Activité I

Pour installer docker il faut installer les dépendances nécessaires

> sudo apt update

> sudo apt install ca-certificates curl gnupg

Pour installer docker il faut faire

> curl -fsSL https://get.docker.com | sh (la commande curl permets d'installer des applications via internet)

> systemctl status docker (la commande systemctl status permet de voir si le processus est bien actif)

```
adminsio@dockerecm:~$ systemctl status docker
● docker.service - Docker Application Container Engine
     Loaded: loaded (/lib/systemd/system/docker.service; enabled; preset: e>
     Active: active (running) since Wed 2025-03-12 08:35:38 CET; 6min ago
TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
   Main PID: 2305 (dockerd)
      Tasks: 10
     Memory: 36.7M
        CPU: 399ms
     CGroup: /system.slice/docker.service
             └─2305 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/>
```

> sudo gpasswd –a adminsio docker (cette commande sert a ajouter un utilisateur dans un groupe dans notre cas le groupe docker et on rajoute l'utilisateur adminsio)

```
adminsio@dockerecm:~$ sudo gpasswd -a adminsio docker
Ajout de l'utilisateur adminsio au groupe docker
adminsio@dockerecm:~$
```

> docker version (cela permets d'afficher la version de docker)

> docker run --rm hello-world (cette commande permet de lance le conteneur hello-world dans notre cas inexistant alors docker vas le télécharger depuis docker hub et le supprimer juste après avec la variable –rm)

```
adminsio@dockerecm:~$ docker run --rm hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
e6590344b1a5: Pull complete
Digest: sha256:bfbb0cc14f13f9ed1ae86abc2b9f11181dc50d779807ed3a3c5e55a6936db
dd5
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/
```

> docker search ubuntu (cette commande permet de rechercher directement sur docker hub une image dans notre cas Ubuntu)

```
adminsio@dockerecm:~$ docker search ubuntu
NAME                                DESCRIPTION
     STARS     OFFICIAL
ubuntu                              Ubuntu is a Debian-based Linux operating sys…   17496     [OK]
ubuntu/squid                        Squid is a caching proxy for the Web. Long-t…   107
ubuntu/nginx                        Nginx, a high-performance reverse proxy & we…   127
ubuntu/cortex                       Cortex provides storage for Prometheus. Long…   4
ubuntu/apache2                      Apache, a secure & extensible open-source HT…   90
ubuntu/bind9                        BIND 9 is a very flexible, full-featured DNS…   102
ubuntu/prometheus                   Prometheus is a systems and service monitori…   70
ubuntu/kafka                        Apache Kafka, a distributed event streaming …   53
ubuntu/zookeeper                    ZooKeeper maintains configuration informatio…   13
ubuntu/mysql                        MySQL open source fast, stable, multi-thread…   67
ubuntu/postgres                     PostgreSQL is an open source object-relation…   41
ubuntu/redis                        Redis, an open source key-value store. Long-…   23
ubuntu/dotnet-aspnet                Chiselled Ubuntu runtime image for ASP.NET a…   25
ubuntu/jre                          Distroless Java runtime based on Ubuntu. Lon…   19
ubuntu/grafana                      Grafana, a feature rich metrics dashboard & …   12
ubuntu/dotnet-deps                  Chiselled Ubuntu for self-contained .NET & A…   16
ubuntu/cassandra                    Cassandra, an open source NoSQL distributed …   2
ubuntu/python                       A chiselled Ubuntu rock with the Python runt…   20
ubuntu/dotnet-runtime               Chiselled Ubuntu runtime image for .NET apps…   20
ubuntu/memcached                    Memcached, in-memory keyvalue store for smal…   5
ubuntu/prometheus-alertmanager      Alertmanager handles client alerts from Prom…   9
ubuntu/mlflow                       MLFlow: for managing the machine learning li…   5
ubuntu/telegraf                     Telegraf collects, processes, aggregates & w…   4
ubuntu/loki                         Grafana Loki, a log aggregation system like …   2
ubuntu/chiselled-jre                [MOVED TO ubuntu/jre] Chiselled JRE: distrol…   3
```

> docker pull ubuntu (cette commande permet de télécharger la dernière version d'une image dans notre cas Ubuntu)

> docker pull ubuntu:lunar (cette commande permet d'installer une version précise d'une image dans notre cas la version lunar de ubuntu)

```
adminsio@dockerecm:~$ docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
5a7813e071bf: Pull complete
Digest: sha256:72297848456d5d37d1262630108ab308d3e9ec7ed1c3286a32fe09856619a782
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
adminsio@dockerecm:~$ docker pull ubuntu:lunar
lunar: Pulling from library/ubuntu
6360b3717211: Pull complete
Digest: sha256:5a828e28de105c3d7821c4442f0f5d1c52dc16acf4999d5f31a3bc0f03f06edd
Status: Downloaded newer image for ubuntu:lunar
docker.io/library/ubuntu:lunar
```

> docker images (cela permet de voir toutes les images télécharger)

```
adminsio@dockerecm:~$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED          SIZE
ubuntu        latest    a04dc4851cbc   6 weeks ago      78.1MB
hello-world   latest    74cc54e27dc4   7 weeks ago      10.1kB
ubuntu        lunar     f4cdeba72b99   15 months ago    70.3MB
```

