Lesson 02 Demo 01

Setting up and Monitoring with Node Exporter

Objective: To set up and monitor Node Exporter, which exposes system metrics from a Linux host, making it a valuable tool for monitoring hosts within a Prometheus ecosystem

Tools required: Linux operating system

Prerequisites: None

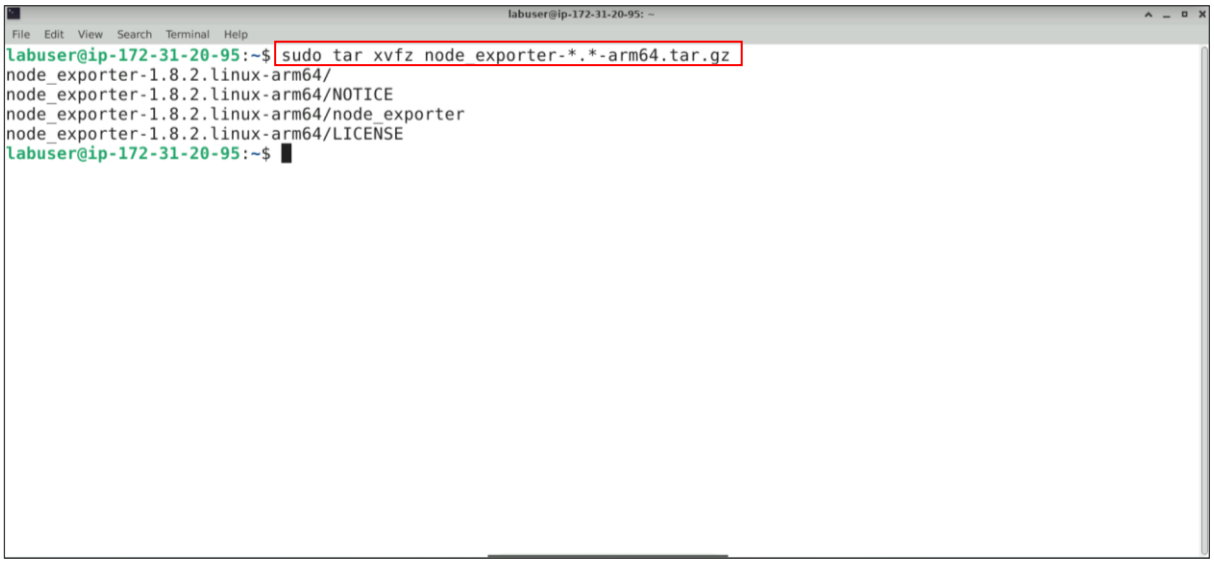
Steps to be followed:

1. Download and set up Node Exporter on localhost
2. Set up a Prometheus server on localhost to scrape Node Exporter metrics
3. Access Node Exporter metrics using Prometheus UI

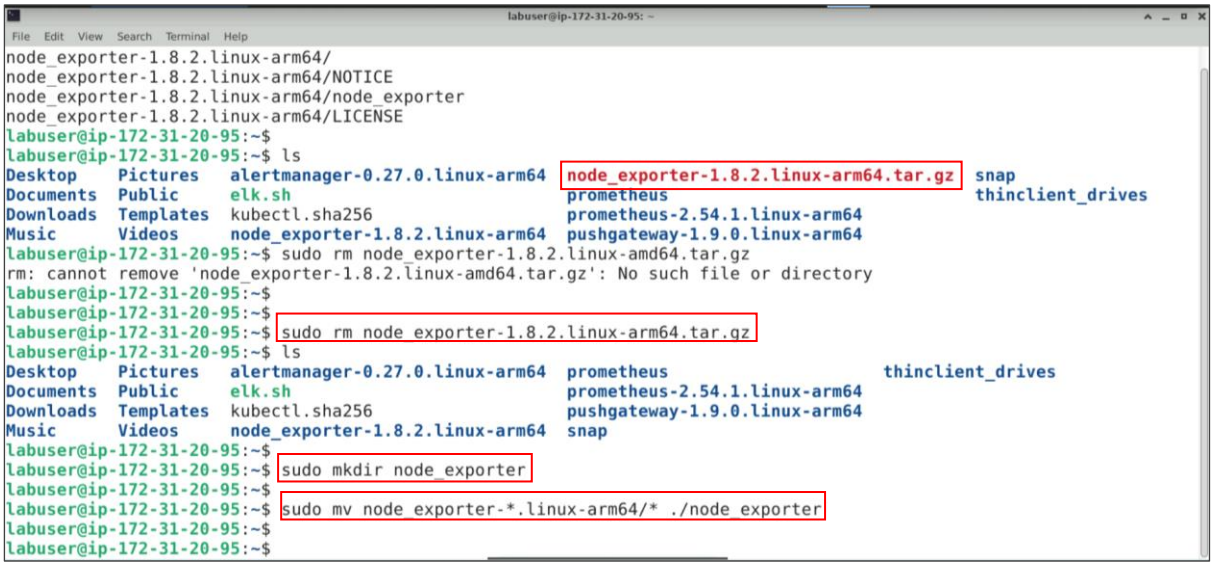
Step 1: Download and set up Node Exporter on localhost

