

# How to Connect

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# Connecting with Node.js

This guide walks you through the process of connecting a Node.js application to a TimescaleDB database using the `pg` package. You'll learn how to set up the environment, configure the connection, and run a simple SQL query.

## Variables

To connect to a TimescaleDB database, the following parameters are required. You can find these details in the **Elestio service overview page** of your TimescaleDB service.

Variable	Description	Purpose
<code>USER</code>	TimescaleDB (PostgreSQL) username	Identifies the database user with access privileges
<code>PASSWORD</code>	TimescaleDB password	Authenticates the user against the TimescaleDB database
<code>HOST</code>	Hostname of the TimescaleDB instance	Specifies the server address of the database
<code>PORT</code>	Port for TimescaleDB (usually 5432)	Specifies the network port for connections
<code>DATABASE</code>	Name of the TimescaleDB database	Specifies which database to access

These values can usually be found in the Elestio service overview details as shown in the image below, make sure to take a copy of these details and add it to the code moving ahead.



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.elestio.app



Port 25432



User postgres



Password \*\*\*\*\*

Show password



CLI PGPASSWORD=\*\*\*\*\* psql --host=timescaledb-gi7jy-u7774.vm.elestio.app --port=25432 --username=postgres

Show password



## Prerequisites

- **Install Node.js and NPM**

- Check if Node.js is installed:

```
node -v
```

```
npm -v
```

- If not, download and install it from <https://nodejs.org>.

- **Install the pg Package**

- TimescaleDB is PostgreSQL-compatible, so use the pg package:

```
npm install pg --save
```

## Code

Once all prerequisites are set up, create a new file named `tdb.js` and add the following code.

```
const { Client } = require("pg");

// Database connection configuration
const config = {
  host: "HOST",
  user: "USER",
  password: "PASSWORD",
  database: "DATABASE",
  port: PORT,
  ssl: {
    rejectUnauthorized: false, // Only if TimescaleDB requires SSL (check Elestio settings)
  },
};

// Create a new client instance
const client = new Client(config);

// Connect to the TimescaleDB database
client.connect((err) => {
  if (err) {
    console.error("Connection failed:", err.stack);
    return;
  }

  console.log("Connected to TimescaleDB");

  // Run a test query
  client.query("SELECT version()", (err, res) => {
    if (err) {
      console.error("Query failed:", err.stack);
    } else {
      console.log("TimescaleDB/PostgreSQL Version:", res.rows[0].version);
    }

    // Close the connection
    client.end((err) => {
      if (err) console.error("Error closing connection:", err.stack);
    });
  });
});
```

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

```
node tdb.js
```

If successful, you'll see:

```
Connected to TimescaleDB  
TimescaleDB/PostgreSQL Version: 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
```

# 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.elesto.app	
Port	25432	
User	postgres	
Password	*****	Show password
CLI	PGPASSWORD=***** psql --host=timescaledb-gi7jy-u7774.vm.elesto.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', '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
```

# Connecting with PHP

This guide explains how to connect a PHP application to a TimescaleDB database using the **PDO extension**. It covers setting up prerequisites, configuring the connection URI, and running a test SQL query.

## 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 connection string from Elestio	Encodes all connection info in one URI

A typical URI looks 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.



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.elestialo.app



Port 25432



User postgres



Password \*\*\*\*\*

Show password



CLI PGPASSWORD=\*\*\*\*\* psql --host=timescaledb-gi7jy-u7774.vm.elestialo.app --port=25432 --username=postgres

Show password



# Prerequisites

## Install PHP

Check if PHP is installed:

```
php -v
```

If not, download and install PHP from: <https://www.php.net/downloads.php>

# Code

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

```
<?php
$db_url = getenv("TIMESCALE_URI") ? "postgresql://user:password@host:port/database";
$db_parts = parse_url($db_url);
$db_name = ltrim($db_parts['path'], '/');
```

