# 7.1.1 Download and Install Your Tools

**Bobby** is excited to get started on this new project. PH has fallen a bit behind in the database department, so it will be a huge achievement to get this organized for the company. To help Bobby prepare for his analysis, he'll need to download his tools: PostgreSQL and pgAdmin. He'll use Postgres to create a database, and pgAdmin to work with the data he'll be importing. These tools are packaged together in a single download, so let's get started with the setup!

Much like using Visual Studio Code (VS Code) to create Python programming scripts, SQL requires a code editor with the ability to execute the queries you create. We also need to set up a local database on our own computer. This database is where we'll house all of our data. This way, all of our datasets are centrally located and we won't need to search for them.

PostgreSQL and pgAdmin will be our gateway into the SQL universe.

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## PostgreSQL

PostgreSQL, typically referred to as just "Postgres," is a **relational database system**. This type of database consists of tables and their predefined relationships.

Think of it like this: Each CSV file's data will be loaded into a table. If there are six CSV files, then there will also be six tables in Postgres. "Relationships" are how each table relates to another. We'll create tables and define relationships as we progress through the module, so don't worry if this seems confusing right now—we'll get lots of practice.

Another aspect of Postgres is that it will create a local server on your computer, which is where the databases we create will be stored. Then the databases will store the tables and the data. It's a rather intricate filing system.

NOTE

> For more about PostgreSQL, see the **PostgreSQL documentation (https://www.postgresql.org/docs/manuals/)** and the **PostgreSQL tutorial (https://www.tutorialspoint.com/postgresql/)** .

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# pgAdmin

pgAdmin is the window into our database: it's where queries are written and executed and where results are viewed. While Postgres holds the files, pgAdmin provides the access. All SQL actions take place within these two programs, so let's install them.

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# Installation

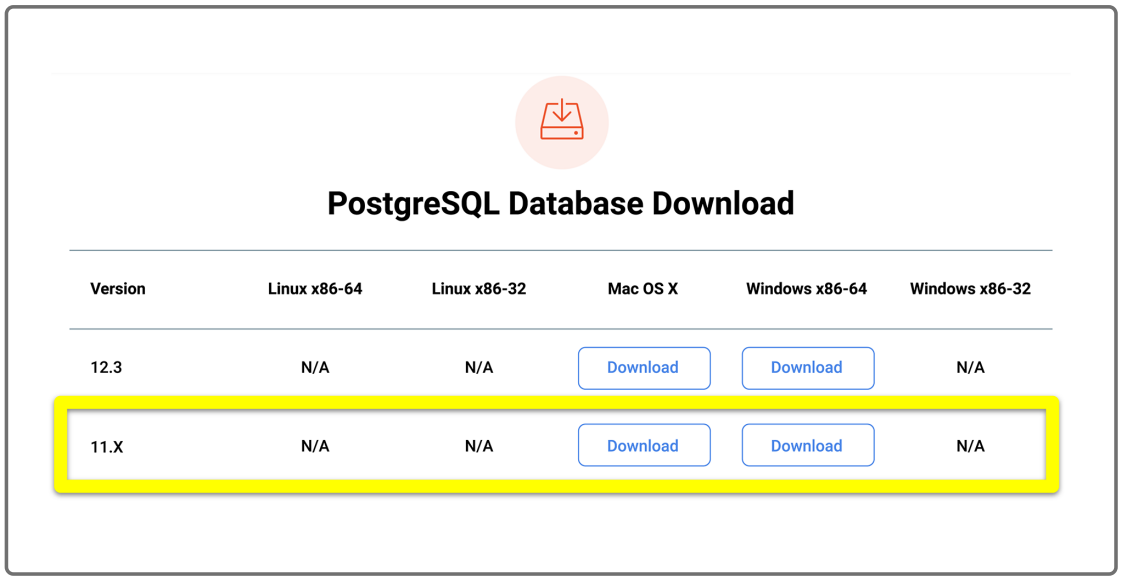
Visit the **PostgresSQL download website (https://www.enterprisedb.com/downloads/postgres-postgresql-downloads)** to initiate your download. **Be sure to choose the correct download option for your operating system.** Both Postgres and pgAdmin are downloaded

together as a package, so the following installation instructions will cover both.

