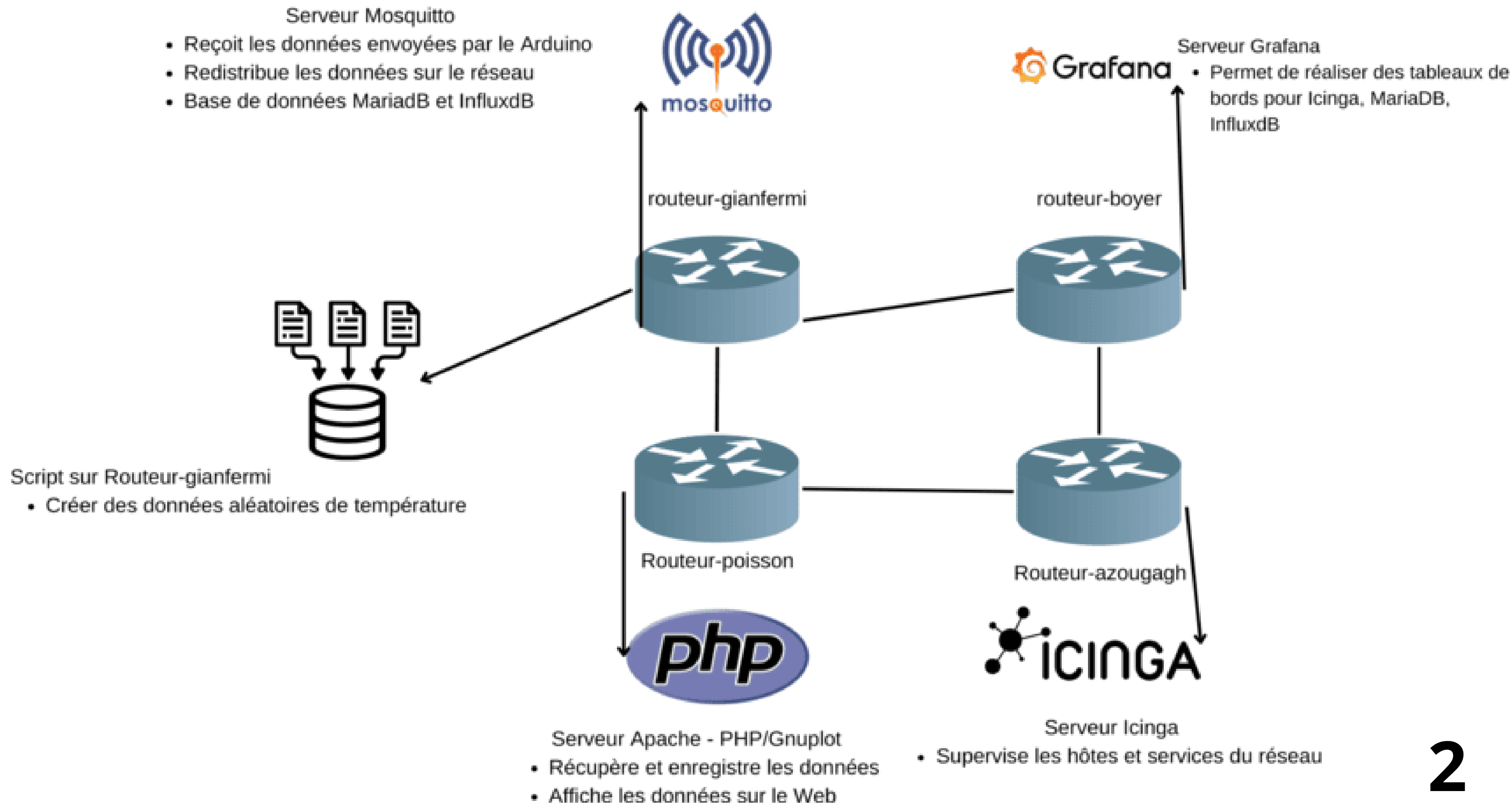


PROJET INTEGRATIF

- GIANFERMI Matteo
- POISSON Matthias
- AZOUGAGH Imène
- BOYER-RENOUX Titouan



```
(mon_environnement) root@serveur-mosquitto:~# python3 retrieve_data.py
/root/retrieve_data.py:68: DeprecationWarning: Callback API version 1 is deprecated, update to latest version
  client = mqtt.Client(client_id=mqtt_client_id)
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:05',27.21);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:10',29.54);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:15',27.2);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:20',27.97);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:25',24.02);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:30',28.65);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:35',25.33);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:40',20.64);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:45',22.72);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:50',25.01);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:28:55',21.97);
INSERT INTO mqtt_data (timestamp, temperature) VALUES('2024-06-19 21:29:00',26.75);
```

```
(env) root@routeur-gianfermi:/home/matteo# python3 mqtt.py
/home/matteo/mqtt.py:27: DeprecationWarning: Callback API version 1 is deprecated, update to latest version
  client = mqtt.Client()
Published: 2024-06-19 21:28:00 25.11
Published: 2024-06-19 21:28:05 27.21
Published: 2024-06-19 21:28:10 29.54
Published: 2024-06-19 21:28:15 27.2
Published: 2024-06-19 21:28:20 27.97