```
$dsn = "pgsql:host=${db_parts['host']};port=${db_parts['port']};dbname=${db_name}";

try {
    $pdo = new PDO($dsn, $db_parts['user'], $db_parts['pass']);
    $version = $pdo->query("SELECT VERSION()")->fetchColumn();
    echo "Connected to TimescaleDB: " . $version . PHP_EOL;
} catch (PDOException $e) {
    echo "Connection failed: " . $e->getMessage() . PHP_EOL;
}
```

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

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

Navigate to the directory containing `tdb.php` and run:

```
php tdb.php
```

If successful, you'll see output like:

# Connecting with Go

This guide walks you through setting up a Go application to connect to a TimescaleDB database, using the PostgreSQL-compatible `lib/pq` driver, and running a basic query to verify the connection.

## Variables


To connect to a TimescaleDB 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
<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-gi7jyTimescaleDBClusterRunningOpen terminalDelete clusterAdd 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 Go**

- Check if Go is installed:

```
go version
```

- If not, download and install Go: <https://go.dev/dl/>

- **Install pq Driver**

```
go get github.com/lib/pq
```

# Code

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

```
package main
```

```

import (
    "database/sql"
    "fmt"
    "log"
    "os"

    _ "github.com/lib/pq"
)

func getDBConnection(connStr string) (*sql.DB, error) {
    db, err := sql.Open("postgres", connStr)
    if err != nil {
        return nil, fmt.Errorf("failed to open database connection: %v", err)
    }

    if err := db.Ping(); err != nil {
        return nil, fmt.Errorf("failed to ping database: %v", err)
    }

    return db, nil
}

func main() {
    // Get the TimescaleDB connection string from environment variable
    connStr := os.Getenv("TIMESCALE_URI")
    if connStr == "" {
        log.Fatal("TIMESCALE_URI environment variable not set")
    }

    db, err := getDBConnection(connStr)
    if err != nil {
        log.Fatal(err)
    }
    defer db.Close()

    query := "SELECT current_database(), current_user, version()"
    row := db.QueryRow(query)

    var dbName, user, version string
    if err := row.Scan(&dbName, &user, &version); err != nil {

```

```
    log.Fatal("Failed to scan row:", err)
  }

  fmt.Printf("Connected to TimescaleDB\nDatabase: %s\nUser: %s\nVersion: %s\n", dbName, user,
version)
}
```

Set your TimescaleDB URI as an environment variable:

```
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 `main.go`. Once in the correct directory, run the script with the command

```
go run main.go
```

If successful, you'll see output like:

```
Connected to TimescaleDB
Database: elestio
User: postgres
Version: 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
```

# Connecting with Java

This guide shows how to connect your Java app to a **TimescaleDB database** using the [PostgreSQL JDBC driver](#), parse command-line arguments, and run a basic query.

## Variables

To connect to a TimescaleDB database, the following parameters are required. You can find these details in the **Elestio service overview page** of your TimescaleDB service.

Variable	Description	Purpose
<code>USER</code>	TimescaleDB (PostgreSQL) username	Identifies the database user with access privileges
<code>PASSWORD</code>	TimescaleDB password	Authenticates the user against the TimescaleDB database
<code>HOST</code>	Hostname of the TimescaleDB instance	Specifies the server address of the database
<code>PORT</code>	Port for TimescaleDB (usually 5432)	Specifies the network port for connections
<code>DATABASE</code>	Name of the TimescaleDB database	Specifies which database to access

These values can usually be found in the Elestio service overview details as shown in the image below, make sure to take a copy of these details and add it to the code moving ahead.



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 <input type="checkbox"/>
Auto-Failover	Enabled. In case of failure, the cluster will automatically attempt to recover	Auto-Failover activated <input checked="" type="checkbox"/>
Node	1 Primary Node	

Database Admin

Display your database credentials

Hide DB Credentials

Host	timescaledb-gi7jy-u7774.vm.elestialio.app	<input type="checkbox"/>
Port	25432	<input type="checkbox"/>
User	postgres	<input type="checkbox"/>
Password	*****	Show password <input type="checkbox"/>
CLI	PGPASSWORD=***** psql --host=timescaledb-gi7jy-u7774.vm.elestialio.app --port=25432 --username=postgres	Show password <input type="checkbox"/>

