

Practica 2 Docker

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Ing. En Ciencias de la Computación

1. Comprueba la versión de Docker:

```
C:\Tareas Hechas\Microservicios\Practica2>docker --version
Docker version 28.3.2, build 578ccf6
```

2. Descarga una imagen de Docker, por ejemplo, httpd (Apache):

```
C:\Tareas Hechas\Microservicios\Practica2>docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
779ccd583397: Pull complete
7e8bbac53823: Pull complete
396b1da7636e: Pull complete
40712a21826a: Pull complete
d2b1a5ae8cd3: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:3198c1839e1a875f8b83803083758a7635f1ae999f0601f30f2f3b8ce2ac99e3
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest
```

3. Consulta las imágenes descargadas:

```
C:\Tareas Hechas\Microservicios\Practica2>docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
httpd	latest	3198c1839e1a	13 days ago	174MB
mysql	8.0	f483084b3708	4 weeks ago	1.07GB
postgres	13	42654ff6e040	2 months ago	600MB

4. Ejecuta una instancia (contenedor) de la imagen descargada (httpd):

```
C:\Tareas Hechas\Microservicios\Practica2>docker run -it -d -p 8080:80 httpd
68b7ca619ef6c15e4d341645327cecfed83d0b756687eb723a57e52845d2f1fb
```

5. Consulta todos los contenedores creados:

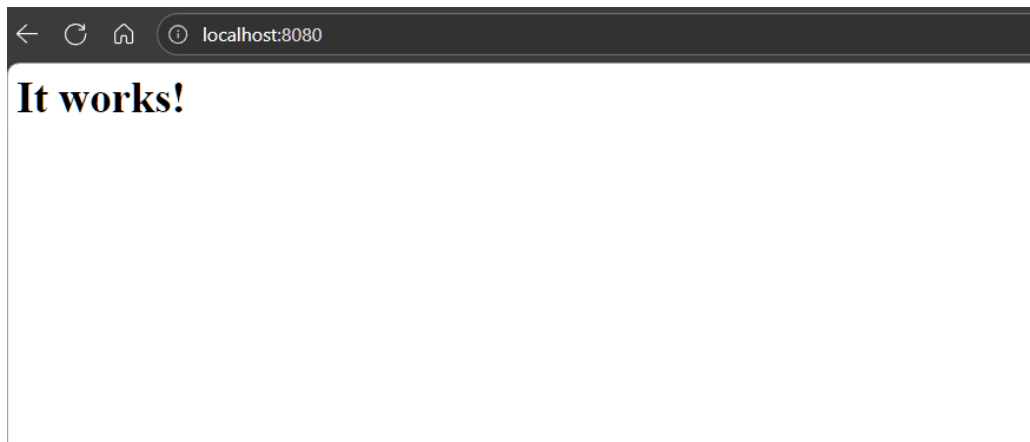
```
C:\Tareas Hechas\Microservicios\Practica2>docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
68b7ca619ef6	httpd	"httpd-foreground"	15 seconds ago	Up 14 seconds	0.0.0.0:8080->80/tcp, [::]:8080->80/tcp	gallant_hopper
20efdc567069	postgres:13	"docker-entrypoint.s..."	8 days ago	Up About a minute	0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp	db_server11
2771dd02e51e	mysql:8.0	"docker-entrypoint.s..."	8 days ago	Up About a minute	0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp	db_server12


```
C:\Tareas Hechas\Microservicios\Practica2>docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
68b7ca619ef6	httpd	"httpd-foreground"	19 seconds ago	Up 18 seconds	0.0.0.0:8080->80/tcp, [::]:8080->80/tcp	gallant_hopper
20efdc567069	postgres:13	"docker-entrypoint.s..."	8 days ago	Up About a minute	0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp	db_server11
2771dd02e51e	mysql:8.0	"docker-entrypoint.s..."	8 days ago	Up About a minute	0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp	db_server12

6. Comprueba el funcionamiento del contenedor desde el host:



7. Ejecuta la terminal de Linux dentro del contenedor:

```
C:\Tareas Hechas\Microservicios\Practica2>docker run -it ubuntu /bin/bash

root@ffc5b5252c89:/#
root@ffc5b5252c89:/#
root@ffc5b5252c89:/#
root@ffc5b5252c89:/# ls
bin  boot  dev  etc  home  lib  lib64  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
```

8. Borra el contenedor creado:

```
C:\Tareas Hechas\Microservicios\Practica2>docker stop 68b7ca619ef6
68b7ca619ef6

C:\Tareas Hechas\Microservicios\Practica2>docker rm 68b7ca619ef6
68b7ca619ef6
```

9. Comprueba que el contenedor ha sido eliminado:

```
C:\Tareas Hechas\Microservicios\Practica2>docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
ffc5b5252c89	ubuntu	"/bin/bash"	3 minutes ago	Exited (130) 3 minutes ago		gracio
us_borg						
20efdc567069	postgres:13	"docker-entrypoint.s..."	8 days ago	Up 7 minutes	0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp	db_ser
ver11						
2771dd02e51e	mysql:8.0	"docker-entrypoint.s..."	8 days ago	Up 7 minutes	0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp	db_ser
ver12						

10. Borra la imagen usando la identificación del Comprueba que el contenedor ha sido eliminado:

```
C:\Tareas Hechas\Microservicios\Practica2>docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
httpd	latest	3198c1839e1a	13 days ago	174MB
ubuntu	latest	7c06e91f61fa	3 weeks ago	117MB
mysql	8.0	f483084b3708	4 weeks ago	1.07GB
postgres	13	42654ff6e040	2 months ago	600MB

```
C:\Tareas Hechas\Microservicios\Practica2>docker rmi 3198c1839e1a
Untagged: httpd:latest
Deleted: sha256:3198c1839e1a875f8b83803083758a7635f1ae999f0601f30f2f3b8ce2ac99e3
```

11. Reinicia el contenedor:

```
C:\Tareas Hechas\Microservicios\Practica2>docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
ffc5b5252c89	ubuntu	"/bin/bash"	6 minutes ago	Exited (130) 5 minutes ago		gracious_borg
20efdc567069	postgres:13	"docker-entrypoint.s..."	8 days ago	Up 9 minutes	0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp	db_server11
2771dd02e51e	mysql:8.0	"docker-entrypoint.s..."	8 days ago	Up 9 minutes	0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp	db_server12

```
C:\Tareas Hechas\Microservicios\Practica2>docker restart ffc5b5252c89
ffc5b5252c89
```

12. Detén y levanta el contenedor:

```
C:\Tareas Hechas\Microservicios\Practica2>docker stop ffc5b5252c89
ffc5b5252c89
```

```
C:\Tareas Hechas\Microservicios\Practica2>docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
20efdc567069	postgres:13	"docker-entrypoint.s..."	8 days ago	Up 11 minutes	0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp	db_server11
2771dd02e51e	mysql:8.0	"docker-entrypoint.s..."	8 days ago	Up 11 minutes	0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp	db_server12

```
C:\Tareas Hechas\Microservicios\Practica2>docker start ffc5b5252c89
ffc5b5252c89
```

```
C:\Tareas Hechas\Microservicios\Practica2>docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
ffc5b5252c89	ubuntu	"/bin/bash"	8 minutes ago	Up 6 seconds		gracious_borg
20efdc567069	postgres:13	"docker-entrypoint.s..."	8 days ago	Up 11 minutes	0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp	db_server11
2771dd02e51e	mysql:8.0	"docker-entrypoint.s..."	8 days ago	Up 11 minutes	0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp	db_server12

13. Mata el contenedor:

```
C:\Tareas Hechas\Microservicios\Practica2>docker kill ffc5b5252c89
ffc5b5252c89

C:\Tareas Hechas\Microservicios\Practica2>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                               NAMES
20efdc567069   postgres:13 "docker-entrypoint.s..." 8 days ago    Up 12 minutes 0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp  db_server11
2771dd02e51e   mysql:8.0  "docker-entrypoint.s..." 8 days ago    Up 12 minutes 0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp  db_server12
```

14. Visualiza los detalles de la red definida con los clústeres:

```
C:\Tareas Hechas\Microservicios\Practica2>docker network ls
NETWORK ID     NAME      DRIVER    SCOPE
f05c185177d1   bridge    bridge    local
5de5f9ad22e5   host      host      local
fa2bdbc8eab6   nestarchivosgen_laravel_network1 bridge    local
3d85273c6994   none      null      local

C:\Tareas Hechas\Microservicios\Practica2>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS                               NAMES
20efdc567069   postgres:13 "docker-entrypoint.s..." 8 days ago    Up 12 minutes 0.0.0.0:5450->5432/tcp, [::]:5450->5432/tcp  db_server11
2771dd02e51e   mysql:8.0  "docker-entrypoint.s..." 8 days ago    Up 12 minutes 0.0.0.0:3311->3306/tcp, [::]:3311->3306/tcp  db_server12
```

15. Obtén información detallada sobre los recursos de Docker:

```
C:\Tareas Hechas\Microservicios\Practica2>docker info
Client:
Version:      28.3.2
Context:      desktop-linux
Debug Mode:   false
Plugins:
ai: Docker AI Agent - Ask Gordon (Docker Inc.)
  Version:    v1.9.9
  Path:       C:\Users\dano4\.docker\cli-plugins\docker-ai.exe
buildx: Docker Buildx (Docker Inc.)
  Version:    v0.25.0-desktop.1
  Path:       C:\Program Files\Docker\cli-plugins\docker-buildx.exe
cloud: Docker Cloud (Docker Inc.)
  Version:    v0.4.2
  Path:       C:\Program Files\Docker\cli-plugins\docker-cloud.exe
compose: Docker Compose (Docker Inc.)
  Version:    v2.38.2-desktop.1
  Path:       C:\Program Files\Docker\cli-plugins\docker-compose.exe
debug: Get a shell into any image or container (Docker Inc.)
  Version:    0.0.41
  Path:       C:\Program Files\Docker\cli-plugins\docker-debug.exe
desktop: Docker Desktop commands (Docker Inc.)
  Version:    v0.1.11
  Path:       C:\Program Files\Docker\cli-plugins\docker-desktop.exe
extension: Manages Docker extensions (Docker Inc.)
  Version:    v0.2.29
  Path:       C:\Program Files\Docker\cli-plugins\docker-extension.exe
init: Creates Docker-related starter files for your project (Docker Inc.)
  Version:    v1.4.0
  Path:       C:\Program Files\Docker\cli-plugins\docker-init.exe
mcp: Docker MCP Plugin (Docker Inc.)
  Version:    v0.9.9
  Path:       C:\Program Files\Docker\cli-plugins\docker-mcp.exe
model: Docker Model Runner (EXPERIMENTAL) (Docker Inc.)
  Version:    v0.1.33
  Path:       C:\Program Files\Docker\cli-plugins\docker-model.exe
sbom: View the packaged-based Software Bill Of Materials (SBOM) for an image (Anchore Inc.)
  Version:    0.6.0
  Path:       C:\Program Files\Docker\cli-plugins\docker-sbom.exe
scout: Docker Scout (Docker Inc.)
  Version:    v1.18.2
  Path:       C:\Users\dano4\.docker\cli-plugins\docker-scout.exe

Server:
Containers: 3
  Running: 2
  Paused: 0
  Stopped: 1
Images: 3
Server Version: 28.3.2
Storage Driver: overlays
  driver-type: io.containerd.snapshotter.v1
Logging Driver: json-file
Cgroup Driver: cgroupfs
Cgroup Version: 2
Plugins:
Volume: local
Network: bridge host ipvlan macvlan null overlay
Log: awslogs fluentd gcplogs gelf journald json-file local splunk syslog
CDI spec directories:
/etc/cdi
/var/run/cdi
Discovered Devices:
cdi: docker.com/gpu-webgpu
Swarm: inactive
Runtimes: io.containerd.runc.v2 nvidia runc
Default Runtime: runc
Init Binary: docker-init
containerd version: 05044ec0a9a75232cad458027ca83437aae3f4da
runc version: v1.2.5-0-g59923ef
init version: de40ad0
Security Options:
seccomp
  Profile: builtin
cgroupns
Kernel Version: 6.6.87.2-microsoft-standard-WSL2
Operating System: Docker Desktop
OSType: linux
Architecture: x86_64
CPUs: 12
Total Memory: 7.431GiB
Name: docker-desktop
ID: c49ad43-129e-40b6-9bf6-30e6d19bd31c
Docker Root Dir: /var/lib/docker
Debug Mode: false
HTTP Proxy: http.docker.internal:3128
HTTPS Proxy: http.docker.internal:3128
No Proxy: hubproxy.docker.internal
Labels:
com.docker.desktop.address=npipe://\\.\pipe/docker_cli
Experimental: false
```

