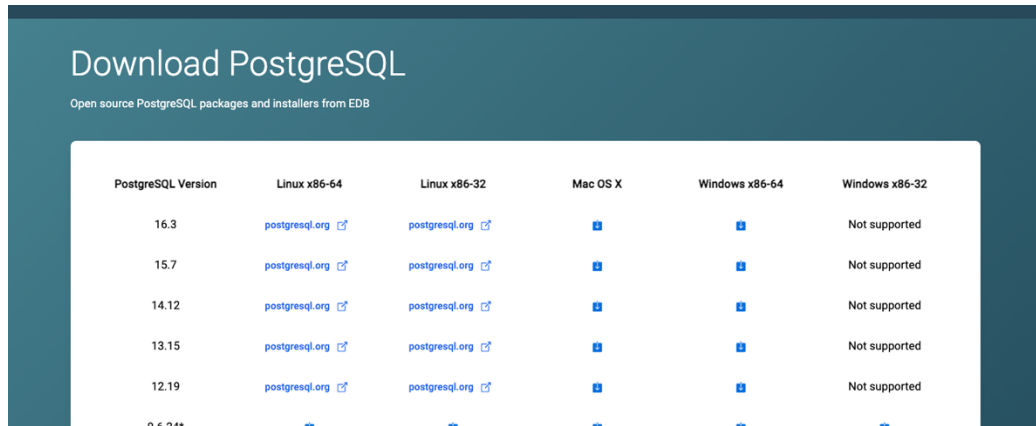
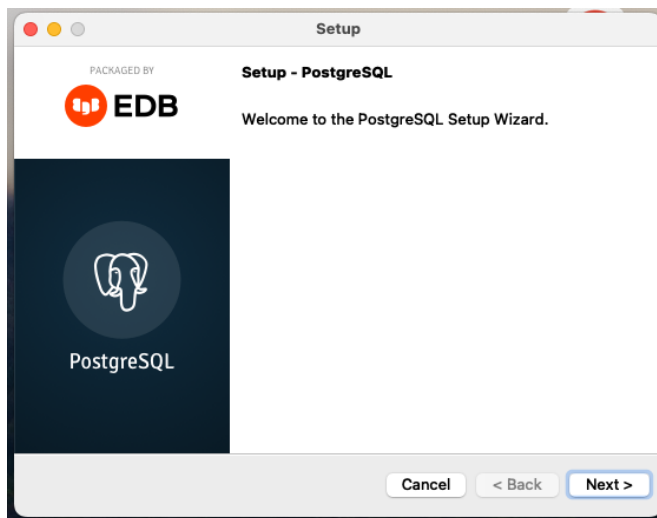


Installing PostgreSQL on local machine

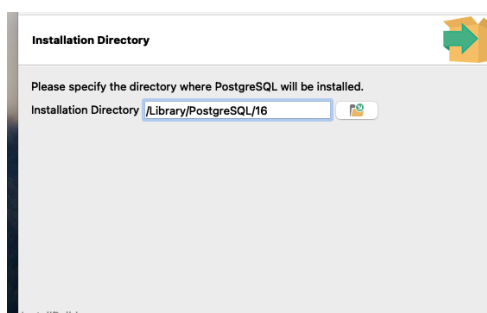
- For mac users- installation might be easier with brew (might prevent issues later)- <https://formulae.brew.sh/formula/postgresql@16>
1. Go to <https://www.enterprisedb.com/downloads/postgres-postgresql-downloads> and download the latest version that fits your OS.