> docker rmi hello-world (cette commande permets de supprimer une image dans notre cas hello-world, il peut être suivis de la variable –f s'il ne veut pas se supprimer)

```
adminsio@dockerecm:~$ docker rmi hello-world
Untagged: hello-world:latest
Untagged: hello-world@sha256:bfbb0cc14f13f9ed1ae86abc2b9f11181dc50d779807ed3a3c5e55a6936dbdd5
Deleted: sha256:74cc54e27dc41bb10dc4b2226072d469509f2f22f1a3ce74f4a59661a1d44602
Deleted: sha256:63a41026379f4391a306242eb0b9f26dc3550d863b7fdbb97d899f6eb89efe72
```

> docker run ubuntu (permet de lancer un conteneur a partir d'une image dans notre cas ubuntu) il ne se passe rien visuellement

> docher ps (cela permet de montrer les conteneurs actifs) dans notre cas il n'y a rien

```
adminsio@dockerecm:~$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
```

> docker ps –a (cette commande permet d'afficher tous les conteneurs actifs ou pas)

```
adminsio@dockerecm:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND       CREATED          STATUS                      PORTS     NAMES
ce791525f8c6   ubuntu    "/bin/bash"   21 seconds ago   Exited (0) 20 seconds ago             epic_kowalevski
```

> docker run ubuntu (vas recréer un conteneur avec un nom différents)

> docker ps –a

```
adminsio@dockerecm:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND       CREATED          STATUS                      PORTS     NAMES
35994c6d9ab6   ubuntu    "/bin/bash"   2 seconds ago    Exited (0) 1 second ago               tender_mestorf
ce791525f8c6   ubuntu    "/bin/bash"   9 minutes ago    Exited (0) 9 minutes ago              epic_kowalevski
```

> docker run ubuntu cat /etc/lsb-release (créer un conteneur à partir de l'image ubuntu et exécute la commande cat /etc/lsb-release)

```
adminsio@dockerecm:~$ docker run ubuntu cat /etc/lsb-release
DISTRIB_ID=Ubuntu
DISTRIB_RELEASE=24.04
DISTRIB_CODENAME=noble
DISTRIB_DESCRIPTION="Ubuntu 24.04.1 LTS"
adminsio@dockerecm:~$
```

> docker ps –a (on peut voir notre conteneur avec la commande que l'on vient d'exécuter)

```
adminsio@dockerecm:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED              STATUS                          PORTS     NAMES
cd029ca92ea0   ubuntu    "cat /etc/lsb-release"   About a minute ago   Exited (0) About a minute ago             inspiring_knuth
35994c6d9ab6   ubuntu    "/bin/bash"              2 minutes ago        Exited (0) 2 minutes ago                  tender_mestorf
ce791525f8c6   ubuntu    "/bin/bash"              12 minutes ago       Exited (0) 12 minutes ago                 epic_kowalevski
```

> docker rm epic_kowalevski (cette commande permet de supprimer un conteneur pour éviter de se retrouver submerger avec des conteneurs inutiles on peut utiliser le

nom ou l'id du container et il faut que le status sois exited ou rajouter l'option -f apres rm)

```
adminsio@dockerecm:~$ docker rm epic_kowalevski
epic_kowalevski
adminsio@dockerecm:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED         STATUS                     PORTS     NAMES
cd029ca92ea0   ubuntu    "cat /etc/lsb-release"   4 minutes ago   Exited (0) 4 minutes ago             inspiring_knuth
35994c6d9ab6   ubuntu    "/bin/bash"              5 minutes ago   Exited (0) 5 minutes ago             tender_mestorf
adminsio@dockerecm:~$
```

> docker run –rm ubuntu cat /etc/lsb-release (permet de créer un container et le supprimer juste après son exécution)

```
Run 'docker run --help' for more information
adminsio@dockerecm:~$ docker run --rm ubuntu cat /etc/lsb-release
DISTRIB_ID=Ubuntu
DISTRIB_RELEASE=24.04
DISTRIB_CODENAME=noble
DISTRIB_DESCRIPTION="Ubuntu 24.04.1 LTS"
adminsio@dockerecm:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED         STATUS                     PORTS     NAMES
cd029ca92ea0   ubuntu    "cat /etc/lsb-release"   8 minutes ago   Exited (0) 8 minutes ago             inspiring_knuth
35994c6d9ab6   ubuntu    "/bin/bash"              9 minutes ago   Exited (0) 9 minutes ago             tender_mestorf
adminsio@dockerecm:~$
```

> docker start inspiring_knuth (cela permet de relancer un container mais il se démarre en arrière-plan pour le lancer en premier-plan il faut rajouter l'option -a)

```
Run 'docker run --help' for more information
adminsio@dockerecm:~$ docker run --rm ubuntu cat /etc/lsb-release
DISTRIB_ID=Ubuntu
DISTRIB_RELEASE=24.04
DISTRIB_CODENAME=noble
DISTRIB_DESCRIPTION="Ubuntu 24.04.1 LTS"
adminsio@dockerecm:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED         STATUS                     PORTS     NAMES
cd029ca92ea0   ubuntu    "cat /etc/lsb-release"   8 minutes ago   Exited (0) 8 minutes ago             inspiring_knuth
35994c6d9ab6   ubuntu    "/bin/bash"              9 minutes ago   Exited (0) 9 minutes ago             tender_mestorf
adminsio@dockerecm:~$
```

> docker run --name servUbuntu -it ubuntu (l'option --name permets de nommer le container et de se repérer plus facilement l'option -i veut dire qu'il se démarre en interactif et -t permet d'avoir un pseudo terminal pour exécuter des commandes pour mettre à jour le container par exemple)

```
adminsio@dockerecm:~$ docker run --name servUbuntu -it ubuntu
root@39d864dbcf7a:/#
```

> apt update (permet de mettre à jour les applications)

> apt dist-upgrade (permet de mettre à jour les distribution)

> apt install openssh-server (permet d'installer un serveur ssh dans le container)

> adduser user (permet de créer un utilisateur et mettre un mot de passe)

```
root@39d864dbcf7a:/# adduser user
info: Adding user `user' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `user' (1001) ...
info: Adding new user `user' (1001) with group `user (1001)' ...
info: Creating home directory `/home/user' ...
info: Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for user
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] Y
info: Adding new user `user' to supplemental / extra groups `users' ...
info: Adding user `user' to group `users' ...
root@39d864dbcf7a:/#
```

```
root@39d864dbcf7a:/# apt update
Get:1 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble InRelease [256 kB]
Get:3 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [909 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [34.0 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [841 kB]
Get:6 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [1063 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [331 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble/restricted amd64 Packages [117 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble/main amd64 Packages [1808 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [19.3 MB]
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1167 kB]
Get:14 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [38.7 kB]
Get:15 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1352 kB]
Get:16 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [962 kB]
Get:17 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [16.0 kB]
Fetched 28.6 MB in 3s (10.1 MB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
18 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@39d864dbcf7a:/# apt dist-upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
  base-files libattr1 libc-bin libc6 libcap2 libgmp10 libgnutls30t64 libgpg-error0 libidn2-0 libmd0 libpcre2-8-0 libselinux1
  libssl3t64 libsystemd0 libtasn1-6 libudev1 libunistring5 perl-base
18 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 10.7 MB of archives.
After this operation, 2048 B of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libc6 amd64 2.39-0ubuntu8.4 [3264 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 base-files amd64 13ubuntu10.2 [73.2 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 perl-base amd64 5.38.2-3.2build2.1 [1823 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libc-bin amd64 2.39-0ubuntu8.4 [682 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libattr1 amd64 1:2.5.2-1build1.1 [11.4 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libcap2 amd64 1:2.66-5ubuntu2.2 [30.0 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libgmp10 amd64 2:6.3.0+dfsg-2ubuntu6.1 [253 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libgpg-error0 amd64 1.47-3build2.1 [70.1 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libmd0 amd64 1.1.0-2build1.1 [27.0 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpcre2-8-0 amd64 10.42-4ubuntu2.1 [227 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libselinux1 amd64 3.5-2ubuntu2.1 [79.7 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libssl3t64 amd64 3.0.13-0ubuntu3.5 [1940 kB]
Get:13 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libsystemd0 amd64 255.4-1ubuntu8.5 [433 kB]
Get:14 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libudev1 amd64 255.4-1ubuntu8.5 [175 kB]
Get:15 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libunistring5 amd64 1.1-2build1.1 [536 kB]
Get:16 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libidn2-0 amd64 2.3.7-2build1.1 [66.2 kB]
Get:17 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libtasn1-6 amd64 4.19.0-3ubuntu0.24.04.1 [44.3 kB]
Get:18 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libgnutls30t64 amd64 3.8.3-1.1ubuntu3.3 [995 kB]
92% [18 libgnutls30t64 71.3 kB/995 kB 7%]
```

```
root@39d864dbcf7a:/# apt dist-upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
  libnss-systemd libpam-systemd libsystemd-shared libsystemd0 libudev1 systemd systemd-dev systemd-resolved systemd-sysv
  systemd-timesyncd
10 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 6994 kB of archives.
After this operation, 8192 B disk space will be freed.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libnss-systemd amd64 255.4-1ubuntu8.6 [159 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 systemd-sysv amd64 255.4-1ubuntu8.6 [11.9 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 systemd-timesyncd amd64 255.4-1ubuntu8.6 [35.3 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 systemd-resolved amd64 255.4-1ubuntu8.6 [296 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 systemd-dev all 255.4-1ubuntu8.6 [104 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpam-systemd amd64 255.4-1ubuntu8.6 [235 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 systemd amd64 255.4-1ubuntu8.6 [3471 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libsystemd-shared amd64 255.4-1ubuntu8.6 [2073 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libsystemd0 amd64 255.4-1ubuntu8.6 [433 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libudev1 amd64 255.4-1ubuntu8.6 [175 kB]
Fetched 6994 kB in 2s (3418 kB/s)   SSSSS
SSSSSSSSdebconf: delaying package configuration, since apt-utils is not installed
(Reading database ... 11586 files and directories currently installed.)
Preparing to unpack .../0-libnss-systemd_255.4-1ubuntu8.6_amd64.deb ...
Unpacking libnss-systemd:amd64 (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../1-systemd-sysv_255.4-1ubuntu8.6_amd64.deb ...
Unpacking systemd-sysv (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../2-systemd-timesyncd_255.4-1ubuntu8.6_amd64.deb ...
Unpacking systemd-timesyncd (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../3-systemd-resolved_255.4-1ubuntu8.6_amd64.deb ...
Unpacking systemd-resolved (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../4-systemd-dev_255.4-1ubuntu8.6_all.deb ...
Unpacking systemd-dev (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../5-libpam-systemd_255.4-1ubuntu8.6_amd64.deb ...
Unpacking libpam-systemd:amd64 (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../6-systemd_255.4-1ubuntu8.6_amd64.deb ...
Unpacking systemd (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../7-libsystemd-shared_255.4-1ubuntu8.6_amd64.deb ...
Unpacking libsystemd-shared:amd64 (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Preparing to unpack .../8-libsystemd0_255.4-1ubuntu8.6_amd64.deb ...
Unpacking libsystemd0:amd64 (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Setting up libsystemd0:amd64 (255.4-1ubuntu8.6) ...
(Reading database ... 11586 files and directories currently installed.)
Preparing to unpack .../libudev1_255.4-1ubuntu8.6_amd64.deb ...
Unpacking libudev1:amd64 (255.4-1ubuntu8.6) over (255.4-1ubuntu8.5) ...
Setting up libudev1:amd64 (255.4-1ubuntu8.6) ...
Setting up systemd-dev (255.4-1ubuntu8.6) ...
Setting up libsystemd-shared:amd64 (255.4-1ubuntu8.6) ...
Setting up systemd (255.4-1ubuntu8.6) ...
Setting up systemd-timesyncd (255.4-1ubuntu8.6) ...
Setting up systemd-resolved (255.4-1ubuntu8.6) ...
Setting up systemd-sysv (255.4-1ubuntu8.6) ...
Setting up libnss-systemd:amd64 (255.4-1ubuntu8.6) ...
Setting up libpam-systemd:amd64 (255.4-1ubuntu8.6) ...
debconf: unable to initialize frontend: Dialog
debconf: (No usable dialog-like program is installed, so the dialog based frontend cannot be used. at /usr/share/perl5/Debconf/Fron
tEnd/Dialog.pm line 79.)
debconf: falling back to frontend: Readline
debconf: unable to initialize frontend: Readline
debconf: (Can't locate Term/ReadLine.pm in @INC (you may need to install the Term::ReadLine module) (@INC entries checked: /etc/per
l /usr/local/lib/x86_64-linux-gnu/perl/5.38.2 /usr/local/share/perl/5.38.2 /usr/lib/x86_64-linux-gnu/perl5/5.38 /usr/share/perl5 /u
sr/lib/x86_64-linux-gnu/perl-base /usr/lib/x86_64-linux-gnu/perl/5.38 /usr/share/perl/5.38 /usr/local/lib/site_perl) at /usr/share/
perl5/Debconf/FrontEnd/Readline.pm line 8.)
debconf: falling back to frontend: Teletype
Processing triggers for dbus (1.14.10-4ubuntu4.1) ...
```

