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Prometheus is an open-source system monitoring and alerting toolkit originally built at SoundCloud. It is now a standalone open source project . Prometheus joined the Cloud Native Computing Foundation in 2016 as the second hosted project, after Kubernetes.

Features,

1. a multi-dimensional data model with time series data identified by metric name and key/value pairs

2. PromQL, a flexible query language to leverage this dimensionality

3. no reliance on distributed storage; single server nodes are autonomous

4. time series collection happens via a pull model over HTTP

5. pushing time series is supported via an intermediary gateway

6. targets are discovered via service discovery or static configuration

7. multiple modes of graphing and dashboarding support

Prometheus Installation:

Username Creation:

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

Commands:

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

tar -xvf prometheus-2.47.1.linux-amd64.tar.gz

sudo mkdir -p /data /etc/prometheus

cd prometheus-2.47.1.linux-amd64/

sudo mv prometheus promtool /usr/local/bin/
```

sudo mv consoles/ console_libraries/ /etc/prometheus/

sudo mv prometheus.yml /etc/prometheus/prometheus.yml

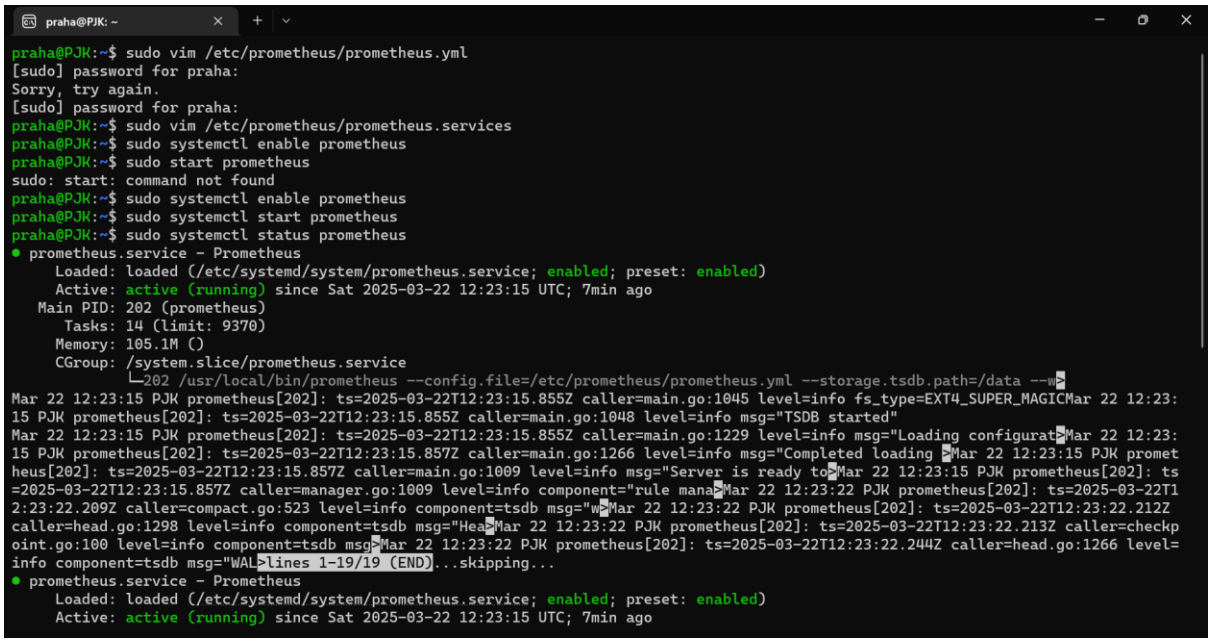
sudo chown -R prometheus:prometheus /etc/prometheus/ /data/

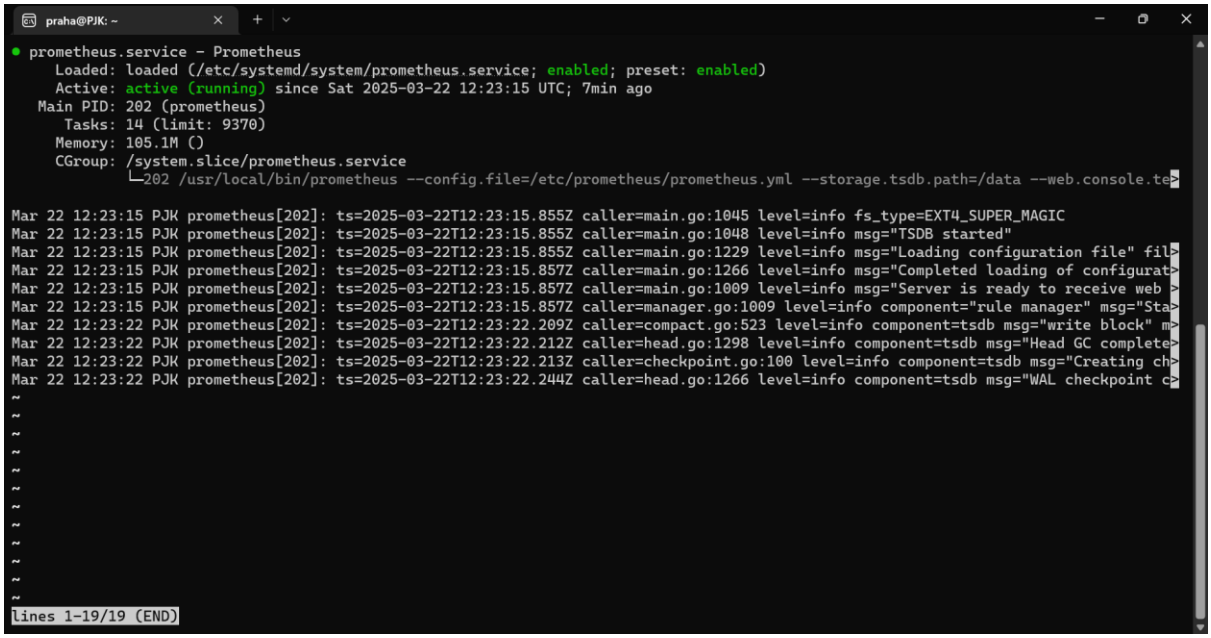
cd

rm -rf prometheus-2.47.1.linux-amd64.tar.gz

prometheus --version

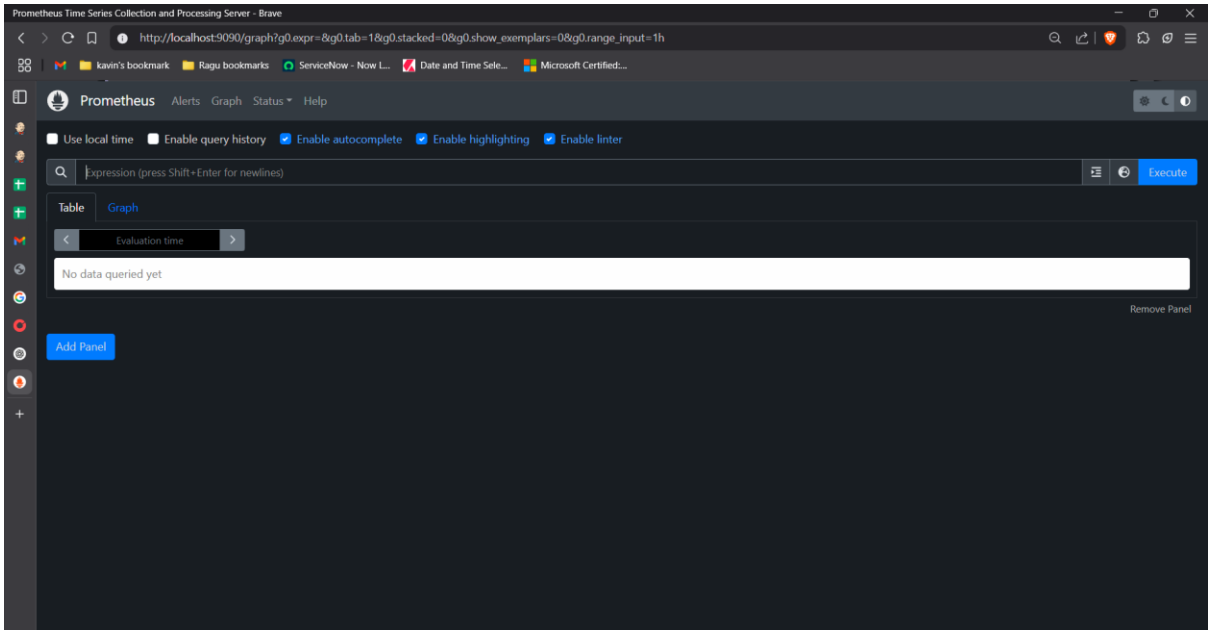
sudo vim /etc/systemd/system/prometheus.service





Prometheus.sevice:

```
[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
```



Node Exporter:

Commands for installation:

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

Node exporter file:

```
[Unit]
Description=Node Exporter
Wants=network-online.target
After=network-online.target
StartLimitIntervalSec=500
StartLimitBurst=5
[Service]
User=node_exporter
Group=node_exporter
Type=simple
```

Restart=on-failure

RestartSec=5s

ExecStart=/usr/local/bin/node_exporter \

  --collector.logind

[Install]

WantedBy=multi-user.target

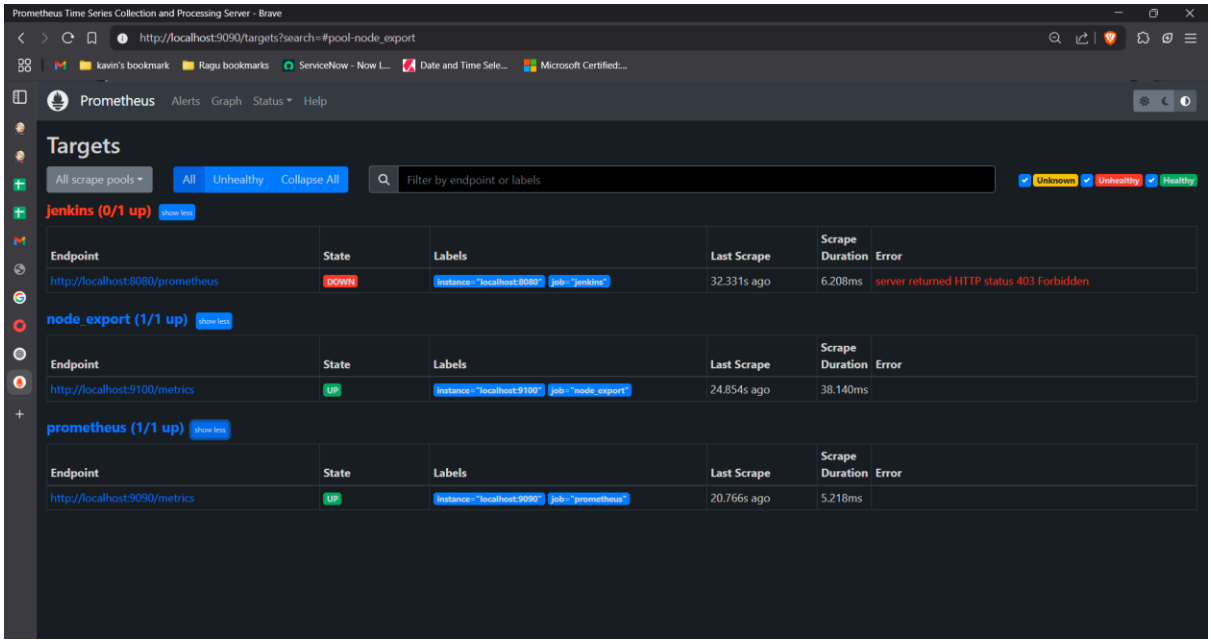
Service check : sudo systemctl enable node_exporter

sudo systemctl start node_exporter

