Tugas:

1. **Install VM dan Konfigurasi Nginx**
   - Install 1 VM, kemudian konfigurasi Nginx.
   - Buat file `index.html` sederhana dengan isi:
     `<h1>Hello, ini website pertama saya!</h1>`
   - **Pengujian**: Akses `http://IP_VM` dan pastikan halaman yang dibuat muncul.

2. **Monitoring Memory Usage**
   Buat monitoring memory usage dari VM di atas dengan menggunakan **Node Exporter** (untuk pengambilan metrik), **Prometheus** (sebagai data source), dan **Grafana** (untuk visualisasi).

3. **Alert Memory Usage**
   - Buat alert ketika memory usage melewati threshold yang ditentukan.
   - Kirim notifikasi alert tersebut ke **Discord**.

4. **Monitoring Webserver dengan Uptime Kuma**
   - Konfigurasikan monitoring webserver menggunakan **Uptime Kuma**.
   - Jika `http://IP_VM` mengalami **down**, kirim notifikasi alert ke **Discord**.

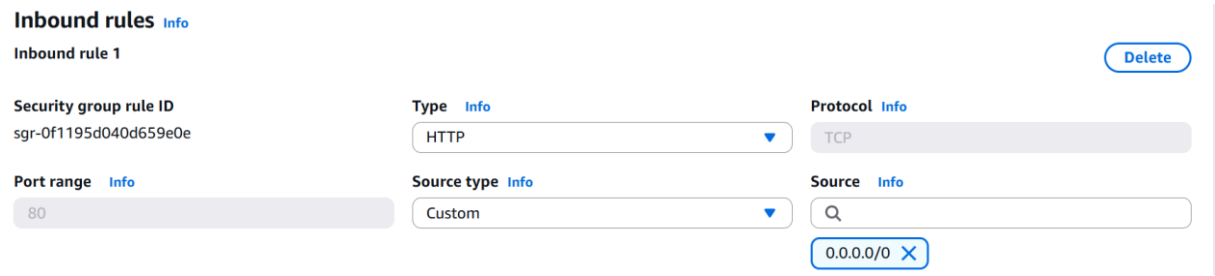
1. install nginx

```
sudo apt update
sudo apt install nginx -y
```

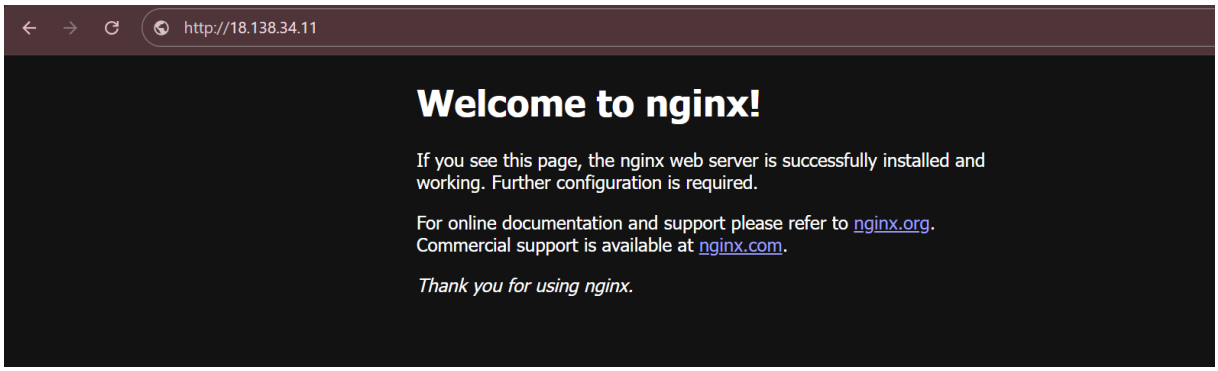
2. Cek nginx

```
ubuntu@ip-172-31-0-203:~$ systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Sun 2025-12-21 22:00:12 UTC; 51s ago
```

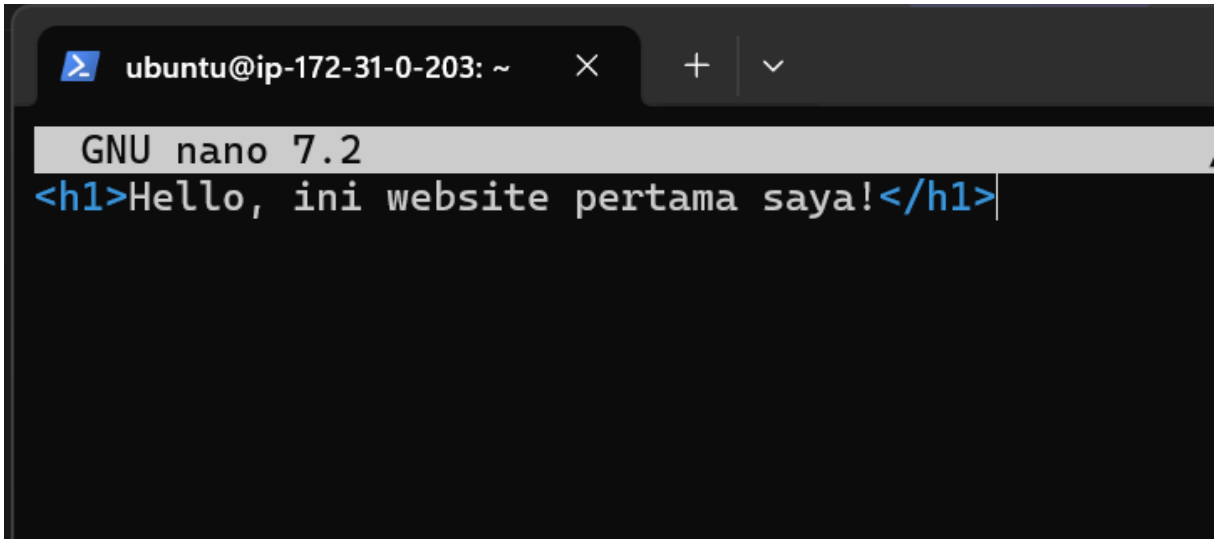
Allow port 80 di security group



Cek di browser:



