

URX

URX

DevSecOps Project

Phase 1: Initial Setup and Deployment

Step 1: Launch EC2 (Ubuntu 22.04):

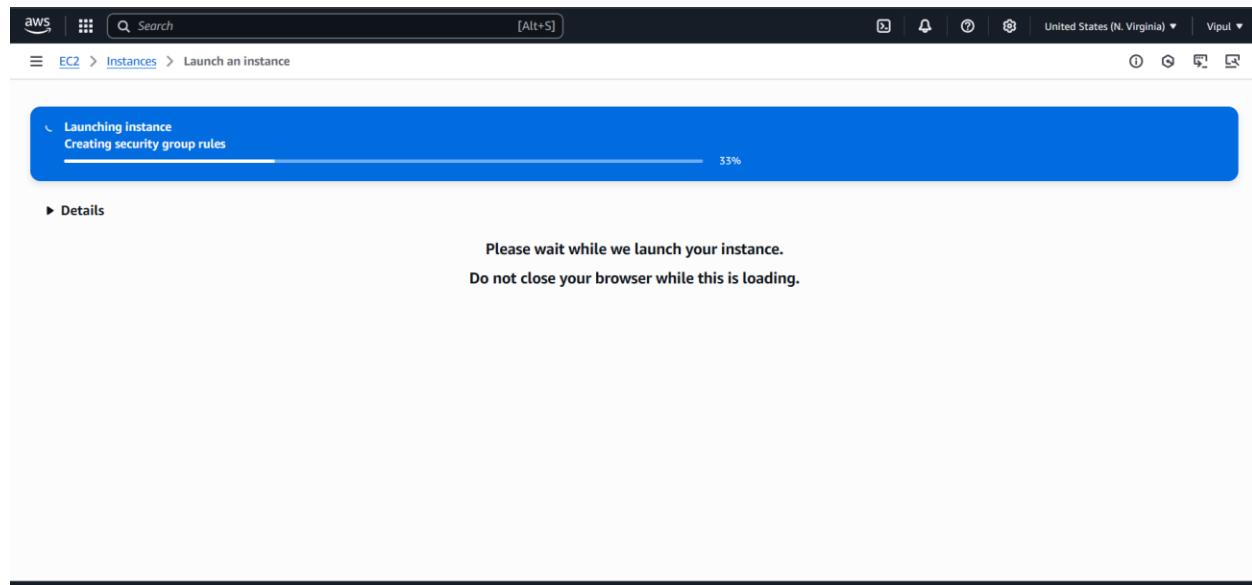
- Provision an EC2 instance on AWS with Ubuntu 22.04.
- Connect to the instance using SSH.

The screenshot shows the 'Launch an instance' wizard in the AWS Management Console. The 'Name and tags' step is completed with the name 'VrxNetflix'. The 'Application and OS Images (Amazon Machine Image)' step shows a search bar and a list of recent AMIs: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, and SUSE. The 'Ubuntu' option is selected. The 'Summary' step on the right shows 1 instance being launched with the Canonical, Ubuntu, 24.04, amd64 AMI. The 'Info' tab is selected in the summary panel. A 'Free tier' message is displayed: 'In your first year of opening an AWS account, you can launch up to 10 instances per month for free.' Buttons for 'Cancel', 'Launch instance', and 'Preview code' are visible.

The screenshot shows the 'Launch an instance' wizard. The 'Instance type' step is selected, showing the 't2.large' instance type details: Family: t2, 2 vCPU, 8 GiB Memory, Current generation: true. It also lists other instance types like On-Demand Windows, SUSE, Linux, RHEL, and Ubuntu Pro. The 'Additional costs apply for AMIs with pre-installed software' note is present. The 'Summary' step on the right shows 1 instance being launched with the Canonical, Ubuntu, 24.04, amd64 AMI. The 'Info' tab is selected in the summary panel. A 'Free tier' message is displayed: 'In your first year of opening an AWS account, you can launch up to 10 instances per month for free.' Buttons for 'Cancel', 'Launch instance', and 'Preview code' are visible.

The screenshot shows the AWS EC2 'Launch an instance' wizard. On the left, under 'Subnet', there's an 'Auto-assign public IP' option. Under 'Firewall (security groups)', it says 'Create security group' (selected) and 'Select existing security group'. A note below says: 'We'll create a new security group called "launch-wizard-9" with the following rules:' with three checked options: 'Allow SSH traffic from Anywhere (0.0.0.0/0)' (Helps you connect to your instance), 'Allow HTTPS traffic from the internet' (To set up an endpoint, for example when creating a web server), and 'Allow HTTP traffic from the internet' (To set up an endpoint, for example when creating a web server). A warning message at the bottom of this section states: '⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' On the right, the 'Summary' section shows 1 instance, AMI 'Canonical, Ubuntu, 24.04, amd64', Virtual server type 't2.large', Firewall (security group) 'New security group', and Storage (volumes) '1 volume(s) - 8 GiB'. The 'Info' tab is selected. A 'Free tier' message is visible, along with 'Launch instance' and 'Preview code' buttons.

This screenshot continues the 'Launch an instance' wizard. On the left, under 'EBS Volumes', it shows 'Volume 1 (AMI Root) (Custom)'. Configuration includes: Storage type 'EBS', Device name - required '/dev/sda1', Snapshot 'snap-0b1af51ad230bdf5e', Size (GiB) '25', Volume type 'gp3', IOPS '3000', Delete on termination 'Yes', Encrypted 'Not encrypted', KMS key 'Select' (disabled), Throughput '125', and Volume initialization rate 'Enter a value' (disabled). A note at the bottom says: '💡 Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage'. On the right, the 'Summary' section remains the same as the previous step. The 'Info' tab is selected, and the 'Free tier' message is still present.



Creating and Allocating the Elastic IP to EC2

The screenshot shows the AWS EC2 'Elastic IP addresses' page. A single elastic IP address, 'VrxNetflixEc2', is listed. It has an allocated IPv4 address of 44.216.5.224, is a Public IP type, and its Allocation ID is eipalloc-0665aad316bda157e. An 'Actions' dropdown menu is open, with the 'Allocate Elastic IP address' option highlighted in orange. The sidebar on the left lists various AWS services under the EC2 category.

Name	Allocated IPv4 addr...	Type	Allocation ID	Reverse DNS record
VrxNetflixEc2	44.216.5.224	Public IP	eipalloc-0665aad316bda157e	-

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AssociateAddress:PublicIp=44.216.5.224

aws Search [Alt+S] United States (N. Virginia) Vipul

EC2 > Elastic IP addresses > Associate Elastic IP address

Associate Elastic IP address info

Choose the instance or network interface to associate to this Elastic IP address (44.216.5.224)

Elastic IP address: 44.216.5.224

Resource type
Choose the type of resource with which to associate the Elastic IP address.

Instance
 Network interface

⚠️ If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Instance
Q i-04f62d8c48bbf327a X [Copy](#)

Use: "i-04f62d8c48bbf327a"

i-04f62d8c48bbf327a (VrxNetflix) - running

Reassociation
Specify whether the Elastic IP address can be reassigned with a different resource if it already associated with a resource.

Allow this Elastic IP address to be reassigned

[Cancel](#) [Associate](#)

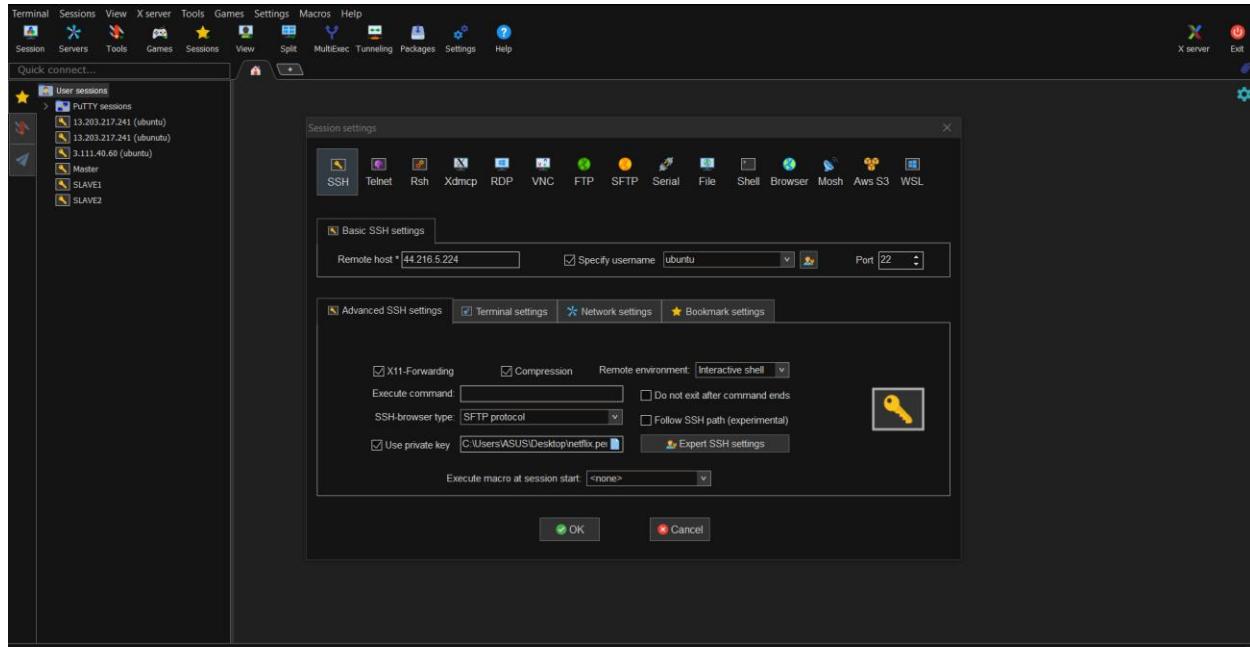
<https://us-east-1.console.aws.amazon.com/ec2/instances/i-04f62d8c48bbf327a>

EC2 Dashboard EC2 Global View Events Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations Images AMIs AMI Catalog Elastic Block Store Volumes Snapshots

Instance summary for i-04f62d8c48bbf327a (VrxNetflix) info

Updated less than a minute ago

Instance ID i-04f62d8c48bbf327a	Public IPv4 address 44.216.5.224 open address	Private IPv4 addresses 172.31.83.186
IPv6 address -	Instance state Running	Public DNS ec2-44-216-5-224.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-83-186.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-83-186.ec2.internal	Elastic IP addresses 44.216.5.224 (VrxNetflixEc2) [Public IP]
Answer private resource DNS name IPv4 (A)	Instance type t2.large	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more
Auto-assigned IP address -	VPC ID vpc-08d672240b42bf2f0	Auto Scaling Group name -
IAM Role -	Subnet ID subnet-0090726ea814d691e	Managed false
IMDSv2 Required	Instance ARN arn:aws:ec2:us-east-1:010928201805:instance/i-04f62d8c48bbf327a	



```
44.216.5.224 (ubuntu)
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect...
Star 2 User sessions
Star 13.203.217.241 (ubuntu)
Star 13.203.217.241 (ubuntu)
Star 3.111.40.60 (ubuntu)
Master
Slave1
Slave2

Session settings
SSH Telnet Rsh Xdmcp RDP VNC FTP SFTP Serial File Shell Browser Mosh Aws S3 WSL

Basic SSH settings
Remote host 44.216.5.224 Specify username ubuntu Port 22

Advanced SSH settings Terminal settings Network settings Bookmark settings

X11-Forwarding Compression Remote environment Interactive shell
Execute command Execute macro at session start <none>
SSH-browser type SFTP protocol Follow SSH path (experimental)
Use private key C:\Users\ASUS\Desktop\netflix.pem Expert SSH settings

OK Cancel
```

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.

```
/usr/bin/xauth: file /home/ubuntu/.Xauthority does not exist
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-83-186:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [100 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Metadata [301 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Metadata [8328 B]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1210 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [250 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [161 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1193 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [280 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [26.0 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [136 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [100 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [22.8 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [5456 B]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [948 B]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Packages [39.2 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main Translation-en [8676 B]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7064 B]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [272 B]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Metadata [16.5 kB]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [27.1 kB]
Get:31 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [16.5 kB]
Get:32 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [16.4 kB]
```

Remote monitoring

Follow terminal folder

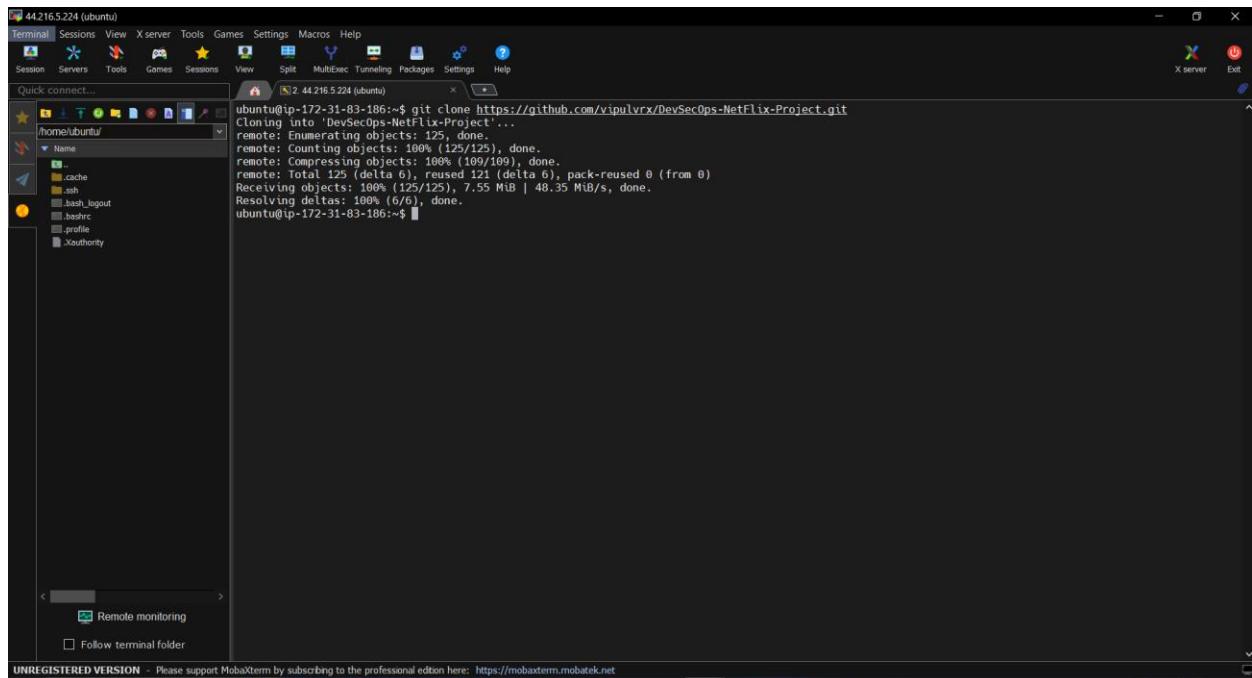
Step 2: Clone the Code:

- Update all the packages and then clone the code.
- Clone your application's code repository onto the EC2 instance:

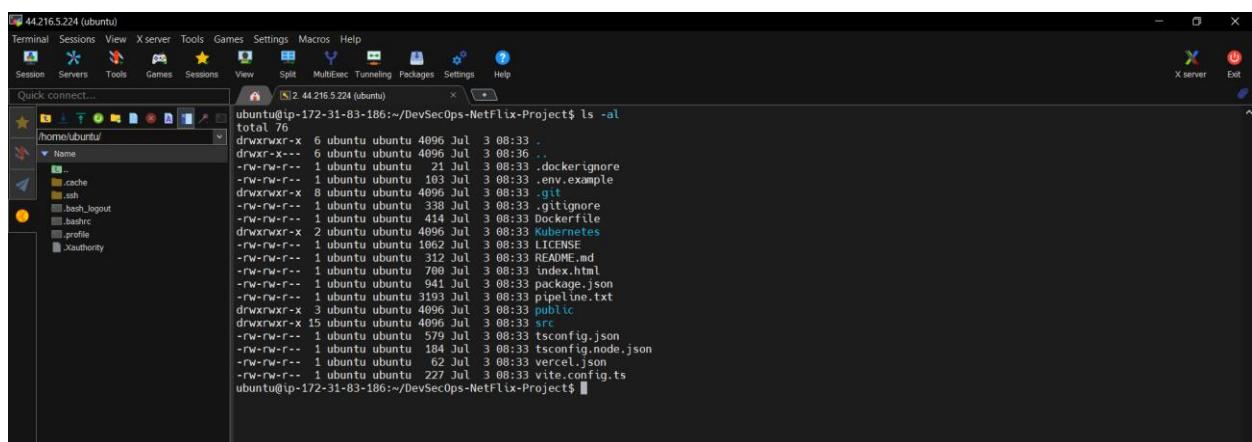
``` bash

```
git clone https://github.com/vipulvrx/DevSecOps-NetFlix-Project.git
```

```



A screenshot of the MobaXterm interface on an Ubuntu 16.04 LTS system (version 4.4.216.5.224). The terminal window shows the command `git clone https://github.com/vipulvrx/DevSecOps-NetFlix-Project.git` being executed. The output of the command is displayed, showing the progress of cloning the repository from GitHub. The session bar at the top includes icons for Session, Servers, Tools, Games, Sessions, View, Split, MultiExec, Tunneling, Packages, Settings, X server, and Exit. The status bar at the bottom indicates an unregistered version and provides a link to support the professional edition.



A screenshot of the MobaXterm interface on the same Ubuntu 16.04 LTS system. The terminal window shows the command `ls -al` being run. The output lists the contents of the current directory, which includes files like `.dockerignore`, `.gitignore`, `Dockerfile`, `Kubernetes`, `LICENSE`, `README.md`, `index.html`, `package.json`, `pipeline.txt`, `tsconfig.json`, `tsconfig.node.json`, `tsconfig.json`, `vite.config.ts`, and several folders and files with their respective permissions, ownership, and timestamps. The session bar and status bar are visible at the top and bottom of the window respectively.

Step 3: Install Docker and Run the App Using a Container:**

- Set up Docker on the EC2 instance:

``` bash

```
sudo apt-get update
```

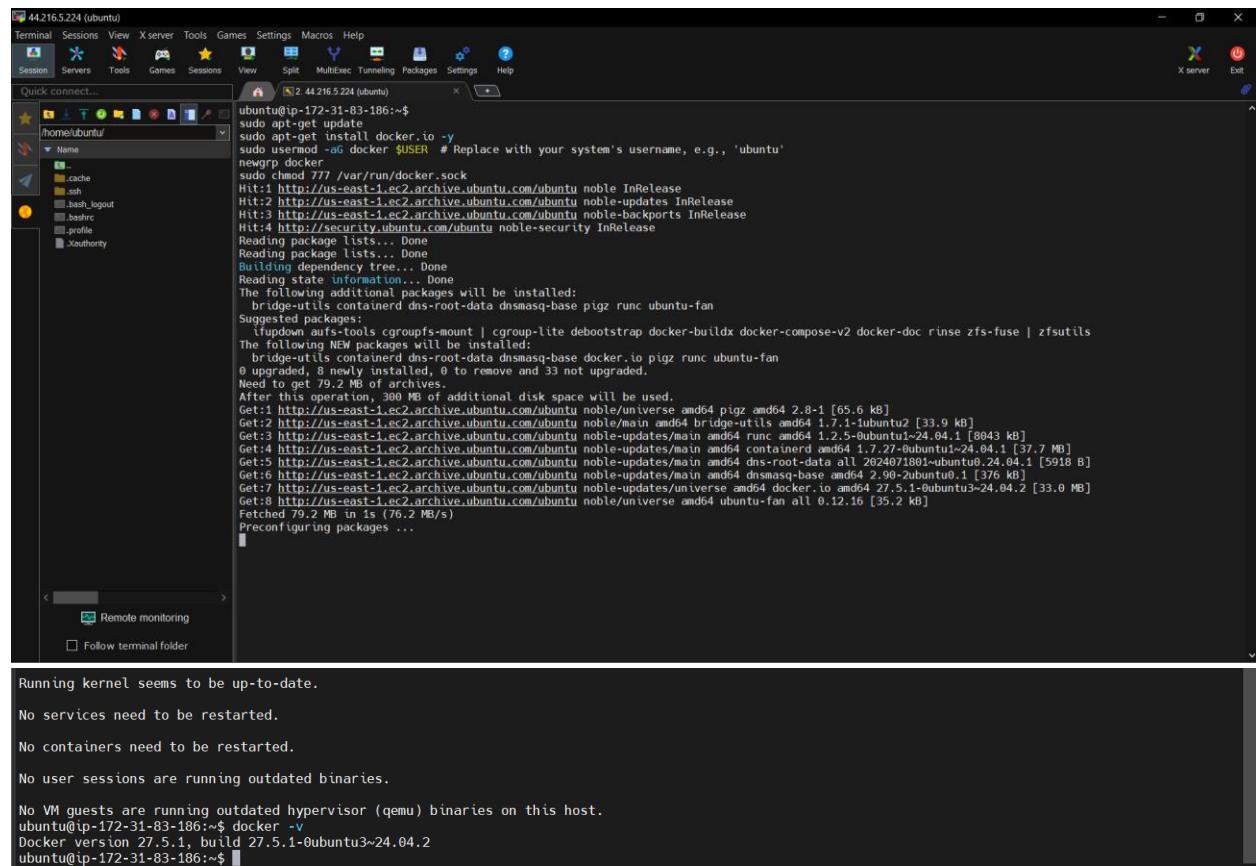
```
sudo apt-get install docker.io -y
```

```
sudo usermod -aG docker $USER # Replace with your system's username, e.g., 'ubuntu'
```

newgrp docker

```
sudo chmod 777 /var/run/docker.sock
```

三



- Build and run your application using Docker containers:

