PROMETHEUS-**GRAFAN**A

1.Configure Prometheus

Create a user prometheus -

useradd – prometheus

Required directories-

mkdir /etc/prometheus

mkdir /var/lib/prometheus

Make prometheus user as the owner of those directories-

chown prometheus:prometheus /etc/prometheus

chown prometheus:prometheus /var/lib/prometheus

Download the source using wget

wget https://github.com/prometheus/prometheus/releases/download/v2.3.2/prometheus-2.3.2.linux-amd64.tar.gz

Untar it.

tar -xvzf prometheus-2.3.2.linux-amd64.tar.gz

Rename the extracted folder to prometheus-files

mv prometheus-2.3.2.linux-amd64 prometheus-files

Copy prometheus and promtool binary from prometheus-files folder to /usr/local/bin

cp prometheus-files/prometheus /usr/local/bin/

cp prometheus-files/promtool /usr/local/bin/

Change the ownership to prometheus user by using chown

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

Move the consoles and console_libraries directories from prometheus-files to /etc/prometheus folder

```
# cp -r prometheus-files/consoles /etc/prometheus
# cp -r prometheus-files/console_libraries /etc/prometheus
```

Change the ownership to prometheus user

```
# sudo chown -R prometheus:prometheus /etc/prometheus/consoles
# sudo chown -R prometheus:prometheus /etc/prometheus/console_libraries
```

Setup Prometheus Configuration

Step1: Create the prometheus.yml file.

Go to `# cd /etc/promotheus` creat prometheus.yml file

`# vi prometheus.yml`

Step2: Write following scripts on that prometheus.yml

```
global:
  scrape_interval: 10s
  evaluation_interval: 15s


scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    metrics_path: '/metrics'
    static_configs:
```

- targets: [192.168.5.208:9090']

Step 3: Change the ownership of the file to prometheus user.

chown prometheus:prometheus /etc/prometheus/prometheus.yml

Note :Whenever you do changes in prometheus.yml file .It is required to run Reload the systemd

systemctl daemon-reload

Step 4 : Create a prometheus service file. Write following scripts

vi /etc/systemd/system/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 --web.enable-admin-api \
--web.listen-address=:9090 \
--storage.tsdb.path /var/lib/prometheus/ \
--web.console.templates=/etc/prometheus/consoles \
--web.console.libraries=/etc/prometheus/console_libraries
[Install]
WantedBy=multi-user.target
```

systemctl daemon-reload

Start the prometheus service.

sudo systemctl start prometheus

Start the prometheus service.

systemctl start prometheus

Check the Status

systemctl status prometheus

Note *: prometheus working fine it's ok Otherwise Check the .yml file & execute below commands*

#systemctl stop prometheus.service

#systemctl status prometheus.service

```
[root@madhu prometheus]# systemctl stop prometheus.service
[root@madhu prometheus]# systemctl status prometheus.service
● prometheus.service
   Loaded: loaded (/etc/systemd/system/prometheus.service; static; vendor preset
   Active: failed (Result: exit-code) since Mon 2019-03-25 17:23:05 IST; 17min ag
 Main PID: 5649 (code=exited, status=1/FAILURE)

