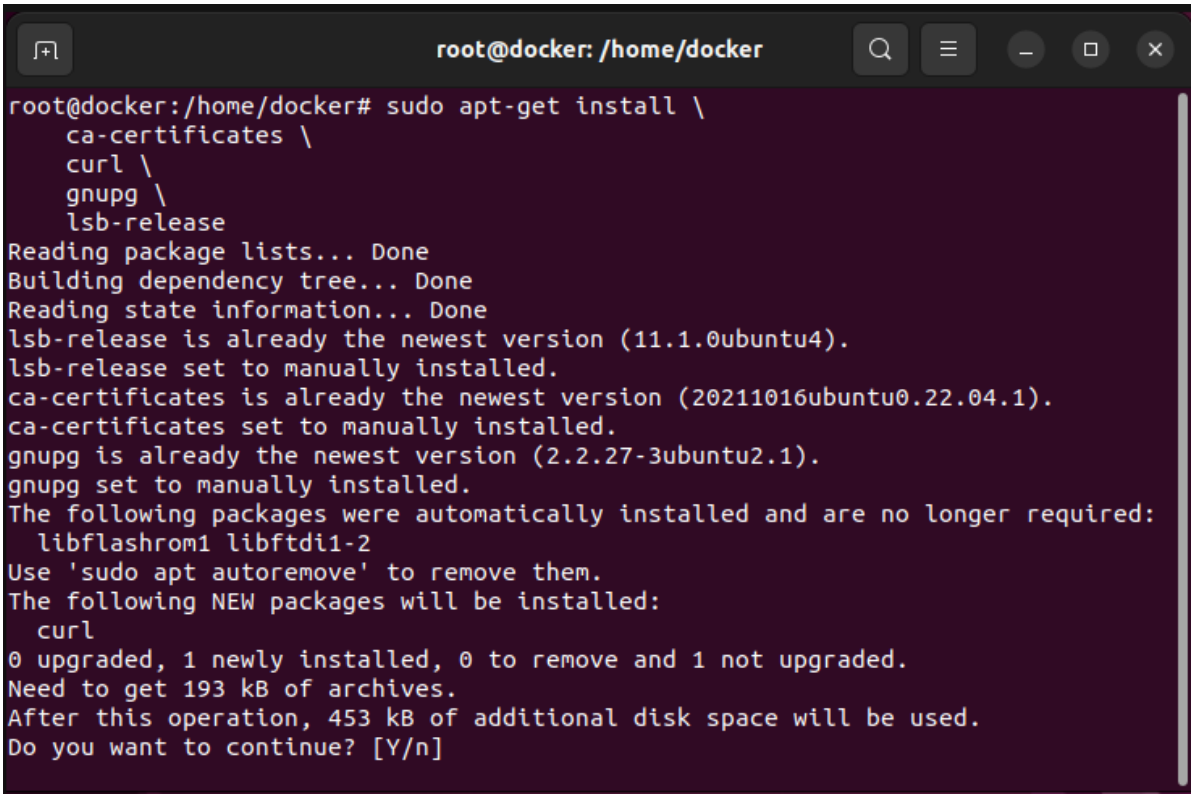
Docker

1. Instala docker en una máquina y configúralo para que se pueda con un usuario sin privilegios.

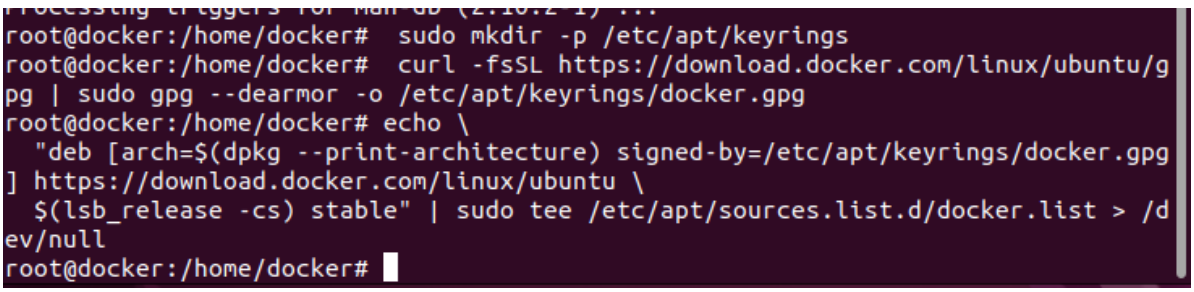
```
apt install ca-certificates curl gnupg lsb-release
```




```
sudo mkdir -p /etc/apt/keyrings
```

