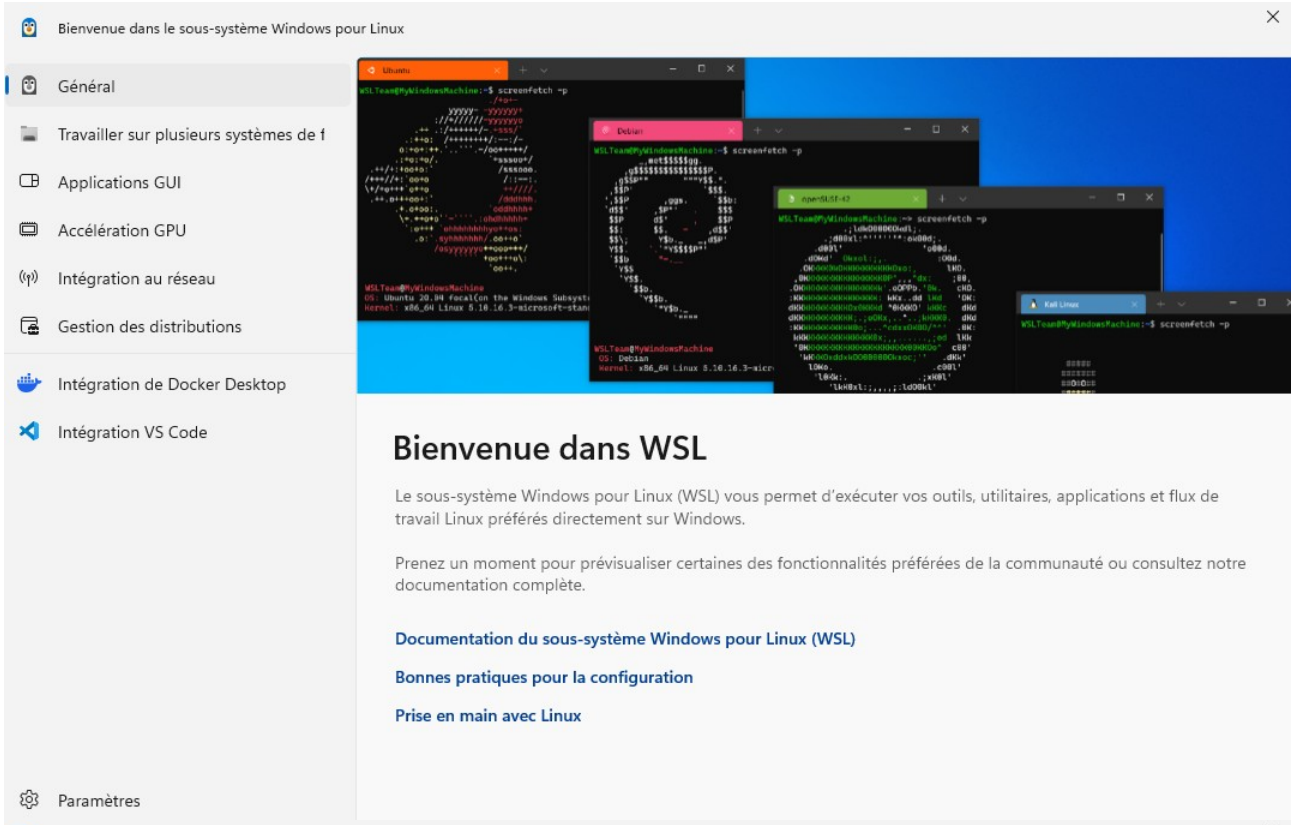
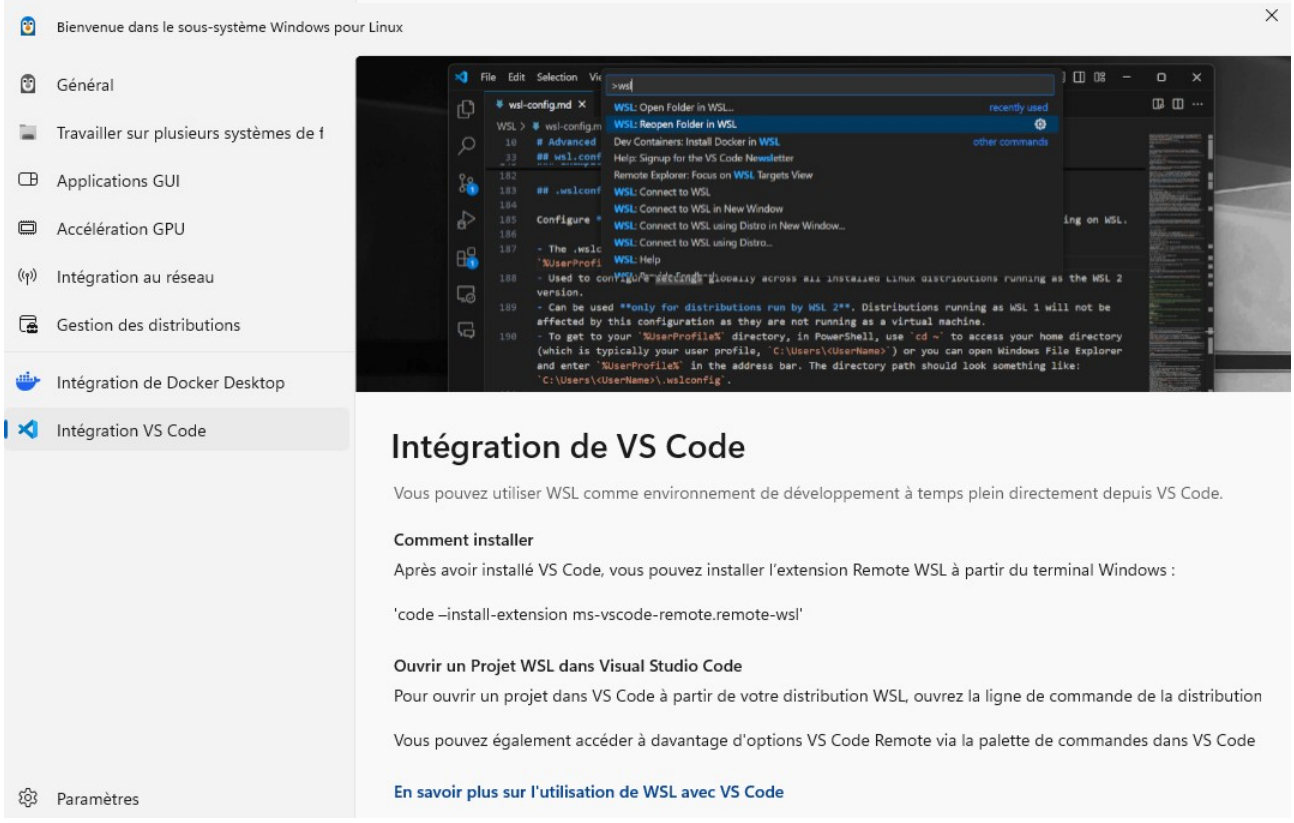
Fleury Timéo

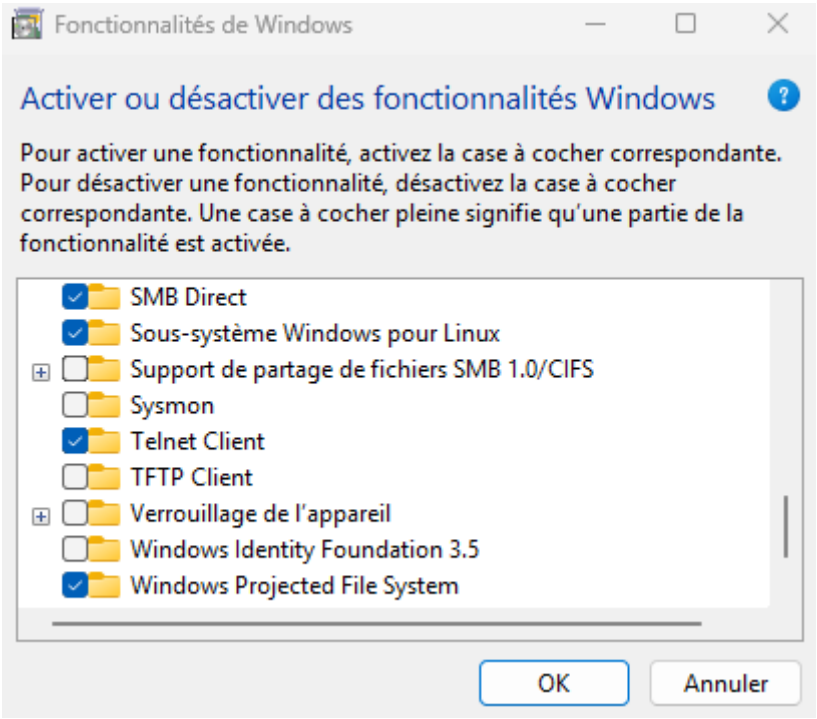
Chapitre 4 – Docker sous Windows (Docker Desktop et WSL 2)

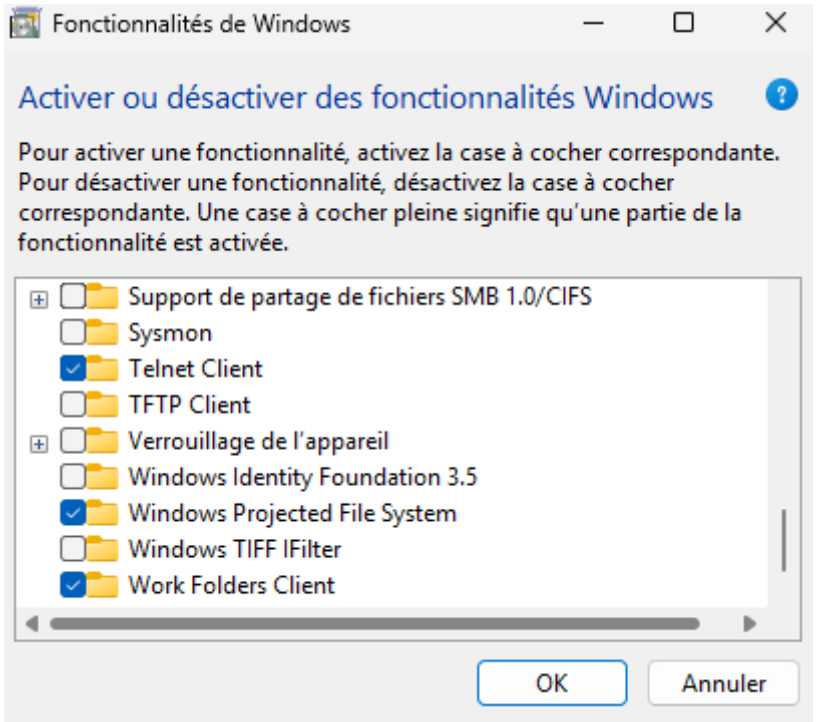
1 . Installation / Activation de WSL.

```
PS C:\Users\tfleury> wsl.exe --install
L'opération demandée nécessite une élévation.
Installation du composant facultatif Windows : VirtualMachinePlatform

Outil Gestion et maintenance des images de déploiement
Version : 10.0.26100.5074

Version de l'image : 10.0.26200.7840

Activation de la ou des fonctionnalités
[==========================100.0%==========================]
L'opération a réussi.
L'opération demandée est réussie. Les modifications ne seront pas effectives avant que le système ne s
oit réamorcé.
L'opération demandée est réussie. Les modifications ne seront pas effectives avant que le système ne s
oit réamorcé.
PS C:\Users\tfleury> wsl.exe --list --online
Voici la liste des distributions valides qui peuvent être installées.
Installez à l'aide de 'wsl.exe --install <Distro>'.

NAME                            FRIENDLY NAME
Ubuntu                          Ubuntu
Ubuntu-24.04                    Ubuntu 24.04 LTS
openSUSE-Tumbleweed             openSUSE Tumbleweed
openSUSE-Leap-16.0              openSUSE Leap 16.0
SUSE-Linux-Enterprise-15-SP7    SUSE Linux Enterprise 15 SP7
SUSE-Linux-Enterprise-16.0      SUSE Linux Enterprise 16.0
kali-linux                      Kali Linux Rolling
Debian                          Debian GNU/Linux
AlmaLinux-8                     AlmaLinux OS 8
AlmaLinux-9                     AlmaLinux OS 9
AlmaLinux-Kitten-10             AlmaLinux OS Kitten 10
AlmaLinux-10                    AlmaLinux OS 10
archlinux                       Arch Linux
FedoraLinux-43                  Fedora Linux 43
FedoraLinux-42                  Fedora Linux 42
eLxr                            eLxr 12.12.0.0 GNU/Linux
Ubuntu-20.04                    Ubuntu 20.04 LTS
Ubuntu-22.04                    Ubuntu 22.04 LTS
OracleLinux_7_9                 Oracle Linux 7.9
OracleLinux_8_10                Oracle Linux 8.10
OracleLinux_9_5                 Oracle Linux 9.5
openSUSE-Leap-15.6              openSUSE Leap 15.6
SUSE-Linux-Enterprise-15-SP6    SUSE Linux Enterprise 15 SP6
PS C:\Users\tfleury>
```


Bienvenue dans le sous-système Windows pour Linux
Général
Travailler sur plusieurs systèmes de f
Applications GUI
Accélération GPU
Intégration au réseau
Gestion des distributions
Intégration de Docker Desktop
Intégration VS Code
Paramètres
Bienvenue dans WSL
Le sous-système Windows pour Linux (WSL) vous permet d'exécuter vos outils, utilitaires, applications et flux de travail Linux préférés directement sur Windows.
Prenez un moment pour prévisualiser certaines des fonctionnalités préférées de la communauté ou consultez notre documentation complète.
Documentation du sous-système Windows pour Linux (WSL)
Bonnes pratiques pour la configuration
Prise en main avec Linux


Bienvenue dans le sous-système Windows pour Linux
Général
Travailler sur plusieurs systèmes de f
Applications GUI
Accélération GPU
Intégration au réseau
Gestion des distributions
Intégration de Docker Desktop
Intégration VS Code
Paramètres
Intégration de VS Code
Vous pouvez utiliser WSL comme environnement de développement à temps plein directement depuis VS Code.
Comment installer
Après avoir installé VS Code, vous pouvez installer l'extension Remote WSL à partir du terminal Windows :
'code –install-extension ms-vscode-remote.remote-wsl'
Ouvrir un Projet WSL dans Visual Studio Code
Pour ouvrir un projet dans VS Code à partir de votre distribution WSL, ouvrez la ligne de commande de la distribution
Vous pouvez également accéder à davantage d'options VS Code Remote via la palette de commandes dans VS Code
En savoir plus sur l'utilisation de WSL avec VS Code


Fonctionnalités de Windows
Activer ou désactiver des fonctionnalités Windows
Pour activer une fonctionnalité, activez la case à cocher correspondante. Pour désactiver une fonctionnalité, désactivez la case à cocher correspondante. Une case à cocher pleine signifie qu'une partie de la fonctionnalité est activée.
SMB Direct
Sous-système Windows pour Linux
Support de partage de fichiers SMB 1.0/CIFS
Sysmon
Telnet Client
TFTP Client
Verrouillage de l'appareil
Windows Identity Foundation 3.5
Windows Projected File System
OK
Annuler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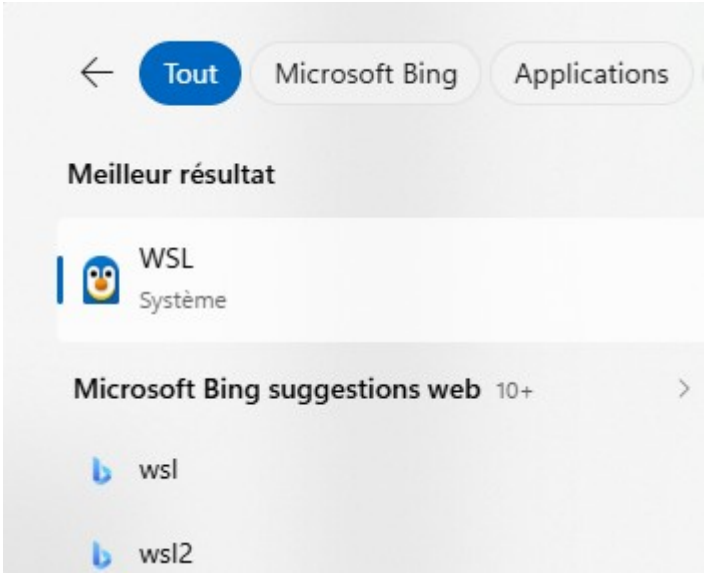
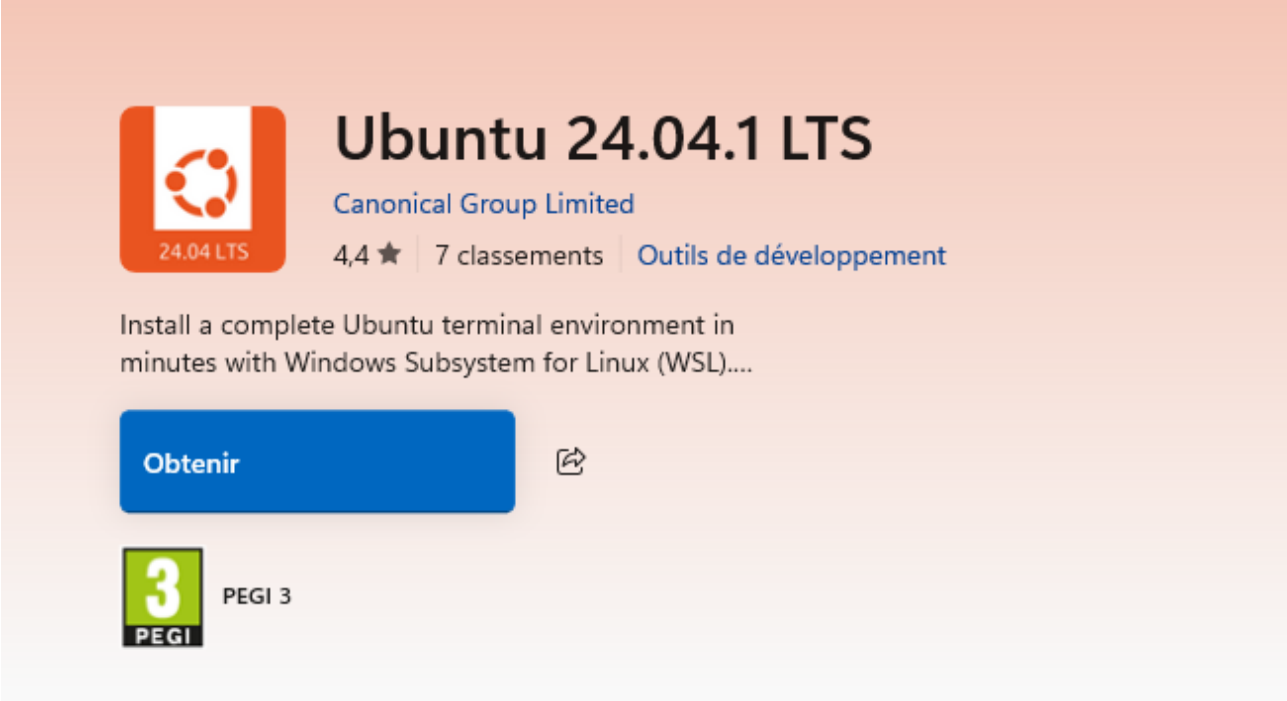
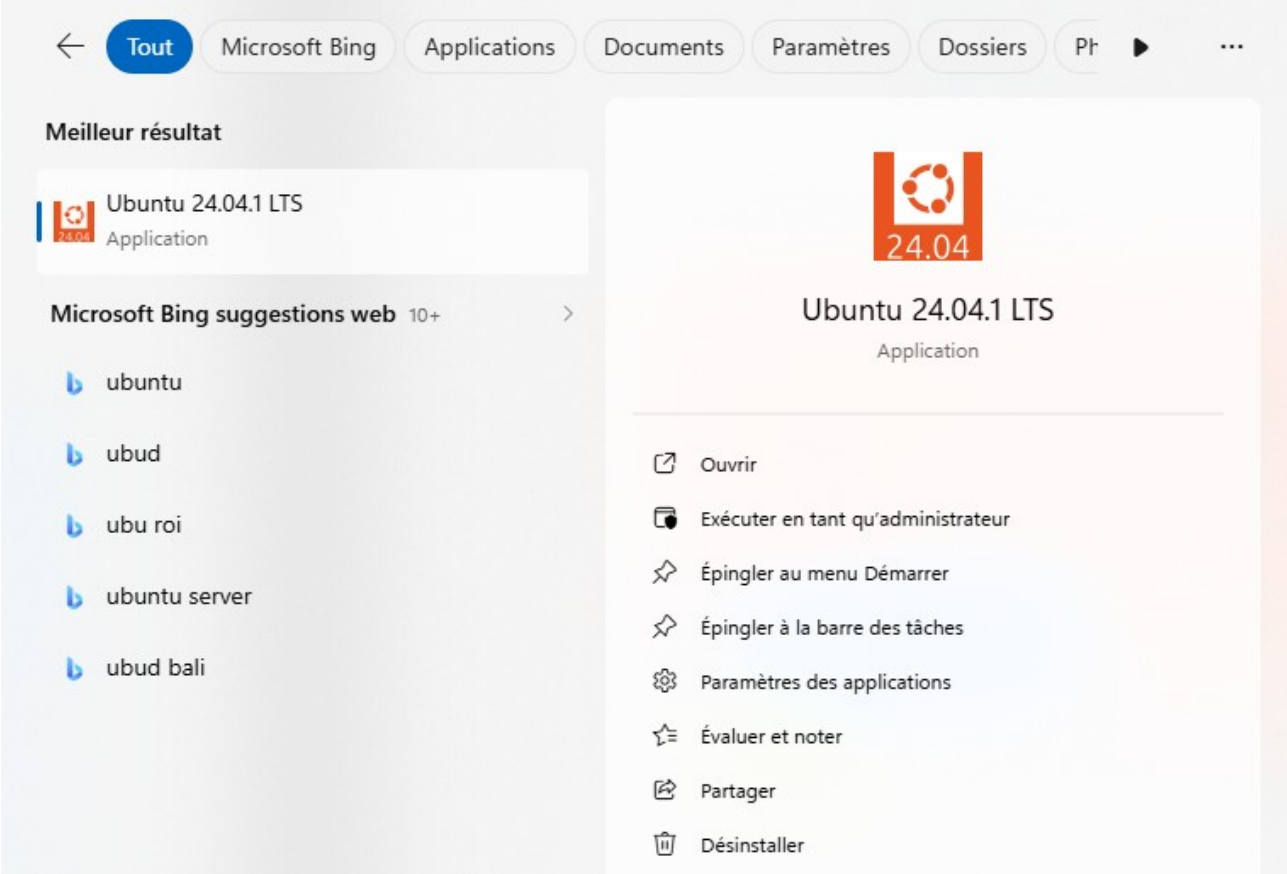
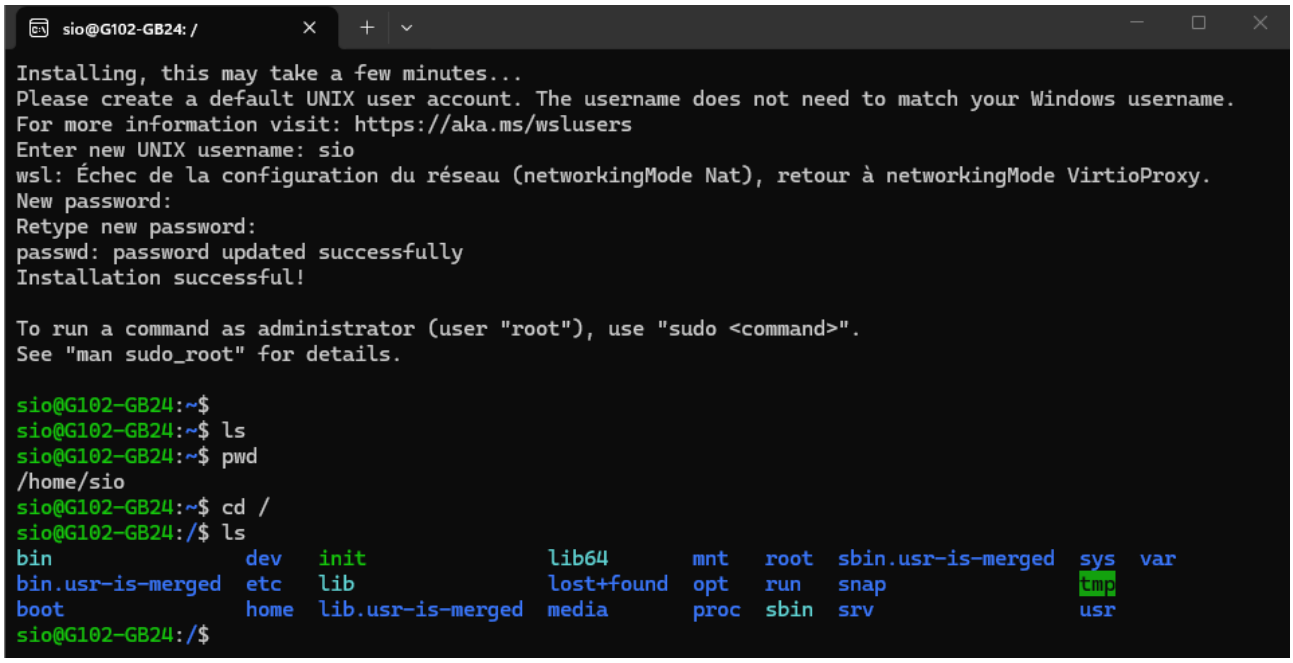
Support de partage de fichiers SMB 1.0/CIFS
Sysmon
Telnet Client
TFTP Client
Verrouillage de l'appareil
Windows Identity Foundation 3.5
Windows Projected File System
Windows TIFF IFilter
Work Folders Client
OK
Annuler

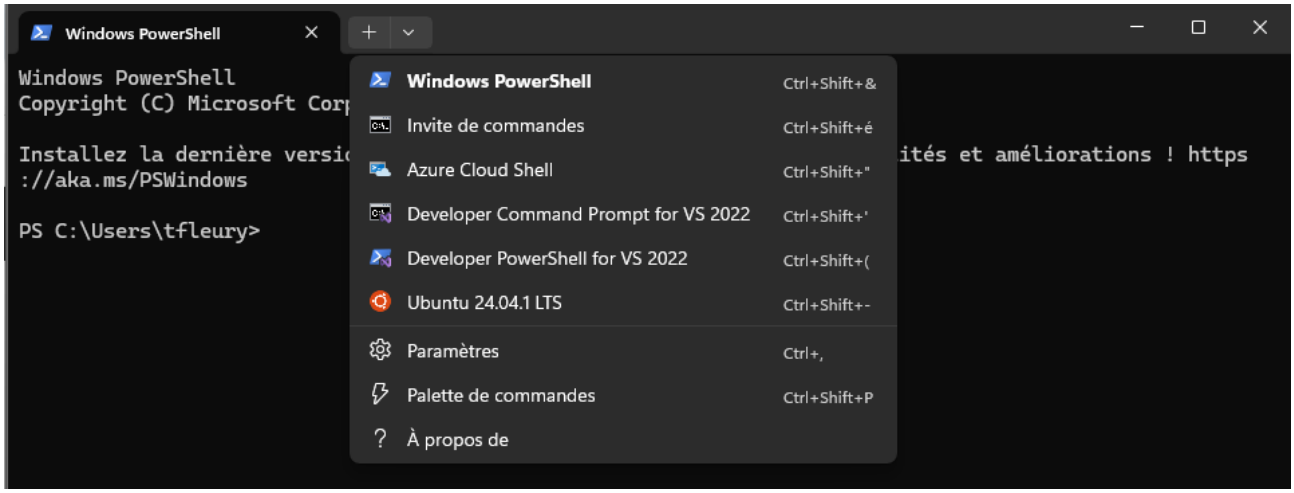


2 . Installation Ubuntu.



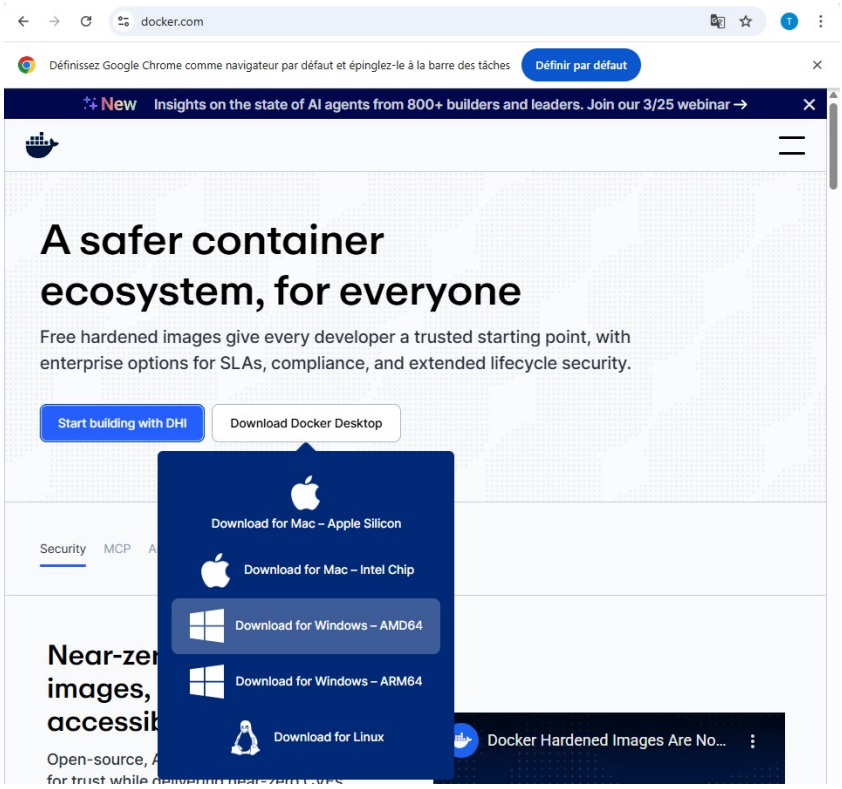

Tout
Microsoft Bing
Applications
Documents
Paramètres
Dossiers
Meilleur résultat
Ubuntu 24.04.1 LTS
Application
Microsoft Bing suggestions web 10+
ubuntu
ubud
ubu roi
ubuntu server
ubud bali
24.04
Ubuntu 24.04.1 LTS
Application
Ouvrir
Exécuter en tant qu'administrateur
Épingler au menu Démarrer
Épingler à la barre des tâches
Paramètres des applications
Évaluer et noter
Partager
Désinstaller

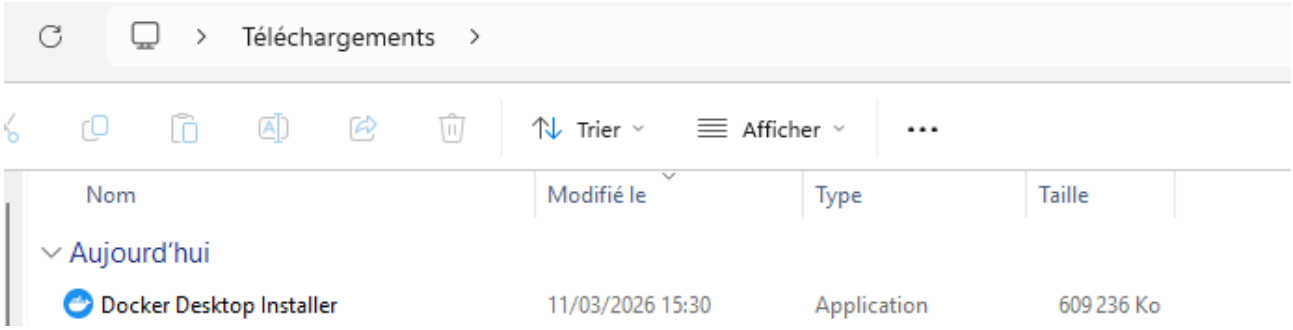

sio@G102-GB24: /
Installing, this may take a few minutes...
Please create a default UNIX user account. The username does not need to match your Windows username.
For more information visit: https://aka.ms/wslusers
Enter new UNIX username: sio
wsl: Échec de la configuration du réseau (networkingMode Nat), retour à networkingMode VirtioProxy.
New password:
Retype new password:
passwd: password updated successfully
Installation successful!
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
sio@G102-GB24:~$
sio@G102-GB24:~$ ls
sio@G102-GB24:~$ pwd
/home/sio
sio@G102-GB24:~$ cd /
sio@G102-GB24:/$ ls
bin dev init lib64 mnt root sbin.usr-is-merged sys var
bin.usr-is-merged etc lib lost+found opt run snap tmp
boot home lib.usr-is-merged media proc sbin srv usr
sio@G102-GB24:/$

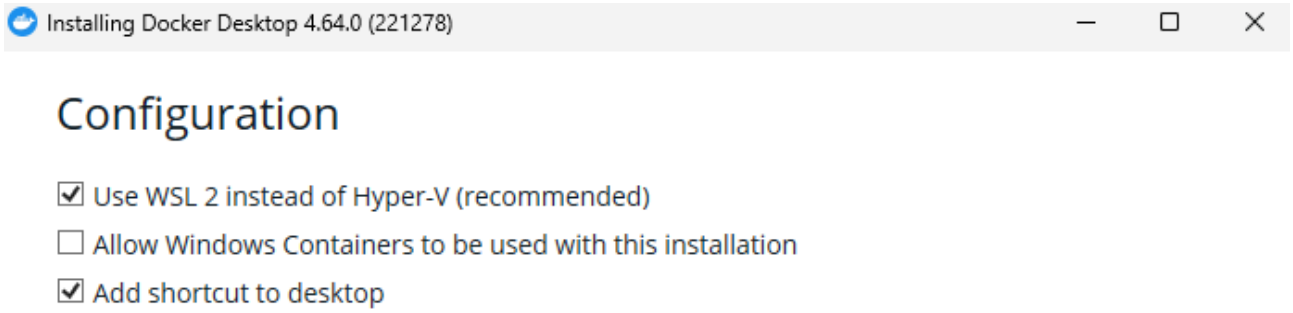


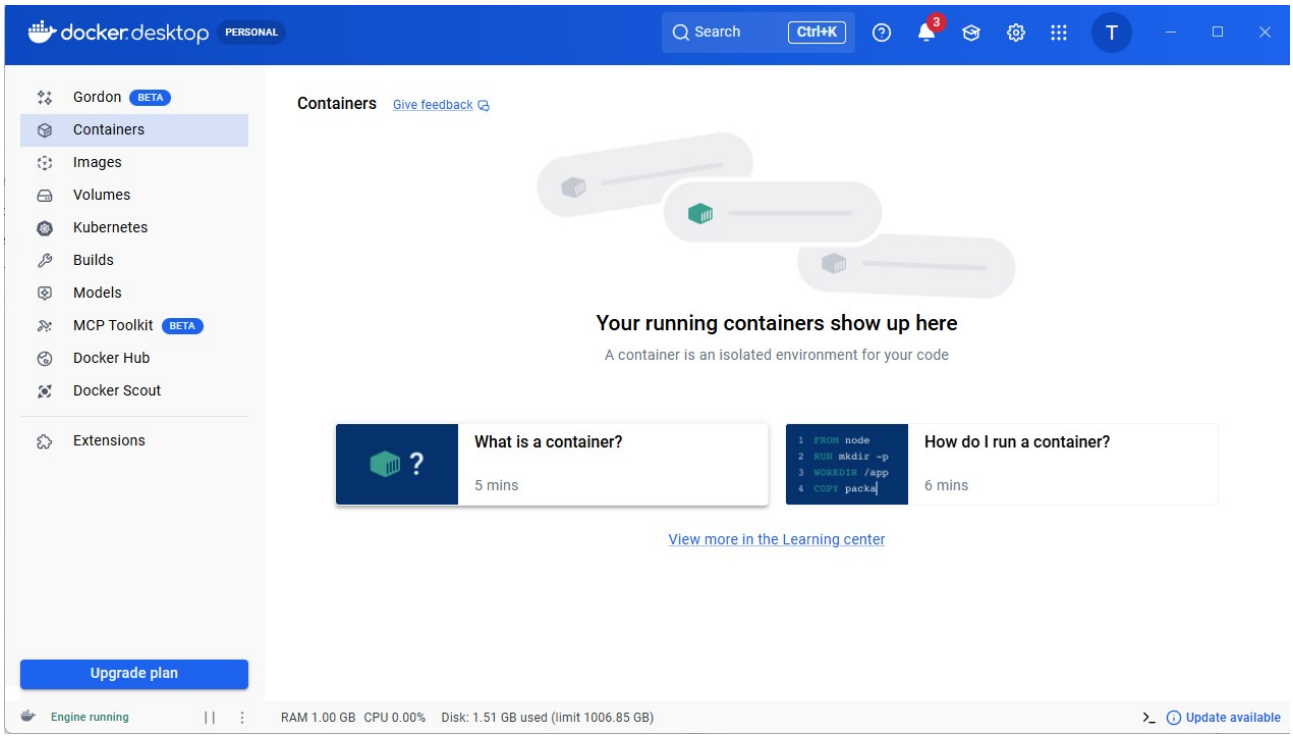

```
PS C:\Users\tfleury> wsl -d Ubuntu-24.04
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

sio@G102-GB24:/mnt/c/Users/tfleury$ exit
logout
PS C:\Users\tfleury>
```

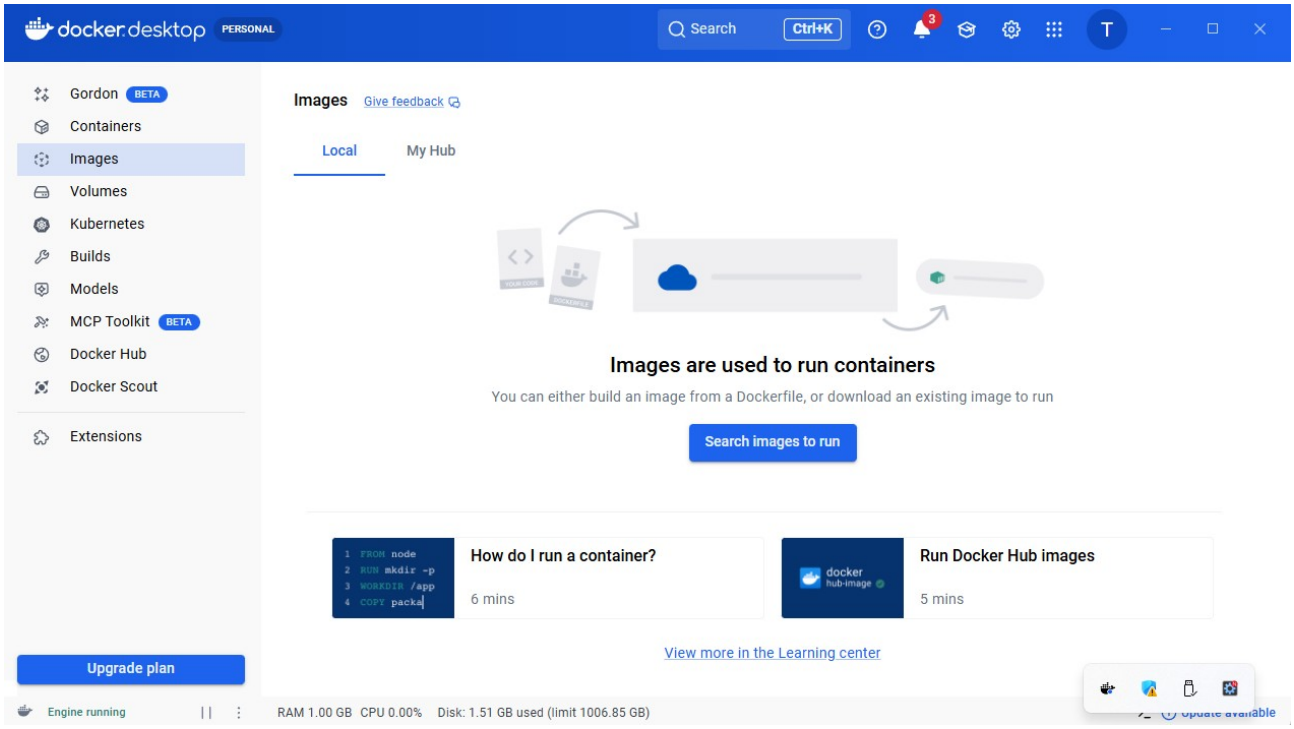
3 . Installation Docker.

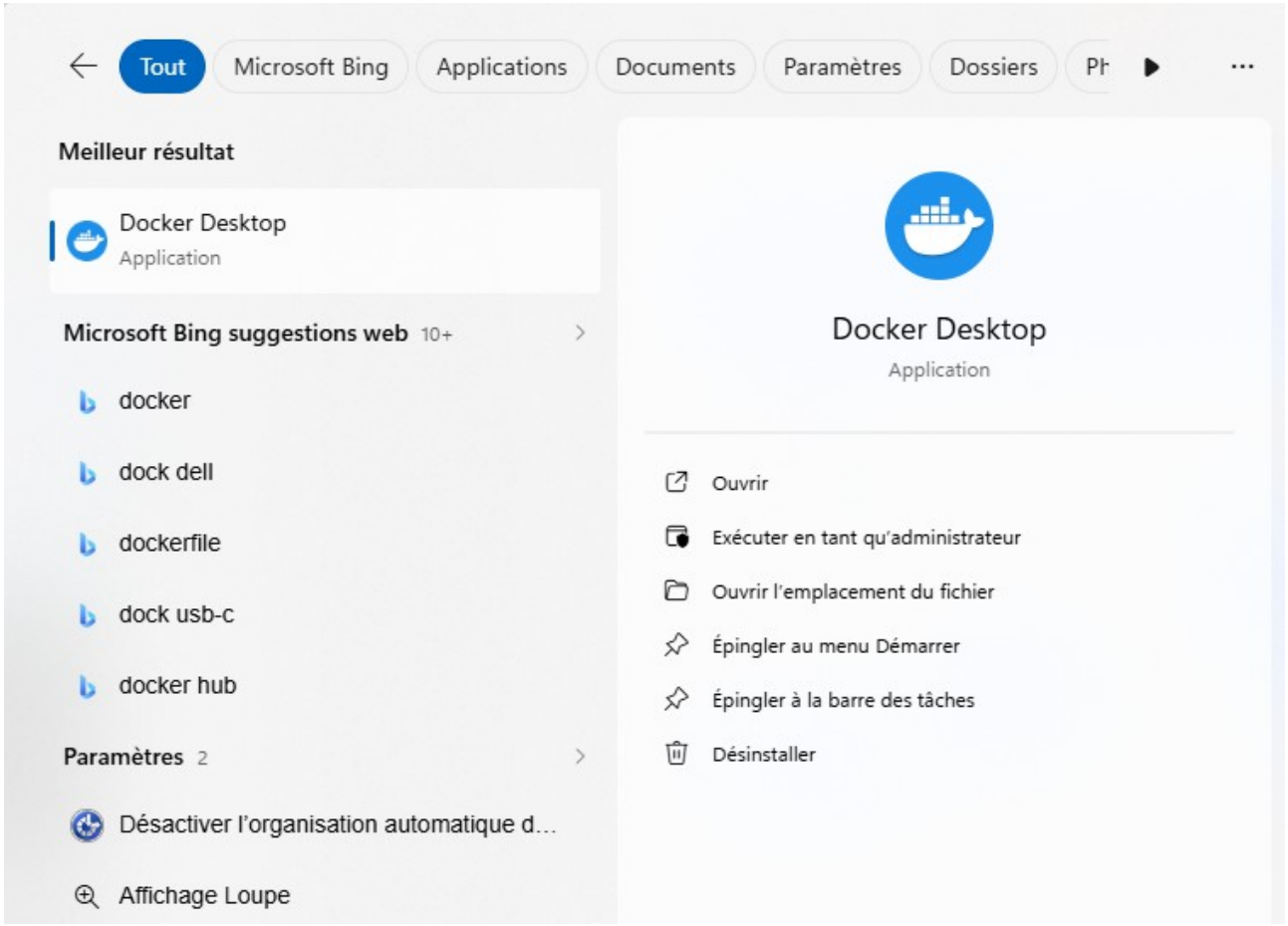



Téléchargements
Trier
Afficher
Nom
Modifié le
Type
Taille
Aujourd'hui
Docker Desktop Installer
11/03/2026 15:30
Application
609 236 Ko


Installing Docker Desktop 4.64.0 (221278)
Configuration
Use WSL 2 instead of Hyper-V (recommended)
Allow Windows Containers to be used with this installation
Add shortcut to desktop


docker desktop
PERSONAL
Search
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Containers
Give feedback
Your running containers show up here
A container is an isolated environment for your code
What is a container?
5 mins
How do I run a container?
6 mins
View more in the Learning center
Engine running
RAM 1.00 GB CPU 0.00% Disk: 1.51 GB used (limit 1006.85 GB)
Update available

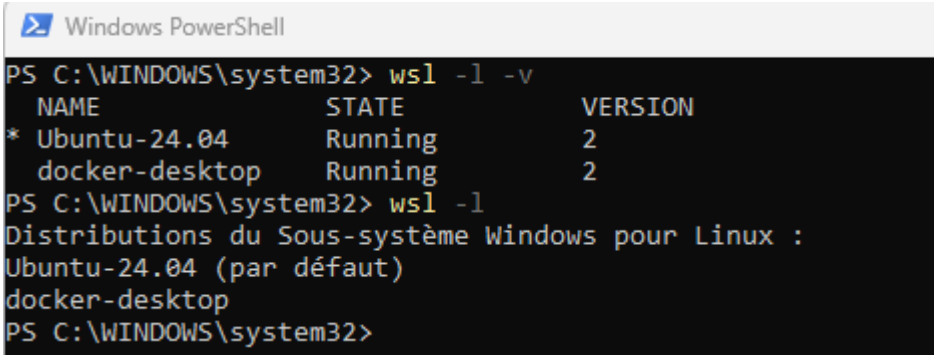

docker desktop
PERSONAL
Search
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Images
Give feedback
Local
My Hub
Images are used to run containers
You can either build an image from a Dockerfile, or download an existing image to run
Search images to run
How do I run a container?
6 mins
Run Docker Hub images
5 mins
View more in the Learning center
Engine running
RAM 1.00 GB CPU 0.00%
Disk: 1.51 GB used (limit 1006.85 GB)

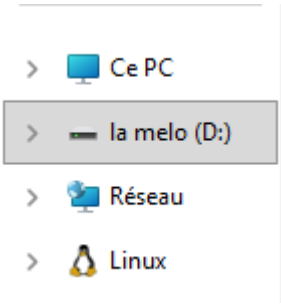

Tout
Microsoft Bing
Applications
Documents
Paramètres
Dossiers
Meilleur résultat
Docker Desktop
Application
Microsoft Bing suggestions web 10+
docker
dock dell
dockerfile
dock usb-c
docker hub
Paramètres 2
Désactiver l'organisation automatique d…
Affichage Loupe
Docker Desktop
Application
Ouvrir
Exécuter en tant qu'administrateur
Ouvrir l'emplacement du fichier
Épingler au menu Démarrer
Épingler à la barre des tâches
Désinstaller

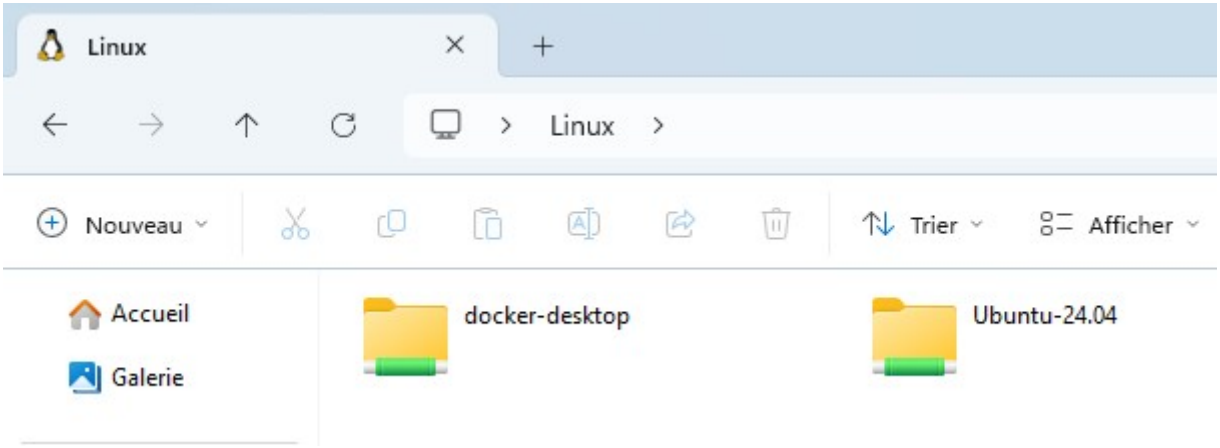
4 Premier test.

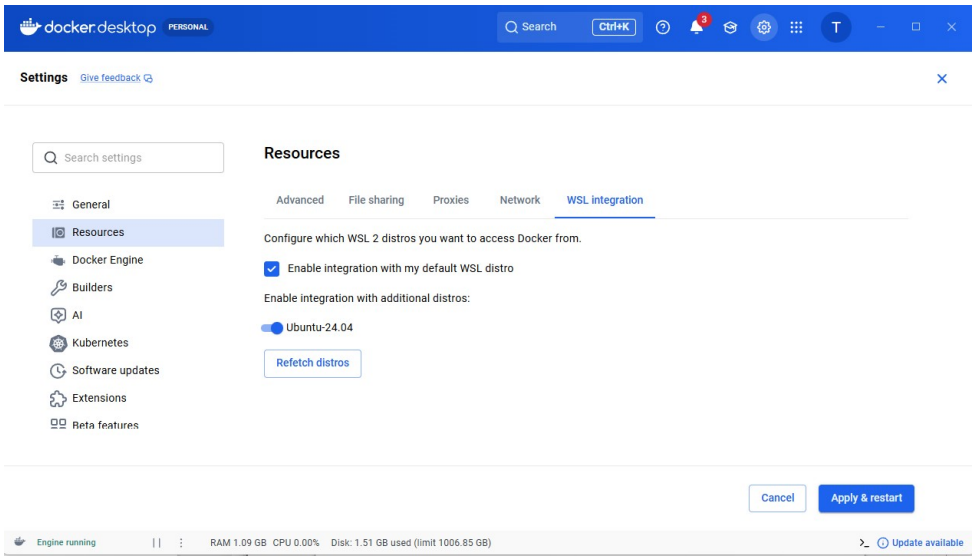
```
tfleury@G102-GB12: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

tfleury@G102-GB12:~$ docker --version
Docker version 29.3.0, build 5927d80
tfleury@G102-GB12:~$
```

```
tfleury@G102-GB12: ~
tfleury@G102-GB12:~$ docker version
Client:
 Version:           29.3.0
 API version:       1.54
 Go version:        go1.25.7
 Git commit:        5927d80
 Built:             Thu Mar  5 14:24:57 2026
 OS/Arch:           linux/amd64
 Context:           default

Server: Docker Desktop 4.66.0 (222299)
 Engine:
  Version:          29.3.0
  API version:      1.54 (minimum version 1.40)
  Go version:       go1.25.7
  Git commit:       83bca51
  Built:            Thu Mar  5 14:25:43 2026
  OS/Arch:          linux/amd64
  Experimental:     false
 containerd:
  Version:          v2.2.1
  GitCommit:        dea7da592f5d1d2b7755e3a161be07f43fad8f75
 runc:
  Version:          1.3.4
  GitCommit:        v1.3.4-0-gd6d73eb8
 docker-init:
  Version:          0.19.0
  GitCommit:        de40ad0
tfleury@G102-GB12:~$
```


Windows PowerShell
PS C:\WINDOWS\system32> wsl -l -v
NAME STATE VERSION
* Ubuntu-24.04 Running 2
docker-desktop Running 2
PS C:\WINDOWS\system32> wsl -l
Distributions du Sous-système Windows pour Linux :
Ubuntu-24.04 (par défaut)
docker-desktop
PS C:\WINDOWS\system32>

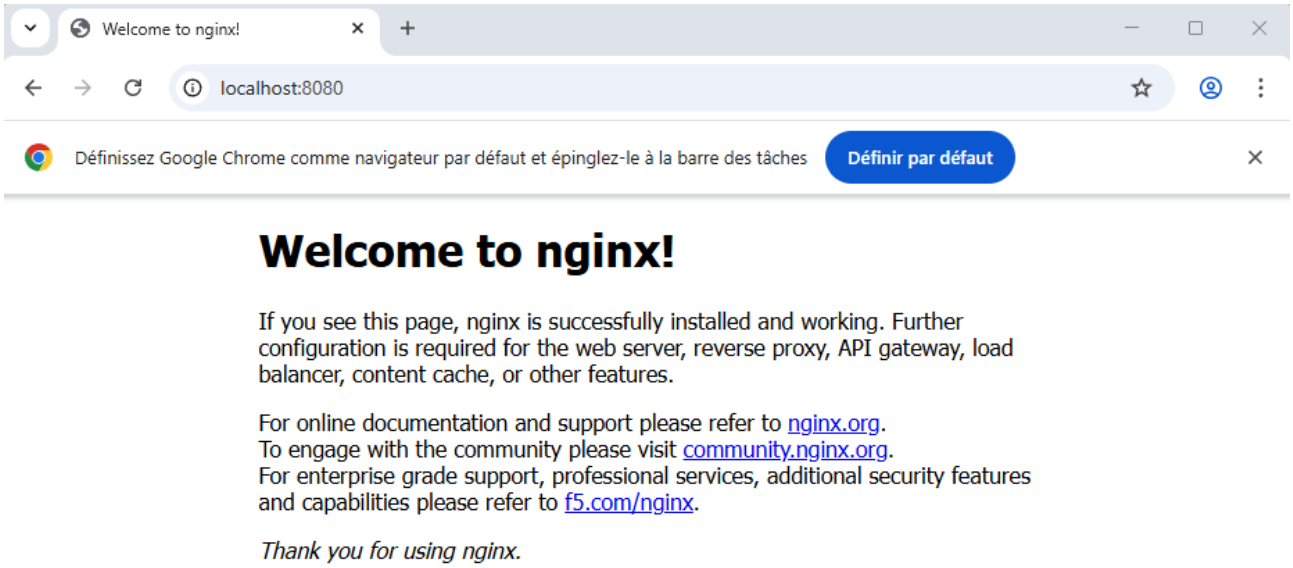

Ce PC
la melo (D:)
Réseau
Linux

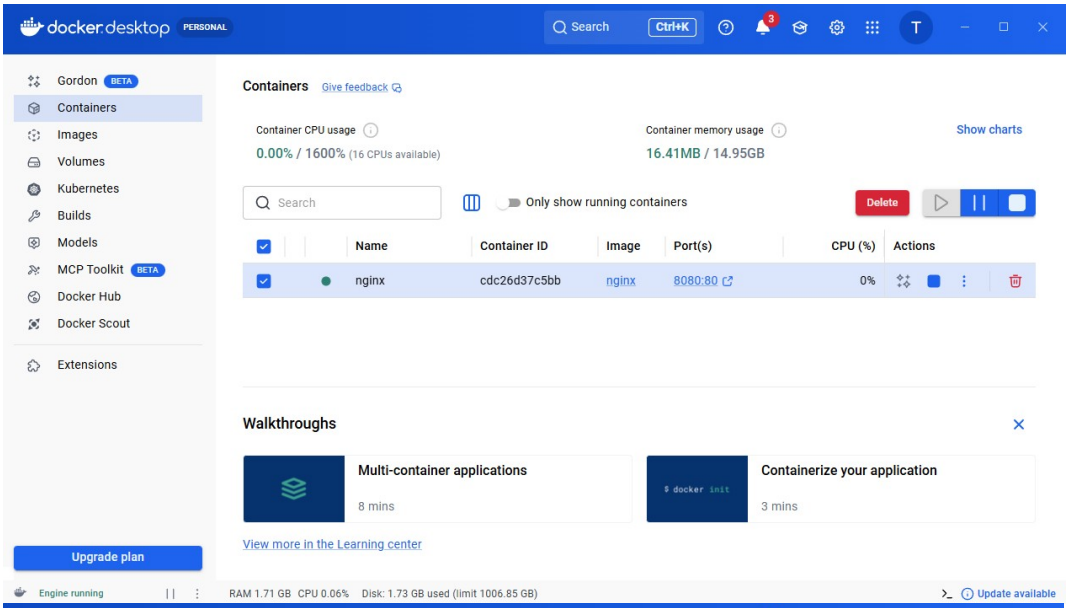

Linux
Linux
Nouveau
Trier
Afficher
Accueil
Galerie
docker-desktop
Ubuntu-24.04

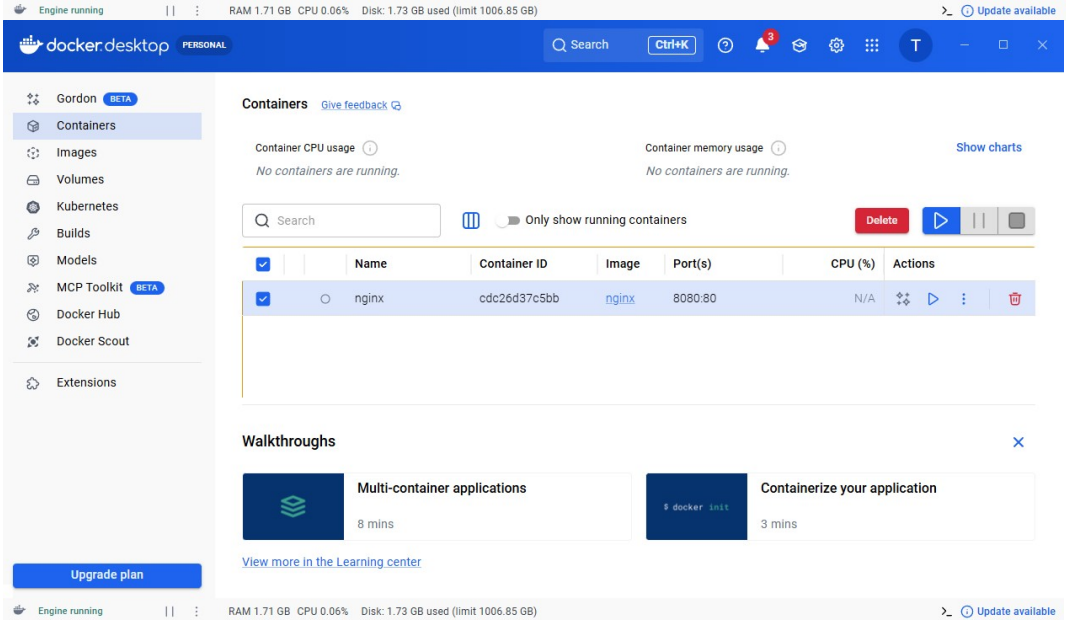

docker desktop PERSONAL
Search Ctrl+K
Settings Give feedback
Search settings
General
Resources
Docker Engine
Builders
AI
Kubernetes
Software updates
Extensions
Beta features
Resources
Advanced File sharing Proxies Network WSL integration
Configure which WSL 2 distros you want to access Docker from.
Enable integration with my default WSL distro
Enable integration with additional distros:
Ubuntu-24.04
Refetch distros
Cancel
Apply & restart
Engine running
RAM 1.09 GB CPU 0.00% Disk: 1.51 GB used (limit 1006.85 GB)
Update available

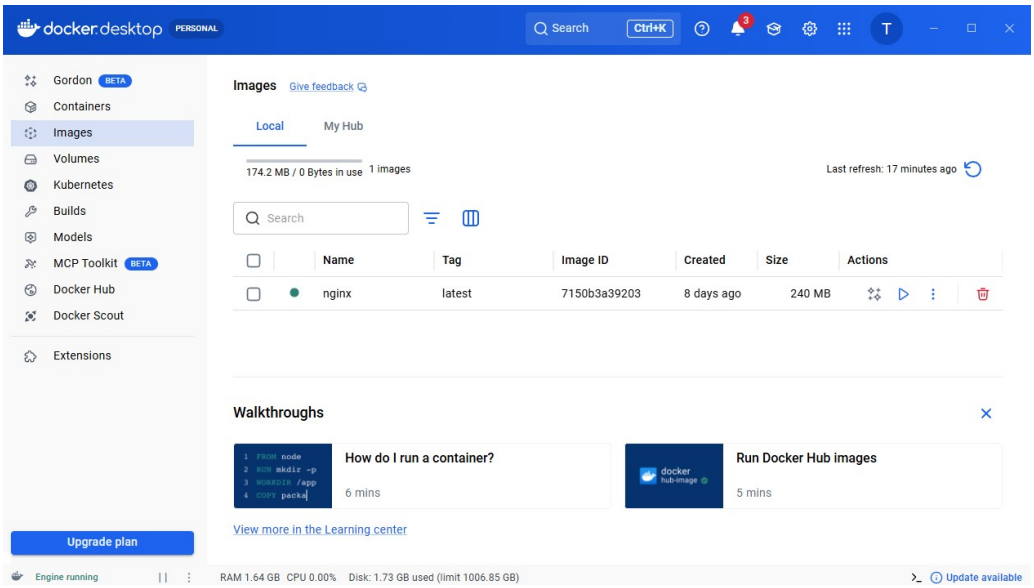
5 Deuxième test.

```
tfleury@G102-GB12: ~
tfleury@G102-GB12:~$ docker run --name nginx -p 8080:80 nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
5e815e07e569: Pull complete
ec781dee3f47: Pull complete
3189680c601f: Pull complete
cde7a05ae428: Pull complete
510ddf6557d6: Pull complete
587e3d84dbb5: Pull complete
bb3d0aa29654: Pull complete
669e0ab8e7fa: Download complete
96a6cfe061e0: Download complete
Digest: sha256:7150b3a39203cb5bee612ff4a9d18774f8c7caf6399d6e8985e97e28eb751c18
Status: Downloaded newer image for nginx:latest
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2026/04/01 13:24:55 [notice] 1#1: using the "epoll" event method
2026/04/01 13:24:55 [notice] 1#1: nginx/1.29.7
2026/04/01 13:24:55 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/04/01 13:24:55 [notice] 1#1: OS: Linux 6.6.87.2-microsoft-standard-WSL2
2026/04/01 13:24:55 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/04/01 13:24:55 [notice] 1#1: start worker processes
2026/04/01 13:24:55 [notice] 1#1: start worker process 29
2026/04/01 13:24:55 [notice] 1#1: start worker process 30
2026/04/01 13:24:55 [notice] 1#1: start worker process 31
2026/04/01 13:24:55 [notice] 1#1: start worker process 32
2026/04/01 13:24:55 [notice] 1#1: start worker process 33
2026/04/01 13:24:55 [notice] 1#1: start worker process 34
2026/04/01 13:24:55 [notice] 1#1: start worker process 35
2026/04/01 13:24:55 [notice] 1#1: start worker process 36
2026/04/01 13:24:55 [notice] 1#1: start worker process 37
2026/04/01 13:24:55 [notice] 1#1: start worker process 38
2026/04/01 13:24:55 [notice] 1#1: start worker process 39
2026/04/01 13:24:55 [notice] 1#1: start worker process 40
2026/04/01 13:24:55 [notice] 1#1: start worker process 41
2026/04/01 13:24:55 [notice] 1#1: start worker process 42
2026/04/01 13:24:55 [notice] 1#1: start worker process 43
2026/04/01 13:24:55 [notice] 1#1: start worker process 44
```



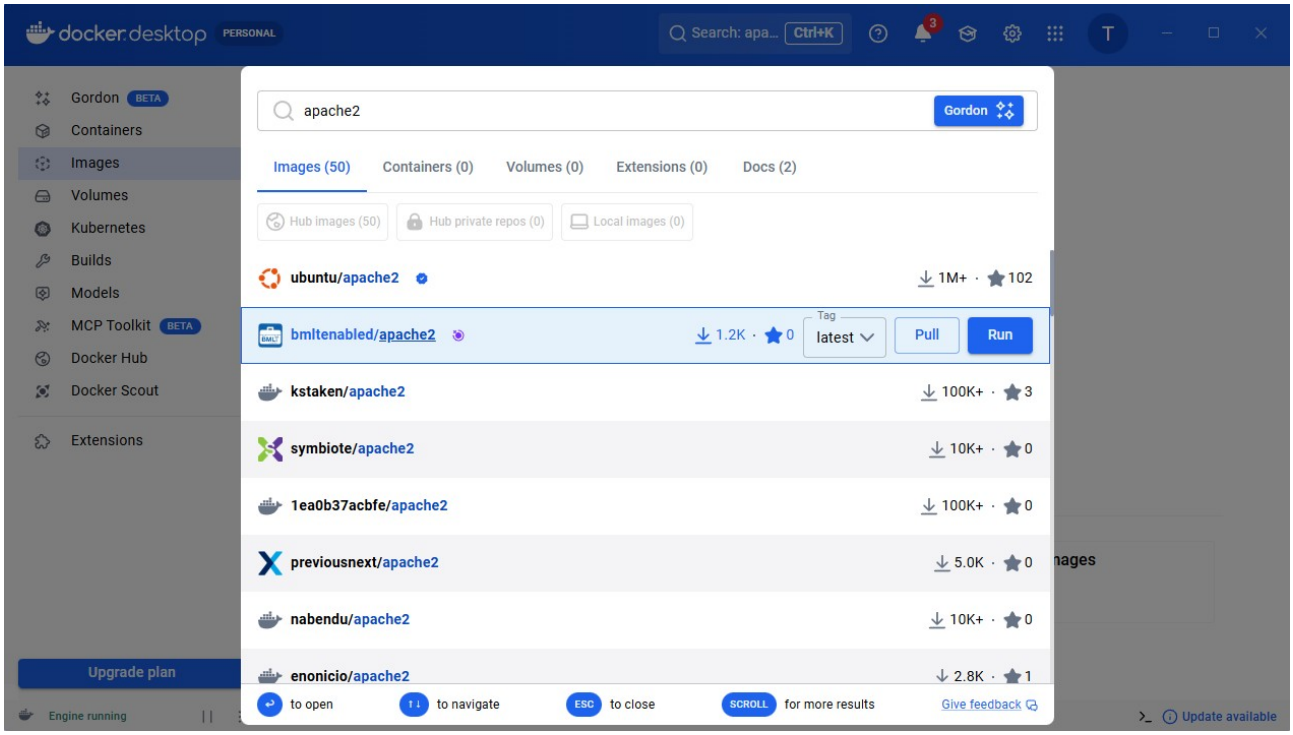

docker desktop
PERSONAL
Search
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Containers
Give feedback
Container CPU usage
0.00% / 1600% (16 CPUs available)
Container memory usage
16.41MB / 14.95GB
Show charts
Search
Only show running containers
Delete
Name
Container ID
Image
Port(s)
CPU (%)
Actions
nginx
cdc26d37c5bb
nginx
8080:80
0%
Walkthroughs
Multi-container applications
8 mins
Containerize your application
3 mins
View more in the Learning center
Engine running
RAM 1.71 GB CPU 0.06%
Disk: 1.73 GB used (limit 1006.85 GB)
Update available

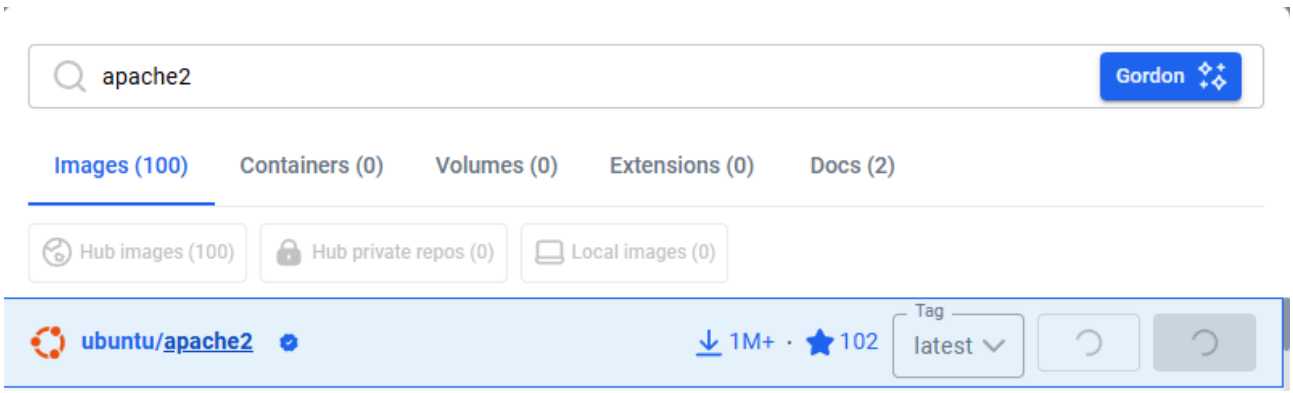

docker desktop
PERSONAL
Search
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Containers
Give feedback
Container CPU usage
No containers are running.
Container memory usage
No containers are running.
Show charts
Search
Only show running containers
Delete
Name
Container ID
Image
Port(s)
CPU (%)
Actions
nginx
cdc26d37c5bb
nginx
8080:80
N/A
Walkthroughs
Multi-container applications
8 mins
Containerize your application
3 mins
View more in the Learning center
Engine running
RAM 1.71 GB CPU 0.06%
Disk: 1.73 GB used (limit 1006.85 GB)
Update available

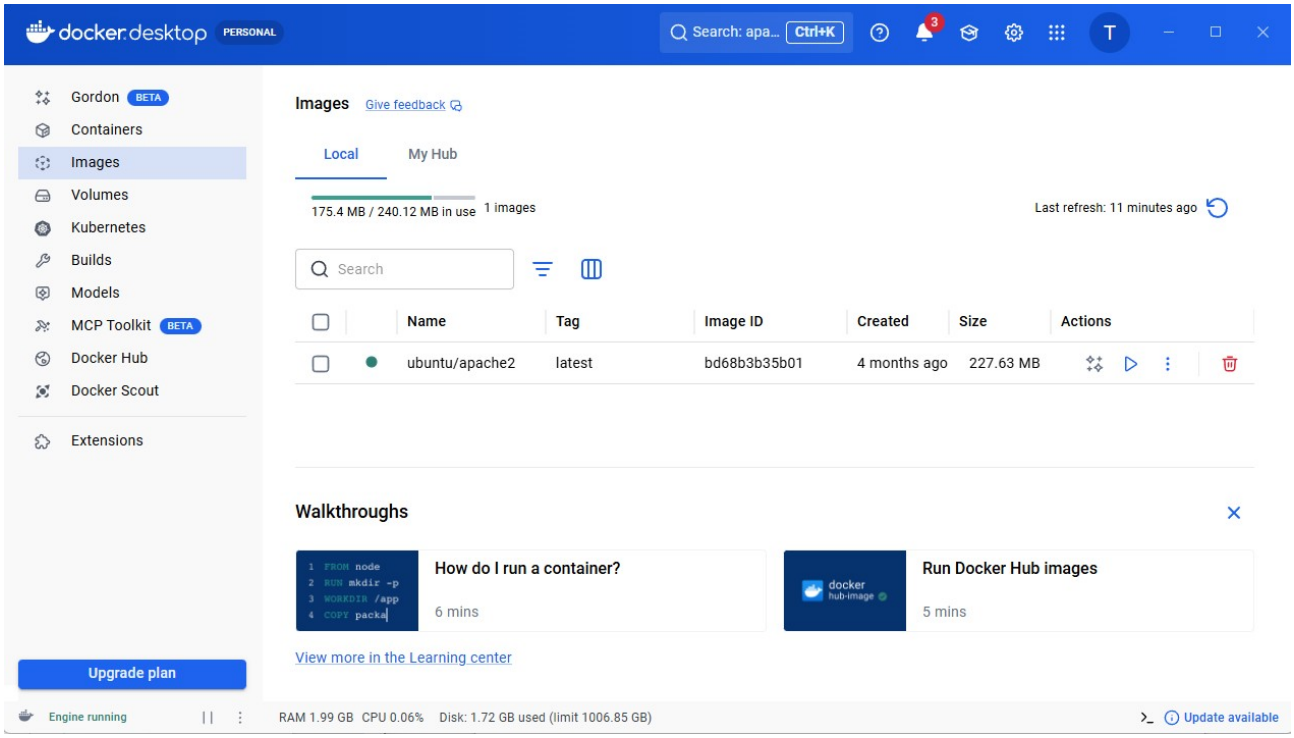

docker desktop
PERSONAL
Search
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Images
Give feedback
Local
My Hub
174.2 MB / 0 Bytes in use
1 images
Last refresh: 17 minutes ago
Search
Name
Tag
Image ID
Created
Size
Actions
nginx
latest
7150b3a39203
8 days ago
240 MB
Walkthroughs
How do I run a container?
6 mins
Run Docker Hub images
5 mins
View more in the Learning center
Engine running
RAM 1.64 GB CPU 0.00%
Disk: 1.73 GB used (limit 1006.85 GB)
Update available

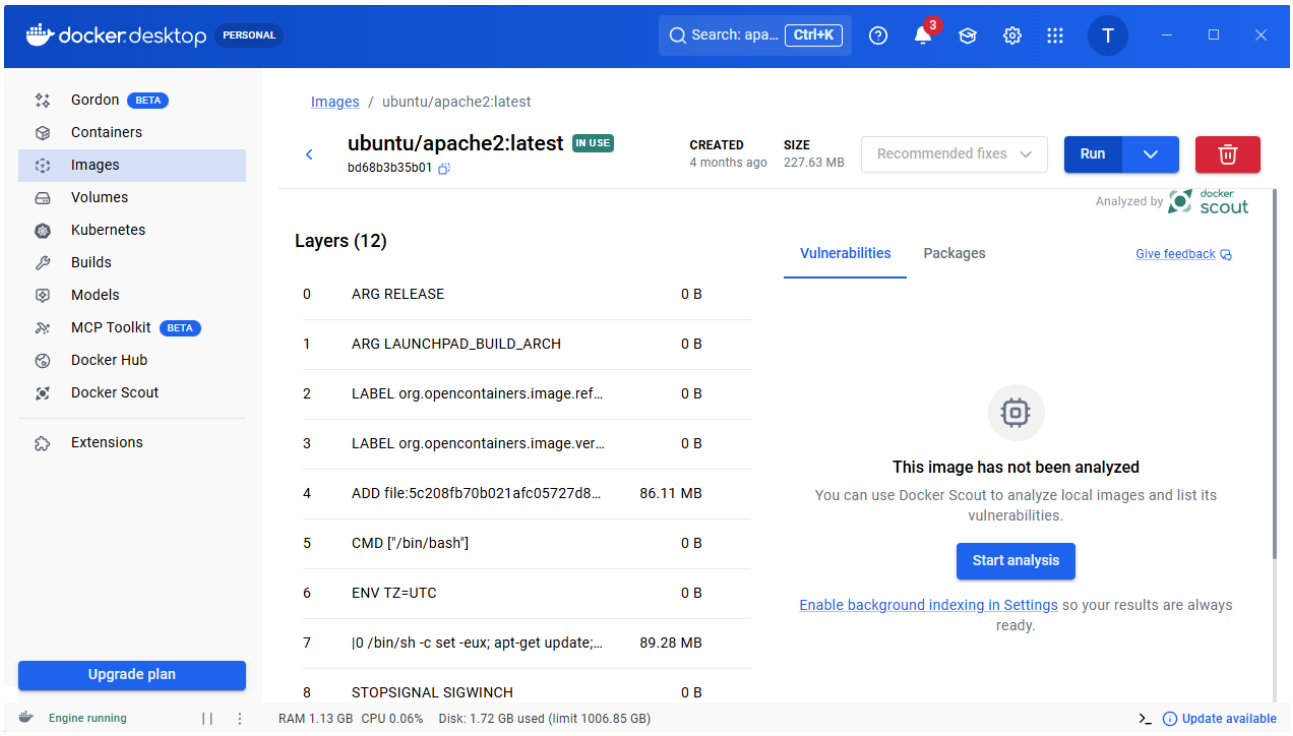
6 Troisième test.

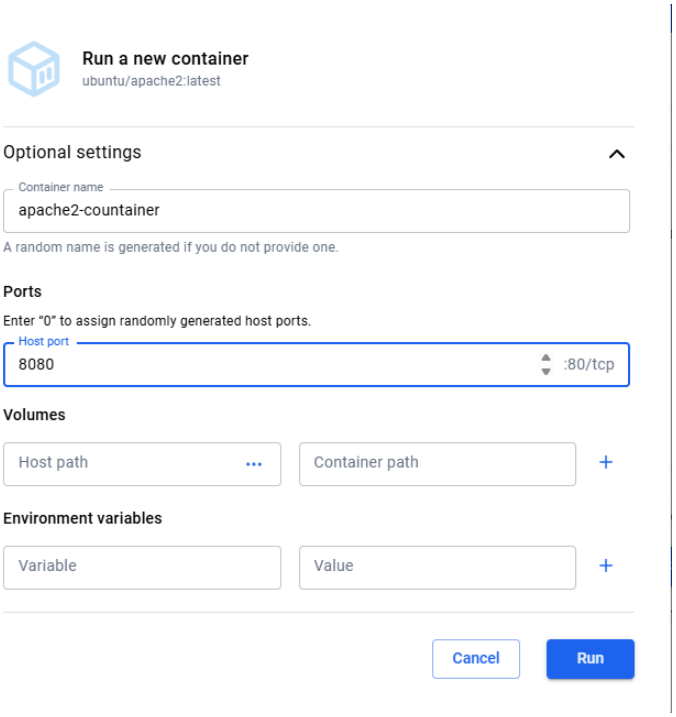
▪ On cherche une image a lancer

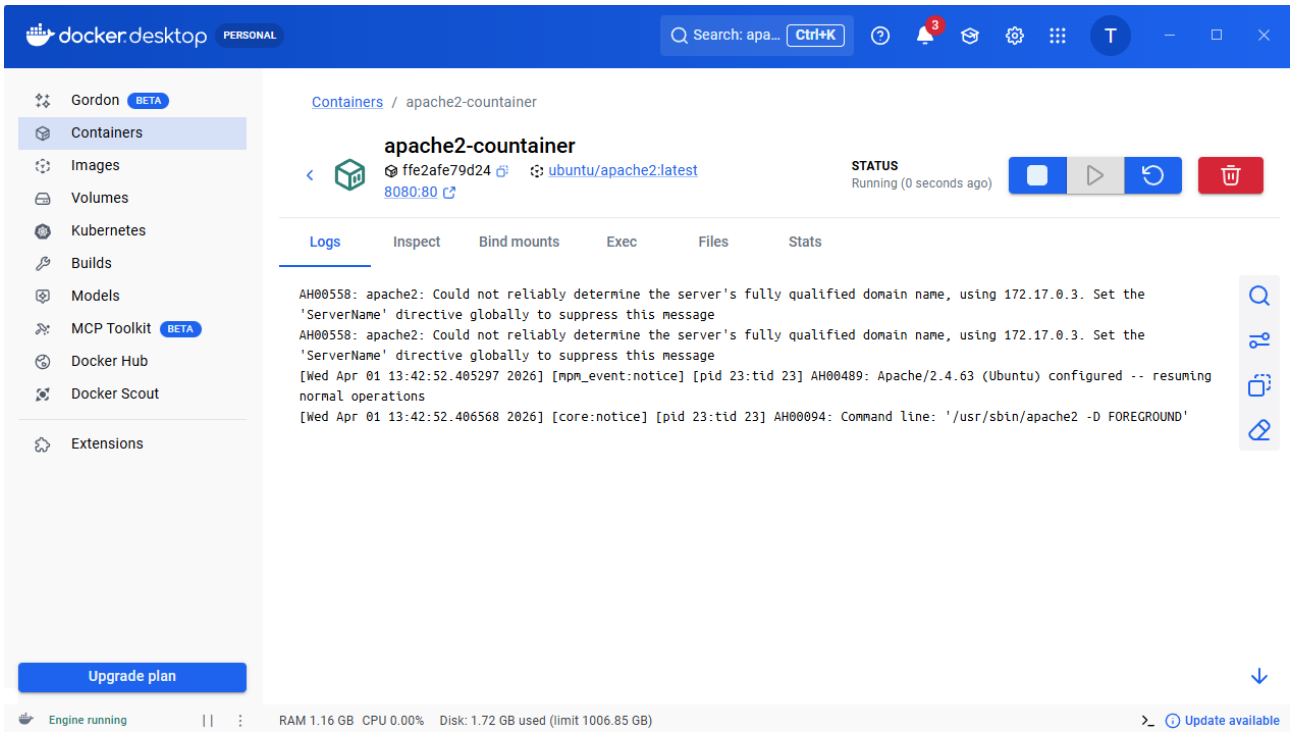


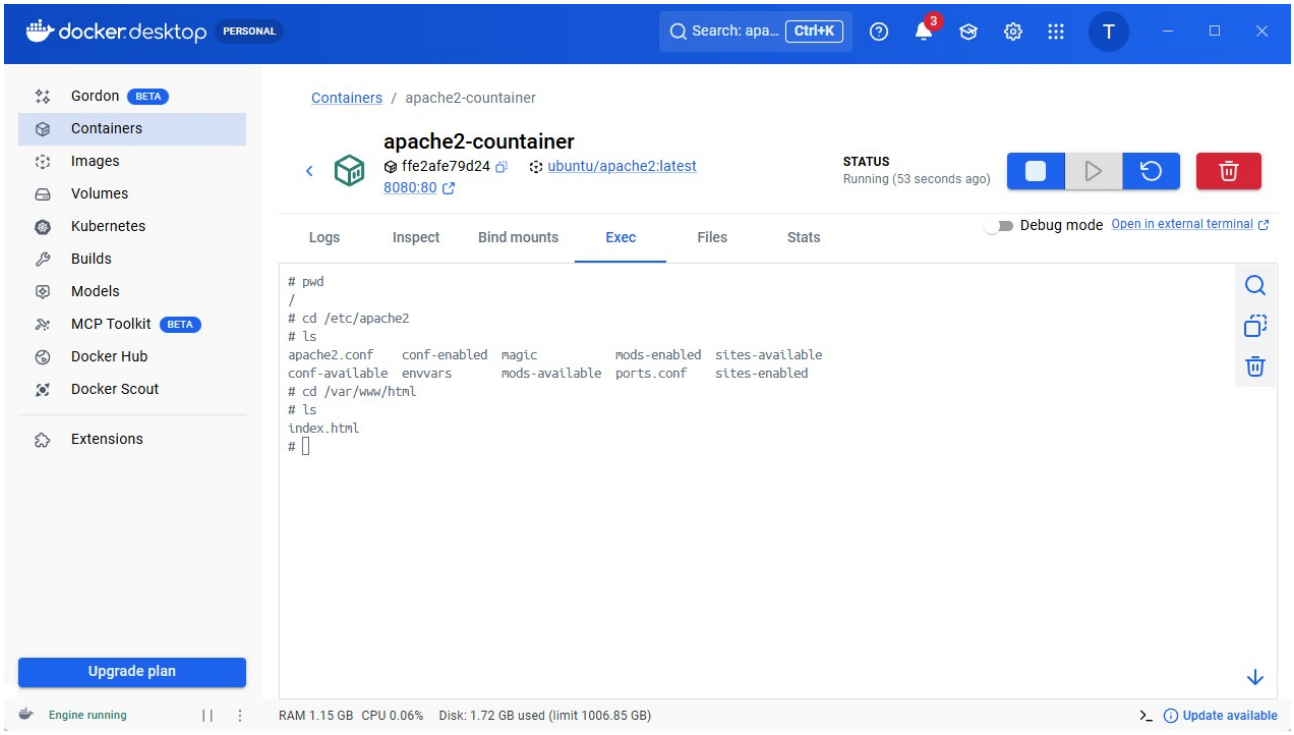


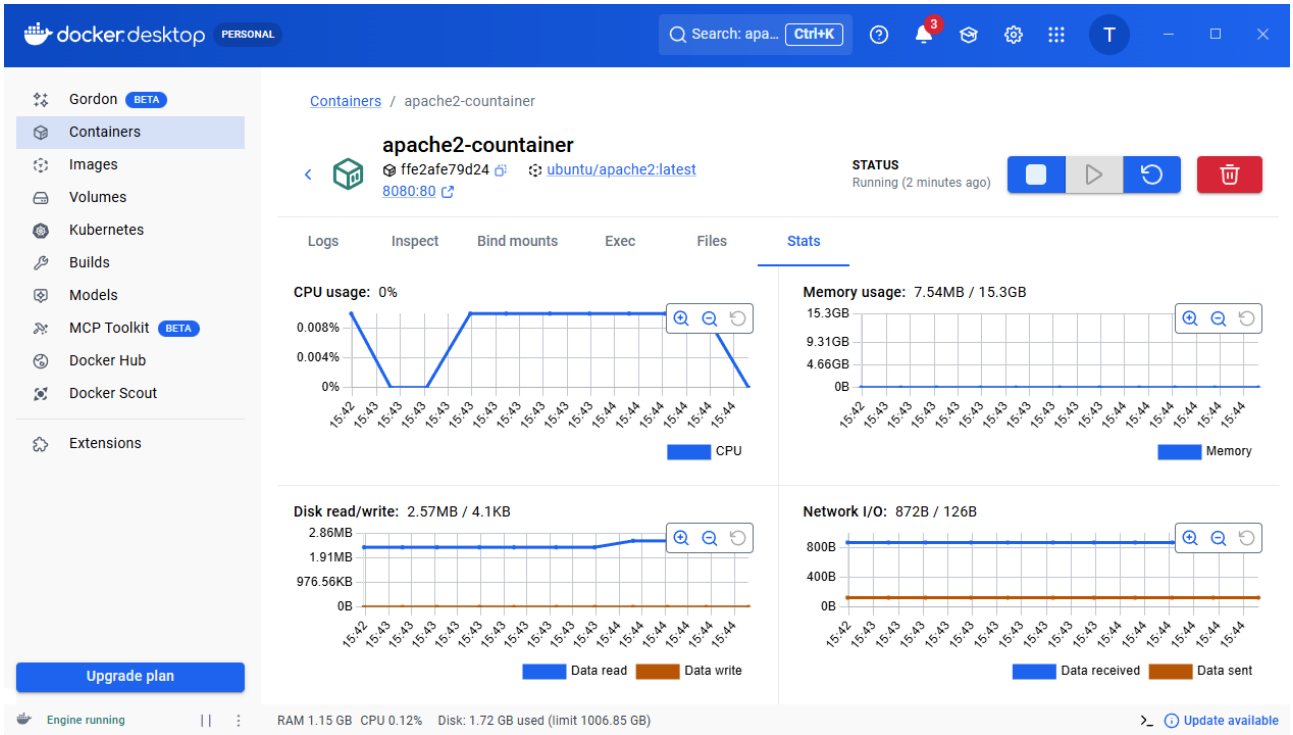

docker desktop
PERSONAL
Search: apa...
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Images
Give feedback
Local
My Hub
175.4 MB / 240.12 MB in use
1 images
Last refresh: 11 minutes ago
Search
Name
Tag
Image ID
Created
Size
Actions
ubuntu/apache2
latest
bd68b3b35b01
4 months ago
227.63 MB
Walkthroughs
How do I run a container?
6 mins
Run Docker Hub images
5 mins
View more in the Learning center
Engine running
RAM 1.99 GB CPU 0.06%
Disk: 1.72 GB used (limit 1006.85 GB)
Update available

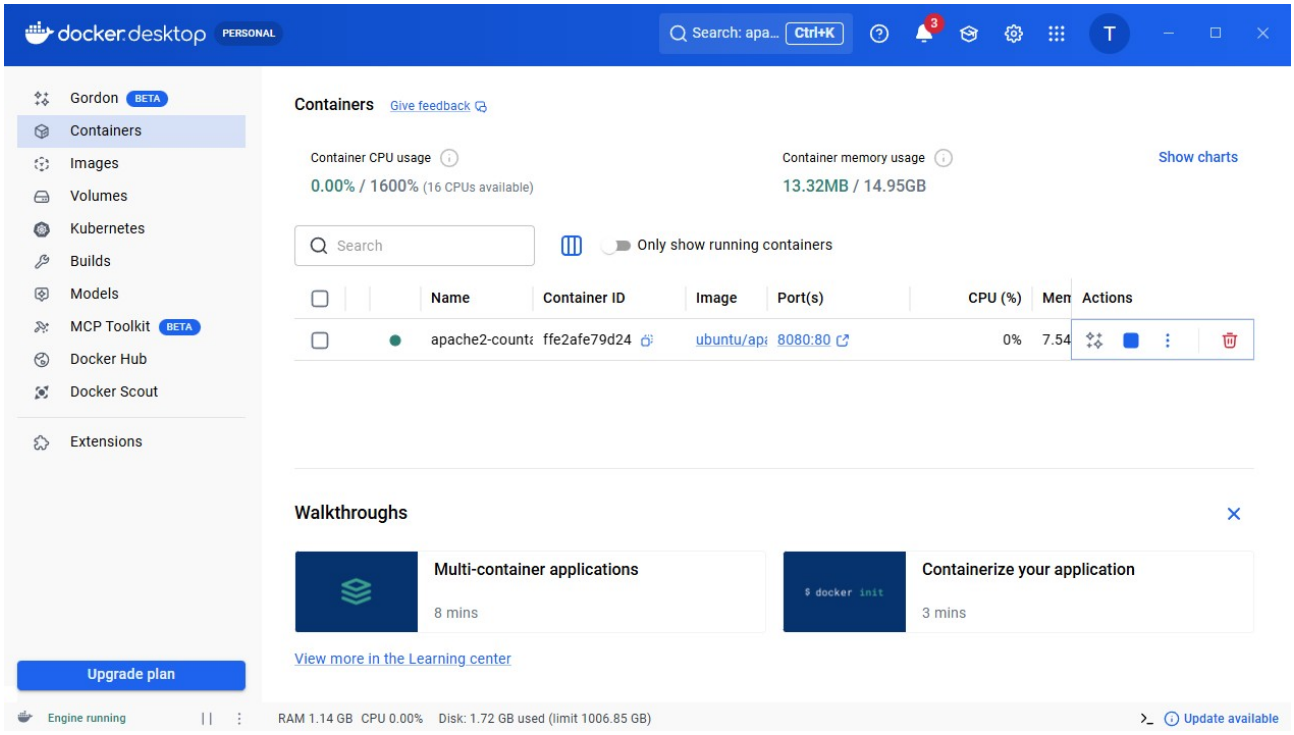

docker desktop
PERSONAL
Search: apa...
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Images / ubuntu/apache2:latest
ubuntu/apache2:latest
IN USE
bd68b3b35b01
CREATED
4 months ago
SIZE
227.63 MB
Recommended fixes
Run
Analyzed by docker scout
Layers (12)
0 ARG RELEASE 0 B
1 ARG LAUNCHPAD_BUILD_ARCH 0 B
2 LABEL org.opencontainers.image.ref... 0 B
3 LABEL org.opencontainers.image.ver... 0 B
4 ADD file:5c208fb70b021afc05727d8... 86.11 MB
5 CMD ["/bin/bash"] 0 B
6 ENV TZ=UTC 0 B
7 |0 /bin/sh -c set -eux; apt-get update;... 89.28 MB
8 STOPSIGNAL SIGWINCH 0 B
Vulnerabilities
Packages
Give feedback
This image has not been analyzed
You can use Docker Scout to analyze local images and list its vulnerabilities.
Start analysis
Enable background indexing in Settings so your results are always ready.
Engine running
RAM 1.13 GB CPU 0.06%
Disk: 1.72 GB used (limit 1006.85 GB)
Update available

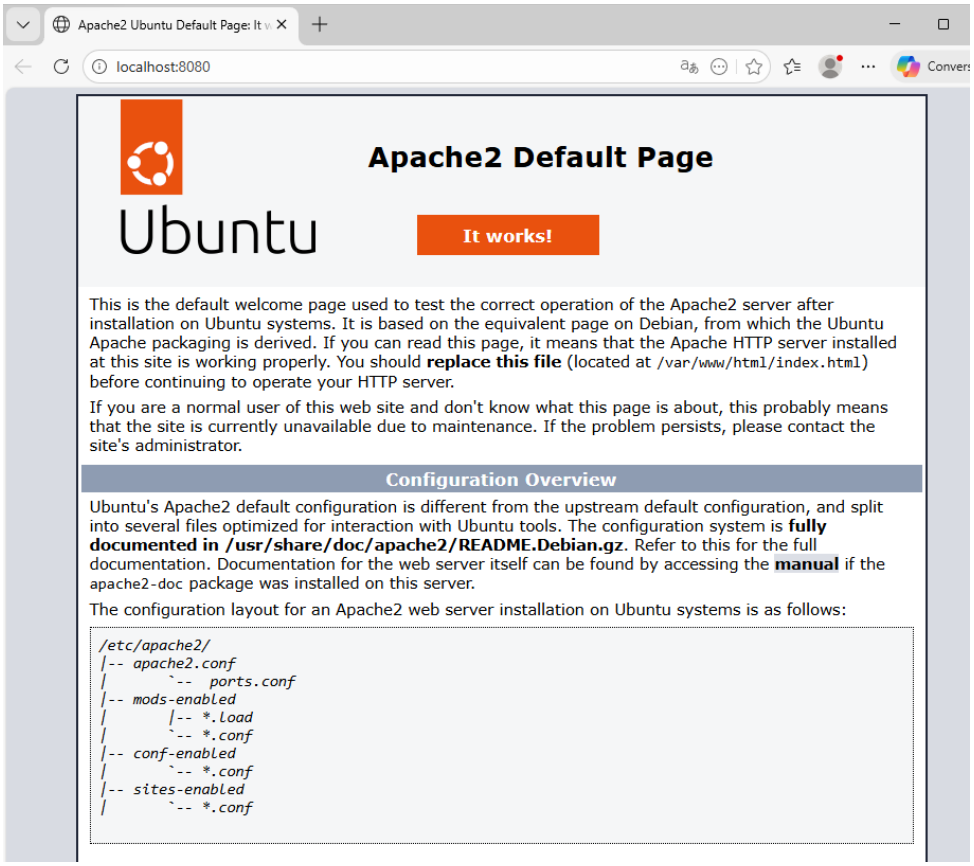

Run a new container
ubuntu/apache2:latest
Optional settings
Container name
apache2-container
A random name is generated if you do not provide one.
Ports
Enter "0" to assign randomly generated host ports.
Host port
8080
:80/tcp
Volumes
Host path
Container path
Environment variables
Variable
Value
Cancel
Run


docker desktop
PERSONAL
Search: apa...
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Containers / apache2-countainer
apache2-countainer
ffe2afe79d24
ubuntu/apache2:latest
8080:80
STATUS
Running (0 seconds ago)
Logs
Inspect
Bind mounts
Exec
Files
Stats
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.3. Set the 'ServerName' directive globally to suppress this message
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.3. Set the 'ServerName' directive globally to suppress this message
[Wed Apr 01 13:42:52.405297 2026] [mpm_event:notice] [pid 23:tid 23] AH00489: Apache/2.4.63 (Ubuntu) configured -- resuming normal operations
[Wed Apr 01 13:42:52.406568 2026] [core:notice] [pid 23:tid 23] AH00094: Command line: '/usr/sbin/apache2 -D FOREGROUND'
Engine running
RAM 1.16 GB CPU 0.00%
Disk: 1.72 GB used (limit 1006.85 GB)
Update available


docker desktop
PERSONAL
Search: apa...
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Containers / apache2-container
apache2-container
ffe2afe79d24
ubuntu/apache2:latest
8080:80
STATUS
Running (53 seconds ago)
Logs
Inspect
Bind mounts
Exec
Files
Stats
Debug mode
Open in external terminal
pwd
/
cd /etc/apache2
ls
apache2.conf conf-enabled magic mods-enabled sites-available
conf-available envvars mods-available ports.conf sites-enabled
cd /var/www/html
ls
index.html
#
Engine running
RAM 1.15 GB CPU 0.06% Disk: 1.72 GB used (limit 1006.85 GB)
Update available

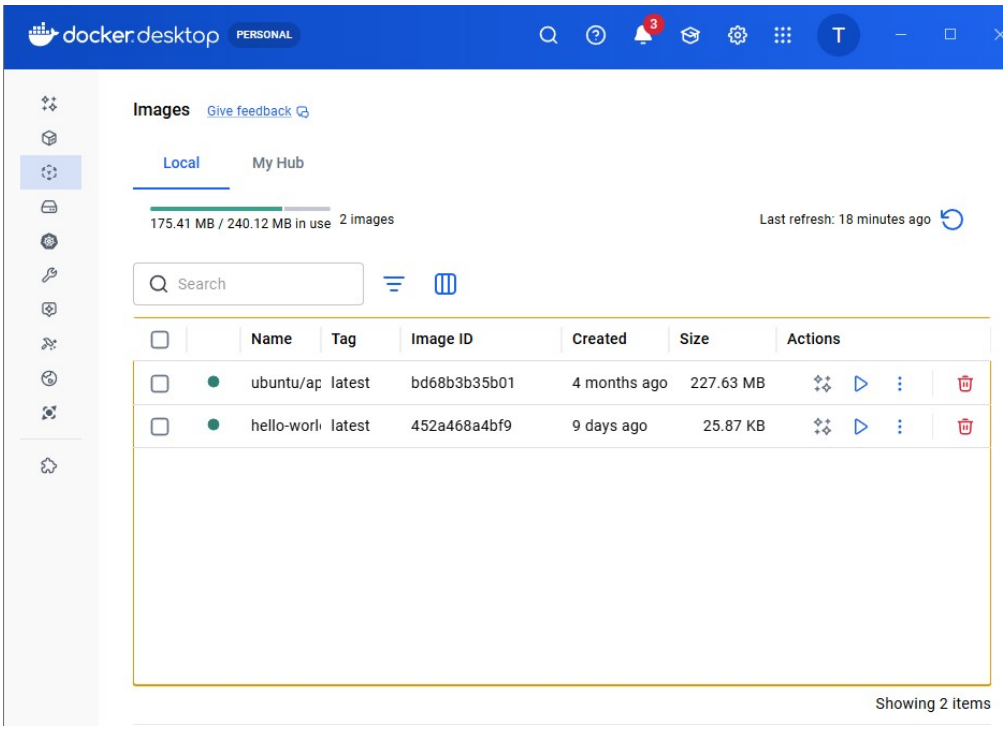

docker desktop
PERSONAL
Search: apa...
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Containers / apache2-container
apache2-container
ffe2afe79d24
ubuntu/apache2:latest
8080:80
STATUS
Running (2 minutes ago)
Logs
Inspect
Bind mounts
Exec
Files
Stats
CPU usage: 0%
0.008%
0.004%
0%
CPU
Memory usage: 7.54MB / 15.3GB
15.3GB
9.31GB
4.66GB
0B
Memory
Disk read/write: 2.57MB / 4.1KB
2.86MB
1.91MB
976.56KB
0B
Data read
Data write
Network I/O: 872B / 126B
800B
400B
0B
Data received
Data sent
Engine running
RAM 1.15 GB CPU 0.12% Disk: 1.72 GB used (limit 1006.85 GB)
Update available

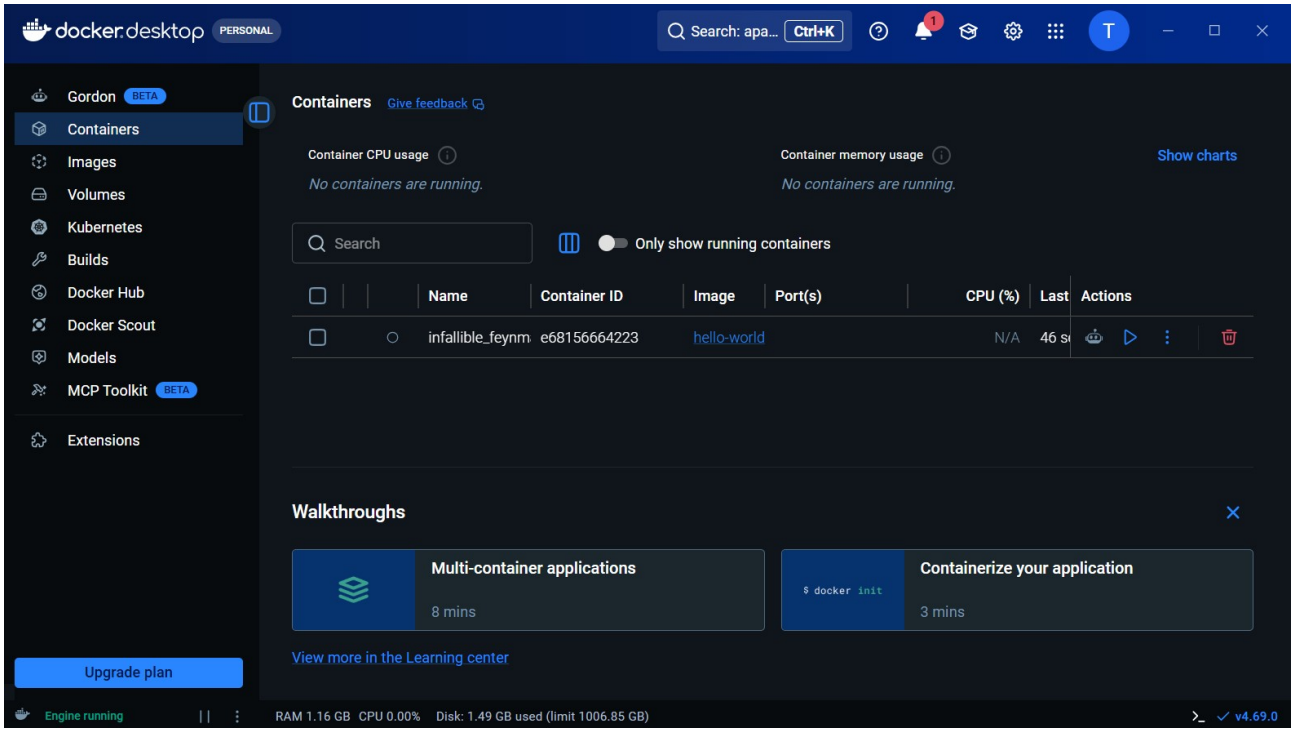

docker desktop
PERSONAL
Search: apa...
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Models
MCP Toolkit
BETA
Docker Hub
Docker Scout
Extensions
Upgrade plan
Containers
Give feedback
Container CPU usage
0.00% / 1600% (16 CPUs available)
Container memory usage
13.32MB / 14.95GB
Show charts
Search
Only show running containers
Name
Container ID
Image
Port(s)
CPU (%)
Mem
Actions
apache2-counta
ffe2afe79d24
ubuntu/apa
8080:80
0%
7.54
Walkthroughs
Multi-container applications
8 mins
$ docker init
Containerize your application
3 mins
View more in the Learning center
Engine running
RAM 1.14 GB CPU 0.00%
Disk: 1.72 GB used (limit 1006.85 GB)
Update available

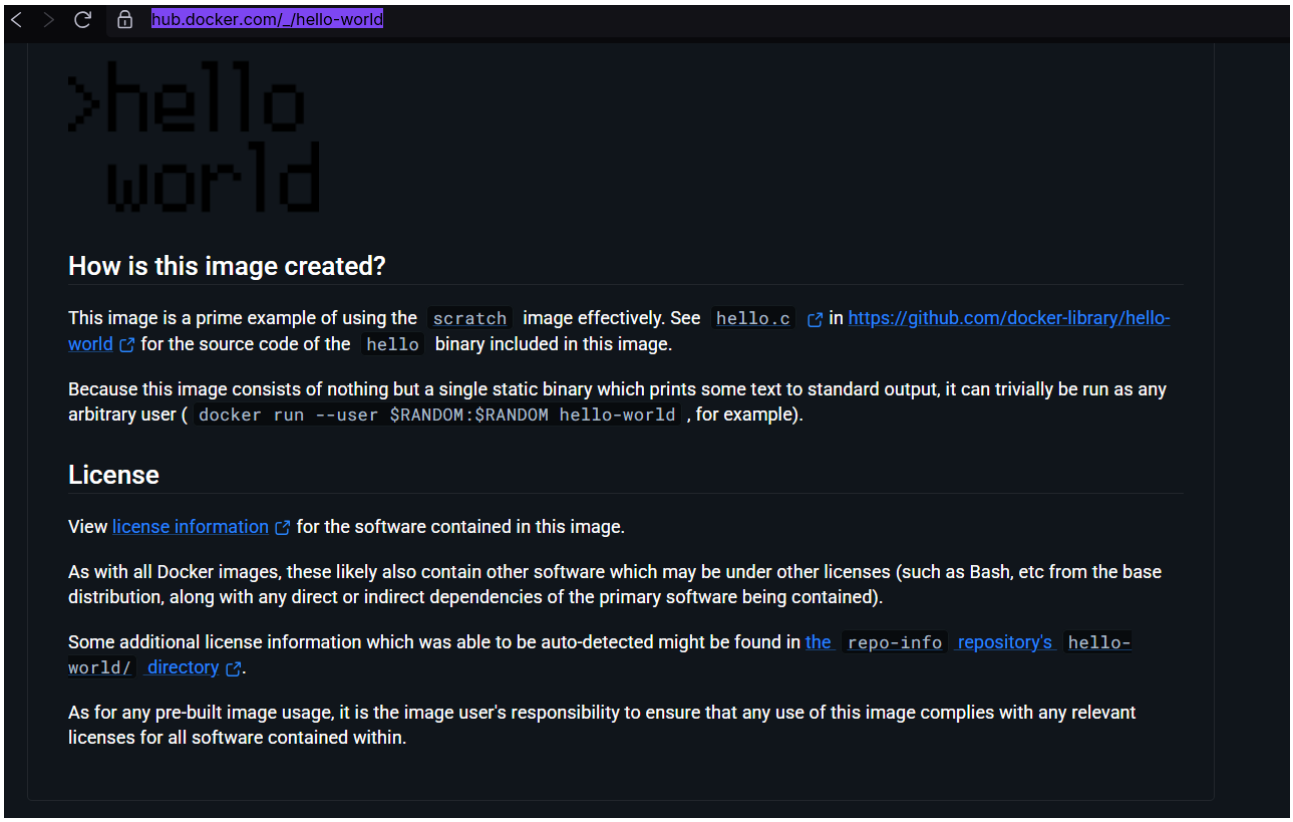

Apache2 Ubuntu Default Page: It
localhost:8080
Apache2 Default Page
Ubuntu
It works!
This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should replace this file (located at /var/www/html/index.html) before continuing to operate your HTTP server.
If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.
Configuration Overview
Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is fully documented in /usr/share/doc/apache2/README.Debian.gz. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the manual if the apache2-doc package was installed on this server.
The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:
/etc/apache2/
|-- apache2.conf
| `-- ports.conf
|-- mods-enabled
| |-- *.load
| `-- *.conf
|-- conf-enabled
| `-- *.conf
|-- sites-enabled
| `-- *.conf

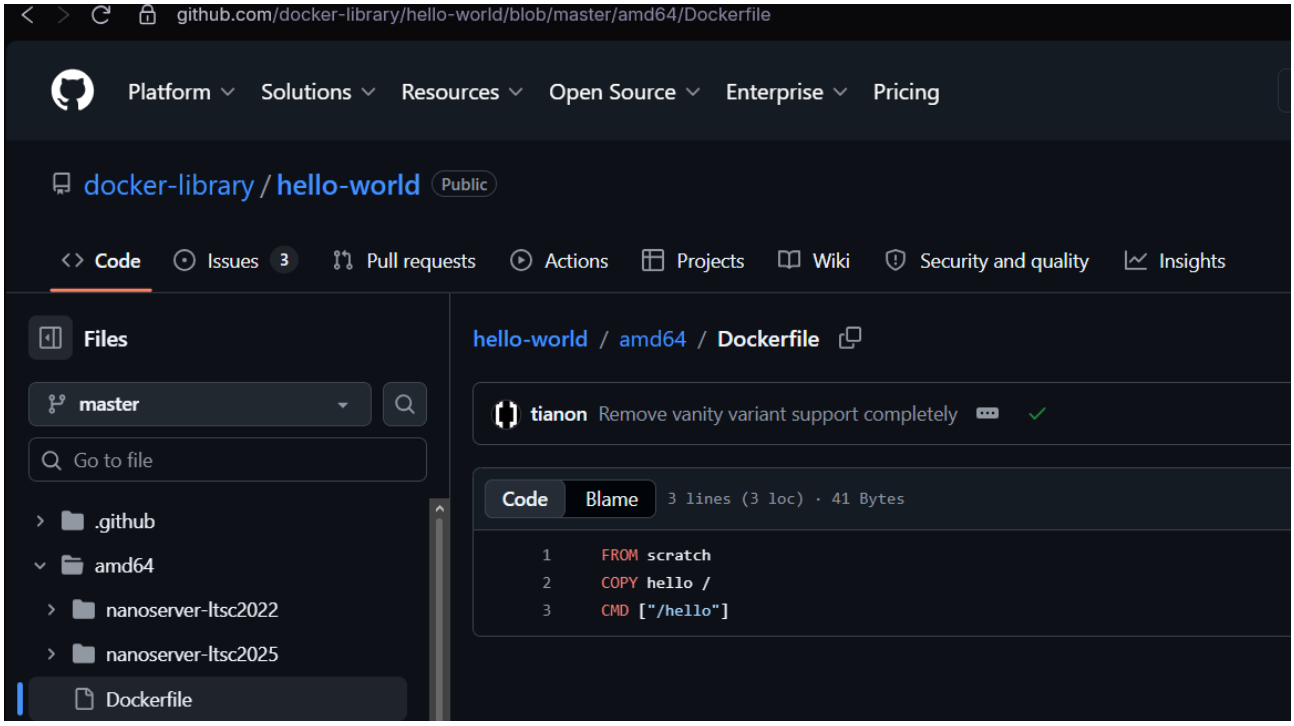
7 Quatrième test.

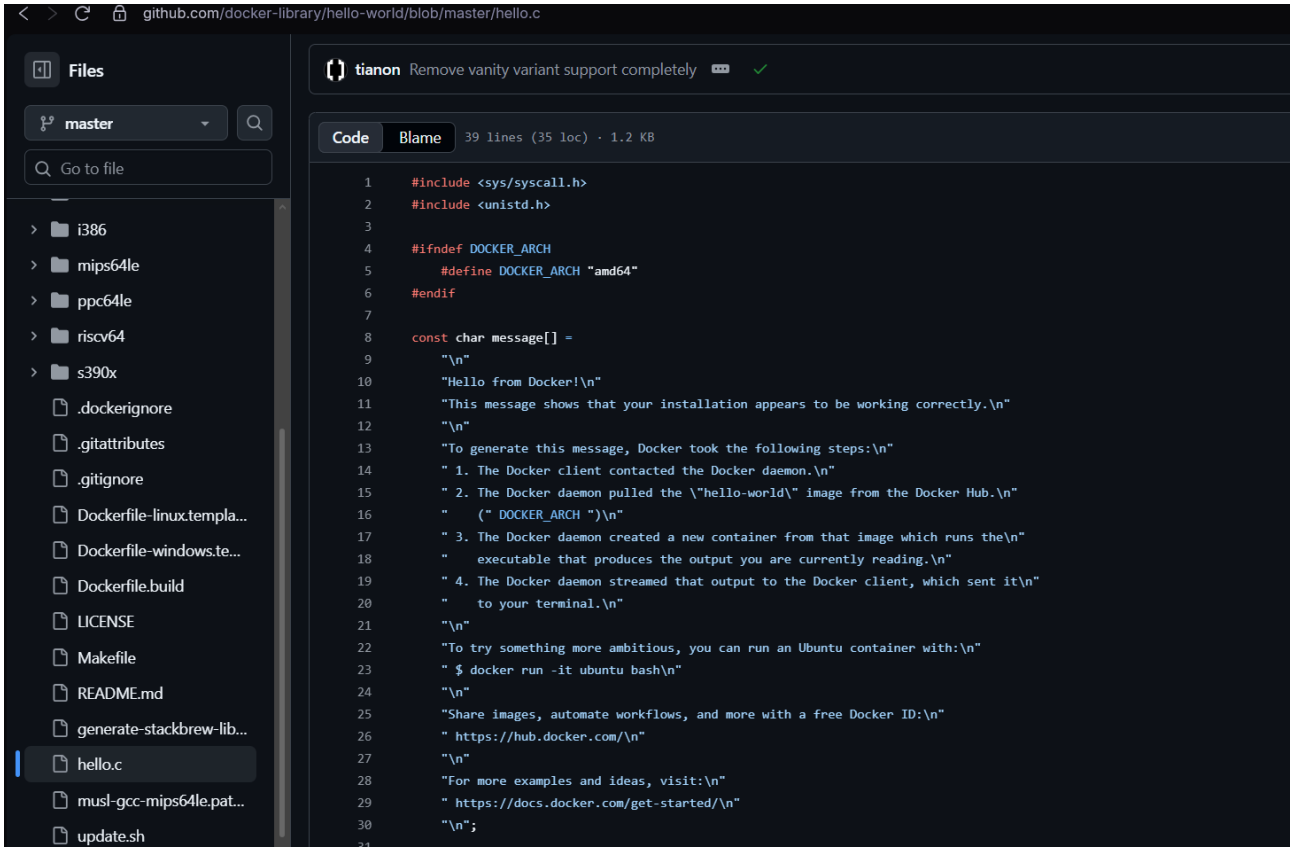
```
tfleury@G102-GB12: ~
tfleury@G102-GB12:~$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
4f55086f7dd0: Pull complete
d5e71e642bf5: Download complete
Digest: sha256:452a468a4bf985040037cb6d5392410206e47db9bf5b7278d281f94d1c2d0931
Status: 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/

tfleury@G102-GB12:~$
```




docker desktop
PERSONAL
Search: apa...
Ctrl+K
Gordon
BETA
Containers
Images
Volumes
Kubernetes
Builds
Docker Hub
Docker Scout
Models
MCP Toolkit
BETA
Extensions
Upgrade plan
Containers
Give feedback
Container CPU usage
No containers are running.
Container memory usage
No containers are running.
Show charts
Search
Only show running containers
Name
Container ID
Image
Port(s)
CPU (%)
Last
Actions
infallible_feynm
e68156664223
hello-world
N/A
Walkthroughs
Multi-container applications
8 mins
$ docker init
Containerize your application
3 mins
View more in the Learning center
Engine running
RAM 1.16 GB CPU 0.00%
Disk: 1.49 GB used (limit 1006.85 GB)
v4.69.0

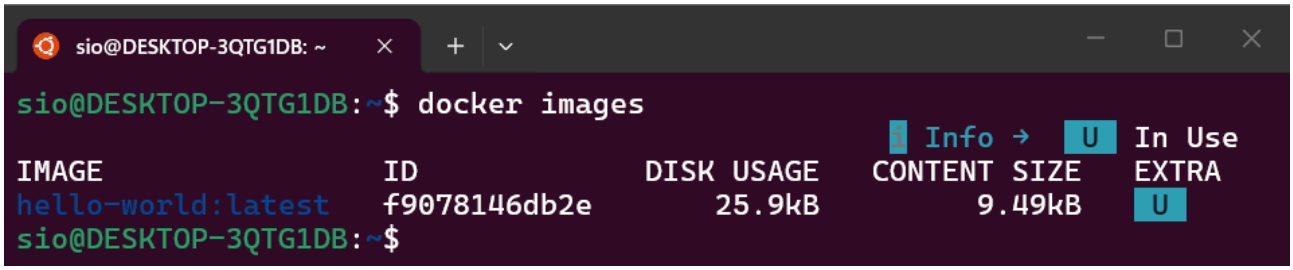

hub.docker.com/_/hello-world
>hello world
How is this image created?
This image is a prime example of using the scratch image effectively. See hello.c in https://github.com/docker-library/hello-world for the source code of the hello binary included in this image.
Because this image consists of nothing but a single static binary which prints some text to standard output, it can trivially be run as any arbitrary user (docker run --user $RANDOM:$RANDOM hello-world , for example).
License
View license information for the software contained in this image.
As with all Docker images, these likely also contain other software which may be under other licenses (such as Bash, etc from the base distribution, along with any direct or indirect dependencies of the primary software being contained).
Some additional license information which was able to be auto-detected might be found in the repo-info repository's hello-world/ directory.
As for any pre-built image usage, it is the image user's responsibility to ensure that any use of this image complies with any relevant licenses for all software contained within.


github.com/docker-library/hello-world/blob/master/amd64/Dockerfile
Platform
Solutions
Resources
Open Source
Enterprise
Pricing
docker-library / hello-world
Public
Code
Issues 3
Pull requests
Actions
Projects
Wiki
Security and quality
Insights
Files
master
Go to file
.github
amd64
nanoserver-ltsc2022
nanoserver-ltsc2025
Dockerfile
hello-world / amd64 / Dockerfile
tianon Remove vanity variant support completely
Code
Blame
3 lines (3 loc) · 41 Bytes
1 FROM scratch
2 COPY hello /
3 CMD ["/hello"]

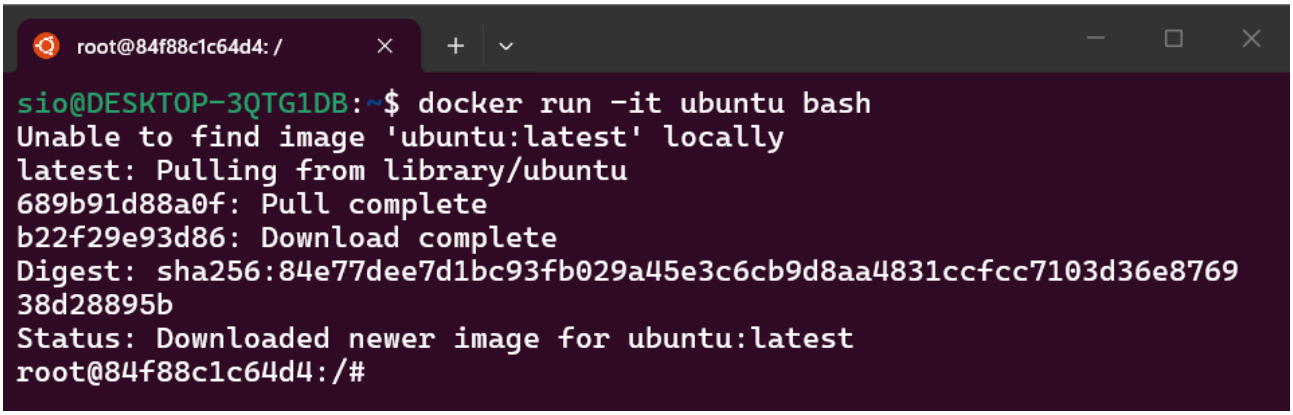

github.com/docker-library/hello-world/blob/master/hello.c
Files
master
Go to file
i386
mips64le
ppc64le
riscv64
s390x
.dockerignore
.gitattributes
.gitignore
Dockerfile-linux.templa...
Dockerfile-windows.te...
Dockerfile.build
LICENSE
Makefile
README.md
generate-stackbrew-lib...
hello.c
musl-gcc-mips64le.pat...
update.sh
tianon Remove vanity variant support completely
Code
Blame
39 lines (35 loc) · 1.2 KB
#include <sys/syscall.h>
#include <unistd.h>
#ifndef DOCKER_ARCH
#define DOCKER_ARCH "amd64"
#endif
const char message[] =
"\n"
"Hello from Docker!\n"
"This message shows that your installation appears to be working correctly.\n"
"\n"
"To generate this message, Docker took the following steps:\n"
" 1. The Docker client contacted the Docker daemon.\n"
" 2. The Docker daemon pulled the \"hello-world\" image from the Docker Hub.\n"
" (" DOCKER_ARCH ")\n"
" 3. The Docker daemon created a new container from that image which runs the\n"
" executable that produces the output you are currently reading.\n"
" 4. The Docker daemon streamed that output to the Docker client, which sent it\n"
" to your terminal.\n"
"\n"
"To try something more ambitious, you can run an Ubuntu container with:\n"
" $ docker run -it ubuntu bash\n"
"\n"
"Share images, automate workflows, and more with a free Docker ID:\n"
" https://hub.docker.com/\n"
"\n"
"For more examples and ideas, visit:\n"
" https://docs.docker.com/get-started/\n"
"\n";

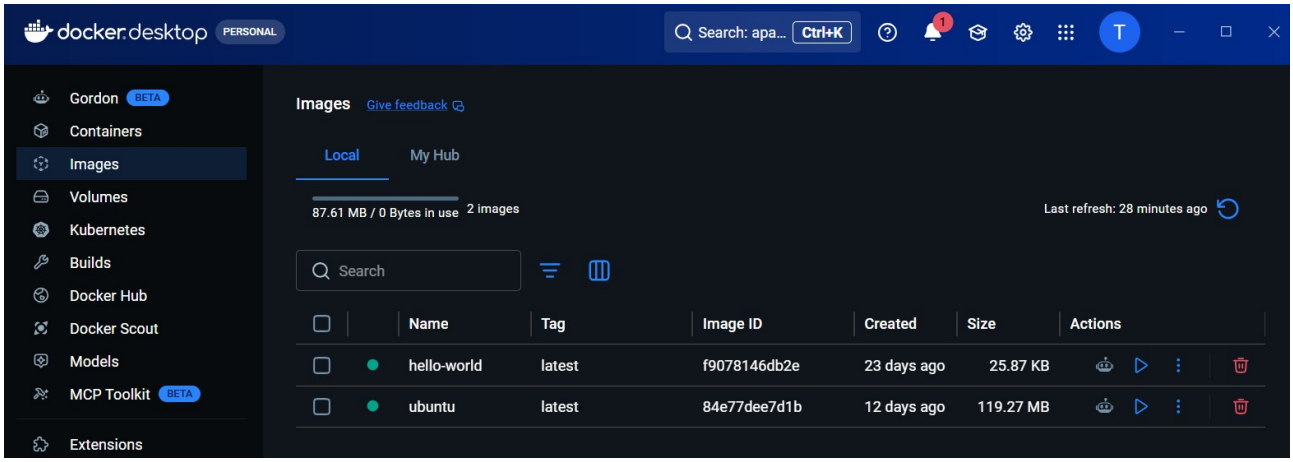
8 . Cinquième test : mode interactif d'utilisation d'un conteneur.

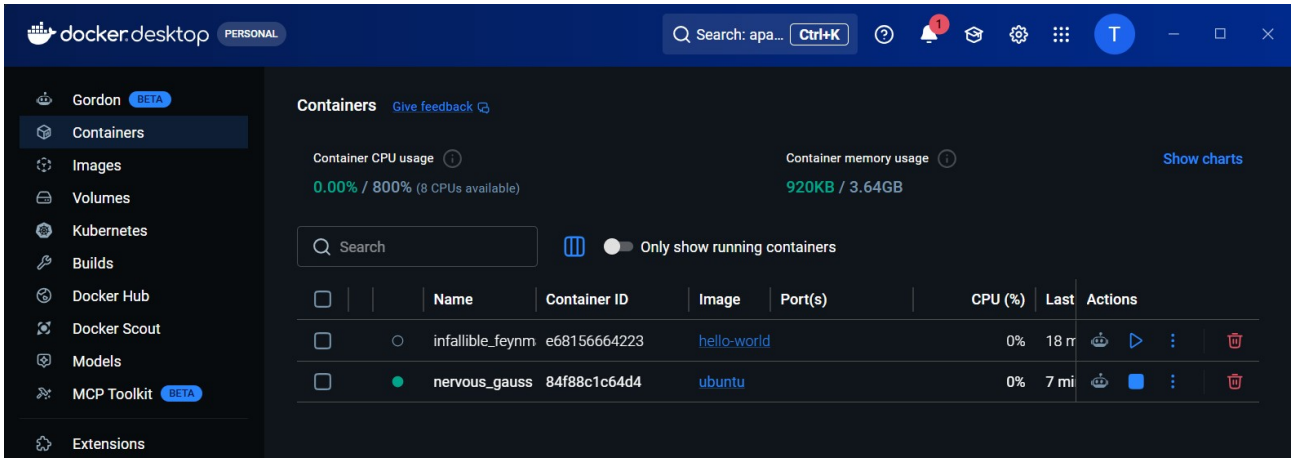
▪ Commande docker images : liste toutes les images sur le cache local de la machine (identifiant = code hexadécimal)



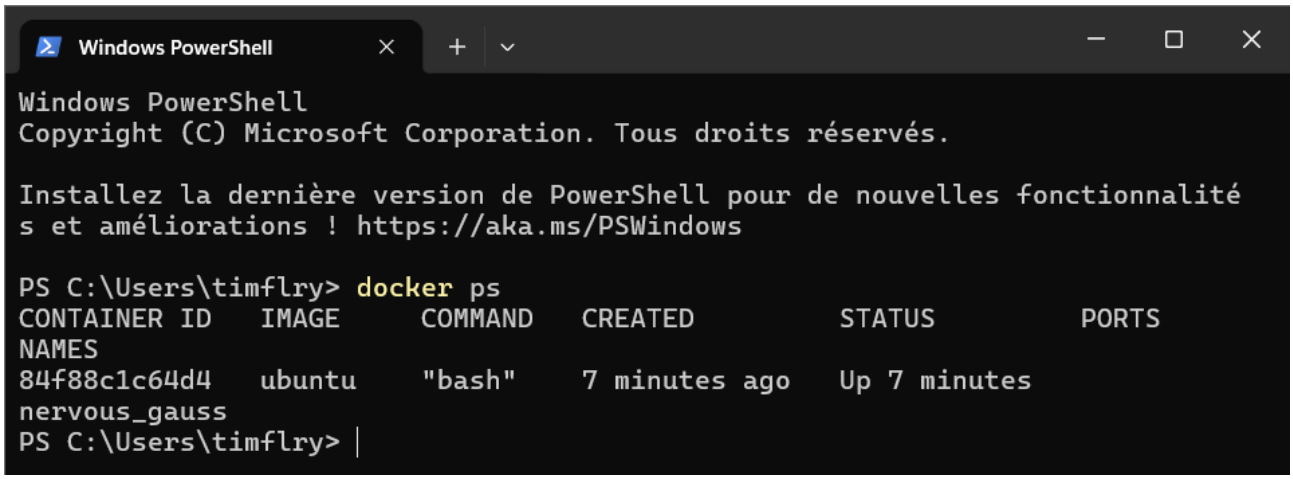
▪ Lancement d'un conteneur en mode interactif qui lancera un shell bash qui interprètera les commandes :



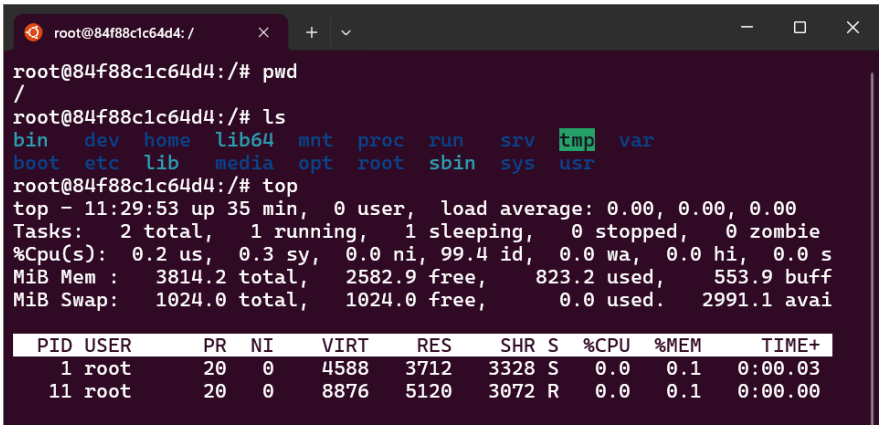




▪ La commande docker ps (depuis la console de la machine Ubuntu ou depuis le terminal Windows) permet de lister les containeurs en cours d'exécution :



▪ Taper quelques commandes (ctrl+c pour quitter la commande top).

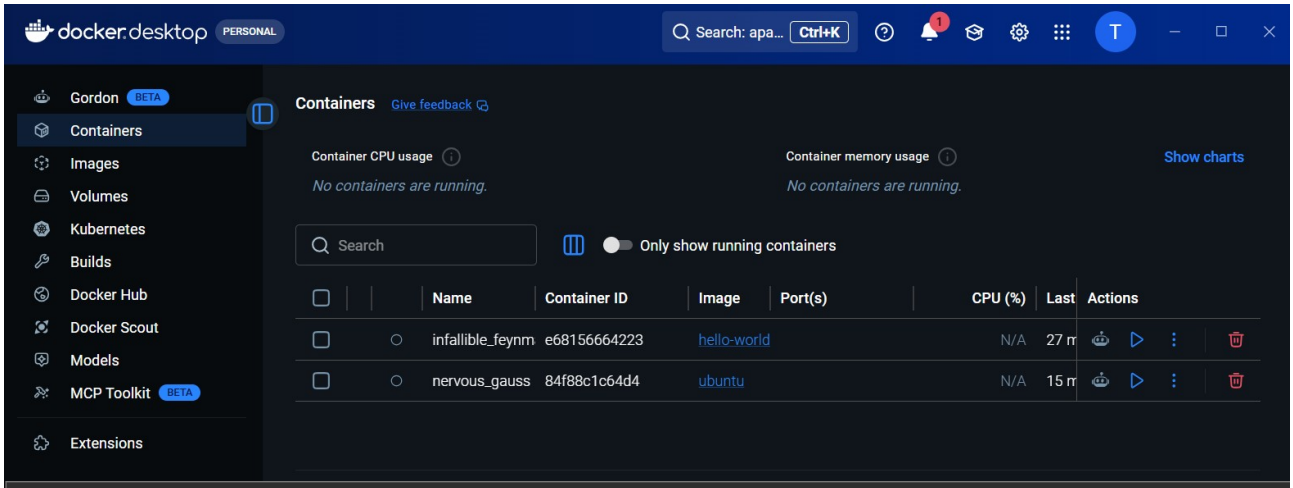


▪ Créer un fichier, vérifier sa présence :

```
root@84f88c1c64d4: /
root@84f88c1c64d4:/# touch fichier_test_persistance
root@84f88c1c64d4:/# ls
bin   etc                      lib    mnt   root  srv  usr
boot  fichier_test_persistance  lib64  opt   run   sys  var
dev   home                     media  proc  sbin  tmp
root@84f88c1c64d4:/#
```

▪ Supprimer /home, vérifier sa suppression puis stopper le conteneur.

```
sio@DESKTOP-3QTG1DB: ~
root@84f88c1c64d4:/# rm -fr /home
root@84f88c1c64d4:/# ls
bin   etc                      lib64  opt   run   sys  var
boot  fichier_test_persistance  media  proc  sbin  tmp
dev   lib                      mnt    root  srv   usr
root@84f88c1c64d4:/# exit
exit
sio@DESKTOP-3QTG1DB:~$
```




```
Windows PowerShell
PS C:\Users\timflry> docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
PS C:\Users\timflry>
```

```
Windows PowerShell
PS C:\Users\timflry> docker ps -a
CONTAINER ID   IMAGE         COMMAND    CREATED          STATUS
         PORTS     NAMES
84f88c1c64d4   ubuntu        "bash"     17 minutes ago   Exited (0) 2 minute
s ago             nervous_gauss
e68156664223   hello-world   "/hello"   30 minutes ago   Exited (0) 29 minut
es ago            infallible_feynman
PS C:\Users\timflry>
```

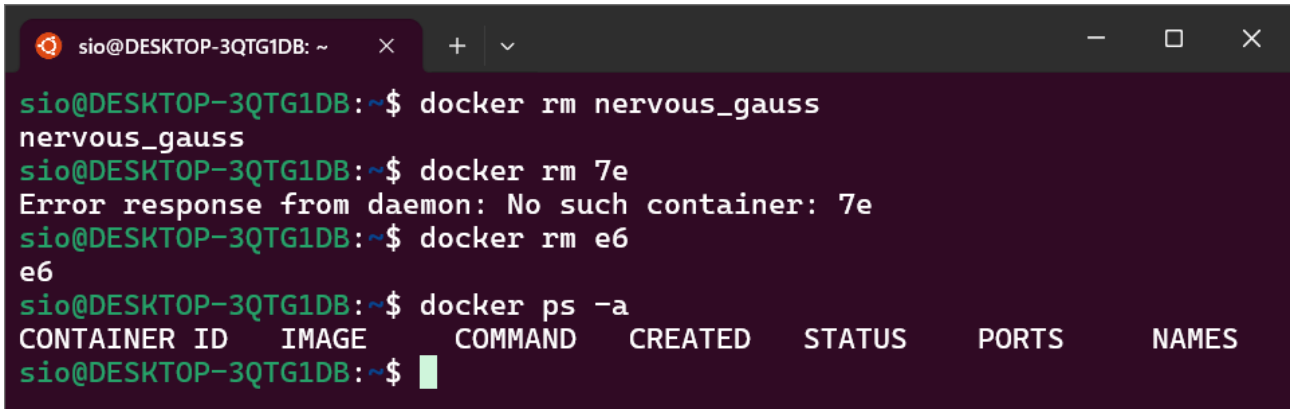
▪ Redémarrer le conteneur et y accéder (option -ai) :

```
sio@DESKTOP-3QTG1DB:~$ docker start 84f
84f
sio@DESKTOP-3QTG1DB:~$ docker stop 84f
84f
sio@DESKTOP-3QTG1DB:~$ docker start -ai 84f
root@84f88c1c64d4:/# ls
bin   etc                      lib64  opt   run   sys  var
boot  fichier_test_persistance  media  proc  sbin  tmp
dev   lib                      mnt    root  srv   usr
root@84f88c1c64d4:/# exit
exit
sio@DESKTOP-3QTG1DB:~$
```

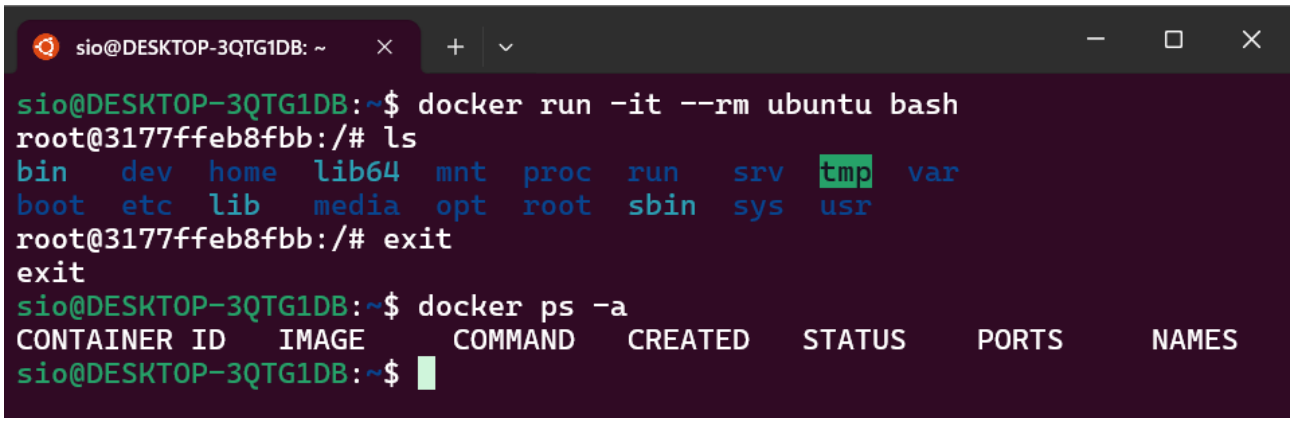
▪ Autre manière d'accéder au conteneur :

```
sio@DESKTOP-3QTG1DB:~$ docker start 84f
84f
sio@DESKTOP-3QTG1DB:~$ docker exec -it 84f bash
root@84f88c1c64d4:/# exit
exit
sio@DESKTOP-3QTG1DB:~$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED          STATUS          PO
RTS     NAMES
84f88c1c64d4   ubuntu    "bash"    30 minutes ago   Up 20 seconds
        nervous_gauss
sio@DESKTOP-3QTG1DB:~$ docker stop 84f
84f
sio@DESKTOP-3QTG1DB:~$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
sio@DESKTOP-3QTG1DB:~$ docker ps -a
CONTAINER ID   IMAGE         COMMAND    CREATED          STATUS
               PORTS     NAMES
84f88c1c64d4   ubuntu        "bash"     30 minutes ago   Exited (137)
15 seconds ago             nervous_gauss
e68156664223   hello-world   "/hello"   43 minutes ago   Exited (0) 42
 minutes ago               infallible_feynman
sio@DESKTOP-3QTG1DB:~$
```

▪ Supprimer en ligne de commande les 2 containers

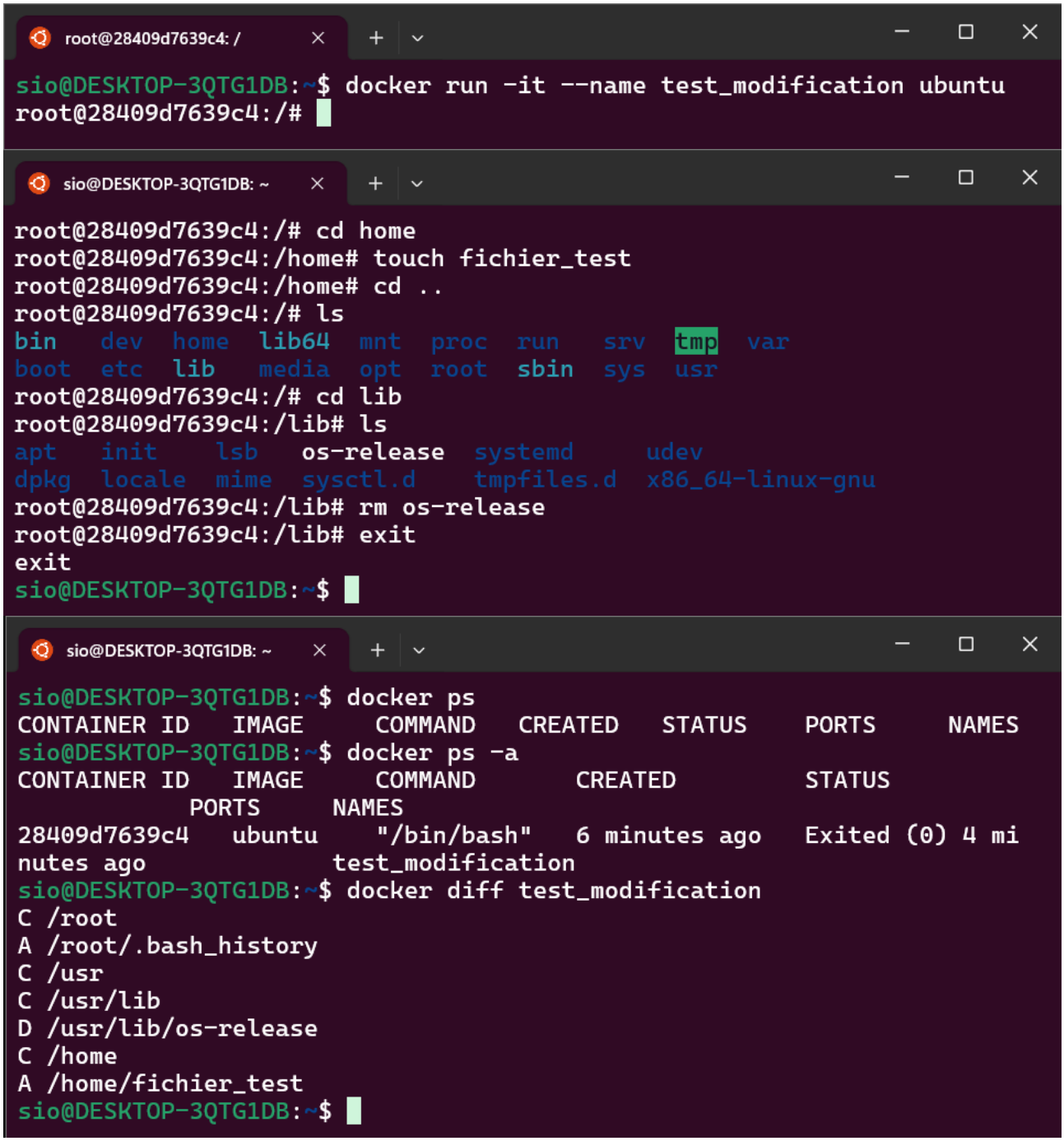


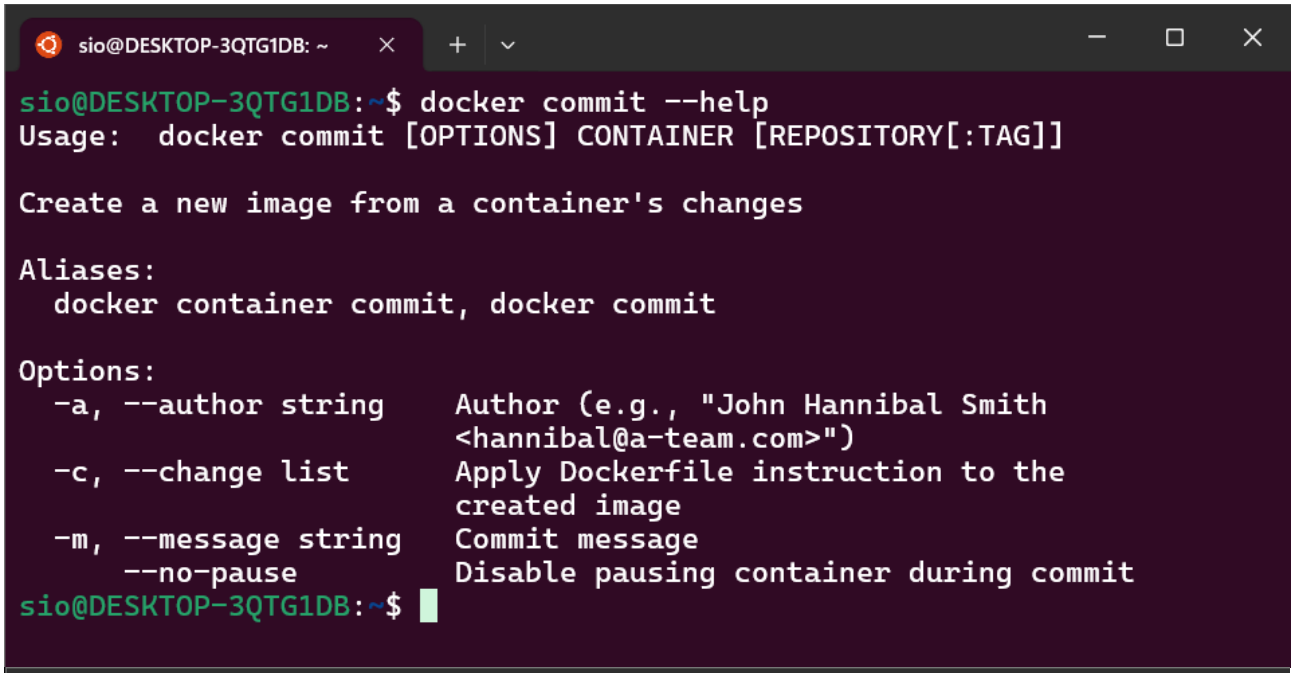
▪ Relancer l'image Ubuntu et constater la création d'un nouveau conteneur (évidemment, plus de fichier_test_persistance et de nouveau la présence de /home), prévoir la suppression automatique du conteneur après son utilisation avec l'option --rm :