1.1 Navigate to the terminal on the Ubuntu system and execute the following command to download Node Exporter:
sudo wget https://github.com/prometheus/node_exporter/releases/download/v1.8.2/node_exporter-1.8.2.linux-arm64.tar.gz

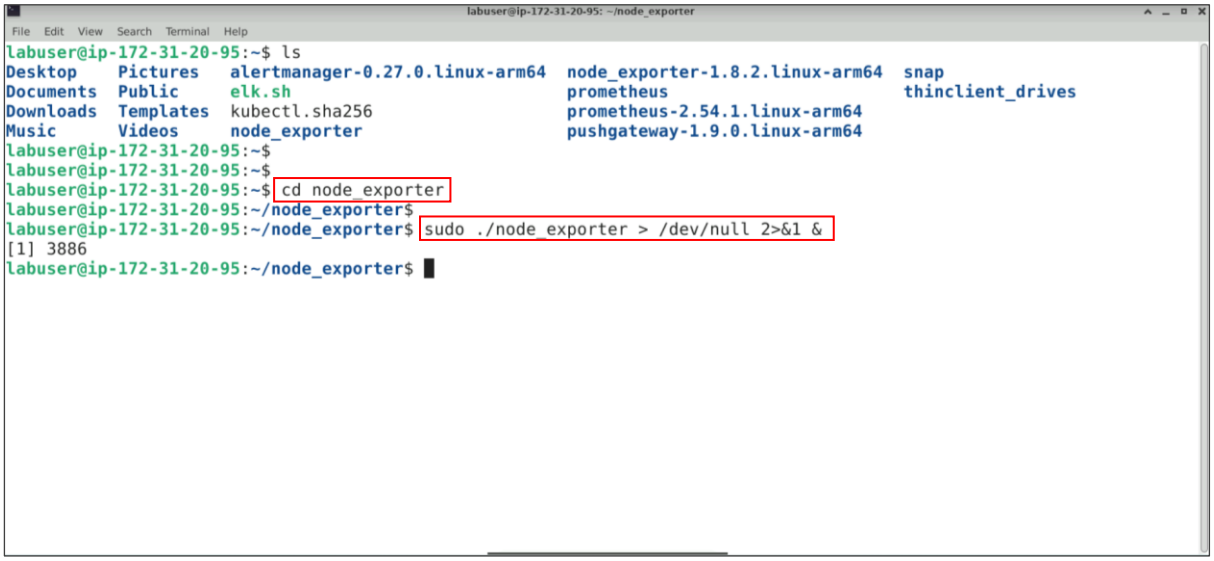
1.2 Run the following command to extract the downloaded Node Exporter package:
sudo tar xvfz node_exporter-*.*-arm64.tar.gz



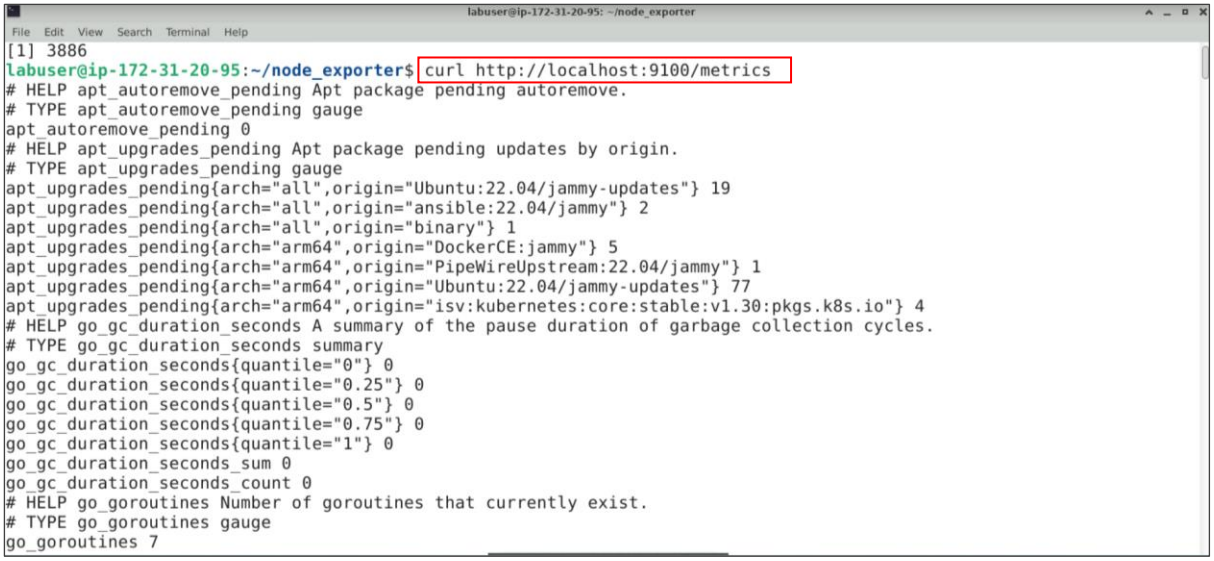
1.3 Delete the downloaded **.tar.gz** file to free up space, then create a new directory named **Node_Exporter** and move the extracted Node Exporter files into the newly created directory using the following commands:
sudo rm node_exporter-1.8.2.linux-arm64.tar.gz
sudo mkdir node_exporter
sudo mv node_exporter-*.linux-arm64/* ./node_exporter

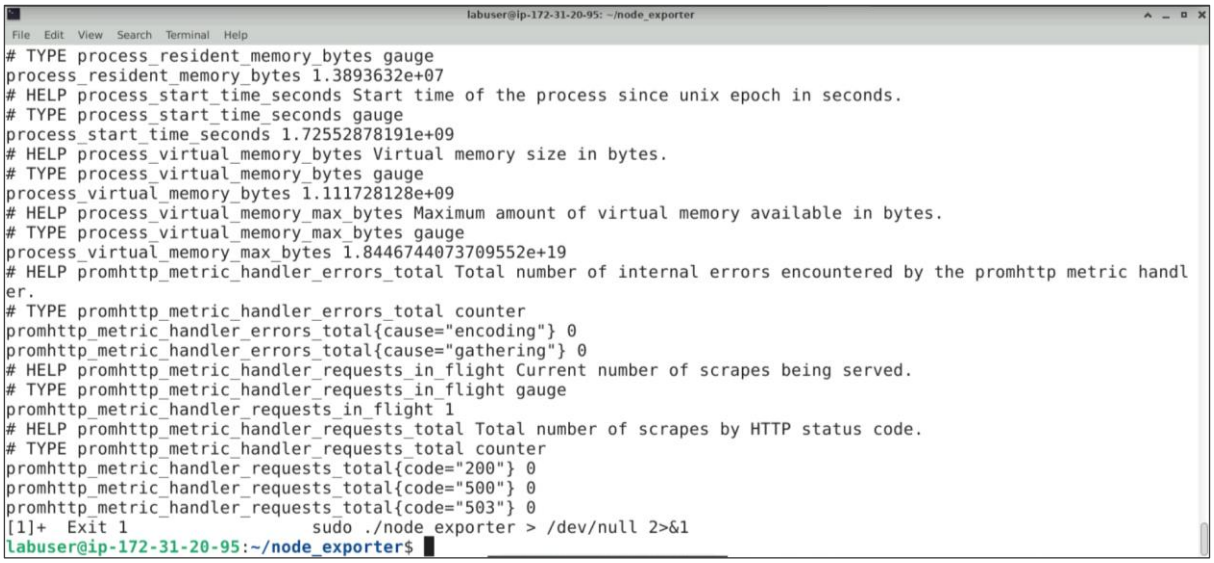


1.4 Execute the following commands to change the directory and start the node_exporter in the background, redirecting output to **/dev/null**:
cd node_exporter
sudo ./node_exporter > /dev/null 2>&1 &



1.5 Verify that Node Exporter is running by fetching its metrics with the following command:
curl http://localhost:9100/metrics





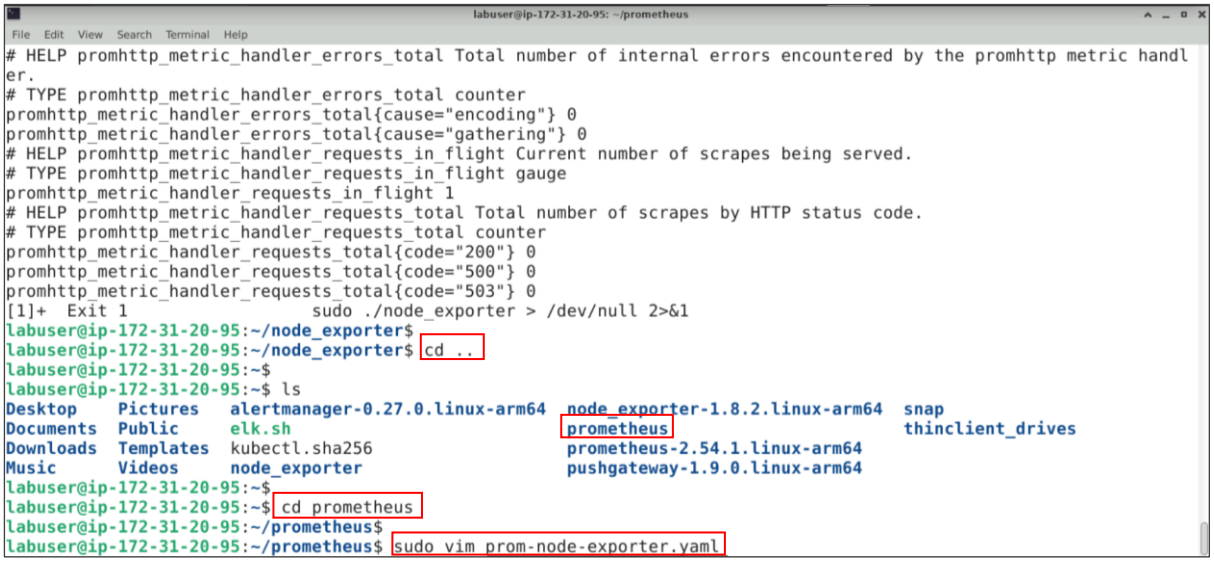
Step 2: Set up a Prometheus server on localhost to scrape Node Exporter metrics

2.1 Change the current directory into the **prometheus** directory, then open the **prom-node-exporter.yaml** file in the **Vim** editor for editing using the following commands:

cd ..

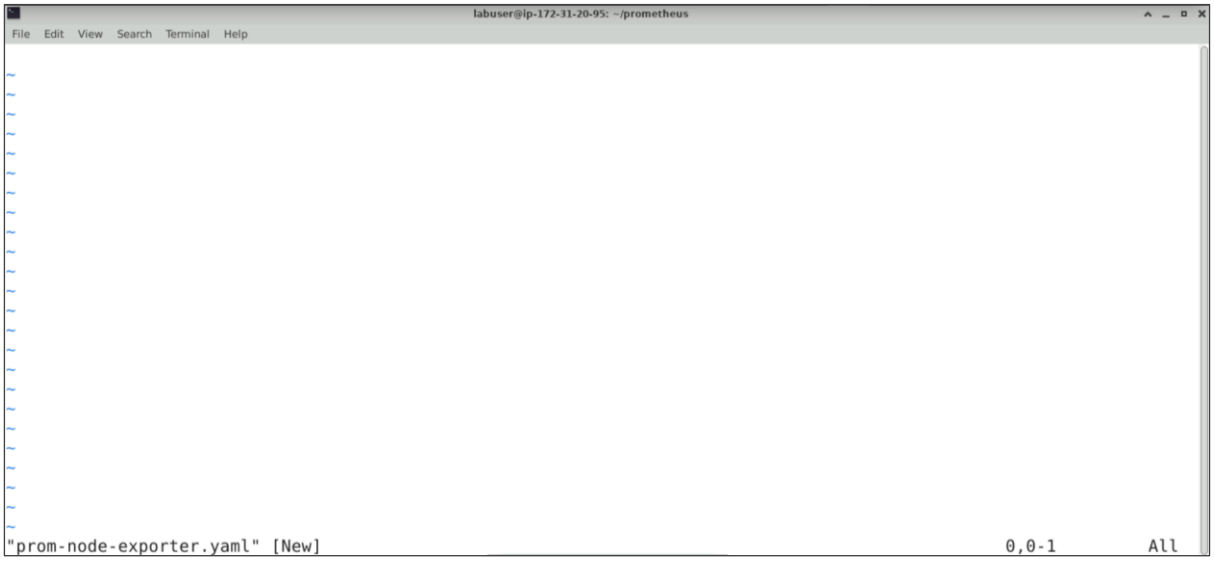
cd prometheus

sudo vim prom-node-exporter.yaml



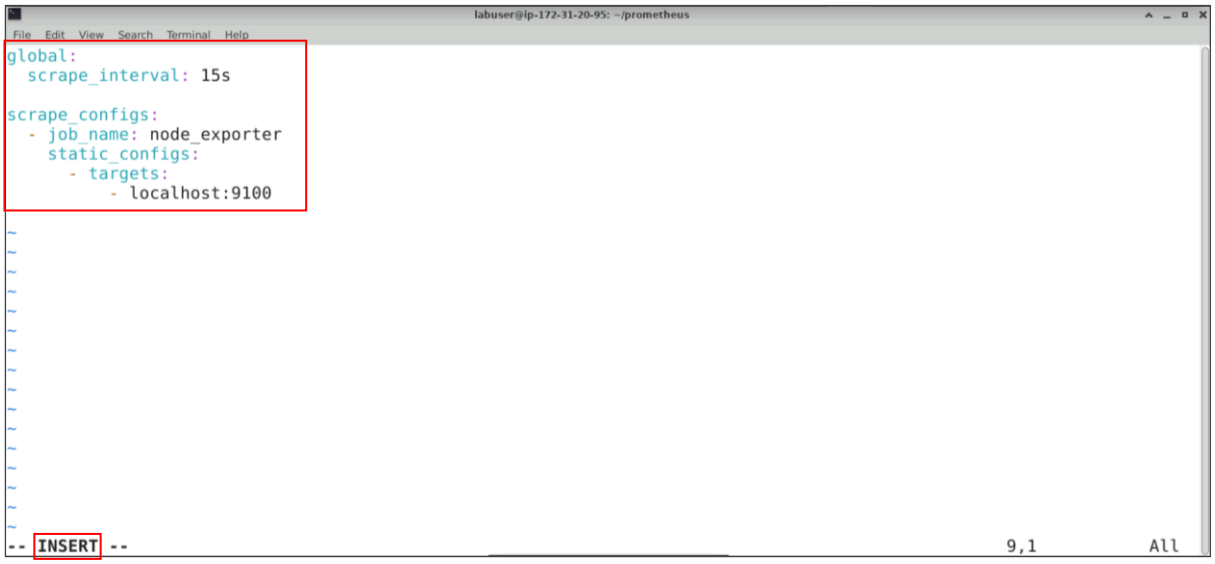
> **Note:** Other editors like **vi**, **nano**, and more can also be used instead of **Vim**.

The **Vim** editor appears as shown below:

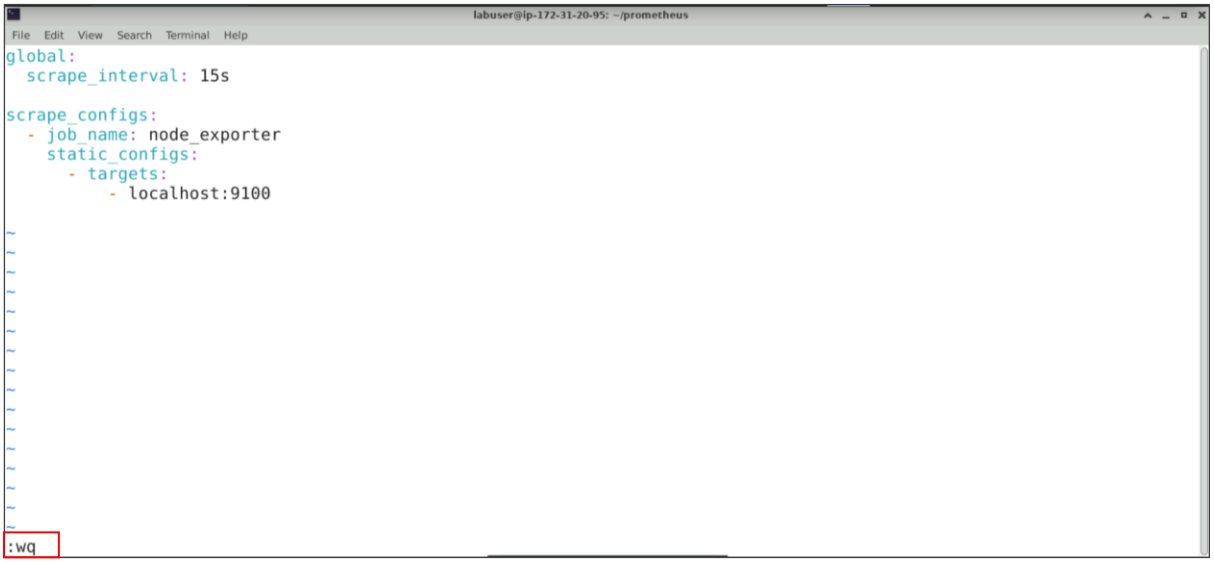


2.2 Press **I** to switch to **INSERT** mode, then copy the following YAML configuration into the file:

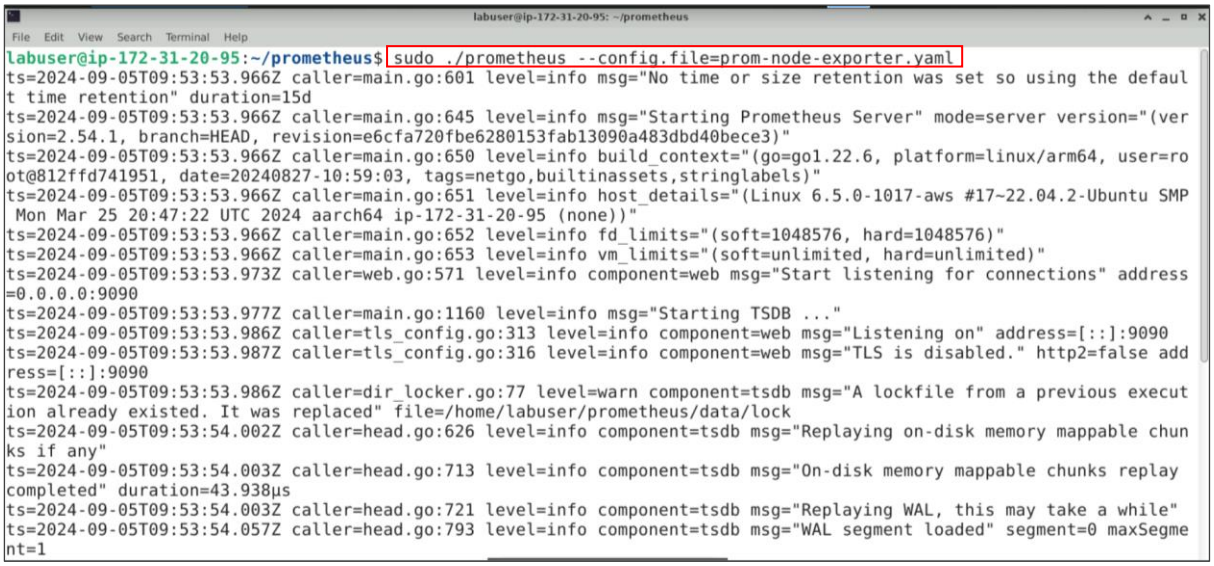
```
global:
  scrape_interval: 15s

scrape_configs:
  - job_name: node_exporter
    static_configs:
      - targets:
          - localhost:9100
```



2.3 Type **:wq** to save and exit the file



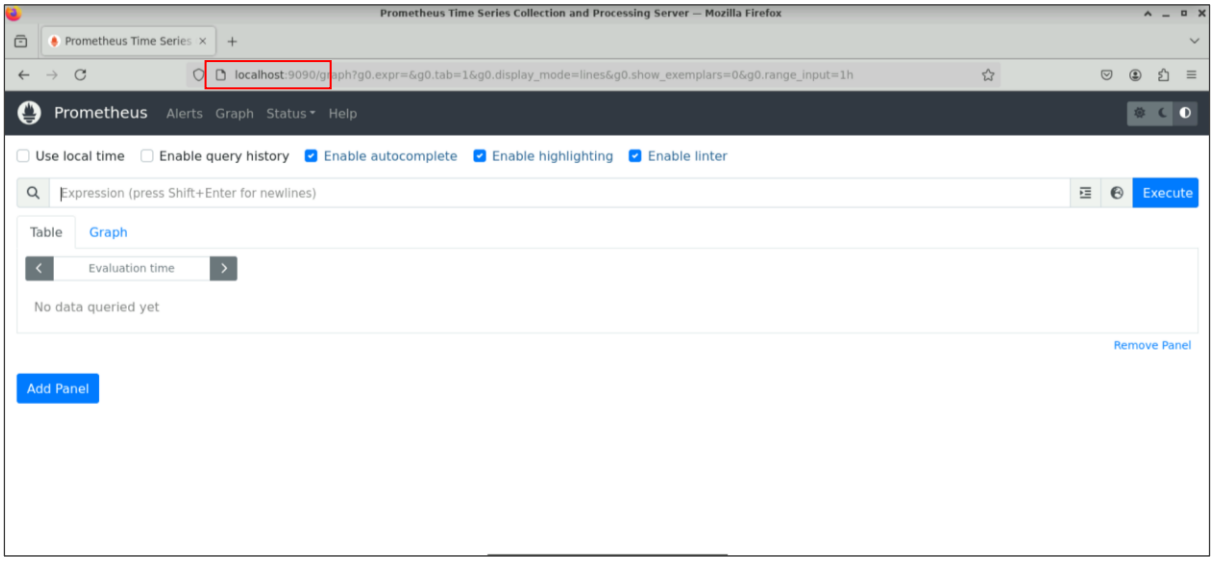
2.4 Execute the following command to start the Prometheus server using the configuration file to monitor Node Exporter:
sudo ./prometheus --config.file=prom-node-exporter.yaml



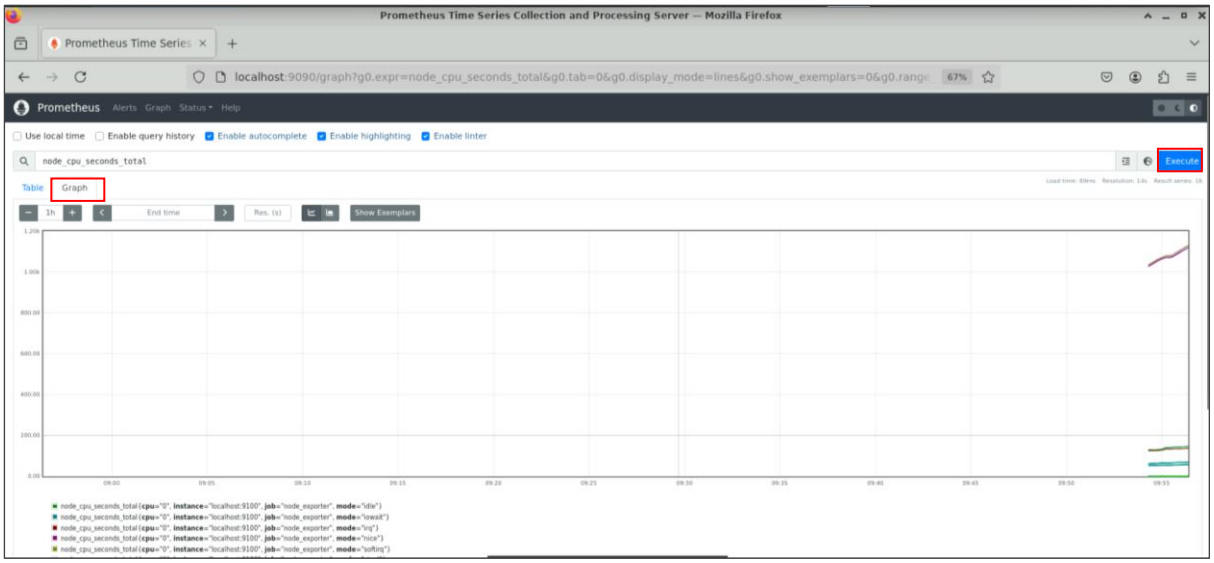
Note: If you encounter any port conflicts, run the following commands to resolve them:
Find which process is occupying the 9090 port: **sudo lsof -i :9090**
Stop that process: **sudo systemctl stop <process_name>**

Step 3: Access Node Exporter metrics using Prometheus UI

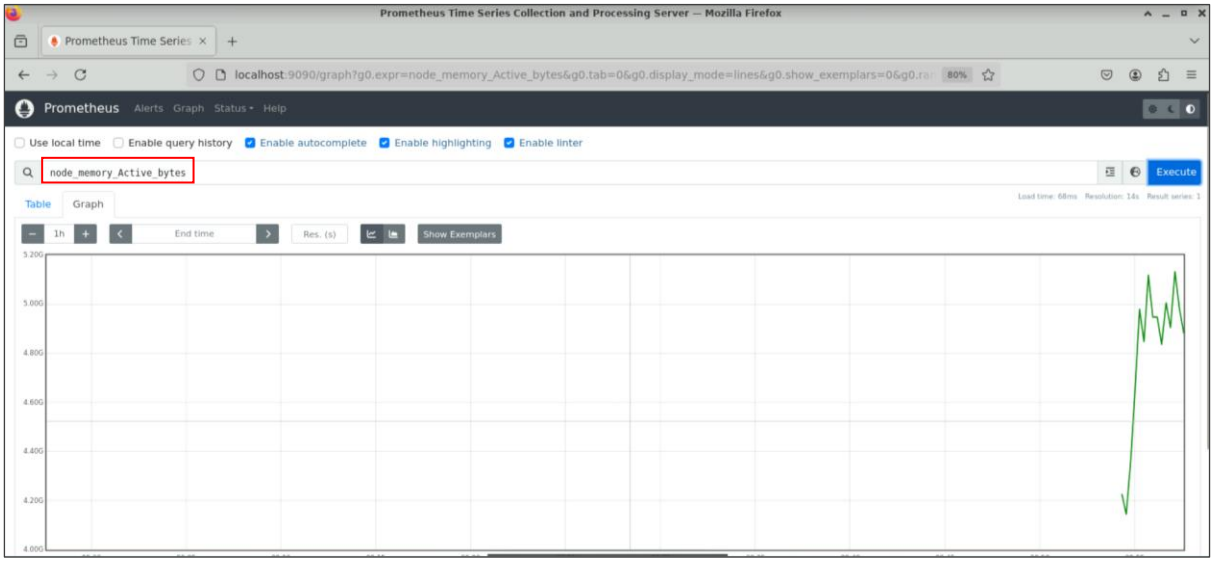
3.1 Navigate to the browser and enter the URL **http://localhost:9090/** or **http://<public-ip>:9090/** to access the Prometheus console



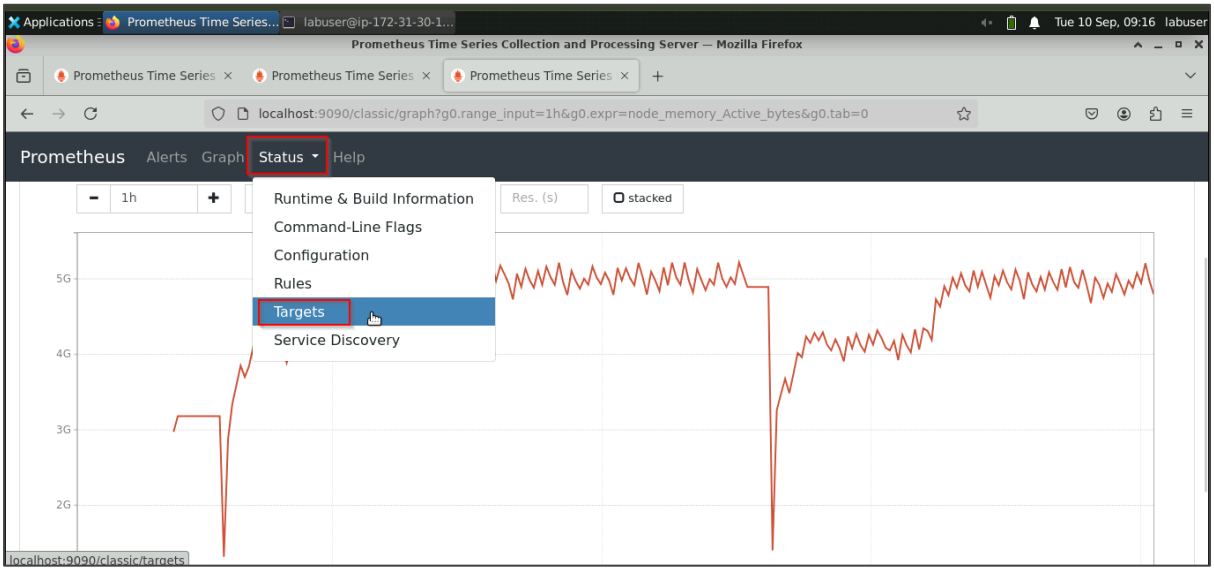
3.2 Click on **Graph** and use the expression browser to plot the **node_cpu_seconds_total** metric, then click on **Execute**