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o
/etc/apt/keyrings/docker.gpg
```

```
echo \
  "deb [arch=$(dpkg --print-architecture) signed-
by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \
  $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list >
/dev/null
```




```
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-compose-plugin
```

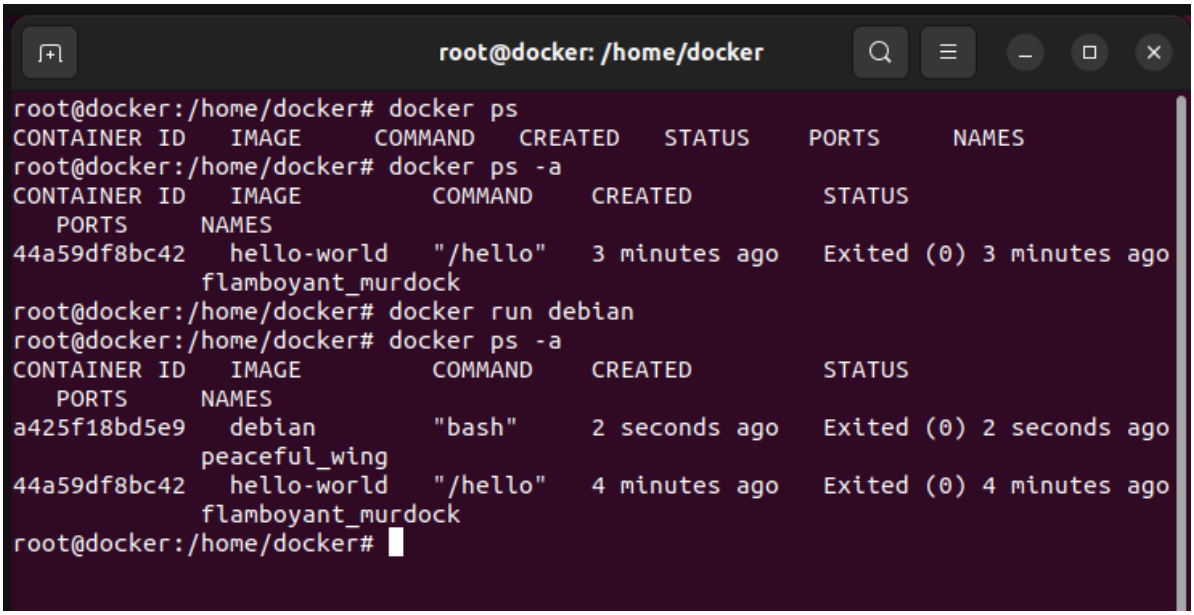
```
root@docker:/home/docker# sudo apt-get install docker-ce docker-ce-cli container
d.io docker-compose-plugin
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libflashrom1 libftdi1-2
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  docker-ce-rootless-extras docker-scan-plugin git git-man liberror-perl
  libslirp0 pigz slirp4netns
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite git-daemon-run | git-daemon-sysvinit
  git-doc git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  containerd.io docker-ce docker-ce-cli docker-ce-rootless-extras
  docker-compose-plugin docker-scan-plugin git git-man liberror-perl libslirp0
  pigz slirp4netns
0 upgraded, 12 newly installed, 0 to remove and 1 not upgraded.
Need to get 116 MB of archives.
After this operation, 449 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

