INSTALASI PROMETHEUS DAN GRAFANA

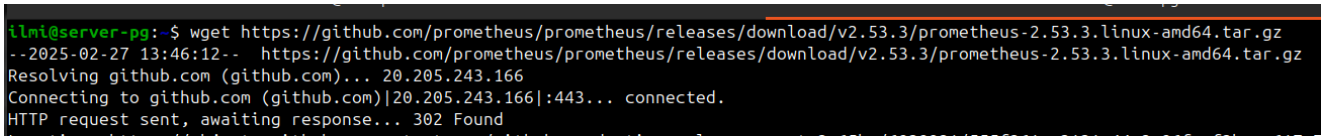
LANGKAH 1: INSTALASI PROMTHEUS

Masuk ke situs https://prometheus.io/ dan klik download dan pilih versi OS masing-masing, dan pilih versi yang sudah LTS lalu klik kanan pada mouse dan pilih copy link.

2.53.3 / 2024-11-04 LTS Release notes

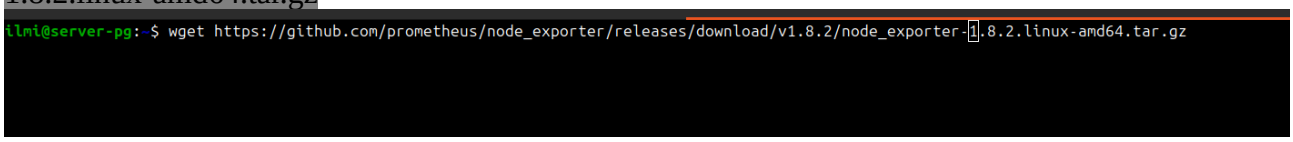
File name	OS	Arch	Size
prometheus-2.53.3.darwin-amd64.tar.gz	darwin	amd64	99.83 MiB
prometheus-2.53.3.darwin-arm64.tar.gz	darwin	arm64	95.99 MiB
prometheus-2.53.3.linux-amd64.tar.gz	linux	amd64	99.38 MiB
prometheus-2.53.3.windows-amd64.zip	windows	amd64	101.63 MiB

Dan jalan kan perintah di terminal:
$ wget https://github.com/prometheus/prometheus/releases/download/v2.53.3/prometheus-2.53.3.linux-amd64.tar.gz

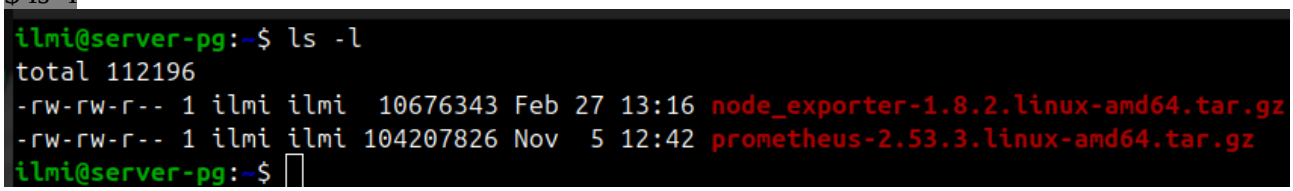


LANGKAH 2: INSTALL NODE EXPORTER

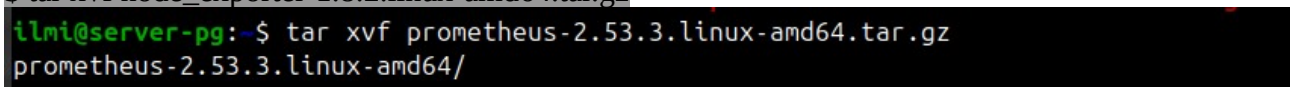
jalankan perintah di terminal:
$ wget https://github.com/prometheus/node_exporter/releases/download/v1.8.2/node_exporter-1.8.2.linux-amd64.tar.gz



Pastikan keduanya sudah terinstall, ketik perintah di terminal:
$ ls -l



Lalu extrak file keduanya dengan perintah:
$ tar xvf prometheus-2.53.3.linux-amd64.tar.gz
$ tar xvf node_exporter-1.8.2.linux-amd64.tar.gz



```
ilmi@server-pg:~$ tar xvf node_exporter-1.8.2.linux-amd64.tar.gz
node_exporter-1.8.2.linux-amd64/
node_exporter-1.8.2.linux-amd64/NOTICE
node_exporter-1.8.2.linux-amd64/node_exporter
node_exporter-1.8.2.linux-amd64/LICENSE
ilmi@server-pg:~$
```

LANGKAH 3: BUATKAN GROUP DAN USER UNTUK PROMETHEUS

Membuat group Ketikkan perintah di terminal:
$ sudo groupadd --system prometheus

```
ilmi@server-pg:~$ sudo groupadd --system prometheus
[sudo] password for ilmi:
ilmi@server-pg:~$
```

Membuat user Ketikan perintah di terminal:
$ sudo useradd --system -s /sbin/nologin -g prometheus prometheus

```
ilmi@server-pg:~$ sudo useradd --system -s /sbin/nologin -g prometheus prometheus
ilmi@server-pg:~$
```

