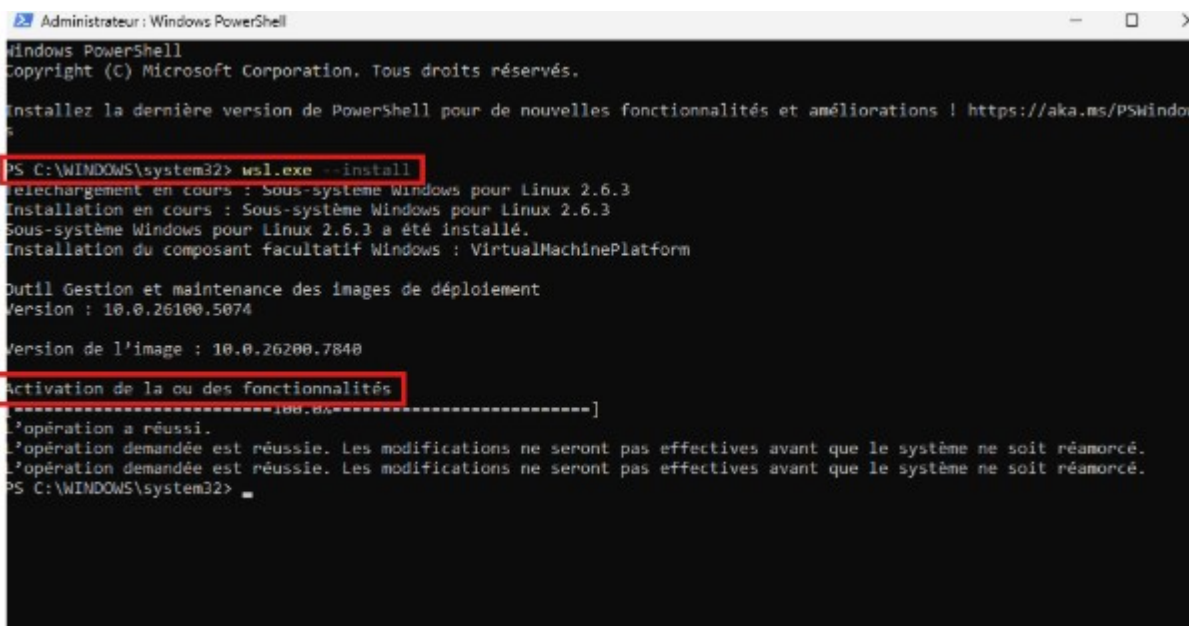


Chapitre 4 – Docker sous Windows (Docker Desktop et WSL 2)

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1. Installation / Activation de WSL.



```
Administrateur : Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. Tous droits réservés.

Installez la dernière version de PowerShell pour de nouvelles fonctionnalités et améliorations ! https://aka.ms/PSWindows
PS C:\WINDOWS\system32> wsl.exe --install
Téléchargement en cours : Sous-système Windows pour Linux 2.6.3
Installation en cours : Sous-système Windows pour Linux 2.6.3
Sous-système Windows pour Linux 2.6.3 a été installé.
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
-----]
L'opération a réussi.
L'opération demandée est réussie. Les modifications ne seront pas effectives avant que le système ne soit réamorcé.
L'opération demandée est réussie. Les modifications ne seront pas effectives avant que le système ne soit réamorcé.
PS C:\WINDOWS\system32>
```

```
Administrateur : Windows PowerShell
PS C:\WINDOWS\system32> 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:\WINDOWS\system32>
```

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 \(WSL\)](#)

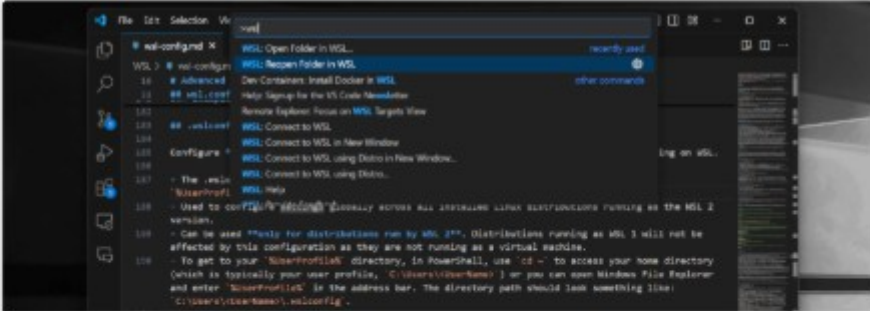
[Bonnes pratiques pour la configuration](#)

[Prise en main avec Linux](#)

Paramètres

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](#)

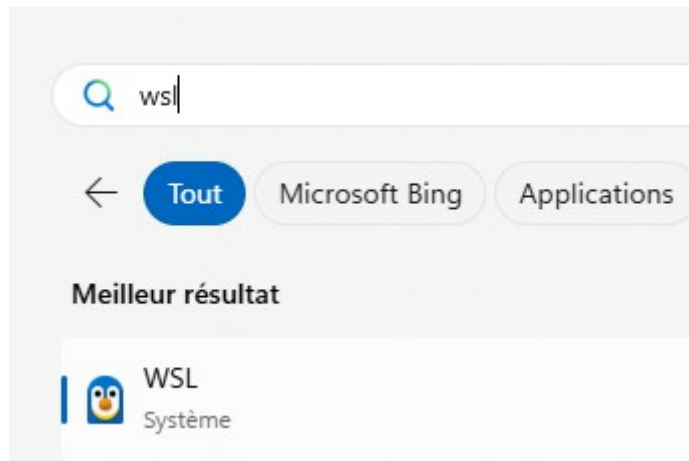
Fonctionnalités de Windows

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.

- Services pour NFS
- Simple TCP/IP services (i.e. echo, daytime etc)
- 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

OK Annuler

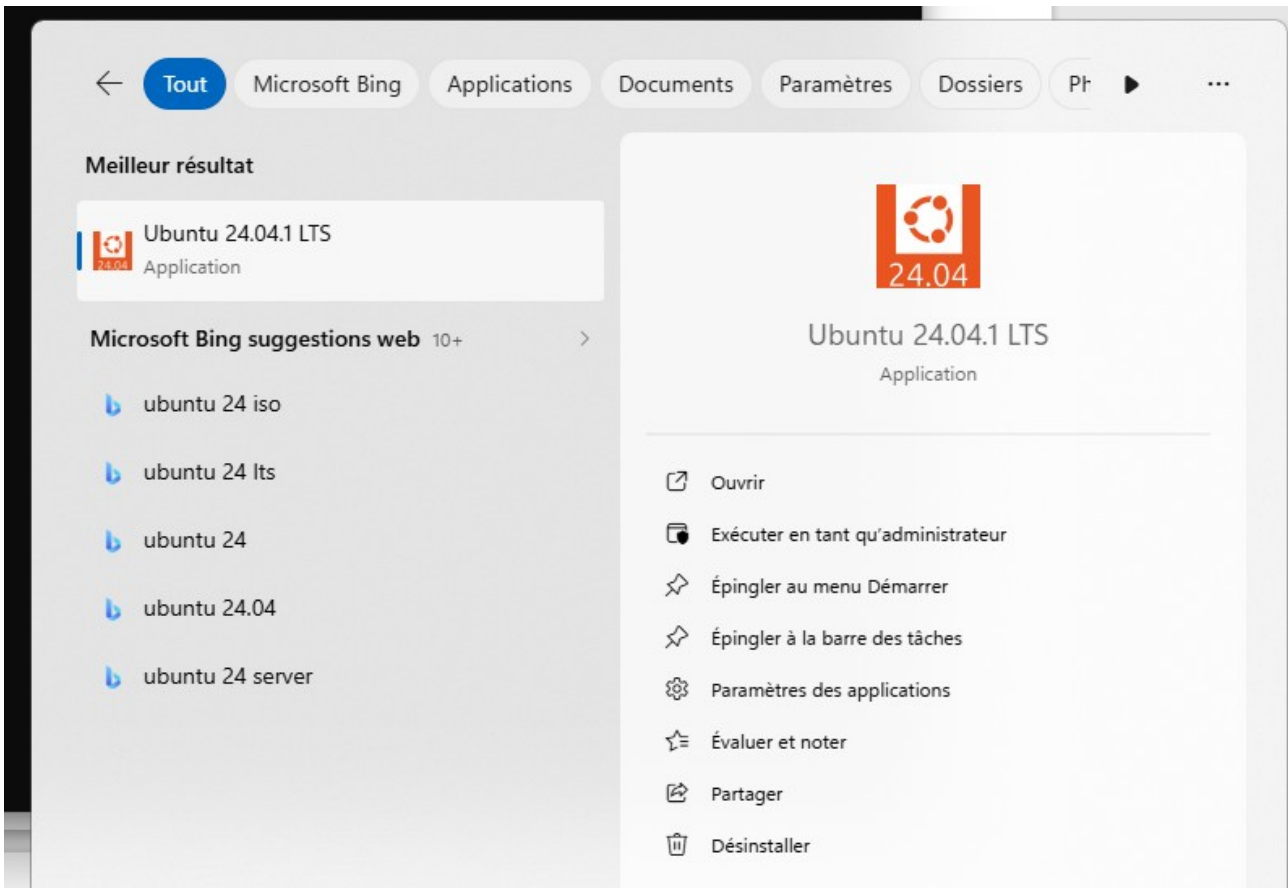


```
rcroquefois@G102-GB13: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
rcroquefois@G102-GB13:~$ |
```

```
rcroquefois@G102-GB13: /mnt  
rcroquefois@G102-GB13: /mnt/c/WINDOWS/system32$ |
```

2. Installation Ubuntu.

A screenshot of an application card for Ubuntu 24.04 LTS. The card features the Ubuntu logo (a red circle with four white dots) and the text '24.04 LTS'. To the right, the title 'Ubuntu 24.04.1 LTS' is displayed in a large font, followed by 'Canonical Group Limited' in a smaller font. Below this, there is a rating of '4,4 ★' and '7 classements', along with the category 'Outils de développement'. A blue button labeled 'Obtenir' is positioned at the bottom left, and a share icon is at the bottom right. A short description reads: 'Install a complete Ubuntu terminal environment in minutes with Windows Subsystem for Linux (WSL)...'.



```
sio@G102-GB13: /
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
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-GB13:~$ ls
sio@G102-GB13:~$ pwd
/home/sio
sio@G102-GB13:~$ cd /
sio@G102-GB13:/$ ls
bin          boot  etc  init  lib.usr-is-merged  lost+found  mnt  proc  run  sbin.usr-is-merged  srv  tmp  var
bin.usr-is-merged  dev  home  lib  lib64              media       opt  root  sbin  snap                sys  usr
```

Terminal Windows :

```
rcroqueois@G102-GB13: /mnt, x Windows PowerShell x + v
Windows PowerShell
Copyright (C) Microsoft Corporation. Tous droits réservés.

Installez la dernière version de PowerShell pour de nouvelles fonctionn
s

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

sio@G102-GB13:/mnt/c/Users/rcroqueois$ exit
logout
PS C:\Users\rcroqueois> |
```

3. Installation Docker.

The screenshot shows the Docker Desktop website with a navigation menu and a main heading: "The #1 containerization software for developers and teams". Below the heading, there are buttons for "Choose plan" and "Download Docker Desktop". A dark blue overlay menu is open, displaying download links for "Mac - Apple Silicon", "Mac - Intel Chip", "Windows - AMD64", "Windows - ARM64", and "Linux". In the background, a Docker Desktop interface is visible, showing system usage statistics (CPU: 0.01% / 1200%, Memory: 249.6MB / 7.47 GB) and a table of running containers.

The screenshot shows a Windows File Explorer window titled "Téléchargements". The file list contains one entry:

| Nom | Modifié le | Type | Taille |
|--------------------------|------------------|-------------|------------|
| Docker Desktop Installer | 11/03/2026 14:57 | Application | 609 236 Ko |

Configuration

- Use WSL 2 instead of Hyper-V (recommended)
- Allow Windows Containers to be used with this installation
- Add shortcut to desktop

Windows Containers should only be enabled if you understand the risks. For more information, see [our docs](#).

OK

Docker Desktop 4.64.0

Unpacking files...

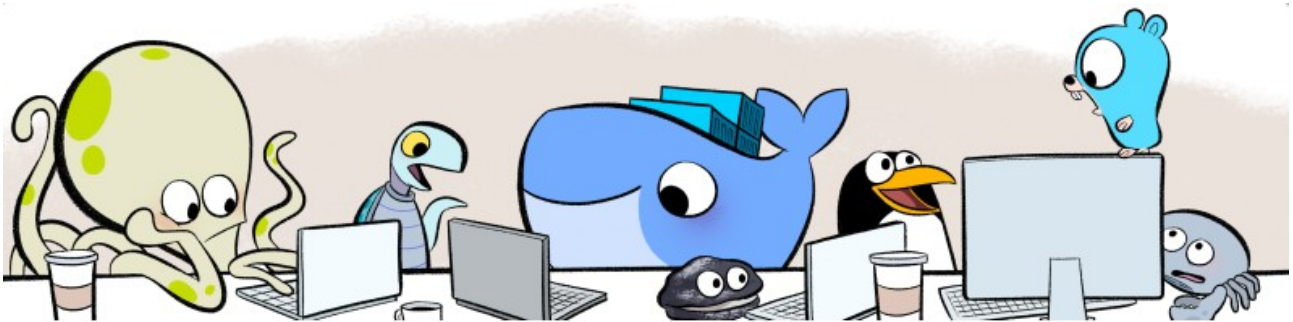
```
Unpacking file: resources/cli-plugins/docker-scout.exe
Unpacking file: resources/cli-plugins/docker-sbom.exe
Unpacking file: resources/cli-plugins/docker-sandbox.exe
Unpacking file: resources/cli-plugins/docker-pass.exe
Unpacking file: resources/cli-plugins/docker-offload.exe
Unpacking file: resources/cli-plugins/docker-model.exe
Unpacking file: resources/cli-plugins/docker-mcp.exe
Unpacking file: resources/cli-plugins/docker-init.exe
Unpacking file: resources/cli-plugins/docker-extension.exe
Unpacking file: resources/cli-plugins/docker-desktop.exe
Unpacking file: resources/cli-plugins/docker-debug.exe
Unpacking file: resources/cli-plugins/docker-compose.exe
Unpacking file: resources/cli-plugins/docker-buildx.exe
Unpacking file: resources/cli-plugins/docker-ai.exe
```

Docker Desktop 4.64.0

Installation succeeded

You must log out of Windows to complete installation.

Close and log out



Docker Subscription Service Agreement

By selecting **accept**, you agree to the [Subscription Service Agreement](#), the [Docker Data Processing Agreement](#), the [Data Privacy Policy](#) and the [Docker AI Supplemental Terms](#).

Commercial use of Docker Desktop at a company of more than 250 employees OR more than \$10 million in annual revenue requires a paid subscription (Pro, Team, or Business). [See subscription details](#)

View Full Terms ↗

Accept

Close



Create your account

Work

Personal

Email

Email is required.

Username

Use 4 to 30 letters & digits only.

Password



Send me occasional product updates and announcements.

Sign up

OR



Continue with Google



Continue with GitHub

[Already have an account? Sign in](#)

This site is protected by hCaptcha and the hCaptcha [Privacy Policy](#) and [Terms of Service](#) apply.

By creating an account I agree to the [Subscription Service Agreement](#), [Privacy Policy](#), [Data Processing Terms](#).

docker desktop PERSONAL

Search **Ctrl+K** ? 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Ask Gordon **BETA**


- Containers
- Images
- Volumes
- Kubernetes
- Builds
- Models
- MCP Toolkit **BETA**
- Docker Hub
- Docker Scout

Extensions


Upgrade plan

Engine running || : RAM 2.99 GB CPU 0.00% Disk: 1.49 GB used (limit 1006.85 GB) > ✓ v4.64.0

Containers [Give feedback](#)



Your running containers show up here
A container is an isolated environment for your code



What is a container?
5 mins

```
1 FROM node
2 RUN mkdir -p
3 WORKDIR /app
4 COPY package
```

How do I run a container?
6 mins

[View more in the Learning center](#)

docker desktop PERSONAL

Search **Ctrl+K** ? 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

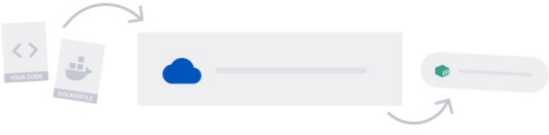
Ask Gordon **BETA**

- Containers
- Images**
- Volumes
- Kubernetes
- Builds
- Models
- MCP Toolkit **BETA**
- Docker Hub
- Docker Scout

Extensions

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

Taskbar icons: Docker, File Explorer, Docker Desktop, Settings, Docker Desktop

 Docker Desktop is running

 Go to the Dashboard

 rcroquelois >

Change settings Ctrl+Comma

Troubleshoot

Give feedback

About Docker Desktop


Docker Hub


Documentation

Extensions >

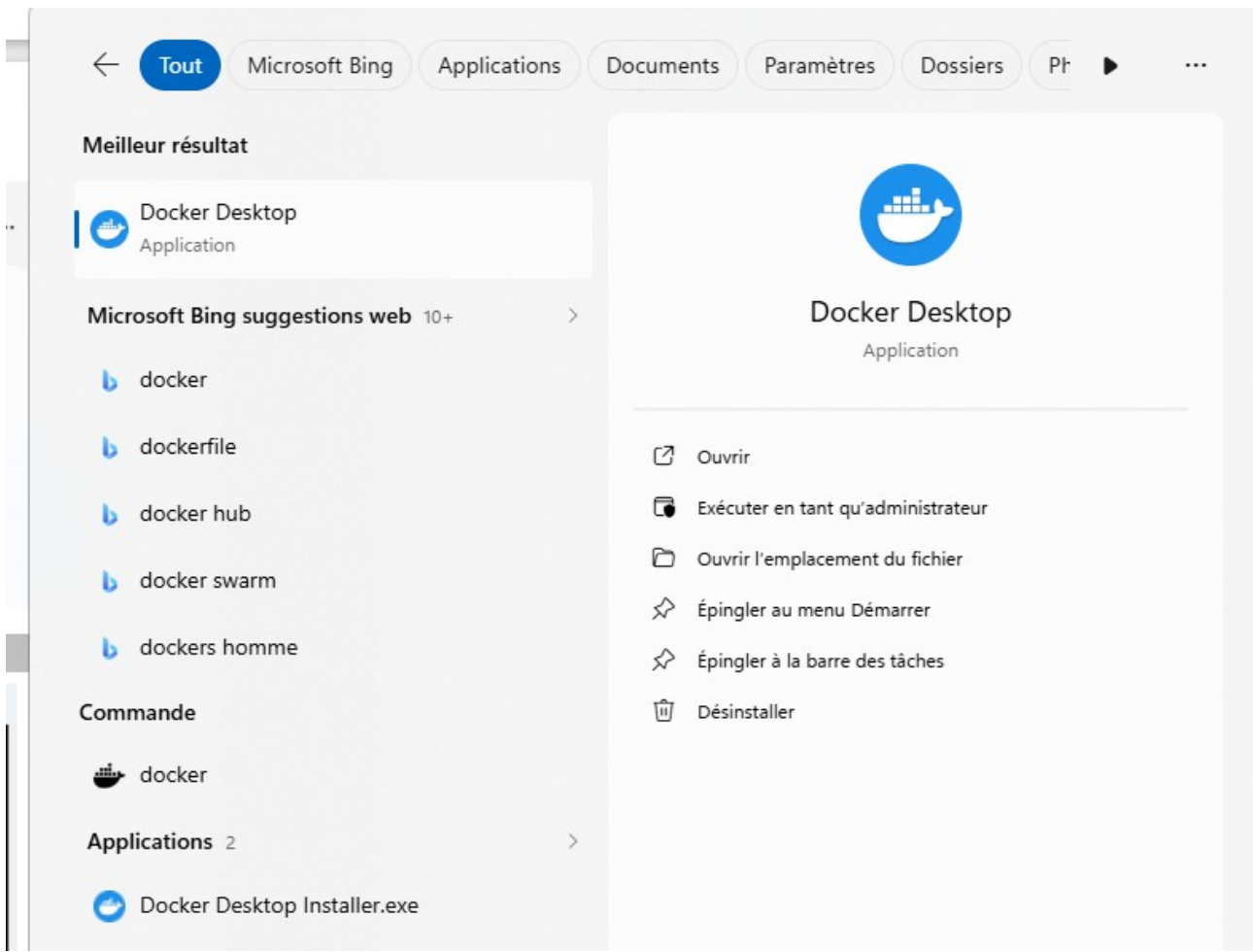
Kubernetes Context >

Check for updates

 Restart

 Pause

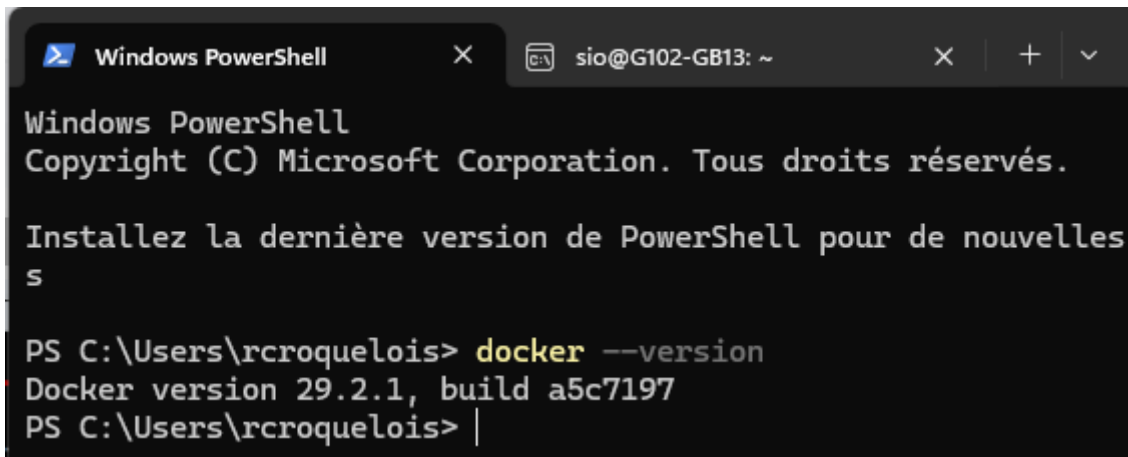
 Quit Docker Desktop



4. Premier test.

```
sio@G102-GB13: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
sio@G102-GB13:~$ docker --version  
  
The command 'docker' could not be found in this WSL 2 distro.  
We recommend to activate the WSL integration in Docker Desktop settings.  
  
For details about using Docker Desktop with WSL 2, visit:  
https://docs.docker.com/go/wsl2/  
  
sio@G102-GB13:~$ |
```