Be sure to select the latest Postgres version 11.x to install. We're installing this version instead of 12 because 11.x is a stable release, meaning that it has been tested and debugged as much as possible and will not generate many errors.

NOTE

> If version 11 is no longer available, use the earliest version of 12. For example, if versions 12.3 and 12.5 are both listed, download and install 12.3.




NOTE

> For more about pgAdmin, see the **pgAdmin documentation (https://www.pgadmin.org/docs/)** .

Follow the installation instructions for your operating system.

**IMPORTANT**

> During installation, you'll need to create a password. **Be sure to record it**, as you'll use it to access your SQL database.

Check out the macOS instructions below, or jump to the **Windows instructions**.

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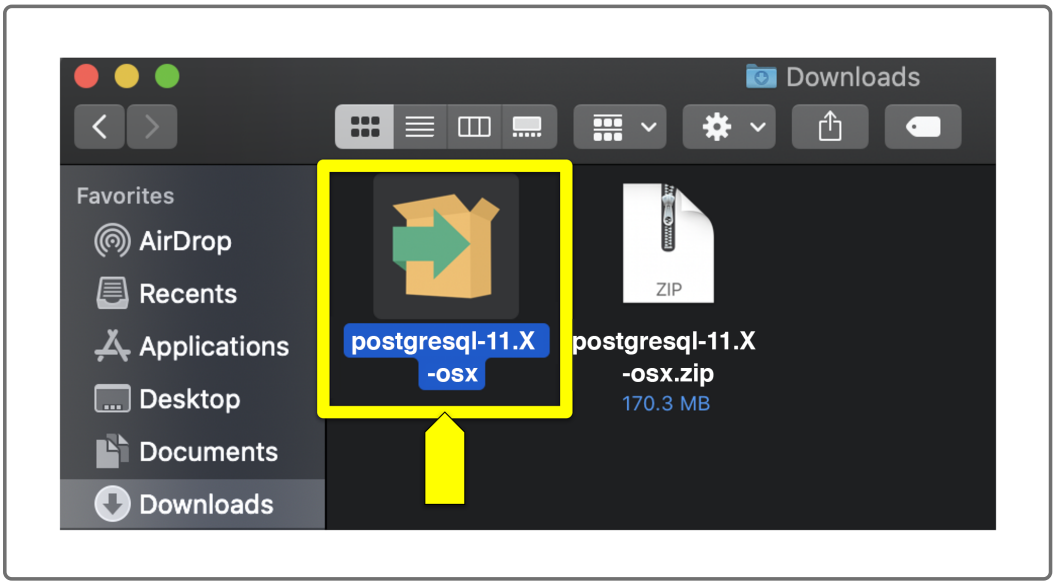
## macOS

