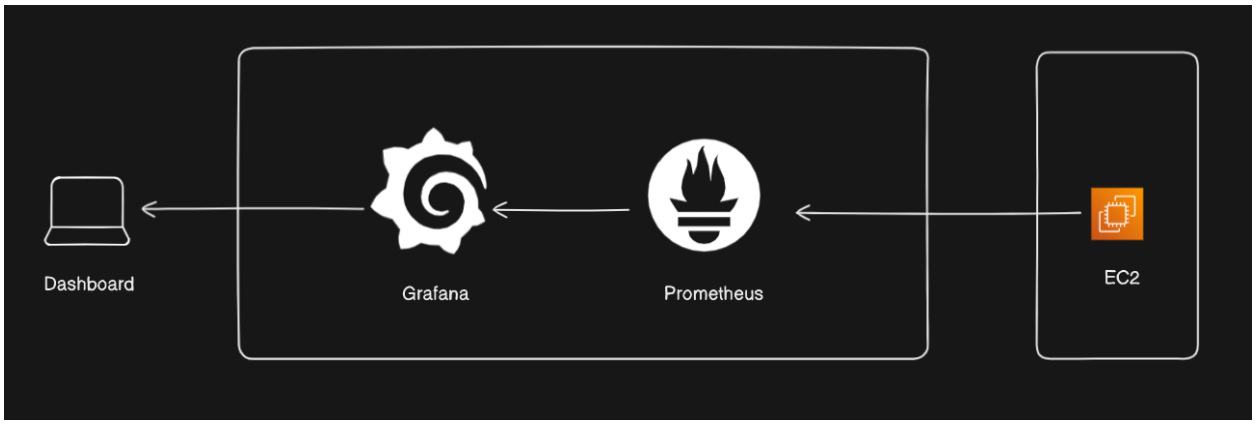
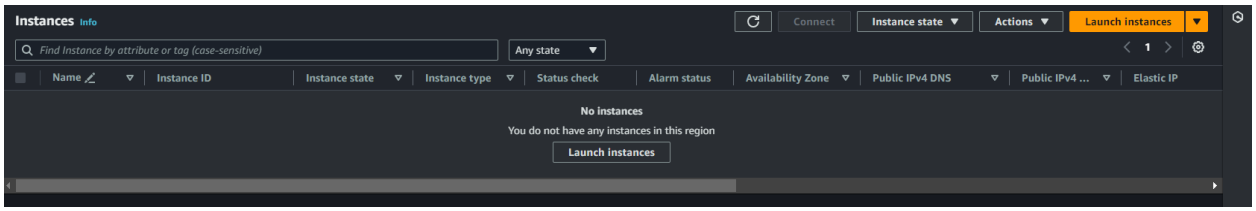
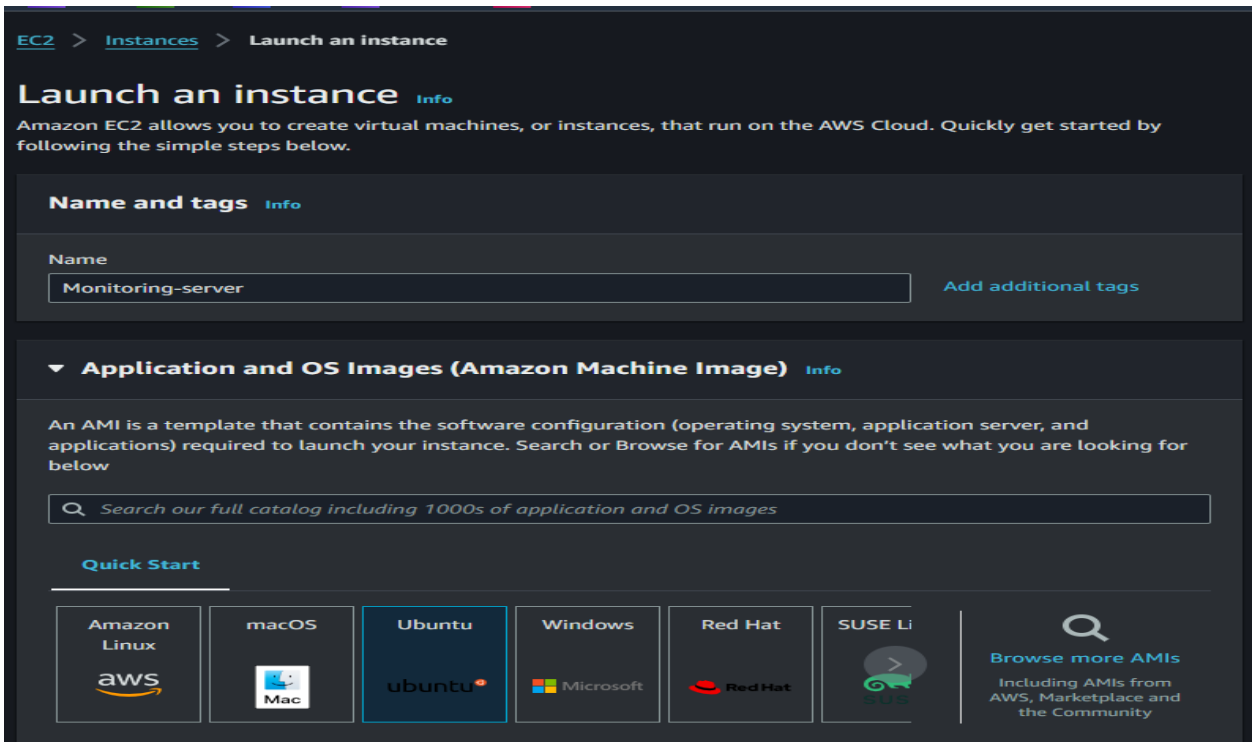
Name: - Prajwal Patil

Task: - Monitoring Your Infrastructure with Grafana and Prometheus: A Comprehensive Guide



1) Launch Instances





Amazon Machine Image (AMI)

Ubuntu Server 22.04 LTS (HVM), SSD Volume Type — Free tier eligible
ami-03f4878755434977f (64-bit (x86)) / ami-077885f59ecb77b84 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Canonical, Ubuntu, 22.04 LTS, amd64 jammy image build on 2023-12-07

Architecture: 64-bit (x86)

AMI ID: ami-03f4878755434977f — Verified provider

Instance type Info | Get advice

Instance type

t2.micro — Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0724 USD per Hour
On-Demand SUSE base pricing: 0.0124 USD per Hour

All generations

Compare instance types

Additional costs apply for AMIs with pre-installed software

Key pair (login) Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*: Mumbai_new_AD

Create new key pair

Network settings Info

Edit

Network | Info
vpc-00c3ebfca0fa4dfc5

Subnet | Info
No preference (Default subnet in any availability zone)

Auto-assign public IP | Info
Enable

Firewall (security groups) | Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

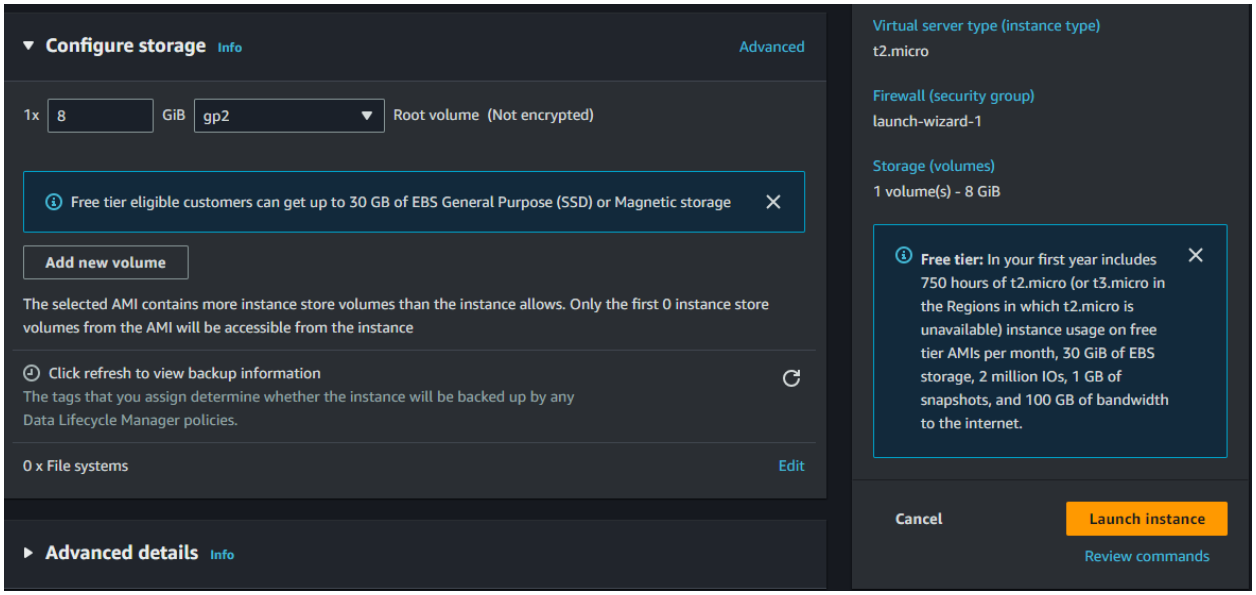
(•) Create security group ( ) Select existing security group

We'll create a new security group called '**launch-wizard-4**' with the following rules:

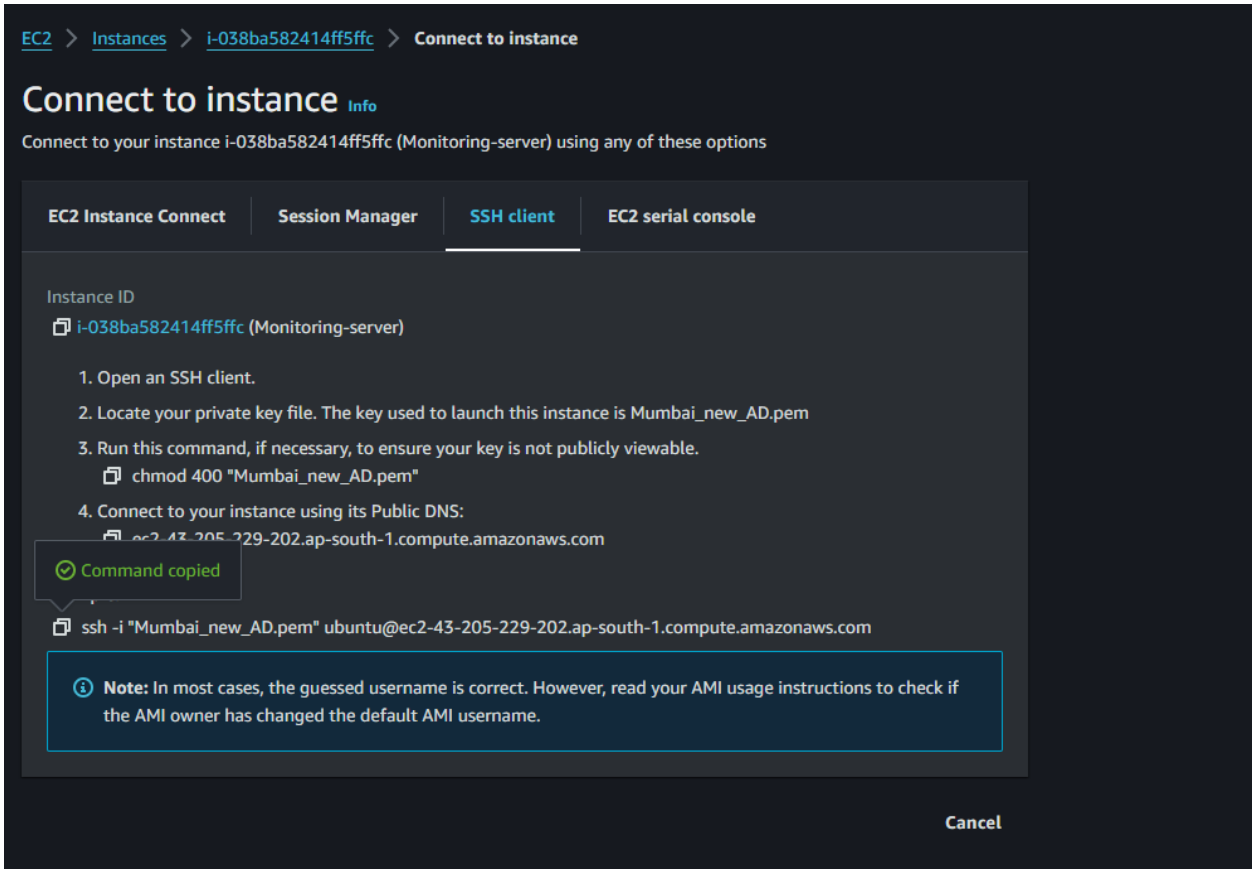
[x] Allow SSH traffic from — Anywhere 0.0.0.0/0
Helps you connect to your instance

[ ] Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

[ ] Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server



2) Connect to Instance



```
Administrator@WindowsPC MINGW64 ~/Downloads (master)
$ ssh -i "Mumbai_new_AD.pem" ubuntu@ec2-43-205-229-202.ap-south-1.compute.amazonaws.com
The authenticity of host 'ec2-43-205-229-202.ap-south-1.compute.amazonaws.com (43.205.229.202)' can't be established.
ED25519 key fingerprint is SHA256:LXfsfZ/xEhB62H9Q47xGeXOzn6Ko3ovlt5sxwCyvIOo.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-43-205-229-202.ap-south-1.compute.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1017-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Tue Jan 30 08:26:24 UTC 2024

  System load:  0.0               Processes:             98
  Usage of /:   16.4% of 9.51GB   Users logged in:       0
  Memory usage: 21%               IPv4 address for eth0: 172.31.39.112
  Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-39-112:~$
```

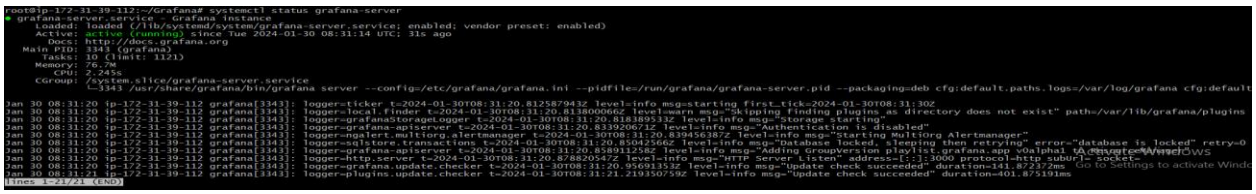
3) Install Grafana

```
ubuntu@ip-172-31-39-112:~$ sudo -i
root@ip-172-31-39-112:~# mkdir Grafana
root@ip-172-31-39-112:~# ls
Grafana  snap
root@ip-172-31-39-112:~# cd Grafana/
root@ip-172-31-39-112:~/Grafana# ls
root@ip-172-31-39-112:~/Grafana# vim Install-Grafana.sh
root@ip-172-31-39-112:~/Grafana# chmod +X Install-Grafana.sh
root@ip-172-31-39-112:~/Grafana# ls
Install-Grafana.sh
```

```
root@ip-172-31-39-112:~/Grafana# chmod +x Install-Grafana.sh
root@ip-172-31-39-112:~/Grafana# ls
Install-Grafana.sh
```

```
root@ip-172-31-39-112:~/Grafana# sudo systemctl start grafana-server
sudo systemctl enable grafana-server
Synchronizing state of grafana-server.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable grafana-server
Created symlink /etc/systemd/system/multi-user.target.wants/grafana-server.service → /lib/systemd/system/grafana-server.service.
root@ip-172-31-39-112:~/Grafana#
```

4) Grafana run

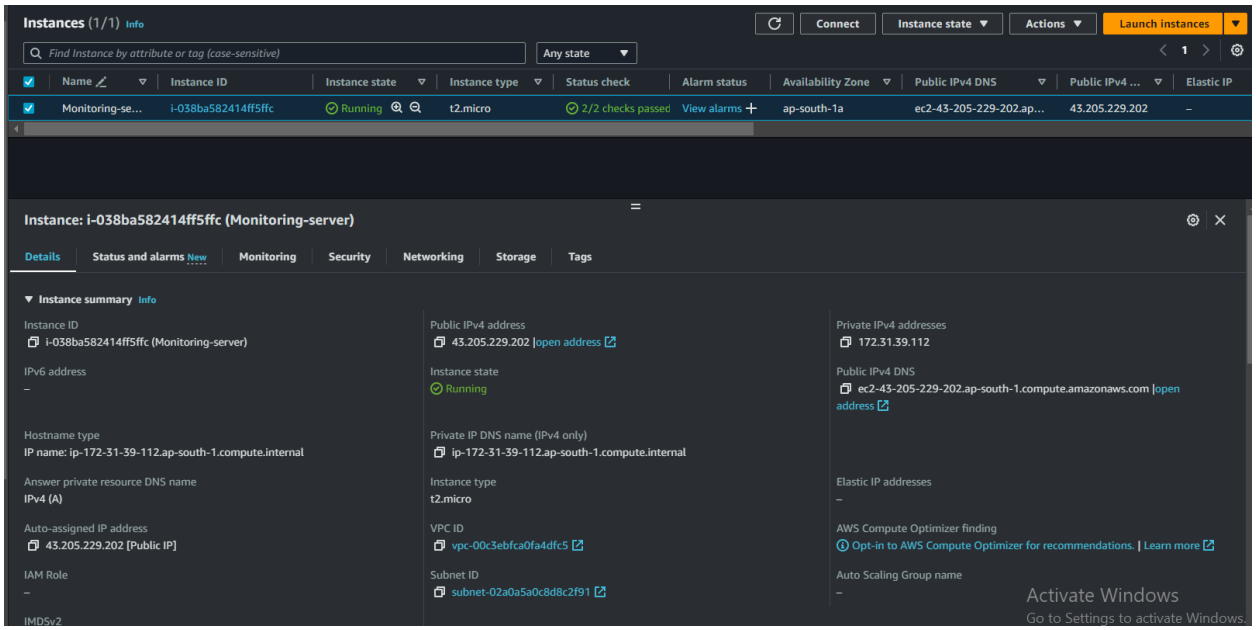


5) Install Prometheus

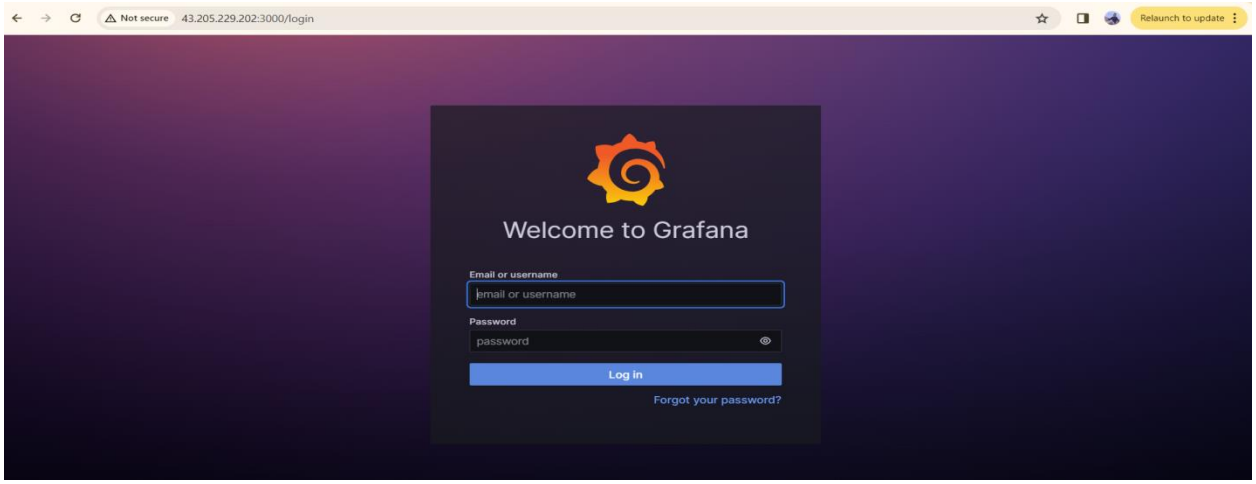
```
root@ip-172-31-39-112:~/Grafana# sudo apt-get install prometheus
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  fonts-glyphicons-halflings javascript-common libio-pty-perl libipc-run-perl libjs-bootstrap
```

```
root@ip-172-31-39-112:~/Grafana# sudo systemctl status prometheus
● prometheus.service - Monitoring system and time series database
     Loaded: loaded (/lib/systemd/system/prometheus.service; enabled; vendor preset: enabled)
     Active: active (running) since Tue 2024-01-30 08:32:52 UTC; 22s ago
       Docs: https://prometheus.io/docs/introduction/overview/
             man:prometheus(1)
   Main PID: 4484 (prometheus)
      Tasks: 7 (limit: 1121)
     Memory: 18.5M
        CPU: 156ms
     CGroup: /system.slice/prometheus.service
             └─4484 /usr/bin/prometheus
```