```
``` bash
```

```
docker build -t netflix .
```

```
docker run -d --name netflix -p 8081:80 netflix:latest
```

```
#to delete
```

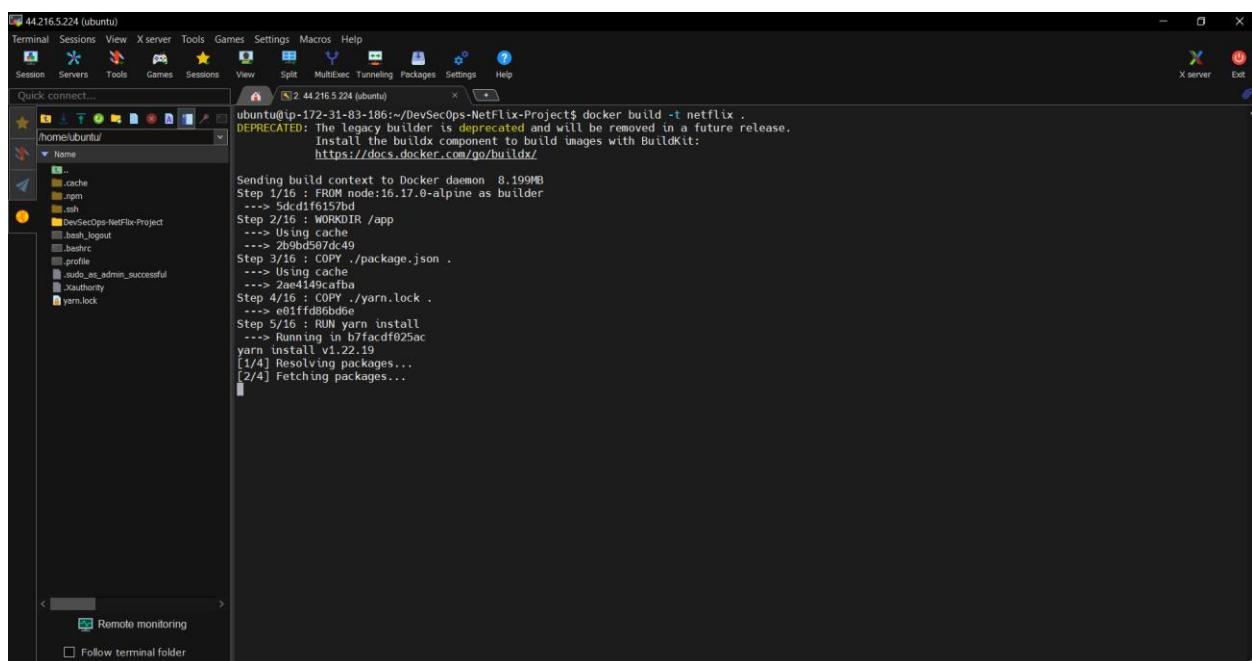
```
docker stop <containerid>
```

```
docker rmi -f netflix
```

```
```
```

**It will show an error cause you need API key**

**Now while creating a docker image we need to provide a API key for movie database. whihc is TMDB basically so let's create it.**



The screenshot shows a terminal window titled "44.216.5.224 (ubuntu)". The window contains a command-line interface where a Docker build is being executed. The command is "docker build -t netflix". A warning message is displayed: "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/". The build process is shown step-by-step, starting from Step 1/16 and continuing through Step 5/16, which involves running "yarn install". The terminal also shows the user's home directory structure on the left, including ".cache", ".npm", ".esh", and a "DevSecOps-NetFlix-Project" folder. At the bottom of the terminal, there are options for "Remote monitoring" and "Follow terminal folder".

```
44.216.5.224 (ubuntu)
Terminal Sessions View Xserver Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunnelling Packages Settings Help
Quick connect...
2 44.216.5.224 (ubuntu)
ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project$ docker build -t netflix .
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 8.199MB
Step 1/16 : FROM node:16.17.0-alpine as builder
--> 5e6d1f19795f
Step 2/16 : WORKDIR /app
--> Using cache
--> 2b0bd507dc49
Step 3/16 : COPY ./package.json .
--> Using cache
--> 2ae4149cafba
Step 4/16 : COPY ./yarn.lock .
--> e01fffd86bd6de
Step 5/16 : RUN yarn install
--> Running in b7facdf025ac
yarn install v1.22.19
[1/4] Resolving packages...
[2/4] Fetching packages...
[3/4] Linking dependencies...
[4/4] Building fresh packages...
```

```
(!) Some chunks are larger than 500 KB after minification. Consider:
- Using dynamic import() to code-split the application
- Use build.rollupOptions.output.manualChunks to improve chunking: https://rollupjs.org/guide/en/#outputmanualchunks
- Adjust chunk size limit for this warning via build.chunkSizeWarningLimit.
Done in 32.53s.
--> Removed intermediate container 8cb8b6bfe766
--> 93934f8fb0a64
Step 1/10 : FROM nginx:stable-alpine
stable-alpine: Pulling from library/nginx
f18232174bc0: Pull complete
ddee65f7af9d6: Pull complete
532a23145349: Pull complete
bbdf43ac95df1: Pull complete
c544760e6514: Pull complete
3cc2eb67bc0e: Pull complete
19f9a172b25c: Pull complete
e57f9ea90ba8: Pull complete
Digest: sha256:aed99734248e851764f1f2146835ecad42b5f994081fa6631cc5d79240891ec9
Status: Downloaded newer image for nginx:stable-alpine
--> 936a1208f483
Step 1/10 : RUN rm -rf /usr/share/nginx/html
--> Running in c857a7f0b4fd
--> Removed intermediate container c857a7f0b4fd
--> 4cc64fb8a58
Step 13/16 : RUN rm -rf /*
--> Running in a069d9e41fc3
--> Removed intermediate container a069d9e41fc3
--> d91cf01f45c1
Step 14/16 : COPY --from=builder /app/dist .
--> 8994c32d47f3
Step 15/16 : EXPOSE 80
--> Running in 4c3d94e41e662
--> Removed intermediate container 4c3d94e41e662
--> 293d401b9a4e
Step 16/16 : ENV NGINX_CONFIGPOINT ["nginx", "-g", "daemon off;"]
--> Running in 958ce41ef5c5
--> Removed intermediate container 958ce41ef5c5
--> f324b56d9028
Successfully built f324b56d9028
Successfully tagged netflix:latest
ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project$
```

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

## Step 4: Get the API Key:

- Open a web browser and navigate to TMDB (The Movie Database) website.
- Click on "Login" and create an account.
- Once logged in, go to your profile and select "Settings."
- Click on "API" from the left-side panel.
- Create a new API key by clicking "Create" and accepting the terms and conditions.
- Provide the required basic details and click "Submit."

- You will receive your TMDB API key.

The screenshot shows a browser window for [themoviedb.org/signup?language=en-US](https://themoviedb.org/signup?language=en-US). The page has a dark header with 'TMDB' and navigation links for 'Movies', 'TV Shows', 'People', and 'More'. A red error box at the top right says 'There was an error processing your signup' with a warning icon. Below it, a bullet point lists 'Username has already been taken'. On the left, there's a sidebar with a list of features like 'Find something to watch on your subscribed streaming services' and 'Log the movies and TV shows you have watched'. The main form fields include 'Username' (set to 'vipul\_03'), 'Password (4 characters minimum)' (set to '\*\*\*\*\*'), 'Password Confirm' (set to '\*\*\*\*\*'), and 'Email' (set to 'vipulgaikwad567@gmail.com'). At the bottom, a note says 'By clicking the "Sign up" button below, I certify that I have read and agree to the TMDB terms of use and privacy policy.' with 'Sign Up' and 'Cancel' buttons.

The screenshot shows a browser window for <https://www.themoviedb.org/settings/api>. The header shows a profile picture for 'vipul\_03'. The left sidebar has a 'Settings' tab selected, with options like 'Edit Profile', 'Account Settings', 'Streaming Services', 'Notification Settings', 'Blocked Users', 'Import List', 'Sharing Settings', 'Sessions', 'API' (which is selected), and 'Delete Account'. The main content area is titled 'API' with a 'New' badge. It includes sections for 'Overview', 'Upgrade', 'Details', 'Sessions', 'Stats', 'Regenerate Key', 'Documentation' (linking to developer.themoviedb.org), 'Support' (linking to support forums), 'API Details' (linking to credentials), and 'API Read Access Token' (with a large blueacted-out area). Below that is an 'API Key' field, also blueacted-out.

Now recreate the Docker image with your api key:

```
docker build --build-arg TMDB_V3_API_KEY=<your-api-key> -t netflix .
```

44.216.5.224 (ubuntu)

Terminal Sessions View Xserver Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...

ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$ docker build --build-arg TMDB\_V3\_API\_KEY=0c9f3734a1d07936 -t netflix .

**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 8.199MB
Step 1/16 : FROM node:16.17.0-alpine as builder
--> 5dcdf16157bd
Step 2/16 : WORKDIR /app
--> 0f0bb5c89c44
--> Removed intermediate container 0f0bb5c89c44
--> 595827f555cf
Step 3/16 : COPY ./package.json .
--> ad6bcac261a3
Step 4/16 : COPY ./yarn.lock .
--> 607c9a8e0d5b
Step 5/16 : RUN yarn install
--> Running in bc48e8d6853a
yarn install v1.22.19
[1/4] Resolving packages...
[2/4] Fetching packages...
```

< >

Remote monitoring

Follow terminal folder

UNREGISTERED VERSION... Please support Mob-Wurm by subscribing to the professional edition here: <https://mob-wurm.mobi/share/ut>

44.216.5.224 (ubuntu)

Terminal Sessions View Xserver Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...

vite v3.2.2 building for production...

transforming...

✓ 1513 modules transformed.

rendering chunks...

| File                                       | Size                           |
|--------------------------------------------|--------------------------------|
| dist/assets/ajax-loader.e7b44c86.gif       | 4.08 KiB                       |
| dist/assets/slick.12459f22.svg             | 2.10 KiB                       |
| dist/index.html                            | 0.77 KiB                       |
| dist/assets/VideoItemWithHover.0eb18bec.js | 1.34 KiB / gzip: 0.78 KiB      |
| dist/assets/GenreExplore.bbd7ab60.js       | 1.41 KiB / gzip: 0.83 KiB      |
| dist/assets/WatchPage.8c6993eb.js          | 25.86 KiB / gzip: 9.00 KiB     |
| dist/assets/index.a62a091f.css             | 55.88 KiB / gzip: 15.19 KiB    |
| dist/assets/HomePage.b95190c7.js           | 89.76 KiB / gzip: 26.00 KiB    |
| dist/assets/index.29c4673b.js              | 1149.24 KiB / gzip: 356.34 KiB |

(!) Some chunks are larger than 500 KiB after minification. Consider:

- Using dynamic import() to code-split the application
- Use build.rollupOptions.output.manualChunks to improve chunking: <https://rollupjs.org/guide/en/#outputmanualchunks>
- Adjust chunk size limit for this warning via build.chunkSizeWarningLimit.

Done in 32.39s.

--> Removed intermediate container db75c510ae2f

Step 11/16 : FROM nginx:stable-alpine

--> 936a1208f403

Step 12/16 : WORKDIR /usr/share/nginx/html

--> 4cc64d05050

Step 13/16 : RUN rm -rf ./\*

--> Using cache

--> d91cf01f45c1

Step 14/16 : COPY --from=builder /app/dist .

--> ae4d9bddb0b5

Step 15/16 : EXPOSE 80

--> Running in 749aa24e5666

--> Removed intermediate container 749aa24e5666

--> 47d81bad3f9e

Step 16/16 : ENTRYPOINT ["nginx", "-g", "daemon off;"]

--> Running in f6fc74b20750

--> Removed intermediate container f6fc74b20750

--> 901c6d7ef1584

Successfully built 901c6d7ef1584

Successfully tagged netflix:latest

ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$

< >

Remote monitoring

Follow terminal folder

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyInboundSecurityGroupRules;securityGroupID... [Alt+S]

aws Search [Alt+S]

EC2 > Security Groups > sg-0abd56975aac91e44 - launch-wizard-6 > Edit inbound rules

### Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

| Security group rule ID | Type <small>Info</small> | Protocol <small>Info</small> | Port range | Source <small>Info</small> | Description - optional <small>Info</small>                     |
|------------------------|--------------------------|------------------------------|------------|----------------------------|----------------------------------------------------------------|
| sgr-0f42e0155f3c0fbdb  | HTTP                     | TCP                          | 80         | Custom                     | <input type="text"/> 0.0.0.0/0 <span>X</span>                  |
| sgr-06053c57564291321  | SSH                      | TCP                          | 22         | Custom                     | <input type="text"/> 0.0.0.0/0 <span>X</span>                  |
| sgr-0d56179c9989adc8f  | HTTPS                    | TCP                          | 443        | Custom                     | <input type="text"/> 0.0.0.0/0 <span>X</span>                  |
| -                      | Custom TCP               | TCP                          | 8081       | Anyw...                    | <input type="text"/> 0.0.0.0/0 Application port <span>X</span> |

[Add rule](#)

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Preview changes](#) [Save rules](#)

Not secure 44.216.5.224:8081/browse

NETFLIX My List Movies Tv Shows

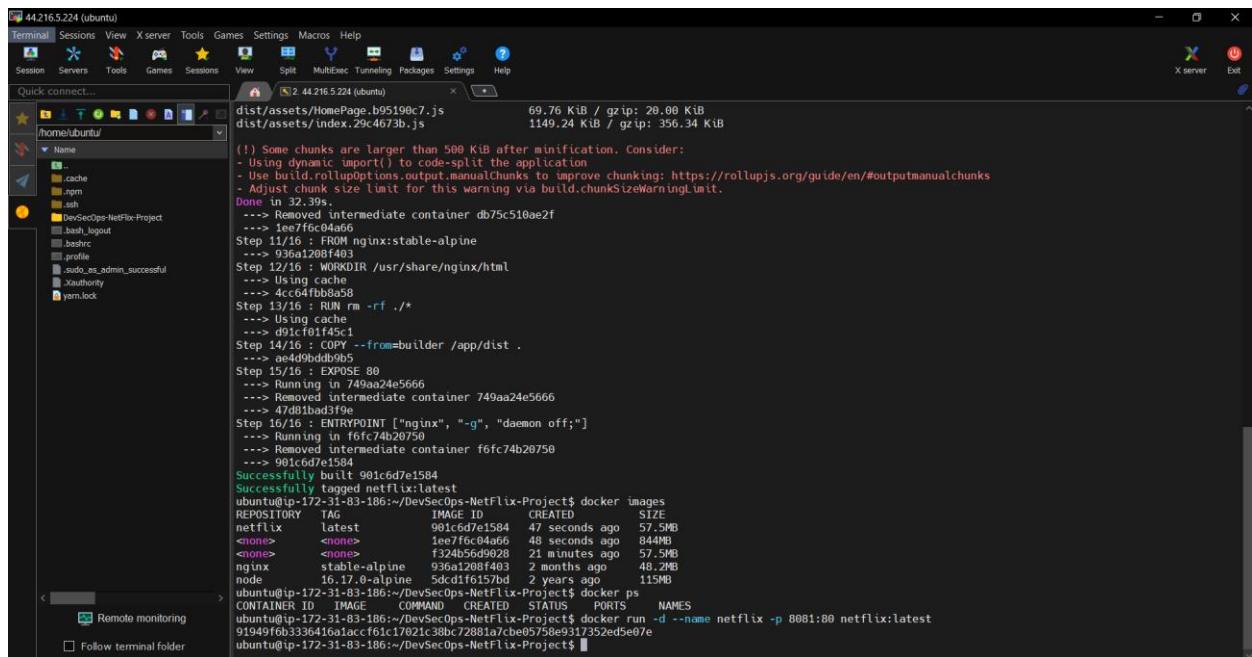
Squid Game: Makin... 씹 씹 하 게 굳 세 게

From set designs to character arcs, get exclusive cast and director interviews on how Season 2 of the globally most-watched series was brought to...

[▶ Play](#) [More Info](#)

Popular Movies

2+



## Phase 2: Security

### 1. Install SonarQube and Trivy:

- Install SonarQube and Trivy on the EC2 instance to scan for vulnerabilities.

sonarqube

`'docker run -d --name sonar -p 9000:9000 sonarqube:its-community'`

To access:

publicIP:9000 (by default username & password is admin)

### 2. Integrate SonarQube and Configure:

- Integrate SonarQube with your CI/CD pipeline.
- Configure SonarQube to analyze code for quality and security issues.

```
ubuntu@ip-172-31-83-186:~/DevSecOps-Netflix-Project$ docker run -d --name sonar -p 9000:9000 sonarqube:lts-community
Unable to find image 'sonarqube:lts-community' locally
lts-community: Pulling from library/sonarqube
e735f3a6b701: Pull complete
5006e0852115: Pull complete
e412e6aa107b: Pull complete
a023b21e1d61: Pull complete
9ab0fd257737: Pull complete
036eda256d37: Pull complete
4f4fb708ef54: Pull complete
] 27.53MB/46.96MB
```

```
ubuntu@ip-172-31-83-186:~/DevSecOps-Netflix-Project$ docker run -d --name sonar -p 9000:9000 sonarqube:lts-community
Unable to find image 'sonarqube:lts-community' locally
lts-community: Pulling from library/sonarqube
e735f3a6b701: Pull complete
5006e0852115: Pull complete
e412e6aa107b: Pull complete
a023b21e1d61: Pull complete
9ab0fd257737: Pull complete
036eda256d37: Pull complete
4f4fb708ef54: Pull complete
Digest: sha256:4049e90e940286579290370b66010002d69508c8ca304f6c33bb74ad0a2ba5
5187e038c09f4adf304ab4d285de1993049f29753995feb903fd293d2db6f77
ubuntu@ip-172-31-83-186:~/DevSecOps-Netflix-Project$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
687e0e38c09f sonarqube:lts-community "/opt/sonarqube/docker..." 11 seconds ago Up 8 seconds 0.0.0.0:9000->9000/tcp sonar
91949ff6b3336 netflix:latest "nginx -g 'daemon off;" 8 minutes ago Up 8 minutes 0.0.0.0:8001->80/tcp, [::]:8081->80/tcp netflix
ubuntu@ip-172-31-83-186:~/DevSecOps-Netflix-Project$
```

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

aws | Search [Alt+S]

☰ EC2 > Security Groups > sg-0abd56975aac91e44 - launch-wizard-6 > Edit inbound rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

| Security group rule ID | Type       | Protocol | Port range | Source  | Description - optional |
|------------------------|------------|----------|------------|---------|------------------------|
| sgr-0f42e0155f3c0fbdbd | HTTP       | TCP      | 80         | Custom  | 0.0.0.0/0              |
| sgr-06053c57564291321  | SSH        | TCP      | 22         | Custom  | 0.0.0.0/0              |
| sgr-0d56179c998adc8f   | HTTPS      | TCP      | 443        | Custom  | 0.0.0.0/0              |
| sgr-0b8028080415aa981  | Custom TCP | TCP      | 8081       | Custom  | 0.0.0.0/0              |
| -                      | Custom TCP | TCP      | 9000       | Anyw... | 0.0.0.0/0              |

Add rule

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

CloudShell Feedback © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

My API Settings — The Movie Data | Netflix | SonarQube

Log in to SonarQube

admin

.....

Log In Cancel

SonarQube™ technology is powered by SonarSource SA  
GPL v3 - Community - Documentation - Plugins

The screenshot shows the SonarQube interface at the URL [44.216.5.224:9000/projects/create](http://44.216.5.224:9000/projects/create). At the top, there's a banner about a new version of SonarQube available. Below it, the navigation bar includes 'sonarqube', 'Projects', 'Issues', 'Rules', 'Quality Profiles', 'Quality Gates', 'Administration', a search bar, and a user icon.

The main content area asks "How do you want to create your project?". It provides five options:

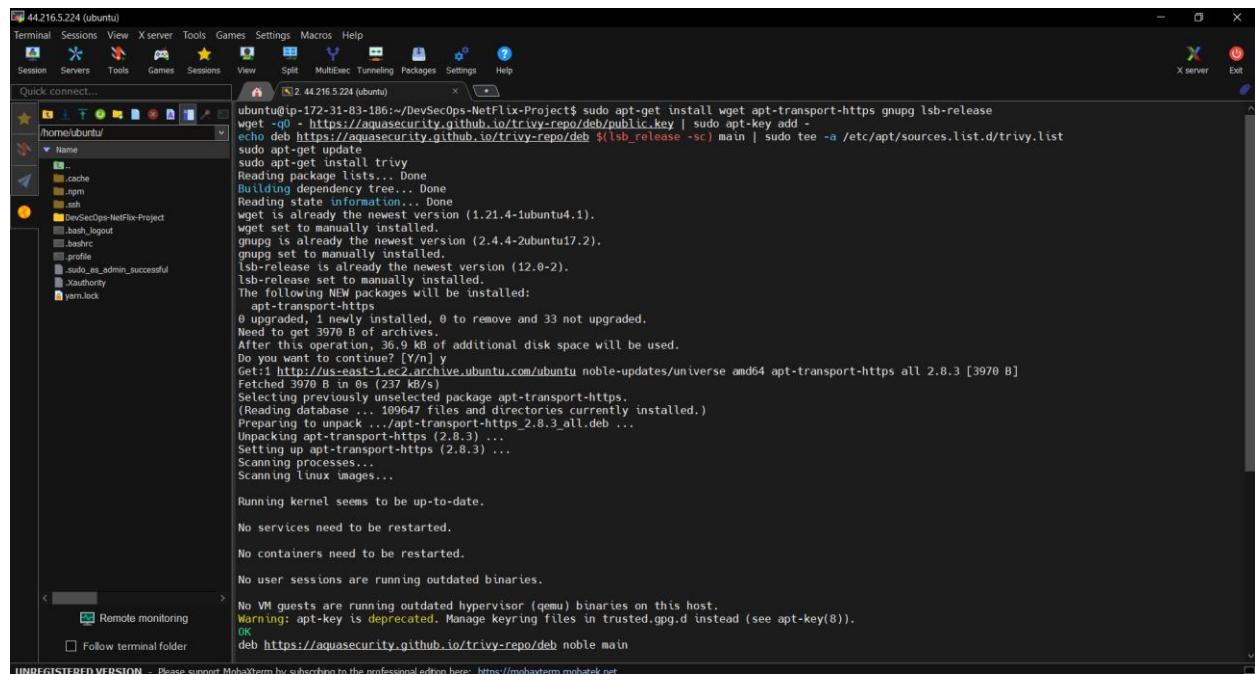
- From Azure DevOps**: Set up global configuration
- From Bitbucket Server**: Set up global configuration
- From Bitbucket Cloud**: Set up global configuration
- From GitHub**: Set up global configuration
- From GitLab**: Set up global configuration

Below these options, a note says: "Are you just testing or have an advanced use-case? Create a project manually." A "Manually" button is shown with a left and right arrow icon above it. In the bottom right corner of the page, there's a promotional message for SonarLint: "Get the most out of SonarQube! Take advantage of the whole ecosystem by using SonarLint, a free IDE plugin that helps you find and fix issues earlier in your workflow. Connect SonarLint to SonarQube to sync rule sets and issue states." It includes "Learn More" and "Dismiss" buttons.

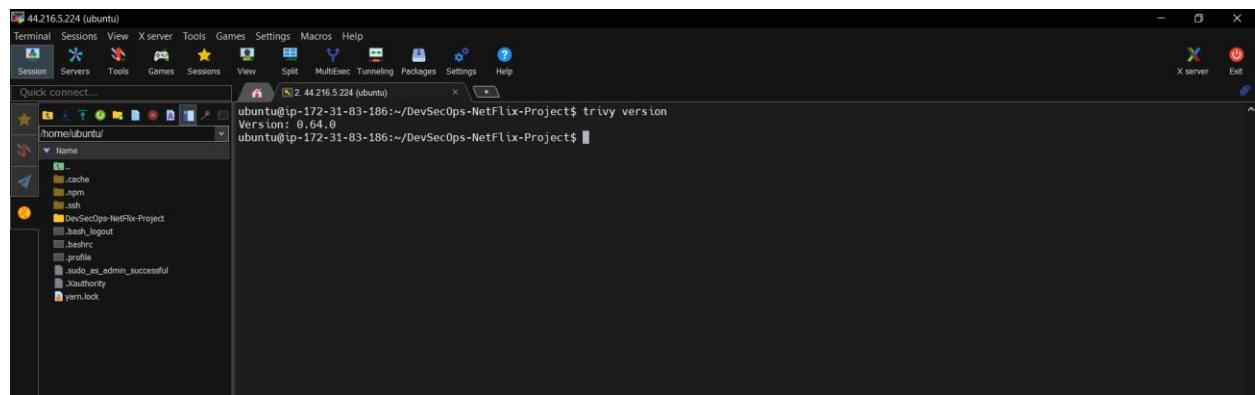
## To install Trivy:

```
'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'
```

to scan image using trivy `trivy image <imageid>`



ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$ 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  
wget is already the newest version (1.21.4-1ubuntu4.1).  
wget set to manually installed.  
gnupg is already the newest version (2.4.4-2ubuntu17.2).  
gnupg set to manually installed.  
lsb-release is already the newest version (12.0-2).  
lsb-release set to manually installed.  
The following NEW packages will be installed:  
 apt-transport-https  
0 upgraded, 1 newly installed, 0 to remove and 33 not upgraded.  
Need to get 3970 B of archives.  
After this operation, 36.9 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 noble-updates/universe amd64 apt-transport-https all 2.8.3 [3970 B]  
Fetched 3970 B in 0s (237 kB/s)  
Selecting previously unselected package apt-transport-https.  
(Reading database... 109647 files and directories currently installed.)  
Preparing to unpack .../apt-transport-https\_2.8.3\_all.deb ...  
Unpacking apt-transport-https (2.8.3) ...  
Setting up apt-transport-https (2.8.3) ...  
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.  
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).  
OK  
deb https://aquasecurity.github.io/trivy-repo/deb noble main



ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$ trivy version  
Version: 0.64.0  
ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$

44.216.5.224 (ubuntu)

Terminal Sessions View Xserver Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunnelling Packages Settings Help

Quick connect...

ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$ trivy version

```
Version: 0.64.0
ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project$ trivy fs .
2025-07-03T09:27:28Z INFO [vulndb] Need to update DB
2025-07-03T09:27:28Z INFO [vulndb] Downloading vulnerability DB...
2025-07-03T09:27:28Z INFO [vulndb] Downloading artifact... repo="mirror.gcr.io/aquasec/trivy-db:2"
66.21 MiB / 66.21 MiB [-----] 100.00% 22.58 MiB p/s 3.1s
2025-07-03T09:27:32Z INFO [vulndb] Artifact successfully downloaded repo="mirror.gcr.io/aquasec/trivy-db:2"
2025-07-03T09:27:32Z INFO [vuln] Vulnerability scanning is enabled
2025-07-03T09:27:32Z INFO [secret] Secret scanning is enabled
2025-07-03T09:27:32Z INFO [secret] If you want to disable secret scanning please try '--scanners vuln' to disable secret scanning
2025-07-03T09:27:32Z INFO [secret] Please see also https://trivy.dev/v0.64/docs/scanner/secret#recommendation for faster secret detection
2025-07-03T09:27:32Z INFO [secret] Suppressing dependencies for development and testing. To display them, try the '--include-dev-deps' flag.
2025-07-03T09:27:32Z INFO Number of language-specific files num=1
2025-07-03T09:27:32Z INFO [yarn] Detecting vulnerabilities...
```

Report Summary

| Target    | Type | Vulnerabilities | Secrets |
|-----------|------|-----------------|---------|
| yarn.lock | yarn | 4               | -       |

Legend:  
- -: Not scanned  
- 0+: Clean (no security findings detected)

yarn.lock (yarn)

Total: 4 (UNKNOWN: 0, LOW: 1, MEDIUM: 2, HIGH: 1, CRITICAL: 0)

| Library       | Vulnerability  | Severity | Status | Installed Version      | Fixed Version | Title                                                       |
|---------------|----------------|----------|--------|------------------------|---------------|-------------------------------------------------------------|
| babel/runtime | CVE-2025-27789 | MEDIUM   | fixed  | 7.26.0, 8.0.0-alpha.17 |               | Babel is a compiler for writing next generation JavaScript. |

< >

Remote monitoring

Follow terminal folder

44.216.5.224 (ubuntu)

Terminal Sessions View Xserver Tools Games Settings Macros Help

Session Servers Tools Games Sessions View Split MultiExec Tunnelling Packages Settings Help

Quick connect...

ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$ trivy image 901c6d7e1584

```
2025-07-03T09:29:32Z INFO [vuln] Vulnerability scanning is enabled
2025-07-03T09:29:32Z INFO [secret] Secret scanning is enabled
2025-07-03T09:29:32Z INFO [secret] If your scanning is slow, please try '--scanners vuln' to disable secret scanning
2025-07-03T09:29:32Z INFO [secret] Please see also https://trivy.dev/v0.64/docs/scanner/secret#recommendation for faster secret detection
2025-07-03T09:29:32Z INFO Detected OS family="alpine" version="3.21.3"
2025-07-03T09:29:32Z INFO [alpine] Detecting vulnerabilities... os_version="3.21" repository="3.21" pkg_num=68
2025-07-03T09:29:34Z INFO Number of language-specific files num=0
```

Report Summary

| Target                       | Type   | Vulnerabilities | Secrets |
|------------------------------|--------|-----------------|---------|
| 901c6d7e1584 (alpine 3.21.3) | alpine | 2               | -       |

Legend:  
- -: Not scanned  
- 0+: Clean (no security findings detected)

901c6d7e1584 (alpine 3.21.3)

Total: 2 (UNKNOWN: 0, LOW: 0, MEDIUM: 0, HIGH: 2, CRITICAL: 0)

| Library | Vulnerability  | Severity | Status | Installed Version | Fixed Version | Title                                                                                                                                                         |
|---------|----------------|----------|--------|-------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| libxml2 | CVE-2025-32414 | HIGH     | fixed  | 2.13.4-r5         | 2.13.4-r6     | libxml2: Out-of-Bounds Read in libxml2 <a href="https://avd.aquasec.com/nvd/cve-2025-32414">https://avd.aquasec.com/nvd/cve-2025-32414</a>                    |
|         | CVE-2025-32415 |          |        |                   |               | libxml2: Out-of-bounds Read in xmlSchemaIDCFillNodeTables <a href="https://avd.aquasec.com/nvd/cve-2025-32415">https://avd.aquasec.com/nvd/cve-2025-32415</a> |

ubuntu@ip-172-31-83-186:~/DevSecOps-NetFlix-Project\$

## Phase 3: CI/CD Setup

### 1. Install Jenkins for Automation:

- Install Jenkins on the EC2 instance to automate deployment:

Install Java

```
#jenkins
```

```
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
sudo systemctl start jenkins
sudo systemctl enable jenkins
``
```

- Access Jenkins in a web browser using the public IP of your EC2 instance.  
publicIp:8080

### 2. Install Necessary Plugins in Jenkins:

Goto Manage Jenkins → Plugins → Available Plugins →

Install below plugins

- 1 Eclipse Temurin Installer (Install without restart)
- 2 SonarQube Scanner (Install without restart)
- 3 NodeJs Plugin (Install Without restart)
- 4 Email Extension Plugin

```

44.216.5.224 (ubuntu)
Terminal Sessions View Xserver Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect...
ubuntu@ip-172-31-83-186:~$ java -version
openjdk version "21.0.7" 2025-04-15
OpenJDK Runtime Environment (build 21.0.7+6-Ubuntu-0ubuntu124.04)
OpenJDK 64-Bit Server VM (build 21.0.7+6-Ubuntu-0ubuntu124.04, mixed mode, sharing)
ubuntu@ip-172-31-83-186:~$

44.216.5.224 (ubuntu)
Terminal Sessions View Xserver Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect...
ubuntu@ip-172-31-83-186:~$ sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc] \
https://pkg.jenkins.io/debian-stable binary/" > /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
--2025-07-03 09:36:50 -- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
Resolving jenkins.io (jenkins.io)... 146.75.34.133 2a04:4e42:79::645
Connecting to jenkins.io (jenkins.io)[146.75.34.133]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3175 (3.1K) [application/pkcs-key]
Saving to: '/etc/apt/keyrings/jenkins-keyring.asc'

/etc/apt/keyrings/jenkins-keyring.asc 100%[=====] 3.10K --.-KB/s in 0s
2025-07-03 09:36:50 (28.6 MB/s) - '/etc/apt/keyrings/jenkins-keyring.asc' saved [3175/3175]

Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:5 https://pkg.jenkins.io/debian-stable binary/ Release [2944 B]
Hit:6 https://nexussecurity.github.io/trivy-repo/deb noble InRelease
Get:7 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Get:8 https://pkg.jenkins.io/debian-stable binary/ Packages [29.4 kB]
Hit:9 http://security.ubuntu.com/ubuntu noble-security InRelease
Fetched 32. KB in 8s (4026 B/s)
Reading package lists... 5%

```

```

44.216.5.224 (ubuntu)
Terminal Sessions View Xserver Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help
Quick connect...
ubuntu@ip-172-31-83-186:~$ sudo systemctl start jenkins
ubuntu@ip-172-31-83-186:~$ sudo systemctl enable jenkins
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
ubuntu@ip-172-31-83-186:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
 Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
 Active: active (running) since Thu 2025-07-03 09:38:44 UTC; 29s ago
 Main PID: 13286 (java)
 Tasks: 48 (limit: 9501)
 Memory: 588.2M (peak: 508.6M)
 CPU: 18.267s
 CGroup: /system.slice/jenkins.service
 └─13286 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Jul 03 09:38:31 ip-172-31-83-186 jenkins[13286]: 8b565835918d4c409ff05885c666b7893
Jul 03 09:38:31 ip-172-31-83-186 jenkins[13286]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Jul 03 09:38:31 ip-172-31-83-186 jenkins[13286]: ****
Jul 03 09:38:31 ip-172-31-83-186 jenkins[13286]: ****
Jul 03 09:38:31 ip-172-31-83-186 jenkins[13286]: ****
Jul 03 09:38:44 ip-172-31-83-186 jenkins[13286]: 2025-07-03 09:38:44.293+0000 [id:38] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
Jul 03 09:38:44 ip-172-31-83-186 jenkins[13286]: 2025-07-03 09:38:44.315+0000 [id:30] INFO hudson.lifecycle.Lifecycle$OnReady: Jenkins is fully up and running
Jul 03 09:38:44 ip-172-31-83-186 jenkins[13286]: 2025-07-03 09:38:44.407+0000 [id:56] INFO h.m.DownloadService$Downloadable#load: Obtained the updated data file for hudson
Jul 03 09:38:44 ip-172-31-83-186 jenkins[13286]: 2025-07-03 09:38:44.475+0000 [id:56] INFO hudson.util.Retriger#start: Performed the action check updates server successfully
Lines 1-28/20 (END).

```

The screenshot shows the AWS Management Console for EC2 Security Groups. A success message at the top states: "Inbound security group rules successfully modified on security group (sg-0abd56975aac91e44 | launch-wizard-6) Details". The left sidebar includes categories like Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), and Lambda.

| Owner        | Inbound rules count  | Outbound rules count |
|--------------|----------------------|----------------------|
| 010928201805 | 6 Permission entries | 1 Permission entry   |

**Inbound rules (6)**

| Name | Security group rule ID | IP version | Type       | Protocol | Port range |
|------|------------------------|------------|------------|----------|------------|
| -    | sgr-055a376b3adb41497  | IPv4       | Custom TCP | TCP      | 9000       |
| -    | sgr-06dac4e4cbe6d2541  | IPv4       | Custom TCP | TCP      | 8080       |
| -    | sgr-0f42e0155f3c0fbdb  | IPv4       | HTTP       | TCP      | 80         |
| -    | sgr-06053c57564291321  | IPv4       | SSH        | TCP      | 22         |
| -    | sgr-0d56179c9989adc8f  | IPv4       | HTTPS      | TCP      | 443        |
| -    | sgr-0b8028080415aa981  | IPv4       | Custom TCP | TCP      | 8081       |

The screenshot shows the Jenkins 'Getting Started' page. It displays the title "Unlock Jenkins" and a message: "To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server: /var/lib/jenkins/secrets/initialAdminPassword". Below this, it says "Please copy the password from either location and paste it below." There is a text input field labeled "Administrator password" and a "Continue" button at the bottom right.

Not secure 44.216.5.224:8080

## Create First Admin User

Username

Password

Confirm password

Full name

E-mail address

Jenkins 2.504.3 Skip and continue as admin Save and Continue

Not secure 44.216.5.224:8080

## Create First Admin User

Username

Password

Confirm password

Full name

E-mail address

Jenkins 2.504.3 Skip and continue as admin Save and Continue

The screenshots show the Jenkins 'Getting Started' configuration interface. The top screenshot is titled 'Instance Configuration' and contains a 'Jenkins URL' input field with the value 'http://44.216.5.224:8080/'. Below the input field is a note about the Jenkins URL being used for absolute links to various Jenkins resources. The bottom screenshot is titled 'Jenkins is ready!' and indicates that the Jenkins setup is complete. It includes a note about skipping the setup of an admin user and provides instructions for logging in with the username 'admin'. Both screenshots show the Jenkins version '2.504.3' at the bottom.

Goto Manage Jenkins → Tools → Install JDK(17) and NodeJs(16)→ Click on  
Apply and Save

The screenshot shows two separate Jenkins configuration pages for tools.

**JDK Installations:**

- Name:** java17
- Install automatically:** Checked
- Install from adoptium.net:** Selected
- Version:** jdk-17.0.15+6
- Add Installer:** Option available

**Save** and **Apply** buttons are at the bottom.

**NodeJS:**

- Name:** node16
- Install automatically:** Checked
- Install from nodejs.org:** Selected
- Version:** NodeJS 16.2.0
- Force 32bit architecture:** Unchecked
- Global npm packages to install:** Specified as "npm install -g".
- Global npm packages refresh hours:** Set to 72.

## Create the SonarQube token

Goto Jenkins Dashboard → Manage Jenkins → Credentials → Add Secret Text.

It should look like this

After adding sonar token

Click on Apply and Save

The Configure System option is used in Jenkins to configure different server

Global Tool Configurationn is used to configure different tools that we install using Plugins

We will install a sonar scanner in the tools.

The screenshot shows the 'Tokens of Administrator' section in SonarQube. A message at the top says, 'There's a new version of SonarQube available. Upgrade to the latest active version to access new updates and features.' Below this, a 'Generate Tokens' form is shown with 'Name' set to 'Enter Token Name' and 'Expires in' set to '30 days'. A success message states, 'New token "jenkins" has been created. Make sure you copy it now, you won't be able to see it again!' with a 'Copy' button and the token value 'squ\_57456093ed7ed6fe25d897b6dfc2ecd4a8db4605'. A table lists the token: Name: jenkins, Type: User, Project: (empty), Last use: Never, Created: July 3, 2025, Expiration: August 2, 2025, and a 'Revoke' button. At the bottom, a note says, '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 includes 'SonarQube™ technology is powered by SonarSource SA' and links for 'Community Edition - v9.0.8 (build 100196) - LGPL v3 - Community - Documentation - Plugins - Web API'.

The screenshot shows the 'New credentials' page in Jenkins. The 'Kind' dropdown is set to 'Secret text'. The 'Scope' dropdown is set to 'Global (Jenkins, nodes, items, all child items, etc.)'. The 'Secret' field contains a redacted password. The 'ID' field is filled with 'sonar-token'. A red error message at the bottom says, 'An internal error occurred during form field validation (HTTP 403). Please reload the page and if the problem persists, ask the administrator for help.' The 'Create' button is visible at the bottom.

Not secure 44.216.5.224:8080/manage/credentials/store/system/domain/\_/ admin log out

## Jenkins

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) >

### Global credentials (unrestricted)

Credentials that should be available irrespective of domain specification to requirements matching.

| ID | Name        | Kind        | Description |
|----|-------------|-------------|-------------|
|    | sonar-token | sonar-token | Secret text |

Icon: S M L

+ Add Credentials

REST API Jenkins 2.504.3

Not secure 44.216.5.224:8080/manage/configure

Dashboard > Manage Jenkins > System > Environment variables

SonarQube installations  
List of SonarQube installations

Name: Sonarqube

An internal error occurred during form field validation (HTTP 403). Please reload the page and if the problem persists, ask the administrator for help.

Server URL: Default is http://localhost:9000  
http://44.216.5.224:9000/

Server authentication token: SonarQube authentication token. Mandatory when anonymous access is disabled.  
sonar-token

+ Add Advanced

Save Apply

The screenshot shows the Jenkins interface for managing tools. The URL is 44.216.5.224:8080/manage/configureTools/. The page title is "SonarQube Scanner installations". A sub-section titled "SonarQube Scanner" is open, showing a configuration form. The "Name" field contains "sonar-scanner". The "Install automatically" checkbox is checked. Under "Install from Maven Central", the "Version" dropdown is set to "SonarQube Scanner 7.1.0.4889". There is also an "Add Installer" button. At the bottom are "Save" and "Apply" buttons.

## Configure CI/CD Pipeline in Jenkins:

- Create a CI/CD pipeline in Jenkins to automate your application deployment.

The screenshot shows the Jenkins interface for creating a new item. The URL is 44.216.5.224:8080/view/all/newJob. The page title is "New Item". The "Enter an item name" field contains "Vrx-Network". The "Select an item type" section shows three options: "Freestyle project", "Pipeline", and "Multi-configuration project". The "Pipeline" option is selected. The "OK" button is visible at the bottom.

Not secure 44.216.5.224:9000/dashboard?id=Netflix&selectedTutorial=local

There's a new version of SonarQube available. Upgrade to the latest active version to access new updates and features. [Learn More](#)

sonarcube Projects Issues Rules Quality Profiles Quality Gates Administration

Netflix main

Overview Issues Security Hotspots Measures Code Activity

Analyze your project  
We initialized your project on SonarQube, now it's up to you to launch analyses!

**1** Provide a token **2** Analyze "Netflix" sqp\_9a3b52d3754f245138aa4035657300aaa7ffdb4a

**2** Run analysis on your project  
What option best describes your build? Maven Gradle .NET Other (for JS, TS, Go, Python, PHP, ...)  
What is your OS? Linux Windows macOS

Download and unzip the Scanner for Linux  
Visit the [official documentation](#) of the Scanner to download the latest version, and add the bin directory to the PATH environment variable

Execute the Scanner  
Running a SonarQube analysis is straightforward. You just need to execute the following commands in your project's folder.

```
sonar-scanner \
-Dsonar.projectKey=Netflix \
-Dsonar.sources= \
-Dsonar.host.url=http://44.216.5.224:9000 \
-Dsonar.login=sqp_9a3b52d3754f245138aa4035657300aaa7ffdb4a
```

[Copy](#)

Not secure 44.216.5.224:9000/dashboard?id=Netflix&selectedTutorial=local

There's a new version of SonarQube available. Upgrade to the latest active version to access new updates and features. [Learn More](#)

sonarcube Projects Issues Rules Quality Profiles Quality Gates Administration

Netflix main

Overview Issues Security Hotspots Measures Code Activity

July 3, 2025 at 3:57 PM Version not provided

Project Settings Project Information

**QUALITY GATE STATUS** Passed  
All conditions passed.

**MEASURES**

| New Code            | Overall Code   |                   |
|---------------------|----------------|-------------------|
| 0 Bugs              | Reliability A  |                   |
| 0 Vulnerabilities   | Security A     |                   |
| 4 Security Hotspots | 0.0% Reviewed  | Security Review E |
| 1h 43min Debt       | 18 Code Smells | Maintainability A |
| 0.0%                | 0.0%           | 0.0%              |

## Install Dependency-Check and Docker Tools in Jenkins

### Install Dependency-Check Plugin:

- Go to "Dashboard" in your Jenkins web interface.
- Navigate to "Manage Jenkins" → "Manage Plugins."
- Click on the "Available" tab and search for "OWASP Dependency-Check."
- Check the checkbox for "OWASP Dependency-Check" and click on the "Install without restart" button.