Masuk ke dalam direktory prometheus, ketik perintah di terminal:|
$ cd prometheus-2.53.3.linux-amd64/

```
ilmi@server-pg:~$ cd prometheus-2.53.3.linux-amd64/
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$
```

PINDAHKAN BINIARY FILE (prometheus & promtool) KE /USR/LOCAL/BIN
ketikan perintah di terminal:
$ sudo mv prometheus promtool /usr/local/bin/

```
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ sudo mv prometheus promtool /usr/local/bin/
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$
```

Untuk mengecek apakah file nya sudah di pindahkan ke /USR/LOCAL/BIN
ketikkan perintah di terminal:
$ which prometheus
$ which promtool

```
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ which prometheus
/usr/local/bin/prometheus
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ which promtool
/usr/local/bin/promtool
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$
```

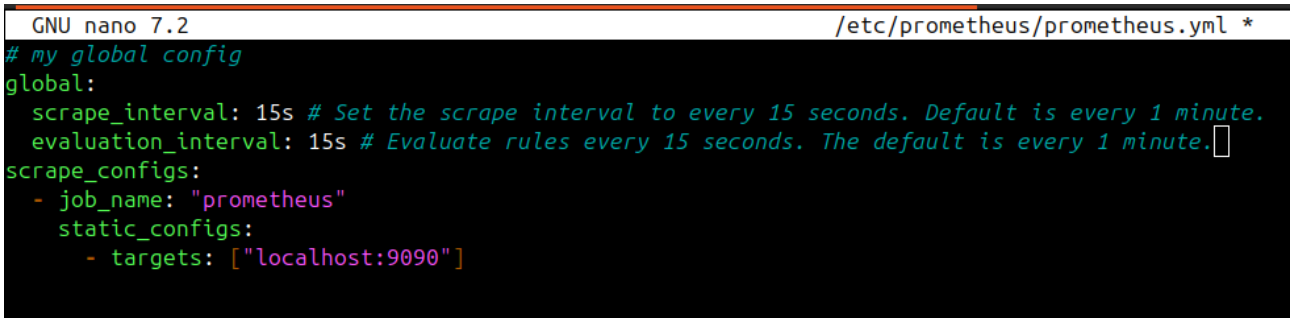
BUAT 1 DIREKTORI BARU DI DIREKTORI /ETC/ UNTUK MENYIMPAN FILE KONFIGURASI.
Ketikan perintah di terminal:
$ sudo mkdir /etc/prometheus

BUAT DIREKTORI DI /VAR/LIB UNTUK PENYIMPANAN DATA PROMETHEUS
ketikan perintah di terminal:
$ sudo mkdir /var/lib/prometheus

UBAH OWNERSHIP DARI DIREKTORI PROMETHEUS DI /VAR/LIB
Ketikan perintah di terminal:
$ sudo chown -R prometheus:prometheus /var/lib/prometheus/

LANGKAH KE 4: PINDAHKAN FILE KONFIGURASI (prometheus.yml) KE DIREKTORI /ETC/PROMETHEUS.
Ketikan perintah di terminal:
$ sudo mv prometheus.yml /etc/prometheus/

Lalu masuk ke file konfigurasi, dan edit file nya sesuai dengan gambar dibawah.
$ sudo nano /etc/prometheus/prometheus.yml



BUATKAN SERVICE DAEMON UNTUK PROMETHEUS
ketikann perintah:
$ sudo nano /etc/systemd/system/prometheus.service

lalu tambahkan baris di dalam file tersebut:

[Unit]
Description=Prometheus Monitoring System
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.libraries=/usr/share/prometheus/console_libraries \
--web.console.templates=/usr/share/prometheus/consoles
Restart=always
[Install]
WantedBy=multi-user.target

```
  GNU nano 7.2                                  /etc/systemd/system/prometheus.service
[Unit]
Description=Prometheus Monitoring System
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.libraries=/usr/share/prometheus/console_libraries \
--web.console.templates=/usr/share/prometheus/consoles
Restart=always
[Install]
WantedBy=multi-user.target
```

KEMUDIAN PERBARUI KONFIGURASI UNIT SYSTEMD DAN CEK STATUS PROMETHEUS.

Ketikan perintah di terminal:

$ sudo systemctl daemon-reload

$ sudo systemctl status prometheus

```
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ sudo systemctl daemon-reload
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ sudo systemctl status prometheus
○ prometheus.service - Prometheus Monitoring System
     Loaded: loaded (/etc/systemd/system/prometheus.service; disabled; preset: enabled)
     Active: inactive (dead)
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$
```

AKTIFKAN PROMETHEUS DAN AKTIFKAN AUTOSTART DARI PROMETHEUS DAN CEK STATUS DARI PROMETHEUS.

