PROJECT-3

Integrate Grafana with Linux Server for high cpu utilization and create a graph in Grafana

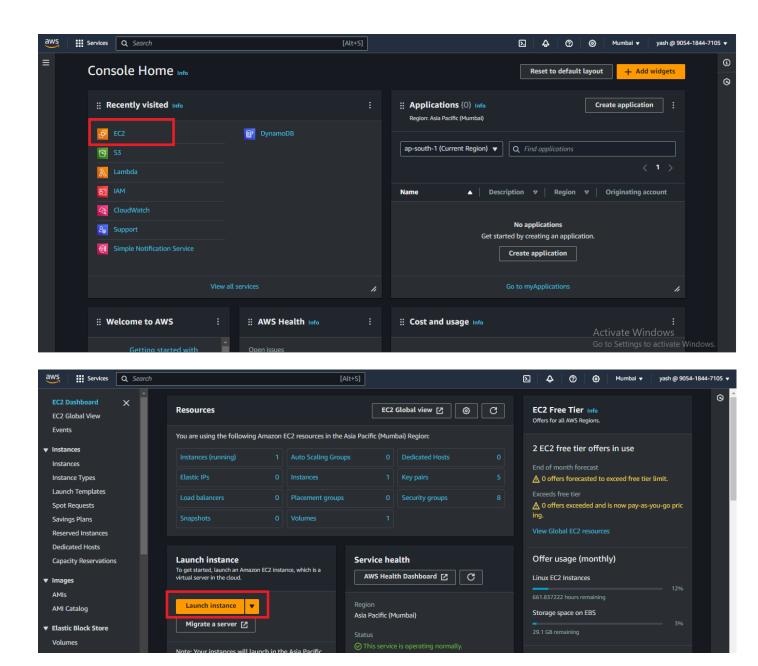
LAB STEPS:-

❖ Sign in to AWS Management Console

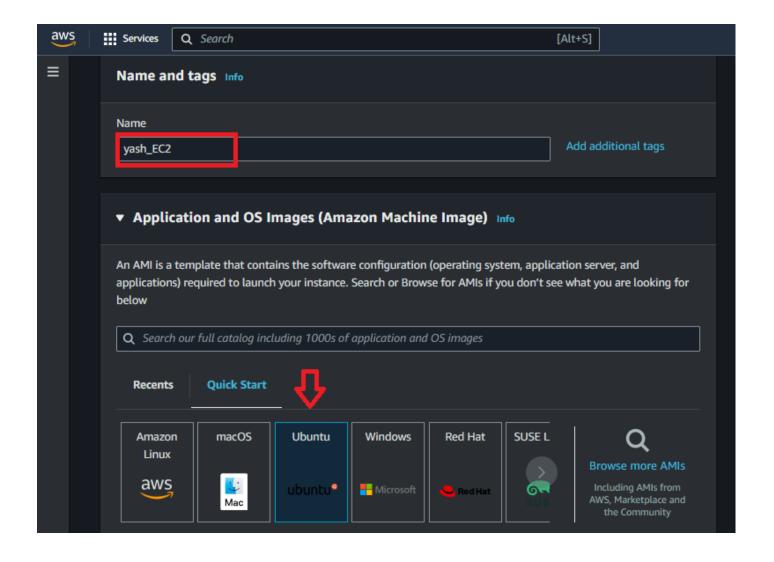
- 1. Click on the Open Console button, and you will get redirected to AWS Console in a new browser tab.
- 2. On the AWS sign-in page,
 - ❖ Leave the Account ID as default. Never edit/remove the 12 digit Account ID present in the AWS Console. otherwise, you cannot proceed with the lab.
 - Now copy your User Name and Password in the Lab Console to the IAM Username and Password in AWS Console and click on the Sign in button.
- 3. Once Signed In to the AWS Management Console, Make the default AWS Region as US East (N. Virginia) us-east-1.

Create an EC2 Instance(ubuntu):

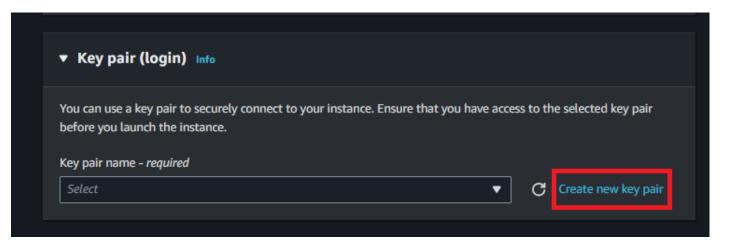
 For creating an EC2 instance follow the following steps as shown in snapshots.

