

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.

The screenshot shows the management interface for a TimescaleDB cluster named 'timescaledb-gi7jy'. The cluster is in a 'Running' state. At the top, there are buttons for 'Open terminal', 'Delete cluster', and 'Add node'. Below this, there are tabs for 'Overview', 'Nodes', 'Backups', and 'Audit'. The 'Overview' tab is active, showing settings for 'Termination protection' (Disabled), 'Auto-Failover' (Enabled), and 'Node' (1 Primary Node). A 'Database Admin' section is highlighted with a red border, displaying database credentials: Host (timescaledb-gi7jy-u7774.vm.elestialio.app), Port (25432), User (postgres), Password (*****), and CLI (PGPASSWORD=***** psql --host=timescaledb-gi7jy-u7774.vm.elestialio.app --port=25432 --username=postgres). There are 'Show password' and 'Hide DB Credentials' buttons.

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', 'POSTGRES_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
```

Revision #1

Created 2025-05-13 06:58:22 UTC by kaiwalya

Updated 2025-05-13 07:01:04 UTC by kaiwalya