Ketikan perintah di terminal:

$ sudo systemctl enable --now prometheus

$ sudo systemctl status prometheus

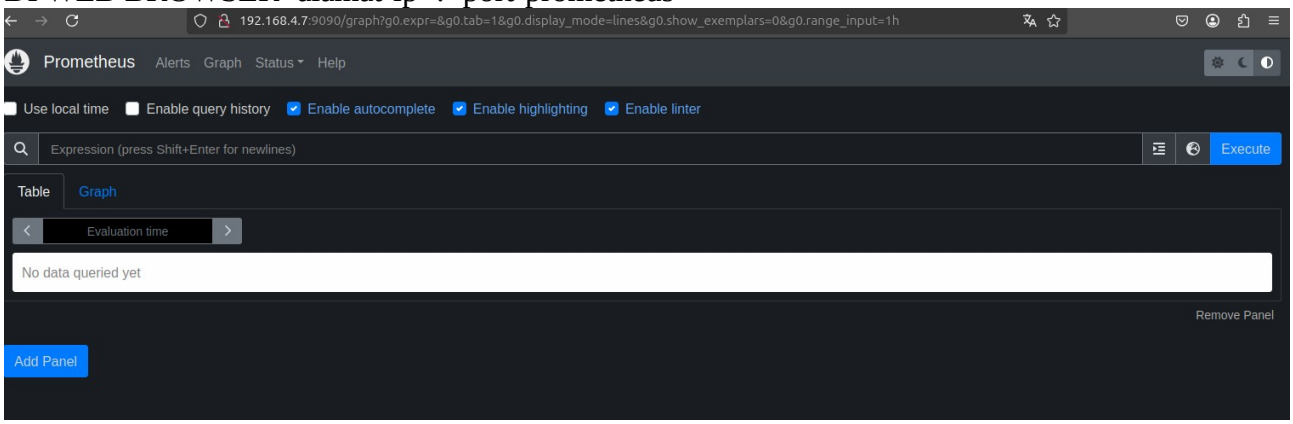
```
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ sudo systemctl enable --now prometheus
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ sudo systemctl status prometheus
● prometheus.service - Prometheus Monitoring System
     Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-02-28 00:34:08 UTC; 1min 17s ago
   Main PID: 2679 (prometheus)
      Tasks: 6 (limit: 2272)
     Memory: 18.1M (peak: 18.1M)
        CPU: 106ms
     CGroup: /system.slice/prometheus.service
             └─2679 /usr/local/bin/prometheus --config.file=/etc/prometheus/prometheus.ym

Feb 28 00:34:08 server-pg prometheus[2679]: ts=2025-02-28T00:34:08.467Z caller=tls_config
Feb 28 00:34:08 server-pg prometheus[2679]: ts=2025-02-28T00:34:08.467Z caller=head.go:79
Feb 28 00:34:08 server-pg prometheus[2679]: ts=2025-02-28T00:34:08.467Z caller=head.go:83
Feb 28 00:34:08 server-pg prometheus[2679]: ts=2025-02-28T00:34:08.468Z caller=main.go:11
Feb 28 00:34:08 server-pg prometheus[2679]: ts=2025-02-28T00:34:08.468Z caller=main.go:11
Feb 28 00:34:08 server-pg prometheus[2679]: ts=2025-02-28T00:34:08.468Z caller=main.go:13
```

UNTUK MENGECEK PROMETHEUS INI RUNNING DI PORT BERAPA, BISA KETIK PERINTAH DI TERMINAL:

$ sudo lsof -n -i | grep LISTEN

```
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$ sudo lsof -n -i | grep LISTEN
systemd       1            root  175u  IPv6   7176      0t0  TCP *:ssh (LISTEN)
systemd-r   570 systemd-resolve   15u  IPv4   6031      0t0  TCP 127.0.0.53:domain (LISTEN)
systemd-r   570 systemd-resolve   17u  IPv4   6033      0t0  TCP 127.0.0.54:domain (LISTEN)
sshd        836            root    3u  IPv6   7176      0t0  TCP *:ssh (LISTEN)
prometheu 2679      prometheus    7u  IPv6  19670      0t0  TCP *:9090 (LISTEN)
ilmi@server-pg:~/prometheus-2.53.3.linux-amd64$
```

LAKUKAN CEK UNTUK MEM-VALIDASI BAHWA PROMETHEUS DAPAT DI AKSES DI WEB BROWSER<alamat-ip>:<port-prometheus>



LANGKAH KE 5: KONFIGURASI NODE EXPORTER

MASUK KE DALAM DIREKTORI NODE EXPORTER
Ketikan perintah di terminal:
$ cd node_exporter-1.8.2.linux-amd64/

```
ilmi@server-pg:~$ cd node_exporter-1.8.2.linux-amd64/
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$
```

PINDAHKAN BINARY FILE NODE EXPORTER KE /usr/local/bin
Ketikan perintah di terminal:
$ sudo mv node_exporter /usr/local/bin/

CEK APAKAH FILE TERSEBUT SUDAH PINDAH KE /USR/LOCAL/BIN
Ketikan perintah di terminal:
$ which node_exporter

```
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ which node_exporter
/usr/local/bin/node_exporter
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$
```

BUATKAN SERVICE DAEMON UNTUK NODE EXPORTER
Ketikan perintah di terminal:
$ sudo nano /etc/systemd/system/node-exporter.service
Lalu tambahkan baris dibawah ini ke dalam file tersebut.

