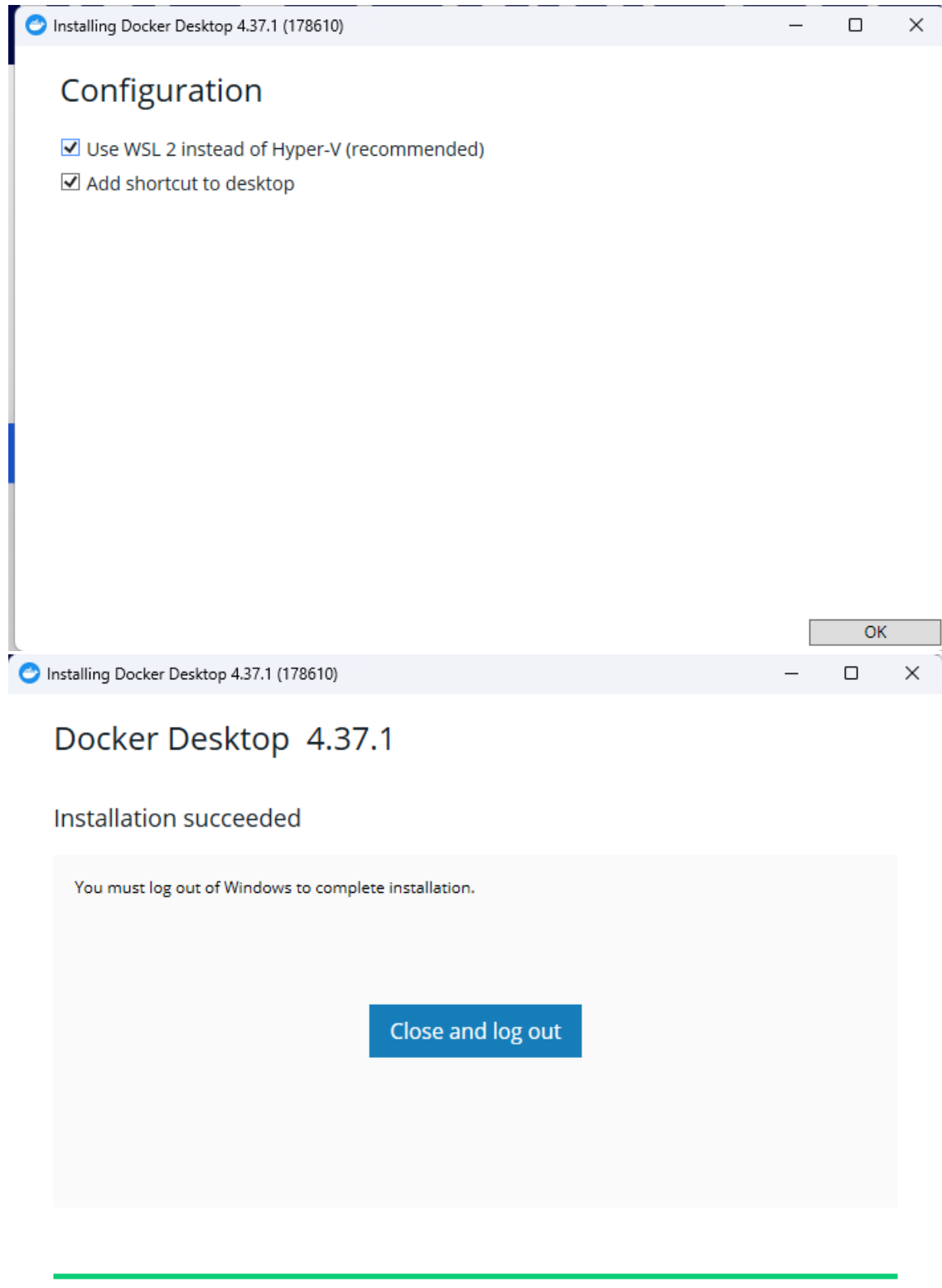
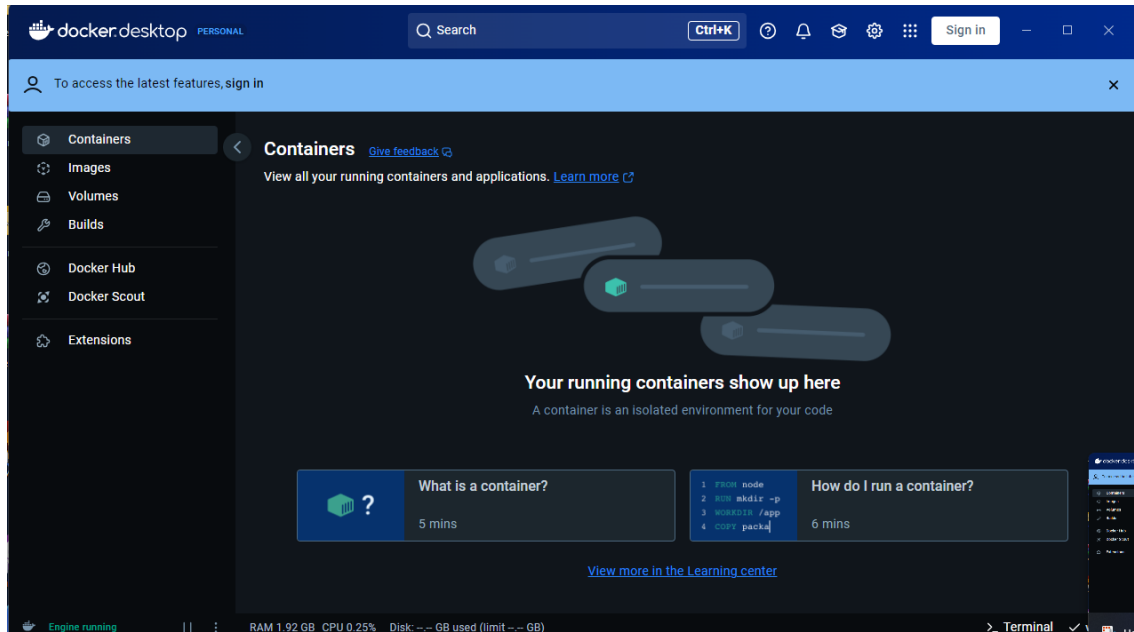


ÁLVARO JOAQUÍN ALBARRACÍN SALINAS. 2ºDAW.

Instalamos Docker en Windows.



Una vez reiniciado el equipo, observamos la pantalla principal de Docker Desktop.



