

1. Install Prometheus Server

- Configuration basic authentication username/password
- Screenshot of login prompt while trying to access prometheus
- Screenshot of prometheus dashboard

Installing Prometheus

Make prometheus user

```
sudo adduser --no-create-home --disabled-login --shell /bin/false --gecos "Prometheus Monitoring User" prometheus
```

Make directories and dummy files necessary for prometheus

```
sudo mkdir /etc/prometheus
sudo mkdir /var/lib/prometheus
sudo touch /etc/prometheus/prometheus.yml
sudo touch /etc/prometheus/prometheus.rules.yml
```

Assign ownership of the files above to prometheus user

```
sudo chown -R prometheus:prometheus /etc/prometheus
sudo chown prometheus:prometheus /var/lib/prometheus
```

Download prometheus

VERSION=latest(2.32)

```
VERSION=$(curl
https://raw.githubusercontent.com/prometheus/prometheus/master/VERSION)
```

```
wget
https://github.com/prometheus/prometheus/releases/download/v${VERSION}/prometheus-${V
ERSION}.linux-amd64.tar.gz
```

```
tar xvf prometheus-${VERSION}.linux-amd64.tar.gz
```

Copy utilities to where they should be in the filesystem

```
sudo cp prometheus-${VERSION}.linux-amd64/prometheus /usr/local/bin/
sudo cp prometheus-${VERSION}.linux-amd64/promtool /usr/local/bin/
sudo cp -r prometheus-${VERSION}.linux-amd64/consoles /etc/prometheus
sudo cp -r prometheus-${VERSION}.linux-amd64/console_libraries /etc/prometheus
```

Assign the ownership of the tools above to prometheus user

sudo chown -R prometheus:prometheus /etc/prometheus/consoles

sudo chown -R prometheus:prometheus /etc/prometheus/console_libraries

sudo chown prometheus:prometheus /usr/local/bin/prometheus

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

Editing configuration files

sudo vi /etc/prometheus/prometheus.yml

```
global:
  scrape_interval: 15s

rule_files:
  - 'prometheus.rules.yml'

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    static_configs:
      - targets: ['192.168.1.147:9090']
```

sudo vi /etc/prometheus/prometheus.rules.yml

```
groups:
  - name: example_alert
    rules:
      - alert: InstanceDown
        expr: up == 0
        for: 5m
        labels:
          severity: page
        annotations:
          summary: "Instance {{ $labels.instance }} down"
          description: "{{ $labels.instance }} of job {{ $labels.job }} has been down for more than 5 minutes."
```

```
[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 \
--web.config.file /etc/prometheus/web.yml

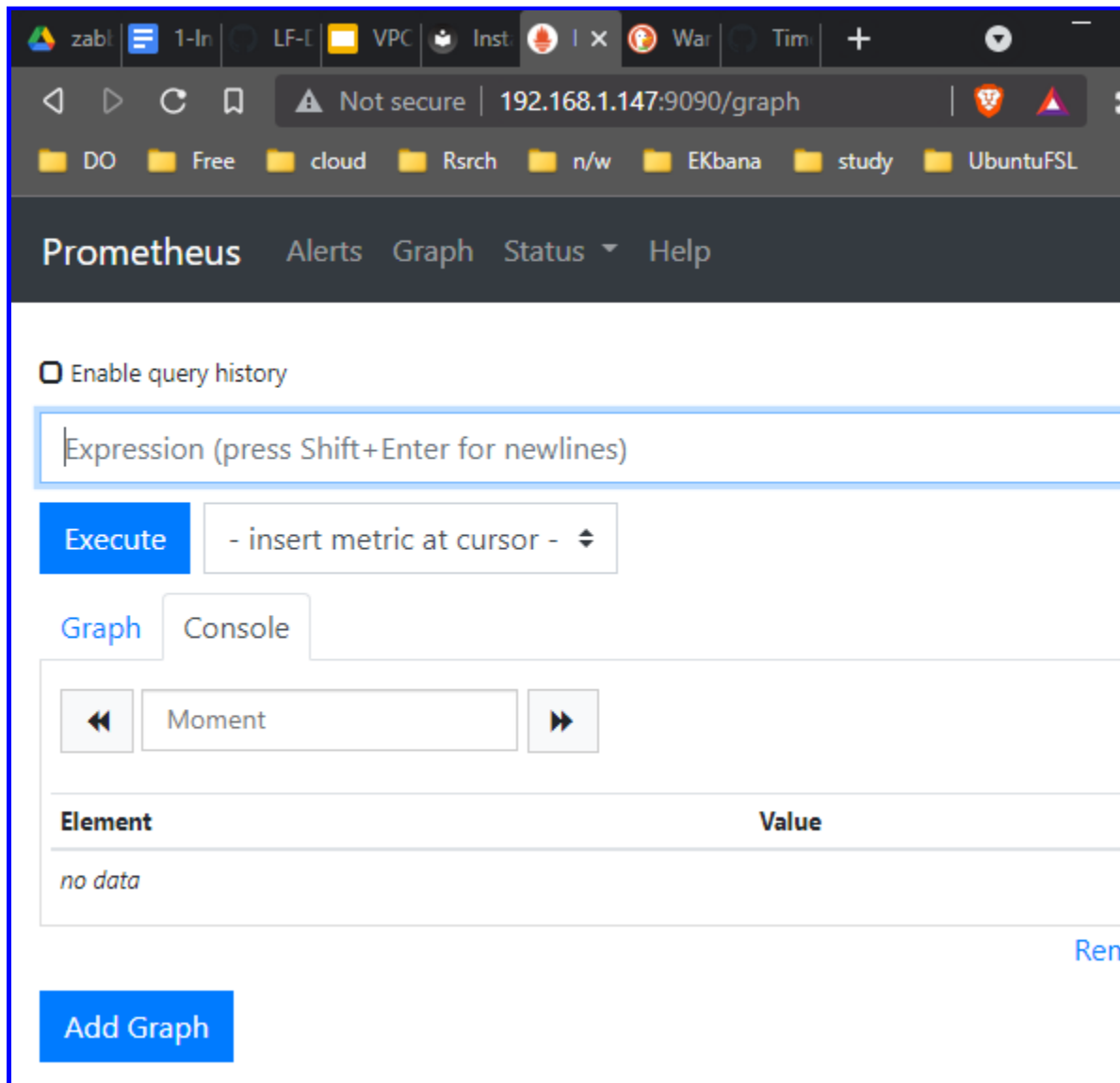
[Install]
WantedBy=multi-user.target
```

```
sudo systemctl daemon-reload
sudo systemctl enable prometheus
sudo systemctl start prometheus
```

sudo service prometheus status

[illegible]

Browsing in the web <server_IP>:9090



If time difference warning is shown then, install ntp and pool for ntp.org

sudo apt-get update

sudo apt-get install ntp

sudo ntpd pool.ntp.org

It will sync time from ntp server and warning is solved

Configuration basic authentication username/password

Generating hashed-password from python

Python3-bcrypt is needed

sudo apt install python3-bcrypt

Opening python3 shell in ubuntu

python3

Importing getpass and bcrypt

import getpass

import bcrypt

Generating hashed-password

hashed_password = bcrypt.hashpw("123456".encode("utf-8"), bcrypt.gensalt())

Getting the hashed-password

hashed_password.decode()

```
>>> import getpass
>>> import bcrypt
>>> hashed_password = bcrypt.hashpw("123456".encode("utf-8"), bcrypt.gensalt())
>>> hashed_password.decode()
'$2b$12$25NgYqbD.tJy2gHaJjJYVuPFNSECNwsJ0oV4BDCafK3zPcHuuKAK2'
>>> █
```

The value we got is hashed-password of "123456"

To set basic_auth, creating web-config file

sudo vi /etc/prometheus/web.yml

```
basic_auth_users:
  admin: $2b$12$25NgYqbD.tJy2gHaJjJYVuPFNSECNwsJ0oV4BDCafK3zPcHuuKAK2
█
```

