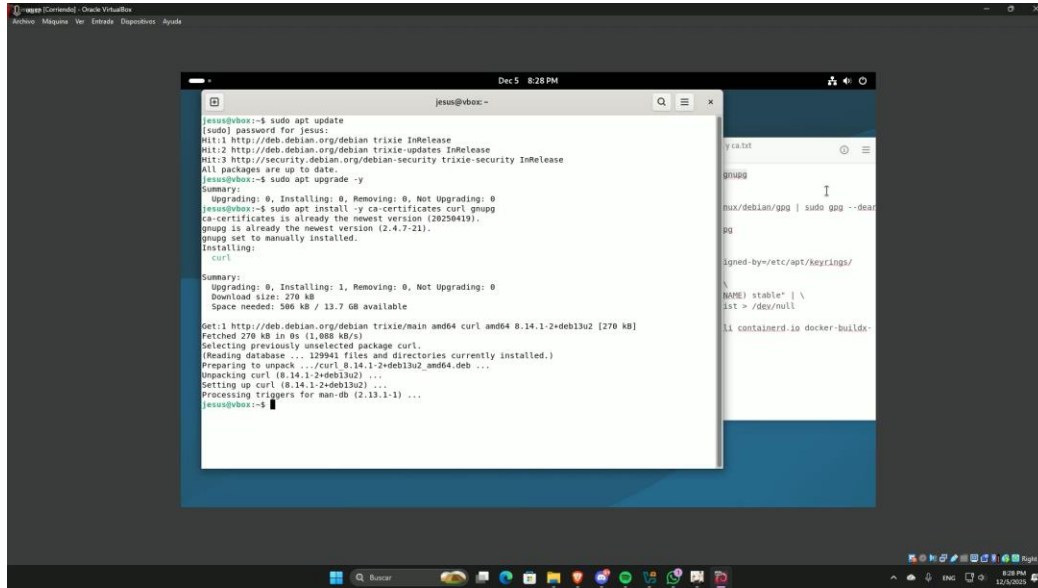


## DOCUMENTO ACTIVIDAD N.4

A continuación, se anexan las capturas con sus respectivas explicaciones

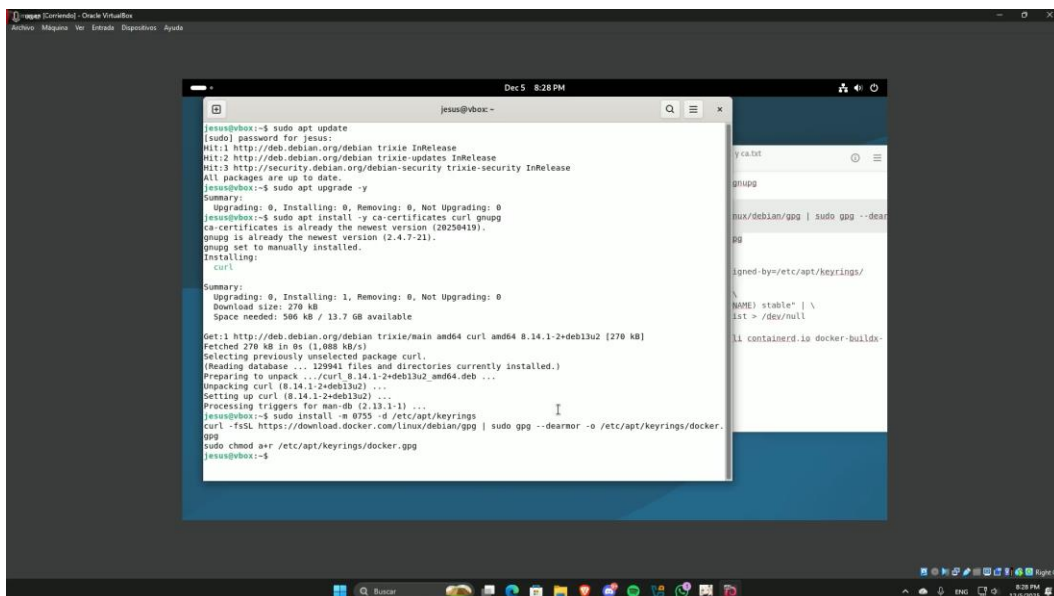
### 4.1 INSTALACION DOCKER ENGINE EN DEBIAN:

1.actualizamos paquetes y versiones, también instalamos las ultimas actualizaciones disponibles



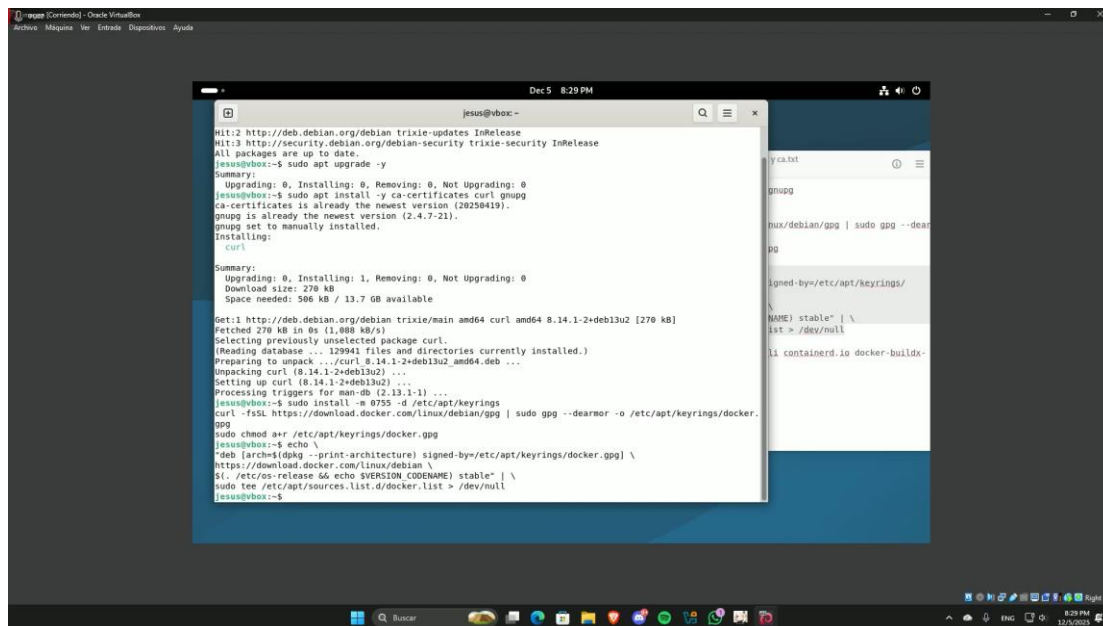
```
jesus@vbox:~$ sudo apt update
[sudo] password for jesus:
Hit:1 http://deb.debian.org/debian trixie InRelease
Hit:2 http://deb.debian.org/debian trixie-updates InRelease
Hit:3 http://security.debian.org/debian-security trixie-security InRelease
All packages are up to date.
jesus@vbox:~$ sudo apt upgrade -y
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 0
jesus@vbox:~$ sudo apt install -y ca-certificates curl gnupg
ca-certificates is already the newest version (20250419).
gnupg is already the newest version (2.4.7-21).
gnupg set to manually installed.
Installing:
  curl
Summary:
  Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 0
  Download size: 270 kB
  Space needed: 506 kB / 13.7 GB available
Get:1 http://deb.debian.org/debian trixie/main amd64 curl amd64 8.14.1-2+deb13u2 [270 kB]
Fetched 270 kB in 0s (1,088 kB/s)
Selecting previously unselected package curl.
(Reading database ... 129941 files and directories currently installed.)
Preparing to unpack .../curl_8.14.1-2+deb13u2_amd64.deb ...
Unpacking curl (8.14.1-2+deb13u2) ...
Setting up curl (8.14.1-2+deb13u2) ...
Processing triggers for man-db (2.13.1-1) ...
jesus@vbox:~$ curl -fsSL https://download.docker.com/linux/debian/gpg
jesus@vbox:~$ sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
jesus@vbox:~$ sudo chmod a+r /etc/apt/keyrings/docker.gpg
jesus@vbox:~$
```

