

# Netflix Clone -DevSecOps Project

## Phase 4: Monitoring using Prometheus and Grafana

### I.Install Prometheus and Grafana:

```
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0e5f7b57296f668ca&osUser=ubuntu&sshPort=22#/  
aws  
Services  
Search [Alt+S]  
EC2 VPC Route 53  
LICENSE NOTICE  
ubuntu@ip-172-31-44-186:~/prometheus-2.47.1.linux-amd64$ prometheus version  
Command 'prometheus' not found, did you mean:  
  command 'prometheus' from deb prometheus (2.31.2+ds1-1ubuntu1.22.04.2)  
Try: sudo apt install <deb name>  
ubuntu@ip-172-31-44-186:~/prometheus-2.47.1.linux-amd64$ prometheus version  
Error parsing command line arguments: unexpected version  
prometheus: error: unexpected version  
ubuntu@ip-172-31-44-186:~/prometheus-2.47.1.linux-amd64$ cd /etc/prometheus  
ubuntu@ip-172-31-44-186:/etc/prometheus$ ls  
console Libraries consoles prometheus.yml  
ubuntu@ip-172-31-44-186:/etc/prometheus$ cd /usr/local/bin  
ubuntu@ip-172-31-44-186:/usr/local/bin$ ls  
prometheus promtool  
ubuntu@ip-172-31-44-186:/usr/local/bin$ sudo chown -R prometheus:prometheus /etc/prometheus/  
ubuntu@ip-172-31-44-186:/usr/local/bin$ sudo service prometheus  
prometheus: unrecognized service  
ubuntu@ip-172-31-44-186:/usr/local/bin$ ls -la /etc/prometheus  
total 20  
drwxr-xr-x  4 prometheus prometheus 4096 Feb 25 13:08 .  
drwxr-xr-x 94 root          root    4096 Feb 25 13:08 ..  
drwxr-xr-x  2 prometheus prometheus 4096 Oct  4 11:05 console Libraries  
drwxr-xr-x  2 prometheus prometheus 4096 Oct  4 11:05 consoles  
-rw-r--r--  1 prometheus prometheus 934 Oct  4 11:05 prometheus.yml  
ubuntu@ip-172-31-44-186:/usr/local/bin$  
  
i-0e5f7b57296f668ca (Monitoring)  
PublicIPs: 15.206.120.123 PrivateIPs: 172.31.44.186  
  
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ENG US 18:46 25-02-2024
```

### Create a system unit configuration file for Prometheus:

```
GNU nano 6.2 /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  
  
Help Write Out Where Is Cut Execute Location M-U Undo M-A Set Mark M-I To Bracket M-Q Previous  
Exit Read File Replace Paste Justify Go To Line M-E Redo M-C Copy M-Q Where Was M-W Next  
  
i-0e5f7b57296f668ca (Monitoring)  
PublicIPs: 15.206.120.123 PrivateIPs: 172.31.44.186  
  
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ENG US 18:47 25-02-2024
```



The image shows a terminal window within an AWS console environment. The terminal output displays the following commands and results:  
  
1. Command: `sudo systemctl start node_exporter`  
Output: `Created symlink /etc/systemd/system/multi-user.target.wants/node_exporter.service → /etc/systemd/system/node_exporter.service.`  
  
2. Command: `sudo systemctl status node_exporter`  
Output:  

```
node_exporter.service - Node Exporter
Loaded: loaded (/etc/systemd/system/node_exporter.service; enabled; vendor preset: enabled)
Active: active (running) since Sun 2024-02-25 14:48:13 UTC; 11s ago
Main PID: 1854 (node_exporter)
Tasks: 4 (limit: 4667)
Memory: 2.5M
CPU: 8ms
CGroup: /system.slice/node_exporter.service
└─1854 /usr/local/bin/node_exporter --collector.logind
```

  
3. Subsequent lines show log output from the Node Exporter, including metrics collection status and TLS configuration messages.  
  
4. At the bottom, the instance ID `i-0c2924d9339103203` is highlighted, along with its public and private IP addresses.  
  
The terminal window is titled "i-0c2924d9339103203 (monitorinfsecond)" and has a close button in the top right corner.

SecurityGroup | EC2 | ap-south- x

EC2 Instance Connect | ap-south- x

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Prometheus Time Series Collect x

Node Exporter x

Not secure 13.126.200.18:9090/targets?search=

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Prometheus Alerts Graph Status ▾ Help

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## Targets

All scrape pools ▾

All Unhealthy Collapse All

👍 Unknown

👎 Unhealthy

✅ Healthy

node\_exporter (1/1 up) [show less](#)

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://13.126.200.18:9100/metrics	UP	instance="13.126.200.18:9100" job="node_exporter"	1m 5s ago	14.722ms	

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

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090" job="prometheus"	1m 6s ago	4.898ms	

Search

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Version: (version=1.6.1, branch=HEAD, revision=4a1b77600c1873a8233f3ffb55afcedbb63b8d84)

- Metrics

2.Grafana: On Port 3000:

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Prometheus Time Series Collect

ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0c2924d9339103203&osUser=ubuntu&sshPort=22#/?

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aws Services Search [Alt+S]

EC2 VPC Route 53

ubuntu@ip-172-31-35-166:/etc/prometheus\$ sudo systemctl status grafana-service  
Unit grafana-service.service could not be found.  
ubuntu@ip-172-31-35-166:/etc/prometheus\$ sudo systemctl status grafana-server  
grafana-server.service - Grafana instance  
Loaded: loaded (/lib/systemd/system/grafana-server.service; enabled; vendor preset: enabled)  
Active: active (running) since Sun 2024-02-25 15:25:07 UTC; 1min 45s ago  
Docs: http://docs.grafana.org  
Main PID: 3605 (grafana)  
Tasks: 11 (limit: 4667)  
Memory: 43.7M  
CPU: 2.288s  
CGroup: /system.slice/grafana-server.service  
└─3605 /usr/share/grafana/bin/grafana server --config=/etc/grafana/grafana.ini --pidfile=/run/grafana/grafana-server.pid --packaging=deb cfg:default.pat

Feb 25 15:25:11 ip-172-31-35-166 grafana[3605]: logger=ticker t=2024-02-25T15:25:11.726731985Z level=info msg=starting first\_tick=2024-02-25T15:25:20Z  
Feb 25 15:25:11 ip-172-31-35-166 grafana[3605]: logger=local.finder t=2024-02-25T15:25:11.727122466Z level=warn msg="Skipping finding plugins as directory does not es  
Feb 25 15:25:11 ip-172-31-35-166 grafana[3605]: logger=http.server t=2024-02-25T15:25:11.728094542Z level=info msg="HTTP Server Listen" address=[::]:3000 protocol=ht  
Feb 25 15:25:11 ip-172-31-35-166 grafana[3605]: logger-grafanaStorageLogger t=2024-02-25T15:25:11.728222682Z level=info msg="Storage starting"  
Feb 25 15:25:11 ip-172-31-35-166 grafana[3605]: logger-ngalert.multiorg.alertmanager t=2024-02-25T15:25:11.738896878Z level=info msg="Starting MultiOrg Alertmanager"  
Feb 25 15:25:11 ip-172-31-35-166 grafana[3605]: logger-grafana-apiserver t=2024-02-25T15:25:11.745584539Z level=info msg="Authentication is disabled"  
Feb 25 15:25:11 ip-172-31-35-166 grafana[3605]: logger-grafana-apiserver t=2024-02-25T15:25:11.749354494Z level=info msg="Adding GroupVersion playlist.grafana.app v0  
Feb 25 15:25:12 ip-172-31-35-166 grafana[3605]: logger-plugins.update.checker t=2024-02-25T15:25:12.050388585Z level=info msg="Update check succeeded" duration=312.0s  
Feb 25 15:25:12 ip-172-31-35-166 grafana[3605]: logger-grafana.update.checker t=2024-02-25T15:25:12.08304196Z level=info msg="Update check succeeded" duration=345.18s  
Feb 25 15:25:41 ip-172-31-35-166 grafana[3605]: logger-infra.usagstats t=2024-02-25T15:25:41.74401958Z level=info msg="Usage stats are ready to report"

lines 1-21/21 (END)

i-0c2924d9339103203 (monitorinfsecond)  
PublicIPs: 13.126.200.18 PrivateIPs: 172.31.35.166

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Grafana

Not secure 13.126.200.18:3000/login

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Welcome to Grafana

Email or username  
Email or username

Password  
password

Login

Forgot your password?