Vemos la versión.

```
C:\WINDOWS\system32\cmd. X + v

Microsoft Windows [Versión 10.0.26100.2894]
(c) Microsoft Corporation. Todos los derechos reservados.

C:\Users\Alvaro>docker --version
Docker version 27.4.0, build bde2b89

C:\Users\Alvaro>
```

Vemos la ayuda de Docker.

```
C:\WINDOWS\system32\cmd. X + v

C:\Users\Alvaro>docker --help

Usage:  docker [OPTIONS] COMMAND

A self-sufficient runtime for containers

Common Commands:
run      Create and run a new container from an image
exec     Execute a command in a running container
ps       List containers
build    Build an image from a Dockerfile
pull     Download an image from a registry
push     Upload an image to a registry
images   List images
login    Authenticate to a registry
logout   Log out from a registry
search   Search Docker Hub for images
version  Show the Docker version information
info     Display system-wide information

Management Commands:
ai*      Ask Gordon - Docker Agent
builder  Manage builds
buildx*  Docker Buildx
compose* Docker Compose
container Manage containers
context  Manage contexts
debug*   Get a shell into any image or container
desktop* Docker Desktop commands (Beta)
dev*     Docker Dev Environments
extension* Manages Docker extensions
feedback* Provide feedback, right in your terminal!
image    Manage images
init*    Creates Docker-related starter files for your project
manifest Manage Docker image manifests and manifest lists
network  Manage networks
plugin   Manage plugins
sbom*    View the packaged-based Software Bill Of Materials (SBOM) for an image
scout*   Docker Scout
system   Manage Docker
trust    Manage trust on Docker images
volume   Manage volumes

Swarm Commands:
swarm    Manage Swarm

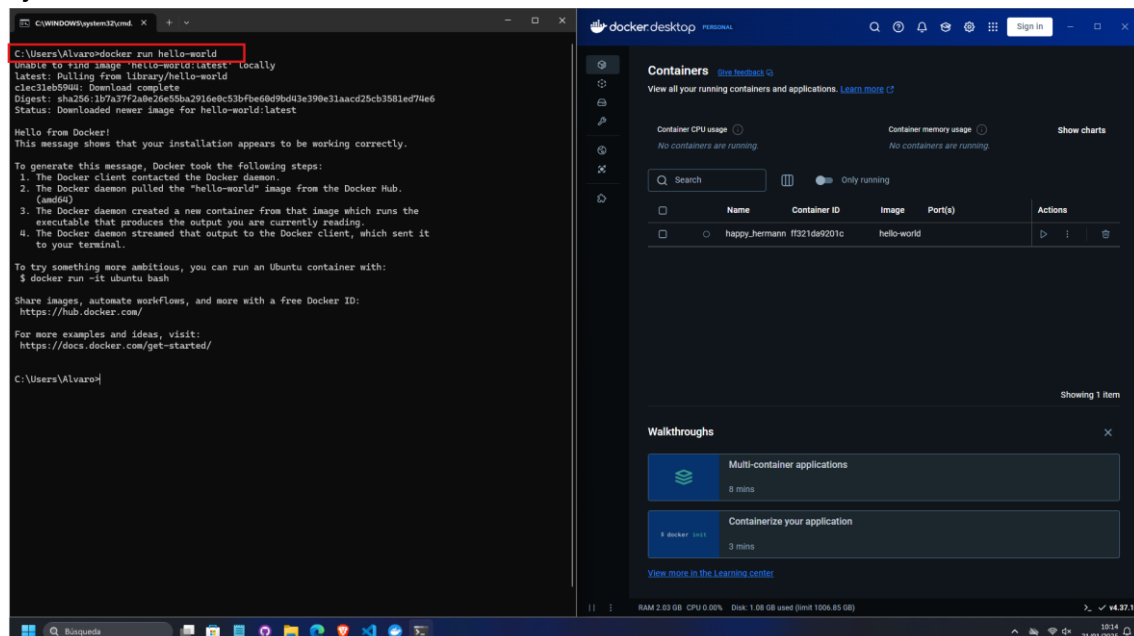
Commands:
attach   Attach local standard input, output, and error streams to a running container
commit   Create a new image from a container's changes
cp       Copy files/folders between a container and the local filesystem
```

Vemos la información de Docker

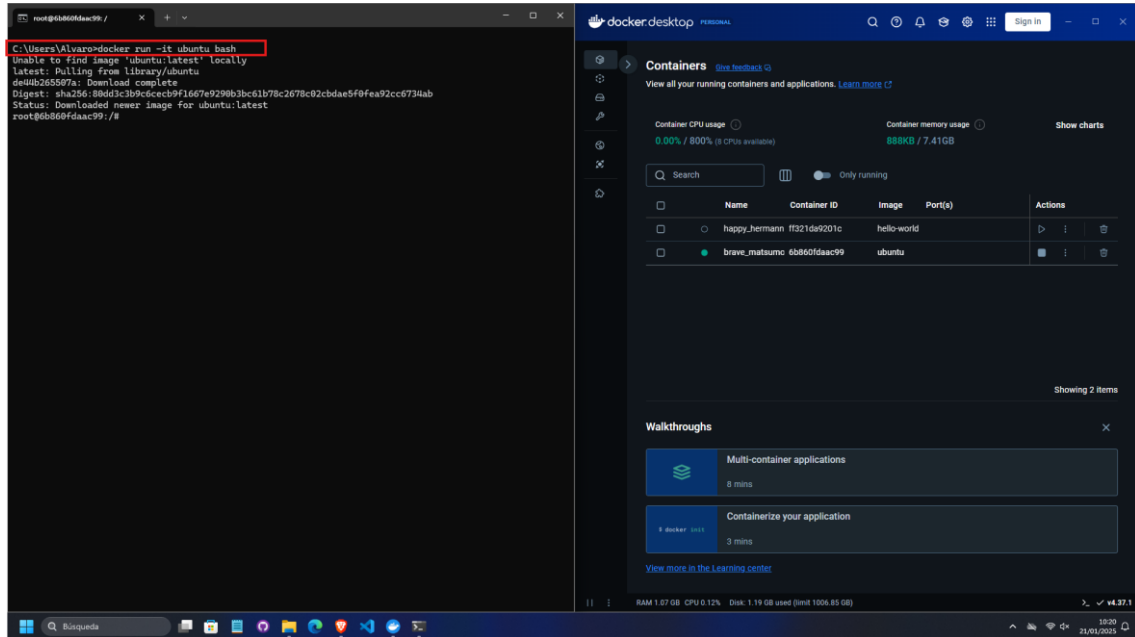
```
C:\WINDOWS\system32\cmd. X + v

C:\Users\Alvaro>docker info
Client:
Version:      27.4.0
Context:      desktop-linux
Debug Mode:   false
Plugins:
ai: Ask Gordon – Docker Agent (Docker Inc.)
  Version:    v0.5.1
  Path:       C:\Program Files\Docker\cli-plugins\docker-ai.exe
buildx: Docker Buildx (Docker Inc.)
  Version:    v0.19.2-desktop.1
  Path:       C:\Program Files\Docker\cli-plugins\docker-buildx.exe
compose: Docker Compose (Docker Inc.)
  Version:    v2.31.0-desktop.2
  Path:       C:\Program Files\Docker\cli-plugins\docker-compose.exe
debug: Get a shell into any image or container (Docker Inc.)
  Version:    0.0.37
  Path:       C:\Program Files\Docker\cli-plugins\docker-debug.exe
desktop: Docker Desktop commands (Beta) (Docker Inc.)
  Version:    v0.1.0
  Path:       C:\Program Files\Docker\cli-plugins\docker-desktop.exe
dev: Docker Dev Environments (Docker Inc.)
  Version:    v0.1.2
  Path:       C:\Program Files\Docker\cli-plugins\docker-dev.exe
extension: Manages Docker extensions (Docker Inc.)
  Version:    v0.2.27
  Path:       C:\Program Files\Docker\cli-plugins\docker-extension.exe
feedback: Provide feedback, right in your terminal! (Docker Inc.)
  Version:    v1.0.5
```

