

HowTo: Install PostGreSQL

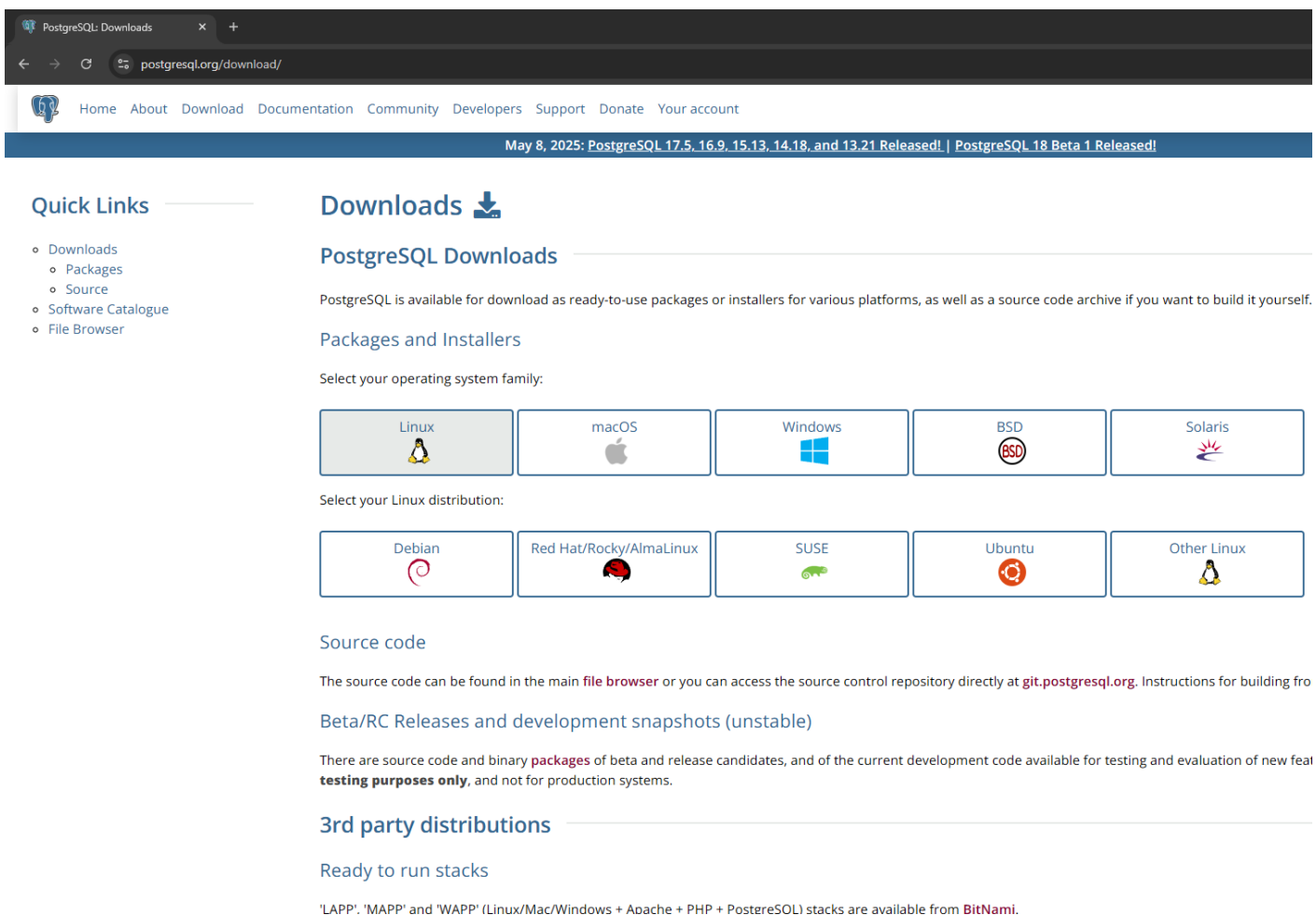
Adapted steps from here:

<https://www.c-sharpcorner.com/article/crud-operations-in-postgresql-with-ef-core-and-asp-net-core-web-api/>

<https://documentation.ubuntu.com/server/how-to/databases/install-postgresql/index.html>

Download

PostgreSQL can be downloaded from here: <https://www.postgresql.org/download/>



The screenshot shows the PostgreSQL Downloads page. At the top, there is a navigation bar with links for Home, About, Download, Documentation, Community, Developers, Support, Donate, and Your account. Below the navigation bar is a banner for PostgreSQL 18 Beta 1. The main content area is titled 'Downloads' and includes a 'Quick Links' sidebar with links to Downloads, Packages, Source, Software Catalogue, and File Browser. The main content is divided into sections: 'PostgreSQL Downloads', 'Packages and Installers' (with buttons for Linux, macOS, Windows, BSD, and Solaris), 'Source code', 'Beta/RC Releases and development snapshots (unstable)', and '3rd party distributions' (with a sub-section for 'Ready to run stacks').

