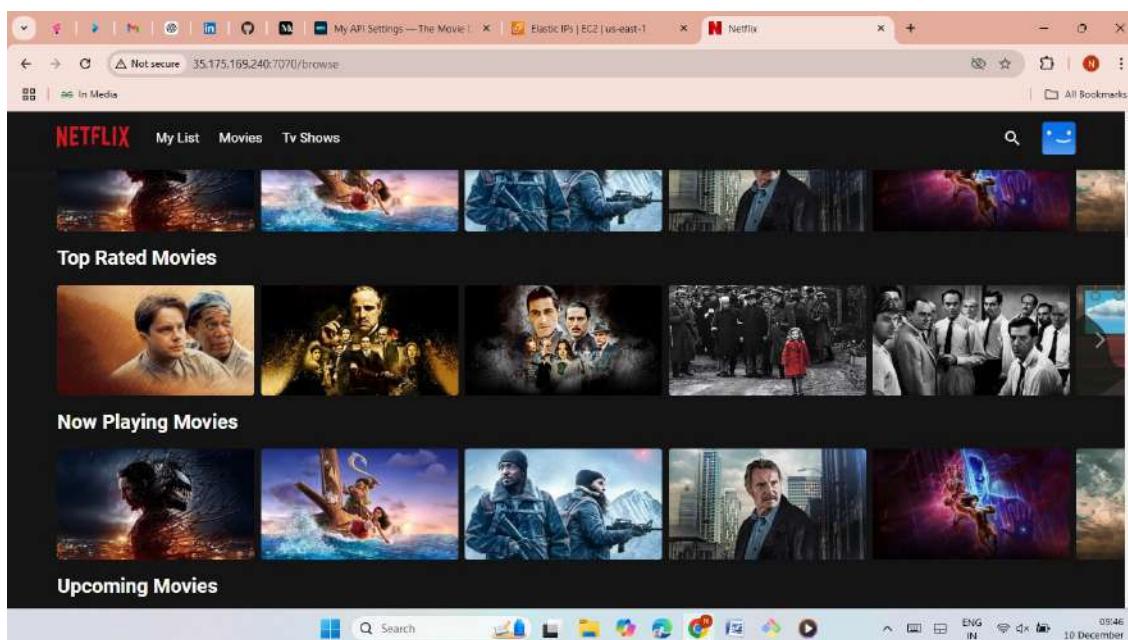
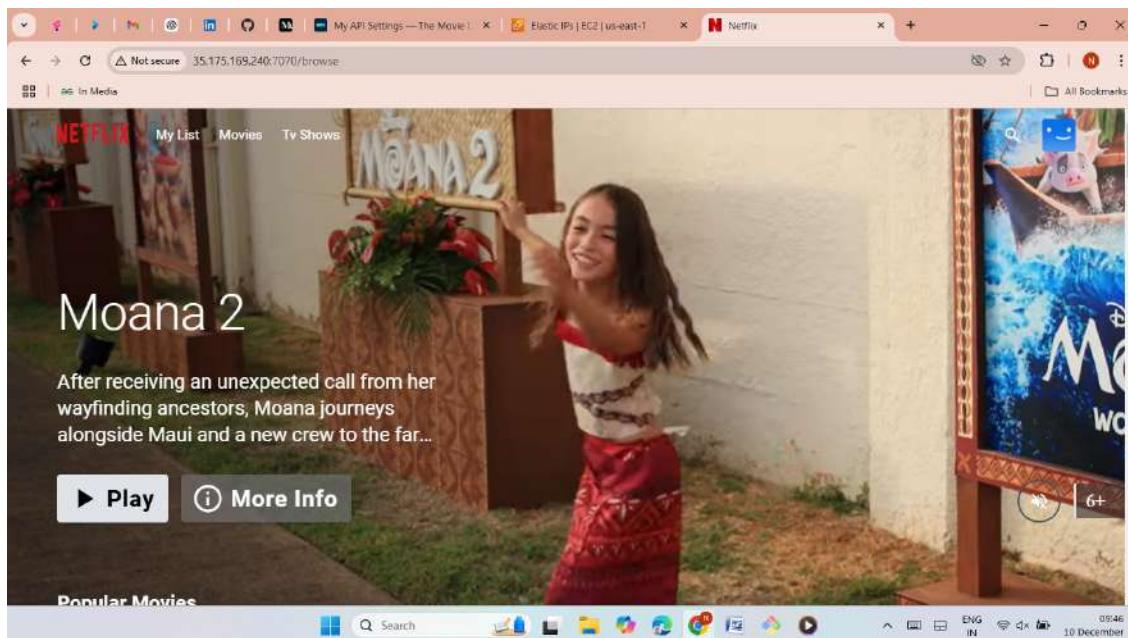
```

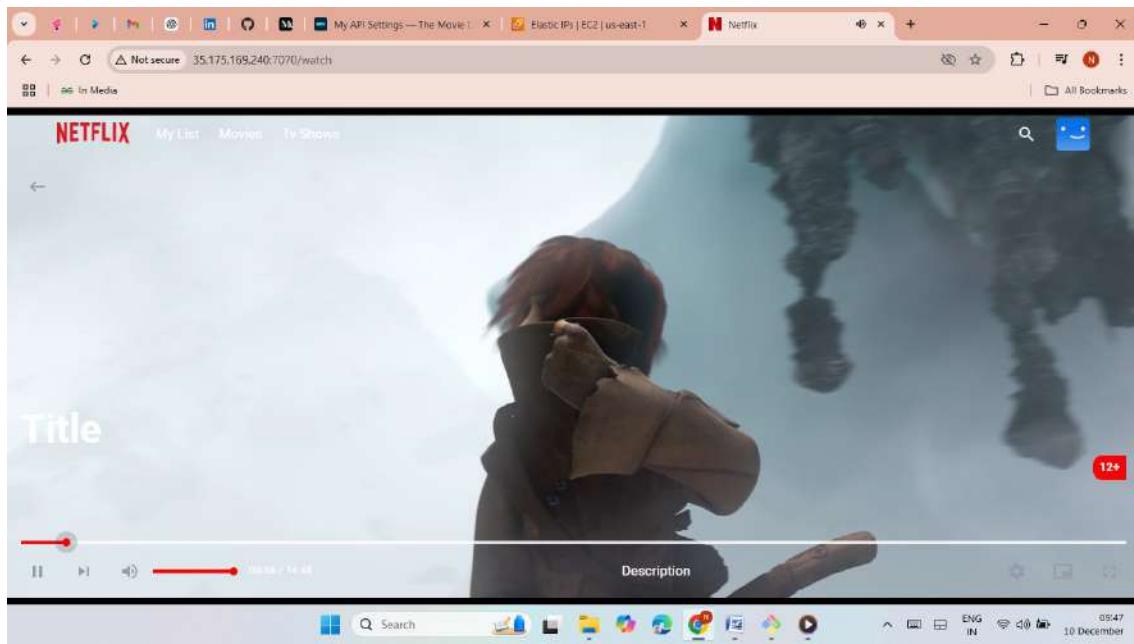
ubuntu@ip-172-31-28-82:~/Netflix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
netflix latest d4fc3c371eb8b 5 seconds ago 58MB
<none> <none> 6d1e14f34e52 8 seconds ago 844MB
nginx stable-alpine 50847f99ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf16157bd 2 years ago 115MB

ubuntu@ip-172-31-28-82:~/Netflix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
ubuntu@ip-172-31-28-82:~/Netflix$ docker run -d -p 7070:80 netflix
2c6e9040ef940ef86bdf72797a6a08596a9621606115df427a57fb4a42fcfd
ubuntu@ip-172-31-28-82:~/Netflix$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
2c6e9040ef94 netflix "nginx -g 'daemon off;" 4 seconds ago Up 3 seconds 0.0.0.0:7070->80/tcp, :::7070->80/tcp hardcore_tharp

ubuntu@ip-172-31-28-82:~/Netflix$
```

- Host the application along with IP and given port.
- Here the Netflix application hosted successfully.





PHASE-2

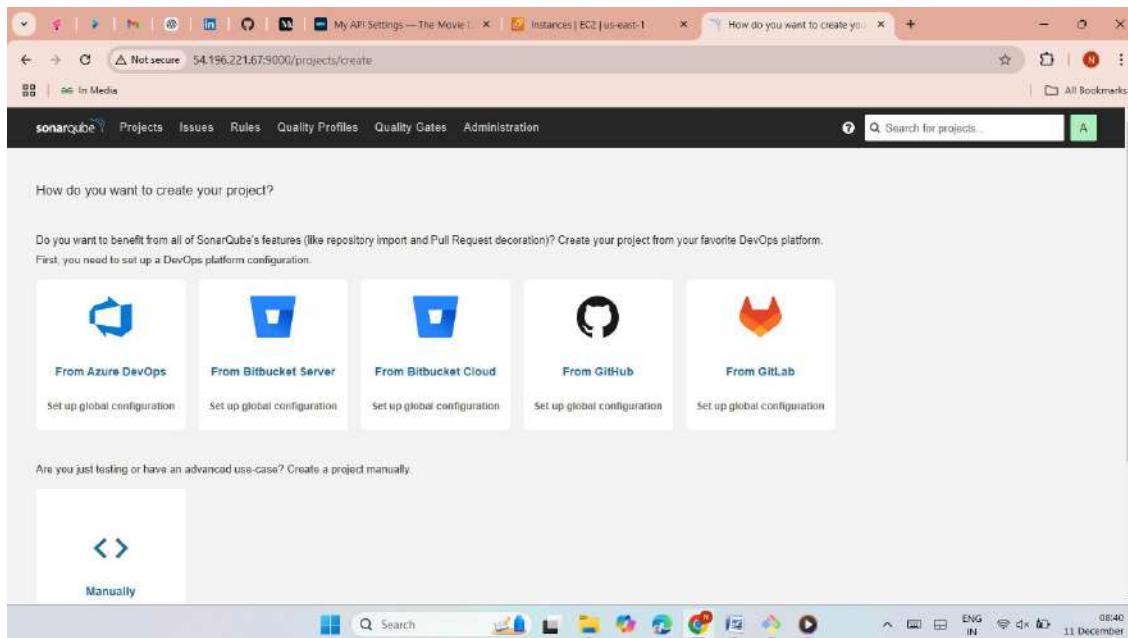
IMPLEMENTATION OF SECURITY WITH SONARQUBE AND TRIVY

- Now run the docker image with the SonarQube.

```
ubuntu@ip-172-31-31-171:~/Netflix
<none>      <none>          6d2270f0b0c9  About a minute ago   844MB
nginx        stable-alpine    60847f99ea69  3 months ago     48.8MB
node         16.17.0-alpine   5dcdf1f6157bd  2 years ago     115MB
ubuntu@ip-172-31-31-171:~/Netflix$ docker ps
CONTAINER ID IMAGE           COMMAND      CREATED      STATUS      PORTS
ES
6dac6226ce35  netflix "nginx -g 'daemon of..."  About a minute ago  Up About a minute  0.0.0.0:7070->80/tcp, :::7070->80/tcp  ten
der_v Vaughan
ubuntu@ip-172-31-31-171:~/Netflix$ docker run -dt --name sonar -p 9000:9000 sonarqube:its-community
Unable to find image 'sonarqube:its-community' locally
docker: Error response from daemon: manifest for sonarqube:its-community not found: manifest unknown: manifest unknown.
See 'docker run --help'.
ubuntu@ip-172-31-31-171:~/Netflix$ docker run -dt --name sonar -p 9000:9000 sonarqube:Its-community
Unable to find image 'sonarqube:Its-community' locally
docker: Error response from daemon: manifest for sonarqube:Its-community not found: manifest unknown: manifest unknown.
See 'docker run --help'.
ubuntu@ip-172-31-31-171:~/Netflix$ docker run -dt --name sonar -p 9000:9000 sonarqube:lts-community
Unable to find image 'sonarqube:lts-community' locally
lts-community: Pulling from library/sonarqube
6414378b6477: Pull complete
17da8ec43a12: Pull complete
d12988e90d61: Pull complete
f4d133ca2b7f: Pull complete
143733ae87a4: Pull complete
8438621478bb: Pull complete
3d0284140b24: Pull complete
44fb700ef54: Pull complete
Digest: sha256:c337c407849de45a727f09dbd875779ad7b5784e0b02b096c1f8cd72e27a9fdc
Status: Downloaded newer image for sonarqube:lts-community
2d8c8a5c066c1b201874661a0eff1af53df58855cbdf0cc3511f03922f0fe7d
ubuntu@ip-172-31-31-171:~/Netflix$ docker ps
CONTAINER ID IMAGE           COMMAND      CREATED      STATUS      PORTS
 NAMES
2d8c8a5c066c  sonarqube:lts-community  "/opt/sonarqube/dock_..."  16 seconds ago  Up 11 seconds  0.0.0.0:9000->9000/tcp, :::9000->90
00/tcp  sonar
6dac6226ce35  netflix          "nginx -g 'daemon of..."  3 minutes ago   Up 3 minutes   0.0.0.0:7070->80/tcp, :::7070->80/t
cp  tender_v Vaughan
ubuntu@ip-172-31-31-171:~/Netflix$ |
```

```
ubuntu@ip-172-31-31-171:~/Netflix
der_v Vaughan
ubuntu@ip-172-31-31-171:~/Netflix$ docker run -dt --name sonar -p 9000:9000 sonarqube:its-community
Unable to find image 'sonarqube:its-community' locally
docker: Error response from daemon: manifest for sonarqube:its-community not found: manifest unknown: manifest unknown.
See 'docker run --help'.
ubuntu@ip-172-31-31-171:~/Netflix$ docker run -dt --name sonar -p 9000:9000 sonarqube:Its-community
Unable to find image 'sonarqube:Its-community' locally
docker: Error response from daemon: manifest for sonarqube:Its-community not found: manifest unknown: manifest unknown.
See 'docker run --help'.
ubuntu@ip-172-31-31-171:~/Netflix$ docker run -dt --name sonar -p 9000:9000 sonarqube:lts-community
Unable to find image 'sonarqube:lts-community' locally
lts-community: Pulling from library/sonarqube
6414378b6477: Pull complete
17da8ec43a12: Pull complete
d12988e90d61: Pull complete
f4d133ca2b7f: Pull complete
143733ae87a4: Pull complete
8438621478bb: Pull complete
3d0284140b24: Pull complete
44fb700ef54: Pull complete
Digest: sha256:c337c407849de45a727f09dbd875779ad7b5784e0b02b096c1f8cd72e27a9fdc
Status: Downloaded newer image for sonarqube:lts-community
2d8c8a5c066c1b201874661a0eff1af53df58855cbdf0cc3511f03922f0fe7d
ubuntu@ip-172-31-31-171:~/Netflix$ docker ps
CONTAINER ID IMAGE           COMMAND      CREATED      STATUS      PORTS
 NAMES
2d8c8a5c066c  sonarqube:lts-community  "/opt/sonarqube/dock_..."  16 seconds ago  Up 11 seconds  0.0.0.0:9000->9000/tcp, :::9000->90
00/tcp  sonar
6dac6226ce35  netflix          "nginx -g 'daemon of..."  3 minutes ago   Up 3 minutes   0.0.0.0:7070->80/tcp, :::7070->80/t
cp  tender_v Vaughan
ubuntu@ip-172-31-31-171:~/Netflix$ docker images
REPOSITORY  TAG      IMAGE ID      CREATED      SIZE
netflix     latest   06583d247eeb  4 minutes ago  58MB
<none>      <none>   6d2270f0b0e9  4 minutes ago  844MB
sonarqube   lts-community 3ead3da9b7ad  8 days ago   605MB
nginx       stable-alpine 60847f99ea69  3 months ago  48.8MB
node        16.17.0-alpine 5dcdf1f6157bd  2 years ago   115MB
ubuntu@ip-172-31-31-171:~/Netflix$ |
```

- Now host the SonarQube with IP and given 9000 port.



- Now install trivy form Google.

```
ubuntu@ip-172-31-31-171:~/Netflix$ sudo apt-get install wget apt-transport-https gnupg lsb-release
wget -qO - https://aquasecurity.github.io/trivy-repo/deb/public.key | sudo apt-key add -
echo deb https://aquasecurity.github.io/trivy-repo/deb $(lsb_release -sc) main | sudo tee -a /etc/apt/sources.list.d/trivy.list
sudo apt-get update
Sudo apt-get install trivy
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
lsb-release is already the newest version (11.1.Oubuntu4).
lsb-release set to manually installed.
gnupg is already the newest version (2.2.27-3ubuntu2.1).
gnupg set to manually installed.
wget is already the newest version (1.21.2-2ubuntu1.1).
wget set to manually installed.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 32 not upgraded.
Need to get 1510 B of archives.
After this operation, 170 kB of additional disk space will be used.
Do you want to continue? [y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 apt-transport-https all 2.4.13 [1510 B]
Fetched 1510 B in 0s (93.0 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 66150 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.4.13_all.deb ...
Unpacking apt-transport-https (2.4.13) ...
Setting up apt-transport-https (2.4.13) ...
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.
```

```

ubuntu@ip-172-31-31-171:~/Netflix$ apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:2 https://aquasecurity.github.io/trivy-repo/deb jammy InRelease [3061 B]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2190 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1179 kB]
Get:6 https://aquasecurity.github.io/trivy-repo/deb jammy/main amd64 Packages [369 B]
Fetched 3629 kB in 1s (4272 kB/s)
Reading package lists... Done
W: https://aquasecurity.github.io/trivy-repo/deb/dists/jammy/InRelease: Key is stored in legacy trusted.gpg keyring (/etc/apt/trusted.gpg), see the DEPRECATION section in apt-key(8) for details.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  trivy
0 upgraded, 1 newly installed, 0 to remove and 32 not upgraded.
Need to get 40.2 MB of archives.
After this operation, 132 MB of additional disk space will be used.
Get:1 https://aquasecurity.github.io/trivy-repo/deb jammy/main amd64 trivy amd64 0.58.0 [40.2 MB]
Fetched 40.2 MB in 3s (14.7 MB/s)
Selecting previously unselected package trivy.
(Reading database ... 60154 files and directories currently installed.)
Preparing to unpack .../trivy_0.58.0_amd64.deb ...
Unpacking trivy (0.58.0) ...
Setting up trivy (0.58.0) ...
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-172-31-31-171:~/Netflix$
```

➤ Now scanning the create image.

```

ubuntu@ip-172-31-31-171:~/Netflix$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
netflix latest 06583d247eeb 12 minutes ago 58MB
<none> <none> 6d2270f0b0c9 12 minutes ago 844MB
sonarqube lts-community 3ead3da9b7ad 8 days ago 605MB
nginx stable-alpine 60847f99ea69 3 months ago 48.8MB
node 16.17.0-alpine 5dcdf1f6157bd 2 years ago 115MB
ubuntu@ip-172-31-31-171:~/Netflix$ trivy image 06583d247eeb
2024-12-11T03:17:19Z INFO [vuldb] Need to update DB
2024-12-11T03:17:19Z INFO [vuldb] Downloading vulnerability DB...
2024-12-11T03:17:19Z INFO [vuldb] Downloading artifact... repo="mirror.gcr.io/aquasec/trivy-db:2"
57.30 MiB / 57.30 MiB [-====-=] 100.00% 23.44 MiB p/s 2.6s
2024-12-11T03:17:23Z INFO [vuldb] Artifact successfully downloaded repo="mirror.gcr.io/aquasec/trivy-db:2"
2024-12-11T03:17:23Z INFO Vulnerability scanning is enabled
2024-12-11T03:17:23Z INFO [secret] Secret scanning is enabled
2024-12-11T03:17:23Z INFO [secret] If your scanning is slow, please try '--scanners vuln' to disable secret scanning
2024-12-11T03:17:23Z INFO [secret] Please see also https://aquasecurity.github.io/trivy/v0.58/docs/scanner/secret#recommendation
for faster secret detection
2024-12-11T03:17:24Z INFO Detected OS family="alpine" version="3.20.3"
2024-12-11T03:17:24Z INFO [alpine] Detecting vulnerabilities... os_version="3.20" repository="3.20" pko_num=66
2024-12-11T03:17:24Z INFO Number of language-specific files num=0

06583d247eeb (alpine 3.20.3)

Total: 0 (UNKNOWN: 0, LOW: 0, MEDIUM: 0, HIGH: 0, CRITICAL: 0)

ubuntu@ip-172-31-31-171:~/Netflix$ trivy image 3ead3da9b7ad
2024-12-11T03:17:42Z INFO [vuin] vulnerability scanning is enabled
2024-12-11T03:17:42Z INFO [secret] Secret scanning is enabled
2024-12-11T03:17:42Z INFO [secret] If your scanning is slow, please try '--scanners vuln' to disable secret scanning
2024-12-11T03:17:42Z INFO [secret] Please see also https://aquasecurity.github.io/trivy/v0.58/docs/scanner/secret#recommendation
for faster secret detection
2024-12-11T03:17:49Z INFO [javadb] Downloading Java DB...
2024-12-11T03:17:49Z INFO [javadb] Downloading artifact... repo="mirror.gcr.io/aquasec/trivy-java-db:1"
2024-12-11T03:17:51Z WARN [secret] The size of the scanned file is too large. It is recommended to use '--skip-files' for this file to avoid high memory consumption. file_path="/opt/sonarqube/web/js/outKPYOV572.js.map" size (MB)=11
668.08 MiB / 668.08 MiB [-====-=] 100.00% 28.36 MiB p/s 24s
2024-12-11T03:18:15Z INFO [javadb] Artifact successfully downloaded repo="mirror.gcr.io/aquasec/trivy-java-db:1"
```

```

ubuntu@ip-172-31-31-171:~/Netflix$ trivy image 3cad3da9b7ad
2024-12-11T03:17:42Z INFO [vuln] Vulnerability scanning is enabled
2024-12-11T03:17:42Z INFO [secret] Secret scanning is enabled
2024-12-11T03:17:42Z INFO [secret] If your scanning is slow, please try '--scanners vuln' to disable secret scanning
2024-12-11T03:17:42Z INFO [secret] Please see also https://aquasecurity.github.io/trivy/v0.58/docs/scanner/secret#recommendation
for faster secret detection
2024-12-11T03:17:49Z INFO [javadb] Downloading Java DB...
2024-12-11T03:17:49Z INFO [javadb] Downloading artifact... repo="mirror.gcr.io/aquasec/trivy-java-db:1"
2024-12-11T03:17:51Z WARN [secret] The size of the scanned file is too large. It is recommended to use --skip-files for this file to avoid high memory consumption. file_path="/opt/sonarqube/web/js/outKPYO5/2.js.map" size (MB)=11
668.08 MiB [-----] 100.00% 28.36 MiB p/s 24s
2024-12-11T03:18:15Z INFO [javadb] Artifact successfully downloaded repo="mirror.gcr.io/aquasec/trivy-java-db:1"
2024-12-11T03:18:15Z INFO [javadb] Java DB is cached for 3 days. If you want to update the database more frequently, "trivy clean --java-db" command clears the DB cache.
2024-12-11T03:18:16Z INFO Detected OS family="ubuntu" version="22.04"
2024-12-11T03:18:16Z INFO [ubuntu] Detecting vulnerabilities... os_version="22.04" pkg_num=143
2024-12-11T03:18:16Z INFO Number of language-specific files num=1
2024-12-11T03:18:16Z INFO [jar] Detecting vulnerabilities...

3cad3da9b7ad (Ubuntu 22.04)

Total: 61 (UNKNOWN: 0, LOW: 45, MEDIUM: 16, HIGH: 0, CRITICAL: 0)



| Title | Library   | Vulnerability | Severity | Status   | Installed Version | Fixed Version | Time                                                                                              |
|-------|-----------|---------------|----------|----------|-------------------|---------------|---------------------------------------------------------------------------------------------------|
|       | coreutils | CVE-2016-2781 | LOW      | affected | 8.32-4.lubuntu1.2 |               | coreutils: Non-privileged session can escape to the parent                                        |
|       |           |               |          |          |                   |               | session in chroot                                                                                 |
|       |           |               |          |          |                   |               | <a href="https://avd.aquasec.com/nvd/cve-2016-2781">https://avd.aquasec.com/nvd/cve-2016-2781</a> |


```

```

ubuntu@ip-172-31-31-171:~/Netflix$ trivy image 3cad3da9b7ad
2024-12-11T03:17:42Z INFO [vuln] Vulnerability scanning is enabled
2024-12-11T03:17:42Z INFO [secret] Secret scanning is enabled
2024-12-11T03:17:42Z INFO [secret] If your scanning is slow, please try '--scanners vuln' to disable secret scanning
2024-12-11T03:17:42Z INFO [secret] Please see also https://aquasecurity.github.io/trivy/v0.58/docs/scanner/secret#recommendation
for faster secret detection
2024-12-11T03:17:49Z INFO [javadb] Downloading Java DB...
2024-12-11T03:17:49Z INFO [javadb] Downloading artifact... repo="mirror.gcr.io/aquasec/trivy-java-db:1"
2024-12-11T03:17:51Z WARN [secret] The size of the scanned file is too large. It is recommended to use --skip-files for this file to avoid high memory consumption. file_path="/opt/sonarqube/web/js/outKPYO5/2.js.map" size (MB)=11
668.08 MiB [-----] 100.00% 28.36 MiB p/s 24s
2024-12-11T03:18:15Z INFO [javadb] Artifact successfully downloaded repo="mirror.gcr.io/aquasec/trivy-java-db:1"
2024-12-11T03:18:15Z INFO [javadb] Java DB is cached for 3 days. If you want to update the database more frequently, "trivy clean --java-db" command clears the DB cache.
2024-12-11T03:18:16Z INFO Detected OS family="ubuntu" version="22.04"
2024-12-11T03:18:16Z INFO [ubuntu] Detecting vulnerabilities... os_version="22.04" pkg_num=143
2024-12-11T03:18:16Z INFO Number of language-specific files num=1
2024-12-11T03:18:16Z INFO [jar] Detecting vulnerabilities...

3cad3da9b7ad (Ubuntu 22.04)

Total: 61 (UNKNOWN: 0, LOW: 45, MEDIUM: 16, HIGH: 0, CRITICAL: 0)



| Title | Library                             | Vulnerability  | Severity | Status   | Installed Version     | Fixed Version | Time                                                                                                |
|-------|-------------------------------------|----------------|----------|----------|-----------------------|---------------|-----------------------------------------------------------------------------------------------------|
|       | coreutils                           | CVE-2016-2781  | LOW      | affected | 8.32-4.lubuntu1.2     |               | coreutils: Non-privileged session can escape to the parent                                          |
|       |                                     |                |          |          |                       |               | session in chroot                                                                                   |
|       |                                     |                |          |          |                       |               | <a href="https://avd.aquasec.com/nvd/cve-2016-2781">https://avd.aquasec.com/nvd/cve-2016-2781</a>   |
|       | dirmngr                             | CVE-2022-3219  | LOW      | affected | 2.2.27-3ubuntu2.1     |               | gnupg: denial of service issue (resource consumption) using compressed packets                      |
|       |                                     |                |          |          |                       |               | <a href="https://avd.aquasec.com/nvd/cve-2022-3219">https://avd.aquasec.com/nvd/cve-2022-3219</a>   |
|       | gcc-12-base                         | CVE-2023-4039  | MEDIUM   | affected | 12.3.0-1ubuntu1~22.04 |               | gcc: -fstack-protector fails to guard dynamic stack allocations on ARM64                            |
|       |                                     |                |          |          |                       |               | <a href="https://avd.aquasec.com/nvd/cve-2023-4039">https://avd.aquasec.com/nvd/cve-2023-4039</a>   |
|       | ngle.c in GNU GCC 11.2 allows const | CVE-2022-27943 | LOW      | affected | 11.2.0-1ubuntu1~22.04 |               | binutils: libiberty/rust-demangle exhaustion in demangle                                            |
|       |                                     |                |          |          |                       |               | <a href="https://avd.aquasec.com/nvd/cve-2022-27943">https://avd.aquasec.com/nvd/cve-2022-27943</a> |


```

```
ubuntu@ip-172-31-31-171: ~/Netflix
+-----+-----+-----+-----+-----+
| ngle.c in GNU GCC 11.2 allows | CVE-2022-27943 | LOW | | | binutils: libiberty/rust-dema
| const | | | | | stack exhaustion in demangle_
| ve-2022-27943 | | | | | https://avd.aquasec.com/nvd/c
+-----+-----+-----+-----+-----+
| gnupg-110n | CVE-2022-3219 | | | | gnupg: denial of service issu
| e (resource consumption) using | | | | | compressed packets
| | | | | | https://avd.aquasec.com/nvd/c
| ve-2022-3219 | | | | | 
| gnupg-utils | | | | | 
| | | | | | 
| gpg | | | | | 
| | | | | | 
| gpg-agent | | | | | 
| | | | | | 
+-----+-----+-----+-----+-----+

```

```
ubuntu@ip-172-31-31-171: ~/Netflix
+-----+-----+-----+-----+-----+
| gpg-wks-client | | | | | 
| | | | | | 
| | | | | | 
| gpg-wks-server | | | | | 
| | | | | | 
| | | | | | 
| gpgconf | | | | | 
| | | | | | 
| | | | | | 
| gpgsm | | | | | 
| | | | | | 
| | | | | | 
| gpgv | | | | | 
| | | | | | 
+-----+-----+-----+-----+-----+

```

libc-bin	CVE-2016-20013		2.35-0ubuntu3.8	sha256crypt and sha512crypt t cause a denial of...
				https://avd.aquasec.com/nvd/cve-2016-20013
libc6				
libgcc-s1	CVE-2023-4039	MEDIUM	12.3.0-1ubuntul-22.04	gcc: -fstack-protector fails allocations on ARM64
				https://avd.aquasec.com/nvd/cve-2023-4039
single.c in GNU GCC 11.2	CVE-2022-27943	LOW		binutils: libiberty/rust-demangle: stack exhaustion in demangle_
const				https://avd.aquasec.com/nvd/cve-2022-27943
libgcrypt20	CVE-2024-2236		1.9.4-3ubuntu3	libgcrypt: vulnerable to Man-in-Attack
				https://avd.aquasec.com/nvd/cve-2024-2236

libgssapi-krb5-2	CVE-2024-26462	MEDIUM	1.19.2-2ubuntu0.4	krb5: Memory leak at /krb5/sr...
c/kdc/ndr.c				https://avd.aquasec.com/nvd/cve-2024-26462
c/lib/rpc/pmap_rmt.c	CVE-2024-26458	LOW		krb5: Memory leak at /krb5/sr...
				https://avd.aquasec.com/nvd/cve-2024-26458
c/lib/gssapi/krb5/k5sealv3.c	CVE-2024-26461			krb5: Memory leak at /krb5/sr...
				https://avd.aquasec.com/nvd/cve-2024-26461
libk5crypto3	CVE-2024-26462	MEDIUM		krb5: Memory leak at /krb5/sr...
c/kdc/ndr.c				https://avd.aquasec.com/nvd/cve-2024-26462
c/lib/rpc/pmap_rmt.c	CVE-2024-26458	LOW		krb5: Memory leak at /krb5/sr...
				https://avd.aquasec.com/nvd/cve-2024-26458
c/lib/gssapi/krb5/k5sealv3.c	CVE-2024-26461			Krb5: Memory leak at /krb5/sr...
				https://avd.aquasec.com/nvd/cve-2024-26461

libkrb5-3 c/kdc/ndr.c ve-2024-26462	CVE-2024-26462	MEDIUM			krb5: Memory leak at /krb5/sr https://avd.aquasec.com/nvd/cve-2024-26462
c/lib/rpc/pmap_rmt.c ve-2024-26458	CVE-2024-26458	LOW			krb5: Memory leak at /krb5/sr https://avd.aquasec.com/nvd/cve-2024-26458
c/lib/gssapi/krb5/k5sealv3.c ve-2024-26461	CVE-2024-26461				krb5: Memory leak at /krb5/sr https://avd.aquasec.com/nvd/cve-2024-26461
libkrb5support0 c/kdc/ndr.c ve-2024-26462	CVE-2024-26462	MEDIUM			krb5: Memory leak at /krb5/sr https://avd.aquasec.com/nvd/cve-2024-26462
c/lib/rpc/pmap_rmt.c ve-2024-26458	CVE-2024-26458	LOW			krb5: Memory leak at /krb5/sr https://avd.aquasec.com/nvd/cve-2024-26458
c/lib/gssapi/krb5/k5sealv3.c ve-2024-26461	CVE-2024-26461				krb5: Memory leak at /krb5/sr https://avd.aquasec.com/nvd/cve-2024-26461

libncurses6 ence in tgetstr in ve-2023-45918	CVE-2023-45918		6.3-2ubuntu0.1		ncurses: NULL pointer derefer tinfo/lib_termcap.c https://avd.aquasec.com/nvd/cve-2023-45918
ia_nc_wrap_entry() ve-2023-50495	CVE-2023-50495				ncurses: segmentation fault v https://avd.aquasec.com/nvd/cve-2023-50495
libncursesw6 ence in tgetstr in ve-2023-45918	CVE-2023-45918				ncurses: NULL pointer derefer tinfo/lib_termcap.c https://avd.aquasec.com/nvd/cve-2023-45918
ia_nc_wrap_entry() ve-2023-50495	CVE-2023-50495				ncurses: segmentation fault v https://avd.aquasec.com/nvd/cve-2023-50495
libpam-modules e to read hashed password ve-2024-10041	CVE-2024-10041	MEDIUM	1.4.0-11ubuntu2.4		pam: libpam: libpam_vulnerabil https://avd.aquasec.com/nvd/cve-2024-10041
	CVE-2024-10963				pam: improper Hostname Interp retation in pam_access Leads to

rotation in pam_access Leads to		Access Control Bypass
libpam-modules-bin	CVE-2024-10041 e to read hashed password	pam: libpam: Libpam vulnerabil https://avd.aquasec.com/nvd/cve-2024-10041
libpam-runtime	CVE-2024-10963 rotation in pam_access Leads to	pam: Improper Hostname Interp Access Control Bypass https://avd.aquasec.com/nvd/cve-2024-10963
libpam0g	CVE-2024-10041 e to read hashed password	pam: libpam: Libpam vulnerabil https://avd.aquasec.com/nvd/cve-2024-10041
libpam0g	CVE-2024-10963 rotation in pam_access Leads to	pam: Improper Hostname Interp Access Control Bypass https://avd.aquasec.com/nvd/cve-2024-10963

Ubuntu 22.04 LTS (Jammy Jellyfish) - Critical				Ubuntu 22.04 LTS (Jammy Jellyfish) - Critical	
CVE-2024-10041	CVE-2024-10963	LOW	rotation in pam_access Leads to	pam: Improper Hostname Interpretation in pam_access	https://avd.aquasec.com/nvd/cve-2024-10963
CVE-2024-10963	CVE-2022-41409	LOW	in libpcre2-8-0 in a pcre2test subject line	pcre2: negative repeat value leads to infinite loop	https://avd.aquasec.com/nvd/cve-2022-41409
CVE-2022-41409	CVE-2017-11164	LOW	in libpcre3 he match function in	pcre: OP_KETRMAX feature in the pcre_exec.c	https://avd.aquasec.com/nvd/cve-2017-11164
CVE-2017-11164	CVE-2024-41996	LOW	on the client side) to trigger r-side...	openssl: remote attackers (from unnecessarily expensive server)	https://avd.aquasec.com/nvd/cve-2024-41996
CVE-2024-41996	CVE-2023-4039	MEDIUM	Libstdc++6 to guard dynamic stack	gcc: -fstack-protector fails	https://avd.aquasec.com/nvd/cve-2023-4039

libstdc++6 to guard dynamic stack	CVE-2023-4039	MEDIUM	12.3.0-1ubuntu1-22.04	gcc: -fstack-protector fails allocations on ARM64 https://avd.aquasec.com/nvd/cve-2023-4039
single.c in GNU GCC 11.2 allows const	CVE-2022-27943	LOW		binutils: libiberty/rust-demangle exhaustion in demangle https://avd.aquasec.com/nvd/cve-2022-27943
libsystemd0 me response in signed zone is	CVE-2023-7008		249.11-0ubuntu3.12	systemd-resolved: Unsigned name not refused when DNSSEC=yes.. https://avd.aquasec.com/nvd/cve-2023-7008
libtinfo6 ence in tgetstr in	CVE-2023-45918		6.3-2ubuntu0.1	ncurses: NULL pointer dereference in lib_termcap.c https://avd.aquasec.com/nvd/cve-2023-45918
ia_nc_wrap_entry()	CVE-2023-50495			ncurses: segmentation fault via https://avd.aquasec.com/nvd/cve-2023-50495

libudev1 me response in signed zone is	CVE-2023-7008		249.11-0ubuntu3.12	systemd-resolved: Unsigned name not refused when DNSSEC=yes.. https://avd.aquasec.com/nvd/cve-2023-7008
libzstd1 n util.c	CVE-2022-4899		1.4.8+dfsg-3build1	zstd: mysql: buffer overrun in https://avd.aquasec.com/nvd/cve-2022-4899
locales through 0.6 allow attackers to	CVE-2016-20013		2.35-0ubuntu3.8	sha256crypt and sha512crypt that cause a denial of service. https://avd.aquasec.com/nvd/cve-2016-20013
login tion in shadow-utils package	CVE-2023-29383		1:4.8.1-2ubuntu2.2	shadow: Improper input validation utility chfn https://avd.aquasec.com/nvd/cve-2023-29383
ncurses-base ence in tgetstr in	CVE-2023-45918		6.3-2ubuntu0.1	ncurses: NULL pointer dereference in lib_termcap.c https://avd.aquasec.com/nvd/cve-2023-45918

ia_nc_wrap_entry()	CVE-2023-50495				ncurses: segmentation fault via https://avd.aquasec.com/nvd/cve-2023-50495
ncurses-bin	CVE-2023-45918				ncurses: NULL pointer dereference in https://avd.aquasec.com/nvd/cve-2023-45918
ia_nc_wrap_entry()	CVE-2023-50495				ncurses: segmentation fault via https://avd.aquasec.com/nvd/cve-2023-50495
openssl	CVE-2024-41996		3.0.2-0ubuntu1.18		openssl: remote attackers (from the client side) to trigger unnecessarily expensive serve https://avd.aquasec.com/nvd/cve-2024-41996
passwd	CVE-2023-29383		1:4.8.1-2ubuntu2.2		shadow: Improper input validation in shadow-utils package utility chfn https://avd.aquasec.com/nvd/cve-2023-29383
wget	CVE-2021-31879	MEDIUM	1.21.2-2ubuntu1.1		wget: authorization header disclosure on redirect https://avd.aquasec.com/nvd/cve-2021-31879

Fixed Version	Library	Vulnerability Title	Severity	Status	Installed version
ch.qos.logback:logback-classic 4.12, 1.2.13 (sonar-scanner-engine-shaded-9.9.8.100196-all.jar)	logback: serialization vulnerability in logback receiver	CVE-2023-6378 https://avd.aquasec.com/nvd/cve-2023-6378	HIGH	fixed	1.2.10
ch.qos.logback:logback-classic (sonar-application-9.9.8.100196.jar)					
ch.qos.logback:Logback-core (sonar-scanner-engine-shaded-9.9.8.100196-all.jar)					

```
ubuntu@ip-172-31-31-171:~/Netflix

| ch.qos.logback:logback-core
| (sonar-application-9.9.8.100196.jar)

| com.fasterxml.woodstox:woodstox-core
| 4.0 (sonar-application-9.9.8.100196.jar) | CVE-2022-40152 | MEDIUM | woodstox-core: woodstox to serialise XML data was vulnerable to Denial of Service...
| https://avd.aquasec.com/nvd/cve-2022-40152

| com.google.guava:guava (sonar-php-plugin-3.27.1.9352.jar)
| droid guava: insecure temporary directory creation | 30.1.1-jre | 32.0.0-an
| https://avd.aquasec.com/nvd/cve-2023-2976

| com.google.guava:guava
| (sonar-python-plugin-3.24.1.11916.jar)

| com.google.guava:guava (sonar-php-plugin-3.27.1.9352.jar) | CVE-2020-8908 | LOW | guava: local information disclosure via temporary directory created with unsafe permissions
| https://avd.aquasec.com/nvd/cve-2020-8908

| com.google.guava:guava
```

```
ubuntu@ip-172-31-31-171:~/Netflix

| com.google.guava:guava
| (sonar-python-plugin-3.24.1.11916.jar)

| com.google.guava:guava
| (sonar-scanner-engine-shaded-9.9.8.100196-all.jar) | CVE-2023-2976 | MEDIUM | guava: insecure temporary directory creation
| https://avd.aquasec.com/nvd/cve-2023-2976

| com.google.guava:guava (sonar-application-9.9.8.100196.jar)

| com.google.guava:guava
| (sonar-scanner-engine-shaded-9.9.8.100196-all.jar) | CVE-2020-8908 | LOW | guava: local information disclosure via temporary directory created with unsafe permissions
| https://avd.aquasec.com/nvd/cve-2020-8908

| com.google.guava:guava (sonar-application-9.9.8.100196.jar)

| com.google.protobuf:protobuf-java | CVE-2024-7254 | HIGH | 3.21.12 | 3.25.5, 4
```

```
ubuntu@ip-172-31-31-171:~/Netflix
+-----+-----+-----+-----+-----+
| com.google.protobuf:protobuf-java | CVE-2024-7254 | HIGH | 3.21.12 | 3.25.5, 4 |
+-----+-----+-----+-----+-----+
| 27.5, 4.28.2 | protobuf: StackOverflow vulnerability in Protocol Buffers | https://nvd.aquasec.com/nvd/cve-2024-7254 |
| (sonar-csharp-plugin-8.51.0.59060.jar) | |
| |
| com.google.protobuf:protobuf-java | | | | |
| (sonar-vbnet-plugin-8.51.0.59060.jar) | | | | |
| |
| com.google.protobuf:protobuf-java | | | 3.21.7 | |
| (sonar-python-plugin-3.24.1.11916.jar) | | | | |
| |
| com.h2database:h2 (h2-2.1.214.jar) | CVE-2022-45868 | The web-based admin console in H2 Database Engine before | 2.1.214 | 2.2.220 |
| 2.2.220 can b... | | https://nvd.aquasec.com/nvd/cve-2022-45868 |
| |
| com.hazelcast:hazelcast (sonar-application-9.9.8.100196.jar) | CVE-2023-33264 | MEDIUM | 5.2.5 | 5.3.0 |
| hazelcast: Improper password mask | | https://nvd.aquasec.com/nvd/cve-2023-33264 |
| |
| commons-io:commons-io (sonar-javascript-plugin-9.13.0.20537.jar) | CVE-2024-47554 | HIGH | 2.11.0 | 2.14.0 |
| apache-commons-io: Possible denial of service attack on | | untrusted input to XMLStreamReader |
| (sonar-javascript-plugin-9.13.0.20537.jar) | | | | |
+-----+-----+-----+-----+-----+

```

```
ubuntu@ip-172-31-31-171:~/Netflix
+-----+-----+-----+-----+-----+
| commons-io:commons-io | | | | |
| (sonar-scanner-engine-shaded-9.9.8.100196-all.jar) | | | | |
| |
| commons-io:commons-io (sonar-application-9.9.8.100196.jar) | | | | |
| |
| commons-io:commons-io (sonar-iac-plugin-1.11.0.2847.jar) | | 2.8.0 | | |
| |
| commons-io:commons-io (sonar-python-plugin-3.24.1.11916.jar) | | | | |
| |
| commons-io:commons-io (sonar-ruby-plugin-1.11.0.3905.jar) | | | | |
+-----+-----+-----+-----+-----+