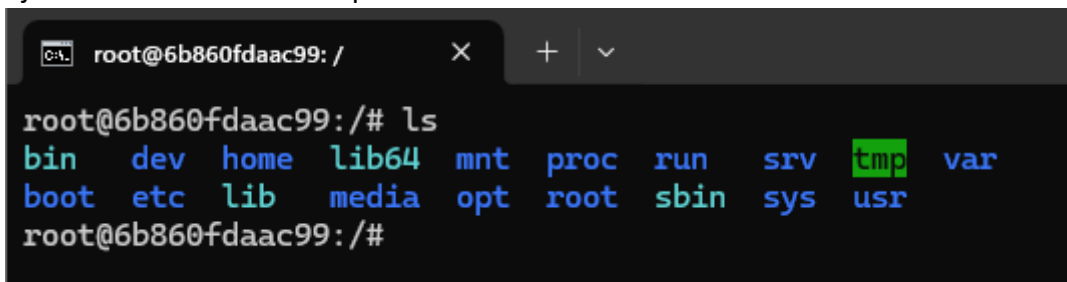
Ejecutamos el hello-world de Docker.



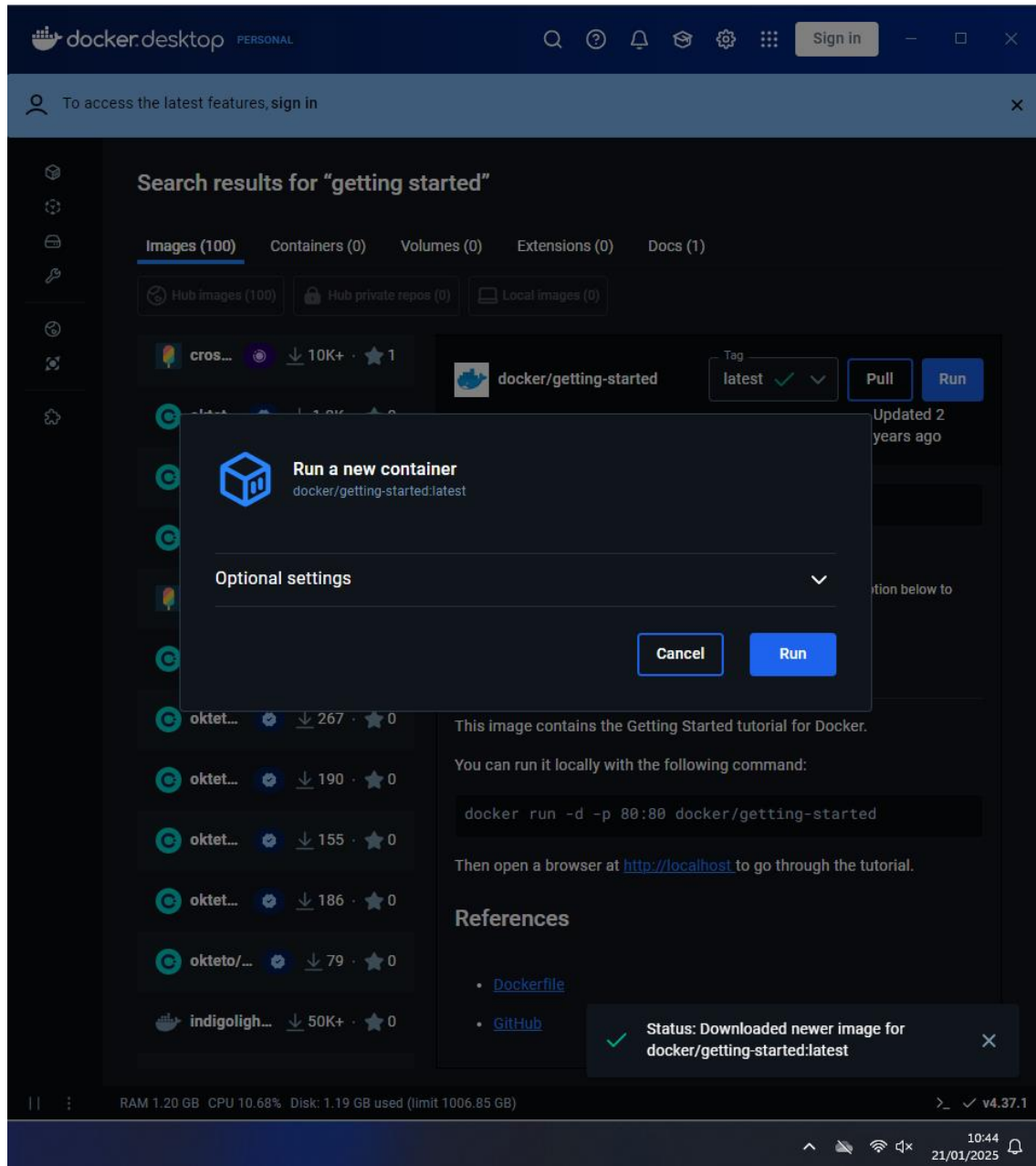
Instalamos ubuntu. También vemos el entorno gráfico.



Ejecutamos un comando típico de Linux.



Ejecutamos getting.started.



Accedemos a su contenido(logs).