### Configure Dependency-Check Tool:

- After installing the Dependency-Check plugin, you need to configure the tool.
- Go to "Dashboard" → "Manage Jenkins" → "Global Tool Configuration."
- Find the section for "OWASP Dependency-Check."
- Add the tool's name, e.g., "DP-Check."
- Save your settings.

### Install Docker Tools and Docker Plugins:

- Go to "Dashboard" in your Jenkins web interface.
- Navigate to "Manage Jenkins" → "Manage Plugins."
- Click on the "Available" tab and search for "Docker."
- Check the following Docker-related plugins:
  - Docker
  - Docker Commons
  - Docker Pipeline

- Docker API
- docker-build-step
- Click on the "Install without restart" button to install these plugins.

### Add DockerHub Credentials:

- To securely handle DockerHub credentials in your Jenkins pipeline, follow these steps:
  - Go to "Dashboard" → "Manage Jenkins" → "Manage Credentials."
  - Click on "System" and then "Global credentials (unrestricted)."
  - Click on "Add Credentials" on the left side.
  - Choose "Secret text" as the kind of credentials.
  - Enter your DockerHub credentials (Username and Password) and give the credentials an ID (e.g., "docker").
  - Click "OK" to save your DockerHub credentials.

| Plugin                              | Description                                                                                                                                                                                                                          | Last Updated     |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| OWASP Dependency-Check 5.6.1        | This plug-in can independently execute a Dependency-Check analysis and visualize results. Dependency-Check is a utility that identifies project dependencies and checks if there are any known, publicly disclosed, vulnerabilities. | 2 mo 13 days ago |
| Docker 1274.vc0203fdf2e74           | This plugin integrates Jenkins with Docker                                                                                                                                                                                           | 3 mo 27 days ago |
| Docker Commons 457.v0f62a_94f11a_3  | Provides the common shared functionality for various Docker-related plugins.                                                                                                                                                         | 1 mo 3 days ago  |
| Docker Pipeline 621.va_73f881d9232  | Build and use Docker containers from pipelines.                                                                                                                                                                                      | 1 mo 3 days ago  |
| Docker API 3.5.2-119.v54c784c71fa_3 | This plugin provides docker-java API for other plugins.                                                                                                                                                                              | 1 day 9 hr ago   |
| docker-build-step 2.12              | This plugin allows to add various docker commands to your job as build steps.                                                                                                                                                        |                  |

hub.docker.com/repositories/vipulvrx

Docker Hub Explore My Hub Search Docker Hub CtrlK

**Repositories**

All repositories within the `vipulvrx` namespace.

Search by repository name All content Create a repository

| Name                                          | Last Pushed  | Contains | Visibility | Scout    |
|-----------------------------------------------|--------------|----------|------------|----------|
| <code>vipulvrx/simple-python-flask-app</code> | 21 days ago  | IMAGE    | Public     | Inactive |
| <code>vipulvrx/singlestage</code>             | 4 months ago | IMAGE    | Public     | Inactive |
| <code>vipulvrx/multistage-app</code>          | 4 months ago | IMAGE    | Public     | Inactive |
| <code>vipulvrx/java-app</code>                | 4 months ago | IMAGE    | Public     | Inactive |
| <code>vipulvrx/webapp</code>                  | 4 months ago | IMAGE    | Public     | Inactive |
| <code>vipulvrx/firstdockerimage</code>        | 5 months ago | IMAGE    | Public     | Inactive |

1–6 of 6

Not secure 44.216.5.224:8080/blue/organizations/jenkins/Vrx-Netflix/detail/Vrx-Netflix/5/pipeline

Vrx-Netflix < 5 Pipeline Changes Tests Artifacts Logout X

Branch: — 53s No changes Started by user admin

Commit: — 2 minutes ago

Start clean workspace Checkout from Git Sonarqube Analysis quality gate Install Dependencies End

Install Dependencies - 22s

- > jdk17 — Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > node16 — Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > npm install -- Shell Script 22s

Restart Install Dependencies

Not secure 44.216.5.224:8080/manage/credentials/store/system/domain/\_/newCredentials

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) > NEW CREDENTIALS

Kind: Username with password

Scope: Global (Jenkins, nodes, items, all child items, etc)

Username: vipulvrx

Treat username as secret

Password:  .....

An internal error occurred during form field validation (HTTP 403). Please reload the page and if the problem persists, ask the administrator for help.

ID: docker

Description:

**Create**

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) > NEW CREDENTIALS

Kind: Username with password

Scope: Global (Jenkins, nodes, items, all child items, etc)

Username: vipulvrx

Treat username as secret

Password:  .....

An internal error occurred during form field validation (HTTP 403). Please reload the page and if the problem persists, ask the administrator for help.

ID: docker

An internal error occurred during form field validation (HTTP 403). Please reload the page and if the problem persists, ask the administrator for help.

Description:

**Create**

Not secure 44.216.5.224:8080/manage/credentials/store/system/domain/\_/ Jenkins

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) >

### Global credentials (unrestricted)

Credentials that should be available irrespective of domain specification to requirements matching.

| ID          | Name           | Kind                   | Description |
|-------------|----------------|------------------------|-------------|
| sonar-token | sonar-token    | Secret text            |             |
| docker      | vipulvrx/***** | Username with password |             |

Icon: S M L

REST API Jenkins 2.504.3

Not secure 44.216.5.224:8080/manage/configureTools/ Jenkins

Dashboard > Manage Jenkins > Tools

### Dependency-Check installations

Add Dependency-Check

**Dependency-Check**

Name: DP-Check

Install automatically ?

**Install from github.com**

Version: dependency-check 12.1.3

Add Installer ▾

Add Dependency-Check

### Docker installations

[Dashboard](#) > [Manage Jenkins](#) > [Tools](#)

### Docker installations

Add Docker

**Docker**

Name: docker

Install automatically ?

**Download from docker.com**

Docker version: latest

Add Installer ▾

Add Docker

**Save** **Apply**

[Logout](#)

### Vrx-Netflix < 12

Branch: --      Commit: --      Changes by noreply      Started by user admin

Pipeline Changes Tests Artifacts

Docker Build & Push - 2m 20s

- > jdk17 – Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > node16 – Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > docker build --build-arg TMDB\_V3\_API\_KEY=f3b2bc9f68779484a762fd5704797090 -t netflix. – Shell Script 2m 15s
- > docker tag netflix vipvulrx/netflix:latest – Shell Script <1s
- > docker push vipvulrx/netflix:latest – Shell Script 4s

hub.docker.com/repositories/vipulvrx

Docker Hub Explore My Hub

**Repositories**

All repositories within the `vipulvrx` namespace.

Search by repository name All content Create a repository

| Name                                          | Last Pushed   | Contains | Visibility | Scout    |
|-----------------------------------------------|---------------|----------|------------|----------|
| <code>vipulvrx/netflix</code>                 | 2 minutes ago | IMAGE    | Public     | Inactive |
| <code>vipulvrx/simple-python-flask-app</code> | 21 days ago   | IMAGE    | Public     | Inactive |
| <code>vipulvrx/singlestage</code>             | 4 months ago  | IMAGE    | Public     | Inactive |
| <code>vipulvrx/multistage-app</code>          | 4 months ago  | IMAGE    | Public     | Inactive |
| <code>vipulvrx/java-app</code>                | 4 months ago  | IMAGE    | Public     | Inactive |
| <code>vipulvrx/webapp</code>                  | 4 months ago  | IMAGE    | Public     | Inactive |
| <code>vipulvrx/firstdockerimage</code>        | 5 months ago  | IMAGE    | Public     | Inactive |

1–7 of 7

Not secure 44.216.5.224:8081/browse

NETFLIX My List Movies Tv Shows

Jurassic World...

Five years after the events of Jurassic World Dominion, covert operations expert Zora Bennett is contracted to lead a skilled team on a top-secret...

Play More Info 15+

Popular Movies

44.216.5.224 (ubuntu)

Terminal Sessions View X server Tools Games Settings Macros Help

Quick connect... 44.216.5.224 (ubuntu)

```
ubuntu@ip-172-31-83-186:~$ sudo usermod -aG docker jenkins
ubuntu@ip-172-31-83-186:~$ sudo systemctl restart jenkins
ubuntu@ip-172-31-83-186:~$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
95028ee7e47 netflix:latest "nginx -g 'daemon off;" 2 minutes ago Up 2 minutes 0.0.0.0:8081->80/tcp, [::]:8081->80/tcp netflix
607e8e38ca9f sonarqube:11.5-community "/opt/sonarqube/docker..." 3 hours ago Up 3 hours 0.0.0.0:9000->9000/tcp, :::9000->9000/tcp sonarqube
ubuntu@ip-172-31-83-186:~$
```

Docker Hub Repository Page (hub.docker.com/repository/docker/vipulvrx/netflix/general)

**General** Tags Image Management Collaborators Webhooks Settings

**Tags**

| Tag    | OS | Type  | Pulled          | Pushed    |
|--------|----|-------|-----------------|-----------|
| latest |    | Image | less than 1 day | 4 minutes |

[See all](#)

**Docker commands**

To push a new tag to this repository:

```
docker push vipulvrx/netflix:tagname
```

[Public view](#)

**buildcloud**

Build with Docker Build Cloud

Accelerate image build times with access to cloud-based builders and shared cache.

Docker Build Cloud executes builds on optimally-dimensioned cloud infrastructure with dedicated per-organization isolation.

Get faster builds through shared caching across your team, native multi-platform support, and encrypted data transfer - all without managing infrastructure.

Jenkins Job Page (44.216.5.224:8080/job/Vrx-Netflix/lastCompletedBuild/dependency-check-findings/)

**Dependency-Check Results**

**SEVERITY DISTRIBUTION**

| Severity | Count |
|----------|-------|
| Low      | 3     |
| Medium   | 10    |
| High     | 1     |
| Critical | 0     |

**Dependency-Check Results Table**

| File Name              | Vulnerability           | Severity | Weakness |
|------------------------|-------------------------|----------|----------|
| brace-expansion@1.1.11 | OSSINDEX CVE-2025-5889  | Medium   | CWE-1333 |
| nanoid@3.4             | OSSINDEX CVE-2024-55565 | Medium   | CWE-835  |
| postcss@8.4.18         | NVD CVE-2023-44270      | Medium   | CWE-74   |
| rollup@2.79.1          | NVD CVE-2024-47068      | Medium   | CWE-79   |
| vite@3.2.2             | OSSINDEX CVE-2024-45811 | High     | CWE-200  |
| vite@3.2.2             | NVD CVE-2023-34092      | High     | CWE-50   |
| vite@3.2.2             | NVD CVE-2024-23331      | High     | CWE-284  |
| vite@3.2.2             | OSSINDEX CVE-2025-32395 | Medium   | CWE-200  |
| vite@3.2.2             | OSSINDEX CVE-2025-46565 | Medium   | CWE-22   |
| vite@3.2.2             | OSSINDEX CVE-2024-31207 | Medium   | CWE-200  |

## Phase 4: Monitoring

### 1. Install Prometheus and Grafana:

Set up Prometheus and Grafana to monitor your application.

#### Installing Prometheus:

First, create a dedicated Linux user for Prometheus and download

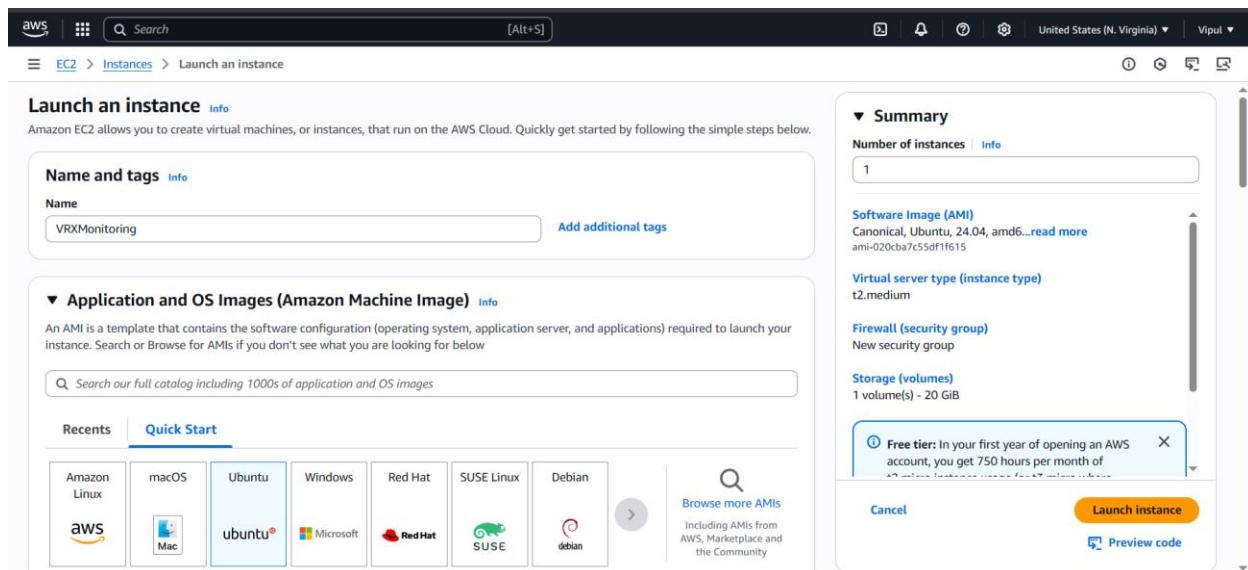
Prometheus:

```
``` bash
```

```
sudo useradd --system --no-create-home --shell /bin/false prometheus
```

```
wget https://github.com/prometheus/prometheus/releases/download/v2.47.1/prometheus-  
2.47.1.linux-amd64.tar.gz
```

```
```
```



**EC2 > Instances > Launch an instance**

allow access from known IP addresses only.

**Storage (volumes) Info**

**EBS Volumes**

**Volume 1 (AMI Root) (Custom)**

**Storage type**: EBS | **Device name - required**: /dev/sda1 | **Snapshot**: snap-0bc1d350c2ac74766

**Size (GiB)**: 20 | **Volume type**: gp3 | **IOPS**: 3000

**Delete on termination**: Yes | **Encrypted**: Not encrypted | **KMS key**: Select

**Throughput**: 125 | **Volume initialization rate - new, optional**: Enter a value

**Summary**

**Number of instances**: 1

**Software Image (AMI)**: Canonical, Ubuntu, 24.04, amd64... [read more](#)

**Virtual server type (instance type)**: t2.medium

**Firewall (security group)**: New security group

**Storage (volumes)**: 1 volume(s) - 20 GiB

**Free tier: In your first year of opening an AWS account, you get 750 hours per month of free compute usage.**

**Launch instance** | **Preview code**

**EC2 > Elastic IP Addresses > Associate Elastic IP address**

**Associate Elastic IP address**

Choose the instance or network interface to associate to this Elastic IP address (107.20.13.13)

**Elastic IP address: 107.20.13.13**

**Resource type**: Instance

If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

**Instance**

i-04f1a1c9696e5de07

Use: i-04f1a1c9696e5de07

i-04f62d8c48bbf327a (VrxNetflix) - running

**i-04f1a1c9696e5de07 (VRXMonitoring) - running**

Specify whether the Elastic IP address can be reassigned with a different resource if it already associated with a resource.

Allow this Elastic IP address to be reassigned

**Cancel** | **Associate**

**aws** | **Search** | **[Alt+S]**

```
ubuntu@ip-172-31-87-78:~$ sudo useradd --system --no-create-home --shell /bin/false prometheus
wget https://github.com/prometheus/releases/download/v2.47.1/prometheus-2.47.1.linux-amd64.tar.gz
--2025-07-03 15:16:21-- https://github.com/prometheus/releases/download/v2.47.1/prometheus-2.47.1.linux-amd64.tar.gz
Resolving github.com (github.com) ... 140.82.114.3
Connecting to github.com (github.com) [140.82.114.3]:443...
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/6838921/2f9b7b37-63a0-428b-adb5-0294482fd743?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250703%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20250703T151621Z&X-Amz-Expires=1800s&X-Amz-Signature=482bcd7048e16e56a046e37076eebf4a98f2cf6311a691622de5cb4e2446cbx-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dprometheus-2.47.1.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream [following]
--2025-07-03 15:16:21-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/6838921/2f9b7b37-63a0-428b-adb5-0294482fd743?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250703%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20250703T151621Z&X-Amz-Expires=1800s&X-Amz-Signature=482bcd7048e16e56a046e37076eebf4a98f2cf6311a691622de5cb4e2446cbx-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dprometheus-2.47.1.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...
HTTP request sent, awaiting response... 200 OK
Length: 95713066 (91M) [application/octet-stream]
Saving to: 'prometheus-2.47.1.linux-amd64.tar.gz'

prometheus-2.47.1.linux-amd64.tar.gz 100%[=====] 91.28M 71.5MB/s in 1.3s
2025-07-03 15:16:22 (71.5 MB/s) - 'prometheus-2.47.1.linux-amd64.tar.gz' saved [95713066/95713066]

ubuntu@ip-172-31-87-78:~$
```

**i-04f1a1c9696e5de07 (VRXMonitoring)**

Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

## Extract Prometheus files, move them, and create directories:

```
``` bash
```

```
tar -xvf prometheus-2.47.1.linux-amd64.tar.gz
cd prometheus-2.47.1.linux-amd64/
sudo mkdir -p /data /etc/prometheus
sudo mv prometheus promtool /usr/local/bin/
sudo mv consoles/ console_libraries/ /etc/prometheus/
sudo mv prometheus.yml /etc/prometheus/prometheus.yml
```

```
```
```

```
aws | ⚡ | Search [Alt+S] | United States (N. Virginia) | Vipul
drwxr-xr-x 3 root root 4096 Jul 3 15:12 ..
-rw-r--r-- 1 ubuntu ubuntu 220 Mar 31 2024 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Mar 31 2024 .bashrc
drwxr----- 2 ubuntu ubuntu 4096 Jul 3 15:14 .cache
-rw-r--r-- 1 ubuntu ubuntu 807 Mar 31 2024 .profile
drwxr----- 2 ubuntu ubuntu 4096 Jul 3 15:12 .ssh
-rw-r--r-- 1 ubuntu ubuntu 0 Jul 3 15:14 .sudo_as_admin_successful
-rw-rw-r-- 1 ubuntu ubuntu 165 Jul 3 15:16 .wget-hsts
-rw-rw-r-- 1 ubuntu ubuntu 95713066 Oct 4 2023 prometheus-2.47.1.linux-amd64.tar.gz
ubuntu@ip-172-31-87-78:~$ tar -xvf prometheus-2.47.1.linux-amd64.tar.gz
cd prometheus-2.47.1.linux-amd64/
sudo mkdir -p /data /etc/prometheus
sudo mv prometheus promtool /usr/local/bin/
sudo mv consoles/ console_libraries/ /etc/prometheus/
sudo mv prometheus.yml /etc/prometheus/prometheus.yml
prometheus-2.47.1.linux-amd64/
prometheus-2.47.1.linux-amd64/LICENSE
prometheus-2.47.1.linux-amd64/NOTICE
prometheus-2.47.1.linux-amd64/prometheus.yml
prometheus-2.47.1.linux-amd64/consoles/
prometheus-2.47.1.linux-amd64/consoles/prometheus.html
prometheus-2.47.1.linux-amd64/consoles/prometheus-overview.html
prometheus-2.47.1.linux-amd64/consoles/node-cpu.html
prometheus-2.47.1.linux-amd64/consoles/index.html.example
prometheus-2.47.1.linux-amd64/consoles/node.html
prometheus-2.47.1.linux-amd64/consoles/node-disk.html
prometheus-2.47.1.linux-amd64/consoles/node-overview.html
i-04f1a1c9696e5de07 (VRXMonitoring)
PublicIP: 107.20.13.13 PrivateIP: 172.31.87.78
```

## Set ownership for directories:

```
``` bash
```

```
sudo chown -R prometheus:prometheus /etc/prometheus/ /data/
```

```
```
```

```
ubuntu@ip-172-31-87-78:~$ sudo chown -R prometheus:prometheus /etc/prometheus/ /data/
ubuntu@ip-172-31-87-78:~$ sudo vi /etc/systemd/system/prometheus.service
ubuntu@ip-172-31-87-78:~$
```

``` plaintext

[Unit]

Description=Prometheus

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 \

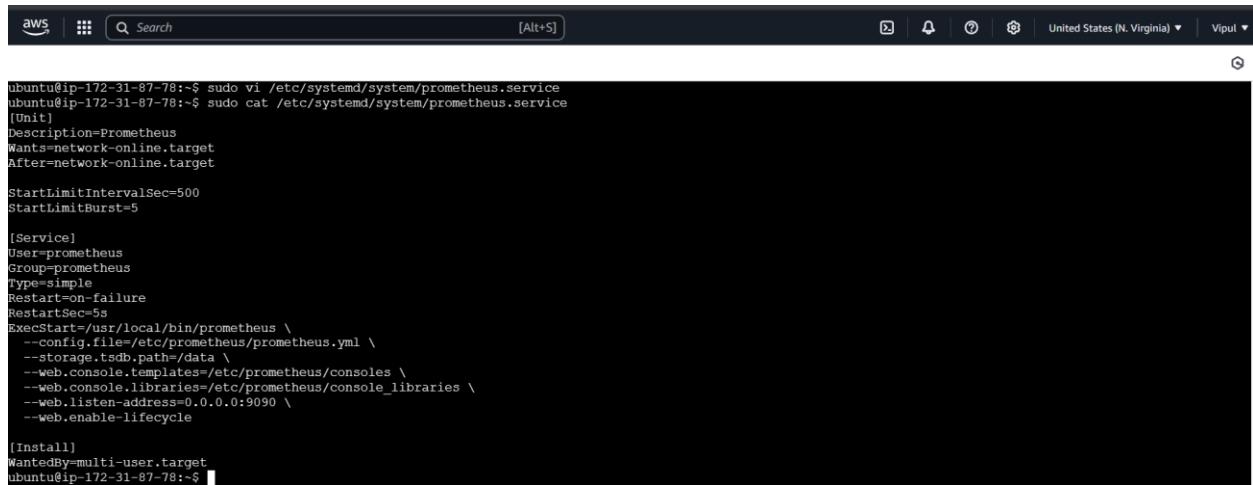
--web.console.libraries=/etc/prometheus/console_libraries \

```
--web.listen-address=0.0.0.0:9090 \
--web.enable-lifecycle
```

[Install]

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

```
```
```



```
ubuntu@ip-172-31-87-78:~$ sudo vi /etc/systemd/system/prometheus.service
ubuntu@ip-172-31-87-78:~$ sudo cat /etc/systemd/system/prometheus.service
[Unit]
Description=Prometheus
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-172-31-87-78:~$
```

## Here's a brief explanation of the key parts in this

'Prometheus. Service` file:

- 'User' and 'Group' specify the Linux user and group under which Prometheus will run.
- 'ExecStart' is where you specify the Prometheus binary path, the location of the configuration file ('Prometheus'), the storage directory, and other settings.
- 'web.Listen-address` configures Prometheus to listen on all network interfaces on port 9090.
- 'web.enable-lifecycle` allows for management of Prometheus through API calls.