[Unit]
Description=Prometheus exporter for machine metrics
[Service]
User=prometheus

Group=prometheus
Restart=always
ExecStart=/usr/local/bin/node_exporter
ExecReload=/bin/kill -HUP $MAINPID
TimeoutStopSec=20s
SendSIGKILL=no
[Install]
WantedBy=multi-user.target

```
  GNU nano 7.2
[Unit]
Description=Prometheus exporter for machine metrics
[Service]
User=prometheus
Group=prometheus
Restart=always
ExecStart=/usr/local/bin/node_exporter
ExecReload=/bin/kill -HUP $MAINPID
TimeoutStopSec=20s
SendSIGKILL=no
[Install]
WantedBy=multi-user.target
```

KEMUDIAN PERBARUI KONFIGURASI UNIT SYSTEMD DAN CEK STATUS NODE EXPORTER.
Ketikan perintah di terminal:
$ sudo systemctl daemon-reload
$ sudo systemctl status node-exporter

```
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ sudo systemctl daemon-reload
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ sudo systemctl status node-exporter
○ node-exporter.service - Prometheus exporter for machine metrics
     Loaded: loaded (/etc/systemd/system/node-exporter.service; disabled; preset: enabled)
     Active: inactive (dead)
```

AKTIFKAN NODE EXPORTER DAN AKTIFKAN AUTOSTART DARI NODE EXPORTER DAN CEK STATUS NODE EXPORTER.
Ketikan perintah di terminal:
$ sudo systemctl enable --now node-exporter
$ sudo systemctl status node-exporter

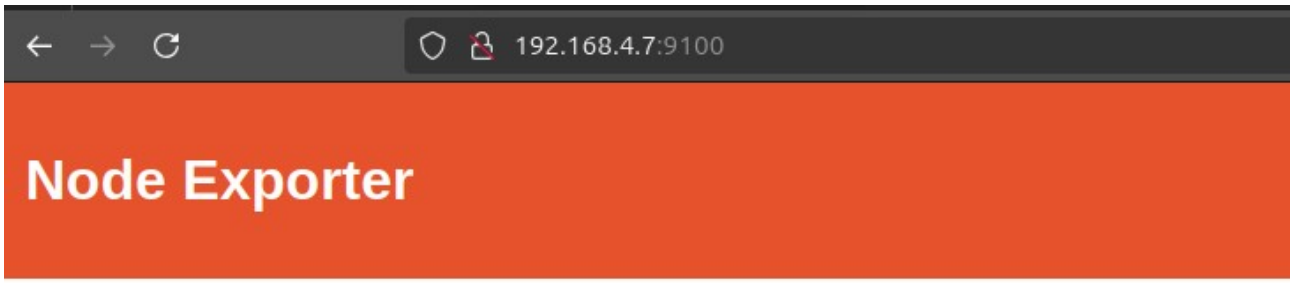
```
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ sudo systemctl enable --now node-exporter
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ sudo systemctl status node-exporter
● node-exporter.service - Prometheus exporter for machine metrics
     Loaded: loaded (/etc/systemd/system/node-exporter.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-02-28 00:51:33 UTC; 1s ago
   Main PID: 3169 (node_exporter)
      Tasks: 3 (limit: 2272)
     Memory: 2.0M (peak: 2.2M)
        CPU: 4ms
     CGroup: /system.slice/node-exporter.service
             └─3169 /usr/local/bin/node_exporter
```

UNTUK MENGECEK PROMETHEUS INI RUNNING DI PORT BERAPA, bisa ketik perintah di terminal:

$ sudo lsof -n -i | grep LISTEN

```
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ sudo lsof -n -i | grep LISTEN
systemd       1            root  175u  IPv6   7176      0t0  TCP *:ssh (LISTEN)
systemd-r   570 systemd-resolve   15u  IPv4   6031      0t0  TCP 127.0.0.53:domain (LISTEN)
systemd-r   570 systemd-resolve   17u  IPv4   6033      0t0  TCP 127.0.0.54:domain (LISTEN)
sshd        836            root    3u  IPv6   7176      0t0  TCP *:ssh (LISTEN)
prometheu 2679      prometheus    7u  IPv6  19670      0t0  TCP *:9090 (LISTEN)
node_expo 3169      prometheus    3u  IPv6  22632      0t0  TCP *:9100 (LISTEN)
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$
```

LAKUKAN CEK UNTUK MEM-VALIDASI BAHWA PROMETHEUS DAPAT DI AKSES DI WEB BROWSER ketik <alamat-ip>:<port-node exporter>



Prometheus Node Exporter

Version: (version=1.8.2, branch=HEAD, revision=f1e0e8360aa60b6cb5e5cc1560bed348fc2c1895)

- Metrics

LANGKAH KE 6: SESUAIKAN KONFIGURASI PROMETHEUS AGAR DAPAT MEMANGGIL METRIKS YANG ADA DI NODE EXPORTER

konfigurasi dan edit di file

$ sudo nano /etc/prometheus/prometheus.yml

Lalu sama kan dengan gambar dibawah ini:

```
  GNU nano 7.2                                  /etc/prometheus/prometheus.yml *
# my global config
global:
  scrape_interval: 15s # Set the scrape interval to every 15 seconds. Default is every 1 minute.
  evaluation_interval: 15s # Evaluate rules every 15 seconds. The default is every 1 minute.
scrape_configs:
  - job_name: "prometheus"
    static_configs:
      - targets: ["localhost:9090"]
  - job_name: "node-exporter"
    static_configs:
      - targets: ["localhost:9100"]
```

RESTART SYSTEM PROMETHEUS DAN CEK STATUS PROMETHEUS
Ketikan perintah di terminal:
$ sudo systemctl restart prometheus.service
$ sudo systemctl status prometheus

```
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ sudo systemctl restart prometheus.service
ilmi@server-pg:~/node_exporter-1.8.2.linux-amd64$ sudo systemctl status prometheus
● prometheus.service - Prometheus Monitoring System
     Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-02-28 01:06:49 UTC; 8s ago
   Main PID: 3294 (prometheus)
      Tasks: 6 (limit: 2272)
     Memory: 23.4M (peak: 23.6M)
        CPU: 216ms
     CGroup: /system.slice/prometheus.service
             └─3294 /usr/local/bin/prometheus --config.file=/etc/prometheus/prometheus.yml --
```

KELUAR DARI DIREKTORI NODE, ketikan perintah di terminal:
$ cd

LANGKAH KE 7: INSTALASI GRAFANA

Ketikan perintah di terminal:
$ sudo apt-get install -y apt-transport-https software-properties-common wget

LALU TAMBAHKAN GPG KEY
Ketikan perintah di terminal:
$ sudo mkdir -p /etc/apt/keyrings/

Kemudian jalankan perintah di termial:
$ wget -q -O - https://apt.grafana.com/gpg.key | gpg --dearmor | sudo tee /etc/apt/keyrings/grafana.gpg > /dev/null

KEMUDIAN TAMBAHKAN BAGIAN REPOSITORINYA
Ketikan perintah di terminal:
$ echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main" | sudo tee -a /etc/apt/sources.list.d/grafana.list

```
ilmi@server-pg:~$ echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main" | sudo tee -a /etc/apt/sources.list.d/grafana
.list
deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main
ilmi@server-pg:~$
```

JIKA KITA SUDAH MENAMBABHKAN REPO BARU Jalankan perintah berikut untuk memperbarui daftar paket yang tersedia:

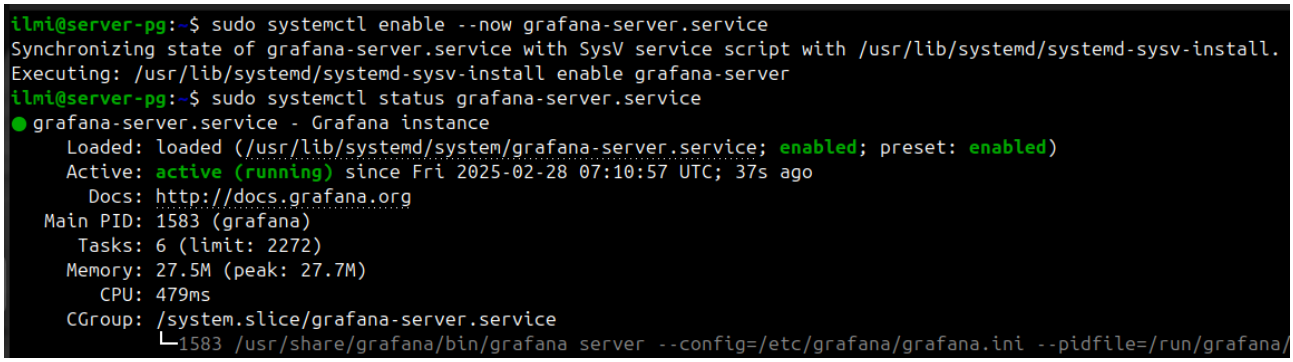
```
$ sudo apt update
```

Kemudian install paket grafana

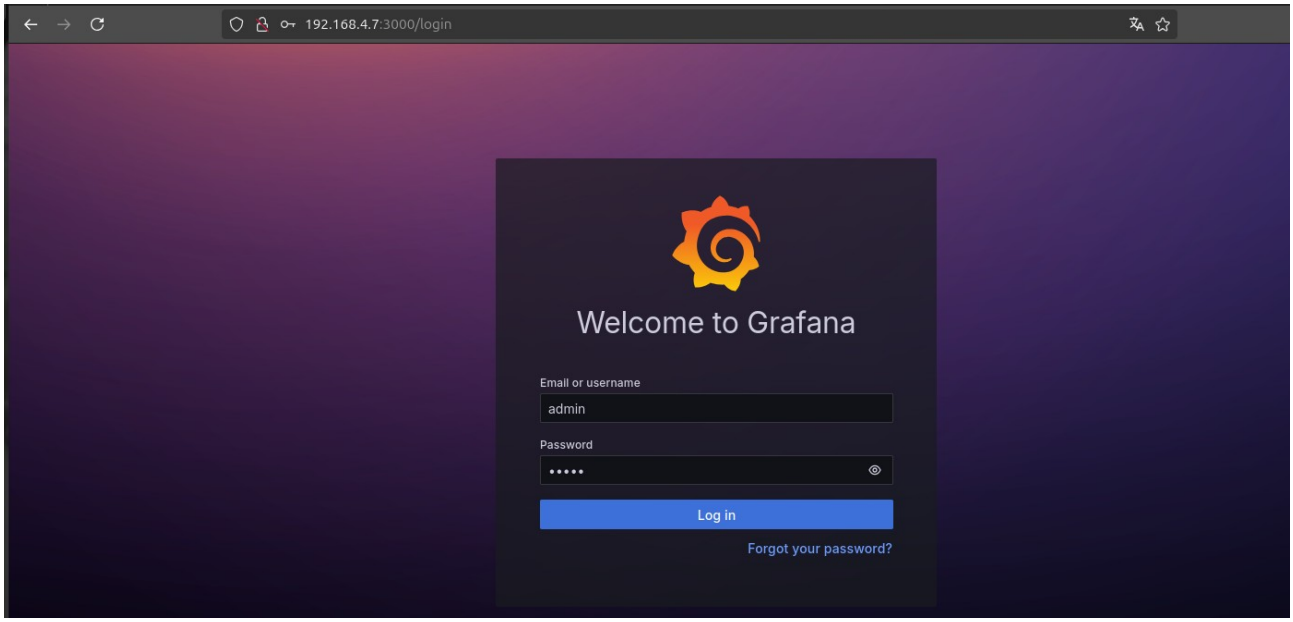
```
$ sudo apt-get install grafana
```

AKTIFKAN GRAFANA DAN AKTIFKAN AUTOSTART DARI GRAFANA DAN CEK STATUS GRAFANA. Ketikan perintah di terminal:

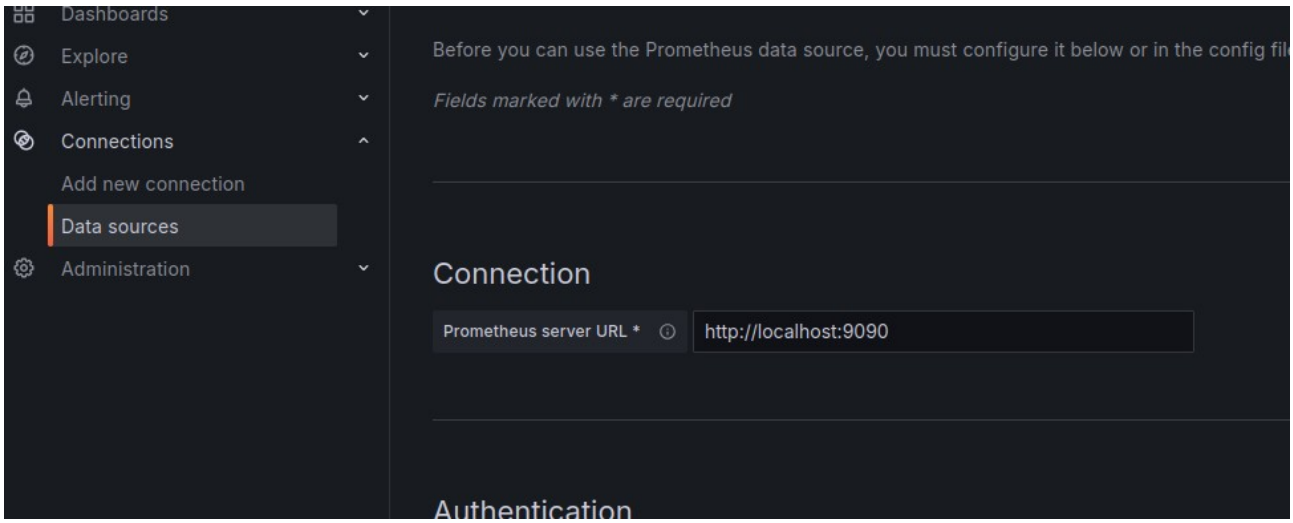
```
$ sudo systemctl enable --now grafana
$ sudo systemctl status grafana
```



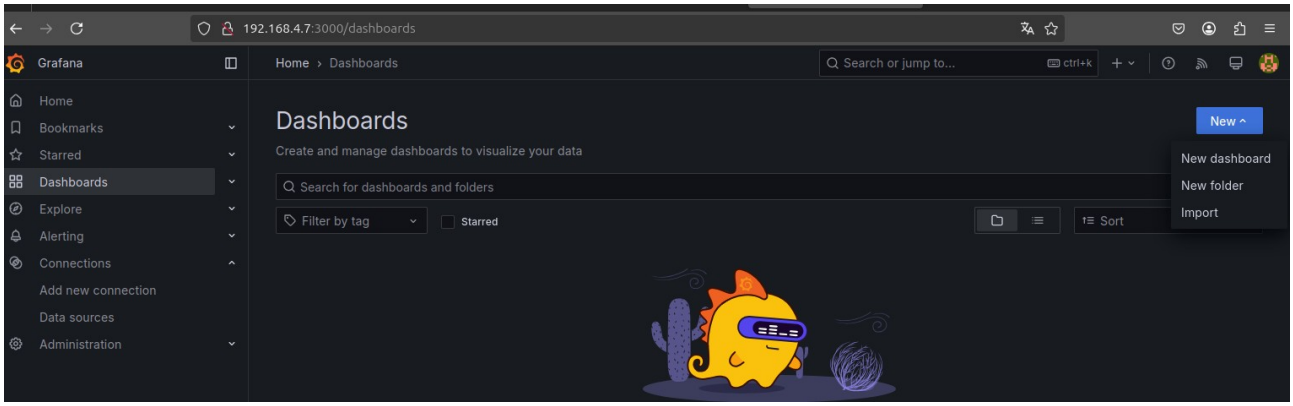
KEMUDIAN AKSES GRAFAN DI WEB BROWSER KETIK PERINTAH <alamat-ip>:<port-node exporter> Lalu masuk kan username (admin) dan password (admin)



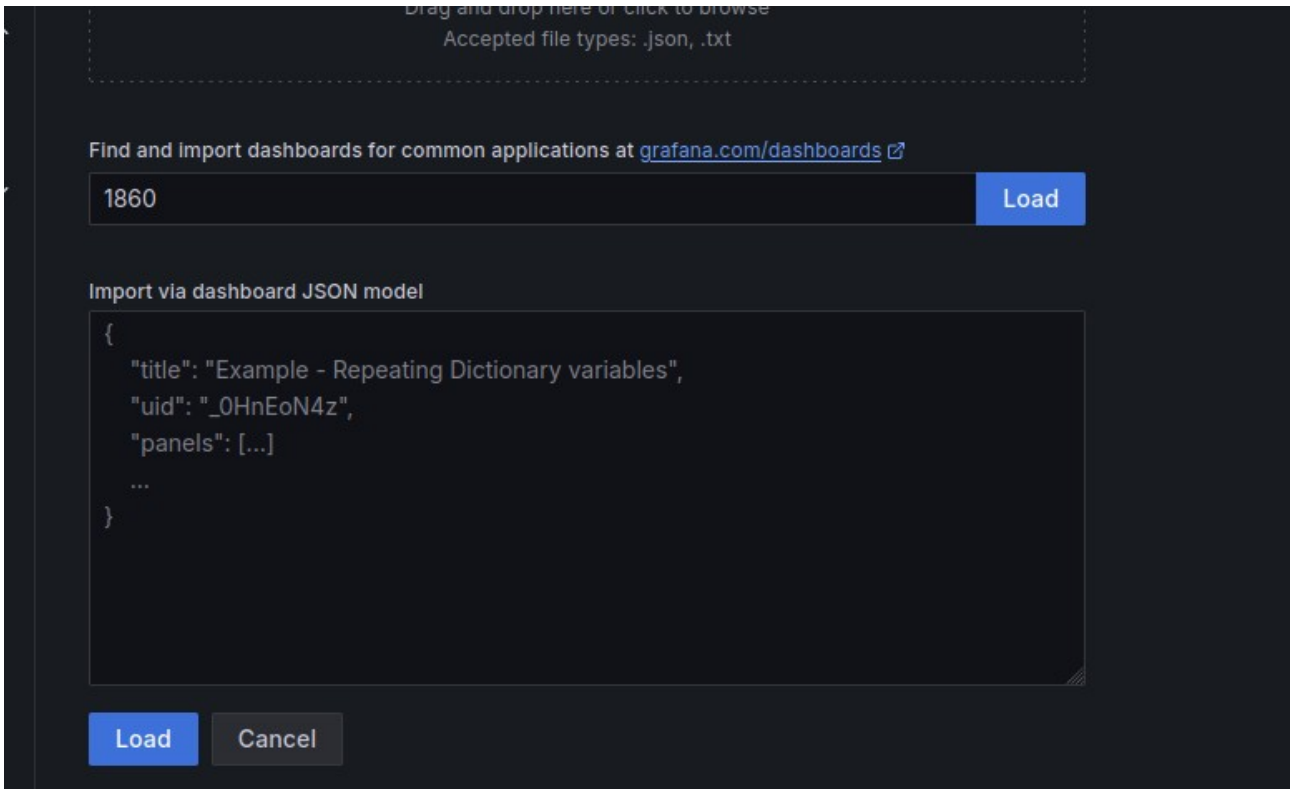
Lalu pilih connections dan klik pada menu data sources dan pilih prometheus lalu di Connection tambahkan <http://localhost:9090>



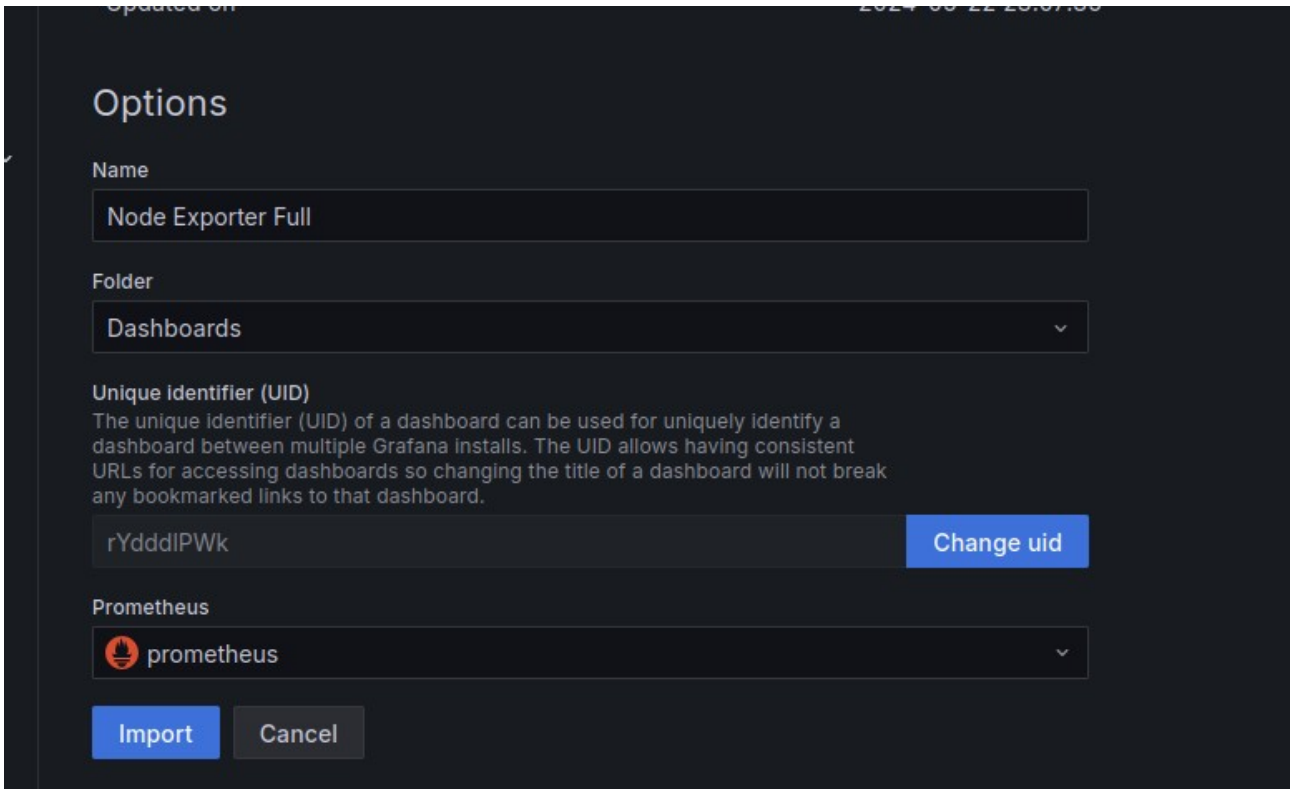
Lalu scroll ke paling bawah klik save & test. Klik ke Dashboards dan klik New pada pojok kanan atas dan pilih import.

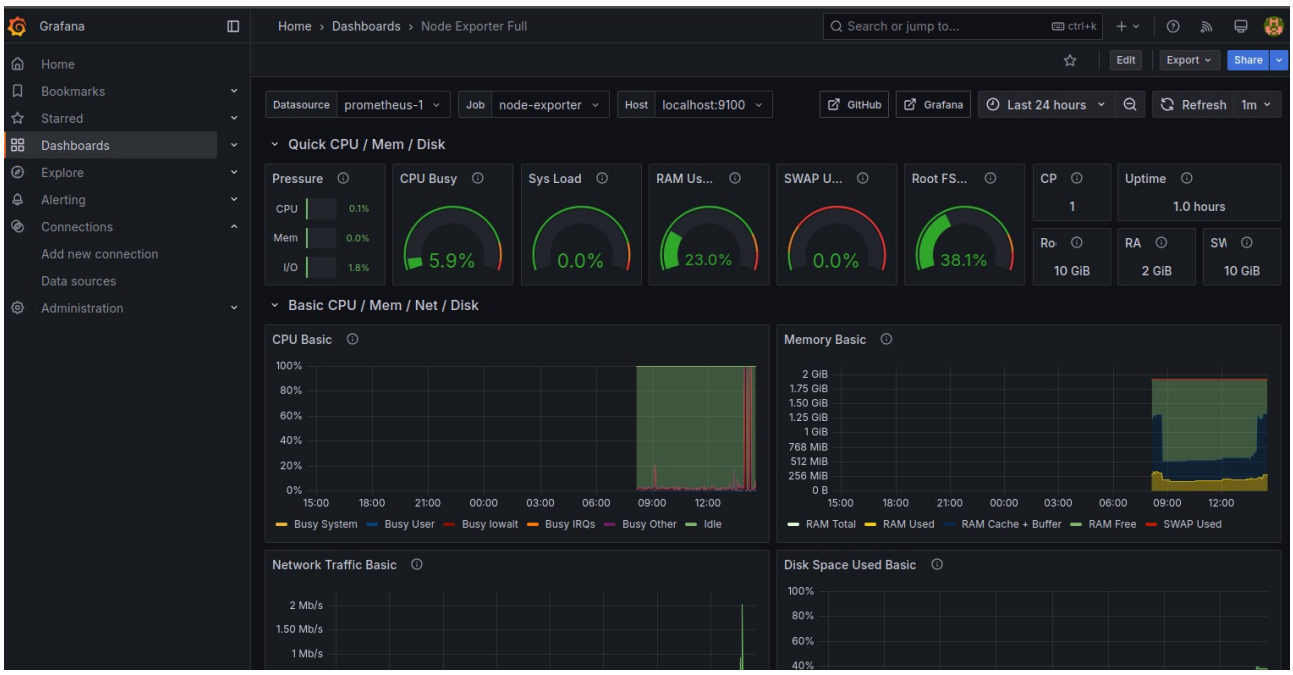


Lalu masuk kan kode nya (1860) dan klik Load pada samping angka.



Lalu bagian prometheus pilih prometheus Lalu klik Import.





SEKIAN DAN TERIMAKASIH