Cheatography

PostgreSQL Installation on Ubuntu Cheat Sheet

by Bersania via cheatography.com/170325/cs/36304/

Documentation

https://www.postgresql.org/docs/15/index.html
https://postgrespro.com/docs/postgresql/15/index

Preparing for the Installation

If PostgreSQL 15 package is not available in the default package repository, enable its official package repository

Execute update

$ sudo apt update && sudo apt upgrade

Check PostgreSQL Version

$postgres --version or $postgres -V

If not found execute $locate bin/postgres
and then $/usr/lib/postgresql/15/bin/postgres -V

Check Postgres version from SQL Shell
$sudo -u postgres psql
SELECT version();

Installation

Ubuntu

install $ sudo apt install -y postgresql-15
uninstall $ sudo apt-get --purge remove postgresql postgresql-*

Server config

sudo /usr/lib/postgresql/15/bin/pg_config --configure

List clusters

$ sudo pg_lsclusters

Creat and drop a cluster

$ sudo pg_createcluster [options] version name
$ sudo pg_dropcluster [--stop] version name

Start, stop, restart service and cluster

When installing from a package, the launch of the PostgreSQL cluster is added to the OS startup settings. Therefore, after loading the operating system, you do not need to start PostgreSQL separately.

Managing the PostgreSQL service

$ sudo systemctl start | stop | restart postgresql

You can explicitly control the cluster with the following commands:

$ sudo pg_ctlcluster 15 main start | stop | restart | status | reload

Directory

Installation directory

/usr/lib/postgresql/15

Configuration directory

/etc/postgresql/15/main

Default cluster location main (PGDATA)

/var/lib/postgresql/15/main

Database directories

/var/lib/postgresql/15/main/base
select oid, datname from pg_database;

Data location

SHOW data_directory;
/var/lib/postgresql/15/main

Server message log

$ ls -l /var/log/postgresql/postgresql-15-main.log

$ tail -n 10 /var/log/postgresql/postgresql-15-main.log

Links

https://www.postgresql.org/docs/current/storage-file-layout.html

https://postgrespro.com/docs/postgresql/15/storage-file-layout

User creation

Set a password for the postgres user

$sudo -u postgres psql
\password postgres
Enter new password:
or
ALTER USER postgres PASSWORD '<new-password>';

user list

\du

Creating a new role (user)

create user <username> with password '123456';
alter user <username> with SUPERUSER;
or
$sudo -u postgres createuser --interactive

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Tablespace

List tablespaces

SELECT * FROM pg_tablespace; or # \db

CREATE TABLESPACE

$ sudo mkdir /var/lib/postgresql/test_dir
$ sudo chown postgres /var/lib/postgresql/test_dir
# CREATE TABLESPACE test LOCATION '/var/lib/postgresql/test_dir';

Creating a database in a new tablespace

CREATE DATABASE appdb TABLESPACE test;

Tablespace size

SELECT pg_size_pretty(pg_tablespace_size('test'));

Delet tablespace

DROP TABLESPACE test;

Moving a directory with default data

Stop cluster
sudo pg_ctlcluster 15 main stop
Copy data to new directory
Change the data_directory variable in the config file /etc/postgresql/15/main/postgresql.conf
Start cluster
sudo pg_ctlcluster 15 main start

Links

https://www.postgresql.org/docs/current/manage-ag-tablespaces.html
https://postgrespro.com/docs/postgrespro/15/sql-createtablespace

Connection configuration

Configuration file

/etc/postgresql/15/main/postgresql.conf
edit the listen_addresses from localhost to *. Enable the listen_addresses by removing the #

/etc/postgresql/15/main/pg_hba.conf

To connect to a particular database, a user must not only pass the pg_hba.conf checks, but must have the CONNECT privilege for the database.
GRANT CONNECT ON DATABASE database_name TO username;

A record can have several formats:

local database user auth-method [auth-options]

host database user address auth-method [auth-options]

host database user IP-address IP-mask auth-method [auth-options]

Allow any user from host 192.168.12.10 to connect to database "-postgres" if the user's password is correctly supplied.

Connection configuration (cont)

TYPE DATABASE USER ADDRESS METHOD
host postgres all 192.168.12.10/32 scram-sha-256

from all IP
host postgres all 0.0.0.0/0 scram-sha-256

Links

https://www.postgresql.org/docs/current/auth-pg-hba-conf.html
https://postgrespro.com/docs/postgrespro/10/auth-pg-hba-conf

Backup & Restore

pg_dumpall

pg_dumpall — extract a PostgreSQL database cluster into a script file

pg_dumpall [connection-option...] [option...]

$ pg_dumpall > db.out
$ psql -f db.out postgres

pg_dump

pg_dump — extract a PostgreSQL database into a script file or other archive file

pg_dump [connection-option...] [option...] [dbname]

To dump a database called mydb into an SQL-script file:

$ pg_dump mydb > db.sql

To reload such a script into a (freshly created) database named newdb:

$ psql -d newdb -f db.sql

To dump a database into a custom-format archive file:

$ pg_dump -Fc mydb > db.dump

To dump a database into a directory-format archive:

$ pg_dump -Fd mydb -f dumpdir

To reload an archive file into a (freshly created) database named newdb:

$ pg_restore -d newdb db.dump

To reload an archive file into the same database it was dumped from, discarding the current contents of that database:

$ pg_restore -d postgres --clean --create db.dump

Links

https://www.postgresql.org/docs/current/app-pgdump.html

https://postgrespro.com/docs/postgrespro/15/app-pgdump

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