Ensuite pour sortir du container il faut utiliser la commande

> exit

Cela va écrire exit et vous faire revenir a votre debian

```
openssh-server is already the newest version (1:9.6p1-3ubuntu13.8).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@39d864dbcf7a:/# exit
exit
adminsio@dockerecm:~$ ^[[2~
```

Pour ensuite pouvoir y re acceder plus tard il faut faire les commandes

> docker start [nom_du_container]

> docker attach [nom_du_container]

```
adminsio@dockerecm:~$ docker start servUbuntu
servUbuntu
adminsio@dockerecm:~$ docker attach servUbuntu
root@39d864dbcf7a:/#
```

La commande

> docker top [nom_du_container] ou docker top [id_du_container]

```
adminsio@dockerecm:~$ docker top servUbuntu
Error response from daemon: container 39d864dbcf7a8afc58056063b4ba1d5864a640d2dcd4b034d50f5a75845e441b is not running
adminsio@dockerecm:~$ docker start servUbuntu
servUbuntu
adminsio@dockerecm:~$ docker top servUbuntu
UID                 PID                 PPID                C                   STIME               TTY                 TIME                CMD
root                2731                2711                0                   08:34               pts/0               00:00:00            /bin/bash
adminsio@dockerecm:~$
```

Permets de voir dans un container démarrer les processus en cours

Le service openssh-server n'est pas démarrer donc nous allons re rentre dans le container avec la commande docker attach puis une fois dans le container utiliser la commande