16. Revisa el historial de una imagen:

```
C:\Tareas Hechas\Microservicios\Practica2>docker history httpd
```

IMAGE	CREATED	CREATED BY	SIZE	COMMENT
3198c1839e1a	13 days ago	CMD ["httpd-foreground"]	0B	buildkit.dockerfile.v0
<missing>	13 days ago	EXPOSE map[80/tcp:{}]	0B	buildkit.dockerfile.v0
<missing>	13 days ago	COPY httpd-foreground /usr/local/bin/ # buil...	20.5kB	buildkit.dockerfile.v0
<missing>	13 days ago	STOPSIGNAL SIGWINCH	0B	buildkit.dockerfile.v0
<missing>	13 days ago	RUN /bin/sh -c set -eux; savedAptMark="\$({a...	34.8MB	buildkit.dockerfile.v0
<missing>	13 days ago	ENV HTTPD_PATCHES=	0B	buildkit.dockerfile.v0
<missing>	13 days ago	ENV HTTPD_SHA256=58b8be97d9940ec17f7656c0c6b...	0B	buildkit.dockerfile.v0
<missing>	13 days ago	ENV HTTPD_VERSION=2.4.65	0B	buildkit.dockerfile.v0
<missing>	13 days ago	RUN /bin/sh -c set -eux; apt-get install --...	6.99MB	buildkit.dockerfile.v0
<missing>	13 days ago	WORKDIR /usr/local/apache2	4.1kB	buildkit.dockerfile.v0
<missing>	13 days ago	RUN /bin/sh -c mkdir -p "\$HTTPD_PREFIX" && ...	16.4kB	buildkit.dockerfile.v0
<missing>	13 days ago	ENV PATH=/usr/local/apache2/bin:/usr/local/s...	0B	buildkit.dockerfile.v0
<missing>	13 days ago	ENV HTTPD_PREFIX=/usr/local/apache2	0B	buildkit.dockerfile.v0
<missing>	13 days ago	# debian.sh --arch 'amd64' out/ 'trixie' '@1...	87.4MB	debuerreotype 0.15

17. Busca una imagen según el nombre:

```
C:\Tareas Hechas\Microservicios\Practica2>docker search mongo
```

NAME	DESCRIPTION	STARS	OFFICIAL
mongo	MongoDB document databases provide high avai...	10618	[OK]
circleci/mongo	CircleCI images for MongoDB	16	
corpusops/mongo	https://github.com/corpusops/docker-images/	0	
rootpublic/mongo		0	
uselagoon/mongo		0	
ekesken/mongo	docker image for mongo that is configurable ...	1	
vepo/mongo	Mongo image with default settings	1	
litmuschaos/mongo		1	
jelastic/mongo	An image of the MongoDB database server main...	0	
arm64v8/mongo	MongoDB document databases provide high avai...	36	
zinobe/mongo	mongo with custom user	0	
s390x/mongo	MongoDB document databases provide high avai...	1	
kubedb/mongo		0	
cescoferraro/mongo	docker alpine mongo	0	
ccitest/mongo	CircleCI test images for Mongo	0	
amd64/mongo	MongoDB document databases provide high avai...	0	
sacashgit/mongo		0	
excellalabs/mongo	Dockerfile and scripts to setup a production...	2	
winamd64/mongo	MongoDB document databases provide high avai...	1	
mongodb/mongodb-community-server	The Official MongoDB Community Server	164	
healthcheck/mongo	https://github.com/docker-library/healthchec...	5	
pagarme/mongo		0	
pastvu/mongo		0	
sscpac/mongo	alpine mongo	0	
mongodb/mongodb-atlas-local	Create, manage, and automate MongoDB Atlas L...	8	