

Task 21: Install Prometheus and Grafana on a EC2 machine, connect Prometheus to Grafana, and create a dashboard to view metrics.

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

monitoring

[Add additional tags](#)

Instances (1/1) [Info](#)



Connect

Instance state ▼

Actions ▼

Launch instances ▼

Find Instance by attribute or tag (case-sensitive)

All states ▼

Instance ID = i-06257437eeb76adc0



Clear filters

< 1 > ⚙

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>	monitoring	i-06257437eeb76adc0	Running	t2.micro	Initializing	View alarms	us-east-1c

1. Install-Prometheus:

[Vi install-prometheus.sh](#)

```
#!/bin/bash
PROMETHEUS_VERSION="2.52.0"
wget https://github.com/prometheus/prometheus/releases/download/v${PROMETHEUS_VERSION}/prometheus-${PROMETHEUS_VERSION}.linux-amd64.tar.gz
tar -xzf prometheus-${PROMETHEUS_VERSION}.linux-amd64.tar.gz
cd prometheus-${PROMETHEUS_VERSION}.linux-amd64/
# if you just want to start prometheus as root
# ./prometheus --config.file=prometheus.yml

# create user
useradd --no-create-home --shell /bin/false prometheus

# create directories
mkdir -p /etc/prometheus
mkdir -p /var/lib/prometheus

# set ownership
chown prometheus:prometheus /etc/prometheus
chown prometheus:prometheus /var/lib/prometheus

# copy binaries
cp prometheus /usr/local/bin/
cp promtool /usr/local/bin/

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

[Execute install-prometheus.sh](#)

```
root@ip-172-31-46-200:/home/ubuntu# ./install-prometheus.sh
--2024-08-08 13:36:04-- https://github.com/prometheus/prometheus/releases/download/v2.52.0/prometheus-2.52.0.linux-amd64.tar.gz
Resolving github.com (github.com)... 140.82.113.3
Connecting to github.com (github.com)|140.82.113.3|:443... connected.
HTTP request sent, awaiting response... 302 Found
location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/6838921/768138e4-e78f-4fb9-b334-959077fddf25a
Amz-Credential=releaseassetproduction%2F20240808%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20240808T133604Z&X-Amz-Expires=300&X-Amz
Be9af2386f351a8d24c1e3e655b2940996e7d09e&X-Amz-SignedHeaders=host&actor_id=0&key_id=0&repo_id=6838921&response-content-disposition=a
s-2.52.0.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream [following]
--2024-08-08 13:36:04-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/6838921/768138e4-e78f-4fb9-b33
-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20240808%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20240808T133604Z&X-Amz-Ex
```

```


root@ip-172-31-46-200:/home/ubuntu# systemctl status prometheus
● prometheus.service - Prometheus
   Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2024-08-08 13:36:12 UTC; 38s ago
     Main PID: 1698 (prometheus)
        Tasks: 6 (limit: 1120)
       Memory: 18.6M
          CPU: 76ms
      CGroup: /system.slice/prometheus.service
              └─1698 /usr/local/bin/prometheus --config.file /etc/prometheus/prometheus.yml --s

```

Open port no: 9090

Inbound rules (2)							
<div> <div>Q Search</div> <div> <div><</div> <div>1</div> <div>></div> <div>⚙</div> </div> </div>							
<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol	Port range	
<input type="checkbox"/>	-	sgr-0eb60e313bdf867f0	IPv4	Custom TCP	TCP	9090	

Copy ip address and paste it in browser


Prometheus
Alerts
Graph
Status
Help

☐ Use local time
☐ Enable query history
☒ Enable autocomplete
☒ Enable highlighting
☒ Enable linter

Q

Expression (press Shift+Enter for newlines)

Table

Graph

<

Evaluation time

>

No data queried yet

Add Panel

Targets

All scrape pools

AllUnhealthyCollapse All

Filter by endpoint or labels

UnknownUnhealthyHealth

prometheus (1/1 up)

show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090"job="prometheus"	10.179s ago	4.903ms	

2. Install node exporter:

```
#!/bin/bash
NODE_EXPORTER_VERSION="1.8.1"
wget https://github.com/prometheus/node_exporter/releases/download/v${NODE_EXPORTER_VERSION}/node_exporter-
tar -xzf node_exporter-${NODE_EXPORTER_VERSION}.linux-amd64.tar.gz
cd node_exporter-${NODE_EXPORTER_VERSION}.linux-amd64
cp node_exporter /usr/local/bin

# create user
useradd --no-create-home --shell /bin/false node_exporter

chown node_exporter:node_exporter /usr/local/bin/node_exporter

echo '[Unit]
Description=Node Exporter
Wants=network-online.target
After=network-online.target

[Service]
User=node_exporter
Group=node_exporter
Type=simple
ExecStart=/usr/local/bin/node_exporter

[Install]
WantedBy=multi-user.target' > /etc/systemd/system/node_exporter.service
```

Execute install-nodeexporter.sh

```
root@ip-172-31-46-200:/home/ubuntu# vi install-nodeexporter.sh
root@ip-172-31-46-200:/home/ubuntu# chmod 777 install-nodeexporter.sh
root@ip-172-31-46-200:/home/ubuntu# ./install-nodeexporter.sh
--2024-08-08 13:50:26-- https://github.com/prometheus/node_exporter/releases/download/v1.8.1/node_exporter-1.8.1.linux-amd64.tar.gz
Resolving github.com (github.com)... 140.82.114.4
Connecting to github.com (github.com)|140.82.114.4|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/9524057/e07e4ee4-e4b0-48dc-9c04-eaad890c81b3?X-
56&X-Amz-Credential=releaseassetproduction%2F20240808%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20240808T135026Z&X-Amz-Expires=300&X-
1635ebb2418793c8fc048891e0074e33831acd8198b0346a86&X-Amz-SignedHeaders=host&actor_id=0&key_id=0&repo_id=9524057&response-content-dispo
ame%3Dnode_exporter-1.8.1.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream [following]
--2024-08-08 13:50:26-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/9524057/e07e4ee4-e4b0-48dc-9c04-
-AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20240808%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20240808T135026Z&X-Amz-
=361daf50a2dd8b1635ebb2418793c8fc048891e0074e33831acd8198b0346a86&X-Amz-SignedHeaders=host&actor_id=0&key_id=0&repo_id=9524057&respon
ment%3B%20filename%3Dnode_exporter-1.8.1.linux-amd64.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.108.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 10672684 (10M) [application/octet-stream]
Saving to: 'node_exporter-1.8.1.linux-amd64.tar.gz'
```

```
root@ip-172-31-46-200:/home/ubuntu# sudo systemctl status node_exporter
● node_exporter.service - Node Exporter
   Loaded: loaded (/etc/systemd/system/node_exporter.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2024-08-08 13:50:27 UTC; 1min 23s ago
     Main PID: 3169 (node_exporter)
        Tasks: 3 (limit: 1120)
       Memory: 2.0M
          CPU: 6ms
       CGroup: /system.slice/node_exporter.service
               └─3169 /usr/local/bin/node_exporter
```

Open port no: 9100

<input type="checkbox"/>	-	sgr-00dc93139961f5e2a	IPv4	Custom TCP	TCP
					9100

Copy ip address and paste it in browser

Node Exporter

Prometheus Node Exporter

Version: (version=1.8.1, branch=HEAD, revision=400c3979931613db930ea035f39ce7b377cddb5b)

- [Metrics](#)

3. Install Grafana:

```
#!/bin/bash
echo 'deb https://packages.grafana.com/oss/deb stable main' >> /etc/apt/sources.list
curl https://packages.grafana.com/gpg.key | sudo apt-key add -
sudo apt-get update
sudo apt-get -y install grafana

systemctl daemon-reload
systemctl start grafana-server
systemctl enable grafana-server.service
```

Execute install-grafana.sh

```
root@ip-172-31-46-200:/home/ubuntu# vi install-grafana.sh
root@ip-172-31-46-200:/home/ubuntu# chmod 777 install-grafana.sh
root@ip-172-31-46-200:/home/ubuntu# ./install-grafana.sh
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 2460 100 2460    0     0 18413      0 --:--:-- --:--:-- --:--:-- 18358
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
OK
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 https://packages.grafana.com/oss/deb stable InRelease [7660 B]
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1930 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [341 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [17.8 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2301 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [396 kB]
```

```

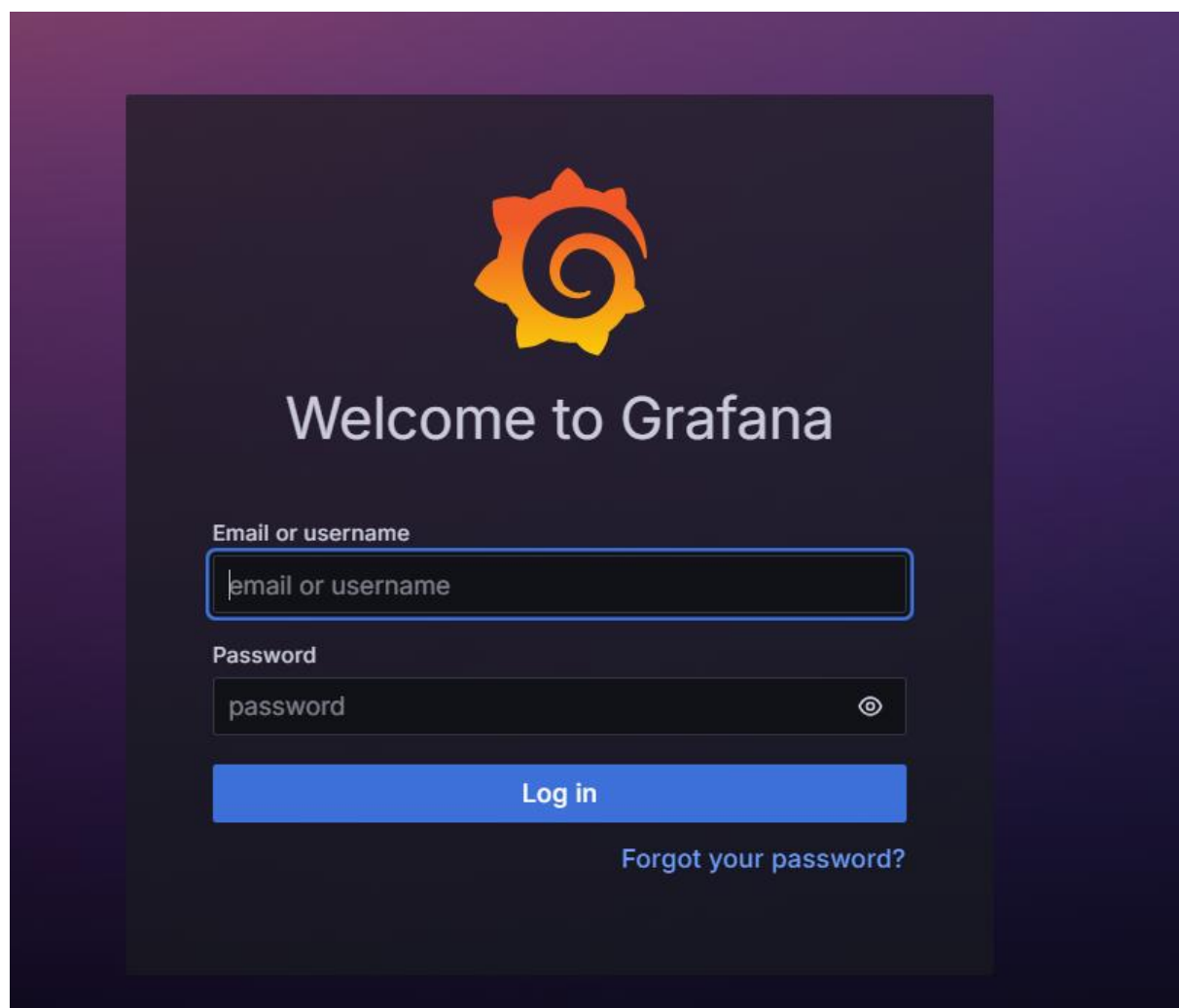
root@ip-172-31-46-200:/home/ubuntu# sudo systemctl status grafana-server
● grafana-server.service - Grafana instance
   Loaded: loaded (/lib/systemd/system/grafana-server.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2024-08-08 13:44:45 UTC; 2min 46s ago
     Docs: http://docs.grafana.org
   Main PID: 3012 (grafana)
    Tasks: 9 (limit: 1120)
   Memory: 142.7M
      CPU: 3.023s
   CGroup: /system.slice/grafana-server.service
           └─3012 /usr/share/grafana/bin/grafana server --config=/etc/grafana/grafana.ini --pidf

```

Open port no: 3000

Inbound rules (3)							Manage tags	Edit inbound rules
<input type="text" value="Search"/>							< 1 >	⚙