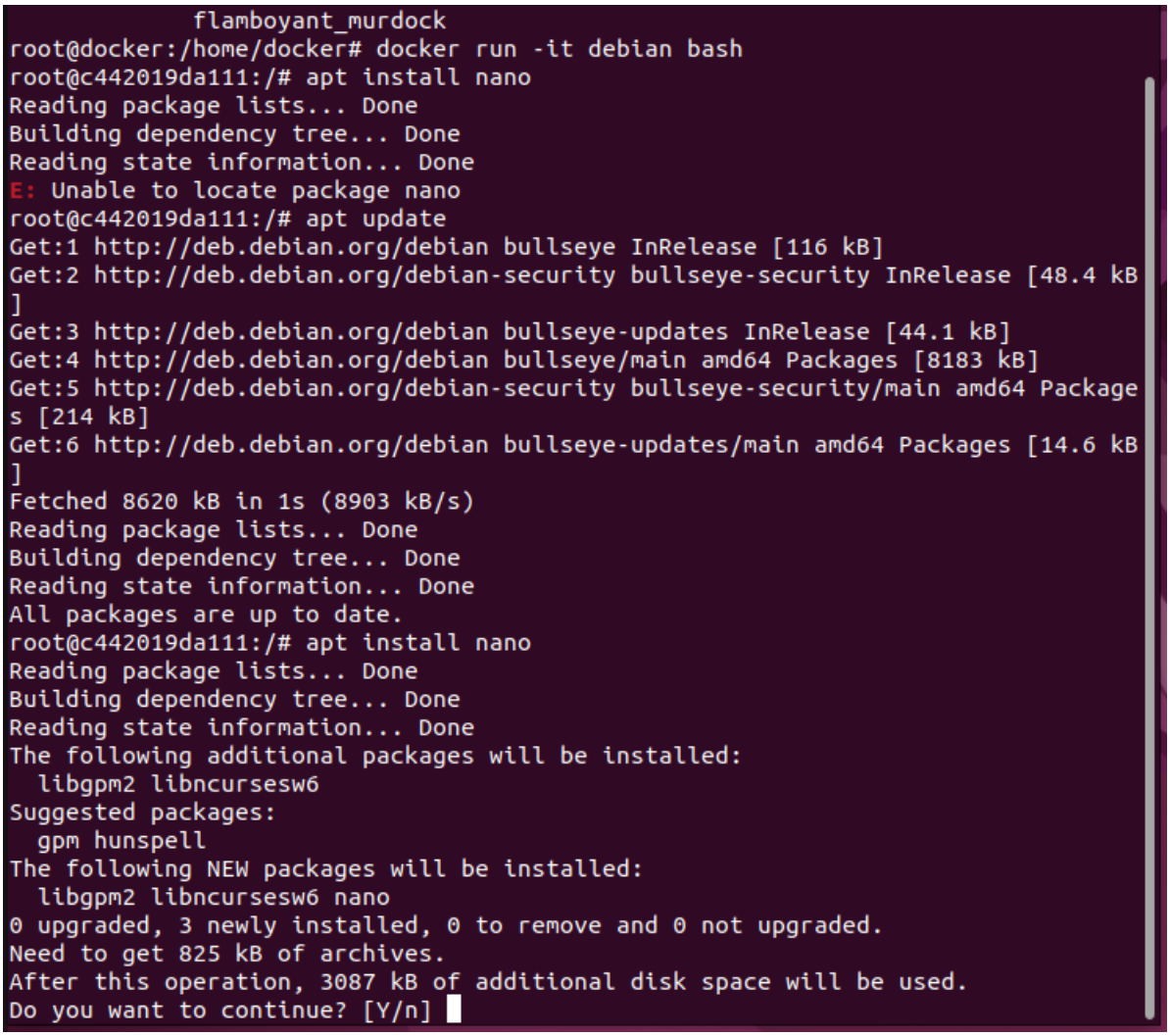
2. Ejecuta un contenedor a partir de la imagen hello-word. Comprueba que nos devuelve la salida adecuada. Comprueba que no se está ejecutando. Lista los contenedores que están parado. Borra el contenedor.

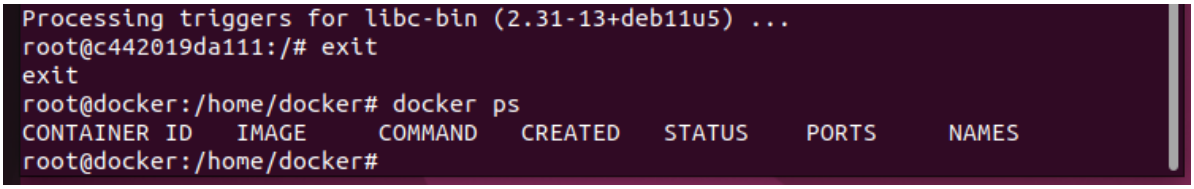
```
sudo docker run hello-word
```

```
root@docker:/home/docker# sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:aa0cc8055b82dc2509bed2e19b275c8f463506616377219d9642221ab53cf9fe
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/

root@docker:/home/docker#
```

3. Crea un contenedor interactivo desde una imagen debian. Instala un paquete (por ejemplo nano). Sal de la terminal, ¿sigue el contenedor corriendo? ¿Por qué?. Vuelve a iniciar el contenedor y accede de nuevo a él de forma interactiva. ¿Sigue instalado el nano?. Sal del contenedor, y bórralo. Crea un nuevo contenedor interactivo desde la misma imagen. ¿Tiene el nano instalado?





