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1 Sistema operativo y versión.

- Sistema Operativo: Linux
- Linux Kernel: 5.10.0-20-amd64

2 Distribución (solamente en el caso de Linux).

- La distribución es "Debian GNU/Linux".

3 Versión de la instalación.

```
"Env": [  
  "POSTGRES_PASSWORD=mysecretpassword",  
  "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/lib/postgresql/15/bin",  
  "GOSU_VERSION=1.16",  
  "LANG=en_US.UTF8",  
  "PG_MAJOR=15",  
  "PG_VERSION=15.4-1.pgdg120+1",  
  "PGDATA=/var/lib/postgresql/data"  
],
```

4 Tiempo requerido.

- Me tomó 1 hora y 40 minutos.

5 Explicación del paso a paso que realizaste con sus respectivas capturas de pantallas. (Adicionalmente agrega las evidencias de los pasos que consideres esenciales de la instalación). Instalación Docker.

Paso 1:

```
Terminal - debian11@am-bc17b88fc32a: ~  
Archivo Editar Ver Terminal Pestañas Ayuda  
debian11@am-bc17b88fc32a:~$ sudo apt update  
[sudo] password for debian11:  
Des:1 http://packages.microsoft.com/repos/code stable InRelease [3 569 B]  
Des:2 https://dl.google.com/linux/chrome/deb stable InRelease [1 825 B]  
Des:3 http://packages.microsoft.com/repos/code stable/main armhf Packages [79.0 kB]  
Des:4 http://packages.microsoft.com/repos/code stable/main amd64 Packages [78.1 kB]  
Des:5 https://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1 089 B]  
Des:6 http://ftp.uk.debian.org/debian bullseye InRelease [116 kB]  
Des:7 http://packages.microsoft.com/repos/code stable/main arm64 Packages [78.8 kB]  
Des:8 http://ftp.uk.debian.org/debian bullseye-updates InRelease [44.1 kB]  
Des:9 http://ftp.uk.debian.org/debian bullseye-updates/main Sources.diff/Index [20.7 kB]  
Des:10 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Packages.diff/Index [20.7 kB]  
Des:11 http://ftp.uk.debian.org/debian bullseye-updates/main Translation-en.diff/Index [9 483 B]  
Des:12 http://ftp.uk.debian.org/debian bullseye-updates/main all Contents (deb).diff/Index [15.1 kB]  
Des:13 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Contents (deb).diff/Index [7 239 B]  
Des:14 http://ftp.uk.debian.org/debian bullseye-updates/main Sources T-2023-08-26-1408.20-F-2023-07-31-2005.11.pdiff [1 673 B]  
Des:15 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Packages T-2023-08-26-1408.20-F-2023-07-31-2005.11.pdiff [3 250 B]  
Des:16 http://ftp.uk.debian.org/debian bullseye-updates/main Translation-en T-2023-08-26-1408.20-F-2023-07-31-2005.11.pdiff [2 273 B]  
Des:17 http://ftp.uk.debian.org/debian bullseye-updates/main all Contents (deb) T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [184 B]  
Des:14 http://ftp.uk.debian.org/debian bullseye-updates/main Sources T-2023-08-26-1408.20-F-2023-07-31-2005.11.pdiff [1 673 B]  
Des:16 http://ftp.uk.debian.org/debian bullseye-updates/main Translation-en T-2023-08-26-1408.20-F-2023-07-31-2005.11.pdiff [2 273 B]  
Des:17 http://ftp.uk.debian.org/debian bullseye-updates/main all Contents (deb) T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [184 B]  
Des:15 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Packages T-2023-08-26-1408.20-F-2023-07-31-2005.11.pdiff [3 250 B]  
Des:18 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Contents (deb) T-2023-07-31-2005.11-F-2023-07-31-2005.11.pdiff [18.0 kB]  
Des:18 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Contents (deb) T-2023-07-31-2005.11-F-2023-07-31-2005.11.pdiff [18.0 kB]  
Des:19 http://ftp.uk.debian.org/debian bullseye-updates/main Sources T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [52 0 B]  
Des:20 http://ftp.uk.debian.org/debian bullseye-updates/main Translation-en T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [199 B]  
Des:21 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Packages T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [464 B]  
Des:19 http://ftp.uk.debian.org/debian bullseye-updates/main Sources T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [52 0 B]  
Des:21 http://ftp.uk.debian.org/debian bullseye-updates/main amd64 Packages T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [464 B]  
Des:20 http://ftp.uk.debian.org/debian bullseye-updates/main Translation-en T-2023-08-26-1408.20-F-2023-08-26-1408.20.pdiff [199 B]  
Descargados 502 kB en 2s (221 kB/s)  
Leyendo lista de paquetes... Hecho  
Creando árbol de dependencias... Hecho  
Leyendo la información de estado... Hecho  
Se pueden actualizar 197 paquetes. Ejecute «apt list --upgradable» para verlos.  
N: Repository 'http://ftp.uk.debian.org/debian bullseye InRelease' changed its 'Suite' value from 'stable' to 'oldstable'  
N: Repository 'http://ftp.uk.debian.org/debian bullseye-updates InRelease' changed its 'Suite' value from 'stable-updates' to 'oldstable-updates'  
debian11@am-bc17b88fc32a:~$
```

Paso 2:

```
Terminal - debian11@am-bc17b88fc32a: ~
Archivo Editar Ver Terminal Pestañas Ayuda
Se instalarán los siguientes paquetes NUEVOS:
  apt-transport-https python3-distro-info python3-software-properties software-properties-common unattended-upgrades
Se actualizarán los siguientes paquetes:
  curl libcurl4
2 actualizados, 5 nuevos se instalarán, 0 para eliminar y 195 no actualizados.
Se necesita descargar 860 kB/1 007 kB de archivos.
Se utilizarán 1 128 kB de espacio de disco adicional después de esta operación.
¿Desea continuar? [S/n] s
Des:1 http://ftp.uk.debian.org/debian bullseye/main amd64 apt-transport-https all 2.2.4 [160 kB]
Des:2 http://ftp.uk.debian.org/debian bullseye/main amd64 curl amd64 7.74.0-1.3+deb11u7 [270 kB]
Des:3 http://ftp.uk.debian.org/debian bullseye/main amd64 libcurl4 amd64 7.74.0-1.3+deb11u7 [346 kB]
Des:4 http://ftp.uk.debian.org/debian bullseye/main amd64 software-properties-common all 0.96.20.2-2.1 [83.4 kB]
Descargados 805 kB en 3s (286 kB/s)
Leyendo lista de cambios... Hecho.
Preconfigurando paquetes ...
Seleccionando el paquete apt-transport-https previamente no seleccionado.
(Leyendo la base de datos ... 261122 ficheros o directorios instalados actualmente.)
Preparando para desempaquetar .../0-apt-transport-https_2.2.4_all.deb ...
Desempaquetando apt-transport-https (2.2.4) ...
Preparando para desempaquetar .../1-curl 7.74.0-1.3+deb11u7 amd64.deb ...
Desempaquetando curl (7.74.0-1.3+deb11u7) sobre (7.74.0-1.3+deb11u3) ...
Preparando para desempaquetar .../2-libcurl4 7.74.0-1.3+deb11u7 amd64.deb ...
Desempaquetando libcurl4:amd64 (7.74.0-1.3+deb11u7) sobre (7.74.0-1.3+deb11u3) ...
Seleccionando el paquete python3-distro-info previamente no seleccionado.
Preparando para desempaquetar .../3-python3-distro-info_1.0_all.deb ...
Desempaquetando python3-distro-info (1.0) ...
Seleccionando el paquete python3-software-properties previamente no seleccionado.
Preparando para desempaquetar .../4-python3-software-properties_0.96.20.2-2.1_all.deb ...
Desempaquetando python3-software-properties (0.96.20.2-2.1) ...
Seleccionando el paquete software-properties-common previamente no seleccionado.
Preparando para desempaquetar .../5-software-properties-common_0.96.20.2-2.1_all.deb ...
Desempaquetando software-properties-common (0.96.20.2-2.1) ...
Seleccionando el paquete unattended-upgrades previamente no seleccionado.
Preparando para desempaquetar .../6-unattended-upgrades_2.8_all.deb ...
Desempaquetando unattended-upgrades (2.8) ...
Configurando apt-transport-https (2.2.4) ...
Configurando python3-software-properties (0.96.20.2-2.1) ...
Configurando libcurl4:amd64 (7.74.0-1.3+deb11u7) ...
Configurando curl (7.74.0-1.3+deb11u7) ...
Configurando python3-distro-info (1.0) ...
Configurando software-properties-common (0.96.20.2-2.1) ...
Configurando unattended-upgrades (2.8) ...

Creating config file /etc/apt/apt.conf.d/50unattended-upgrades with new version
Created symlink /etc/systemd/system/multi-user.target.wants/unattended-upgrades.service → /lib/systemd/system/unattended-upgrades.service.
Synchronizing state of unattended-upgrades.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable unattended-upgrades
Procesando disparadores para libc-bin (2.31-13+deb11u5) ...
Procesando disparadores para man-db (2.9.4-2) ...
Procesando disparadores para dbus (1.12.24-0+deb11u1) ...
Auto empaquetado del repositorio en segundo plano para un performance óptimo.
Vea "git help gc" para limpieza manual.
[master 3e2d25a] committing changes in /etc made by "apt install apt-transport-https ca-certificates curl software-properties-common"
Author: ArizdelcyLizbeth <arizdelcyLizbeth1203@ciencias.unam.mx>
15 files changed, 312 insertions(+)
create mode 100644 apt/apt.conf.d/50unattended-upgrades
create mode 100644 dbus-1/system.d/com.ubuntu.SoftwareProperties.conf
create mode 100755 init.d/unattended-upgrades
create mode 100755 kernel/postinst.d/unattended-upgrades
create mode 100644 logrotate.d/unattended-upgrades
create mode 100755 pm/sleep.d/10_unattended-upgrades-hibernate
create mode 120000 rc0.d/S01unattended-upgrades
create mode 120000 rc2.d/S01unattended-upgrades
create mode 120000 rc3.d/S01unattended-upgrades
create mode 120000 rc4.d/S01unattended-upgrades
create mode 120000 rc5.d/S01unattended-upgrades
create mode 120000 rc6.d/K01unattended-upgrades
create mode 120000 systemd/system/multi-user.target.wants/unattended-upgrades.service
create mode 100755 update-motd.d/92-unattended-upgrades
debian11@am-bc17b88fc32a:~$
```

Paso 3:

```
debian11@am-bc17b88fc32a:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
OK
debian11@am-bc17b88fc32a:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
debian11@am-bc17b88fc32a:~$
```

Paso 4:

```
debian11@am-bc17b88fc32a:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu focal stable"
debian11@am-bc17b88fc32a:~$
```

Paso 5:

```

debian11@am-bc17b88fc32a:~$ sudo apt update
Obj:1 http://packages.microsoft.com/repos/code stable InRelease
Obj:2 https://dl.google.com/linux/chrome/deb stable InRelease
Des:3 https://download.docker.com/linux/ubuntu focal InRelease [57.7 kB]
Obj:4 http://ftp.uk.debian.org/debian bullseye InRelease
Des:5 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages [33.2 kB]
Obj:6 http://ftp.uk.debian.org/debian bullseye-updates InRelease
Des:7 https://download.docker.com/linux/ubuntu focal/stable amd64 Contents (deb) [1 384 B]
Descargados 92.3 kB en 1s (176 kB/s)
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Se pueden actualizar 195 paquetes. Ejecute «apt list --upgradable» para verlos.
debian11@am-bc17b88fc32a:~$

```

Paso 6:

```

Terminal - debian11@am-bc17b88fc32a: ~
Archivo Editar Ver Terminal Pestañas Ayuda
Seleccionando el paquete docker-compose-plugin previamente no seleccionado.
Preparando para desempaquetar .../6-docker-compose-plugin_2.21.0-1-ubuntu.20.04-focal_amd64.deb ...
Desempaquetando docker-compose-plugin (2.21.0-1-ubuntu.20.04-focal) ...
Seleccionando el paquete libslirp0:amd64 previamente no seleccionado.
Preparando para desempaquetar .../7-libslirp0_4.4.0-1+deb11u2_amd64.deb ...
Desempaquetando libslirp0:amd64 (4.4.0-1+deb11u2) ...
Seleccionando el paquete slirp4netns previamente no seleccionado.
Preparando para desempaquetar .../8-slirp4netns_1.0.1-2_amd64.deb ...
Desempaquetando slirp4netns (1.0.1-2) ...
Configurando docker-buildx-plugin (0.11.2-1-ubuntu.20.04-focal) ...
Configurando containerd.io (1.6.22-1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.
Configurando docker-compose-plugin (2.21.0-1-ubuntu.20.04-focal) ...
Configurando docker-ce-cli (5:24.0.6-1-ubuntu.20.04-focal) ...
Configurando libslirp0:amd64 (4.4.0-1+deb11u2) ...
Configurando pigz (2.6-1) ...
Configurando docker-ce-rootless-extras (5:24.0.6-1-ubuntu.20.04-focal) ...
Configurando slirp4netns (1.0.1-2) ...
Configurando docker-ce (5:24.0.6-1-ubuntu.20.04-focal) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Procesando disparadores para man-db (2.9.4-2) ...
Procesando disparadores para libc-bin (2.31-13+deb11u5) ...
Auto empaquetado del repositorio en segundo plano para un performance óptimo.
Vea "git help gc" para limpieza manual.
[master f313d65] committing changes in /etc made by "apt install docker-ce"
Author: ArizdelcyLizbeth <arizdelcyLizbeth1203@ciencias.unam.mx>
18 files changed, 188 insertions(+)
create mode 100644 containerd/config.toml
create mode 100644 default/docker
create mode 100755 init.d/docker
create mode 120000 rc0.d/K01docker
create mode 120000 rc1.d/K01docker
create mode 120000 rc2.d/S01docker
create mode 120000 rc3.d/S01docker
create mode 120000 rc4.d/S01docker
create mode 120000 rc5.d/S01docker
create mode 120000 rc6.d/K01docker
create mode 120000 systemd/system/multi-user.target.wants/containerd.service
create mode 120000 systemd/system/multi-user.target.wants/docker.service
create mode 120000 systemd/system/sockets.target.wants/docker.socket
debian11@am-bc17b88fc32a:~$

```

Paso 7:

```

debian11@am-bc17b88fc32a:~$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-09-07 05:06:13 CST; 45s ago
 TriggeredBy: ● docker.socket
           Docs: https://docs.docker.com
   Main PID: 5933 (dockerd)
     Tasks: 15
    Memory: 31.3M
       CPU: 273ms
   CGroup: /system.slice/docker.service
           └─5933 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

sep 07 05:06:12 am-bc17b88fc32a.intern systemd[1]: Starting Docker Application Container Engine...
sep 07 05:06:12 am-bc17b88fc32a.intern dockerd[5933]: time="2023-09-07T05:06:12.926452074-06:00" level=info msg="Starting up"
sep 07 05:06:13 am-bc17b88fc32a.intern dockerd[5933]: time="2023-09-07T05:06:13.018298073-06:00" level=info msg="Loading containers: start."
sep 07 05:06:13 am-bc17b88fc32a.intern dockerd[5933]: time="2023-09-07T05:06:13.336316706-06:00" level=info msg="Loading containers: done."
sep 07 05:06:13 am-bc17b88fc32a.intern dockerd[5933]: time="2023-09-07T05:06:13.369231204-06:00" level=info msg="Docker daemon" commit=1a79695 graphd=
sep 07 05:06:13 am-bc17b88fc32a.intern dockerd[5933]: time="2023-09-07T05:06:13.369321006-06:00" level=info msg="Daemon has completed initialization"
sep 07 05:06:13 am-bc17b88fc32a.intern dockerd[5933]: time="2023-09-07T05:06:13.424691167-06:00" level=info msg="API listen on /run/docker.sock"
sep 07 05:06:13 am-bc17b88fc32a.intern systemd[1]: Started Docker Application Container Engine.
lines 1-20/20 (END)

```

Paso 8:

```

Terminal - debian11@am-bc17b88fc32a: ~
Archivo Editar Ver Terminal Pestañas Ayuda
debian11@am-bc17b88fc32a:~$ sudo docker run hello-world
[sudo] password for debian11:
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
719385e32844: Pull complete
Digest: sha256:dcba6daec718f547568c562956fa47e1b03673dd010fe6ee58ca806767031d1c
Status: Downloaded newer image for hello-world:latest

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/

debian11@am-bc17b88fc32a:~$

```

SMBD PostgreSQL

Paso 1:

```
Terminal - debian11@am-bc17b88fc32a: ~
Archivo Editar Ver Terminal Pestañas Ayuda
debian11@am-bc17b88fc32a:~$ sudo apt update
Obj:1 http://packages.microsoft.com/repos/code stable InRelease
Obj:2 https://dl.google.com/linux/chrome/deb stable InRelease
Obj:3 https://download.docker.com/linux/ubuntu focal InRelease
Obj:4 http://ftp.uk.debian.org/debian bullseye InRelease
Obj:5 http://ftp.uk.debian.org/debian bullseye-updates InRelease
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Se pueden actualizar 195 paquetes. Ejecute «apt list --upgradable» para verlos.
debian11@am-bc17b88fc32a:~$ docker pull postgres
Using default tag: latest
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/images/create?fromImage=postgres&tag=latest": dial unix /var/run/docker.sock: connect: permission denied
debian11@am-bc17b88fc32a:~$ groups debian11
debian11 : debian11 sudo
debian11@am-bc17b88fc32a:~$ sudo systemctl restart docker
debian11@am-bc17b88fc32a:~$ ls -l /var/run/docker.sock
srw-rw-rw- 1 root docker 0 sep  7 05:06 /var/run/docker.sock
debian11@am-bc17b88fc32a:~$ sudo chmod 666 /var/run/docker.sock
debian11@am-bc17b88fc32a:~$ docker pull postgres
Using default tag: latest
latest: Pulling from library/postgres
52d2b7f179e3: Pull complete
d9c06b35c8a5: Pull complete
ec0d4c36c7f4: Pull complete
aa8e32a16a69: Pull complete
8950a67e90d4: Pull complete
1b47429b7c5f: Pull complete
a773f7da97bb: Pull complete
7bddc9bbcf13: Pull complete
60829730fa39: Pull complete
f3d9c845d2f3: Pull complete
cfdc43fe346d: Pull complete
576335d55cdb: Pull complete
caad4144446c: Pull complete
Digest: sha256:760b5eab1487afaaedee7f265931a6d203b2d42140e09400dbf54e83a4e6eff1
Status: Downloaded newer image for postgres:latest
docker.io/library/postgres:latest
debian11@am-bc17b88fc32a:~$
```

Paso 2:

```
debian11@am-bc17b88fc32a:~$ docker run -d --name postgres -e POSTGRES_PASSWORD=mysecretpassword -p 5432:5432 postgres
2d9f8c83c36f5060f9c28997a2571467d3d3aac2bf3aeb5a75a2c818812efaf5
debian11@am-bc17b88fc32a:~$
```

Paso 3:

```
debian11@am-bc17b88fc32a:~$ docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS
2d9f8c83c36f   postgres  "docker-entrypoint.s..." 3 minutes ago  Up 3 minutes  0.0.0.0:5432->5432/tcp, ::
:5432->5432/tcp
d78f7174b159   hello-world "/hello"                28 minutes ago  Exited (0) 28 minutes ago
gracious_mendelev
debian11@am-bc17b88fc32a:~$
```

Paso 4 y 5:

```
debian11@am-bc17b88fc32a:~$ docker start 2d9f8c83c36f
2d9f8c83c36f
debian11@am-bc17b88fc32a:~$ docker stop 2d9f8c83c36f
2d9f8c83c36f
```

Paso 6:

```
debian11@am-bc17b88fc32a:~$ docker run -it --link postgres:postgres postgres psql -h postgres -U postgres
Password for user postgres:
psql (15.4 (Debian 15.4-1.pgdg120+1))
Type "help" for help.

postgres=#
```

6 Comentarios y los problemas a los que te enfrentaste en la instalación.

Para la instalación Docker:

Me arrojaba el mensaje “Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8))”. Lo que significa que el comando que estaba utilizando, implicaba el uso de apt-key, este está desaconsejado y considerado obsoleto en las versiones más recientes de Ubuntu y Debian. En lugar de usar apt-key, se recomendaba utilizar el directorio trusted.gpg.d para gestionar las claves de los repositorios.

Para SMBD PostgreSQL:

Me arrojaba el error “permission denied while trying to connect to the Docker daemon socket” lo que indicaba que estaba experimentando problemas de permisos para ejecutar comandos de Docker. Así que revisé el grupo “docker” con el comando: `groups MiUsuario`, luego reinicié el servicio Docker con el comando: `sudo systemctl restart docker` y verifiqué los permisos de socket de Docker con el comando: `ls -l /var/run/docker.sock`, por último cerré la sesión y verifiqué nuevamente.