## Enable and start Prometheus:

```
``` bash
sudo systemctl enable prometheus
sudo systemctl start prometheus
```

```

## Verify Prometheus's status:

```
``` bash
sudo systemctl status prometheus
```

```

```
ubuntu@ip-172-31-87-78:~$ sudo systemctl status prometheus
● prometheus.service - Prometheus
 Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; preset: enabled)
 Active: active (running) since Thu 2025-07-03 15:24:41 UTC; 7s ago
 Main PID: 2056 (prometheus)
 Tasks: 7 (limit: 4670)
 Memory: 15.9M (peak: 16.4M)
 CPU: 75ms
 CGroup: /system.slice/prometheus.service
 └─ 2056 /usr/local/bin/prometheus --config.file=/etc/prometheus/prometheus.yml --storage.tsdb.path=/data --web.console.templates=/etc/prometheus/con

Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.361Z caller=head.go:681 level=info component=tsdb msg="On-disk memory mappable chunks re
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.361Z caller=head.go:689 level=info component=tsdb msg="Replaying WAL, this may take a wh
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.361Z caller=head.go:760 level=info component=tsdb msg="WAL segment loaded" Segment=0 max_
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.361Z caller=head.go:797 level=info component=tsdb msg="WAL replay completed" checkpoint_
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.367Z caller=main.go:1045 level=info fs_type=EXT4_SUPER_MAGIC
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.367Z caller=main.go:1048 level=info msg="TSDB started"
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.367Z caller=main.go:1229 level=info msg="Loading configuration file" filename=/etc/prom
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.371Z caller=main.go:1266 level=info msg="Completed loading of configuration file" filenam
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.371Z caller=main.go:1009 level=info msg="Server is ready to receive web requests."
Jul 3 15:24:41 ip-172-31-87-78 prometheus[2056]: ts=2025-07-03T15:24:41.371Z caller=manager.go:1009 level=info component="rule manager" msg="Starting rule manag
lines 1-20/20 (END)
```

i-04f1a1c9696e5de07 (VRXMonitoring)  
Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

You can access Prometheus in a web browser using your server's IP

and port 9090:

`http://<your-server-ip>:9090`

The screenshot shows the Prometheus Targets page. At the top, there are tabs for 'All', 'Unhealthy', and 'Collapse All'. A search bar is present, and a filter for 'Unknown', 'Unhealthy', and 'Healthy' status is applied. The main table has columns for Endpoint, State, Labels, Last Scrape, Scrape Duration, and Error. One entry is listed: 'http://localhost:9090/metrics' with state 'UP', labels 'instance="localhost:9090"', 'job="prometheus"', last scraped 8.225s ago, and a duration of 6.139ms.

The screenshot shows the 'Edit inbound rules' screen in the AWS Management Console. It lists three rules:

- sgr-08e3ef854e5f666f3**: Type SSH, Protocol TCP, Port range 22, Source 0.0.0.0/0, Description optional.
- sgr-0eb21b0de028ade14**: Type HTTPS, Protocol TCP, Port range 443, Source 0.0.0.0/0, Description optional.
- : Type Custom TCP, Protocol TCP, Port range 9090, Source Anywhere, Destination Prometheus, Description optional.

A warning message at the bottom states: "⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only." Buttons for 'Cancel', 'Preview changes', and 'Save rules' are at the bottom right.

## Installing Node Exporter:

Create a system user for Node Exporter and download Node Exporter:

```
``` bash
```

```
sudo useradd --system --no-create-home --shell /bin/false node_exporter
```

```
wget https://github.com/prometheus/node_exporter/releases/download/v1.6.1/node_exporter-1.6.1.linux-amd64.tar.gz
```

```
```

```

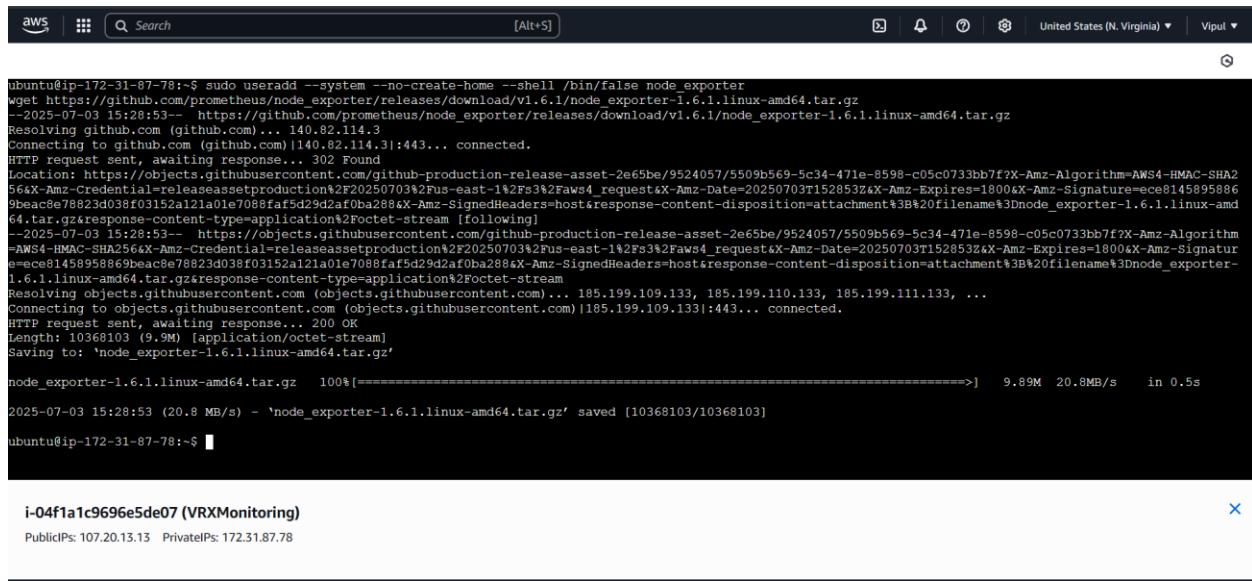
Extract Node Exporter files, move the binary, and clean up:

```
``` bash
```

```
tar -xvf node_exporter-1.6.1.linux-amd64.tar.gz
sudo mv node_exporter-1.6.1.linux-amd64/node_exporter /usr/local/bin/
rm -rf node_exporter*
```

```
```

```



```
ubuntu@ip-172-31-87-78:~$ sudo useradd --system --no-create-home --shell /bin/false node_exporter
wget https://github.com/prometheus/node_exporter/releases/download/v1.6.1/node_exporter-1.6.1.linux-amd64.tar.gz
--2025-07-03 15:28:53-- https://github.com/prometheus/node_exporter/releases/download/v1.6.1/node_exporter-1.6.1.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/9524057/5509b569-5c34-471e-8598-c05c0733bb7f?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250703%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20250703T152853Z&X-Amz-Expires=1800X-Amz-Signature=ece01458958869beac8e78823d038f03152a121a01e7088faf5d29d2af0ba288X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnode_exporter-1.6.1.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream [following]
--2025-07-03 15:28:53-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/9524057/5509b569-5c34-471e-8598-c05c0733bb7f?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250703%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20250703T152853Z&X-Amz-Expires=1800X-Amz-Signature=ece01458958869beac8e78823d038f03152a121a01e7088faf5d29d2af0ba288X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dnode_exporter-1.6.1.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.109.133, 185.199.110.133, 185.199.111.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.109.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 10368103 (9.9M) [application/octet-stream]
Saving to: 'node_exporter-1.6.1.linux-amd64.tar.gz'

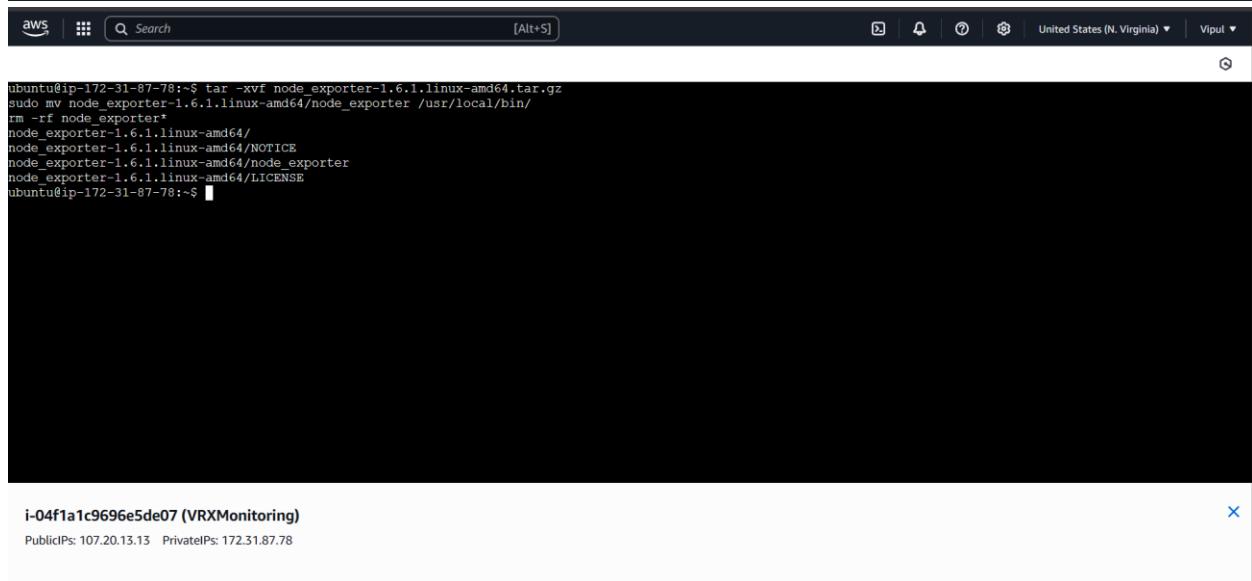
node_exporter-1.6.1.linux-amd64.tar.gz 100%[=====] 9.89M 20.8MB/s in 0.5s

2025-07-03 15:28:53 (20.8 MB/s) - 'node_exporter-1.6.1.linux-amd64.tar.gz' saved [10368103/10368103]

ubuntu@ip-172-31-87-78:~$
```

**i-04f1a1c9696e5de07 (VRXMonitoring)**

PublicIPs: 107.20.13.13 PrivateIPs: 172.31.87.78



```
ubuntu@ip-172-31-87-78:~$ tar -xvf node_exporter-1.6.1.linux-amd64.tar.gz
sudo mv node_exporter-1.6.1.linux-amd64/node_exporter /usr/local/bin/
rm -rf node_exporter*
node_exporter-1.6.1.linux-amd64/
node_exporter-1.6.1.linux-amd64/NOTICE
node_exporter-1.6.1.linux-amd64/node_exporter
node_exporter-1.6.1.linux-amd64/LICENSE
ubuntu@ip-172-31-87-78:~$
```

**i-04f1a1c9696e5de07 (VRXMonitoring)**

PublicIPs: 107.20.13.13 PrivateIPs: 172.31.87.78

## Add the content to the service 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

:wq!
```

i-04f1a1c9696e5de07 (VRXMonitoring)  
Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

## Enable and start Node Exporter:

```
sudo systemctl enable node_exporter
sudo systemctl start node_exporter
```

## Verify the Node Exporter's status:

```
sudo systemctl status node_exporter
```

```
ubuntu@ip-172-31-87-78:~$ sudo vi /etc/systemd/system/node_exporter.service
ubuntu@ip-172-31-87-78:~$ 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-172-31-87-78:~$ sudo systemctl start node_exporter
ubuntu@ip-172-31-87-78:~$ sudo systemctl status node_exporter
● node_exporter.service - Node Exporter
 Loaded: loaded (/etc/systemd/system/node_exporter.service; enabled; preset: enabled)
 Active: active (running) since Thu 2025-07-03 15:32:18 UTC; 9s ago
 Main PID: 2154 (node_exporter)
 Tasks: 4 (limit: 4670)
 Memory: 2.6M (peak: 2.7M)
 CPU: 9ms
 CGroup: /system.slice/node_exporter.service
 └─2154 /usr/local/bin/node_exporter --collector.logind

Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=thermal_zone
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=time
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=timex
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=udp_queues
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=uname
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=vmstat
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=xfs
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=node_exporter.go:117 level=info collector=zfs
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=tls config.go:274 level=info msg="Listening on" address=[::]:9100
Jul 03 15:32:18 ip-172-31-87-78 node_exporter[2154]: ts=2025-07-03T15:32:18.845Z caller=tls_config.go:277 level=info msg="TLS is disabled." http2=false address=[::]:9100
lines 1-20/20 (END)
```

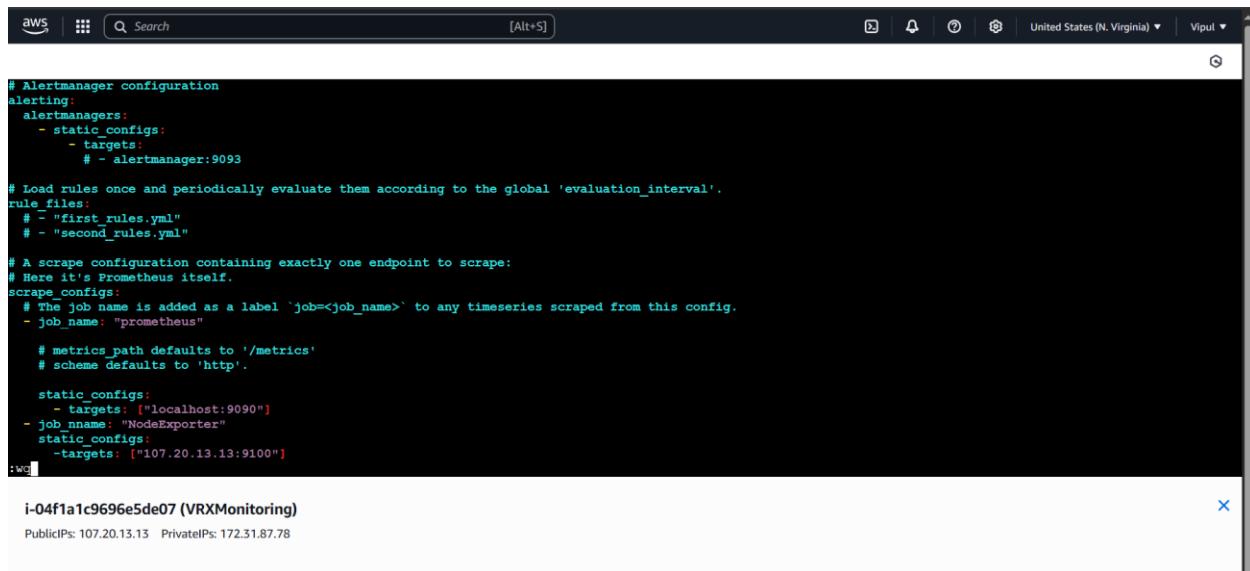
i-04f1a1c9696e5de07 (VRXMonitoring)  
Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

## 2. Configure Prometheus Plugin Integration:

Integrate Jenkins with Prometheus to monitor the CI/CD pipeline.

### Prometheus Configuration:

To configure Prometheus to scrape metrics from Node Exporter and Jenkins, you need to modify the `prometheus.yml` file. Here is an example `prometheus.yml` configuration for your setup:



```
Alertmanager configuration
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'.

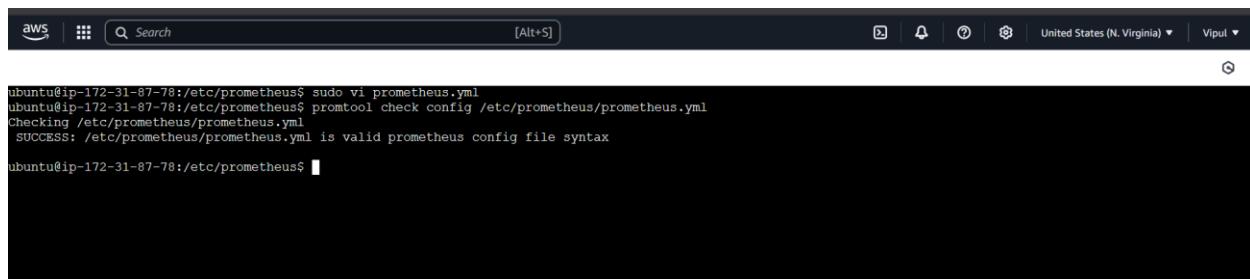
 static_configs:
 - targets: ["localhost:9090"]
 - job_name: "NodeExporter"
 static_configs:
 - targets: ["107.20.13.13:9100"]

:wd
```

i-04f1a1c9696e5de07 (VRXMonitoring)  
Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

Check the validity of the configuration file:

**promtool check config /etc/prometheus/prometheus.yml**



```
ubuntu@ip-172-31-87-78:/etc/prometheus$ sudo vi prometheus.yml
ubuntu@ip-172-31-87-78:/etc/prometheus$ promtool check config /etc/prometheus/prometheus.yml
Checking /etc/prometheus/prometheus.yml
SUCCESS: /etc/prometheus/prometheus.yml is valid prometheus config file syntax

ubuntu@ip-172-31-87-78:/etc/prometheus$
```

## Reload the Prometheus configuration without restarting:

```
curl -X POST http://localhost:9090/-/reload
```

ubuntu@ip-172-31-87-78:/etc/prometheus\$ curl -X POST http://localhost:9090/-/reload  
ubuntu@ip-172-31-87-78:/etc/prometheus\$

| Security group rule ID | Type       | Protocol | Port range | Source   | Description - optional |
|------------------------|------------|----------|------------|----------|------------------------|
| sgr-0ad6b112f0051484f  | Custom TCP | TCP      | 9090       | Custom   | Prometheus             |
| sgr-08e3ef854e5f666f3  | SSH        | TCP      | 22         | Custom   |                        |
| sgr-0eb21b0de028ade14  | HTTPS      | TCP      | 443        | Custom   |                        |
| -                      | Custom TCP | TCP      | 9100       | Anywhere | Node Exporter          |
|                        |            |          |            |          | 0.0.0.0/0              |

You can access Prometheus targets at:

`[http://<your-prometheus-ip>:9090/targets`](http://<your-prometheus-ip>:9090/targets)

You can access Node Exporter metrics in Prometheus.

| Endpoint                         | State | Labels                                          | Last Scrape | Scrape Duration | Error |
|----------------------------------|-------|-------------------------------------------------|-------------|-----------------|-------|
| http://107.20.13.13:9100/metrics | UP    | instance="107.20.13.13:9100" job="NodeExporter" | 13.624s ago | 15.731ms        |       |

| Endpoint                      | State | Labels                                     | Last Scrape | Scrape Duration | Error |
|-------------------------------|-------|--------------------------------------------|-------------|-----------------|-------|
| http://localhost:9090/metrics | UP    | instance="localhost:9090" job="prometheus" | 6.276s ago  | 4.837ms         |       |