The screenshot shows the Docker Desktop application window. The top bar is dark blue with the Docker logo, 'docker.desktop PERSONAL', and navigation icons. A light blue banner below the top bar says 'To access the latest features, sign in'. The main interface has a dark theme. On the left is a sidebar with icons for containers, services, volumes, and networks. The main area shows the details of a container named 'silly_kowalevski' with ID '3ac7b906a857'. The container is running 'docker/getting-started:latest' and is in a 'Running' state. Below the container details are tabs for 'Logs', 'Inspect', 'Bind mounts', 'Exec', 'Files', and 'Stats'. The 'Logs' tab is selected, displaying a list of log entries. The logs show the container's startup sequence, including the entrypoint script, the launch of the '10-listen-on-ipv6-by-default.sh' script, and the start of the '1#1' worker processes. The bottom status bar shows system resources: RAM 1.40 GB, CPU 0.00%, and Disk 1.26 GB used (limit 1006.85 GB). The Docker version 'v4.37.1' is also displayed.

docker.desktop PERSONAL

To access the latest features, sign in

Containers / silly_kowalevski

silly_kowalevski

3ac7b906a857 docker/getting-started:latest STATUS Running (0 seconds ago)

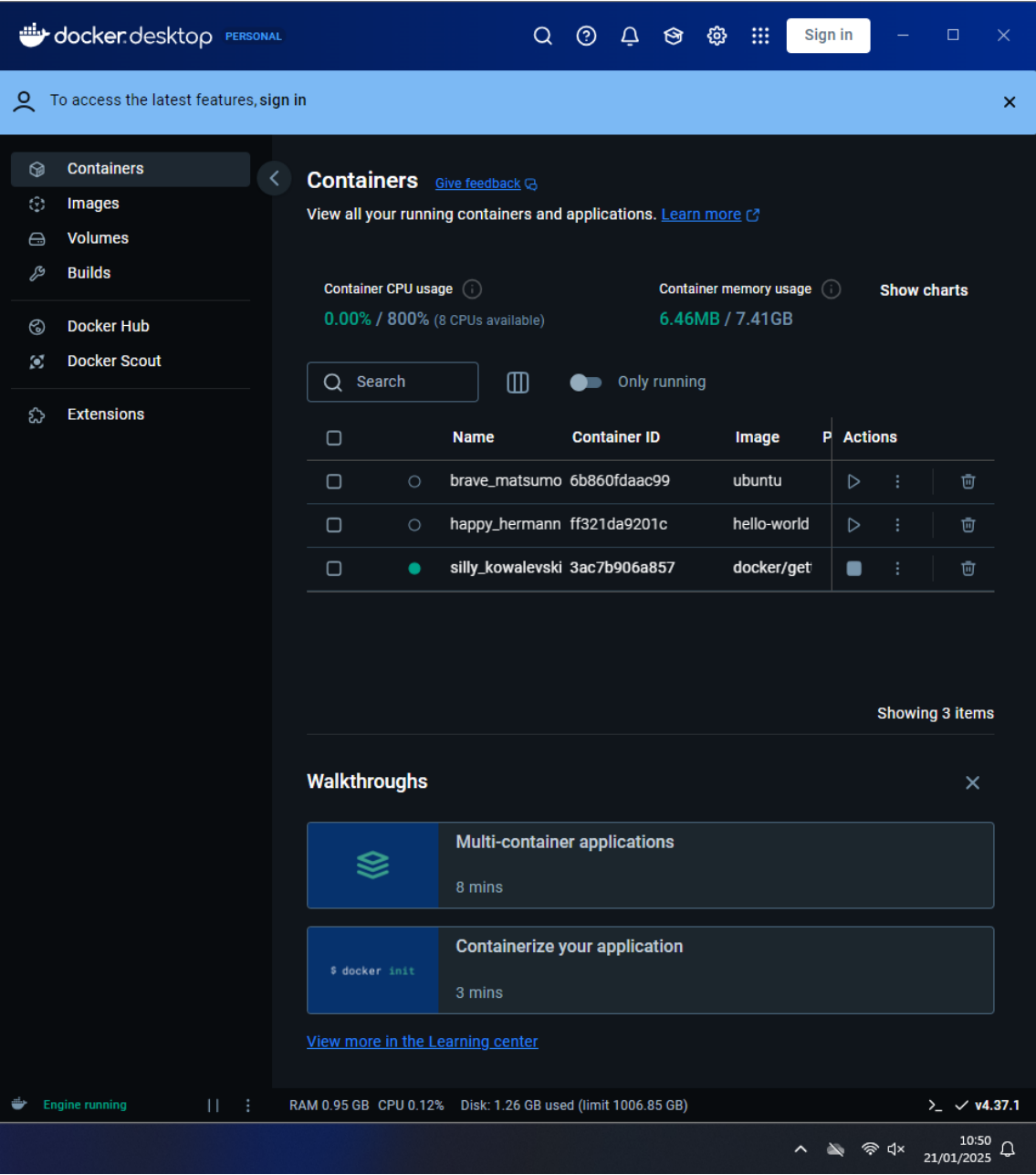
Logs Inspect Bind mounts Exec Files Stats

2025-01-21 10:45:10 /docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
2025-01-21 10:45:10 /docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
2025-01-21 10:45:10 /docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
2025-01-21 10:45:10 10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
2025-01-21 10:45:10 10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
2025-01-21 10:45:10 /docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
2025-01-21 10:45:10 /docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
2025-01-21 10:45:10 /docker-entrypoint.sh: Configuration complete; ready for start up
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: using the "epoll" event method
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: nginx/1.23.3
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: built by gcc 12.2.1 20220924 (Alpine 12.2.1_git20220924-r4)
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: OS: Linux 5.15.167.4-microsoft-standard-WSL2
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker processes
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 30
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 31
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 32
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 33
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 34
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 35
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 36
2025-01-21 10:45:10 2025/01/21 09:45:10 [notice] 1#1: start worker process 37

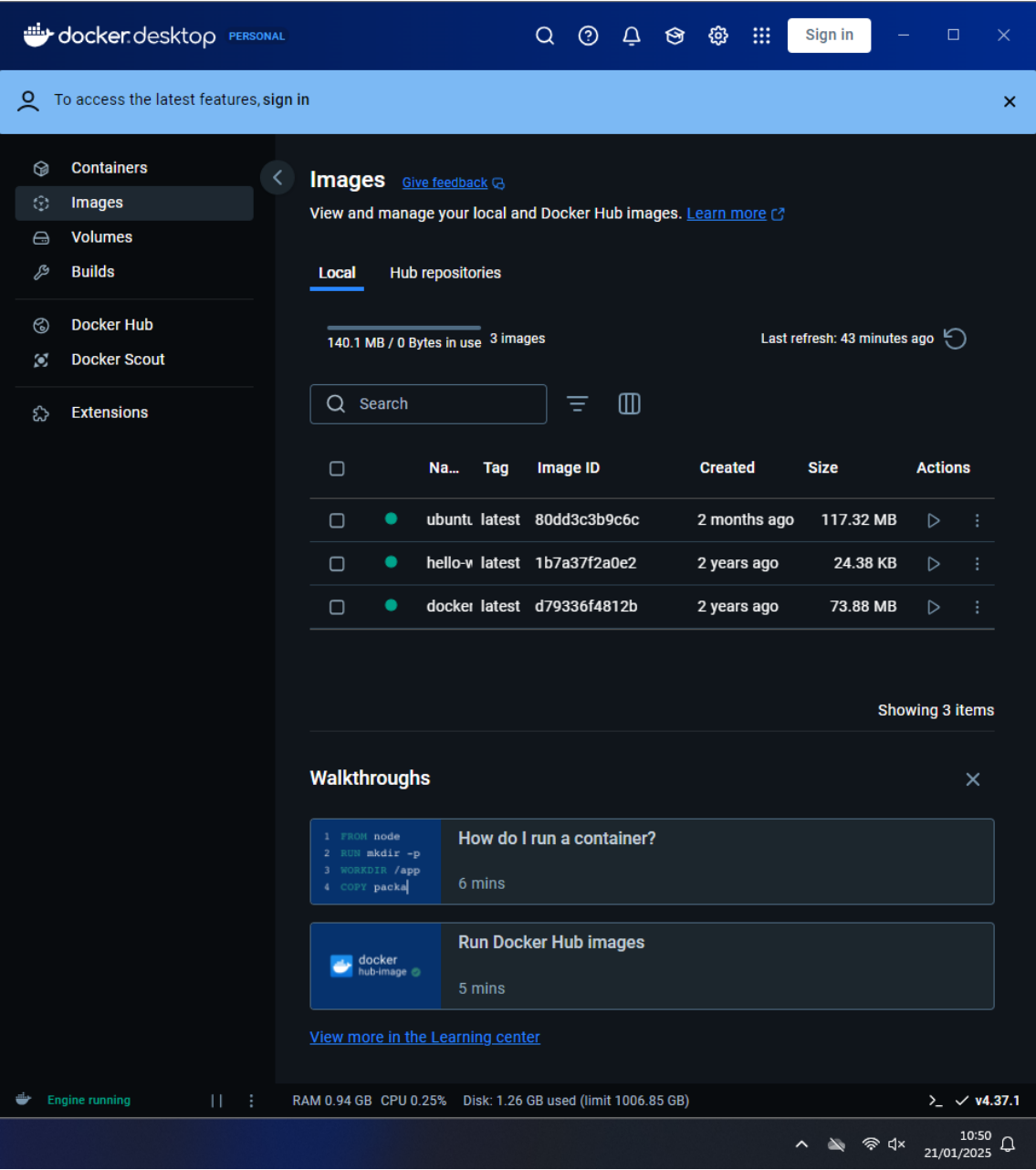
RAM 1.40 GB CPU 0.00% Disk: 1.26 GB used (limit 1006.85 GB) v4.37.1

10:45 21/01/2025

Vemos los contenedores en el entorno gráfico.



Vemos las imágenes en el entorno gráfico.



Los/as vemos en la consola.

C:\Users\Alvaro>docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
ubuntu	latest	80dd3c3b9c6c	2 months ago	117MB
hello-world	latest	1b7a37f2a8e2	29 months ago	24.4kB
docker/getting-started	latest	d79336f4012b	2 years ago	73.9MB

C:\Users\Alvaro>docker ps -a

CONTAINER ID	IMAGE	PORTS	NAMES	COMMAND	CREATED	STATUS
3ac7b906a857	docker/getting-started:latest		silly_kowalevski	"/docker-entrypoint..."	9 minutes ago	Up 9 minutes
6b860fdaac99	ubuntu	80/tcp	brave_matsumoto	"bash"	34 minutes ago	Exited (0) 21 minutes ago
ff321da9281c	hello-world		happy_hermann	"/hello"	48 minutes ago	Exited (0) 37 minutes ago

C:\Users\Alvaro>

docker.desktop

To access the latest features, sign in

Containers

Images

Volumes

Builds

Docker Hub

Docker Scout

Extensions

Containers

View all your running containers and applications. [Learn more](#)

Container CPU usage

0.00% / 800% (8 CPUs available)

Container memory usage

6.46MB / 7.41GB

Show charts

Q Search

Only running

	Name	Container ID	Image	P	Actions
<input type="checkbox"/>	brave_matsumoto	6b860fdaac99	ubuntu		▶ ⋮ 🗑
<input type="checkbox"/>	happy_hermann	ff321da9281c	hello-world		▶ ⋮ 🗑
<input checked="" type="checkbox"/>	silly_kowalevski	3ac7b906a857	docker/get		▶ ⋮ 🗑

Showing 3 items

Walkthroughs

Multi-container applications

8 mins

Containerize your application

3 mins

[View more in the Learning center](#)

Engine running

RAM 0.95 GB CPU 2.13% Disk 1.26 GB used (limit 1006.85 GB)

Eliminamos el hello-world container.

C:\Users\Alvaro>docker rm happy_hermann silly_kowalevski

happy_hermann

Error response from daemon: cannot remove container "/silly_kowalevski": container is running: stop the container before removing or force remove

C:\Users\Alvaro>

docker.desktop

To access the latest features, sign in

Containers

Images

Volumes

Builds

Docker Hub

Docker Scout

Extensions

Containers

View all your running containers and applications. [Learn more](#)

Container CPU usage

0.00% / 800% (8 CPUs available)

Container memory usage

6.46MB / 7.41GB

Show charts

Q Search

Only running

	Name	Container ID	Image	Port(s)	Actions
<input type="checkbox"/>	brave_matsumoto	6b860fdaac99	ubuntu		▶ ⋮ 🗑
<input checked="" type="checkbox"/>	silly_kowalevski	3ac7b906a857	docker/get		▶ ⋮ 🗑

Showing 2 items

Walkthroughs

Multi-container applications

8 mins

Containerize your application

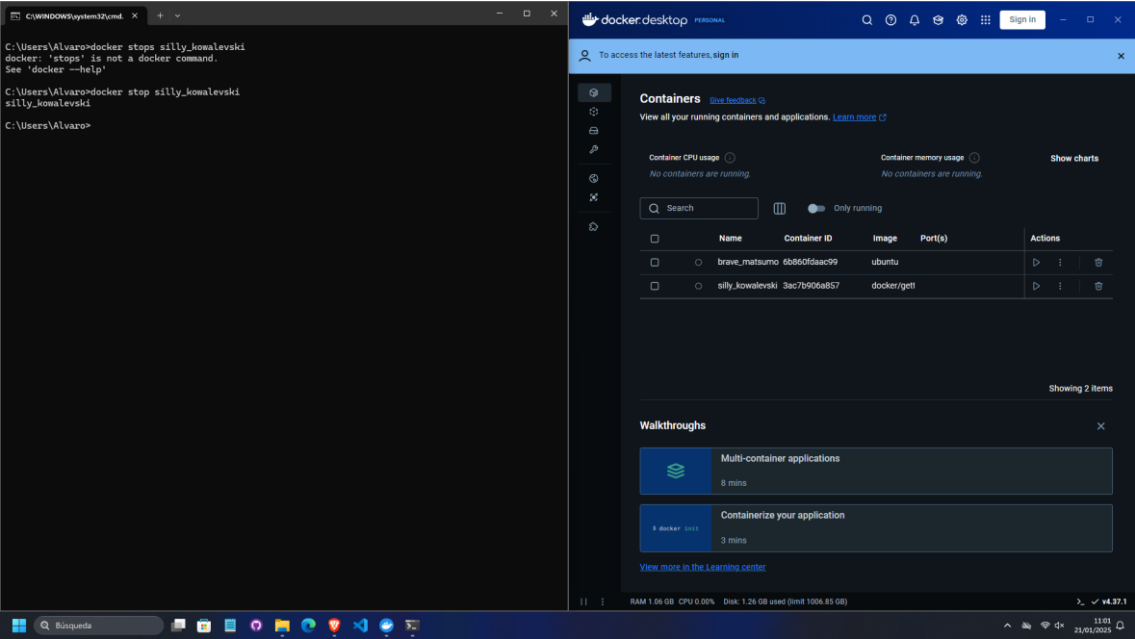
3 mins

[View more in the Learning center](#)

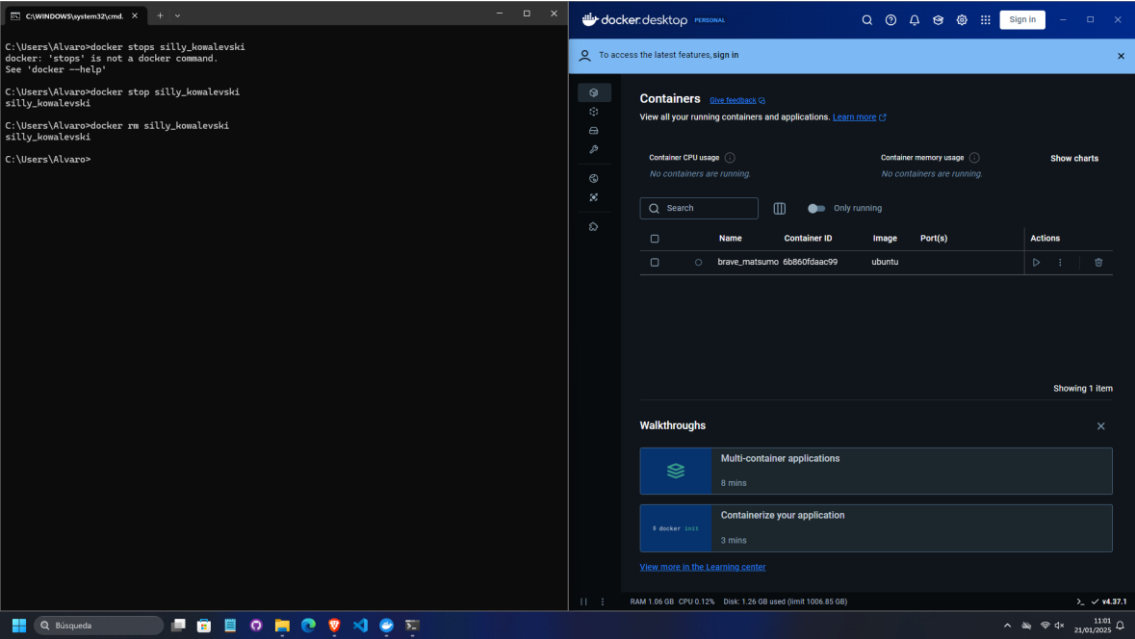
Engine running

RAM 1.06 GB CPU 0.25% Disk 1.26 GB used (limit 1006.85 GB)

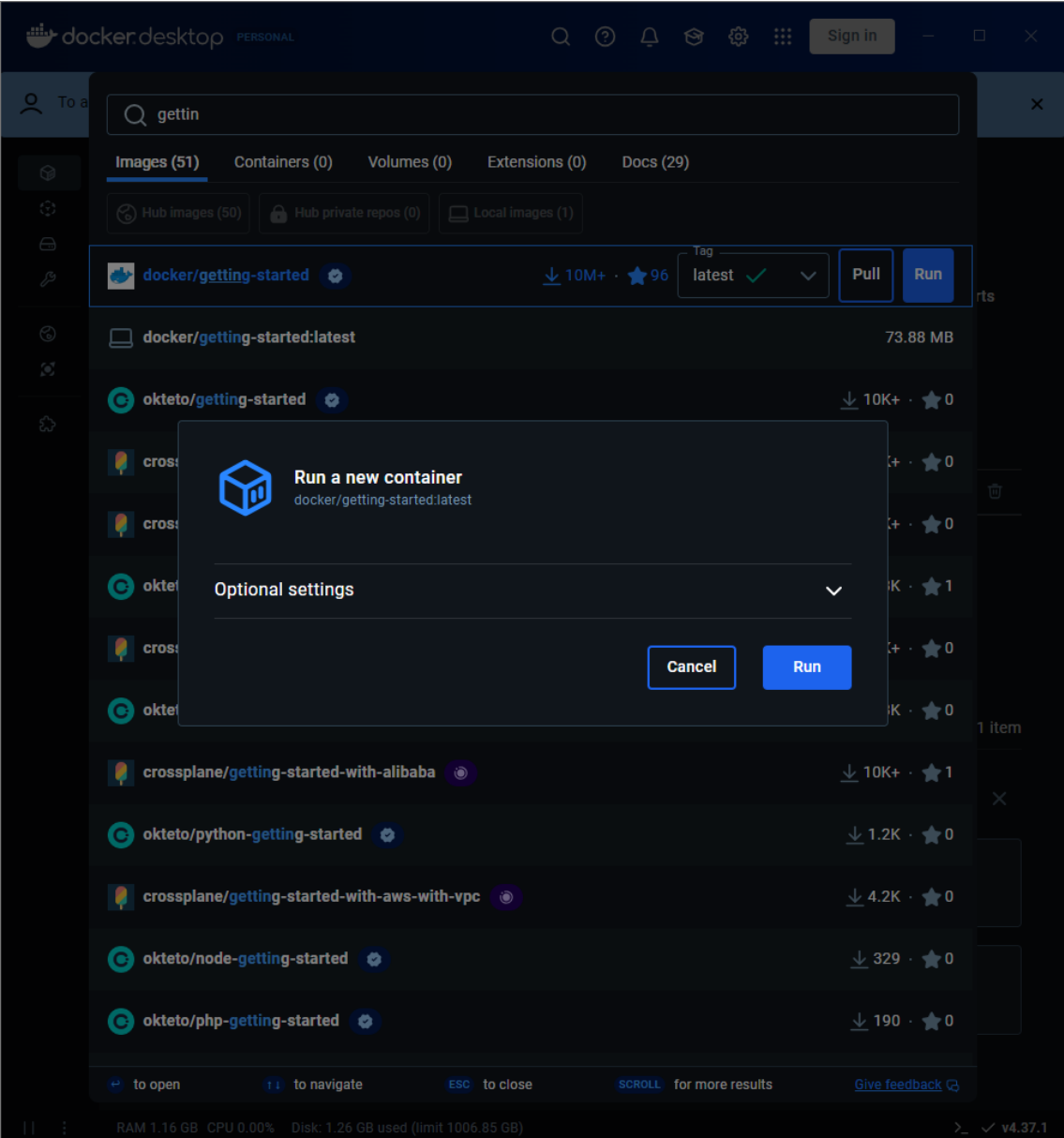
Paramos el container para poder eliminarlo.



