



**UNIVERSIDAD DE  
GUADALAJARA**  
Red Universitaria e Institución Benemérita de Jalisco

**CENTRO DE CIENCIAS EXACTAS E INGENIERIAS**

**DIVISION DE INGENIERIAS**



Daniel Padilla Mora - 221350184

Tolerante a fallos

```
Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

Prueba la nueva tecnología PowerShell multiplataforma https://aka.ms/pscore6

PS C:\Users\padil> docker images
error during connect: this error may indicate that the docker daemon is not running: Get "http://%2F%2F.%2Fpipe%2Fdocker_engine/v1.24/images/json": open
en //./pipe/docker_engine: El sistema no puede encontrar el archivo especificado.
PS C:\Users\padil> docker ps
error during connect: this error may indicate that the docker daemon is not running: Get "http://%2F%2F.%2Fpipe%2Fdocker_engine/v1.24/containers/json"
: open //./pipe/docker_engine: El sistema no puede encontrar el archivo especificado.
PS C:\Users\padil> docker images
REPOSITORY      TAG         IMAGE ID      CREATED       SIZE
nginx            latest      2ac752d7aeb1  4 days ago   188MB
hello-world      latest      d2c94e258dcb  11 months ago 13.3kB
PS C:\Users\padil> docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS          NAMES
PS C:\Users\padil> docker pull alpine:3.18.4
3.18.4: Pulling from library/alpine
96526aa774ef: Pull complete
Digest: sha256:eece025e432126ce23f223450a0326fbebde39cdf496a85d8c016293fc851978
Status: Downloaded newer image for alpine:3.18.4
docker.io/library/alpine:3.18.4

What's Next?
  View a summary of image vulnerabilities and recommendations + docker scout quickview alpine:3.18.4
PS C:\Users\padil> docker run -it alpine:3.18.4 sh
/ # apk update
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/community/x86_64/APKINDEX.tar.gz
v3.18.6-177-g0fd8a8ca1b2 [https://dl-cdn.alpinelinux.org/alpine/v3.18/main]
v3.18.6-177-g0fd8a8ca1b2 [https://dl-cdn.alpinelinux.org/alpine/v3.18/community]
OK: 20079 distinct packages available
/ # apk upgrade
Upgrading critical system libraries and apk-tools:
(1/1) Upgrading apk-tools (2.14.0-r2 -> 2.14.4-r0)
Executing busybox-1.36.1-r2.trigger
Continuing the upgrade transaction with new apk-tools:
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/community/x86_64/APKINDEX.tar.gz
(1/8) Upgrading musl (1.2.4-r1 -> 1.2.4-r2)
(2/8) Upgrading busybox (1.36.1-r2 -> 1.36.1-r5)
Executing busybox-1.36.1-r5.post-upgrade
(3/8) Upgrading busybox-binsh (1.36.1-r2 -> 1.36.1-r5)
(4/8) Upgrading ca-certificates-bundle (20230506-r0 -> 20240226-r0)
(5/8) Upgrading libcrypto3 (3.1.3-r0 -> 3.1.4-r6)
(6/8) Upgrading libssl3 (3.1.3-r0 -> 3.1.4-r6)
(7/8) Upgrading ssl_client (1.36.1-r2 -> 1.36.1-r5)
(8/8) Upgrading musl-utils (1.2.4-r1 -> 1.2.4-r2)
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

Prueba la nueva tecnología PowerShell multiplataforma https://aka.ms/pscore6

PS C:\Users\padil> docker pull nginx:1.23
1.23: Pulling from library/nginx
f03b40093957: Pull complete
0972072e0e8a: Pull complete
a85095acb896: Pull complete
d24b987aa74e: Pull complete
6c1a86118ade: Pull complete
9989f7b33228: Pull complete
Digest: sha256:f5747a42e3adcb3168049d63278d7251d91185bb5111d2563d58729a5c9179b0
Status: Downloaded newer image for nginx:1.23
docker.io/library/nginx:1.23

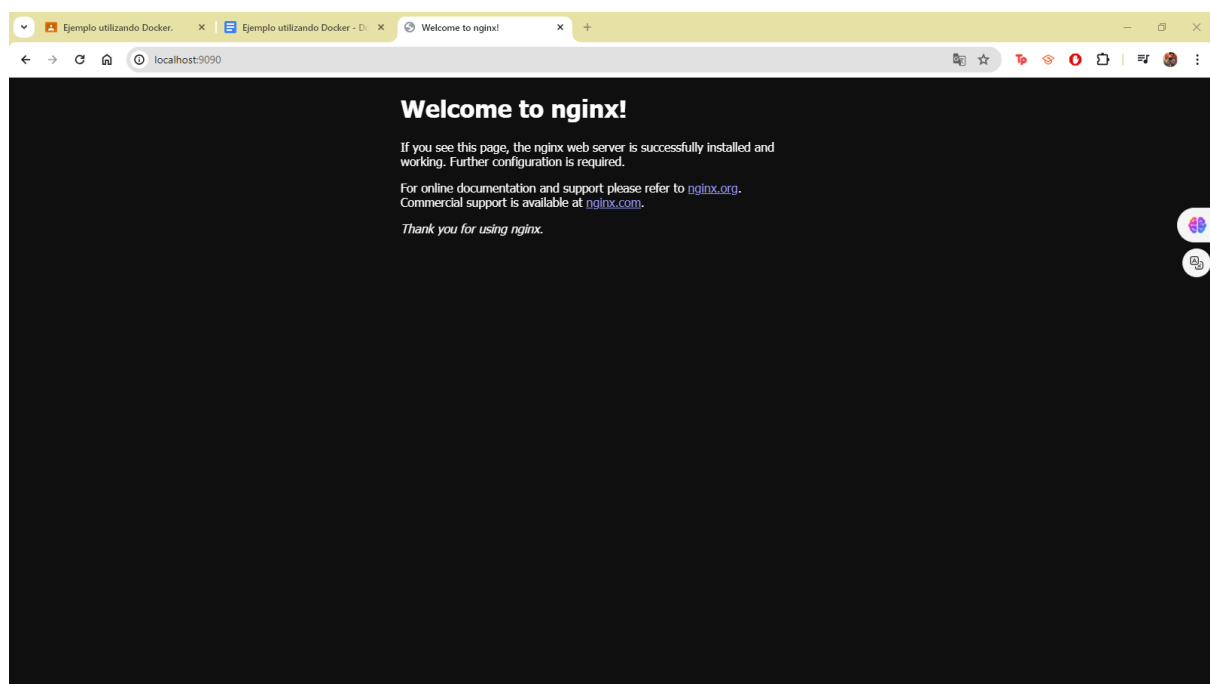
What's Next?
  View a summary of image vulnerabilities and recommendations + docker scout quickview nginx:1.23
PS C:\Users\padil> docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
Digest: sha256:0463a96ac74b84a8ab27f3d1f4ae5d1a70ea823219394e131f5bf3536674419
Status: Image is up to date for nginx:latest
docker.io/library/nginx:latest

What's Next?
  View a summary of image vulnerabilities and recommendations + docker scout quickview nginx
PS C:\Users\padil> docker run nginx:1.23