sudo systemctl status node_exporter

journalctl -u node_exporter -f --no-pager

Reload Promotheus: curl -X POST http://localhost:9090/-/reload



Grafana:

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

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

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

sudo apt-get update

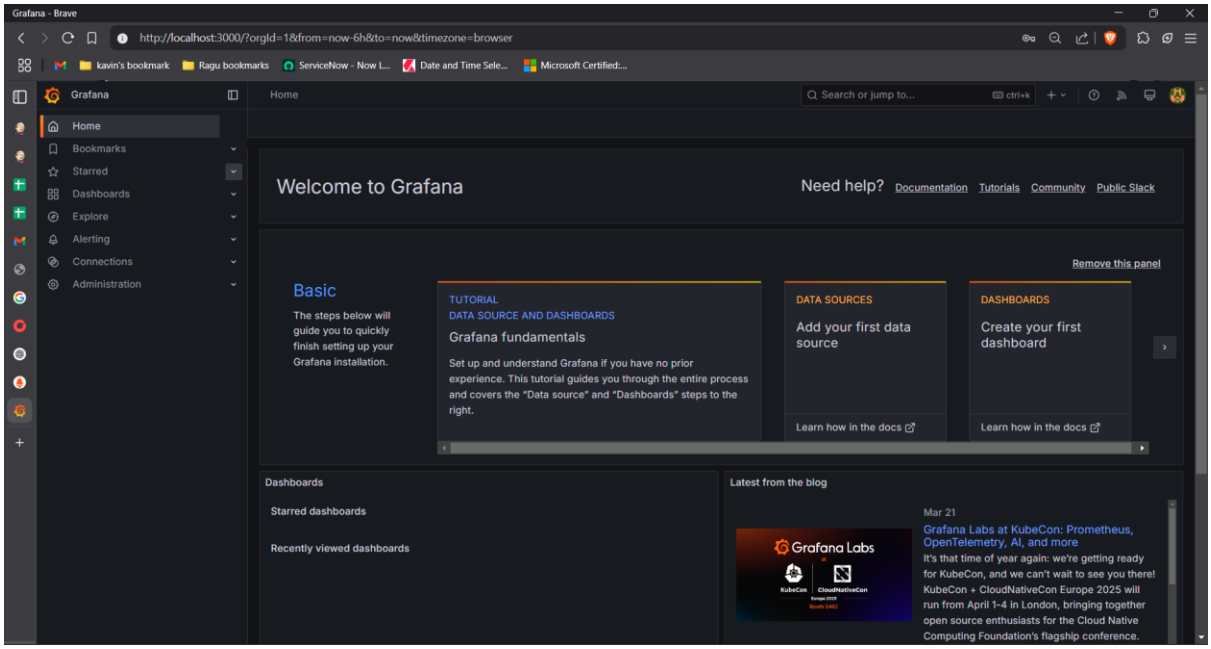
sudo apt-get -y install grafana

sudo systemctl enable grafana-server

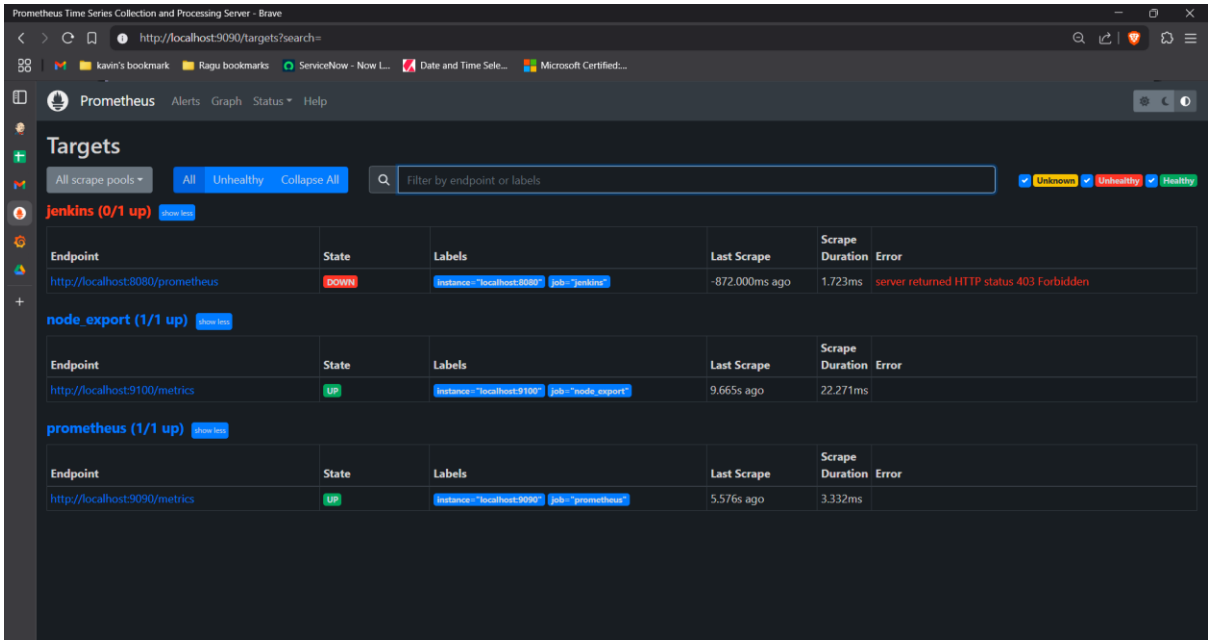
sudo systemctl start grafana-server

sudo systemctl status grafana-server

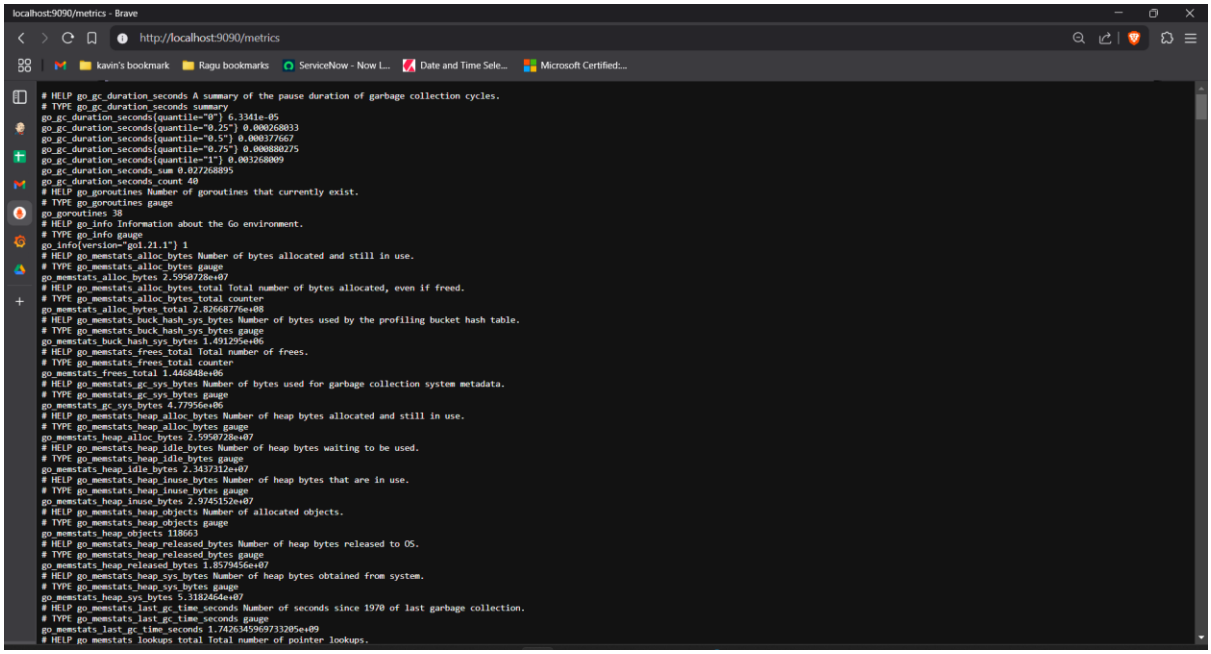
Grafana UI:



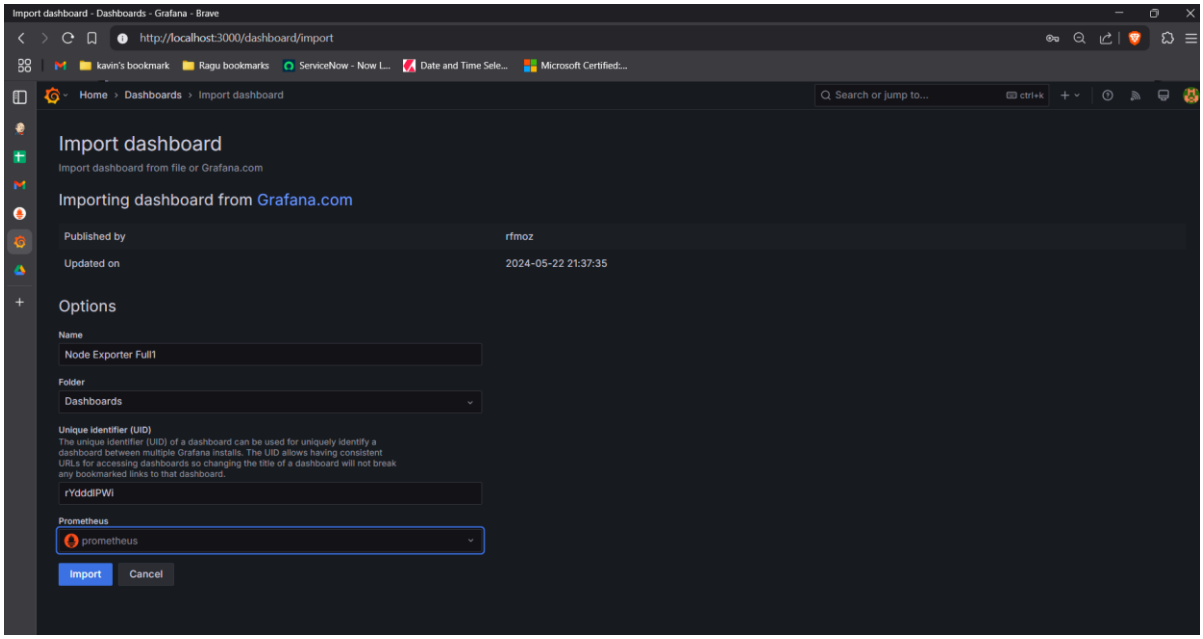
Status in promethues:



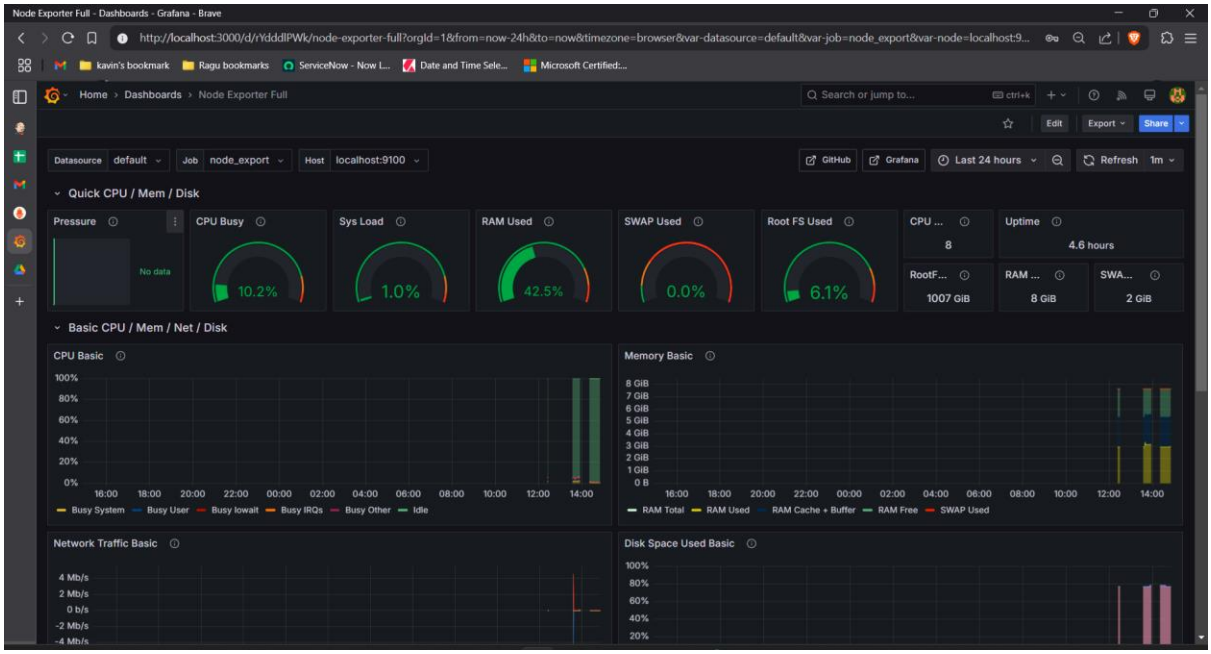
Metrics in Prometheus:

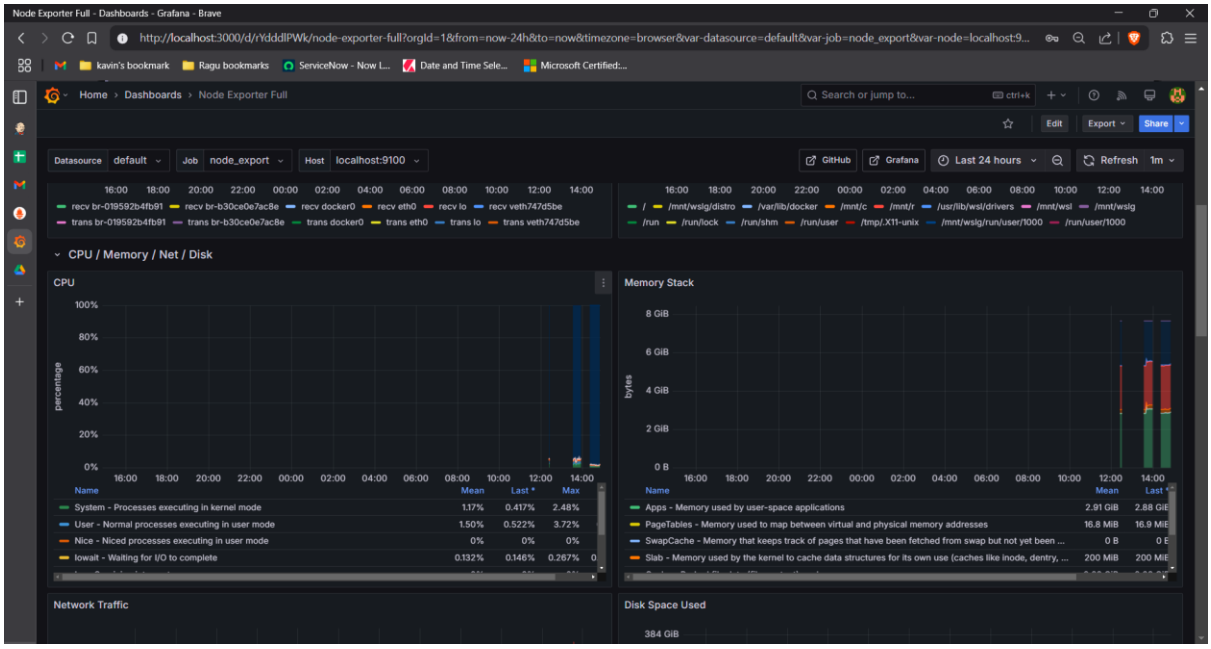


Node Exporter:

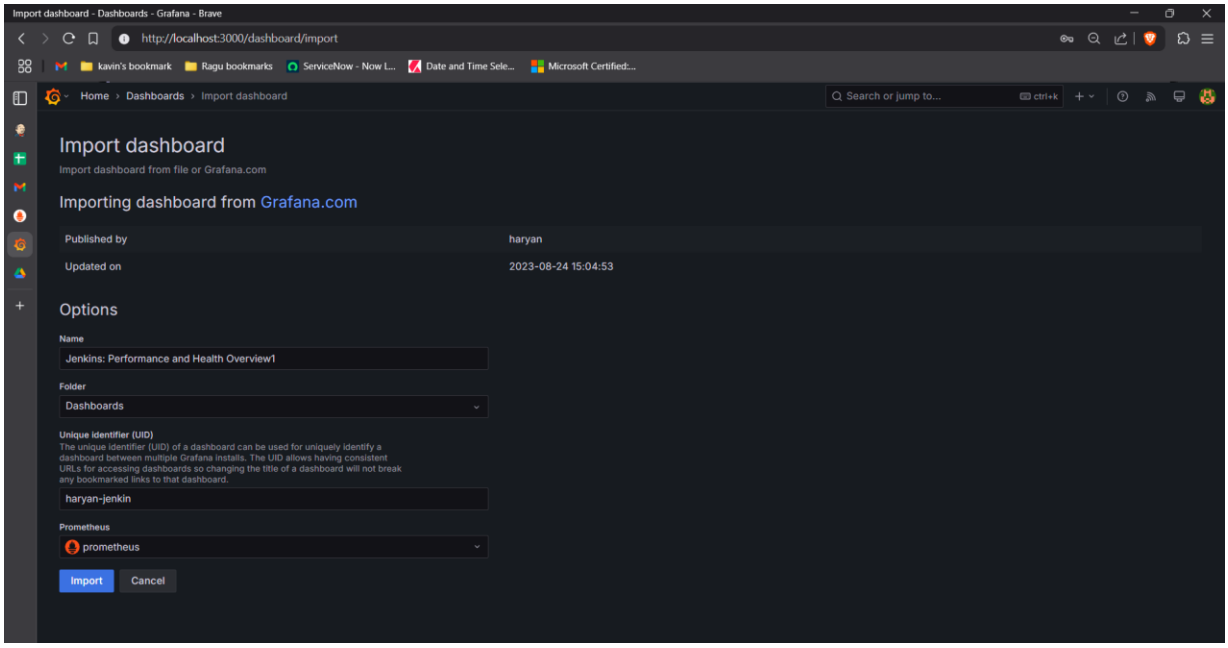


Dashboard:

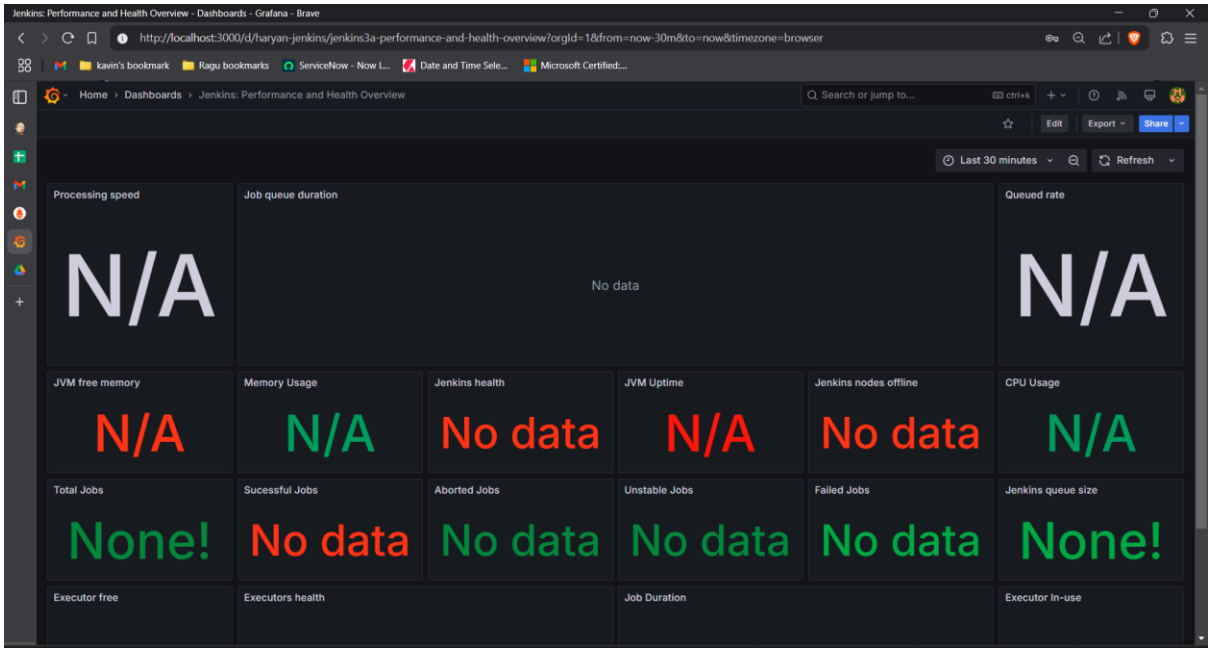




Jenkins Overview:

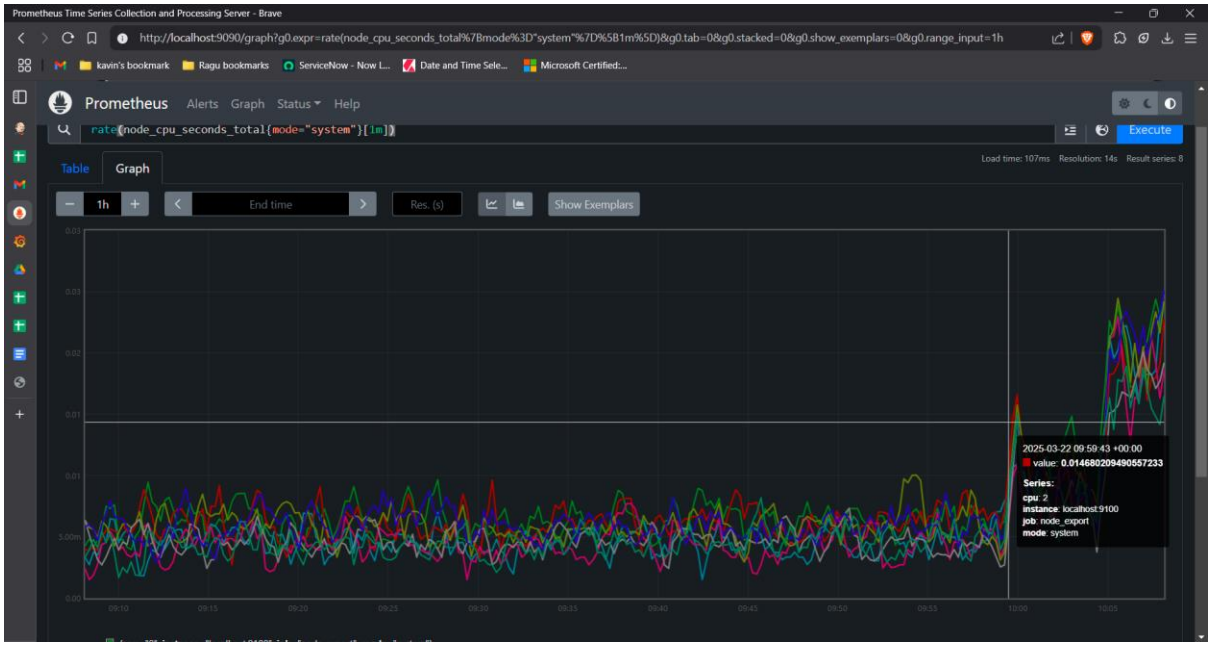


Dashboard:



Prometheus analysis:

rate(node_cpu_seconds_total{mode="system"}[1m])

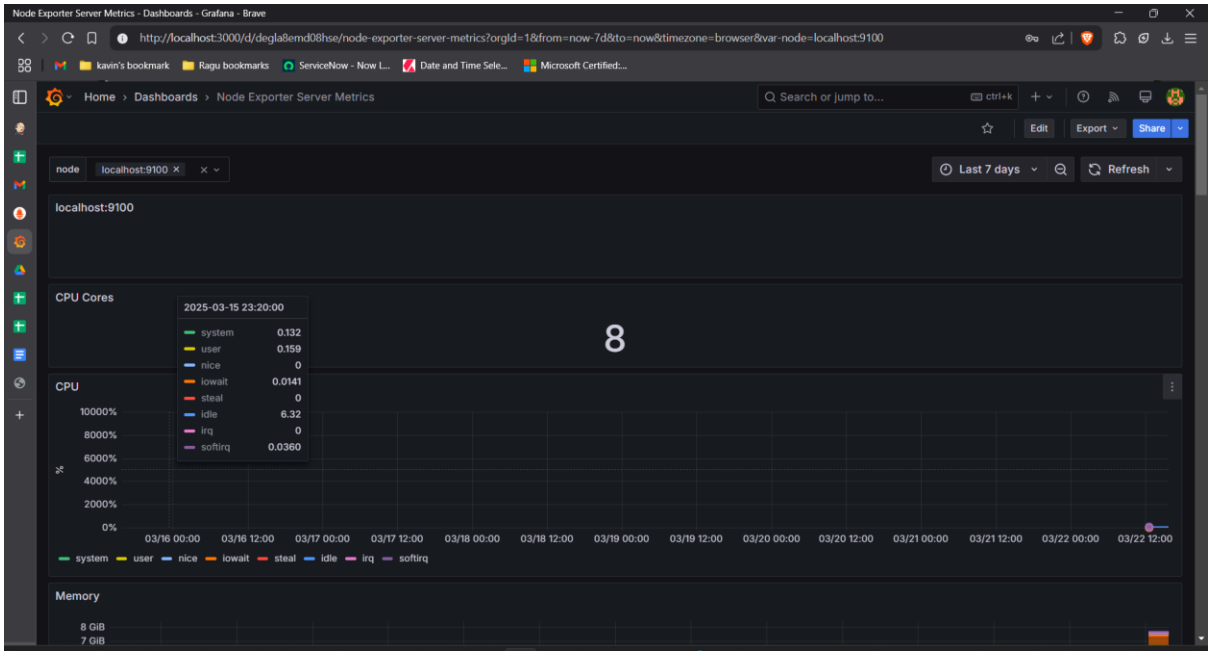


rate(node_network_receive_bytes_total[1m])

node_load15

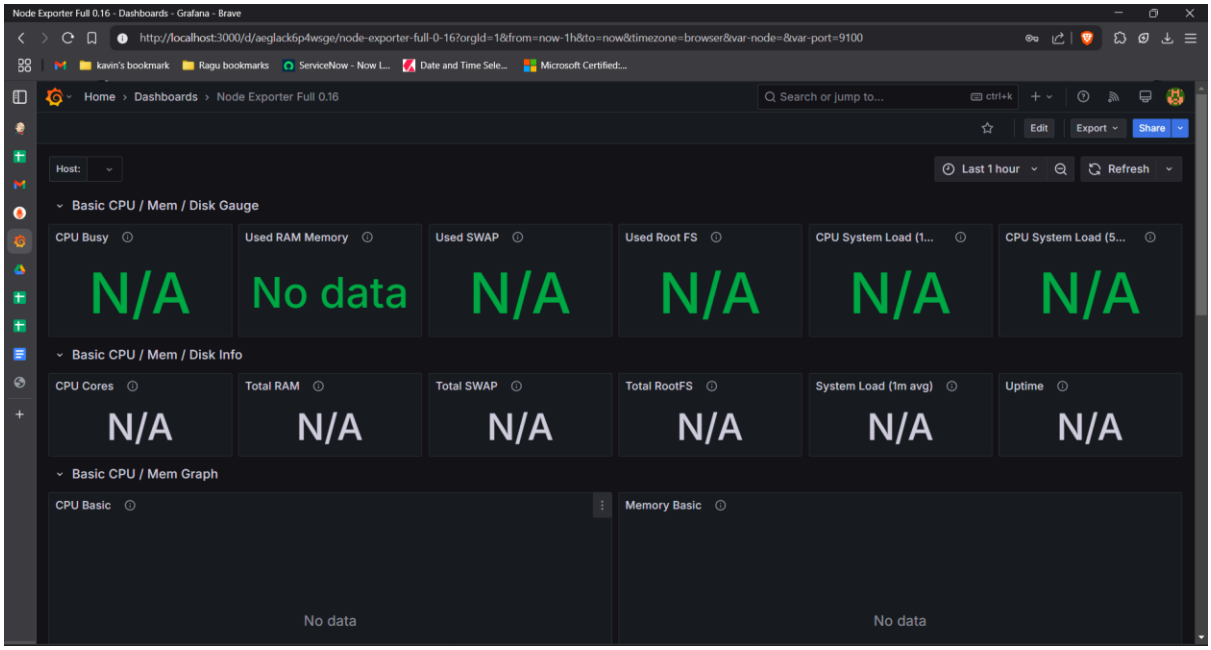
Dashboard: (405)

Node Exporter Service metrics,



Dashboard (5174):

Node Exporter Full 0.16,



Dashboard (9096):

1 Node Exporter 1.0.1