Eliminamos el container getting-started.



Volvemos a ejecutar los contenedores.



```
C:\WINDOWS\system32\cmd. X + v - □ X

C:\Users\Alvaro>docker run hello-world

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/

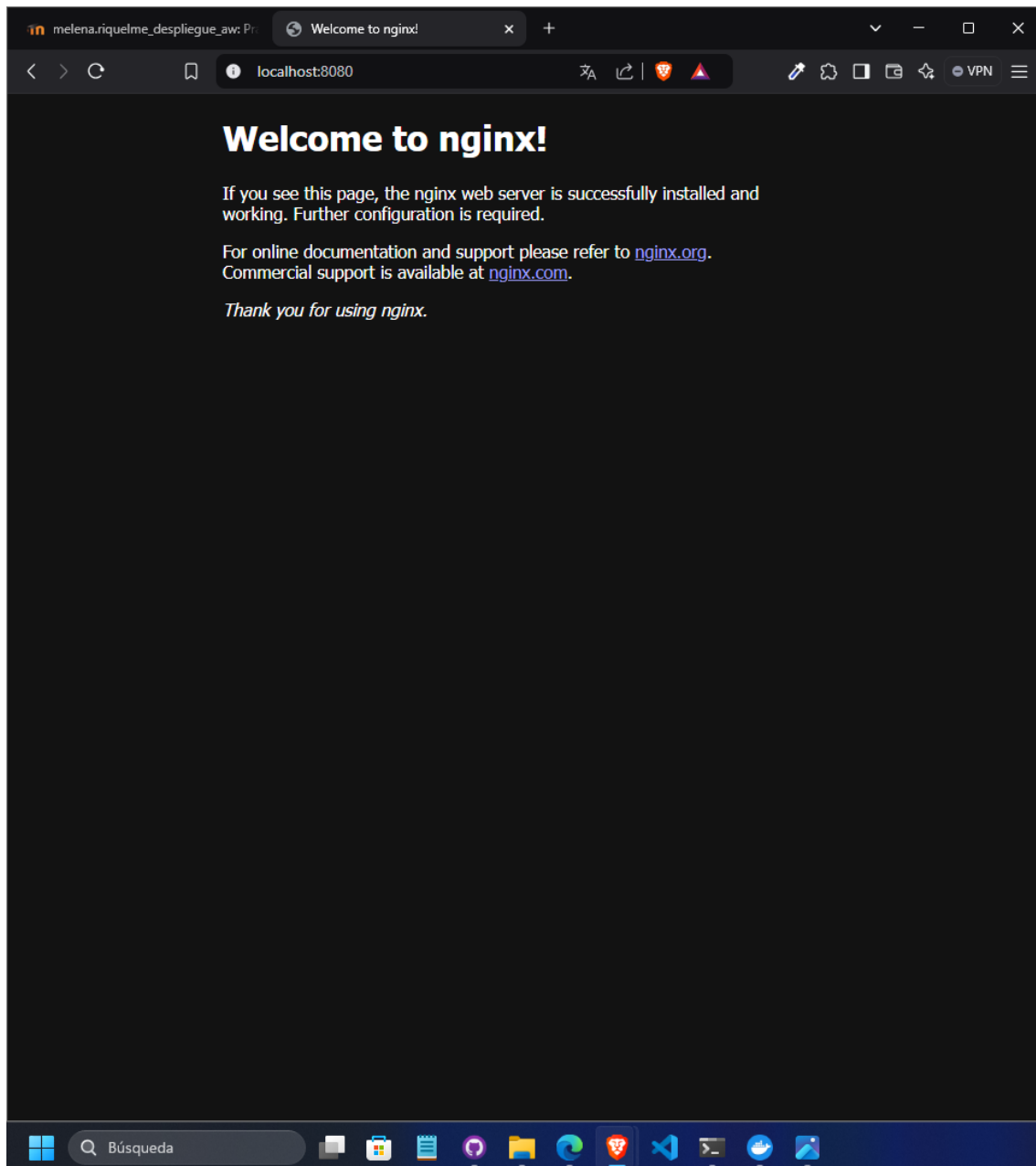
C:\Users\Alvaro>
```

Ejecutamos Docker Nginx. Mapeamos el puerto 8080 de local al 80 del container.

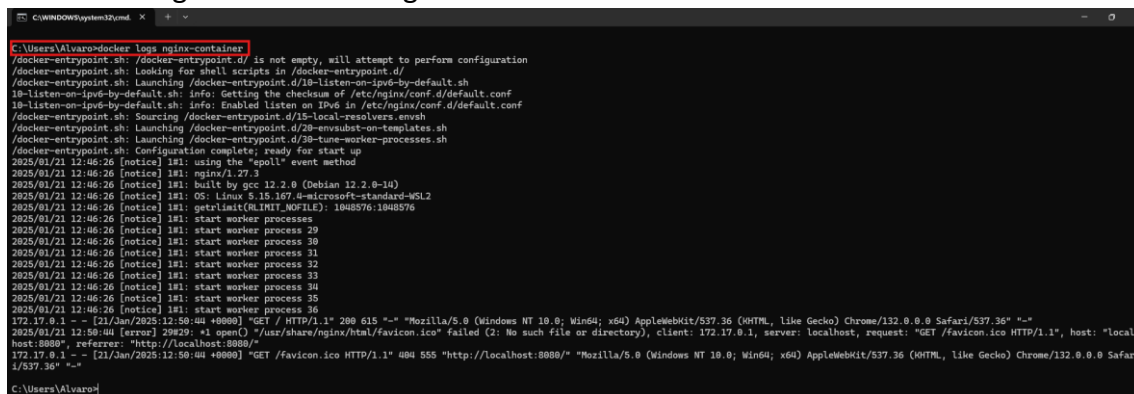
```
C:\WINDOWS\system32\cmd. X + v - □ X

C:\Users\Alvaro>docker run -d -p 8080:80 --name nginx-container nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
0256c04a8d84: Download complete
38e992d287c5: Download complete
af302e5c37e9: Download complete
841e383b441e: Download complete
207b812743af: Download complete
9e9aab598f58: Download complete
4de87b37f4ad: Download complete
Digest: sha256:0a399eb16751829e1af26fea27b20c3ec28d7ab1fb72182879dcae1cca21206a
Status: Downloaded newer image for nginx:latest
48af56edf09339208c86192b23c45b2c19150c0b908d159d09179aba50cd5494

C:\Users\Alvaro>docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS
48af56edf093   nginx     "/docker-entrypoint...." 3 minutes ago Up            0.0.0.0:8080->80/tcp
f81084f05be2   docker/getting-started:latest "/docker-entrypoint...." 16 minutes ago Up            80/tcp
xenodochial_northcutt
```



Vemos los logs del container nginx-container.



