psql PostgreSQL shell

CONCEPTS

Backslash commands belong to psql, not SQL: they end at the line break and need no semicolon. SQL statements need a closing ;.

Connect flags, URI, env
↓ type
Query buffer SQL ending in ;
↓ run
Result format with \pset
↓ redirect
Output \o, \g, \copy

Missing connection flags fall back to PGHOST, PGPORT, PGUSER, PGDATABASE and ~/.pgpass, then to the local socket and your OS user name.

Put \set, \pset and \timing lines in ~/.psqlrc to apply them to every session; -X skips that file.

CONNECT

psql -h *<host>* **-p** *<port>* **-U** *<user>* **-d** *<db>*
Connect with explicit options

psql "postgresql://*<user>***@***<host>***:***<port>***/***<db>***"**
Connect with a URI

psql *<db>*
Connect to a local database

psql -l
List databases and exit

\c *<db>* **[***<user>***]**
Switch database in the session

\conninfo
Show the current connection

\q
Quit

INSPECT

\l
List databases

\dt
List tables

\d *<table>*
Columns, indexes and constraints

INSPECT (cont.)

\d+ *<table>*
Same plus size and storage

\dn
List schemas

\du
List roles

\dv
List views

\di
List indexes

\df *<pattern>*
List functions

\dx
List installed extensions

\dt *<schema>***.***
Tables in one schema

RUN SQL

psql -c "*<sql>***"**
Run one statement and exit

psql -f *<file.sql>*
Run a script file

\i *<file>*
Run a file inside psql

\e
Edit the query in $EDITOR

\g
Run the buffer again

\gx
Run once with vertical output

\watch *<seconds>*
Repeat the query every n seconds

psql -1 -f *<file.sql>*
Run a script in one transaction

OUTPUT

\x auto
Expanded mode only when wide

\x
Toggle vertical output

\timing
Toggle query timing

\pset null '*<text>***'**
Show NULL as text

\pset format *<fmt>*
Choose aligned, csv, html or more

OUTPUT (cont.)

\pset pager off
Disable the pager

\t
Toggle header and footer off

psql -A -t -c "*<sql>***"**
Bare values for scripts

psql --csv -c "*<sql>***"**
CSV output

\o *<file>*
Send results to a file

IMPORT & EXPORT

\copy *<table>* **from '***<file>***' csv header**
Load a CSV file

\copy *<table>* **to '***<file>***' csv header**
Export a table to CSV

\copy (*<query>***) to '***<file>***' csv header**
Export a query result

\copy or COPY?

Form	File lives on
`\copy`	your machine (client)
`COPY`	database server

VARIABLES & SCRIPTING

\set *<name>* *<value>*
Set a psql variable

psql -v *<name>*=*<value>*
Set a variable from the shell

SELECT :'*<name>***';**
Use a variable as a quoted literal

\set ON_ERROR_STOP on
Abort a script on first error

\gset [*<prefix>***]**
Store a one-row result in variables

\? / \h *<command>*
Help for psql or SQL

RECIPES

Export a query to CSV

```
\copy (SELECT * FROM <table>
WHERE <cond>) to 'out.csv' csv
header
```

Safe migration script

```
psql -X -1 -v ON_ERROR_STOP=1 -f
migrate.sql <db>
```