```

io.netty:netty-codec-http	CVE-2024-29025	MEDIUM	4.1.94.Final	4.1.108.F
(netty-codec-http-4.1.94.Final.jar)	netty-codec-http: Allocation of Resources Without Limits or Throttling			
	https://avd.aquasec.com/nvd/cve-2024-29025			
io.netty:netty-common	CVE-2024-47535		4.1.115	
(netty-common-4.1.94.Final.jar)	netty: Denial of Service attack on windows app using Netty			
	https://avd.aquasec.com/nvd/cve-2024-47535			
org.apache.commons:commons-compress	CVE-2024-25710	HIGH	1.21	1.26.0
(sonar-javascript-plugin-9.13.0.20537.jar)	commons-compress: Denial of service caused by an infinite loop for a corrupted...			
	https://avd.aquasec.com/nvd/cve-2024-25710			
	CVE-2024-26308	MEDIUM		
	commons-compress: OutOfMemoryError unpacking broken Pack200 file			
	https://avd.aquasec.com/nvd/cve-2024-26308			
org.apache.httpcomponents:httpclient	CVE-2020-13956		4.5.10	4.5.13, 5
(httpclient-4.5.10.jar)	apache-httpclient: incorrect handling of malformed authority component in request URIs			
	https://avd.aquasec.com/nvd/cve-2020-13956			

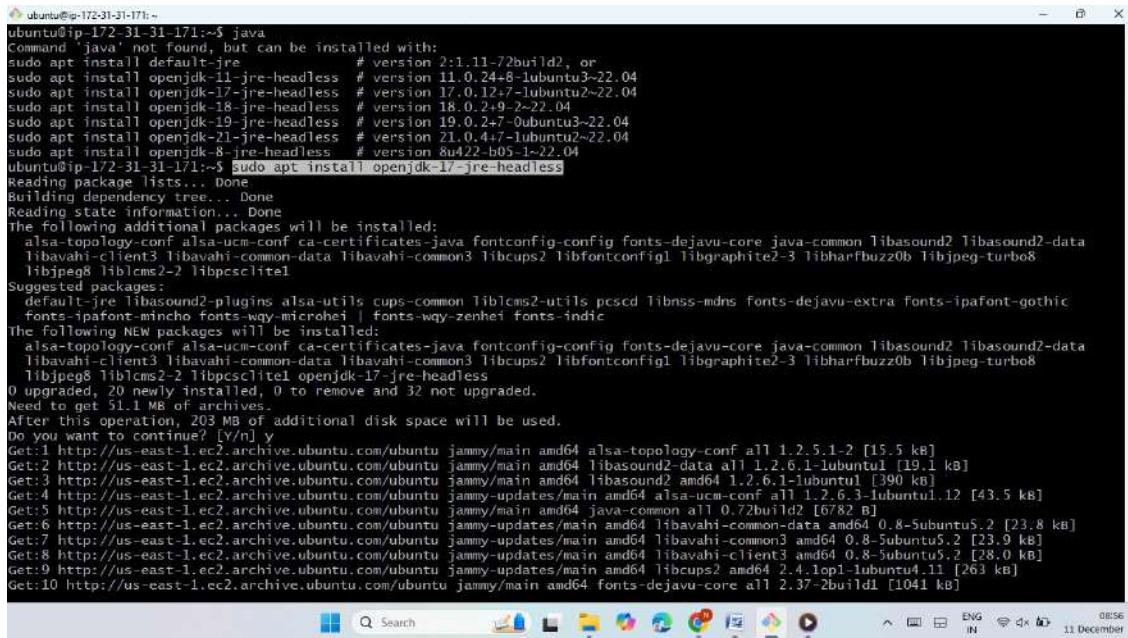
org.apache.santuario:xmlsec	CVE-2023-44483		2.2.3	2.3.4, 2.
2.6, 3.0.3	santuario: Private Key disclosure in debug-log output			
(sonar-application-9.9.8.100196.jar)	https://avd.aquasec.com/nvd/cve-2023-44483			
org.eclipse.jgit:org.eclipse.jgit	CVE-2023-4759	HIGH	6.4.0.202211300538-r	6.6.1.202
309021850-r, 5.13.3.202401111512-r	jgit: arbitrary file overwrite			
(sonar-scanner-engine-shaded-9.9.8.100196-all.jar)	https://avd.aquasec.com/nvd/cve-2023-4759			
org.elasticsearch:elasticsearch	CVE-2023-49921	MEDIUM	7.17.15	7.17.16,
(elasticsearch-7.17.15.jar)	elasticsearch: Insertion of Sensitive Information into Log File			
	https://avd.aquasec.com/nvd/cve-2023-49921			
	CVE-2024-23444			8.13.0, 7
.17.23	Elasticsearch stores private key on disk unencrypted			
	https://avd.aquasec.com/nvd/cve-2024-23444			
	CVE-2024-23450			7.17.19,
8.13.0	elasticsearch: Possible denial of service when processing documents in a deeply nested...			
	https://avd.aquasec.com/nvd/cve-2024-23450			
org.postgresql:postgresql	CVE-2024-1597	CRITICAL	42.5.1	42.2.28,
(postgresql-42.5.1.jar)	pgjdbc: PostgreSQL JDBC Driver allows attacker to inject SQL if using PreferQueryMode=SIMPLE...			
42.3.9, 42.4.4, 42.5.5, 42.6.1, 42.7.2	https://avd.aquasec.com/nvd/cve-2024-1597			

	https://avd.aquasec.com/nvd/cve-2023-49921			
	CVE-2024-23444			8.13.0, 7
.17.23	Elasticsearch stores private key on disk unencrypted			
	https://avd.aquasec.com/nvd/cve-2024-23444			
	CVE-2024-23450			7.17.19,
8.13.0	elasticsearch: Possible denial of service when processing documents in a deeply nested...			
	https://avd.aquasec.com/nvd/cve-2024-23450			
org.postgresql:postgresql	CVE-2024-1597	CRITICAL	42.5.1	42.2.28,
(postgresql-42.5.1.jar)	pgjdbc: PostgreSQL JDBC Driver allows attacker to inject SQL if using PreferQueryMode=SIMPLE...			
42.3.9, 42.4.4, 42.5.5, 42.6.1, 42.7.2	https://avd.aquasec.com/nvd/cve-2024-1597			
org.yaml:snakeyaml	CVE-2022-1471	HIGH	1.33	2.0
(snakeyaml-1.33.jar)	SnakeYAML: Constructor Deserialization Remote Code Execution			
	https://avd.aquasec.com/nvd/cve-2022-1471			
org.yaml:snakeyaml	(sonar-application-9.9.8.100196.jar)			

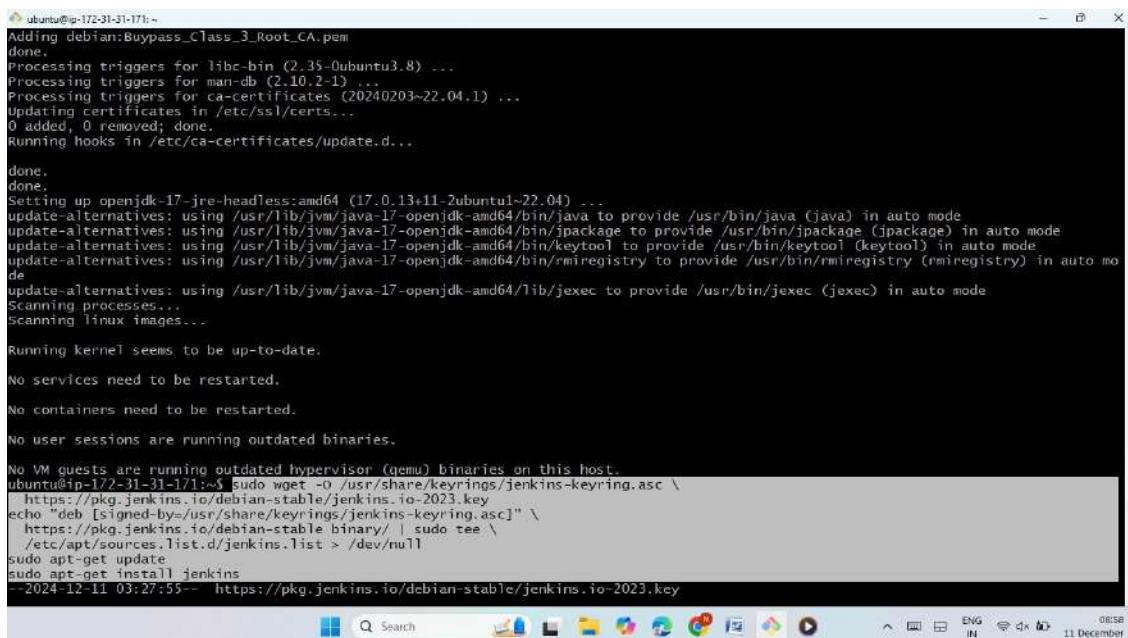
PHASE-3

NOW WE AUTOMATE THE WHOLE DEPLOYMENT USING BY JENKINS PIPELINE.

- Now install java 17th version.
- Install Jenkins packages and Jenkins.
- Then start and enable the Jenkins.



```
ubuntu@ip-172-31-31-171:~$ sudo apt install openjdk-17-jre-headless
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  alsatopology-conf alsaucm-conf ca-certificates-java fontconfig-config fonts-dejavu-core java-common libavahi-client3 libavahi-common-data libavahi-common3 libcurl2 libfontconfig libgraphite2-3 libharfbuzz0b libjpeg-turbo8
  libjpeg8 liblcms2-2 libpcslite1
Suggested packages:
  default-jre libavasound2-plugins alsauutils cups-common liblcms2-utils pscd libnss-mdns fonts-dejavu-extra fonts-ipafont-gothic
  fonts-ipafont-mincho fonts-way-microhei | fonts-way-zenhei fonts-indic
The following NEW packages will be installed:
  alsatopology-conf alsaucm-conf ca-certificates-java fontconfig-config fonts-dejavu-core java-common libavahi-client3 libavahi-common-data libavahi-common3 libcurl2 libfontconfig libgraphite2-3 libharfbuzz0b libjpeg-turbo8
  libjpeg8 liblcms2-2 libpcslite1 openjdk-17-jre-headless
0 upgraded, 20 newly installed, 0 to remove and 32 not upgraded.
Need to get 51.1 MB of archives.
After this operation, 203 MB of additional disk space will be used.
Do you want to continue? [y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 alsatopology-conf all 1.2.5.1-2 [15.5 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libavasound2-data all 1.2.6.1-1ubuntu1 [19.1 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libavahi-client3 amd64 1.2.6.1-1ubuntu1 [390 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 alsaucm-conf all 1.2.6.3-1ubuntu1.12 [43.5 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 java-common all 0.72build2 [6782 B]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libavahi-common-data amd64 0.8-5ubuntu5.2 [23.8 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libavahi-common3 amd64 0.8-5ubuntu5.2 [23.9 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libavahi-client3 amd64 0.8-5ubuntu5.2 [28.0 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libcurl2 amd64 2.4.10pl1-1ubuntu4.11 [263 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 fonts-dejavu-core all 2.37-2build1 [1041 kB]
```



```
ubuntu@ip-172-31-31-171:~$ sudo apt-get update
Adding debian:Buypass_CClass_3_Root_CA.pem
done.
Processing triggers for libc-bin (2.35-0ubuntu3.8) ...
Processing triggers for man-db (2.10.2-1)
Processing triggers for ca-certificates (20240203~22.04.1) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...

done.
done.
Setting up openjdk-17-jre-headless:amd64 (17.0.13+11-2ubuntu1~22.04) ...
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/java to provide /usr/bin/java (java) in auto mode
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/jpackage to provide /usr/bin/jpackage (jpackage) in auto mode
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/keytool to provide /usr/bin/keytool (keytool) in auto mode
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/bin/rmiregistry to provide /usr/bin/rmiregistry (rmiregistry) in auto mode
update-alternatives: using /usr/lib/jvm/java-17-openjdk-amd64/lib/jexec to provide /usr/bin/jexec (jexec) in auto mode
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-172-31-31-171:~$ sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
  https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \
  https://pkg.jenkins.io/debian-stable binary/" | sudo tee \
  /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
--2024-12-11 03:27:55-- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
```

```

ubuntu@ip-172-31-31-171:~ Setting up net-tools (1.60+git20181103.0eebece-lubuntu5) ...
Setting up jenkins (2.479.2) ...
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /lib/systemd/system/jenkins.service.
Processing triggers for man-db (2.10.2-1) ...
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.

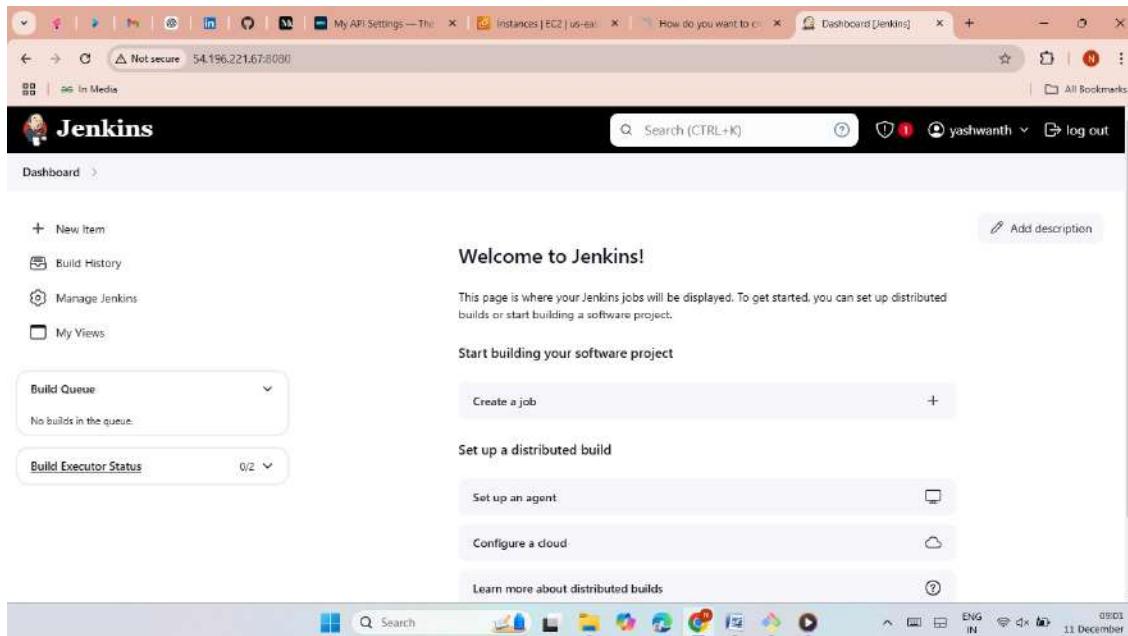
No VM guests are running outdated hypervisor (qemu) binaries on this host.

ubuntu@ip-172-31-31-171:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
  Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
  Active: active (running) since wed 2024-12-11 03:28:16 utc; 51s ago
    Main PID: 6963 (java)
      Tasks: 52 (limit: 9507)
        Memory: 813.2M
          CPU: 15.883s
        CGroup: /system.slice/jenkins.service
                └─6963 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Dec 11 03:28:13 ip-172-31-31-171 jenkins[6963]: 55db174823d14d9c80ec0a1070a17fd1
Dec 11 03:28:13 ip-172-31-31-171 jenkins[6963]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Dec 11 03:28:13 ip-172-31-31-171 jenkins[6963]: ****
Dec 11 03:28:16 ip-172-31-31-171 jenkins[6963]: 2024-12-11 03:28:16.664+0000 [id=33]           INFO      jenkins.InitReactorRunner$1@1
Dec 11 03:28:16 ip-172-31-31-171 jenkins[6963]: 2024-12-11 03:28:16.689+0000 [id=23]           INFO      hudson.lifecycle.Lifecycle#on
Dec 11 03:28:16 ip-172-31-31-171 systemd[1]: Started Jenkins Continuous Integration Server.
Dec 11 03:28:16 ip-172-31-31-171 jenkins[6963]: 2024-12-11 03:28:16.934+0000 [id=48]           INFO      h.m.DownloadService$Download@1
Dec 11 03:28:16 ip-172-31-31-171 jenkins[6963]: 2024-12-11 03:28:16.935+0000 [id=48]           INFO      hudson.util.Retriger#start: P@1
Times 1-20/20 (END)

```

➤ Host the Jenkins with the port 8080.



- Now install some plugins for host Netflix application with the pipeline script.
- Eclipse Temurin Installer, SonarQube Scanner, Node JS plugin, Email Extension plugin, Owasp, Prometheus Metrics and download the docker related plugins.

The screenshot shows the Jenkins Plugins management interface. The search bar at the top contains the query "eclipse tem". A single plugin entry is visible:

Install	Name	Released
<input checked="" type="checkbox"/>	Eclipse Temurin installer 1.5	Provides an installer for the JDK tool that downloads the JDK from https://adoptium.net 2 yr 2 mo ago

The left sidebar includes links for Updates, Available plugins (which is selected), Installed plugins, Advanced settings, and Download progress.

The screenshot shows the Jenkins Plugins management interface with the search bar containing "sonar". Three plugin entries are listed:

Install	Name	Released
<input checked="" type="checkbox"/>	SonarQube Scanner 2.17.3	External Site/Tool Integrations - Build Reports This plugin allows an easy integration of SonarQube, the open source platform for Continuous Inspection of code quality. 22 days ago
<input type="checkbox"/>	Sonar Quality Gates 3.2.0.v4369b_da_d3c2	Library plugins (for use by other plugins) - analysis - Other Post-Build Actions Fails the build whenever the Quality Gates criteria in the Sonar 5.6+ analysis aren't met (the project Quality Gates status is different than "Passed"). 1 mo 23 days ago
<input type="checkbox"/>	Quality Gates 2.5	Fails the build whenever the Quality Gates criteria in the Sonar analysis aren't met (the project Quality Gates status is different than "Passed"). Warning: This plugin version may not be safe to use. Please review the following security notices: 8 yr 6 mo ago

The left sidebar includes links for Updates, Available plugins (selected), Installed plugins, Advanced settings, and Download progress.

The screenshot shows the Jenkins plugin manager interface. The search bar at the top contains the text "nodejs". A single result is listed: "NodeJS 1.6.2" by "rpm". The "Install" button is highlighted in blue. The Jenkins logo is visible in the top left corner.

The screenshot shows the Jenkins plugin manager interface. The search bar at the top contains the text "email exte". A single result is listed: "Email Extension Template 215.v14ff1547f70d" by "Build Notifiers emailed". A message box indicates that this plugin is up for adoption. The Jenkins logo is visible in the top left corner.

The screenshot shows the Jenkins plugin manager interface. The search bar at the top contains the query "owasp". On the left sidebar, the "Available plugins" tab is selected. The main table lists three available plugins:

Install	Name	Released
<input checked="" type="checkbox"/>	OWASP Dependency-Check 5.2.2	22 days ago
<input type="checkbox"/>	OWASP Dependency-Track 5.2.0	2 days 11 hr ago
<input type="checkbox"/>	Official OWASP ZAP 1.1.0	(Information only)

The status bar at the bottom indicates the system is running on Windows 10, ENG IN, and the date is 11 December.

The screenshot shows the Jenkins plugin manager interface. The search bar at the top contains the query "prom". On the left sidebar, the "Available plugins" tab is selected. The main table lists two available plugins:

Install	Name	Released
<input type="checkbox"/>	Artifactory 4.0.0	5 mo 2 days ago
<input checked="" type="checkbox"/>	Prometheus metrics 0.0.1-v96e119d5feeds-monitoring	4 days 20 hr ago
<input type="checkbox"/>	Build With Parameters 76v382dh_7f8962	2 yr 0 mo ago

The status bar at the bottom indicates the system is running on Windows 10, ENG IN, and the date is 11 December.

The screenshot shows the Jenkins plugin manager interface. The left sidebar has tabs for 'Updates', 'Available plugins' (which is selected), 'Installed plugins', 'Advanced settings', and 'Download progress'. The main area is titled 'Plugins' and has a search bar with 'docker' typed in. A table lists four Docker-related plugins:

Install	Name	Released
<input checked="" type="checkbox"/>	Docker 1.7.0 Cloud Providers Cluster Management docker This plugin integrates Jenkins with Docker	1 mo 27 days ago
<input checked="" type="checkbox"/>	Docker Commons 445.v6b_646c962a_94 Utility plugins (for use by other plugins) docker Provides the common shared functionality for various Docker-related plugins.	1 mo 3 days ago
<input checked="" type="checkbox"/>	Docker Pipeline 580.v0c340f686b_54 pipeline DevOps Deployment docker Build and use Docker containers from pipelines.	6 mo 23 days ago
<input checked="" type="checkbox"/>	Docker API 3.4.0-94.v05ced49b_a_7d5 Library plugins (for use by other plugins) docker	

At the bottom right of the main area, there is a toolbar with icons for search, file operations, and system status.

This screenshot shows the Jenkins plugin manager with the 'Available plugins' tab selected. The search bar contains 'docker'. One plugin is listed:

Install	Name	Released
<input checked="" type="checkbox"/>	docker-build-step 2.12 Build Tools docker This plugin allows to add various docker commands to your job as build steps. Warning: This plugin version may not be safe to use. Please review the following security notices: <ul style="list-style-type: none">CSRF vulnerability and missing permission check	6 mo 17 days ago

Below this, two other plugins are listed:

Install	Name	Released
<input checked="" type="checkbox"/>	CloudBees Docker Build and Publish 1.4.0 Build Tools docker This plugin enables building Dockerfile based projects, as well as publishing of the built images/repos to the docker registry.	2 yr 3 mo ago
<input type="checkbox"/>	Amazon ECR 1.136.v914ea_5940ff34 aws This plugin generates Docker authentication token from Amazon Credentials to access Amazon ECR. This plugin is up for adoption! We are looking for new maintainers. Visit our Adopt a Plugin .	5 mo 16 days ago

At the bottom right of the main area, there is a toolbar with icons for search, file operations, and system status.

The screenshot shows the Jenkins Manage Plugins interface. The left sidebar has options: Updates, Available plugins (which is selected), Installed plugins, Advanced settings, and Download progress. A search bar at the top right contains the query 'docker'. Below it, a table lists several Jenkins plugins:

Name	Description	Last Updated
Docker Compose Build Step 1.0	Docker Compose plugin for Jenkins	6 yr 5 mo ago
Docker Slaves 1.0.7	Uses Docker containers to run Jenkins build agents.	7 yr 4 mo ago
JFrog 1.5.6	The Jenkins JFrog Plugin allows for easy integration between Jenkins and the JFrog Platform. This integration allows your build jobs to deploy artifacts and resolve dependencies to and from Artifactory, and then have them linked to the build job that created them. It also allows you to scan your artifacts and builds with JFrog Xray and distribute your software package to remote locations using JFrog Distribution. This is all achieved by the plugin by wrapping JFrog CLI. Any JFrog CLI command can be executed from within your Jenkins Pipeline job using the JFrog Plugin.	1 mo 23 days ago
CloudBees Docker Custom Build Environment 1.7.3	Run builds inside a docker container defined by a Docker image or Dockerfile stored in project SCM.	6 yr 9 mo ago

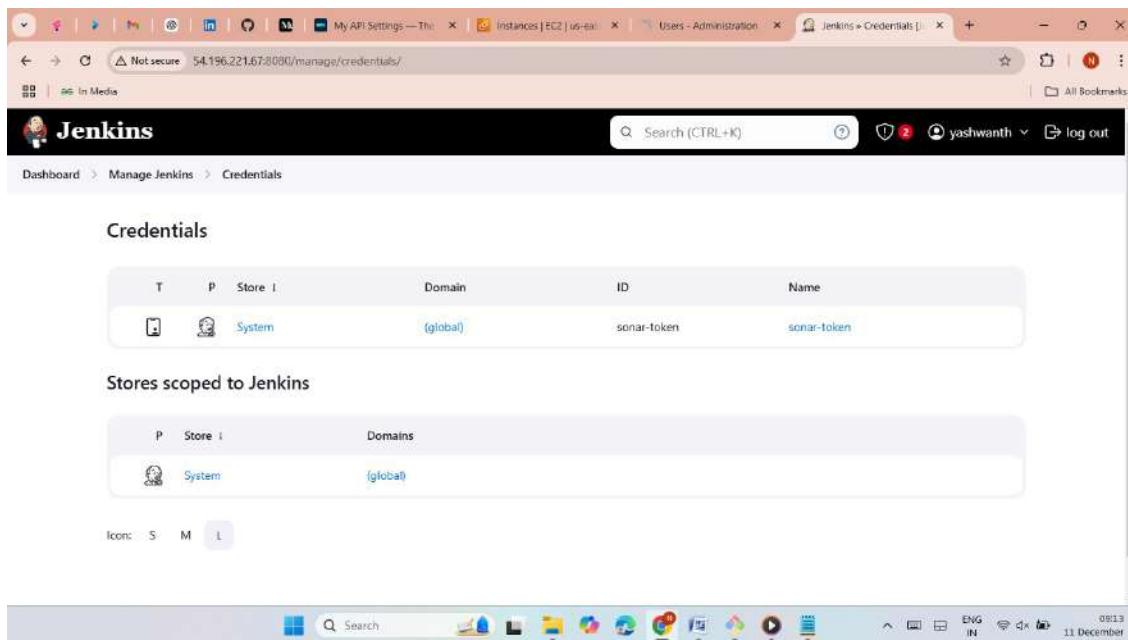
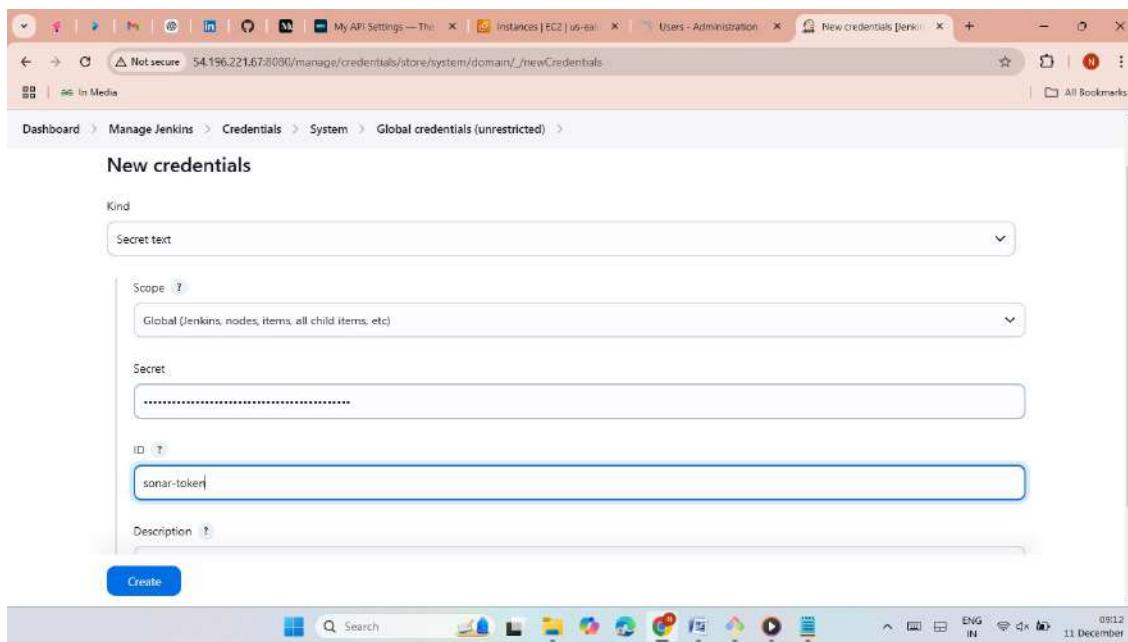
➤ Now go to SonarQubes and then create a token.

The screenshot shows the SonarQube Administration - Tokens of Administrator page. The top navigation bar includes links for sonarqube, Projects, Issues, Roles, Quality Profiles, Quality Gates, and Administration. The main content area displays a table of tokens:

Name	Type	Project	Last use	Created	Expiration	Action
sonarqubes	User		Never	December 11, 2024	January 10, 2025	<button>Revoke</button>

A note at the bottom states: "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."

- Now add credentials of SonarQube and Docker in Jenkins.



- Now go to projects and then click on project and create a analyze token then copy the data.

The screenshot shows the SonarQube interface with the URL http://54.196.221.67:9000/admin/projects_management. The page title is 'Projects Management'. The navigation bar includes 'Administration', 'Configuration', 'Security', 'Projects', 'System', and 'Marketplace'. A search bar at the top right says 'Search for projects...'. Below the search bar, there are filters: 'Last analysis before' (dropdown), 'Public Projects' (dropdown), 'Only Provisioned' (checkbox), and a 'Search by name or key' input field. To the right of these are 'Bulk Apply Permission Template' and 'Delete' buttons. The main table lists one project:

Name	Key	Last Analysis
netflix	app	

Below the table, it says '1 of 1 shown'. A yellow warning box states: '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.' At the bottom of the page, there is footer information: 'SonarQube™ technology is powered by SonarSource SA Community Edition - v9.9.8 (build 100196) - [LGPL v3](#) - [Community](#) - [Documentation](#) - [Plugins - Web API](#)' and system status: 'ENG IN 08:15 11 December'.

The screenshot shows the SonarQube 'Dashboard' page for the 'netflix' project, with the URL <http://54.196.221.67:9000/dashboard?id=app&selectedTutorial=local>. The page title is 'netflix'. The navigation bar includes 'Administration', 'Configuration', 'Security', 'Issues', 'Security Hotspots', 'Measures', 'Code', and 'Activity'. On the right, there are 'Project Settings' and 'Project Information' buttons. The main content area has a heading 'Analyze your project' with the sub-instruction 'We initialized your project on SonarQube, now it's up to you to launch analyses!'. Step 1 is 'Provide a token' with the sub-instruction 'Analyze "netflix": sqp_b35193305fa40a7980ca448ad1dd93cb99b68fb2'. It includes a note: 'The token is used to identify you when an analysis is performed. If it has been compromised, you can revoke it at any point in time in your user account.' A 'Continue' button is present. Step 2 is 'Run analysis on your project'. A yellow warning box at the bottom states: '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.' The footer and system status are identical to the previous screenshot.

The screenshot shows the SonarQube interface for the Netflix project. The top navigation bar includes links for Projects, Issues, Rules, Quality Profiles, Quality Gates, Administration, and a search bar. Below the navigation is a breadcrumb trail: Overview > Issues > Security Hotspots > Measures > Code > Activity. A sidebar on the left provides instructions for running an analysis, selecting build options (Maven, Gradle, .NET, Other), and choosing the OS (Linux, Windows, macOS). It also includes a command-line snippet for running the SonarScanner and a link to the official documentation.

The screenshot shows the Jenkins 'Update credentials' page for a global credential named 'yashwanthnajana'. The page has a 'Scope' dropdown set to 'Global (Jenkins, nodes, items, all child items, etc.)'. The 'Username' field contains 'yashwanthnajana' and the 'Password' field is currently concealed. A 'Save' button is at the bottom. The Jenkins header shows the user 'yashwanth' is logged in.

The screenshot shows the Jenkins web interface at <http://54.196.221.67:8080/manage/credentials/>. The page title is "Credentials". It displays a table with two rows:

T	P	Store	Domain	ID	Name
		System	(global)	sonar-token	sonar-token
		System	(global)	docker	yashwanthnajana/*****

Below the table, there is a section titled "Stores scoped to Jenkins" which lists a single store named "System" with domain "(global)". The browser's address bar shows the URL <http://54.196.221.67:8080/manage/credentials/>.

- Now set up tools for Jenkins.
- Now add JDK, Node JS, Docker, SonarQubes and Owasp dependency check.

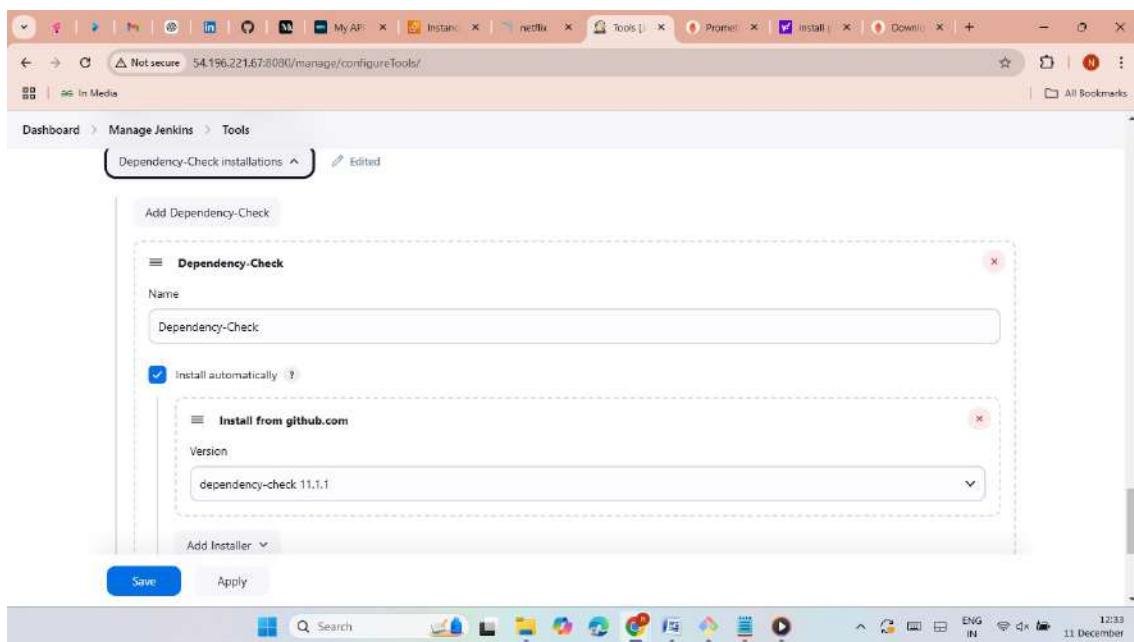
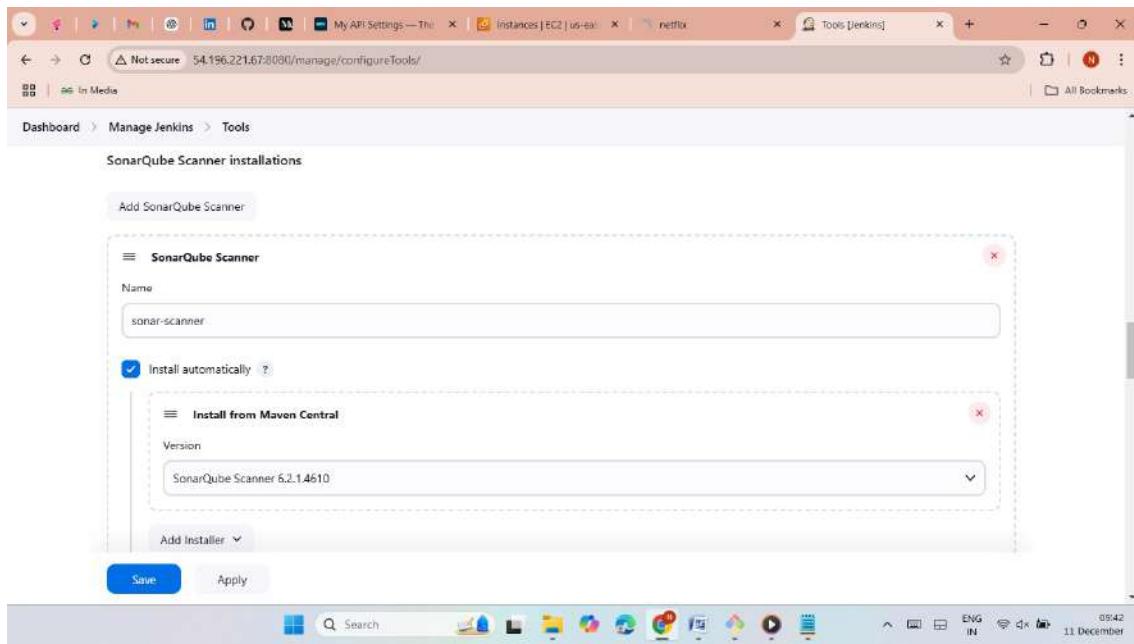
The screenshot shows the Jenkins web interface at <http://54.196.221.67:8080/manage/configureTools/>. The page title is "Tools". A sub-menu "JDK installations" is selected. The main content area is titled "Add JDK" and contains the following configuration:

- JDK** (Section title)
- Name**: jdk17
- Install automatically**: checked
- Install from adoptium.net**: checked
- Version**: jdk-17.0.8.1+1
- Add Installer**: dropdown menu

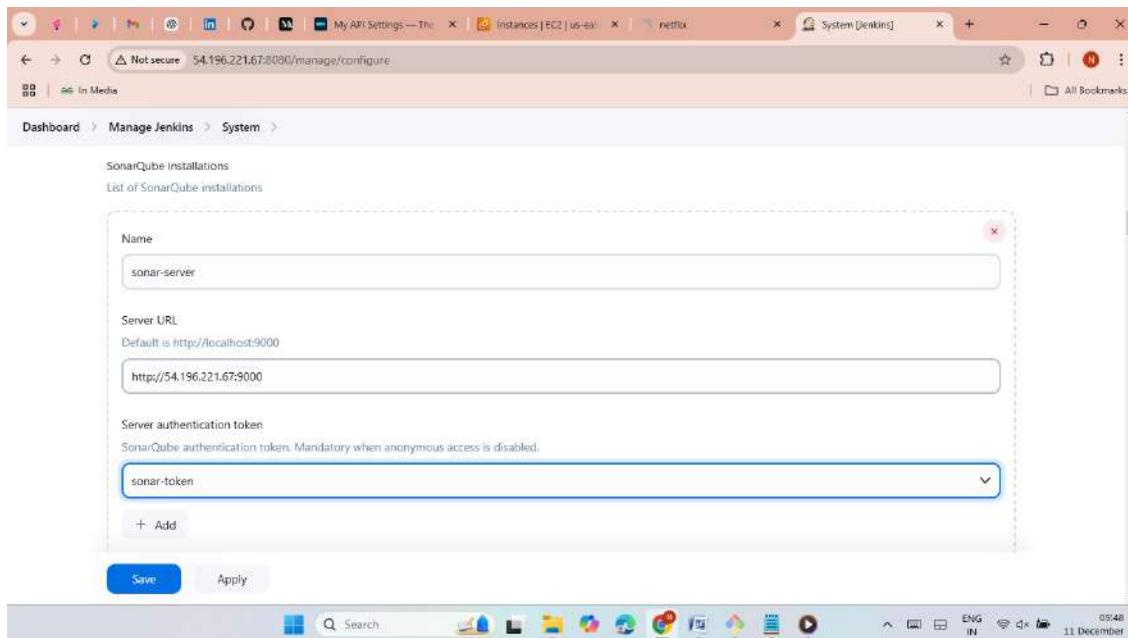
At the bottom are "Save" and "Apply" buttons. The browser's address bar shows the URL <http://54.196.221.67:8080/manage/configureTools/>.

The screenshot shows the Jenkins 'Manage Jenkins' interface under the 'Tools' section. A sub-menu for 'NodeJS installations' is open, showing a configuration form for adding a new NodeJS tool. The form includes fields for 'Name' (set to 'node16'), 'Install automatically' (checked), and 'Version' (set to 'NodeJS 16.2.0'). There is also an option to 'Force 32bit architecture'. At the bottom are 'Save' and 'Apply' buttons.

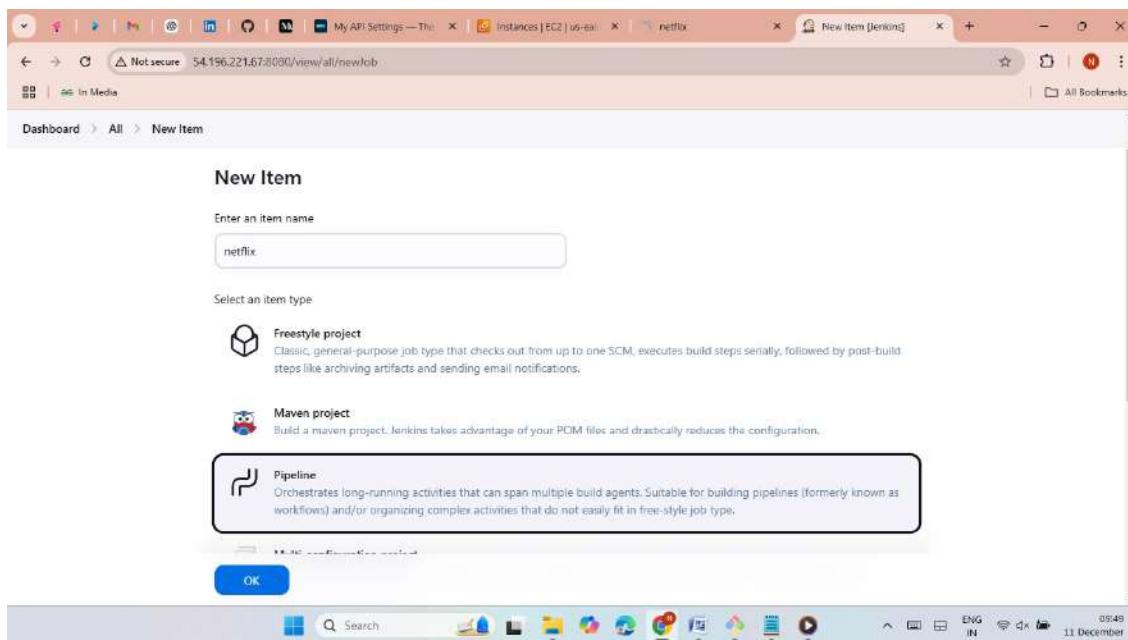
The screenshot shows the Jenkins 'Manage Jenkins' interface under the 'Tools' section. A sub-menu for 'Docker installations' is open, showing a configuration form for adding a new Docker tool. The form includes fields for 'Name' (set to 'docker'), 'Install automatically' (checked), and 'Docker version' (set to 'latest'). There is also an 'Add Installer' dropdown menu. At the bottom are 'Save' and 'Apply' buttons.



- Now configure the global setting for SonarQubes.



