

This tutorial helps you to monitor "POSTGRES" DB with "Prometheus & Grafana".

Follow the below steps:

```
sudo cp postgres_exporter /usr/local/bin
```

```
cd /opt/postgres_exporter
```

```
sudo nano postgres_exporter.env
```

```
DATA_SOURCE_NAME="postgresql://postgres:postgres@192.168.56.106:5432/?sslmode=disable"
```

```
sudo useradd -rs /bin/false postgres
```

```
vi /etc/systemd/system/postgres_exporter.service
```

```
[Unit]
```

```
Description=Prometheus exporter for Postgresql
```

```
Wants=network-online.target
```

```
After=network-online.target
```

```
[Service]
```

```
User=postgres
```

```
Group=postgres
```

```
WorkingDirectory=/opt/postgres_exporter
```

```
EnvironmentFile=/opt/postgres_exporter/postgres_exporter.env
```

```
ExecStart=/usr/local/bin/postgres_exporter --web.listen-address=192.168.56.106:9100
```

```
--web.telemetry-path=/metrics
```

```
Restart=always
```

```
[Install]
```

```
WantedBy=multi-user.target
```

```
sudo systemctl daemon-reload
```

```
sudo systemctl start postgres_exporter
```

```
sudo systemctl enable postgres_exporter
```

```
sudo systemctl status postgres_exporter
```

**Steps to perform on Prometheus Server**

```
systemctl stop prometheus
```

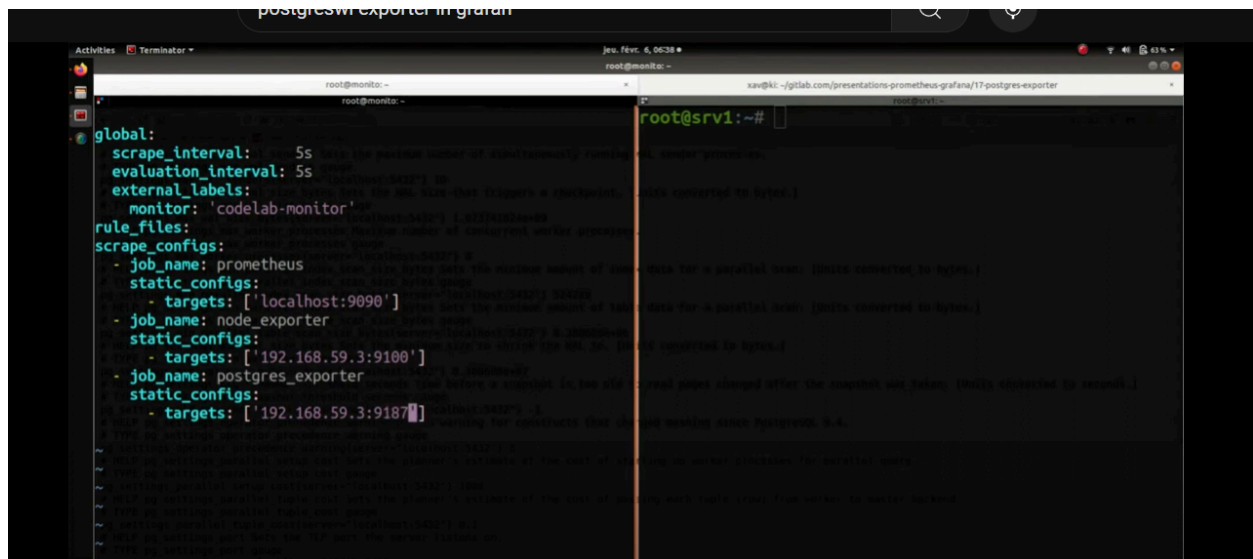
```
vi /etc/prometheus/prometheus.yml
```

```
systemctl start prometheus
```

```
systemctl status prometheus
```

```
root@srv1: ~  
postgres@srv1:~$ psql  
psql (10.10 (Ubuntu 10.10-0ubuntu0.18.04.1))  
Type "help" for help.  
  
postgres=# alter user postgres encrypted password 'xavier';  
ALTER ROLE  
postgres=# \q  
postgres@srv1:~$ psql -h 127.0.0.1 -U postgres  
Password for user postgres:  
psql (10.10 (Ubuntu 10.10-0ubuntu0.18.04.1))  
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, bits: 256, compression: off)  
Type "help" for help.  
  
postgres=# \q  
postgres@srv1:~$
```

```
root@srv1: ~  
# maintenance (custom daily cronjobs, replication, and similar tasks).  
#  
# Database administrative login by Unix domain socket  
local all postgres peer  
  
# TYPE DATABASE USER ADDRESS METHOD  
# "local" is for Unix domain socket connections only  
local all all peer  
# IPv4 local connections:  
host all all 127.0.0.1/32 md5  
host all all 127.0.0.1/32 md5  
# IPv6 local connections:  
host all all ::1/128 md5  
# Allow replication connections from localhost, by a user with the  
# replication privilege.  
local replication all peer  
host replication all 127.0.0.1/32 md5  
host replication all ::1/128 md5  
~  
~  
~  
~
```



```
global:
  scrape_interval: 5s
  evaluation_interval: 5s
  external_labels:
    monitor: 'codelab-monitor'
rule_files:
  - /etc/prometheus/rules
scrape_configs:
  - job_name: prometheus
    static_configs:
      - targets: ['localhost:9090']
  - job_name: node_exporter
    static_configs:
      - targets: ['192.168.59.3:9100']
  - job_name: postgres_exporter
    static_configs:
      - targets: ['192.168.59.3:9187']
```