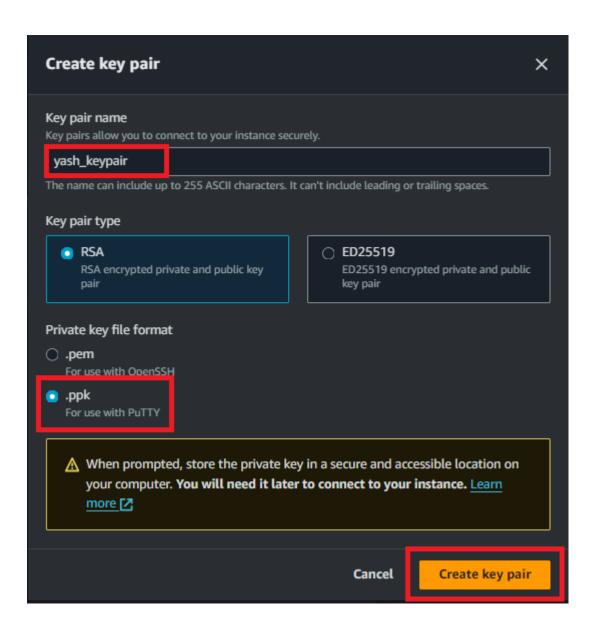


 Provide the EC2 name of your choise and select "Ubuntu" as an OS Image.

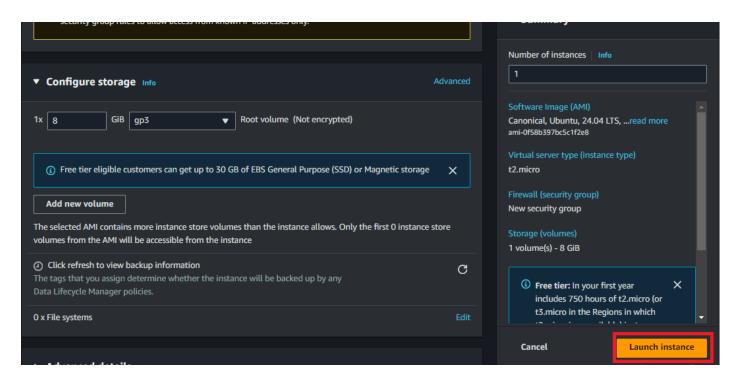


• Create a New Key Pair.

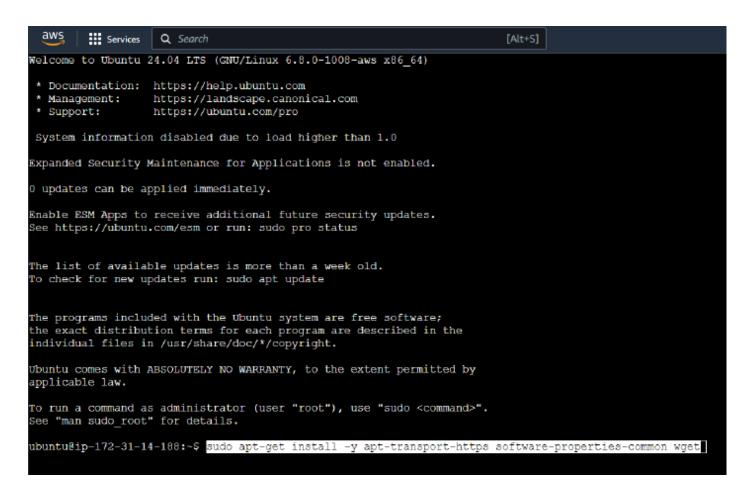




• Scroll down and click on Launch Instance.



- Then open your instance and connect that instance by putty or on web browser.
- After connecting the instance follow the given command or read Grafana documentation for help.



