

- DOCKER Basic Commands

//to see docker version

//to run an image

```

Select C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18363.1556]
(c) 2019 Microsoft Corporation. All rights reserved.

E:\INFOBELL\Training\Docker\Practice> docker --version
Docker version 20.10.24, build 297e128

E:\INFOBELL\Training\Docker\Practice> docker run hello-world
Unable to find image 'hello-world:latest' locally
[2023-04-21T08:52:07.566064300Z][docker-credential-desktop][W] Windows version might not be up-to-date: The system cannot find the
file specified.
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:4e83453afed1b4fa1a3500525091dbfca6ce1e66903fd4c01ff015dbcb1ba33e
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

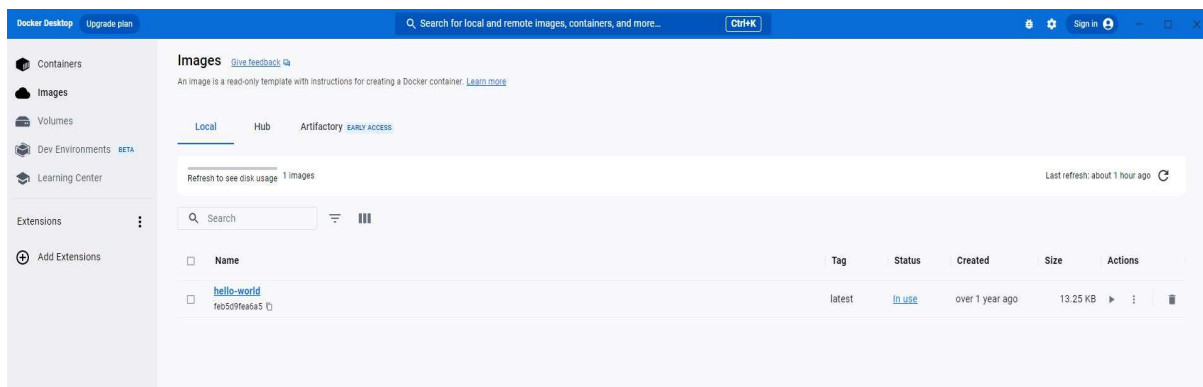
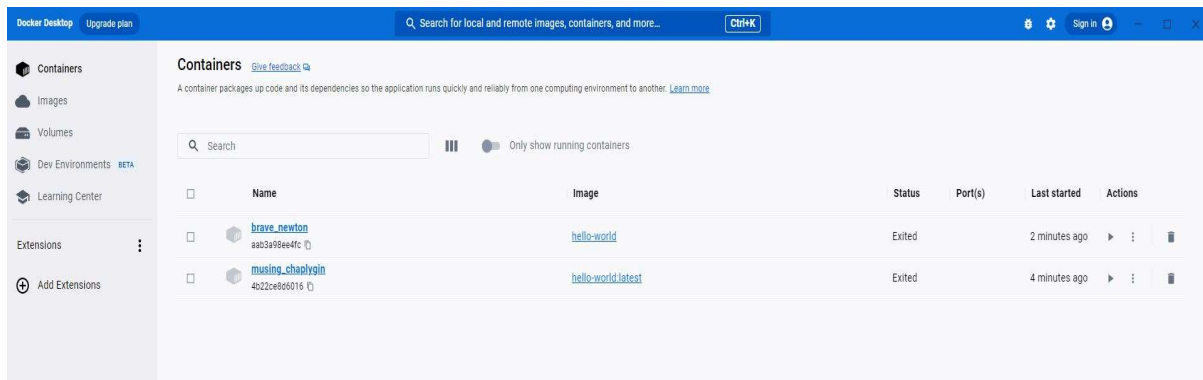
To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the 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/

```

//downloaded hello-world container & image from docker hub



//docker hub

The screenshot shows the Docker Hub search results for the query 'hello-world'. The interface includes a search bar at the top with the text 'hello-world' and buttons for 'Explore', 'Pricing', 'Sign In', and 'Register'. Below the search bar, there are filters for 'Products' (Images, Extensions, Plugins) and 'Trusted Content' (Docker Official Image, Verified Publisher, Sponsored OSS). The search results are displayed in a grid. The first result is 'hello-world' by 'DOCKER OFFICIAL IMAGE', updated 9 days ago, with 1B+ downloads and 2.0K stars. It has 2,165,131 pulls last week. The second result is 'rancher/hello-world' by 'Rancher by SUSE', updated 5 years ago, with 1M+ downloads and 4 stars. It has 999 pulls last week. Both results include a 'Learn more' link.

//hello-world image data from docker hub

```
Select C:\Windows\System32\cmd.exe
E:\INFOBELL\Training\Docker\Practice> docker run hello-world

Hello from Docker!
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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/

E:\INFOBELL\Training\Docker\Practice>
```

//to check all images on docker (ps, ps -a), to stop and start a container (start, stop)

```
C:\Windows\System32\cmd.exe
E:\INFOBELL\Training\Docker\Practice> docker images hello-world
REPOSITORY TAG IMAGE ID CREATED SIZE
hello-world latest feb5d9fea6a5 19 months ago 13.3kB

E:\INFOBELL\Training\Docker\Practice> docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

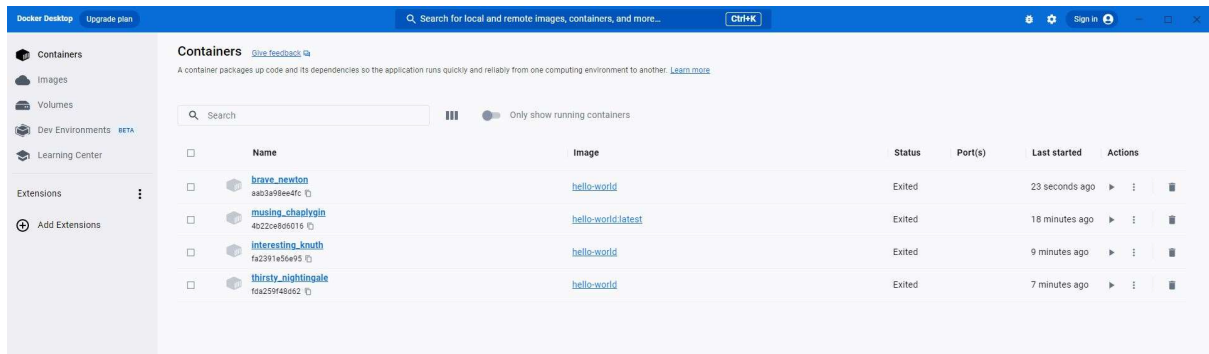
E:\INFOBELL\Training\Docker\Practice> docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
fda259f48d62 hello-world "/hello" 4 minutes ago Exited (0) 4 minutes ago thirsty_nightingale
fa2391e56e95 hello-world "/hello" 6 minutes ago Exited (0) 6 minutes ago interesting_knuth
4b22ce8d6016 hello-world:latest "/hello" 15 minutes ago Exited (0) 15 minutes ago musing_chaplygin
aab3a98ee4fc hello-world "/hello" 34 minutes ago Exited (0) 13 minutes ago brave_newton

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice> docker stop brave_newton
brave_newton

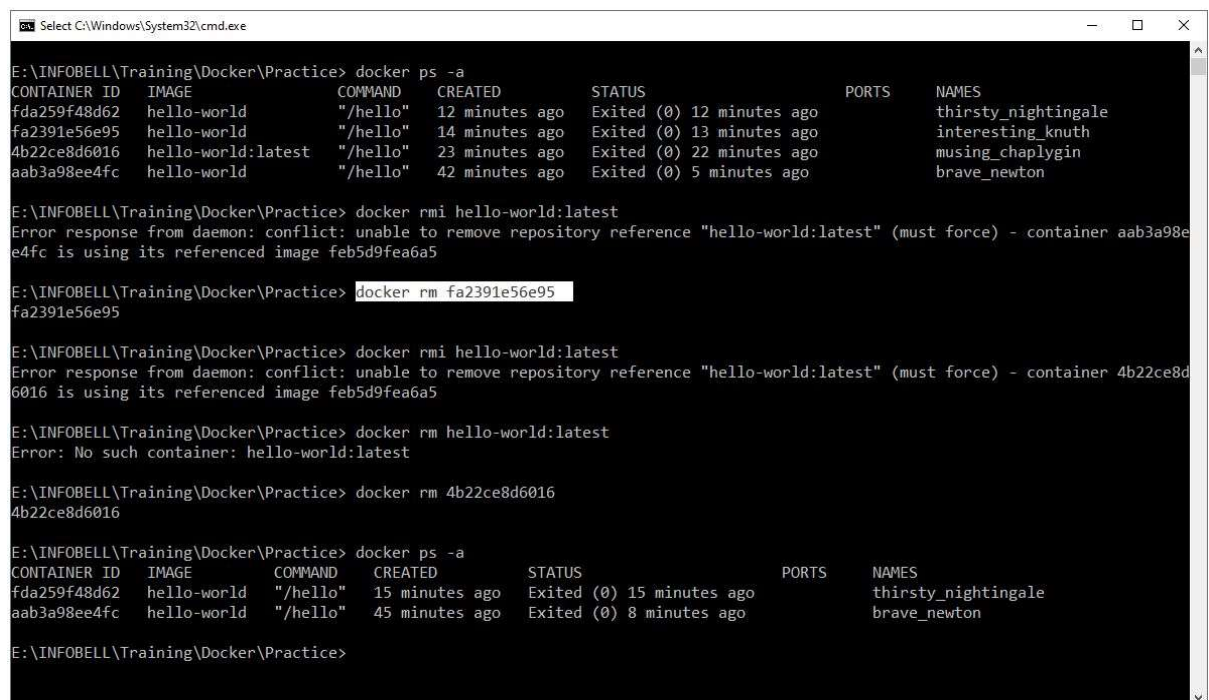
E:\INFOBELL\Training\Docker\Practice> docker start brave_newton
brave_newton

E:\INFOBELL\Training\Docker\Practice>
```

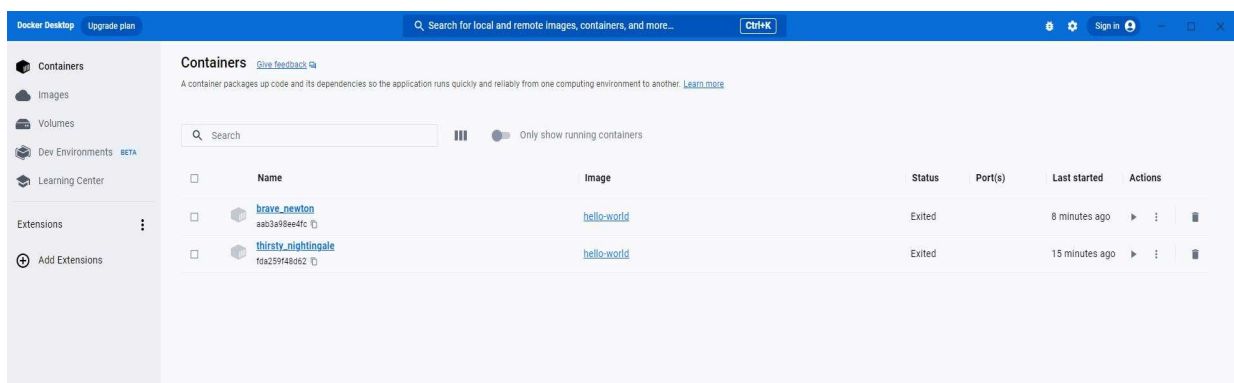
//restarted the container brave\_newton using stop and start



// to remove a container and a image (rm , rmi)



// here 2 containers removed



// to search an image file

```
Select C:\Windows\System32\cmd.exe

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice>docker search hello-world
[2023-04-21T09:42:04.488458400Z][docker-credential-desktop][W] Windows version might not be up-to-date: The system cannot find the
file specified.

NAME                DESCRIPTION                STARS    OFFICIAL    AUTOMATED
hello-world         Hello World! (an example of minimal Dockeriz...  2015     [OK]
kitematic/hello-world-nginx  A light-weight nginx container that demonstr...  153
tutum/hello-world     Image to test docker deployments. Has Apache...  90       [OK]
dockercloud/hello-world  Hello World!                20       [OK]
crccheck/hello-world    Hello World web server in under 2.5 MB          15       [OK]
vadimo/hello-world-rest  A simple REST Service that echoes back all t...  7        [OK]
rancher/hello-world     4
ansibleplaybookbundle/hello-world-db-apb  An APB which deploys a sample Hello World! a...  2        [OK]
thomaspoignant/hello-world-rest-json  This project is a REST hello-world API to bu...  2
ppc64le/hello-world     Hello World! (an example of minimal Dockeriz...  2
ansibleplaybookbundle/hello-world-apb  An APB which deploys a sample Hello World! a...  1        [OK]
freddiedevops/hello-world-spring-boot  0
armswdev/c-hello-world    Simple hello-world C program on Alpine Linux...  0
strimzi/hello-world-producer  0
strimzi/hello-world-consumer  0
businessgeeks00/hello-world-nodejs  0
koudaiiii/hello-world     0
okteto/hello-world       0
strimzi/hello-world-streams  0
tsepotesting123/hello-world  0
golift/hello-world        Hello World Go-App built by Go Lift Applicat...  0
garystafford/hello-world    Simple hello-world Spring Boot service for t...  0        [OK]
kevindockercompany/hello-world  0
dandando/hello-world-dotnet  0
tacc/hello-world          0

E:\INFOBELL\Training\Docker\Practice>
```

// to get docker help (Options)

```
E:\INFOBELL\Training\Docker\Practice>docker --help

Usage: docker [OPTIONS] COMMAND

A self-sufficient runtime for containers

Options:
  --config string      Location of client config files (default
                        "C:\Users\lalatit\.docker")
  -c, --context string  Name of the context to use to connect to the
                        daemon (overrides DOCKER_HOST env var and
                        default context set with "docker context use")
  -D, --debug           Enable debug mode
  -H, --host list       Daemon socket(s) to connect to
  -l, --log-level string Set the logging level
                        ("debug"|"info"|"warn"|"error"|"fatal")
                        (default "info")
  --tls                Use TLS; implied by --tlsverify
  --tlscacert string    Trust certs signed only by this CA (default
                        "C:\Users\lalatit\.docker\ca.pem")
  --tlscert string      Path to TLS certificate file (default
                        "C:\Users\lalatit\.docker\cert.pem")
  --tlskey string       Path to TLS key file (default
                        "C:\Users\lalatit\.docker\key.pem")
  --tlsverify           Use TLS and verify the remote
  -v, --version         Print version information and quit
```



## // Management commands

```
Management Commands:
builder      Manage builds
buildx*      Docker Buildx (Docker Inc., v0.10.4)
compose*     Docker Compose (Docker Inc., v2.17.2)
config       Manage Docker configs
container    Manage containers
context      Manage contexts
dev*         Docker Dev Environments (Docker Inc., v0.1.0)
extension*   Manages Docker extensions (Docker Inc., v0.2.19)
image        Manage images
init*        Creates Docker-related starter files for your project (Docker Inc., v0.1.0-beta.2)
manifest     Manage Docker image manifests and manifest lists
network      Manage networks
node         Manage Swarm nodes
plugin       Manage plugins
sbom*        View the packaged-based Software Bill Of Materials (SBOM) for an image (Anchore Inc., 0.6.0)
scan*        Docker Scan (Docker Inc., v0.25.0)
scout*       Command line tool for Docker Scout (Docker Inc., v0.9.0)
secret       Manage Docker secrets
service      Manage services
stack        Manage Docker stacks
swarm        Manage Swarm
system       Manage Docker
trust        Manage trust on Docker images
volume       Manage volumes
```

## // Docker Commands and uses

```
Select C:\Windows\System32\cmd.exe
Commands:
attach      Attach local standard input, output, and error streams to a running container
build       Build an image from a Dockerfile
commit      Create a new image from a container's changes
cp          Copy files/folders between a container and the local filesystem
create      Create a new container
diff        Inspect changes to files or directories on a container's filesystem
events      Get real time events from the server
exec        Run a command in a running container
export      Export a container's filesystem as a tar archive
history     Show the history of an image
images      List images
import      Import the contents from a tarball to create a filesystem image
info        Display system-wide information
inspect     Return low-level information on Docker objects
kill        Kill one or more running containers
load        Load an image from a tar archive or STDIN
login       Log in to a Docker registry
logout      Log out from a Docker registry
logs        Fetch the logs of a container
pause       Pause all processes within one or more containers
port        List port mappings or a specific mapping for the container
ps          List containers
pull        Pull an image or a repository from a registry
push        Push an image or a repository to a registry
rename      Rename a container
restart     Restart one or more containers
rm          Remove one or more containers
rmi         Remove one or more images
run         Run a command in a new container
save        Save one or more images to a tar archive (streamed to STDOUT by default)
search      Search the Docker Hub for images
start       Start one or more stopped containers
```

