Menu

How to Install PostgreSQL and pgAdmin4 in Ubuntu 20.04

Aaron Kili | Last Updated: August 3, 2020 | PostgreSQL, Ubuntu | 24 Comments

This guide will walk you through the instructions to install **PostgreSQL 12** relational and object-oriented database management systems and **pgAdmin4**, a commonly-used web-based **PostgreSQL** database server administration tool. We will show how to install the latest version of pgAdmin4 that is v4.23.

> **Related Read**: How to Install PostgreSQL and pgAdmin in CentOS 8

Prerequisites:

- Ubuntu 20.04 Server installation
- Ubuntu 20.04 Desktop installation

Let's get started...

Installing PostgreSQL in Ubuntu 20.04

Log into your **Ubuntu** system and update the system software packages using the following apt command.

```
$ sudo apt update
```

Now install the latest version of **PostgreSQL** from the default Ubuntu repositories.

```
$ sudo apt install postgresql
```

During the installation, the installer will create a new **PostgreSQL** cluster (a collection of databases that will be managed by a single server instance), thus initialize the database. The default data directory is **/var/lib/postgresql/12/main** and the configurations files are stored in the **/etc/postgresql/12/main** directory.

After **PostgreSQL** installed, you can confirm that the **PostgreSQL** service is active, running and is enabled under systemd using the following systemctl commands:

```
$ sudo systemctl is-active postgresql
$ sudo systemctl is-enabled postgresql
$ sudo systemctl status postgresql
```

```
tecmint@ubuntu-20-04:~$ sudo systemctl is-active postgresql
active
tecmint@ubuntu-20-04:~$ sudo systemctl is-enabled postgresql
enabled
tecmint@ubuntu-20-04:~$ sudo systemctl status postgresql
● postgresql.service - PostgreSQL RDBMS
     Loaded: loaded (/lib/systemd/system/postgresql.service; enabled; vendor preset: enabled)
     Active: active (exited) since Thu 2020-07-16 19:29:27 UTC; 11min ago
   Main PID: 3885 (code=exited, status=0/SUCCESS)
      Tasks: 0 (limit: 1075)
     Memory: 0B
     CGroup: /system.slice/postgresql.service

Jul 16 19:29:27 ubuntu-20-04 systemd[1]: Starting PostgreSQL RDBMS...
Jul 16 19:29:27 ubuntu-20-04 systemd[1]: Finished PostgreSQL RDBMS.
tecmint@ubuntu-20-04:~$
```

Check PostgreSQL Status

Also, confirm that the **Postgresql** server is ready to accept connections from clients as follows:

```
$ sudo pg_isready
```

```
tecmint@ubuntu-20-04:~$ sudo pg_isready
/var/run/postgresql:5432 - accepting connections
tecmint@ubuntu-20-04:~$
```

PostgreSQL Accepting Client Connections

Creating Database in PostgreSQL

To create a new database in **PostgreSQL**, you need to access the **PostgreSQL** database shell `(psql)` program. First, switch to the **postgres** system user account and run the `psql` command as follows:

```
$ sudo su - postgres
$ psql
postgres=#
```

Now create a new database and a user using the following commands.

```
postgres=# CREATE USER tecmint WITH PASSWORD 'securep@wd';
postgres=# CREATE DATABASE tecmintdb;
postgres=# GRANT ALL PRIVILEGES ON DATABASE tecmintdb to tecmint;
postgres=# \q
```

```
postgres@ubuntu-20-04:~$ psql
psql (12.2 (Ubuntu 12.2-4))
Type "help" for help.

postgres=# CREATE USER tecmint WITH PASSWORD 'securep@wd';
CREATE ROLE
postgres=# CREATE DATABASE tecmintdb;
CREATE DATABASE
postgres=# GRANT ALL PRIVILEGES ON DATABASE tecmintdb to tecmint;
GRANT
```

Create a Database in PostgreSQL

Configuring PostgreSQL Client Authentication

PostgreSQL uses client authentication to decide which user accounts can connect to which databases from which hosts and this is controlled by settings in the client authentication configuration file, which on Ubuntu is located at **/etc/postgresql/12/main/pg_hba.conf**.