2. verificamos certificados, el curl es la herramienta que permite descargar este contenido, el gnupg verifican la autenticidad del repositorio docker



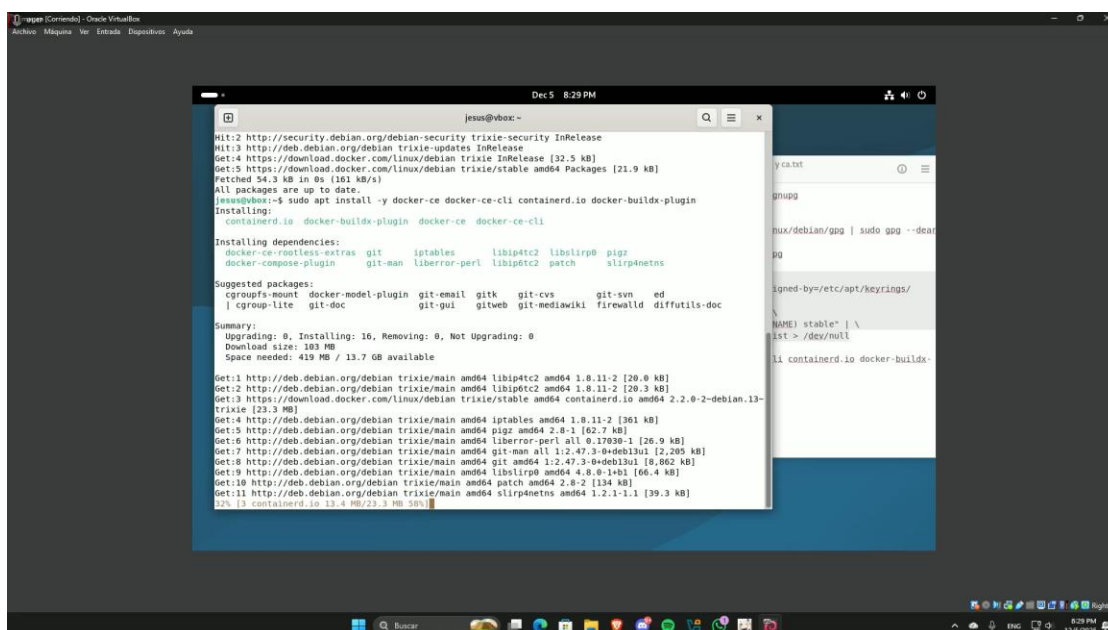
```
jesus@vbox:~$ sudo apt update
[sudo] password for jesus:
Hit:1 http://deb.debian.org/debian trixie InRelease
Hit:2 http://deb.debian.org/debian trixie-updates InRelease
Hit:3 http://security.debian.org/debian-security trixie-security InRelease
All packages are up to date.
jesus@vbox:~$ sudo apt upgrade -y
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 0
jesus@vbox:~$ sudo apt install -y ca-certificates curl gnupg
ca-certificates is already the newest version (20250419).
gnupg is already the newest version (2.4.7-21).
gnupg set to manually installed.
Installing:
  curl
Summary:
  Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 0
  Download size: 270 kB
  Space needed: 506 kB / 13.7 GB available
Get:1 http://deb.debian.org/debian trixie/main amd64 curl amd64 8.14.1-2+deb13u2 [270 kB]
Fetched 270 kB in 0s (1,088 kB/s)
Selecting previously unselected package curl.
(Reading database ... 129941 files and directories currently installed.)
Preparing to unpack .../curl_8.14.1-2+deb13u2_amd64.deb ...
Unpacking curl (8.14.1-2+deb13u2) ...
Setting up curl (8.14.1-2+deb13u2) ...
Processing triggers for man-db (2.13.1-1) ...
jesus@vbox:~$ curl -fsSL https://download.docker.com/linux/debian/gpg
jesus@vbox:~$ sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
jesus@vbox:~$ sudo chmod a+r /etc/apt/keyrings/docker.gpg
jesus@vbox:~$
```