- Now create a pipeline.
- Give groovy script for automatically hosting the Netflix application.



```

pipeline {
    agent any
    tools {
        jdk 'jdk17'
        nodejs 'node16'
    }
    environment {
        SCANNER_HOME = tool 'sonar-scanner'
    }
    stages {
        stage('Clean Workspace') {
            steps {
                cleanWs()
            }
        }
        stage('Checkout from Git') {
            steps {
                git branch: 'main', url: 'https://github.com/Yashwanth-najana/Netflix.git'
            }
        }
        stage('SonarQube Analysis') {
            steps {
                withSonarQubeEnv('sonar-server') {
                    sh """
                        $SCANNER_HOME/bin/sonar-scanner \
                        -Dsonar.projectName=Netflix \
                        -Dsonar.projectKey=Netflix
                    """
                }
            }
        }
        stage('Quality Gate') {
    
```

```

        steps {
            script {
                waitForQualityGate abortPipeline: false, credentialsId: 'sonar-token'
            }
        }
    }

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

    stage('OWASP Dependency Check') {
        steps {
            dependencyCheck additionalArguments: '--scan ./ --disableYarnAudit -- disableNodeAudit', odcInstallation: 'Dependency-Check'
        }
    }

    stage('TRIVY File System Scan') {
        steps {
            sh 'trivy fs . > trivyfs.txt'
        }
    }

    stage('Docker Build & Push') {
        steps {
            script {
                withDockerRegistry(credentialsId: 'docker', toolName: 'docker') {
                    sh """
                        docker build --build-arg TMDB_V3_API_KEY=1d0307083a0d06e9c160de07d9d53d7a -t netflix .
                        docker tag netflix yashwanthnajana/netflix:latest
                        docker push yashwanthnajana/netflix:latest
                        ...
                    """
                }
            }
        }
    }
}

```

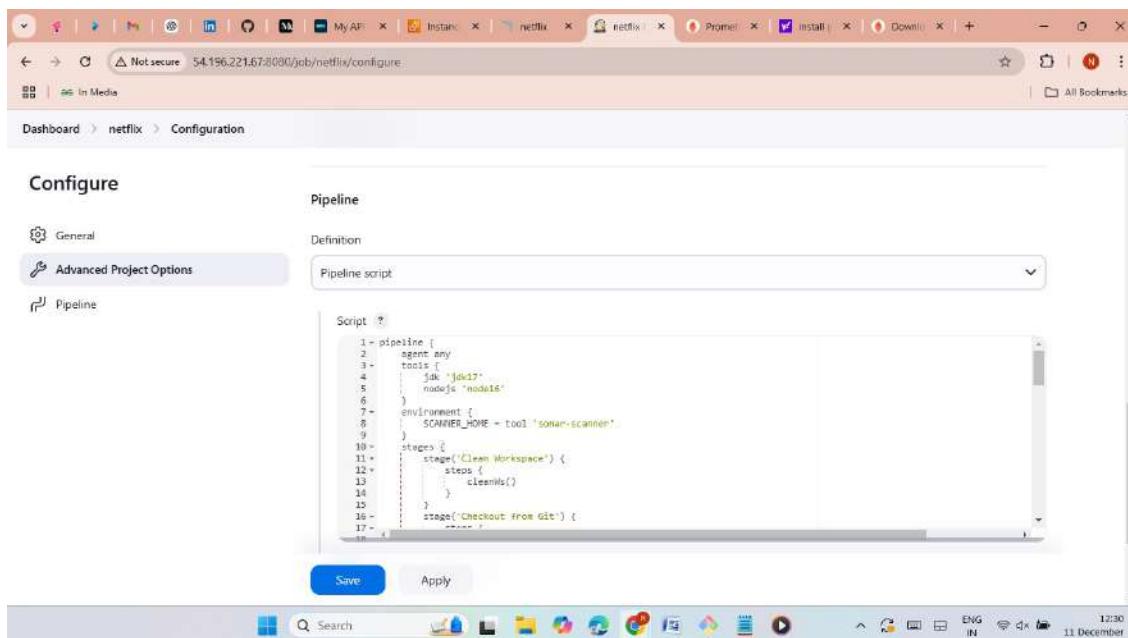
```

        }
    }
}

stage('TRIVY Image Scan') {
    steps {
        sh 'trivy image yashwanthnajana/netflix:latest > trivyimage.txt'
    }
}

stage('Deploy to Container') {
    steps {
        sh 'docker run -d --name netflix -p 8081:80
yashwanthnajana/netflix:latest'
    }
}
}

```



```
17+     steps {
18+       git branch: 'main', url: 'https://github.com/Yashwanth-naJana/Netflix.git'
19+     }
20+
21+   stage('SonarQube Analysis') {
22+     steps {
23+       withSonarQubeEnv('sonar-server') {
24+         sh """
25+           SONARQUBE_HOME/bin/sonar-scanner \
26+             -Dsonar.projectName=Netflix \
27+             ...
28+         """
29+       }
30+     }
31+   }
32+   stage('Quality Gate') {
33+     ...
34+   }

```

Save Apply

```
32+     steps {
33+       script {
34+         waitForQualityGate abortPipeline: false, credentialsId: 'sonar-taken'
35+       }
36+     }
37+
38+   stage('Quality Gate') {
39+     steps {
40+       script {
41+         waitForQualityGate abortPipeline: false, credentialsId: 'sonar-taken'
42+       }
43+     }
44+   }
45+   stage('Install Dependencies') {
46+     steps {
47+       sh 'npm install'
48+     }
49+   }
50+   stage('ODCP Dependency Check') {
51+     steps {
52+       dependencyCheck additionalArguments: '--scm ./ --disableYarnAudit --disableNodeAudit', odcInstallation:
53+     }
54+   }

```

Save Apply

Configure

Pipeline

General

Advanced Project Options

Pipeline

```
48
49+     }
50+   steps {
51+     sh 'trivy fs - > trivyfs.txt'
52+
53+
54+   }
55+   stage('Docker Build & Push') {
56+     steps {
57+       script {
58+         withDockerRegistry(credentialsId: 'docker', toolName: 'docker') {
59+           sh """
60+             docker build --build-arg INDB_V3_API_KEY=1d50387083ead08e9c168de87d9d53d7a -t netflix ,
61+             docker tag netflix yashwanthnajan/netflix:latest
62+             docker push yashwanthnajan/netflix:latest
63+           """
64+         }
65+       }
66+     }
67+   }
68+   stage('TRIVY Image Scan') {
69+     steps {
70+       sh 'trivy image yashwanthnajan/netflix:latest > trivymimage.txt'
71+
72+     }
73+   }
74+   stage('Deploy to Container') {
75+     steps {
76+       sh 'docker run -d --name netflix -p 8081:80 yashwanthnajan/netflix:latest'
77+     }
78+
79+ }
```

Save Apply

Configure

Definition

General

Advanced Project Options

Pipeline

```
63
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```

Use Groovy Sandbox ?

Pipeline Syntax

Save Apply

- Now click on build now the job was success.

The screenshot shows the Jenkins dashboard for the 'netflix' pipeline. The pipeline status is 'Passed'. The SonarQube Quality Gate status is 'Success'. The last successful build was 11 minutes ago. The pipeline has been updated 11 times. The pipeline syntax is valid.

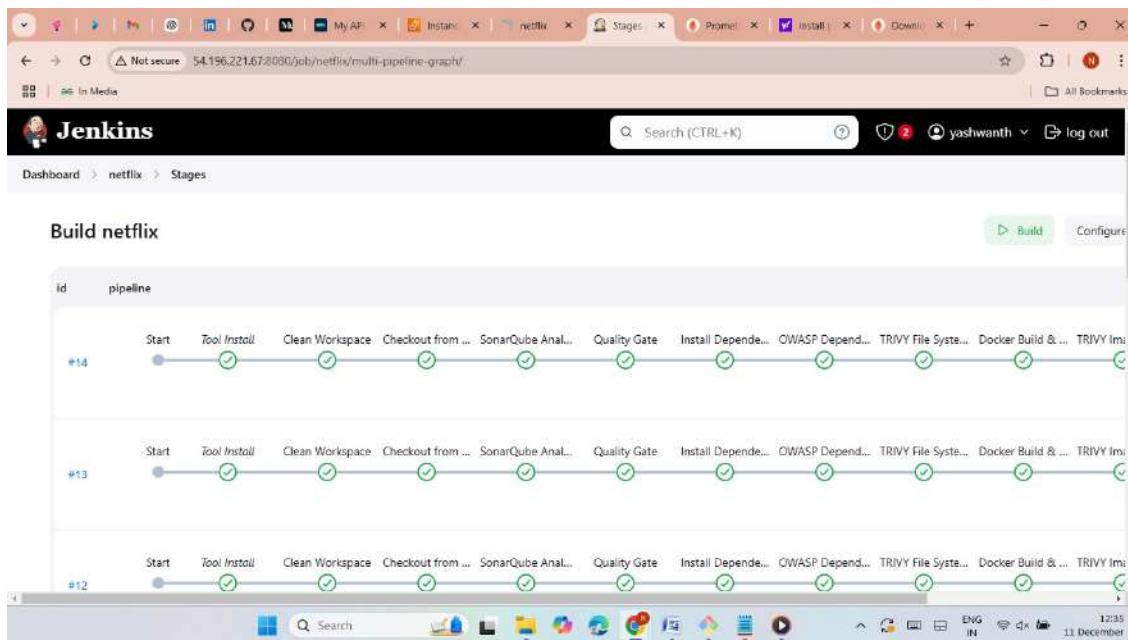
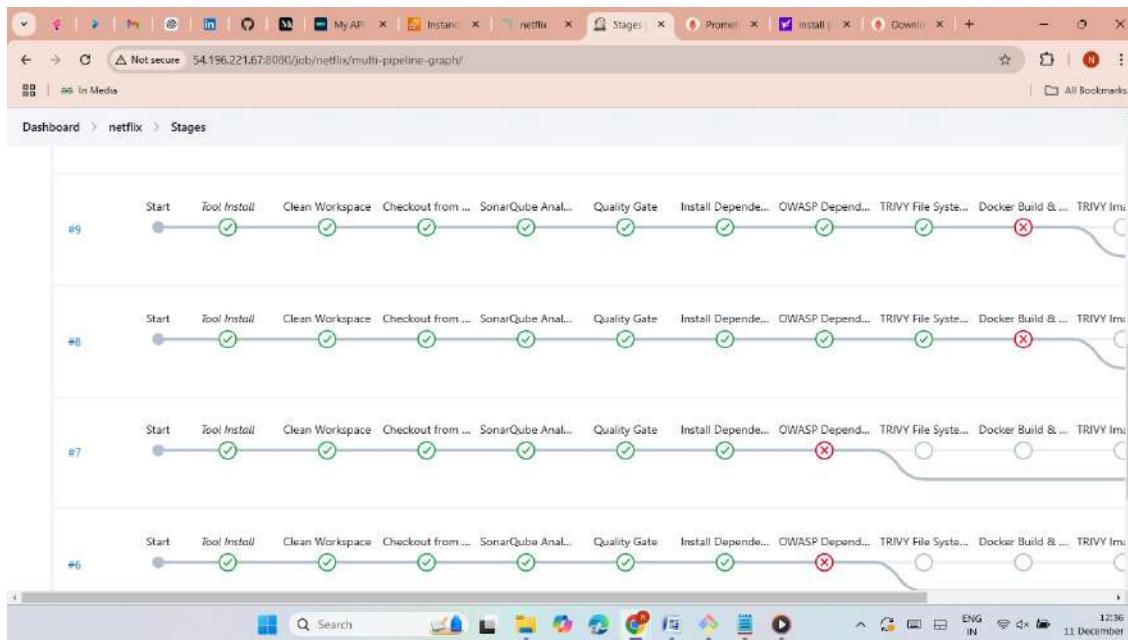
Build	Last Updated
Last build (#14)	11 min ago
Last stable build (#14)	11 min ago
Last successful build (#14)	11 min ago
Last failed build (#13)	18 min ago
Last unsuccessful build (#13)	18 min ago
Last completed build (#14)	11 min ago

- Here the image was pushed to the dockerhub.

The screenshot shows the Docker Hub interface for the repository 'yashwanthnajana/netflix'. The image was pushed 16 minutes ago. The repository is public and inactive.

Name	Last Pushed	Contains	Visibility	Scout
yashwanthnajana/netflix	16 minutes ago	IMAGE	Public	Inactive
yashwanthnajana/netflix1	33 minutes ago	IMAGE	Public	Inactive
yashwanthnajana/k8	14 days ago	IMAGE	Public	Inactive
yashwanthnajana/python	about 1 month ago	IMAGE	Public	Inactive
yashwanthnajana/yash	about 2 months ago	IMAGE	Public	Inactive
yashwanthnajana/dockerfile	about 2 months ago	IMAGE	Public	Inactive
https://hub.docker.com/repository/docker/yashwanthnajana/netflix	4 months ago	IMAGE	Public	Inactive

➤ Here we can see the stages of pipeline.



Stages

Not secure 54.196.221.67:8080/job/netflix/multi-pipeline-graph/

In Media

Search (CTRL+K) yashwanth log out

Build Configure

staff Clean Workspace Checkout from ... SonarQube Anal... Quality Gate Install Depend... OWASP Depend... TRIVY File Syste... Docker Build & ... TRIVY Image Scan Deploy to Conta... End

staff Clean Workspace Checkout from ... SonarQube Anal... Quality Gate Install Depend... OWASP Depend... TRIVY File Syste... Docker Build & ... TRIVY Image Scan Deploy to Conta... End

staff Clean Workspace Checkout from ... SonarQube Anal... Quality Gate Install Depend... OWASP Depend... TRIVY File Syste... Docker Build & ... TRIVY Image Scan Deploy to Conta... End

Search ENG IN 11 December

Jenkins

Dashboard > netflix > #14 > Pipeline Console

Build #14

Success 18 min ago in 5 min 33 sec

Rebuild Overview Configure

Tool Install
Clean Workspace
Checkout from Git
SonarQube Analysis
Quality Gate
Install Dependencies
OWASP Dependency Check
TRIVY File System

Stage 'Deploy to Container'
Started 12 min ago
queued 0 ms
Took 0.85 sec
Success
View as plain text

jdk17
Use a tool from a predefined Tool Installation 37 ms

Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the wi... 46 ms

Jenkins 2.479.2

Search ENG IN 11 December

The top screenshot shows three parallel Jenkins pipeline stages. Each stage consists of a sequence of steps: 'staff', 'Clean Workspace', 'Checkout from ...', 'SonarQube Anal...', 'Quality Gate', 'Install Depend...', 'OWASP Depend...', 'TRIVY File Syste...', 'Docker Build & ...', 'TRIVY Image Scan', 'Deploy to Conta...', and 'End'. The first two stages have a green checkmark icon next to each step, while the third stage has a red X icon next to the 'Deploy to Conta...' step. The bottom screenshot shows the Jenkins Pipeline Console for build #14, displaying the stages and their execution details. It includes a sidebar with tool installations like jdk17 and environment variable fetches.

- Here we can see the code Quality in SonarQubes form Jenkins also.

The screenshot shows the SonarQube interface for the Netflix project. At the top, there's a navigation bar with links for Projects, Issues, Rules, Quality Profiles, Quality Gates, and Administration. Below that is a search bar and a date/time stamp (December 11, 2024). The main area is titled 'MEASURES' and displays the following information:

- QUALITY GATE STATUS:** Passed (All conditions passed)
- New Code:** Since December 11, ... Started 2 hours ago
- Overall Code:** Reliability (A)
- Reliability Metrics:** 0 New Bugs, Security (A)
- Security Metrics:** 0 New Vulnerabilities, Security Review (A)
- Code Quality Metrics:** 0 New Security Hotspots, Reviewed

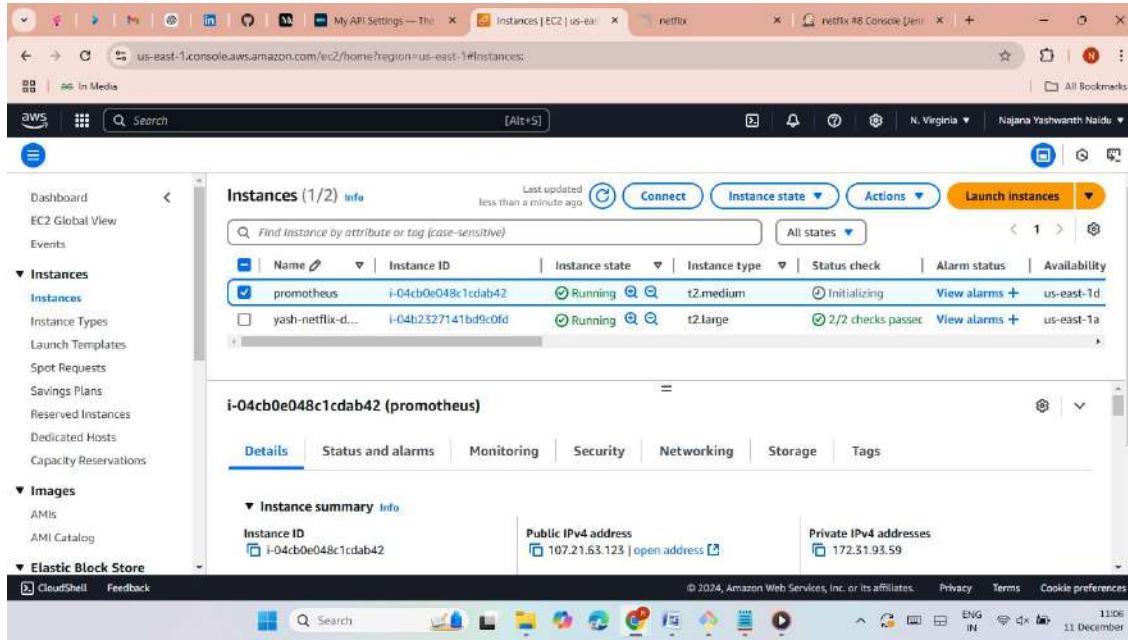
- Now copy the IP along with given port in Google browser.
- Here the Netflix application was deployed successfully.

The screenshot shows a Google Chrome browser window displaying the Netflix homepage. The main content area features a large image of Joaquin Phoenix as Commodus in the movie 'Gladiator II'. Below the image, there's a summary text: 'Years after witnessing the death of the revered hero Maximus at the hands of his uncle, Lucius is forced to enter the...'. There are two buttons at the bottom left: 'Play' and 'More Info'. The browser taskbar at the bottom shows several other tabs open, including Jenkins, Prometheus, and Docker.

PHASE-4

MONITORING VIA PROMETHEUS AND GRAFANA

- Now launch an EC2 instance for set up Prometheus and grafana.



- Set up the Prometheus with the below following command.

```
ubuntu@ip-172-31-93-59:~$ sudo useradd --system --no-create-home --shell /bin/false prometheus
```

```
ubuntu@ip-172-31-93-59:~$ sudo useradd --system --no-create-home --shell /bin/false prometheus
ubuntu@ip-172-31-93-59:~$ wget https://github.com/prometheus/prometheus/releases/download/v2.53.3/prometheus-2.53.3.linux-amd64.tar.gz
Resolving github.com (github.com)... 140.82.112.4
Connecting to github.com (github.com)|140.82.112.4|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/6838921/555f261a-3131-44a2-86fa-f3baac617a7e?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20241211%2Fus-east-1%2F5%2Faws4_request&X-Amz-Date=20241211T062410Z&X-Amz-Expires=300&X-Amz-Signature=93e4b6f650eb17275c66479e42d336cd0681801e8023efdf3767df029ceae11&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dprometheus-2.53.3.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream [following]
--2024-12-11 06:24:10--  https://objects.githubusercontent.com/github-production-release-asset-2e65be/6838921/555f261a-3131-44a2-86fa-f3baac617a7e?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20241211%2Fus-east-1%2F5%2Faws4_request&X-Amz-Date=20241211T062410Z&X-Amz-Expires=300&X-Amz-Signature=93e4b6f650eb17275c66479e42d336cd0681801e8023efdf3767df029ceae11&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dprometheus-2.53.3.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.110.133, 185.199.111.133, 185.199.108.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.110.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 104207826 (99M) [application/octet-stream]
Saving to: 'prometheus-2.53.3.linux-amd64.tar.gz'

prometheus-2.53.3.linux-amd64.tar 100%[=====] 99.38M  107MB/s   in 0.9s

2024-12-11 06:24:11 (107 MB/s) - 'prometheus-2.53.3.linux-amd64.tar.gz' saved [104207826/104207826]

ubuntu@ip-172-31-93-59:~$ ls
prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$
```

```
ubuntu@ip-172-31-93-59:~$ -Date=20241211T062410Z&X-Amz-Expires=300&X-Amz-Signature=93e4b6f650eb17275c66479e42d336cd0681801e8023efdf3767df029ceae11&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dprometheus-2.53.3.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.110.133, 185.199.111.133, 185.199.108.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.110.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 104207826 (99M) [application/octet-stream]
Saving to: 'prometheus-2.53.3.linux-amd64.tar.gz'

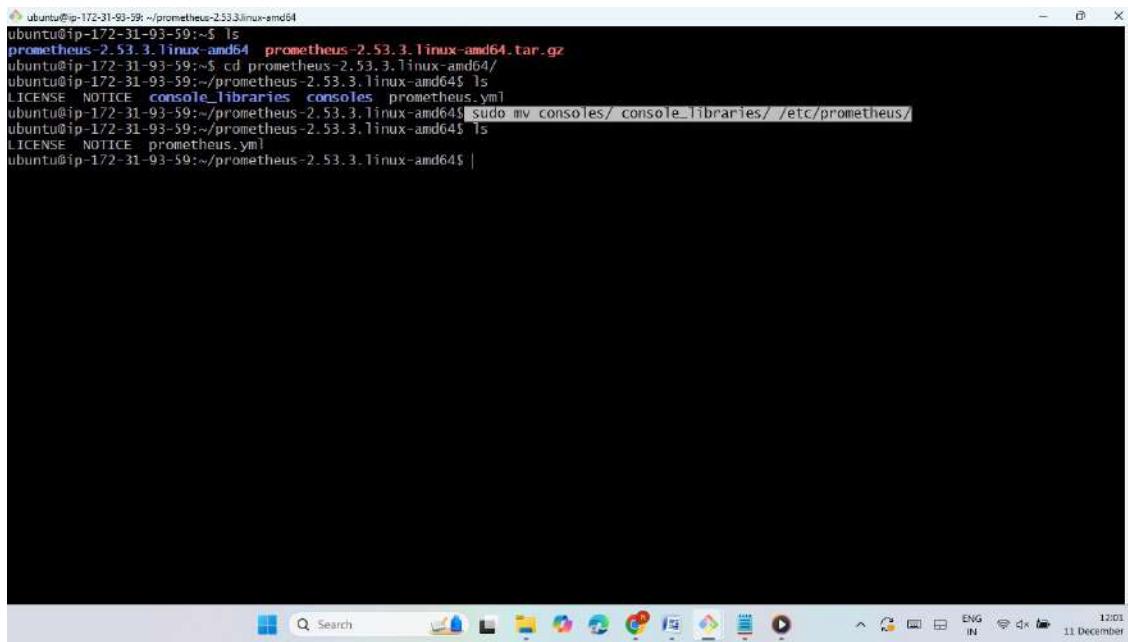
prometheus-2.53.3.linux-amd64.tar 100%[=====] 99.38M  107MB/s   in 0.9s

2024-12-11 06:24:11 (107 MB/s) - 'prometheus-2.53.3.linux-amd64.tar.gz' saved [104207826/104207826]

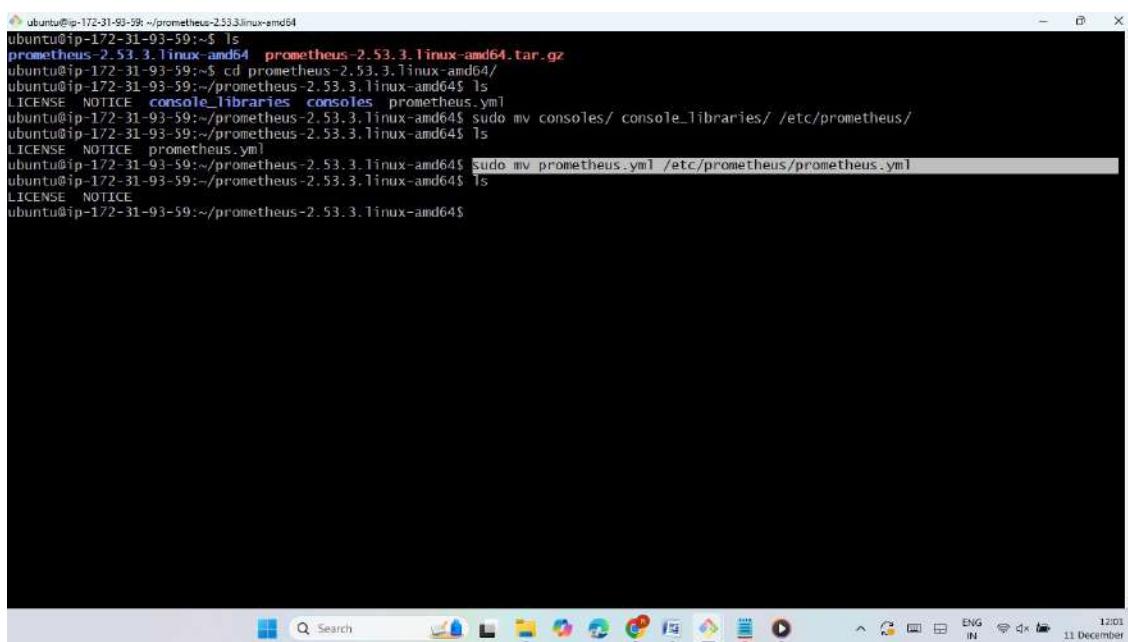
ubuntu@ip-172-31-93-59:~$ ls
prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ tar -xvf prometheus-2.53.3.linux-amd64.tar.gz
prometheus-2.53.3.linux-amd64/
prometheus-2.53.3.linux-amd64/consoles/
prometheus-2.53.3.linux-amd64/consoles/node-disk.html
prometheus-2.53.3.linux-amd64/consoles/node-overview.html
prometheus-2.53.3.linux-amd64/consoles/prometheus.html
prometheus-2.53.3.linux-amd64/consoles/index.html.example
prometheus-2.53.3.linux-amd64/consoles/node-cpu.html
prometheus-2.53.3.linux-amd64/consoles/prometheus-overview.html
prometheus-2.53.3.linux-amd64/consoles/node.html
prometheus-2.53.3.linux-amd64/promtool
prometheus-2.53.3.linux-amd64/LICENSE
prometheus-2.53.3.linux-amd64/prometheus
prometheus-2.53.3.linux-amd64/prometheus.yml
prometheus-2.53.3.linux-amd64/console_libraries/
prometheus-2.53.3.linux-amd64/console_libraries/menu.lib
prometheus-2.53.3.linux-amd64/console_libraries/prom.lib
prometheus-2.53.3.linux-amd64/NOTICE
ubuntu@ip-172-31-93-59:~$ ls
prometheus-2.53.3.linux-amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~|
```

```
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
prometheus-2.53.3.linux-amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ cd prometheus-2.53.3.linux-amd64/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE  console_libraries  consoles  prometheus  prometheus.yml  promtool
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mkdir -p /data/etc/prometheus
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE  console_libraries  consoles  prometheus  prometheus.yml  promtool
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mv prometheus promtool /usr/local/bin/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE  console_libraries  consoles  prometheus  prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$
```

```
ubuntu@ip-172-31-93-59:~/etc$ ls
LICENSE NOTICE  console_libraries  consoles  prometheus  prometheus.yml  promtool
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mv prometheus promtool /usr/local/bin/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE  console_libraries  consoles  prometheus  prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ cd /etc/
ubuntu@ip-172-31-93-59:/etc$ sudo mkdir prometheus
ubuntu@ip-172-31-93-59:/etc$ ls
PackageKit          debian_version      inputrc        mime.types      profile      subgid-
X11                 default           iproute2       mke2fs.conf    profile.d    subuid
acpi                deluser.conf     iscsi          modprobe.d    prometheus  subuid-
adduser.conf        demod.d          issue         modules       protocols   sudo.conf
alternatives        dhcp             issue.net     modules-load.d python3      sudo_logsrvd.conf
apparmor            dpkg              kernel        multipath     python3.10  sudoers
apparmor.d          e2scrub.conf    kernel-img.conf  multipath.conf rc0.d       sudoers.d
apport               ec2_version     landscape     nanorc       rc1.d       sysctl.conf
apt                  environment    ethertypes   ld.so.cache  needrestart rc2.d       systemd
bash.bashrc          fonts            ld.so.cache  ld.so.conf   netconfig   rc3.d       terminfo
bash_completion     fstab            gai.conf     libaudit.conf networks   resolv.conf
bash_completion.d   fuse.conf       glibc         libblkdev     newt        rmt
bindresport.blacklist  gshadow         gnutls       libn1-3       nftables.conf  rpc
binfmt.d            grub.d          gss          locale.alias  nsswitch.conf  rsyslog.conf
byobu               group           gshadow-     logcheck     opt          rsyslog.d
ca-certificates     group           group-      localtime   os-release  screenrc
ca-certificates.conf  grub.d          hibernate   logrotate   pam         security
ca-certificates.conf.dpkg-old  hibernation   hibagent-  logrotate.conf  selinux    services
chrony              hparm.conf     hibagent-  logrotate.d  pam.d       shadow
cloud               host.conf      hibinit-  logrotate.conf  pam.d       shadow-
console-setup       hostname      hibernate  logrotate.d  passwd     shells
cron.d              hosts          hibernate  logrotate.conf  perl       skel
cron.daily          hosts          hibernate  logrotate.d  pm        sos
cron.hourly         hosts          hibernate  logrotate.conf  wgetrc    xattr.conf
cron.monthly        hosts          hibernate  logrotate.d  vmlinuz   xdg
cron.weekly         hosts          hibernate  logrotate.conf  vtrgb
cryptsetup-initramfs hosts.allow    hibernate  logrotate.d  vtrgb
hosts.allow
```

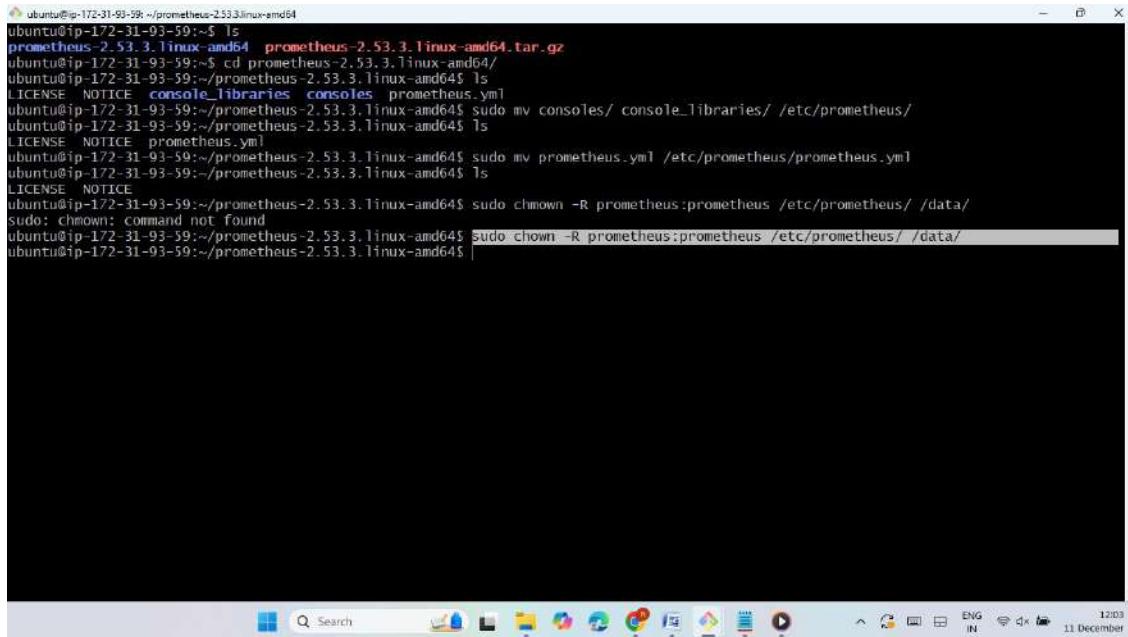


```
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
ubuntu@ip-172-31-93-59:~$ cd prometheus-2.53.3.linux-amd64/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE console_libraries consoles prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mv consoles/ console_libraries/ /etc/prometheus/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ |
```



```
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
ubuntu@ip-172-31-93-59:~$ cd prometheus-2.53.3.linux-amd64/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE console_libraries consoles prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mv consoles/ console_libraries/ /etc/prometheus/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mv prometheus.yml /etc/prometheus/prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE NOTICE
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ |
```

- Set up ownership.



```
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
prometheus-2.53.3.linux_amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ cd prometheus-2.53.3.linux-amd64/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE  consoles  console_libraries  prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mv consoles/ console_libraries/ /etc/prometheus/
LICENSE NOTICE  prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo mv prometheus.yml /etc/prometheus/prometheus.yml
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ ls
LICENSE  NOTICE
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo chown -R prometheus:prometheus /etc/prometheus/ /data/
sudo: chown: command not found
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$ sudo chown -R prometheus:prometheus /etc/prometheus/ /data/
ubuntu@ip-172-31-93-59:~/prometheus-2.53.3.linux-amd64$
```

- Now create a Prometheus service file.

[Unit]

Description=Prometheus Monitoring System

Wants=network-online.target

After=network-online.target

StartLimitIntervalSec=500

StartLimitBurst=5

[Service]

User=prometheus

Group=prometheus

Type=simple

Restart=on-failure

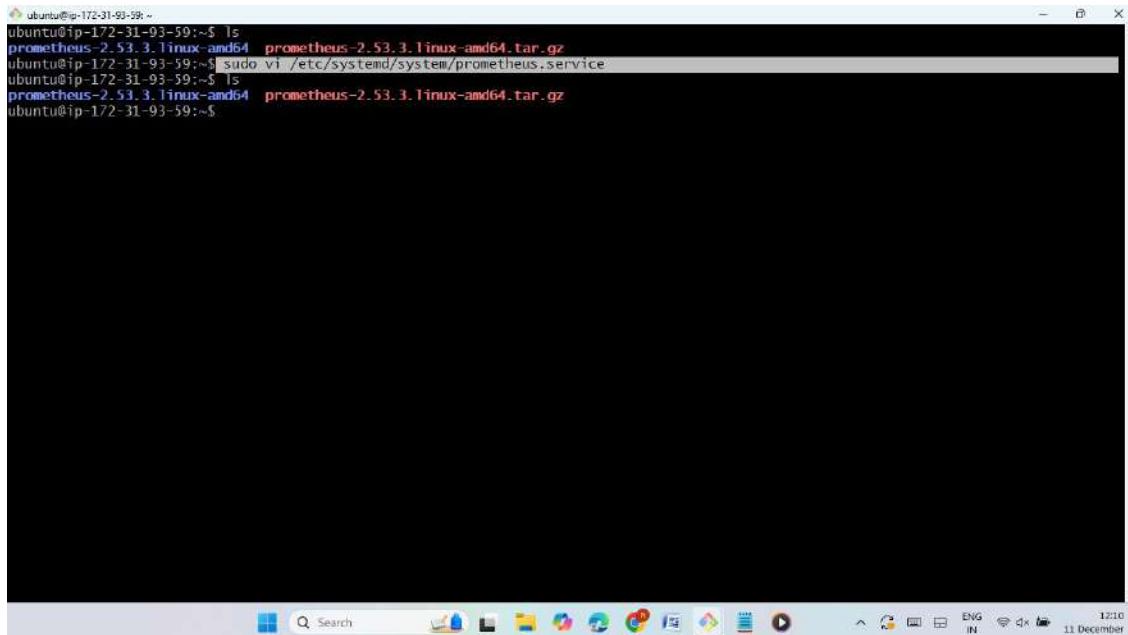
RestartSec=5s

**ExecStart=/usr/local/bin/prometheus \
--config.file=/etc/prometheus/prometheus.yml \
--storage.tsdb.path=/data **

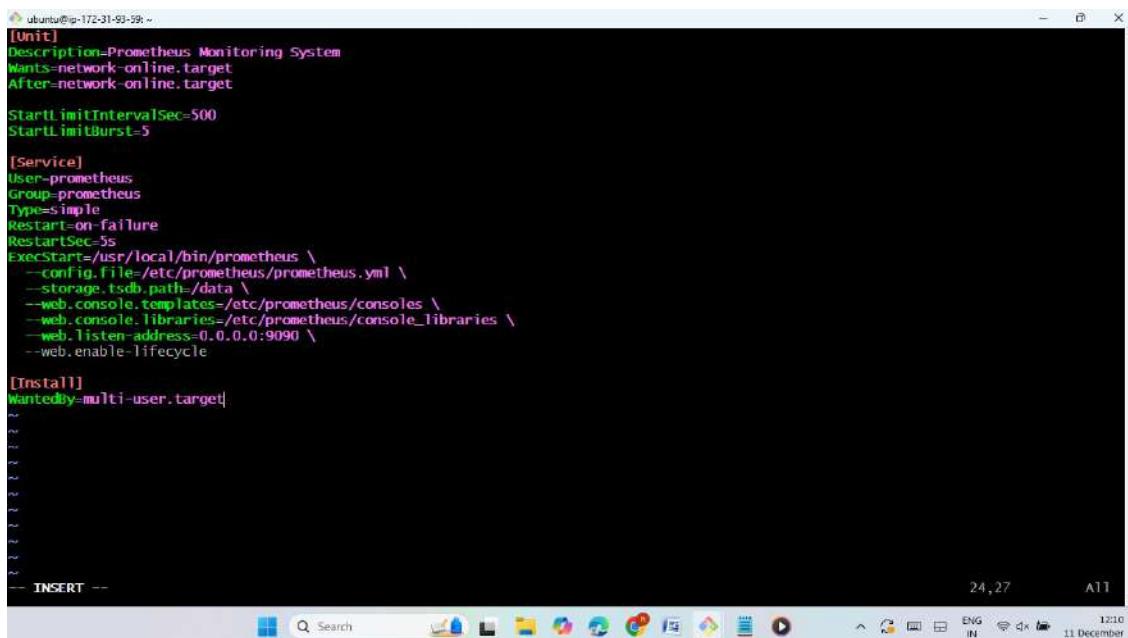
```
--web.console.templates=/etc/prometheus/consoles \
--web.console.libraries=/etc/prometheus/console_libraries \
--web.listen-address=0.0.0.0:9090 \
--web.enable-lifecycle
```

[Install]

WantedBy=multi-user.target



```
ubuntu@ip-172-31-93-59:~$ ls
prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ sudo vi /etc/systemd/system/prometheus.service
ubuntu@ip-172-31-93-59:~$ ls
prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$
```



```
[Unit]
Description=Prometheus Monitoring System
Wants=network-online.target
After=network-online.target

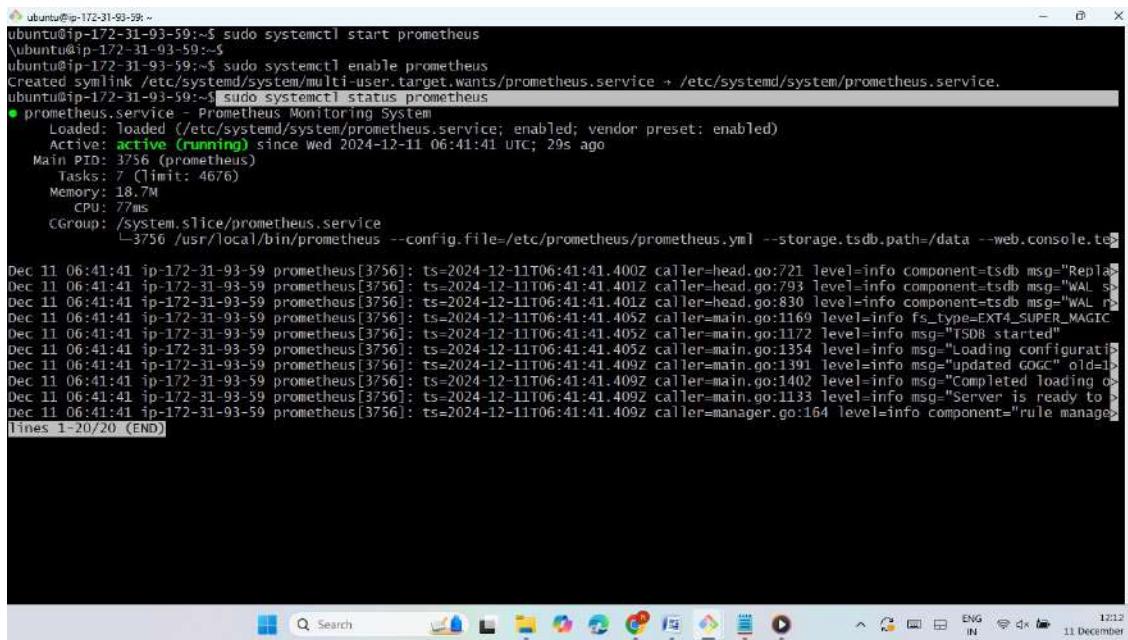
StartLimitIntervalSec=500
StartLimitBurst=5

[Service]
User=prometheus
Group=prometheus
Type=simple
Restart=on-failure
RestartSec=5s
ExecStart=/usr/local/bin/prometheus \
--config.file=/etc/prometheus/prometheus.yml \
--storage.tsdb.path=/data \
--web.console.templates=/etc/prometheus/consoles \
--web.console.libraries=/etc/prometheus/console_libraries \
--web.listen-address=0.0.0.0:9090 \
--web.enable-lifecycle

[Install]
WantedBy=multi-user.target
```

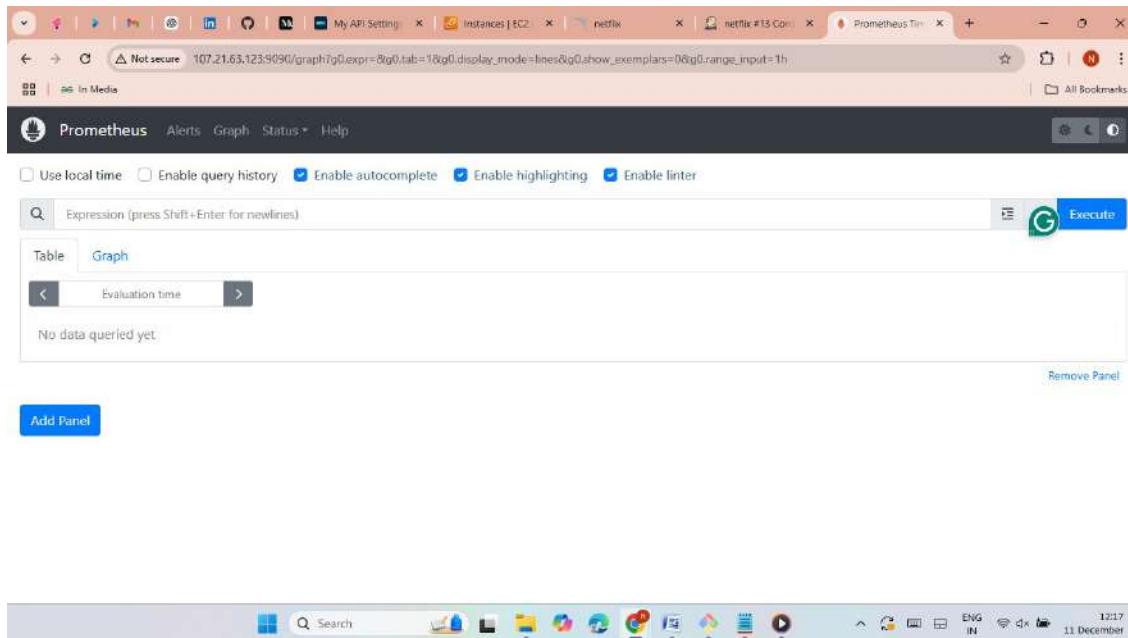
-- INSERT --

- Now start and enable the Prometheus.



```
ubuntu@ip-172-31-93-59:~$ sudo systemctl start prometheus
ubuntu@ip-172-31-93-59:~$ sudo systemctl enable prometheus
Created symlink /etc/systemd/system/multi-user.target.wants/prometheus.service → /etc/systemd/system/prometheus.service.
ubuntu@ip-172-31-93-59:~$ sudo systemctl status prometheus
● prometheus.service - Prometheus Monitoring System
   Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; vendor preset: enabled)
     Active: active (running) since Wed 2024-12-11 06:41:41 UTC; 29s ago
       Main PID: 3756 (prometheus)
         Tasks: 7 (limit: 4676)
        Memory: 18.7M
          CPU: 77ms
        CGroup: /system.slice/prometheus.service
                └─3756 /usr/local/bin/prometheus --config.file=/etc/prometheus/prometheus.yaml --storage.tsdb.path=/data --web.console.te
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.400Z caller=head.go:721 level=info component=tsdb msg="Repla
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.401Z caller=head.go:793 level=info component=tsdb msg="WAL i
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.401Z caller=head.go:830 level=info component=tsdb msg="WAL i
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.405Z caller=main.go:1169 level=info fs_type=EXT4_SUPER_MAGIC
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.405Z caller=main.go:1172 level=info msg="TSDB started"
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.405Z caller=main.go:1354 level=info msg="Loading configurati
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.409Z caller=main.go:1391 level=info msg="updated GOGC old=>
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.409Z caller=main.go:1402 level=info msg="Completed loading >
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.409Z caller=main.go:1133 level=info msg="Server is ready to >
Dec 11 06:41:41 ip-172-31-93-59 prometheus[3756]: ts=2024-12-11T06:41:41.409Z caller=manager.go:164 level=info component="rule manage
lines 1-20/20. (END)
```

- Now host the Prometheus with IP and port 9090.



- Now install Prometheus node exporter from Google.
- The Node Exporter is lightweight and acts as a bridge between the system it is running on and Prometheus, providing metrics about the machine's performance and resource utilization.