The primary issue here is that Grafana failed to start because the port **3001** is already in use. The error message **bind: address already in use** confirms this.

## Steps to Resolve:

**Identify the Process Using Port 3001:** Run the following command to identify the process using port **3001**:

bash

Copy code

```
sudo lsof -i :3001
```

1. This will display the process ID (PID) of the application using the port.

**Kill the Process (If Necessary):** If the port is being used by an unnecessary or stuck process, terminate it:

bash

Copy code

```
sudo kill -9 <PID>
```

2. Replace **<PID>** with the process ID obtained from the previous command.

3. **Change Grafana's Port (If Needed):** If another application is legitimately using port **3001**, change the Grafana port in its configuration file:

Open the configuration file:

bash

Copy code

```
sudo nano /etc/grafana/grafana.ini
```

○

Find the **[server]** section and update the **http\_port** value, for example:

ini

Copy code

```
[server]
```

```
http_port = 3002
```

○

- Save and exit the file.

**Restart Grafana:** Restart the Grafana service to apply the changes:

bash

Copy code

```
sudo systemctl restart grafana-server.service
```

4.

**Verify Grafana Status:** Check if Grafana is running:

bash

Copy code

```
sudo systemctl status grafana-server.service
```

5.

6. **Access Grafana:** Open a browser and navigate to the updated port (e.g., **http://localhost:3002**).

If the error persists or you encounter additional issues, let me know!

4o

You said:

grafan is runing in http://localhost:3000 porth grafan is good runing but i am using in terminal commend in grafan server is run but systemctl restart grafan and status grafan Failed in terminal i am hiting in brower http://192.168.6.108:3000 is runing in brower

ChatGPT said:

## ChatGPT

It sounds like your Grafana server is running successfully when started manually, but the service fails to start or restart when using `systemctl`. This discrepancy could be caused by several factors, such as incorrect permissions, misconfigured service files, or dependency issues. Here's how you can debug and fix this issue:

### Steps to Debug and Fix

**Check the Grafana Service Logs:** Run the following command to inspect the logs for more details on why the service is failing:

bash

Copy code

```
journalctl -u grafana.service
```

1. Look for error messages or hints about what is causing the failure.

**Verify the Service Configuration:** Open the Grafana service file to ensure it's correctly configured:

bash

Copy code

```
sudo nano /etc/systemd/system/grafana.service
```

2. Common issues might include:

- Incorrect paths to the Grafana binary.
- Missing or incorrect environment variables.
- Dependency issues.

**Check File Permissions:** Ensure that the Grafana binary and its configuration files have the correct permissions:

bash

Copy code

```
sudo chown -R grafana:grafana /usr/share/grafana /var/lib/grafana /etc/grafana
```

```
sudo chmod -R 755 /usr/share/grafana /var/lib/grafana /etc/grafana
```

- 3.

**Reload the Systemd Daemon:** After making changes to the service file, reload the systemd daemon to apply the updates:

bash

Copy code

```
sudo systemctl daemon-reload
```

- 4.

**Restart and Check Status:** Try restarting the service again and check its status:

bash

Copy code

```
sudo systemctl restart grafana
```

```
sudo systemctl status grafana
```

5.

**Check Network Binding:** Since Grafana is accessible via the browser on

<http://192.168.6.108:3000>, it indicates the service is bound to that IP. Verify the binding in the configuration file:

bash

Copy code

```
sudo nano /etc/grafana/grafana.ini
```

Look for the **[server]** section and ensure it's properly configured:

ini

Copy code

```
[server]
```

```
http_addr = 0.0.0.0
```

```
http_port = 3000
```

6.

**Verify Dependencies:** Ensure all required dependencies are installed:

bash

Copy code

```
sudo apt install -y grafana
```

7.