3. Este bloque de comandos crea la carpeta donde se guardarán las llaves de seguridad de los repositorios (/etc/apt/keyrings), descarga la llave GPG oficial de Docker y la convierte al formato correcto para que el sistema pueda usarla, y finalmente le da permisos de lectura para que apt pueda verificar que los paquetes instalados desde el repositorio de Docker son auténticos y seguros, el echo construye la línea para conectar al Docker para el apt pueda saber dónde buscar los paquetes para actualizar.



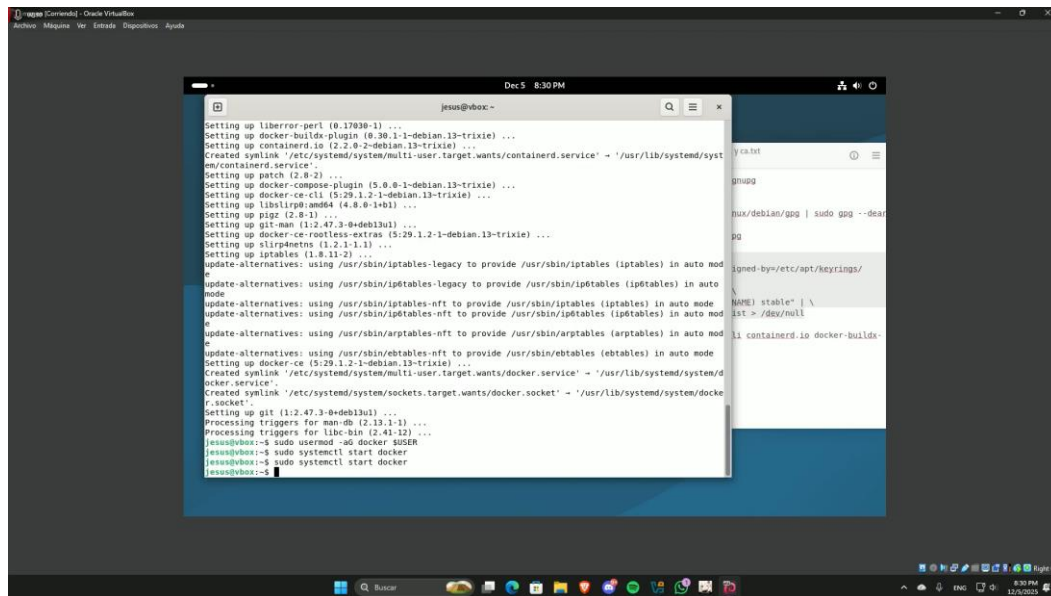
```
Dec 5 8:29 PM
jesus@vbox:~$ cat > /etc/apt/sources.list.d/docker.list
Hit:2 http://deb.debian.org/debian trixie-updates InRelease
Hit:3 http://security.debian.org/debian-security trixie-security InRelease
All packages are up to date.
jesus@vbox:~$ sudo apt upgrade -y
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 0
  Download size: 270 kB
  Space needed: 566 kB / 13.7 GB available
Get:1 http://deb.debian.org/debian trixie/main amd64 curl amd64 8.14.1-2+deb13u2 [270 kB]
Fetched 270 kB in 0s (1,088 kB/s)
Selecting previously unselected package curl.
(Reading database ... 129941 files and directories currently installed.)
Preparing to unpack .../curl_8.14.1-2+deb13u2_amd64.deb ...
Unpacking curl (8.14.1-2+deb13u2) ...
Setting up curl (8.14.1-2+deb13u2) ...
Processing triggers for man-db (2.13.1-1) ...
jesus@vbox:~$ sudo install -m 0755 -d /etc/apt/keyrings
curl -fsSL https://download.docker.com/linux/debian/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
sudo chmod a+r /etc/apt/keyrings/docker.gpg
jesus@vbox:~$ echo \
'deb [arch=$dpkg --print-architecture] signed-by=/etc/apt/keyrings/docker.gpg \
https://download.docker.com/linux/debian \
stable' > /dev/null
sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
jesus@vbox:~$
```