# Prerequisites

## Install Java & JDBC driver

Check if Java is installed by running:

```
java -version
```

If not installed, install it first and then download and install **JDBC** driver from <https://jdbc.postgresql.org/download/> or if you have Maven installed, run the following command with updated version of the driver:

```
mvn org.apache.maven.plugins:maven-dependency-plugin:2.8:get \
-Dartifact=org.postgresql:postgresql:42.7.5:jar \
-Ddest=postgresql-42.7.5.jar
```

# Code

Once all prerequisites are set up, create a new file named `TDB.java` and add the following code:

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.HashMap;
import java.util.Map;

public class TDB {

    static class Config {
        String host, port, database, username, password;

        Config(String host, String port, String database, String username, String password) {
            this.host = host;
            this.port = port;
            this.database = database;
            this.username = username;
            this.password = password;
        }

        String getJdbcUrl() {
            return String.format("jdbc:postgresql://%s:%s/%s?sslmode=require", host, port,
database);
        }

        boolean isComplete() {
            return host != null && port != null && database != null && username != null &&
password != null;
        }
    }

    static Map<String, String> parseArgs(String[] args) {
        Map<String, String> map = new HashMap<>();
        for (int i = 0; i < args.length - 1; i += 2) {
            map.put(args[i], args[i + 1]);
        }
        return map;
    }
}
```

```

}

public static void main(String[] args) {
    try {
        Class.forName("org.postgresql.Driver");

        Map<String, String> argMap = parseArgs(args);
        Config cfg = new Config(
            argMap.get("-host"),
            argMap.get("-port"),
            argMap.get("-database"),
            argMap.get("-username"),
            argMap.get("-password")
        );

        if (!cfg.isComplete()) {
            System.err.println("Missing required arguments. Example usage:");
            System.err.println("java -cp postgresql-42.7.5.jar:. TDB -host <HOST> -port
<PORT> -database <DB> -username <USER> -password <PASS>");
            return;
        }

        try (Connection conn = DriverManager.getConnection(cfg.getJdbcUrl(), cfg.username,
cfg.password)) {
            System.out.println("Connected to TimescaleDB database successfully.");

            Statement stmt = conn.createStatement();
            ResultSet rs = stmt.executeQuery("SELECT current_database(), current_user,
version()");

            while (rs.next()) {
                System.out.println("Database: " + rs.getString(1));
                System.out.println("User: " + rs.getString(2));
                System.out.println("Version: " + rs.getString(3));
            }

            rs.close();
            stmt.close();
        }
    }
}

```

```
    } catch (ClassNotFoundException e) {
        System.err.println("PostgreSQL JDBC driver not found.");
        e.printStackTrace();
    } catch (SQLException e) {
        System.err.println("Connection or query error:");
        e.printStackTrace();
    }
}
}
```

To execute the script, open the terminal or command prompt and navigate to the directory where `TDB.java`. Once in the correct directory, run the script with the command (Update the variables with actual values acquired from previous steps).

```
javac TDB.java
```

```
java -cp postgresql-42.7.5.jar:. TDB -host HOST -port PORT -database DATABASE -username
USERNAME -password PASSWORD
```

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

```
Connected to TimescaleDB database successfully.
Database: elestio
User: postgres
Version: 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
```

# Connecting with psql

This guide explains how to connect to a **TimescaleDB** database using the `psql` command-line tool. It walks through the necessary setup, connection process, and execution of a simple SQL query.

## 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 connection string from Elestio	Encodes all connection info in one URI

A typical URI looks 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.



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.elestialo.app



Port 25432



User postgres



Password \*\*\*\*\*

Show password



CLI PGPASSWORD=\*\*\*\*\* psql --host=timescaledb-gi7jy-u7774.vm.elestialo.app --port=25432 --username=postgres

Show password



## Prerequisites

While following this tutorial, you will need to have `psql` already installed; if not head over to <https://www.postgresql.org/download/> and download it first.

## Connecting to TimescaleDB

Open your terminal and run the following command to connect to your TimescaleDB database using the full connection URI:

```
psql TIMESCALE_URI
```

If the connection is successful, you'll see output similar to this. Here it will show you the database you tried to connect to, which in this case is Elestio:

```
psql (17.4, server 14.13 (Debian 14.13-1.pgdg120+1))
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, compression: off, ALPN:
none)
Type "help" for help.
```

```
elestio=#
```

To ensure you're connected correctly, run this command inside the `psql` prompt:

```
SELECT version();
```

You should receive output like the following:

```
version
-----
-----
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
(1 row)
```

# Connecting with pgAdmin

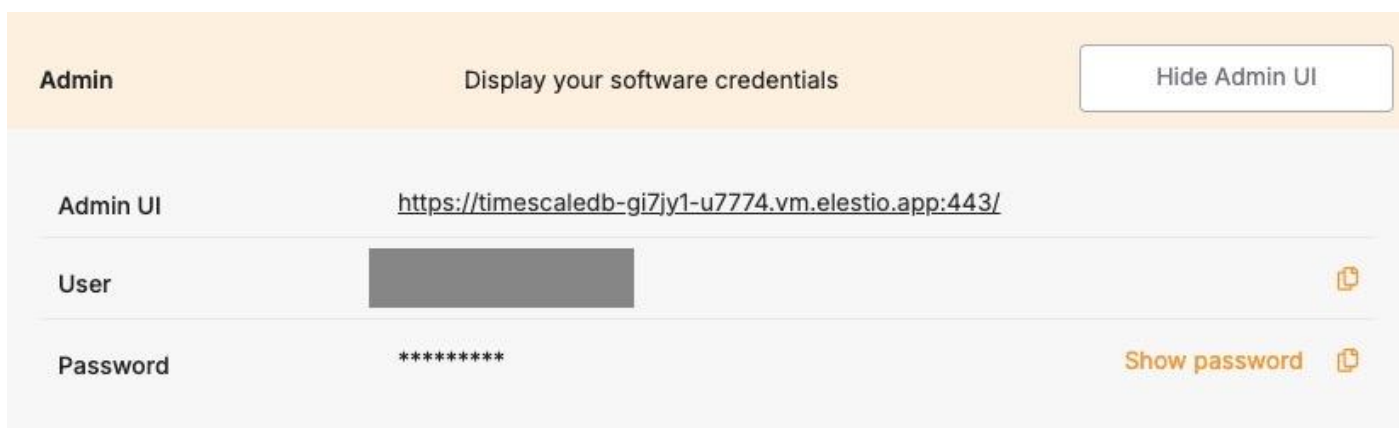
**pgAdmin** is a widely used graphical interface for TimescaleDB that allows you to manage, connect to, and run queries on your databases with ease.

## Variables

To connect using `pgAdmin`, you'll need the following connection parameters. When you deploy a TimescaleDB service on Elestio, you also get a pgAdmin dashboard configured for you to use with these variables. These details are available in the **Elestio service overview page**:

Variable	Description	Purpose
<code>USER</code>	pgAdmin username	Identifies the pgAdmin user with access permission.
<code>PASSWORD</code>	pgAdmin password	Authentication key for the <code>USER</code> .

You can find these values in your Elestio project dashboard under **Admin** section.