> service ssh start

Cela permet de démarrer le service ssh pour pouvoir si cela fonctionne bient et que la commande docker top fonctionne bien nous allons effectuer la combinaison de touche ctrl+p puis ctrl+q cela vous fait quitter le container sans l'arreter et nous allons refaire la commande docker top

```
adminsio@dockerecm:~$ docker top servUbuntu
UID                 PID                 PPID                C                   STIME               TTY                 TIME                CMD
root                2731                2711                0                   08:34               pts/0               00:00:00            /bin/bash
adminsio@dockerecm:~$ docker attach servUbuntu
root@39d864dbcf7a:/# service ssh start
 * Starting OpenBSD Secure Shell server sshd                                                                                                  [ OK ]
root@39d864dbcf7a:/# read escape sequence
adminsio@dockerecm:~$ docker top servUbuntu
UID                 PID                 PPID                C                   STIME               TTY                 TIME                CMD
root                2731                2711                0                   08:34               pts/0               00:00:00            /bin/bash
root                2825                2731                0                   08:36               ?                   00:00:00            sshd: /usr/sb
in/sshd [listener] 0 of 10-100 startups
```

Ensuite la commande

> docker commit [nom_du_container] [nom_de_l'image]

Ou

> docker commit [id_du_container] [nom_de_l'image]

Permet de créer une nouvelle image grâce à un container déjà existant

```
adminsio@dockerecm:~$ docker commit servUbuntu aporaf/ubuntu:ssh
sha256:c441419b44e1c1c6336d1db55bbc893ec52e854d368ea23a63aa08ff1345dd47
adminsio@dockerecm:~$
```

```
adminsio@dockerecm:~$ docker images
REPOSITORY      TAG       IMAGE ID       CREATED         SIZE
aporaf/ubuntu   ssh       c441419b44e1   2 minutes ago   300MB
ubuntu          latest    a04dc4851cbc   8 weeks ago     78.1MB
ubuntu          lunar     f4cdeba72b99   16 months ago   70.3MB
adminsio@dockerecm:~$
```

Si nous faisons la commande docker images, on peut voir notre nouvelle image qu'on a créer

Ensuite grâce à la commande

> docker save [nom_de_l'image] > [nom_du_fichier.tar]

Nous pouvons sauvegarder localement notre image

Puis grâce la commande

> docker load –i [nom_du_fichier.tar]

On peut restaurer notre image

```
adminsio@dockerecm:~$ docker images
REPOSITORY      TAG       IMAGE ID       CREATED         SIZE
aporaf/ubuntu   ssh       c441419b44e1   2 minutes ago   300MB
ubuntu          latest    a04dc4851cbc   8 weeks ago     78.1MB
ubuntu          lunar     f4cdeba72b99   16 months ago   70.3MB
adminsio@dockerecm:~$ docker save aporaf/ubuntu:ssh > serv_ubuntu-ssh.tar
adminsio@dockerecm:~$ docker load -i serv_ubuntu-ssh.tar
Loaded image: aporaf/ubuntu:ssh
adminsio@dockerecm:~$
```

Sur l'ordinateur hôte si nous effectuons la commande

> ip a
nous pouvons voir que docker a une carte réseau

```
adminsio@dockerecm:~$ docker images
REPOSITORY      TAG       IMAGE ID       CREATED         SIZE
aporaf/ubuntu   ssh       c441419b44e1   2 minutes ago   300MB
ubuntu          latest    a04dc4851cbc   8 weeks ago     78.1MB
ubuntu          lunar     f4cdeba72b99   16 months ago   70.3MB
adminsio@dockerecm:~$ docker save aporaf/ubuntu:ssh > serv_ubuntu-ssh.tar
adminsio@dockerecm:~$ docker load -i serv_ubuntu-ssh.tar
Loaded image: aporaf/ubuntu:ssh
adminsio@dockerecm:~$
```

Nous allons utiliser la commande

> docker run -d -p [adresseip_de_l'hôte]:[port_choisi]:[port_container (pour le service par exemple 22 pour ssh dans notre cas)] --name servssh aporaf/ubuntu:ssh /usr/sbin/sshd -D

```
adminsio@dockerecm:~$ docker run -d -p 10.0.232.6:999:22 --name servssh aporaf/ubuntu:ssh /usr/sbin/sshd -D
e4189eb9332e4022aebc74243871b087126cfd4361b78f832d553e827523db52
adminsio@dockerecm:~$ docker ps -a
CONTAINER ID   IMAGE               COMMAND               CREATED              STATUS              PORTS                     NAMES
e4189eb9332e   aporaf/ubuntu:ssh   "/usr/sbin/sshd -D"   About a minute ago   Up About a minute   10.0.232.6:999->22/tcp   servssh
adminsio@dockerecm:~$
adminsio@dockerecm:~$
adminsio@dockerecm:~$
adminsio@dockerecm:~$ ssh user@10.0.232.6 -p 999
The authenticity of host '[10.0.232.6]:999 ([10.0.232.6]:999)' can't be established.
ED25519 key fingerprint is SHA256:4v8RloIEPK2QQ2utL5ztue9Ig7u32/dc366BAVVZRfA.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '[10.0.232.6]:999' (ED25519) to the list of known hosts.
user@10.0.232.6's password:
Permission denied, please try again.
user@10.0.232.6's password:
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.1.0-25-amd64 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
```