```
HELP go_gc_duration_seconds A summary of the pause duration of garbage collection cycles.
TYPE go_gc_duration_seconds summary
go_gc_duration_seconds{quantile="0"} 2.4936e-05
go_gc_duration_seconds{quantile="0.25"} 4.4422e-05
go_gc_duration_seconds{quantile="0.5"} 4.7e-05
go_gc_duration_seconds{quantile="0.75"} 4.7456e-05
go_gc_duration_seconds{quantile="1"} 4.7456e-05
go_gc_duration_seconds_sum 0.000163914
go_gc_duration_seconds_count 4
HELP go_goroutines Number of goroutines that currently exist.
TYPE go_goroutines gauge
go_goroutines 8
HELP go_info Information about the Go environment.
TYPE go_info gauge
go_info_github_sha["github.com/golang/go@v20.G"] 1
HELP go_memstats_alloc_bytes Number of bytes allocated and still in use.
TYPE go_memstats_alloc_bytes gauge
go_memstats_alloc_bytes 2.500112e+06
HELP go_memstats_alloc_bytes_total Total number of bytes allocated, even if freed.
TYPE go_memstats_alloc_bytes_total counter
go_memstats_alloc_bytes_total 9.74948e+06
HELP go_memstats_frees_total Total number of bytes used by the profiling bucket hash table.
TYPE go_memstats_frees_total counter
go_memstats_frees_total 108857
HELP go_memstats_gc_sys_bytes Number of bytes used for garbage collection system metadata.
TYPE go_memstats_gc_sys_bytes gauge
go_memstats_gc_sys_bytes 3.00000e+06
HELP go_memstats_heap_alloc_bytes Number of heap bytes allocated and still in use.
TYPE go_memstats_heap_alloc_bytes gauge
go_memstats_heap_alloc_bytes 2.500112e+06
HELP go_memstats_heap_released_bytes Number of heap bytes released to OS.
TYPE go_memstats_heap_released_bytes gauge
go_memstats_heap_released_bytes 3.145728e+06
HELP go_memstats_heap_sys_bytes Number of heap bytes obtained from system.
TYPE go_memstats_heap_sys_bytes gauge
go_memstats_heap_sys_bytes 7.995592e+06
```

## Install Grafana on Ubuntu 22.04 and Set it up to Work with Prometheus

## Step 1: Install Dependencies:

First, ensure that all necessary dependencies are installed:

```
sudo apt-get update
```

```
sudo apt-get install -y apt-transport-https software-properties-common
```

```
aws | [Search] [Alt+S] | United States (N. Virginia) | Vipul

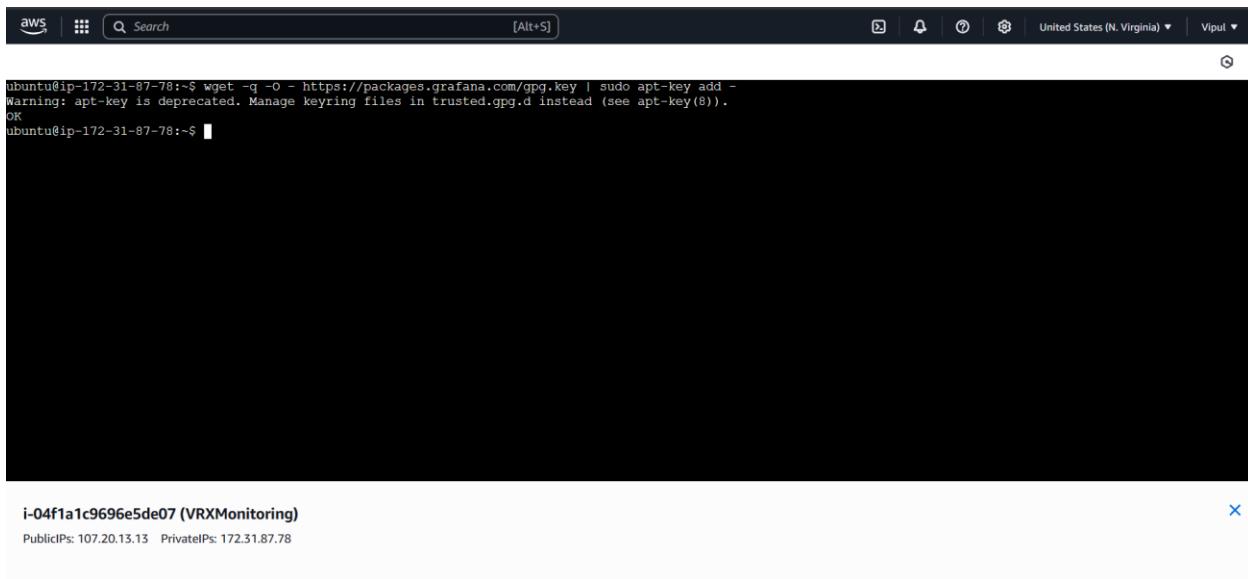
ubuntu@ip-172-31-87-78:~$ sudo apt-get update
sudo apt-get install -y apt-transport-https software-properties-common
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-common is already the newest version (0.99.49.2).
software-properties-common set to manually installed.
The following NEW packages will be installed:
 apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 34 not upgraded.
Need to get 3970 B of archives.
After this operation, 36.9 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 apt-transport-https all 2.8.3 [3970 B]
Fetched 3970 B in 0s (316 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 70681 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.8.3_all.deb ...
Unpacking apt-transport-https (2.8.3) ...
Setting up apt-transport-https (2.8.3) ...
Scanning processes...
Scanning linux images...
```

i-04f1a1c9696e5de07 (VRXMonitoring)

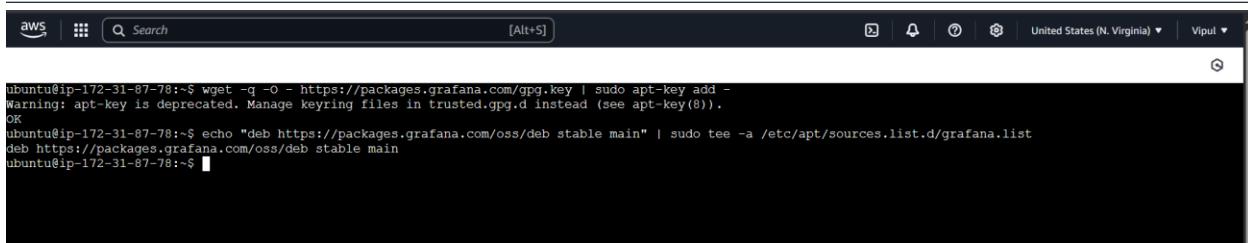
Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

## Add the GPG key for Grafana:

```
wget -q -O - https://packages.grafana.com/gpg.key | sudo apt-key add -
```



The terminal window shows the command being run: `ubuntu@ip-172-31-87-78:~$ wget -q -O - https://packages.grafana.com/gpg.key | sudo apt-key add -`. The output indicates that the key is deprecated and should be managed in `trusted.gpg.d` instead. The command exits successfully with status 0.

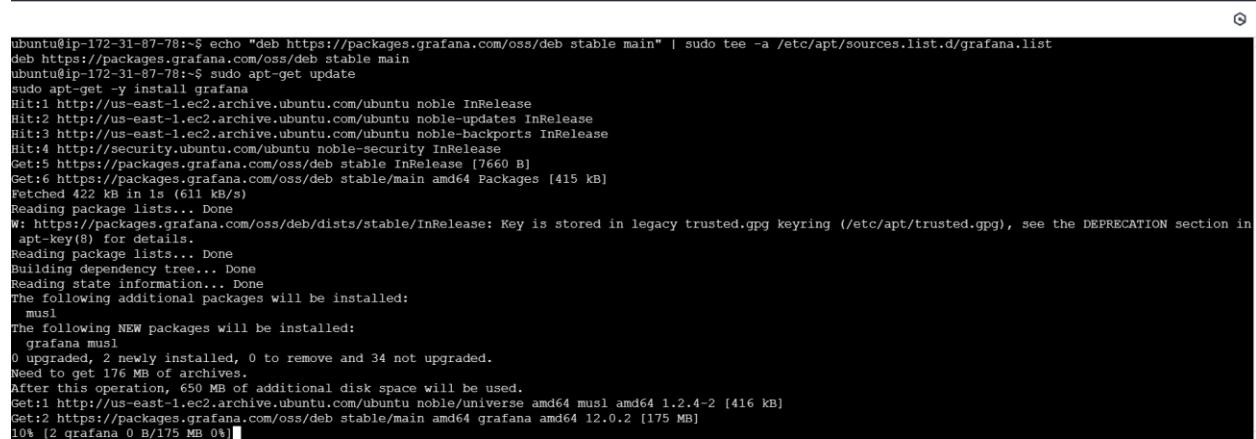
  


The terminal window shows the command to add the Grafana repository: `ubuntu@ip-172-31-87-78:~$ echo "deb https://packages.grafana.com/oss/deb stable main" | sudo tee -a /etc/apt/sources.list.d/grafana.list`. The command is run and completed successfully.

## Step 3: Add Grafana Repository:

Add the repository for Grafana stable releases:

```
echo "deb https://packages.grafana.com/oss/deb stable main" | sudo tee -a
/etc/apt/sources.list.d/grafana.list
```



The terminal window shows the output of the package manager after adding the repository. It lists the packages being installed, including `musl` and `grafana`, and provides details about dependencies and disk usage. The process is completed successfully.

```

ubuntu@ip-172-31-87-78:~$ sudo systemctl enable grafana-server
Synchronizing state of grafana-server.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable grafana-server
Created symlink /etc/systemd/system/multi-user.target.wants/grafana-server.service → /usr/lib/systemd/system/grafana-server.service.
ubuntu@ip-172-31-87-78:~$ sudo systemctl start grafana-server
ubuntu@ip-172-31-87-78:~$ sudo systemctl status grafana-server
● grafana-server.service - Grafana instance
 Loaded: loaded (/usr/lib/systemd/system/grafana-server.service; enabled; preset: enabled)
 Active: active (running) since Thu 2025-07-03 15:58:06 UTC; 6s ago
 Docs: http://docs.grafana.org
 Main PID: 3491 (grafana)
 Tasks: 15 (limit: 4670)
 Memory: 67.0M (peak: 67.2M)
 CPU: 3.700s
 CGroup: /system.slice/grafana-server.service
 └─3491 /usr/share/grafana/bin/grafana server --config=/etc/grafana/grafana.ini --pidfile=/run/grafana/grafana-server.pid --packaging=deb cfg:default

Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=ticker t=2025-07-03T15:58:12.737492384Z level=info msg="starting first_tick=2025-07-03T15:58:20Z"
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=plugin.backgroundinstaller t=2025-07-03T15:58:12.740924194Z level=info msg="Installing plugin" pluginId=grafana
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=plugins.update.checker t=2025-07-03T15:58:12.847563627Z level=info msg="Update check succeeded" duration=1ms
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=grafana.update.checker t=2025-07-03T15:58:12.852563871Z level=info msg="Update check succeeded" duration=1ms
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=provisioning.alerting t=2025-07-03T15:58:12.853755673Z level=info msg="finished to provision alerting"
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=provisioning.alerting t=2025-07-03T15:58:12.853751319Z level=info msg="starting to provision alerting"
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=provisioning.dashboard t=2025-07-03T15:58:12.855362524Z level=info msg="starting to provision dashboards"
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=provisioning.dashboard t=2025-07-03T15:58:12.855402362Z level=info msg="finished to provision dashboards"
Jul 03 15:58:12 ip-172-31-87-78 grafana[3491]: logger=plugin.angulardetectorsprovider.dynamic t=2025-07-03T15:58:12.875139742Z level=info msg="Patterns update finished"
Jul 03 15:58:13 ip-172-31-87-78 grafana[3491]: logger=plugin.installer t=2025-07-03T15:58:13.152200562Z level=info msg="Installing plugin" pluginId=grafana-metrics

```

i-04f1a1c9696e5de07 (VRXMonitoring)

Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

| Inbound rules - sg-0491a0dec47c25308 - launch-wizard-7 |            |          |            |         |                        |                         |
|--------------------------------------------------------|------------|----------|------------|---------|------------------------|-------------------------|
| Security group rule ID                                 | Type       | Protocol | Port range | Source  | Description - optional | Info                    |
| sgr-0ad6b112f0051484f                                  | Custom TCP | TCP      | 9090       | Custom  | Prometheus             | <button>Delete</button> |
| sgr-0885197b0ab1d4719                                  | Custom TCP | TCP      | 9100       | Custom  | Node Exporter          | <button>Delete</button> |
| sgr-08e3ef854e5f666f3                                  | SSH        | TCP      | 22         | Custom  |                        | <button>Delete</button> |
| sgr-0eb21b0de028ade14                                  | HTTPS      | TCP      | 443        | Custom  |                        | <button>Delete</button> |
| -                                                      | Custom TCP | TCP      | 3000       | Anyw... | Grafana                | <button>Delete</button> |
|                                                        |            |          |            |         | 0.0.0.0/0              | <button>Delete</button> |
|                                                        |            |          |            |         | 0.0.0.0/0              | <button>Delete</button> |

Add rule

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Preview changes Save rules

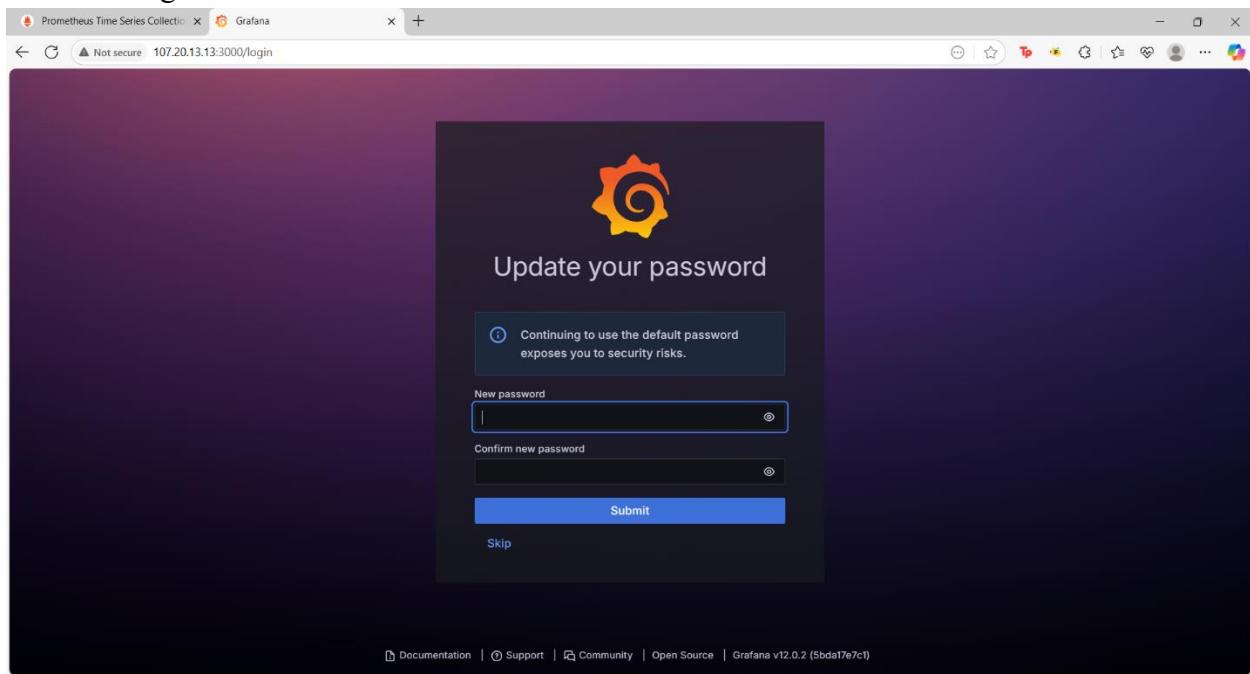
## Step : Change the Default Password:

When you log in for the first time, Grafana will prompt you to change the default password for security reasons. Follow the prompts to set a new password.

## Step : Add Prometheus Data Source:

To visualize metrics, you need to add a data source. Follow these steps:

- Click on the gear icon (⚙️) in the left sidebar to open the "Configuration" menu.
- Select "Data Sources."
- Click on the "Add data source" button.
- Choose "Prometheus" as the data source type.
- In the "HTTP" section:
  - Set the "URL" to `http://localhost:9090` (assuming Prometheus is running on the same server).
  - Click the "Save & Test" button to ensure the data source is working.



The screenshot shows the Grafana web interface. On the left, there's a sidebar with options like Home, Bookmarks, Starred, Dashboards, Explore, Drilldown, Alerting, Connections, and Data sources (which is currently selected). The main area is titled "prometheus" and shows it's a "Type: Prometheus" data source. It has tabs for Settings (which is active) and Dashboards. A modal window is open with the heading "Configure your Prometheus data source below" and instructions to skip configuration or use the free forever plan. Below the modal, there's a "Name" field set to "prometheus", a "Default" toggle switch (which is off), and a "Connection" section with a "Prometheus server URL" input field containing "http://107.20.13.13:9090/".

### Step : Import a Dashboard:

To make it easier to view metrics, you can import a pre-configured dashboard. Follow these steps:

- Click on the "+" (plus) icon in the left sidebar to open the "Create" menu.
- Select "Dashboard."
- Click on the "Import" dashboard option.
- Enter the dashboard code you want to import (e.g., code 1860).
- Click the "Load" button.
- Select the data source you added (Prometheus) from the dropdown.
- Click on the "Import" button.

You should now have a Grafana dashboard set up to visualize metrics from Prometheus.

Grafana is a powerful tool for creating visualizations and dashboards, and you can further customize it to suit your specific monitoring needs.

That's it! You've successfully installed and set up Grafana to work with Prometheus for monitoring and visualization.

The top screenshot shows the 'Import dashboard' screen in Grafana. It displays information about the imported dashboard, including its author (rfmoz), publication date (2025-06-13 01:36:17), and options for naming and folder placement. The bottom screenshot shows the 'Node Exporter Full' dashboard, which includes several panels: 'Quick CPU / Mem / Disk' (with CPU Busy at 3.9%, RAM Used at 15.0%, and Root FS Used at 17.1%), 'CPU Basic' (a timeline chart showing CPU usage over 24 hours), 'Memory Basic' (a timeline chart showing memory usage over 24 hours), 'Network Traffic Basic' (a chart showing network traffic in Mb/s), and 'Disk Space Used Basic' (a chart showing disk space usage in percent).

## Configure Prometheus Plugin Integration:

- Integrate Jenkins with Prometheus to monitor the CI/CD pipeline.

Not secure 44.216.5.224:8080/manage/pluginManager/available

## Jenkins

Dashboard > Manage Jenkins > Plugins

### Plugins

Updates Available plugins Installed plugins Advanced settings

Search: prometh

| Install                             | Name ↓                                                                                                                                                                                                                                                     | Released         |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <input checked="" type="checkbox"/> | Prometheus metrics 819.v50953a_c560dd monitoring Miscellaneous Jenkins Prometheus Plugin expose an endpoint (default /prometheus) with metrics where a Prometheus Server can scrape.                                                                       | 4 mo 14 days ago |
| <input type="checkbox"/>            | Otel agent host metrics monitoring 1.4.1 monitoring observability This plugin allows monitoring of Jenkins agents by deploying Prometheus node exporters and Otel collectors to them and linking to a Grafana dashboard displaying those gathered metrics. | 3 mo 2 days ago  |
| <input type="checkbox"/>            | Cortex Metrics 1.0.1 Adds the ability to publish run results to Cortex directly using the Prometheus push endpoint.                                                                                                                                        | 4 yr 3 mo ago    |

Install

REST API Jenkins 2.504.3

Not secure 44.216.5.224:8080/manage/configure

Dashboard > Manage Jenkins > System > Prometheus

Path ? Prometheus

Default Namespace ? default

Enable authentication for prometheus end-point ?

Collecting metrics period in seconds ? 120

Count duration of successful builds ?  
 Count duration of unstable builds ?  
 Count duration of failed builds ?  
 Count duration of not-built builds ?  
 Count duration of aborted builds ?  
 Fetch the test results of builds ?  
 Add build parameter label to metrics ?  
 Add build status label to metrics ?

Save Apply



```
aws | [Search] [Alt+S] United States (N. Virginia) | Vipul

- 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: "NodeExporter"
 static_configs:
 - targets: ["107.20.13.13:9100"]

 - job_name: "jenkins"
 static_configs:
 - targets: ["44.216.5.224:8080"]
ubuntu@ec2-172-31-87-19:~/etc/prometheus$
```

j-04f1a1c9696e5de07 (VRXMonitoring)

Public IPs: 107.20.13.13 Private IPs: 172.31.87.78