```

ubuntu@ip-172-31-93-59:~ ls
prometheus-2.53.3.linux-amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ sudo useradd --system --no-create-home --shell /bin/false node_exporter
ubuntu@ip-172-31-93-59:~$
```

```

ubuntu@ip-172-31-93-59:~ ls
prometheus-2.53.3.linux-amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ sudo useradd --system --no-create-home --shell /bin/false node_exporter
ubuntu@ip-172-31-93-59:~$ wget https://github.com/prometheus/node_exporter/releases/download/v1.8.2/node_exporter-1.8.2.linux-amd64.tar.gz
--2024-12-11 06:50:32-- https://github.com/prometheus/node_exporter/releases/download/v1.8.2/node_exporter-1.8.2.linux-amd64.tar.gz
Resolving github.com (github.com)... 140.82.114.3
Connecting to github.com (github.com)|140.82.114.3|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/9524057/a7e04f41-5543-40e2-9060-26fefef32bb4b?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20241211%2Fs3%2Faws4_request&X-Amz-Date=20241211T065032Z&X-Amz-Expires=300&X-Amz-Signature=0e53a5e1579972b5c0cdfcaaf6d7ce5dcf7b2034cba8ba2cbc81d63dea6b1cee&X-Amz-SignedHeaders=host&response-content-disposition=attachment%38%20filename%3Dnode_exporter-1.8.2.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream
--2024-12-11 06:50:32-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/9524057/a7e04f41-5543-40e2-9060-26fefef32bb4b?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20241211%2Fs3%2Faws4_request&X-Amz-Date=20241211T065032Z&X-Amz-Expires=300&X-Amz-Signature=0e53a5e1579972b5c0cdfcaaf6d7ce5dcf7b2034cba8ba2cbc81d63dea6b1cee&X-Amz-SignedHeaders=host&response-content-disposition=attachment%38%20filename%3Dnode_exporter-1.8.2.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.108.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 10676343 (10M) [application/octet-stream]
Saving to: 'node_exporter-1.8.2.linux-amd64.tar.gz'

node_exporter-1.8.2.linux-amd64.t 100%[=====] 10.18M 46.6MB/s   in 0.2s

2024-12-11 06:50:32 (46.6 MB/s) - 'node_exporter-1.8.2.linux-amd64.tar.gz' saved [10676343/10676343]

ubuntu@ip-172-31-93-59:~ ls
node_exporter-1.8.2.linux-amd64.tar.gz  prometheus-2.53.3.linux-amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$
```

```
ubuntu@ip-172-31-93-59: ~
r.gz
--2024-12-11 06:50:32-- https://github.com/prometheus/node_exporter/releases/download/v1.8.2/node_exporter-1.8.2.linux-amd64.tar.gz
Resolving github.com (github.com)... 140.82.114.3
Connecting to github.com (github.com)|140.82.114.3|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/9524057/a7e04f41-5543-40e2-9060-26fefef32bb4b?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20241211%2Fs-east-1%2Fs3%2Faws4_request&X-Amz-Date=20241211T065032Z&X-Amz-Expires=3008X-Amz-Signature=0e53a5e1579972b5c0dcfcfaaf6d7ce5dcf7b2034cba8ba2cbc81d63dea6b1ce&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnode_exporter-1.8.2.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream [following]
--2024-12-11 06:50:32-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/9524057/a7e04f41-5543-40e2-9060-26fefef32bb4b?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20241211%2Fs-east-1%2Fs3%2Faws4_request&X-Amz-Date=20241211T065032Z&X-Amz-Expires=3008X-Amz-Signature=0e53a5e1579972b5c0dcfcfaaf6d7ce5dcf7b2034cba8ba2cbc81d63dea6b1ce&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnode_exporter-1.8.2.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.108.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 10676343 (10M) [application/octet-stream]
Saving to: 'node_exporter-1.8.2.linux-amd64.tar.gz'

node_exporter-1.8.2.linux-amd64.t 100%[=====] 10.18M 46.6MB/s   in 0.2s

2024-12-11 06:50:32 (46.6 MB/s) - 'node_exporter-1.8.2.linux-amd64.tar.gz' saved [10676343/10676343]

ubuntu@ip-172-31-93-59:~$ ls
node_exporter-1.8.2.linux-amd64.tar.gz  prometheus-2.53.3.linux-amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ tar -xvf node_exporter-1.8.2.linux-amd64.tar.gz
node_exporter-1.8.2.linux-amd64/
node_exporter-1.8.2.linux-amd64/NOTICE
node_exporter-1.8.2.linux-amd64/node_exporter
node_exporter-1.8.2.linux-amd64/LICENSE
ubuntu@ip-172-31-93-59:~$ ls
node_exporter-1.8.2.linux-amd64      prometheus-2.53.3.linux-amd64
node_exporter-1.8.2.linux-amd64.tar.gz  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$
```

```
ubuntu@ip-172-31-93-59: ~
ubuntu@ip-172-31-93-59:~$ sudo mv node_exporter-1.8.2.linux-amd64/node_exporter /usr/local/bin/
ubuntu@ip-172-31-93-59:~$ ls
node_exporter-1.8.2.linux-amd64      prometheus-2.53.3.linux-amd64
node_exporter-1.8.2.linux-amd64.tar.gz  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ rm -rf node_exporter*
ubuntu@ip-172-31-93-59:~$ ls
prometheus-2.53.3.linux-amd64  prometheus-2.53.3.linux-amd64.tar.gz
ubuntu@ip-172-31-93-59:~$ |
```

- Now create a node exporter file.

[Unit]

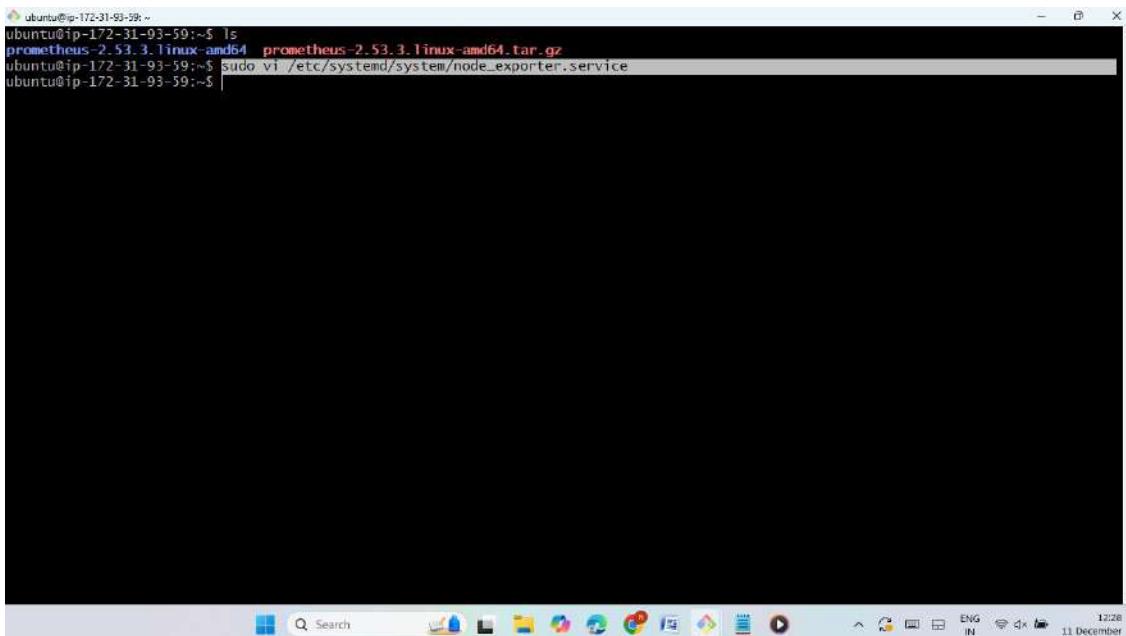
```
Description=Node Exporter  
Wants=network-online.target  
After=network-online.target  
  
StartLimitIntervalSec=500  
StartLimitBurst=5
```

[Service]

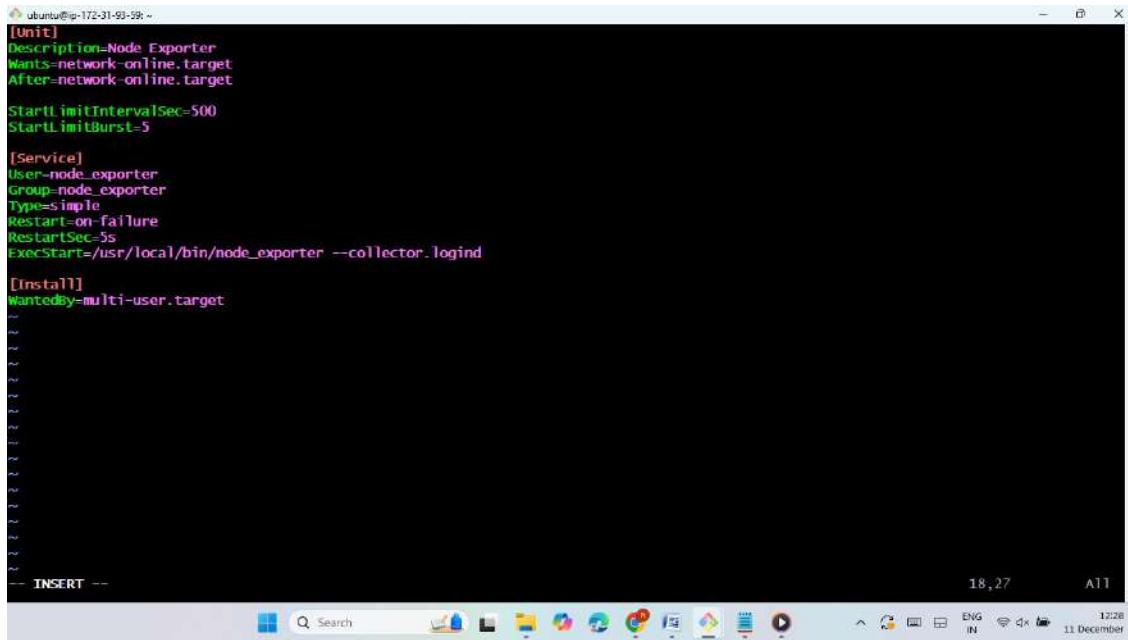
```
User=node_exporter  
Group=node_exporter  
Type=simple  
Restart=on-failure  
RestartSec=5s  
ExecStart=/usr/local/bin/node_exporter --collector.logind
```

[Install]

```
WantedBy=multi-user.target
```



A screenshot of a terminal window on a Windows operating system. The terminal is running on an Ubuntu system, as indicated by the prompt "ubuntu@ip-172-31-93-59:~\$". The user has run the command "ls" to list files, showing "prometheus-2.53.3.linux-amd64" and "prometheus-2.53.3.linux-amd64.tar.gz". The user then runs "sudo vi /etc/systemd/system/node_exporter.service" to edit the service file. The terminal window has a dark background and a light gray border. The taskbar at the bottom shows various application icons, and the system tray indicates the date and time as "11 December 12:28".



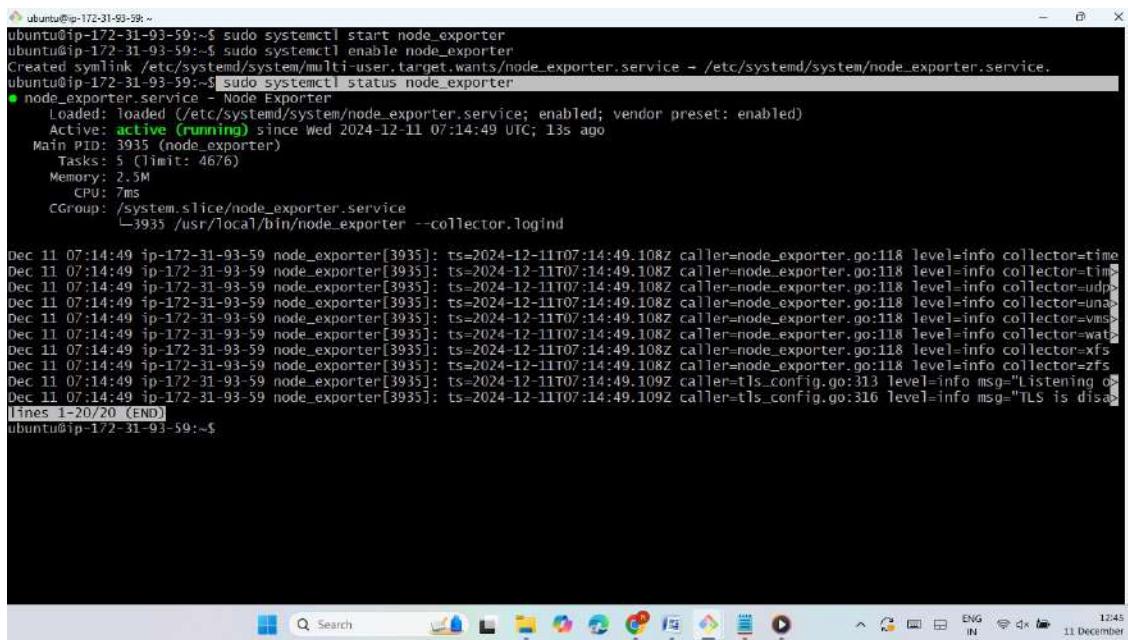
```
[Unit]
Description=Node Exporter
Wants=network-online.target
After=network-online.target

StartLimitIntervalSec=500
StartLimitBurst=5

[Service]
User=node_exporter
Group=node_exporter
Type=simple
Restart=on-failure
RestartSec=5s
ExecStart=/usr/local/bin/node_exporter --collector.logind

[Install]
WantedBy=multi-user.target
```

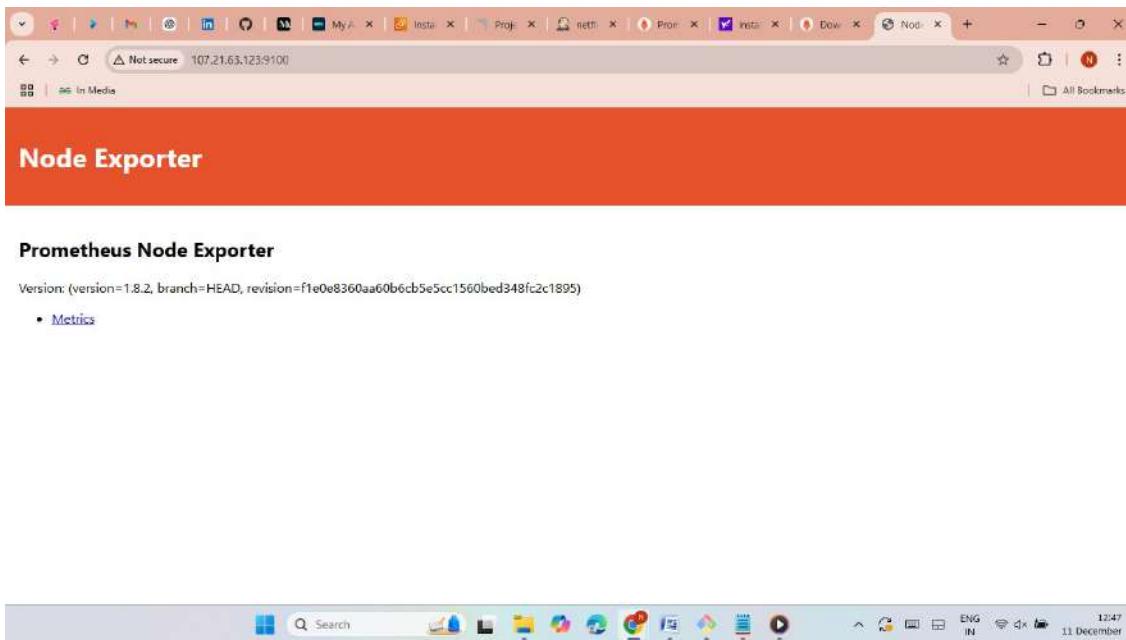
➤ Now start and enable the node exporter.



```
ubuntu@ip-172-31-93-59:~$ sudo systemctl start node_exporter
ubuntu@ip-172-31-93-59:~$ sudo systemctl enable node_exporter
Created symlink /etc/systemd/system/multi-user.target.wants/node_exporter.service → /etc/systemd/system/node_exporter.service.
ubuntu@ip-172-31-93-59:~$ sudo systemctl status node_exporter
● node_exporter.service - Node Exporter
   Loaded: loaded (/etc/systemd/system/node_exporter.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2024-12-11 07:14:49 UTC; 13s ago
     Main PID: 3935 (node_exporter)
       Tasks: 5 (limit: 4676)
      Memory: 2.5M
        CPU: 7ms
       CGroup: /system.slice/node_exporter.service
               └─3935 /usr/local/bin/node_exporter --collector.logind

Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=time
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=tint
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=udp
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=unis
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=vms
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=water
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=xfs
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.108Z caller=node_exporter.go:118 level=info collector=zfs
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.109Z caller=tls_config.go:313 level=info msg="Listening >
Dec 11 07:14:49 ip-172-31-93-59 node_exporter[3935]: ts=2024-12-11T07:14:49.109Z caller=tls_config.go:316 level=info msg="TLS is disabled"
[lines 1-20/20 (END)]
ubuntu@ip-172-31-93-59:~$
```

- Now host the node exporter with IP along with the port 9100.



- Now edit the Prometheus.yaml file.
➤ Give Jenkins job and targets for monitoring the Jenkins tool form Prometheus.

```
ubuntu@ip-172-31-93-59:/etc/prometheus$ cd /etc/prometheus/
ubuntu@ip-172-31-93-59:/etc/prometheus$ ls
console_libraries consoles prometheus.yml
ubuntu@ip-172-31-93-59:/etc/prometheus$ sudo vi prometheus.yml
ubuntu@ip-172-31-93-59:/etc/prometheus$
```

The terminal window shows the user navigating to the Prometheus configuration directory, listing files, and then opening the configuration file for editing using the vi editor. The terminal window has a Windows-style taskbar at the bottom.

```

ubuntu@ip-172-31-93-59:/etc/prometheus
alerting:
  alertmanagers:
    - static_configs:
      - targets:
        # - alertmanager:9093

# Load rules once and periodically evaluate them according to the global 'evaluation_interval'.
rule_files:
  # - "first_rules.yml"
  # - "second_rules.yml"

# A scrape configuration containing exactly one endpoint to scrape:
# Here it's Prometheus itself.
scrape_configs:
  # The job name is added as a label 'job=<job_name>' to any timeseries scraped from this config.
  - job_name: "prometheus"
    # metrics_path defaults to '/metrics'
    # scheme defaults to 'http'.

    static_configs:
      - targets: ["localhost:9090"]

  - job_name: 'node_exporter'
    static_configs:
      - targets: ["localhost:9100"]

  - job_name: 'jenkins'
    metrics_path: '/prometheus'
    static_configs:
      - targets: ['54.196.221.67:8080']

  -
  -
  -
  -
  -
  -- INSERT --

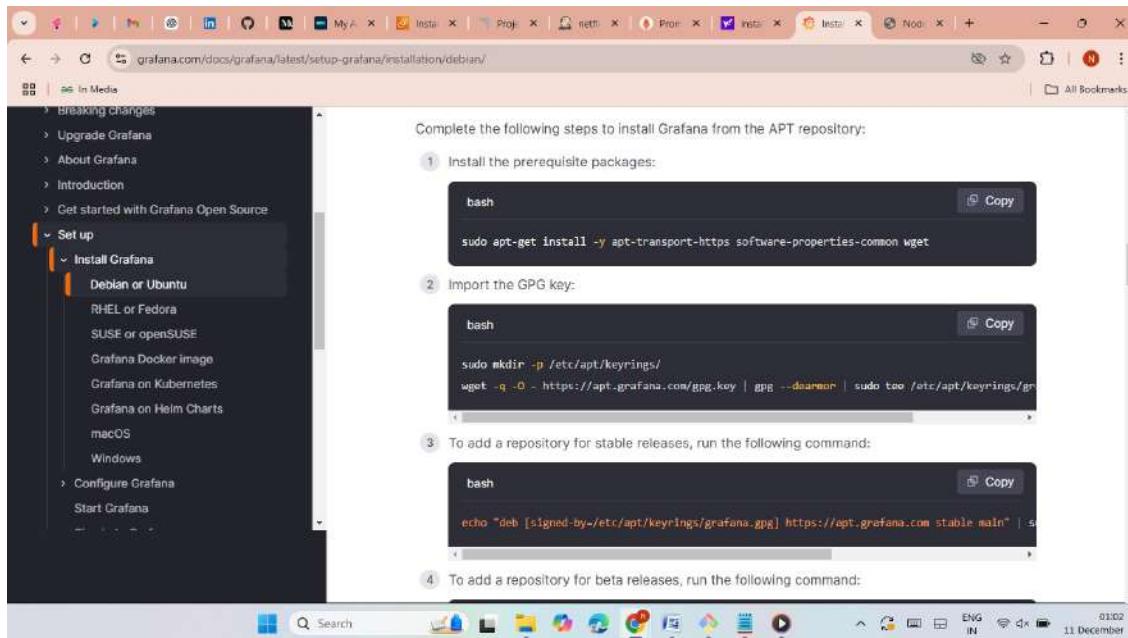
```

➤ Here we can see the targets in Prometheus.

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090", job="prometheus"	7.97s ago	4.428ms	

Targets					
All scrape pools		All	Unhealthy	Collapse All	
<input type="text"/> Filter by endpoint or labels <input checked="" type="checkbox"/> Unknown <input checked="" type="checkbox"/> Unhealthy <input checked="" type="checkbox"/> Healthy					
prometheus (1/1 up) show less					
Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090", job="prometheus"	7.97s ago	4.428ms	

- Now set up the Grafana.
- Install grafana from google.
- Grafana is an open-source, multi-platform analytics and monitoring tool that allows users to visualize and analyze data from various sources in the form of interactive dashboards and alerts.

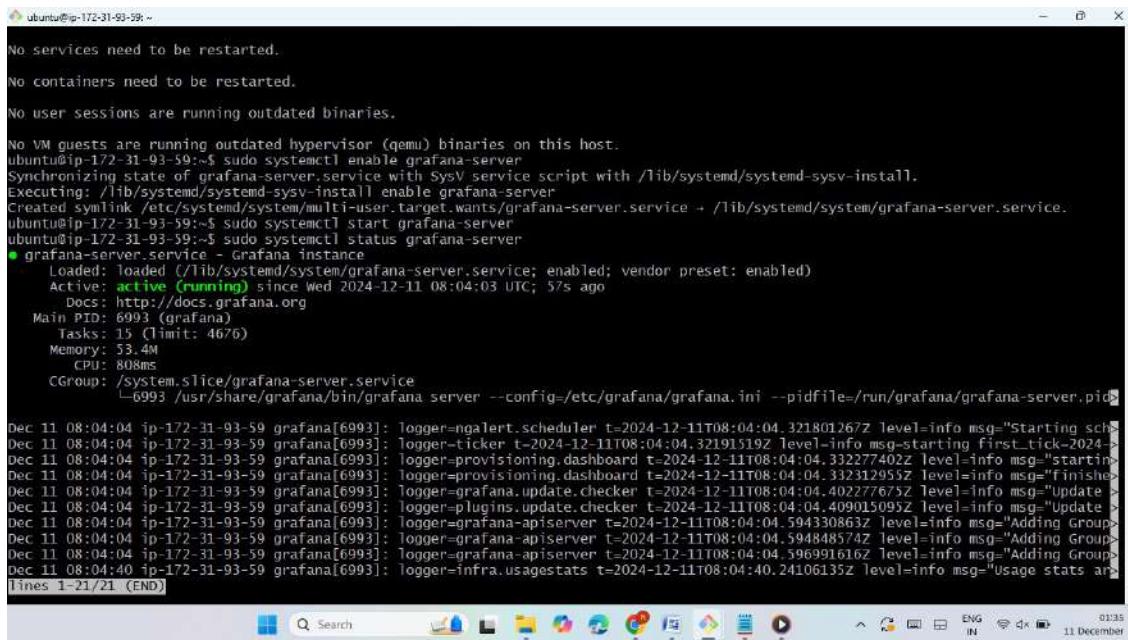


```
ubuntu@ip-172-31-93-59:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Fetched 129 kB in 0s (298 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-93-59:~$ sudo apt-get install -y apt-transport-https software-properties-common wget
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-common is already the newest version (0.99.22.9).
wget is already the newest version (1.21.2-2ubuntu1.1).
apt-transport-https is already the newest version (2.4.13).
0 upgraded, 0 newly installed, 0 to remove and 32 not upgraded.
ubuntu@ip-172-31-93-59:~$ sudo mkdir -p /etc/apt/keyrings/
ubuntu@ip-172-31-93-59:~$ wget -q -O - https://apt.grafana.com/gpg.key | gpg --dearmor | sudo tee /etc/apt/keyrings/grafana.gpg > /dev/null
ubuntu@ip-172-31-93-59:~$ echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main" | sudo tee -a /etc/apt/sources.list.d/grafana.list
deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main
ubuntu@ip-172-31-93-59:~$ echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com beta main" | sudo tee -a /etc/apt/sources.list.d/grafana.list
deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com beta main
ubuntu@ip-172-31-93-59:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 https://apt.grafana.com stable InRelease [7661 B]
Get:5 https://apt.grafana.com beta InRelease [5975 B]
Hit:6 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:7 https://apt.grafana.com stable/main amd64 Packages [327 kB]
Get:8 https://apt.grafana.com beta/main amd64 Packages [1616 B]
Fetched 342 kB in 1s (587 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-93-59:~$ sudo apt-get install grafana
```

```
ubuntu@ip-172-31-93-59:~$ Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Fetched 129 kB in 0s (298 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-93-59:~$ sudo apt-get install -y apt-transport-https software-properties-common wget
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-common is already the newest version (0.99.22.9).
wget is already the newest version (1.21.2-2ubuntu1.1).
apt-transport-https is already the newest version (2.4.13).
0 upgraded, 0 newly installed, 0 to remove and 32 not upgraded.
ubuntu@ip-172-31-93-59:~$ sudo mkdir -p /etc/apt/keyrings/
ubuntu@ip-172-31-93-59:~$ wget -q -O - https://apt.grafana.com/gpg.key | gpg --dearmor | sudo tee /etc/apt/keyrings/grafana.gpg > /dev/null
ubuntu@ip-172-31-93-59:~$ echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main" | sudo tee -a /etc/apt/sources.list.d/grafana.list
deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main
ubuntu@ip-172-31-93-59:~$ echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com beta main" | sudo tee -a /etc/apt/sources.list.d/grafana.list
deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com beta main
ubuntu@ip-172-31-93-59:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 https://apt.grafana.com stable InRelease [7661 B]
Get:5 https://apt.grafana.com beta InRelease [5975 B]
Hit:6 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:7 https://apt.grafana.com stable/main amd64 Packages [327 kB]
Get:8 https://apt.grafana.com beta/main amd64 Packages [1616 B]
Fetched 342 kB in 0s (597 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-93-59:~$ sudo apt-get install grafana
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  musl
The following NEW packages will be installed:
  grafana musl
0 upgraded, 2 newly installed, 0 to remove and 32 not upgraded.
Need to get 127 MB of archives.
After this operation, 471 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 musl amd64 1.2.2-4 [407 kB]
Get:2 https://apt.grafana.com stable/main amd64 grafana amd64 11.4.0 [127 MB]
Fetched 127 MB in 5s (27.1 MB/s)
Selecting previously unselected package musl:amd64.
(Reading database ... 66873 files and directories currently installed.)
Preparing to unpack .../musl_1.2.2-4_amd64.deb ...
Unpacking musl:amd64 (1.2.2-4) ...
Selecting previously unselected package grafana.
Preparing to unpack .../grafana_11.4.0_amd64.deb ...
Unpacking grafana (11.4.0) ...
Setting up musl:amd64 (1.2.2-4) ...
Setting up grafana (11.4.0) ...
Adding system user 'grafana' (UID 115) ...
Adding new user 'grafana' (UID 115) with group 'grafana' ...
Not creating home directory '/usr/share/grafana'.
### NOT starting on installation, please execute the following statements to configure grafana to start automatically using systemd
sudo /bin/systemctl daemon-reload
sudo /bin/systemctl enable grafana-server
## You can start grafana-server by executing
sudo /bin/systemctl start grafana-server
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
```

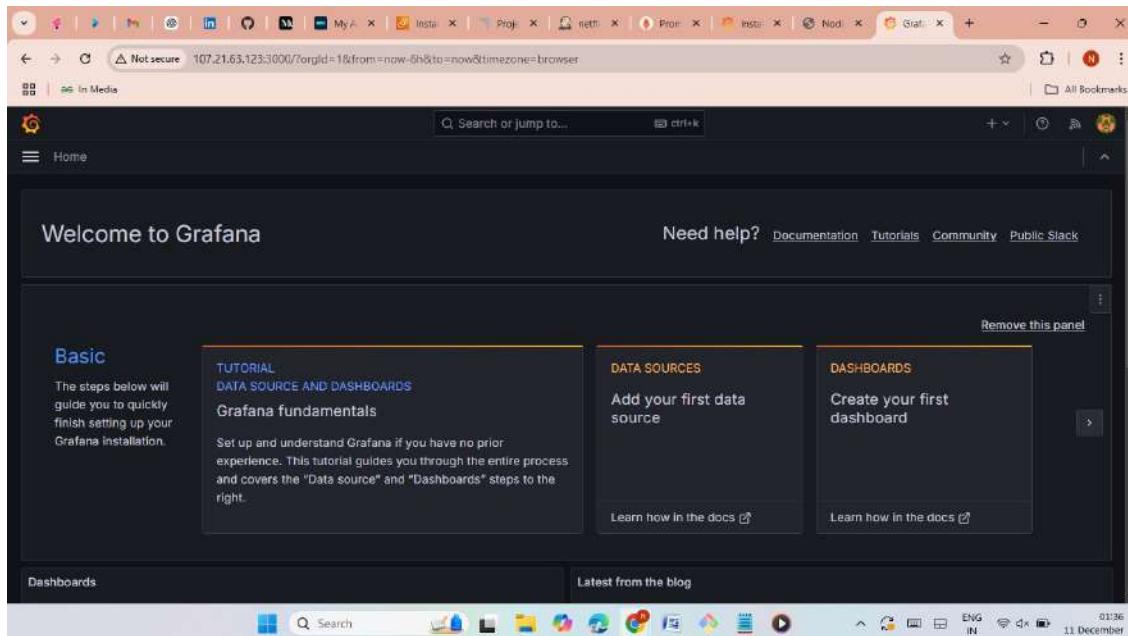
```
ubuntu@ip-172-31-93-59:~$ Fetched 342 kB in 0s (597 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-93-59:~$ sudo apt-get install grafana
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  musl
The following NEW packages will be installed:
  grafana musl
0 upgraded, 2 newly installed, 0 to remove and 32 not upgraded.
Need to get 127 MB of archives.
After this operation, 471 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 musl amd64 1.2.2-4 [407 kB]
Get:2 https://apt.grafana.com stable/main amd64 grafana amd64 11.4.0 [127 MB]
Fetched 127 MB in 5s (27.1 MB/s)
Selecting previously unselected package musl:amd64.
(Reading database ... 66873 files and directories currently installed.)
Preparing to unpack .../musl_1.2.2-4_amd64.deb ...
Unpacking musl:amd64 (1.2.2-4) ...
Selecting previously unselected package grafana.
Preparing to unpack .../grafana_11.4.0_amd64.deb ...
Unpacking grafana (11.4.0) ...
Setting up musl:amd64 (1.2.2-4) ...
Setting up grafana (11.4.0) ...
Adding system user 'grafana' (UID 115) ...
Adding new user 'grafana' (UID 115) with group 'grafana' ...
Not creating home directory '/usr/share/grafana'.
### NOT starting on installation, please execute the following statements to configure grafana to start automatically using systemd
sudo /bin/systemctl daemon-reload
sudo /bin/systemctl enable grafana-server
## You can start grafana-server by executing
sudo /bin/systemctl start grafana-server
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
```

➤ Now start and enable the Grafana.

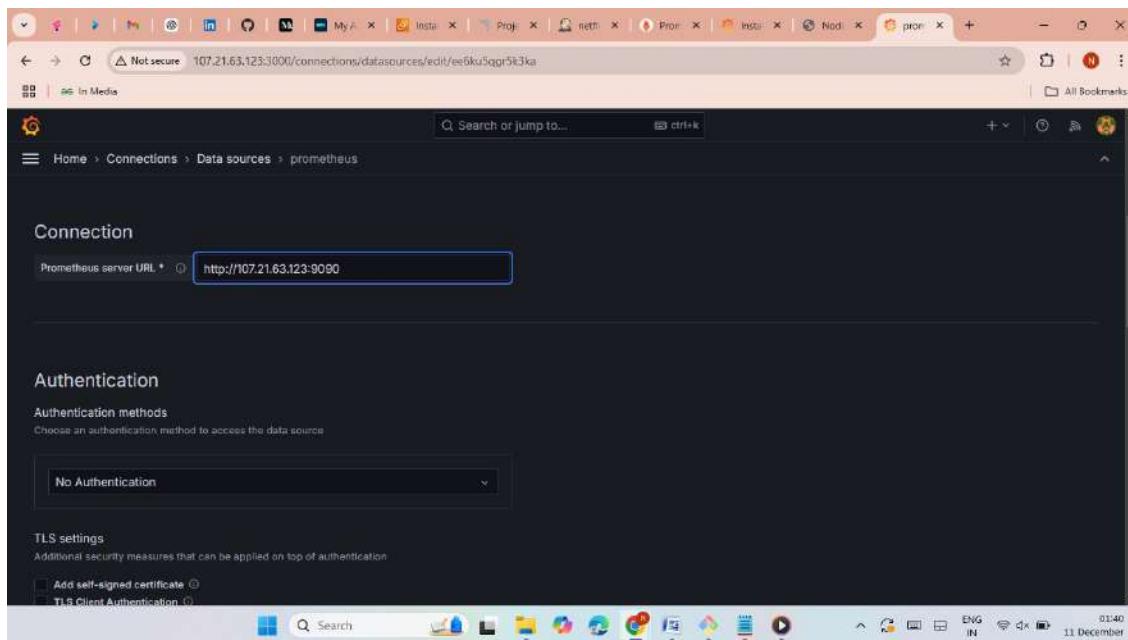
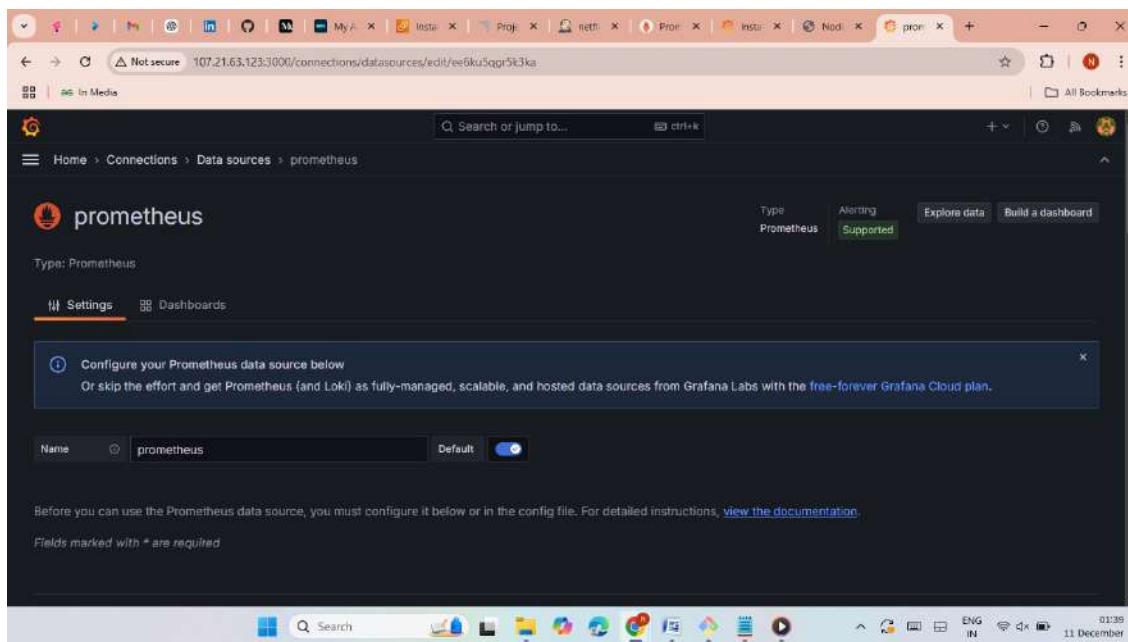


```
ubuntu@ip-172-31-93-59:~  
No services need to be restarted.  
No containers need to be restarted.  
No user sessions are running outdated binaries.  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-93-59:~$ sudo systemctl enable grafana-server  
Synchronizing state of grafana-server.service with SysV service script with /lib/systemd/systemd-sysv-install.  
Executing: /lib/systemd/systemd-sysv-install enable grafana-server  
Created symlink /etc/systemd/system/multi-user.target.wants/grafana-server.service → /lib/systemd/system/grafana-server.service.  
ubuntu@ip-172-31-93-59:~$ sudo systemctl start grafana-server  
ubuntu@ip-172-31-93-59:~$ sudo systemctl status grafana-server  
● grafana-server.service - Grafana instance  
   Loaded: loaded (/lib/systemd/system/grafana-server.service; enabled; vendor preset: enabled)  
   Active: active (running) since Wed 2024-12-11 08:04:03 UTC; 57s ago  
     Docs: http://docs.grafana.org  
     Main PID: 6993 (grafana)  
        Tasks: 15 (limit: 4676)  
       Memory: 53.4M  
          CPU: 808ms  
         CGroup: /system.slice/grafana-server.service  
                 └─6993 /usr/share/grafana/bin/grafana server --config=/etc/grafana/grafana.ini --pidfile=/run/grafana/grafana-server.pid  
  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=ngalert_scheduler t=2024-12-11T08:04:04.321801267Z level=info msg="Starting sch...  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=ticker t=2024-12-11T08:04:04.321915192Z level=info msg="starting first_tick-2024-12-11T08:04:04.32277402Z level=info msg='startin...  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=provisioning.dashboard t=2024-12-11T08:04:04.332312955Z level=info msg='finishe...  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=grafana.update.checker t=2024-12-11T08:04:04.402776752Z level=info msg='Update >...  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=plugins.update.checker t=2024-12-11T08:04:04.409015095Z level=info msg='Update >...  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=grafana.apiserver t=2024-12-11T08:04:04.594330863Z level=info msg='Adding Group...  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=grafana.apiserver t=2024-12-11T08:04:04.594848574Z level=info msg='Adding Group...  
Dec 11 08:04:04 ip-172-31-93-59 grafana[6993]: logger=grafana.apiserver t=2024-12-11T08:04:04.596991616Z level=info msg='Adding Group...  
Dec 11 08:04:40 ip-172-31-93-59 grafana[6993]: logger=infra.usagestats t=2024-12-11T08:04:40.24106135Z level=info msg="Usage stats ar...  
Lines 1-21/21 (END)
```

Now host the Grafana with the IP along with the port 3000.



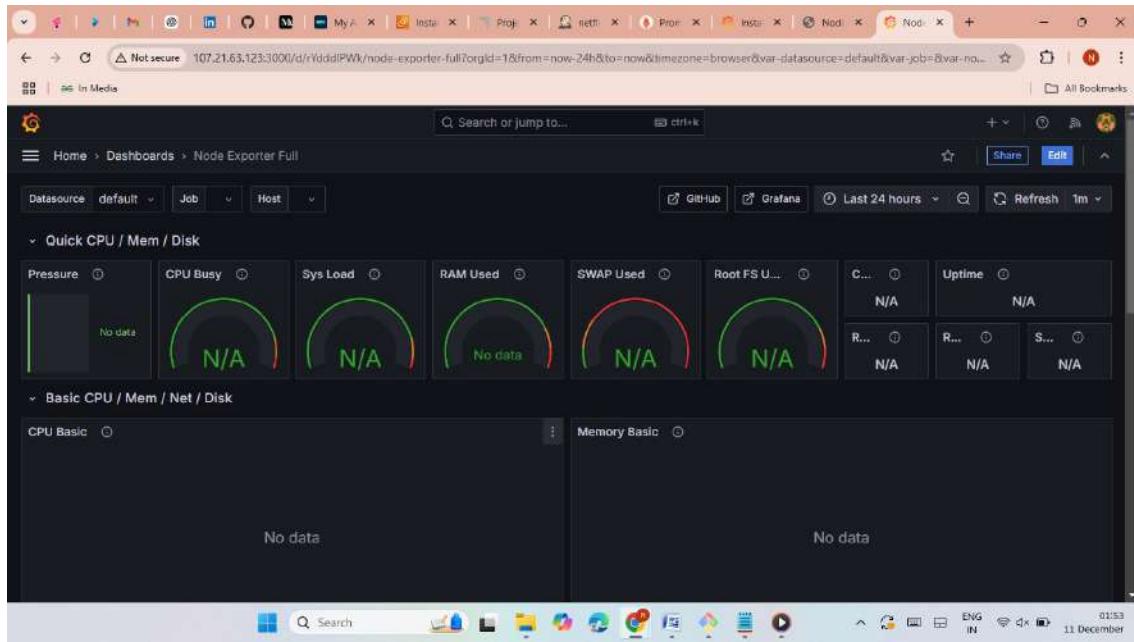
- Now set up the Prometheus in Grafana for visualize and analyze data from Prometheus.



The screenshot shows the Grafana interface for managing data sources. The URL in the address bar is `107.21.63.123:3000/connections/datasources/edit/ee6ku5qr5k3ka`. The main content area is titled "Data sources > prometheus". It includes sections for "Custom query parameters" (with an example: `max_source_resolution=5m&timeout`) and "HTTP method" (set to POST). Below these are sections for "Exemplars" and "Metrics". A success message box states: "Successfully queried the Prometheus API. Next, you can start to visualize data by [building a dashboard](#), or by querying data in the [Explore view](#)". At the bottom are "Delete" and "Save & test" buttons.

The screenshot shows the Grafana interface for importing dashboards. The URL in the address bar is `107.21.63.123:3000/dashboard/import`. The main content area is titled "Import dashboard". It features a "Upload dashboard JSON file" section with a file input field and a "Load" button. Below it is a "Find and Import dashboards for common applications at [grafana.com/dashboards](#)" link. A text input field contains the value "1860" and a "Load" button. At the bottom is an "Import via dashboard JSON model" section containing a JSON code block:

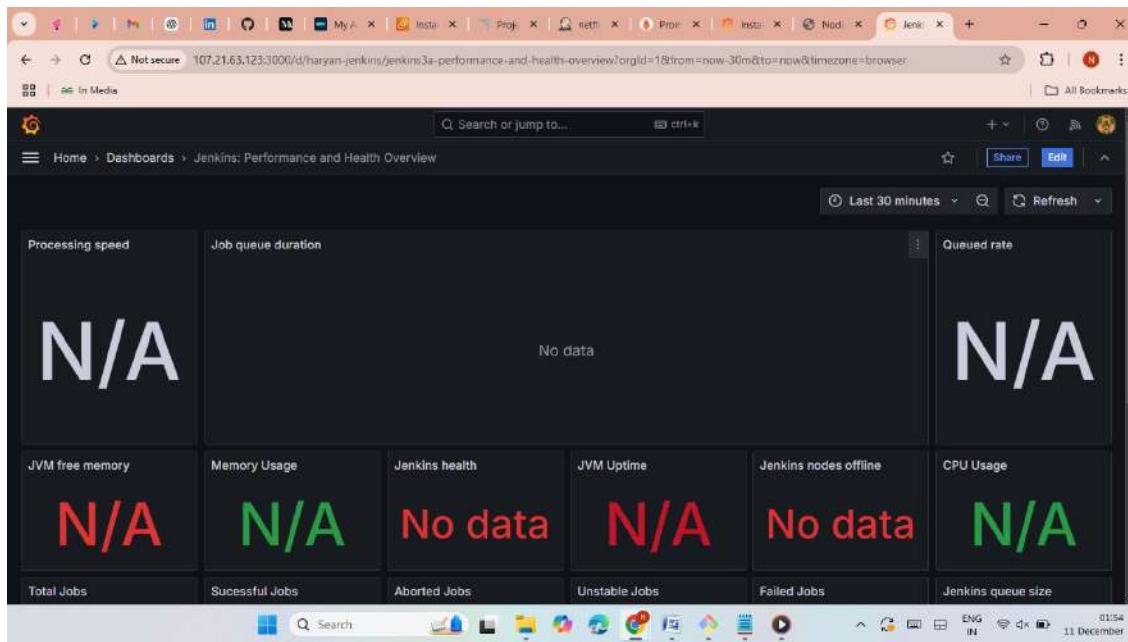
```
{
  "title": "Example - Repeating Dictionary Variables",
  "uid": "OHnEoN4z",
  "panels": [...]
}
```



The screenshot shows the "Import dashboard" page in Grafana. The URL is "107.21.63.123:3000/dashboard/import". The main content area includes:

- Import dashboard**: Subtitle "Import dashboard from file or Grafana.com".
- Importing dashboard from Grafana.com**
- Published by**: haryan.
- Updated on**: 2023-08-24 15:04:53
- Options** section:
 - Name**: Jenkins: Performance and Health Overview
 - Folder**: Dashboards
- Unique Identifier (UID)**: A note explaining that the UID allows for consistent URLs across multiple Grafana installs.

The bottom status bar indicates "01/53 ENG IN 11 December".



- Now check the plugins in Jenkins.
- Install Prometheus metrics then restart the Jenkins.
- Restart the Prometheus.yaml file.

- Here the Jenkins status was up in Prometheus.

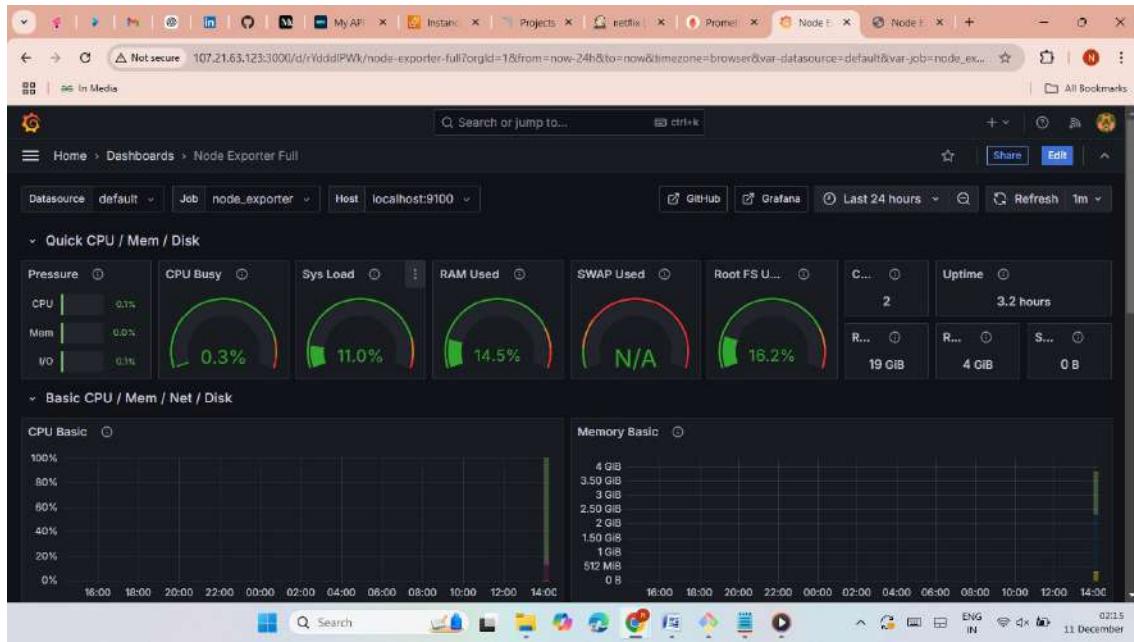
The screenshot shows the Prometheus Targets page with three sections:

- Targets**: Shows the status of three endpoints:
 - jenkins (1/1 up)**: State: UP, Labels: instance="54.196.221.67:8080" job="jenkins", Last Scrape: 10.191s ago, Scrape Duration: 13.760ms.
 - node_exporter (1/1 up)**: State: UP, Labels: instance="localhost:9100" job="node_exporter", Last Scrape: 6.402s ago, Scrape Duration: 14.714ms.
 - prometheus (1/1 up)**: State: UP, Labels: instance="54.196.221.67:8080" job="prometheus", Last Scrape: 10.191s ago, Scrape Duration: 13.760ms.
- Scrape**: A button at the bottom right of the table.

- Here we can see the Jenkins performance and health overview in Grafana.

The screenshot shows the Grafana dashboard titled "Jenkins: Performance and Health Overview". It contains several panels:

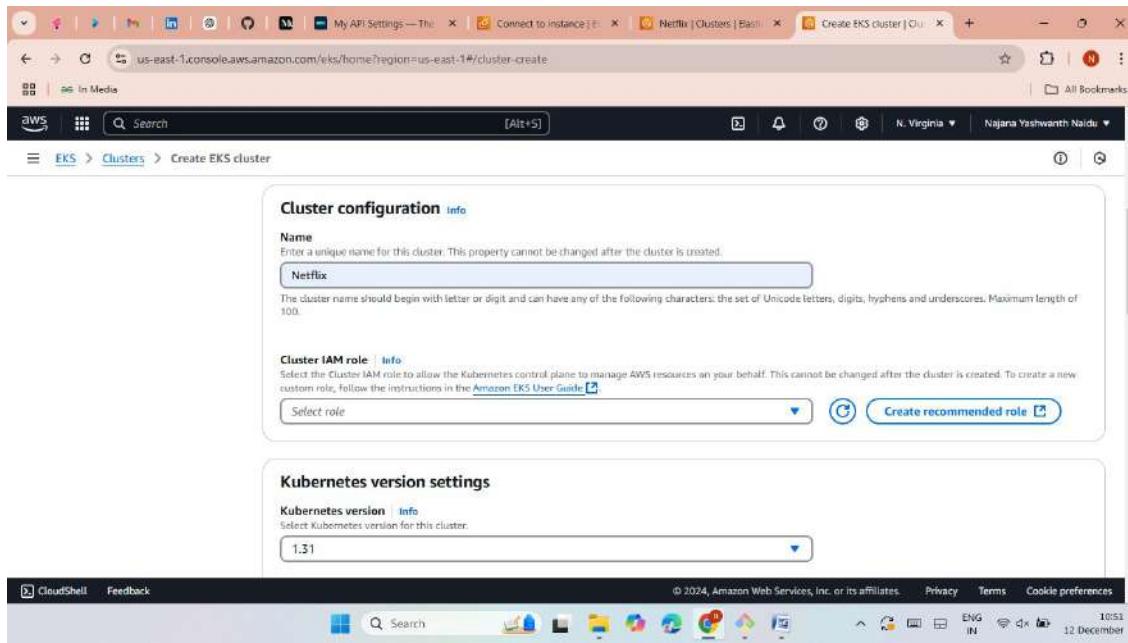
- Processing speed**: Shows a large value of 0.
- Job queue duration**: A line chart showing duration over time from 13:45 to 14:10.
- Queued rate**: Shows a large value of 0.
- JVM free memory**: Value: 28922162500.0%.
- Memory Usage**: Value: 289 MB.
- Jenkins health**: Value: 1.0.
- JVM Uptime**: Value: N/A.
- Jenkins nodes offline**: Value: None!.
- CPU Usage**: Value: 1.10%.
- Total Jobs**, **Successful Jobs**, **Aborted Jobs**, **Unstable Jobs**, **Failed Jobs**, **Jenkins queue size**: Various status indicators.



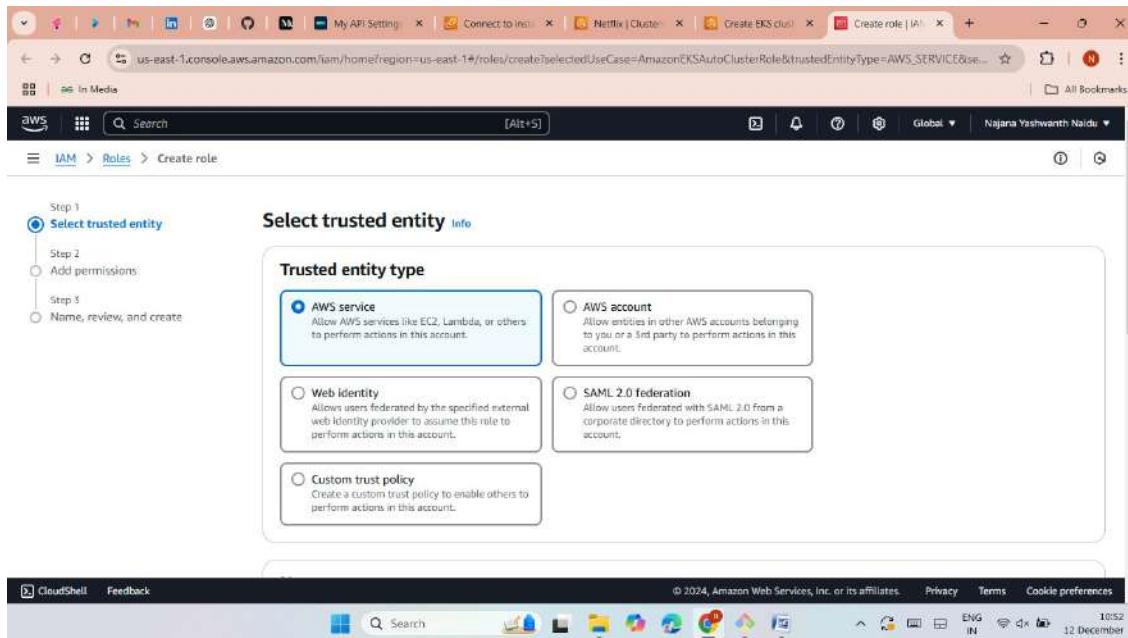
PHASE-5

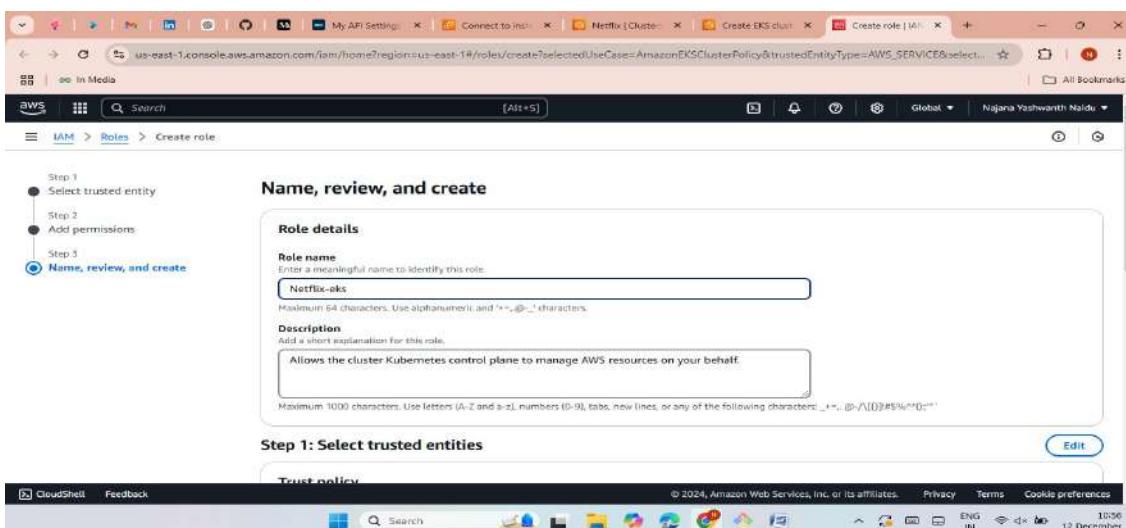
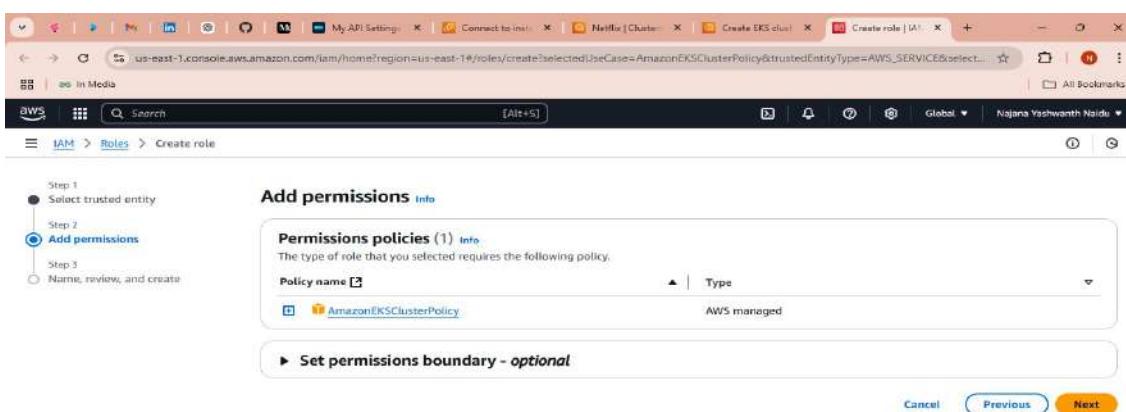
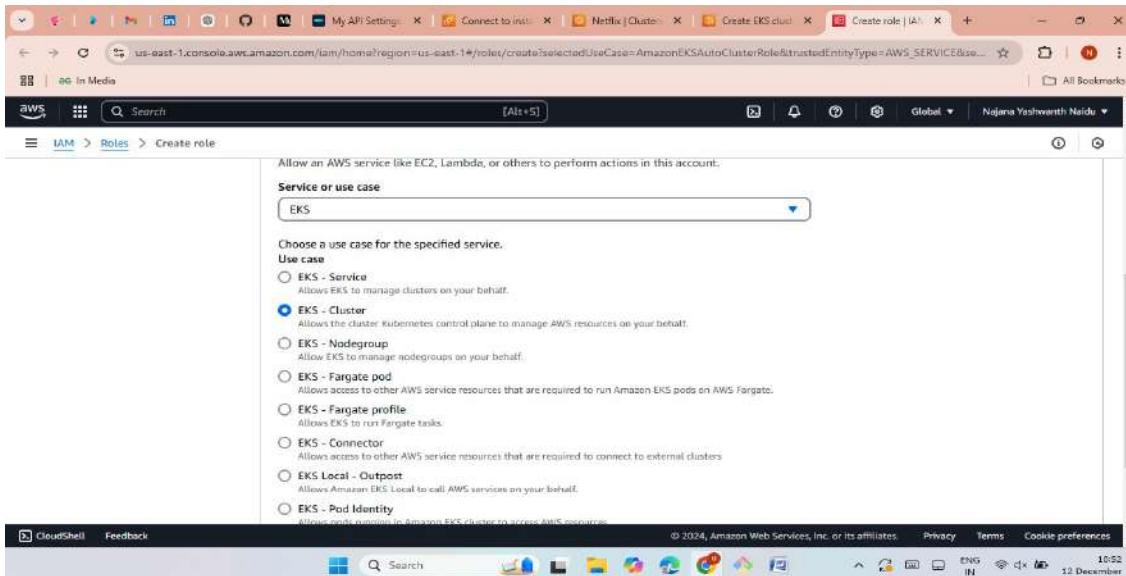
DEPLOY NETFLIX APPLICATION WITH KUBERNETES EKS AND ARGOCD

- Now go to EKS then create a EKS Cluster(Elastic Kubernetes Service).



- Now we have to create a Cluster IAM role.





Step 3: Add tags

Add tags - optional Info
Tags are key-value pairs that you can add to AWS resources to help identify, organize, or search for resources.
No tags associated with the resource.

Add new tag
You can add up to 50 more tags.

Create role

Role Netflix-eks created.

Roles (30) Info
An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.

Role name	Trusted entities	Last activity
AWSServiceRoleForAmazonEKS	AWS Service: eks (Service-Linked Role)	18 minutes ago
AWSServiceRoleForAmazonEKSNodegroup	AWS Service: eks-nodegroup (Service-Linked Role)	16 minutes ago
AWSServiceRoleForAmazonElasticFileSystem	AWS Service: elasticfilesystem (Service-Linked Role)	191 days ago
AWSServiceRoleForAmazonSSM	AWS Service: ssm (Service-Linked Role)	4 hours ago
AWSServiceRoleForAutoScaling	AWS Service: autoscaling (Service-Linked Role)	15 hours ago
AWSServiceRoleForBackup	AWS Service: backup (Service-Linked Role)	24 hours ago

Cluster configuration Info

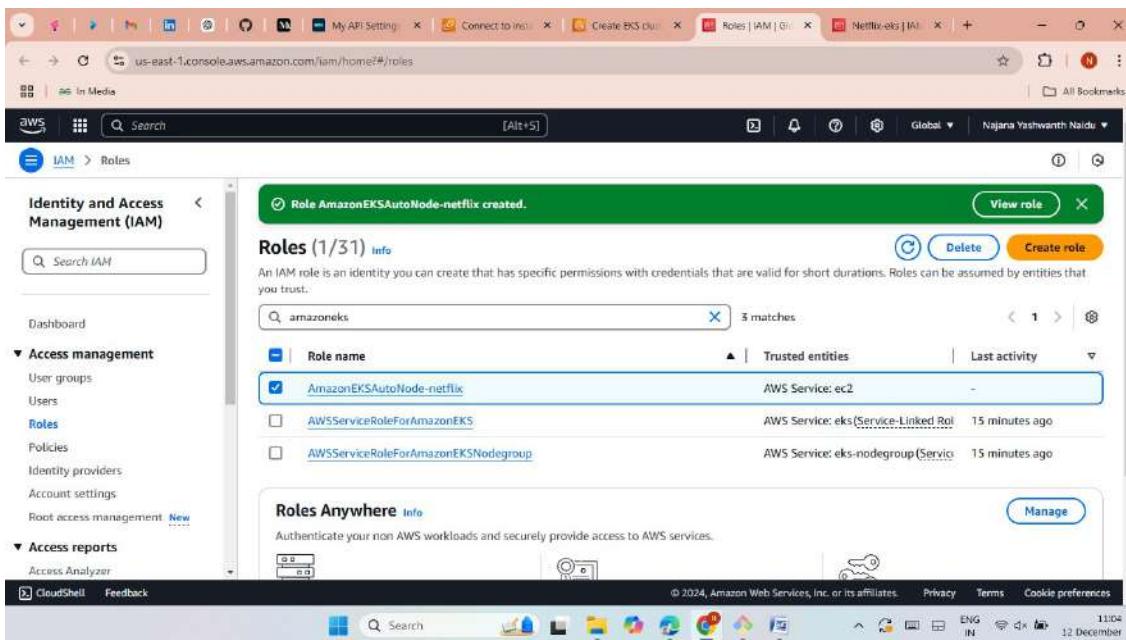
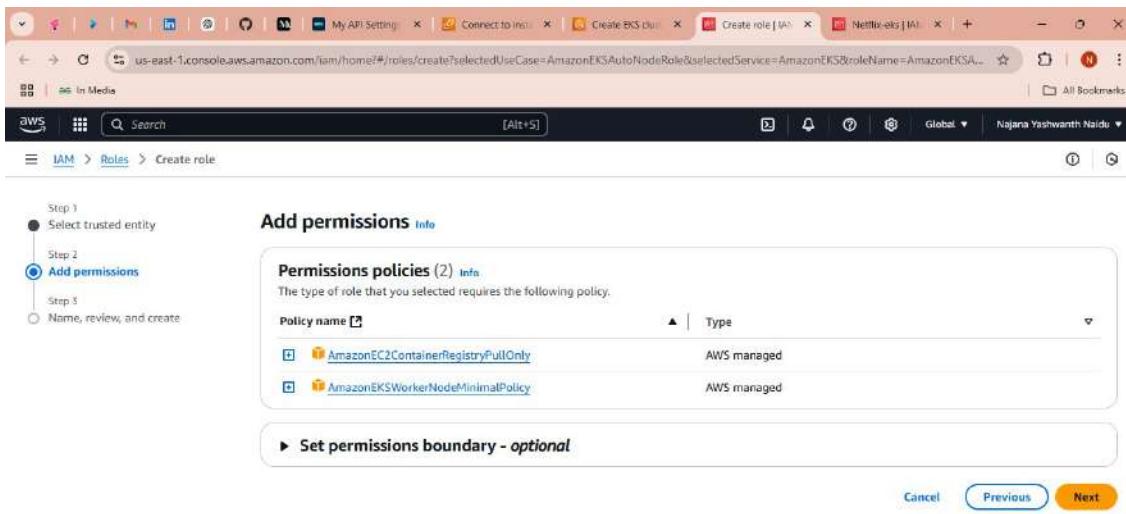
Name
Enter a unique name for this cluster. This property cannot be changed after the cluster is created.

Cluster IAM role Info
Select the Cluster IAM role to allow the Kubernetes control plane to manage AWS resources on your behalf. This cannot be changed after the cluster is created. To create a new custom role, follow the instructions in the [Amazon EKS User Guide](#).
 [Create recommended role](#)

Kubernetes version settings

Kubernetes version Info
Select Kubernetes versions for this cluster.

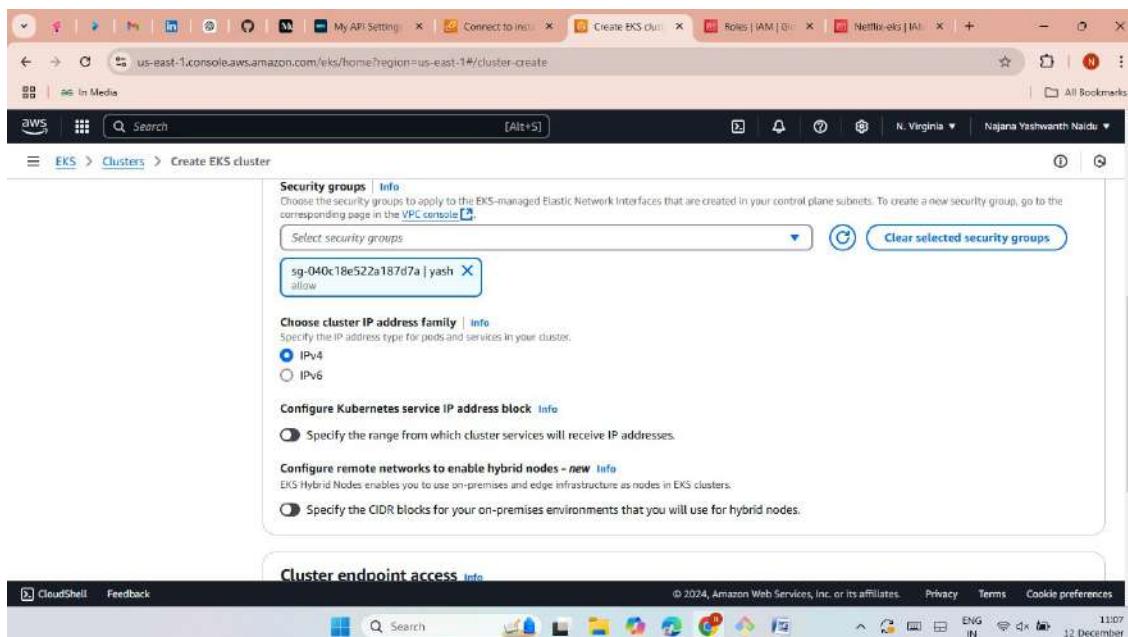
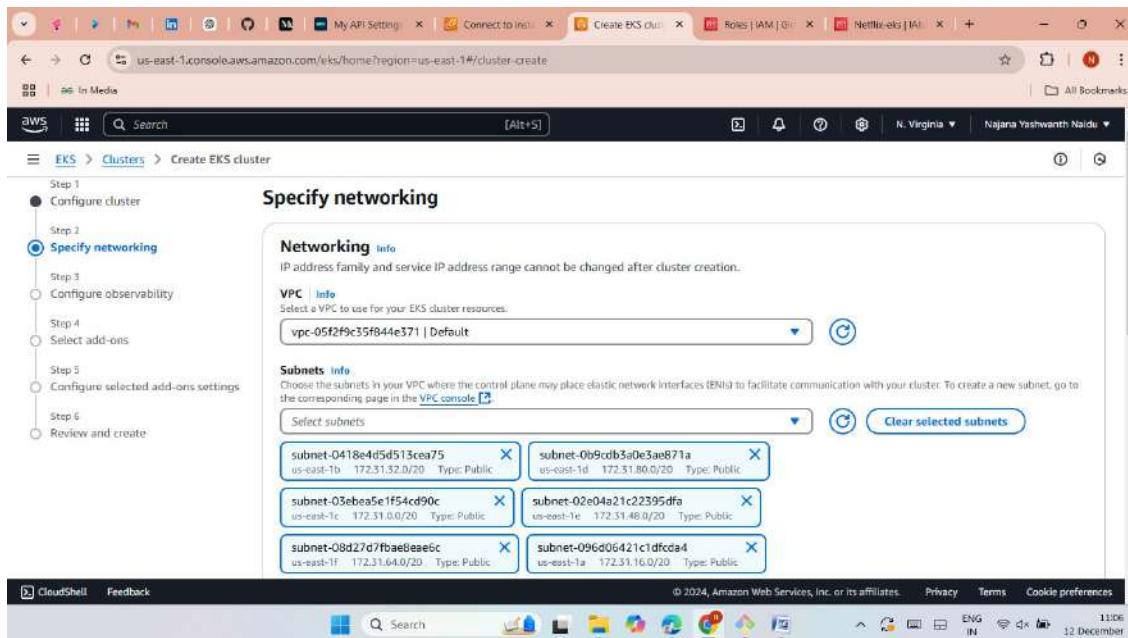
➤ Now create a node IAM role.



The screenshot shows the 'Create EKS cluster' page in the AWS Management Console. Under the 'Auto Mode Compute' section, it says 'Configure node management for your EKS cluster. EKS offers four compute options: EKS Auto Mode, EC2 Managed Node Groups, Fargate, and hybrid nodes. Node groups, Fargate profiles, and hybrid nodes are configured after cluster creation. You can also create self-managed nodes.' Below this, under 'Built-in node pools - optional', it says 'EKS Auto Mode uses node pools to create nodes for pods. The node IAM role will be associated with built-in node pools. Use the Kubernetes API after cluster creation to create your own node pools.' A dropdown menu shows 'Choose node pool(s)' with 'general-purpose' and 'system' selected. A 'Node IAM role' dropdown shows 'AmazonEKSAutoNode-netflix'. Buttons for 'Create recommended role' and 'Create new role' are present.

The screenshot shows the 'Create EKS cluster' page in the AWS Management Console. Under the 'Cluster access' section, it says 'Control how IAM principals can access this cluster.' Below this, under 'Bootstrap cluster administrator access', it says 'Choose whether the IAM principal creating the cluster has Kubernetes cluster administrator access.' Two radio buttons are shown: 'Allow cluster administrator access' (selected) and 'Disallow cluster administrator access'. A note states 'Allow cluster administrator access for your IAM principal.' Under 'Cluster authentication mode', it says 'Configure which source the cluster will use for authenticated IAM principals.' Two radio buttons are shown: 'EKS API' (unselected) and 'EKS API and ConfigMap' (selected). A note states 'The cluster will source authenticated IAM principals from both EKS access entry APIs and the aws-auth ConfigMap.' Under the 'Secrets encryption' section, it says 'Once turned on, secrets encryption cannot be modified or removed.' A radio button is selected for 'Turn on envelope encryption of Kubernetes secrets using KMS'. A note states 'Envelope encryption provides an additional layer of encryption for your Kubernetes secrets.'

- Here we can give created or default VPC and Subnets.



The screenshot shows the second step of the 'Create EKS cluster' wizard. The title is 'Configure remote networks to enable hybrid nodes'. It contains two sections: 'Specify the range from which cluster services will receive IP addresses.' and 'Configure remote networks to enable hybrid nodes - new info'. Below these are two radio button options: 'Specify the CIDR blocks for your on-premises environments that you will use for hybrid nodes.' and 'Specify the range from which cluster services will receive IP addresses.'. A note states: 'EKS Hybrid Nodes enables you to use on-premises and edge infrastructure as nodes in EKS clusters.' At the bottom, there is a 'Cluster endpoint access' section with three options: 'Public', 'Public and private' (selected), and 'Private'. A note for 'Public and private' says: 'The cluster endpoint is accessible from outside of your VPC. Worker node traffic will leave your VPC to connect to the endpoint.' A note for 'Private' says: 'The cluster endpoint is only accessible through your VPC. Worker node traffic to the endpoint will stay within your VPC.' There is also a '► Advanced settings' link. At the bottom right are 'Cancel', 'Previous', and 'Next' buttons.

The screenshot shows the third step of the 'Create EKS cluster' wizard. The title is 'Control plane logs'. It contains a single section: 'Send audit and diagnostic logs from the Amazon EKS control plane to CloudWatch Logs.' Below this is a list of five log types with radio buttons: 'API server' (selected), 'Audit', 'Authenticator', 'Controller manager', and 'Scheduler'. A note for 'API server' says: 'Logs pertaining to API requests to the cluster.' A note for 'Audit' says: 'Logs pertaining to cluster access via the Kubernetes API.' A note for 'Authenticator' says: 'Logs pertaining to authentication requests into the cluster.' A note for 'Controller manager' says: 'Logs pertaining to state of cluster controllers.' A note for 'Scheduler' says: 'Logs pertaining to scheduling decisions.' At the bottom right are 'Cancel', 'Previous', and 'Next' buttons.

- Here we can set up the Amazon add-on also.

The screenshot shows the AWS EKS Create Cluster wizard at the 'Additional Amazon EKS Add-ons' step. A note states: 'EKS automates the functionality of these add-ons when EKS Auto Mode is enabled. These add-ons will only be installed on self-managed nodes and node groups.' Below this, a callout box notes: 'The following Add-ons are not needed for clusters solely using EKS Auto Mode. Only add these add-ons if you plan to use multiple types of compute.' It lists three items:

- kube-proxy
- Amazon VPC CNI
- CoreDNS

Three add-on cards are displayed:

- kube-proxy**: Info, Enable service networking within your cluster, Category: networking, Compatible compute: All.
- Amazon VPC CNI**: Info, Enable pod networking within your cluster, Category: networking, Compatible compute: All.
- CoreDNS**: Info, Enable service discovery within your cluster, Category: networking, Compatible compute: All.

The screenshot shows the AWS EKS Create Cluster wizard at the 'Add-ons' and 'EKS Pod Identity' configuration steps. The 'Add-ons' section lists the following configurations:

Add-on name	Version
coredns	v1.11.1-eksbuild.4
kube-proxy	v1.29.10-eksbuild.3
vpc-cni	v1.19.0-eksbuild.1

The 'EKS Pod Identity' section shows one entry:

Add-on name	IAM role	Service account
vpc-cni	Not set	aws-node

At the bottom, there are 'Cancel', 'Previous', and 'Create' buttons. The status bar at the bottom indicates: 'CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences ENG IN 11:09 12 December'.

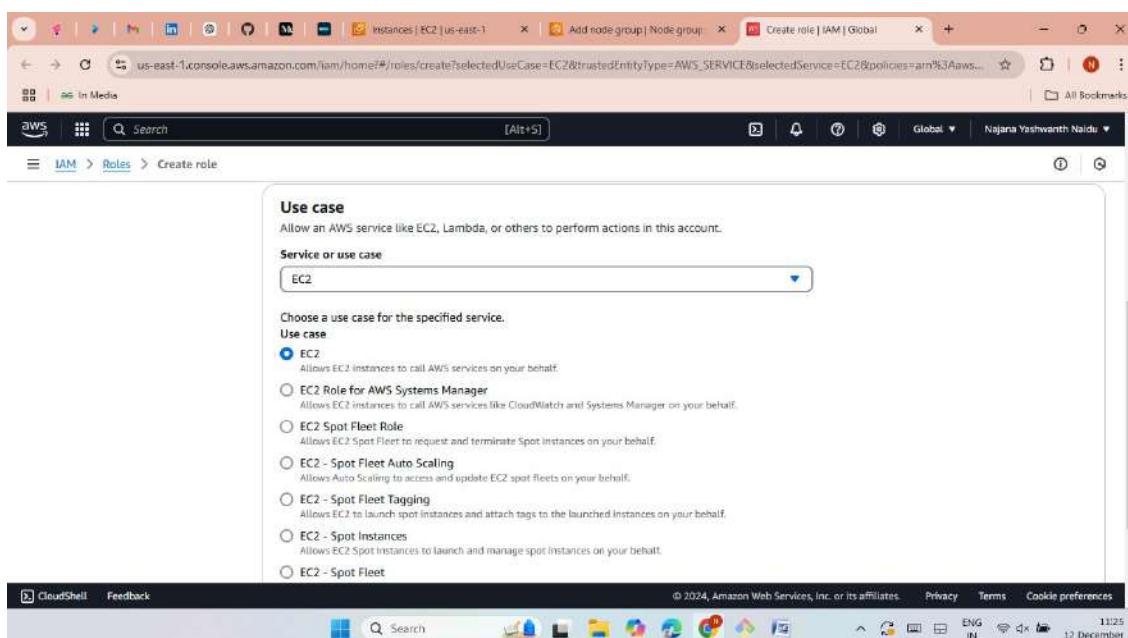
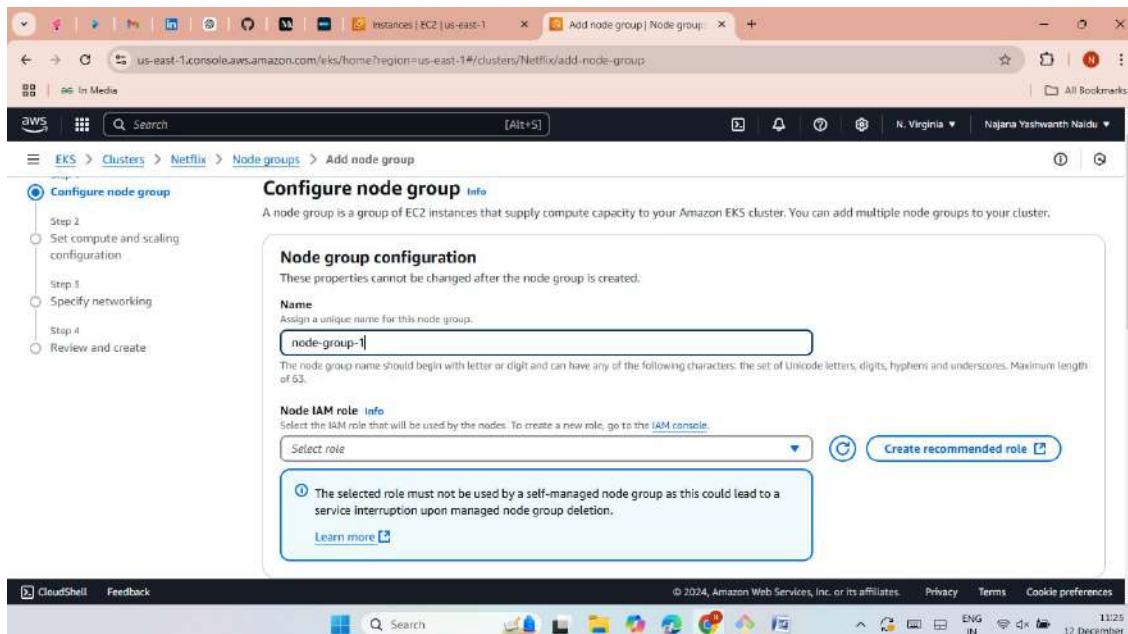
- Here the cluster was creating. It took some time to create.

The screenshot shows the AWS EKS console with the Netflix cluster selected. A notification at the top states: "Add-on(s) kube-proxy, vpc-cni, coredns successfully added to cluster Netflix." The cluster info section shows the status as "Creating", Kubernetes version as 1.29, and support period until March 23, 2025. The provider is listed as EKS. The "Overview" tab is selected. The bottom of the screen shows a Windows taskbar with various icons.

- Here the cluster was created.

The screenshot shows the AWS EKS console with the Netflix cluster selected. A message box displays: "Your cluster's Kubernetes version (1.29) will reach the end of standard support on March 23, 2025. On that date, your cluster will enter the extended support period with additional fees. For more information, see the [pricing page](#).
Upgrade now". The cluster info section shows the status as "Active", Kubernetes version as 1.29, and support period until March 23, 2025. The provider is listed as EKS. The "Overview" tab is selected. The bottom of the screen shows a Windows taskbar with various icons.

- Now create a node group for cluster.



The screenshot shows the AWS IAM 'Create role' wizard at Step 2: Add permissions. The search bar at the top has 'ec2' typed into it. Below the search bar, a table lists 'Permissions policies (3/1020)'. One policy, 'AmazonEC2ContainerRegistryReadOnly', is selected and highlighted with a blue border. Other policies listed include 'AmazonEC2ContainerRegistryFullAccess', 'AmazonEC2ContainerRegistryPowerUser', 'AmazonEC2ContainerServiceAutoscaling', 'AmazonEC2ContainerServiceEvents', 'AmazonEC2ContainerServiceforECS', and 'AmazonEC2ContainerServiceRole'. The table has columns for Policy name, Type, and Description.

The screenshot shows the AWS IAM 'Create role' wizard at Step 2: Add permissions. The search bar at the top has 'cn' typed into it. Below the search bar, a table lists 'Permissions policies (3/1020)'. One policy, 'AmazonEKS_CNI_Policy', is selected and highlighted with a blue border. Another policy, 'AmazonVPCNetworkAccessAnalyzer', is also listed. The table has columns for Policy name, Type, and Description. At the bottom of the screen, there is a note: '▶ Set permissions boundary - optional'.

The screenshot shows the 'Add permissions' step of the IAM role creation wizard. On the left, a sidebar lists three steps: 'Step 1 Select trusted entity', 'Step 2 Add permissions' (which is selected), and 'Step 3 Name, review, and create'. The main area is titled 'Add permissions' and displays a list of 'Permissions policies (3/1020)'. A search bar at the top of the list allows filtering by policy name. The list includes several AWS managed policies, with one specific policy highlighted: 'AmazonEKWorkerNodePolicy'. This policy is described as allowing Amazon EKS worker nodes to access specific AWS services. Other visible policies include 'AmazonEKSNetworkingPolicy', 'AmazonEKWorkerNodeMinima...', 'AmazonHoneycodeWorkbookFu...', 'AmazonHoneycodeWorkbookRe...', and 'AmazonNimbleStudio-LaunchPr...'. The bottom of the screen shows the standard Windows taskbar.

The screenshot shows the 'Name, review, and create' step of the IAM role creation wizard. The sidebar indicates this is the final step. The main area is titled 'Role details' and contains fields for 'Role name' (set to 'node-yash') and 'Description' (set to 'Allows EC2 instances to call AWS services on your behalf'). Below this, the 'Step 1: Select trusted entities' section is shown, which includes a 'Trust policy' editor containing the following JSON code:

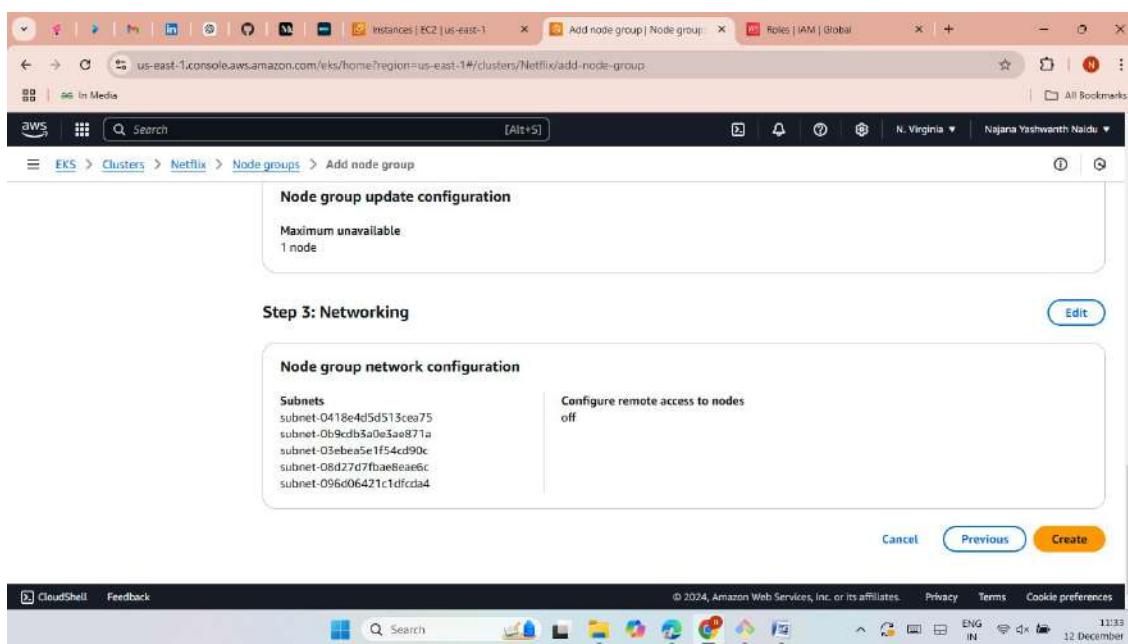
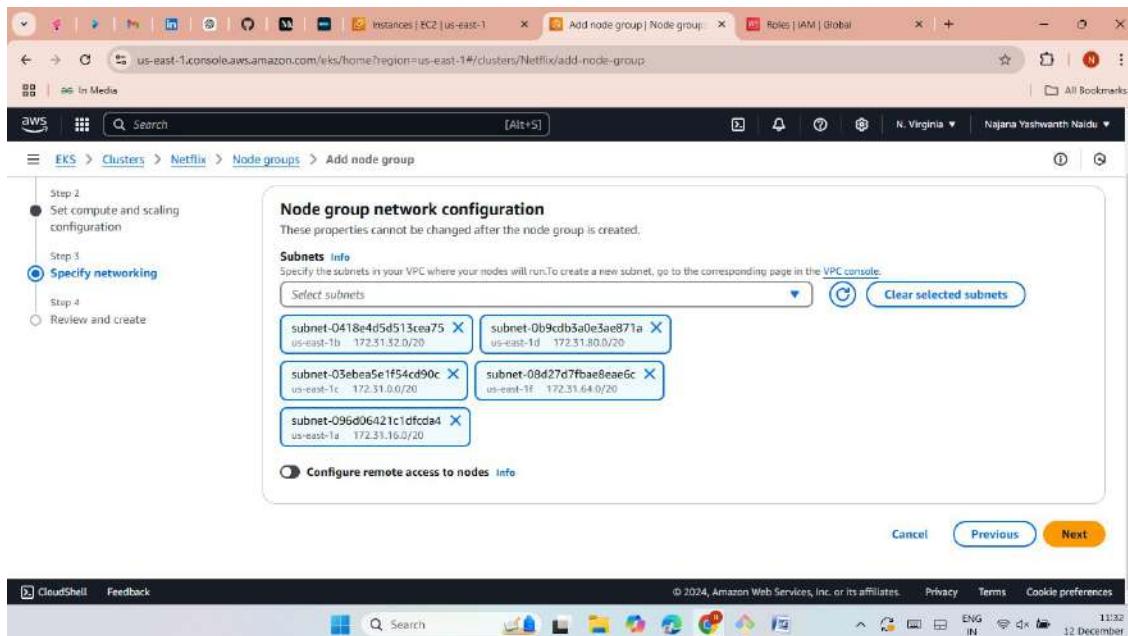
```
1 <{  
2   "Version": "2012-10-17",  
3   "Statement": [  
4     {
```

The screenshot shows the 'Create role' wizard in the AWS IAM console. The current step is 'Step 3: Add tags'. A table lists three AWS managed policies: 'AmazonEC2ContainerRegistryReadOnly', 'AmazonEKS_CNI_Policy', and 'AmazonEKSWorkerNodePolicy'. Below the table, there is a section titled 'Add tags - optional' with a note explaining that tags are key-value pairs used for identification and search. A button 'Add new tag' is available, and a note states that up to 50 more tags can be added. At the bottom right of the wizard, there are 'Cancel', 'Previous', and 'Create role' buttons.

The screenshot shows the 'Roles' page in the AWS IAM console. A green banner at the top indicates that the role 'yash-node' was created with errors, with a link to see the error description. The main table lists two roles: 'node-yash' and 'yash-node'. The 'yash-node' row is selected, indicated by a blue background and a checked checkbox. The table includes columns for 'Role name', 'Trusted entities', and 'Last activity'. Below the table, there is a section for 'Roles Anywhere' with options for 'Access AWS from your non AWS' and 'X.509 Standard'. At the bottom right of the page, there are 'View role', 'Delete', and 'Create role' buttons. The left sidebar shows navigation links for Identity and Access Management (IAM), Access management, and Access reports.

The screenshot shows the 'Configure node group' step in the AWS EKS console. The left sidebar lists steps: Step 2 (Set compute and scaling configuration), Step 3 (Specify networking), and Step 4 (Review and create). The main area is titled 'Node group configuration' and contains a note: 'A node group is a group of EC2 instances that supply compute capacity to your Amazon EKS cluster. You can add multiple node groups to your cluster.' It includes fields for 'Name' (node-group-1) and 'Node IAM role' (yash-node). A warning message states: 'The selected role must not be used by a self-managed node group as this could lead to a service interruption upon managed node group deletion.' Below the warning is a 'Learn more' link.

The screenshot shows the 'Node group update configuration' step. It has a note: 'Maximum unavailable' and 'Set the maximum number or percentage of unavailable nodes to be tolerated during the node group version update.' It offers two options: 'Number' (Enter a number) and 'Percentage' (Specify a percentage). Under 'Number', the value is set to '1 node'. A note below says: 'Node count must be greater than 0.' At the bottom are 'Cancel', 'Previous', and 'Next' buttons.



The screenshot shows the AWS EKS console interface. On the left, there's a navigation sidebar with 'Amazon Elastic Kubernetes Service' selected. Under 'Clusters', there's a 'node-group-1' entry. The main content area is titled 'node-group-1'. A prominent blue banner at the top says 'Node group creation in progress' and 'node-group-1 is now being created. This process may take several minutes.' Below this, there's a 'Node group configuration' section with tabs for 'Info', 'AMI type' (AL2_x86_64), 'Status' (Creating), 'Kubernetes version' (1.29), 'AMI release version' (1.29.10-20241205), 'Instance types' (t3.medium), and 'Disk size' (20 GiB). At the bottom of the configuration section, there are tabs for 'Details', 'Nodes', 'Health issues', 'Kubernetes labels', 'Update config', 'Kubernetes taints', and 'Update h'. The status bar at the bottom right shows the date as 12 December.

➤ Here the node-group was created.

This screenshot shows the same AWS EKS interface after the node group has been successfully created. The 'Status' field in the configuration section is now green with the text 'Active'. The rest of the configuration details remain the same: Kubernetes version 1.29, AMI release version 1.29.10-20241205, instance type t3.medium, and disk size 20 GiB. The 'Details' tab is currently selected. The 'Subnets' section lists four subnets: subnet-0418e4d5d513cea75, subnet-0b9cbb3a0e3ae871a, subnet-03beaa5e1f54cd90c, and subnet-08d27d71bae8aa6c. The status bar at the bottom right shows the date as 12 December.

The screenshot shows the AWS EKS Node Groups console. On the left, there's a sidebar with 'Clusters' (selected), 'Amazon EKS Anywhere', 'Enterprise Subscriptions', and 'Related services' (Amazon ECR, AWS Batch). The main area shows 'AMI release version: 1.29.10-20241205' and 'Instance types: t3.medium'. Below this, the 'Nodes' tab is selected, showing a table with two rows:

Node name	Instance type	Compute	Managed by	Created	Status
ip-172-31-23-244.ec2.internal	t3.medium	Node group	node-group-1	Created 2 minutes ago	Ready
ip-172-31-92-28.ec2.internal	t3.medium	Node group	node-group-1	Created 2 minutes ago	Ready

➤ Now install awscli.

