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

STEP 1 - create prometheus user using below command

```
root@ip-172-31-17-83:/home/ubuntu/prometheus# cd ..
root@ip-172-31-17-83:/home/ubuntu# sudo useradd --no-create-home --shell /bin/false prometheus
root@ip-172-31-17-83:/home/ubuntu# pwd
/home/ubuntu
```

STEP 2 - create 2 file to store prometheus comfig and lib files

```
root@ip-172-31-17-83:/home/ubuntu# sudo mkdir /etc/prometheus
sudo mkdir /var/lib/prometheus
root@ip-172-31-17-83:/home/ubuntu# sudo chown prometheus:prometheus /var/lib/prometheus
root@ip-172-31-17-83:/home/ubuntu# cd /var/lib/
```

STEP 3 - change owner and group

```
drwx------  2 root       root       4096 Sep 27 08:36 private
drwxr-xr-x  2 prometheus prometheus 4096 Nov 28 12:54 prometheus
drwxr-xr-x  2 root       root       4096 Sep 27 08:36 python
drwxr-xr-x  2 root       root       4096 Sep 27 08:41 sgml-base
-rw-r--r--  1 root       root        114 Sep 27 08:38 shells.state
```

STEP 4- pull the prometheus binary files from github

```
root@ip-172-31-17-83:/# cd tmp
root@ip-172-31-17-83:/tmp# wget https://github.com/prometheus/prometheus/releases/download/v2.46.0/prometheus-2.46.0.linux-amd64.tar.gz
--2024-11-28 13:05:28--  https://github.com/prometheus/prometheus/releases/download/v2.46.0/prometheus-2.46.0.linux-amd64.tar.gz
Resolving github.com (github.com)... 4.237.22.38
Connecting to github.com (github.com)|4.237.22.38|:443... connected.
```

STEP 5 - extract the tar file using tar -xvf command under cd /var/lib/tmp

```
root@ip-172-31-17-83:/tmp# tar -xvf prometheus-2.46.0.linux-amd64.tar.gz
prometheus-2.46.0.linux-amd64/
prometheus-2.46.0.linux-amd64/console_libraries/
prometheus-2.46.0.linux-amd64/console_libraries/prom.lib
prometheus-2.46.0.linux-amd64/console_libraries/menu.lib
prometheus-2.46.0.linux-amd64/NOTICE
prometheus-2.46.0.linux-amd64/promtool
prometheus-2.46.0.linux-amd64/prometheus.yml
prometheus-2.46.0.linux-amd64/LICENSE
prometheus-2.46.0.linux-amd64/prometheus
prometheus-2.46.0.linux-amd64/consoles/
prometheus-2.46.0.linux-amd64/consoles/node-disk.html
prometheus-2.46.0.linux-amd64/consoles/node-cpu.html
prometheus-2.46.0.linux-amd64/consoles/prometheus.html
prometheus-2.46.0.linux-amd64/consoles/prometheus-overview.html
prometheus-2.46.0.linux-amd64/consoles/node.html
prometheus-2.46.0.linux-amd64/consoles/index.html.example
prometheus-2.46.0.linux-amd64/consoles/node-overview.html
```

STEP 6 - once extract is done open the folder as given below

```
root@ip-172-31-17-83:/tmp# cd prometheus-2.46.0.linux-amd64
root@ip-172-31-17-83:/tmp/prometheus-2.46.0.linux-amd64# ls -l
total 236292
-rw-r--r-- 1 prometheus 123     11357 Jul 25  2023 LICENSE
-rw-r--r-- 1 prometheus 123      3773 Jul 25  2023 NOTICE
drwxr-xr-x 2 prometheus 123      4096 Jul 25  2023 console_libraries
drwxr-xr-x 2 prometheus 123      4096 Jul 25  2023 consoles
-rwxr-xr-x 1 prometheus 123 123611355 Jul 25  2023 prometheus
-rw-r--r-- 1 prometheus 123       934 Jul 25  2023 prometheus.yml
-rwxr-xr-x 1 prometheus 123 118310964 Jul 25  2023 promtool
root@ip-172-31-17-83:/tmp/prometheus-2.46.0.linux-amd64#
```

STEP 7 - move the console and yaml file comfig file prometheus location and give read only access

```
root@ip-172-31-17-83:/tmp/prometheus-2.46.0.linux-amd64# sudo mv console* /etc/prometheus
root@ip-172-31-17-83:/tmp/prometheus-2.46.0.linux-amd64# sudo mv prometheus.yml /etc/prometheus
root@ip-172-31-17-83:/tmp/prometheus-2.46.0.linux-amd64# sudo chown -R prometheus:prometheus /etc/prometheus
```

