

```
[student@localhost ~]$ su - postgres
Password:
Last login: Tue Sep 21 16:14:24 EDT 2021 on pts/0
-bash-4.2$
-bash-4.2$ psql
Password for user postgres:
psql (12.8)
Type "help" for help.
```

```
postgres=# \l
                                List of databases
  Name      | Owner   | Encoding | Collate  | Ctype    | Access privileges
-----+-----+-----+-----+-----+-----
postgres   | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
template0  | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
gres       |         |          |             |             | postgres=Ctc/postgres
template1  | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
gres       |         |          |             |             | postgres=Ctc/postgres
test       | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
(4 rows)
```

```
postgres=#
postgres=#
postgres=# create database db1;
CREATE DATABASE
postgres=# \c db1
You are now connected to database "db1" as user "postgres".
db1=# create schema hr;
CREATE SCHEMA
db1=# create table hr.t(id int);
CREATE TABLE
db1=# insert into hr.t values(1);
INSERT 0 1
db1=#
db1=# \!
bash-4.2$
```

```
bash-4.2$
bash-4.2$ pg_dump -d db1 -F p -f /tmp/db1_p.psql
Password:
bash-4.2$
bash-4.2$
```

```
bash-4.2$
bash-4.2$ exit
exit
db1=# \c postgres
You are now connected to database "postgres" as user "postgres".
postgres=#
postgres=#
postgres=# \l
```

```
                                List of databases
  Name      | Owner   | Encoding | Collate  | Ctype    | Access privileges
```

```

es
-----+-----+-----+-----+-----+-----
-----
db1      | postgres | UTF8      | en_US.UTF-8 | en_US.UTF-8 |
postgres | postgres | UTF8      | en_US.UTF-8 | en_US.UTF-8 |
template0 | postgres | UTF8      | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
      |          |           |              |              |
gres
template1 | postgres | UTF8      | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
      |          |           |              |              |
gres
test      | postgres | UTF8      | en_US.UTF-8 | en_US.UTF-8 |
(5 rows)

```

```

postgres=#
postgres=# drop database db1;
DROP DATABASE
postgres=#
postgres=# \l

```

```

                                List of databases
  Name      | Owner      | Encoding | Collate      | Ctype      | Access privileg
es
-----+-----+-----+-----+-----+-----
-----
postgres   | postgres   | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
template0  | postgres   | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
      |          |           |              |              |
gres
template1  | postgres   | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
      |          |           |              |              |
gres
test       | postgres   | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
(4 rows)

```

```

postgres=# \!
bash-4.2$
bash-4.2$

```

```

postgres=# create database db1;
CREATE DATABASE
postgres=# \c db1
You are now connected to database "db1" as user "postgres".

```

```

db1=#
db1=# \dn
List of schemas
 Name | Owner
-----+-----
 public | postgres
(1 row)

```

```

db1=# \!
bash-4.2$
bash-4.2$
bash-4.2$ psql -d db1 -f /tmp/db1_p.psql
Password for user postgres:

```

```
SET
SET
SET
SET
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
CREATE SCHEMA
ALTER SCHEMA
SET
SET
CREATE TABLE
ALTER TABLE
COPY 1
bash-4.2$
bash-4.2$
bash-4.2$ exit
```

```
exit
db1=#
db1=#
db1=# \dn
  List of schemas
  Name | Owner
-----+-----
  hr   | postgres
  public | postgres
(2 rows)
```

```
db1=# \d hr.*
          Table "hr.t"
  Column | Type   | Collation | Nullable | Default
-----+-----+-----+-----+-----
  id     | integer |           |          |
```

```
db1=# select * from hr.t;
 id
----
  1
(1 row)
```

```
db1=# \!
bash-4.2$
bash-4.2$
bash-4.2$ exit
exit
db1=# \!
bash-4.2$
bash-4.2$
bash-4.2$ pg_dump -d db1 --schema=hr -F p -f /tmp/db1_sc_hr.psql
Password:
bash-4.2$ cat /tmp/db1_sc_hr.psql
--
```

```
-- PostgreSQL database dump
--

-- Dumped from database version 12.8
-- Dumped by pg_dump version 12.8

SET statement_timeout = 0;
SET lock_timeout = 0;
SET idle_in_transaction_session_timeout = 0;
SET client_encoding = 'UTF8';
SET standard_conforming_strings = on;
SELECT pg_catalog.set_config('search_path', '', false);
SET check_function_bodies = false;
SET xmloption = content;
SET client_min_messages = warning;
SET row_security = off;

--
-- Name: hr; Type: SCHEMA; Schema: -; Owner: postgres
--

CREATE SCHEMA hr;

ALTER SCHEMA hr OWNER TO postgres;

SET default_tablespace = '';

SET default_table_access_method = heap;

--
-- Name: t; Type: TABLE; Schema: hr; Owner: postgres
--

CREATE TABLE hr.t (
    id integer
);

ALTER TABLE hr.t OWNER TO postgres;

--
-- Data for Name: t; Type: TABLE DATA; Schema: hr; Owner: postgres
--

COPY hr.t (id) FROM stdin;
1
\.

--
-- PostgreSQL database dump complete
--

bash-4.2$ exit
exit
db1=#
db1=#
```

```

db1=# drop schema hr cascade;
NOTICE: drop cascades to table hr.t
DROP SCHEMA
db1=#
db1=# \dn
      List of schemas
  Name | Owner
-----+-----
 public | postgres
(1 row)

db1=#
db1=# \!
bash-4.2$
bash-4.2$
bash-4.2$ psql -d db1 -f /tmp/db1_sc_hr.psql
Password for user postgres:
SET
SET
SET
SET
SET
set_config
-----

(1 row)

SET
SET
SET
SET
CREATE SCHEMA
ALTER SCHEMA
SET
SET
CREATE TABLE
ALTER TABLE
COPY 1
bash-4.2$
bash-4.2$
bash-4.2$ exit
exit
db1=# \dn
      List of schemas
  Name | Owner
-----+-----
 hr    | postgres
 public | postgres
(2 rows)

db1=# \d hr.*
                    Table "hr.t"
  Column | Type          | Collation | Nullable | Default
-----+-----+-----+-----+-----
 id      | integer      |           |          |