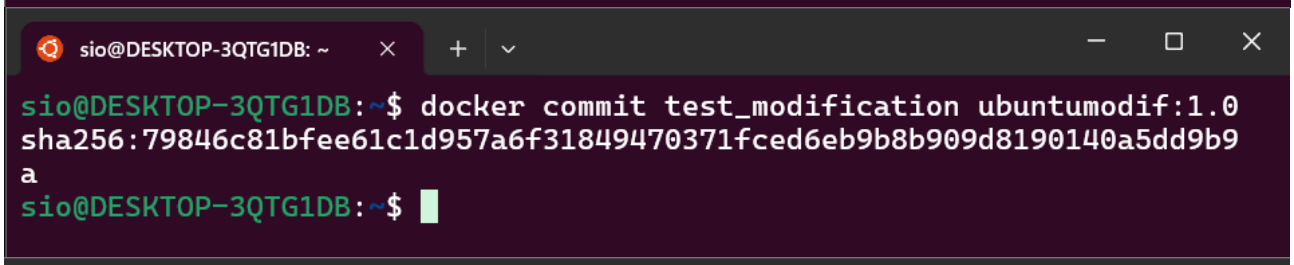


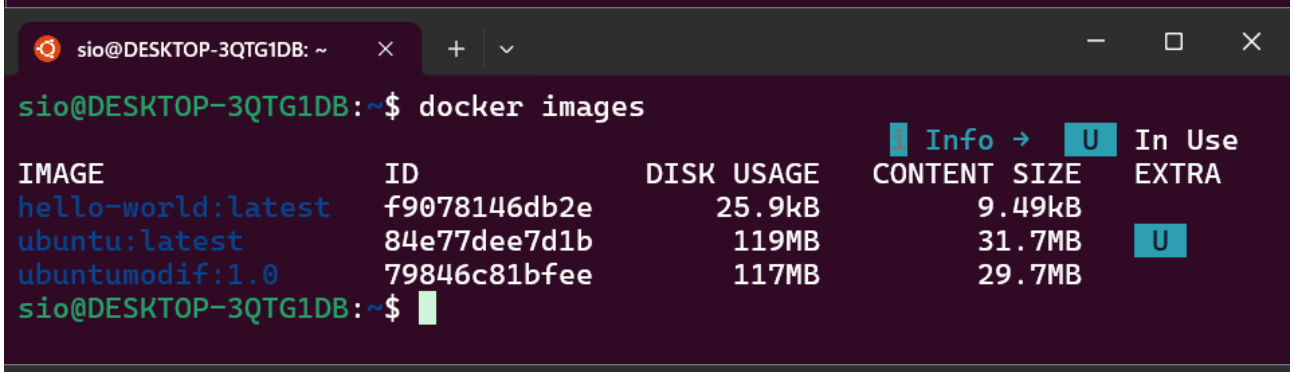
9 . Création d'une image à la main avec docker commit.

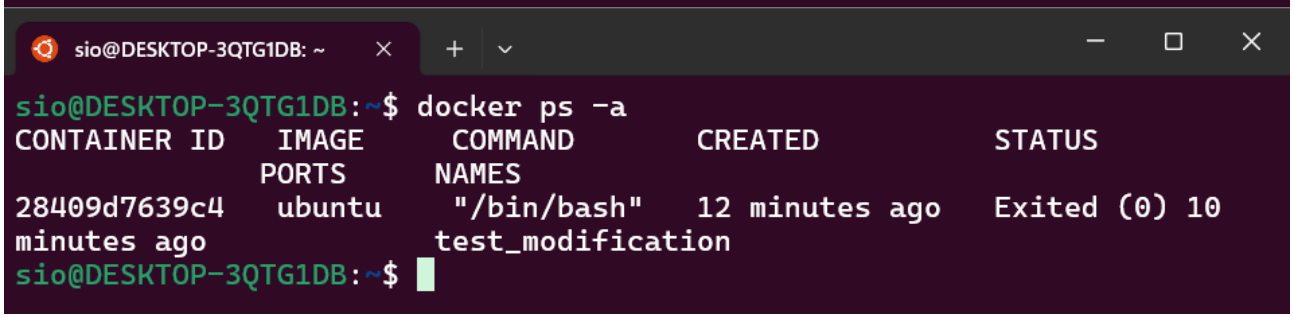
On souhaite conserver les modifications une fois le conteneur arrêté et supprimé.




sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker commit --help
Usage: docker commit [OPTIONS] CONTAINER [REPOSITORY[:TAG]]
Create a new image from a container's changes
Aliases:
  docker container commit, docker commit
Options:
  -a, --author string   Author (e.g., "John Hannibal Smith
                         <hannibal@a-team.com>")
  -c, --change list   Apply Dockerfile instruction to the
                         created image
  -m, --message string   Commit message
      --no-pause   Disable pausing container during commit
sio@DESKTOP-3QTG1DB:~$


sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker commit test_modification ubuntumodif:1.0
sha256:79846c81bfee61c1d957a6f31849470371fced6eb9b8b909d8190140a5dd9b9
a
sio@DESKTOP-3QTG1DB:~$


sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker images
i Info → U In Use
IMAGE   ID   DISK USAGE   CONTENT SIZE   EXTRA
hello-world:latest   f9078146db2e   25.9kB   9.49kB
ubuntu:latest   84e77dee7d1b   119MB   31.7MB   U
ubuntumodif:1.0   79846c81bfee   117MB   29.7MB
sio@DESKTOP-3QTG1DB:~$


sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker ps -a
CONTAINER ID   IMAGE   COMMAND   CREATED   STATUS
          PORTS   NAMES
28409d7639c4   ubuntu   "/bin/bash"   12 minutes ago   Exited (0) 10
minutes ago   test_modification
sio@DESKTOP-3QTG1DB:~$

```
sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker run -it --rm --name test ubuntumodif:1.0
root@3a667550246a:/# ls /home
fichier_test  ubuntu
root@3a667550246a:/# exit
exit
sio@DESKTOP-3QTG1DB:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND       CREATED          STATUS
              PORTS     NAMES
28409d7639c4   ubuntu    "/bin/bash"   15 minutes ago   Exited (0) 13
minutes ago             test_modification
sio@DESKTOP-3QTG1DB:~$
```

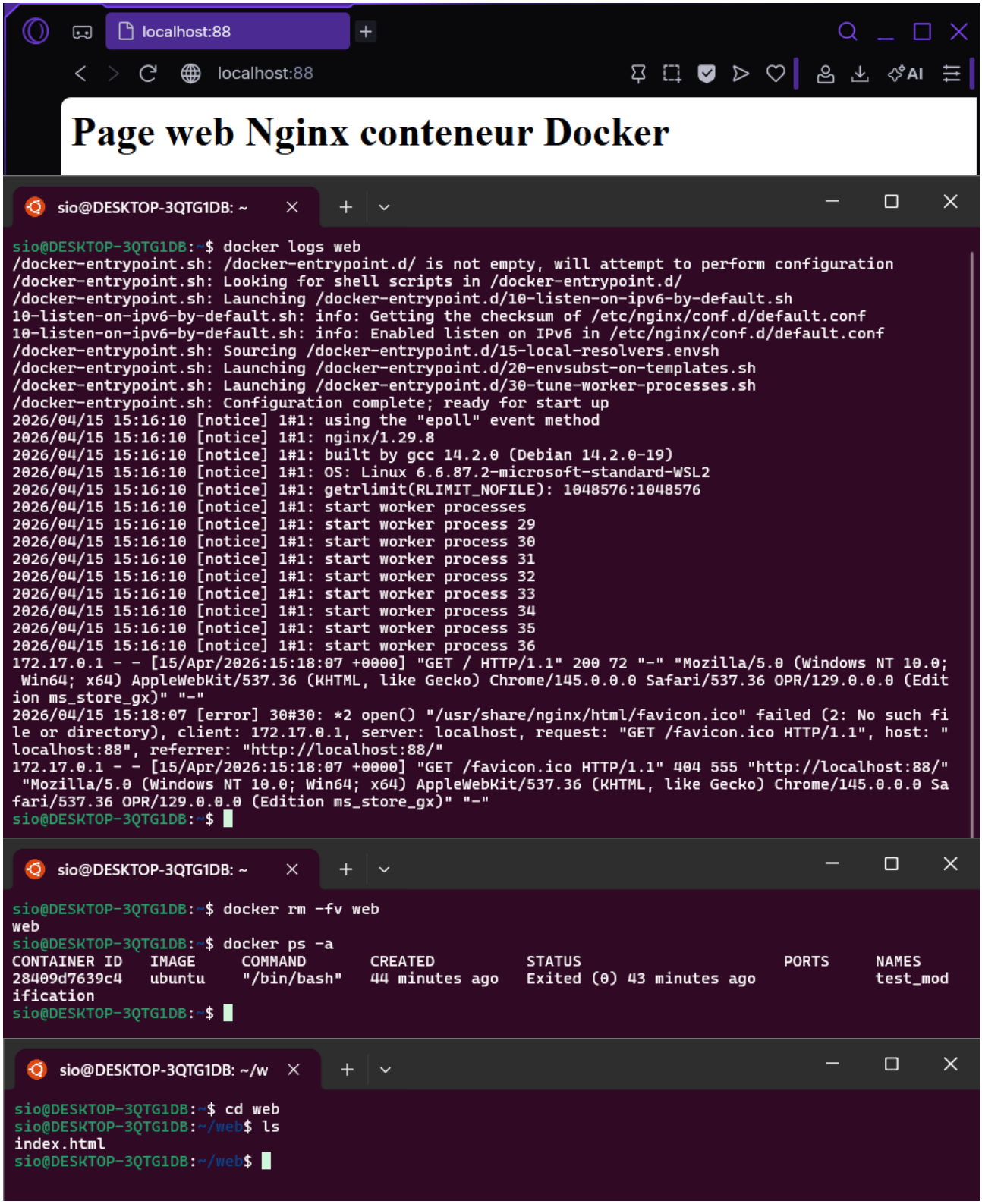
10 . Première approche des volumes.

Les données sont sur le système local : création d'un répertoire web sur la machine ubuntu :

```
sio@DESKTOP-3QTG1DB: ~/w
sio@DESKTOP-3QTG1DB:~$ pwd
/home/sio
sio@DESKTOP-3QTG1DB:~$ mkdir web
sio@DESKTOP-3QTG1DB:~$ cd web
sio@DESKTOP-3QTG1DB:~/web$ nano index.html
```

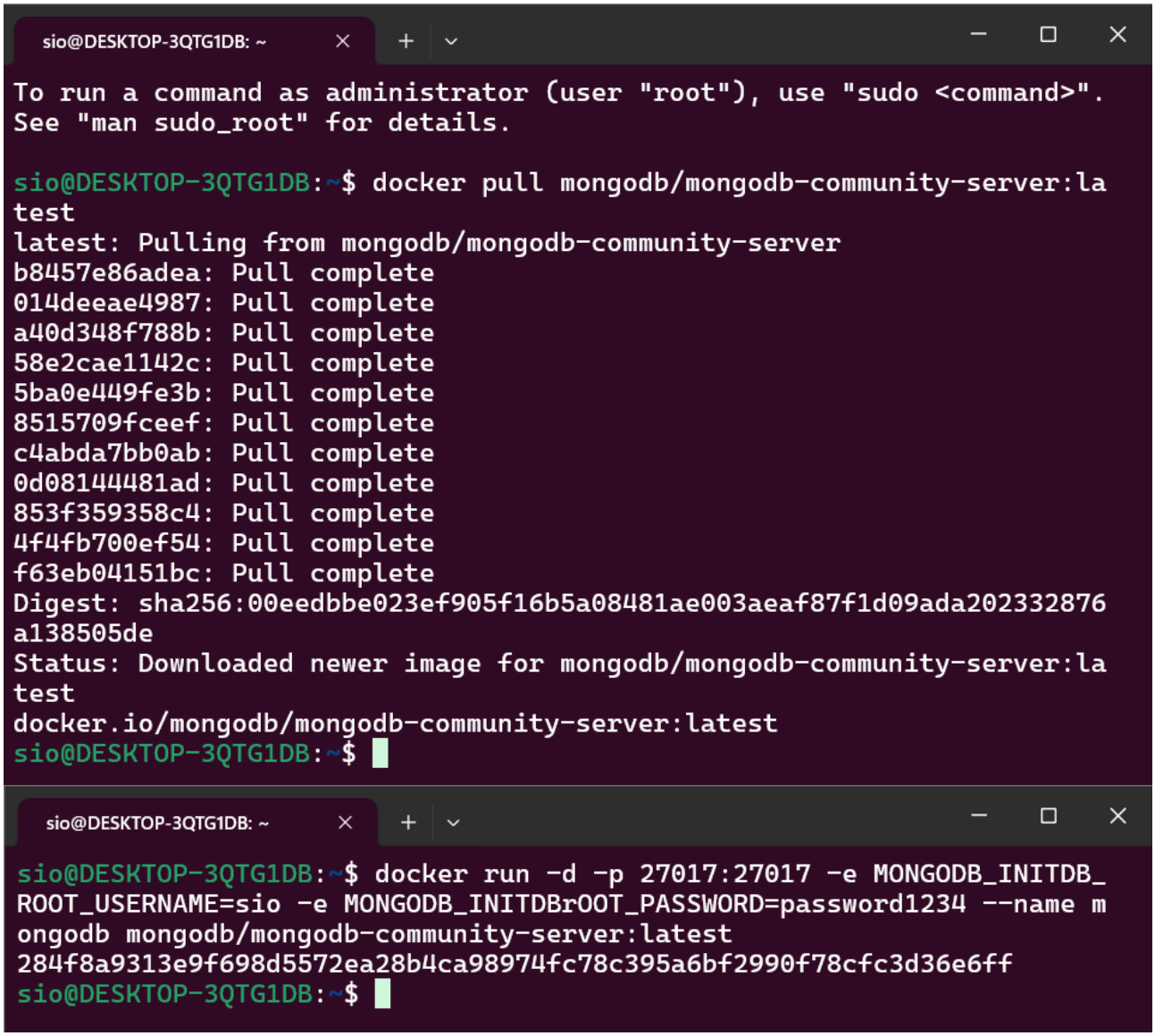
```
sio@DESKTOP-3QTG1DB: ~/w
  GNU nano 7.2                    index.html *
<html<>
<body>
<h1>Page web Nginx conteneur Docker</h1>
</body>
</html>
```

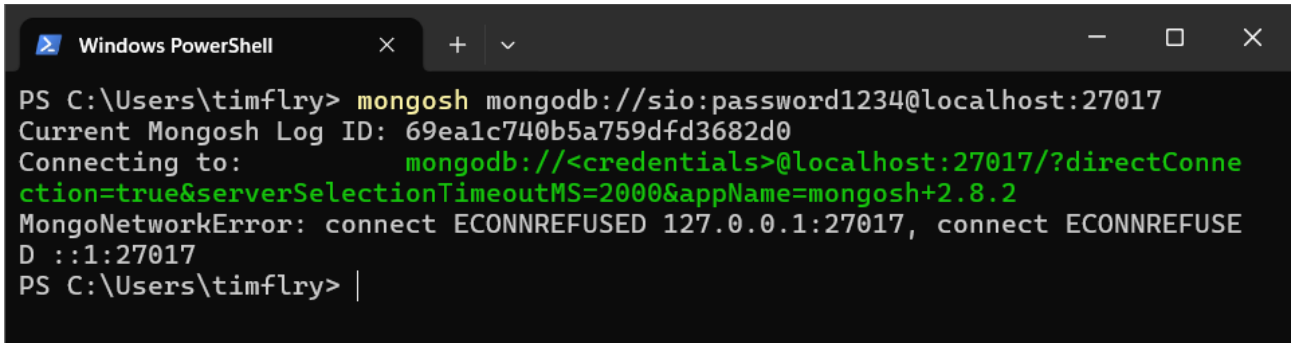
```
Windows PowerShell | sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker run -d --name web -v /home/sio/web:/usr/
share/nginx/html:ro -p 88:80 nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
4a038fd18db1: Pull complete
84e114c2bb36: Pull complete
054715a6bffa: Pull complete
7b5d674621c2: Pull complete
5435b2dcdf5c: Pull complete
448ea5cac5d5: Pull complete
88d1d984b765: Pull complete
cc0cf959117b: Download complete
3eff0a97d435: Download complete
Digest: sha256:7f0adca1fc6c29c8dc49a2e90037a10ba20dc266baaed0988e9fb4d
0d8b85ba0
Status: Downloaded newer image for nginx:latest
b8325d01db3f0b6de1d92d1f699afd6ef699cc0ac960d1716206971b2776a5f0
sio@DESKTOP-3QTG1DB:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED         STAT
US         PORTS                                NAMES
b8325d01db3f   nginx     "/docker-entrypoint.…"   7 seconds ago   Up 7
 seconds   0.0.0.0:88->80/tcp, [::]:88->80/tcp   web
sio@DESKTOP-3QTG1DB:~$
```


localhost:88
localhost:88
Page web Nginx conteneur Docker
sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker logs web
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2026/04/15 15:16:10 [notice] 1#1: using the "epoll" event method
2026/04/15 15:16:10 [notice] 1#1: nginx/1.29.8
2026/04/15 15:16:10 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/04/15 15:16:10 [notice] 1#1: OS: Linux 6.6.87.2-microsoft-standard-WSL2
2026/04/15 15:16:10 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/04/15 15:16:10 [notice] 1#1: start worker processes
2026/04/15 15:16:10 [notice] 1#1: start worker process 29
2026/04/15 15:16:10 [notice] 1#1: start worker process 30
2026/04/15 15:16:10 [notice] 1#1: start worker process 31
2026/04/15 15:16:10 [notice] 1#1: start worker process 32
2026/04/15 15:16:10 [notice] 1#1: start worker process 33
2026/04/15 15:16:10 [notice] 1#1: start worker process 34
2026/04/15 15:16:10 [notice] 1#1: start worker process 35
2026/04/15 15:16:10 [notice] 1#1: start worker process 36
172.17.0.1 - - [15/Apr/2026:15:18:07 +0000] "GET / HTTP/1.1" 200 72 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/145.0.0.0 Safari/537.36 OPR/129.0.0.0 (Edition ms_store_gx)" "-"
2026/04/15 15:18:07 [error] 30#30: *2 open() "/usr/share/nginx/html/favicon.ico" failed (2: No such file or directory), client: 172.17.0.1, server: localhost, request: "GET /favicon.ico HTTP/1.1", host: "localhost:88", referrer: "http://localhost:88/"
172.17.0.1 - - [15/Apr/2026:15:18:07 +0000] "GET /favicon.ico HTTP/1.1" 404 555 "http://localhost:88/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/145.0.0.0 Safari/537.36 OPR/129.0.0.0 (Edition ms_store_gx)" "-"
sio@DESKTOP-3QTG1DB:~$
sio@DESKTOP-3QTG1DB: ~
sio@DESKTOP-3QTG1DB:~$ docker rm -fv web
web
sio@DESKTOP-3QTG1DB:~$ docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
28409d7639c4 ubuntu "/bin/bash" 44 minutes ago Exited (0) 43 minutes ago test_modification
sio@DESKTOP-3QTG1DB:~$
sio@DESKTOP-3QTG1DB: ~/w
sio@DESKTOP-3QTG1DB:~$ cd web
sio@DESKTOP-3QTG1DB:~/web$ ls
index.html
sio@DESKTOP-3QTG1DB:~/web$

11 . Gestion des volumes en écriture.

11.1. Premier type de volume : volume nommé





J'ai eux cette erreur puis je n'ai pas réussi à m'en sortir.