NOTE: We are installing on Ubuntu v24.04 in this tutorial.

Select Linux and Ubuntu from the click boxes.

Install

Run this to install PostgreSQL:

```
sudo apt install postgresql
```

Listener

By default, Postgres only listens on the localhost adapter. We will change it to listen on all adapters.

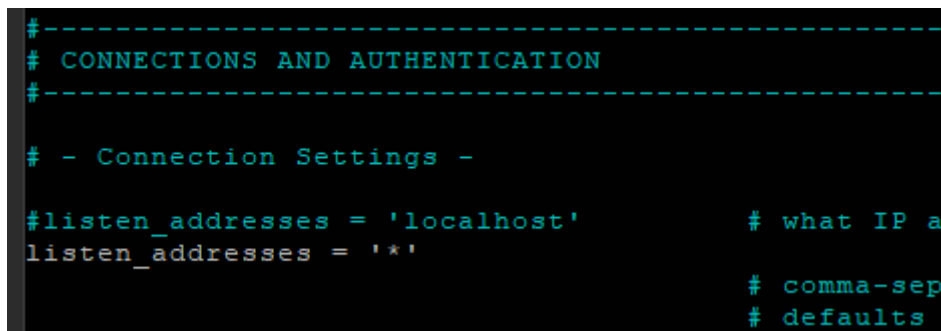
NOTE: If you only want it to listen on a specific IP, use that.

Navigate to `/etc/postgresql/*/main/`, and open `postgresql.conf`.

Change the listen address to `'*'`. It might not be set, at all.

```
listen_addresses = '*'
```

Like this:

A terminal window showing the configuration of the postgresql.conf file. The text is as follows:

```
#-----  
# CONNECTIONS AND AUTHENTICATION  
#-----  
  
# - Connection Settings -  
  
#listen_addresses = 'localhost'          # what IP a  
listen_addresses = '*'                  # comma-sep  
                                         # defaults
```

Save the file.

Restart postgres with this:

```
sudo systemctl restart postgresql.service
```

Set Postgres Password

Now, we need to set the password for the postgres user.

Run this in the terminal, to open the default template database:

```
sudo -u postgres psql template1
```

```
glwhite@postgres01:/etc/postgresql/16/main$ sudo -u postgres psql template1
psql (16.9 (Ubuntu 16.9-0ubuntu0.24.04.1))
Type "help" for help.

template1=#
```

Set the password for the postgres user with this:

```
ALTER ROLE postgres WITH PASSWORD 'Your$trongPassword';
```

Exit psql with 'exit'.

Network Access

With a listener and password set, we need to allow client access from outside the host.

By default, the postgres listener only allows connections from inside the machine. We need to expand that to the local subnet.

Open the `pg_hba.conf` file (in `/etc/postgresql/*/main/`), and allow access from the local subnet.

Find the IPV4 line, that looks like this:

```
host all all 127.0.0.1/32 scram-sha-256
```

Change the allowed addresses to your subnet:

```
host all all 192.168.60.1/24 scram-sha-256
```

The above allows access to all databases for all users coming from the 60 subnet.

NOTE: For a production database, your security model may require tighter access. If so, you can change the above to specify what users and what databases can access from what addresses. Add more than one line if needed, similar to firewall rules.

If you need to provide specific access from multiple subnets or VLANs, you can add entries for each one, like this:

```
host all all 192.168.1.0/24 md5
host all all 192.168.60.0/24 md5
host all all 192.168.70.0/24 md5
```

```
host all all 192.168.110.0/24 md5
host all all 192.168.120.0/24 md5
host all all 192.168.150.0/24 md5
host all all 192.168.160.0/24 md5
```

Once changes have been made, restart the postgres service with:

```
sudo systemctl restart postgresql.service
```

Or, if you are in a query window of pgadmin, you can run this to reload the hba config:

```
SELECT pg_reload_conf()
```

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