Published: 2024-06-19 21:28:25 24.02
Published: 2024-06-19 21:28:30 28.65
Published: 2024-06-19 21:28:35 25.33
Published: 2024-06-19 21:28:40 20.64
Published: 2024-06-19 21:28:45 22.72
Published: 2024-06-19 21:28:50 25.01
Published: 2024-06-19 21:28:55 21.97
Published: 2024-06-19 21:29:00 26.75
Published: 2024-06-19 21:29:05 29.71
Published: 2024-06-19 21:29:10 27.91
Published: 2024-06-19 21:29:15 23.26
Published: 2024-06-19 21:29:20 22.1
█
```

MOSQUITTO

```
root@php:/var/www/html# ls
generate_graph.php  graphs  index.php  output.png  script.py
root@php:/var/www/html#
```

Choisir les Courbes et l'Intervalle de Temps

Heure de début:

Heure de fin:

Type de données:

Température
Humidité

```
<!DOCTYPE html>
<html lang="fr">
<head>
  <meta charset="UTF-8">
  <title>Choisir les Courbes et l'Intervalle de Temps</title>
</head>
<body>
  <h1>Choisir les Courbes et l'Intervalle de Temps</h1>
  <form method="POST" action="generate_graph.php">
    <label for="start_time">Heure de début:</label>
    <input type="datetime-local" id="start_time" name="start_time" required><br><br>
    <label for="end_time">Heure de fin:</label>
    <input type="datetime-local" id="end_time" name="end_time" required><br><br>
    <label for="data_type">Type de données:</label>
    <select id="data_type" name="data_type[]" multiple required>
      <option value="temperature">Température</option>
      <option value="humidity">Humidité</option>
    </select><br><br>
    <input type="submit" value="Générer le Graphique">
  </form>
</body>
</html>
```

PHP

serveur php code

```
#!/usr/bin/python3
import sys
import os

# Définir MPLCONFIGDIR pour Matplotlib
os.environ['MPLCONFIGDIR'] = '/var/www/html/graphs/matplotlib'

import mysql.connector as sql_link
import matplotlib.pyplot as plt
import matplotlib.dates as mdates
from datetime import datetime

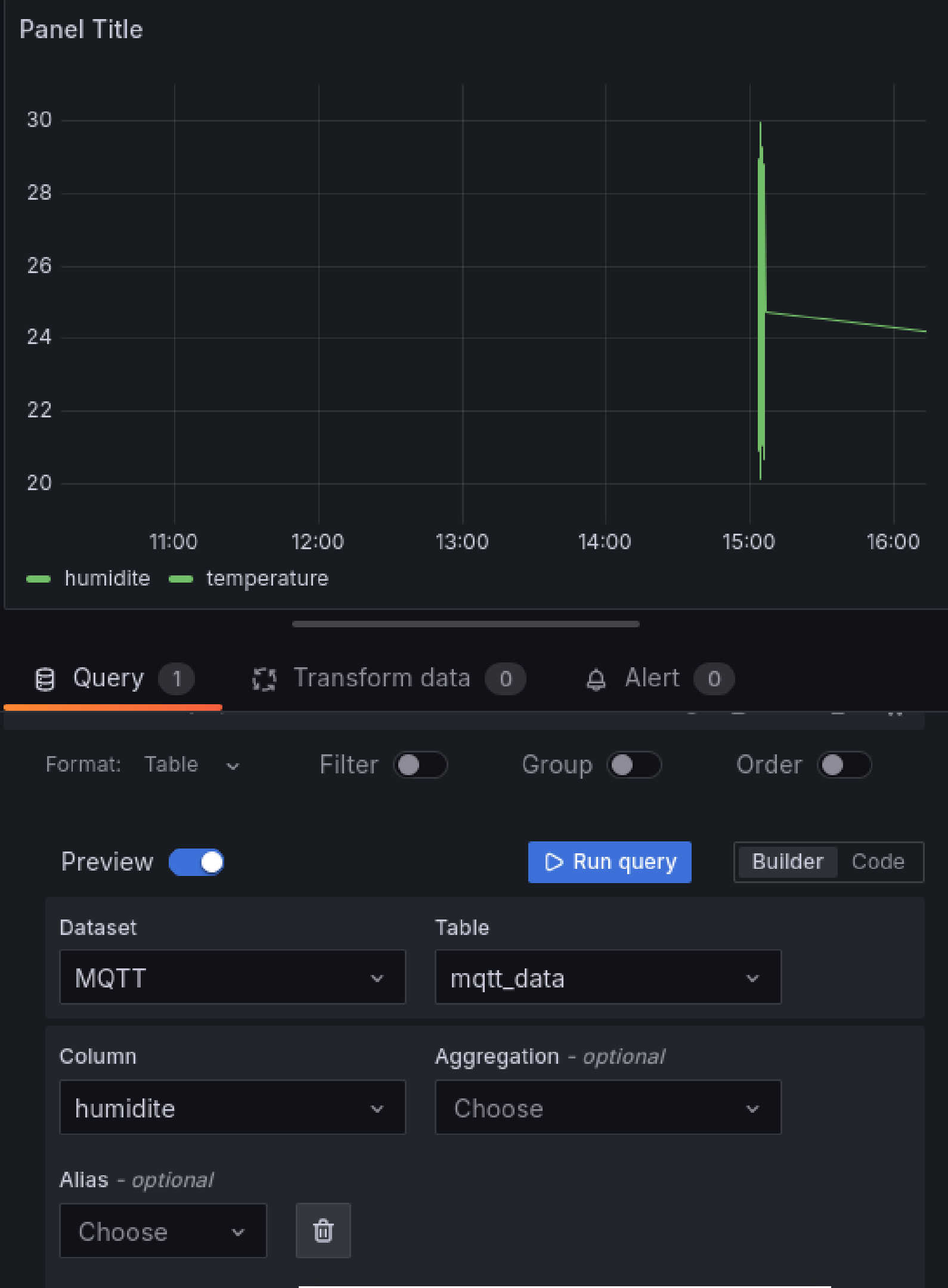
# Vérifiez les arguments
if len(sys.argv) != 5:
    print("Usage: script.py <start_time> <end_time> <data_types> <output_file>")
    sys.exit(1)

start_time = sys.argv[1]
end_time = sys.argv[2]
data_types = sys.argv[3].split(",")
output_file = sys.argv[4]