Nous pouvons voir si cela a fonctionner grâce la commande

> ssh [nom_utilisateur_sur_le_container]@[adresseip_hôte] -P [port_choisi (dans notre cas 999)]

Avec docker ps nous pouvons voir les ports défini

```
adminsio@dockerecm:~$ docker ps
CONTAINER ID   IMAGE               COMMAND               CREATED          STATUS          PORTS                     NAMES
e4189eb9332e   aporaf/ubuntu:ssh   "/usr/sbin/sshd -D"   9 minutes ago    Up 9 minutes    10.0.232.6:999->22/tcp   servssh
acf79b549165   aporaf/ubuntu:ssh   "/bin/bash"           18 minutes ago   Up 18 minutes                             servUbuntuSsh
adminsio@dockerecm:~$
```

Et nous pouvons utiliser plusieurs fois le paramètres –p pour ajouter d’autre service

Et enfin il y a la commande

> docker logs [nom_du_container]
si il y a un problème la commande nous renverras quelque chose si tout se passe bien il n'y auras rien

```
Connection to 10.0.232.6 closed.
adminsio@dockerecm:~$ docker ps
CONTAINER ID   IMAGE              COMMAND               CREATED          STATUS          PORTS                     NAMES
e4189eb9332e   aporaf/ubuntu:ssh  "/usr/sbin/sshd -D"   9 minutes ago    Up 9 minutes    10.0.232.6:999->22/tcp    servssh
acf79b549165   aporaf/ubuntu:ssh  "/bin/bash"           18 minutes ago   Up 18 minutes                             servUbuntuSsh
adminsio@dockerecm:~$ docker logs servssh
adminsio@dockerecm:~$
```

Activité II

Nous allons d'abord installer une image httpd avec la commande vue dans l'activité I
> docker pull httpd

Puis pour créer un volume il faut faire
> docker volume create [nom_du_volume]

Le volume est créé dans /var/lib/docker/volumes et un dossier _data a été créer automatiquement

```
adminsio@dockerecm:~$ docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
6e909acdb790: Pull complete
9f9b03a66afb: Pull complete
4f4fb700ef54: Pull complete
09bf08b13dbd: Pull complete
084c58879b9a: Pull complete
c61868f0ad74: Pull complete
Digest: sha256:391a8eb0c1ed464163da46099606a5ec293705118f3054d6c60f5957e2485bd0
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest
adminsio@dockerecm:~$ docker volume create public-html
public-html
adminsio@dockerecm:~$ ls -IR /Var/lib/docker/volumes
ls: impossible d'accéder à '/Var/lib/docker/volumes': Aucun fichier ou dossier de ce type
adminsio@dockerecm:~$ ls -IR /var/lib/docker/volumes
ls: impossible d'accéder à '/var/lib/docker/volumes': Permission non accordée
adminsio@dockerecm:~$ sudo ls -IR /var/lib/docker/volumes
[sudo] Mot de passe de adminsio :
backingFsBlockDev  metadata.db  public-html
adminsio@dockerecm:~$ sudo ls -IR /var/lib/docker/volumes/public-html
_data
adminsio@dockerecm:~$
adminsio@dockerecm:~$ S
```

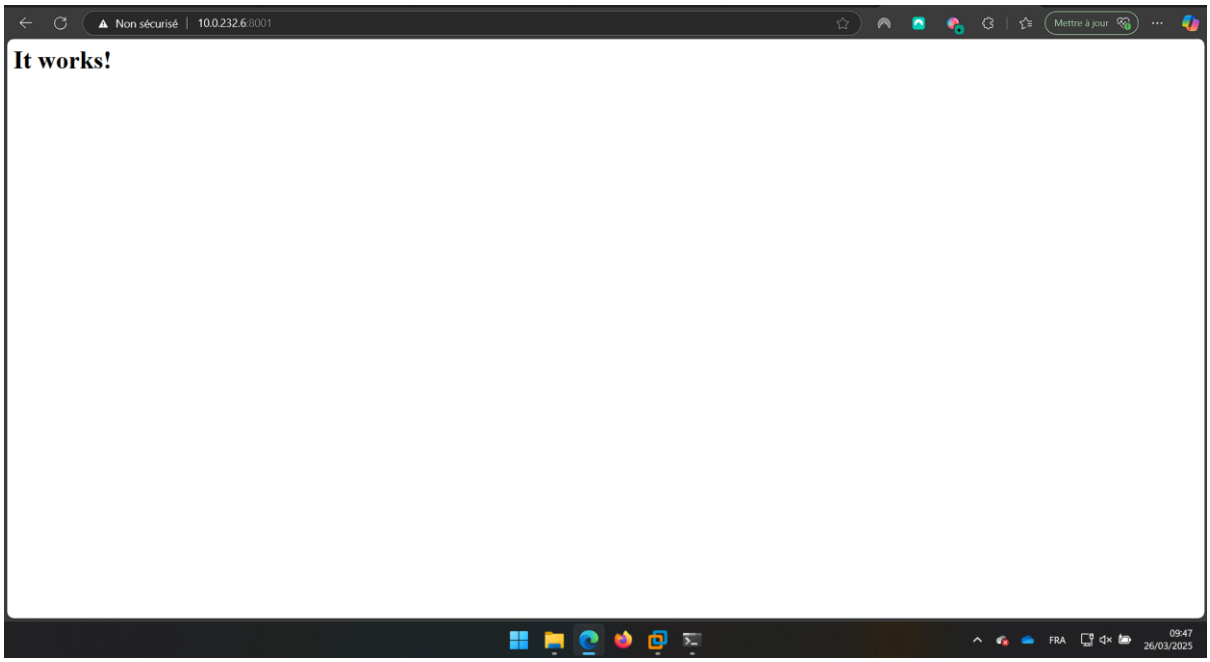
Nous allons créer un container avec notre volume grâce au paramètre -v voici la commande

