

Unit-1 Docker Practice

BASIC CONTAINER EXAMPLES:

1 Example 1 :

Windows PowerShell

Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! <https://aka.ms/PSWindows>

```
PS C:\Users\sr302> docker run httpd echo "Hello, World!"
```

Hello, World!

```
PS C:\Users\sr302>
```

2 Example 2 (Named container):

```
PS C:\Users\sr302> docker run --name my-container httpd echo "Hello, World!"
```

Hello, World!

```
PS C:\Users\sr302> ^C
```

```
PS C:\Users\sr302> docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS
			PORTS	NAMES
351586ca7581	httpd	"echo 'Hello, World!'"	16 seconds ago	Exited (0) 21 seconds ago
my-container				
dfd88e3ebb41	httpd	"echo 'Hello, World!'"	About a minute ago	Exited (0) About a minute ago
lucid_satoshi				
f5651d3b5a6a	ghcr.io/rajyadav23/mysql-college:v1	"docker-entrypoint.s..."	6 hours ago	Exited (255) 26 minutes ago
0.0.0.0:3306->3306/tcp, 33060/tcp	mysql-container			
2efa330296b2	ghcr.io/rajyadav23/flask-ghcr:v1	"python app.py"	9 hours ago	Exited (255) 26 minutes ago
0.0.0.0:5000->5000/tcp	romantic_tu			
ae04a14aa2eb	ghcr.io/rajyadav23/ghcr-demo:latest	"/docker-entrypoint...."	22 hours ago	Exited (255) 9 hours ago
0.0.0.0:8080->80/tcp	ghcr-test			
1a6cb7e7f1de	ghcr.io/rajyadav23/ghcr-demo:latest	"/docker-entrypoint...."	23 hours ago	Exited (0) 23 hours ago
angry_pascal				

c9cebccc0f48 flask-user-app wizardly_dhawan	"python app.py"	2 days ago	Exited (0) 2 days ago
5bd50702b144 5ed9fdf0785b vigorous_faraday	"python app.py"	2 days ago	Exited (0) 2 days ago
a28b7d62446d 5ed9fdf0785b crazy_antonelli	"python app.py"	2 days ago	Exited (0) 2 days ago
5ec4340b79a8 python-flask-app great_lalande	"python app.py"	2 days ago	Exited (0) 2 days ago
f363f2ae734a python-flask-app focused_nightingale	"python app.py"	2 days ago	Exited (0) 2 days ago
b42bae970c35 python-flask-app epic_proskuriakova	"python app.py"	2 days ago	Exited (0) 2 days ago
ad03dfb3c6db 4e03f04a7704 fervent_dirac	"python app.py"	2 days ago	Exited (1) 2 days ago
3fd2c34e69b6 536bb36e733c recursing_hopper	"python app.py"	2 days ago	Exited (1) 2 days ago
53cf1d289007 f6b56af4ba7b vigilant_neumann	"python app.py"	2 days ago	Exited (1) 2 days ago
7443a5cddd09 nginx 0.0.0.0:8080->80/tcp mynginx	"/docker-entrypoint...."	8 days ago	Exited (255) 8 days ago
c46f16b228a8 raaz01/ub1:v1.1 aa1	"/bin/bash"	10 days ago	Exited (126) 10 days ago
2ca7912eb8ff ubuntu dreamy_shaw	"/bin/bash"	13 days ago	Exited (130) 13 days ago
9172811adc4c ubuntu stoic_hellman	"/bin/bash"	13 days ago	Exited (0) 13 days ago
64e85ff54f43 ubuntu competent_nobel	"/bin/bash"	13 days ago	Exited (127) 13 days ago

PS C:\Users\sr302>

3 Setting Environment Variable:

PS C:\Users\sr302> docker run -e MY_VAR=value httpd env

PATH=/usr/local/apache2/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin

HOSTNAME=82515f2d2847

MY_VAR=value

HTTPD_PREFIX=/usr/local/apache2

HTTPD_VERSION=2.4.66

HTTPD_SHA256=94d7ff2b42acbb828e870ba29e4cbad48e558a79c623ad3596e4116efcfea25a

HTTPD_PATCHES=

HOME=/root

PS C:\Users\sr302>

Interactive + Environment

PS C:\Users\sr302> docker run -it -e MY_NAME=Sandesh ubuntu bash

root@ae193bfb37dc:/# echo \$MY_NAME

echo \$MY_NAME

Sandesh

root@ae193bfb37dc:/# exit

exit

Multiple Environment Variables:

PS C:\Users\sr302> docker run -e APP_ENV=production -e APP_VERSION=1.0 nginx

/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

2026/02/20 16:00:40 [notice] 1#1: using the "epoll" event method

2026/02/20 16:00:40 [notice] 1#1: nginx/1.29.4

2026/02/20 16:00:40 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)

2026/02/20 16:00:40 [notice] 1#1: OS: Linux 6.6.87.2-microsoft-standard-WSL2

2026/02/20 16:00:40 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576

2026/02/20 16:00:40 [notice] 1#1: start worker processes

2026/02/20 16:00:40 [notice] 1#1: start worker process 29

2026/02/20 16:00:40 [notice] 1#1: start worker process 30

2026/02/20 16:00:40 [notice] 1#1: start worker process 31

2026/02/20 16:00:40 [notice] 1#1: start worker process 32

2026/02/20 16:00:40 [notice] 1#1: start worker process 33

2026/02/20 16:00:40 [notice] 1#1: start worker process 34

2026/02/20 16:00:40 [notice] 1#1: start worker process 35

2026/02/20 16:00:40 [notice] 1#1: start worker process 36

2026/02/20 16:02:14 [notice] 1#1: signal 2 (SIGINT) received, exiting

2026/02/20 16:02:14 [notice] 31#31: exiting

2026/02/20 16:02:14 [notice] 29#29: exiting

2026/02/20 16:02:14 [notice] 30#30: exiting

2026/02/20 16:02:14 [notice] 30#30: exit

2026/02/20 16:02:14 [notice] 31#31: exit

2026/02/20 16:02:14 [notice] 29#29: exit

2026/02/20 16:02:14 [notice] 32#32: exiting

2026/02/20 16:02:14 [notice] 34#34: exiting

2026/02/20 16:02:14 [notice] 32#32: exit

2026/02/20 16:02:14 [notice] 34#34: exit

2026/02/20 16:02:14 [notice] 33#33: exiting

2026/02/20 16:02:14 [notice] 35#35: exiting

2026/02/20 16:02:14 [notice] 36#36: exiting

2026/02/20 16:02:14 [notice] 33#33: exit

2026/02/20 16:02:14 [notice] 35#35: exit

2026/02/20 16:02:14 [notice] 36#36: exit

2026/02/20 16:02:14 [notice] 1#1: signal 14 (SIGALRM) received

2026/02/20 16:02:14 [notice] 1#1: signal 17 (SIGCHLD) received from 35

2026/02/20 16:02:14 [notice] 1#1: worker process 35 exited with code 0

2026/02/20 16:02:14 [notice] 1#1: signal 29 (SIGIO) received