/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: 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
2024/04/21 03:02:40 [notice] 1#1: using the "epoll" event method
2024/04/21 03:02:40 [notice] 1#1: nginx/1.23.4
2024/04/21 03:02:40 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2024/04/21 03:02:40 [notice] 1#1: OS: Linux 5.15.146.1-microsoft-standard-WSL2
2024/04/21 03:02:40 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2024/04/21 03:02:40 [notice] 1#1: start worker processes
2024/04/21 03:02:40 [notice] 1#1: start worker process 29
2024/04/21 03:02:40 [notice] 1#1: start worker process 30
2024/04/21 03:02:40 [notice] 1#1: start worker process 31
2024/04/21 03:02:40 [notice] 1#1: start worker process 32
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

Prueba la nueva tecnología PowerShell multiplataforma https://aka.ms/pscore6

PS C:\Users\padil> docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
2e08148e5017   nginx:1.23 "/docker-entrypoint. ..." 3 minutes ago  Up 3 minutes  80/tcp       tender_gould
PS C:\Users\padil> docker run -d nginx:1.23
39986e715dea30748f63df911544c61ceb6e71005eb4cb3171cc19cb52fb7399
PS C:\Users\padil> docker logs 39986e715dea30748f63df911544c61ceb6e71005eb4cb3171cc19cb52fb7399
/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: 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
2024/04/21 03:07:27 [notice] 1#1: using the "epoll" event method
2024/04/21 03:07:27 [notice] 1#1: nginx/1.23.4
2024/04/21 03:07:27 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2024/04/21 03:07:27 [notice] 1#1: OS: Linux 5.15.146.1-microsoft-standard-WSL2
2024/04/21 03:07:27 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2024/04/21 03:07:27 [notice] 1#1: start worker processes
2024/04/21 03:07:27 [notice] 1#1: start worker process 29
2024/04/21 03:07:27 [notice] 1#1: start worker process 30
2024/04/21 03:07:27 [notice] 1#1: start worker process 31
2024/04/21 03:07:27 [notice] 1#1: start worker process 32
PS C:\Users\padil> docker stop 39986e715dea30748f63df911544c61ceb6e71005eb4cb3171cc19cb52fb7399
39986e715dea30748f63df911544c61ceb6e71005eb4cb3171cc19cb52fb7399
PS C:\Users\padil> docker run -d -p 9090:80 nginx:1.23
be4b3c11d7ac032343bf9066ff606e643d0652e9b9c4fe0a0a8828e89f22684f
PS C:\Users\padil>
```



```
Windows PowerShell
PS C:\Users\pad11> docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS          PORTS
NAME
be4b3c11d7ac   nginx:1.23     "/docker-entrypoint..." 3 minutes ago  Up 3 minutes   0.0.0.0:9090->80/
tcp_optimistic_faraday
39986e715dea   nginx:1.23     "/docker-entrypoint..." 6 minutes ago  Exited (0) 5 minutes ago
unruffled_lamport
2e08148e5017   nginx:1.23     "/docker-entrypoint..." 11 minutes ago Up 11 minutes   80/tcp
tender_gould
47789cef747b   alpine:3.18.4 "sh"                   17 minutes ago Exited (127) 15 minutes ago
cranky_antonelli
eb8e264de3e3   hello-world    "/hello"                21 hours ago  Exited (0) 21 hours ago
hopeful_williams
PS C:\Users\pad11>
```

```
Windows PowerShell
PS C:\Users\padil> docker stop 39986e715dea30748f63df911544c61ceb6e71005eb4cb3171cc19cb52fb7399
39986e715dea30748f63df911544c61ceb6e71005eb4cb3171cc19cb52fb7399
PS C:\Users\padil> docker run -d -p 9090:80 nginx:1.23
be4b3c11d7ac032343bf9066ff606e643d0652e9b9c4fe0a0a8828e89f22684f
PS C:\Users\padil> docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
be4b3c11d7ac   nginx:1.23     "/docker-entrypoint...." 3 minutes ago   Up 3 minutes   0.0.0.0:9090->80/tcp      optimistic_faraday
39986e715dea   nginx:1.23     "/docker-entrypoint...." 6 minutes ago   Exited (0) 5 minutes ago                                unruffled_lampport
2e08148e5017   nginx:1.23     "/docker-entrypoint...." 11 minutes ago   Up 11 minutes   80/tcp                    tender_gould