4. instalamos el docker engine y sus paquetes relacionados

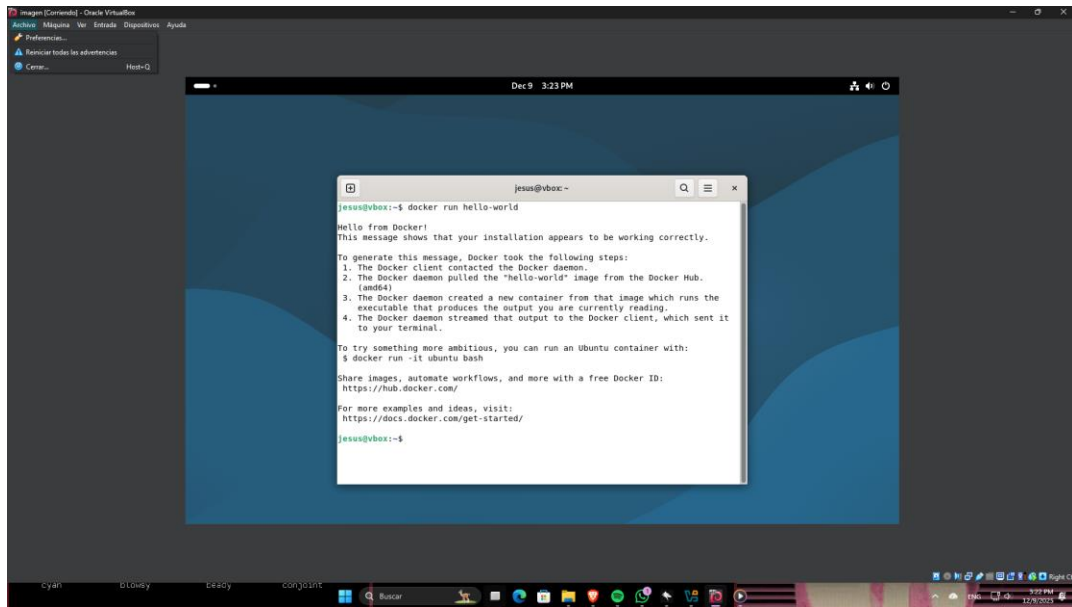


```
Dec 5 8:29 PM
jesus@vbox:~$ cat > /etc/apt/sources.list.d/docker.list
Hit:2 http://security.debian.org/debian-security trixie-security InRelease
Hit:3 http://deb.debian.org/debian trixie-updates InRelease
Hit:4 https://download.docker.com/linux/debian trixie InRelease
Hit:5 https://download.docker.com/linux/debian trixie/stable amd64 Packages [21.9 kB]
Fetched 54.3 kB in 0s (161 kB/s)
All packages are up to date.
jesus@vbox:~$ sudo apt install -y docker-ce docker-ce-cli containerd.io docker-buildx-plugin
Installing:
  containerd.io  docker-buildx-plugin  docker-ce  docker-ce-cli
Installing dependencies:
  docker-ce-rootless-extras  git  iptables  libipset2  libselinux0  pigz
  docker-compose-plugin  git-man  liberror-perl  libipset2  patch  slurp4netns
Suggested packages:
  cgroupfs-mount  docker-model-plugin  git-email  gitk  git-cvs  git-svn  ed
  | cgroup-lite  git-doc  git-gui  gitweb  git-mediawiki  firewall  diffutils-doc
Summary:
  Upgrading: 0, Installing: 16, Removing: 0, Not Upgrading: 0
  Download size: 103 MB
  Space needed: 419 MB / 13.7 GB available
Get:1 http://deb.debian.org/debian trixie/main amd64 libipset2 amd64 1.0.11-2 [20.0 kB]
Get:2 http://deb.debian.org/debian trixie/main amd64 libipset2 amd64 1.0.11-2 [20.3 kB]
Get:3 https://download.docker.com/linux/debian trixie/stable amd64 containerd.io amd64 2.2.0-2-debian-13-trixie [25.3 MB]
Get:4 http://deb.debian.org/debian trixie/main amd64 iptables amd64 1.8.11-2 [361 kB]
Get:5 http://deb.debian.org/debian trixie/main amd64 pigz amd64 2.8-1 [62.7 kB]
Get:6 http://deb.debian.org/debian trixie/main amd64 liberror-perl all 0.17030-1 [26.9 kB]
Get:7 http://deb.debian.org/debian trixie/main amd64 git-man all 1:2.47.3-0+deb13u1 [2,205 kB]
Get:8 http://deb.debian.org/debian trixie/main amd64 git amd64 1:2.47.3-0+deb13u1 [9,802 kB]
Get:9 http://deb.debian.org/debian trixie/main amd64 libselinux0 amd64 4.8-0-1+b1 [66.4 kB]
Get:10 http://deb.debian.org/debian trixie/main amd64 patch amd64 2.8-2 [134 kB]
Get:11 http://deb.debian.org/debian trixie/main amd64 slurp4netns amd64 1.2.1-1 [39.3 kB]
12% [3 containerd.io 13.4 MB/25.3 MB 50%]
```

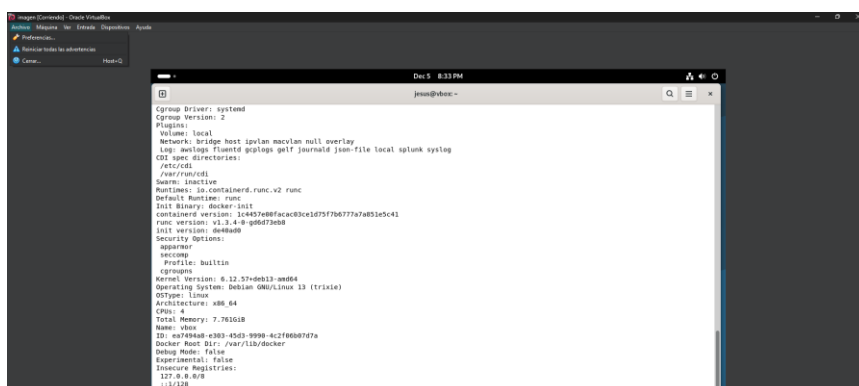
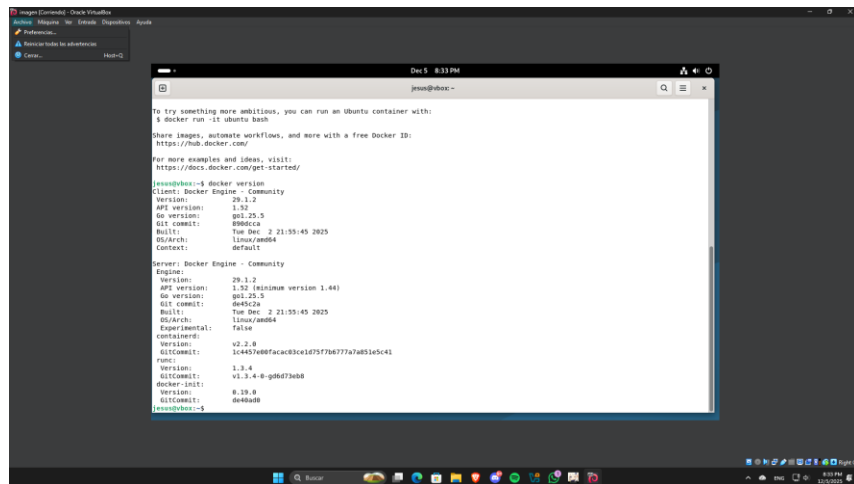
5. agregamos al usuario al grupo docker, para no poner sudo cada vez, después habilitamos el servidor docker y iniciamos el Docker