```
aws | [Alt+S] | United States (N. Virginia) | Vipul |  Search |      United States (N. Virginia) | Vipul |  
```

ubuntu@ip-172-31-87-78:/etc/prometheus\$ promtool check config /etc/prometheus/prometheus.yml  
Checking /etc/prometheus/prometheus.yml  
SUCCESS: /etc/prometheus/prometheus.yml is valid prometheus config file syntax  
ubuntu@ip-172-31-87-78:/etc/prometheus\$ █

Not secure 107.20.13.13:9090/targets?search=

Prometheus Alerts Graph Status Help

## Targets

All scrape pools ▾ All Unhealthy Collapse All Filter by endpoint or labels  Unknown  Unhealthy  Healthy

| Endpoint                         | State | Labels                                          | Last Scrape | Scrape Duration | Error |
|----------------------------------|-------|-------------------------------------------------|-------------|-----------------|-------|
| http://107.20.13.13:9100/metrics | UP    | instance="107.20.13.13:9100" job="NodeExporter" | 8.369s ago  | 14.392ms        |       |

jenkins (1/1 up) [show less](#)

| Endpoint                            | State | Labels                                     | Last Scrape | Scrape Duration | Error |
|-------------------------------------|-------|--------------------------------------------|-------------|-----------------|-------|
| http://44.216.5.224.8080/prometheus | UP    | instance="44.216.5.224.8080" job="jenkins" | 3.85s ago   | 23.768ms        |       |

prometheus (1/1 up) [show less](#)

| Endpoint                      | State | Labels                                     | Last Scrape | Scrape Duration | Error |
|-------------------------------|-------|--------------------------------------------|-------------|-----------------|-------|
| http://localhost:9090/metrics | UP    | instance="localhost:9090" job="prometheus" | 16.21s ago  | 5.039ms         |       |

Not secure 107.20.13.13:3000/dashboard/import

Home > Dashboards > Import dashboard

## Import dashboard

Import dashboard from file or Grafana.com

Upload dashboard JSON file

Drag and drop here or click to browse  
Accepted file types: json, .txt

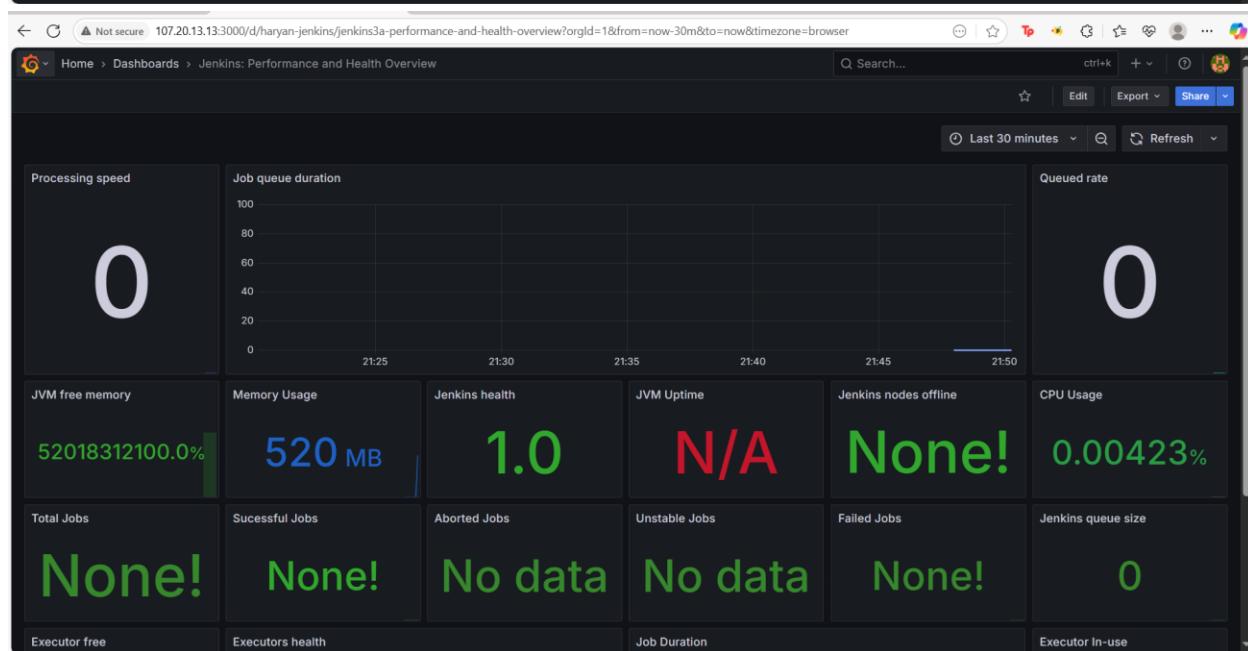
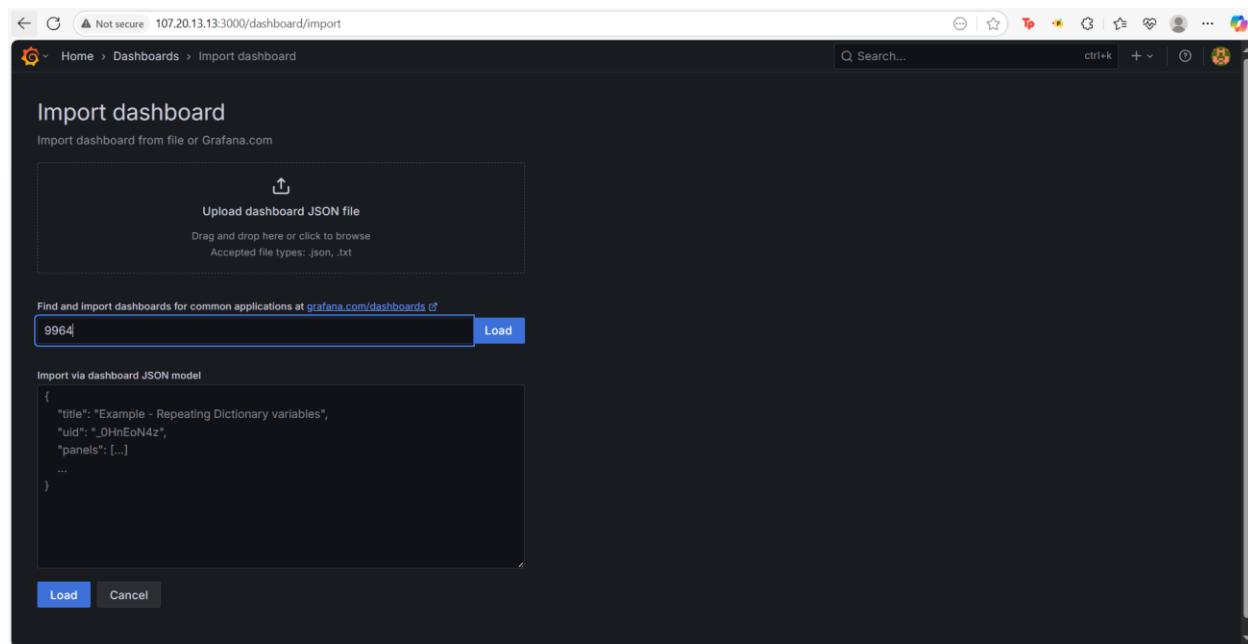
Find and import dashboards for common applications at [grafana.com/dashboards](https://grafana.com/dashboards)

9964 | Load

Import via dashboard JSON model

```
{
 "title": "Example - Repeating Dictionary variables",
 "uid": "_OhInEoN4z",
 "panels": [...]
}
```

Load Cancel



Not secure 44.216.5.224:8080/blue/organizations/jenkins/Vrx-Netflix/detail/Vrx-Netflix/13/pipeline

Vrx-Netflix < 13

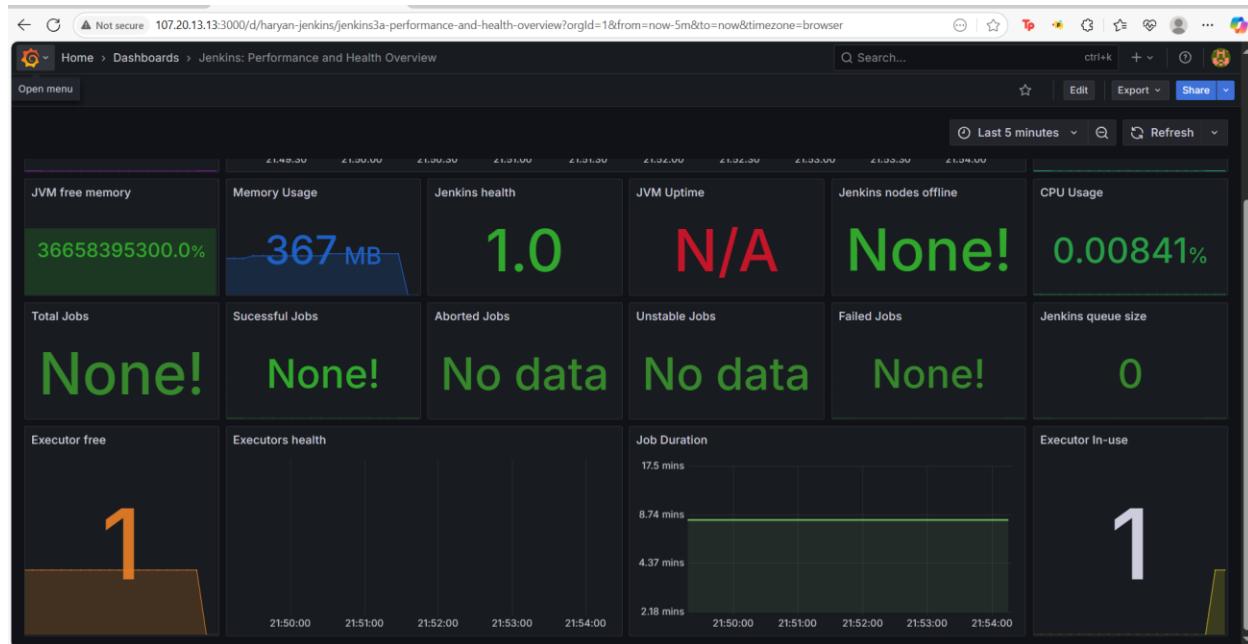
Pipeline Changes Tests Artifacts Logout

Branch: - Commit: - Started by user admin

Start clean workspace Checkout from Git Sonarqube Analysis quality gate Install Dependencies OWASP FS SCAN TRIVY FS SCAN Docker Build & Push TRIVY Deploy to container End

Install Dependencies - 18s

- > jdk17 - Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > node16 - Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > npm install - Shell Script 18s



← ⌂ Not secure 44.216.5.224:8080/job/Vrx-Netflix/13/console

Dashboard > Vrx-Netflix > #13

```
[Pipeline] tool
[Pipeline] envVarsForTool
[Pipeline] tool
[Pipeline] envVarsForTool
[Pipeline] withEnv
[Pipeline] {
[Pipeline] sh
+ docker run -d --name netflix -p 8081:80 nasi01/netflix:latest
docker: Error response from daemon: Conflict. The container name "/netflix" is already in use by container "95020eee7e479e4d4aadd80c3dc40519c4c6b78903a5165a788fid6318e3bf95". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
ERROR: script returned exit code 125
Finished: FAILURE
```

REST API Jenkins 2.504.3

Home > Dashboards > Jenkins: Performance and Health Overview

Processing speed: 0

Job queue duration: 0.08

Queued rate: 0

JVM free memory: 55656287300.0%

Memory Usage: 557 MB

Jenkins health: 1.0

JVM Uptime: N/A

Jenkins nodes offline: None!

CPU Usage: 0.00493%

Total Jobs: None!

Successful Jobs: None!

Aborted Jobs: No data

Unstable Jobs: No data

Failed Jobs: 1

Jenkins queue size: 0

Executor free: Executor health

Job Duration: Executor In-use

[Not secure 44.216.5.224:8080/blue/organizations/jenkins/Vrx-Netflix/detail/Vrx-Netflix/14/pipeline](https://44.216.5.224:8080/blue/organizations/jenkins/Vrx-Netflix/detail/Vrx-Netflix/14/pipeline)

Vrx-Netflix < 14

Branch: --      Commit: --      Started by user admin

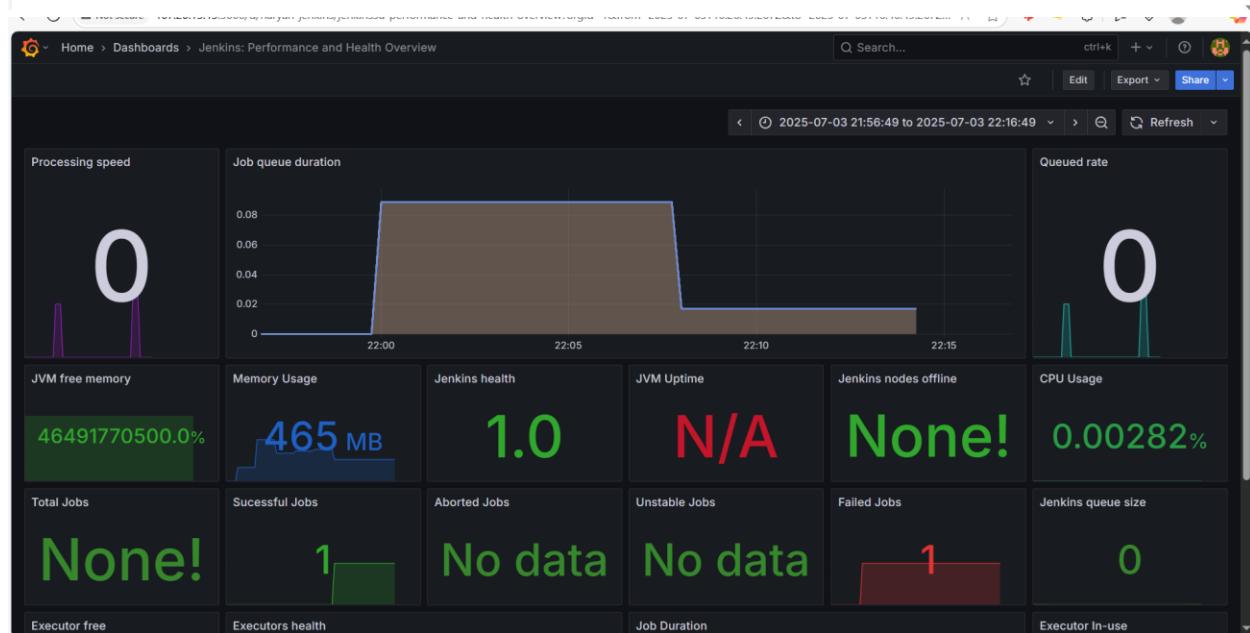
6m 34s      2 minutes ago

Pipeline Changes Tests Artifacts

Deploy to container - <1s

- > jdk17 – Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > node16 – Use a tool from a predefined Tool Installation <1s
- > Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. <1s
- > docker run -d --name netflix -p 8081:80 nasi101/netflictest – Shell Script. <1s

Restart Deploy to container



Create a AWS EKS Cluster and deploy an application with ArgoCD, you can follow these steps, which

I'll outline in Markdown format:

## **Deploy Application with ArgoCD**

### **1. Install ArgoCD:**

You can install ArgoCD on your Kubernetes cluster by following the instructions provided in the [EKS Workshop]([https://archive.eksworkshop.com/intermediate/290\\_argocd/install/](https://archive.eksworkshop.com/intermediate/290_argocd/install/)) documentation.

### **2. Set Your GitHub Repository as a Source:**

After installing ArgoCD, you need to set up your GitHub repository as a source for your application deployment. This typically involves configuring the connection to your repository and defining the source for your ArgoCD application. The specific steps will depend on your setup and requirements.

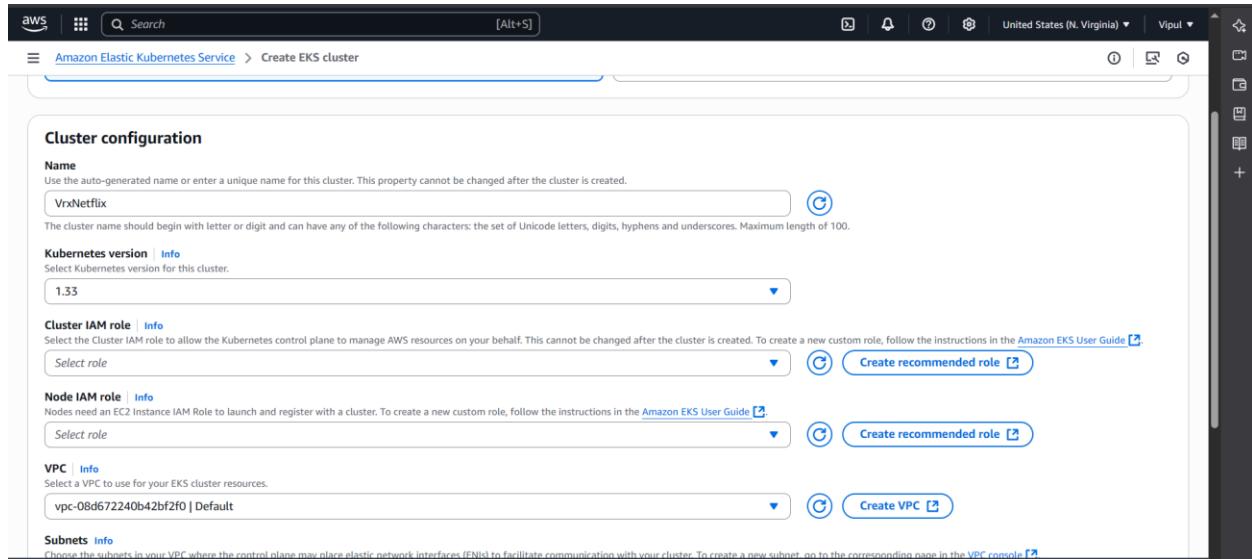
### **3. Create an ArgoCD Application:**

- `name`: Set the name for your application.
- `destination`: Define the destination where your application should be deployed.
- `project`: Specify the project the application belongs to.

- `source`: Set the source of your application, including the GitHub repository URL, revision, and the path to the application within the repository.
- `syncPolicy`: Configure the sync policy, including automatic syncing, pruning, and self-healing.

## 4. Access your Application

- To Access the app make sure port 30007 is open in your security group and then open a new tab paste your NodeIP:30007, your app should be running.



**Step 1: Select trusted entities**

**Trust policy**

```

1- [
2- "Version": "2012-10-17",
3- "Statement": [
4- {
5- "Effect": "Allow",
6- "Principal": {
7- "Service": [
8- "eks.amazonaws.com"
9-]
10- },
11- "Action": "sts:AssumeRole"
12- }
13-]
14-]

```

**Step 2: Add permissions**

**Kubernetes version** | [Info](#)  
Select Kubernetes version for this cluster.  
1.33

**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](#).  
VRXAmazonEKSAutoClusterRole [Create recommended role](#)

**Node IAM role** | [Info](#)  
Nodes need an EC2 Instance IAM Role to launch and register with a cluster. To create a new custom role, follow the instructions in the [Amazon EKS User Guide](#).  
VRXEKSNODE [Create recommended role](#)

**VPC** | [Info](#)  
Select a VPC to use for your EKS cluster resources.  
vpc-08d672240b42bf2f0 | Default [Create VPC](#)

**Subnets** | [Info](#)  
Choose the subnets in your VPC where the control plane may place elastic network interfaces (ENIs) to facilitate communication with your cluster. To create a new subnet, go to the corresponding page in the [VPC console](#).  
Select subnets [Clear selected subnets](#)

|                          |                |                          |            |                |              |
|--------------------------|----------------|--------------------------|------------|----------------|--------------|
| subnet-0090726ea814d691e | x              | subnet-064a956f048471f5a | x          |                |              |
| us-east-1a               | 172.31.80.0/20 | Type: Public             | us-east-1b | 172.31.16.0/20 | Type: Public |

[View quick configuration defaults](#)

[us-east-1.console.aws.amazon.com/eks/clusters/VrxNetflix/add-node-group?region=us-east-1&selectedTab=cluster-com...](#)

Search [Alt+S]

Amazon Elastic Kubernetes Service > Clusters > VrxNetflix > Add node group

Step 1 **Configure node group** Info

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.

**Node group configuration** Info

These properties cannot be changed after the node group is created.

**Name** Assign a unique name for this node group.

The node group name should begin with letter or digit and can have any of the following characters: the set of Unicode letters, digits, hyphens and underscores. Maximum length of 63.

**Node IAM role** Info

Select the IAM role that will be used by the nodes. To create a new role, go to the [IAM console](#).

(C) Create recommended role

ⓘ 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.

[Learn more](#)

**Launch template** Info

These properties cannot be changed after the node group is created.

[aws](#) Search [Alt+S]

Amazon Elastic Kubernetes Service > Clusters > VrxNetflix > Add node group

Step 1 **Set compute and scaling configuration**

**Node group compute configuration** Info

These properties cannot be changed after the node group is created.

**AMI type** Info

Select the EKS-optimized Amazon Machine Image for nodes.

**Capacity type** Select the capacity purchase option for this node group.

**Instance types** Info

Select instance types you prefer for this node group.

t3.medium  
vCPU: 2 vCPUs Memory: 4 GiB Network: Up to 5 Gigabit Max ENI: 3 Max IPs: 18

**Disk size** Select the size of the attached EBS volume for each node.

GiB

**Node group scaling configuration**

**Desired size** Set the desired number of nodes that the group should launch with initially.

**Node group scaling configuration**

**Desired size**  
Set the desired number of nodes that the group should launch with initially.  
 nodes  
Desired node size must be greater than or equal to 0

**Minimum size**  
Set the minimum number of nodes that the group can scale in to.  
 nodes  
Minimum node size must be greater than or equal to 0

**Maximum size**  
Set the maximum number of nodes that the group can scale out to.  
 nodes  
Maximum node size must be greater than or equal to 1 and cannot be lower than the minimum size

**Node group update configuration** [Info](#)

**Maximum unavailable**  
Set the maximum number or percentage of unavailable nodes to be tolerated during the node group version update.

Number  
Enter a number

Percentage  
Specify a percentage

**Amazon Elastic Kubernetes Service**

**Clusters**

**Amazon EKS Anywhere**

**Related services**

**Documentation**

**Node group creation in progress**  
nodes is now being created. This process may take several minutes.

**nodes**

**Node group configuration** [Info](#)

|                                                               |                                                                        |                    |
|---------------------------------------------------------------|------------------------------------------------------------------------|--------------------|
| Kubernetes version<br>1.33                                    | AMI type   <a href="#">Info</a><br>Amazon Linux 2023 (x86_64) Standard | Status<br>Creating |
| AMI release version   <a href="#">Info</a><br>1.33.0-20250627 | Instance types<br>t3.medium                                            | Disk size<br>20 GB |

**Details** [Nodes](#) [Health issues](#) [Kubernetes labels](#) [Update config](#) [Kubernetes taints](#) [Update history](#) [Tags](#)

**Details**

|                                                                                                                                     |                                              |                            |                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------|
| Node group ARN<br><a href="#">arn:aws:eks:us-east-1:010928201805:nodegroup/VrxNetflix/nodes/a8cbea1e-02e5-08f6-9fd-3e58739762de</a> | Autoscaling group name<br><a href="#">()</a> | Capacity type<br>On-Demand | Subnets<br><a href="#">subnet-0090726ea814d691e</a> <a href="#">subnet-064a956f048471f5a</a> |
| Created                                                                                                                             | Node IAM role ARN<br><a href="#">()</a>      | Desired size<br>1 node     | Configure remote access to nodes<br>off                                                      |
|                                                                                                                                     |                                              | Minimum size<br>1          |                                                                                              |