<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol	Port range		
<input type="checkbox"/>	-	sgr-09383082162b0a...	IPv4	Custom TCP	TCP	3000		

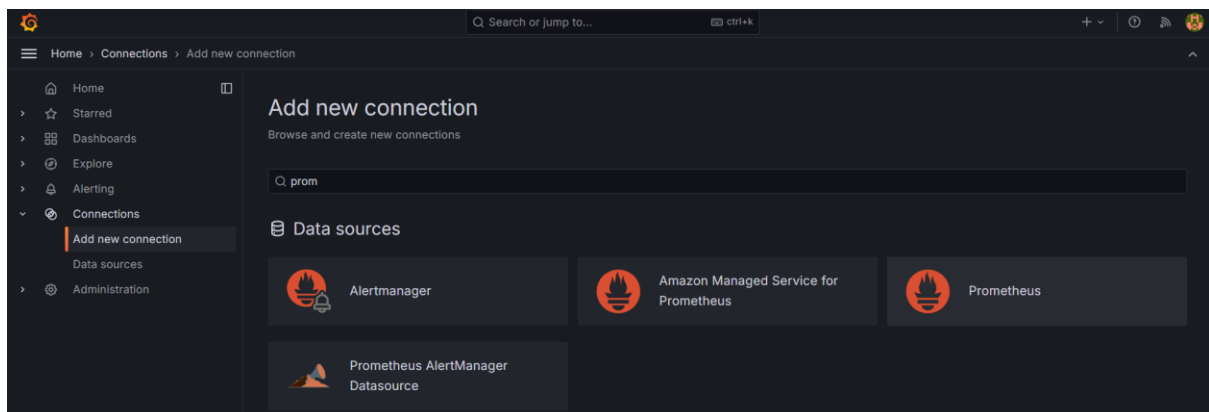
Copy ip address and paste it in browser



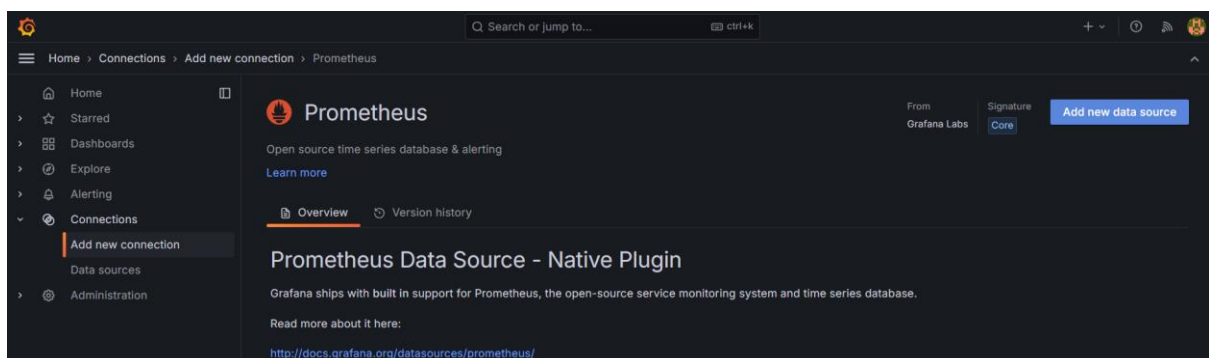
Initially give admin as login and admin as password. After that change the password.

4. Connect Prometheus to Grafana:

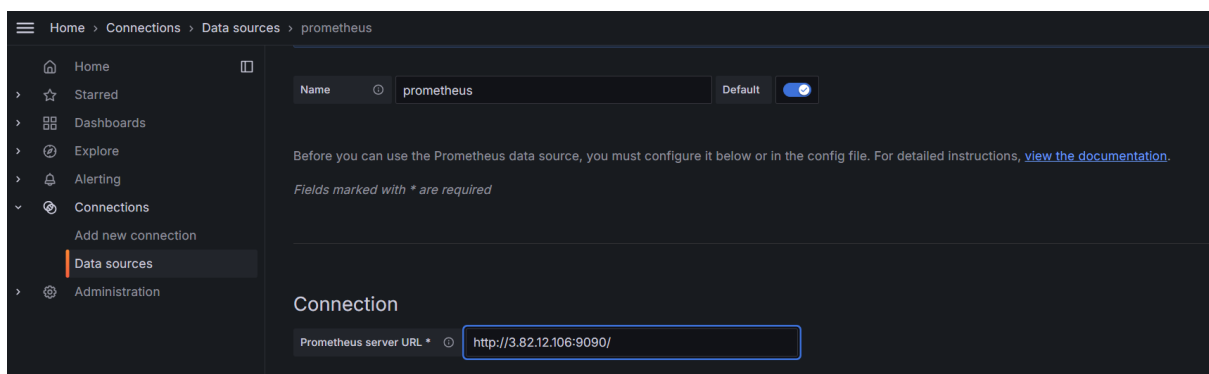
Add Prometheus in Grafana



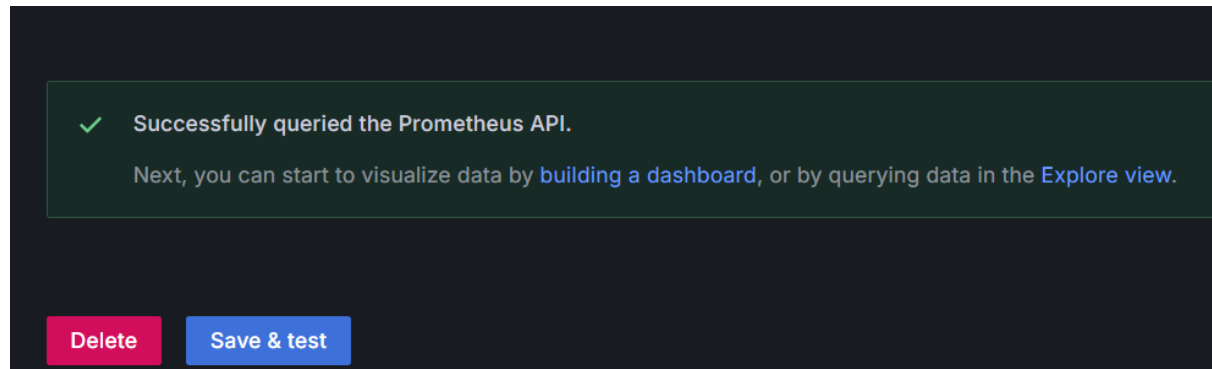
Add new data source



Copy and paste the Prometheus ip address in grafana



Click save and test



Prometheus configuration file:

While install Prometheus, Prometheus.yml file created. get into that file using nano editor

```
root@ip-172-31-46-200:/home/ubuntu# cd /etc/prometheus
root@ip-172-31-46-200:/etc/prometheus# ls
console_libraries  consoles  prometheus.yml
root@ip-172-31-46-200:/etc/prometheus# nano prometheus.yml
```

Add node exporter in Prometheus.yml file:

Change local host 9100 [node exporter port no:]. Save the file [ctrl+x → y → enter]

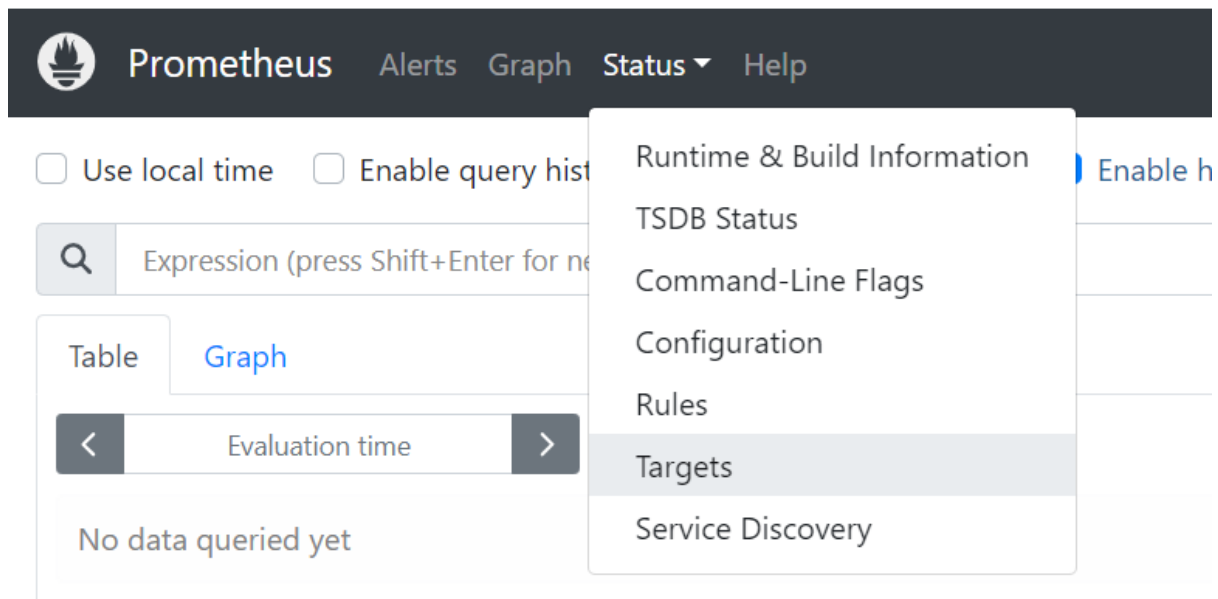
```
scrape_configs:
  # The job name is added as a label `job=<j
  - job_name: "prometheus"

  # metrics_path defaults to '/metrics'
  # scheme defaults to 'http'.

  static_configs:
    - targets: ["localhost:9100"]
```

```
root@ip-172-31-46-200:/etc/prometheus# service prometheus restart
```

Refresh the Prometheus page. Click status → targets



Targets

All scrape pools ▾ All Unhealthy Collapse All

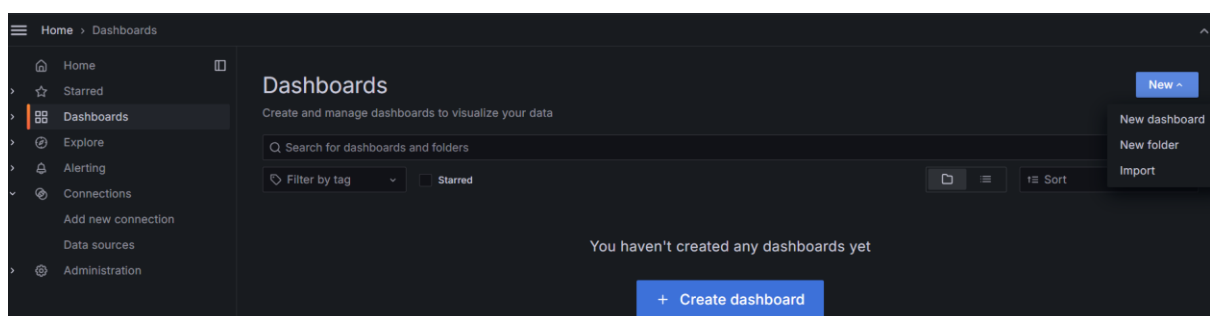
Filter by endpoint or labels

prometheus (1/1 up) show less

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9100/metrics	UP	instance="localhost:9100" job="prometheus" ▾	704.000ms ago	12.249ms	

5. Create a dashboard to view metrics:

Goto Grafana page click dashboard → new → import →



give 1860 [pre build dashboard] click load

Home > Dashboards > Import dashboard

Import dashboard

Import dashboard from file or Grafana.com

Upload dashboard JSON file

Drag and drop here or click to browse
Accepted file types: .json, .txt

Find and import dashboards for common applications at grafana.com/dashboards

1860 **Load**

Import via dashboard JSON model

```
{
  "title": "Example - Repeating Dictionary variables",
  "uid": "_OHnEoN4z",
  "panels": [...]
  ...
}
```

Select source ad Prometheus. Click → import

Importing dashboard from Grafana.com

Published by	rfmoz
Updated on	2024-05-22 21:37:35

Options

Name

Node Exporter Full

Folder

Dashboards


Unique identifier (UID)

The unique identifier (UID) of a dashboard can be used to uniquely identify a dashboard between multiple Grafana installs. The UID allows having consistent URLs for accessing dashboards so changing the title of a dashboard will not break any bookmarked links to that dashboard.

rYdddIPWk

Change uid

Prometheus

 prometheus

Import

Cancel

Click last 5 mint