```
ubuntu@ip-172-31-23-232:~$ aws --version
Command 'aws' not found, but can be installed with:
sudo snap install aws-cli # version 1.15.58, or
sudo apt install awscli # version 1.22.34-1
See 'snap info aws-cli' for additional versions.
ubuntu@ip-172-31-23-232:~$ sudo apt install awscli
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bzip2-docs fonts-common fontconfig fonts-droid-fallback fonts-noto-mono fonts-urw-base35 ghostscript groff gsfonts
  hicolor-icon-theme imagemagick imagemagick-6-common imagemagick-6.q16 libao3 libcairo2 libdatriel libdavids libde265-0
  libdeflate0 libdjvuibre-text libdjvuibre2 libfftw3-double3 libgomp1 libgs9 libgs9-common libheif libice6 libidn12 libijs-0.35
  libimbase25 libimagequant0 libjbig0 libjbig2dec0 libjxr-tools libjxr0 liblqr-1-0 libltdl libmagickcore-6.q16-6
  libmagickcore-6.q16-6-extra libmagickwand-6.q16-6 libnetpbm0 libopenexr25 libopenjp2-7 libpango-1.0-0 libpangocairo-1.0-0
  libpangoft2-1.0-0 libpaper-utils libpaper1 libpixman-1-0 libraqm0 libsm6 libthai-data libthai0 libtiff5 libwebp7 libwebpdemux2
  libwebpmux3 libwmflite-0.2-7 libx265-199 libxaw libxcb-render0 libxcb-shm0 libxml6 libxmlxm4 libxrender1 libxt6 mailcap
  mime-support netpbm poppler-data psutils python3-bcore python3-dateutil python3-docutils python3-jmespath python3-olefile
  python3-pil python3-pygments python3-roman python3-rsa python3-s3transfer sgml-base x11-common xml-core
Suggested packages:
  bzip2-doc fonts-noto fonts-freefont-otf | fonts-freefont-ttf fonts-texgyre ghostscript-x imagemagick-doc autotrace cups-bsd | lpr
  | lprng enscript ffmpeg gimp gnuplot grads graphviz hp2xx html2ps libwmf-bin mplayer povray radiance sane-utils texlive-base-bin
  transfig ufraw-batch xdg-utils libfftw3-bin libfftw3-dev inkscape poppler-utils fonts-japanese-mincho | fonts-ipafont-mincho
  fonts-japanese-gothic | fonts-ipafont-gothic fonts-aphic-ukai fonts-aphic-uming fonts-nanum docutils-doc fonts-linuxlibertine
  | ttf-linux-libertine texlive-lang-french texlive-latex-recommended python-pil-doc python-pygments-doc
  ttf-bitstream-vera sgml-base-doc debhelper
The following NEW packages will be installed:
  awscli bzip2-docs fonts-common fontconfig fonts-droid-fallback fonts-noto-mono fonts-urw-base35 ghostscript groff gsfonts
  hicolor-icon-theme imagemagick imagemagick-6-common imagemagick-6.q16 libao3 libcairo2 libdatriel libdavids libde265-0
  libdeflate0 libdjvuibre-text libdjvuibre2 libfftw3-double3 libgomp1 libgs9 libgs9-common libheif libice6 libidn12 libijs-0.35
  libimbase25 libimagequant0 libjbig0 libjbig2dec0 libjxr-tools libjxr0 liblqr-1-0 libltdl libmagickcore-6.q16-6
  libmagickcore-6.q16-6-extra libmagickwand-6.q16-6 libnetpbm0 libopenexr25 libopenjp2-7 libpango-1.0-0 libpangocairo-1.0-0
  libpangoft2-1.0-0 libpaper-utils libpaper1 libpixman-1-0 libraqm0 libsm6 libthai-data libthai0 libtiff5 libwebp7 libwebpdemux2
  libwebpmux3 libwmflite-0.2-7 libx265-199 libxaw libxcb-render0 libxcb-shm0 libxml6 libxmlxm4 libxrender1 libxt6 mailcap
  mime-support netpbm poppler-data psutils python3-bcore python3-dateutil python3-docutils python3-jmespath python3-olefile
  python3-pil python3-pygments python3-roman python3-rsa python3-s3transfer sgml-base x11-common xml-core
0 upgraded, 85 newly installed, 0 to remove and 37 not upgraded.
Need to get 44.9 MB of archives.
```

```
ubuntu@ip-172-31-23-232:~$ update-alternatives: using /usr/bin/display-im6.q16 to provide /usr/bin/display (display) in auto mode
update-alternatives: using /usr/bin/display-im6.q16 to provide /usr/bin/display-im6 (display-im6) in auto mode
update-alternatives: using /usr/bin/montage-im6.q16 to provide /usr/bin/montage (montage) in auto mode
update-alternatives: using /usr/bin/montage-im6.q16 to provide /usr/bin/montage-im6 (montage-im6) in auto mode
update-alternatives: using /usr/bin/mogrify-im6.q16 to provide /usr/bin/mogrify (mogrify) in auto mode
update-alternatives: using /usr/bin/mogrify-im6.q16 to provide /usr/bin/mogrify-im6 (mogrify-im6) in auto mode
Setting up libpangoft2-1.0-0:amd64 (1.50.6+ds-2ubuntu1) ...
Setting up libpangocairo-1.0-0:amd64 (1.50.6+ds-2ubuntu1) ...
Setting up libxml2:amd64 (2.1.1.3-3) ...
Setting up libmagickcore-6.q16-6-extracodec-amd64 (8:6.9.11.60+dfsg-1.3ubuntu0.22.04.5) ...
setting up libxaw/:amd64 (2:1.0.14-1) ...
Setting up groff (1.22.4-8build1) ...
Setting up ImageMagick (8:6.9.11.60+dfsg-1.3ubuntu0.22.04.5) ...
Processing triggers for install-info (6.8-4build1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.8) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for shared-mime-info (2.1-2) ...
Processing triggers for sgml-base (1.30) ...
Setting up docutils-common (0.17.1+dfsg-2) ...
Processing triggers for sgml-base (1.30) ...
Setting up python3-docutils (0.17.1+dfsg-2) ...
Setting up awscli (1.22.34-1) ...
scanning processes...
scanning linux images...

Running kernel seems to be up-to-date.

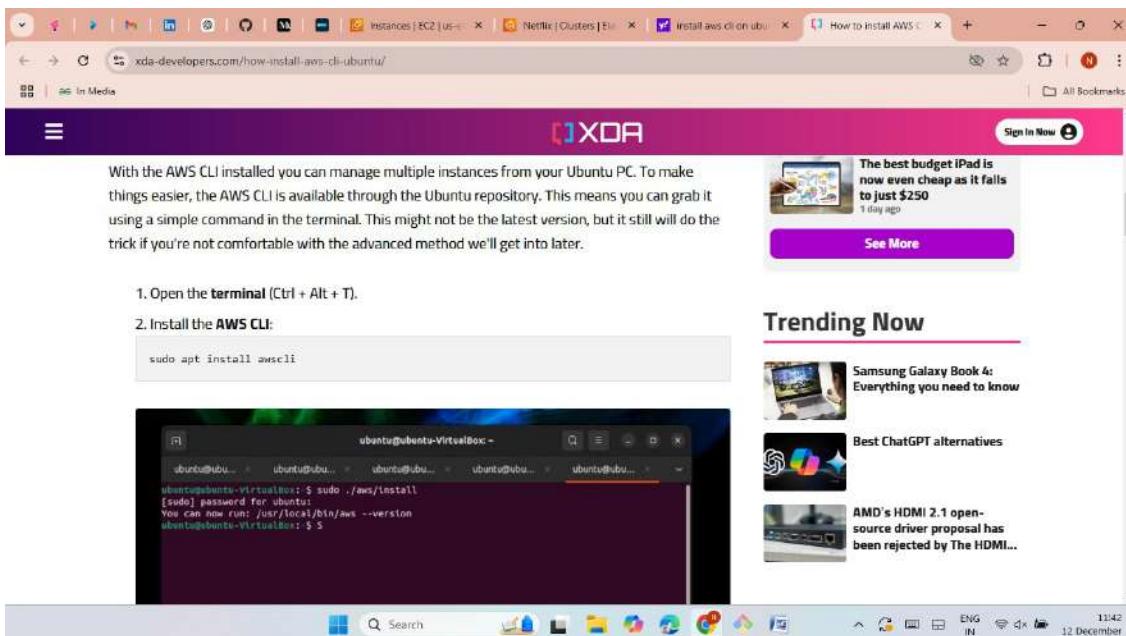
No services need to be restarted.

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-172-31-23-232:~$ ls
ubuntu@ip-172-31-23-232:~$ aws --version
aws-cli/1.22.34 Python/3.10.12 Linux/6.8.0-1015-aws botocore/1.23.34
ubuntu@ip-172-31-23-232:~$
```

Here we have to install updated awscli from Google.



```
ubuntu@ip-172-31-23-232:~$ sudo apt install awscli
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
awscli is already the newest version (1.22.34-1).
0 upgraded, 0 newly installed, 0 to remove and 37 not upgraded.
ubuntu@ip-172-31-23-232:~$
```

```
ubuntu@ip-172-31-23-232:~$ sudo apt install awscli
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
awscli is already the newest version (1.22.34-1).
0 upgraded, 0 newly installed, 0 to remove and 37 not upgraded.
ubuntu@ip-172-31-23-232:~$ sudo apt install curl unzip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libcurl4
Suggested packages:
  zip
The following NEW packages will be installed:
  unzip
The following packages will be upgraded:
  curl libcurl4
2 upgraded, 1 newly installed, 0 to remove and 35 not upgraded.
Need to get 657 kB of archives.
After this operation, 386 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.19 [194 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libcurl4 amd64 7.81.0-1ubuntu1.19 [289 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 unzip amd64 6.0-26ubuntu3.2 [175 kB]
Fetched 657 kB in 0s (18.6 MB/s)
(Reading database ... 78625 files and directories currently installed.)
Preparing to unpack .../curl_7.81.0-1ubuntu1.19_amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.19) over (7.81.0-1ubuntu1.18) ...
Preparing to unpack .../libcurl4_7.81.0-1ubuntu1.19_amd64.deb ...
Unpacking libcurl4:amd64 (7.81.0-1ubuntu1.19) over (7.81.0-1ubuntu1.18) ...
Selecting previously unselected package unzip.
Preparing to unpack .../unzip_6.0-26ubuntu3.2_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.2) ...
Setting up unzip (6.0-26ubuntu3.2) ...
Setting up libcurl4:amd64 (7.81.0-1ubuntu1.19) ...
Setting up curl (7.81.0-1ubuntu1.19) ...
Processing triggers for libc-bin (2.35-0ubuntu3.8) ...
```

```
ubuntu@ip-172-31-23-232:~$ Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.19 [194 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libcurl4 amd64 7.81.0-1ubuntu1.19 [289 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 unzip amd64 6.0-26ubuntu3.2 [175 kB]
Fetched 657 kB in 0s (18.6 MB/s)
(Reading database ... 78625 files and directories currently installed.)
Preparing to unpack .../curl_7.81.0-1ubuntu1.19_amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.19) over (7.81.0-1ubuntu1.18) ...
Preparing to unpack .../libcurl4_7.81.0-1ubuntu1.19_amd64.deb ...
Unpacking libcurl4:amd64 (7.81.0-1ubuntu1.19) over (7.81.0-1ubuntu1.18) ...
Selecting previously unselected package unzip.
Preparing to unpack .../unzip_6.0-26ubuntu3.2_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.2) ...
Setting up unzip (6.0-26ubuntu3.2) ...
Setting up libcurl4:amd64 (7.81.0-1ubuntu1.19) ...
Setting up curl (7.81.0-1ubuntu1.19) ...
Processing triggers for libc-bin (2.35-0ubuntu3.8) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
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-172-31-23-232:~$ curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
  % Total    % Received % Xferd  Average Speed   Time   Time     Current
          Dload  Upload Total Spent   Left Speed
100 64.2M  100 64.2M    0      0  119M      0 --::-- --::-- --::-- 119M
ubuntu@ip-172-31-23-232:~$ ls
awscliv2.zip
ubuntu@ip-172-31-23-232:~$
```

```
ubuntu@ip-172-31-23-232:~$ 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-172-31-23-232:~$ curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
  % Total    % Received % Xferd  Average Speed   Time   Time     Current
          Dload  Upload Total Spent   Left Speed
100 64.2M  100 64.2M    0      0  119M      0 --::-- --::-- --::-- 119M
ubuntu@ip-172-31-23-232:~$ ls
awscliv2.zip
ubuntu@ip-172-31-23-232:~$ unzip awscliv2.zip
Archive: awscliv2.zip
  creating: aws/
  creating: aws/dist/
  inflating: aws/install
  inflating: aws/THIRD_PARTY_LICENSES
  inflating: aws/README.md
  creating: aws/dist/awscli/
  creating: aws/dist/cryptography/
  creating: aws/dist/docutils/
  creating: aws/dist/lib-dynload/
  inflating: aws/dist/aws
  inflating: aws/dist/aws_completer
  inflating: aws/dist/libpython3.12.so.1.0
  inflating: aws/dist/_awsCRT.abi3.so
  inflating: aws/dist/_cffi_backend.cpython-312-x86_64-linux-gnu.so
  inflating: aws/dist/_ruamel_yaml.cpython-312-x86_64-linux-gnu.so
  inflating: aws/dist/libbz2.so.1
  inflating: aws/dist/libbz2ma.so.5
  inflating: aws/dist/libbz2.so.1
  inflating: aws/dist/libffi.so.6
  inflating: aws/dist/libuuid.so.1
  inflating: aws/dist/libgcc_s.so.1
  inflating: aws/dist/libsqlite3.so.0
  inflating: aws/dist/base_library.zip
```

```

ubuntu@ip-172-31-23-232:~$ ls
aws awscli v2.zip
ubuntu@ip-172-31-23-232:~$ sudo ./aws/install
You can now run: /usr/local/bin/aws --version
ubuntu@ip-172-31-23-232:~$ /usr/local/bin/aws --version
aws-cli/2.22.15 Python/3.12.6 Linux/6.8.0-1015-aws exe/x86_64.ubuntu.22
ubuntu@ip-172-31-23-232:~$ ls

```

➤ Now create a Access key Secret key in IAM Security credentials for set up the EKS.

Create access key | IAM | Global

Access key created

This is the only time that the secret access key can be viewed or downloaded. You cannot recover it later. However, you can create a new access key any time.

Step 1
Alternatives to root user access keys

Step 2
Retrieve access key

Access key
If you lose or forget your secret access key, you cannot retrieve it. Instead, create a new access key and make the old key inactive.

Access key	Secret access key
AKIAZI2LEBHWMW2H5A	***** Show

Access key best practices

- Never store your access key in plain text, in a code repository, or in code.
- Disable or delete access key when no longer needed.
- Enable least-privilege permissions.

- First install kubectl from Google.

Method 3 - Install Kubectl using Snap

Snap is another package manager that can be used to install Kubectl on Ubuntu 22.04. This method is suitable if you prefer a simple installation process.

Step 1 - Update system packages

Run the following command to update the system packages:

```
sudo apt update
```

Step 2 - Install Kubectl

Next, to install Kubectl using Snap, run the command below:

```
sudo snap install kubectl --classic
```

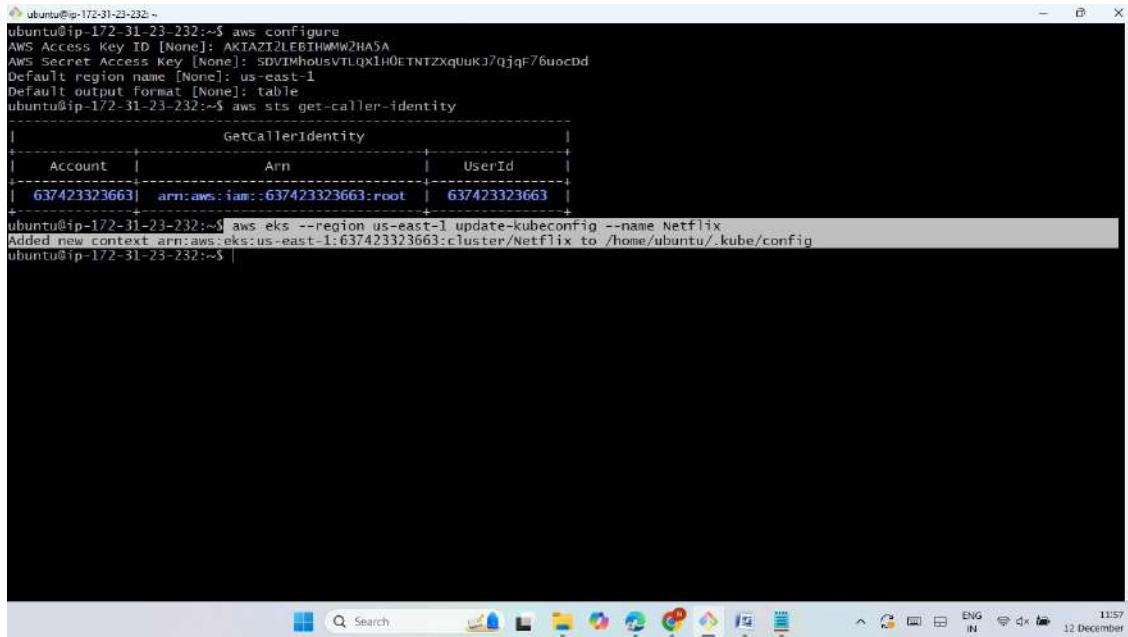
ubuntu@ip-172-31-23-232:~\$
inflating: aws/dist/docutils/parsers/rst/include/isocyr2.txt
inflating: aws/dist/docutils/parsers/rst/include/mmalias.txt
inflating: aws/dist/docutils/parsers/rst/include/isogrk3.txt
inflating: aws/dist/docutils/parsers/rst/include/isopub.txt
ubuntu@ip-172-31-23-232:~\$ ls
aws awscli2.zip
ubuntu@ip-172-31-23-232:~\$ sudo ./aws/install
You can now run: /usr/local/bin/aws --version
ubuntu@ip-172-31-23-232:~\$ /usr/local/bin/aws --version
aws-cli/2.22.15 Python/3.12.6 Linux/6.8.0-105-aws exe/x86_64.ubuntu.22
ubuntu@ip-172-31-23-232:~\$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1180 kB]
Fetched 1437 kB in 1s (268 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
35 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-23-232:~\$ sudo snap install kubectl --classic
kubectl/1.31.4 From: Canonical
ubuntu@ip-172-31-23-232:~\$ kubectl version --output=yaml
clientVersion:
 buildDate: "2024-12-11T02:16:58Z"
 compiler: gc
 gitCommit: a78aa07129b8539636eb86a9d00e31b2720fe06b
 gitTreeState: clean
 gitVersion: v1.31.4
 goVersion: go1.22.10
 major: "1"
 minor: "31"
 platform: linux/amd64
kustomizeVersion: v5.4.2
The connection to the server localhost:8080 was refused - did you specify the right host or port?
ubuntu@ip-172-31-23-232:~\$

- Now configure with the created AWS access key and secret key.

```
ubuntu@ip-172-31-23-232:~$ aws configure
AWS Access Key ID [None]: AKTAZT2LEBTIHMW2HA5A
AWS Secret Access Key [None]: SDVIMh0usVTLQx1H0ETNTZXquuKj7qjqF76uoCDD
Default region name [None]: us-east-1
Default output format [None]: table
ubuntu@ip-172-31-23-232:~$
```

```
ubuntu@ip-172-31-23-232:~$ aws configure
AWS Access Key ID [None]: AKTAZT2LEBTIHMW2HA5A
AWS Secret Access Key [None]: SDVIMh0usVTLQx1H0ETNTZXquuKj7qjqF76uoCDD
Default region name [None]: us-east-1
Default output format [None]: table
ubuntu@ip-172-31-23-232:~$ aws sts get-caller-identity
+-----+-----+-----+
| Account | Arn      | UserId          |
+-----+-----+-----+
| 637423323663 | arn:aws:iam::637423323663:root | 637423323663 |
+-----+-----+-----+
ubuntu@ip-172-31-23-232:~$
```

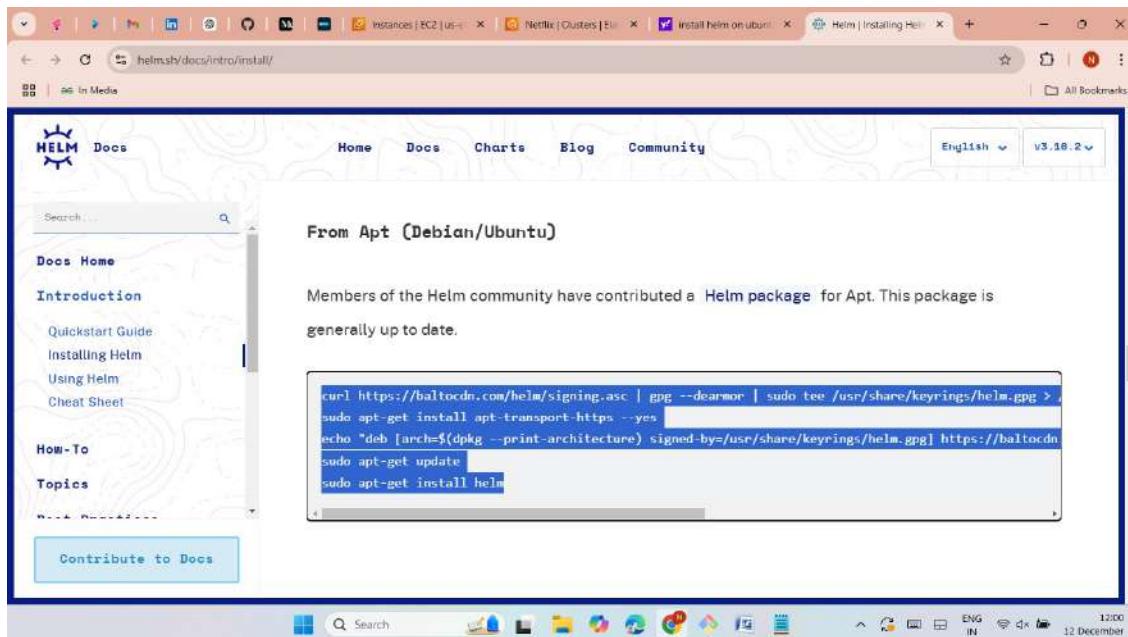
- Now update the EKS.



```

ubuntu@ip-172-31-23-232:~$ aws configure
AWS Access Key ID [None]: AKTAZT2LEBTIHWYWZHA5A
AWS Secret Access Key [None]: SDVIMhou5VTLQX1H0ETNTZXquUKj7qjqF76uoCDD
Default region name [None]: us-east-1
Default output format [None]: table
ubuntu@ip-172-31-23-232:~$ aws sts get-caller-identity
{
    "GetCallerIdentity": [
        {
            "Account": "637423323663",
            "Arn": "arn:aws:iam::637423323663:root",
            "UserId": "637423323663"
        }
    ]
}
ubuntu@ip-172-31-23-232:~$ aws eks --region us-east-1 update-kubeconfig --name Netflix
Added new context arn:aws:eks:us-east-1:637423323663:cluster/Netflix to /home/ubuntu/.kube/config
ubuntu@ip-172-31-23-232:~$
```

- Now install HELM form Google.
- **Helm** is a **package manager for Kubernetes** that simplifies the process of deploying, managing, and configuring applications on Kubernetes clusters. Think of it as a tool to automate Kubernetes deployments using pre-configured templates and reusable components called **Helm Charts**.



The screenshot shows a web browser window with the URL <https://helm.sh/docs/intro/install/>. The page is titled "From Apt (Debian/Ubuntu)". It contains instructions for installing Helm using an apt package. A code block shows the following command:

```

curl https://baltocdn.com/helm/signing.asc | gpg --dearmor | sudo tee /usr/share/keyrings/helm.gpg >
sudo apt-get install apt-transport-https --yes
echo "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/helm.gpg] https://baltocdn.com/helm/deb/ stable main" | sudo tee /etc/apt/sources.list.d/helm-stable.list
sudo apt-get update
sudo apt-get install helm

```

```
ubuntu@ip-172-31-23-232:~$ curl https://baltocdn.com/helm/signing.asc | gpg --dearmor | sudo tee /usr/share/keyrings/helm.gpg > /dev/null
% Total    % Received % Xferd  Average Speed   Time     Time   Current
          Dload  Upload   Total Spent  Left  Speed
100 1699  100 1699    0      0  10765  0:--:-- --:--:--:--:--:-- 10891
ubuntu@ip-172-31-23-232:~$ sudo apt-get install apt-transport-https --yes
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 35 not upgraded.
Need to get 1510 B of archives.
After this operation, 170 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 apt-transport-https all 2.4.13 [1510 B]
Fetched 1510 B in 0s (83.1 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 78643 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.4.13_all.deb ...
Unpacking apt-transport-https (2.4.13) ...
Setting up apt-transport-https (2.4.13) ...
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-172-31-23-232:~$ |
```

```
ubuntu@ip-172-31-23-232: ~
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-23-232:~$ echo "deb [arch=amd64 signed-by=/usr/share/keyrings/helm.gpg] https://baltocdn.com/helm/stable/debian all main" | sudo tee /etc/apt/sources.list.d/helm-stable-debian.list
deb [arch=amd64 signed-by=/usr/share/keyrings/helm.gpg] https://baltocdn.com/helm/stable/debian all main
ubuntu@ip-172-31-23-232:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:5 https://baltocdn.com/helm/stable/debian all InRelease [7652 B]
Get:6 https://baltocdn.com/helm/stable/debian all/main amd64 Packages [4552 B]
Fetched 12.2 kB in 1s (20.5 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-23-232:~$ sudo apt-get install helm
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  helm
0 upgraded, 1 newly installed, 0 to remove and 35 not upgraded.
Need to get 17.3 MB of archives.
After this operation, 57.2 MB of additional disk space will be used.
Get:1 https://baltocdn.com/helm/stable/debian all/main amd64 helm amd64 3.16.3-1 [17.3 MB]
Fetched 17.3 MB in 12s (1485 kB/s)
Selecting previously unselected package helm.
(Reading database ... 78647 files and directories currently installed.)
Preparing to unpack .../helm_3.16.3-1_amd64.deb ...
Unpacking helm (3.16.3-1) ...
Setting up helm (3.16.3-1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.
```

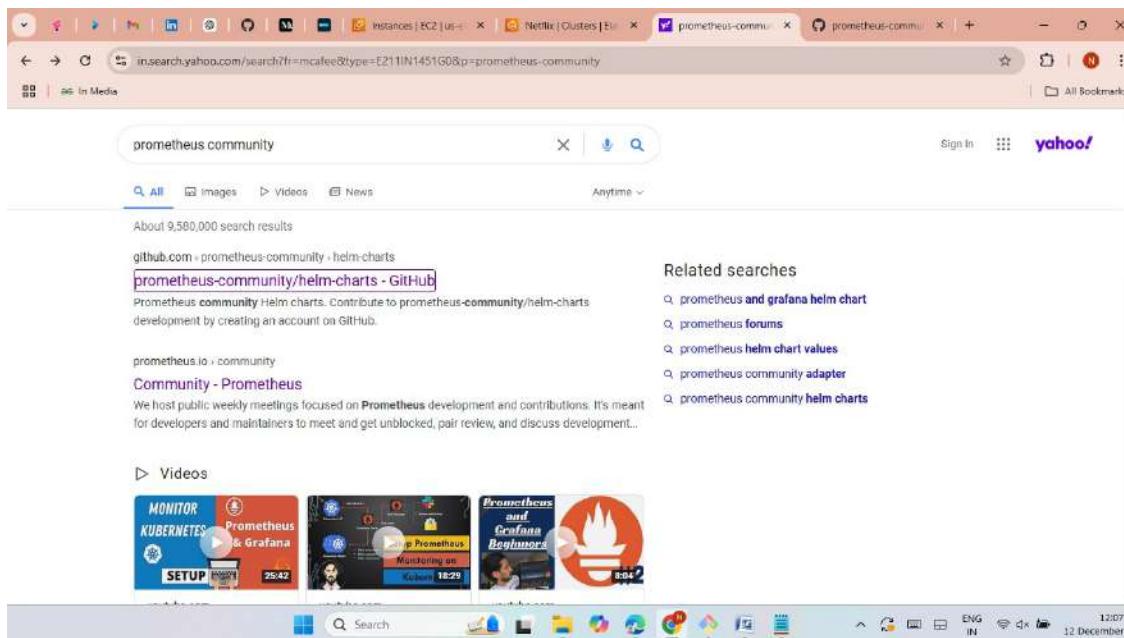
```

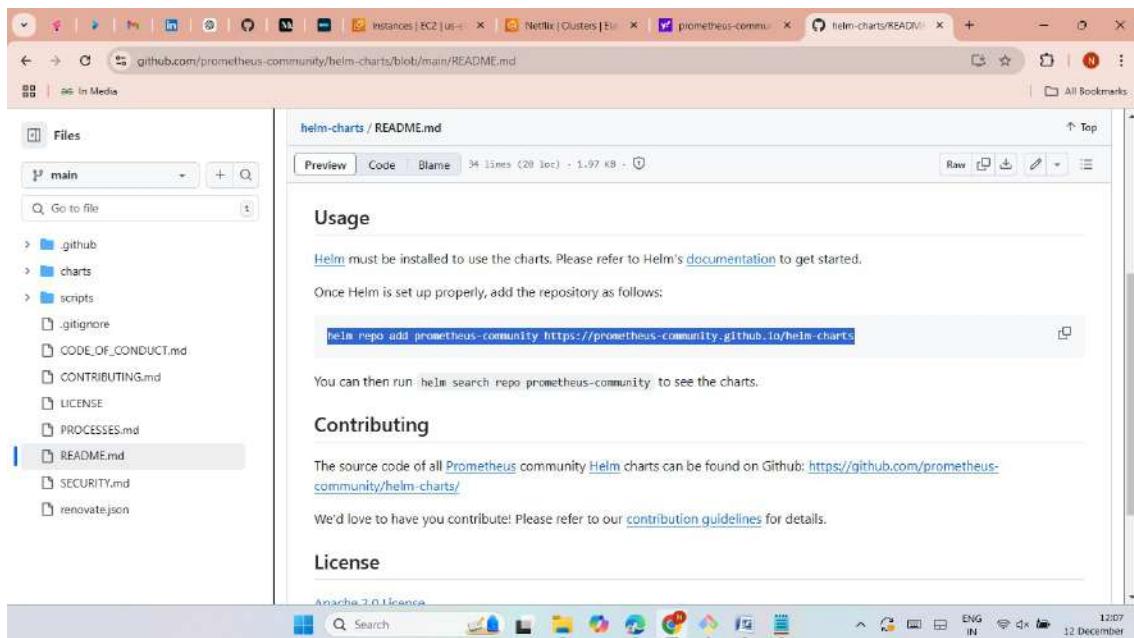
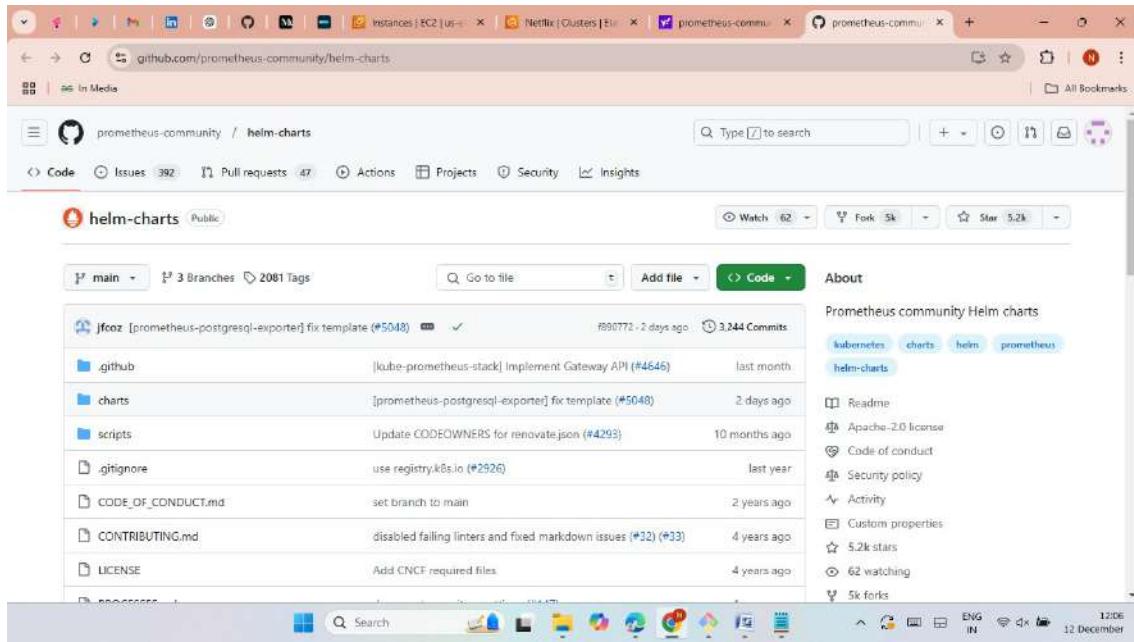
ubuntu@ip-172-31-23-232:~$ sudo apt-get install helm
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  helm
0 upgraded, 1 newly installed, 0 to remove and 35 not upgraded.
Need to get 17.3 MB of archives.
After this operation, 57.2 MB of additional disk space will be used.
Get:1 https://baltocdn.com/helm/stable/debian all/main amd64 helm amd64 3.16.3-1 [17.3 MB]
Fetched 17.3 MB in 12s (1485 kB/s)
Selecting previously unselected package helm.
(Reading database ... 78647 files and directories currently installed.)
Preparing to unpack .../helm_3.16.3-1_amd64.deb ...
Unpacking helm (3.16.3-1) ...
Setting up helm (3.16.3-1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning /var/lib/dpkg/info...
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-172-31-23-232:~$ aws awscli v2 zip snap
ubuntu@ip-172-31-23-232:~$ 

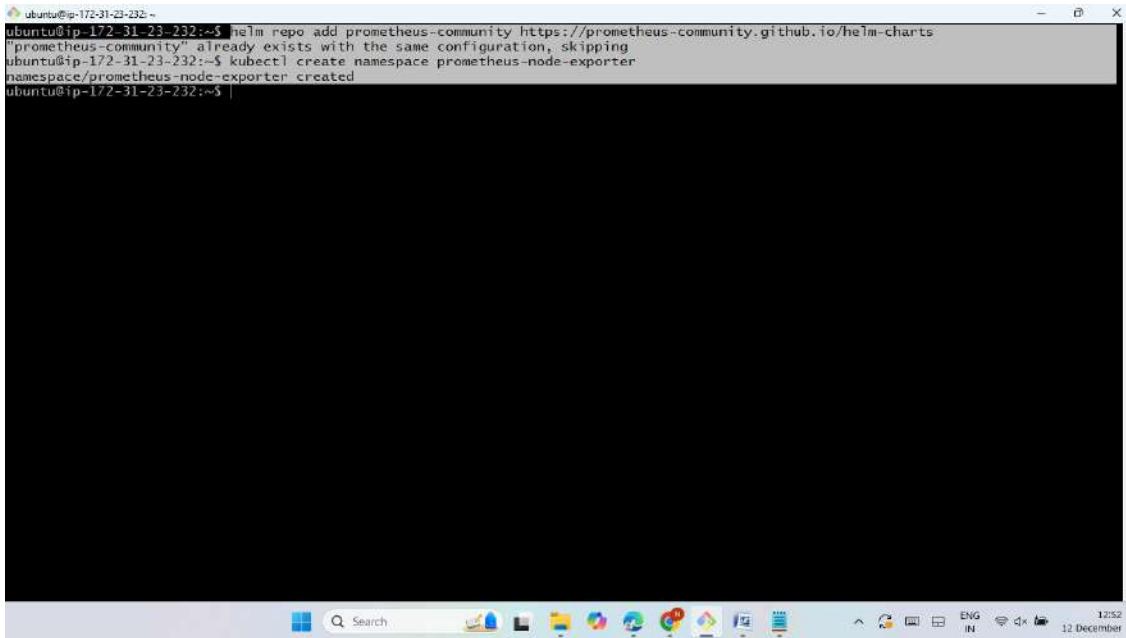
```

➤ Now setup helm chart.





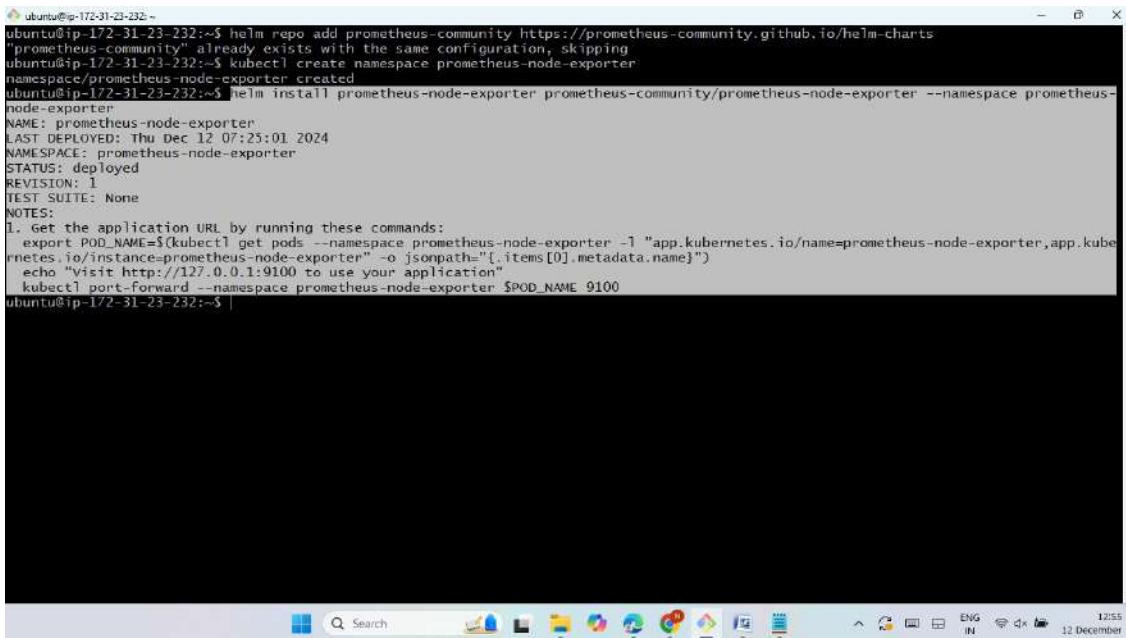
- Now Change API version to v1 then add **interactiveMode: IfAvailable** in config file.
- Then AWS configure with the access key and secret key.
- Now setup Prometheus node exporter namespace.