// to check history of an image (history)

// to list all the images (image ls)

```
Select C:\Windows\System32\cmd.exe

E:\INFOBELL\Training\Docker\Practice> docker history hello-world
IMAGE          CREATED          CREATED BY          SIZE      COMMENT
feb5d9fea6a5   19 months ago   /bin/sh -c #(nop)  CMD ["/hello"]     0B
<missing>      19 months ago   /bin/sh -c #(nop)  COPY file:50563a97010fd7ce... 13.3kB

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice> docker image ls
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
hello-world    latest    feb5d9fea6a5  19 months ago  13.3kB

E:\INFOBELL\Training\Docker\Practice>
```

// to pull a repository Ubuntu:latest(tag) (image pull)

```
Select C:\Windows\System32\cmd.exe

E:\INFOBELL\Training\Docker\Practice> docker history hello-world
IMAGE          CREATED          CREATED BY          SIZE      COMMENT
feb5d9fea6a5   19 months ago   /bin/sh -c #(nop)  CMD ["/hello"]     0B
<missing>      19 months ago   /bin/sh -c #(nop)  COPY file:50563a97010fd7ce... 13.3kB

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice> docker image ls
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
hello-world    latest    feb5d9fea6a5  19 months ago  13.3kB

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice> docker image pull windows:latest
[2023-04-21T09:52:42.408220600Z][docker-credential-desktop][W] Windows version might not be up-to-date: The system cannot find the
file specified.
Error response from daemon: pull access denied for windows, repository does not exist or may require 'docker login': denied: requ
sted access to the resource is denied

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice> docker image pull ubuntu:latest
[2023-04-21T09:52:58.265683800Z][docker-credential-desktop][W] Windows version might not be up-to-date: The system cannot find the
file specified.
latest: Pulling from library/ubuntu
2ab09b027e7f: Pull complete
Digest: sha256:67211c14fa74f070d27cc59d69a7fa9aeff8e28ea118ef3babc295a0428a6d21
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest

E:\INFOBELL\Training\Docker\Practice>
```

// pulled repository Ubuntu as tag latest

```
Select C:\Windows\System32\cmd.exe

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice> docker image ls
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
ubuntu         latest    08d22c0ceb15  6 weeks ago  77.8MB
hello-world    latest    feb5d9fea6a5  19 months ago  13.3kB

E:\INFOBELL\Training\Docker\Practice>
E:\INFOBELL\Training\Docker\Practice>
```

// to run a repository of ubuntu terminal (run -it image\_id)

// we can run linux commands for checks (ps, ls, uname -a, whoami etc)

```
Select root@49839d9436c8: /

E:\INFOBELL\Training\Docker\Practice> docker image ls
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
ubuntu        latest    08d22c0ceb15   6 weeks ago    77.8MB
hello-world    latest    feb5d9fea6a5   19 months ago  13.3kB

E:\INFOBELL\Training\Docker\Practice> docker run -it 08d22c0ceb15 /bin/bash
root@49839d9436c8:/#
root@49839d9436c8:/# ps
  PID TTY          TIME CMD
   1 pts/0    00:00:00 bash
   9 pts/0    00:00:00 ps
root@49839d9436c8:/#
root@49839d9436c8:/# ls
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  media  mnt  opt  proc  root  run  sbin  srv  sys  temp  usr  var
root@49839d9436c8:/#
root@49839d9436c8:/# uname -a
Linux 49839d9436c8 5.10.16.3-microsoft-standard-WSL2 #1 SMP Fri Apr 2 22:23:49 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
root@49839d9436c8:/#
root@49839d9436c8:/# whoami
root
root@49839d9436c8:/#
```