```

```

db1=#
db1=#
db1=# \!

```

```

bash-4.2$
bash-4.2$
bash-4.2$
bash-4.2$ exit
exit
db1=# \!
bash-4.2$
bash-4.2$
bash-4.2$ pg_dump -d db1 -s -F p -f /tmp/db1_st.psql
Password:
bash-4.2$ psql -c "create database new"
Password for user postgres:
CREATE DATABASE
bash-4.2$
bash-4.2$
bash-4.2$
bash-4.2$ psql -d new -f /tmp/db1_st.psql
Password for user postgres:
SET
SET
SET
SET
SET
   set_config
-----

(1 row)

SET
SET
SET
SET
CREATE SCHEMA
ALTER SCHEMA
SET
SET
CREATE TABLE
ALTER TABLE
bash-4.2$
bash-4.2$
bash-4.2$ exit
exit
db1=#
db1=#
db1=# \c new
You are now connected to database "new" as user "postgres".
new=#
new=# \dn
   List of schemas
   Name | Owner
-----+-----
   hr   | postgres
  public | postgres
(2 rows)

new=# \d hr.*
                Table "hr.t"
 Column | Type          | Collation | Nullable | Default
-----+-----+-----+-----+-----

```

```
id      | integer |          |          |
```

```
new=# select count(*) from hr.t;
```

```
count
-----
      0
(1 row)
```

```
new=# \!
```

```
bash-4.2$
```

```
bash-4.2$ pg_dump -d db1 -F c -f /tmp/db1_co.pp
```

```
Password:
```

```
bash-4.2$ exit
```

```
exit
```

```
new=# \c postgres
```

```
You are now connected to database "postgres" as user "postgres".
```

```
postgres=# drop database db1;
```

```
DROP DATABASE
```

```
postgres=# \!
```

```
bash-4.2$
```

```
bash-4.2$ psql -c "create database db1"
```

```
Password for user postgres:
```

```
CREATE DATABASE
```

```
bash-4.2$
```

```
bash-4.2$
```

```
bash-4.2$ psql -d db1 -f /tmp/db1_co.pp
```

```
Password for user postgres:
```

```
The input is a PostgreSQL custom-format dump.
```

```
Use the pg_restore command-line client to restore this dump to a database.
```

```
bash-4.2$ pg_restore -d db1 /tmp/db1_co.pp
```

```
Password:
```

```
bash-4.2$
```

```
bash-4.2$
```

```
bash-4.2$ exit
```

```
exit
```

```
postgres=#
```

```
postgres=# \l
```

```
                List of databases
  Name      | Owner   | Encoding | Collate  | Ctype    | Access privileges
-----+-----+-----+-----+-----+-----
db1         | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
new        | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
postgres   | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
template0  | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
+
+
gres       |         |         |         |         | postgres=Ctc/postgres
+
template1 | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
+
gres       |         |         |         |         | postgres=Ctc/postgres
test      | postgres | UTF8     | en_US.UTF-8 | en_US.UTF-8 |
(6 rows)
```

```
postgres=# \c db1
```

```
You are now connected to database "db1" as user "postgres".
```

```
db1=# \dn
List of schemas
Name | Owner
-----+-----
hr   | postgres
public | postgres
(2 rows)
```

```
db1=#
db1=# \d hr.*
Table "hr.t"
Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----
id     | integer |          |          |
```

```
db1=# select count(*) from hr.t;
count
-----
1
(1 row)
```

```
db1=# drop table hr.t;
DROP TABLE
db1=#
db1=# \!
bash-4.2$
bash-4.2$ pg_restore -d db1 --table=hr.t /tmp/db1_co.pp
Password:
bash-4.2$ exit
exit
```

```
db1=#
db1=# \d hr.*
Did not find any relation named "hr.*".
db1=#
db1=#
db1=# \!
bash-4.2$
bash-4.2$ pg_restore -d db1 --table=t /tmp/db1_co.pp
Password:
bash-4.2$
bash-4.2$ exit
exit
```

```
db1=# \d hr.*
Table "hr.t"
Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----
id     | integer |          |          |
```

```
db1=#
db1=#
db1=#
db1=# \!
bash-4.2$
bash-4.2$
bash-4.2$ pg_dump -d db1 -F t -f /tmp/db1_ta.tt
Password:
bash-4.2$
bash-4.2$ exit
exit
```



```

db1=# \c postgres
You are now connected to database "postgres" as user "postgres".
postgres=#
postgres=# drop database db1;
DROP DATABASE
postgres=# \!
bash-4.2$
bash-4.2$
bash-4.2$ pg_restore -d db1 /tmp/db1_ta.tt
Password:
pg_restore: error: connection to database "db1" failed: FATAL: database "db1" does
not exist
bash-4.2$ psql -c "create database db1"
Password for user postgres:
CREATE DATABASE
bash-4.2$
bash-4.2$ pg_restore -d db1 /tmp/db1_ta.tt
Password:
bash-4.2$
bash-4.2$
bash-4.2$ exit
exit