Mar 25 17:23:05 madhu systemd[1]: prometheus.service failed.
Mar 25 17:35:09 madhu systemd[1]: [/etc/systemd/system/prometheus.service:1] Ass
Mar 25 17:35:09 madhu systemd[1]: [/etc/systemd/system/prometheus.service:2] Ass
Mar 25 17:35:09 madhu systemd[1]: [/etc/systemd/system/prometheus.service:3] Ass
Mar 25 17:39:40 madhu systemd[1]: [/etc/systemd/system/prometheus.service:1] Ass
Mar 25 17:39:40 madhu systemd[1]: [/etc/systemd/system/prometheus.service:2] Ass
Mar 25 17:39:40 madhu systemd[1]: [/etc/systemd/system/prometheus.service:3] Ass
Mar 25 17:39:41 madhu systemd[1]: [/etc/systemd/system/prometheus.service:1] Ass
Mar 25 17:39:41 madhu systemd[1]: [/etc/systemd/system/prometheus.service:2] Ass
Mar 25 17:39:41 madhu systemd[1]: [/etc/systemd/system/prometheus.service:3] Ass
```

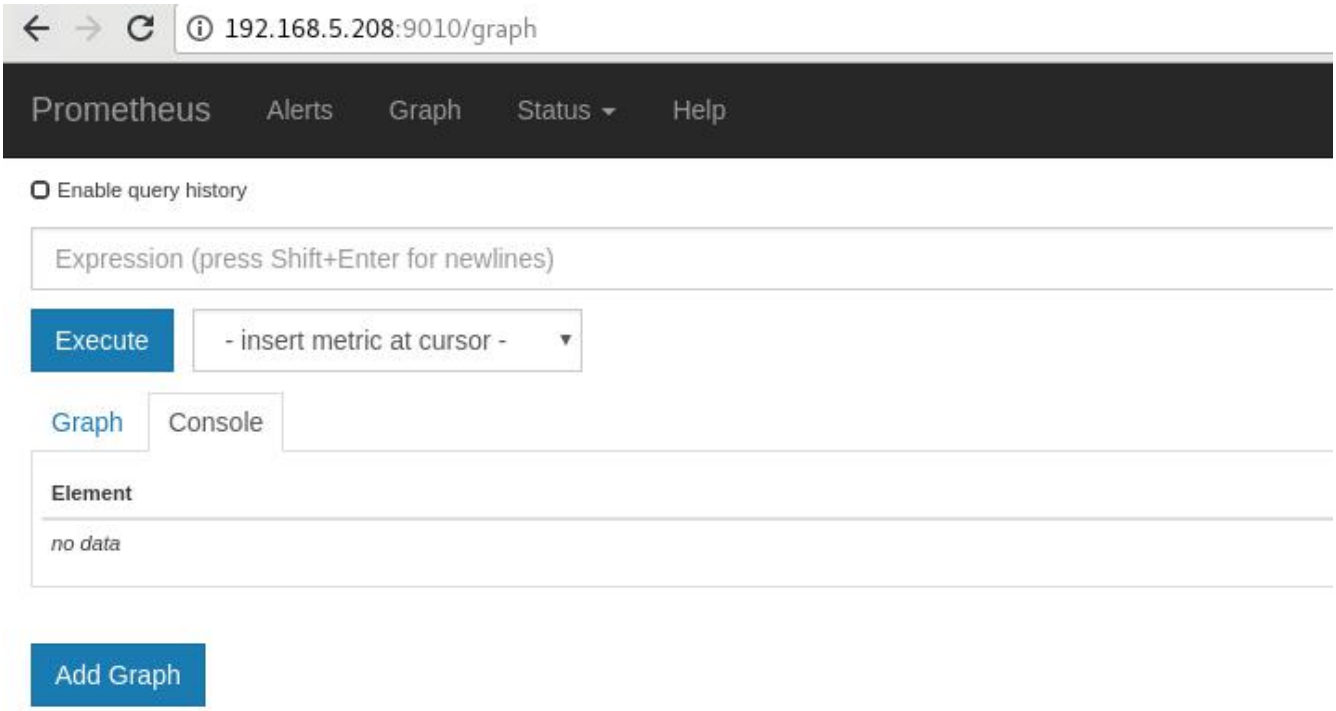
#systemctl start prometheus.service

#systemctl status prometheus.service

```
[root@madhu prometheus]# systemctl start  prometheus.service
[root@madhu prometheus]# systemctl status prometheus.service
● prometheus.service
   Loaded: loaded (/etc/systemd/system/prometheus.service; static; vendor preset: disabled)
   Active: active (running) since Mon 2019-03-25 17:40:44 IST; 3s ago
 Main PID: 7317 (prometheus)
   CGroup: /system.slice/prometheus.service
           └─7317 /usr/local/bin/prometheus --config.file /etc/prometheus/prometheus.yml --storage.tsdb.path /var/li

Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.469235081Z caller=main.go:222 msg="Startin
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.469307162Z caller=main.go:223 build_contex
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.469327525Z caller=main.go:224 host_details
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.469346124Z caller=main.go:225 fd_limits="(
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.469959663Z caller=main.go:533 msg="Startin
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.470024333Z caller=web.go:415 component=web
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.473532004Z caller=main.go:543 msg="TSDB st
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.473580511Z caller=main.go:603 msg="Loading
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.473809917Z caller=main.go:629 msg="Complet
Mar 25 17:40:44 madhu prometheus[7317]: level=info ts=2019-03-25T12:10:44.473827261Z caller=main.go:502 msg="Server
Hint: Some lines were ellipsized, use -l to show in full.
[root@madhu prometheus]# systemctl status prometheus
● prometheus.service
   Loaded: loaded (/etc/systemd/system/prometheus.service; static; vendor preset: disabled)
   Active: active (running) since Mon 2019-03-25 17:40:44 IST; 18s ago
 Main PID: 7317 (prometheus)
   CGroup: /system.slice/prometheus.service
           └─7317 /usr/local/bin/prometheus --config.file /etc/prometheus/prometheus.yml --storage.tsdb.path /var/li
```

Now open in browser http://192.168.5.208:9090 for Prometheus Dashboard.



You will get the dash board like this.

Prometheus port number is by default 9090. If u need to change the port number you can change in this path

cd /etc/systemd/system

vi prometheus.service

Add this to lines in to shown as below

--web.enable-admin-ap

```
[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 --web.enable-admin-ap
    --web.listen-address=:9010 \
    --storage.tsdb.path /var/lib/prometheus/ \
    --web.console.templates=/etc/prometheus/consoles \
    --web.console.libraries=/etc/prometheus/console_libraries
[Install]
WantedBy=multi-user.target
```

--web.listen-address=:9010 \In prometheus.yml file we need to add tomcat credintials (metrics) same as shown below.

madhukar@madhu:/etc/prometheus

```
global:
  scrape_interval: 10s
  evaluation_interval: 15s

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    metrics_path: '/metrics'
    static_configs:
      - targets: ['localhost:9010']
  - job_name: 'tomcat'
    scrape_interval: 5s
    metrics_path: '/metrics'
    static_configs:
      - targets: ['localhost:8090']

~
```

Prometheus MONITORING for Tomcat Server

1. download the 'tomcat_exporter_servlet' war file from

'https://search.maven.org/search?q=a:tomcat_exporter_servlet'

and rename the war with metrics.war and copy to webapp in tomcat server

2. download the below jar file from

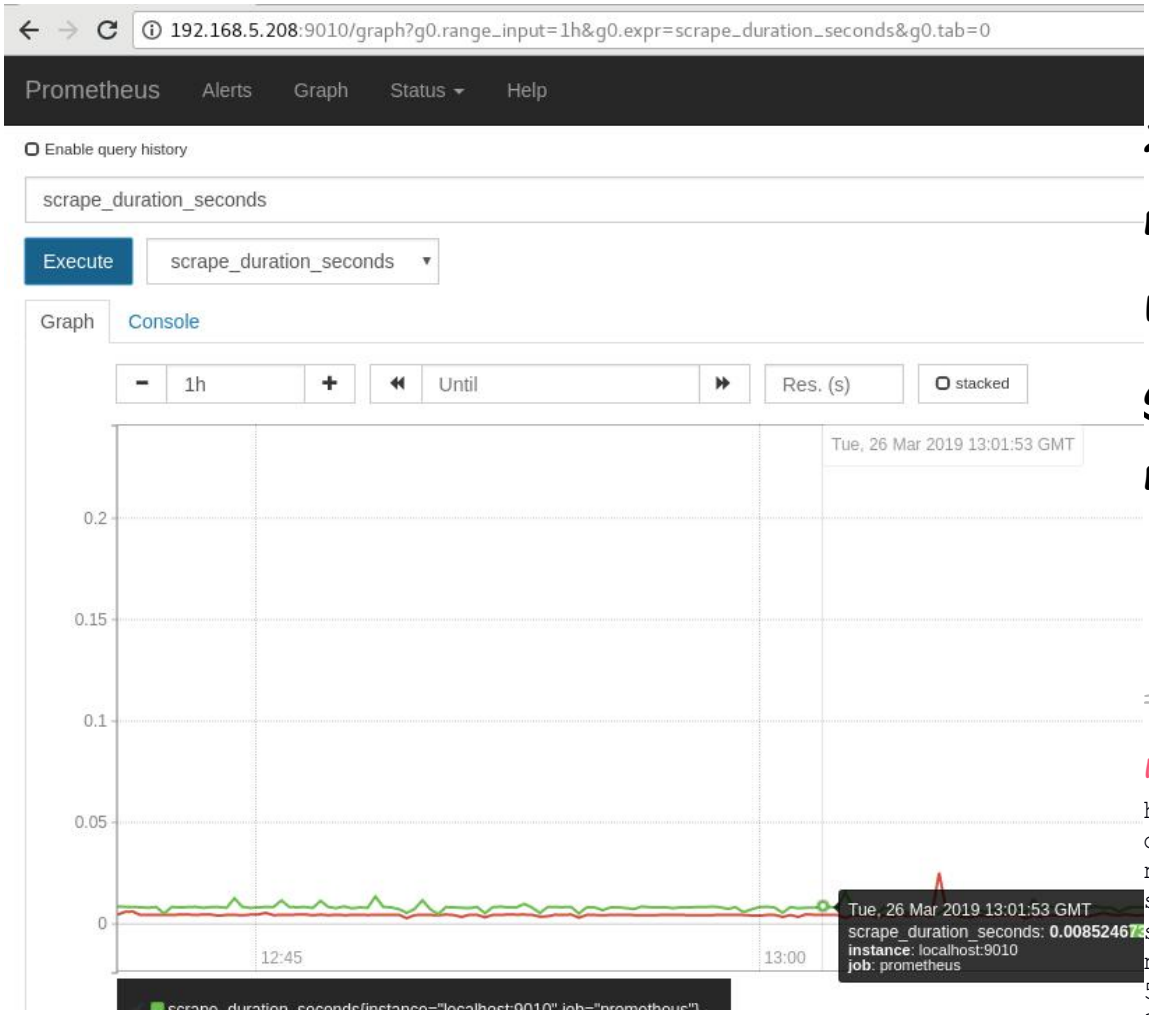
https://github.com/nlighten/tomcat_exporter

Copy to **tomcat/lib** in tomcat server.

1. simpleclient_common-0.6.0.jar
2. simpleclient-0.6.0.jar
3. simpleclient_servlet-0.6.0.jar
4. simpleclient_hotspot-0.6.0.jar
5. tomcat_exporter_client-0.0.7.jar

Restart the tomcat server & prometheus also.

Now open in browser http://192.168.5.208:9090 for Prometheus graph page



2.Configure grafana.

yum install https://dl.grafana.com/oss/release/grafana-5.4.2-1.x86_64.rpm

wget https://dl.grafana.com/oss/release/grafana-5.4.2-1.x86_64.rpm

yum install initscripts fontconfig

Create new repository for grafana and save it.

cd /etc/yum.repos.d
vi grafana.repo

add this one into grafana.repo

```
[grafana]
name=grafana
baseurl=https://packages.grafana.com/oss/rpm
repo_gpgcheck=1
enabled=1
gpgcheck=1
gpgkey=https://packages.grafana.com/gpg.key
sslverify=1
sslcacert=/etc/pki/tls/certs/ca-bundle.crt
```

yum install grafana

Now Run garfana by using--

sudo service grafana-server start

It can start at boot -

/sbin/chkconfig --add grafana-server

To start at Boot:

systemctl daemon-reload

systemctl start grafana-server

systemctl status grafana-server

systemctl enable grafana-server.service

```
[root@madhu grafana]# systemctl status grafana-server
● grafana-server.service - Grafana instance
   Loaded: loaded (/usr/lib/systemd/system/grafana-server.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2019-03-26 15:24:57 IST; 3h 53min ago
     Docs: http://docs.grafana.org
 Main PID: 18541 (grafana-server)
   Memory: 23.4M
   CGroup: /system.slice/grafana-server.service
           └─18541 /usr/sbin/grafana-server --config=/etc/grafana/grafana.ini --pidfile=/var/run/grafan

Mar 26 18:49:14 madhu grafana-server[18541]: 2019/03/26 18:49:14 http: proxy error: context canceled
Mar 26 18:49:14 madhu grafana-server[18541]: t=2019-03-26T18:49:14+0530 lvl=info msg="Request Completed
Mar 26 18:49:15 madhu grafana-server[18541]: 2019/03/26 18:49:15 http: proxy error: context canceled
Mar 26 18:49:15 madhu grafana-server[18541]: t=2019-03-26T18:49:15+0530 lvl=info msg="Request Completed
Mar 26 18:49:15 madhu grafana-server[18541]: 2019/03/26 18:49:15 http: proxy error: context canceled
Mar 26 18:49:15 madhu grafana-server[18541]: t=2019-03-26T18:49:15+0530 lvl=info msg="Request Completed
Mar 26 18:49:15 madhu grafana-server[18541]: 2019/03/26 18:49:15 http: proxy error: context canceled
Mar 26 18:49:15 madhu grafana-server[18541]: t=2019-03-26T18:49:15+0530 lvl=info msg="Request Completed
Mar 26 18:49:16 madhu grafana-server[18541]: 2019/03/26 18:49:16 http: proxy error: context canceled
Mar 26 18:49:16 madhu grafana-server[18541]: t=2019-03-26T18:49:16+0530 lvl=info msg="Request Completed
Hint: Some lines were ellipsized, use -l to show in full.
[root@madhu grafana]#
```

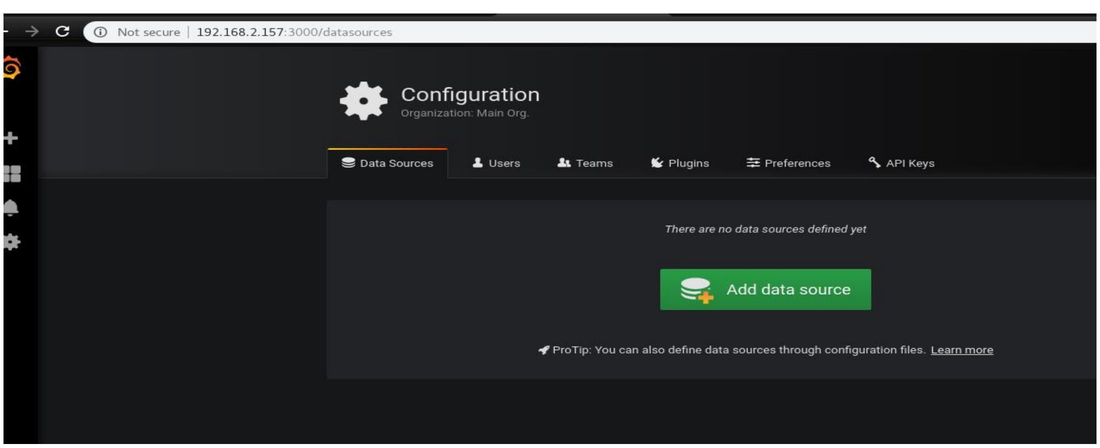
Once grafana configured, go to 192.168.5.208:3000 It will log credentials

Default User name and password will be **admin/admin**

If u need to check u can Check this file—**etc/grafana/grafana.ini**

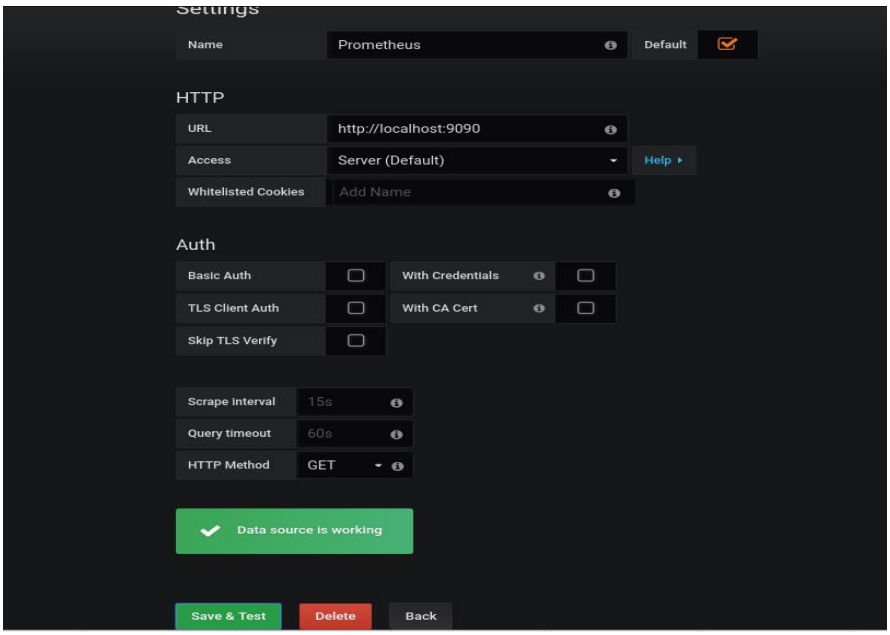
here u can change the poart number also

Go to Add Data Sources there find Prometheus.

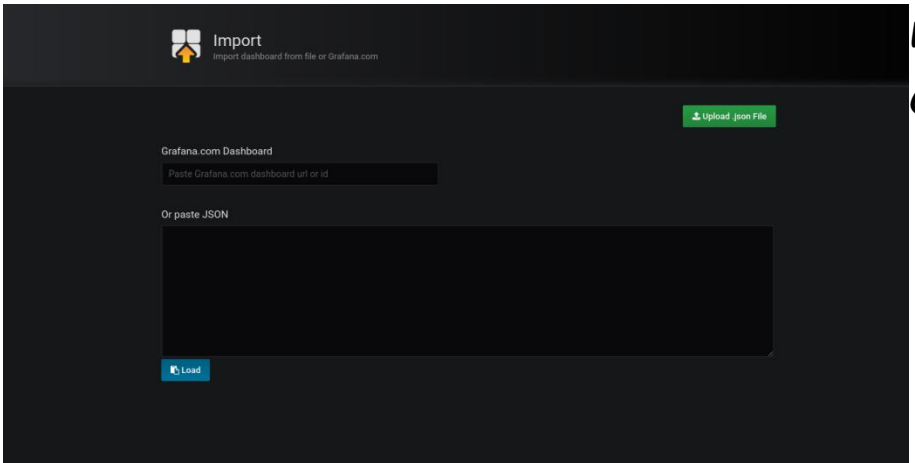


Add Prometheus as data source.

Enter URL & If it is correct it will show-Data source is Working.



Here, You will get JVM Overview ---
Click on Copy Id clipboard copy – 3066
>Download .JSON file also



Import JVM OVERVIEW.

Dashboard ID

http://192.168.5.208:3000/d/fa1r1eqmz/jvm-overview-prometheus?orgId=1

Spring boot Application configurtion

cd /etc/prometheus
vim vi prometheus.yml (Add this below lines)

```
global:
  scrape_interval: 10s
  evaluation_interval: 15s

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    metrics_path: '/metrics'
    scheme: http
    static_configs:
      - targets: [192.168.2.167:9090]
  - job_name: 'spring-boot'
    scrape_interval: 5s
    metrics_path: '/pos-service/actuator/prometheus'
```

static_configs:
- targets: ['192.168.0.85:9095']

$ systemctl restart prometheus

$ systemctl restart grafana-server.service

and go to grafana dashboard and import the *Spring Boot Statistics*

using this url:-
https://grafana.com/dashboards/8813