Save and exit

Configuring in systemd for basic auth with above web.yml file

sudo vi /etc/systemd/system/prometheus.service

Adding line "--web.config.file /etc/prometheus/web.yml"

```
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 \
  --web.config.file /etc/prometheus/web.yml
[Install]
WantedBy=multi-user.target
```

While restarting prometheus service, it will use this web.yml as authentication file

Providing authentication in prometheus job so that it will be authorized, and we can get the in UP state

sudo vi /etc/prometheus/prometheus.yml

```
global:
  scrape_interval: 15s

rule_files:
  - 'prometheus.rules.yml'

scrape_configs:
  - job_name: 'prometheus'
    scrape_interval: 5s
    static_configs:
      - targets: ['192.168.1.147:9090']
    basic_auth:
      username: admin
      password: 123456
```

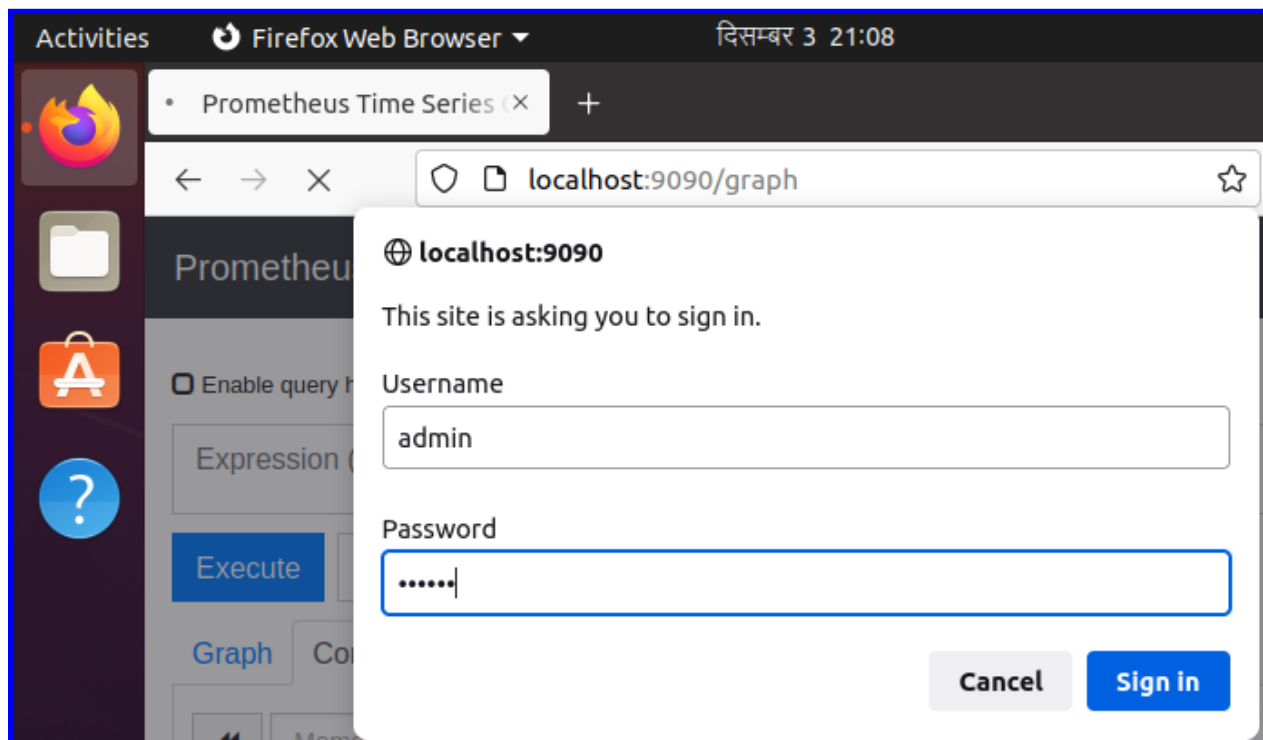
Restarting prometheus

sudo systemctl restart prometheus.service

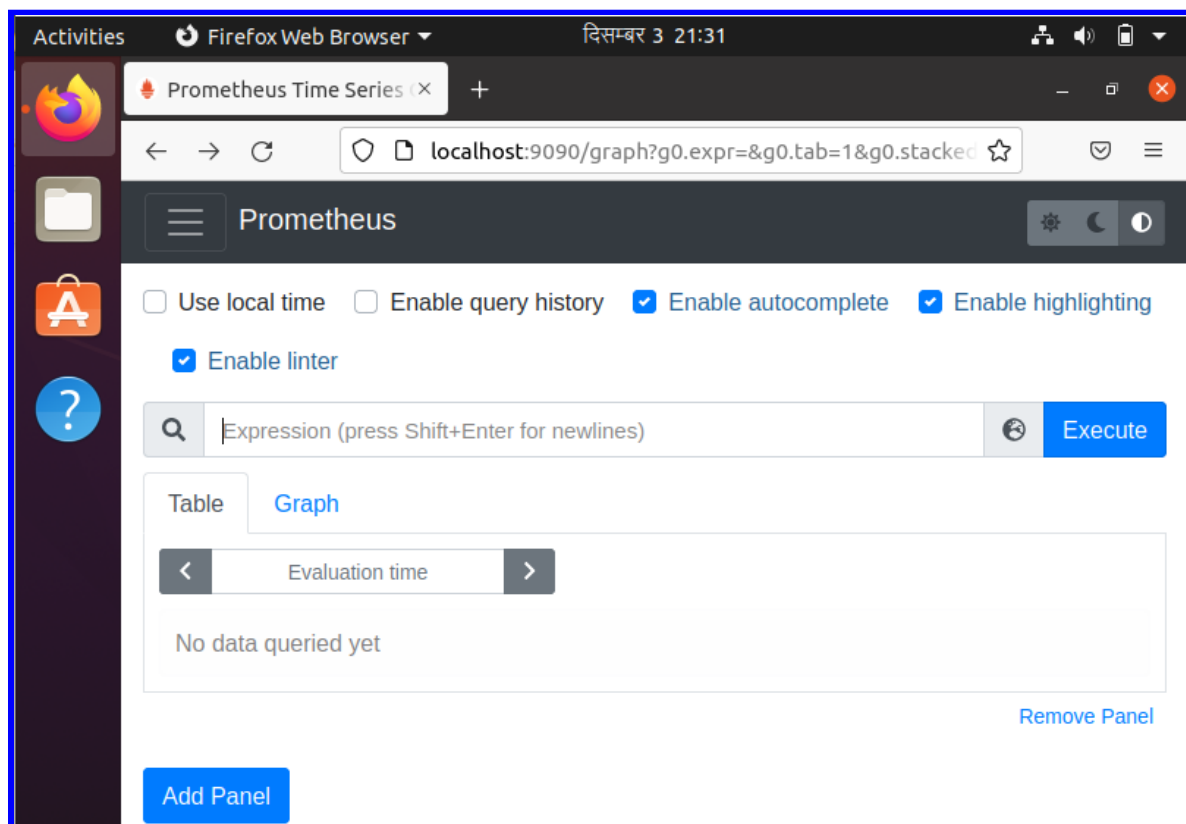
```
bibek@prometheus:/etc/prometheus$ sudo systemctl restart prometheus.service
bibek@prometheus:/etc/prometheus$ sudo systemctl status prometheus.service
● prometheus.service - Prometheus
   Loaded: loaded (/etc/systemd/system/prometheus.service; enabled; vendor pre
   Active: active (running) since Fri 2021-12-03 22:00:46 +0545; 8s ago
     Main PID: 20909 (prometheus)
        Tasks: 7 (limit: 2299)
      Memory: 62.1M
      CGroup: /system.slice/prometheus.service
              └─20909 /usr/local/bin/prometheus --config.file /etc/prometheus/pr
```