2. Download and run installer

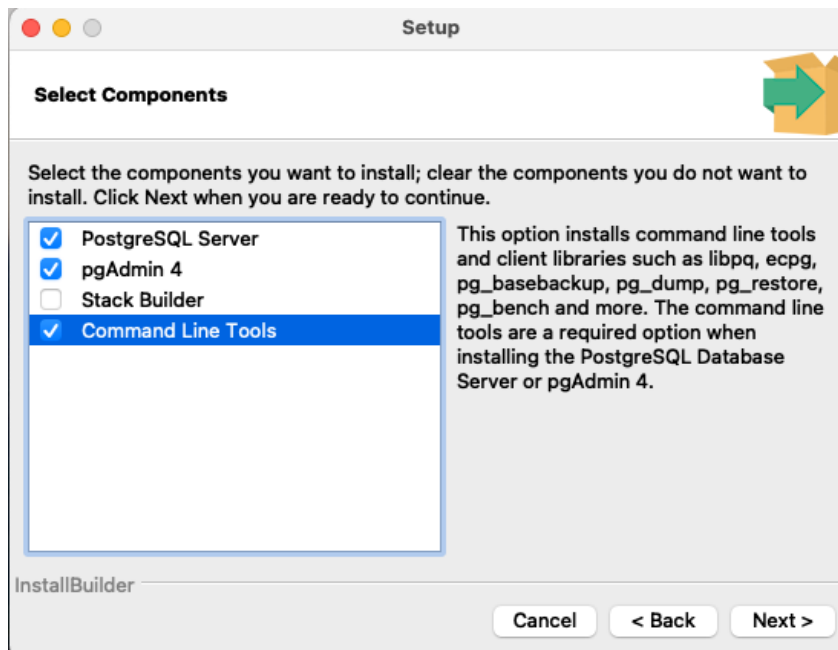


2. Choose installation directory

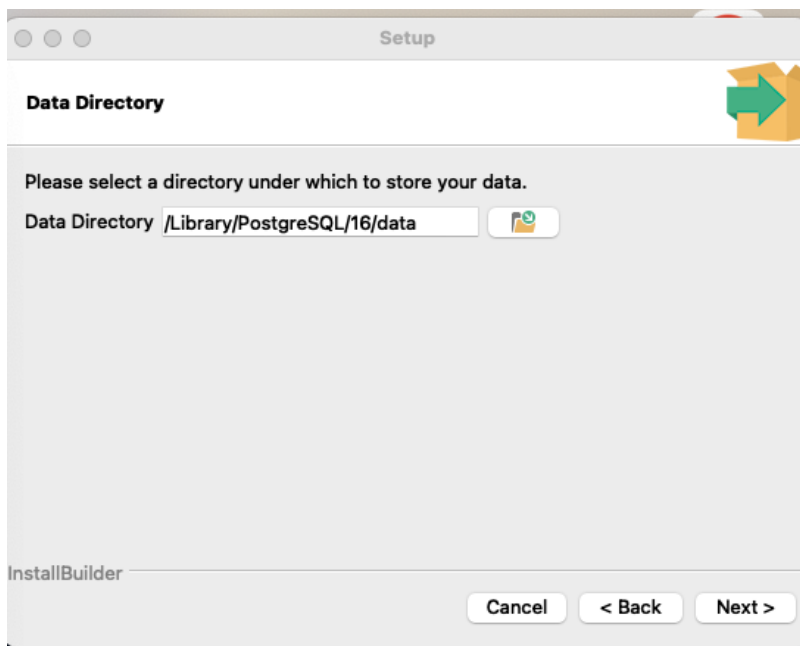


3. Select Components for PostgreSQL Installation:

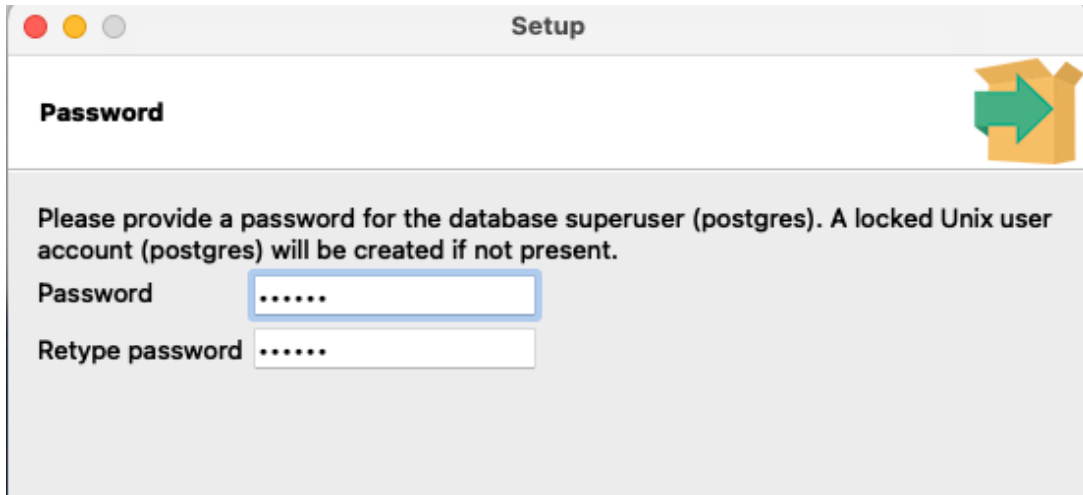
- **PostgreSQL Server:** This component is the core of PostgreSQL. It includes the database server and the necessary files to run PostgreSQL.
- **pgAdmin 4:** This component is a web-based administration tool for managing PostgreSQL databases. It provides a graphical interface to perform various database operations.
- **Command Line Tools:** This option installs command-line tools and client libraries. These tools are required for performing various database tasks via the command line.



4. Choose data directory

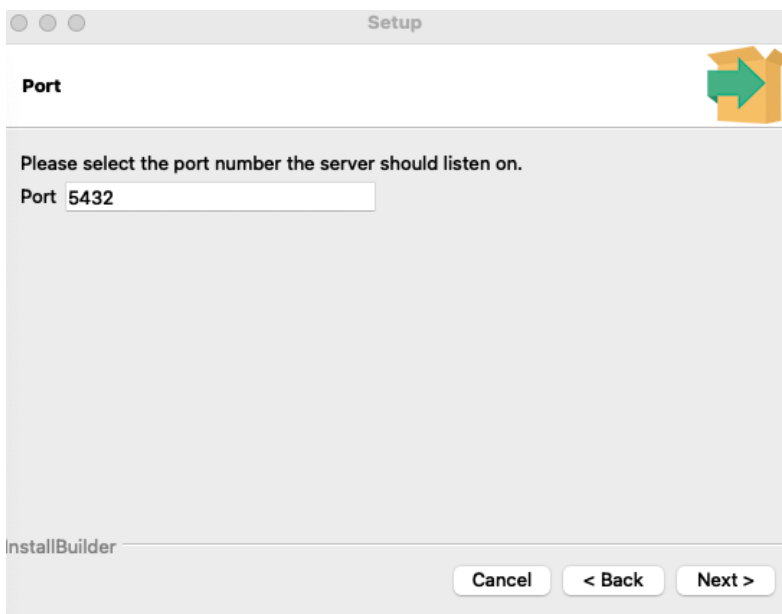


5. Provide a password for superuser Postgres (you can choose anything you want but remember it!)



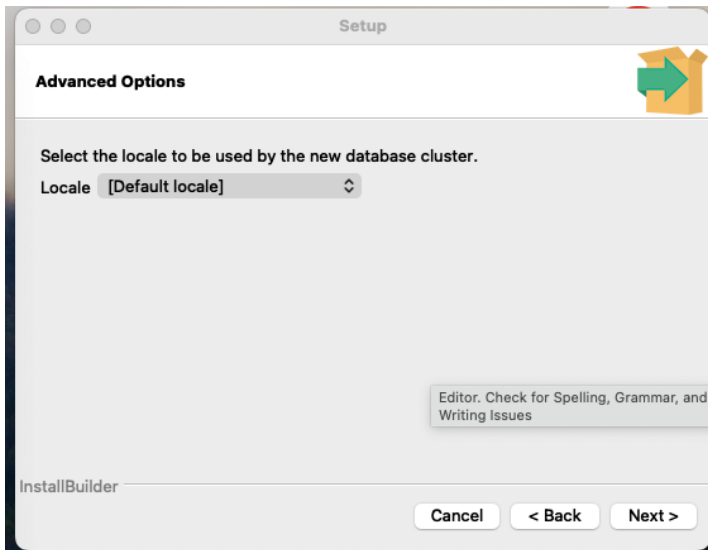
The screenshot shows a macOS-style window titled "Setup". The window has a title bar with three colored buttons (red, yellow, grey) on the left. The main content area has a header "Password" in bold. Below the header, there is a text instruction: "Please provide a password for the database superuser (postgres). A locked Unix user account (postgres) will be created if not present." Under this instruction, there are two text input fields. The first field is labeled "Password" and contains six dots. The second field is labeled "Retype password" and also contains six dots. In the top right corner of the window, there is a yellow box icon with a green arrow pointing to the right. The window has a light grey background and a thin border.

6. Select the port the server listens on (default is 5432)

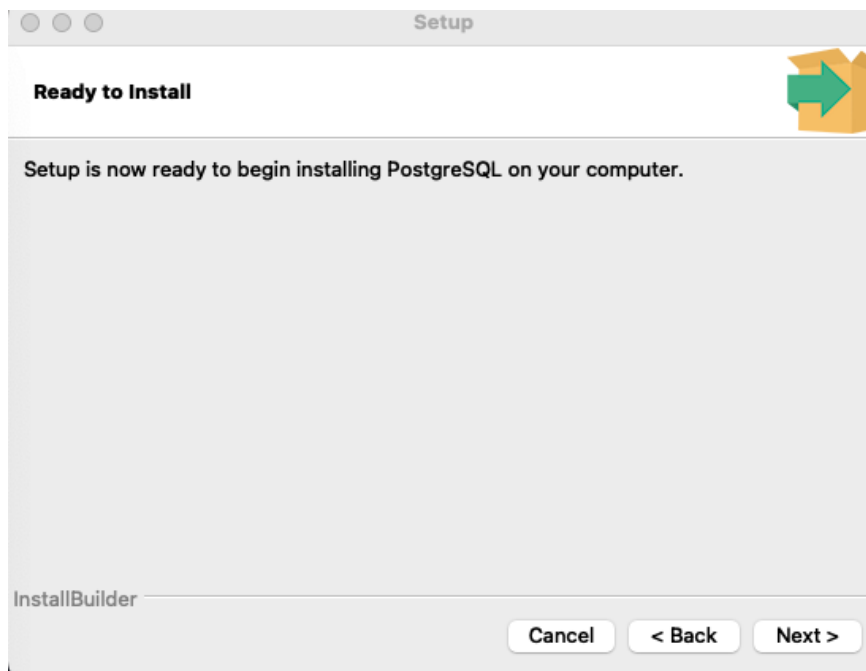


The screenshot shows a macOS-style window titled "Setup". The window has a title bar with three colored buttons (red, yellow, grey) on the left. The main content area has a header "Port" in bold. Below the header, there is a text instruction: "Please select the port number the server should listen on." Under this instruction, there is a text input field labeled "Port" which contains the number "5432". In the top right corner of the window, there is a yellow box icon with a green arrow pointing to the right. At the bottom of the window, there is a footer area with the text "InstallBuilder" on the left and three buttons: "Cancel", "< Back", and "Next >". The window has a light grey background and a thin border.

