Prometheus and Grafana Monitoring system Architecture

Install the prometheus on ubuntu and start the service

1. https://prometheus.io/download/ download according to your os

2. wget https://github.com/prometheus/prometheus/releases/download/v2.35.0/prometheus-2.35.0.linux-amd64.tar.gz

3. tar zxvf prometheus-2.35.0.linux-amd64.tar.gz

4. 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

   create the user and give the rights to the user

Install the prometheus on ubuntu and start the service

5

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

6

```
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
```

create the prometheus directory if not exist at that location

7

```
sudo vi /etc/prometheus/prometheus.yml
```

```
global:
  scrape_interval: 10s

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    static_configs:
      - targets: ['localhost:9090']
```

8

change the ownership of the file

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

Install the prometheus on ubuntu and start the service

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

10

```
[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
```

Install the prometheus on ubuntu and start the service

11 sudo systemctl daemon-reload

12 sudo systemctl start prometheus
sudo systemctl status prometheus

13

```
ubuntu@prometheus:~/prometheus-2.35.0.linux-amd64$ sudo systemctl status prometheus
● prometheus.service - Prometheus
     Loaded: loaded (/etc/systemd/system/prometheus.service; disabled; vendor preset: enabled)
     Active: active (running) since Sun 2022-04-24 07:15:31 UTC; 1h 25min ago
   Main PID: 3627 (prometheus)
      Tasks: 8 (limit: 4626)
     Memory: 32.1M
     CGroup: /system.slice/prometheus.service
             └─3627 /usr/local/bin/prometheus --config.file /etc/prometheus/prometheus.yml --st
```

install the nginx server and configure the exporter in prometheus

1

```
sudo apt-get install nginx
```

2

```
wget https://github.com/nginxinc/nginx-prometheus-exporter/releases/
download/v0.10.0/nginx-prometheus-exporter_0.10.0_linux_arm64.tar.gz
```

3

```
tar zxvf nginx-prometheus-exporter_0.10.0_linux_arm64.tar.gz
```

4

```
mv nginx-prometheus-exporter /usr/local/bin
useradd -r nginx_exporter
```

install the nginx server and configure the exporter in prometheus

5 nano /etc/systemd/system/nginx_prometheus_exporter.service

```
[Unit]
Description=NGINX Prometheus Exporter
After=network.target

[Service]
Type=simple
User=nginx_exporter
Group=nginx_exporter
ExecStart=/usr/local/bin/nginx-prometheus-exporter \
    -web.listen-address=10.0.0.83:4040 \
    -nginx.scrape-uri http://127.0.0.1/metrics

SyslogIdentifier=nginx_prometheus_exporter
Restart=always

[Install]
WantedBy=multi-user.target
```

it is ip address where the Nginx Exporter Installed in these case exporter installed in same machine where prometheus installed

install the nginx server and configure the exporter in prometheus

6 /etc/nginx/sites-available/default

```
server {
      listen 80;
        location /metrics {
        stub_status on;
           allow 127.0.0.1;    #only allow requests from localhost
           deny all;       #deny all other hosts
      }
}
```

7

```
sudo systemctl daemon-reload
sudo systemctl enable --now nginx_prometheus_exporter.service
```

```
ubuntu@myinstacne:~$ sudo systemctl status nginx_prometheus_exporter.service
● nginx_prometheus_exporter.service - NGINX Prometheus Exporter
     Loaded: loaded (/etc/systemd/system/nginx_prometheus_exporter.service; e
     Active: active (running) since Tue 2022-04-26 06:40:37 UTC; 33s ago
   Main PID: 3172 (nginx-prometheu)
      Tasks: 7 (limit: 4657)
     Memory: 2.9M
```