47789cef747b   alpine:3.18.4   "sh"                     17 minutes ago   Exited (127) 15 minutes ago                           cranky_antonelli
eb8e264de3e3   hello-world    "/hello"                  21 hours ago    Exited (0) 21 hours ago                                hopeful_williams
PS C:\Users\padil> docker start i- be4b3c11d7ac
Error response from daemon: No such container: i-
be4b3c11d7ac
Error: failed to start containers: i-
PS C:\Users\padil> docker start i- 2e08148e5017
Error response from daemon: No such container: i-
2e08148e5017
Error: failed to start containers: i-
PS C:\Users\padil> docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
be4b3c11d7ac   nginx:1.23     "/docker-entrypoint...." 8 minutes ago   Up 8 minutes   0.0.0.0:9090->80/tcp      optimistic_faraday
39986e715dea   nginx:1.23     "/docker-entrypoint...." 11 minutes ago   Exited (0) 9 minutes ago                                unruffled_lampport
2e08148e5017   nginx:1.23     "/docker-entrypoint...." 16 minutes ago   Up 16 minutes   80/tcp                    tender_gould
47789cef747b   alpine:3.18.4   "sh"                     22 minutes ago   Exited (127) 20 minutes ago                           cranky_antonelli
eb8e264de3e3   hello-world    "/hello"                  22 hours ago    Exited (0) 22 hours ago                                hopeful_williams
PS C:\Users\padil> docker start -i 47789cef747b
/ # docker run --testToleranteFallos -d -p 9090:80 nginx:1.23
sh: docker: not found
/ #
```

```
Windows PowerShell
47789cef747b   alpine:3.18.4   "sh"                     32 minutes ago   Exited (0) About a minute ago                           cranky_antonelli
eb8e264de3e3   hello-world    "/hello"                  22 hours ago    Exited (0) 22 hours ago                                hopeful_williams
PS C:\Users\padil> docker start -i d9cfa04fba74
Error response from daemon: driver failed programming external connectivity on endpoint evangelionTest (83f1b85c1a3681ede6c01fa98a549c10d7773d5ae5f328
10bab779a44d217b40): Bind for 0.0.0.0:9090 failed: port is already allocated
PS C:\Users\padil> docker start -i eb8e264de3e3

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/

PS C:\Users\padil> docker run --name evangelionTest -d -p 9090:80 nginx:1.23
docker: Error response from daemon: Conflict. The container name "/evangelionTest" is already in use by container "d9cfa04fba74dea112c01ad7e0800138f7d
32a80dd6de9bd573091f7345688c6". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
PS C:\Users\padil> docker run --name evangelionTest -d -p 9090:80 nginx:1.23
c56275654e2411d0a7e5cef3b288ecbe563b79f3f39e1e46093b80007c2b61d1
docker: Error response from daemon: driver failed programming external connectivity on endpoint evangelionTest (0ce54d6f58d19ab3e2f56459c8ade396ccdd36
c93acda528a9505d29c3ba31b1): Bind for 0.0.0.0:9090 failed: port is already allocated.
PS C:\Users\padil> docker run --name evangelionTest -d -p 8080:80 nginx:1.23
>>
85b40293a68a88341bac2abb5f32d0246fe3e957cab7cda4f55804c68055918
PS C:\Users\padil>
```

```
JS server.js X Dockerfile npm package.json
src > JS server.js > ...
1  const express = require('express');
2  const app = express ();
3
4  app.get('/', (req, res) =>{
5      res.send("Welcome to my awesome app v2!");
6  });
7
8  app. listen (3000, function ( ) {
9      console. log ("app listening on port 3000");
10 });
```

```
JS server.js npm package.json X Dockerfile
npm package.json > ...
1  {
2      "name": "my-app",
3      "version": "1.0",
4      "dependencies": {
5          "express": "4.18.2"
6      }
7  }
```

```
JS server.js npm package.json Dockerfile X
Dockerfile > ...
1  FROM node:19-alpine
2
3  COPY package.json /app/
4  COPY src /app/
5
6  WORKDIR /app
7
8  RUN npm install
9
10 CMD [ "node", "server.js" ]
```