**Reinstall Grafana (If Necessary):** If the above steps don't resolve the issue, consider reinstalling Grafana:

bash

Copy code

```
sudo apt purge grafana -y
```

```
sudo apt install grafana -y
```

8.

If the issue persists, share the specific error message from `journalctl` or the output of `sudo systemctl status grafana`, and I can assist further!

You said:

i am goto grafan and add data source in prometheus in grafan <http://192.168.6.108:9187> add not showing this error ReadObject: expect { or , or } or n, but found <, error found in #1 byte of ...| <he|..., bigger context ...| <title>Postgres exporter</title></hea|... - There was an error returned querying the Prometheus API.

ChatGPT said:

ChatGPT

The error you're encountering indicates that Grafana is trying to query a Prometheus data source at <http://192.168.6.108:9187>, but instead of receiving a valid JSON response (which Prometheus APIs return), it received an HTML response. This typically means one of the following:

1. The URL is incorrect: The address <http://192.168.6.108:9187> might not be pointing to the Prometheus API but to another service, such as a Postgres exporter.
2. You're querying the wrong endpoint: If you're using a specific exporter like the Postgres exporter, you should point Grafana to the Prometheus server, which scrapes metrics from that exporter.

---

## Steps to Fix:

### 1. Verify the Prometheus Server Address:

Ensure that you're adding the correct Prometheus server address in Grafana. It should look something like this:

arduino

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<http://<prometheus-server-IP>:9090>

For example:

arduino

Copy code

<http://192.168.6.108:9090>

To confirm Prometheus is running:

- Open a browser and visit <http://192.168.6.108:9090>.

- If Prometheus is working, you'll see its web interface.
- 

## 2. Ensure Prometheus is Scraping the Exporter:

Check if Prometheus is scraping metrics from the Postgres exporter at <http://192.168.6.108:9187>. This can be verified in Prometheus' **targets** list:

- Visit <http://192.168.6.108:9090/targets>.
  - Ensure the Postgres exporter appears as "UP" in the targets list.
- 

## 3. Check the Exporter Output:

Open <http://192.168.6.108:9187> in a browser or use **curl**:

bash

Copy code

```
curl http://192.168.6.108:9187
```

You should see plain-text metrics. If you see an HTML page (like **<title>Postgres Exporter</title>**), the Postgres exporter may not be configured correctly or is being accessed incorrectly.

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## 4. Correct Grafana Data Source:

- In Grafana, add your Prometheus server URL as the data source (e.g., <http://192.168.6.108:9090>).
  - Do not directly add the Postgres exporter (<http://192.168.6.108:9187>) as the Prometheus data source. Instead, configure Prometheus to scrape the exporter.
- 

## 5. Update Prometheus Configuration:

If Prometheus is not scraping the Postgres exporter, edit the Prometheus configuration file (e.g., **prometheus.yml**):

yaml

Copy code

```
scrape_configs:
```



```
- job_name: 'postgres-exporter'
  static_configs:
    - targets: ['192.168.6.108:9187']
```

Restart Prometheus after making changes:

bash

Copy code

```
sudo systemctl restart prometheus
```

---

## Test After Fixing:

1. In Grafana:
  - Use the Prometheus server (<http://192.168.6.108:9090>) as the data source.
  - Create dashboards to visualize the metrics.
2. If the problem persists, share:
  - The output of `curl http://192.168.6.108:9187`.
  - The configuration of Prometheus (`prometheus.yml`).
  - Screenshots or logs of errors.

Let me know if you need further assistance!

4o

You said:

Ensure Prometheus is Scraping the Exporter: Check if Prometheus is scraping metrics from the Postgres exporter at <http://192.168.6.108:9187>. This can be verified in Prometheus' targets list: Visit <http://192.168.6.108:9090/targets>. Ensure the Postgres exporter appears as "UP" in the targets list. prometheus all target are up . Update Prometheus Configuration: If Prometheus is not scraping the Postgres exporter, edit the Prometheus configuration file (e.g., `prometheus.yml`): yml Copy code `scrape_configs: - job_name: 'postgres-exporter' static_configs: - targets: ['192.168.6.108:9187']` i am also configuration in prometheus.yml file

ChatGPT said:

ChatGPT

If Prometheus is successfully scraping the Postgres exporter (all targets are "UP"), but Grafana still shows an error when querying the data source, the issue likely lies in one of the following:

---

## 1. Incorrect Data Source Configuration in Grafana

- In Grafana, ensure you're adding the Prometheus server as the data source, not the exporter directly.

Use this URL in Grafana's data source settings:

arduino

Copy code

<http://192.168.6.108:9090>

- 
- Do not use <http://192.168.6.108:9187> as the data source in Grafana. This address is for the exporter, not Prometheus.

---

## 2. Verify the Metrics in Prometheus

- Open Prometheus at <http://192.168.6.108:9090>.

In the "Graph" section, search for metrics related to the Postgres exporter. Example query:

Copy code

[pg\\_stat\\_activity\\_count](#)

- 
- If no metrics appear, there might be an issue with the Postgres exporter itself.

---

## 3. Check the Postgres Exporter Output

Run this in your terminal to check the raw metrics from the Postgres exporter:

bash

Copy code

[curl http://192.168.6.108:9187/metrics](http://192.168.6.108:9187/metrics)

- - You should see plain-text metrics. If you see an HTML page, ensure:
    - The Postgres exporter is properly configured.
    - The Postgres database is reachable by the exporter.
-

## 4. Verify Postgres Exporter Configuration

- Check if the Postgres exporter has the correct connection to your database.

The exporter typically requires a connection string to the Postgres database, e.g.:

bash

Copy code

```
DATA_SOURCE_NAME="postgresql://username:password@localhost:5432/dbname?sslmode=disable" ./postgres_exporter
```

- - If this is misconfigured, the exporter won't collect metrics from the database.
- 

## 5. Test Grafana Queries

- After configuring the Prometheus data source in Grafana, create a new panel and test queries.

Example Prometheus query for Postgres exporter metrics:

Copy code

```
pg_stat_activity_count
```

- - If no data appears, confirm that Prometheus is actually scraping metrics from the exporter.
- 

## Troubleshooting Steps Summary:

1. In Prometheus:
  - Verify Postgres metrics appear using <http://192.168.6.108:9090> and searching queries like `pg_*`.
2. In Grafana:
  - Configure Prometheus (<http://192.168.6.108:9090>) as the data source.
  - Test queries related to Postgres metrics.
3. Check Postgres Exporter:
  - Ensure the Postgres exporter outputs valid metrics when accessed at <http://192.168.6.108:9187/metrics>.

Let me know if you need help with further debugging!

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You said:

and instance pulge problem sgowing in grafan in add data sorace

ChatGPT said:

ChatGPT

The "Instance Plugin Problem" in Grafana when adding a data source indicates an issue with the communication between Grafana and the data source (e.g., Prometheus). Here's how to troubleshoot and fix this:

---

## 1. Verify Grafana's Prometheus Data Source Configuration

URL: Make sure the correct Prometheus URL is provided:

arduino

Copy code

<http://192.168.6.108:9090>

- - Access Method: Use **Server** (not **Browser**).
  - Save and Test: After entering the details, click Save & Test to ensure the connection is successful.
- 

## 2. Check Firewall and Network Connectivity

- If Grafana and Prometheus are running on different servers, ensure:
  - The Grafana server can access <http://192.168.6.108:9090>.
  - No firewall or security group (SG) is blocking the traffic.

Test connectivity from the Grafana server:

bash

Copy code

**curl** <http://192.168.6.108:9090>

- If this fails, adjust your firewall or security group settings to allow communication.
- 

## 3. Verify Prometheus is Running

Confirm that Prometheus is active and accessible:

bash

Copy code

```
systemctl status prometheus
```

- 

If it's not running, start it:

bash

Copy code

```
systemctl start prometheus
```

- 

---

## 4. Ensure Proper Security Group (SG) Configuration

- If you're using a cloud instance (e.g., AWS), ensure the Security Group allows traffic on:
    - Port **9090** (Prometheus)
    - Port **3000** (Grafana)
  - Example SG Rules:
    - Ingress: Allow ports **9090**, **3000** from your IP or Grafana's IP.
    - Egress: Allow all or specific ports required for outbound communication.
- 

## 5. Check Grafana Logs for Details

Grafana logs often contain specific error messages that help pinpoint the issue:

bash

Copy code

```
sudo journalctl -u grafana-server -f
```

- 

- Look for errors related to "data source" or "Prometheus."
- 

## 6. Update Plugins and Grafana

Ensure you are using the latest version of Grafana and any required plugins:

bash

Copy code

```
sudo apt update && sudo apt upgrade grafana  
grafana-cli plugins update-all
```

- 

---

## 7. Enable Prometheus CORS (if using Browser Access)

- If you're using the Browser access method instead of Server, Prometheus must allow CORS requests:

Edit the Prometheus configuration to include this flag:

bash

Copy code

```
--web.enable-cors
```

○

Restart Prometheus:

bash

Copy code

```
systemctl restart prometheus
```

○

---

## Final Step: Test the Data Source

- After applying these fixes, go to Grafana, Add Data Source, select Prometheus, and test the connection.

Let me know if the issue persists after following these steps!

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