Prometheus service is up and running

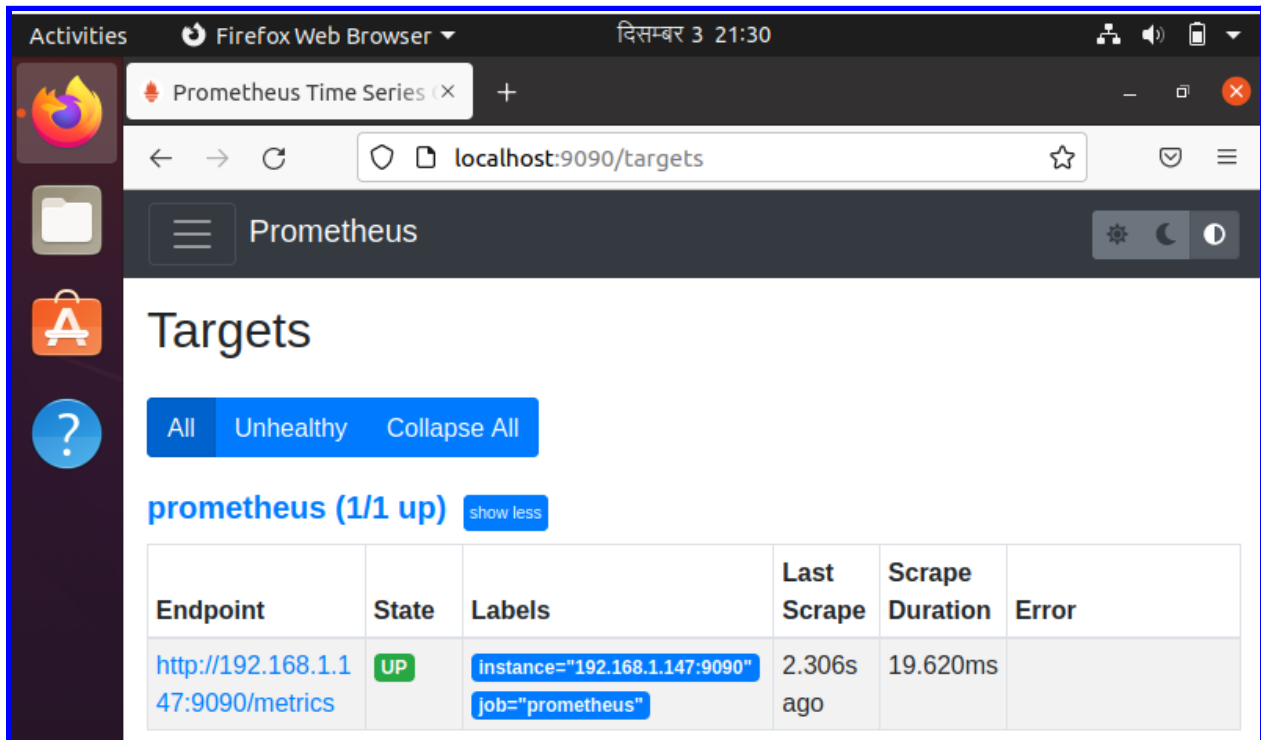
Accessing in the browser will ask for authentication



Dashboard of Prometheus after logged in



Target of Prometheus Job assigned



The screenshot shows the Prometheus web interface in a Firefox browser. The browser's address bar displays `localhost:9090/targets`. The Prometheus UI header includes a menu icon, the word "Prometheus", and a dark theme toggle. The main section is titled "Targets" and features three filter buttons: "All", "Unhealthy", and "Collapse All". Below these, it indicates "prometheus (1/1 up)" with a "show less" link. A table lists the targets with columns for Endpoint, State, Labels, Last Scrape, Scrape Duration, and Error.

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://192.168.1.147:9090/metrics	UP	<code>instance="192.168.1.147:9090"</code> <code>job="prometheus"</code>	2.306s ago	19.620ms	