6. descargamos una imagen de prueba

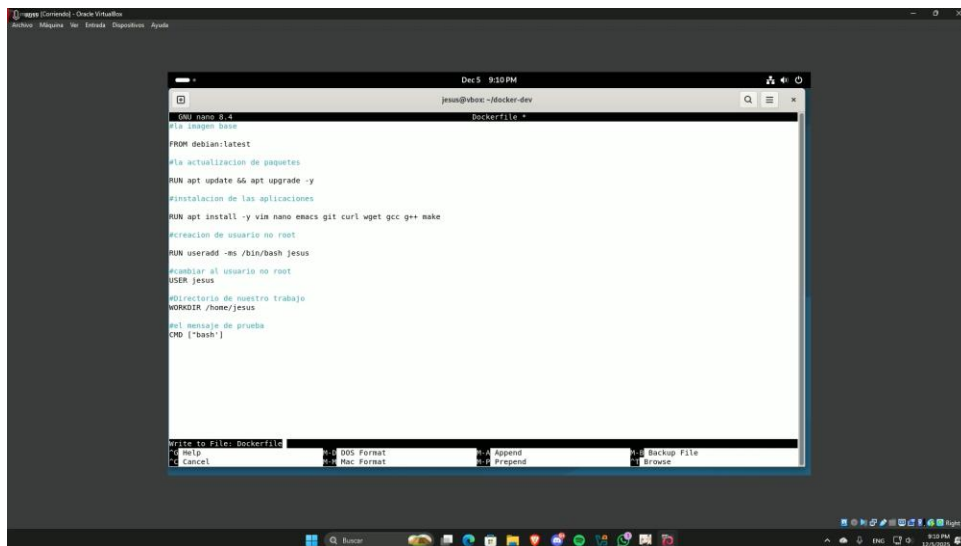


## 7. Docker info y Docker versión





2. Configuración del dockerfile, en la primera linea de FROM debian, nos indica la imagen base donde trabajaremos el dockerfile, la segunda RUN apt update && apt upgrade -y nos ayuda a que los paquetes esten actualizados en cada momento que se abra el dockerfile, RUN apt install nos descarga las aplicaciones de desarrollo, RUN useradd crea el usuario no root, con el shell /bin/bash y crea su carpeta home -ms, el USER jesus nos ayuda a que las instrucciones se ejecuten como usuario jesus, para mayor seguridad, el WORKDIR establece el directorio donde se trabajara y el CMD es el comando por defecto que se ejecuta al abrir el contenedor.



The screenshot shows a terminal window titled "jesus@vbox: ~/docker-dev" with a sub-window titled "Dockerfile". The terminal is running nano 8.4 and editing a Dockerfile. The content of the Dockerfile is as follows:

```
FROM debian:latest
# Actualización de paquetes
RUN apt update && apt upgrade -y
# Instalación de las aplicaciones
RUN apt install -y vim nano emacs git curl wget gcc g++ make
# Creación de usuario no root
RUN useradd -ms /bin/bash jesus
# Cambiar al usuario no root
USER jesus
# Directorio de nuestro trabajo
WORKDIR /home/jesus
# El mensaje de prueba
CMD ["bash"]
```

At the bottom of the terminal, a message says "Write to file: Dockerfile" and a menu is displayed with the following options:

Ctrl+O	Write	Ctrl+H	Help	Ctrl+A	Append	Ctrl+B	Backup File
Ctrl+C	Cancel	Ctrl+M	Mac Format	Ctrl+P	Prepend	Ctrl+R	Revert