Containers

Images

Volumes

Builds

Dev Environments BETA

Docker Scout

Extensions

Add Extensions

evangelionTest

nginx:1.23

85b40293a68a

8080.80

STATUS

Running (40 minutes ago)

Logs

Inspect

Bind mounts

Exec

Files

Stats

2024-04-20 21:32:57 /docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration

2024-04-20 21:32:57 /docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/

2024-04-20 21:32:57 /docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh

2024-04-20 21:32:57 10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf

2024-04-20 21:32:57 10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf

2024-04-20 21:32:57 /docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh

2024-04-20 21:32:57 /docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh

2024-04-20 21:32:57 /docker-entrypoint.sh: Configuration complete; ready for start up

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: using the "epoll" event method

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: nginx/1.23.4

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: built by gcc 10.2.1 20211010 (Debian 10.2.1-6)

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: OS: Linux 5.15.146.1-microsoft-standard-WSL2

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: getrlimit(RLIMIT\_NOFILE): 1048576:1048576

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: start worker processes

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: start worker process 28

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: start worker process 29

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: start worker process 30

2024-04-20 21:32:57 2024/04/21 03:32:57 [notice] 1#1: start worker process 31

2024-04-20 21:33:25 2024/04/21 03:33:25 [error] 30#30: \*2 open() "/usr/share/nginx/html/favicon.ico" failed (2: No such file or directory), client: 172.17.0.1, server: localhost, request: "GET /favicon.ico HTTP/1.1", host: "localhost:8080", referer: "http://localhost:8080/"

2024-04-20 21:33:24 172.17.0.1 - - [21/Apr/2024:03:33:24 +0000] "GET / HTTP/1.1" 200 615 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/124.0.0.0 Safari/537.36"

2024-04-20 21:33:25 172.17.0.1 - - [21/Apr/2024:03:33:25 +0000] "GET /favicon.ico HTTP/1.1" 404 555 "http://localhost:8080/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/124.0.0.0 Safari/537.36" "-"

Engine running

RAM 4.36 GB CPU 1.00%

Not signed in

New version available

5

Ejemplo utilizando Docker.

Ejemplo utilizando Docker - D

Welcome to nginx!

Welcome to nginx!

localhost:3000

localhost:3000

Welcome to my awesome app v2!

