

Connecting with Python

This guide explains how to connect a Python application to a Hydra 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 Hydra database, you only need **one environment variable** — the connection URI.

| Variable | Description | Purpose |
|------------------------|--|---|
| <code>HYDRA_URI</code> | Full Hydra (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 Hydra cluster management interface for a cluster named 'hydra-y2e0a'. At the top, there are buttons for 'Hydra', 'Cluster', and 'Running' (with a green checkmark). To the right, 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 red box highlights the 'Database Admin' section, which displays database credentials for a PostgreSQL instance. The credentials are as follows:

| Field | Value | Action |
|----------|--|----------------------|
| Host | hydra-y2e0a-u7774.vm.elestialo.app | Copy |
| Port | 15432 | Copy |
| User | postgres | Copy |
| Password | ***** | Show password / Copy |
| CLI | PGPASSWORD=***** psql --host=hydra-y2e0a-u7774.vm.elestialo.app --port=15432 --username=postgres | Show password / Copy |

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 `hydra.py` and add the following code and replace the `HYDRA_URI` with actual link or in environment setup as you wish:

```
import psycopg2
import os

def get_db_version():
    try:
        # Use the Hydra URI from environment variable
        connection_uri = os.getenv('HYDRA_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 Hydra: {version}")

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

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

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

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

```
python hydra.py
```

If the connection is successful, you'll see:

```
Connected to Hydra: 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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