print(f"Script started with start_time={start_time}, end_time={end_time}, data_types={data_types}, output_file={output_file}")

# Déclaration des paramètres de connexion.
sql_host = "10.144.21.30"
sql_database = "MQTT"
sql_user = "Matteo"
sql_password = "root"

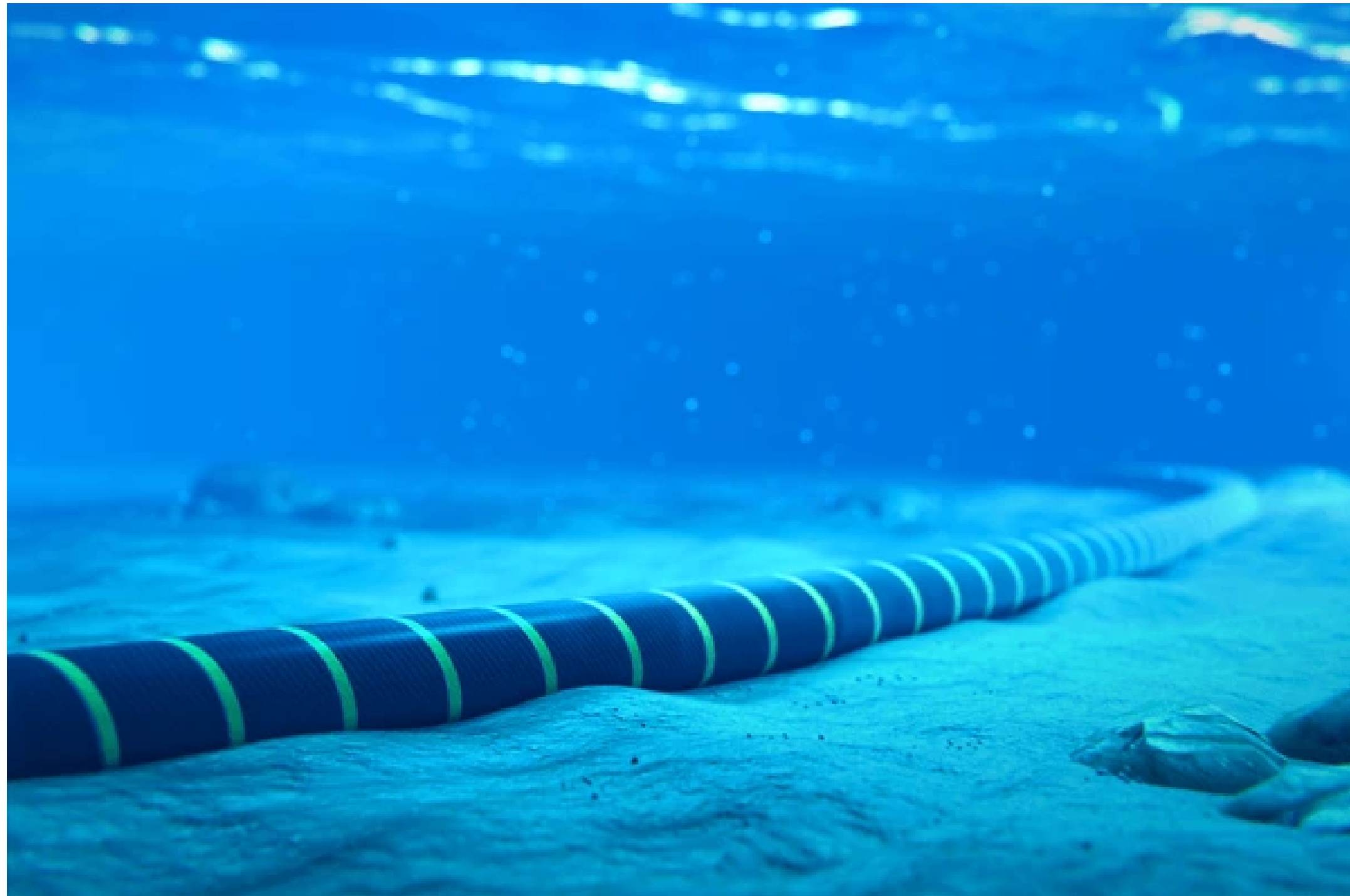
try:
    # Connexion à la base de données MariaDB.
    sql_connexion = sql_link.connect(
        host=sql_host,
        user=sql_user,
        password=sql_password,
        database=sql_database
    )
    print("Database connection established")
except sql_link.Error as err:
    print(f"Error connecting to the database: {err}")
    sys.exit(1)
```



GRAFANA

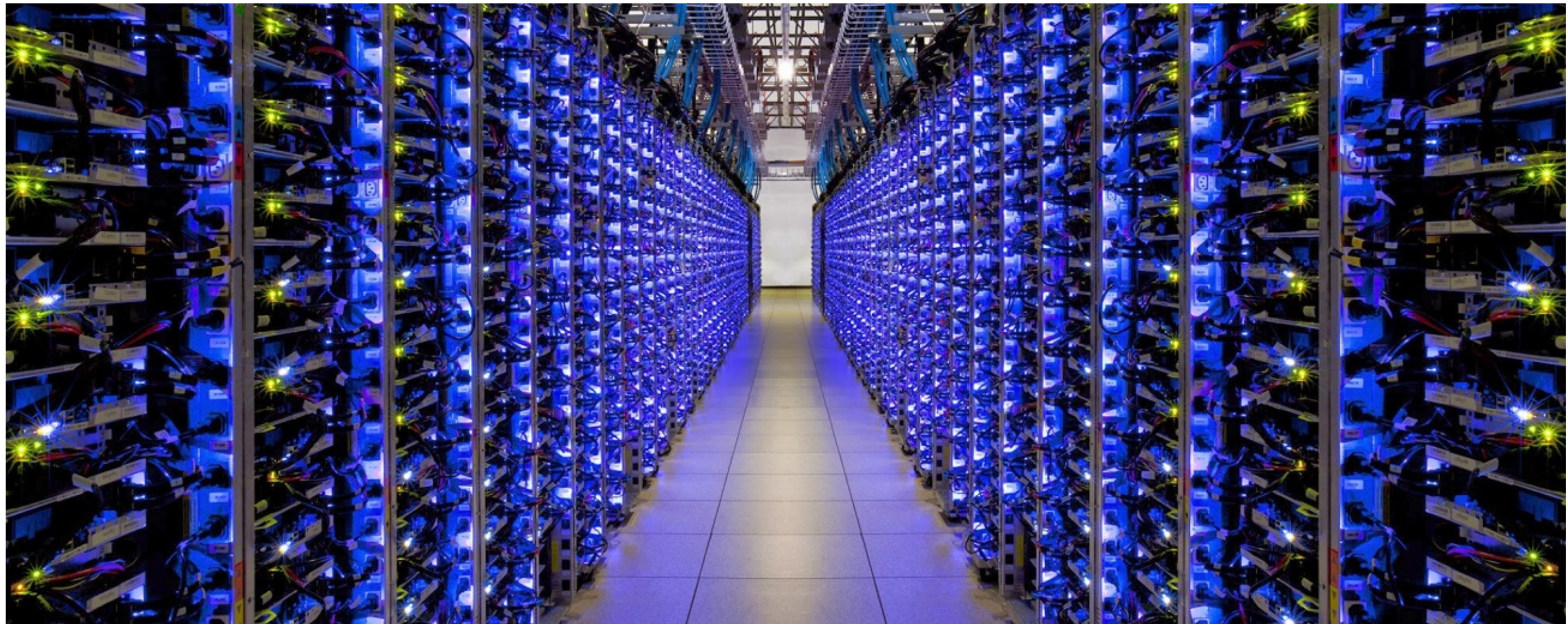
**visualiser, surveiller et analyser
des données de diverses sources
en temps réel à travers des
tableaux de bord interactifs et
personnalisables.**