configure the prometheus.yaml for nginx metrics

8 /etc/prometheus/prometheus.yml

9

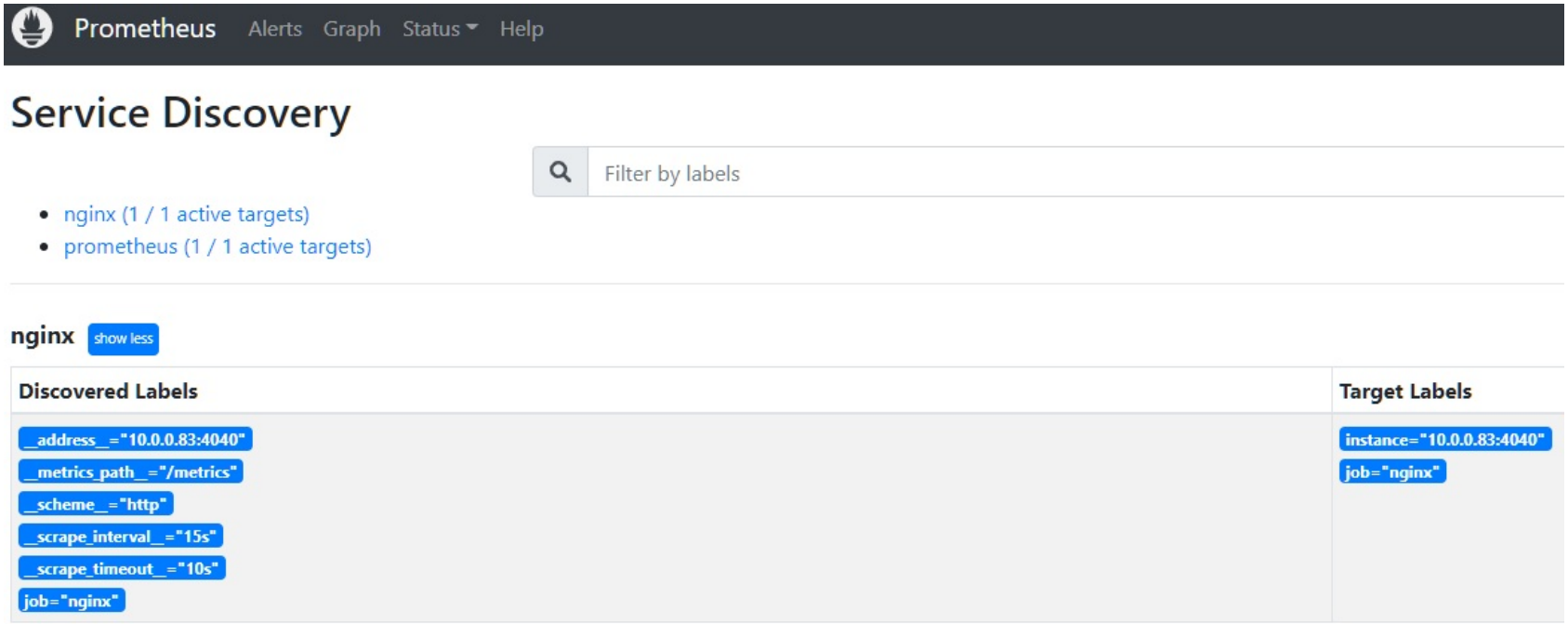
```
global:
  scrape_interval: 10s

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    static_configs:
      - targets: ['localhost:9090']


  - job_name: 'nginx'
    scrape_interval: 15s
    static_configs:
      - targets: ['10.0.0.83:4040']
```

verify the configuration

10



now go to grafana and create the dashboard for nginx matrics

install grafana

1

```
sudo apt-get install -y apt-transport-https
sudo apt-get install -y software-properties-common wget
wget -q -O - https://packages.grafana.com/gpg.key | sudo apt-
key add -
```

2

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

3

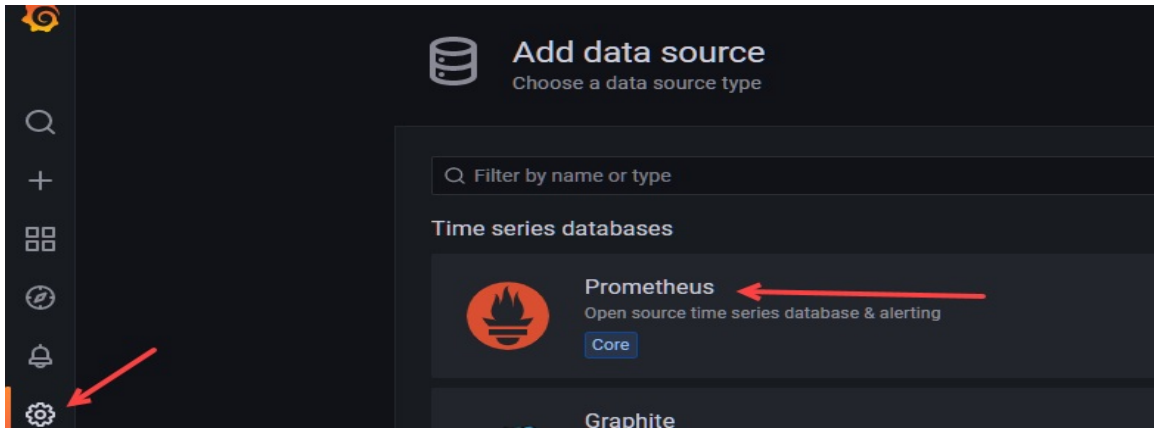
```
sudo apt-get update
sudo apt-get install grafana
```

4

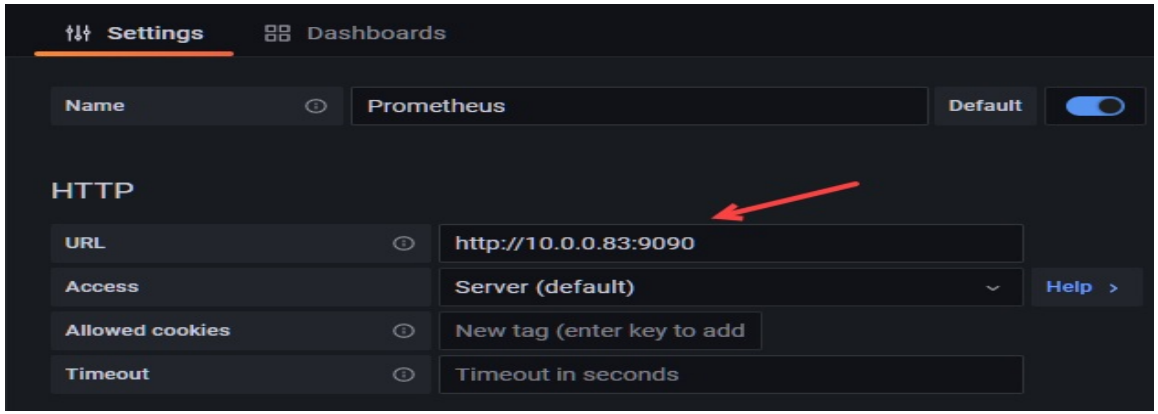
```
sudo systemclt enable --now grafana-server.service
```