```
ubuntu@ip-172-31-23-232:~$ helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" already exists with the same configuration, skipping
ubuntu@ip-172-31-23-232:~$ kubectl create namespace prometheus-node-exporter
namespace/prometheus-node-exporter created
ubuntu@ip-172-31-23-232:~$
```

The screenshot shows a terminal window on an Ubuntu desktop environment. The terminal command history is visible, starting with 'helm repo add' to add the Prometheus community chart repository. It then checks if the repository already exists and creates a new namespace named 'prometheus-node-exporter'. The status message 'namespace/prometheus-node-exporter created' is shown. The desktop taskbar at the bottom includes icons for various applications like a browser, file manager, and system tools, along with system status indicators like battery level and date/time.

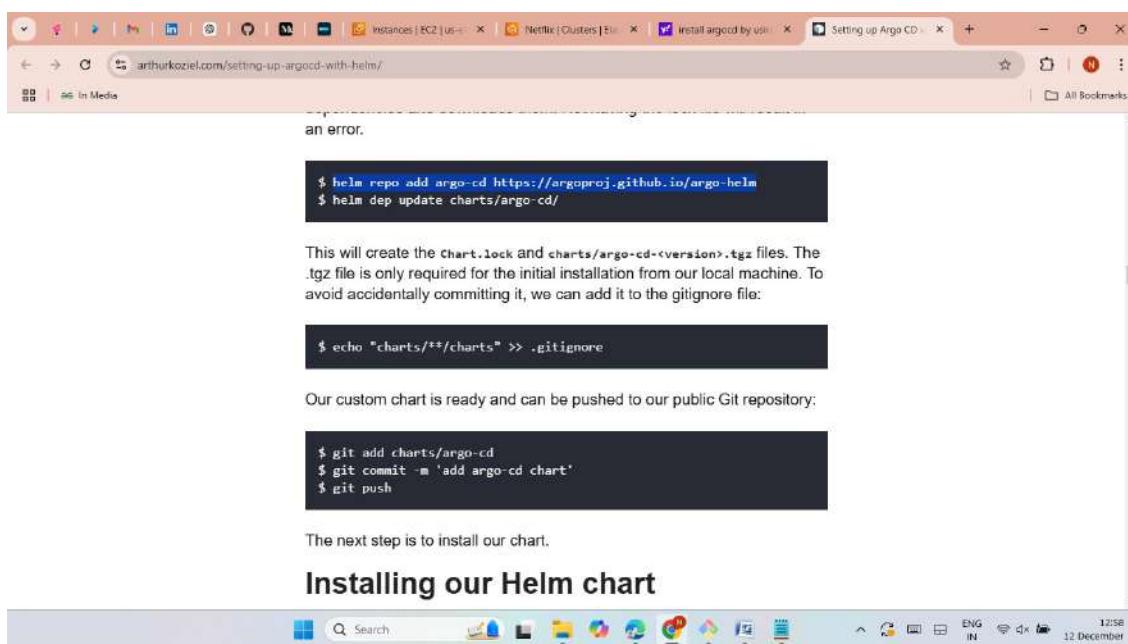
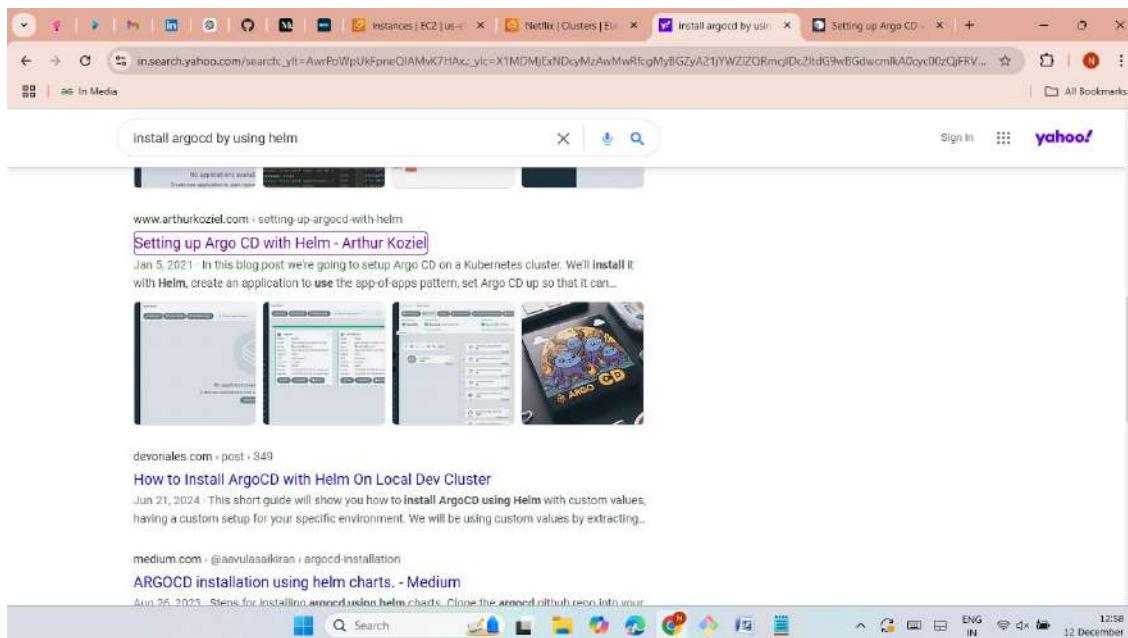
- Now install Prometheus node exporter with the namespace.



```
ubuntu@ip-172-31-23-232:~$ helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" already exists with the same configuration, skipping
ubuntu@ip-172-31-23-232:~$ kubectl create namespace prometheus-node-exporter
namespace/prometheus-node-exporter created
ubuntu@ip-172-31-23-232:~$ helm install prometheus-node-exporter prometheus-community/prometheus-node-exporter --namespace prometheus-node-exporter
NAME: prometheus-node-exporter
LAST DEPLOYED: Thu Dec 12 07:25:01 2024
NAMESPACE: prometheus-node-exporter
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
1. Get the application URL by running these commands:
   export POD_NAME=$(kubectl get pods --namespace prometheus-node-exporter -l "app.kubernetes.io/name=prometheus-node-exporter,app.kubernetes.io/instance=prometheus-node-exporter" -o jsonpath=".items[0].metadata.name")
   echo "Visit http://127.0.0.1:9100 to use your application"
   kubectl port-forward --namespace prometheus-node-exporter $POD_NAME 9100
ubuntu@ip-172-31-23-232:~$
```

This screenshot shows the continuation of the terminal session from the previous one. It installs the 'prometheus-node-exporter' chart from the 'prometheus-community' repository into the 'prometheus-node-exporter' namespace. The output provides deployment details such as the name, last deployment time, namespace, status, revision, and test suite. It also includes notes on how to get the application URL by running specific commands involving 'kubectl' to get the pod name and 'port-forward' it to port 9100. The desktop taskbar at the bottom is visible again.

- Now setup the ARGOCD by using helm.
- **ArgoCD** (Argo Continuous Delivery) is a declarative, GitOps-based **continuous delivery tool** for Kubernetes. It is part of the Argo project and is designed to automate and streamline the deployment of applications to Kubernetes clusters by using Git repositories as the single source of truth for application configurations.



```
ubuntu@ip-172-31-23-232:~$ helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" already exists with the same configuration, skipping
ubuntu@ip-172-31-23-232:~$ kubectl create namespace prometheus-node-exporter
ubuntu@ip-172-31-23-232:~$ helm install prometheus-node-exporter prometheus-community/prometheus-node-exporter --namespace prometheus-node-exporter
NAME: prometheus-node-exporter
LAST DEPLOYED: Thu Dec 12 07:25:01 2024
NAMESPACE: prometheus-node-exporter
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
1. Get the application URL by running these commands:
  export POD_NAME=$(kubectl get pods --namespace prometheus-node-exporter -l "app.kubernetes.io/name=prometheus-node-exporter,app.kubernetes.io/instance=prometheus-node-exporter" -o jsonpath=".items[0].metadata.name")
  echo "Visit http://127.0.0.1:9100 to use your application"
  kubectl port-forward --namespace prometheus-node-exporter $POD_NAME 9100
ubuntu@ip-172-31-23-232:~$ helm repo add argo-cd https://argoproj.github.io/argo-helm
"argo-cd" has been added to your repositories
ubuntu@ip-172-31-23-232:~$ helm repo update
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "argo-cd" chart repository
...Successfully got an update from the "prometheus-community" chart repository
Update Complete. Happy Helm-ing!
ubuntu@ip-172-31-23-232:~$
```

```
ubuntu@ip-172-31-23-232:~$ kubectl create namespace argocd
namespace/argocd created
ubuntu@ip-172-31-23-232:~$ helm install argocd argo-cd/argo-cd -n argocd
Command 'helm' not found, did you mean:
  command 'hell' from snap hell (1.0)
  command 'helm' from snap helm (3.16.3)
  command 'haml' from deb ruby-haml (5.2.2-1)
See 'snap info <snapname>' for additional versions.
ubuntu@ip-172-31-23-232:~$ helm install argocd argo-cd/argo-cd -n argocd
NAME: argocd
LAST DEPLOYED: Thu Dec 12 07:32:28 2024
NAMESPACE: argocd
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
In order to access the server UI you have the following options:
1. kubectl port-forward service/argocd-server -n argocd 8080:443
   and then open the browser on http://localhost:8080 and accept the certificate
2. enable ingress in the values file 'server.ingress.enabled' and either
   - Add the annotation for ssl passthrough: https://argo-cd.readthedocs.io/en/stable/operator-manual/ingress/#option-1-ssl-passthrough
   - Set the 'configs.params.'server.insecure'' in the values file and terminate SSL at your ingress: https://argo-cd.readthedocs.io/en/stable/operator-manual/ingress/#option-2-multiple-ingress-objects-and-hosts

After reaching the UI the first time you can login with username: admin and the random password generated during the installation. You can find the password by running:
kubectl -n argocd get secret argocd-initial-admin-secret -o jsonpath="{.data.password}" | base64 -d
(You should delete the initial secret afterwards as suggested by the Getting Started Guide: https://argo-cd.readthedocs.io/en/stable/getting-started/#4-login-using-the-cli)
ubuntu@ip-172-31-23-232:~$
```

```

ubuntu@ip-172-31-23-232:~$ kubectl -n argocd get secret argocd-initial-admin-secret -o jsonpath='{.data.password}' | base64 -d
(You should delete the initial secret afterwards as suggested by the Getting Started Guide: https://argo-cd.readthedocs.io/en/stable/getting-started/#4-login-using-the-cli)
ubuntu@ip-172-31-23-232:~$ kubectl get all -n argocd
NAME                                         READY   STATUS    RESTARTS   AGE
pod/argocd-application-controller-0          1/1    Running   0          49s
pod/argocd-applicationset-controller-5b89c58bb7-6zpfq 1/1    Running   0          49s
pod/argocd-dex-server-70f5778c-x79jm        1/1    Running   0          49s
pod/argocd-notifications-controller-67dd86c57c-sd9qp 1/1    Running   0          50s
pod/argocd-redis-6c68fc9dd-746pb           1/1    Running   0          49s
pod/argocd-redis-secret-init-vb6r          0/1    Completed  0          65s
pod/argocd-repo-server-c6d6897c-kjv1m       1/1    Running   0          49s
pod/argocd-server-96cf597c9-6q16k          1/1    Running   0          49s

NAME                           TYPE     CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
service/argocd-applicationset-controller ClusterIP 10.100.230.69 <none>        7000/TCP        50s
service/argocd-dex-server                 ClusterIP 10.100.48.134 <none>        5556/TCP, 5557/TCP 50s
service/argocd-redis                     ClusterIP 10.100.206.197 <none>        6379/TCP        50s
service/argocd-repo-server                ClusterIP 10.100.173.80 <none>        8081/TCP        50s
service/argocd-server                   ClusterIP 10.100.63.169 <none>        80/TCP, 443/TCP  50s

NAME                                         READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/argocd-applicationset-controller 1/1     1           1           50s
deployment.apps/argocd-dex-server              1/1     1           1           50s
deployment.apps/argocd-notifications-controller 1/1     1           1           50s
deployment.apps/argocd-redis                  1/1     1           1           50s
deployment.apps/argocd-repo-server             1/1     1           1           50s
deployment.apps/argocd-server                 1/1     1           1           50s

NAME                                         DESIRED  CURRENT  READY   AGE
replicaset.apps/argocd-applicationset-controller-5b89c58bb7 1        1        1        50s
replicaset.apps/argocd-dex-server-70f57785c            1        1        1        50s
replicaset.apps/argocd-notifications-controller-67dd86c57c 1        1        1        50s
replicaset.apps/argocd-redis-6c68fc9dd4d             1        1        1        50s
replicaset.apps/argocd-repo-server-c6d6897c            1        1        1        50s
replicaset.apps/argocd-server-96cf597c9               1        1        1        50s

```

```

ubuntu@ip-172-31-23-232:~$ kubectl -n argocd get secret argocd-initial-admin-secret -o jsonpath='{.data.password}' | base64 -d
(You should delete the initial secret afterwards as suggested by the Getting Started Guide: https://argo-cd.readthedocs.io/en/stable/getting-started/#4-login-using-the-cli)
ubuntu@ip-172-31-23-232:~$ kubectl get all -n argocd
NAME                                         READY   STATUS    RESTARTS   AGE
pod/argocd-application-controller-0          1/1    Running   0          49s
pod/argocd-applicationset-controller-5b89c58bb7-6zpfq 1/1    Running   0          49s
pod/argocd-dex-server-70f5778c-x79jm        1/1    Running   0          49s
pod/argocd-notifications-controller-67dd86c57c-sd9qp 1/1    Running   0          50s
pod/argocd-redis-6c68fc9dd-746pb           1/1    Running   0          49s
pod/argocd-redis-secret-init-vb6r          0/1    Completed  0          65s
pod/argocd-repo-server-c6d6897c-kjv1m       1/1    Running   0          49s
pod/argocd-server-96cf597c9-6q16k          1/1    Running   0          49s

NAME                           TYPE     CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
service/argocd-applicationset-controller ClusterIP 10.100.230.69 <none>        7000/TCP        50s
service/argocd-dex-server                 ClusterIP 10.100.48.134 <none>        5556/TCP, 5557/TCP 50s
service/argocd-redis                     ClusterIP 10.100.206.197 <none>        6379/TCP        50s
service/argocd-repo-server                ClusterIP 10.100.173.80 <none>        8081/TCP        50s
service/argocd-server                   ClusterIP 10.100.63.169 <none>        80/TCP, 443/TCP  50s

NAME                                         READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/argocd-applicationset-controller 1/1     1           1           50s
deployment.apps/argocd-dex-server              1/1     1           1           50s
deployment.apps/argocd-notifications-controller 1/1     1           1           50s
deployment.apps/argocd-redis                  1/1     1           1           50s
deployment.apps/argocd-repo-server             1/1     1           1           50s
deployment.apps/argocd-server                 1/1     1           1           50s

NAME                                         DESIRED  CURRENT  READY   AGE
replicaset.apps/argocd-applicationset-controller-5b89c58bb7 1        1        1        50s
replicaset.apps/argocd-dex-server-70f57785c            1        1        1        50s
replicaset.apps/argocd-notifications-controller-67dd86c57c 1        1        1        50s
replicaset.apps/argocd-redis-6c68fc9dd4d             1        1        1        50s
replicaset.apps/argocd-repo-server-c6d6897c            1        1        1        50s
replicaset.apps/argocd-server-96cf597c9               1        1        1        50s

NAME                                         READY   AGE
statefulset.apps/argocd-application-controller 1/1    50s

NAME                                         COMPLETIONS   DURATION   AGE
job.batch/argocd-redis-secret-init          1/1    14s         65s
ubuntu@ip-172-31-23-232:~$
```

```

ubuntu@ip-172-31-23-232:~$ export ARGOCD_SERVER='kubectl get svc argoctl-server -n argoctl -o json | jq --raw-output ".status.loadBalancer.ingress[0].hostname"'
ubuntu@ip-172-31-23-232:~$ echo $ARGOCD_SERVER
ubuntu@ip-172-31-23-232:~$ echo ARGOCD_SERVER
ARGOCD_SERVER
ubuntu@ip-172-31-23-232:~$ echo $ARGOCD_SERVER
ubuntu@ip-172-31-23-232:~$ echo ARGOCD_SERVER
ubuntu@ip-172-31-23-232:~$ echo ARGOCD_SERVER
null
ubuntu@ip-172-31-23-232:~$ export ARGOCD_SERVER=$(kubectl get svc argoctl-server -n argoctl -o json | jq --raw-output ".status.loadBalancer.ingress[0].hostname")
ubuntu@ip-172-31-23-232:~$ echo $ARGOCD_SERVER
null
ubuntu@ip-172-31-23-232:~$ export ARGOCD_SERVER=kubectl get svc argoctl-server -n argoctl -o json | jq --raw-output ".status.loadBalancer.ingress[0].hostname"
bash: export: 'argoctl-server': not a valid identifier
bash: export: '-n': not a valid identifier
bash: export: '-o': not a valid identifier
ubuntu@ip-172-31-23-232:~$ export ARGOCD_SERVER=kubectl get svc argoctl-server -n argoctl -o json | jq --raw-output ".status.loadBalancer.ingress[0].hostname"
bash: export: 'argoctl-server': not a valid identifier
bash: export: '-n': not a valid identifier
bash: export: '-o': not a valid identifier
ubuntu@ip-172-31-23-232:~$ export ARGOCD_SERVER=$(kubectl get svc argoctl-server -n argoctl -o json | jq --raw-output ".status.loadBalancer.ingress[0].hostname")
ubuntu@ip-172-31-23-232:~$ echo $ARGOCD_SERVER
null
ubuntu@ip-172-31-23-232:~$ kubectl get svc argoctl-server -n argoctl
NAME      TYPE      CLUSTER-IP   EXTERNAL-IP   PORT(S)      AGE
argoctl-server   ClusterIP  10.100.63.169 <none>        80/TCP,443/TCP   18m
ubuntu@ip-172-31-23-232:~$ kubectl get svc argoctl-server -n argoctl -o json
{
  "apiVersion": "v1",
  "kind": "Service",
  "metadata": {
    "annotations": {
      "meta.helm.sh/release-name": "argoctl"
    }
  }
}

```

- Here I failed to create external IP(loadbalancer) so I gave some commands to create external IP to host the ARGOCD.

```

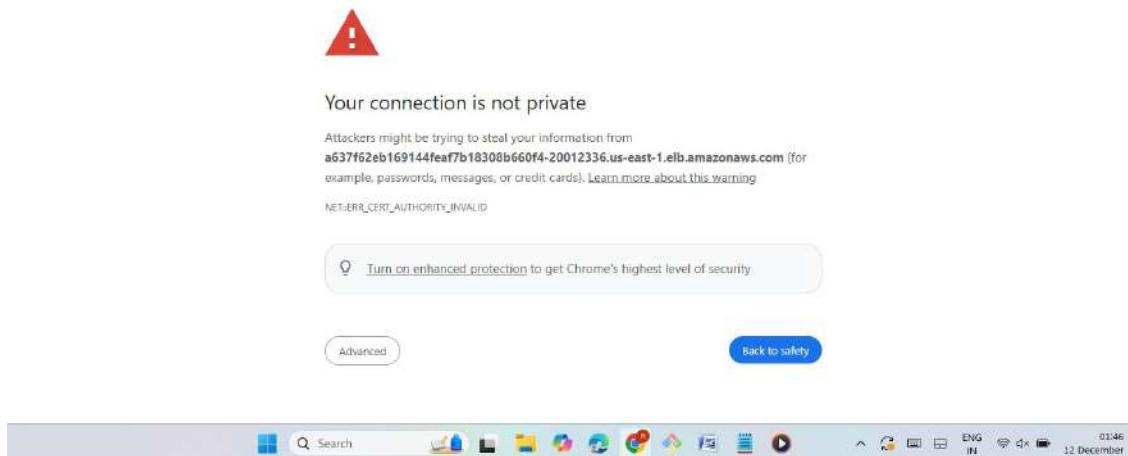
ubuntu@ip-172-31-23-232:~$ Building dependency tree... Done
Reading state information... Done
jq is already the newest version (1.6-2.1ubuntu3).
0 upgraded, 0 newly installed, 0 to remove and 35 not upgraded.
ubuntu@ip-172-31-23-232:~$ export ARGOCD_SERVER='kubectl get svc argoctl-server -n argoctl -o json | jq --raw-output ".status.loadBalancer.ingress[0].hostname"'
ubuntu@ip-172-31-23-232:~$ echo $ARGOCD_SERVER
ubuntu@ip-172-31-23-232:~$ kubectl get svc argoctl-server -n argoctl
NAME      TYPE      CLUSTER-IP   EXTERNAL-IP   PORT(S)      AGE
argoctl-server   ClusterIP  10.100.63.169 <none>        80/TCP,443/TCP   35m
ubuntu@ip-172-31-23-232:~$ kubectl get svc argoctl-server -n argoctl -o jsonpath='{.spec.type}'
ClusterIP
ubuntu@ip-172-31-23-232:~$ kubectl patch svc argoctl-server -n argoctl -p '{"spec": {"type": "LoadBalancer"}}'
service/argoctl-server patched
ubuntu@ip-172-31-23-232:~$ kubectl describe svc argoctl-server -n argoctl
Name:           argoctl-server
Namespace:      argoctl
Labels:         app.kubernetes.io/component=server
                app.kubernetes.io/instance=argoctl
                app.kubernetes.io/managed-by=Helm
                app.kubernetes.io/name=argoctl-server
                app.kubernetes.io/part-of=argoctl
                app.kubernetes.io/version=v2.13.2
                helm.sh/chart=argo-cd-7.7.10
Annotations:   meta.helm.sh/release-name: argoctl
                meta.helm.sh/release-namespace: argoctl
Selector:      app.kubernetes.io/instance=argoctl,app.kubernetes.io/name=argoctl-server
Type:          LoadBalancer
IP Family Policy: SingleStack
IP Families:  IPv4
IP:            10.100.63.169
IPs:           10.100.63.169
LoadBalancer Ingress: a637f62eb169144feaf7b18308b660f4-20012336.us-east-1.elb.amazonaws.com
Port:          http  80/TCP
TargetPort:    8080/TCP
NodePort:     http  30344/TCP
Endpoints:    172.31.83.102:8080
Port:          https 443/TCP

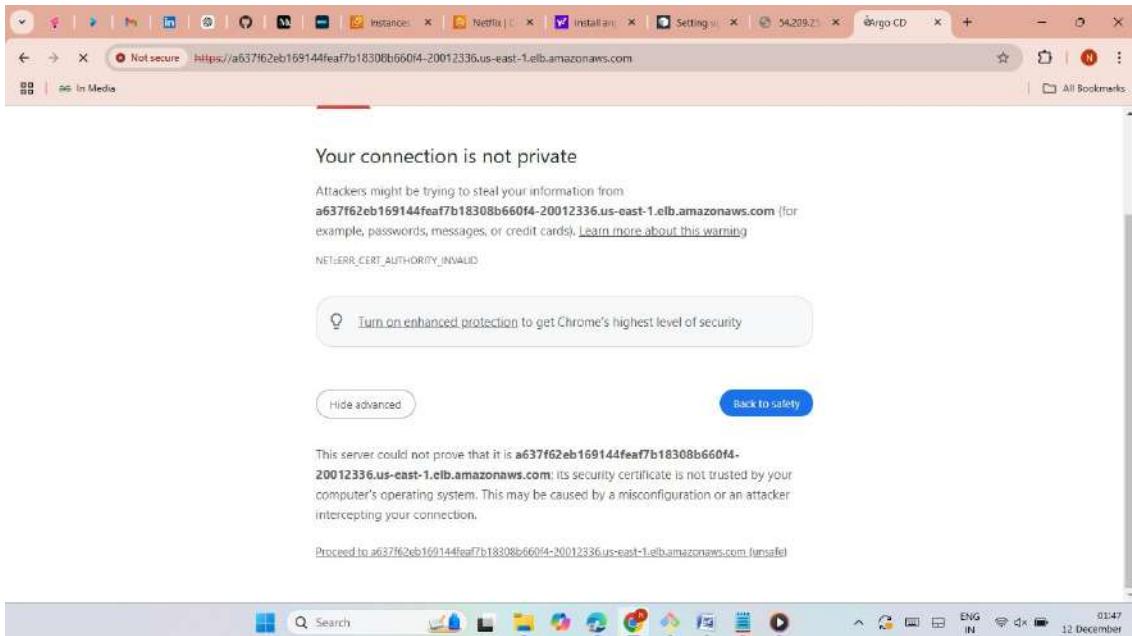
```

```

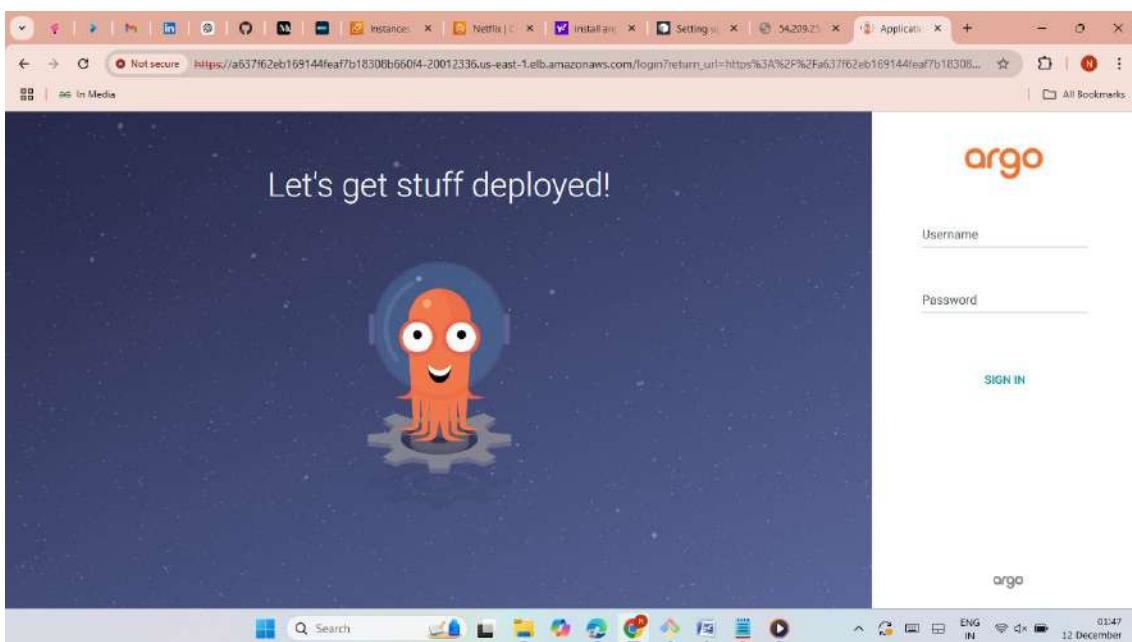
ubuntu@ip-172-31-23-232:~$ meta.helm.sh/release-namespace: argocd
app.kubernetes.io/instance=argocd,app.kubernetes.io/name=argocd-server
Selector:
Type: LoadBalancer
IP Family Policy: SingleStack
IP Families: IPv4
IP: 10.100.63.169
IPs: 10.100.63.169
LoadBalancer Ingress: a637f62eb169144feaf7b18308b660f4-20012336.us-east-1.elb.amazonaws.com
Port: http 80/TCP
TargetPort: 8080/TCP
NodePort: http 30344/TCP
Endpoints: 172.31.83.102:8080
Port: https 443/TCP
TargetPort: 8080/TCP
NodePort: https 31396/TCP
Endpoints: 172.31.83.102:8080
Session Affinity: None
External Traffic Policy: Cluster
Internal Traffic Policy: Cluster
Events:
  Type Reason Age From Message
  ---- ---- - - - -
  Normal Type 98s service-controller ClusterIP -> LoadBalancer
  Normal EnsuringLoadBalancer 98s service-controller Ensuring load balancer
  Normal EnsuredLoadbalancer 94s service-controller Ensured load balancer
ubuntu@ip-172-31-23-232:~$ echo ${ARGOCD_SERVER}
kubectl get svc argocd-server -n argocd -o json | jq --raw-output .status.loadBalancer.ingress[0].hostname
ubuntu@ip-172-31-23-232:~$ kubectl port-forward svc/argocd-server -n argocd 8080:80
Forwarding from 127.0.0.1:8080 -> 8080
Forwarding from [::]:8080 -> 8080
ubuntu@ip-172-31-23-232:~$ curl https://argocd-server
ubuntu@ip-172-31-23-232:~$ kubectl get svc argocd-server -n argocd
NAME           TYPE        CLUSTER-IP   EXTERNAL-IP        PORT(S)
              AGE
argocd-server   LoadBalancer 10.100.63.169  a637f62eb169144feaf7b18308b660f4-20012336.us-east-1.elb.amazonaws.com  80:30344/TCP,443:31396/TCP
41m
ubuntu@ip-172-31-23-232:~$ 
```

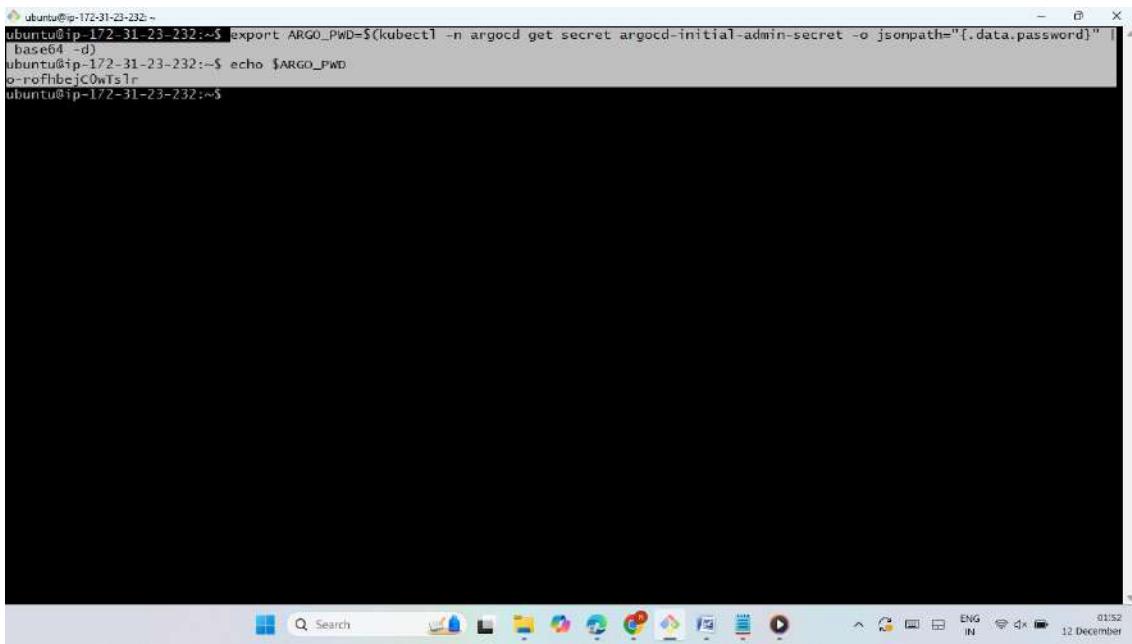
- Now launch the ARGOCD with the EXTERNAL-IP.
- Now click on advanced.
- Now click the below link.





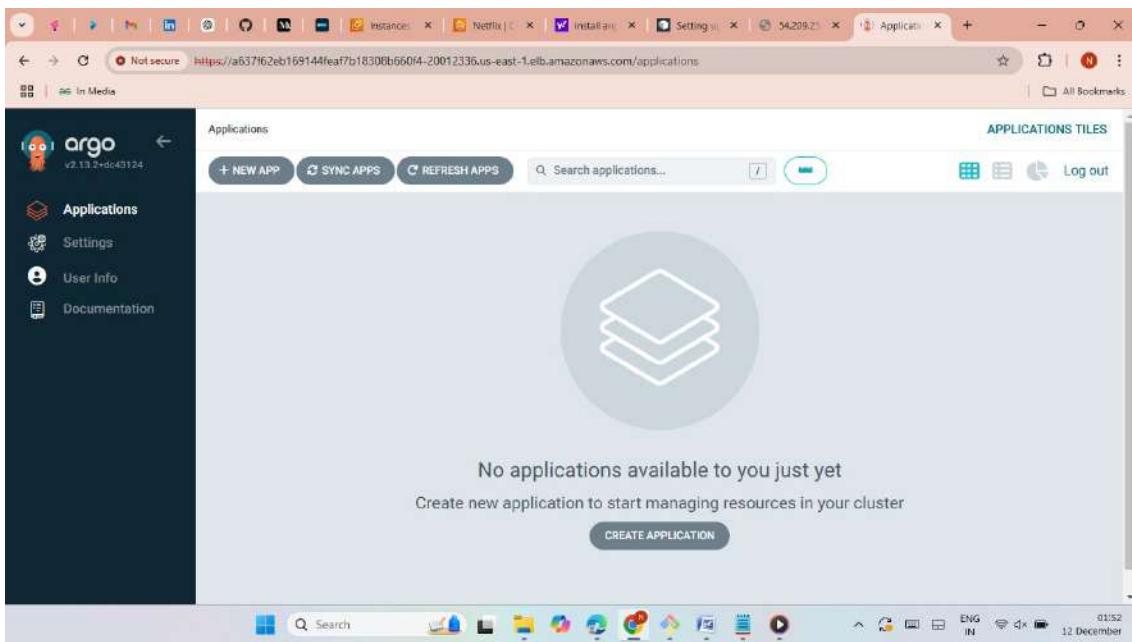
- Here the ARGOCD was hosted.
 - Give user name as admin and give password to run the command below.

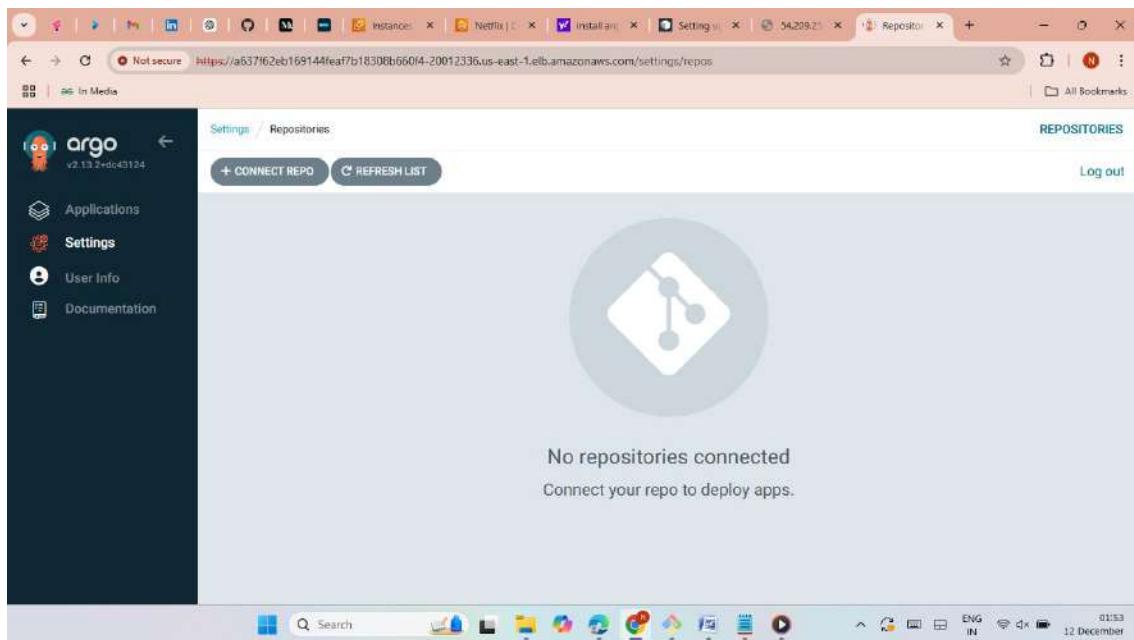
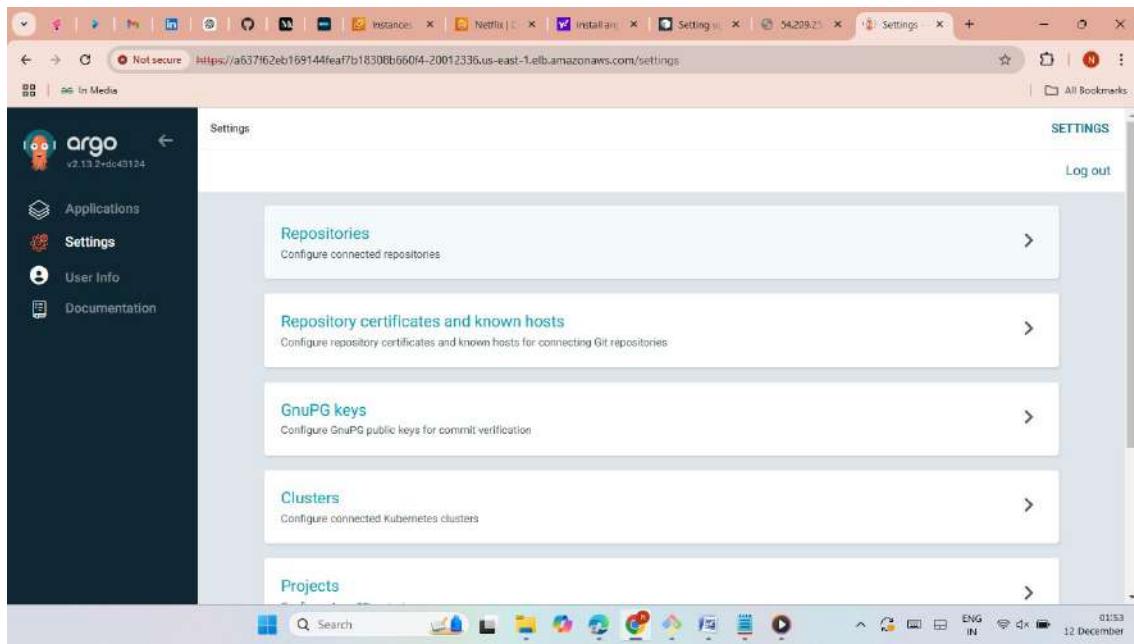


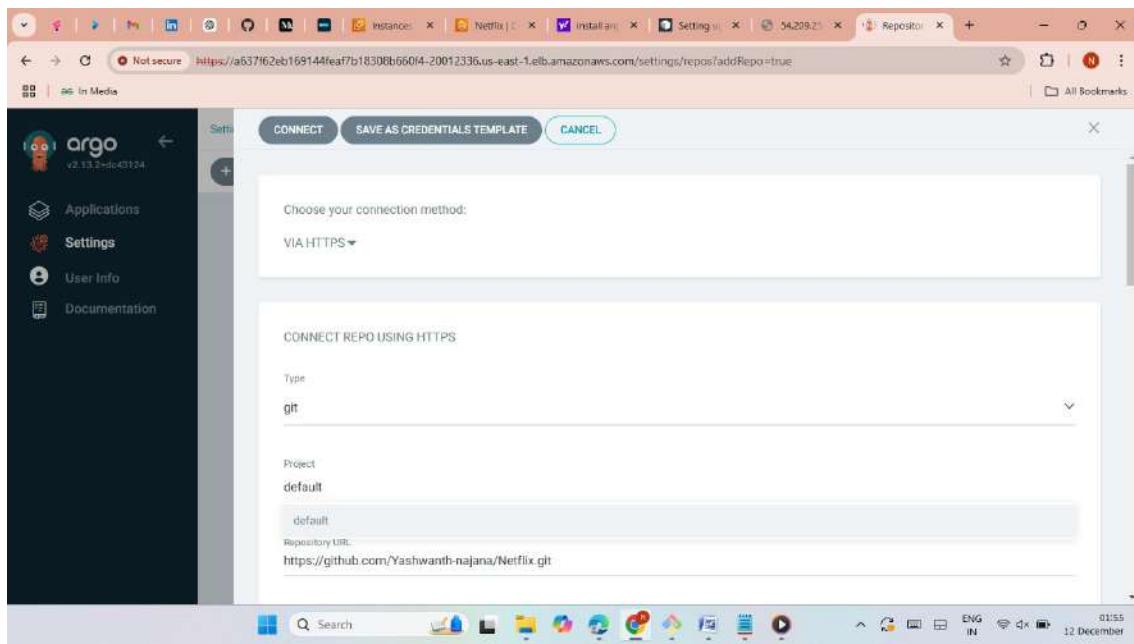
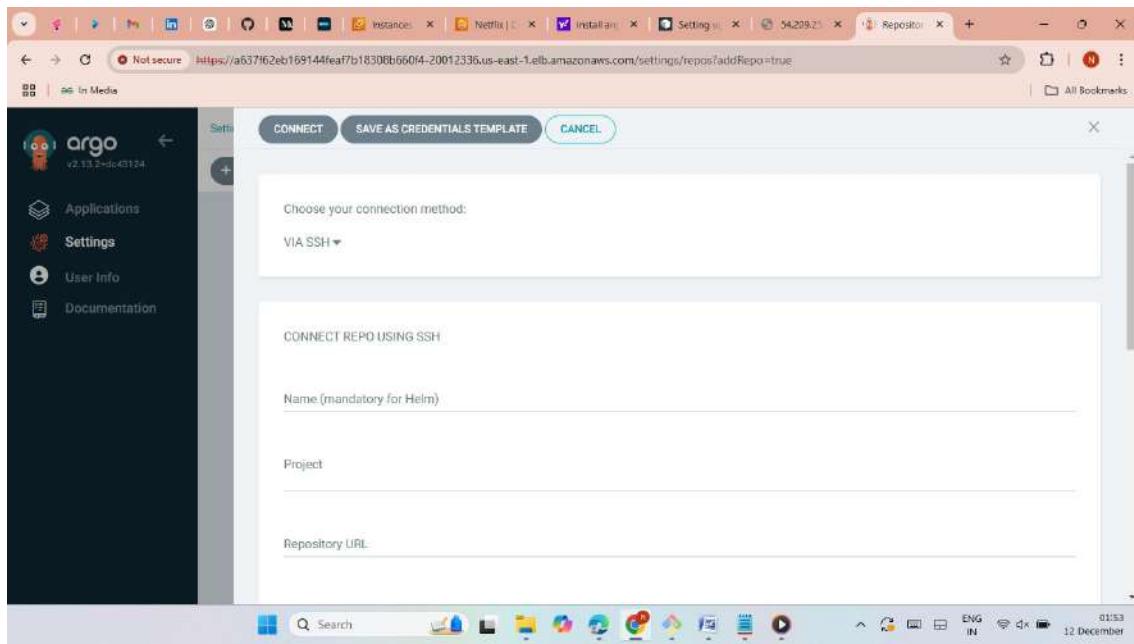


```
ubuntu@ip-172-31-23-232:~$ export ARGO_PWD=$(kubectl -n argocd get secret argocd-initial-admin-secret -o jsonpath=".data.password" | base64 -d)
ubuntu@ip-172-31-23-232:~$ echo $ARGO_PWD
o-rofhbejC0wTs1r
ubuntu@ip-172-31-23-232:~$
```

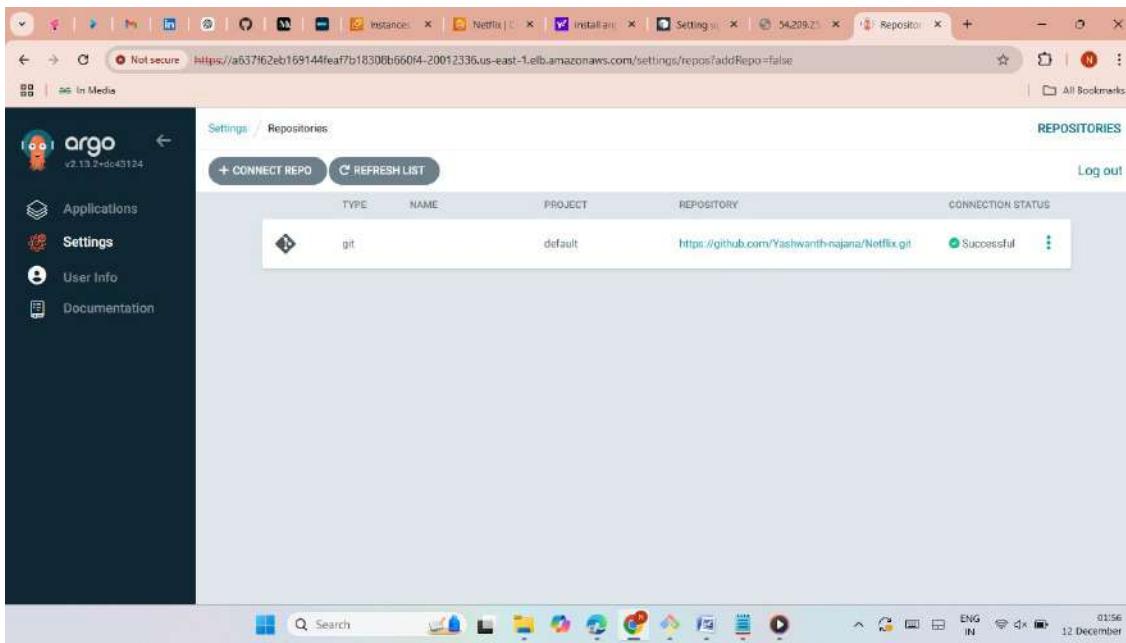
➤ Now click on setting, repositories, connect repo to create repo from github.



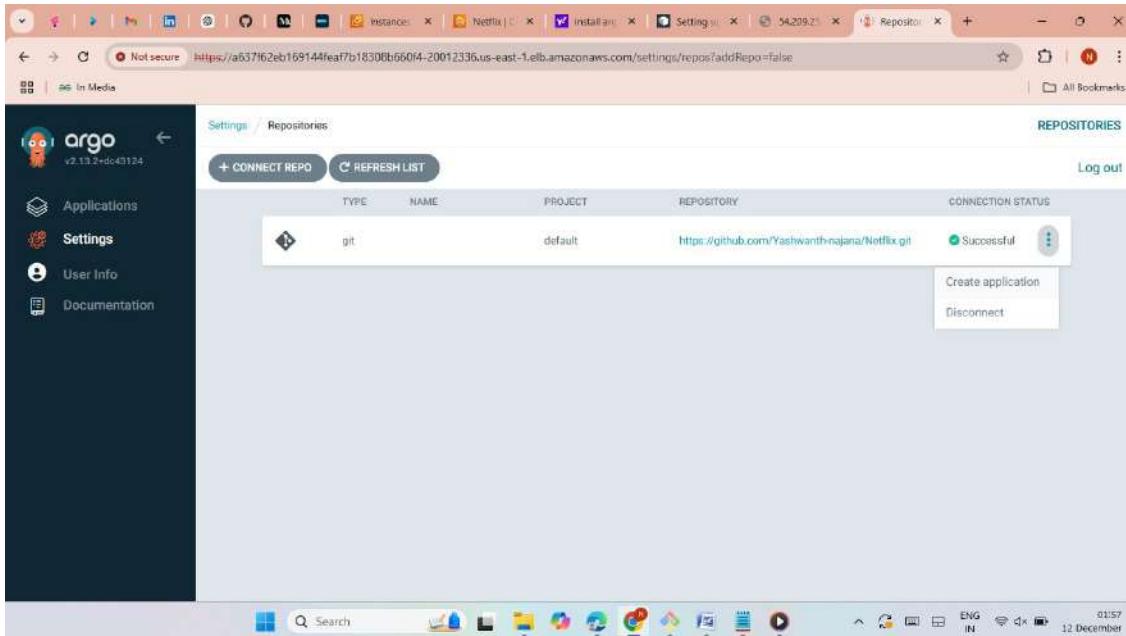


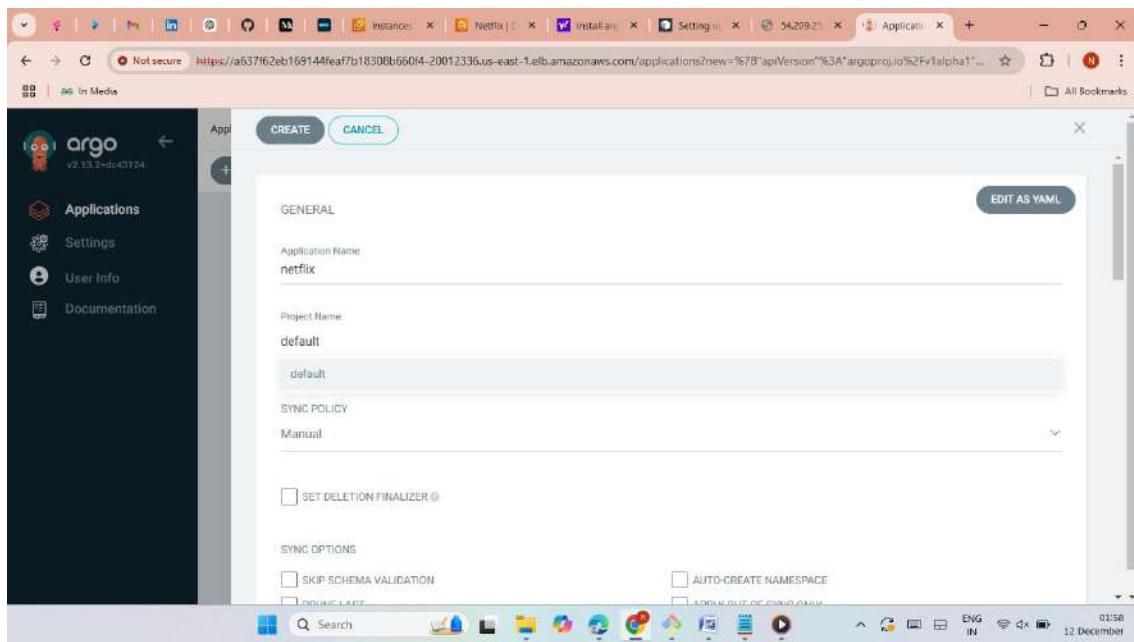
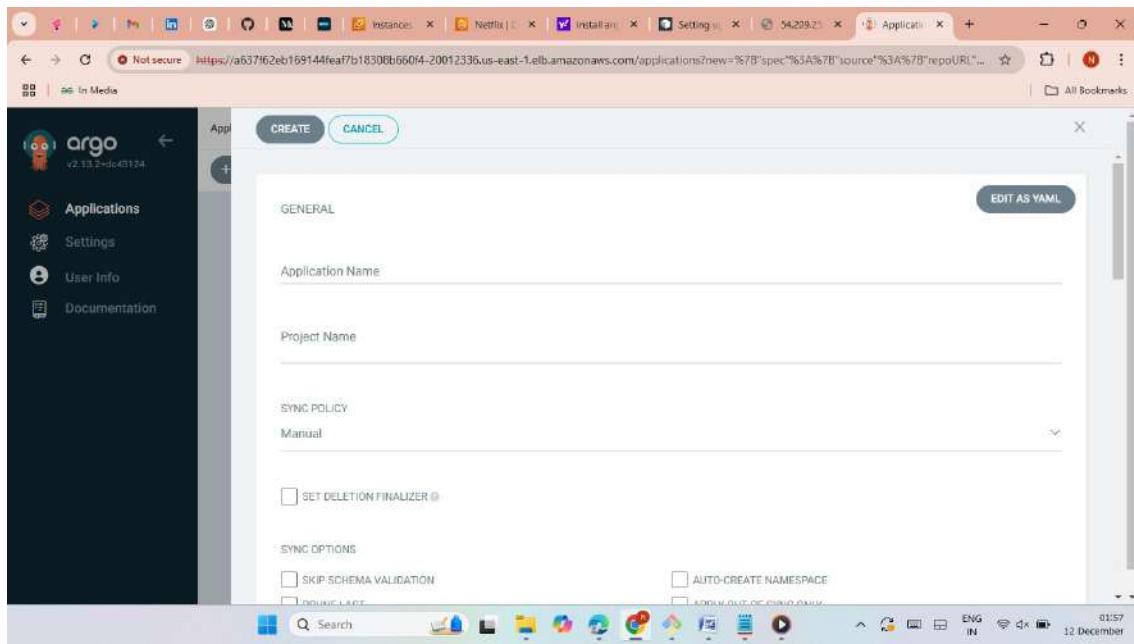


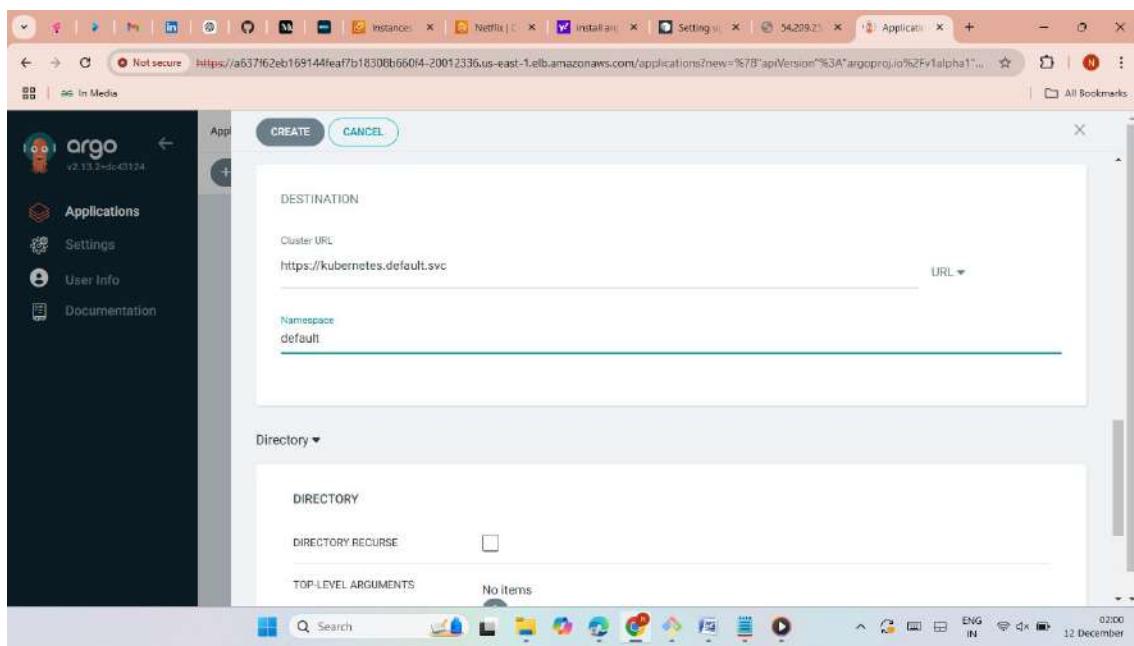
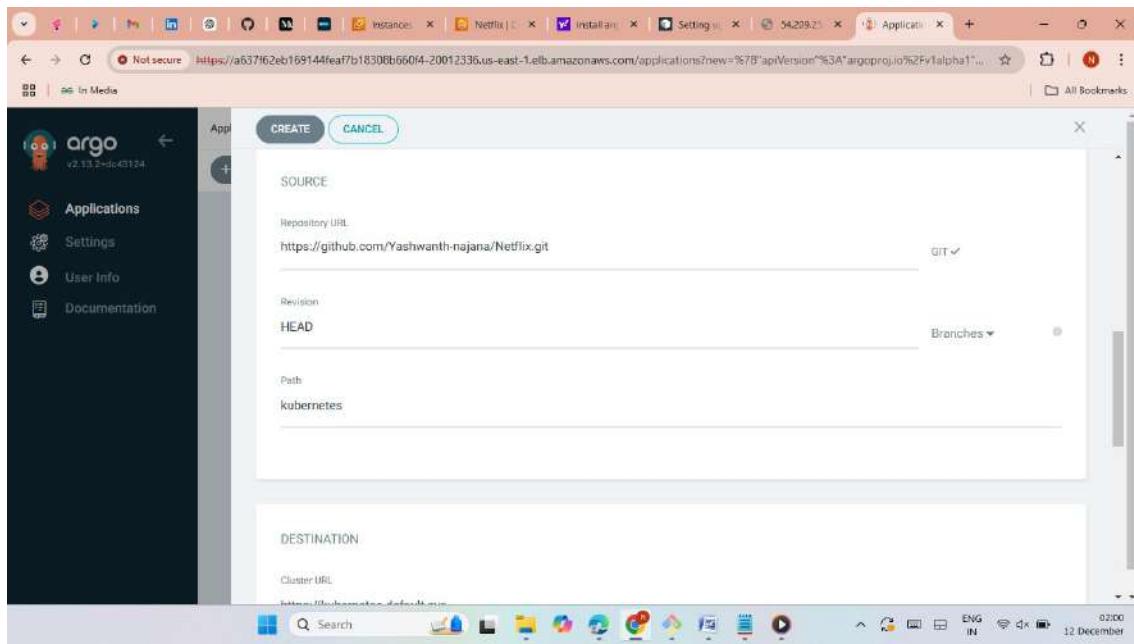
- Here the Netflix repo was created.

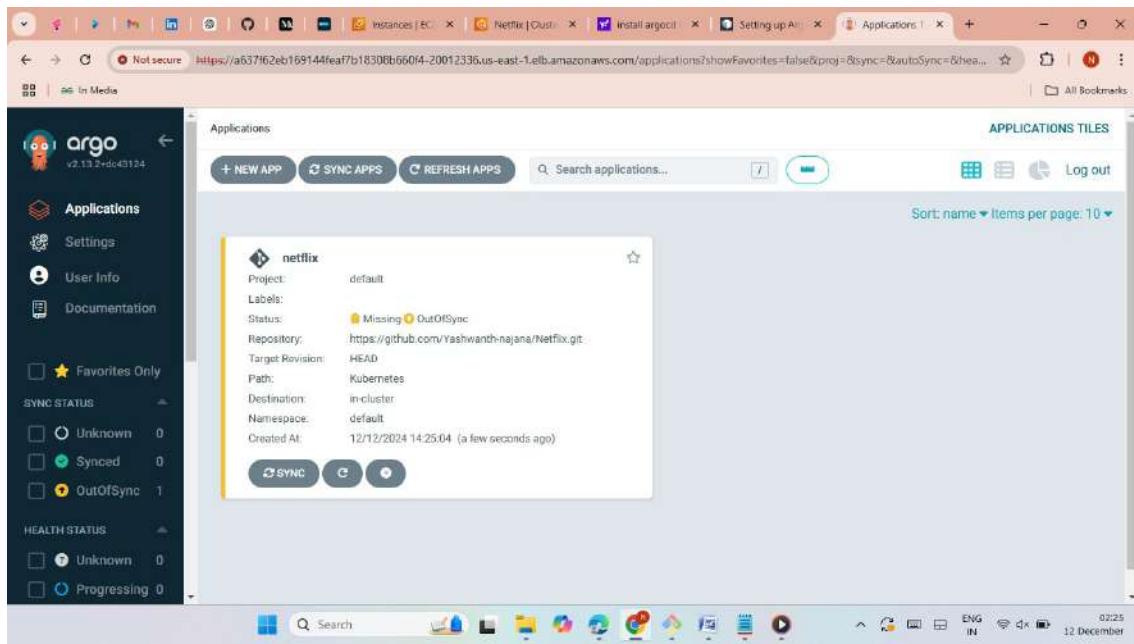


- Now create application to host the Netflix application.

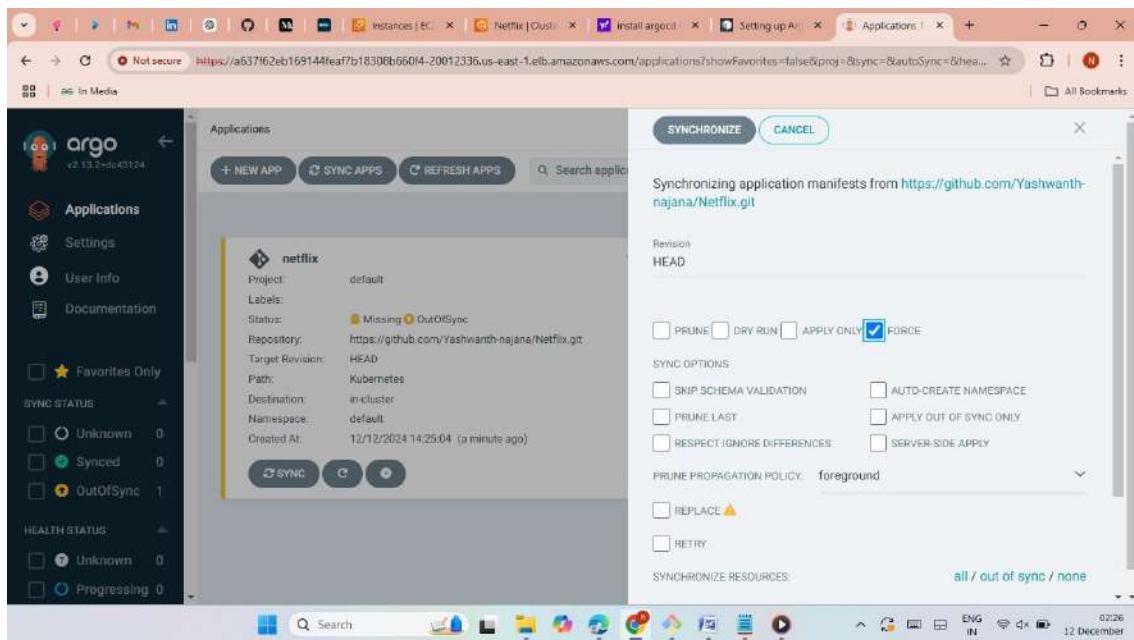


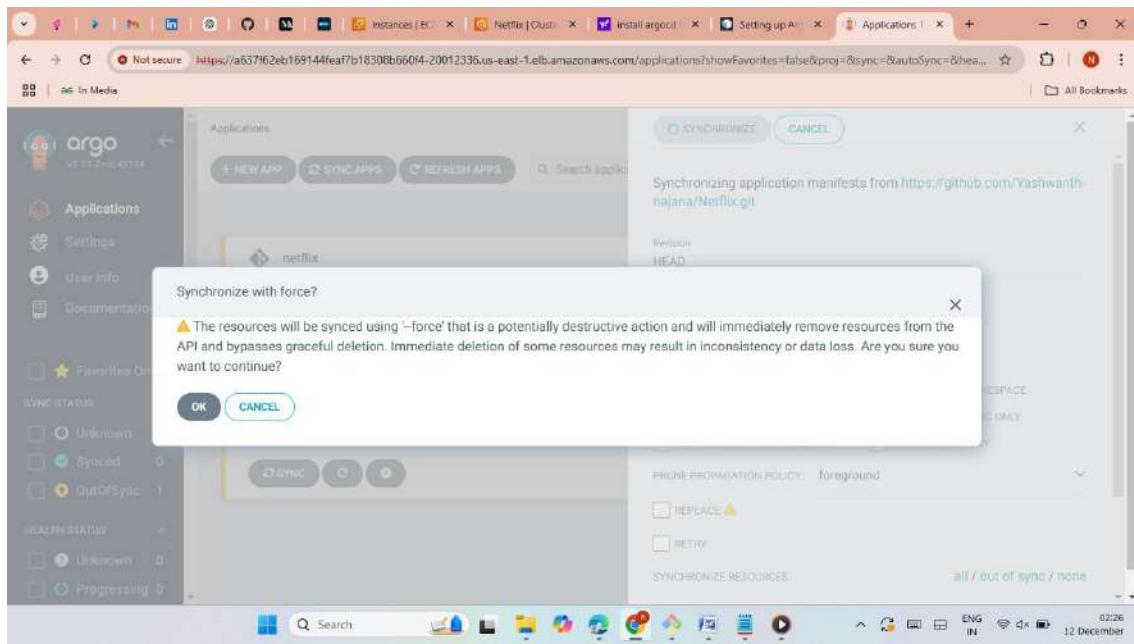




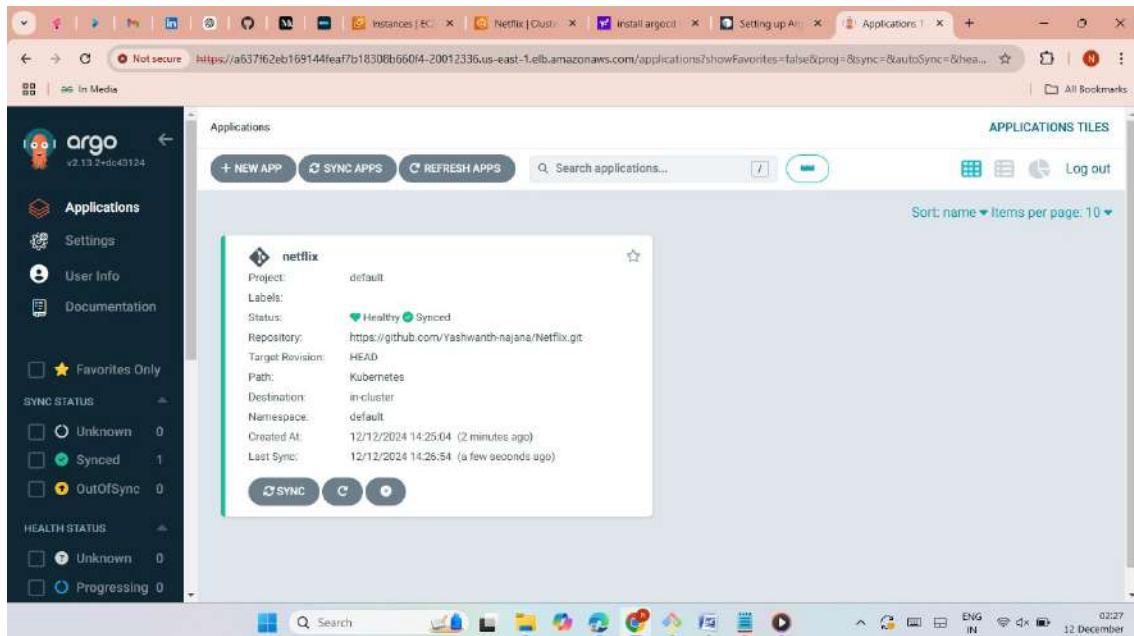


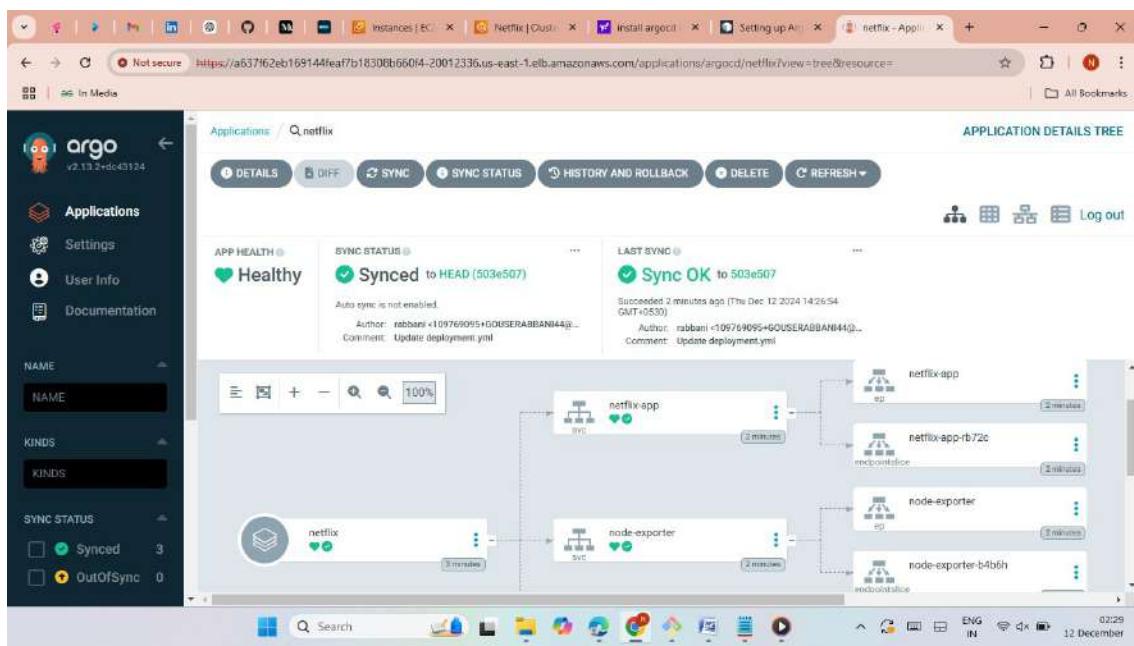
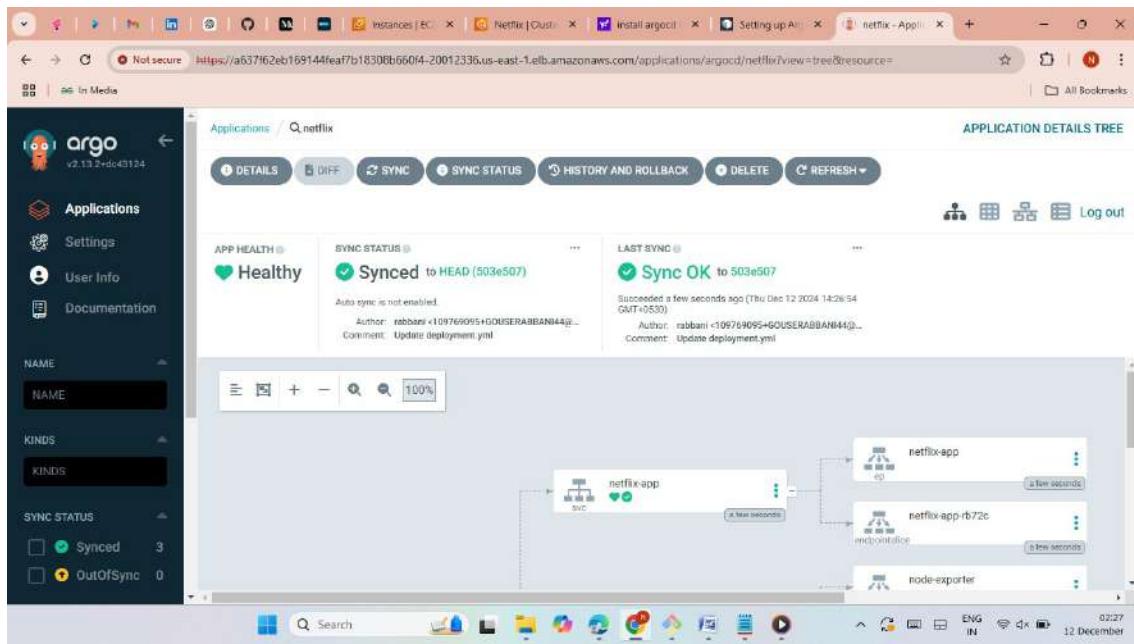
➤ Make application healthy with synchronize.

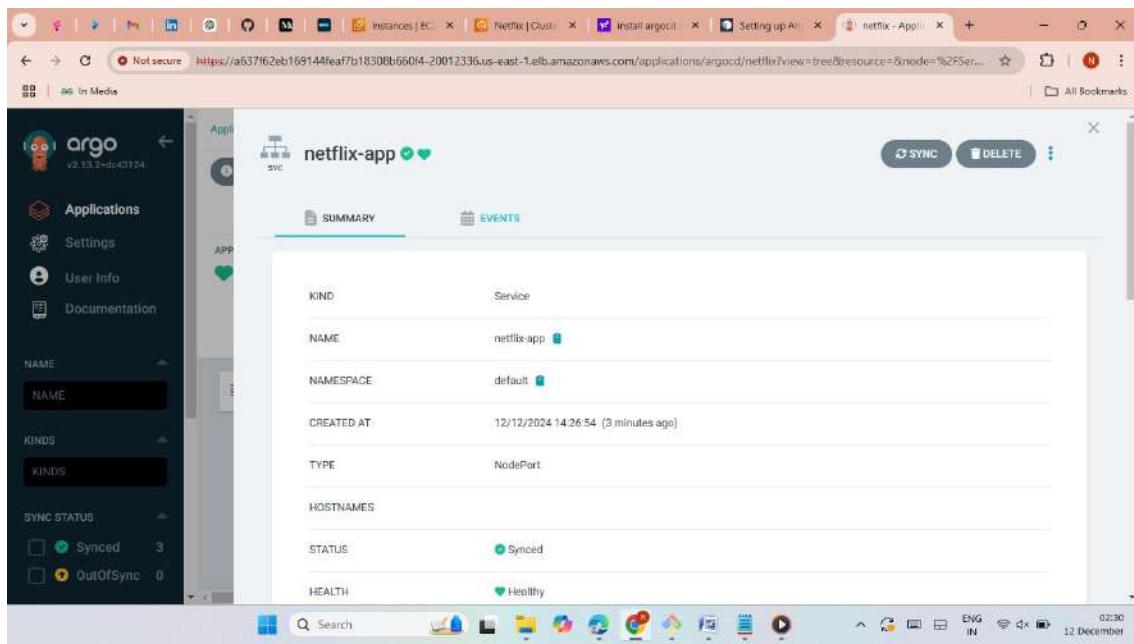
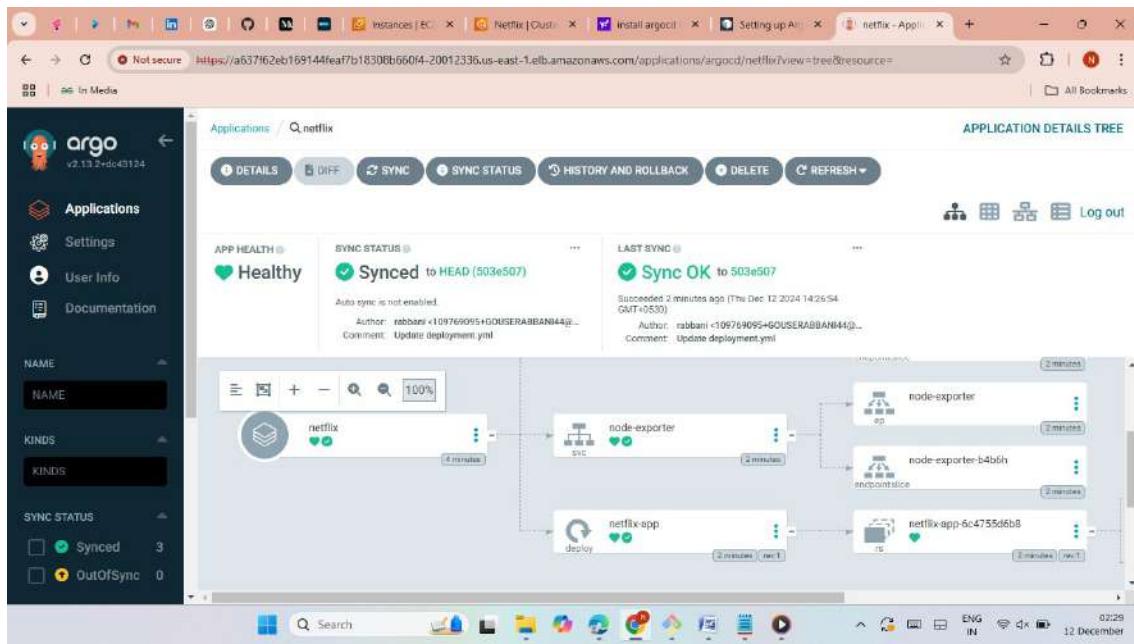


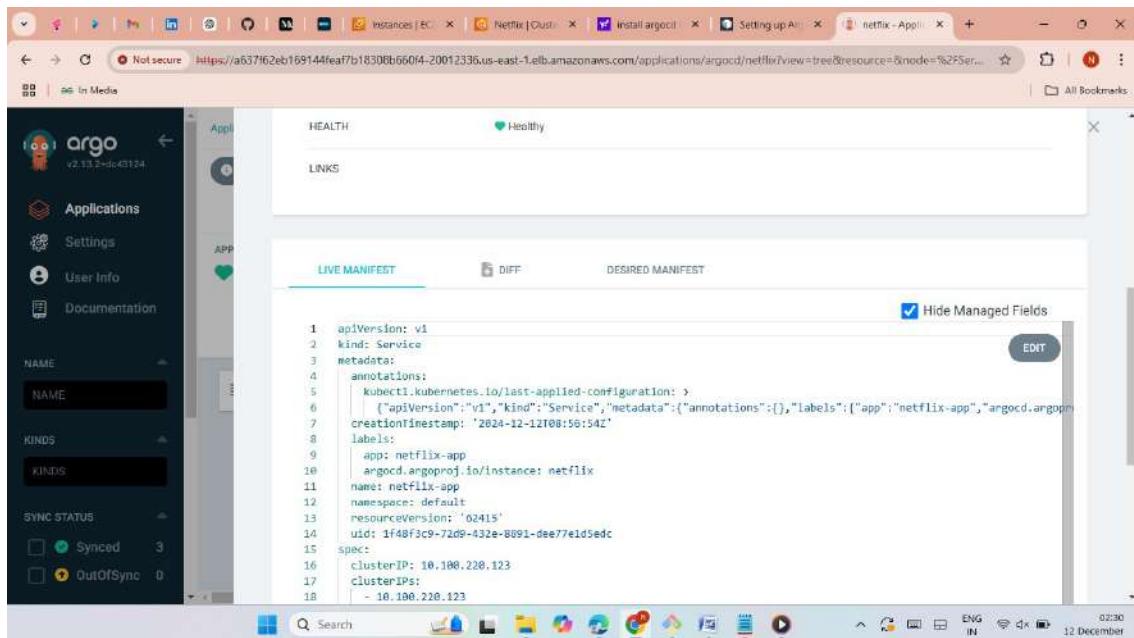


➤ Here the Netflix application was healthy.

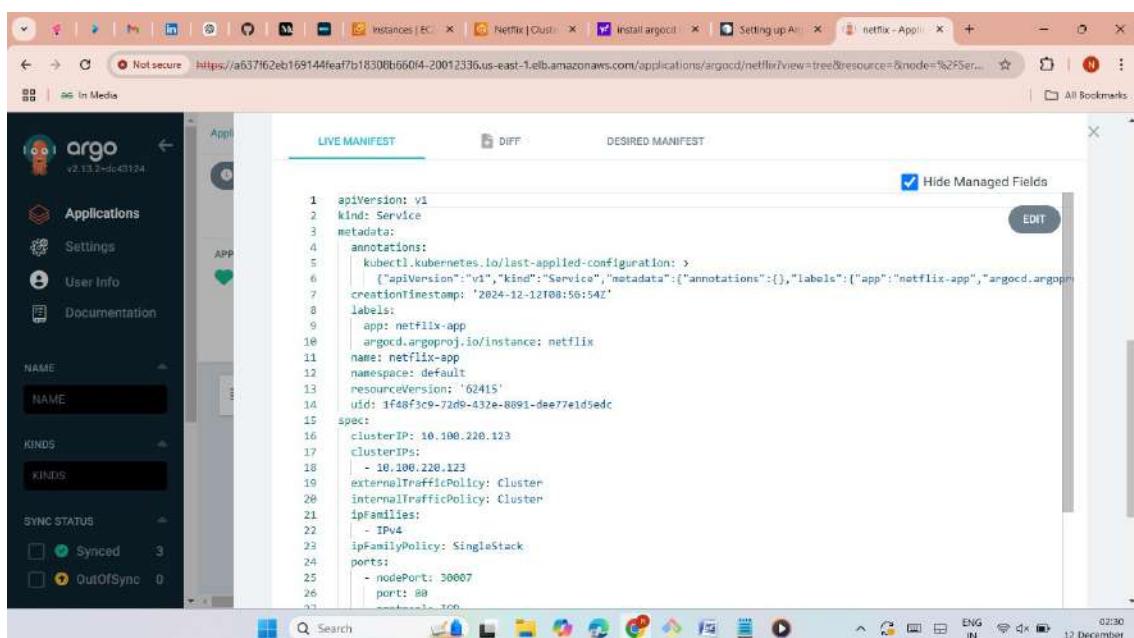




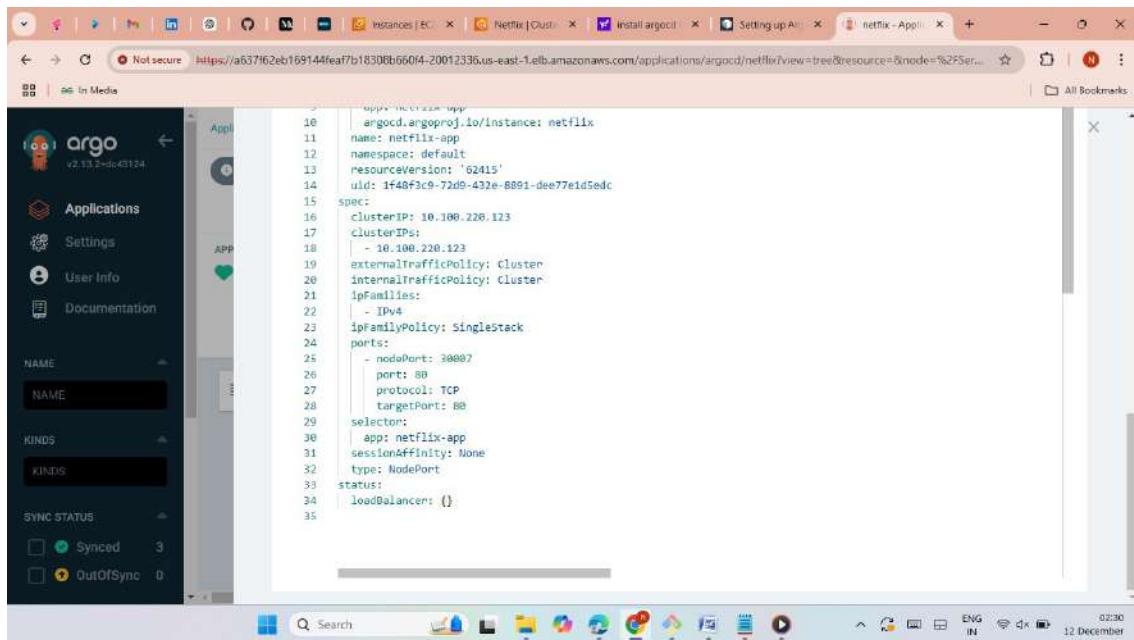




```
1 apiVersion: v1
2 kind: Service
3 metadata:
4   annotations:
5     kubectl.kubernetes.io/last-applied-configuration: >
6       {"apiVersion":"v1","kind":"Service","metadata":{"annotations":{},"labels":{"app":"netflix-app","argocd.argoproj.io/instance: netflix"}}, "creationTimestamp: "2024-12-12T08:56:54Z"
7   labels:
8     app: netflix-app
9     argocd.argoproj.io/instance: netflix
10    name: netflix-app
11    namespace: default
12    resourceVersion: '62415'
13    uid: 1f48f3c9-72d9-432e-8091-dae77e1d5edc
14  spec:
15    clusterIP: 10.100.220.123
16    clusterIPs:
17      - 10.100.220.123
```

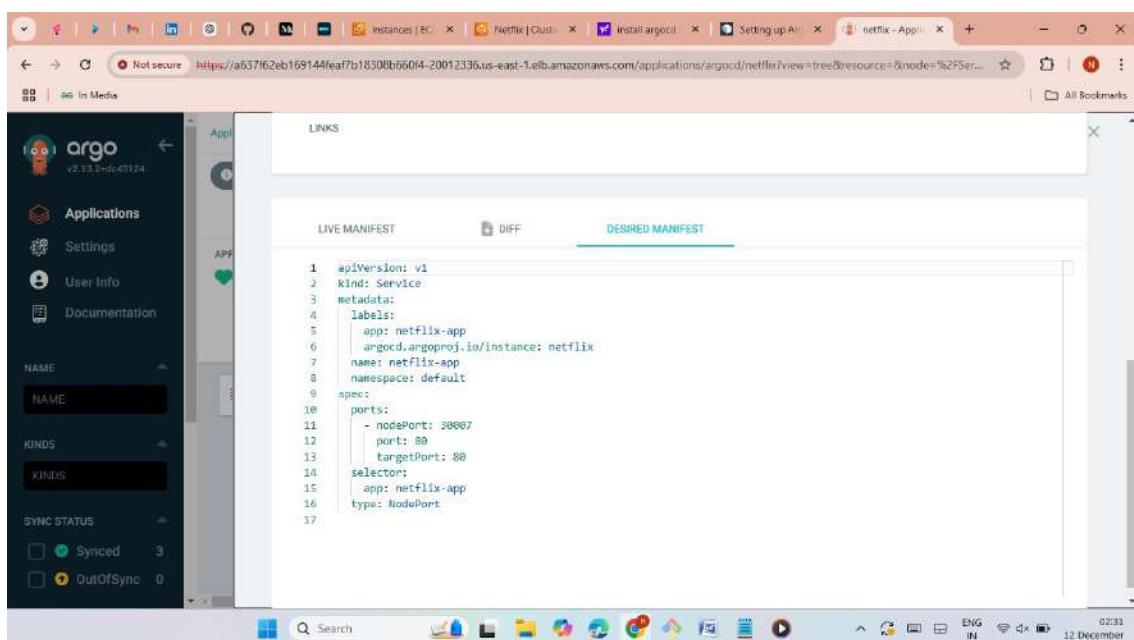


```
1 apiVersion: v1
2 kind: Service
3 metadata:
4   annotations:
5     kubectl.kubernetes.io/last-applied-configuration: >
6       {"apiVersion":"v1","kind":"Service","metadata":{"annotations":{},"labels":{"app":"netflix-app","argocd.argoproj.io/instance: netflix"}}, "creationTimestamp: "2024-12-12T08:56:54Z"
7   labels:
8     app: netflix-app
9     argocd.argoproj.io/instance: netflix
10    name: netflix-app
11    namespace: default
12    resourceVersion: '62415'
13    uid: 1f48f3c9-72d9-432e-8091-dae77e1d5edc
14  spec:
15    clusterIP: 10.100.220.123
16    clusterIPs:
17      - 10.100.220.123
18    externalTrafficPolicy: Cluster
19    internalTrafficPolicy: Cluster
20    ipFamilies:
21      - IPv4
22    ipFamilyPolicy: SingleStack
23    ports:
24      - nodePort: 30007
25        port: 80
26        protocol: TCP
```



The screenshot shows the Argo UI interface for managing Kubernetes applications. On the left, there's a sidebar with navigation links: Home, Applications, Settings, User Info, and Documentation. Below these are dropdown menus for NAME, KINDS, and SYNC STATUS. The SYNC STATUS section shows 3 Synced and 0 OutOfSync. The main content area displays the manifest for the 'netflix' application. The manifest is a YAML file with the following content:

```
apiVersion: v1
kind: Service
metadata:
  labels:
    app: netflix-app
  name: netflix-app
  namespace: default
spec:
  clusterIP: 10.106.226.123
  clusterIPs:
  - 10.106.226.123
  externalTrafficPolicy: Cluster
  internalTrafficPolicy: Cluster
  ipFamilies:
  - IPv4
  ipFamilyPolicy: SingleStack
  ports:
  - nodePort: 30007
    port: 80
    protocol: TCP
    targetPort: 80
  selector:
    app: netflix-app
  sessionAffinity: None
  type: NodePort
status:
  loadBalancer: {}
```



This screenshot shows the Argo UI with the DIFF tab selected. The interface is similar to the previous one, with the Argo logo, sidebar, and NAME/KINDS dropdowns. The SYNC STATUS shows 3 Synced and 0 OutOfSync. The main area now displays the DIFF tab, which compares the LIVE MANIFEST and DESIRED MANIFEST. The LIVE MANIFEST is identical to the one shown in the first screenshot. The DESIRED MANIFEST is also identical. Both tabs show the same YAML code as the first screenshot.

```
apiVersion: v1
kind: Service
metadata:
  labels:
    app: netflix-app
  name: netflix-app
  namespace: default
spec:
  ports:
  - nodePort: 30007
    port: 80
    targetPort: 80
  selector:
    app: netflix-app
  type: NodePort
```

- Now host the application with the created instances IP along with the given port 30007.

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like Dashboard, EC2 Global View, Events, Instances, Images, and Elastic Block Store. The Instances section is expanded, showing sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations. The main content area displays a table of instances. One instance, **i-04674f167c2d773bc**, is selected and highlighted with a blue border. The table columns include Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability. The instance **i-04674f167c2d773bc** is listed as Running, t3.medium, 3/3 checks passed, us-east-1a. Below the table, a detailed view for the selected instance is provided. It shows the Instance ID (i-04674f167c2d773bc), Public IPv4 address (98.81.216.156), and Private IPv4 addresses (172.31.23.244, 172.31.28.143). The bottom of the page includes standard browser navigation and status bars.

The screenshot shows a web browser window with the URL <http://98.81.216.156:30007/browsing>. The page is titled "Not secure". The content is the Netflix homepage, showing the movie "Absolution" as the featured title. The plot summary reads: "An aging ex-boxer gangster working as muscle for a Boston crime boss receives an upsetting diagnosis. Despite a faltering...". Below the movie title are two buttons: "Play" and "More Info". The bottom of the screen shows a taskbar with various icons and the system clock indicating 02:30 on 12 December.