> docker run --name servweb –d –v [nom_du_volume]:[emplacement_ou_le_volume_doit_être_utiliser] -p [adresseip_hôte]:[port_choisi]:[port_du_service] httpd

```
adminsio@dockerecm:~$ docker run --name servweb -d -v public-html:/usr/local/apache2/htdocs
 -p 10.0.232.6:8001:80 httpd
e62771d850c7a9f98e826b3171ddb3ebea95a231b3758620cb191ec148f67a74
```

Si maintenant sur un ordinateur sur le même réseau que la machine hôte on cherche

[adresseip_hôte]:[port_choisi] dans notre cas 8001 on obitent se qui suit




```
adminsio@dockerecm:~$ sudo ls -l /var/lib/docker/volumes/public-html/_data
total 4
-rw-r--r-- 1 501 root 45 11 juin   2007 index.html
adminsio@dockerecm:~$
```

Au moment de l'initialisation, si des fichiers sont présents dans le dossier du conteneur, ceux-ci sont copiés dans le dossier de l'hôte.

Il suffit donc maintenant de modifier dans /var/lib/docker/volumes/public-html/_data/ de l'hôte le fichier index.html afin de le distinguer de la page par défaut d'Apache et de vérifier que c'est bien cette page qui est publiée.


adminsio@dockerecm: ~
GNU nano 7.2 /var/lib/docker/volumes/public-html/_data/index.html *
<html><body><h1>It works! - Sa fonctionne !</h1></body></html>
Sauver l'espace modifié ?
O Oui
N Non
^C Annuler


```
adminsio@dockerecm:~$ docker volume ls
DRIVER    VOLUME NAME
local     public-html
adminsio@dockerecm:~$ docker volume inspect public-html
[
    {
        "CreatedAt": "2025-03-26T09:36:29+01:00",
        "Driver": "local",
        "Labels": null,
        "Mountpoint": "/var/lib/docker/volumes/public-html/_data",
        "Name": "public-html",
        "Options": null,
        "Scope": "local"
    }
]
adminsio@dockerecm:~$ docker volume rm public-html
Error response from daemon: remove public-html: volume is in use - [8d20dfa98835ec046760821a89413f5b2e2871af4584f0ff21b40ca572b63e81]
adminsio@dockerecm:~$ docker stop servweb
servweb
adminsio@dockerecm:~$ docker volume rm public-html
Error response from daemon: remove public-html: volume is in use - [8d20dfa98835ec046760821a89413f5b2e2871af4584f0ff21b40ca572b63e81]
adminsio@dockerecm:~$ docker rm servweb
servweb
adminsio@dockerecm:~$ docker volume rm public-html
public-html
adminsio@dockerecm:~$ docker volume ls
DRIVER    VOLUME NAME
adminsio@dockerecm:~$
```

Nous allons effectuer la commande
> docker volume ls (cela permet de lister tous les volumes comme sur l'image ci-dessus)

Pour voir les détails d'un volume on peut faire
> docker volume inspect [NOM_DU_VOLUME]

Avec la commande
> docker volume rm [NOM_DU_VOLUME]

Cela permet de supprimer un volume non actif donc il faut stopper le container puis le supprimer et après on peut le supprimer

Utilisation de portainer
Pour l'installer il faut d'abord creer un volume

> docker volume create portainer_data

Q1 : le chemin complet du dossier de l'hôte qui va accueillir les données de Portainer est :
/var/lib/docker/volumes/portainer_data/_data

Pour le voir on reutilise la commande
> docker volume inspect portainer_data

Q2 : -p [PORT_EXTERNE]:[PORT_INTERNE] cela permet de donner un port externe pour accéder au container vers le port interne du container