6) Take Public IP

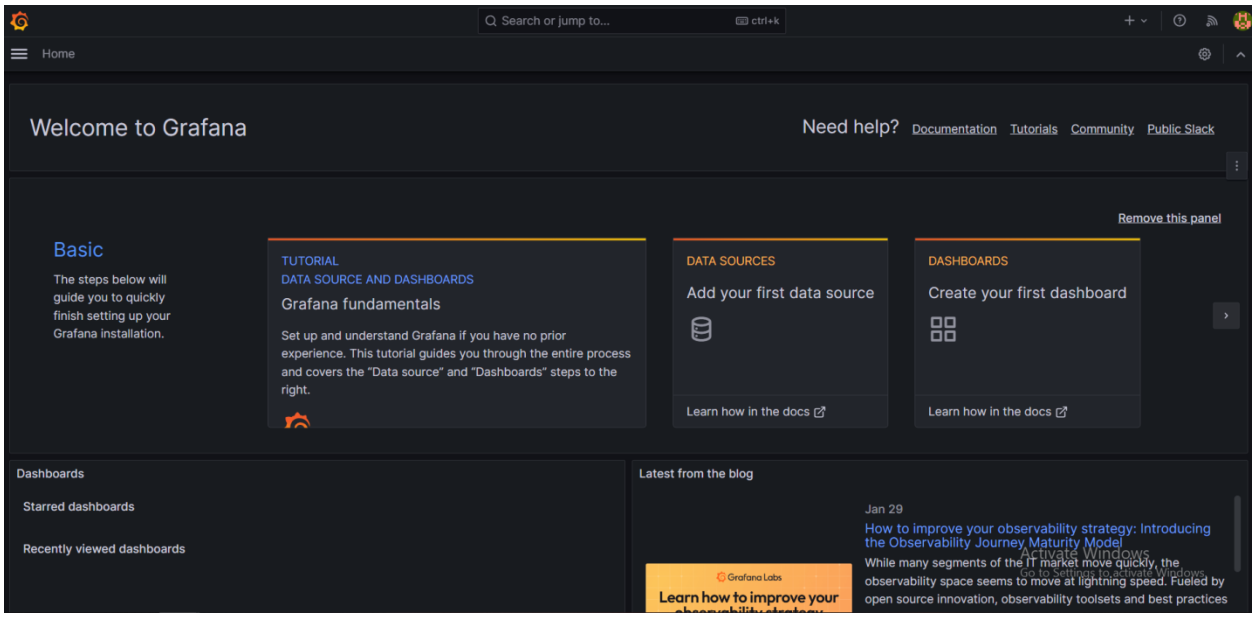


7) Open Grafana Dashboard

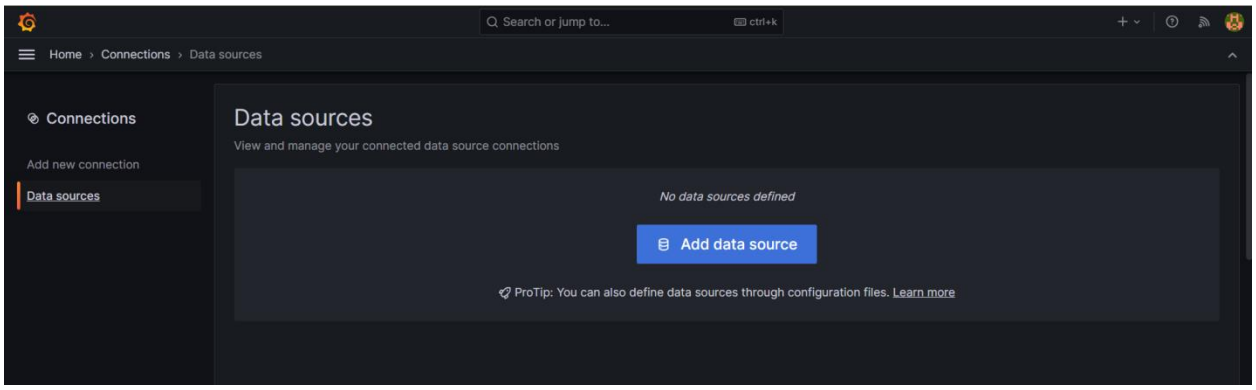


8) Open Prometheus

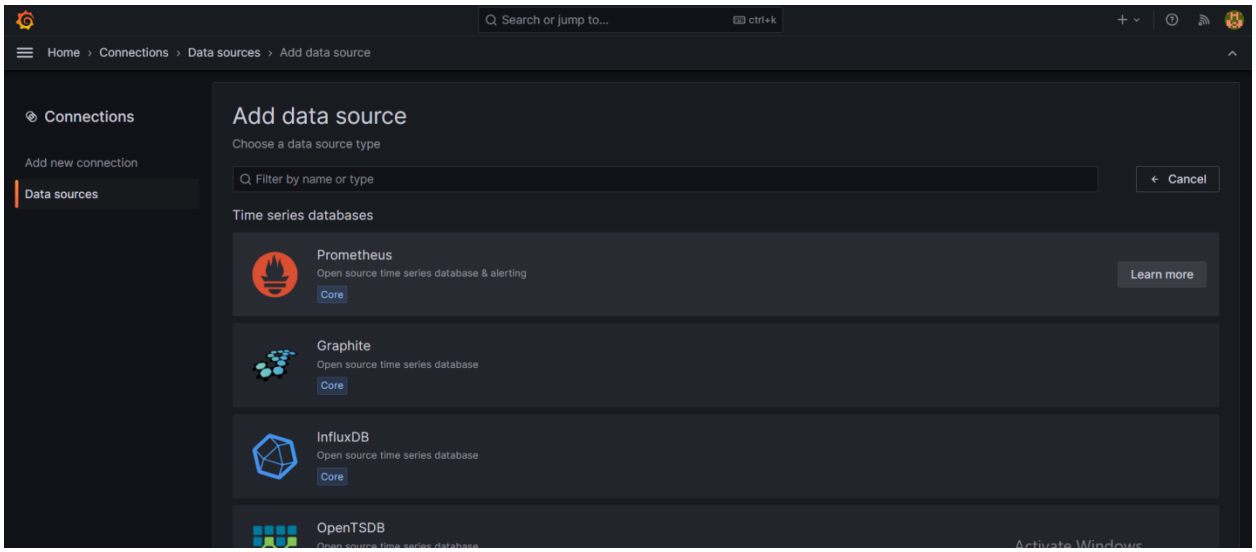
9) Grafana Dashboard

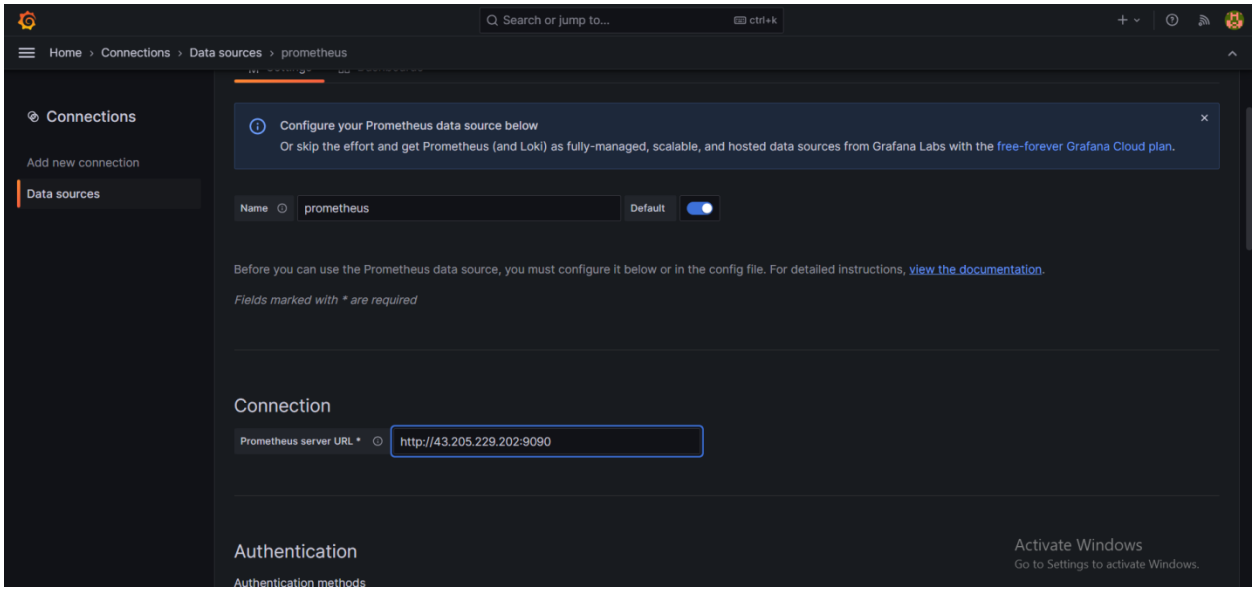


10) Add data source