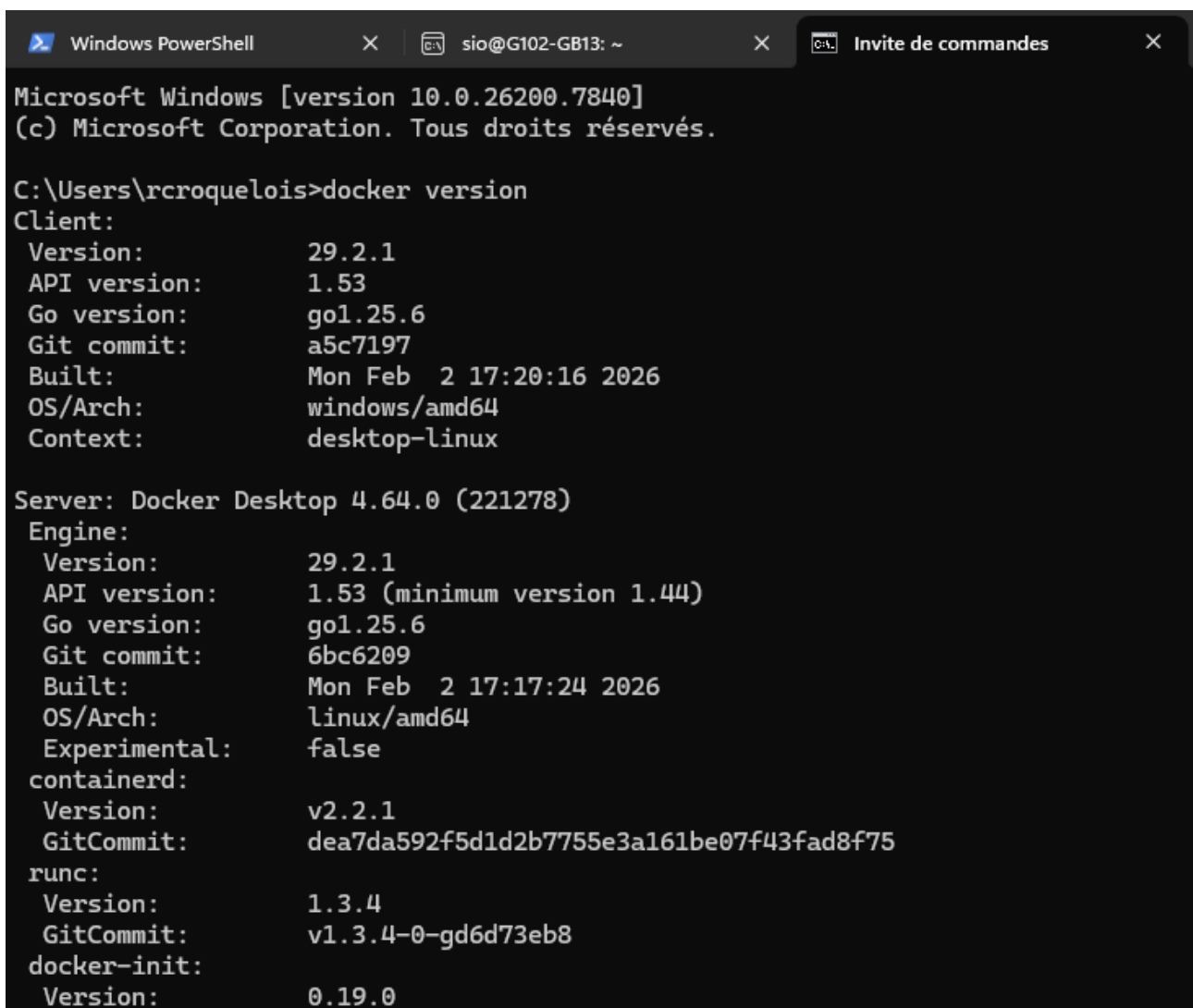
Terminal Windows :



```
Windows PowerShell
Copyright (C) Microsoft Corporation. Tous droits réservés.

Installez la dernière version de PowerShell pour de nouvelles
s

PS C:\Users\rcroquelois> docker --version
Docker version 29.2.1, build a5c7197
PS C:\Users\rcroquelois> |
```

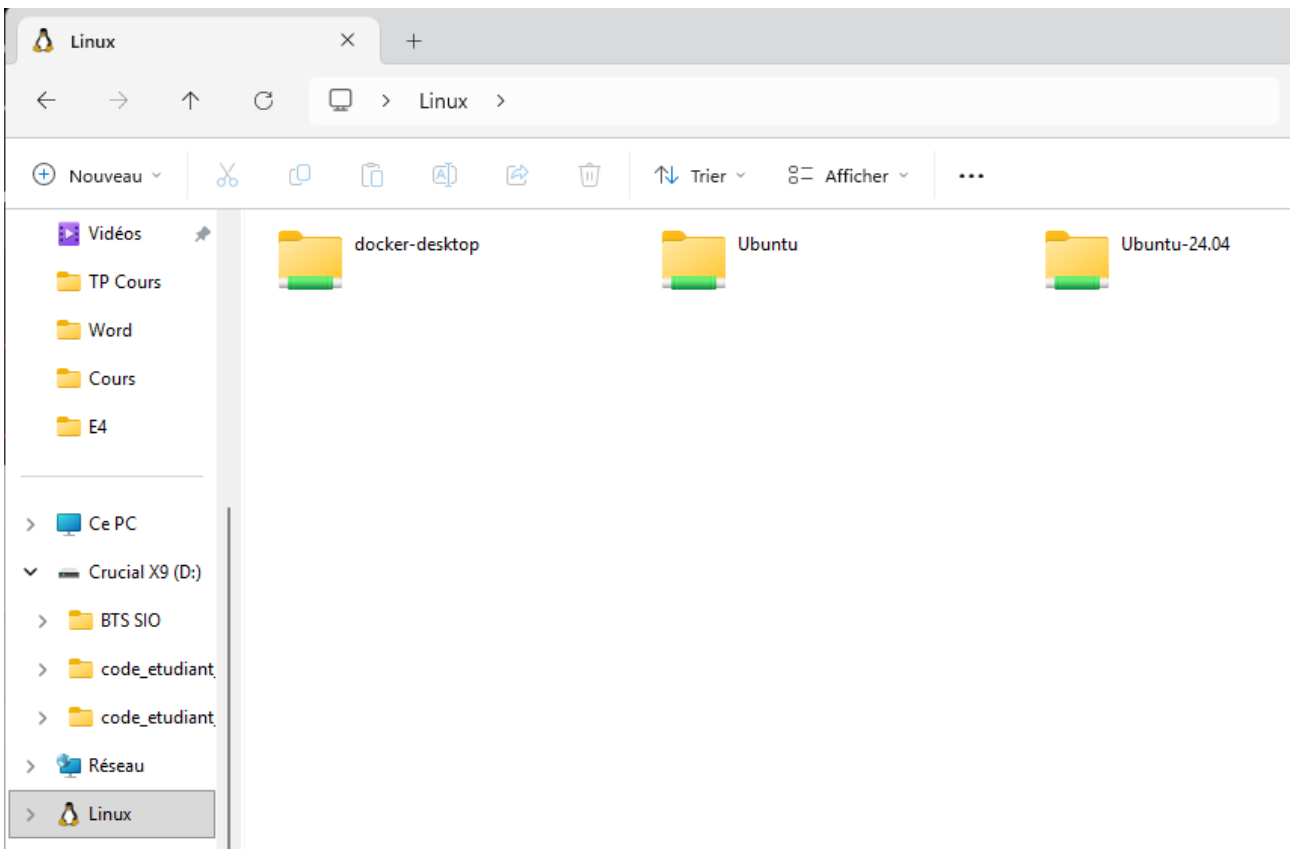


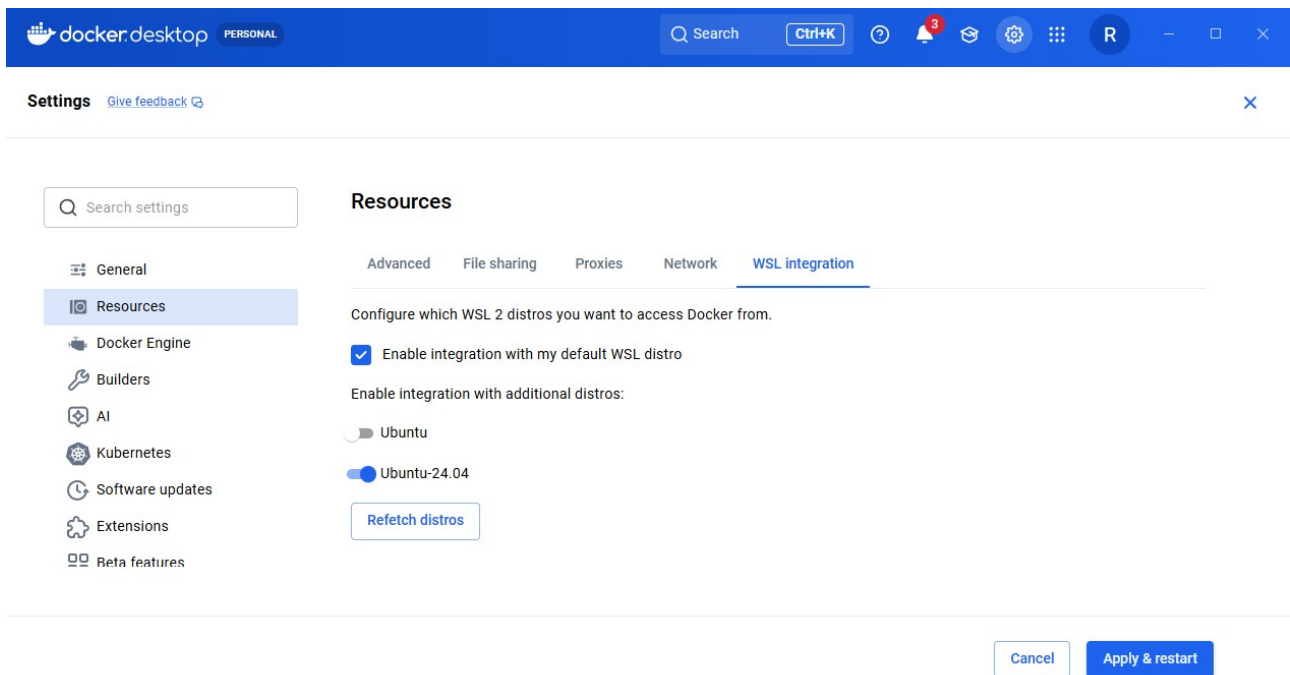
```
Microsoft Windows [version 10.0.26200.7840]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\rcroquelois>docker version
Client:
Version:           29.2.1
API version:       1.53
Go version:        go1.25.6
Git commit:        a5c7197
Built:             Mon Feb  2 17:20:16 2026
OS/Arch:           windows/amd64
Context:           desktop-linux

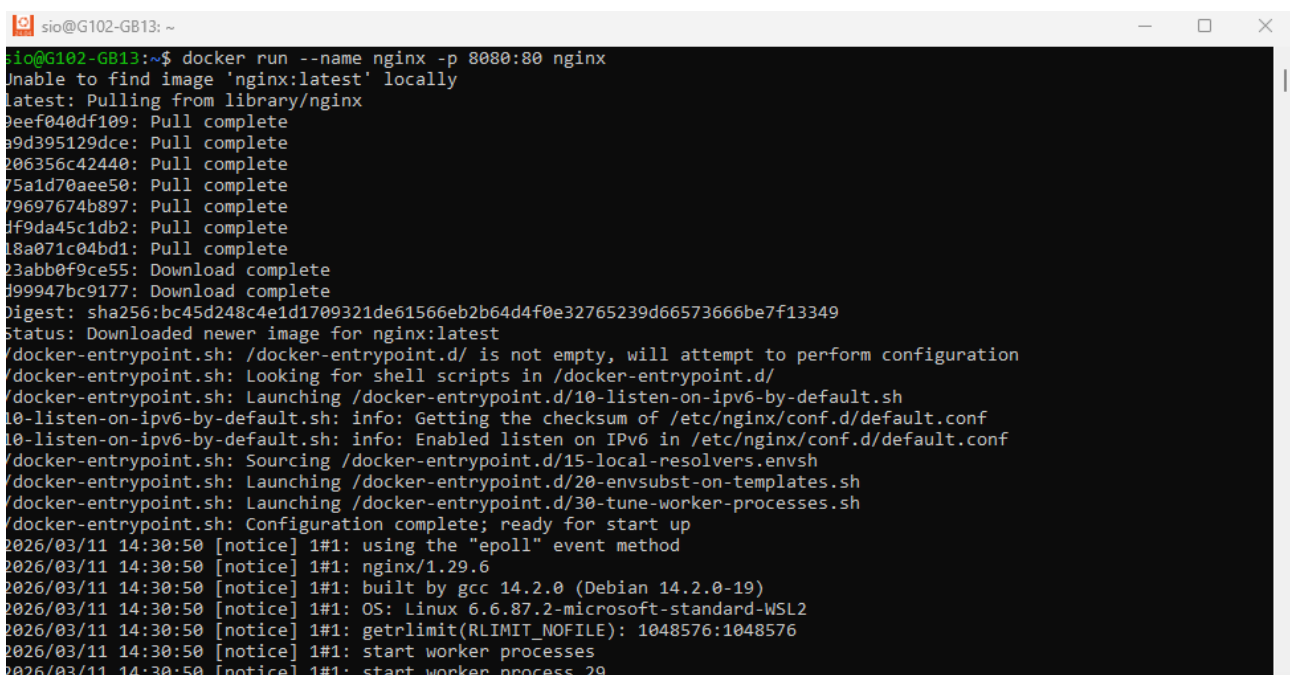
Server: Docker Desktop 4.64.0 (221278)
Engine:
Version:           29.2.1
API version:       1.53 (minimum version 1.44)
Go version:        go1.25.6
Git commit:        6bc6209
Built:             Mon Feb  2 17:17:24 2026
OS/Arch:           linux/amd64
Experimental:     false
containerd:
Version:           v2.2.1
GitCommit:         dea7da592f5d1d2b7755e3a161be07f43fad8f75
runc:
Version:           1.3.4
GitCommit:         v1.3.4-0-gd6d73eb8
docker-init:
Version:           0.19.0
```

```
Windows PowerShell x sio@G102-GB13: ~ x Invite de commandes x
PS C:\Users\rcroquelois> wsl -l -v
NAME                STATE      VERSION
* Ubuntu            Running    2
  docker-desktop    Running    2
  Ubuntu-24.04      Running    2
PS C:\Users\rcroquelois> wsl -l
Distributions du Sous-système Windows pour Linux :
Ubuntu (par défaut)
docker-desktop
Ubuntu-24.04
PS C:\Users\rcroquelois> |
```

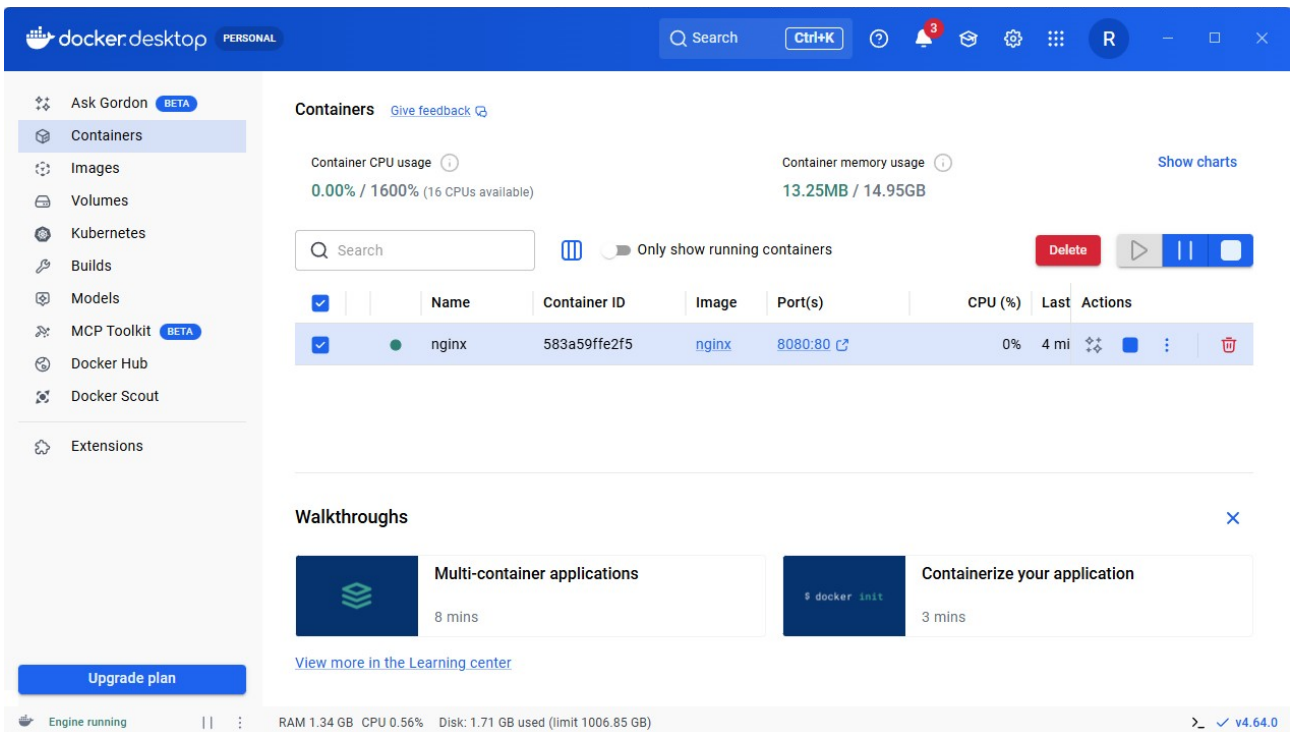
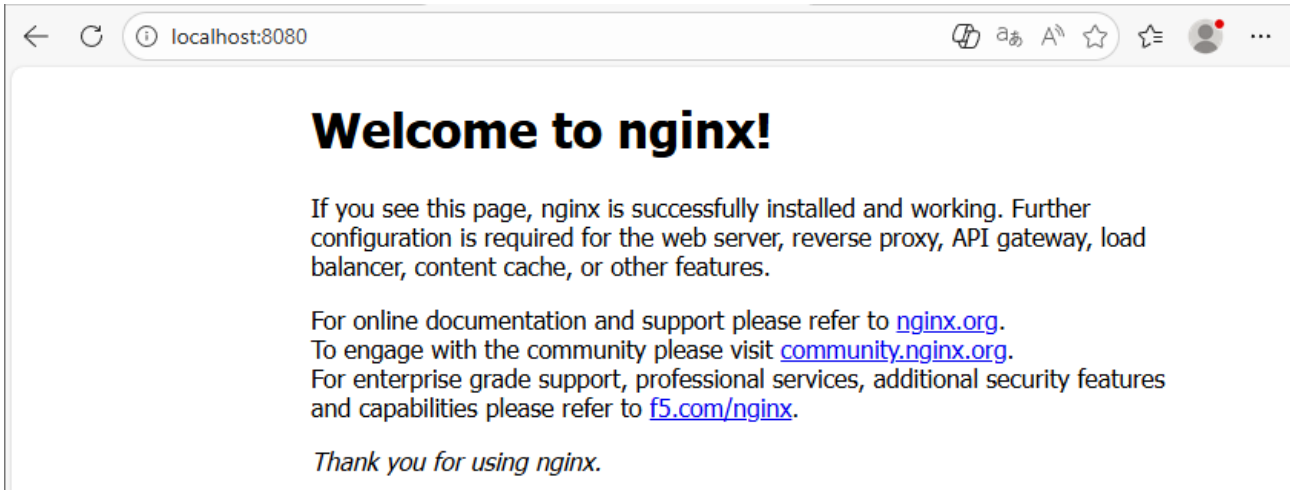




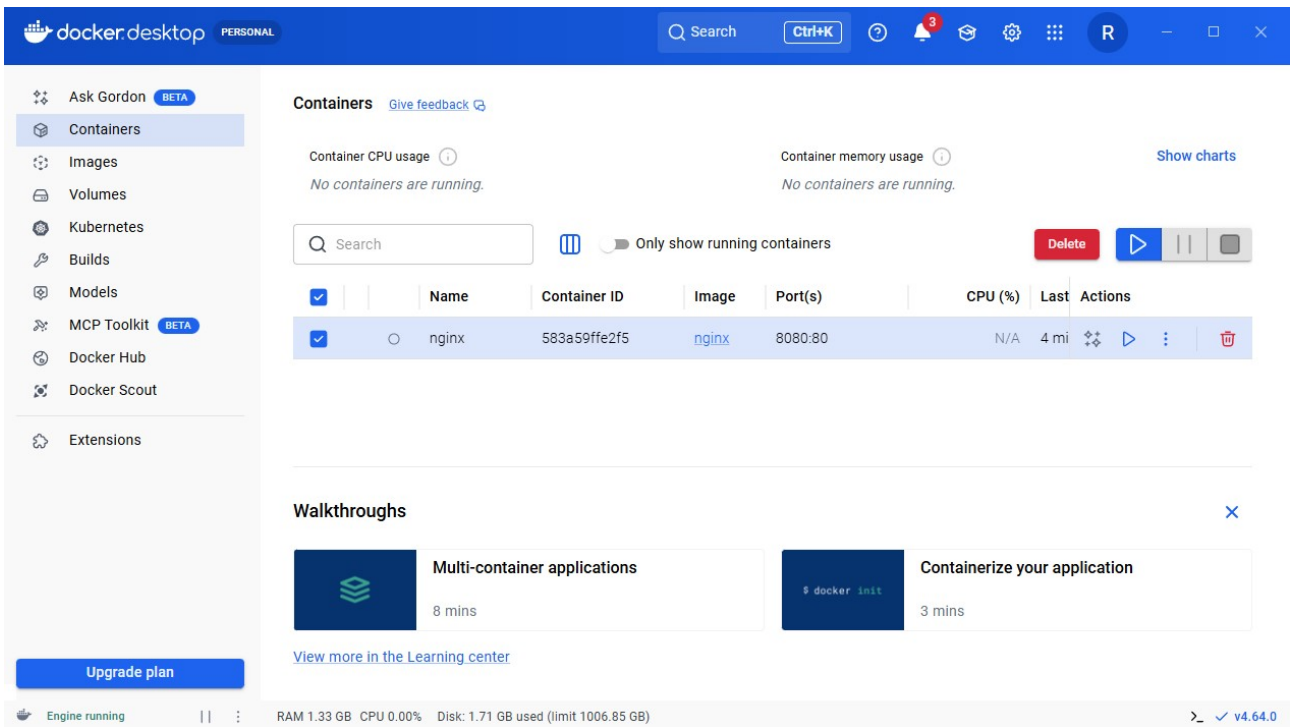
5. Deuxième test.



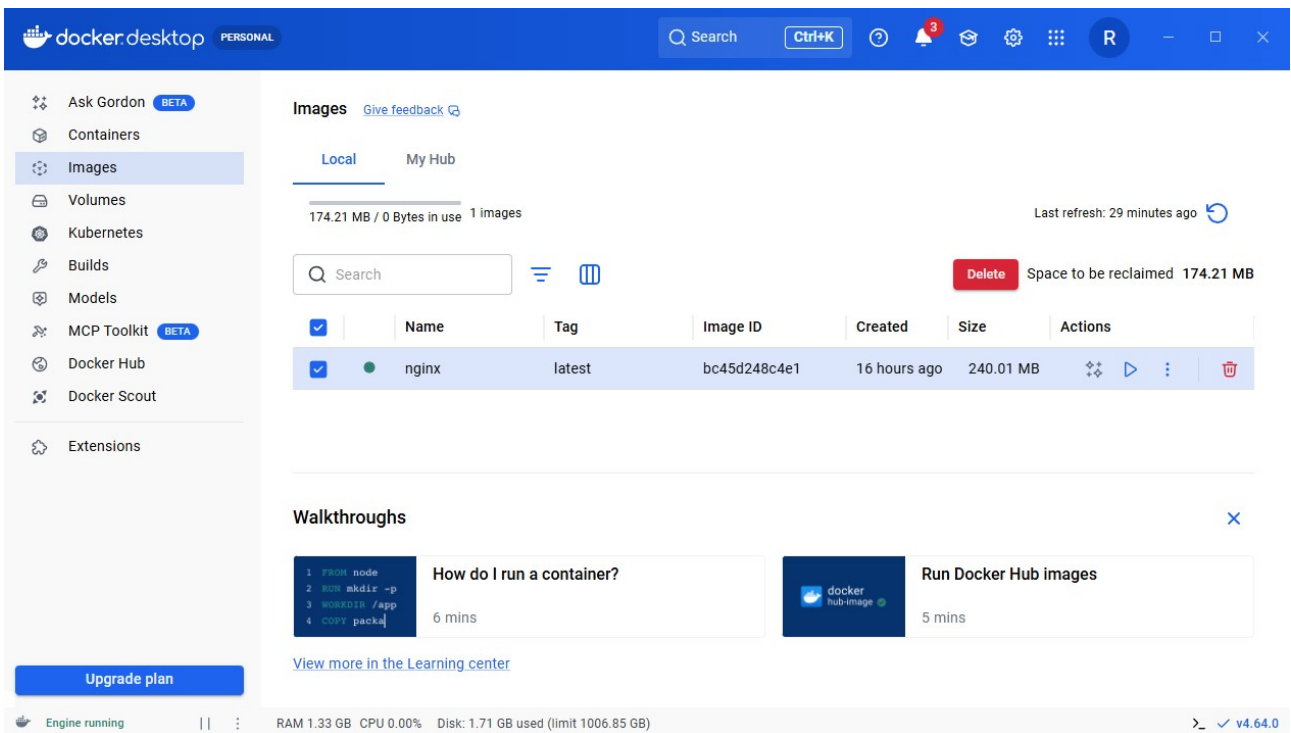
→ Docker télécharge dans un premier temps l'image nginx. Il crée ensuite une instance de cette image qui est le conteneur.



▪ Action container : stop



- Delete container
- Puis Delete image :



Delete container?

The 'nginx' container is selected for deletion. Any anonymous volumes associated with these containers are also deleted.

Cancel

Delete forever

Delete image?

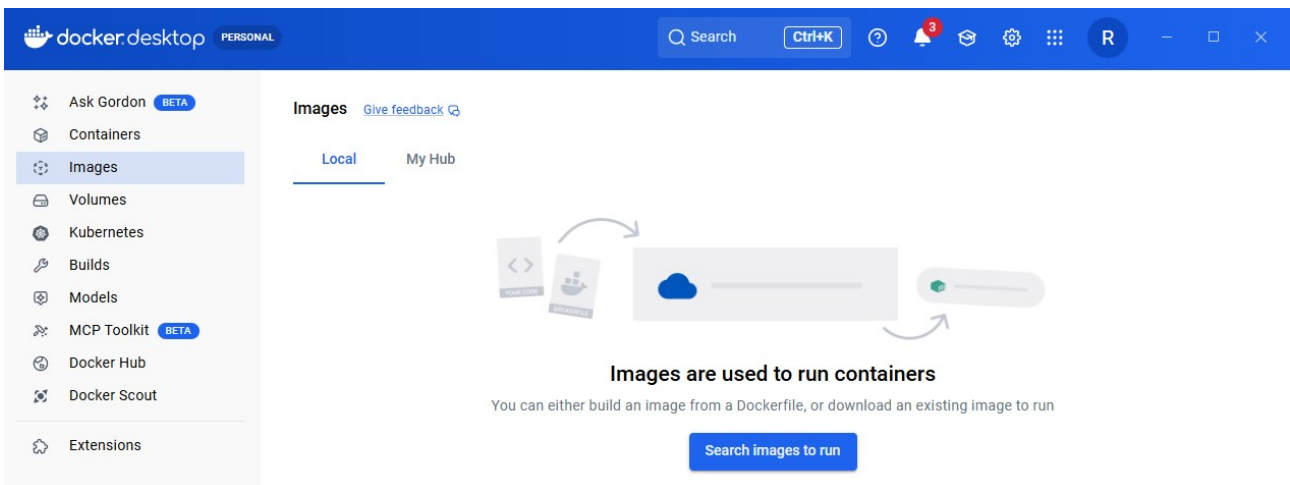
The 'nginx:latest' image is selected for deletion.

Cancel

Delete forever

6. Troisième test.

- Search images to run



The screenshot shows the Docker Desktop interface. The top bar includes the Docker logo, 'docker desktop PERSONAL', a search bar, and a 'Ctrl+K' shortcut. The left sidebar contains a navigation menu with options: Ask Gordon (BETA), Containers, Images (selected), Volumes, Kubernetes, Builds, Models, MCP Toolkit (BETA), Docker Hub, Docker Scout, and Extensions. The main area is titled 'Images' and has tabs for 'Local' and 'My Hub'. Below the tabs is a diagram illustrating the process of running containers from images. The diagram shows a code editor icon, a Dockerfile icon, a cloud icon representing a registry, and a container icon. Arrows indicate the flow from code/Dockerfile to the registry, and from the registry to the container. Below the diagram, the text reads: 'Images are used to run containers' and 'You can either build an image from a Dockerfile, or download an existing image to run'. A blue button labeled 'Search images to run' is positioned at the bottom of the diagram area.

- Pull :

Search: apache2 Ask Gordon

Images (50) Containers (0) Volumes (0) Extensions (0) Docs (2)

Hub images (50) Hub private repos (0) Local images (0)

| |
|---|
| ubuntu/apache2 1M+ · 102 latest Pull Run |
| bmltenabled/apache2 1.2K · 0 |
| kstaken/apache2 100K+ · 3 |
| 1ea0b37acbfe/apache2 100K+ · 0 |
| symbiote/apache2 10K+ · 0 |
| nabendu/apache2 10K+ · 0 |
| previousnext/apache2 4.9K · 0 |
| epicmorg/apache2 10K+ · 1 |

to open to navigate ESC to close SCROLL for more results [Give feedback](#)

docker desktop PERSONAL

Search: apa... Ctrl+K

Images [Give feedback](#)

Local My Hub

0 Bytes / 0 Bytes in use 1 images Last refresh: 32 minutes ago

Search Delete Space to be reclaimed 175.4 MB

| <input checked="" type="checkbox"/> | Name | Tag | Image ID | Created | Size | Actions |
|-------------------------------------|----------------|--------|--------------|--------------|-----------|--|
| <input checked="" type="checkbox"/> | ubuntu/apache2 | latest | bd68b3b35b01 | 4 months ago | 227.63 MB | Refresh Play More Delete |

▪ Run :

The screenshot shows the Docker Desktop interface. The top navigation bar includes the Docker logo, 'docker desktop PERSONAL', a search bar with 'Search: apa...' and 'Ctrl+K', and system icons. The left sidebar contains navigation options: Ask Gordon (BETA), Containers, Images (selected), Volumes, Kubernetes, Builds, Models, MCP Toolkit (BETA), Docker Hub, Docker Scout, and Extensions. An 'Upgrade plan' button is at the bottom of the sidebar.

The main content area displays the 'Images / ubuntu/apache2:latest' page. The image name 'ubuntu/apache2:latest' is shown with its ID 'bd68b3b35b01'. Metadata includes 'CREATED 4 months ago' and 'SIZE 227.63 MB'. There are buttons for 'Run', a dropdown arrow, and a trash icon. A 'Recommended fixes' dropdown is also present.

Below the image header is a 'Layers (12)' table:

| Layer ID | Layer Description | Size |
|----------|--|----------|
| 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 | l0 /bin/sh -c set -eux; apt-get update;... | 89.28 MB |
| 8 | STOPSIGNAL SIGWINCH | 0 B |

To the right of the layers table are tabs for 'Vulnerabilities' (selected) and 'Packages'. A 'Give feedback' link is also visible.

A large warning message is displayed: 'This image has not been analyzed'. It includes a gear icon and text: 'You can use Docker Scout to analyze local images and list its vulnerabilities.' A 'Start analysis' button is provided. Below this, a link says 'Enable background indexing in Settings so your results are always ready.'

The bottom status bar shows 'Engine running', system resources (RAM 1.71 GB, CPU 0.06%, Disk: 1.70 GB used (limit 1006.85 GB)), and the version 'v4.64.0'.



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**

Containers / apache2-container

apache2-container

e742207c514e 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 172.17.0.2. Set the 'ServerName' directive globally to suppress this message
 AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress this message
 [Wed Mar 11 14:41:25.770566 2026] [mpm_event:notice] [pid 23:tid 23] AH00489: Apache/2.4.63 (Ubuntu) configured -- resuming normal operations
 [Wed Mar 11 14:41:25.770686 2026] [core:notice] [pid 23:tid 23] AH00094: Command Line: '/usr/sbin/apache2 -D FOREGROUND'

Upgrade plan

docker desktop PERSONAL

Search: apa... **Ctrl+K**

Containers / apache2-container

apache2-container

e742207c514e ubuntu/apache2:latest 8080:80

STATUS
Running (25 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
#
```

Upgrade plan

docker desktop PERSONAL

Search: apa... Ctrl+K

Containers / apache2-container

apache2-container
 e742207c514e ubuntu/apache2:latest
 8080:80

STATUS: Running (1 minute ago)

Logs Inspect Bind mounts Exec Files **Stats**

CPU usage: 0.01%

Memory usage: 5.98MB / 15.31GB

docker desktop PERSONAL

Search: apa... Ctrl+K

Containers [Give feedback](#)

Container CPU usage: 0.01% / 1600% (16 CPUs available)

Container memory usage: 5.98MB / 14.95GB [Show charts](#)

Search Only show running containers

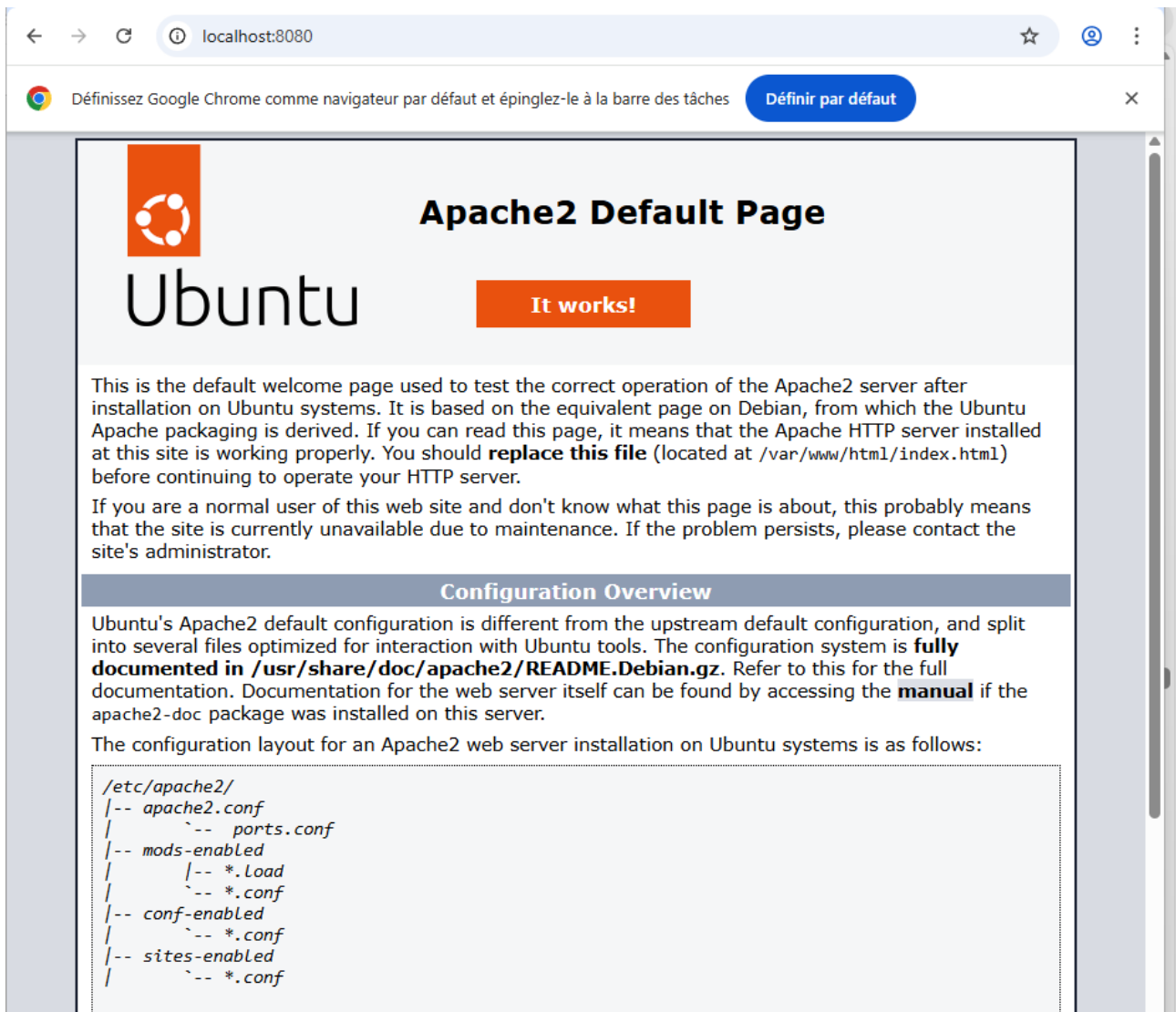
| <input type="checkbox"/> | Name | Container ID | Image | Port(s) | CPU (%) | Mem | Actions |
|--------------------------|----------------|--------------|--------------------|---------|---------|------|---------|
| <input type="checkbox"/> | apache2-contai | e742207c514e | ubuntu/ap: 8080:80 | | 0.01% | 5.98 | |

Walkthroughs

- Multi-container applications** (8 mins)
- Containerize your application** (3 mins)

[View more in the Learning center](#)

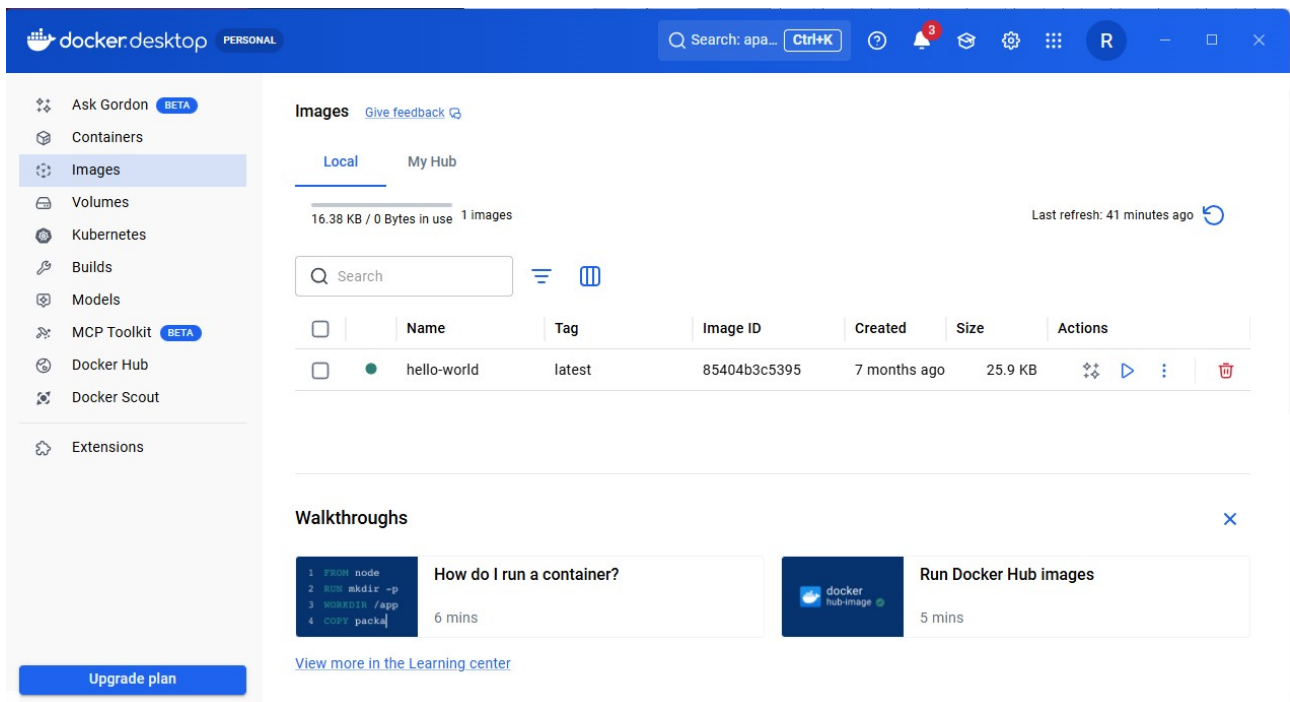
[Upgrade plan](#)



- Arrêter et supprimer le container puis l'image.

7. Quatrième test.

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker run hello-world  
Unable to find image 'hello-world:latest' locally  
latest: Pulling from library/hello-world  
17eec7bbc9d7: Pull complete  
ea52d2000f90: Download complete  
Digest: sha256:85404b3c53951c3ff5d40de0972b1bb21fafa2e8daa235355baf44f33db9dbdd  
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/  
sio@G102-GB13:~$
```



Le conteneur est arrêté après l’affichage du message :

docker desktop PERSONAL

Search **Ctrl+K** [Help] [Notifications: 4] [Settings] [Grid] [Profile: R]

- Ask Gordon **BETA**
- Containers**
- Images
- Volumes
- Kubernetes
- Builds
- Models
- MCP Toolkit **BETA**
- Docker Hub
- Docker Scout
- Extensions


Containers [Give feedback](#)

Container CPU usage ⓘ Container memory usage ⓘ [Show charts](#)
No containers are running. *No containers are running.*

Search [] [] Only show running containers


| <input type="checkbox"/> | Name | Container ID | Image | Port(s) | CPU (%) | Mem | Actions |
|--------------------------|-----------------|--------------|-----------------------------|---------|---------|-----|---------------------------------|
| <input type="checkbox"/> | inspiring_cohen | c3168ecacb37 | hello-world | | N/A | N/A | [Refresh] [Play] [More] [Trash] |

Walkthroughs ✕



Multi-container applications

8 mins



Containerize your application

3 mins

[View more in the Learning center](#)

[Upgrade plan](#)

Engine running | RAM 2.28 GB CPU 0.00% Disk: 1.49 GB used (limit 1006.85 GB) Update available

docker desktop PERSONAL

Search **Ctrl+K** [Help] [Notifications: 4] [Settings] [Grid] [Profile: R]

- Ask Gordon **BETA**
- Containers**
- Images
- Volumes
- Kubernetes
- Builds
- Models
- MCP Toolkit **BETA**
- Docker Hub
- Docker Scout
- Extensions

Containers / inspiring_cohen

inspiring_cohen c3168ecacb37 hello-world:latest **STATUS**
Exited (0) (14 days ago) [Stop] [Play] [Refresh] [Trash]

[Logs](#) [Inspect](#) [Bind mounts](#) [Exec](#) [Files](#) [Stats](#)

```

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/

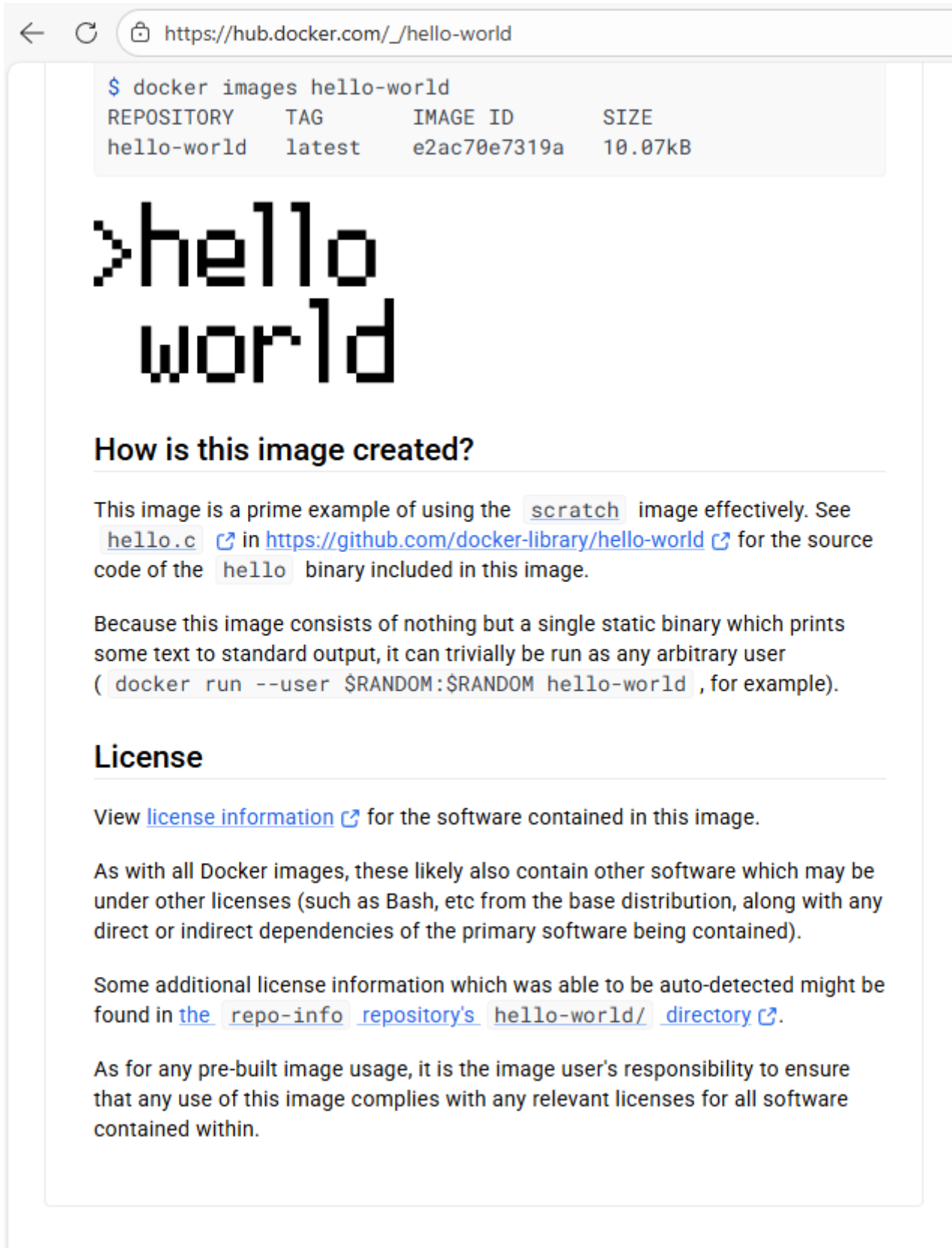
For more examples and ideas, visit:
https://docs.docker.com/get-started/

```

[Upgrade plan](#)

Engine running | RAM 2.31 GB CPU 0.12% Disk: 1.49 GB used (limit 1006.85 GB) Update available

Les sources de l'image :



```
$ docker images hello-world
REPOSITORY    TAG       IMAGE ID       SIZE
hello-world   latest    e2ac70e7319a  10.07kB
```

>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.

Les fichiers qui servent à créer l'image hello-word :

The screenshot shows a GitHub repository page for 'docker-library/hello-world'. The browser address bar displays 'https://github.com/docker-library/hello-world/blob/master/amd64/Dockerfile'. The repository is public. The navigation bar includes links for Platform, Solutions, Resources, Open Source, Enterprise, and Pricing. Below the repository name, there are tabs for Code, Issues (3), Pull requests, Actions, Projects, Wiki, Security, and Insights. The left sidebar shows a file tree with folders for '.github', 'amd64', 'nanoserver-ltsc2022', and 'nanoserver-ltsc2025', and files for 'Dockerfile' and 'hello'. The main content area shows the 'Dockerfile' for the 'amd64' architecture. A commit by 'tianon' is visible, with the message 'Remove vanity variant support completely'. The code content is as follows:

```
1 FROM scratch
2 COPY hello /
3 CMD ["/hello"]
```

← → ↻ <https://github.com/docker-library/hello-world/blob/master/hello.c>

Platform Solutions Resources Open Source Enterprise Pricing

docker-library / hello-world Public

Code Issues 3 Pull requests Actions Projects Wiki Security Insights

Files

master

Go to file

- .github
- amd64
- arm32v5
- arm32v6
- arm32v7
- arm64v8
- i386
- mips64le
- ppc64le
- riscv64
- s390x
- .dockerignore
- .gitattributes
- .gitignore
- Dockerfile-linux.template
- Dockerfile-windows.template
- Dockerfile.build
- LICENSE
- Makefile

hello-world / hello.c

tianon Remove vanity variant support completely

Code Blame 39 lines (35 loc) · 1.2 KB

```
1 #include <sys/syscall.h>
2 #include <unistd.h>
3
4 #ifndef DOCKER_ARCH
5 #define DOCKER_ARCH "amd64"
6 #endif
7
8 const char message[] =
9     "\n"
10    "Hello from Docker!\n"
11    "This message shows that your installation appears to be working correctly.\n"
12    "\n"
13    "To generate this message, Docker took the following steps:\n"
14    " 1. The Docker client contacted the Docker daemon.\n"
15    " 2. The Docker daemon pulled the \"hello-world\" image from the Docker Hub.\n"
16    "   (\" DOCKER_ARCH \" )\n"
17    " 3. The Docker daemon created a new container from that image which runs the\n"
18    "   executable that produces the output you are currently reading.\n"
19    " 4. The Docker daemon streamed that output to the Docker client, which sent it\n"
20    "   to your terminal.\n"
21    "\n"
22    "To try something more ambitious, you can run an Ubuntu container with:\n"
23    " $ docker run -it ubuntu bash\n"
24    "\n"
25    "Share images, automate workflows, and more with a free Docker ID:\n"
26    " https://hub.docker.com/\n"
27    "\n"
28    "For more examples and ideas, visit:\n"
29    " https://docs.docker.com/get-started/\n"
```

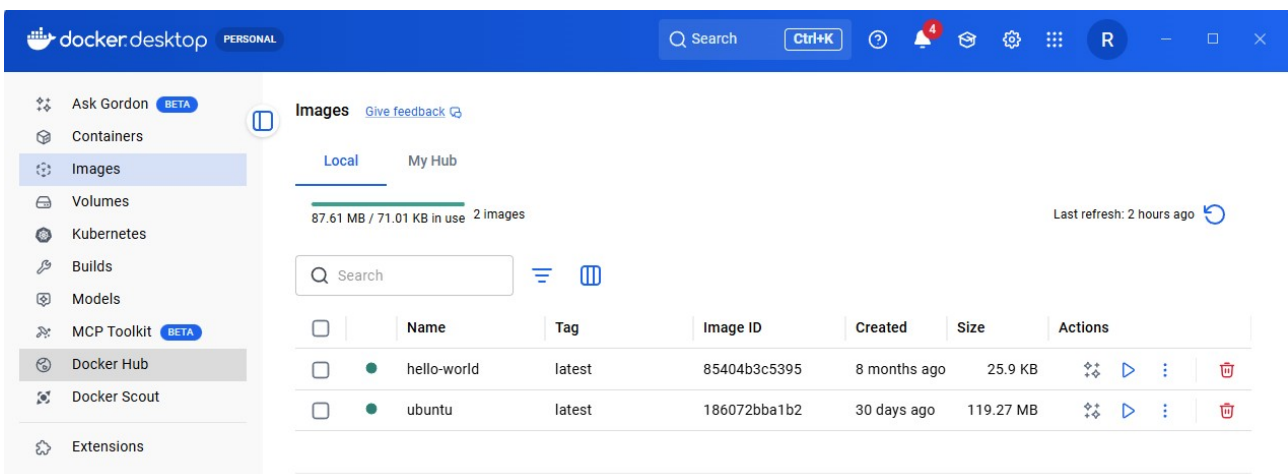
8. Cinquième test : mode interactif d'utilisation d'un conteneur.

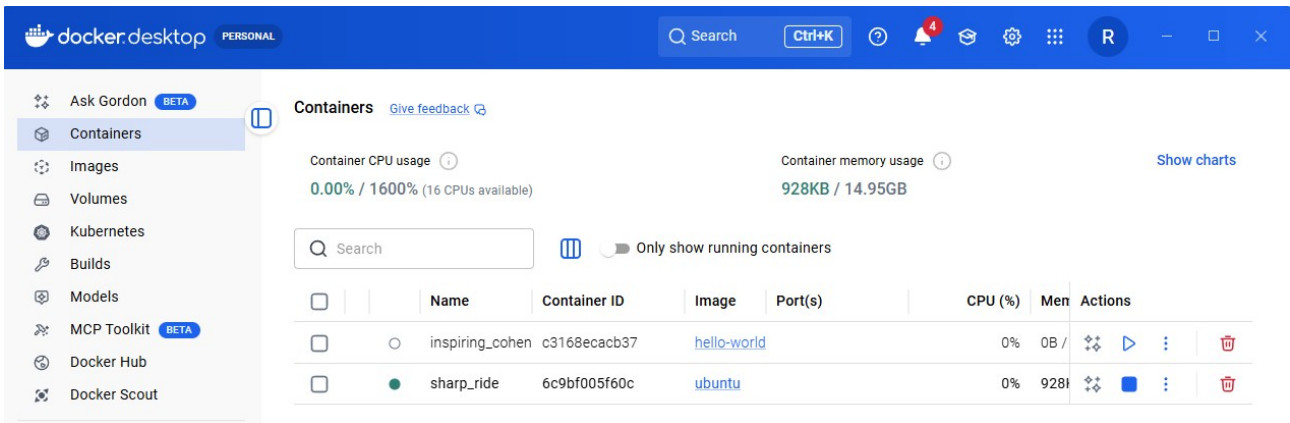
- Commande docker images : liste toutes les images sur le cache local de la machine (identifiant = code hexadécimal)

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker images  
INFO In Use  
IMAGE          ID          DISK USAGE  CONTENT SIZE  EXTRA  
hello-world:latest  85404b3c5395  25.9kB      9.52kB        U  
sio@G102-GB13:~$
```

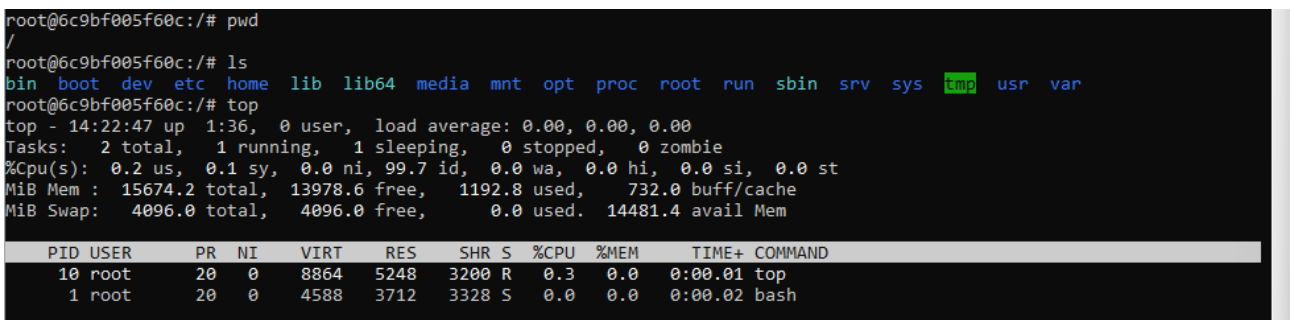
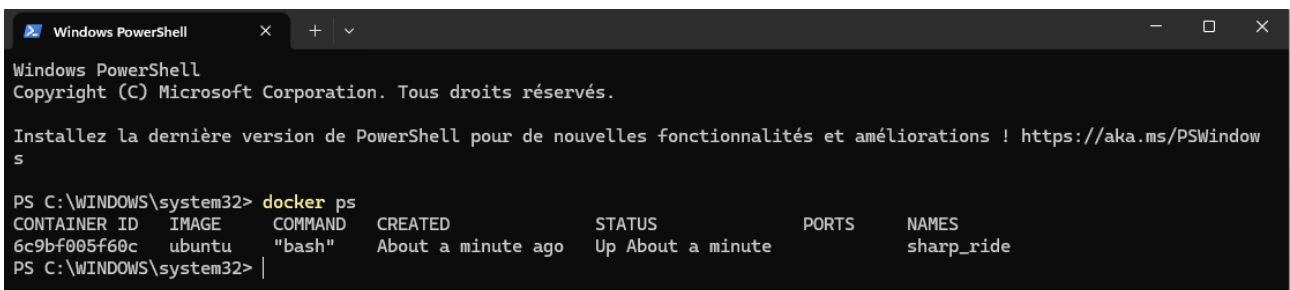
- Lancement d'un conteneur en mode interactif qui lancera un shell bash qui interprètera les commandes :

```
root@6c9bf005f60c: /  
sio@G102-GB13:~$ docker run -it ubuntu bash  
Unable to find image 'ubuntu:latest' locally  
latest: Pulling from library/ubuntu  
817807f3c64e: Pull complete  
e4a1e8de092c: Download complete  
Digest: sha256:186072bba1b2f436cbb91ef2567abca677337cfc786c86e107d25b7072feef0c  
Status: Downloaded newer image for ubuntu:latest  
root@6c9bf005f60c:/#
```

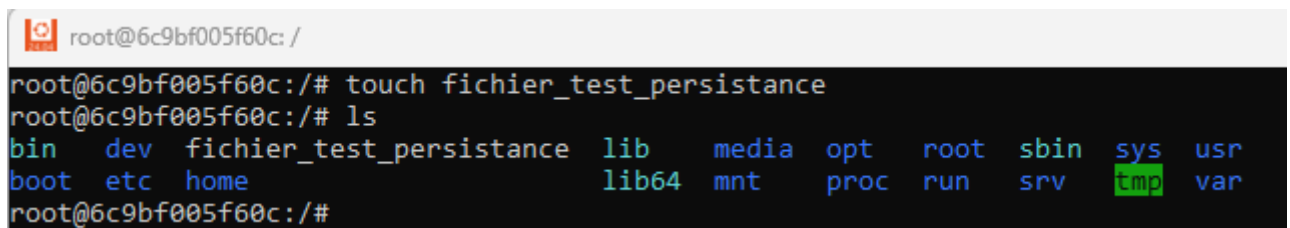




- La commande `docker ps` (depuis la console de la machine Ubuntu ou depuis le terminal Windows) permet de lister les conteneurs en cours d'exécution :



- Créer un fichier, vérifier sa présence :

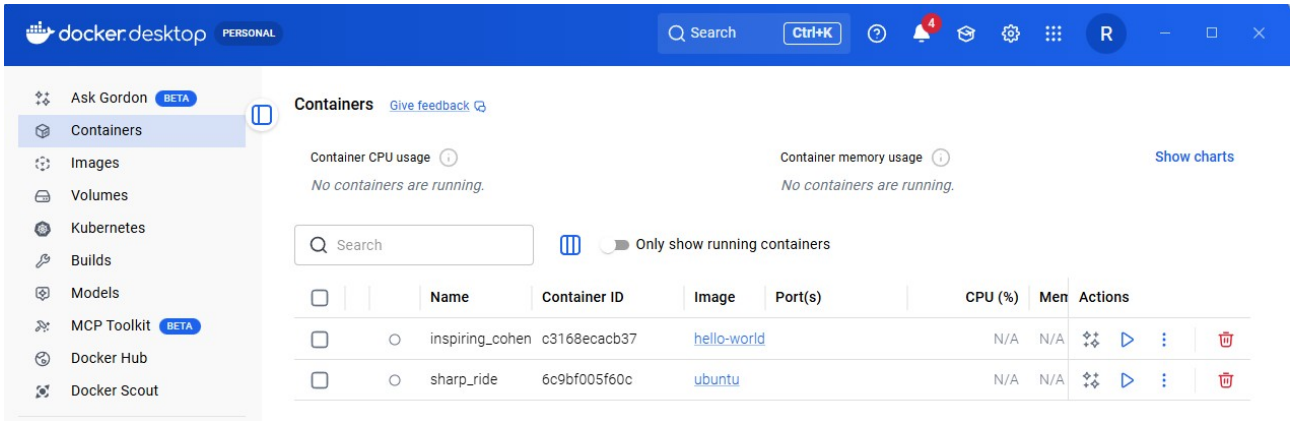


- Supprimer `/home`, vérifier sa suppression puis stopper le conteneur.

```

sio@G102-GB13: ~
root@6c9bf005f60c:/# rm -fr /home
root@6c9bf005f60c:/# ls
bin  dev  fichier_test_persistence  lib64  mnt  proc  run  srv  tmp  var
boot  etc  lib                        media  opt  root  sbin  sys  usr
root@6c9bf005f60c:/# exit
exit
sio@G102-GB13:~$

```



```

Windows PowerShell
PS C:\WINDOWS\system32> docker ps
CONTAINER ID   IMAGE          COMMAND         CREATED        STATUS        PORTS          NAMES
PS C:\WINDOWS\system32>

```

```

Windows PowerShell
PS C:\WINDOWS\system32> docker ps -a
CONTAINER ID   IMAGE          COMMAND         CREATED        STATUS        PORTS          NAMES
6c9bf005f60c  ubuntu        "bash"         6 minutes ago Exited (0)    About a minute ago
c3168ecacb37  hello-world   "/hello"       2 weeks ago   Exited (0)   2 weeks ago   inspiring_cohen
PS C:\WINDOWS\system32>

```

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

```

sio@G102-GB13: ~
sio@G102-GB13:~$ docker start 6c9
6c9
sio@G102-GB13:~$ docker stop 6c9
6c9
sio@G102-GB13:~$ docker start -ai 6c9
root@6c9bf005f60c:/# ls
bin  dev  fichier_test_persistence  lib64  mnt  proc  run  srv  tmp  var
boot  etc  lib                        media  opt  root  sbin  sys  usr
root@6c9bf005f60c:/# exit
exit
sio@G102-GB13:~$

```

→ Les modifications sont conservées tant que le conteneur n'est pas supprimé.

▪ Autre manière d'accéder au conteneur :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker start 6c9  
6c9  
sio@G102-GB13:~$ docker exec -it 6c9 bash  
root@6c9bf005f60c:/# exit  
exit  
sio@G102-GB13:~$ docker ps  
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES  
6c9bf005f60c  ubuntu   "bash"    10 minutes ago  Up 25 seconds           sharp_ride  
sio@G102-GB13:~$ docker stop 6c9  
6c9  
sio@G102-GB13:~$ docker ps  
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES  
sio@G102-GB13:~$ docker ps -a  
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES  
6c9bf005f60c  ubuntu   "bash"    10 minutes ago  Exited (137) 11 seconds ago           sharp_ride  
c3168ecacb37  hello-world  "/hello"  2 weeks ago  Exited (0) 2 weeks ago           inspiring_cohen  
sio@G102-GB13:~$
```

▪ Supprimer en ligne de commande les 2 containers

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker rm sharp_ride  
sharp_ride  
sio@G102-GB13:~$ docker rm c3  
c3  
sio@G102-GB13:~$ docker ps -a  
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES  
sio@G102-GB13:~$
```

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

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker run -it --rm ubuntu bash  
root@177301e5a215:/# ls  
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys tmp usr var  
root@177301e5a215:/# exit  
exit  
sio@G102-GB13:~$ docker ps -a  
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES  
sio@G102-GB13:~$
```

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

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

```
root@efe8fc041524: /
sio@G102-GB13:~$ docker run -it --name test_modification ubuntu
root@efe8fc041524:/#
```

```
sio@G102-GB13: ~
root@efe8fc041524:/# cd home
root@efe8fc041524:/home# touch fichier_test
root@efe8fc041524:/home# cd ..
root@efe8fc041524:/# ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys tmp usr var
root@efe8fc041524:/# cd lib
root@efe8fc041524:/lib# ls
apt dpkg init locale lsb mime os-release sysctl.d systemd tmpfiles.d udev x86_64-linux-gnu
root@efe8fc041524:/lib# rm os-release
root@efe8fc041524:/lib# exit
exit
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
sio@G102-GB13:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED          STATUS          PORTS   NAMES
efe8fc041524  ubuntu   "/bin/bash"   About a minute ago   Exited (0) 32 seconds ago   test_modification
sio@G102-GB13:~$ docker diff test_modification
C /usr
C /usr/lib
D /usr/lib/os-release
C /home
A /home/fichier_test
C /root
A /root/.bash_history
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~
sio@G102-GB13:~$ 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@G102-GB13:~$
```

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker commit test_modification ubuntu:1.0
sha256:b88b605e75c66591de55def04a6ca05d94067042e3fcf62137e0bd9aa9b333ad
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker images
INFO In Use
IMAGE          ID                DISK USAGE  CONTENT SIZE  EXTRA
hello-world:latest  85404b3c5395     25.9kB      9.52kB
ubuntu:latest     186072bba1b2     119MB       31.7MB
ubuntu:1.0       b88b605e75c6     117MB       29.7MB
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND             CREATED          STATUS          PORTS          NAMES
efe8fc041524  ubuntu   "/bin/bash"        4 minutes ago   Exited (0) 3 minutes ago
sio@G102-GB13:~$ docker rm test_modification
test_modification
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker run -it --rm --name test ubuntu:1.0
root@659c19556d1e:/# ls /home
fichier_test  ubuntu
root@659c19556d1e:/# exit
exit
sio@G102-GB13:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND             CREATED          STATUS          PORTS          NAMES
sio@G102-GB13:~$
```

10. Première approche des volumes.

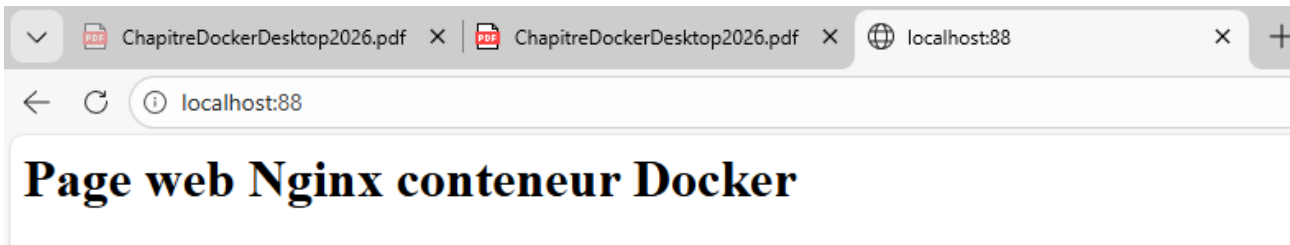
Les données sont sur le système local : création d'un répertoire web sur la machine ubuntu :

```
sio@G102-GB13: ~/web
sio@G102-GB13:~$ pwd
/home/sio
sio@G102-GB13:~$ mkdir web
sio@G102-GB13:~$ cd web
sio@G102-GB13:~/web$ nano index.html
```

```
sio@G102-GB13: ~/web
GNU nano 7.2 index.html *
<html>
<body>
<h1>Page web Nginx conteneur Docker</h1>
</body>
</html>
```

Création d'un conteneur qui va pointer sur le répertoire web du FS local :

```
sio@G102-GB13: ~
sio@G102-GB13:~$ 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
cde7a05ae428: Pull complete
5e815e07e569: Pull complete
ec781dee3f47: Pull complete
587e3d84dbb5: Pull complete
510ddf6557d6: Pull complete
3189680c601f: Pull complete
bb3d0aa29654: Pull complete
669e0ab8e7fa: Download complete
96a6cfe061e0: Download complete
Digest: sha256:7150b3a39203cb5bee612ff4a9d18774f8c7caf6399d6e8985e97e28eb751c18
Status: Downloaded newer image for nginx:latest
4db60d711633da32f9fbcc2bcf88fcb5ec96212c2187819b901ae406a2dde4dd
sio@G102-GB13:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS
AMES
4db60d711633   nginx    "/docker-entrypoint..." 9 seconds ago  Up 8 seconds  0.0.0.0:88->80/tcp, [::]:88->80/tcp
web
sio@G102-GB13:~$
```



```
sio@G102-GB13: ~  
sio@G102-GB13:~$ 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  
2026/03/25 14:45:30 [notice] 1#1: using the "epoll" event method  
2026/03/25 14:45:30 [notice] 1#1: nginx/1.29.7  
2026/03/25 14:45:30 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)  
2026/03/25 14:45:30 [notice] 1#1: OS: Linux 6.6.87.2-microsoft-standard-WSL2  
2026/03/25 14:45:30 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576  
2026/03/25 14:45:30 [notice] 1#1: start worker processes  
2026/03/25 14:45:30 [notice] 1#1: start worker process 29  
2026/03/25 14:45:30 [notice] 1#1: start worker process 30  
2026/03/25 14:45:30 [notice] 1#1: start worker process 31  
2026/03/25 14:45:30 [notice] 1#1: start worker process 32  
2026/03/25 14:45:30 [notice] 1#1: start worker process 33  
2026/03/25 14:45:30 [notice] 1#1: start worker process 34  
2026/03/25 14:45:30 [notice] 1#1: start worker process 35  
2026/03/25 14:45:30 [notice] 1#1: start worker process 36  
2026/03/25 14:45:30 [notice] 1#1: start worker process 37  
2026/03/25 14:45:30 [notice] 1#1: start worker process 38  
2026/03/25 14:45:30 [notice] 1#1: start worker process 39  
2026/03/25 14:45:30 [notice] 1#1: start worker process 40  
2026/03/25 14:45:30 [notice] 1#1: start worker process 41  
2026/03/25 14:45:30 [notice] 1#1: start worker process 42  
2026/03/25 14:45:30 [notice] 1#1: start worker process 43  
2026/03/25 14:45:30 [notice] 1#1: start worker process 44  
172.17.0.1 - - [25/Mar/2026:14:46:17 +0000] "GET / HTTP/1.1" 200 73 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/146.0.0.0 Safari/537.36 Edg/146.0.0.0" "-"  
172.17.0.1 - - [25/Mar/2026:14:46:17 +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/146.0.0.0 Safari/537.36 Edg/146.0.0.0" "-"  
2026/03/25 14:46:17 [error] 29#29: *1 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", referer: "http://localhost:88/"  
sio@G102-GB13:~$
```

Arrêt et suppression du conteneur web :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker rm -fv web  
web  
sio@G102-GB13:~$ docker ps -a  
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES  
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~/web  
sio@G102-GB13:~$ cd web  
sio@G102-GB13:~/web$ ls  
index.html  
sio@G102-GB13:~/web$
```

11. Gestion des volumes en écriture.

11.1. Premier type de volume : volume nommé

```
sio@G102-GB13: ~/data
sio@G102-GB13:~/data$ docker pull mongodb/mongodb-community-server:latest
latest: Pulling from mongodb/mongodb-community-server
850408643d86: Pull complete
c768445e12aa: Pull complete
970ca871f47d: Pull complete
e515f5b2543c: Pull complete
c306d7b3e0ad: Pull complete
4f4fb700ef54: Pull complete
4b0f7d51bcad: Pull complete
9e4040d1c74c: Pull complete
7cd6ff9e93a9: Pull complete
fcab688a0cbe: Pull complete
Digest: sha256:6f15ef87cd09b99325ebefe8111542f08290b31cc60ca6d6aa3bfcee80c9249d
Status: Downloaded newer image for mongodb/mongodb-community-server:latest
docker.io/mongodb/mongodb-community-server:latest
sio@G102-GB13:~/data$
```

- Lancer un conteneur en mode serveur à partir de l’image mongodb-community-server :

```
sio@G102-GB13:~/data$ docker run -d -p 27017:27017 -e MONGODB_INITDB_ROOT_USERNAME=sio -e MONGODB_INITDB_ROOT_PASSWORD=password1234 --name mongodb mongodb/mongodb-community-server:latest
c209b9eb33a751776ae14e67ab7d763c10f8fe2410647fe1728d635c3aafe188
sio@G102-GB13:~/data$
```

- Installez MongoDB Shell sur la machine physique pour pouvoir vous connecter au serveur MongoDB :

The screenshot shows the MongoDB website's download page for the MongoDB Shell. The URL in the browser is <https://www.mongodb.com/try/download/shell>. The navigation menu includes links for Products, Resources, Solutions, Company, and Pricing. The sidebar on the left lists various MongoDB products and tools, with 'MongoDB Shell' highlighted. The main content area provides a description of MongoDB Shell as a modern, extensible command-line interface. It includes a compatibility note for Red Hat Enterprise Linux (RHEL) 7, Amazon Linux 2, SUSE Linux Enterprise Server (SLES) 12, and Ubuntu 18.04, stating that support for these versions is deprecated. A note mentions that MongoDB Shell is an open source product developed separately from the MongoDB Server. Below the text, there are 'Learn more' links and a dropdown menu for selecting the version (2.8.2), platform (Windows x64 (10+)), and package type (zip). At the bottom, there are buttons for 'Download', 'Copy link', and 'More Options'.

```
mongosh mongodb://localhost:27017/?directConnection=true&serverSelectionTimeoutMS=2000
```

```
PS C:\WINDOWS\system32> mongosh mongodb://localhost:27017
```

```
PS C:\WINDOWS\system32> mongosh mongodb://localhost:27017
Current Mongosh Log ID: 69ccf9019c77096e363682d0
Connecting to:      mongodb://localhost:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.8.2
Using MongoDB:      6.0.6
Using Mongosh:      2.8.2

For mongosh info see: https://www.mongodb.com/docs/mongosh-shell/

To help improve our products, anonymous usage data is collected and sent to MongoDB periodically (https://www.mongodb.com/legal/privacy-policy).
You can opt-out by running the disableTelemetry() command.

-----
The server generated these startup warnings when booting
  2026-04-01T12:00:04.302+02:00: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> use("ma_bdd")
switched to db ma_bdd
ma_bdd> db.createCollection("etudiants");
{ ok: 1 }
ma_bdd> db.etudiants.insertOne({"nom":"smet", "prenom":"jp"});
{
  acknowledged: true,
  insertedId: ObjectId('69ccf9e59c77096e363682d1')
}
ma_bdd> db.etudiants.find();
[
  {
    _id: ObjectId('69ccf9e59c77096e363682d1'),
    nom: 'smet',
    prenom: 'jp'
  }
]
ma_bdd> exit
PS C:\WINDOWS\system32>
```

```
sio@G102-GB13: ~
```

```
sio@G102-GB13:~$ docker inspect mongodb
```

```
{
  "Id": "c209b9eb33a751776ae14e67ab7d763c10f8fe2410647fe1728d635c3aafe188",
  "Created": "2026-04-01T10:43:28.664820526Z",
  "Path": "python3",
  "Args": [
    "/usr/local/bin/docker-entrypoint.py",
    "mongod"
  ],
  "State": {
    "Status": "running",
    "Running": true,
```

```
sio@G102-GB13: ~  
    }  
  },  
  "Mounts": [  
    {  
      "Type": "volume",  
      "Name": "e046ecb3ca541c28c445fddcb171aac3453c91b350dd63ea2c2c7d3fd6df34ab",  
      "Source": "/var/lib/docker/volumes/e046ecb3ca541c28c445fddcb171aac3453c91b350dd63ea2c2c7d3fd6df34ab/_data",  
      "Destination": "/data/configdb",  
      "Driver": "local",  
      "Mode": "",  
      "RW": true,  
      "Propagation": ""  
    },  
    {  
      "Type": "volume",  
      "Name": "6389bce4f15897ee9d480dc09ed758e59081c7a5c46ebda239e3193ee1abbfd6",  
      "Source": "/var/lib/docker/volumes/6389bce4f15897ee9d480dc09ed758e59081c7a5c46ebda239e3193ee1abbfd6/_data",  
      "Destination": "/data/db",  
      "Driver": "local",  
      "Mode": "",  
      "RW": true,  
      "Propagation": ""  
    }  
  ]  
}
```

```
sio@G102-GB13: ~  
  "StdinOnce": false,  
  "Env": [  
    "MONGODB_INITDB_ROOT_USERNAME=sio",  
    "MONGODB_INITDB_ROOT_PASSWORD=password1234",  
    "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin",  
    "HOME=/data/db",  
    "GLIBC_TUNABLES=glibc.pthread.rseq=0"  
  ],  
  "Cmd": [  
    "mongod"  
  ],  
  "Image": "mongodb/mongodb-community-server:latest",  
  "Volumes": {  
    "/data/configdb": {},  
    "/data/db": {}  
  },  
}
```

- Accédez au conteneur puis aux données et arrêtez le conteneur :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker exec -it mongodb bash  
mongodb@c209b9eb33a7:/$ cd /data  
mongodb@c209b9eb33a7:/data$ ls  
configdb  db  
mongodb@c209b9eb33a7:/data$ cd db  
mongodb@c209b9eb33a7:~$ ls  
WiredTiger          diagnostic.data  
WiredTiger.lock    index-1cdfc2ac-f105-410d-8fd6-52f83cffe103.wt  
WiredTiger.turtle  index-63490973-55b6-44a2-bcb9-28194d24307e.wt  
WiredTiger.wt      index-6352f2d8-177c-4e30-a29e-48df8c366ea0.wt  
WiredTigerHS.wt    index-8d854f6d-e586-418c-bcdc-f319259d0827.wt  
_mdb_catalog.wt    index-a176f3be-cdfc-4c8d-8963-6392b4214891.wt  
_tmp                index-ad4238de-7527-4105-b0c5-0ccaddf775bd.wt  
collection-2bb9554b-12f8-4844-967b-39c4fbd9a07.wt  journal  
collection-67f02125-110c-422c-a1f2-26d8a79bc1c4.wt  mongod.lock  
collection-aacac916-8343-446e-baa1-2fa776db3ec2.wt  sizeStorer.wt  
collection-d2487b9d-7e1c-4933-bb3b-520d658b466d.wt  storage.bson  
mongodb@c209b9eb33a7:~$ exit  
exit  
sio@G102-GB13:~$
```

- Supprimez le conteneur : les données vont être perdues.

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker rm -f mongodb  
mongodb  
sio@G102-GB13:~$ docker ps -a  
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS    NAMES  
sio@G102-GB13:~$
```

- Nous souhaitons bénéficier d'une persistance des données MongoDB dans Docker. Créez un volume nommé à l'aide de la commande `docker volume create` :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker volume create mon_volume_mongodb  
mon_volume_mongodb  
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker volume ls  
DRIVER      VOLUME NAME  
local      6389bce4f15897ee9d480dc09ed758e59081c7a5c46ebda239e3193ee1abbfd6  
local      e046ecb3ca541c28c445fddcb171aac3453c91b350dd63ea2c2c7d3fd6df34ab  
local      mon_volume_mongodb  
sio@G102-GB13:~$
```

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker volume inspect mon_volume_mongodb  
[  
  {  
    "CreatedAt": "2026-04-01T11:34:10Z",  
    "Driver": "local",  
    "Labels": null,  
    "Mountpoint": "/var/lib/docker/volumes/mon_volume_mongodb/_data",  
    "Name": "mon_volume_mongodb",  
    "Options": null,  
    "Scope": "local"  
  }  
]  
sio@G102-GB13:~$
```

- Lancez un conteneur avec un mappage de volume (volume nommé:/volume du conteneur) :

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker run -d --name mongodb -p 27017:27017 -e MONGODB_INITDB_ROOT_USERNAME=sio -e MONGODB_INITDB_ROOT_PASSWORD=password1234 -v mon_volume_mongodb:/data/db mongodb/mongodb-community-server:latest
a04fcb3869c64e7f09bc9e66f945cf52379049c98f718d51a785a314eb7fffbdb
sio@G102-GB13:~$
```

- Connectez-vous au serveur MongoDB :

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker ps
CONTAINER ID   IMAGE                                COMMAND                                  CREATED        STATUS
PORTS
a04fcb3869c6   mongodb/mongodb-community-server:latest  "python3 /usr/local/..."             About an hour ago    Up About an hour
0.0.0.0:27017->27017/tcp, [::]:27017->27017/tcp   mongod
sio@G102-GB13:~$
```

- Arrêtez le conteneur et supprimez-le :

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker stop mongodb
mongod
sio@G102-GB13:~$ docker rm -v mongodb
mongod
sio@G102-GB13:~$ docker ps -a
CONTAINER ID   IMAGE                                COMMAND                                  CREATED        STATUS        PORTS        NAMES
sio@G102-GB13:~$
```

- Après suppression du conteneur, redémarrez un conteneur mongo :

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker run -d --name mongodb -p 27017:27017 -e MONGODB_INITDB_ROOT_USERNAME=sio -e MONGODB_INITDB_ROOT_PASSWORD=password1234 -v mon_volume_mongodb:/data/db mongodb/mongodb-community-server:latest
83a2bfddd7dbe2ea27f0c385ec27260a7e630bbb668b2d4a6c421e0633b1996b
sio@G102-GB13:~$
```

La persistance a bien été gérée :

```
Administrateur : Windows PowerShell
PS C:\WINDOWS\system32> mongosh mongodb://localhost:27017
Current Mongosh Log ID: 69cd18fc8c3481ee8d3682d0
Connecting to:      mongodb://localhost:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.8.2
Using MongoDB:      6.0.6
Using Mongosh:      2.8.2

For mongosh info see: https://www.mongodb.com/docs/mongodb-shell/

-----
  The server generated these startup warnings when booting
  2026-04-01T12:00:04.302+02:00: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
  -----

test> use("ma_bdd");
switched to db ma_bdd
ma_bdd> db.etudiants.find();
[
  {
    _id: ObjectId('69ccf9e59c77096e363682d1'),
    nom: 'smet',
    prenom: 'jp'
  }
]
ma_bdd> exit
PS C:\WINDOWS\system32>
```

- Supprimez le conteneur :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker rm -fv mongodb  
mongodb  
sio@G102-GB13:~$
```

- Relancez un conteneur et ajoutez une deuxième ligne pour vérifier la persistance :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker run -d --name mongodb -p 27017:27017 -e MONGODB_INITDB_ROOT_USERNAME=sio -e MONGODB_INITDB_ROOT_PASSWORD=password1234 -v mon_volume_mongodb:/data/db mongodb/mongodb-community-server:latest  
42e6ec34ea1eb08bac36c11eb27fbe9964d27fc11de30b1bead6c5903d793a33  
sio@G102-GB13:~$
```

```
test> use("ma_bdd");  
switched to db ma_bdd  
ma_bdd> db.etudiants.insertOne({"nom":"hallyday", "prenom":"johnny"});  
{  
  acknowledged: true,  
  insertedId: ObjectId('69cd19df6b70b7fbf03682d1')  
}  
ma_bdd> db.etudiants.find();  
[  
  {  
    _id: ObjectId('69ccf9e59c77096e363682d1'),  
    nom: 'smet',  
    prenom: 'jp'  
  },  
  {  
    _id: ObjectId('69cd19df6b70b7fbf03682d1'),  
    nom: 'hallyday',  
    prenom: 'johnny'  
  }  
]  
ma_bdd> exit  
PS C:\WINDOWS\system32>
```

- Supprimez le conteneur :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker rm -fv mongodb  
mongodb  
sio@G102-GB13:~$
```

- Relancez un conteneur et constatez la persistance des données :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker run -d --name mongodb -p 27017:27017 -e MONGODB_INITDB_ROOT_USERNAME=sio -e MONGODB_INITDB_ROOT_PASSWORD=password1234 -v mon_volume_mongodb:/data/db mongodb/mongodb-community-server:latest  
0e6f1e88169cb5fb2740efdccebbec478b7ec1fca9a575c0e1a9b64e51f2827  
sio@G102-GB13:~$
```

```
Administrateur : Windows PowerShell
Connecting to:      mongodb://localhost:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2
.8.2
Using MongoDB:     6.0.6
Using Mongosh:     2.8.2

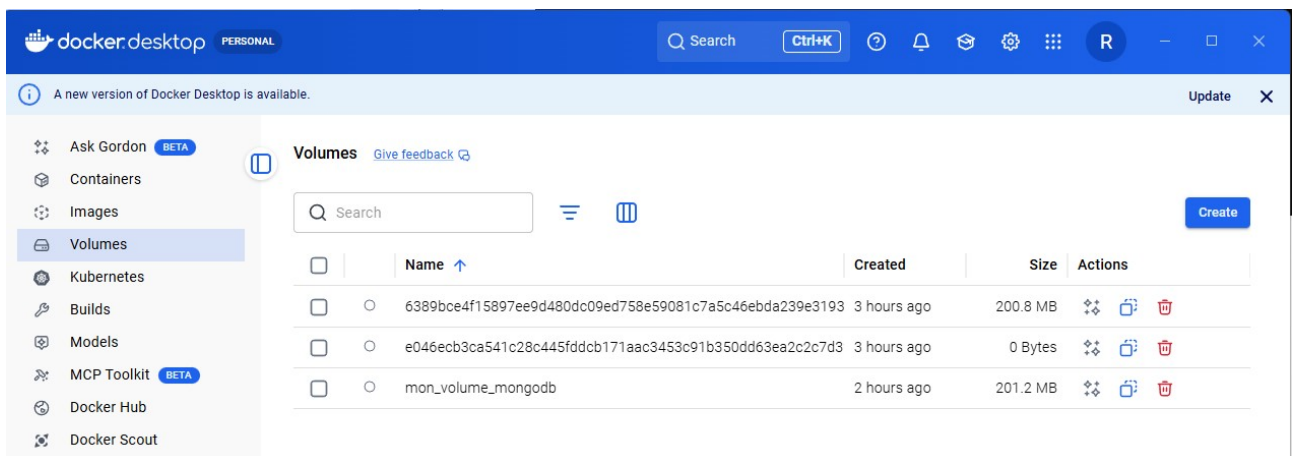
For mongosh info see: https://www.mongodb.com/docs/mongodb-shell/

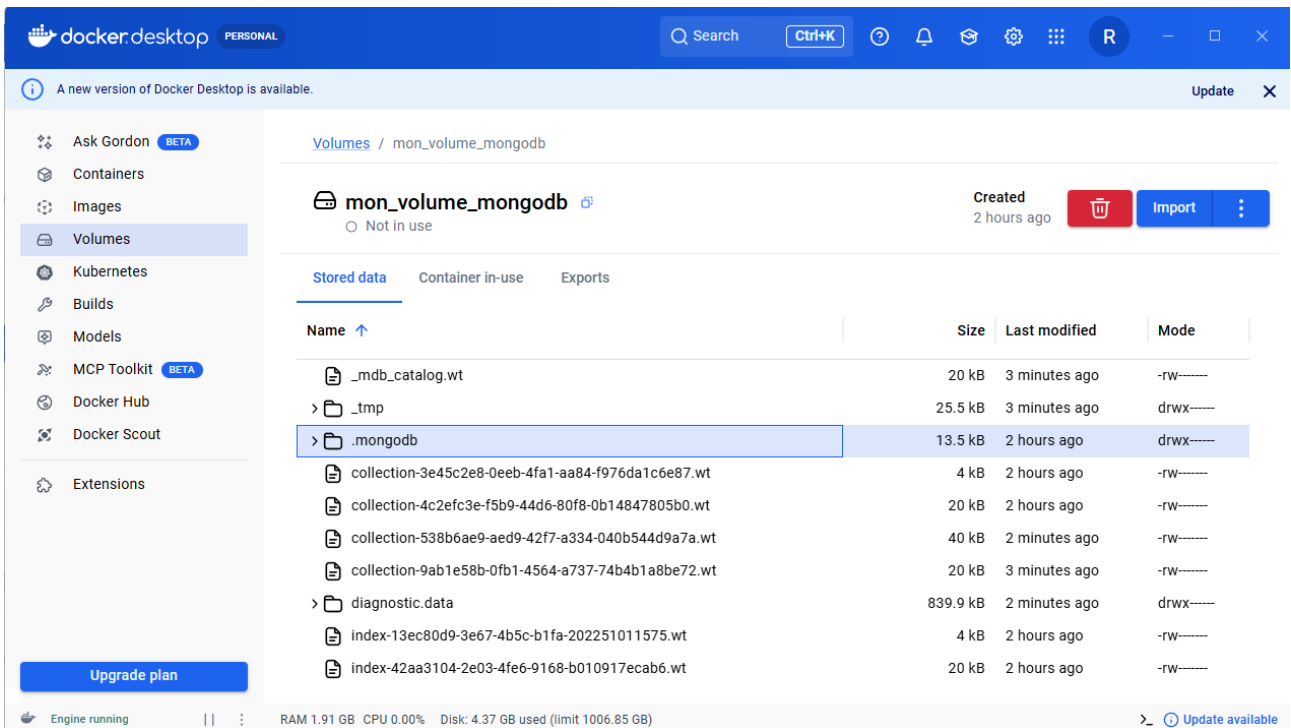
-----
The server generated these startup warnings when booting
2026-04-01T12:00:04.302+02:00: Access control is not enabled for the database. Read and write access to data and conf
figuration is unrestricted
-----

test> use("ma_bdd");
switched to db ma_bdd
ma_bdd> db.etudiants.find();
[
  {
    _id: ObjectId('69ccf9e59c77096e363682d1'),
    nom: 'smet',
    prenom: 'jp'
  },
  {
    _id: ObjectId('69cd19df6b70b7FbF03682d1'),
    nom: 'hallyday',
    prenom: 'johnny'
  }
]
ma_bdd> exit
PS C:\WINDOWS\system32>
```

- Supprimez le conteneur :

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker rm -fv mongodb
mongodb
sio@G102-GB13:~$
```





11.1. Deuxième type de volume : montage lié (bind mounting)

```
sio@G102-GB13: ~
sio@G102-GB13:~$ docker run -d --name mongodb2 -p 27017:27017 -e MONGODB_INITDB_ROOT_USERNAME=sio -e MONGODB_INITDB_ROOT_PASSWORD=password1234 -v /home/sio/data:/data/db mongodb/mongodb-community-server:latest
06a634bc7512d21ef695f769926151dea0e624ced39e640a6b119ceec6d1e5a70
sio@G102-GB13:~$
```

```
Administrateur : Windows PowerShell
PS C:\WINDOWS\system32> docker ps
CONTAINER ID   IMAGE                                     NAMES
06a634bc7512   mongodb/mongodb-community-server:latest  mongodb2
:27017->27017/tcp, [::]:27017->27017/tcp
PS C:\WINDOWS\system32> docker stop mongodb2
mongodb2
PS C:\WINDOWS\system32> docker rm -v mongodb2
mongodb2
PS C:\WINDOWS\system32>
```

```
sio@G102-GB13: ~/data
sio@G102-GB13:~$ cd data
sio@G102-GB13:~/data$ ls
wiredTiger                               diagnostic.data
wiredTiger.lock                          index-1ae90317-9f34-4c41-82f1-d6fc082fa14f.wt
wiredTiger.turtle                        index-9bfde7b2-f8c4-4aec-97e5-c1e470abcb95.wt
wiredTiger.wt                             index-9fc889fa-2546-42c4-82a9-f70da3ec55de.wt
wiredTigerHS.wt                           index-d58edc04-36e0-48bc-aa4b-b4abe7104792.wt
_mdb_catalog.wt                           index-dbef1912-ea76-4f17-88cb-c59b52c6135c.wt
_tmp                                       index-dda4e19f-fcb3-4ea6-948e-ca337c4573f0.wt
collection-12695b29-45aa-4e22-a491-9855490d0859.wt journal
collection-17d6f7f2-bb39-474a-aaca-2217a6deac24.wt mongod.lock
collection-1825c13e-e9b4-469c-ad30-2fa35cc41910.wt sizeStorer.wt
collection-d9bb2207-ed15-44c2-b00d-a1b025781c2f.wt storage.bson
sio@G102-GB13:~/data$
```

Après suppression du conteneur, on relance une nouvelle instance de l'image :

```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker run -d --name mongodb2 -p 27017:27017 -e MONGODB_INITDB_ROOT_USERNAME=sio -e MONGODB_INITDB_ROOT_PASSWORD=password1234 -v /home/sio/data:/data/db mongodb/mongodb-community-server:latest  
3bcabbe1e80522f9d81ed8af3b6c6eeb3e03942ea8f508b3f75ce280ba2a09ee  
sio@G102-GB13:~$
```

The screenshot shows the Docker Desktop interface with the 'Volumes' tab selected. A table lists the following volumes:

| Name | Created | Size | Actions |
|---|--------------|----------|---------------------------|
| 6389bce4f15897ee9d480dc09ed758e59081c7a5c46ebda239e3193 | 3 hours ago | 200.8 MB | [Refresh] [Copy] [Delete] |
| e046ecb3ca541c28c445fddb171aac3453c91b350dd63ea2c2c7d3 | 3 hours ago | 0 Bytes | [Refresh] [Copy] [Delete] |
| ee22212ca6138e7448c4f798896ddd0a7eb7348de1d5cb109b8c17 | 1 second ago | 0 Bytes | [Refresh] [Copy] [Delete] |
| mon_volume_mongodb | 2 hours ago | 201.2 MB | [Refresh] [Copy] [Delete] |

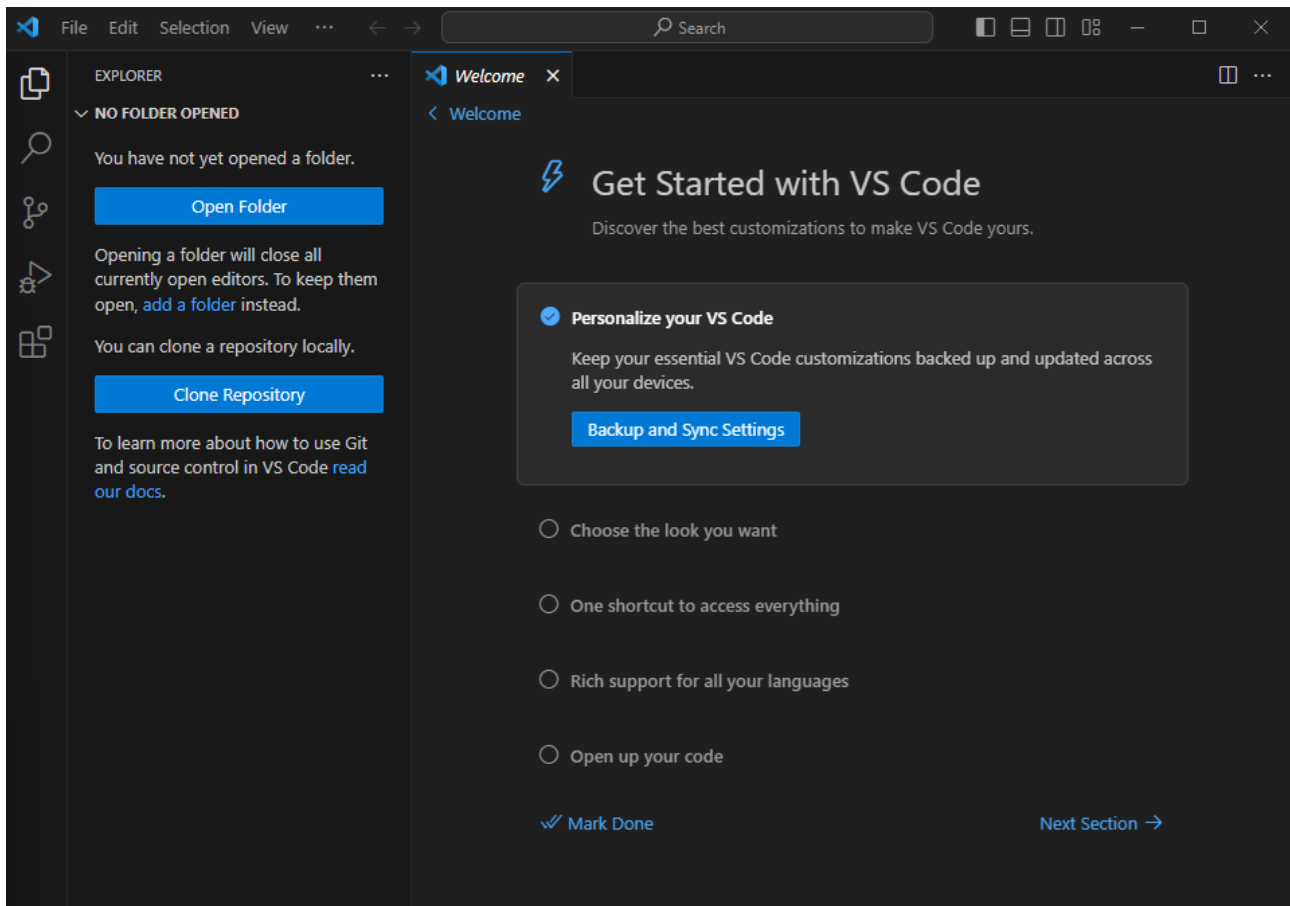
```
sio@G102-GB13: ~  
sio@G102-GB13:~$ docker rm -fv mongodb2  
mongodb2  
sio@G102-GB13:~$
```

The screenshot shows the Docker Desktop interface with the 'Volumes' tab selected. The volume 'mongodb2' has been removed from the list. The remaining volumes are:

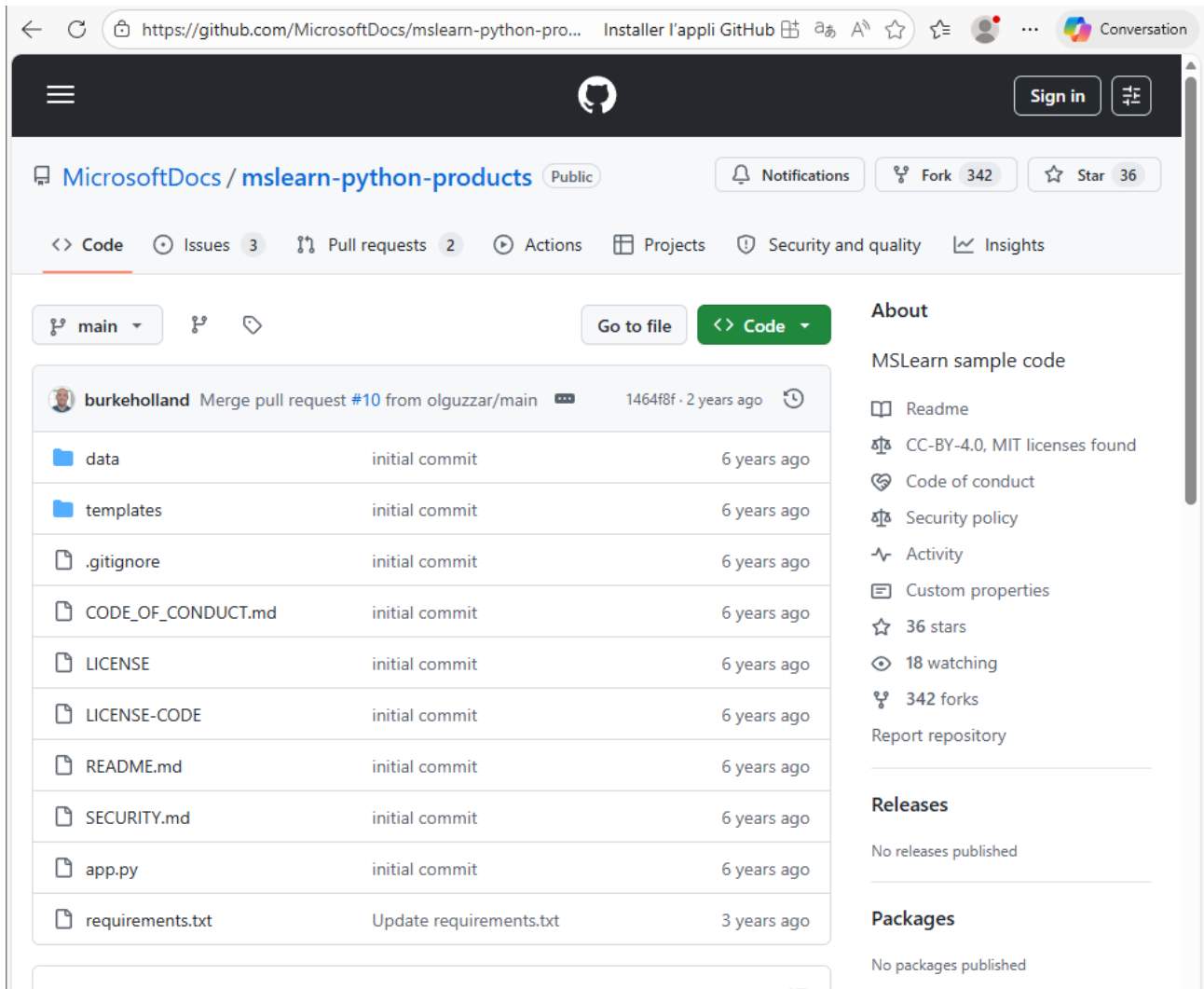
| Name | Created | Size | Actions |
|---|-------------|----------|---------------------------|
| 6389bce4f15897ee9d480dc09ed758e59081c7a5c46ebda239e3193 | 3 hours ago | 200.8 MB | [Refresh] [Copy] [Delete] |
| e046ecb3ca541c28c445fddb171aac3453c91b350dd63ea2c2c7d3 | 3 hours ago | 0 Bytes | [Refresh] [Copy] [Delete] |
| mon_volume_mongodb | 2 hours ago | 201.2 MB | [Refresh] [Copy] [Delete] |

12. Utiliser un conteneur Docker et Visual Studio Code.

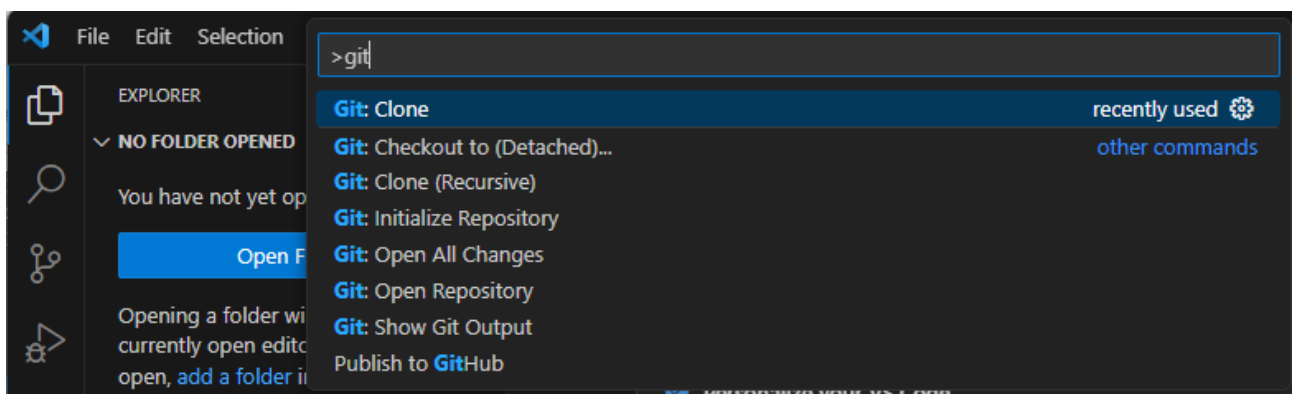
- Ouvrez une nouvelle instance de Visual Studio Code :

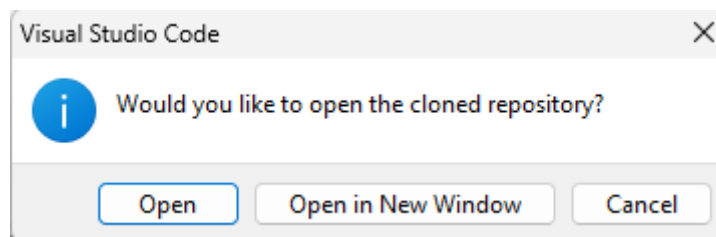
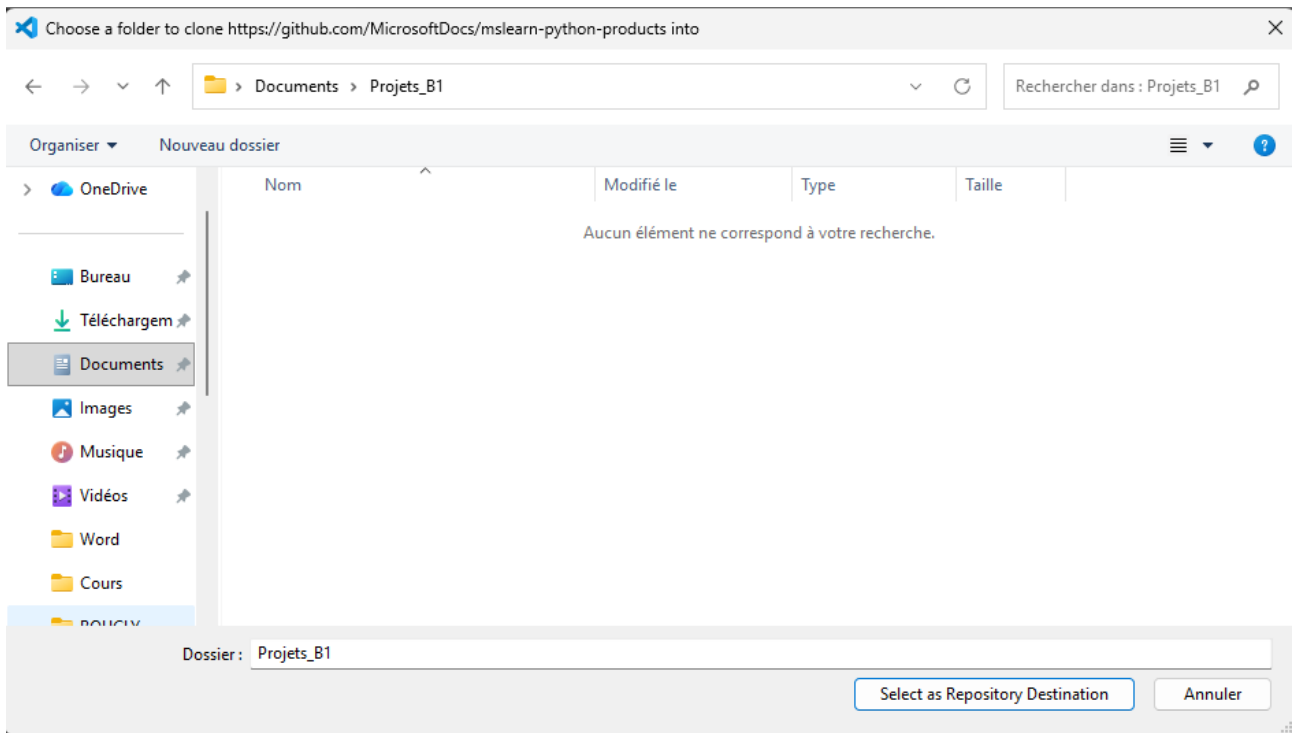


- Copiez l'URL du projet mslearn-python-products qui nous servira d'exemple :



- Dans VS Code, sélectionnez Clone Repository ou appuyez sur F1 pour rechercher Git : Clone :







Do you trust the authors of the files in this folder?

Code provides features that may automatically execute files in this folder.

If you don't trust the authors of these files, we recommend to continue in restricted mode as the files may be malicious. See [our docs](#) to learn more.

C:\Users\rcroquelois\Documents\Projets_B1\mslearn-python-products

Trust the authors of all files in the parent folder 'Projets_B1'

Yes, I trust the authors

Trust folder and enable all features

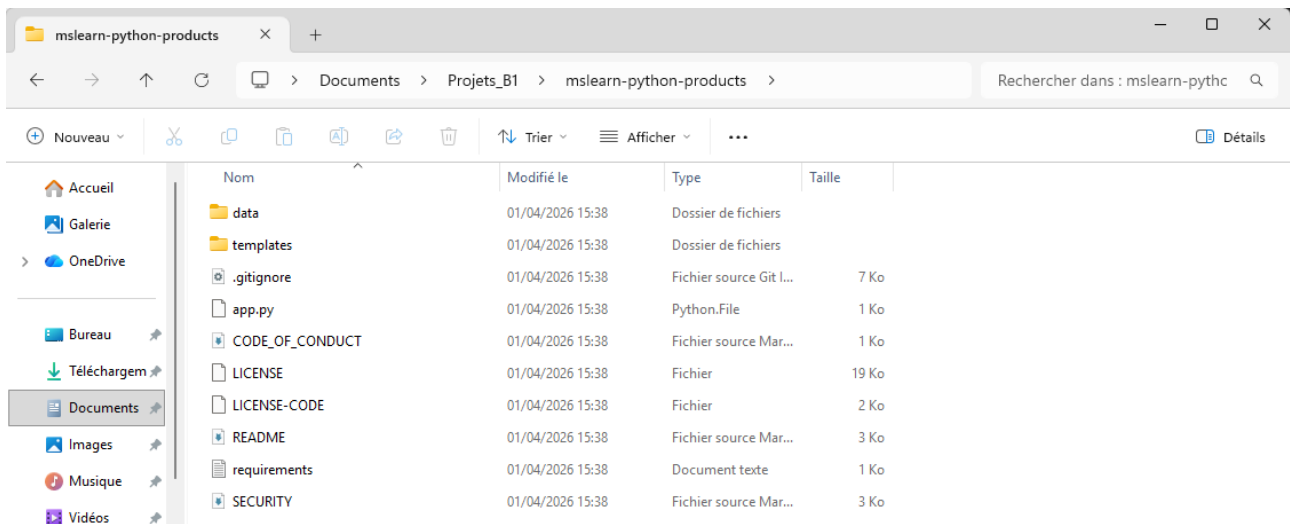
No, I don't trust the authors

Browse folder in restricted mode

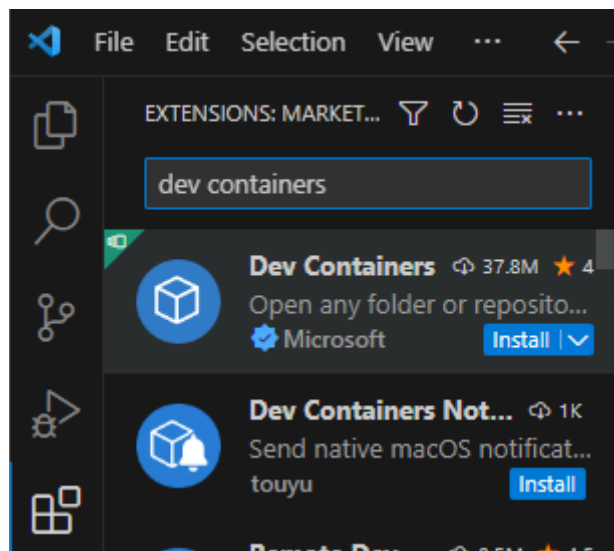
The image shows a code editor window with the following content:

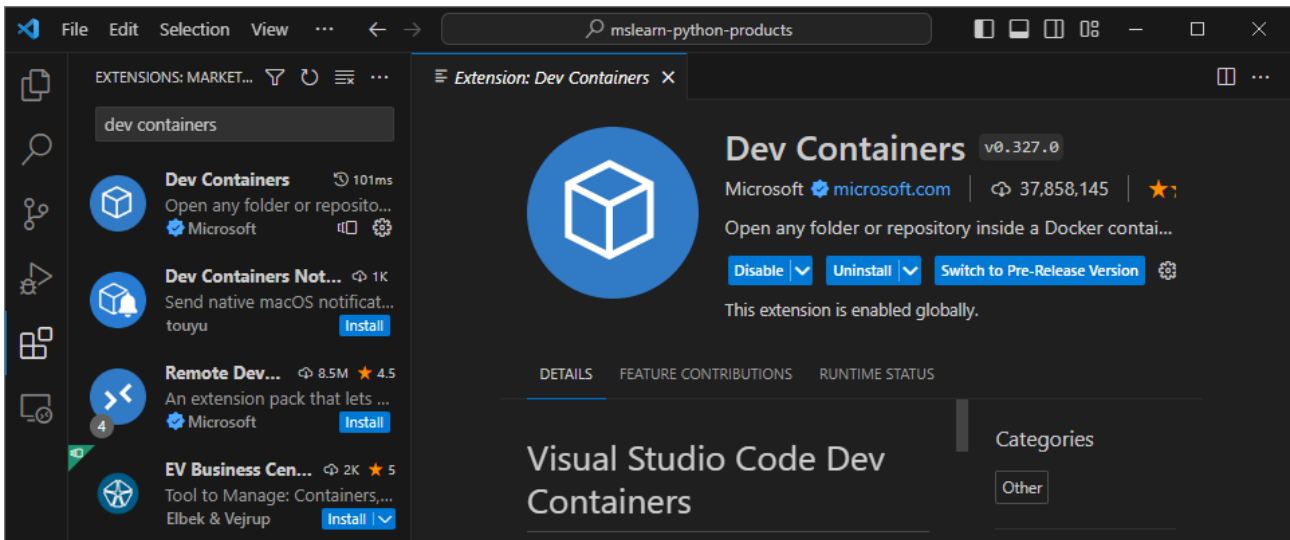
- EXPLORER:** A file tree for a project named 'MSLEARN-PYTHON-PRODUCTS'. It contains a 'data' folder with 'products.json', a 'templates' folder with 'index.html', and files: '.gitignore', 'app.py', 'CODE_OF_CONDUCT.md', 'LICENSE', 'LICENSE-CODE', 'README.md', 'requirements.txt', and 'SECURITY.md'.
- Code Editor:** A single file named 'app.py' containing the following Python code:

```
1 from flask import Flask
2 from flask import render_template
3 import json
4
5 app = Flask(__name__)
6
7 @app.route("/")
8 def index():
9     with open('data/products.json') as f:
10         data = json.load(f)
11
12     return render_template('index.html', products=data)
13
14 if __name__ == "__main__":
15     app.run(debug=True)
```
- Bottom Bar:** Shows 'main' as the active environment, 0 errors, 0 warnings, and 0 messages. The status bar indicates 'Ln 1, Col 1', 'Spaces: 4', 'UTF-8', 'CRLF', and 'Python'.
- Windows Notification:** A message in the bottom right corner says 'Activer Windows' and 'Accédez aux paramètres pour activer Windows.'

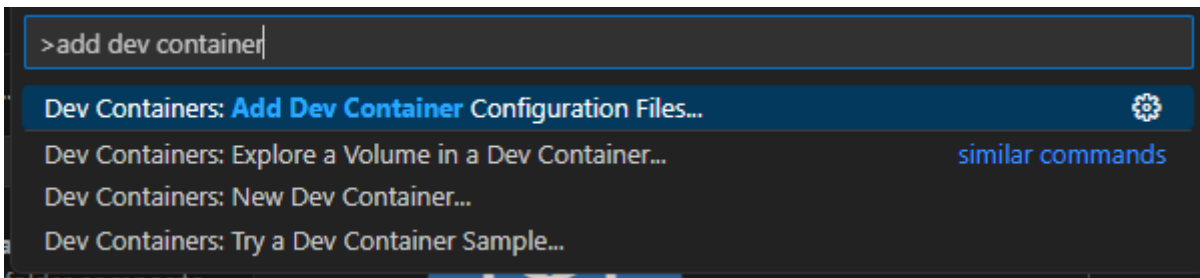


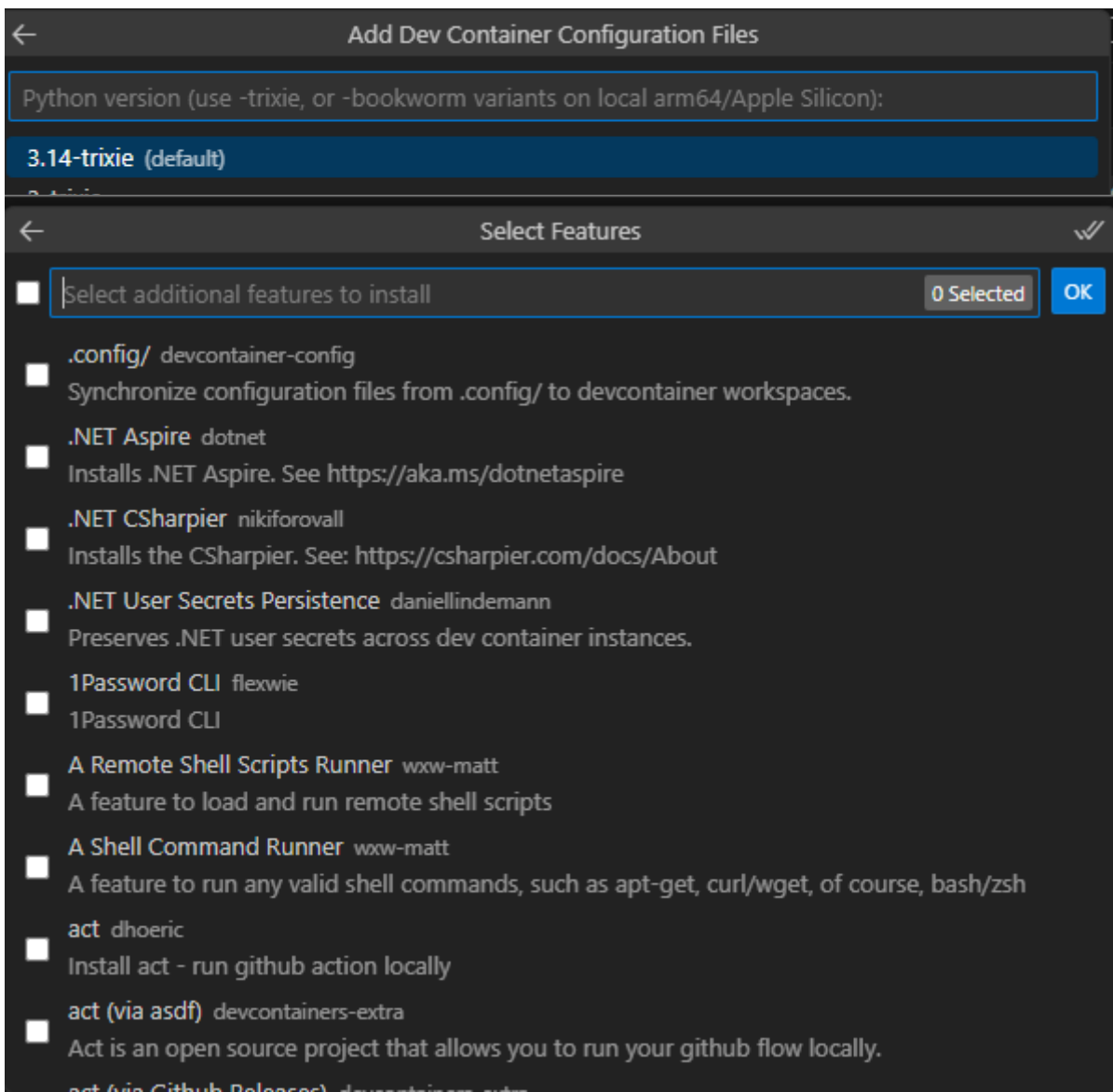
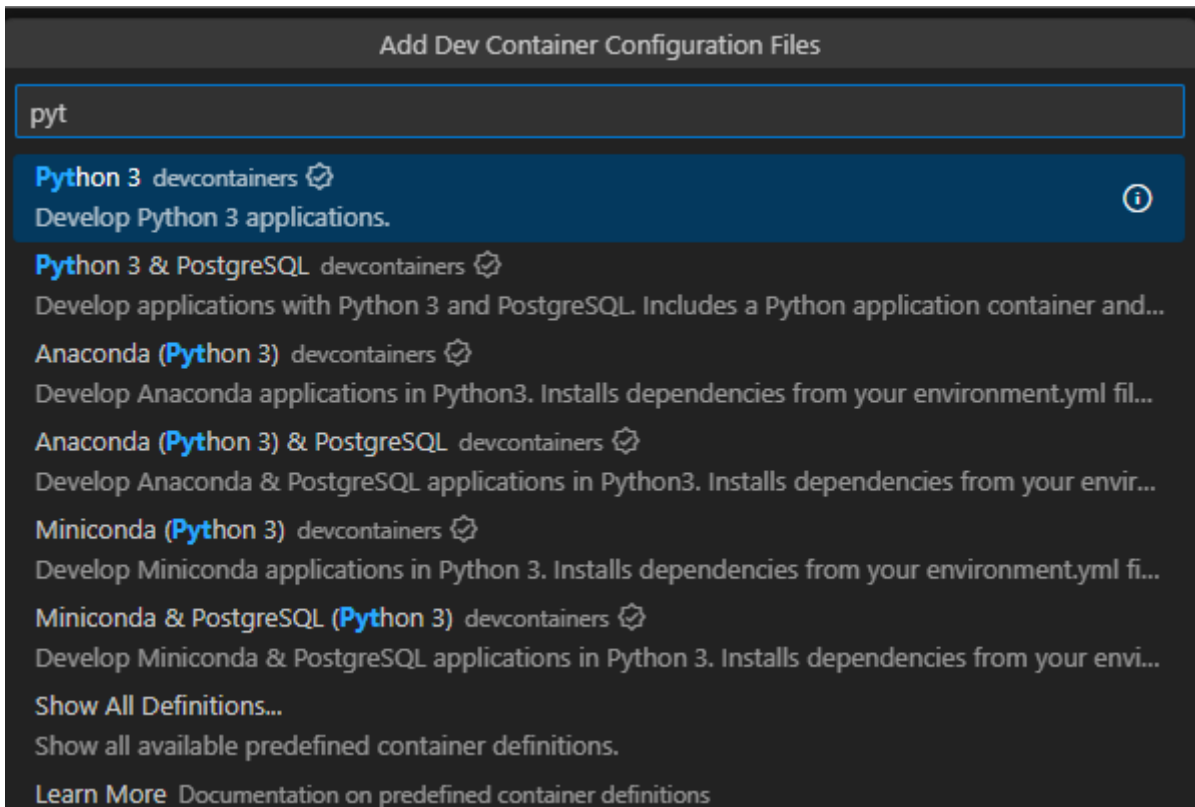
- Sélectionnez l'icône Extensions afin d'installer l'extension Dev Containers (« conteneurs de développement »).



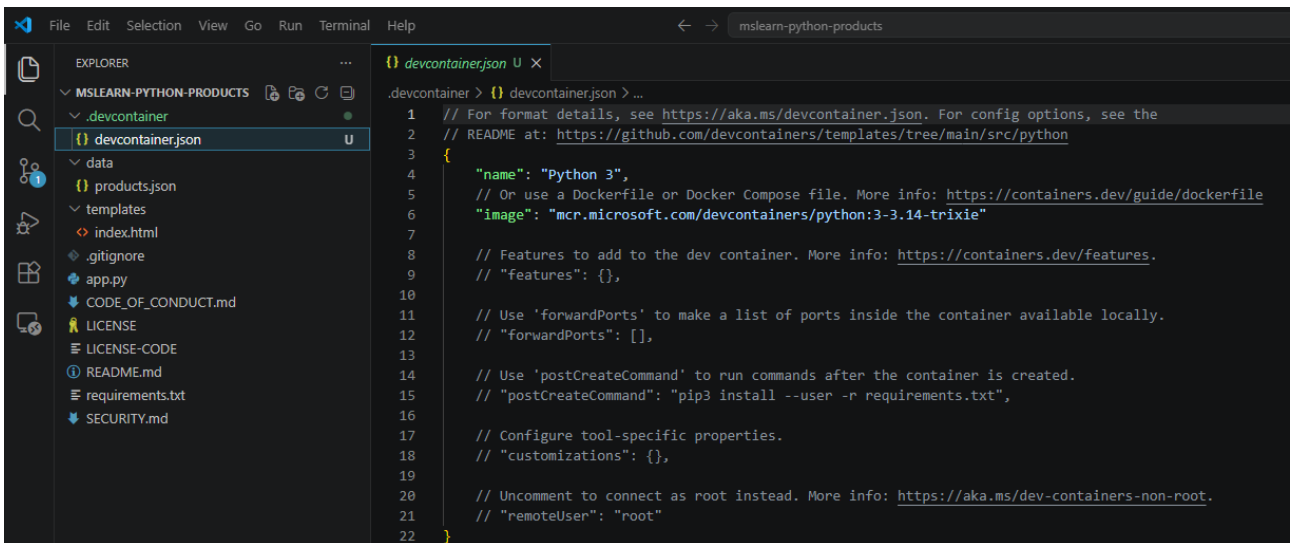


- Tapez add dev container et sélectionnez Dev Containers: Add Dev Container Configuration Files.





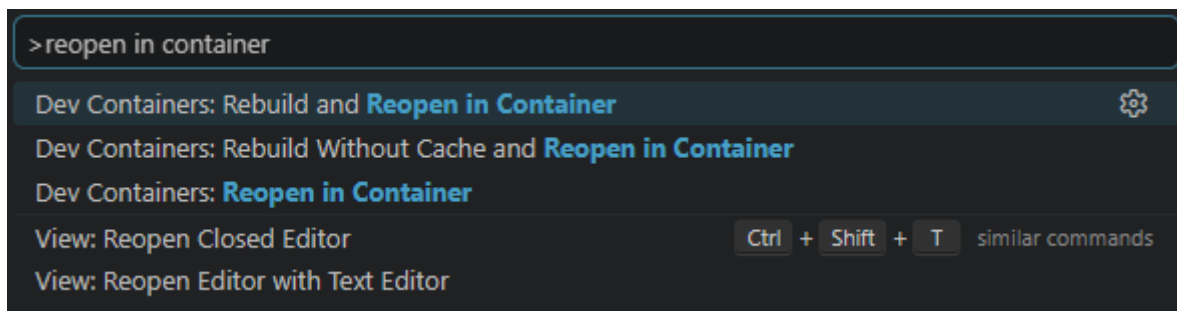
- Un nouveau dossier nommé « .devcontainer » a été ajouté au projet. Développez ce dossier : il contient un fichier devcontainer.json.



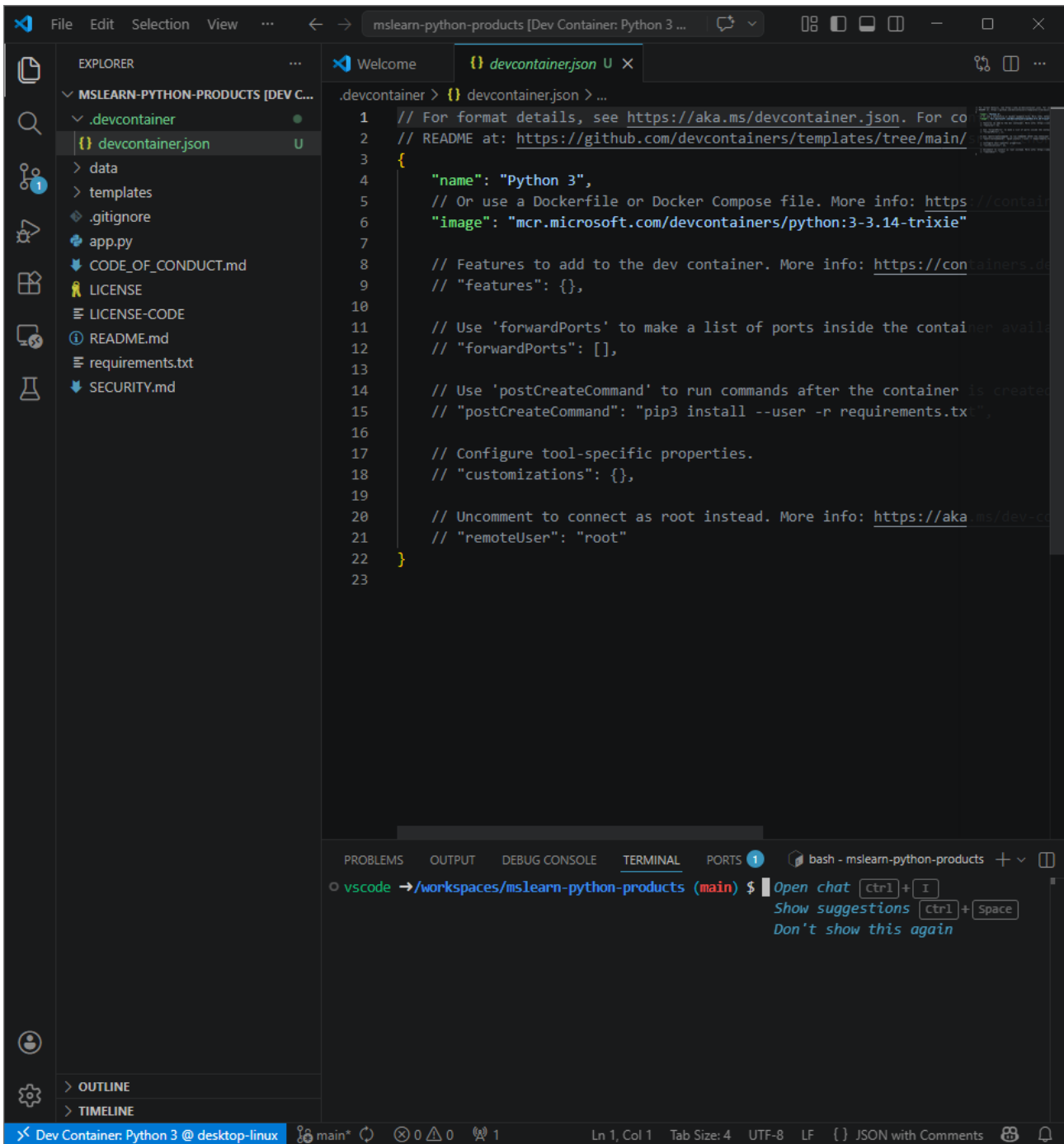
The screenshot shows the Visual Studio Code interface. On the left, the Explorer sidebar shows a project named 'MSLEARN-PYTHON-PRODUCTS' with a newly added '.devcontainer' folder. Inside this folder is a file named 'devcontainer.json'. The main editor area displays the content of 'devcontainer.json', which is a JSON configuration file for Dev Containers. The file includes comments and a JSON object with the following structure:

```
1 // For format details, see https://aka.ms/devcontainer.json. For config options, see the
2 // README at: https://github.com/devcontainers/templates/tree/main/src/python
3
4 {
5   "name": "Python 3",
6   // Or use a Dockerfile or Docker Compose file. More info: https://containers.dev/guide/dockerfile
7   "image": "mcr.microsoft.com/devcontainers/python:3-3.14-trixie"
8
9   // Features to add to the dev container. More info: https://containers.dev/features.
10  // "features": {},
11
12  // Use 'forwardPorts' to make a list of ports inside the container available locally.
13  // "forwardPorts": [],
14
15  // Use 'postCreateCommand' to run commands after the container is created.
16  // "postCreateCommand": "pip3 install --user -r requirements.txt",
17
18  // Configure tool-specific properties.
19  // "customizations": {},
20
21  // Uncomment to connect as root instead. More info: https://aka.ms/dev-containers-non-root.
22  // "remoteUser": "root"
23 }
```

- Appuyez sur F1 pour ouvrir la palette de commandes, tapez reopen in container et sélectionnez Dev Containers: Reopen in Container dans la liste des options disponibles.



- Examinez l'indicateur distant en bas à gauche de VS Code : il affiche à présent « Dev Container: Python 3 ».



- Ouvrez le terminal intégré dans Visual Studio Code.
- Exécutez la commande suivante pour vérifier que Python est installé :

```
PROBLEMS  TERMINAL  ...  bash - mslearn-python-products  + v  [ ]  [ ]  ...  |  [ ]  [ ]  x
● vscode →/workspaces/mslearn-python-products (main) $ python --version
Python 3.14.3
● vscode →/workspaces/mslearn-python-products (main) $ pip3 install --user -r requirements.txt
Collecting Flask==2.3.3 (from -r requirements.txt (line 2))
  Downloading flask-2.3.3-py3-none-any.whl.metadata (3.6 kB)
Collecting Werkzeug>=2.3.7 (from Flask==2.3.3->-r requirements.txt (line 2))
  Downloading werkzeug-3.1.8-py3-none-any.whl.metadata (4.0 kB)
Collecting Jinja2>=3.1.2 (from Flask==2.3.3->-r requirements.txt (line 2))
  Downloading jinja2-3.1.6-py3-none-any.whl.metadata (2.9 kB)
Collecting itsdangerous>=2.1.2 (from Flask==2.3.3->-r requirements.txt (line 2))
  Downloading itsdangerous-2.2.0-py3-none-any.whl.metadata (1.9 kB)
Collecting click>=8.1.3 (from Flask==2.3.3->-r requirements.txt (line 2))
```

- Entrez la commande suivante dans le terminal pour exécuter le projet :

```
PROBLEMS  TERMINAL  ...  python - mslearn-python-products  + v  [ ]  [ ]  ...  |  [ ]  [ ]  x
vscode →/workspaces/mslearn-python-products (main) $ python app.py
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 981-991-232
127.0.0.1
127.0.0.1 - - [08/Apr/2026 10:20:27] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [08/Apr/2026 10:20:27] "GET /favicon.ico HTTP/1.1" 404 -
[ ]
```

127.0.0.1:5000

Products

| Name | Brand | Price | Units in Stock |
|-------------------------|------------------|-------|----------------|
| Single red garden gnome | Home & Pro tools | 56 | 98 |
| Two red garden gnomes | Home & Pro tools | 92 | 4 |
| One sat gnome | Home & Pro tools | 34 | 34 |
| One sat on shoe gnome | Home & Pro tools | 54 | 54 |
| One barrow gnome | Home & Pro tools | 29 | 23 |
| One glasses gnome | Home & Pro tools | 54 | 94 |

```

File Edit Selection View ... mslearn-python-products [Dev Container: Python 3...
EXPLORER
MSLEARN-PYTHON...
  .devcontainer
    {} devcontainer.json
  data
    {} products.json
  templates
  .gitignore
  app.py
  CODE_OF_CONDUCT.md
  LICENSE
  LICENSE-CODE
  README.md
  requirements.txt
  SECURITY.md

Welcome
products.json
data > {} products.json > ...
1  [
2
3  {
4    "name": "Single red garden gnome",
5    "price": 56,
6    "brand": {
7      "name": "Home & Pro tools"
8    },
9    "stockUnits": 98
10  },
11  {
12    "name": "Two red garden gnomes",
13    "price": 92,
14    "brand": {
15      "name": "Home & Pro tools"
16    },
17    "stockUnits": 4
18  },
19  {
20    "name": "One sat gnome",
21    "price": 34,
22    "brand": {
23      "name": "Home & Pro tools"
24    },
25    "stockUnits": 34
26  },
27  {
28    "name": "One sat on shoe gnome",
29    "price": 54,
30    "brand": {
31      "name": "Home & Pro tools"
32    },
33    "stockUnits": 54
34  },
35  ]

```

```

mslearn-python-products [Dev Container: Python 3 ...]
File Edit Selection View ...
EXPLORER
MSLEARN-PYTHON...
  .devcontainer
  devcontainer.json
  data
  products.json
  templates
  index.html
  .gitignore
  app.py
  CODE_OF_CONDUCT.md
  LICENSE
  LICENSE-CODE
  README.md
  requirements.txt
  SECURITY.md
Welcome
index.html
templates > index.html > ...
2 <html lang="en">
9 <body>
10 <div id="app">
20 <section class="section">
21 <div class="container">
22 <div>
23 <table class="table is-fullwidth is-striped">
24 <thead>
25 <tr>
26 <th>Name</th>
27 <th>Brand</th>
28 <th>Price</th>
29 <th class="has-text-centered">Units in Stock</th>
30 </tr>
31 </thead>
32 <tbody>
33 {% for product in products %}
34 <tr>
35 <td>
36 | {{product.name}}
37 </td>
38 <td>
39 | | {{product.brand.name}}
40 </td>
41 <td>

```

docker desktop PERSONAL

A new version of Docker Desktop is available. Update X

Images Give feedback

Local My Hub

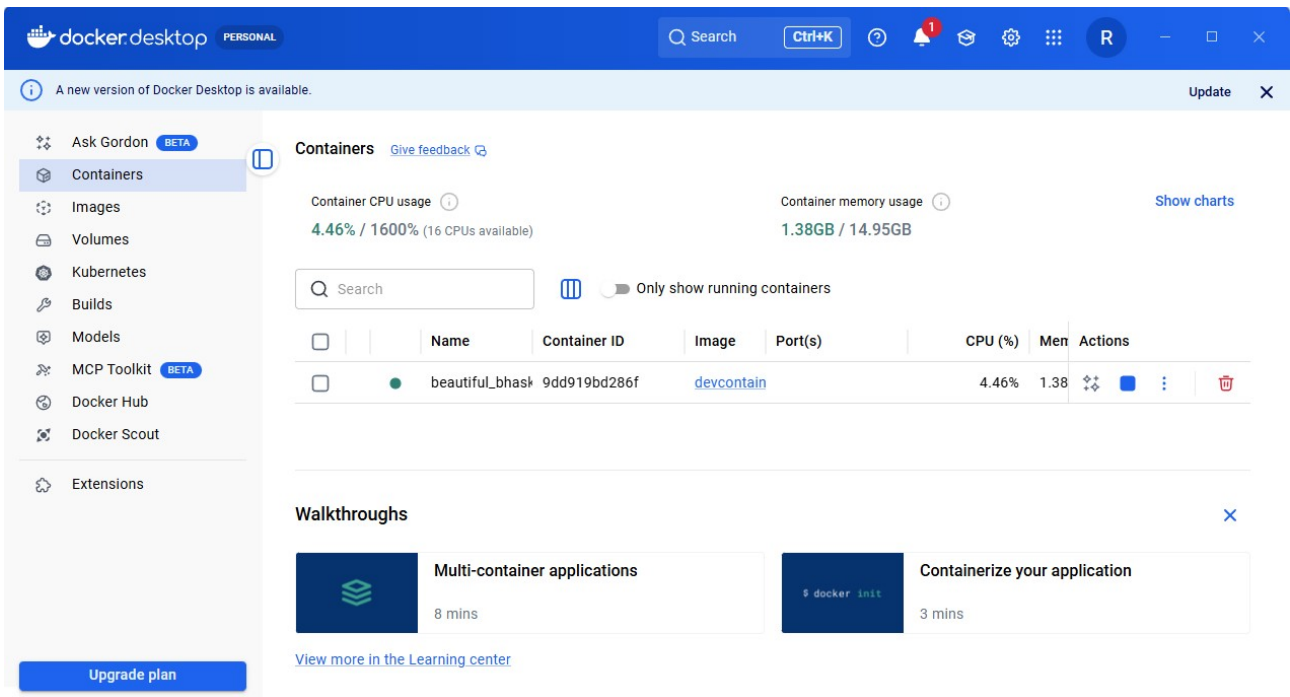
1.77 GB / 2.67 GB in use 7 images Last refresh: 16 minutes ago

Search

| | Name | Tag | Image ID | Created | Size | Actions |
|--------------------------|---------------------|---------------|--------------|--------------|-----------|---------|
| <input type="checkbox"/> | mongodb/mongodb- | latest | 6f15ef87cd09 | 7 days ago | 1.21 GB | |
| <input type="checkbox"/> | ubuntumodif | 1.0 | b88b605e75c6 | 14 days ago | 117.38 MB | |
| <input type="checkbox"/> | <none> | <none> | 7266392360c6 | 14 days ago | 1.21 GB | |
| <input type="checkbox"/> | nginx | latest | 7150b3a39203 | 15 days ago | 240.01 MB | |
| <input type="checkbox"/> | ubuntu | latest | 186072bba1b2 | 1 month ago | 119.27 MB | |
| <input type="checkbox"/> | hello-world | latest | 85404b3c5395 | 8 months ago | 25.9 KB | |
| <input type="checkbox"/> | mcr.microsoft.com/c | 3-3.14-trixie | 1af48f9bd555 | 28 days ago | 2.4 GB | |

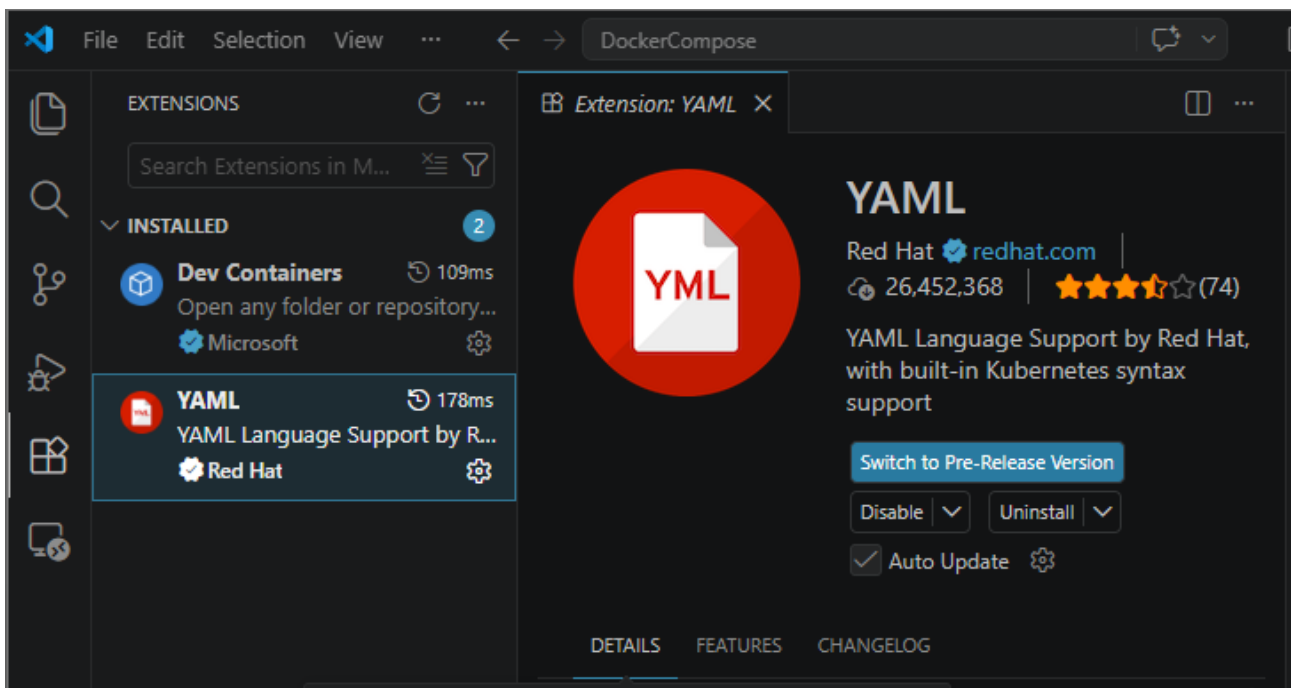
Showing 7 items

Upgrade plan

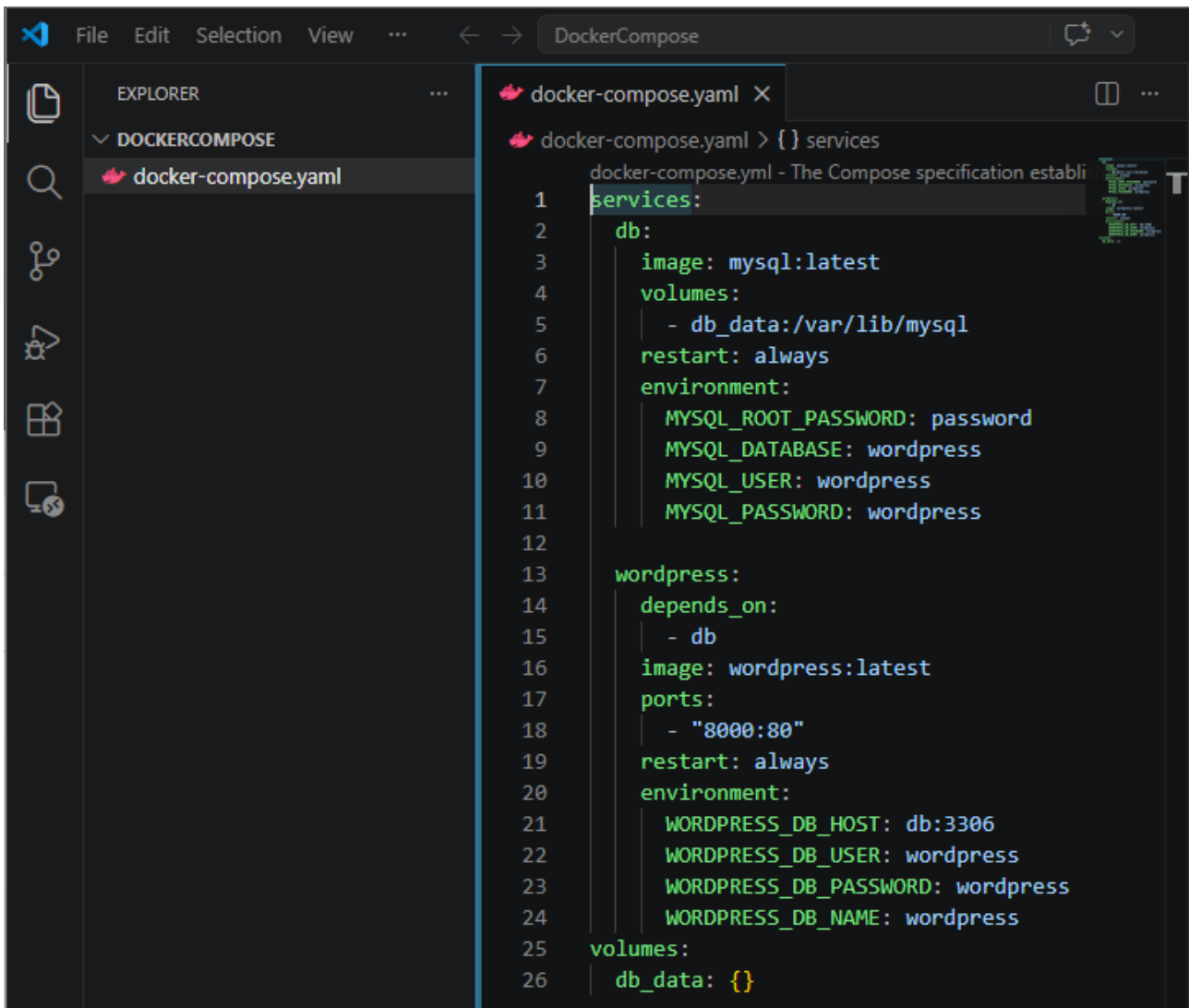
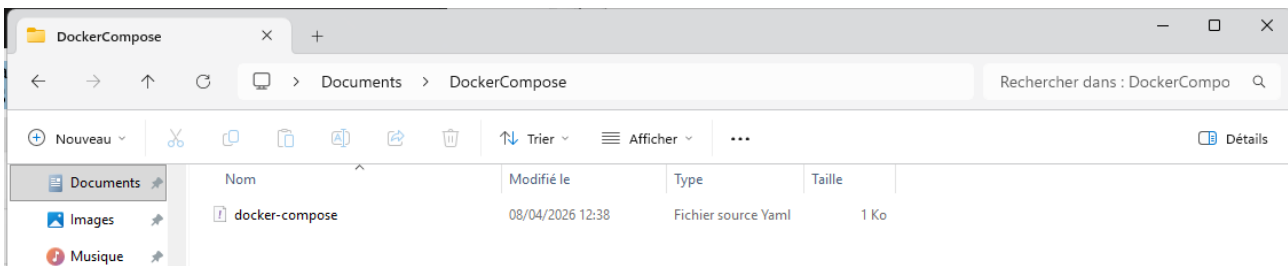


13. Monter une stack applicative avec Docker Compose.

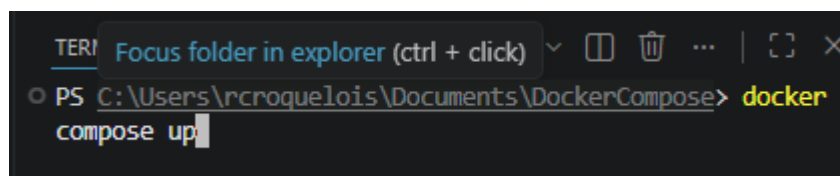
- Installer l'extension YAML dans VS Code.



- Afin de monter un blog Wordpress avec sa base de données, créez dans un dossier le fichier docker-compose.yml suivant à l'aide de VS Code :



- Depuis le terminal, lancez la stack applicative avec la commande docker compose up :



```

PS C:\Users\rcoquelois\Documents\DockerCompose> docker compose up
- Image m... [██████████] 281.8MB / 282.7MB      [+] up 37/40 26.5s
- Image m... [██████████] 281.8MB / 282.7MB      [+] up 38/40 26.6s
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40 26.6s
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 38/40
- Image m... [██████████] 281.8MB / 282.7MB Pulling 2[+] up 44/44
✓ Image mysql:latest          Pulled      27.8s
✓ Image wordpress:latest     Pulled      26.6s
✓ Network dockercompose_default Created     0.1s
✓ Volume dockercompose_db_data Created      0.0s
✓ Container dockercompose-db-1 Created        2.7s
✓ Container dockercompose-wordpress-1 Created     0.1s
Attaching to db-1, wordpress-1
db-1 | 2026-04-08 10:41:34+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 9
.6.0-1.el9 started.
db-1 | 2026-04-08 10:41:34+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
db-1 | 2026-04-08 10:41:34+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 9
.6.0-1.el9 started.
wordpress-1 | WordPress not found in /var/www/html - copying now...
db-1 | 2026-04-08 10:41:34+00:00 [Note] [Entrypoint]: Initializing database files
db-1 | 2026-04-08T10:41:34.677523Z 0 [System] [MY-015017] [Server] MySQL Server Ini
tialization - start.
db-1 | 2026-04-08T10:41:34.679283Z 0 [System] [MY-013169] [Server] /usr/sbin/mysqld
(mysql 9.6.0) initializing of server in progress as process 80
db-1 | 2026-04-08T10:41:34.694251Z 1 [System] [MY-013576] [InnoDB] InnoDB initializ
ation has started.
wordpress-1 | Complete! WordPress has been successfully copied to /var/www/html
wordpress-1 | No 'wp-config.php' found in /var/www/html, but 'WORDPRESS_...' variables sup
plied; copying 'wp-config-docker.php' (WORDPRESS_DB_HOST WORDPRESS_DB_NAME WORDPRESS_DB_PAS
SWORD WORDPRESS_DB_USER)
wordpress-1 | AH00558: apache2: Could not reliably determine the server's fully qualified
domain name, using 172.18.0.3. Set the 'ServerName' directive globally to suppress this mes
sage
wordpress-1 | AH00558: apache2: Could not reliably determine the server's fully qualified
domain name, using 172.18.0.3. Set the 'ServerName' directive globally to suppress this mes
sage
wordpress-1 | [Wed Apr 08 10:41:35.002904 2026] [mpm_prefork:notice] [pid 1:tid 1] AH00163
: Apache/2.4.66 (Debian) PHP/8.3.30 configured -- resuming normal operations
wordpress-1 | [Wed Apr 08 10:41:35.002958 2026] [core:notice] [pid 1:tid 1] AH00094: Comma
nd line: 'apache2 -D FOREGROUND'
db-1 | 2026-04-08T10:41:35.032729Z 1 [System] [MY-013577] [InnoDB] InnoDB initializ
ation has ended.
db-1 | 2026-04-08T10:41:36.024957Z 6 [Warning] [MY-010453] [Server] root@localhost
is created with an empty password ! Please consider switching off the --initialize-insecure
option.
db-1 | 2026-04-08T10:41:37.859901Z 0 [System] [MY-015018] [Server] MySQL Server Ini
tialization - end.

```

- Accédez au blog en saisissant l'url <http://localhost:8000> :

localhost:8000/wp-admin/install.php?step=1

Résumer A ☆ ☆ Conversation

Bienvenue

Bienvenue dans la très célèbre installation en 5 minutes de WordPress ! Vous n'avez qu'à remplir les informations demandées ci-dessous et vous serez prêt à utiliser la plus extensible et puissante plateforme de publication de contenu au monde.

Informations nécessaires

Veillez renseigner les informations suivantes. Ne vous inquiétez pas, vous pourrez les modifier plus tard.

Titre du site

Identifiant

Les identifiants ne peuvent utiliser que des caractères alphanumériques, des espaces, des tirets bas ("_"), des traits d'union ("-"), des points et le symbole @.

Mot de passe

Forte

Important : Vous aurez besoin de ce mot de passe pour vous connecter. Pensez à le stocker dans un lieu sûr.

Votre e-mail

Vérifiez bien cette adresse e-mail avant de continuer.

Visibilité par les moteurs de recherche Demander aux moteurs de recherche de ne pas indexer ce site

Certains moteurs de recherche peuvent décider de l'indexer malgré tout.

docker desktop PERSONAL

A new version of Docker Desktop is available. Update X

Ask Gordon BETA Containers Images Volumes Kubernetes Builds Models MCP Toolkit BETA Docker Hub Docker Scout Extensions Upgrade plan

Images [Give feedback](#)

Local My Hub

3.55 GB / 2.67 GB in use 9 images Last refresh: 37 minutes ago

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| <input type="checkbox"/> | Name | Tag | Image ID | Created | Size | Actions |
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| <input type="checkbox"/> | <none> | <none> | 7266392360c6 | 14 days ago | 1.21 GB | |
| <input type="checkbox"/> | nginx | latest | 7150b3a39203 | 15 days ago | 240.01 MB | |
| <input type="checkbox"/> | ubuntu | latest | 186072bba1b2 | 1 month ago | 119.27 MB | |
| <input type="checkbox"/> | hello-world | latest | 85404b3c5395 | 8 months ago | 25.9 KB | |
| <input type="checkbox"/> | mcr.microsoft.com/c | 3-3.14-trixie | 1af48f9bd555 | 28 days ago | 2.4 GB | |
| <input type="checkbox"/> | wordpress | latest | 831ada79c104 | 1 day ago | 1.07 GB | |
| <input type="checkbox"/> | mysql | latest | 24e450bbd24f | 19 days ago | 1.26 GB | |

Showing 9 items

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Containers [Give feedback](#)

Container CPU usage 1.44% / 1600% (16 CPUs available) Container memory usage 1.76GB / 14.95GB [Show charts](#)

Search Only show running containers

| <input type="checkbox"/> | Name | Container ID | Image | Port(s) | CPU (%) | Mem | Actions |
|--------------------------|-----------------|--------------|------------|---------|---------|------|---------|
| <input type="checkbox"/> | beautiful_bhask | 9dd919bd286f | devcontain | | 1.05% | 1.25 | |
| <input type="checkbox"/> | dockercompose | - | - | - | 0.39% | 520 | |

Walkthroughs

Multi-container applications

8 mins

Containerize your application

3 mins

[View more in the Learning center](#)

Engine running RAM 3.44 GB CPU 0.50% Disk: 9.75 GB used (limit 1006.85 GB) Update available

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Containers

Images

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Kubernetes

Builds

Models

MCP Toolkit BETA

Docker Hub

Docker Scout

Extensions

Upgrade plan

dockercompose
C:\Users\rcroquelois\Documents\DockerCompose

View configurations

db
mysql:latest

wordpress
wordpress:latest
8000:80

```

"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36
(KHTML, like Gecko) Chrome/146.0.0.0 Safari/537.36
Edg/146.0.0.0"
172.18.0.1 - - [08/Apr/2026:10:45:11 +0000] "GET /wp-
admin/install.php HTTP/1.1" 200 4733 "http://localhost:8000/wp-
admin/install.php" "Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/146.0.0.0
Safari/537.36 Edg/146.0.0.0"
172.18.0.1 - - [08/Apr/2026:10:45:16 +0000] "POST /wp-
admin/install.php?step=1 HTTP/1.1" 200 3719
"http://localhost:8000/wp-admin/install.php" "Mozilla/5.0
(Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like
Gecko) Chrome/146.0.0.0 Safari/537.36 Edg/146.0.0.0"
172.18.0.1 - - [08/Apr/2026:10:45:16 +0000] "GET /favicon.ico
HTTP/1.1" 302 423 "http://localhost:8000/wp-admin/install.php?
step=1" "Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/146.0.0.0
Safari/537.36 Edg/146.0.0.0"
172.18.0.1 - - [08/Apr/2026:10:45:16 +0000] "GET /wp-
admin/install.php HTTP/1.1" 200 4733 "http://localhost:8000/wp-
admin/install.php?step=1" "Mozilla/5.0 (Windows NT 10.0; Win64;
x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/146.0.0.0
Safari/537.36 Edg/146.0.0.0"
172.18.0.1 - - [08/Apr/2026:10:46:05 +0000] "-" 408 0 "-" "-"

```