Durabilité des Câbles Sous-Marins de Télécommunications



Le Développement Durable et les Défis des Datacenters

Problèmes et Solutions pour un Refroidissement Écologique

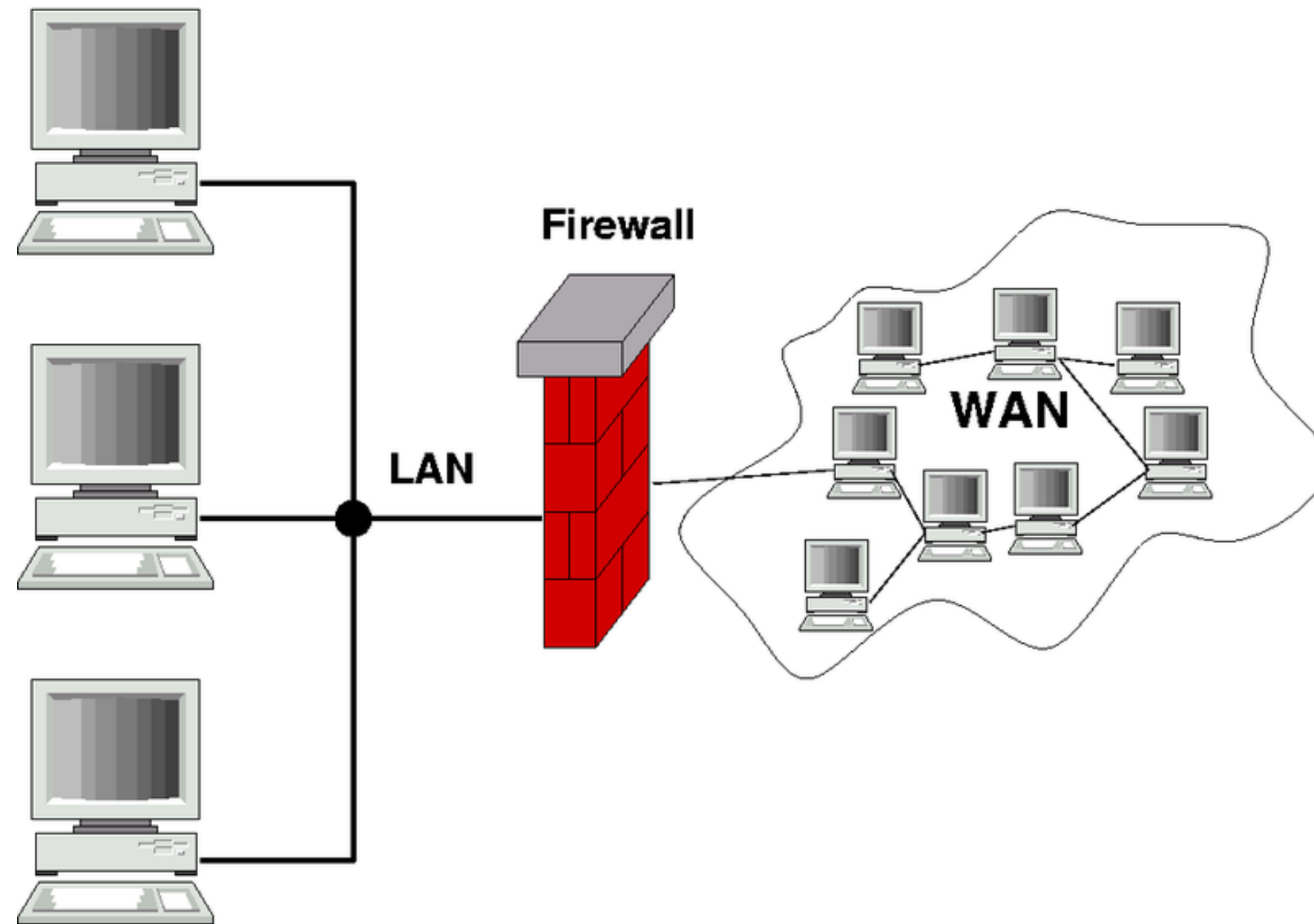


<https://depositphotos.com/fr/photos/datacenter.html>

SUJET CYBERSÉCURITÉ

La double authentification

Pourquoi les firewall



le lien de la photo