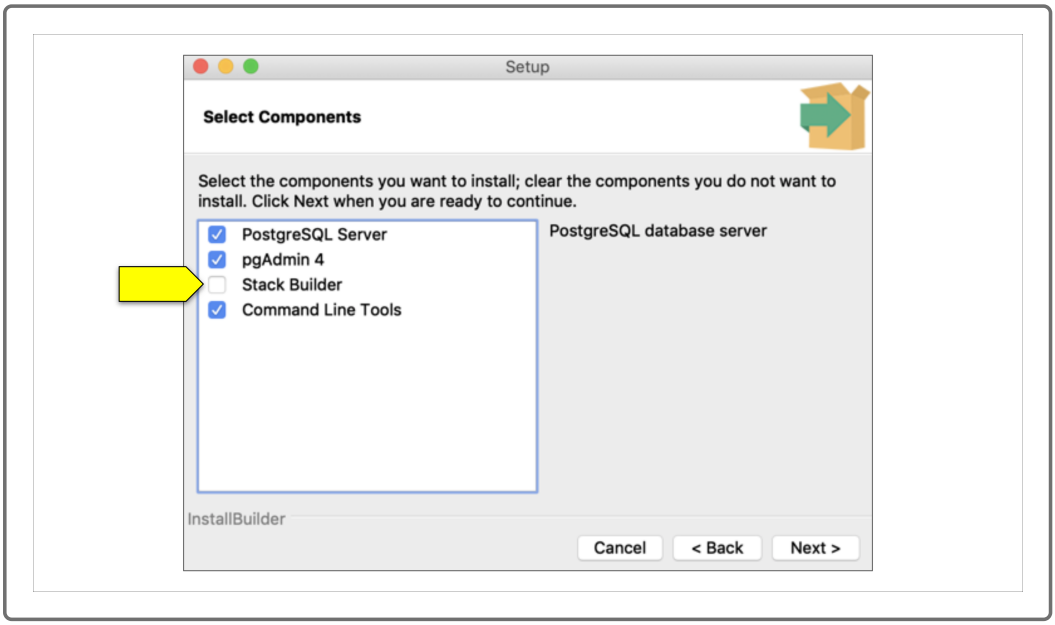
After downloading PostgreSQL, follow these steps (the version you download may not exactly match the version below, but the steps remain the same):

1. Double-click the postgresql-11.x-osx file.




2. Follow the setup wizard's prompts to begin installation. The software will be installed in /Library/PostgreSQL/11.

3. An InstallBuilder window will show the components selected for installation. Be sure to uncheck Stack Builder's box. Stack Builder is used to install Postgres add-ons, but we won't need it for our project.



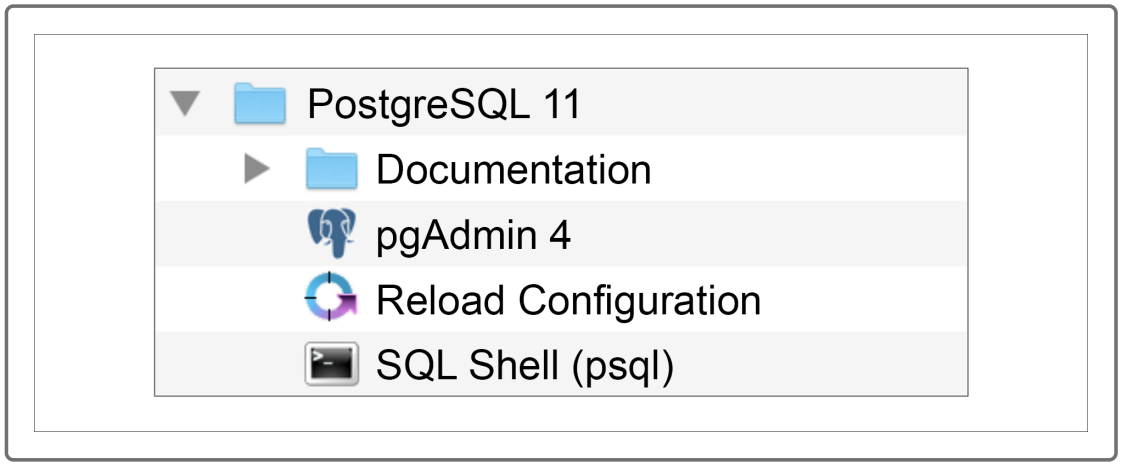

4. Add your data directory to /Library/PostgreSQL/11/data, where data will be loaded and stored.

   Note: Since you'll be prompted for your password every time you start up Postgres and pgAdmin, it's very important to **record it for future use**.