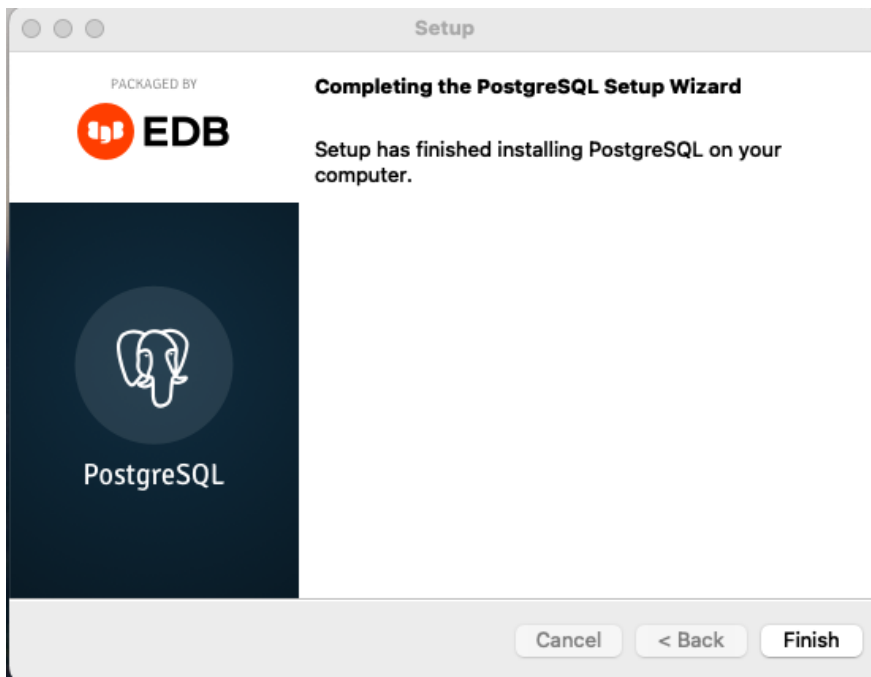
7. Select the locale for DB cluster as “default locale”



8. Install the software



9. Finish installation.

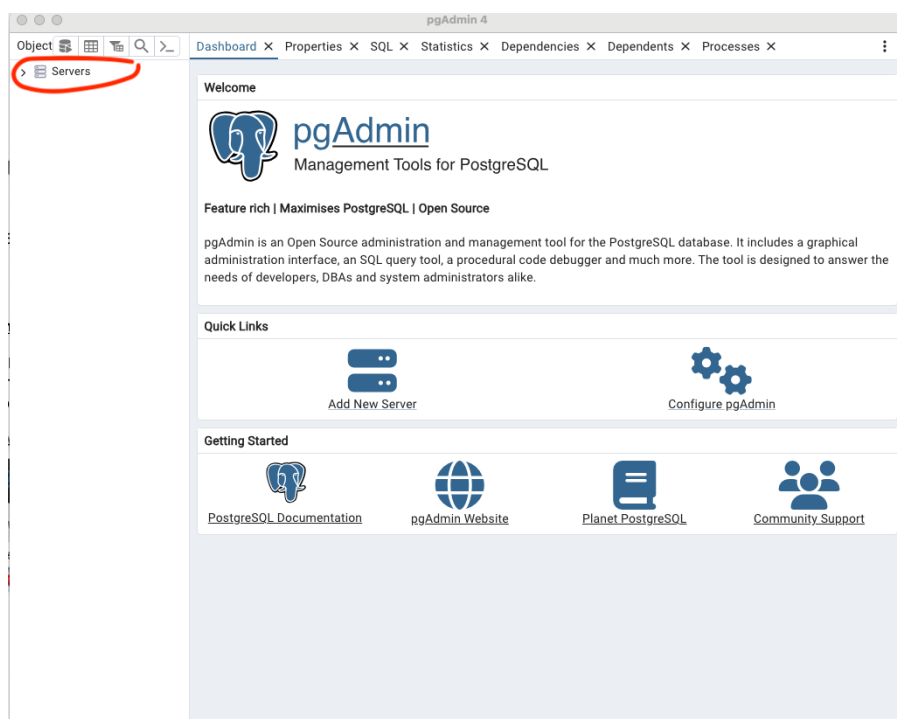


First sign in (as superuser)

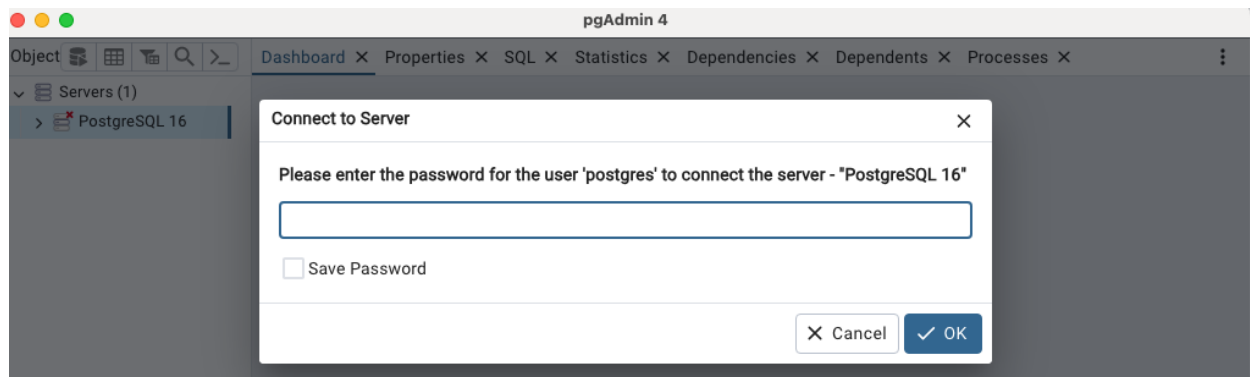
1. Run pgAdmin

- For Mac users: You can find pgAdmin in the Applications folder.
- For Windows users: It is located under {installation directory}\pgAdmin 4\bin.

You should see the following dashboard after entering the app:

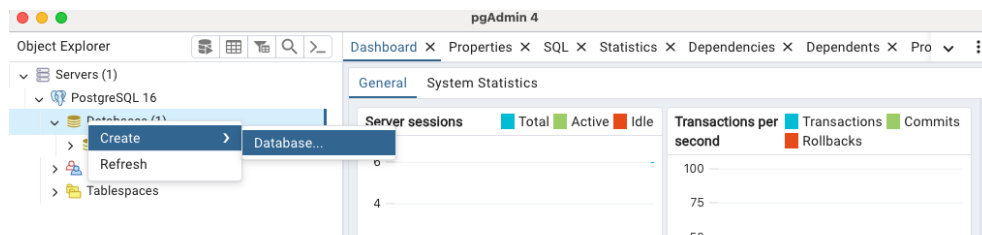


2. Connect to your server (right click on “PostgreSQL 16” and click “Connect Server”). Enter password for postgres user if prompted.