## Prerequisites

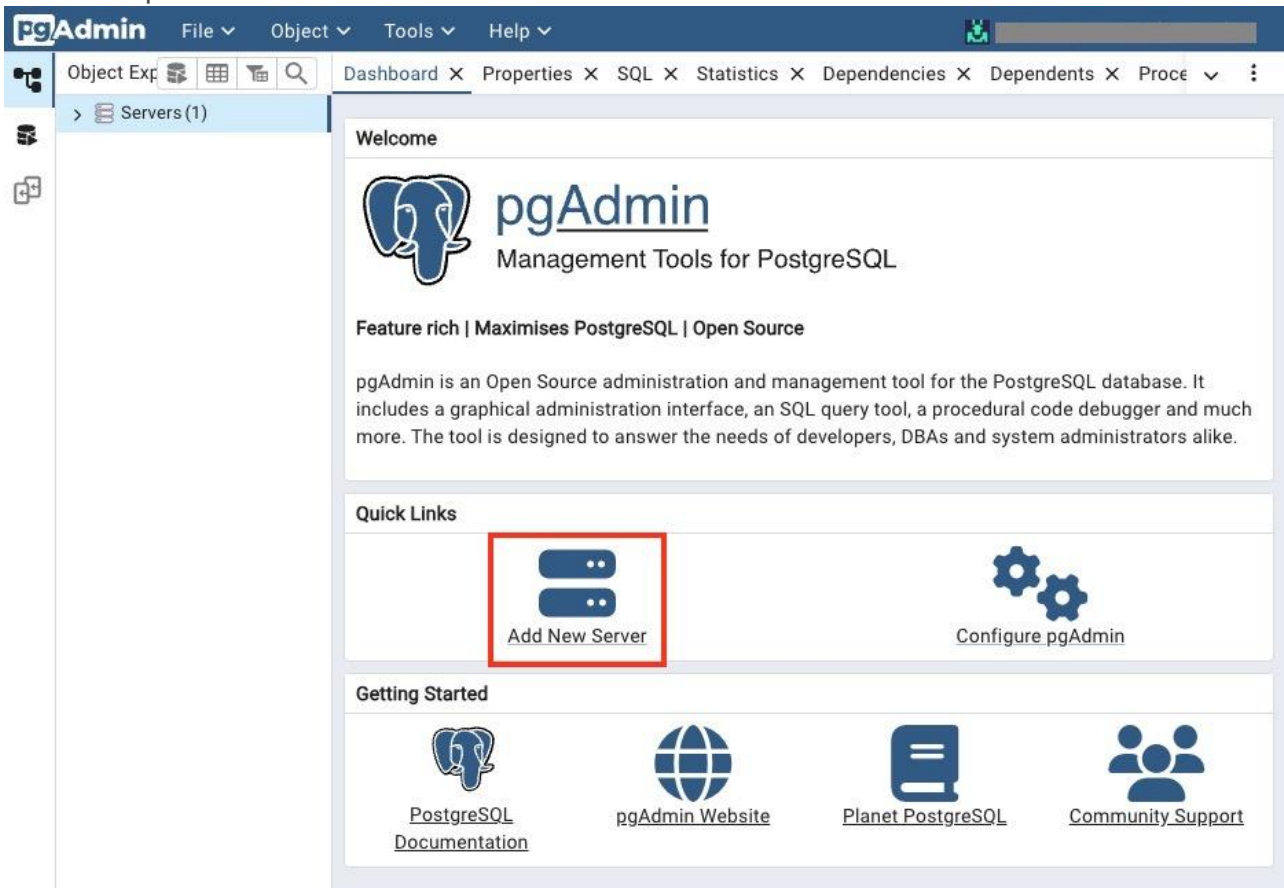
Make sure the **TimescaleDB** service is correctly deployed on Elestio and you are able to access the Admin section like the one in the image above.

## Setting Up the Connection

1. Launch **pgAdmin** from the Admin UI URL and log in with the credentials acquired in the steps before.



2. Click on "**Create**" and select "**Server...**" from the dropdown, or find **Add New Server** from the quick links



3. In the **General** tab:
  - Enter a name for your connection (e.g., `Trial pgAdmin Connection`).

**Register - Server** ×

**General** | Connection | Parameters | SSH Tunnel | Advanced | Tags

Name: Trial pgAdmin Connection

Server group: Servers

Background:

Foreground:

Connect now?:

Shared?:

Shared Username:

Comments:

4. Go to the **Connection** tab and enter the following details:

- **Host name/address:**
- **Port:**
- **Maintenance database:**
- **Username:**
- **Password:**

Host name/address	<input type="text"/>
Port	<input type="text" value="5432"/>
Maintenance database	<input type="text" value="postgres"/>
Username	<input type="text" value="trial-user"/>
Kerberos authentication?	<input type="checkbox"/>
Password	<input type="password"/>
Save password?	<input type="checkbox"/>
Role	<input type="text"/>
Service	<input type="text"/>



× Close

↺ Reset

💾 Save