

Connecting with Python

This guide explains how to connect a Python application to a TimescaleDB database using the `psycopg2-binary` package. It covers environment setup, configuration, and execution of a simple query to test connectivity.

Variables


To connect to a TimescaleDB database, you only need **one environment variable** — the connection URI.


| Variable | Description | Purpose |
|----------------------------|--|---|
| <code>TIMESCALE_URI</code> | Full TimescaleDB (PostgreSQL-compatible) connection string from the Elestio service overview | Provides all credentials and connection details in a single URI |


A typical URI format looks like:


```
postgresql://<USER>:<PASSWORD>@<HOST>:<PORT>/<DATABASE>
```

You can find the details needed in the URI from the **Elestio service overview** details. Copy and replace the variables carefully in the URI example provided above.


**timescaledb-gi7jy**

 TimescaleDB

 Cluster

 Running

>_ Open terminal

 Delete cluster

Add node

Overview


Nodes

Backups

Audit


Termination protection

Disabled. VM can be powered off and terminated.

Protection deactivated 

Auto-Failover

Enabled. In case of failure, the cluster will automatically attempt to recover

Auto-Failover activated 






Node

1 Primary Node

Database Admin

Display your database credentials

Hide DB Credentials

| | | |
|----------|---|---|
| Host | timescaledb-gi7jy-u7774.vm.elestialio.app |  |
| Port | 25432 |  |
| User | postgres |  |
| Password | ***** | Show password  |
| CLI | PGPASSWORD=***** psql --host=timescaledb-gi7jy-u7774.vm.elestialio.app --port=25432 --username=postgres | Show password  |

Prerequisites

Install Python

Check if Python is installed:

```
python --version
```

If not installed, download it from <https://python.org>.

Install `psycopg2-binary`

Install the PostgreSQL driver for Python:

```
pip install psycopg2-binary
```

Code

Once all prerequisites are set up, create a new file named `tdb.py` and add the following code and replace the `TIMESCALE_URI` with actual link or in environment setup as you wish:

```

import psycopg2
import os

def get_db_version():
    try:
        # Use the TimescaleDB URI from environment variable
        connection_uri = os.getenv('TIMESCALE_URI', 'POSTGRESQL_URI')
        db_connection = psycopg2.connect(connection_uri)
        db_cursor = db_connection.cursor()
        db_cursor.execute('SELECT VERSION()')
        db_version = db_cursor.fetchone()[0]
        return db_version

    except Exception as e:
        print(f"Database connection error: {e}")
        return None

    finally:
        if 'db_cursor' in locals():
            db_cursor.close()
        if 'db_connection' in locals():
            db_connection.close()

def display_version():
    version = get_db_version()
    if version:
        print(f"Connected to TimescaleDB: {version}")

if __name__ == "__main__":
    display_version()

```

💡 **Tip:** Save your URI in an .env file or set it in your terminal session like this:

```
export TIMESCALE_URI=postgresql://user:password@host:port/database
```

To execute the script, open the terminal or command prompt and navigate to the directory where `tdb.py`. Once in the correct directory, run the script with the command

```
python tdb.py
```

If the connection is successful, you'll see:

```
Connected to TimescaleDB: PostgreSQL 14.13 (Debian 14.13-1.pgdg120+1) on x86_64-pc-linux-gnu,  
compiled by gcc (Debian 12.2.0-14) 12.2.0, 64-bit
```

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