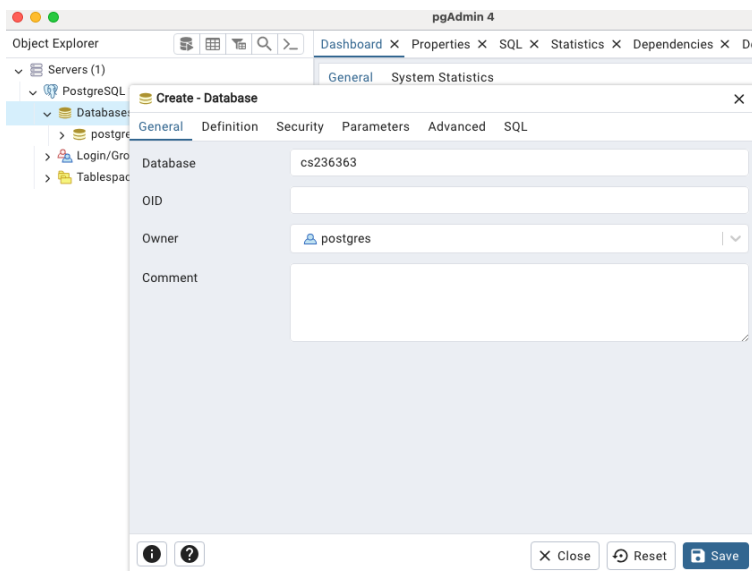


Create Database

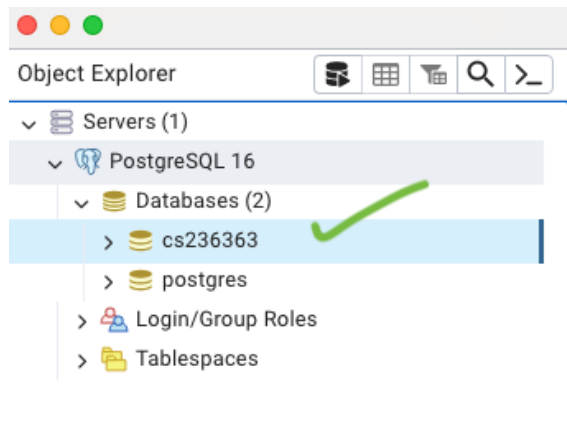
1. Right click on “databases” and choose “create”->”database”



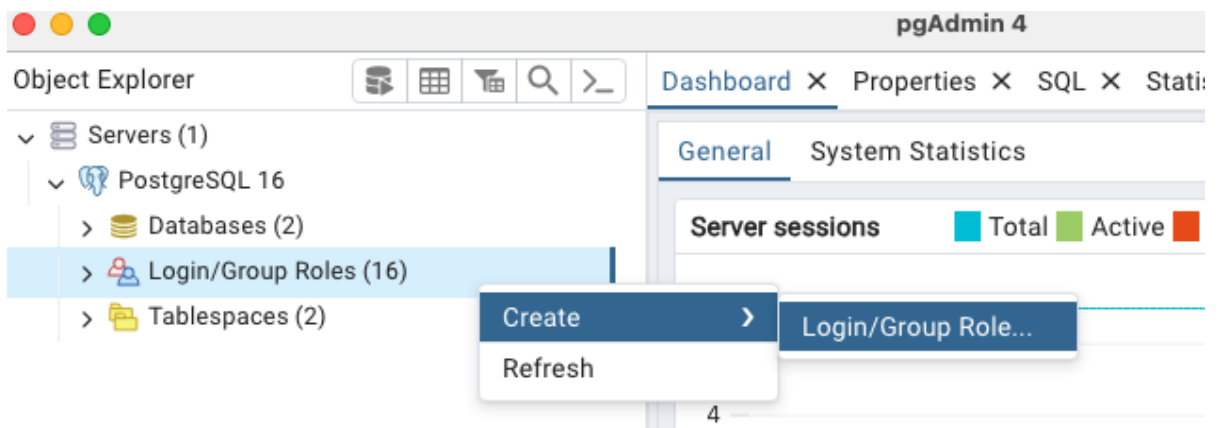
2. Call the database “cs236363” and save it:



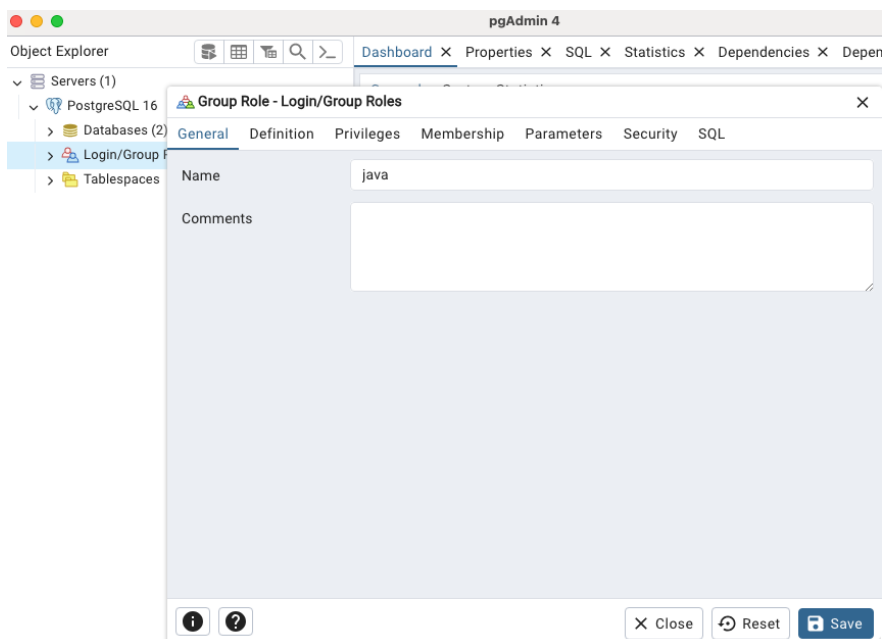
3. You should see the new database under Databases after you save it:



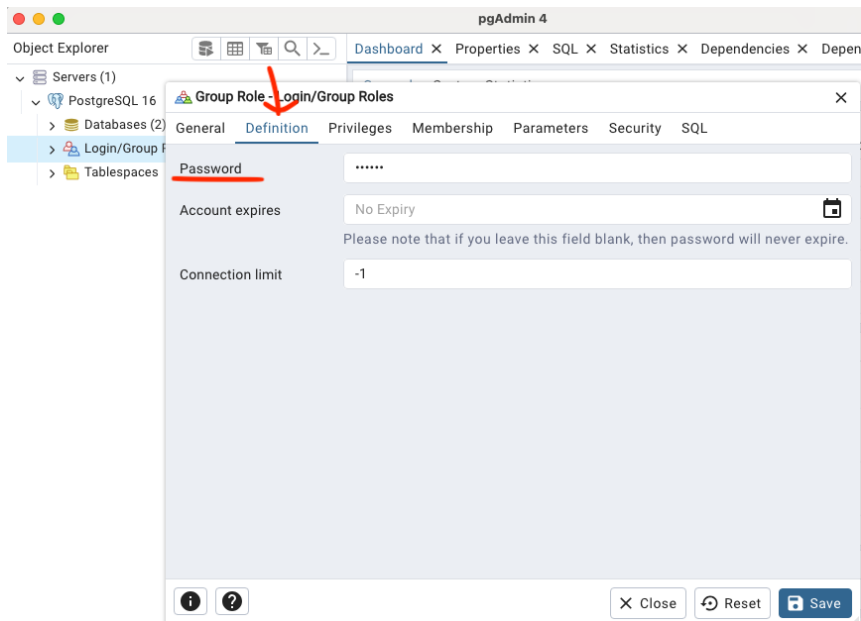
1. Right click on “Login/Group Roles”->”create”->”Login/Group Role”.