```
C:\Users\ASUS>aws configure
AWS Access Key ID [None]: XXXXXXXXXXXXXX
AWS Secret Access Key [None]: XXXXXXXXXXXXXX
Default region name [None]: us-east-1
Default output format [None]: json

C:\Users\ASUS>aws eks update-kubeconfig --name VrxNetflix --region us-east-1
Added new context arn:aws:eks:us-east-1:010928201805:cluster/VrxNetflix to C:\Users\ASUS\.kube\config

C:\Users\ASUS>

C:\Users\ASUS>kubectl get ns
NAME STATUS AGE
default Active 25m
kube-node-lease Active 25m
kube-public Active 25m
kube-system Active 25m

C:\Users\ASUS>
```

```
vipul@DESKTOP-I07S3T2:~/aws$ kubectl create namespace argocd
namespace/argocd created
vipul@DESKTOP-I07S3T2:~/aws$ kubectl apply -n argocd -f https://raw.githubusercontent.com/argoproj/argo-cd/stable/manifests/install.yaml
customresourcedefinition.apirextensions.k8s.io/applications.argoproj.io created
customresourcedefinition.apirextensions.k8s.io/applicationsets.argoproj.io created
customresourcedefinition.apirextensions.k8s.io/approjects.argoproj.io created
serviceaccount/argocd-application-controller created
serviceaccount/argocd-applicationset-controller created
serviceaccount/argocd-dex-server created
serviceaccount/argocd-notifications-controller created
serviceaccount/argocd-redis created
serviceaccount/argocd-repo-server created
serviceaccount/argocd-server created
role.rbac.authorization.k8s.io/argocd-application-controller created
role.rbac.authorization.k8s.io/argocd-applicationset-controller created
role.rbac.authorization.k8s.io/argocd-dex-server created
role.rbac.authorization.k8s.io/argocd-notifications-controller created
role.rbac.authorization.k8s.io/argocd-redis created
role.rbac.authorization.k8s.io/argocd-server created
clusterrole.rbac.authorization.k8s.io/argocd-application-controller created
clusterrole.rbac.authorization.k8s.io/argocd-server created
rolebinding.rbac.authorization.k8s.io/argocd-application-controller created
rolebinding.rbac.authorization.k8s.io/argocd-applicationset-controller created
rolebinding.rbac.authorization.k8s.io/argocd-dex-server created
rolebinding.rbac.authorization.k8s.io/argocd-notifications-controller created
rolebinding.rbac.authorization.k8s.io/argocd-redis created
rolebinding.rbac.authorization.k8s.io/argocd-server created
clusterrolebinding.rbac.authorization.k8s.io/argocd-application-controller created
clusterrolebinding.rbac.authorization.k8s.io/argocd-server created
configmap/argocd-cm created
configmap/argocd-endpoints-cm created
configmap/argocd-gpg-key-cm created
configmap/argocd-notifications-cm created
configmap/argocd-rbac-cm created
configmap/argocd-ssh-known-hosts-cm created
configmap/argocd-tls-certs-cm created
secret/argocd-secret created
service/argocd-applicationset-controller created
service/argocd-dex-server created
service/argocd-metrics created
service/argocd-notifications-controller-metrics created
service/argocd-redis created
service/argocd-repo-server created
service/argocd-server created
service/argocd-server-metrics created
deployment.apps/argocd-applicationset-controller created

vipul@DESKTOP-I07S3T2:~/aws$ kubectl get ns
NAME STATUS AGE
argocd Active 114s
default Active 57m
kube-node-lease Active 57m
kube-public Active 57m
kube-system Active 57m
vipul@DESKTOP-I07S3T2:~/aws$ kubectl patch svc argocd-server -n argocd -p '{"spec": {"type": "LoadBalancer"}}'
service/argocd-server patched
vipul@DESKTOP-I07S3T2:~$ helm repo add prometheus-community https://prometheus-community.github.io/helm-charts
"prometheus-community" has been added to your repositories
vipul@DESKTOP-I07S3T2:~$ kubectl create namespace prometheus-node-exporter
namespace/prometheus-node-exporter created
vipul@DESKTOP-I07S3T2:~$ helm install prometheus-node-exporter prometheus-community/prometheus-node-exporter --namespace prometheus-node-exporter
NAME: prometheus-node-exporter
LAST DEPLOYED: Fri Jul 4 15:57:51 2025
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 $POD_NAME 9100
vipul@DESKTOP-I07S3T2:~$
```

```

vipul@DESKTOP-I0753T2:~$ kubectl get pods -n prometheus-node-exporter
NAME READY STATUS RESTARTS AGE
prometheus-node-exporter-djmsq 1/1 Running 0 3m14s
prometheus-node-exporter-tgft8 1/1 Running 0 3m14s
vipul@DESKTOP-I0753T2:~$ kubectl get pods -n argocd
No resources found in argocd namespace.
vipul@DESKTOP-I0753T2:~$ kubectl get all -n argocd

NAME READY STATUS RESTARTS AGE
pod/argocd-application-controller-0 1/1 Running 0 15m
pod/argocd-applicationset-controller-655cc58ff8-lscf7 1/1 Running 0 15m
pod/argocd-dex-server-7d9dfb4fb8-6zvzt 1/1 Running 0 15m
pod/argocd-notification-controller-6c6848bc4c-fkjr2 1/1 Running 0 15m
pod/argocd-redis-656c79549c-54ksj 1/1 Running 0 15m
pod/argocd-repo-server-856b768fd9-m7mj 1/1 Running 0 15m
pod/argocd-server-99c4b5944-mjwnq 1/1 Running 0 15m

NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
service/argocd-applicationset-controller ClusterIP 10.100.111.34 <none> 7000/TCP,8080/TCP 15m
service/argocd-dex-server ClusterIP 10.100.134.46 <none> 5556/TCP,5557/TCP,5558/TCP 15m
service/argocd-metrics ClusterIP 10.100.79.97 <none> 8086/TCP 15m
service/argocd-notifications-controller-metrics ClusterIP 10.100.2.66 <none> 9001/TCP 15m
service/argocd-redis ClusterIP 10.100.48.199 <none> 6379/TCP 15m
service/argocd-repo-server ClusterIP 10.100.130.234 <none> 8081/TCP,8084/TCP 15m
service/argocd-server LoadBalancer <unset> a37a4c3fb42b445c78f5514c68a6a728-1202472563.us-east-1.elb.amazonaws.com 80:32116/TCP,443:32698/TCP 15m
service/argocd-server-metrics ClusterIP 10.100.194.33 <none> 8083/TCP 15m

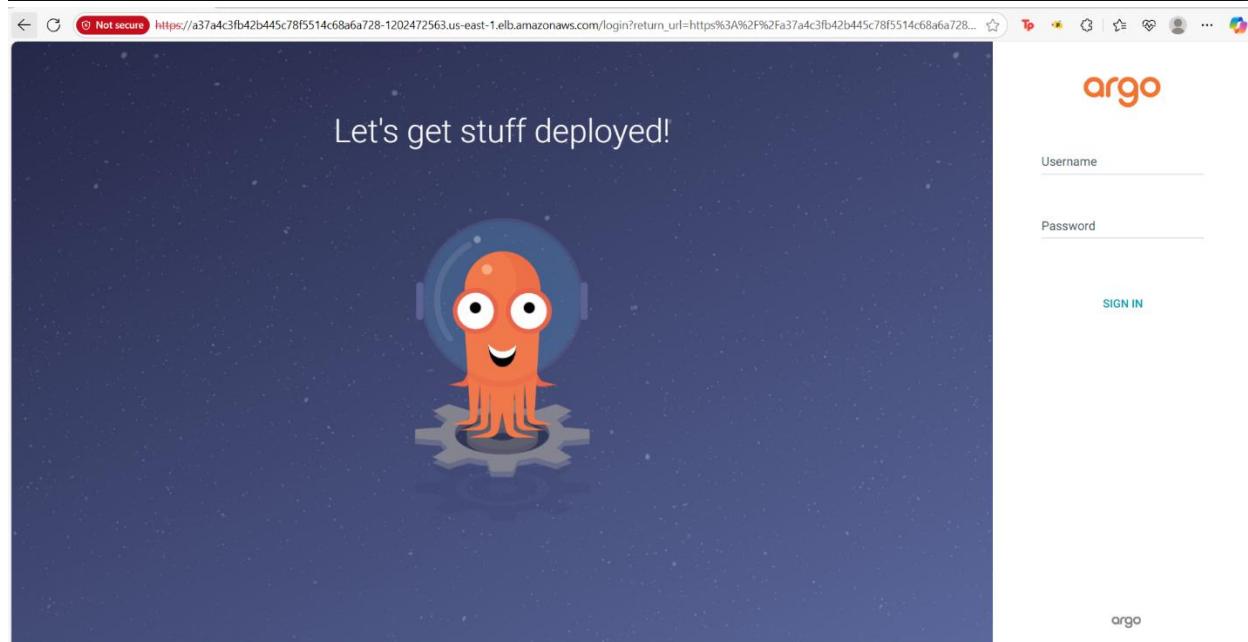
NAME READY UP-TO-DATE AVAILABLE AGE
deployment.apps/argocd-applicationset-controller 1/1 1 1 15m
deployment.apps/argocd-dex-server 1/1 1 1 15m
deployment.apps/argocd-notifications-controller 1/1 1 1 15m
deployment.apps/argocd-redis 1/1 1 1 15m
deployment.apps/argocd-repo-server 1/1 1 1 15m
deployment.apps/argocd-server 1/1 1 1 15m

NAME DESIRED CURRENT READY AGE
replicaset.apps/argocd-applicationset-controller-655cc58ff8 1 1 1 15m
replicaset.apps/argocd-dex-server-7d9dfb4fb8 1 1 1 15m
replicaset.apps/argocd-notifications-controller-6c6848bc4c 1 1 1 15m
replicaset.apps/argocd-redis-656c79549c 1 1 1 15m
replicaset.apps/argocd-repo-server-856b768fd9 1 1 1 15m
replicaset.apps/argocd-server-99c4b5944 1 1 1 15m

NAME
statefulset.apps/argocd-application-controller 1/1 15m
vipul@DESKTOP-I0753T2:~$
```

```

vipul@DESKTOP-I0753T2:~$ export ARGOCD_SERVER=$(kubectl get svc argocd-server -n argocd -o json | jq --raw-output '.status.loadBalancer.ingress[0].hostname')
vipul@DESKTOP-I0753T2:~$ echo $ARGOCD_SERVER
a37a4c3fb42b445c78f5514c68a6a728-1202472563.us-east-1.elb.amazonaws.com
vipul@DESKTOP-I0753T2:~$
```



Applications Tiles - Argo CD

Not secure https://a37a4c3fb42b445c78f5514c68a6a728-1202472563.us-east-1.elb.amazonaws.com/applications

argo v3.0.6+db93798

Applications

+ NEW APP ⚙️ SYNC APPS ⚙️ REFRESH APPS ⚙️ Search applications... ⚙️ APPLICATIONS TILES Log out

Applications

Settings

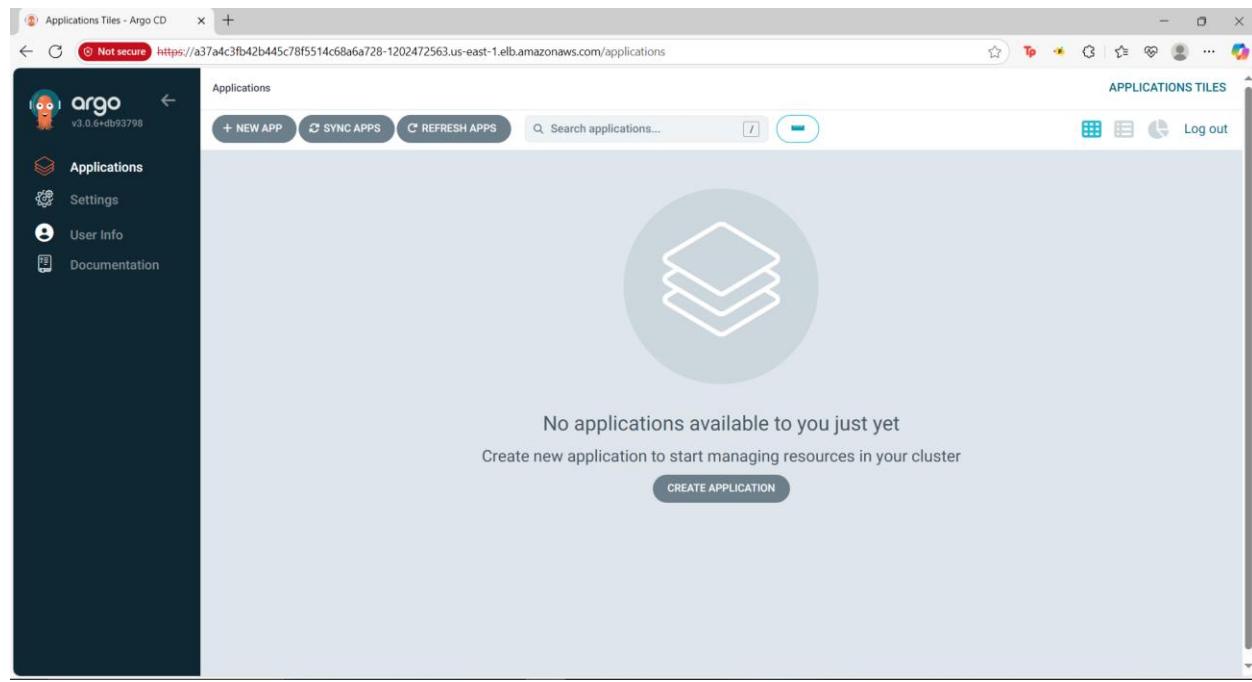
User Info

Documentation

No applications available to you just yet

Create new application to start managing resources in your cluster

CREATE APPLICATION



Repositories / Settings - Argo CD

Not secure https://a37a4c3fb42b445c78f5514c68a6a728-1202472563.us-east-1.elb.amazonaws.com/settings/repos?addRepo=false

argo v3.0.6+db93798

Settings CANCEL

+ CONN

CONNECTED REPOSITORY

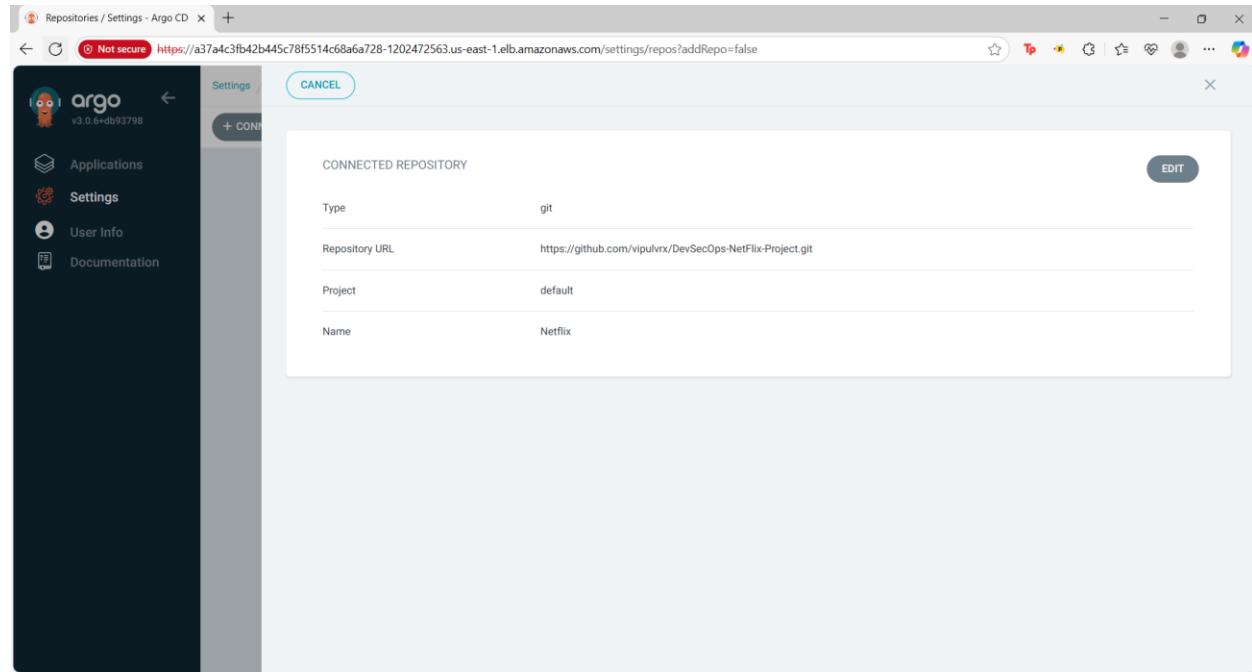
Type git

Repository URL https://github.com/vipulvrx/DevSecOps-NetFlix-Project.git

Project default

Name Netflix

EDIT



The screenshot shows two consecutive screenshots of the Argo CD web interface, illustrating the creation of a new application named "Netflix".

**Top Screenshot (General Tab):**

- GENERAL** tab selected.
- Application Name:** Netflix
- Project Name:** default
- SYNC POLICY:** Automatic
  - PRUNE RESOURCES
  - SELF HEAL
  - SET DELETION FINALIZER
- SYNC OPTIONS:**
  - SKIP SCHEMA VALIDATION
  - PRUNE LAST
  - RESPECT IGNORE DIFFERENCES
  - AUTO-CREATE NAMESPACE
  - APPLY OUT OF SYNC ONLY
  - SERVER-SIDE APPLY
- PRUNE PROPAGATION POLICY:** foreground

**Bottom Screenshot (Source Tab):**

- SOURCE** tab selected.
- Repository URL:** <https://github.com/vipulvrx/DevSecOps-NetFlix-Project.git> (GIT checked)
- Revision:** HEAD
- Path:** Kubernetes
- DESTINATION** tab partially visible.
- Cluster URL:** Cluster URL is required (URL dropdown selected).

The screenshot displays two windows of the Argo CD application management interface.

**Top Window: Application Creation**

This window shows the "CREATE" dialog for a new application:

- Path:** Kubernetes
- DESTINATION**
  - Cluster URL:** https://kubernetes.default.svc
  - Namespace:** default
- Directory**
  - DIRECTORY**: DIRECTORY RECURSE

**Bottom Window: Applications Overview**

This window shows the main application dashboard with the following sections:

- Left Sidebar:** Includes links for Applications, Settings, User Info, and Documentation. It also features filters for Favorites Only, SYNC STATUS (Unknown: 0, Synced: 0, OutOfSync: 1), and HEALTH STATUS (Progressing: 0, Suspended: 0, Healthy: 0, Degraded: 0, Missing: 1).
- Header:** Shows the Argo logo, version v3.0.6+db93798, and navigation buttons (+ NEW APP, SYNC APPS, REFRESH APPS), a search bar (Search applications...), and user options (Log out).
- Applications List:** A card for the "netflix" application, showing its details:
  - Project:** default
  - Labels:** (empty)
  - Status:** Missing (red)
  - Repository:** https://github.com/vipulvrx/DevSecOps...
  - Target Ref:** HEAD
  - Path:** Kubernetes
  - Destination:** in-cluster
  - Namespace:** default
  - Created:** 07/04/2025 16:38:11 (a few seconds ago)
  - Last Sync:** 07/04/2025 16:38:13 (a few seconds ago)

Buttons at the bottom of the card: SYNC, REFRESH, DELETE.

**argo - Application Details Tree**

Not secure https://a37a4c3fb42b445c78f5514c68a6a728-1202472563.us-east-1.elb.amazonaws.com/applications/argocd/netflix?view=tree&operation=false&resource=

APPLICATION DETAILS TREE

DETAILS DIFF SYNC SYNC STATUS HISTORY AND ROLLBACK DELETE REFRESH

APP HEALTH SYNC STATUS Sync OK from HEAD (7ea0dfd)

LAST SYNC Sync OK to 7ea0dfd

Synced a few seconds ago (Fri Jul 04 2025 16:51:18 GMT+0530)  
Author: Vipul <162679803+vipulvrx@users.noreply.github.com>  
Comment: Update deployment.yaml

Resource filters

NAME: netflix

KINDS: KINDS

SYNC STATUS: Synced 3, OutOfSync 1

HEALTH STATUS: Progressing 0, Suspended 0, Healthy 10

**us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-04e21cb81ddd4fe0c - eks-cluster-sg-VrxNetflix-1715166506**

Edit inbound rules

Inbound rules control the incoming traffic that's allowed to reach the instance.

| Security group rule ID | Type        | Protocol | Port range | Source            | Description - optional                                                                        |
|------------------------|-------------|----------|------------|-------------------|-----------------------------------------------------------------------------------------------|
| sgr-006e7762950b7ae37  | All traffic | All      | All        | Custom            | Allows EFA traffic, which is no<br>Allows EFA traffic, which is not<br>matched by CIDR rules. |
| sgr-08bc4f9c941ee51cb  | All traffic | All      | All        | Custom            | sg-04e21cb81ddd4fe0c X<br>sg-031abf5081863651e X                                              |
| -                      | Custom TCP  | TCP      | 30007      | Anyw... 0.0.0.0/0 | app Node port 0.0.0.0/0                                                                       |

Add rule

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Preview changes Save rules

CloudShell Feedback © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

**NETFLIX** My List Movies Tv Shows

# Final Destination...

Plagued by a violent recurring nightmare, college student Stefanie heads home to track down the one person who might be able to break the cycle...

**Play** **More Info**

17+

**Popular Movies**

**Applications / Q.netflix**

**SYNC STATUS** **OutOfSync** from HEAD (7ea0dfd)

**LAST SYNC** **Sync OK** to 7ea0dfd

**APPLICATION DETAILS TREE**