```

```

postgres=# \c db1
You are now connected to database "db1" as user "postgres".

```

```

db1=# \dn
List of schemas
Name | Owner
-----+-----
hr   | postgres
public | postgres
(2 rows)

```

```

db1=# \d hr.*
Table "hr.t"
Column | Type | Collation | Nullable | Default
-----+-----+-----+-----+-----
id     | integer |          |          |

```

```

db1=# \c postgres
You are now connected to database "postgres" as user "postgres".
postgres=# create database db2;
CREATE DATABASE
postgres=# create database db3;
CREATE DATABASE
postgres=# \l

```

```

List of databases
Name | Owner | Encoding | Collate | Ctype | Access privileges
-----+-----+-----+-----+-----+-----
db1  | postgres | UTF8 | en_US.UTF-8 | en_US.UTF-8 |
db2  | postgres | UTF8 | en_US.UTF-8 | en_US.UTF-8 |
db3  | postgres | UTF8 | en_US.UTF-8 | en_US.UTF-8 |
new  | postgres | UTF8 | en_US.UTF-8 | en_US.UTF-8 |
postgres | postgres | UTF8 | en_US.UTF-8 | en_US.UTF-8 |
template0 | postgres | UTF8 | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
| | | | | | postgres=CTc/post

```

```
gres
  template1 | postgres | UTF8      | en_US.UTF-8 | en_US.UTF-8 | =c/postgres
+
          |           |           |           |           | postgres=CtC/post
gres
  test      | postgres | UTF8      | en_US.UTF-8 | en_US.UTF-8 |
(8 rows)
```

```
postgres=# \!
bash-4.2$
bash-4.2$ pg_dumpall -f /tmp/full_5432.psql
Password:
Password:
Password:
Password:
Password:
Password:
Password:
Password:
bash-4.2$
bash-4.2$ mkdir -p /var/lib/pgsql/12/data2
```

```
bash-4.2$ initdb -D /var/lib/pgsql/12/data2
The files belonging to this database system will be owned by user "postgres".
This user must also own the server process.
```

The database cluster will be initialized with locale "en_US.UTF-8".
The default database encoding has accordingly been set to "UTF8".
The default text search configuration will be set to "english".

Data page checksums are disabled.

```
fixing permissions on existing directory /var/lib/pgsql/12/data2 ... ok
creating subdirectories ... ok
selecting dynamic shared memory implementation ... posix
selecting default max_connections ... 100
selecting default shared_buffers ... 128MB
selecting default time zone ... America/New_York
creating configuration files ... ok
running bootstrap script ... ok
performing post-bootstrap initialization ... ok
syncing data to disk ... ok
```

```
initdb: warning: enabling "trust" authentication for local connections
You can change this by editing pg_hba.conf or using the option -A, or
--auth-local and --auth-host, the next time you run initdb.
```

Success. You can now start the database server using:

```
pg_ctl -D /var/lib/pgsql/12/data2 -l logfile start
```

```
bash-4.2$ vi /var/lib/pgsql/12/data2/postgresql.conf
bash-4.2$
bash-4.2$ pg_ctl -D /var/lib/pgsql/12/data2 start
waiting for server to start....2021-09-22 15:53:31.416 EDT [90651] LOG:  starting
PostgreSQL 12.8 on x86_64-pc-linux-gnu, compiled by gcc (GCC) 4.8.5 20150623 (Red
Hat 4.8.5-44), 64-bit
2021-09-22 15:53:31.417 EDT [90651] LOG:  listening on IPv6 address ":::1", port
```



```
packaging.log
program.log
sensitive-info.log
.s.PGSQL.4432
.s.PGSQL.4432.lock
.s.PGSQL.5432
.s.PGSQL.5432.lock
--More--^C
bash-4.2$ psql -p 4432 -f /tmp/full_5432.psql
SET
SET
SET
psql:/tmp/full_5432.psql:14: ERROR:  role "postgres" already exists
ALTER ROLE
CREATE ROLE
ALTER ROLE
CREATE ROLE
ALTER ROLE
GRANT ROLE
You are now connected to database "template1" as user "postgres".
SET
SET
SET
SET
SET
  set_config
-----

(1 row)

SET
SET
SET
SET
SET
SET
SET
SET
SET
  set_config
-----

(1 row)

SET
SET
SET
SET
CREATE DATABASE
ALTER DATABASE
You are now connected to database "db1" as user "postgres".
SET
SET
SET
SET
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
CREATE SCHEMA
ALTER SCHEMA
SET
SET
CREATE TABLE
ALTER TABLE
COPY 1
SET
SET
SET
SET
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
CREATE DATABASE
ALTER DATABASE
You are now connected to database "db2" as user "postgres".
SET
SET
SET
SET
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
SET
SET
SET
SET
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
CREATE DATABASE
```

```
ALTER DATABASE
You are now connected to database "db3" as user "postgres".
SET
SET
SET
SET
SET
  set_config
-----

(1 row)

SET
SET
SET
SET
SET
SET
SET
SET
SET
  set_config
-----

(1 row)

SET
SET
SET
SET
CREATE DATABASE
ALTER DATABASE
You are now connected to database "new" as user "postgres".
SET
SET
SET
SET
SET
  set_config
-----

(1 row)

SET
SET
SET
SET
CREATE SCHEMA
ALTER SCHEMA
SET
SET
CREATE TABLE
ALTER TABLE
COPY 0
You are now connected to database "postgres" as user "postgres".
SET
SET
SET
SET
```

```
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
CREATE SCHEMA
ALTER SCHEMA
CREATE EXTENSION
COMMENT
CREATE SERVER
ALTER SERVER
SET
SET
CREATE TABLE
ALTER TABLE
COPY 1
SET
SET
SET
SET
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
CREATE DATABASE
ALTER DATABASE
You are now connected to database "test" as user "postgres".
SET
SET
SET
SET
SET
  set_config
-----
```

(1 row)

```
SET
SET
SET
SET
CREATE SCHEMA
ALTER SCHEMA
SET
SET
CREATE TABLE
ALTER TABLE
COPY 1
```

```
GRANT
GRANT
bash-4.2$
bash-4.2$
bash-4.2$
bash-4.2$ psql -p 4432
psql (12.8)
Type "help" for help.
```

```
postgres=# \l
```

List of databases						
Name	Owner	Encoding	Collate	Ctype	Access privileges	
db1	postgres	UTF8	en_US.UTF-8	en_US.UTF-8		
db2	postgres	UTF8	en_US.UTF-8	en_US.UTF-8		
db3	postgres	UTF8	en_US.UTF-8	en_US.UTF-8		
new	postgres	UTF8	en_US.UTF-8	en_US.UTF-8		
postgres	postgres	UTF8	en_US.UTF-8	en_US.UTF-8		
template0	postgres	UTF8	en_US.UTF-8	en_US.UTF-8	=c/postgres	
+						
gres						postgres=Ctc/postgres
template1	postgres	UTF8	en_US.UTF-8	en_US.UTF-8	=c/postgres	
+						
gres						postgres=Ctc/postgres
test	postgres	UTF8	en_US.UTF-8	en_US.UTF-8		

(8 rows)

```
postgres=# \c db1
```

```
You are now connected to database "db1" as user "postgres".
```

```
db1=# \dn
```

List of schemas	
Name	Owner
hr	postgres
public	postgres

(2 rows)

```
db1=# select * from hr.t;
```

```
id
----
  1
(1 row)
```

```
db1=#
```