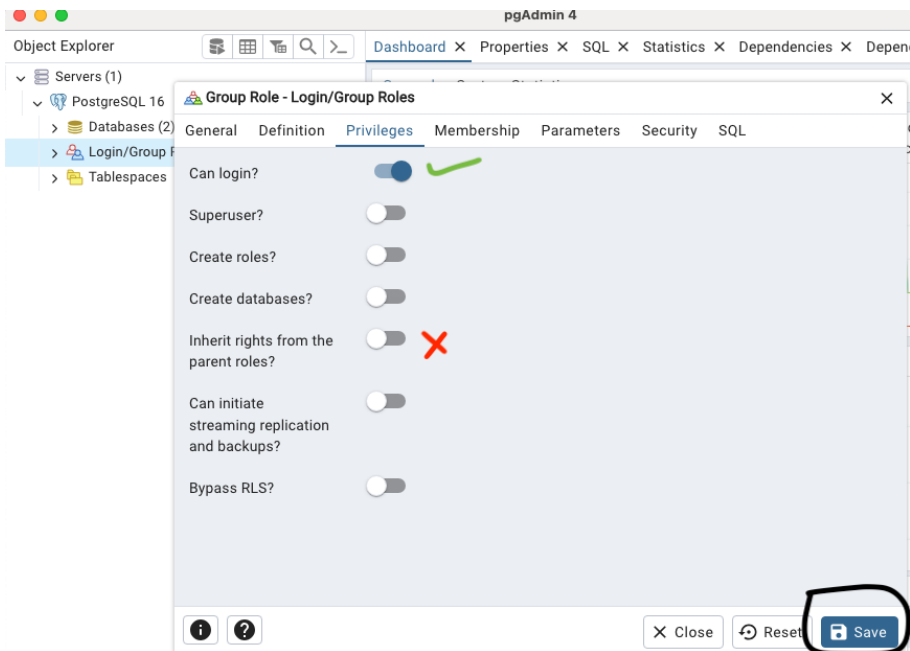
2. In the “general” tab, give your user a name (I used the name “java”, for example)



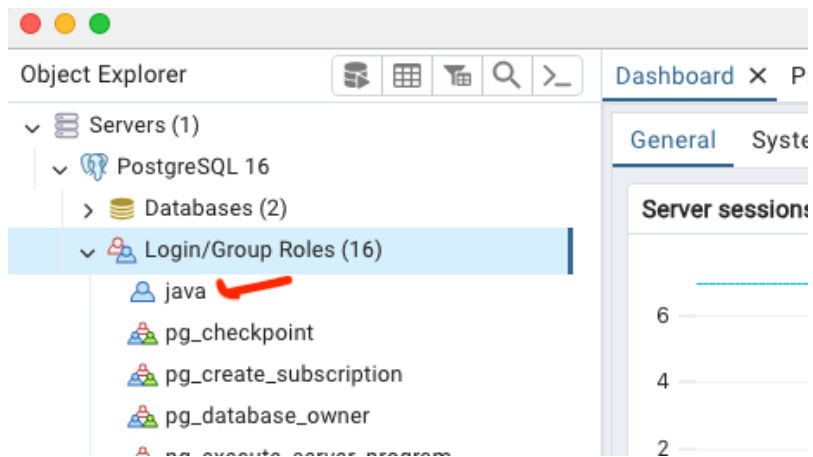
3. In the “Definition” tab, set a password for your user (please remember this user password, in addition to the superuser password you entered earlier)



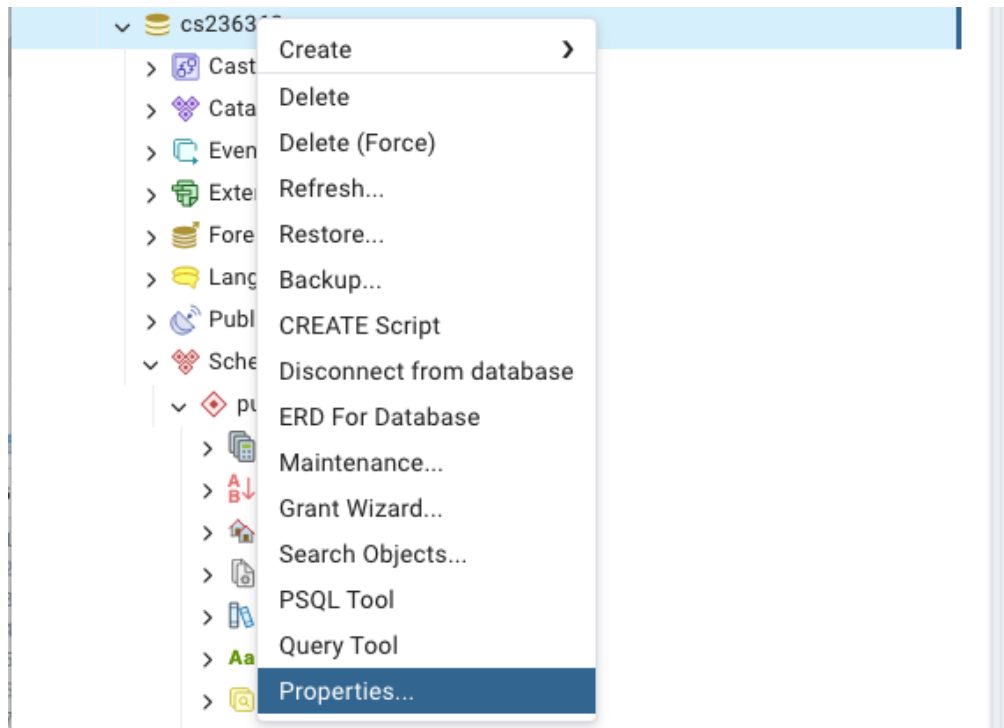
4. In “previliges” tab mark “can login” and umark “inherit rights from the parent roles?” and click save



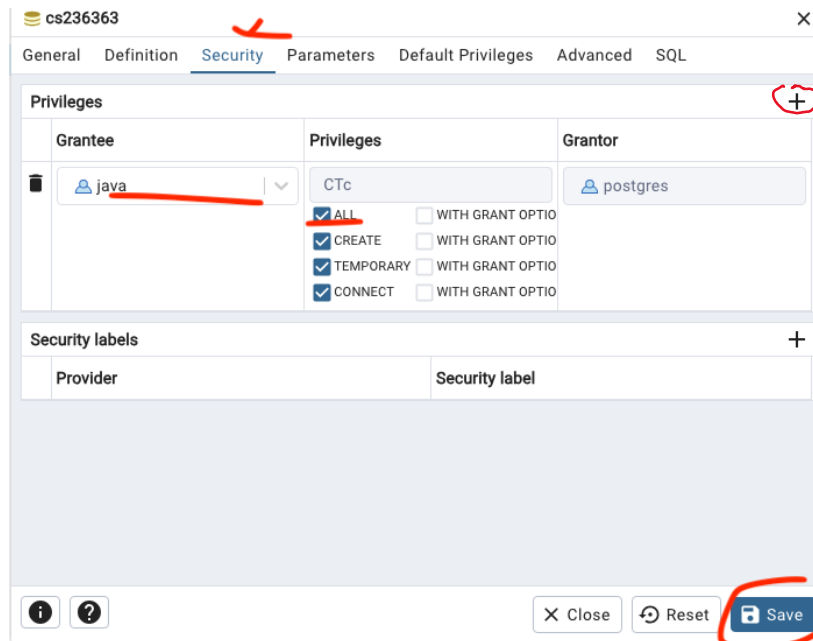
5. You should see your new user under Login/Group roles section.



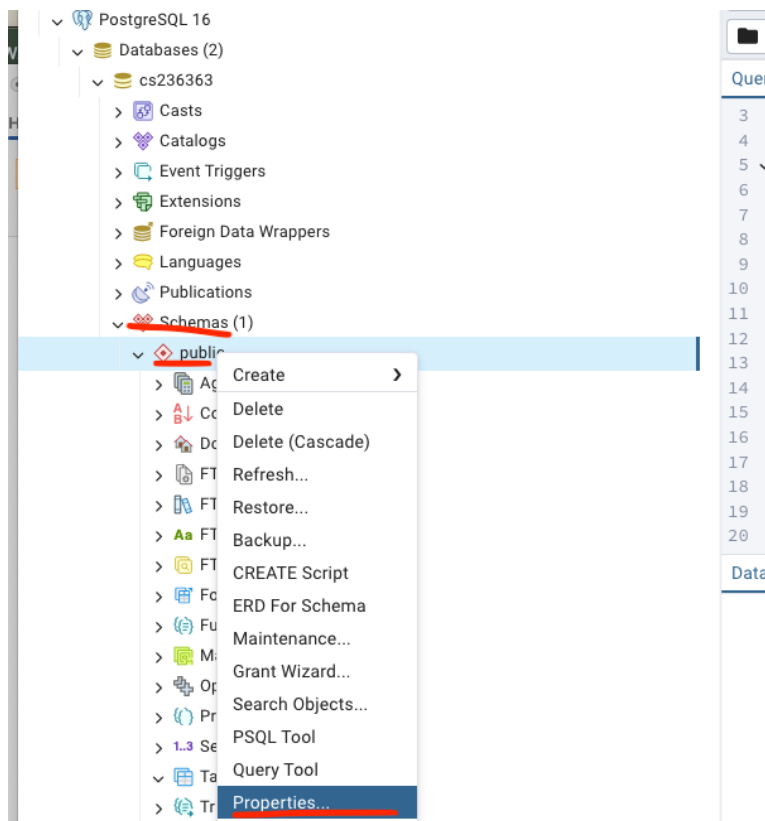
6. On the database "cs236363" go to "Properties"



7. In the "Security" tab, click the plus sign to add a row in privileges. Select the new user you created in the "Grantee" field (e.g., "java") and check the box for "ALL" privileges. Click "Save" to apply the changes.



8. On the database "cs236363" go to "schemas" -> "public" -> right click on "Properties"



9. In the "Security" tab, click the plus sign to add a row in privileges. Select the new user you created in the "Grantee" field (e.g., "java") and check the box for "ALL" privileges. Click "Save" to apply the changes.

The screenshot shows the 'public' database configuration window with the 'Security' tab selected. The 'Privileges' section contains a table with three rows. The third row is for the 'java' user, with 'CU' privileges. The 'ALL' checkbox is checked. The 'Save' button is circled in red.

Grantee	Privileges	Grantor
PUBLIC	U	pg_database...
pg_data...	UC	pg_database...
java	CU	postgres

Security labels

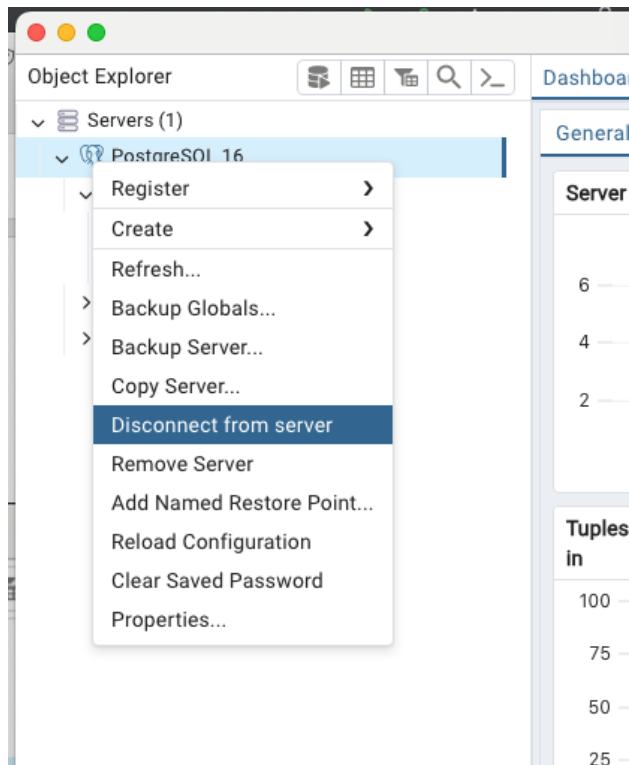
Provider	Security label
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Close Reset Save

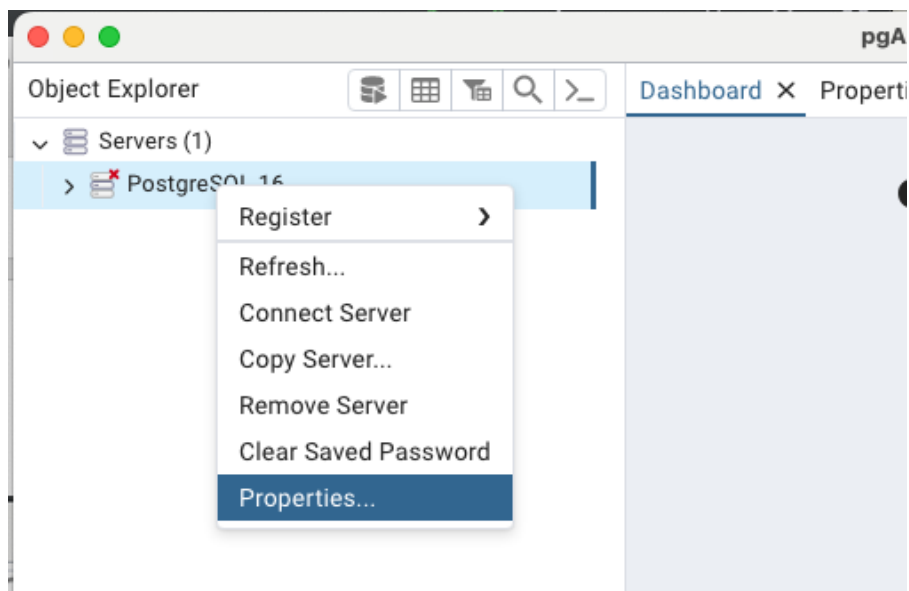
Sign in as your user

1. Please sign in as your user to prevent any unnecessary mistakes, caused by superuser privileges.

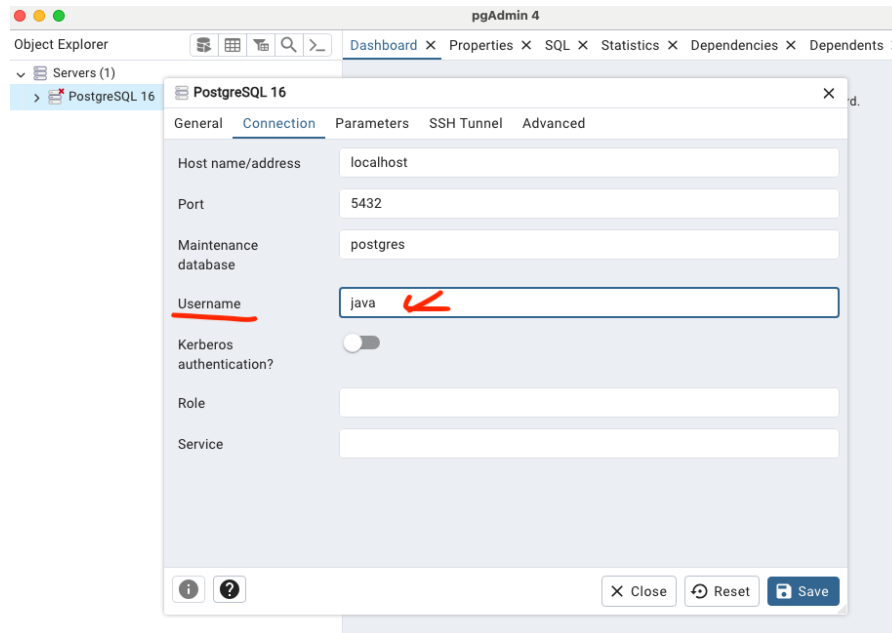
Right click on “postgreSQL 16” server and choose “disconnect server”.