STEP 8 - now verify moved files

```
root@ip-172-31-17-83:/# cd /etc/prometheus
root@ip-172-31-17-83:/etc/prometheus# ls -l
total 12
drwxr-xr-x 2 prometheus prometheus 4096 Jul 25  2023 console_libraries
drwxr-xr-x 2 prometheus prometheus 4096 Jul 25  2023 consoles
-rw-r--r-- 1 prometheus prometheus  934 Jul 25  2023 prometheus.yml
```

STEP 9 - now move our prometheus to usr/local/bin location

```
root@ip-172-31-17-83:/etc/prometheus# sudo mv prometheus /usr/local/bin/
mv: cannot stat 'prometheus': No such file or directory
root@ip-172-31-17-83:/etc/prometheus# cd ..
root@ip-172-31-17-83:/etc# sudo mv prometheus /usr/local/bin/
root@ip-172-31-17-83:/etc# sudo chown prometheus:prometheus /usr/local/bin/prometheus
root@ip-172-31-17-83:/etc# cd /usr/local/bin/prometheus
root@ip-172-31-17-83:/usr/local/bin/prometheus# ls -l
total 12
drwxr-xr-x 2 prometheus prometheus 4096 Jul 25  2023 console_libraries
drwxr-xr-x 2 prometheus prometheus 4096 Jul 25  2023 consoles
-rw-r--r-- 1 prometheus prometheus  934 Jul 25  2023 prometheus.yml
```

STEP 10 - verify the comfig files using **cat command**

```
# Load rules once and periodically evaluate them according to the global 'evaluation_interval'.
rule_files:
  # - "first_rules.yml"
  # - "second_rules.yml"

# A scrape configuration containing exactly one endpoint to scrape:
# Here it's Prometheus itself.
scrape_configs:
  # The job name is added as a label `job=<job_name>` to any timeseries scraped from this config.
  - job_name: "prometheus"

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

    static_configs:
      - targets: ["localhost:9090"]
```

```
root@ip-172-31-17-83:/usr/local/bin/prometheus# cat 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_timeout is set to the global default (10s).

# Alertmanager configuration
alerting:
  alertmanagers:
    - static_configs:
        - targets:
          # - alertmanager:9093

# Load rules once and periodically evaluate them according to the global 'evaluation_interval'.
rule_files:
  # - "first_rules.yml"
  # - "second_rules.yml"
```

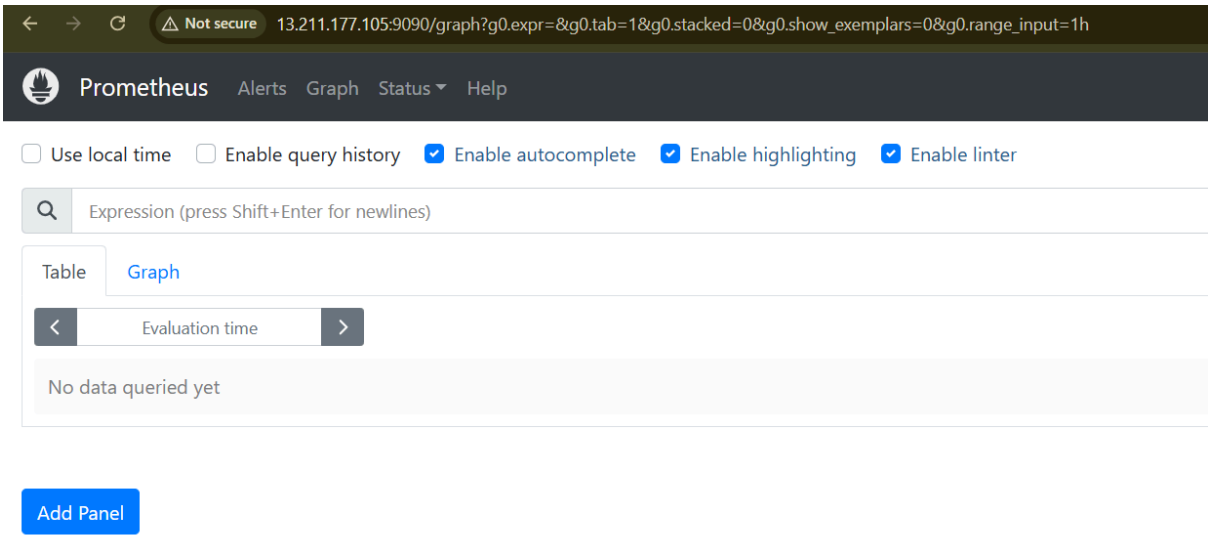
STEP 11 - write our prometheus installation file to install in aws

```
root@ip-172-31-17-83:/etc/systemd/system# vim  prometheus.service
root@ip-172-31-17-83:/etc/systemd/system# cat  prometheus.service
[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
```