3. Buat index.html



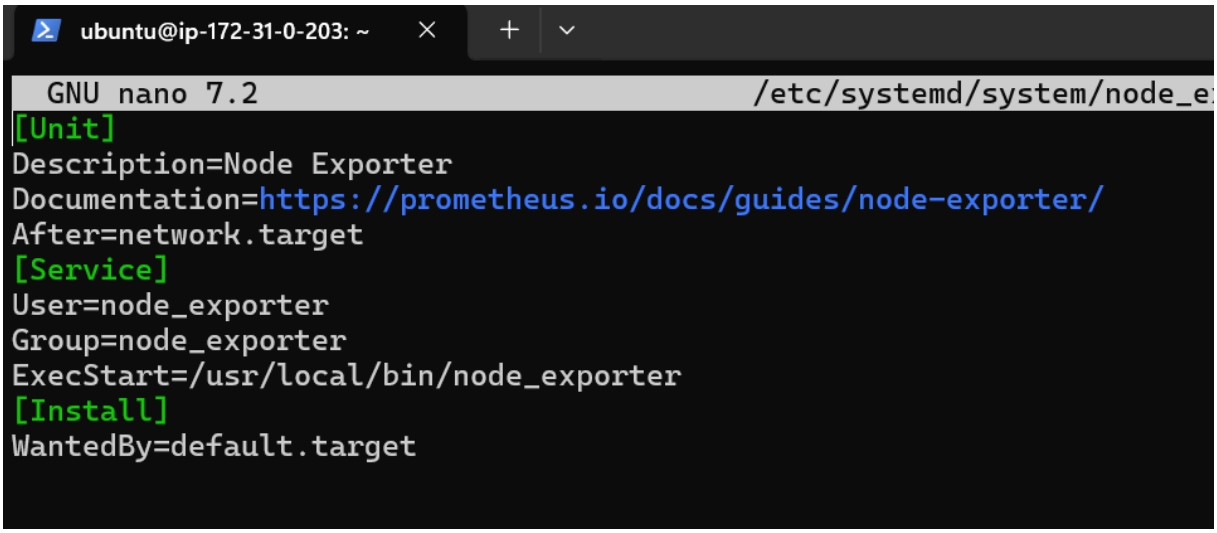
Dan test lagi :

STEP 2

1. Install node exporter
   cd /tmp
   wget
   https://github.com/prometheus/node_exporter/releases/download/v1.8.1/node_exporter-1.8.1.linux-amd64.tar.gz
   tar xvf node_exporter-*.tar.gz

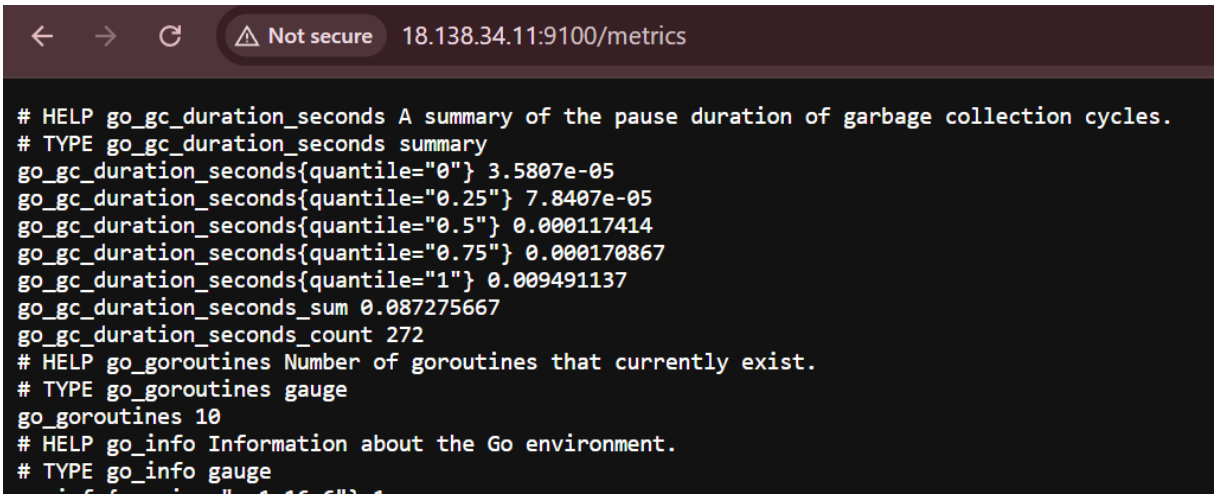
sudo mv node_exporter-*/node_exporter /usr/local/bin/

2. Buat systemd service
   sudo nano /etc/systemd/system/node_exporter.service



3. Enable dan start
   sudo systemctl daemon-reexec
   sudo systemctl daemon-reload
   sudo systemctl enable node_exporter
   sudo systemctl start node_exporter

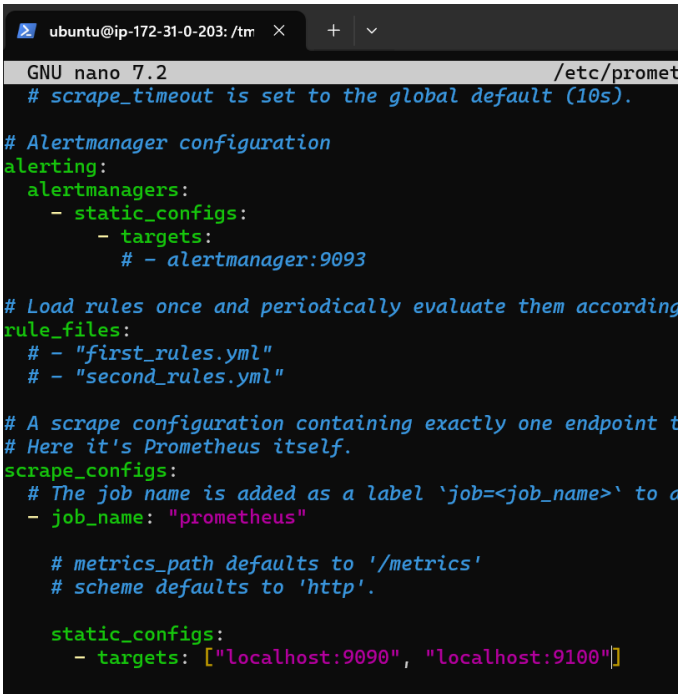
4. Testing



STEP 3

1. Download Promentheus
   cd /tmp
   wget
   https://github.com/prometheus/prometheus/releases/download/v2.53.0/
   prometheus-2.53.0.linux-amd64.tar.gz
   tar xvf prometheus-*.tar.gz
   sudo mv prometheus-*/ /etc/Prometheus

2. Konfigurasi Promentheus
   sudo nano /etc/prometheus/prometheus.yml

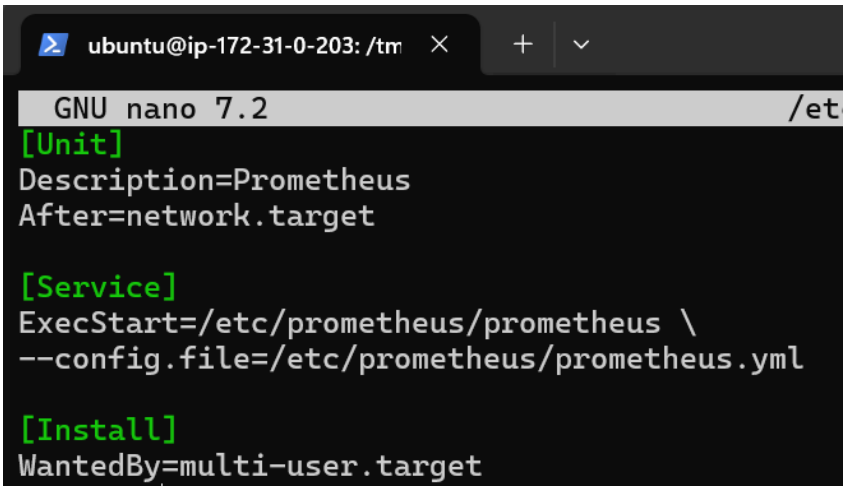


3. Systemd promentheus
   sudo nano /etc/systemd/system/prometheus.service

   copy ini:
   [Unit]
   Description=Prometheus
   After=network.target

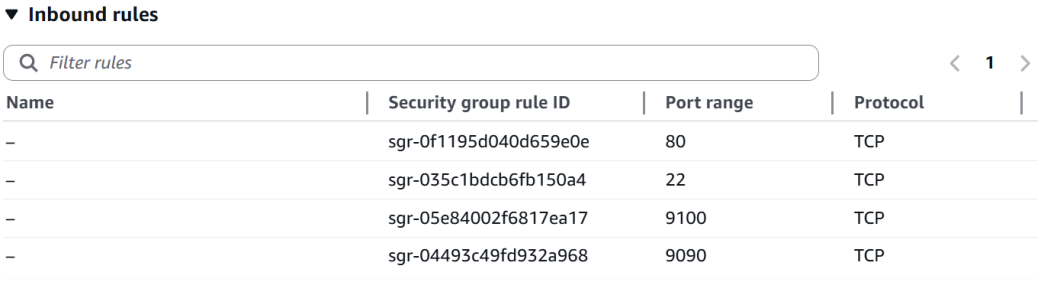
   [Service]
   ExecStart=/etc/prometheus/prometheus \
   --config.file=/etc/prometheus/prometheus.yml

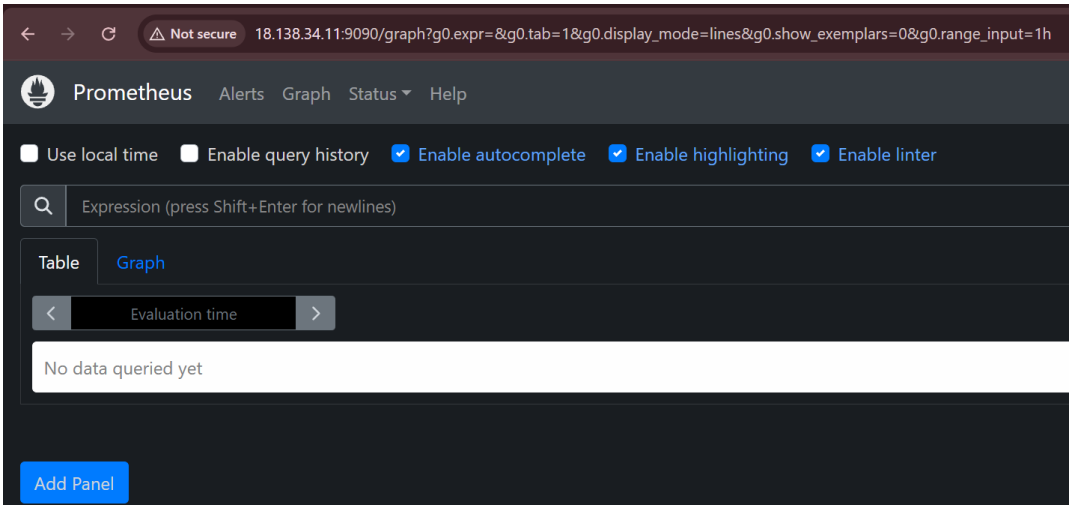
   [Install]
   WantedBy=multi-user.target



4. Start
   sudo systemctl daemon-reload
   sudo systemctl enable prometheus
   sudo systemctl start Prometheus

5. Test
   Jangan lupa allow security group dulu:





STEP 4

1. Install Grafana

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

wget -q -O - https://packages.grafana.com/gpg.key | sudo apt-key add -
sudo add-apt-repository "deb https://packages.grafana.com/oss/deb stable main"
sudo apt update
sudo apt install grafana -y

2. Start

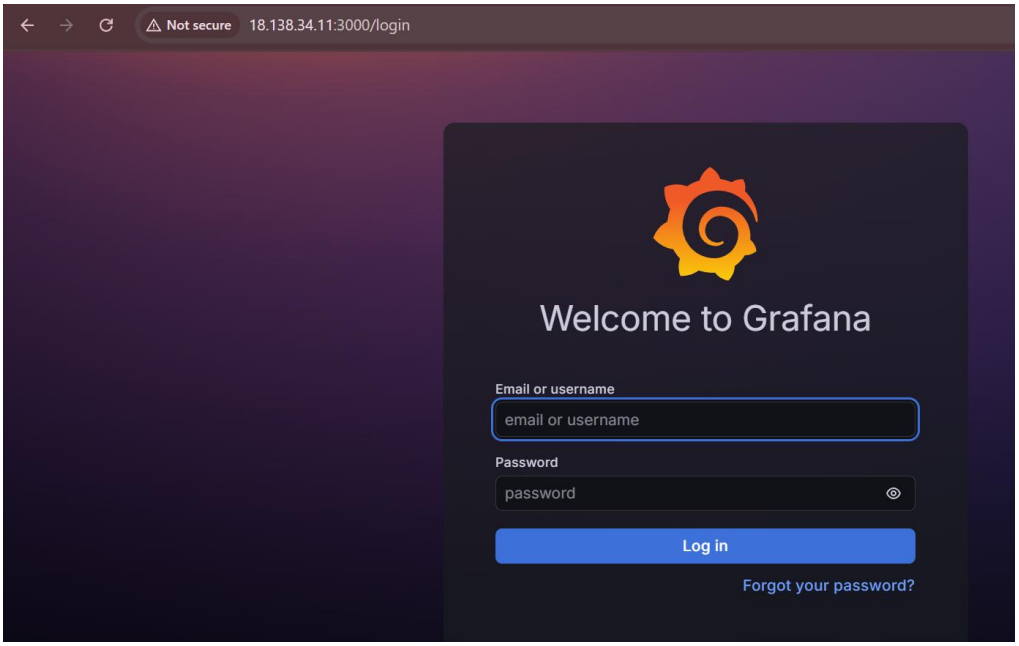
sudo systemctl enable grafana-server

sudo systemctl start grafana-server

3. Akses

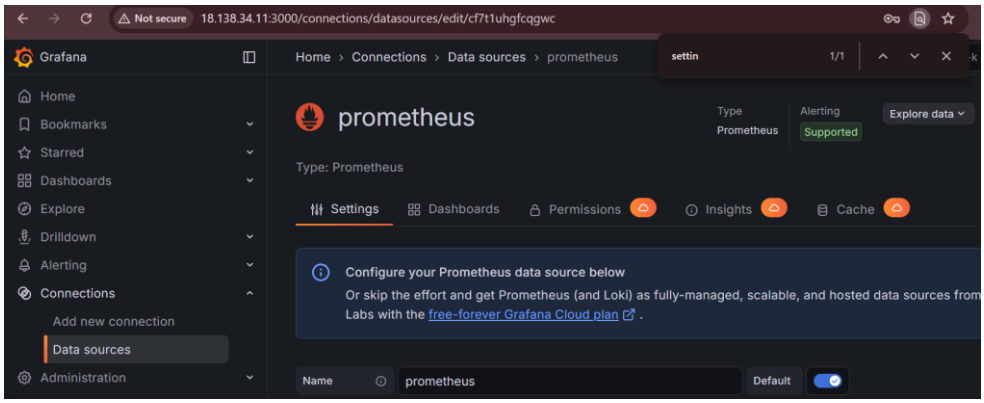
Allow security group 3000
Login : admin

Password : admin

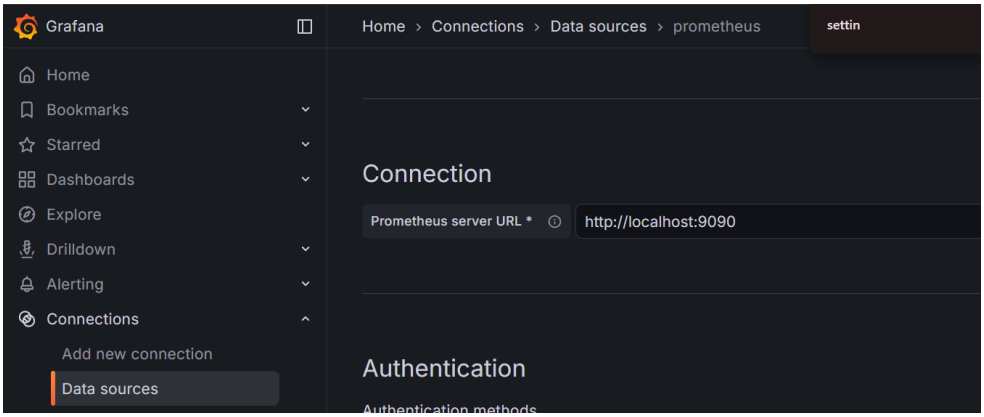


4. Tambah data source

Setting – data source – Prometheus

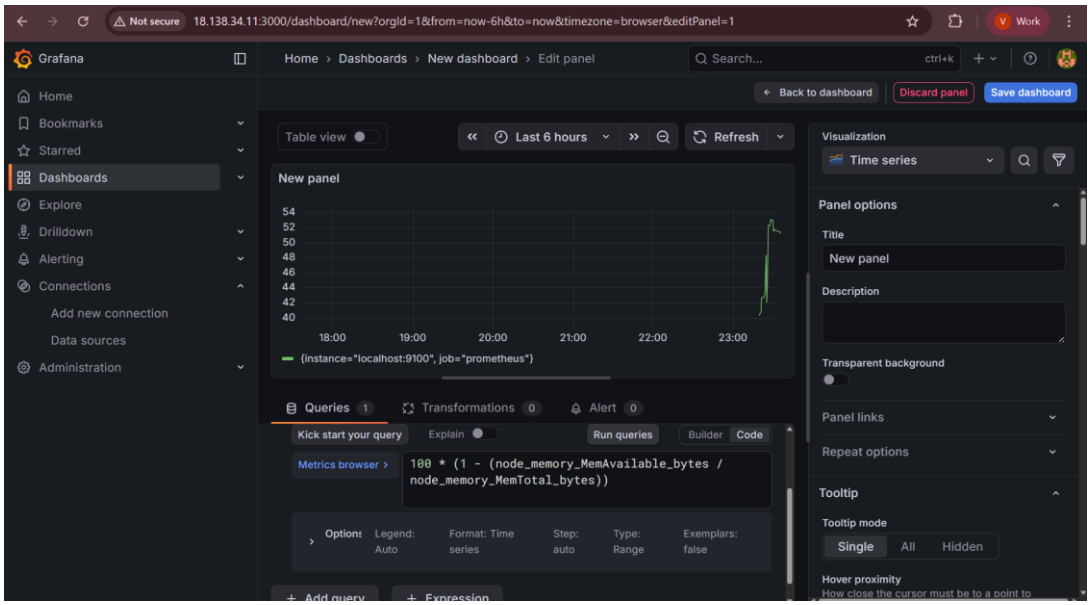


Localhost:9090



5. Dashboard memory usage

100 * (1 - (node_memory_MemAvailable_bytes / node_memory_MemTotal_bytes))



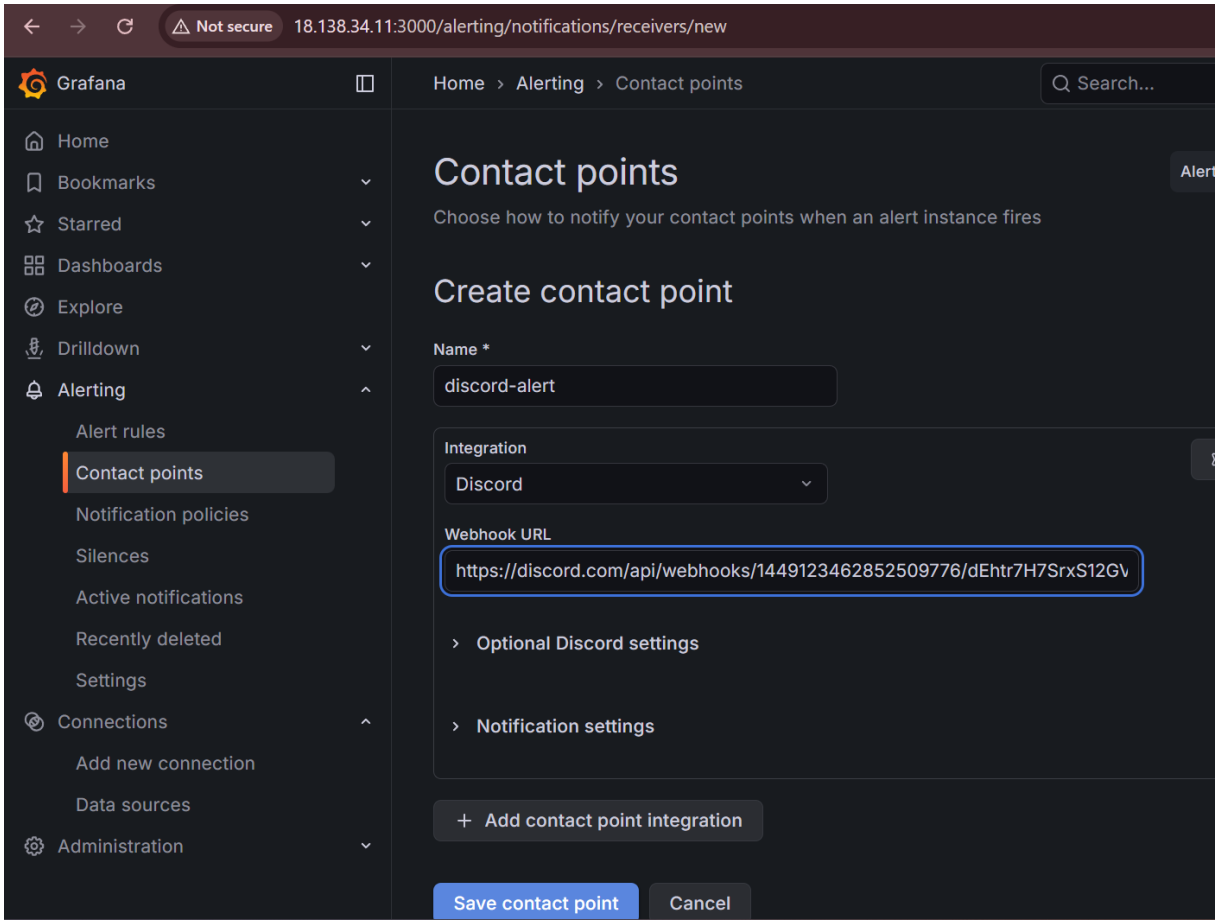
STEP 5

1. Alert memory – discord

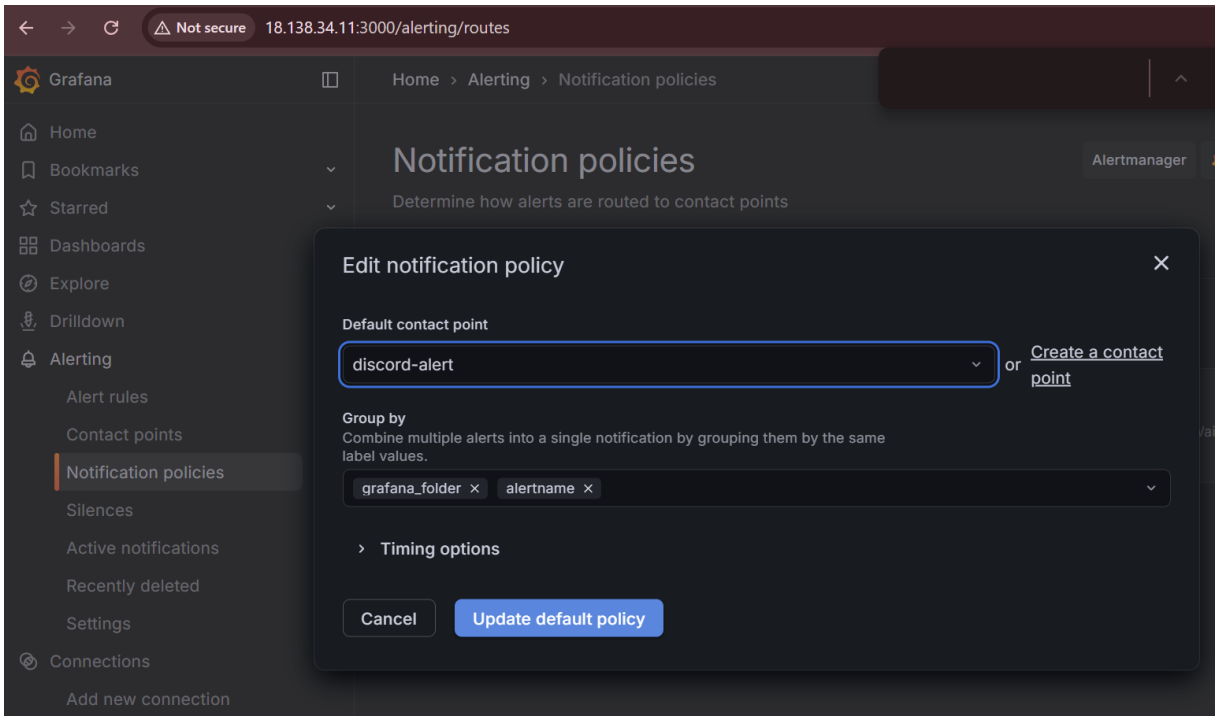
Buat Discord Webhook

https://discord.com/api/webhooks/1449123462852509776/dEhtr7H7SrxS12GVeVtufNBRXp2W4UesxMutxgTRSBsvgDQMDemTy7_24_OFJrUMceKu

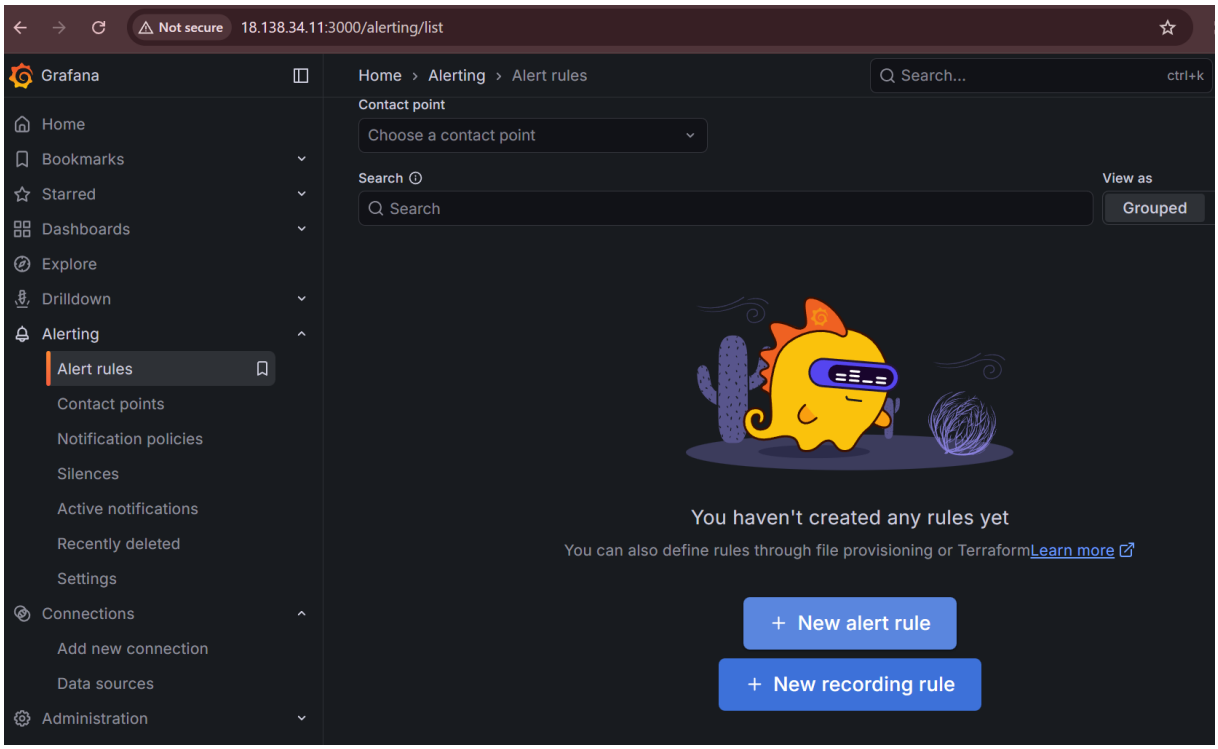
2. Buat Contact Point Discord di Grafana



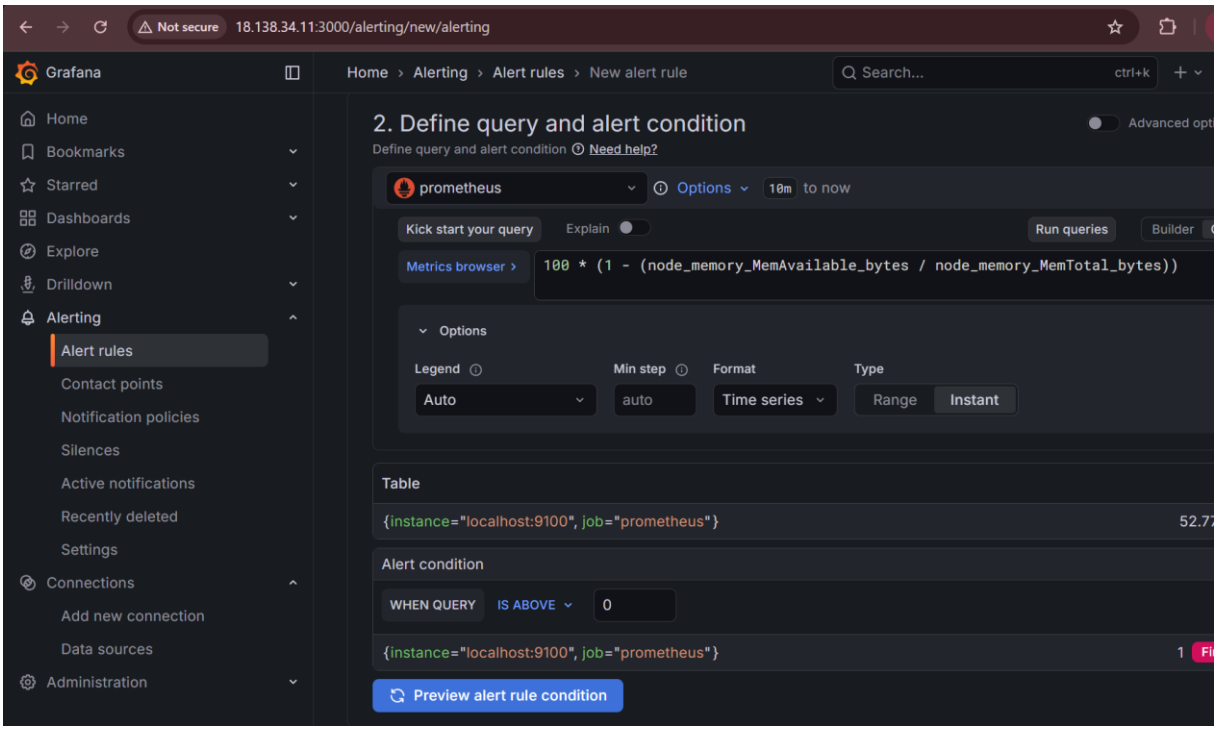
2. Buat Notification Policy

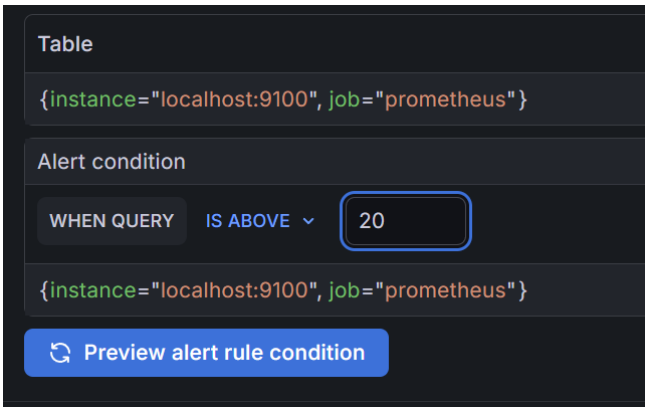


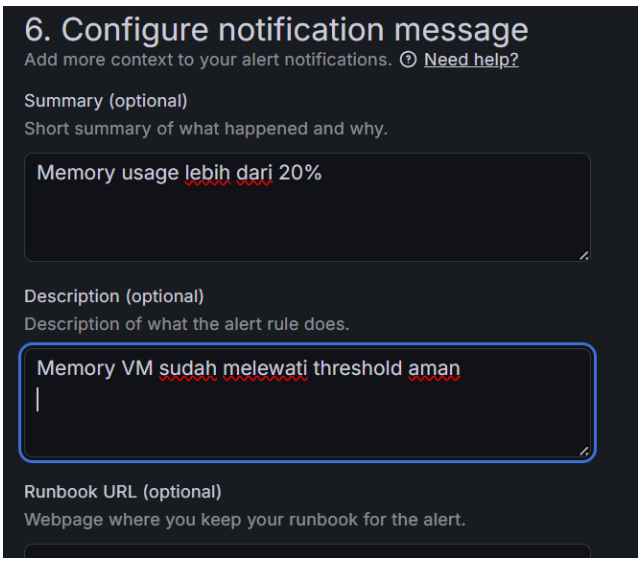
3. Buat Alert Rule Memory Usage



100 * (1 - (node_memory_MemAvailable_bytes / node_memory_MemTotal_bytes))



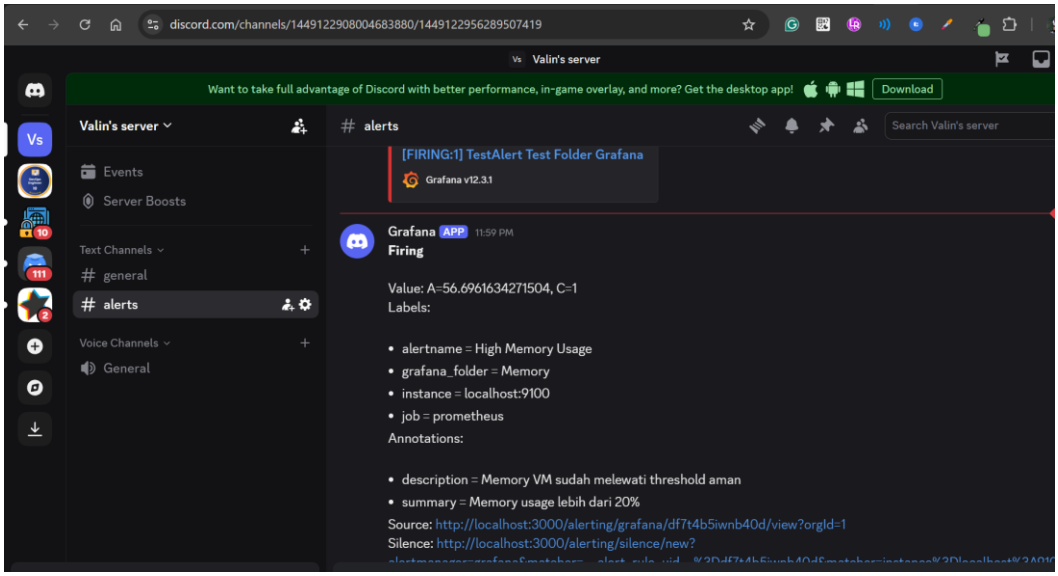




4. Test Alert

sudo apt install stress -y

stress --vm 1 --vm-bytes 300M --timeout 60s



STEP 6

Monitoring webserver dengan uptime kuma

1. install docker

sudo apt update

sudo apt upgrade -y

sudo apt install docker.io -y

2. Start dan enable docker

sudo systemctl start docker

sudo systemctl enable docker

Cek : systemctl status docker

3. install uptime kuma dengan docker

sudo docker run -d \

--restart=always \

-p 3001:3001 \

-v uptime-kuma:/app/data \

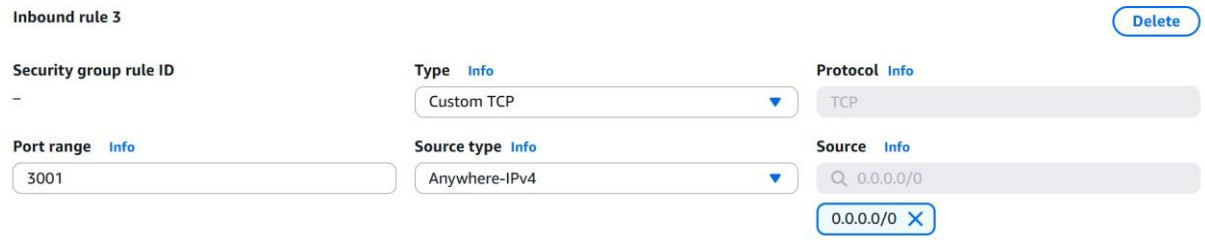
--name uptime-kuma \

louislam/uptime-kuma

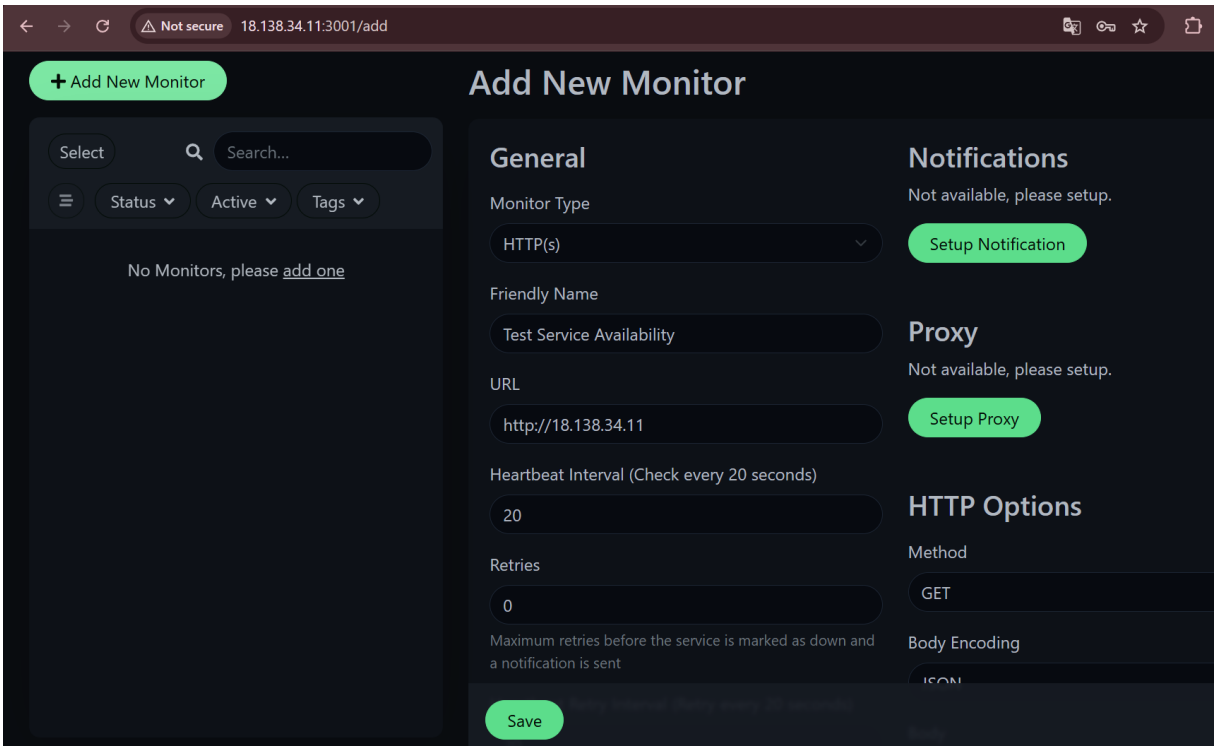
```
ubuntu@ip-172-31-0-203:/tmp$ sudo docker run -d --restart=always -p 3001:3001 -v uptime-kuma:/app/data --name uptime-kum
a louislam/uptime-kuma
Unable to find image 'louislam/uptime-kuma:latest' locally
latest: Pulling from louislam/uptime-kuma
b338562f40a7: Pull complete
874bf4d93720: Pull complete
b16337721583: Pull complete
```

Pastikan container running : docker ps

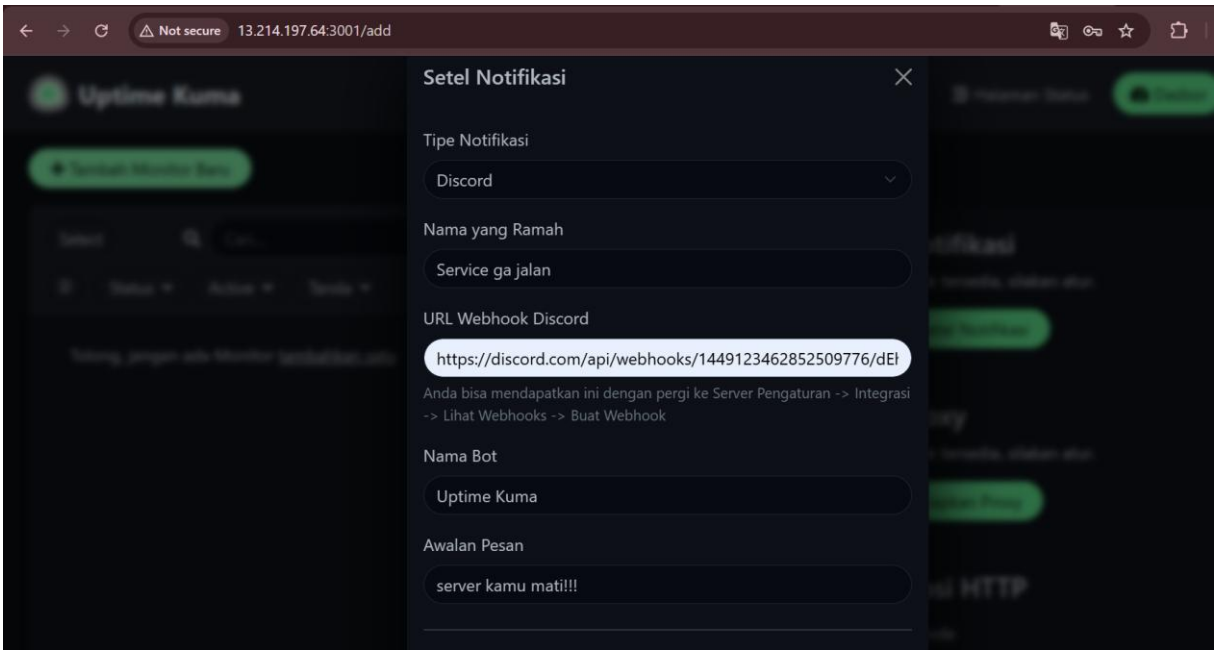
3. allow port 3001 di security group

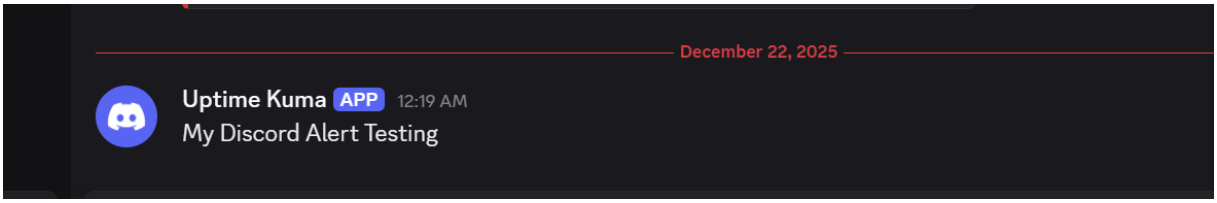


5. buka uptime kuma dengan port 3001 dan add new monitor

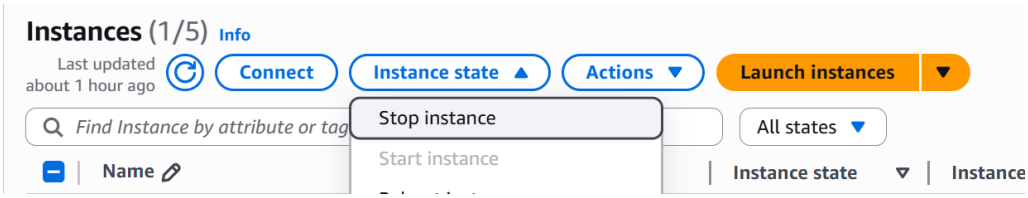


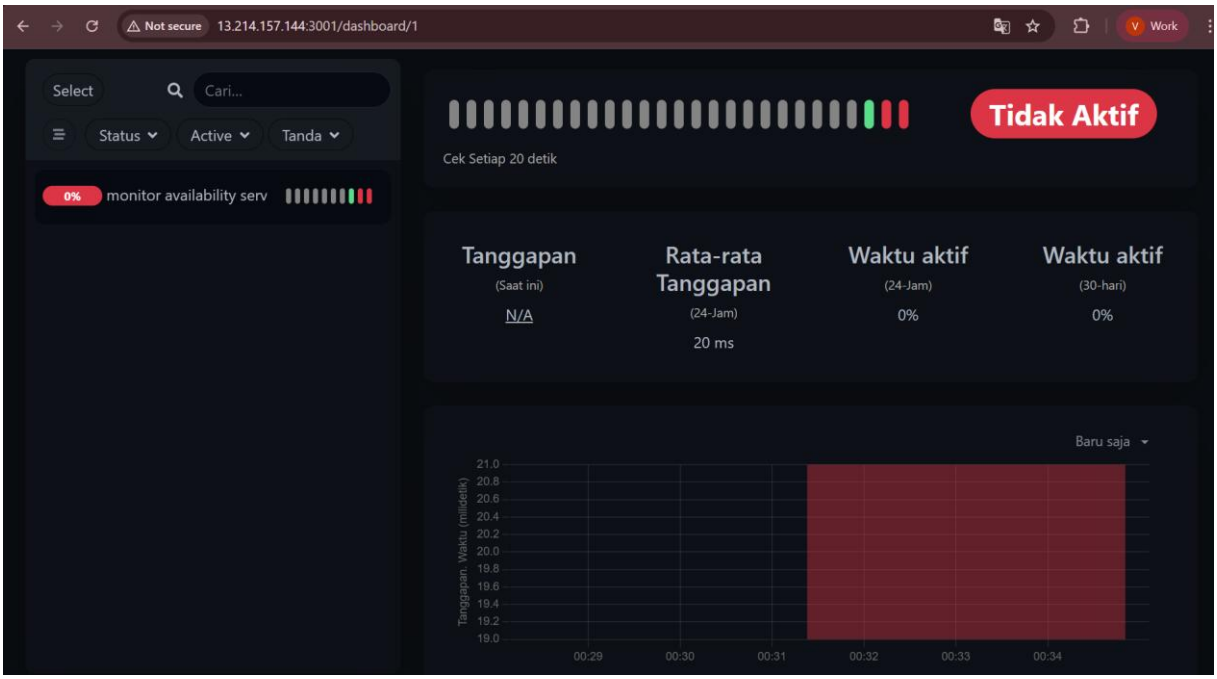
Dan setup notification

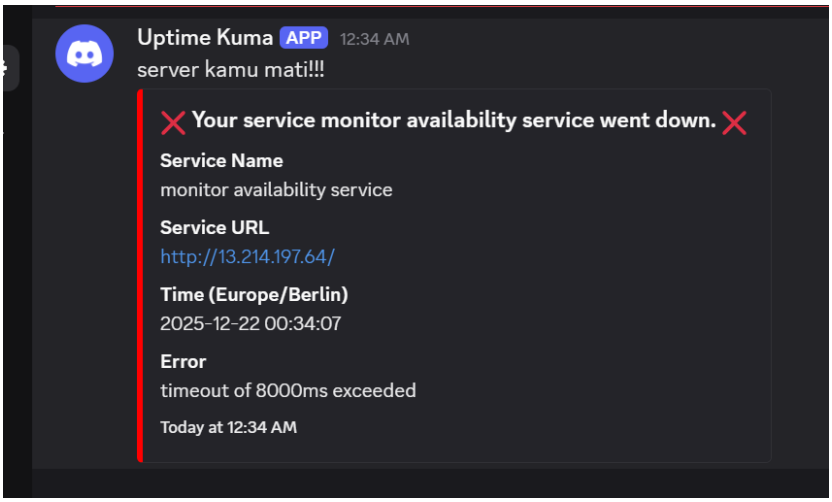




Kita tes dengan stop instance :






Uptime Kuma APP 12:34 AM
server kamu mati!!!
❌ Your service monitor availability service went down. ❌
Service Name
monitor availability service
Service URL
http://13.214.197.64/
Time (Europe/Berlin)
2025-12-22 00:34:07
Error
timeout of 8000ms exceeded
Today at 12:34 AM