

## CODELAB DE LA BASE DE DATOS DE SERIES DE TIEMPO TIMESCALEDB

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ubuntu@ip-172-31-0-5:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Hit:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Hit:5 http://apt.postgresql.org/pub/repos/apt jammy-pgdg InRelease
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2072 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1132 kB]
Hit:6 https://packagecloud.io/timescale/timescaledb/ubuntu jammy InRelease
Fetched 3460 kB in 2s (2069 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
40 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-0-5:~$ for pkg in docker.io docker-doc docker-compose docker-compose-v2 podman-docker containerd runc; do sudo apt-get remove $pkg; done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'docker.io' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'docker-doc' is not installed, so not removed
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0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'docker-compose' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'docker-compose-v2' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'podman-docker' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'containerd' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package 'runc' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
ubuntu@ip-172-31-0-5:~$ sudo apt install ca-certificates curl -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20240203~22.04.1).
ca-certificates set to manually installed.
curl is already the newest version (7.81.0-1ubuntu1.18).
curl set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 40 not upgraded.
ubuntu@ip-172-31-0-5:~$ sudo install -m 0755 -d /etc/apt/keyrings
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ubuntu@ip-172-31-0-5:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 https://download.docker.com/linux/ubuntu jammy InRelease [48.8 kB]
Hit:5 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:7 http://apt.postgresql.org/pub/repos/apt jammy-pgdg InRelease
Hit:6 https://packagecloud.io/timescale/timescaledb/ubuntu jammy InRelease
Get:8 https://download.docker.com/linux/ubuntu jammy/stable amd64 Packages [40.7 kB]
Fetched 89.5 kB in 1s (73.5 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
40 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-0-5:~$ sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  docker-ce-rootless-extras libltdl7 libslirp0 pigz slirp4netns
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite
The following NEW packages will be installed:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli
  docker-ce-rootless-extras docker-compose-plugin libltdl7 libslirp0

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Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/

ubuntu@ip-172-31-0-5:~$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
ubuntu@ip-172-31-0-5:~$ sudo systemctl stop postgresql
sudo systemctl disable postgresql
ubuntu@ip-172-31-0-5:~$ sudo systemctl status postgresql
ubuntu@ip-172-31-0-5:~$ nano instalar-timescale.sh
ubuntu@ip-172-31-0-5:~$ cd timescaledb-lab
-bash: cd: timescaledb-lab: No such file or directory
ubuntu@ip-172-31-0-5:~$ nano instalar-timescale.sh
ubuntu@ip-172-31-0-5:~$ chmod 700 instalar-timescale.sh
ubuntu@ip-172-31-0-5:~$ ./instalar-timescale.sh
Reading package lists... Done

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Need to get 17.0 MB of archives.
After this operation, 10.5 MB of additional disk space will be used.
Get:1 https://packagecloud.io/timescale/timescaledb/ubuntu jammy/main amd64 timescaledb-2-loader-postgresql-16 amd64 2.17.0~ubuntu22.04 [105 kB]
Get:2 https://packagecloud.io/timescale/timescaledb/ubuntu jammy/main amd64 timescaledb-2-postgresql-16 amd64 2.17.0~ubuntu22.04 [16.9 MB]
Fetched 17.0 MB in 1s (28.2 MB/s)
(Reading database ... 98841 files and directories currently installed.)
Preparing to unpack .../timescaledb-2-loader-postgresql-16_2.17.0~ubuntu22.04_amd64.deb ...
Unpacking timescaledb-2-loader-postgresql-16 (2.17.0~ubuntu22.04) over (2.16.1~ubuntu22.04) ...
Preparing to unpack .../timescaledb-2-postgresql-16_2.17.0~ubuntu22.04_amd64.deb ...
Unpacking timescaledb-2-postgresql-16 (2.17.0~ubuntu22.04) over (2.16.1~ubuntu22.04) ...
Setting up timescaledb-2-loader-postgresql-16 (2.17.0~ubuntu22.04) ...
Setting up timescaledb-2-postgresql-16 (2.17.0~ubuntu22.04) ...
RECOMMENDED: Run 'timescaledb-tune' (installed as part of the timescaledb-tools package, a recommended dependency) to update your config settings for TimescaleDB:

    timescaledb-tune --quiet --yes

IF NOT, you need to update your postgresql.conf file to load TimescaleDB by adding 'timescaledb' to your shared_preload_libraries.
Find the line below and change the value as shown (uncomment if needed):

shared_preload_libraries = 'timescaledb'
Processing triggers for postgresql-common (264.pgdg22.04+1) ...
Building PostgreSQL dictionaries from installed myspell/hunspell packages ...
Removing obsolete dictionary files:
Scanning processes...
Scanning candidates...
Scanning linux images...
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Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart networkd-dispatcher.service
systemctl restart systemd-logind.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
Using postgresql.conf at this path:
/etc/postgresql/16/main/postgresql.conf

Is this correct? [(y)es/(n)o]: Y
Writing backup to:
/tmp/timescaledb_tune.backup202410121755

success: shared_preload_libraries is set correctly

Tune memory/parallelism/WAL and other settings? [(y)es/(n)o]: Y
Recommendations based on 949.25 MB of available memory and 1 CPUs for PostgreSQL 16

Memory settings recommendations
success: memory settings are already tuned

WAL settings recommendations
success: WAL settings are already tuned

Background writer settings recommendations
Current:
Recommended:
Is this okay? [(y)es/(s)kip/(q)uit]: Y
success: background writer settings will be updated
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```
Miscellaneous settings recommendations
success: miscellaneous settings are already tuned
Saving changes to: /etc/postgresql/16/main/postgresql.conf
ubuntu@ip-172-31-0-5:~$ cd
ubuntu@ip-172-31-0-5:~$ mkdir timescaledb-lab
ubuntu@ip-172-31-0-5:~$ cd timescaledb-lab
ubuntu@ip-172-31-0-5:~/timescaledb-lab$ nano docker-compose.yml
ubuntu@ip-172-31-0-5:~/timescaledb-lab$ mkdir -p ./data
ubuntu@ip-172-31-0-5:~/timescaledb-lab$ cd data/
ubuntu@ip-172-31-0-5:~/timescaledb-lab/data$ ls
ubuntu@ip-172-31-0-5:~/timescaledb-lab/data$ nano docker-compose.yml
ubuntu@ip-172-31-0-5:~/timescaledb-lab/data$ docker-compose up -d
Command 'docker-compose' not found, but can be installed with:
sudo snap install docker          # version 24.0.5, or
sudo apt install docker-compose  # version 1.29.2-1
See 'snap info docker' for additional versions.
ubuntu@ip-172-31-0-5:~/timescaledb-lab/data$ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS          NAMES
ubuntu@ip-172-31-0-5:~/timescaledb-lab/data$ sudo -u postgres psql
psql (16.4 (Ubuntu 16.4-1.pgdg22.04+2))
Type "help" for help.

postgres=# \password postgres
Enter new password for user "postgres":
Enter it again:
postgres=# \q
ubuntu@ip-172-31-0-5:~/timescaledb-lab/data$ psql -d "postgres://postgres:a1b2c3d4@localhost:5432/postgres"
psql (16.4 (Ubuntu 16.4-1.pgdg22.04+2))
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, compression: off)
Type "help" for help.

postgres=# CREATE EXTENSION IF NOT EXISTS timescaledb;
CREATE EXTENSION
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postgres=# \dx
postgres=# CREATE USER iot_data_user WITH PASSWORD 'a1b2c3d4';
CREATE ROLE
postgres=# CREATE DATABASE iot_data OWNER iot_data_user;
CREATE DATABASE
postgres=# GRANT ALL PRIVILEGES ON DATABASE iot_data TO iot_data_user;
GRANT
postgres=# \l
```