 sudo apt-get install -y apt-transport-https software-propertiescommon

```
aws
         Services Q Search
                                                                                 [Alt+S]
Expanded Security Maintenance for Applications is not enabled.
  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.
Fo run a command as administrator (user "root"), use "sudo <command>".
See "man sudo root" for details.
ubuntu@ip-172-31-14-188:~$ sudo apt-get install -y apt-transport-https software-properties-common wget
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.
software-properties-common is already the newest version (0.99.48). software-properties-common set to manually installed.
wget is already the newest version (1.21.4-1ubuntu4).
wget set to manually installed.
O upgraded, O newly installed, O to remove and O not upgraded.
ubuntu@ip-172-31-14-188:~$ sudo mkdir -p /etc/apt/keyrings/
              https://apt.grafana.com/gpg.key | gpg -
                                                                    | sudo tee /etc/apt/keyrings/grafana.gpg >
```

sudo mkdir -p /etc/apt/keyrings/wget -q -O https://apt.grafana.com/gpg.key | gpg --dearmor | sudo tee
/etc/apt/keyrings/grafana.gpg > /dev/null

```
O updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.

See https://dubuntu.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 includes with the Ubuntu system are free software/
the exect 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.

ubuntu8ip-172-31-14-188:-5 sudo apt-get install -y apt-transport-https software-properties-common wyet
Reading package lists... bone
nuilding dependency tree... bone
Reading state information... bone
Note, selecting 'apt' instead of 'apt-transport-https'
apt is already the newest version (2.7.14build2).

apt set to manually installed.

Software-properties-common is already the newest version (0.99.48).

software-properties-common set to manually installed.

wypt is already the newest version (1.21.4-lubuntu4).

wypt is already the newest version (1.21.4-lubuntu4).

wypt is already the newest version (1.21.4-lubuntu4).

wypt set to manually installed. Or oremove and 0 not upgraded.

ubuntu8ip-172-31-14-188:-$ sudo mkdir -p /etc/apt/keyrings/yrafana.opg] https://apt.gafana.com stable main" | sudo tee -a /etc/apt/sources.list.d/grafana.it
```

echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg]
 https://apt.grafana.com stable main" | sudo tee -a /etc/apt/sources.list.d/grafana.list

```
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 rikes 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 <commando".
See "man sudo root" for details.

ubuntu@ip=172-31-14-188:-$ sudo apt-get install -y apt-transport-https software-properties-common wget
Reading package lists... Done
Ruiding dependency tree... Done
Note, selecting 'apt' instead of 'apt-transport-https'
apt is already the newest version (2.7.14build2).

software-properties-common is already the newest version (0.99.48).
software-properties-common set to annually installed.

viget is already the newest version (1.21.4-lubuntu4).

viget set to manually installed.

0 uppraded, 0 newly installed, 0 to remove and 0 not upgraded.

ubuntu8ip-172-31-14-188:-$ sudo midit - y /etc./apt/keyrings/grafana.gpg > /dev/null

ubuntu8ip-172-31-14-188:-$ sudo midit - y /etc./apt/keyrings/grafana.gpg > /dev/null

ubuntu8ip-172-31-14-188:-$ com feed [signed-by-/etc/apt/keyrings/grafana.com stable main

ubuntu8ip-172-31-14-188:-$ com feed [signed-by-/etc/apt/keyrings/grafana.com stable main
```

To updates the list of available packages

sudo apt-get update

```
Get:22 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [25.1 kB]
Get:23 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [45.0 kB]
Get:24 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [112 B]
Get:25 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [70.1 kB]
Get:26 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [14.3 kB]
Get:27 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:28 http://ap-south-l.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [2968 B]
Get:29 http://ap-south-l.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [968 B]
Get:30 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [212 B]
Get:31 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [116 B]
Get:32 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:33 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:34 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [6840 B]
Get:35 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [9652 B]
Get:36 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Get:37 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [116 B]
Get:38 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:39 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:40 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:41 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:42 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [158 kB]
Get:43 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [41.5 kB]
Get:44 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [6876 B]
Get:45 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Fackages [44.4 kB]
Get:46 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [17.0 kB]
Get:47 https://apt.grafana.com stable/main amd64 Packages [250 kB]
Get:48 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [8632 B]
Get:49 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [112 B]
Get:50 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [70.1 kB]
Get:51 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [14.3 kB]
Get:52 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:53 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:54 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [116 B]
Fetched 29.4 MB in 6s (4962 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-14-188:~$ sudo apt-get install grafana-enterprise
```

To installs the latest Enterprise release:

sudo apt-get install grafana-enterprise

```
Cot:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 musl amd64 1.2.4-2 [416 kB]
Cot:2 https://apt.grafana.com stable/main amd66 grafana-onterprise amd64 11.0.0 [120 MB]
Fortched 121 MB in 18 [10.5 MB/S)
Selecting previously unselected package musl:amd64.

Reading database ... 71835 files and directories currently installed.)
Preparing to unpack ... /musl 1.2.4-2_amd64.deb ...
Unpacking previously unselected package grafana-enterprise.
Preparing to unpack ... /musl 1.2.4-2_amd64.deb ...
Unpacking grafana-enterprise (11.0.0) ...
Setting up grafana-enterprise (11.0.0) ...
Setting up grafana-enterprise (11.0.0) ...
Setting up grafana-enterprise (11.0.0) ...
info: Selecting UID from range 100 to 999 ...

info: Adding system user 'grafana' (UID 111) ...
info: Adding new user 'grafana' (UID 111) with group 'grafana' ...
info: Not creating home directory 'yusr/share/grafana' ...
info: Not creating home directory 'yusr/share/grafana' ...
info: Not creating home directory 'yusr/share/grafana' ...
info: Not a start grafana server by executing
sudo /bin/systemctl daebon-reload
sudo /bin/systemctl start grafana-server
flyf You can start grafana-server by executing
sudo /bin/systemctl start grafana-server
processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...

Scanning brocesses...

Running kernel seems to be up-to-date.

No services need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated binaries.
```

sudo systemctl start grafana-server

```
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=provisioning.dashboard t=2024-06-18T15:11:38.331125089z level=info msg="starting to provision dashboards"
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=provisioning.dashboard t=2024-06-18T15:11:38.331155154z level=info msg="finished to provision dashboards"
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=provisioning.dashboard t=2024-06-18T15:11:38.331155154z level=info msg="finished to provision dashboards"
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=sqlstore.transactions t=2024-06-18T15:11:38.49382274z level=info msg="Database locked, sleeping then retryip:
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=plugins.update.checker t=2024-06-18T15:11:38.15065191z level=info msg="Update check succeeded" duration=5540
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=grafana.update.checker t=2024-06-18T15:11:38.853932226z level=info msg="Update check succeeded" duration=5540
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=grafana.update.checker t=2024-06-18T15:11:39.39390342z level=info msg="Wadding GroupVersion playlist.grafana.app
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=grafana-apiserver t=2024-06-18T15:11:39.383960342z level=info msg="Adding GroupVersion playlist.grafana.app
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=grafana-apiserver t=2024-06-18T15:11:39.383960342z level=info msg="Adding GroupVersion featuretoggle.grafana.app
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=grafana-apiserver t=2024-06-18T15:11:39.383960342z level=info msg="Adding GroupVersion featuretoggle.grafana.apiserver t=2024-06-18T15:11:39.384644464z level=info msg="Adding GroupVersion featuretoggle.grafana.apiserver t=2024-06-18T15:11:39.383960342z level=info msg="Adding GroupVersion featuretoggle.grafana.apiserver t=2024-06-18T15:11:39.383960342z level=info msg="Adding GroupVersion featuretoggle.grafana.apiserver t=2024-06-18T15:11:39.38464464z level=info msg="Adding GroupVersion featuretoggle.grafana.api
```

sudo systemctl enable grafana-server.service

```
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=provisioning.dashboard t=2024-06-18T15:11:38.331125089z level=info msg="starting to provision dashboards"
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=provisioning.dashboard t=2024-06-18T15:11:38.331155154z level=info msg="finished to provision dashboards"
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=provisioning.dashboard t=2024-06-18T15:11:38.331155154z level=info msg="finished to provision dashboards"
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=provisioning.dashboard t=2024-06-18T15:11:38.330388573z level=info msg="matter address=[::]3000 protocol=5
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=sqlstore.transactions t=2024-06-18T15:11:38.516065191z level=info msg="Database locked, sleeping then retryis
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=plugins.update.checker t=2024-06-18T15:11:38.516065191z level=info msg="Database locked, sleeping then retryis
Jun 18 15:11:38 ip-172-31-14-188 grafana[2028]: logger=plugins.update.checker t=2024-06-18T15:11:38.833932226z level=info msg="Database locked, sleeping then retryis
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=plugins.angulardetectorsprovider.dynamic t=2024-06-18T15:11:39.007963038z level=info msg="Patterns update finished to provision dashboards"
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=plugins.angulardetectorsprovider.dynamic t=2024-06-18T15:11:39.007963038z level=info msg="Patterns update finished to provision dashboards"
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=provision plugins.angulardetectorsprovider.dynamic t=2024-06-18T15:11:39.30398034zz level=info msg="Adding GroupVersion plugins.grafana.app
Jun 18 15:11:39 ip-172-31-14-188 grafana[2028]: logger=grafana-apiserver t=2024-06-18T15:11:39.38398034zz level=info msg="Adding GroupVersion plugins.grafana.app"
Jun 18 15:11:39 ip-172-31-14-188 grafana-server.service with Sysv service script with /usr/lib/systemd/systemd-sysv-install.

Executing: /usr/lib/systemd/sy
```

sudo systemctl status grafana-server.service

```
Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

ubuntu@ip-172-31-14-188:-$ sudo systemctl start grafana-server

ubuntu@ip-172-31-14-188:-$ sudo systemctl status grafana-server

ubuntu@ip-172-31-14-188:-$ sudo systemctl status grafana-server

• grafana-server.service - Grafana instance

Loaded: loaded (/usr/lb/systemd/system/grafana-server.service; disabled; preset: enabled)

Active: active (running) since Tue 2024-06-18 15:11:29 UTC; 21s ago

Docs: neceptions active (running)

Main PID: 2028 (grafana)

Tasks: 16 (limit: 1130)

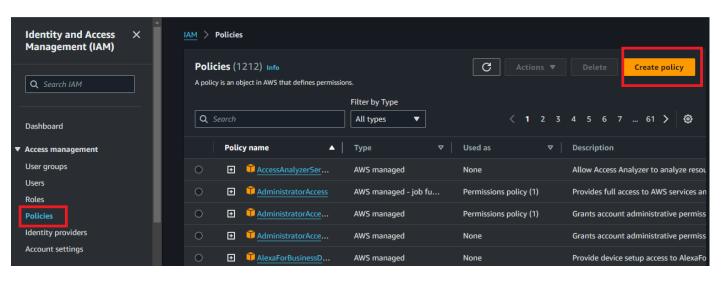
Memory: 88.9M (peak: 89.3M)

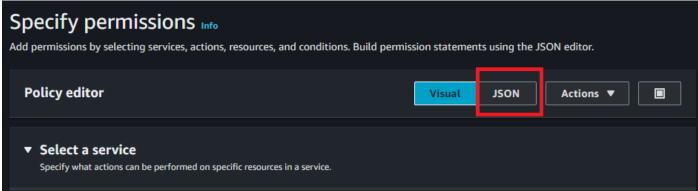
CPU: 3.284s
```

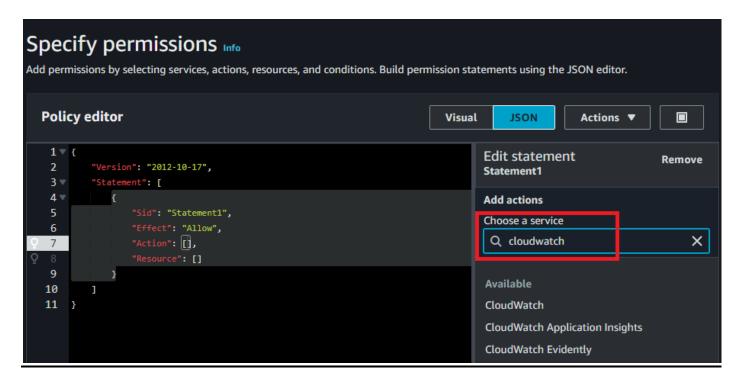
Active(running)

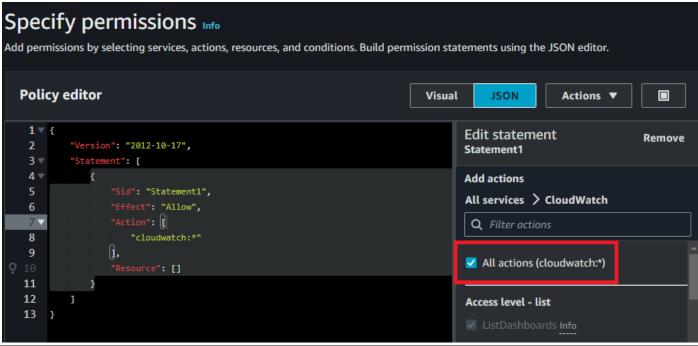
❖ Create Policy and Roles:-

Follow the following below rectangular box steps for POLICY









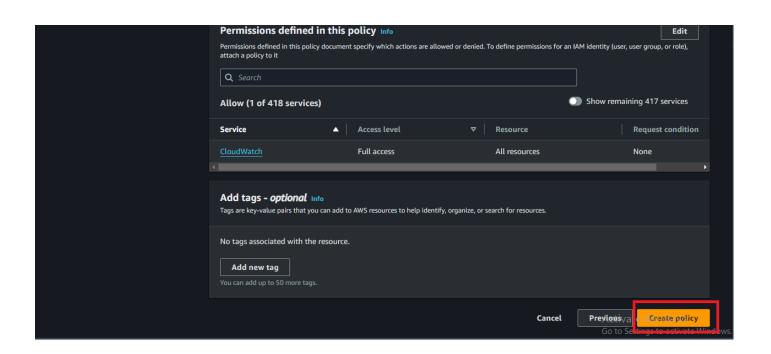
Policy Editor:-

```
"Effect": "Allow",

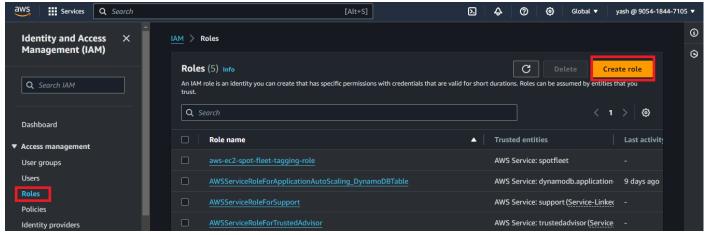
"Action": [

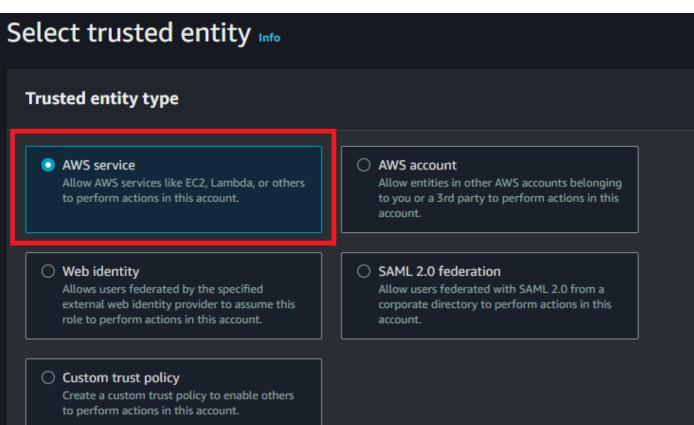
"cloudwatch:*"
],

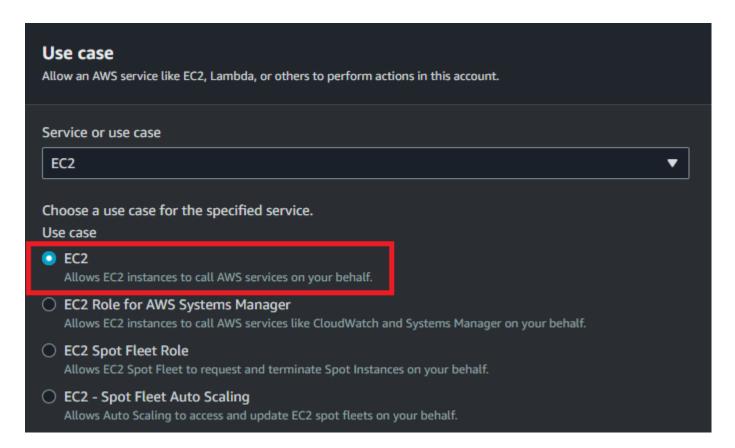
"Resource":"*"
}
```