2. Right click on “PostgreSQL 16” server and choose “properties.”

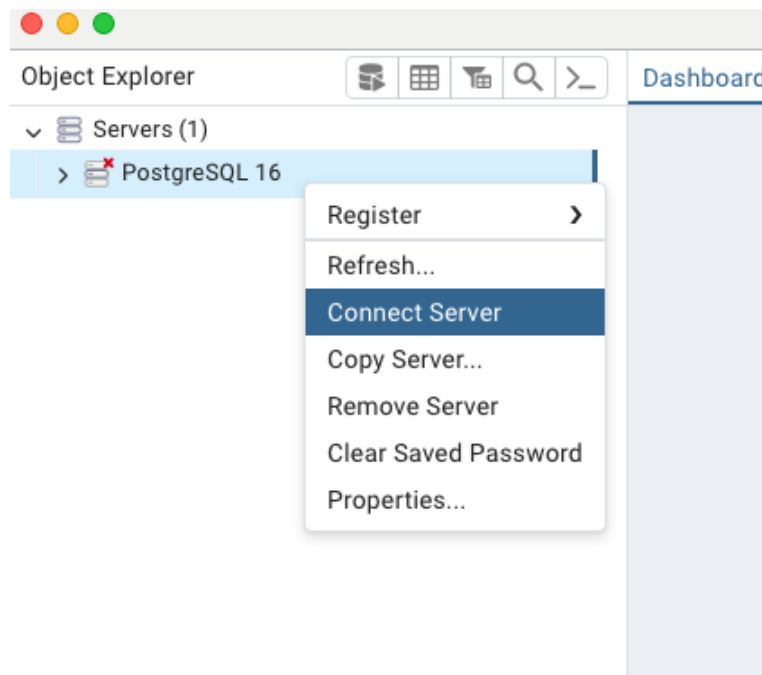


3. On the “connection” tab, change the user from “postgres” to your username and save



4. Right click on “postgreSQL 16” server and choose “connect server”.

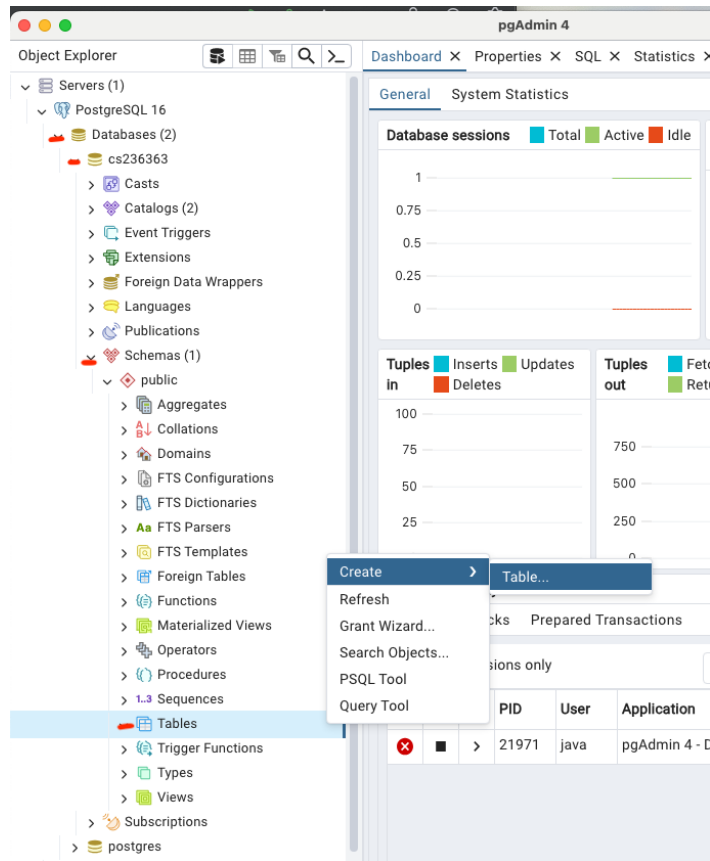
Enter password if prompted



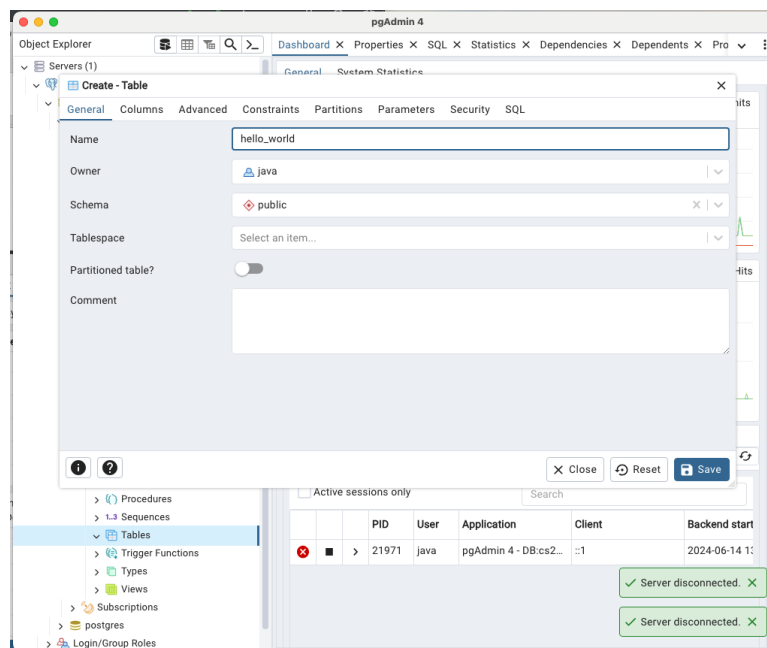
Notice: before you run any DB's command in python you must configure the project with your account in postgresSQL as explained in the HW PDF file in section 5.2 (Connecting to the Database using JDBC) – Do it before you try to run the Example.py you got in the zip file.

Hello world

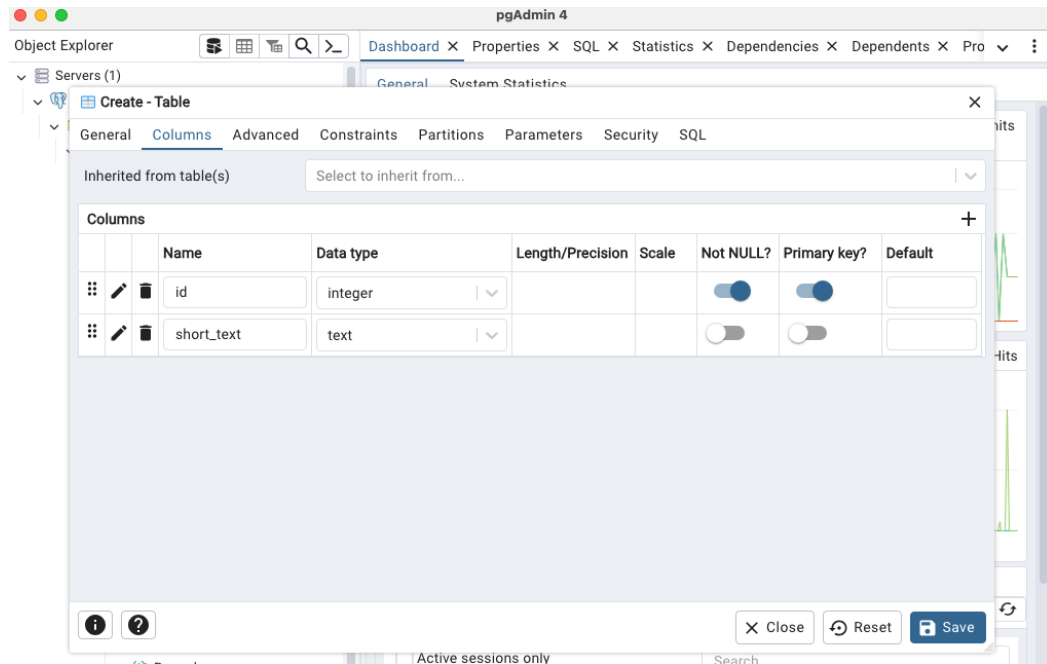
1. On the database “cs236363” go to “schemas” -> “public” -> right click on “tables” -> “create table”