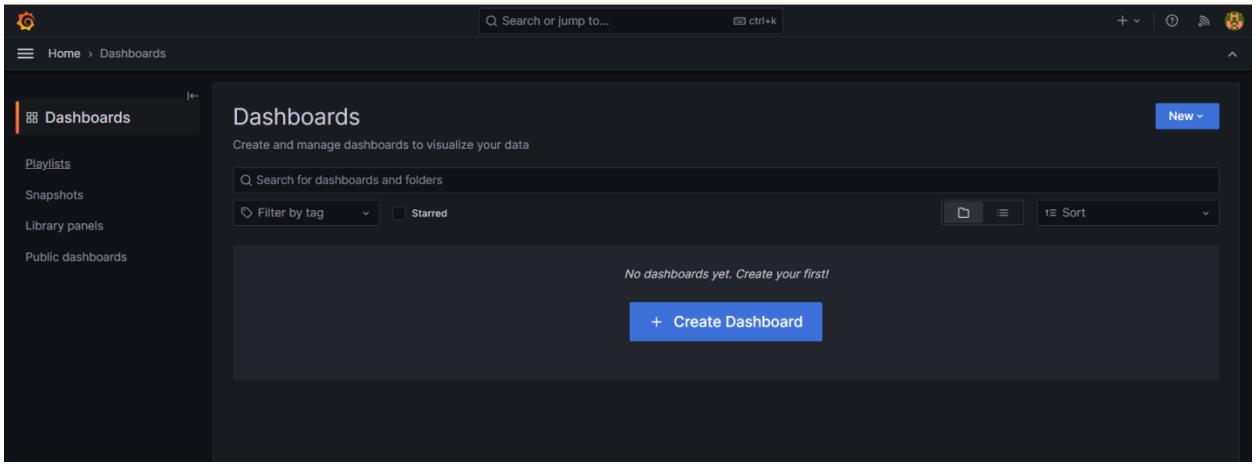


11) Integrate Prometheus

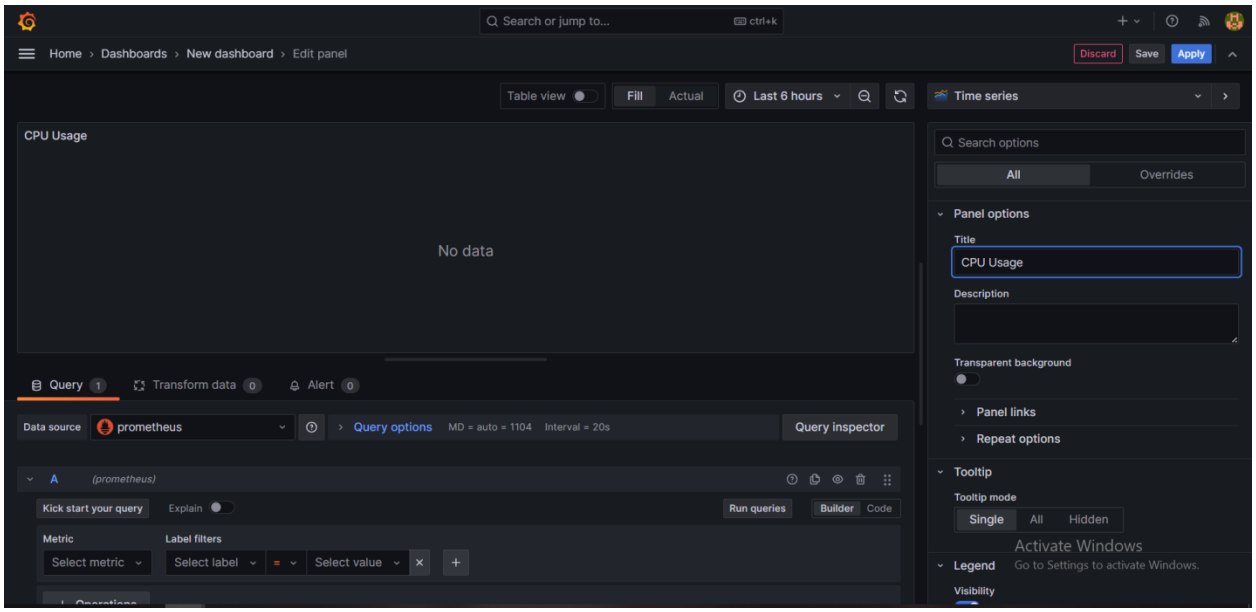




12) Create Dashboard

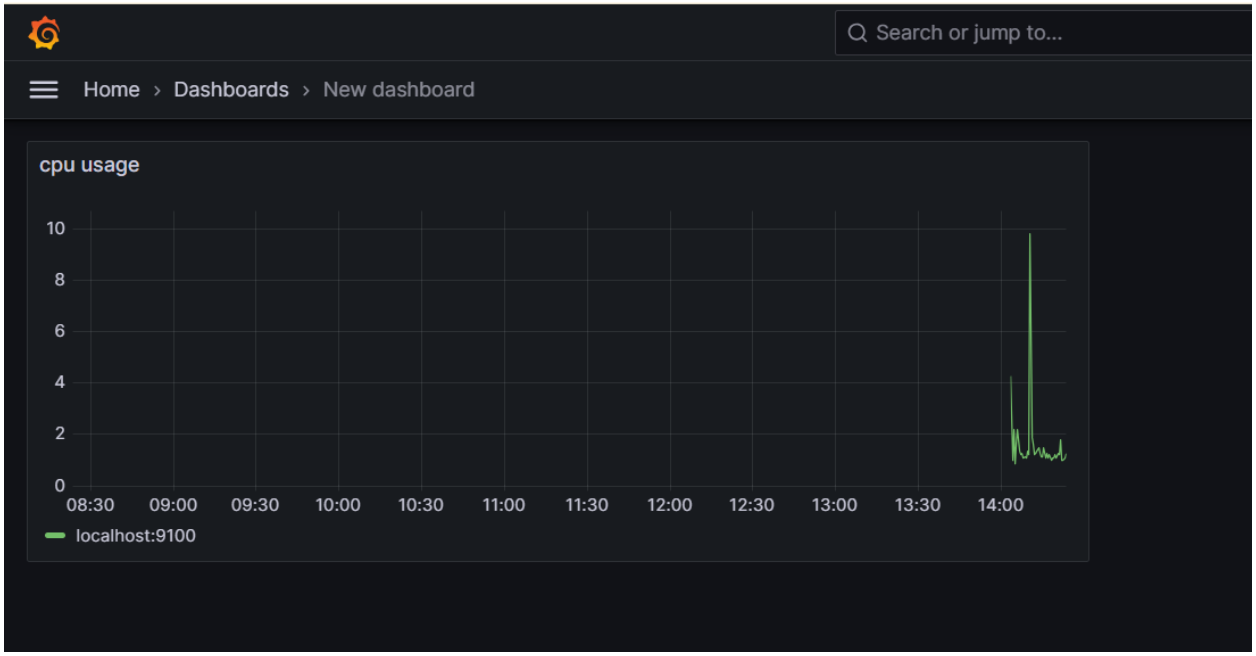


13) Create CPU Usage Dashboard

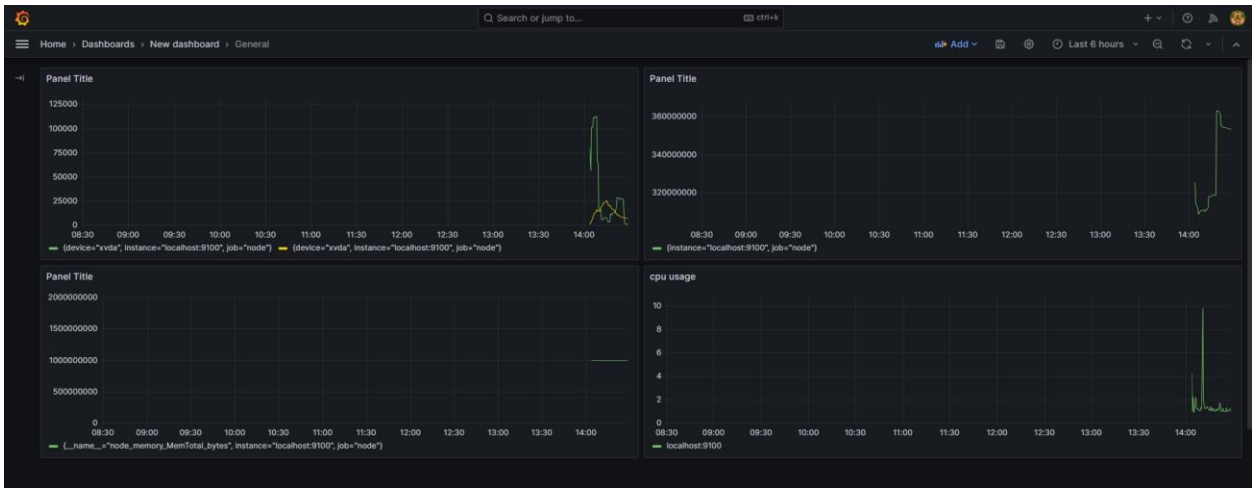


14) Set up CPU metrics

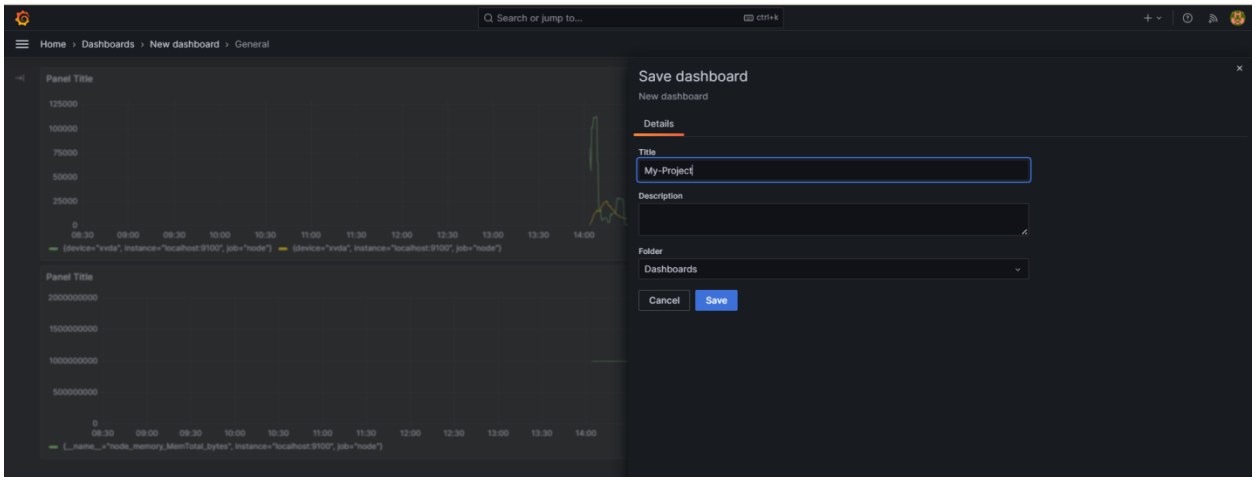
15) Run CPU queries



16) Add more Dashboard



17) Save Dashboard



18) Install Stress

```
root@ip-172-31-39-112:~# sudo apt-get install stress
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  stress
0 upgraded, 1 newly installed, 0 to remove and 55 not upgraded.
Need to get 18.4 kB of archives.
After this operation, 52.2 kB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 stress amd64 1.0.5-1 [18.4 kB]
Fetched 18.4 kB in 0s (45.3 kB/s)
Selecting previously unselected package stress.
(Reading database ... 76102 files and directories currently installed.)
```

19) Resource Monitoring