Open this file using your favorite text editor as shown.

```
$ sudo vim /etc/postgresql/12/main/pg_hba.conf
```

PostgreSQL uses many types of client authentication methods including peer, ident, password, and md5 (read the PostgreSQL 12 documentation for a detailed explanation of each method).

md5 is the most secure and recommended because it requires the client to supply a double-MD5-hashed password for authentication. So, ensure that the entries below have **md5** as the under method:

```
host    all             all             127.0.0.1/32            md5
```

```
host    all             all             127.0.0.1/32            md5
# IPv6 local connections:
host    all             all             ::1/128                 md5
```

After making changes in the Client Authentication configuration file, you will need to restart the **PostgreSQL** service.

```
$ sudo systemctl restart postgresql
```

Installing pgAdmin4 in Ubuntu

pgAdmin4 is not available in the **Ubuntu** repositories. We need to install it from the **pgAdmin4 APT** repository. Start by setting up the repository. Add the public key for the repository and create the repository configuration file.

```
$ curl https://www.pgadmin.org/static/packages_pgadmin_org.pub | su
$ sudo sh -c 'echo "deb https://ftp.postgresql.org/pub/pgadmin/pgad
```

Then install **pgAdmin4**,

```
$sudo apt install pgadmin4
```

The above command will install numerous required packages including **Apache2** webserver to serve the **pgadmin4-web** application in web mode.

Once the installation is complete, run the web setup script which ships with the **pgdmin4** binary package, to configure the system to run in web mode. You will be prompted to create a **pgAdmin4** login email and password as shown in the screenshot below.

This script will configure **Apache2** to serve the **pgAdmin4** web application which involves enabling the **WSGI** module and configuring the **pgAdmin** application to mount at **pgadmin4** on the webserver so you can access it at:

```
http://SERVER_IP/pgadmin4
```

It also restarts the Apache2 service to apply the recent changes.

Remember to replace `admin@tecmint.lan` with your email address and set a strong secure password as well:

```
$ sudo /usr/pgadmin4/bin/setup-web.sh
```

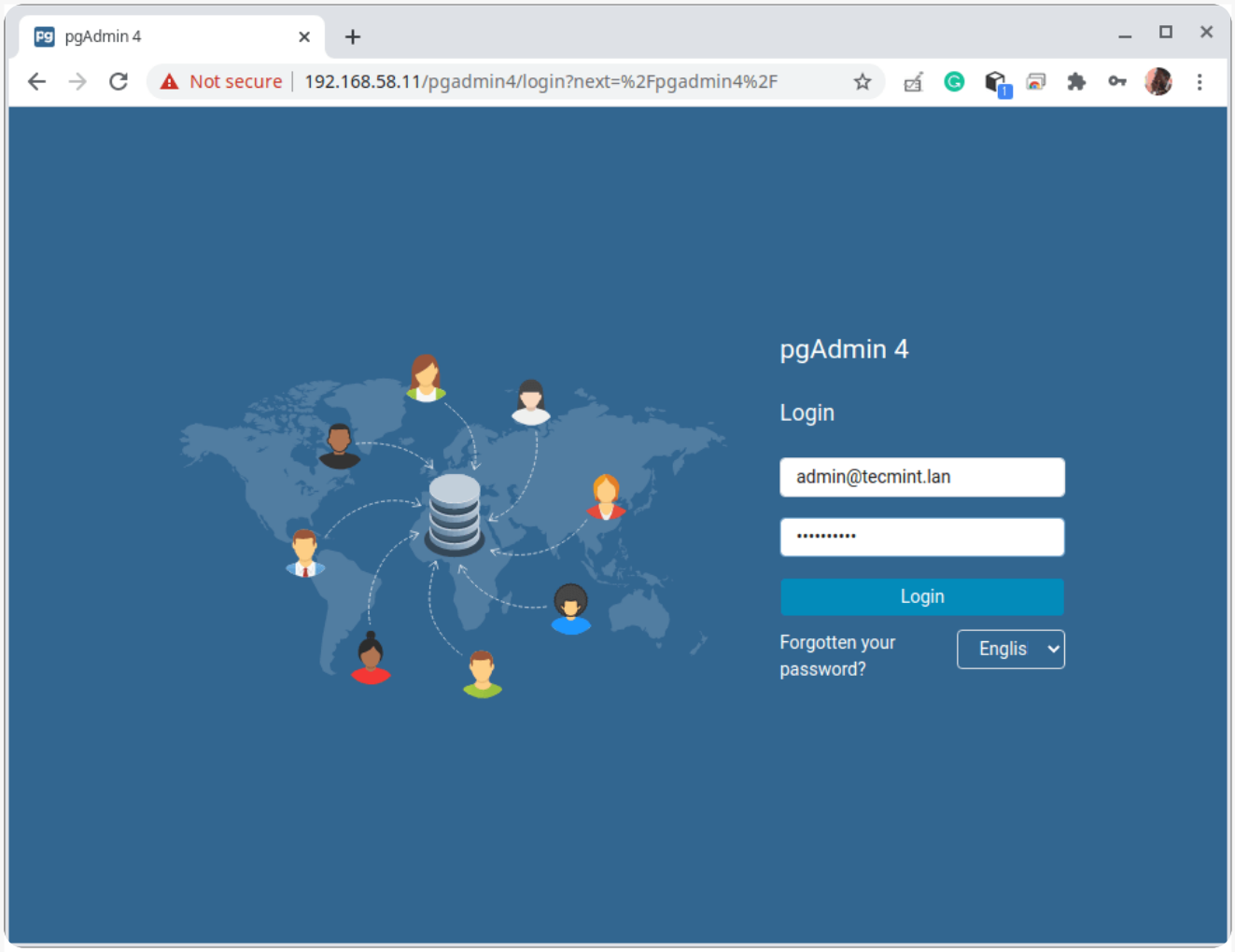
Set Up PgAdmin in Ubuntu

Accessing pgAdmin4 Web Interface

To access the **pgAdmin4** web application interface, open a web browser, and use the following address to navigate:

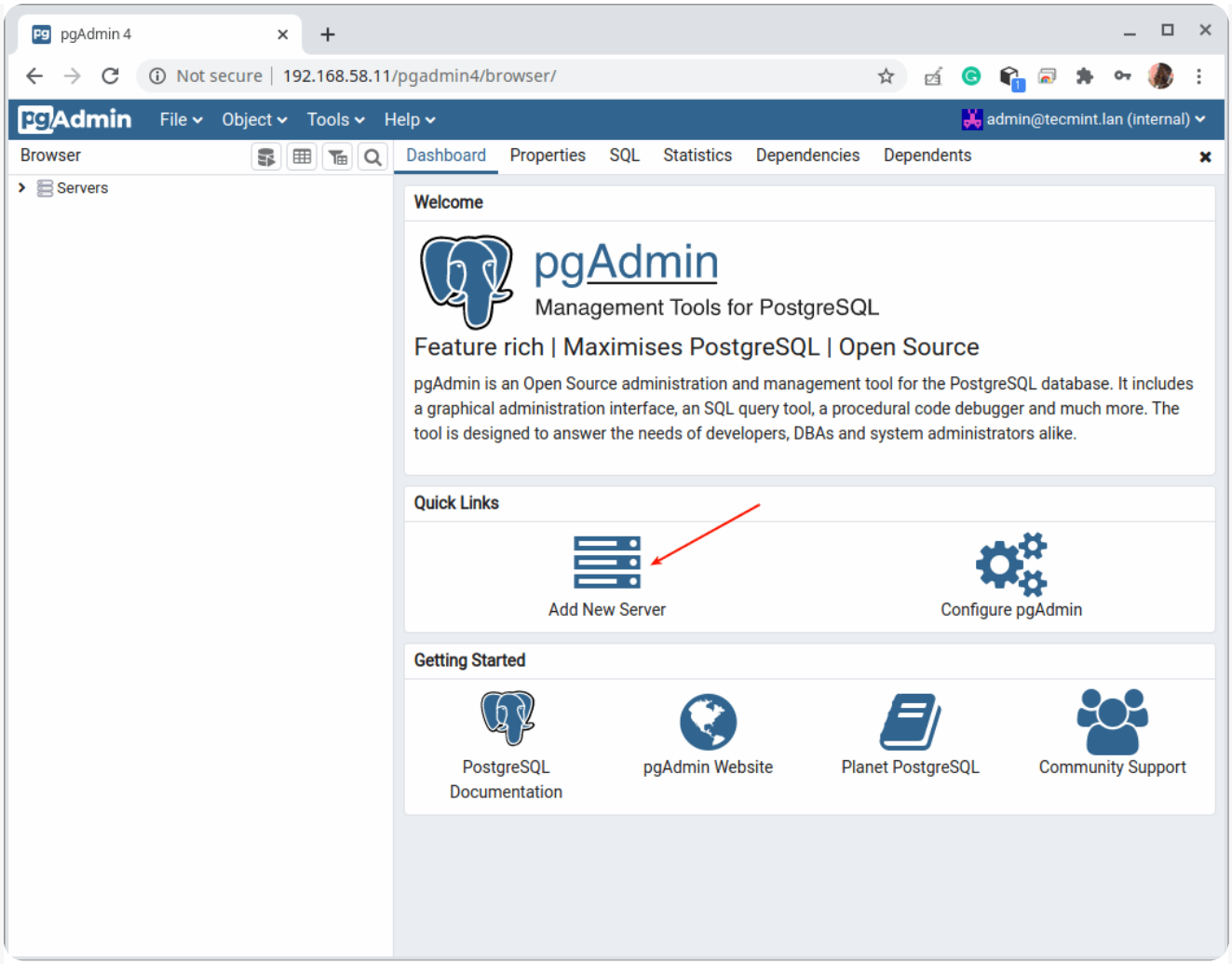
```
http://SERVER_IP/pgadmin4
```

Once the login page loads, enter the email address and password you created in the previous section while configuring the pgAdmin4 to run in web mode.



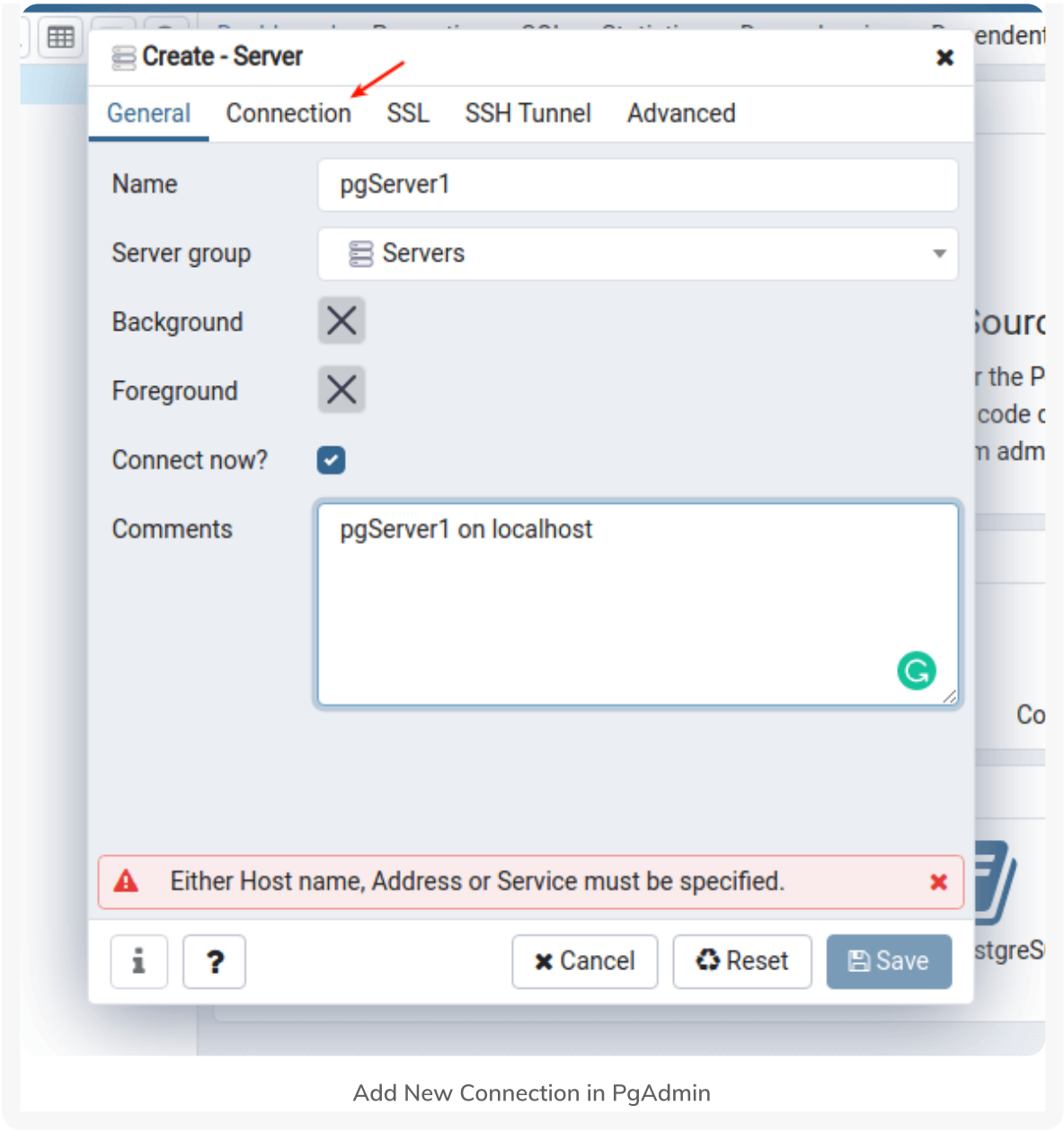
PgAdmin Login

After a successful login, you will be land in the **pgAdmin4** web application dashboard. To connect to a server, click on **Add New Server** as highlighted in the following screenshot.



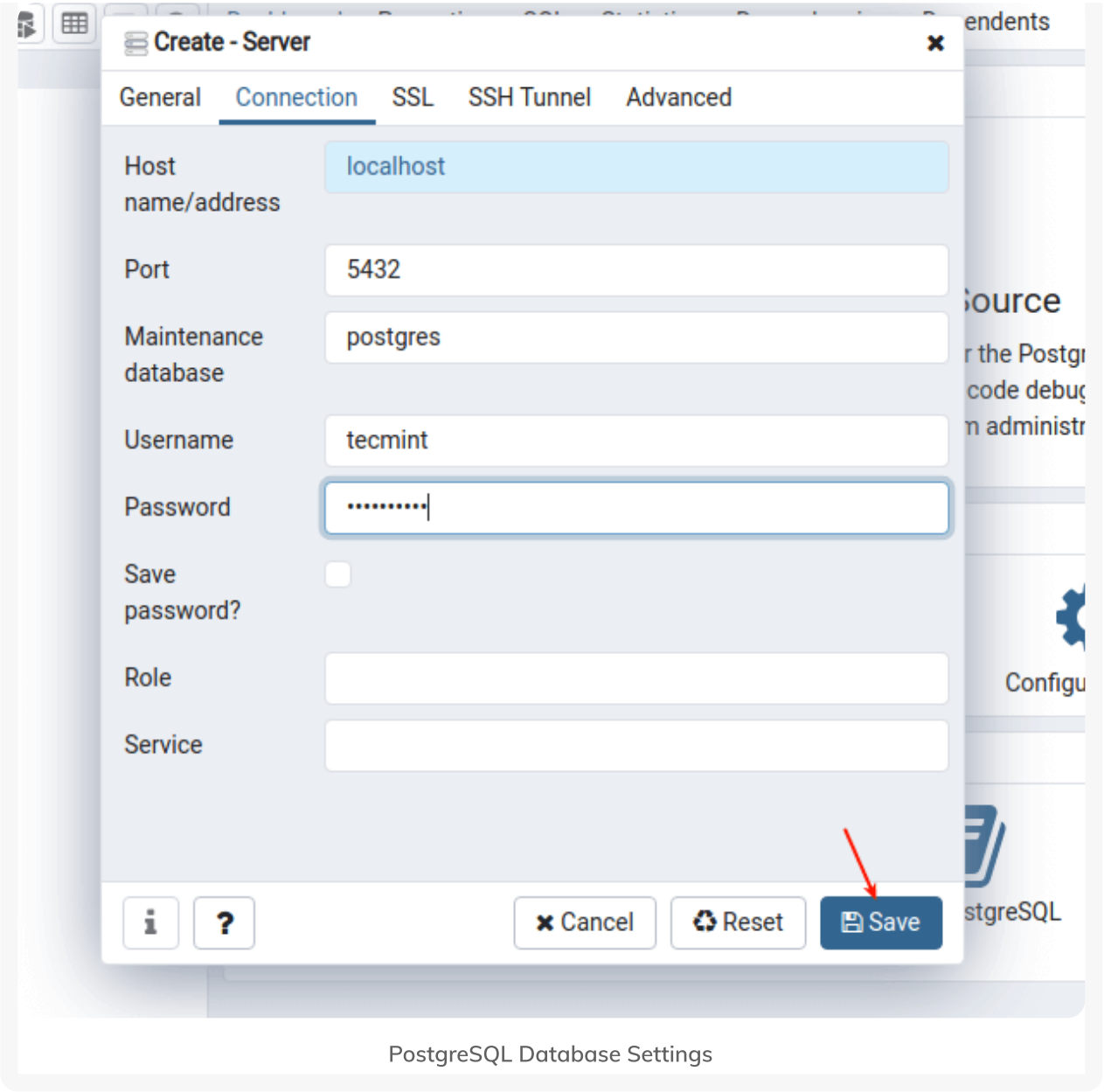
Add New Server in PgAdmin

Next, enter the connection in General settings (Name, Server group, and a comment). Then click Connections as highlighted in the following screenshot.



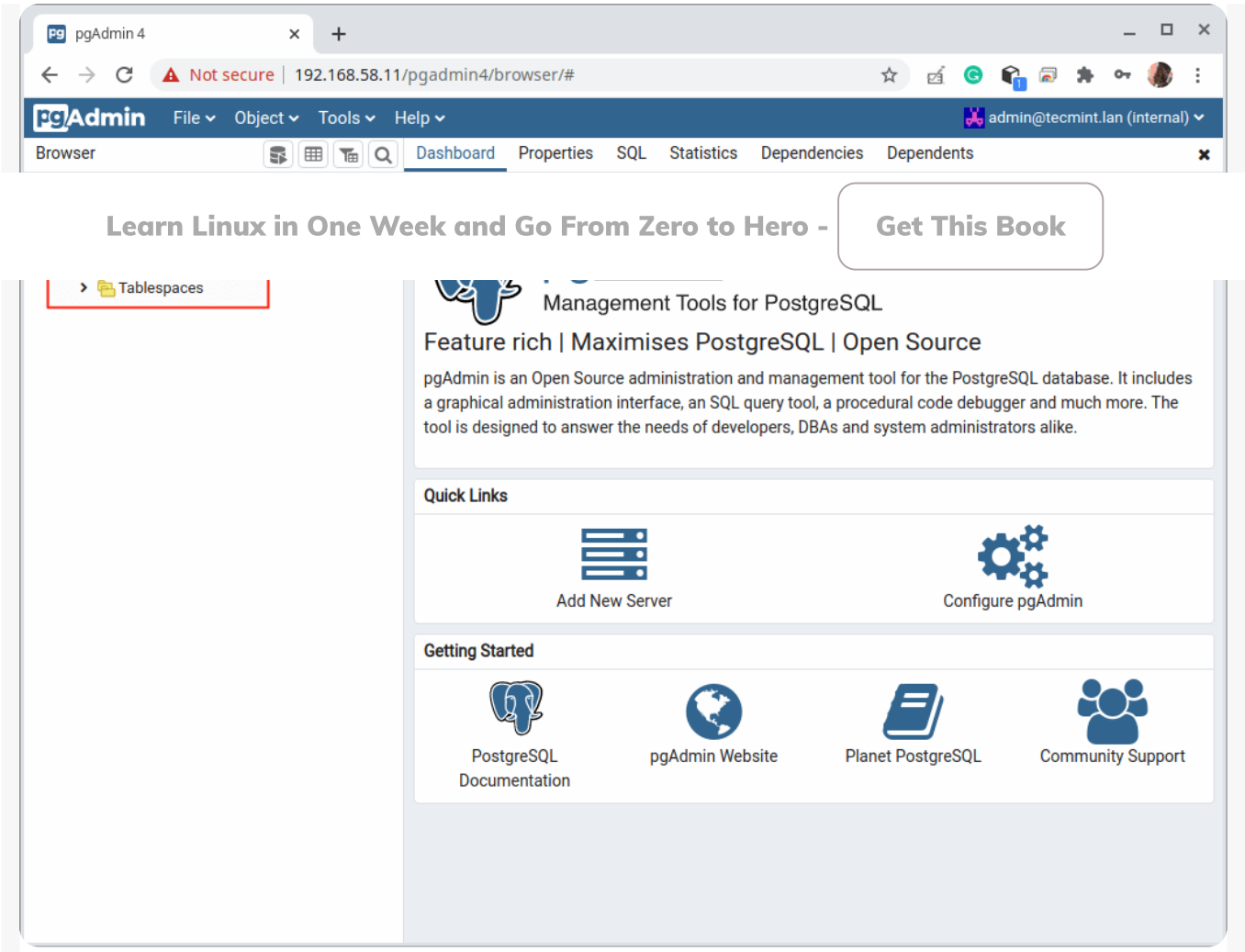
Add New Connection in PgAdmin

Next, enter the PostgreSQL database server hostname/address, Port number (leave **5432** to use default), select the **Maintenance** database (which should be **postgres**), enter the database username and password.



PostgreSQL Database Settings

If the database access credentials are **OK** and the server-client authentication configuration is too, **pgAdmin4** should successfully connect to the database server.



PostgreSQL Databases

That's all! For more information, see the PostgreSQL 12 documentation and pgAdmin 4 documentation. Remember to share your thoughts with us via the comment section below.

Tags: PgAdmin , PostgreSQL Tips , Ubuntu Tips

‹ Setting Up Zimbra Collaboration Suite (ZCS) on RHEL/CentOS 7/8

How to Install and Use Linux Malware Detect (LMD) with ClamAV as Antivirus Engine ›

> If you liked this article, then do subscribe to email alerts for Linux tutorials. If you have any questions or doubts? do ask for help in the comments section.