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EC2 Instance Connect | ap-south-1

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Prometheus Time Series Collect

Node Exporter Full - Dashboard

Not secure 13.126.200.18:3000/d/rYdddlPWk/node-exporter-full?orgId=1

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Search or jump to... ctrl+k

Home > Dashboards > Node Exporter Full

datasource default Job node\_exporter Host 13.126.200.18:9100

Quick CPU / Mem / Disk

CPU Busy 0.2%

Sys Load (5m av) 0.9%

Sys Load (15m av) 0.2%

RAM Used 13.4%

SWAP Used N/A

Root FS Used 13.6%

CPU Co 2

Uptime 59.8 mins

RootFS 19 GiB

RAM To 4 GiB

SWAP T 0 B

Basic CPU / Mem / Net / Disk

CPU Basic

Memory Basic

Network Traffic Basic

Disk Space Used Basic

3. Configure Prometheus Plugin Integration

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Prometheus Time Series Collec

Node Exporter Full - Dashboar

ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0c2924d9339103203&osUser=ubuntu&sshPort=22#

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Services Search [Alt+S]

EC2 VPC Route 53

GNU nano 6.2 prometheus.yml \*

# - "first\_rules.yml"  
# - "second\_rules.yml"  
  
# A scrape configuration containing exactly one endpoint to scrape:  
# Here it's Prometheus itself.  
scrape\_configs:  
 # The job name is added as a label `job=<job\_name>` to any timeseries scraped from this config.  
 - job\_name: "prometheus"  
  
 # metrics\_path defaults to '/metrics'  
 # scheme defaults to 'http'.  
  
 static\_configs:  
 - targets: ["localhost:9090"]  
 - job\_name: "node\_exporter"  
 static\_configs:  
 - targets: ["13.126.200.18:9100"]  
  
 - job\_name: 'jenkins'  
 metrics\_path: '/prometheus'  
 static\_configs:

Help Write Out Where Is Cut Execute Location M-U Undo M-A Set Mark M-I To Bracket M-O Previous  
Exit Read File Replace Paste Justify Go To Line M-B Redo M-G Copy M-W Where Was M-W Next

i-0c2924d9339103203 (monitorinfsecond)

PublicIPs: 13.126.200.18 PrivateIPs: 172.31.35.166

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22:19 25-02-2024

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Node Exporter Full - Dashboar

jenkins grafana dashboard

Not secure 13.126.200.18:9090/targets?search=

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Prometheus Alerts Graph Status Help

Targets

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

jenkins (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://3.111.238.40:8080/prometheus	UP	instance="3.111.238.40:8080" job="jenkins"	24.880s ago	13.323ms	

node\_exporter (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://13.126.200.18:9100/metrics	UP	instance="13.126.200.18:9100" job="node_exporter"	21.437s ago	14.892ms	

prometheus (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090" job="prometheus"	22.559s ago	5.076ms	

SecurityGroup | EC2 | ap-south-1

EC2 Instance Connect | ap-south-1

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Prometheus Time Series Collec

Jenkins: Performance and Health

Not secure 13.126.200.18:3000/d/haryan-jenkins/jenkins3a-performance-and-health-overview?orgId=1

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Search or jump to... ctrl+k

Home > Dashboards > Jenkins: Performance and Health Overview Last 30 minutes

Processing speed 0

Job queue duration  
1  
21:58 22:00 22:02 22:04 22:06 22:08 22:10 22:12 22:14 22:16 22:18 22:20 22:22 22:24 22:26

Queued rate 0

JVM free memory 105690264100.0% 1 GB

Memory Usage 1.0

Jenkins health N/A

JVM Uptime None!

Jenkins nodes offline 0.00563%

CPU Usage

Total Jobs None!

Successful Jobs None!

Aborted Jobs No data

Unstable Jobs No data

Failed Jobs None!

Jenkins queue size 0