

## DATA ONLY CONTAINER

Create a Postgres docker container and create a table

```
aws | Search [Alt+S]

root@ip-172-31-36-206:~# docker run --name some-postgres -e POSTGRES_PASSWORD=mysecretpassword -d postgres
Unable to find image 'postgres:latest' locally
latest: Pulling from library/postgres
6e909acd790: Pull complete
fec99121872b: Pull complete
133acbe970df: Pull complete
e02d97322fc6: Pull complete
4b9643c6af3: Pull complete
9bcedd9434e7: Pull complete
fc8982ec96d9: Pull complete
1824bd6b75d7: Pull complete
fbad2bf2d5e6: Pull complete
221788d72606: Pull complete
e9f43b682bc0: Pull complete
e7a249e24ab0: Pull complete
a96cb29b0d13: Pull complete
140970538145: Pull complete
Digest: sha256:7f29c02ba9e9ff4de9a9f414d803faa0e6fe5e8d15ebe217e3e418c82e652b35
Status: Downloaded newer image for postgres:latest
5ead6501d5eed7b4fd84202b99883769b9281c68a17a52f1af11f05456ee43a
root@ip-172-31-36-206:~#
```

```
aws | Search [Alt+S]

root@ip-172-31-36-206:~# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS          NAMES
5ead6501d5ee   postgres  "docker-entrypoint.s..." 3 minutes ago  Up 3 minutes  5432/tcp       some-postgres
root@ip-172-31-36-206:~# docker exec -it 5ead6501d5ee /bin/bash
root@5ead6501d5ee:~# su - postgres
postgres@5ead6501d5ee:~$ psql
psql (17.4 (Debian 17.4-1.pgdg120+2))
Type "help" for help.

postgres=# \l
          List of databases
  Name | Owner | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges
-----+-----+-----+-----+-----+-----+-----+-----+-----
postgres | postgres | UTF8 | libc | en_US.utf8 | en_US.utf8 | | | | =c/postgres
template0 | postgres | UTF8 | libc | en_US.utf8 | en_US.utf8 | | | | postgres=CTC/postgres
template1 | postgres | UTF8 | libc | en_US.utf8 | en_US.utf8 | | | | =c/postgres
(3 rows)

postgres=#
```

```
aws | Search [Alt+S]

postgres=# CREATE TABLE employees (
  id SERIAL PRIMARY KEY,
  first_name VARCHAR(50),
  last_name VARCHAR(50),
  email VARCHAR(100),
  hire_date DATE
);
CREATE TABLE
postgres=# \dt
          List of relations
 Schema | Name      | Type  | Owner
-----+-----+-----+-----
 public | employees | table | postgres
(1 row)

postgres=# \d employees
          Table "public.employees"
   Column   |      Type      | Collation | Nullable |   Default
-----+-----+-----+-----+-----
 id          | integer         |           | not null | nextval('employees_id_seq'::regclass)
 first_name  | character varying(50) |           |          |
 last_name   | character varying(50) |           |          |
 email       | character varying(100) |           |          |
 hire_date   | date            |           |          |
Indexes:
    "employees_pkey" PRIMARY KEY, btree (id)
postgres=#
```

Run docker inspect command and get the IP address

```
aws [Alt+S]
CONTAINER ID   IMAGE     COMMAND                  CREATED      STATUS      PORTS      NAMES
5ead6501d5ee  postgres "docker-entrypoint.s..." 28 minutes ago Up 28 minutes 5432/tcp    some-postgres
root@ip-172-31-36-206:~# docker inspect 5ead6501d5ee
[
  {
    "Id": "5ead6501d5ead7b4fdd84202b99883769b9281c68a17a52f1af11f05456ee43a",
    "Created": "2025-03-22T14:41:04.340307199Z",
    "Path": "docker-entrypoint.sh",
    "Args": [
      "postgres"
    ]
  }
]
```

```
aws [Alt+S]
{
  "stopSignal": "SIGINT",
  "NetworkSettings": {
    "bridge": "eth0",
    "SandboxID": "ba71bea69423f0dd248724691c4c70d0a6534f1a51ef858206e130a588c222dc",
    "SandboxKey": "/var/run/docker/netns/ba71bea69423",
    "Ports": {
      "5432/tcp": null
    },
    "HairpinMode": false,
    "LinkLocalIPv6Address": "",
    "LinkLocalIPv6PrefixLen": 0,
    "SecondaryIPAddresses": null,
    "SecondaryIPv6Addresses": null,
    "EndpointID": "60b43493d9da0d5e5008531a6686777572a13fc996af6c26888d03428f42718c",
    "Gateway": "172.17.0.1",
    "GlobalIPv6Address": "",
    "GlobalIPv6PrefixLen": 0,
    "IPAddress": "172.17.0.2",
    "IPPrefixLen": 16,
    "IPv6Gateway": "",
    "MacAddress": "1a:0f:84:f1:53:bd",
    "Networks": {
      "bridge": {
        "IPAMConfig": null,
        "DriverOpts": null
      }
    }
  }
}
```

Create an Ubuntu container and run below commands

# apt update

# apt install -y postgresql-common

# apt install -y postgresql-client

And try connecting to existing postgres container in the same host with ip address and port

psql -h 172.17.0.2 -p 5432 -d postgres -U postgres and try accessing the containers

```
aws [Alt+S]
root@ed40694fc965:/# psql -h 172.17.0.2 -p 5432 -d postgres -U postgres
Password for user postgres:
psql (16.8 (Ubuntu 16.8-0ubuntu0.24.04.1), server 17.4 (Debian 17.4-1.pgdg120+2))
WARNING: psql major version 16, server major version 17.
Some psql features might not work.
Type "help" for help.

postgres=# \d
          List of relations
Schema | Name          | Type  | Owner
-----+-----+-----+-----
public | employees     | table | postgres
public | employees_id_seq | sequence | postgres
(2 rows)

postgres=# \d employees
Did not find any relation named "employees".
postgres=# \d employees
          Table "public.employees"
Column | Type          | Collation | Nullable | Default
-----+-----+-----+-----+-----
id      | integer       |           | not null | nextval('employees_id_seq'::regclass)
first_name | character varying(50) |           |         |
last_name  | character varying(50) |           |         |
email      | character varying(100) |           |         |
hire_date  | date          |           |         |
Indexes:
    "employees_pkey" PRIMARY KEY, btree (id)
```

## Docker save and load

```
aws | [Search] [Alt+S] | Asia Pacific (Mumbai) | Nikhil Patil | [G]

root@ip-172-31-36-206:~# docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
postgres latest 7663e031d245 3 weeks ago 438MB
ubuntu latest a04dc4851cbc 7 weeks ago 78.1MB
root@ip-172-31-36-206:~# docker images --filter dangling=true
REPOSITORY TAG IMAGE ID CREATED SIZE
root@ip-172-31-36-206:~# docker save ubuntu > new_image.tar
root@ip-172-31-36-206:~# ls
aws awscli v2.zip [redacted] new_image.tar snap
root@ip-172-31-36-206:~# docker load < new_image.tar
Loaded image: ubuntu:latest
root@ip-172-31-36-206:~# ls
aws awscli v2.zip [redacted] new_image.tar snap
root@ip-172-31-36-206:~# docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
postgres latest 7663e031d245 3 weeks ago 438MB
ubuntu latest a04dc4851cbc 7 weeks ago 78.1MB
root@ip-172-31-36-206:~#
```