configure prometheus data source in grafana

5 Go to Settings | Data Source | Prometheus

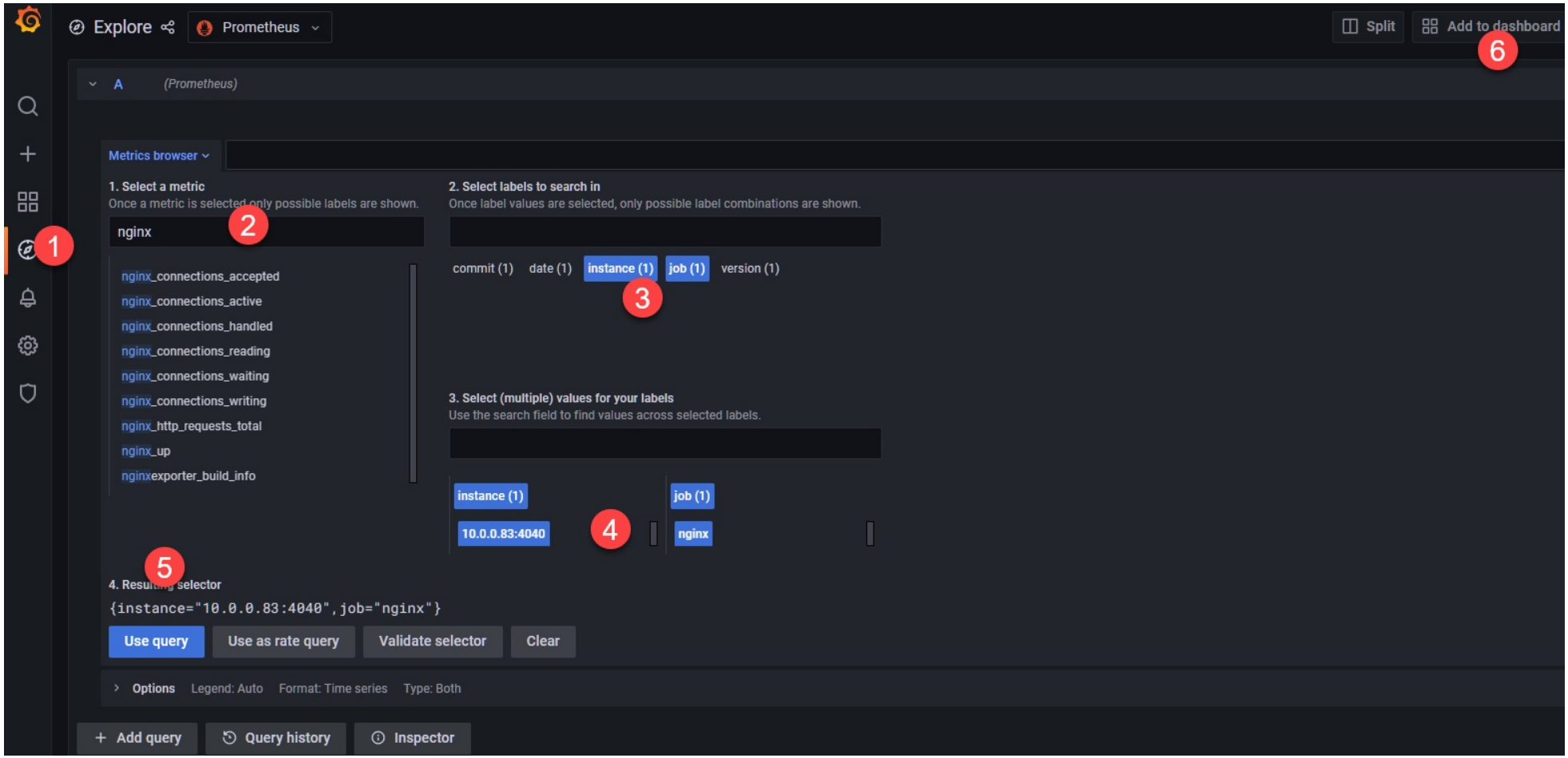


6 configure the ip address of prometheus in grafana



create nginx metrics dashboard

7 Go to Settings | Data Source | Prometheus



choose the metrics then add to dasboard

create nginx metrics dashboard

7 Go to Settings | Data Source | Prometheus

data receive from prometheus and graph created by grafana