STEP 12 - once installation done then **start and enable the service and the activity using status**

```
[ec2-user@ip-172-31-20-93 prometheus-2.43.0.linux-amd64]$ sudo systemctl daemon-reload
[ec2-user@ip-172-31-20-93 prometheus-2.43.0.linux-amd64]$ sudo systemctl enable prometheus
Created symlink /etc/systemd/system/multi-user.target.wants/prometheus.service → /etc/systemd/system/prometheus.service.
[ec2-user@ip-172-31-20-93 prometheus-2.43.0.linux-amd64]$ sudo systemctl start prometheus
[ec2-user@ip-172-31-20-93 prometheus-2.43.0.linux-amd64]$ sudo systemctl status prometheus
● prometheus.service - Prometheus
     Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; preset: disabled)
     Active: active (running) since Thu 2024-11-28 15:14:03 UTC; 10s ago
   Main PID: 7833 (prometheus)
      Tasks: 6 (limit: 1111)
     Memory: 16.0M
        CPU: 52ms
     CGroup: /system.slice/prometheus.service
             └─7833 /usr/local/bin/prometheus --config.file /etc/prometheus/prometheus.yml --storage.tsdb.path /var/lib/pro
```

STEP 13 - now copy our **instance public ip with 9090 port** in browser as given below to view **prometheus dashboard**



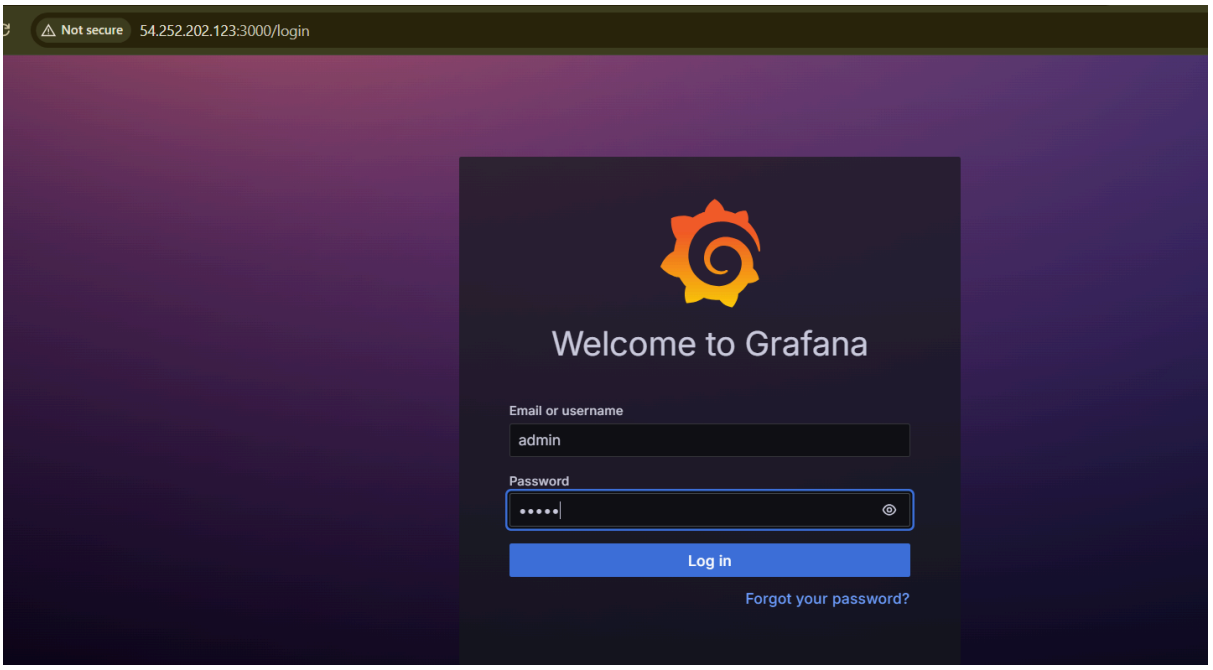
STEP 14 - now start **garafana installation** by pulling the grafana package from **grafana.com** then execute the file using **echo command**

```
ubuntu@ip-172-31-23-145:/usr/local/bin$ sudo apt install -y apt-transport-https
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'apt' instead of 'apt-transport-https'
apt is already the newest version (2.7.14build2).
apt set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ubuntu@ip-172-31-23-145:/usr/local/bin$ wget -q -O - https://packages.grafana.com/gpg.key | sudo apt-ke
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
OK
ubuntu@ip-172-31-23-145:/usr/local/bin$ echo "deb https://packages.grafana.com/oss/deb stable main" | s
deb https://packages.grafana.com/oss/deb stable main
ubuntu@ip-172-31-23-145:/usr/local/bin$ sudo apt-get update
```

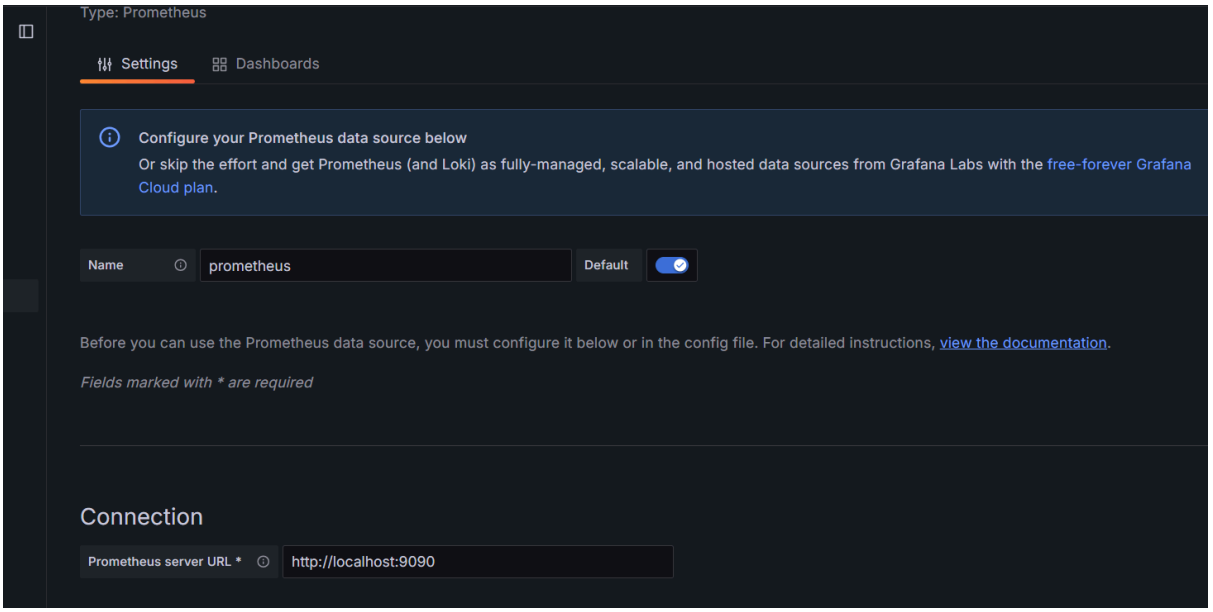
STEP 15 - now above step is success then **install grafana using apt**

```
ubuntu@ip-172-31-23-145:/usr/local/bin$ sudo apt-get install grafana -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  musl
The following NEW packages will be installed:
  grafana musl
0 upgraded, 2 newly installed, 0 to remove and 58 not upgraded.
Need to get 127 MB of archives.
```

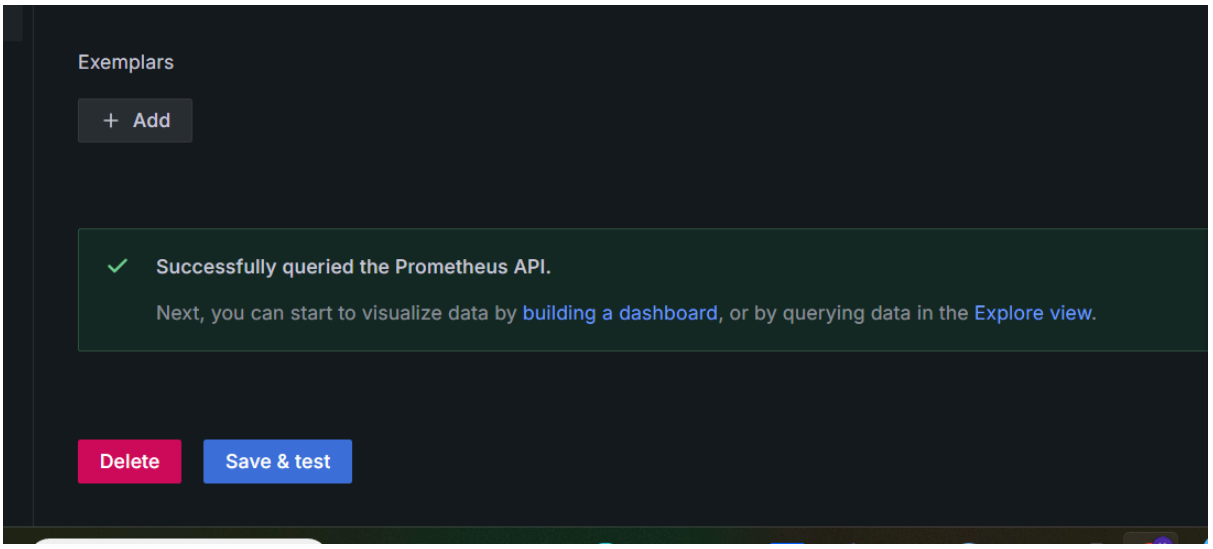
STEP 16 - once installation success copy the **instance public ip** and paste in brower along with **garfana port 3000** as shown in below image



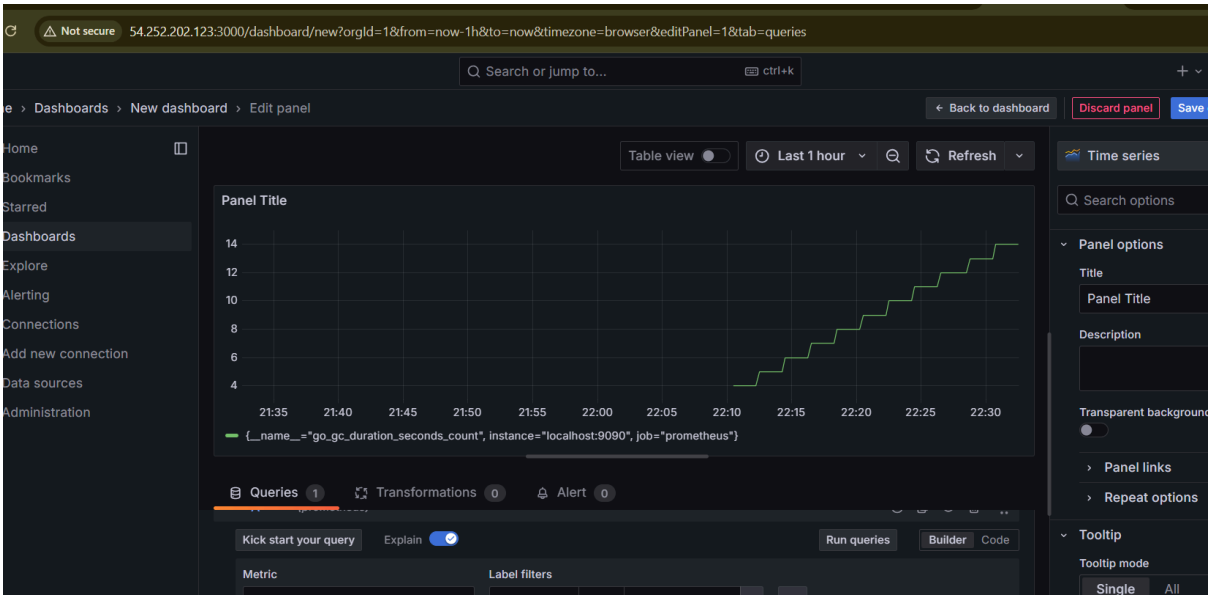
STEP 17 - as per the above image default **user & passw is admin** change it as per wish



STEP 18 - once login as done goto **menu>dashboard>connection> add conection> prometheus** Then open prometheus the config with local host and shown in given above image then **save and tes**t if it success it looks like below image



STEP 19 - create a dashboard to view metrics, metric below as given for instance usage this wil be set under queries section



Note: Launch an ec2 instance with http port 80 and prometheus and grafana port 3000 and 9090 for viewing prometheus and grafana dashboard