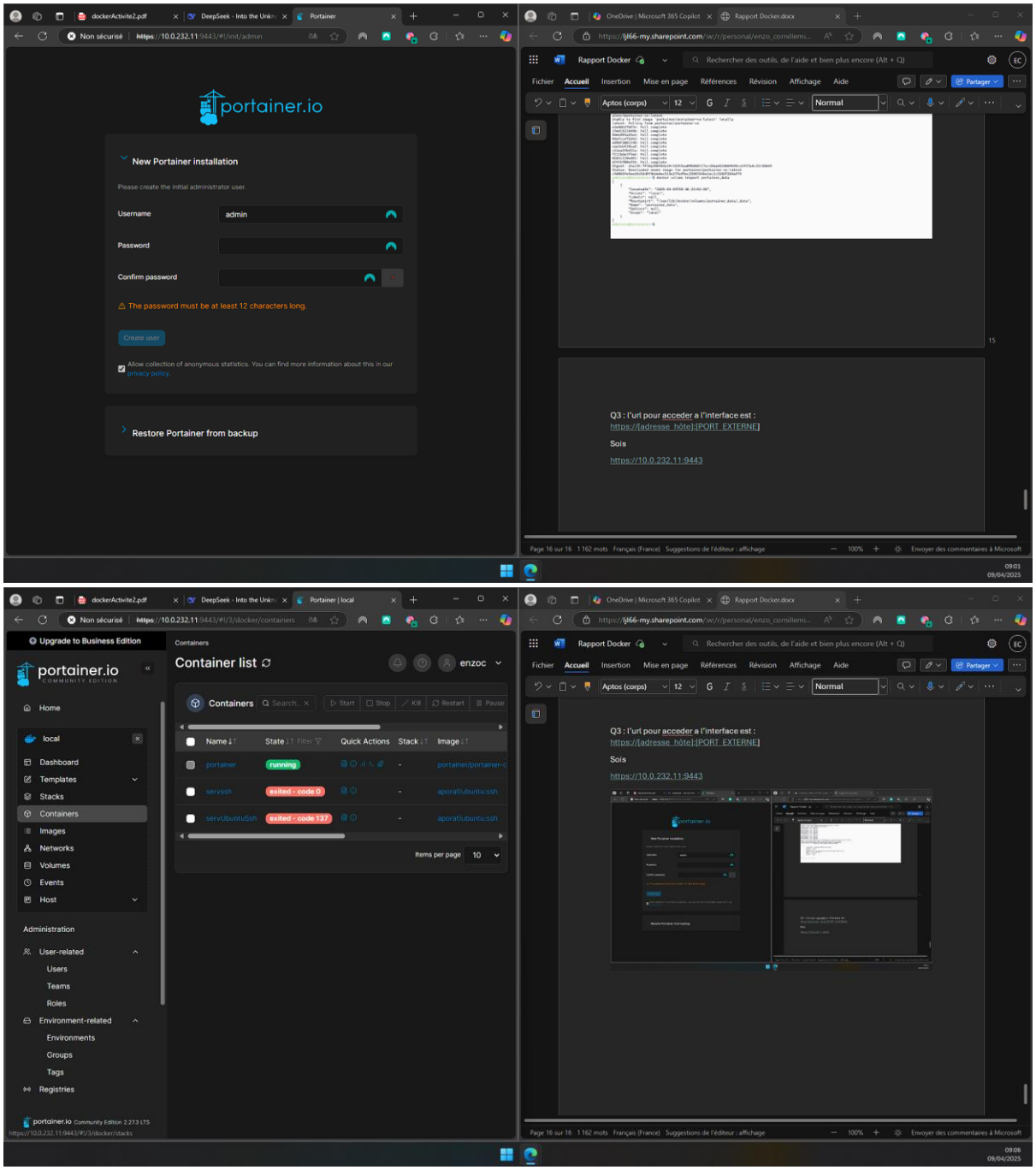
sudo docker run -d -p 9443:9443 --name portainer --restart=always -v /var/run/docker.sock:/var/run/iipdocker.sock -v portainer_data:/data portainer/portainer-ce:latest

```
adminsio@dockerecm:~$ docker volume create portainer_data
portainer_data
adminsio@dockerecm:~$ docker run -d -p 9443:9443 --name portainer --restart=always -v /var/run/docker.sock:/var/run/docker.sock -v portainer_data:/data port
ainer/portainer-ce:latest
Unable to find image 'portainer/portainer-ce:latest' locally
latest: Pulling from portainer/portainer-ce
e2e06b27b87e: Pull complete
1fed1531b45b: Pull complete
04de093ad5ed: Pull complete
86a7cce72d42: Pull complete
e09df2601140: Pull complete
eae3ebf29ea8: Pull complete
c12aa3fbd31a: Pull complete
f111bda3f9a6: Pull complete
81021110ed01: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:7f10a26bfdda3fc58295ea09b860117ecd86a642d66fb94ce1f27a4c221d4649
Status: Downloaded newer image for portainer/portainer-ce:latest
c9d065fe8eed6d5dd0f5bde6ec518e279a99ec28603b4be1ec2c528d72b4a975
adminsio@dockerecm:~$ docker volume inspect portainer_data
[
    {
        "CreatedAt": "2025-04-09T08:46:21+02:00",
        "Driver": "local",
        "Labels": null,
        "Mountpoint": "/var/lib/docker/volumes/portainer_data/_data",
        "Name": "portainer_data",
        "Options": null,
        "Scope": "local"
    }
]
adminsio@dockerecm:~$
```

Q3 : l'url pour acceder a l'interface est :
https://[adresse_hôte]:[PORT_EXTERNE]

Sois

https://10.0.232.11:9443



Portainer est une interface graphique qui permets de gérer et créer des containers beaucoup plus facilement.