```
2026/02/20 16:02:14 [notice] 1#1: signal 17 (SIGCHLD) received from 33
2026/02/20 16:02:14 [notice] 1#1: worker process 30 exited with code 0
2026/02/20 16:02:14 [notice] 1#1: worker process 31 exited with code 0
2026/02/20 16:02:14 [notice] 1#1: worker process 33 exited with code 0
2026/02/20 16:02:14 [notice] 1#1: signal 29 (SIGIO) received
2026/02/20 16:02:14 [notice] 1#1: signal 17 (SIGCHLD) received from 31
2026/02/20 16:02:14 [notice] 1#1: signal 17 (SIGCHLD) received from 36
2026/02/20 16:02:14 [notice] 1#1: worker process 29 exited with code 0
2026/02/20 16:02:14 [notice] 1#1: worker process 32 exited with code 0
2026/02/20 16:02:14 [notice] 1#1: worker process 36 exited with code 0
2026/02/20 16:02:14 [notice] 1#1: signal 29 (SIGIO) received
2026/02/20 16:02:14 [notice] 1#1: signal 17 (SIGCHLD) received from 34
2026/02/20 16:02:14 [notice] 1#1: worker process 34 exited with code 0
2026/02/20 16:02:14 [notice] 1#1: exit
PS C:\Users\sr302>
```

Pass Environment Variable & Display:

```
PS C:\Users\sr302> docker run -e APP_PORT=5000 nginx env

HOSTNAME=93f8fc72e5e7
HOME=/root
APP_PORT=5000
PKG_RELEASE=1~trixie
DYNPKG_RELEASE=1~trixie
ACME_VERSION=0.3.1
NGINX_VERSION=1.29.4
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin
NJS_VERSION=0.9.4
NJS_RELEASE=1~trixie
PWD=/
PS C:\Users\sr302>
```

7 Run Detached Mode:

```
PS C:\Users\sr302> docker run -it -d httpd
```

```
cf164df82c56c8622eda7f4022d73f0b1f0b9277d73cc0c80d310efe5bd37c85
```

```
PS C:\Users\sr302> docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
cf164df82c56	httpd	"httpd-foreground"	2 seconds ago	Up 8 seconds	80/tcp	dazzling_clarke

```
PS C:\Users\sr302>
```