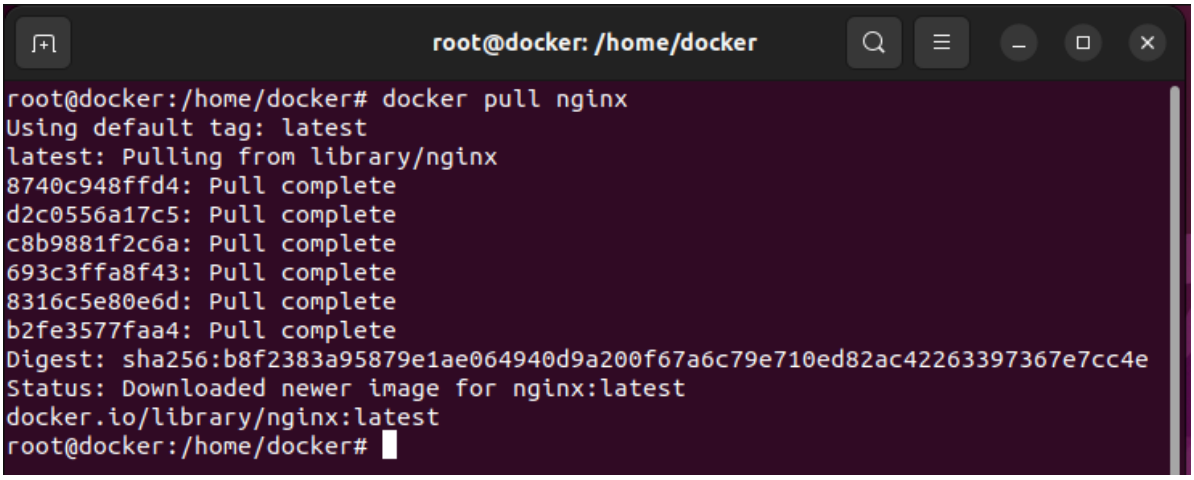


El contenedor no sigue corriendo, ya que con el run -it al salir, se cierra directamente. Al volver a ejecutarlo, el paquete nano no esta instalado ya que se crea un nuevo contenedor.

```
root@docker:/home/docker# docker ps -a
CONTAINER ID   IMAGE         COMMAND    CREATED              STATUS
          PORTS     NAMES
827065284b32   debian        "bash"     About a minute ago   Exited (127) 1 seco
nd ago              festive_haibt
c442019da111   debian        "bash"     4 minutes ago        Exited (0) 2 minute
s ago               awesome_williams
a425f18bd5e9   debian        "bash"     5 minutes ago        Exited (0) 5 minute
s ago               peaceful_wing
44a59df8bc42   hello-world   "/hello"   10 minutes ago       Exited (0) 10 minut
es ago              flamboyant_murdock
root@docker:/home/docker# docker rm 827065284b32 c442019da111 a425f18bd5e9
827065284b32
c442019da111
a425f18bd5e9
root@docker:/home/docker#
```