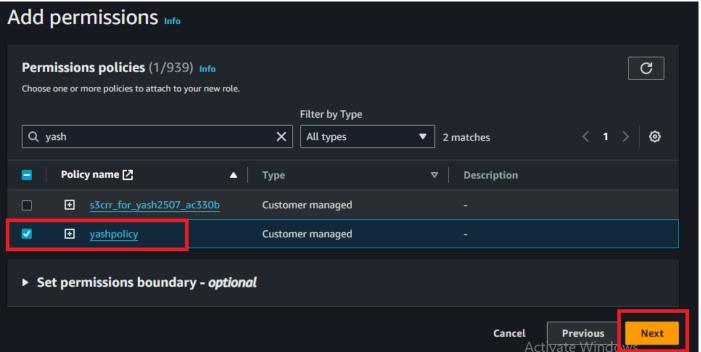


Follow the following below rectangular box steps for ROLE

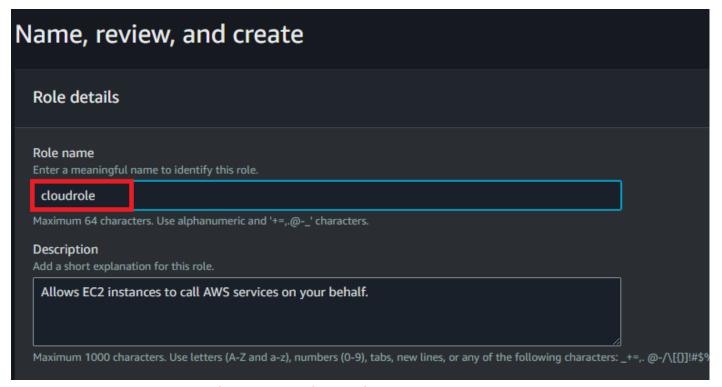




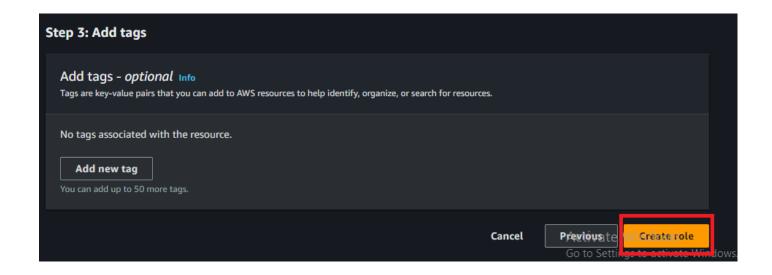




#Select your policy

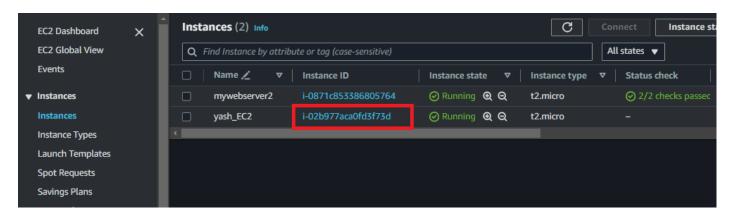


Give a name your choise to the role

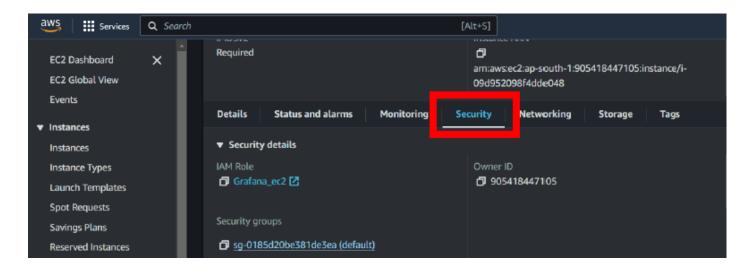


❖Create a Graph in GRAFANA

Follow the following below rectangular box steps



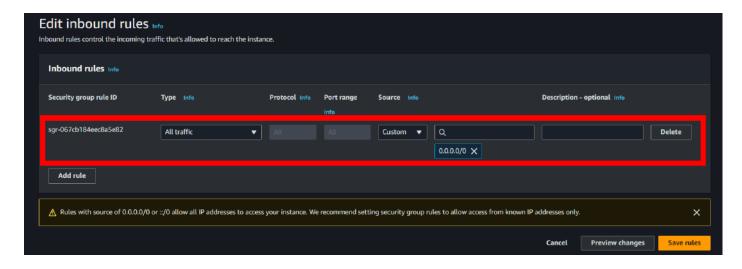
 After creating your role and policy go to instance and open your instance, which you have already created.



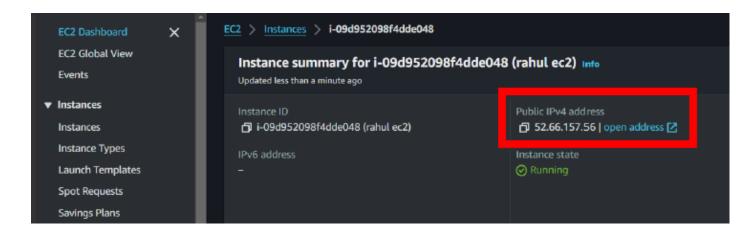
• Scroll down and go to **SECURITY** option.



• Then click on **Edit inbound rule**.



• Then modify your rule select type = All traffic and source =0.0.0.0/0



• Then copy your **Public IPv4 address** of your instance.

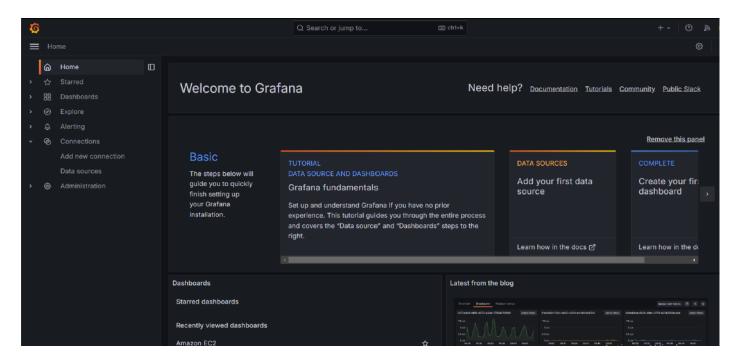


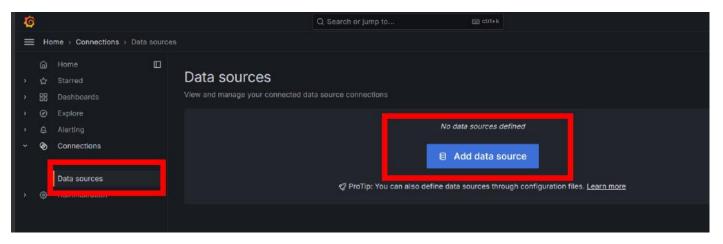
• Then paste your copied ip address and type ":3000" after ip address and search it .

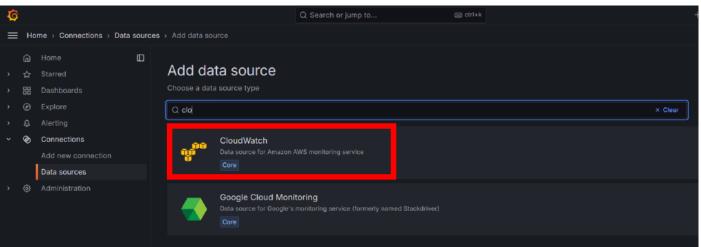
Welcome to Grafana	
Email or username admin	
admin 🔯	
Log in Forgot your password?	

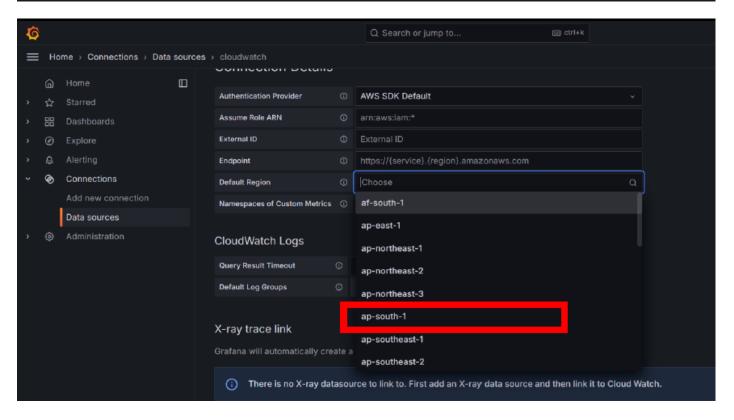
• Then login in Grafana by the help of credientials shown in above snapshot.

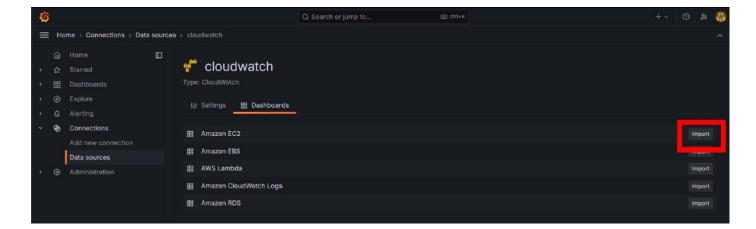
Follow the below steps in Rectangular box.



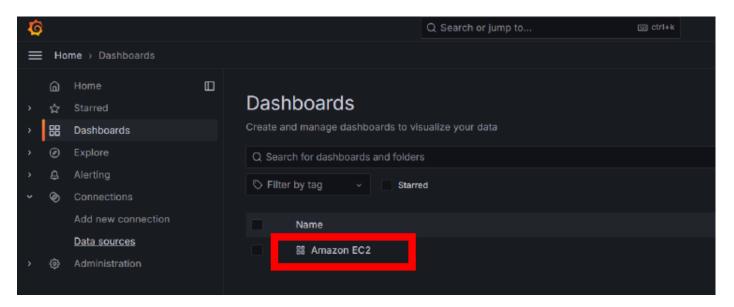








• Then inside your cloudwatch go to dashboard and Import EC2.



• Then go to dashboard and open your Amazon EC2.

High cpu utilization and a graph in Grafana