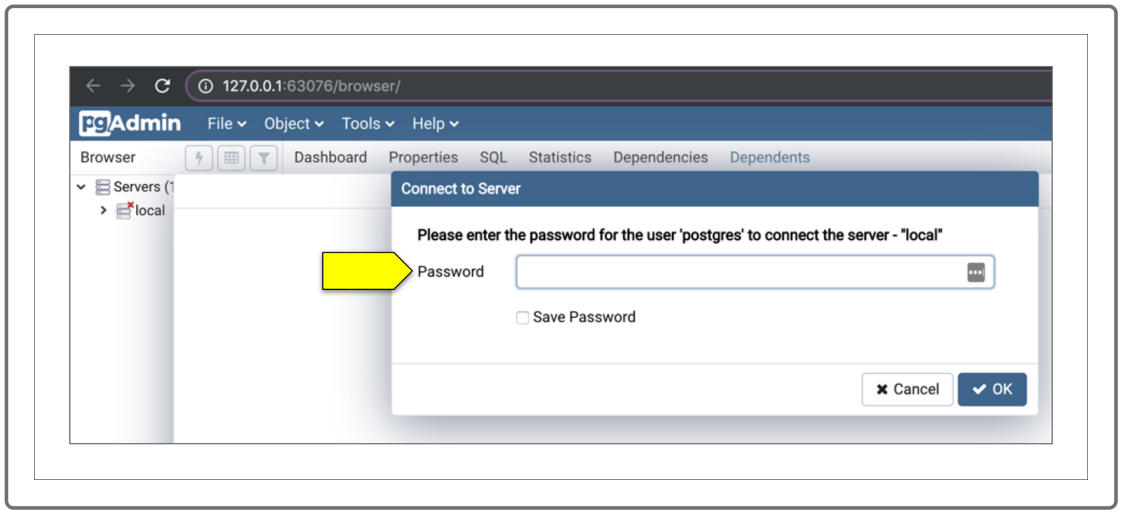
5. Continue to use the default port 5432. Under Advanced Options, set the locale as "[Default locale]."

6. After reviewing your preinstallation summary, click "Next" to begin the installation.

When the installation is complete, your Mac's Applications section will contain a new folder with the following:




To confirm your installation, start pgAdmin by navigating through your Application section and double-clicking the pgAdmin 4 icon (this will launch a new browser window). Then, double-click to connect to the default server (local) and enter your password.



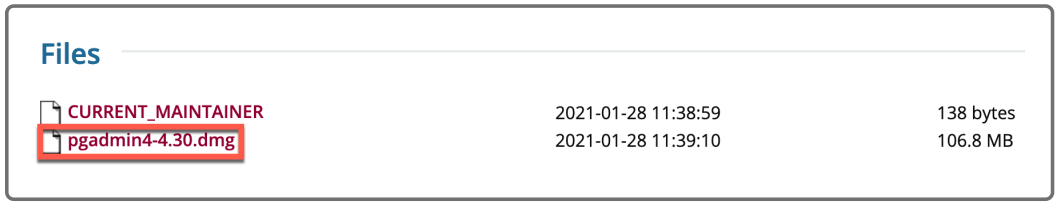

You now have access to your first SQL server.

**IMPORTANT**

> If you are running the Big Sur update for Mac you will need to download the latest version of pgAdmin.

1. To get the latest version of pgAdmin go to the **pgAdmin download (https://www.pgadmin.org/download/pgadmin-4-macos/)** and select the latest version.

2. Click the `.dmg` files to start the download.




3. Once the download is complete click on the `.dmg` file in your downloads to install.

4. After it has finished installing, drag the `pgAdmin` file into your applications folder (this will take a few minutes).

5. Once the transfer completes you will now be able to use `pgAdmin`. Please note that you will still have a version in your PostgreSQL folder, but only use the version that you recently downloaded and copied into Applications.

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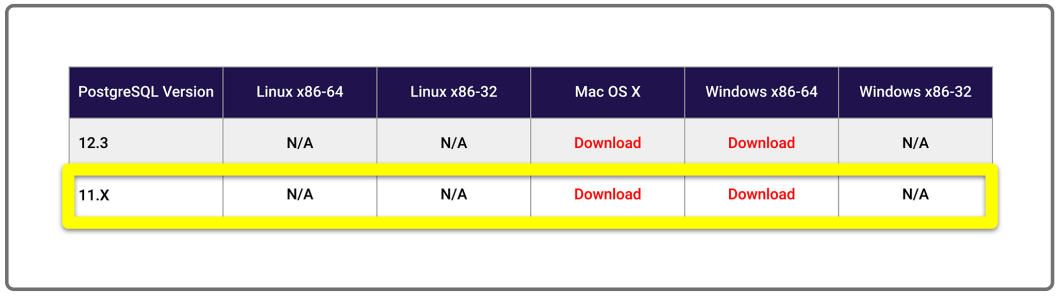
# Windows

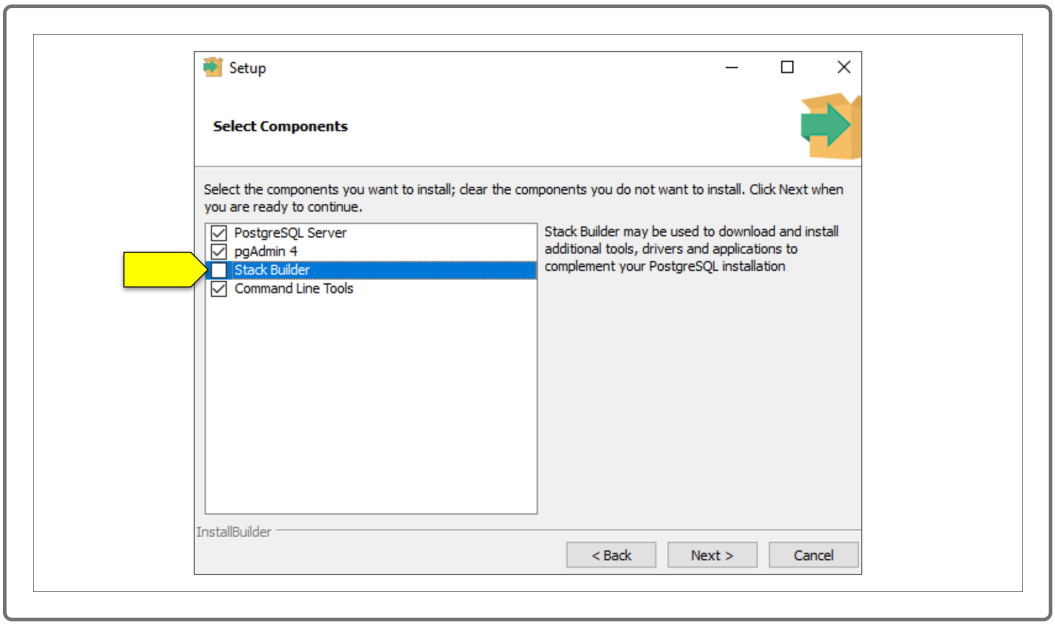
After downloading PostgreSQL, follow these steps.

1. Double-click the postgresql-11.x-windows-x64 file.



2. Follow the setup wizard's prompts and install PostgreSQL to /ProgramFiles/PostgreSQL/11, the default location. To find the installation files, first look in the ProgramFiles folder and then in PostgreSQL.

3. An InstallBuilder window will show the components selected for installation. Be sure to uncheck Stack Builder's box. Stack Builder is used to install Postgres add-ons, but we won't need it for our project.



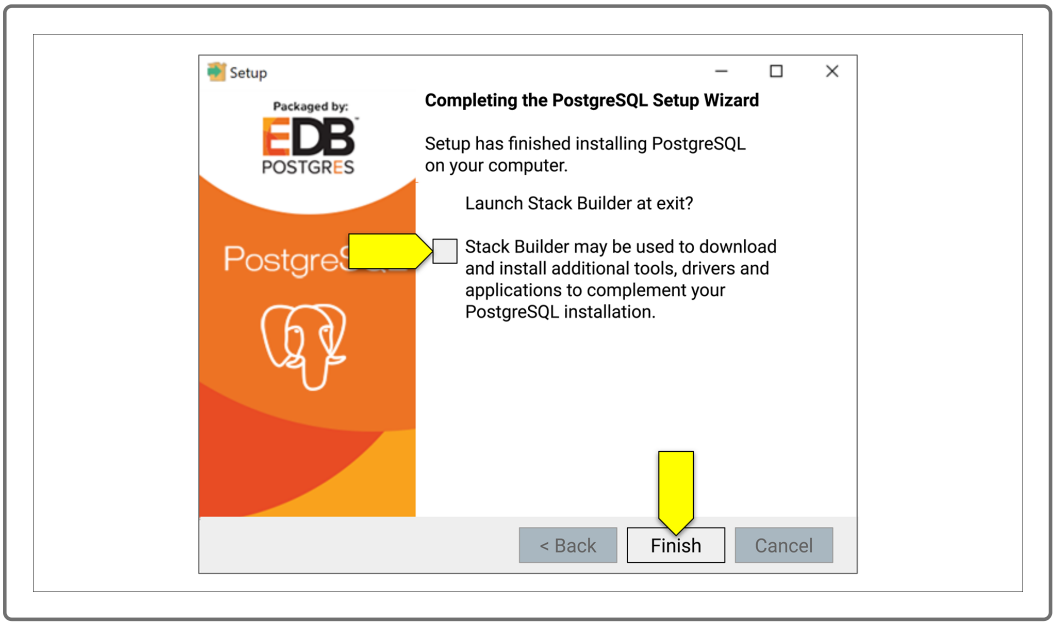

InstallBuilder might not let you uncheck Stack Builder's box. That's okay—it won't harm anything if it is installed.

4. Add your data directory to /ProgramFiles/PostgreSQL/11/data, where data will be loaded and stored.

5. Continue to use the default port 5432. Under Advanced Options, set the locale as "[Default locale]."

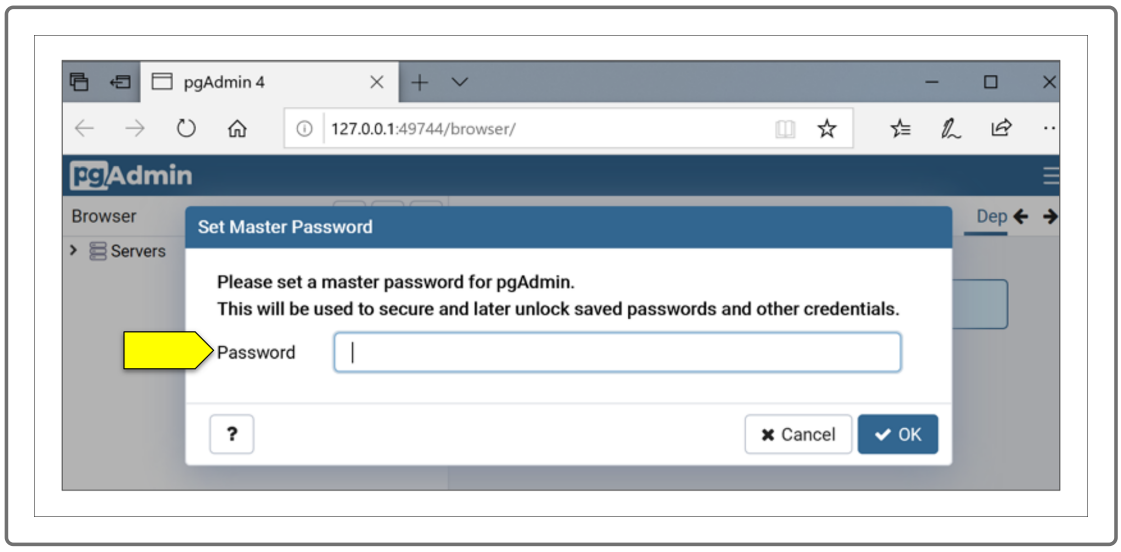
6. After reviewing your preinstallation summary, click "Next" to begin installation (this may take a few minutes).

7. If the final setup screen prompts you to launch Stack Builder at exit, uncheck this box and click "Finish."




8. If prompted, restart your computer to complete the installation.

You should be able to access the Postgres 11 folder from your Start Menu. To confirm your installation, start pgAdmin (a new browser window will launch) and double-click to connect to the default server and enter your password.




Enter your password and log in to access and work with pgAdmin and Postgres.