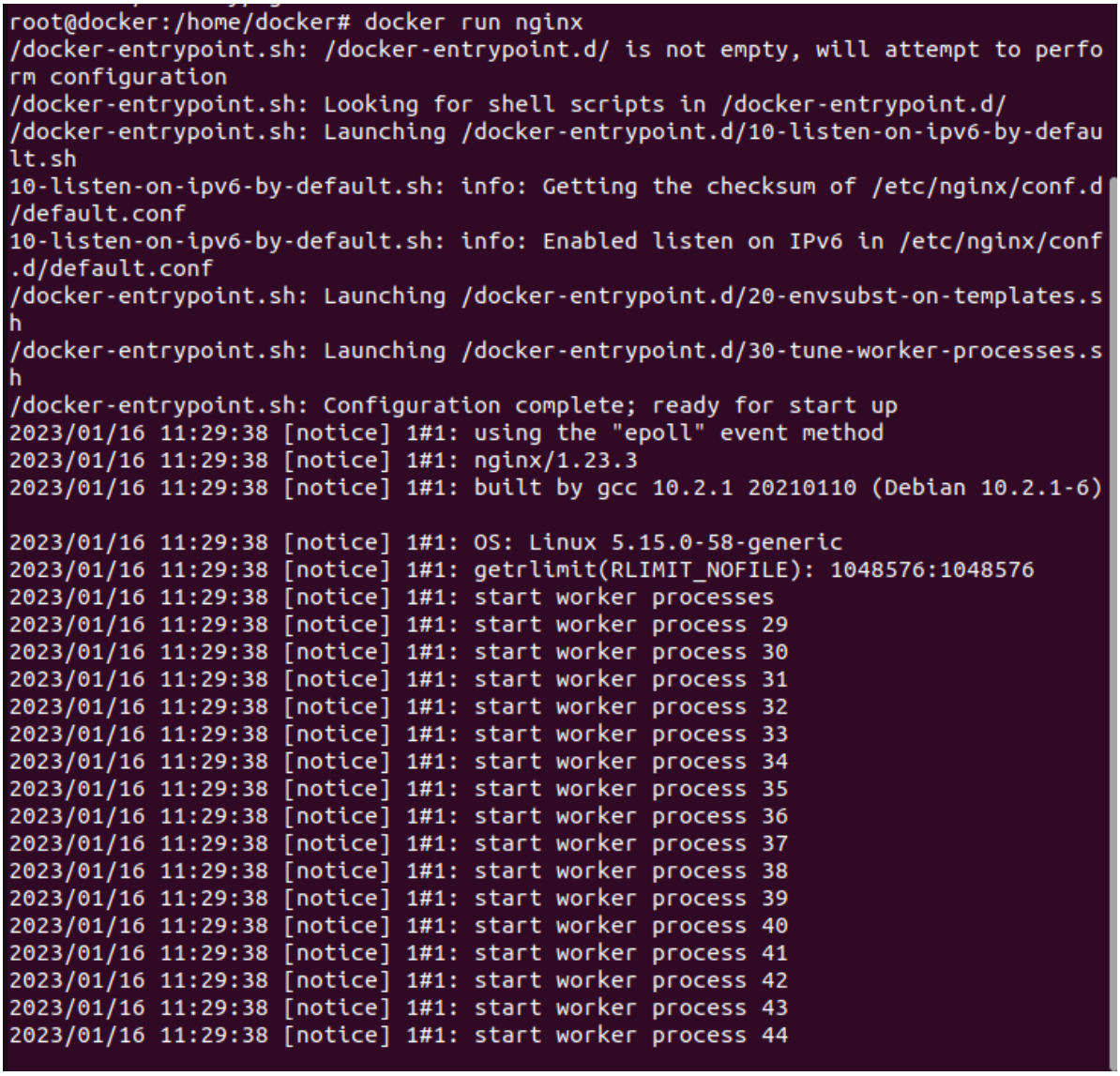
4. Crea un contenedor demonio con un servidor nginx, usando la imagen oficial de nginx. Al crear el contenedor, ¿has tenido que indicar algún comando para que lo ejecute? Accede al navegador web y comprueba que el servidor esta funcionando. Muestra los logs del contenedor.

   ```
   docker pull nginx
   ```



Para ejecutarlo, hay que ejecutar el siguiente comando:

```
docker run nginx
```



Para ver la IP del docker, se hace el siguiente comando:

```
docker inspect id_contenedor
```

```
                "80/tcp": null
            },
            "SandboxKey": "/var/run/docker/netns/9e11d7b11945",
            "SecondaryIPAddresses": null,
            "SecondaryIPv6Addresses": null,
            "EndpointID": "7b345411a300b1762f90c24d324ec5d02fe3d6565dcd7c1152fa3
0dec8442582",
            "Gateway": "172.17.0.1",
            "GlobalIPv6Address": "",
            "GlobalIPv6PrefixLen": 0,
            "IPAddress": "172.17.0.2",
            "IPPrefixLen": 16,
            "IPv6Gateway": "",
            "MacAddress": "02:42:ac:11:00:02",
            "Networks": {
                "bridge": {
                    "IPAMConfig": null,
                    "Links": null,
                    "Aliases": null,
                    "NetworkID": "42e08a97a33435b1522ac18549b7d57edae627f3e89495
298be6415de2ff3aec",
                    "EndpointID": "7b345411a300b1762f90c24d324ec5d02fe3d6565dcd7
c1152fa30dec8442582",
                    "Gateway": "172.17.0.1",
                    "IPAddress": "172.17.0.2",
                    "IPPrefixLen": 16,
                    "IPv6Gateway": "",
                    "GlobalIPv6Address": "",
                    "GlobalIPv6PrefixLen": 0,
                    "MacAddress": "02:42:ac:11:00:02",
                    "DriverOpts": null
                }
            }
        }
    }
]
docker@docker:~$
```


Y el resultado final, es este: