

Connecting with Python

This guide explains how to establish a connection between a **Python** application and a **PostgreSQL** database using the `psycopg2-binary` package. It walks through the necessary setup, configuration, and execution of a simple SQL query.

Variables

To connect to a PostgreSQL database, you only need one environment variable — the **connection URI**. This URI contains all the necessary information like username, password, host, port, and database name.

Variable	Description	Purpose
POSTGRESQL_URI	Full PostgreSQL connection string (from the Elestio service overview page)	Provides all necessary credentials and endpoint details in a single URI format.

The URI will look like this:

```
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.



postgresql-2p7j1

PostgreSQL

Running

Open terminal

Delete service

Clone this service

Overview

Tools

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Metrics

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Termination protection

Disabled. VM can be powered off and terminated.

Protection deactivated



Database Admin

Display your database credentials

Hide DB Credentials

Host

postgresql-2p7j1-u7774.vm.elestio.app



Port

25432



User

postgres



Password

Show password



CLI

PGPASSWORD=***** psql --host=postgresql-2p7j1-u7774.vm.elestio.app --port=25432 --username=postgres

Show password



Prerequisites

Install Python

Check if Python is installed by running:

```
python --version
```

If not installed, download it from python.org and install it.

Install `psycopg2-binary` Package

The `psycopg2-binary` package enables Python applications to interact with PostgreSQL. Install it using:

```
pip install psycopg2-binary
```

Code

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

```
import psycopg2

def get_db_version():
    try:
        db_connection = psycopg2.connect('POSTGRESQL_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 PostgreSQL: {version}")

if __name__ == "__main__":
    display_version()
```

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

```
python pg.py
```

If the connection is successful, the terminal will display output similar to:

```
Connected to PostgreSQL: PostgreSQL 16.8 (Debian 16.8-1.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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