Información de la memoria, cpu...

```
C:\WINDOWS\system32\cmd. X + v
CONTAINER ID   NAME          CPU %      MEM USAGE / LIMIT   MEM %      NET I/O      BLOCK I/O
48af56edf093   nginx-container 0.00%      7.199MiB / 7.59GiB   0.09%      3.01kB / 2.46kB    0B / 0B
|
C:\WINDOWS\system32\cmd. X + v
C:\Users\Alvaro>docker stats nginx-container|
```

Primero vemos las imágenes que tenemos, vemos los comandos con los que podemos borrar imágenes y forzamos la eliminación de la imagen hello-world y de getting-started.

```
C:\WINDOWS\system32\cmd. X + v
C:\Users\Alvaro>docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
nginx                latest          0a399eb16751   7 weeks ago    278MB
ubuntu              latest          80dd3c3b9c6c   2 months ago   117MB
hello-world          latest          1b7a37f2a0e2   20 months ago  24.4kB
docker/getting-started latest          d79336f4812b   2 years ago    73.9MB

C:\Users\Alvaro>docker rmi --help

Usage:  docker rmi [OPTIONS] IMAGE [IMAGE...]

Remove one or more images

Aliases:
  docker image rm, docker image remove, docker rmi

Options:
  -f, --force      Force removal of the image
  --no-prune       Do not delete untagged parents

C:\Users\Alvaro>docker rmi hello-world
Error response from daemon: conflict: unable to delete hello-world:latest (must be forced) - container
aa61ea990d40 is using its referenced image 1b7a37f2a0e2

C:\Users\Alvaro>docker rmi -f hello-world
Untagged: hello-world:latest

C:\Users\Alvaro>docker rmi -f docker/getting-started
Untagged: docker/getting-started:latest

C:\Users\Alvaro>docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
nginx                latest          0a399eb16751   7 weeks ago    278MB
ubuntu              latest          80dd3c3b9c6c   2 months ago   117MB
<none>              <none>          1b7a37f2a0e2   20 months ago  24.4kB
<none>              <none>          d79336f4812b   2 years ago    73.9MB

C:\Users\Alvaro>docker rmi 1b7a37f2a0e2
Error response from daemon: conflict: unable to delete 1b7a37f2a0e2 (must be forced) - image is being
used by stopped container aa61ea990d40

C:\Users\Alvaro>docker rmi -f 1b7a37f2a0e2
Deleted: sha256:1b7a37f2a0e26e55ba2916e0c53bfbe60d9bd43e390e31aacd25cb3581ed74e6

C:\Users\Alvaro>docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
nginx                latest          0a399eb16751   7 weeks ago    278MB
ubuntu              latest          80dd3c3b9c6c   2 months ago   117MB
<none>              <none>          d79336f4812b   2 years ago    73.9MB
```


Nos borra solo el nombre, por ello borramos por el IMAGE ID.

```
C:\WINDOWS\system32\cmd. X + v

C:\Users\Alvaro>docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
nginx         latest    0a399eb16751   7 weeks ago    278MB
ubuntu        latest    80dd3c3b9c6c   2 months ago   117MB
<none>         <none>    1b7a37f2a0e2   20 months ago  24.4kB
<none>         <none>    d79336f4812b   2 years ago    73.9MB

C:\Users\Alvaro>docker rmi 1b7a37f2a0e2
Error response from daemon: conflict: unable to delete 1b7a37f2a0e2 (must be forced) - image is being
used by stopped container aa61ea990d40

C:\Users\Alvaro>docker rmi -f 1b7a37f2a0e2
Deleted: sha256:1b7a37f2a0e26e55ba2916e0c53bfbe60d9bd43e390e31aacd25cb3581ed74e6

C:\Users\Alvaro>docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
nginx         latest    0a399eb16751   7 weeks ago    278MB
ubuntu        latest    80dd3c3b9c6c   2 months ago   117MB
<none>         <none>    d79336f4812b   2 years ago    73.9MB

C:\Users\Alvaro>docker rmi -f d79336f4812b
Error response from daemon: conflict: unable to delete d79336f4812b (cannot be forced) - image is bein
g used by running container f81084f05be2

C:\Users\Alvaro> docker container --help

Usage: docker container COMMAND

Manage containers

Commands:
  attach      Attach local standard input, output, and error streams to a running container
  commit      Create a new image from a container's changes
  cp          Copy files/folders between a container and the local filesystem
  create      Create a new container
  diff        Inspect changes to files or directories on a container's filesystem
  exec        Execute a command in a running container
  export      Export a container's filesystem as a tar archive
  inspect     Display detailed information on one or more containers
  kill        Kill one or more running containers
  logs        Fetch the logs of a container
  ls          List containers
  pause       Pause all processes within one or more containers
  port        List port mappings or a specific mapping for the container
  prune       Remove all stopped containers
  rename      Rename a container
  restart     Restart one or more containers
  rm          Remove one or more containers
  run         Create and run a new container from an image
  start       Start one or more stopped containers
```


Borramos las imágenes, para ello, tenemos que parar un container que está usando una de ellas. Además forzamos que se borren con `-f`.

```
C:\WINDOWS\system32\cmd. X + v
Usage: docker container COMMAND

Manage containers

Commands:
  attach      Attach local standard input, output, and error streams to a running container
  commit      Create a new image from a container's changes
  cp          Copy files/folders between a container and the local filesystem
  create      Create a new container
  diff        Inspect changes to files or directories on a container's filesystem
  exec        Execute a command in a running container
  export      Export a container's filesystem as a tar archive
  inspect     Display detailed information on one or more containers
  kill        Kill one or more running containers
  logs        Fetch the logs of a container
  ls          List containers
  pause       Pause all processes within one or more containers
  port        List port mappings or a specific mapping for the container
  prune       Remove all stopped containers
  rename      Rename a container
  restart     Restart one or more containers
  rm          Remove one or more containers
  run         Create and run a new container from an image
  start       Start one or more stopped containers
  stats       Display a live stream of container(s) resource usage statistics
  stop        Stop one or more running containers
  top         Display the running processes of a container
  unpause     Unpause all processes within one or more containers
  update      Update configuration of one or more containers
  wait        Block until one or more containers stop, then print their exit codes

Run 'docker container COMMAND --help' for more information on a command.

C:\Users\Alvaro>docker container stop f81084f05be2
f81084f05be2

C:\Users\Alvaro>docker rmi -f d79336f4812b
Deleted: sha256:d79336f4812b6547a53e735480dde67f8f8f7071b414fbd9297609ffb989abc1

C:\Users\Alvaro>docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
nginx         latest   0a399eb16751   7 weeks ago   278MB
ubuntu        latest   80dd3c3b9c6c   2 months ago  117MB

C:\Users\Alvaro>
```