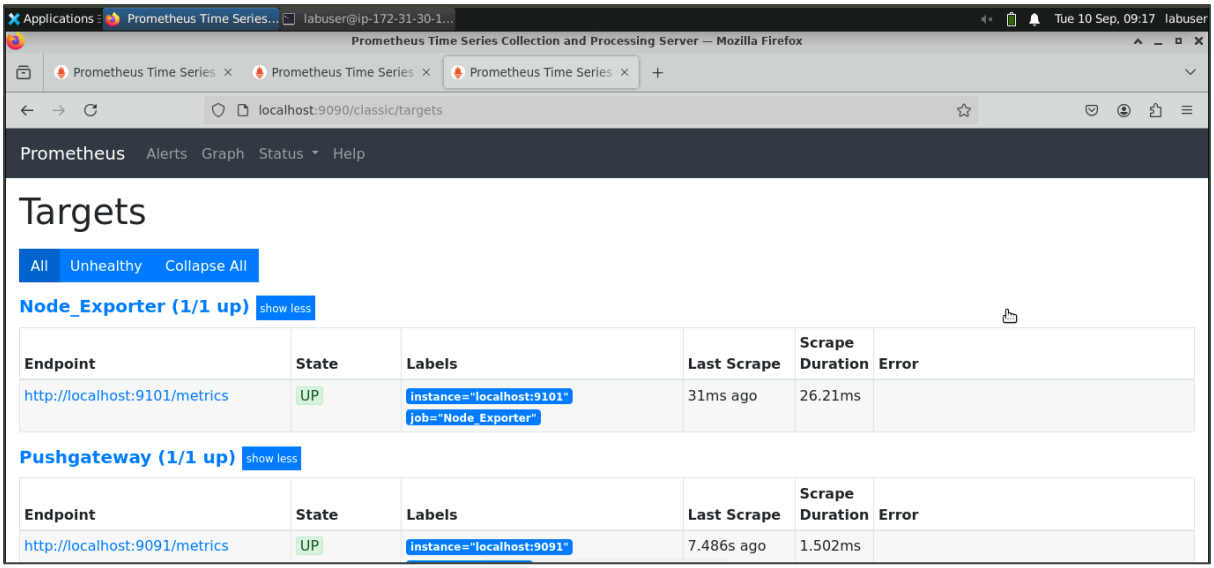


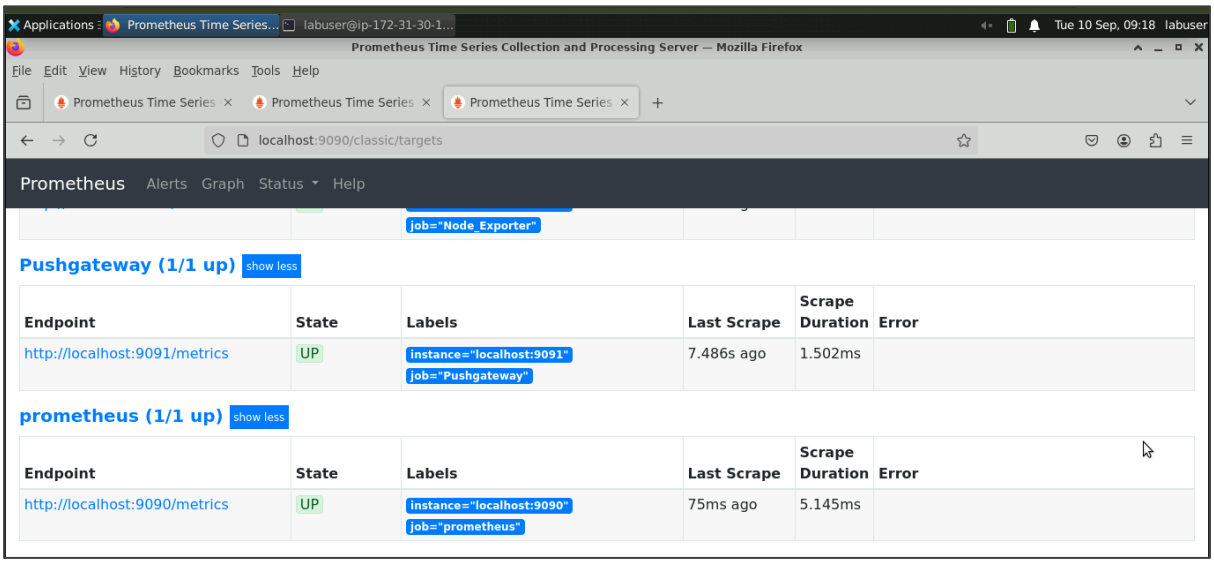
3.3 Visualize the graph using the **node_memory_Active_bytes** metric



3.4 Select **Targets** under the **Status** section to view the health of the scraped **node_exporter** target







By following these steps, you have successfully set up and monitored system metrics from a Linux host using Node Exporter, integrating it effectively within the Prometheus ecosystem.