# Prometheus Server Configuration on AWS EC2 Machine

## I. Prometheus Server Setup:

Step 1: **Update the yum package repositories.**

sudo yum update -y

Step 2: **Create a Prometheus user, and required directories, and make the Prometheus user as the owner of those directories.**

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

sudo mkdir /etc/prometheus

sudo mkdir /var/lib/prometheus

sudo chown prometheus:prometheus /etc/prometheus

sudo chown prometheus:prometheus /var/lib/prometheus

Step 3: **Go to the official Prometheus downloads page (https://prometheus.io/)and get the download link for the Linux binary.**

https://github.com/prometheus/prometheus/releases/download/v2.53.4/prometheus-2.53.4.linux-amd64.tar.gz

Step 4: **Download the source using wget, unzip the package then rename the extracted folder to prometheus-files.**

wget https://github.com/prometheus/prometheus/releases/download/v2.53.4/prometheus-2.53.4.linux-amd64.tar.gz

tar -xvf prometheus-2.53.4.linux-amd64.tar.gz

mv prometheus-2.53.4.linux-amd64  prometheus-files

Step 5: **Copy Prometheus and promtool binary from prometheus-files folder to /usr/local/bin and change the ownership to prometheus user.**

sudo cp prometheus-files/prometheus /usr/local/bin/

sudo cp prometheus-files/promtool /usr/local/bin/

sudo chown prometheus:prometheus /usr/local/bin/prometheus

sudo chown prometheus:prometheus /usr/local/bin/promtool

Step 6: **Move the consoles and console_libraries directories from prometheus-files to /etc/prometheus folder and change the ownership to Prometheus user.**

sudo cp -r prometheus-files/consoles /etc/prometheus

sudo cp -r prometheus-files/console_libraries /etc/prometheus

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

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

## II. Setup Prometheus Configuration:

All the Prometheus configurations should be present in /etc/prometheus/prometheus.yml file.

Step 1: **Create the prometheus.yml file.**

sudo vi /etc/prometheus/prometheus.yml

Step 2: **Copy the following contents to the prometheus.yml file.**

```
global:
  scrape_interval: 10s
scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 10s
    static_configs:
      - targets: ['server_ip:9090'] //PRIVATE IPV4 ADRESS OF PROMETHEUS EC2_INSTANCE
```

Step 3: **Change the ownership of the file to the Prometheus user.**

sudo chown prometheus:prometheus /etc/prometheus/prometheus.yml

## III. Setup Prometheus Service File:

Step 1: **Create a Prometheus service file.**

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

Step 2: **Copy the following content to the file.**

```
[Unit]
Description=Prometheus
```

Wants=network-online.target

After=network-online.target

[Service]

User=prometheus

Group=prometheus

Type=simple

ExecStart=/usr/local/bin/prometheus \

    --config.file /etc/prometheus/prometheus.yml \

    --storage.tsdb.path /var/lib/prometheus/ \

    --web.console.templates=/etc/prometheus/consoles \

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

[Install]

WantedBy=multi-user.target

Step 3: **Reload the systemd service to register the Prometheus service and start the Prometheus service.**

sudo systemctl daemon-reload

sudo service prometheus start

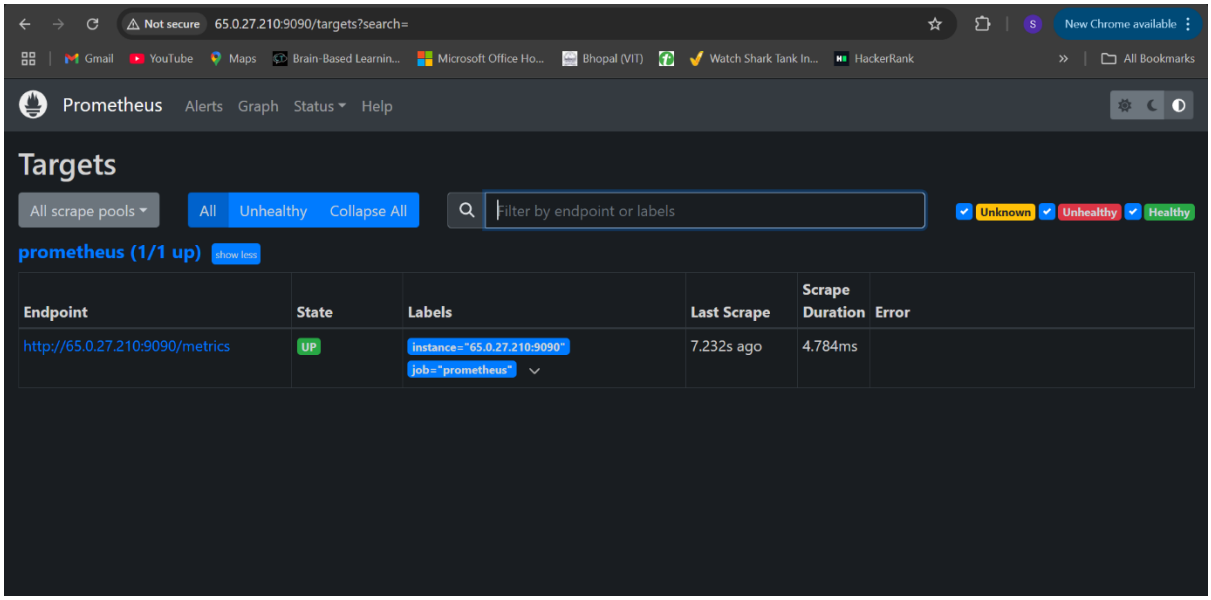
service prometheus status

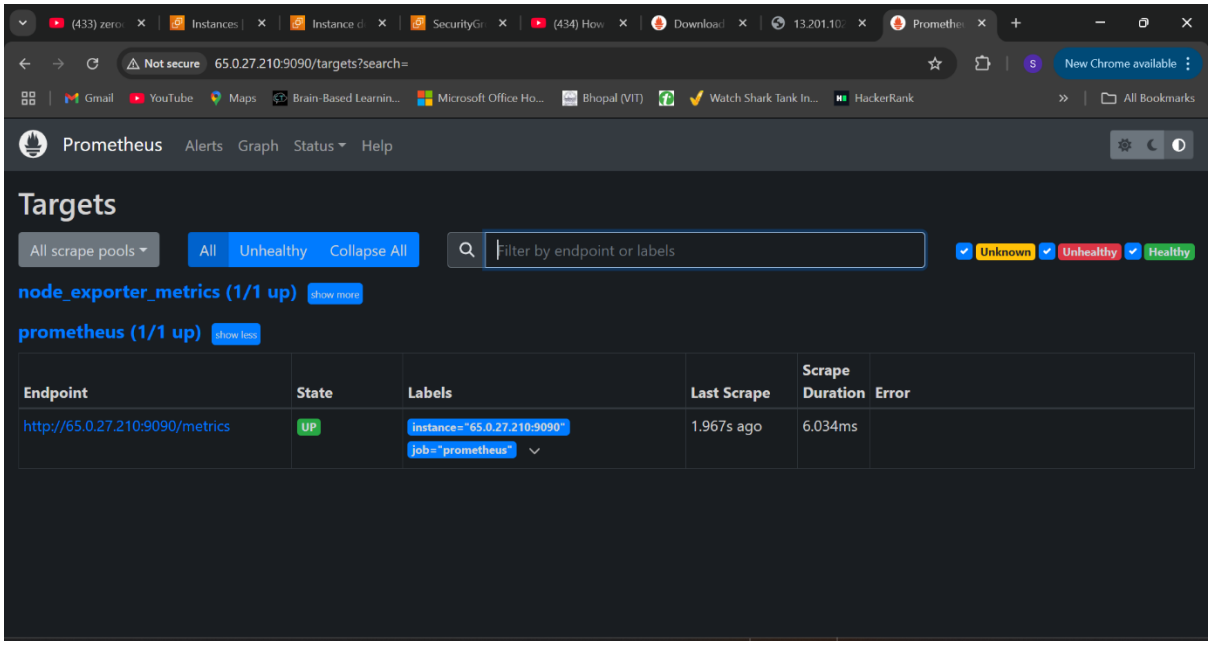
sudo systemctl enable prometheus

sudo systemctl status prometheus

Step 4: **Access Prometheus Web UI**

http//:ec2serverip:9090 //PRIVATE IPV4 ADRESS OF PROMETHEUS EC2_INSTANCE


Not secure 65.0.27.210:9090/targets?search=
New Chrome available
Gmail YouTube Maps Brain-Based Learnin... Microsoft Office Ho... Bhopal (VIT) Watch Shark Tank In... HackerRank All Bookmarks
Prometheus Alerts Graph Status Help
Targets
All scrape pools All Unhealthy Collapse All Filter by endpoint or labels Unknown Unhealthy Healthy
prometheus (1/1 up) show less
Endpoint State Labels Last Scrape Scrape Duration Error
http://65.0.27.210:9090/metrics UP instance="65.0.27.210:9090" job="prometheus" 7.232s ago 4.784ms


Not secure 65.0.27.210:9090/targets?search=
New Chrome available
Gmail YouTube Maps Brain-Based Learnin... Microsoft Office Ho... Bhopal (VIT) Watch Shark Tank In... HackerRank All Bookmarks
Prometheus Alerts Graph Status Help
Targets
All scrape pools All Unhealthy Collapse All Filter by endpoint or labels Unknown Unhealthy Healthy
node_exporter_metrics (1/1 up) show more
prometheus (1/1 up) show less
Endpoint State Labels Last Scrape Scrape Duration Error
http://65.0.27.210:9090/metrics UP instance="65.0.27.210:9090" job="prometheus" 1.967s ago 6.034ms

# Prometheus Node Exporter on AWS EC2

## I.Setup Node Exporter Binary:(on a new EC2 INSTANCE)

Step 1: **Download the latest node exporter package. You should check the Prometheus downloads section for the latest version and update this command to get that package.**

cd /tmp

wget
https://github.com/prometheus/node_exporter/releases/download/v1.9.0/node_exporter-1.9.0.linux-amd64.tar.gz

Step 2: **Unpack the tarball**

tar -xvf node_exporter-1.9.0.linux-amd64.tar.gz

Step 3: **Move the node export binary to /usr/local/bin**

sudo mv node_exporter-1.9.0.linux-amd64/node_exporter /usr/local/bin/

## II. Create a Custom Node Exporter Service:

Step 1: **Create a node_exporter user to run the node exporter service.**

sudo useradd -rs /bin/false node_exporter

Step 2: **Create a node_exporter service file under systemd.**

sudo vi /etc/systemd/system/node_exporter.service

Step 3: **Add the following service file content to the service file and save it.**

[Unit]

Description=Node Exporter

After=network.target

[Service]

User=node_exporter

Group=node_exporter

Type=simple

ExecStart=/usr/local/bin/node_exporter

[Install]

WantedBy=multi-user.target

Step 4: **Reload the system daemon and star the node exporter service.**

sudo systemctl daemon-reload

sudo systemctl start node_exporter

Step 5: **check the node exporter status to make sure it is running in the active state.**

sudo systemctl status node_exporter

Step 6: **Enable the node exporter service to the system startup.**

sudo systemctl enable node_exporter

Step 7: **Access Node Exporter Web UI**

http://serverip:9100/metrics //PUBLIC IPV4 OF NODE_EXPORTER EC2 INSTANCE

## III. SETUP TARGET ON PROMETHEUS SERVER:

Now that we have the node exporter up and running on the server, we have to add this server a target on the Prometheus server configuration.

Note: This configuration should be done on the Prometheus server.

Step 1: **Login to the Prometheus server and open the prometheus.yml file.**

sudo vi /etc/prometheus/prometheus.yml

Step 2: **Under the scrape config section add the node exporter target as shown below.**

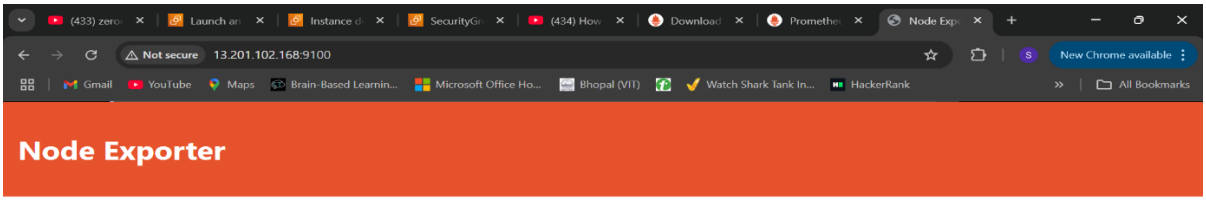
```
- job_name: 'node_exporter_metrics'
    scrape_interval: 5s
    static_configs:
      - targets: ['serverip:9100'] //PUBLIC IPV4 OF NODE_EXPORTER EC2 INSTANCE
```

Step 3: **Restart the prometheus service for the configuration changes to take place.**

sudo systemctl restart prometheus

Step 4: **Access Node Exporter  on Prometheus Web UI**

http://ec2serverip:9090/targets //PUBLIC IPV4 OF NODE_EXPORTER EC2 INSTANCE




# Node Exporter

## Prometheus Node Exporter

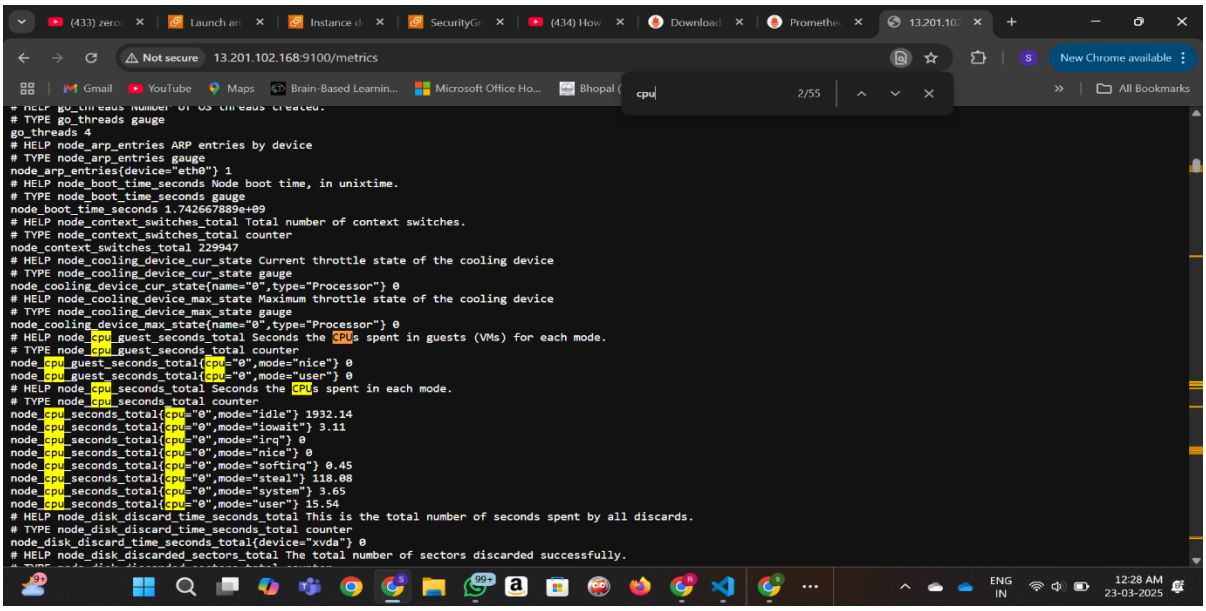
Version: (version=1.9.0, branch=HEAD, revision=02afa5c53c36123611533f2defea6ccd4546a9bb)

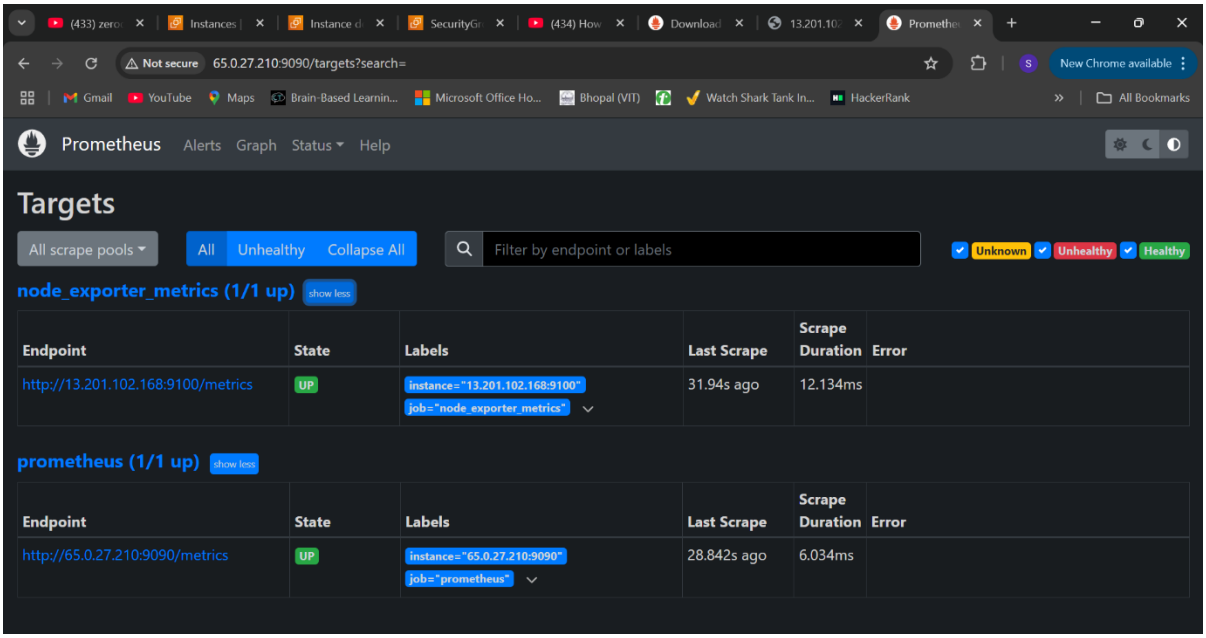
- Metrics

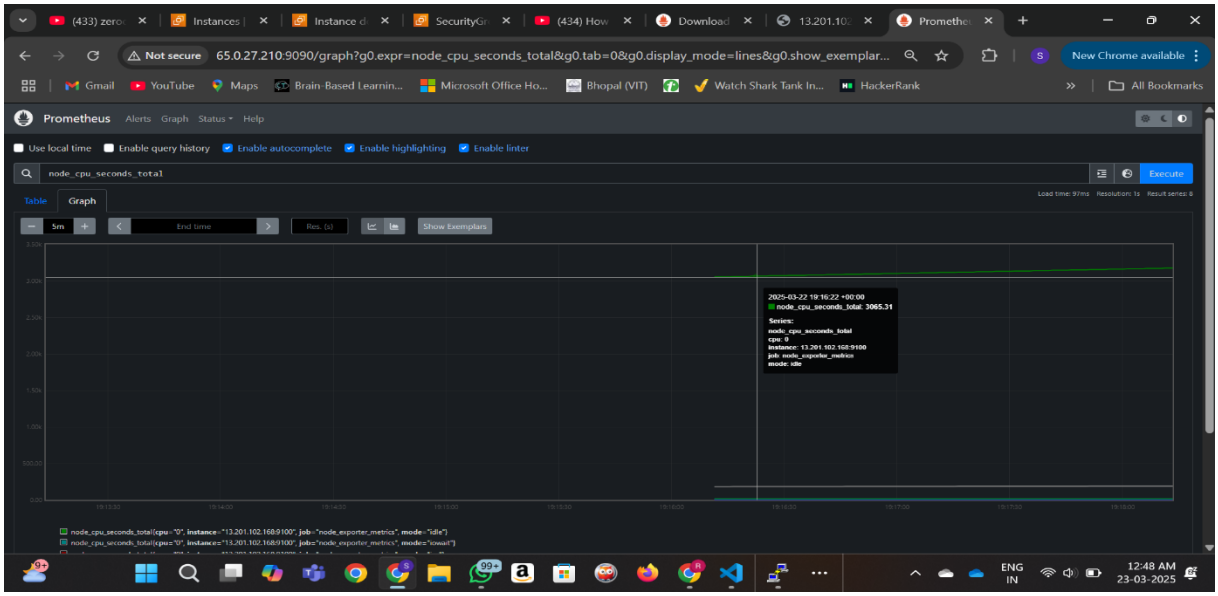
Download a detailed report of resource usage (pprof format, from the Go runtime):

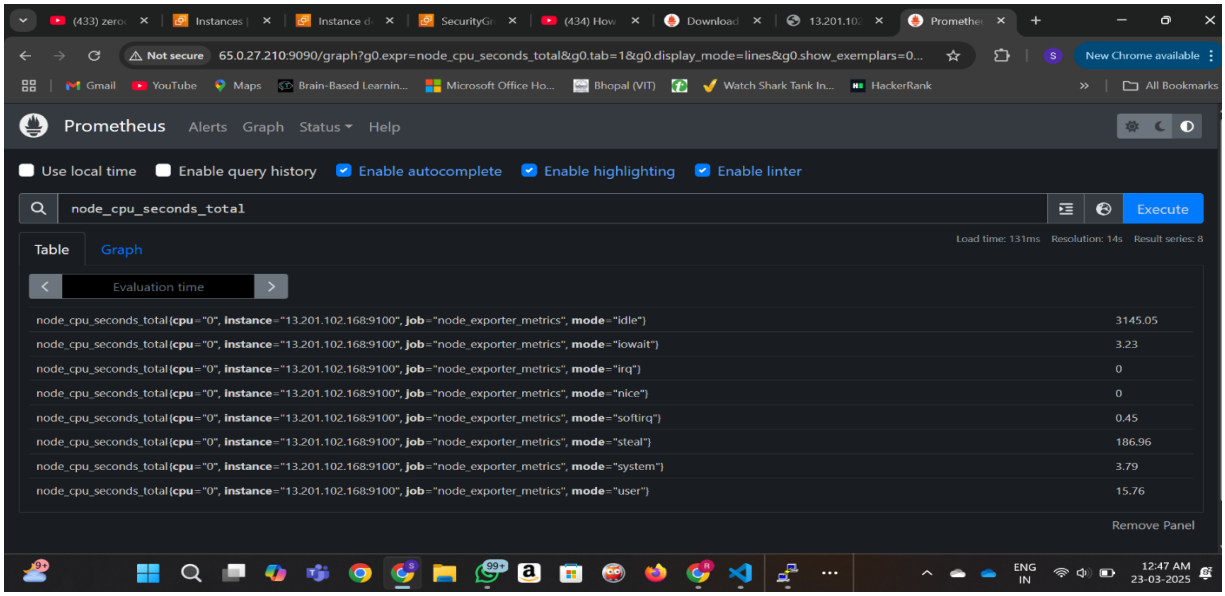
- heap usage (memory)
- CPU usage (60 second profile)

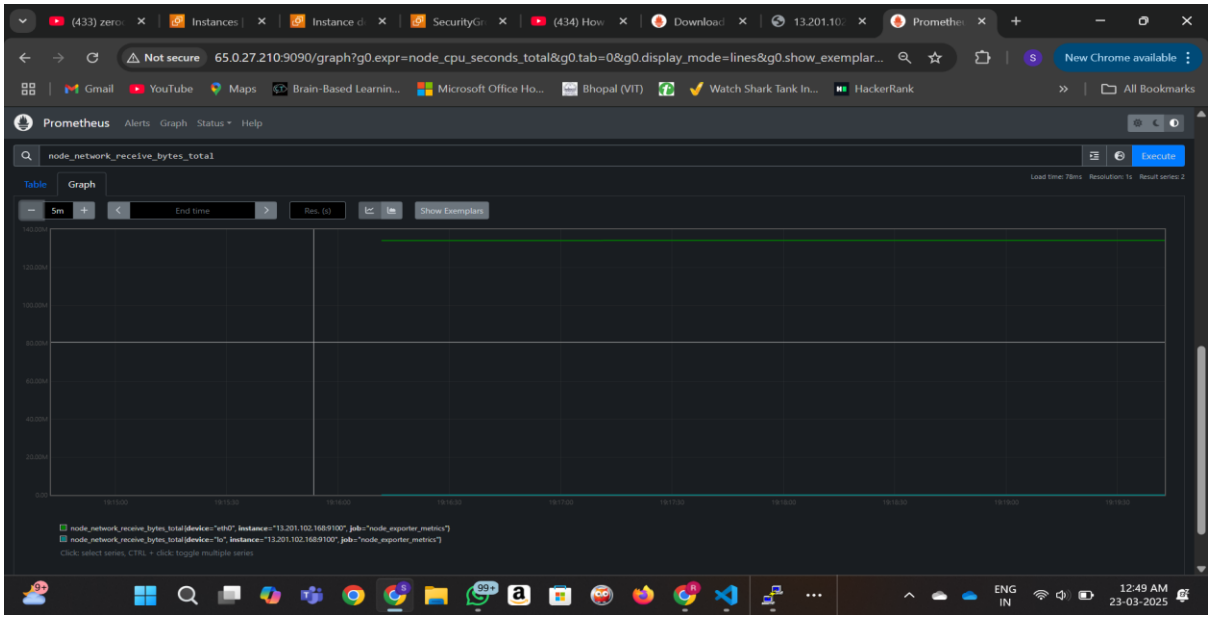
To visualize and share profiles you can upload to pprof.me




Not secure
65.0.27.210:9090/graph?g0.expr=node_cpu_seconds_total&g0.tab=0&g0.display_mode=lines&g0.show_exemplar...
Prometheus
Alerts
Graph
Status
Help
Use local time
Enable query history
Enable autocomplete
Enable highlighting
Enable linter
node_cpu_seconds_total
Execute
Table
Graph
Load time: 97ms
Resolution: 1s
Result series: 8
5m
End time
Res. (s)
Show Exemplars
2025-03-22 19:16:22 +00:00
node_cpu_seconds_total: 3065.31
Series:
node_cpu_seconds_total
cpu: 0
instance: 13.201.102.168:9100
job: node_exporter_metrics
mode: idle
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="idle"}
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="iowait"}
ENG
IN
12:48 AM
23-03-2025


Not secure
65.0.27.210:9090/graph?g0.expr=node_cpu_seconds_total&g0.tab=1&g0.display_mode=lines&g0.show_exemplars=0...
Prometheus
Alerts
Graph
Status
Help
Use local time
Enable query history
Enable autocomplete
Enable highlighting
Enable linter
node_cpu_seconds_total
Execute
Table
Graph
Load time: 131ms
Resolution: 14s
Result series: 8
Evaluation time
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="idle"} 3145.05
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="iowait"} 3.23
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="irq"} 0
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="nice"} 0
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="softirq"} 0.45
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="steal"} 186.96
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="system"} 3.79
node_cpu_seconds_total{cpu="0", instance="13.201.102.168:9100", job="node_exporter_metrics", mode="user"} 15.76
Remove Panel
ENG
IN
12:47 AM
23-03-2025


Not secure
65.0.27.210:9090/graph?g0.expr=node_cpu_seconds_total&g0.tab=0&g0.display_mode=lines&g0.show_exemplar...
Prometheus
Alerts
Graph
Status
Help
node_network_receive_bytes_total
Execute
Table
Graph
5m
End time
Res. (s)
Show Exemplars
node_network_receive_bytes_total{device="eth0", instance="13.201.102.168:9100", job="node_exporter_metrics"}
node_network_receive_bytes_total{device="lo", instance="13.201.102.168:9100", job="node_exporter_metrics"}
Click: select series, CTRL + click: toggle multiple series
ENG
IN
12:49 AM
23-03-2025