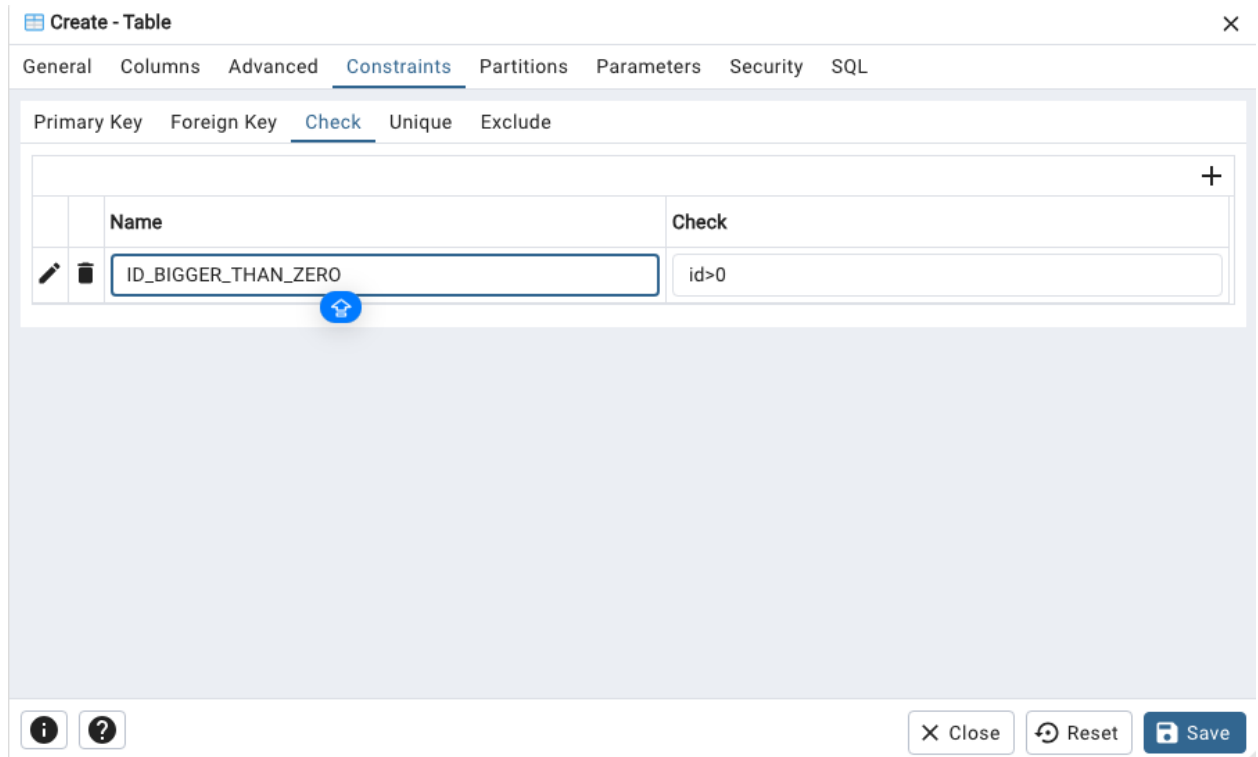
2. In the “general” tab, give your table a name



3. Create the columns you like with the “+” button

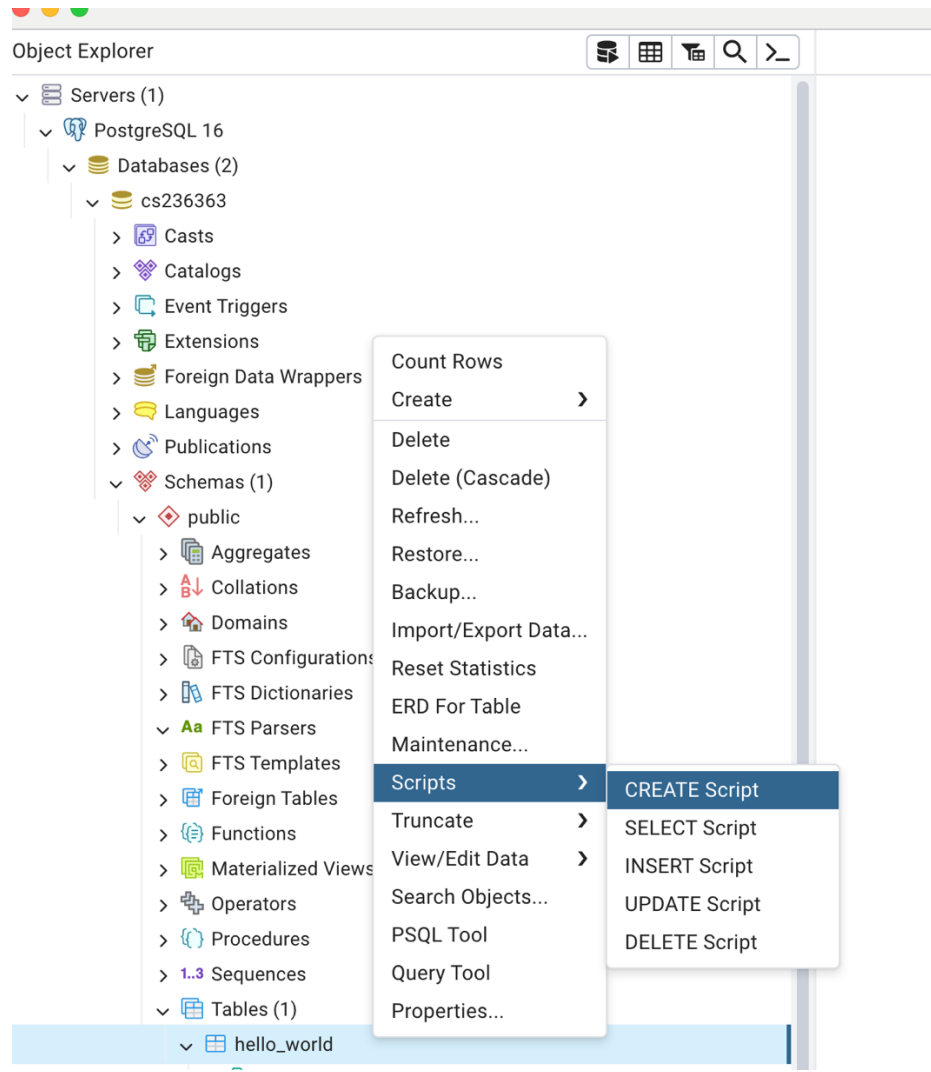


4. Notice that in the “Constraints” tab you can set everything we talked about in tutorial 1 (foreign keys, unique, check etc..)



5. When done, click save

Hint: right click on the table, and choosing scripts, will auto generate a script for you, for example, and insert script



6. You can try to run Queries , for example :

(To execute click execute “script” button)

