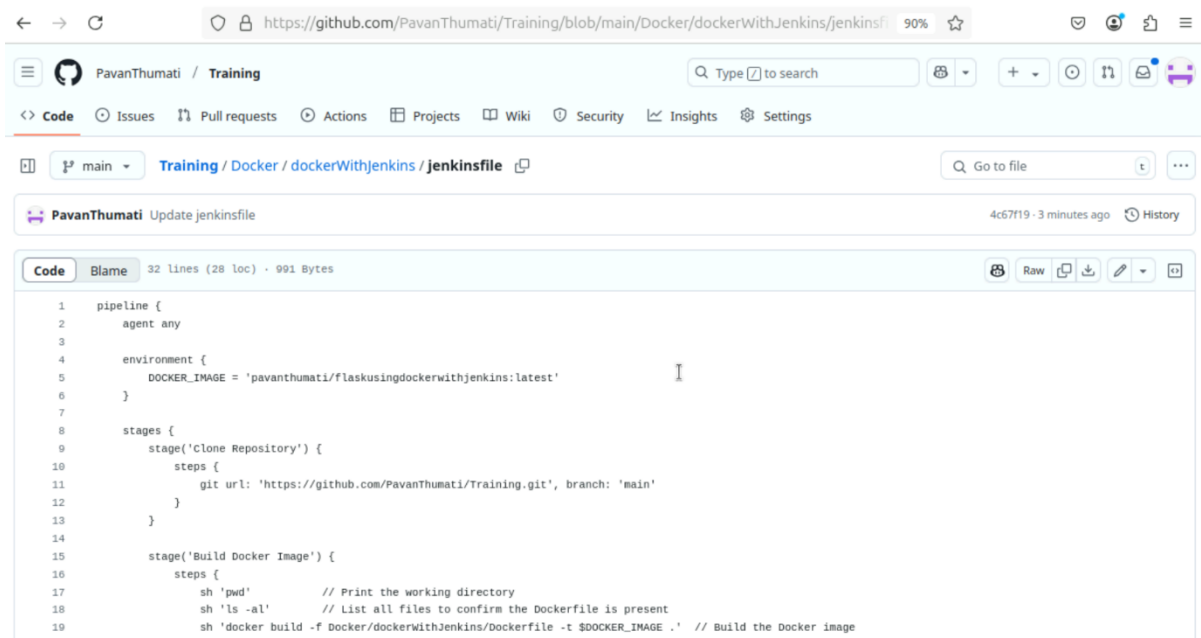


Thumati Pavan Venkata Narendra Kumar

EMP-ID-289219

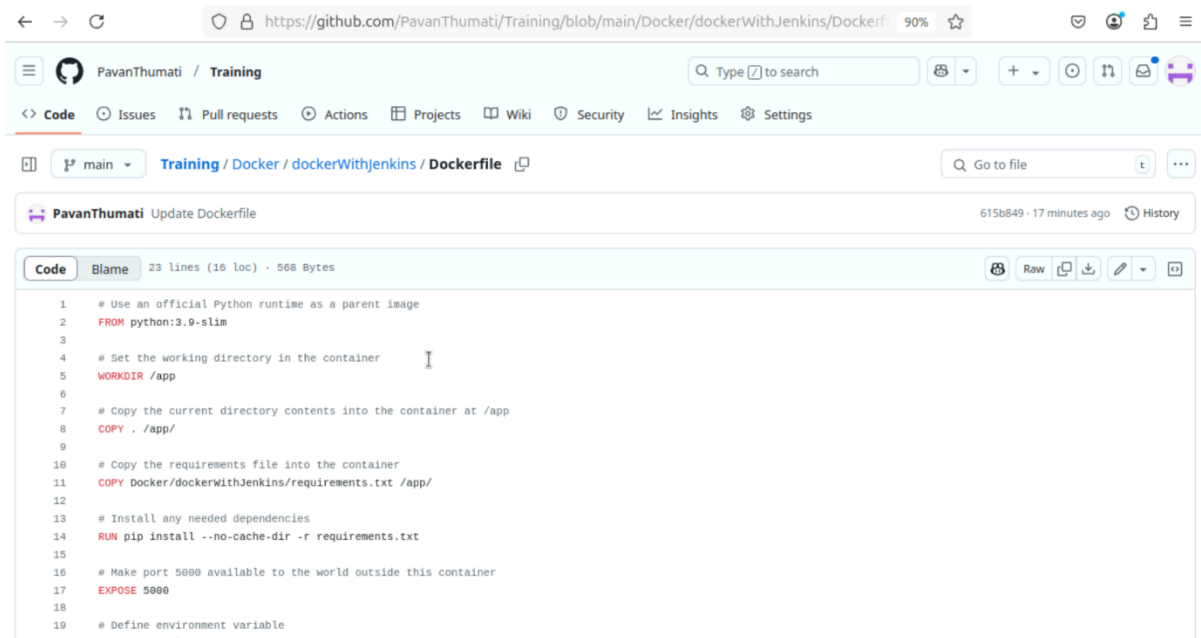
DOCKER-ASSIGNMENTS-1

1.Building Flask app using Docker and Jenkins pipeline.



The screenshot shows a GitHub repository page for 'PavanThumati / Training'. The file 'jenkinsfile' is selected, showing a Jenkins pipeline script. The script defines a pipeline with an agent 'any', an environment variable 'DOCKER_IMAGE' set to 'pavanthumati/flaskusingdockerwithjenkins:latest', and two stages: 'Clone Repository' and 'Build Docker Image'. The 'Build Docker Image' stage includes steps to print the working directory, list files, and build the Docker image.

```
1 pipeline {
2   agent any
3
4   environment {
5     DOCKER_IMAGE = 'pavanthumati/flaskusingdockerwithjenkins:latest'
6   }
7
8   stages {
9     stage('Clone Repository') {
10      steps {
11        git url: 'https://github.com/PavanThumati/Training.git', branch: 'main'
12      }
13    }
14
15    stage('Build Docker Image') {
16      steps {
17        sh 'pwd' // Print the working directory
18        sh 'ls -al' // List all files to confirm the Dockerfile is present
19        sh 'docker build -f Docker/dockerWithJenkins/Dockerfile -t $DOCKER_IMAGE .' // Build the Docker image
20      }
21    }
22  }
23 }
```



The screenshot shows a GitHub repository page for 'PavanThumati / Training'. The file 'Dockerfile' is selected, showing a Dockerfile script. The script uses an official Python runtime as a parent image, sets the working directory to '/app', copies the current directory contents into the container, copies the requirements file, installs dependencies, exposes port 5000, and defines an environment variable.

```
1 # Use an official Python runtime as a parent image
2 FROM python:3.9-slim
3
4 # Set the working directory in the container
5 WORKDIR /app
6
7 # Copy the current directory contents into the container at /app
8 COPY . /app/
9
10 # Copy the requirements file into the container
11 COPY Docker/dockerWithJenkins/requirements.txt /app/
12
13 # Install any needed dependencies
14 RUN pip install --no-cache-dir -r requirements.txt
15
16 # Make port 5000 available to the world outside this container
17 EXPOSE 5000
18
19 # Define environment variable
20 ENV NAME=flask
```

← → ↻ https://github.com/PavanThumati/Training/blob/main/Docker/dockerWithJenkins/app.py 90% ☆

☰ PavanThumati / Training 🔍 Type to search

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

📄 main Training / Docker / dockerWithJenkins / app.py 🔍 Go to file t ...

PavanThumati Create app.py 8fc368a · 17 hours ago 🕒 History

Code Blame 10 Lines (7 loc) · 162 Bytes 📄 Raw 📄 Download 📄 Copy 📄

```
1 from flask import Flask
2
3 app = Flask(__name__)
4
5 @app.route('/')
6 def hello_world():
7     return 'Hello, World!'
8
9 if __name__ == '__main__':
10     app.run(debug=True)
```

☰ PavanThumati / Training 🔍 Type to search

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

📄 main Training / Docker / dockerWithJenkins / requirements.txt 🔍 Go to file t ...

PavanThumati Create requirements.txt 6053f3b · 17 hours ago 🕒 History

Code Blame 2 Lines (2 loc) · 29 Bytes 📄 Raw 📄 Download 📄 Copy 📄

```
1 Flask==2.2.2
2 Werkzeug==2.2.2
```

← → ↻ https://github.com/PavanThumati/Training/tree/main/Docker/dockerWithJenkins 90% ☆

☰ PavanThumati / Training 🔍 Type to search

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

📄 main Training / Docker / dockerWithJenkins / 🔍 Go to file t Add file ...

PavanThumati Update jenkinsfile 4c67f19 · 3 minutes ago 🕒 History

Name	Last commit message	Last commit da...
..		
📄 Dockerfile	Update Dockerfile	17 minutes ago
📄 app.py	Create app.py	17 hours ago
📄 jenkinsfile	Update jenkinsfile	3 minutes ago
📄 requirements.txt	Create requirements.txt	17 hours ago

Dashboard > Dockers with jenkins >

+ New Item

Build History

Edit View

Delete View

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Open Blue Ocean

All

Dockers with jenkins

Jenkins-Assignments

+

Icon: S M L

...

Add description

S	W	Name	Last Success	Last Failure	Last Duration	F
		docker with github	N/A	23 hr #7	12 sec	
		docker1	23 hr #10	23 hr #9	1 min 5 sec	
		flaskUsingDockerWithJenkins	4 hr 46 min #16	4 hr 47 min #15	46 sec	

Dashboard > Dockers with jenkins > flaskUsingDockerWithJenkins > Configuration

Configure

General

Triggers

Pipeline

Advanced

Pipeline script from SCM

SCM ?

Git

Repositories ?

Repository URL ?

https://github.com/PavanThumati/Training.git

Credentials ?

PavanThumati/*****

+ Add

Advanced v

Add Repository

Branches to build ?

Save

Apply

← → ↺ localhost:8080/view/Dockers with jenkins/job/flaskUsingDockerWithJenkins/ 80% ☆

Dashboard > Dockers with jenkins > flaskUsingDockerWithJenkins >

</> Changes

▶ Build Now

⚙️ Configure

🗑️ Delete Pipeline

🔍 Full Stage View

★ Favorite

🌊 Open Blue Ocean

📁 Stages

✎ Rename

🔗 Pipeline Syntax

Stage View

Average stage times: (full run time: ~46s)

	Declarative: Checkout SCM	Clone Repository	Build Docker Image	Push Docker Image
#16 10:35 No Changes	3s	1s	11s	27s
#15 10:33 1	2s	1s	13s	2s failed
#14 10:26 1	1s	1s	13s	2s failed
#13 10:22 1	1s	1s	11s	2s failed
#12 10:20 1	1s	1s	11s	2s failed
#11 10:18 1	1s	1s	3s failed	107ms failed

Builds Filter /

Today

- ✓ #16 10:35 AM
- ✗ #15 10:33 AM
- ✗ #14 10:26 AM
- ✗ #13 10:22 AM
- ✗ #12 10:20 AM

← → ↺ https://hub.docker.com/repository/docker/pavanthumati/flaskusingdockerwithjenkins/general ☆

dockerhub Explore **Repositories** Organizations Usage 🔍 Search Docker... ctrl+K ⚙️ 🔔 🔄 ⋮ P

pavanthumati / [Repositories](#) / [flaskusingdockerwithjenkins](#) / [General](#) Using 0 of 1 private repositories.

pavanthumati/flaskusingdockerwithjenkins

Last pushed 3 minutes ago · Repository size: 48.5 MB

[Add a description](#) ✎ ⓘ

[Add a category](#) ✎ ⓘ

Docker commands

To push a new tag to this repository: [Public view](#)

```
docker push pavanthumati/flaskusingdockew  
ithjenkins:tagname
```

General Tags Image Management **BETA** Builds Collaborators Webhooks Settings

Tags

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
latest	🐳	Image	less than 1 day	3 minutes

[See all](#)

Automated builds

Manually pushing images to Docker Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

Available with Pro, Team and Business subscriptions. [Read more about automated builds](#) ↗

2.Installing Dockers and running sample nginx image & container.

```
master@master-vm: ~/Desktop$ sudo apt update && sudo apt upgrade -y
[sudo] password for master:
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
Get more security updates through Ubuntu Pro with 'esm-apps' enabled:
  libpostproc58 libavcodec58 libavutil56 libswscale5 libswresample3
  libavformat58 libavfilter7
Learn more about Ubuntu Pro at https://ubuntu.com/pro
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
master@master-vm: ~/Desktop$ sudo apt install -y ca-certificates curl gnupg lsb-release
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
lsb-release is already the newest version (11.1.0ubuntu4).
lsb-release set to manually installed.
ca-certificates is already the newest version (20240203~22.04.1).
curl is already the newest version (7.81.0-1ubuntu1.20).
gnupg is already the newest version (2.2.27-3ubuntu2.1).
gnupg set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
master@master-vm: ~/Desktop$ sudo mkdir -p /etc/apt/keyrings
master@master-vm: ~/Desktop$ cd ..
```

```
master@master-vm: ~/Desktop$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo tee
/etc/apt/keyrings/docker.asc > /dev/null
-----BEGIN PGP PUBLIC KEY BLOCK-----

mQIwBFit2ioBEADhWpZ8/wvZ6hUTiXOwQHXMALaFHCpH9hAtr4F1y2+OYdbtMuth
lqqw028AqyY+PRFVMtSYMbjuQuu5byyKR01BbqYhuS3jtqQmIjZ/bJvXqnmivXh
38UuLa+z077PxyxQhu5BbqntTPQMfiyqEiU+BKbq2WmANUKQf+1AmZY/IruOXbnq
L4C1+gJ8vfmXQt99npCaxEjaNRVYfOS8QcixNzHUYnb6emjLANyEVLZzeqo7XK17
UrwV5lnawTSzWNvtjEjj4nJL8NsLwscpLPQUhTQ+7BbQXAwAmeHCUTQIvvWXqW0N
cmhh4HgeQscQHfYgOjJjDVfoY5MucvglbIgCqfzAHW9jxmRL4qbMZj+b1XoePEtht
ku4bIQN1X5P07fNWzlgARL5Z4POXDDZTLIQ/El58j9kp4bnWRCJW0lya+f8ocodo
vZZ+Doi+fy4D5ZGrL4XECIQP/Lv5uFyf+kQtL/94VFYVJ0leAv8W92KdgDkhTcTD
G7c0tIkVEKNUq48b3aQ64NOZQW7fVjfoKwEZd0qPE72Pa45jrZzvUFxSpdiNk2tZ
XYukHjlxXegBdC/J3cMMNRE1F4NCA3ApfV1Y7/hTeOnmDuDYwr9/obA8t016Ylj
q5rdkywPf4JF8mXUW5eCN1vAFHxeg9ZWemhBtQMgXxNw9M+z6hWwc6ahmwARAQAB
tCtEb2NrZXIgaUumVsZWZzZSAoQ0UgZGVikaSA8ZG9ja2VyQGRvY2tici5jb20+iQI3
BBMBCgAhBQJYrefAAhsvBQsJCAcDBRUKCQgLBRYCAwEAAh4BAheAAAJE12BgDw0
v82IsskP/iQZ068fLDQmNvn8X5XTd6RRaUH33kXYXquT6NkHJciS7E2gTJmqvMqd
tI4mNYHCSEYxI5qrcYV5YqX9P6+Ko+vozo4nseUQLPH/ATQ4qL0Zok+1jkag3Lgk
jonyUf9bwtWxFp05HC3GMHPHhcUSeXCxQLQvnFWXD2sWLKivHp2fT8QbRGeZ+d3m
6fqcd5Fu7pxsqm0EUDK5NL+nPIgYhN+auTrhgzhK1CSHfGccM/wfRle19Utz6p9P
XRKILWnXtT4qNGZNTN0tR+NLG/6Bqd80YBaFAUcue/w1VW6JQ2VGYZHnZu9S8LMc
FYBa5Ig9PwGQ0gq6RDkDbV+PqTQT5EFMeR1mrjckk4DQJjbxemZbiNMG5kGECA8
```



```

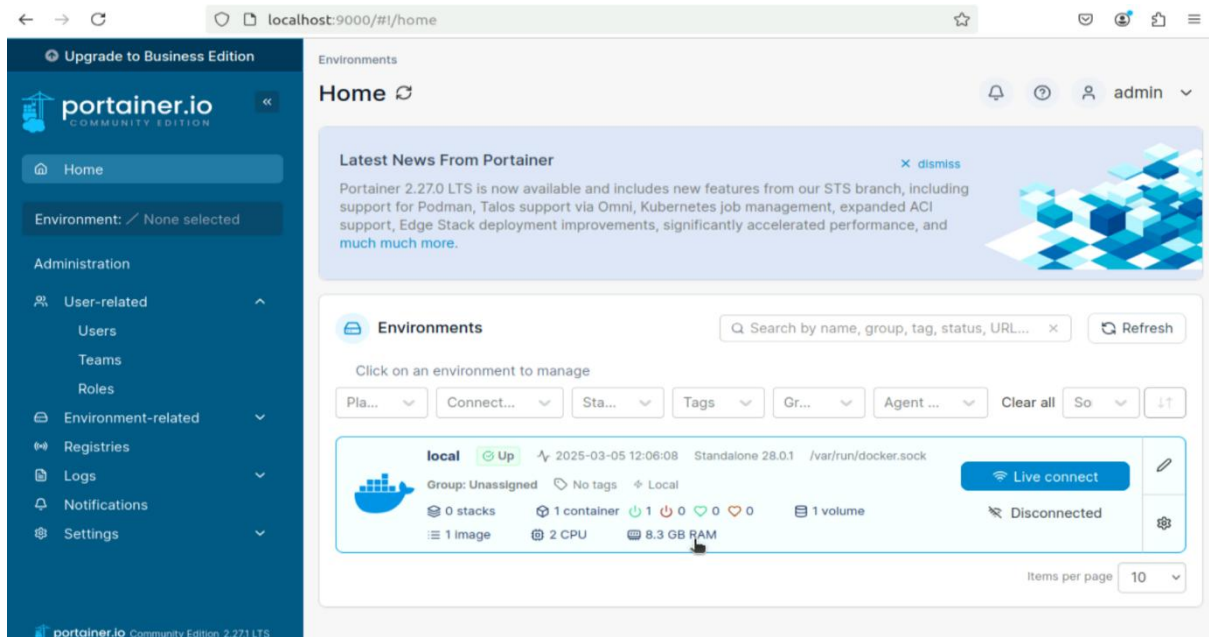
master@master-vm: ~
master@master-vm: ~/Desktop
master@master-vm:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo tee /etc/apt/keyrings/docker.asc > /dev/null
master@master-vm:~$ sudo chmod a+r /etc/apt/keyrings/docker.asc
master@master-vm:~$ echo "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
master@master-vm:~$ sudo apt update
Get:1 https://download.docker.com/linux/ubuntu jammy InRelease [48.8 kB]
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:5 https://download.docker.com/linux/ubuntu jammy/stable amd64 Packages [45.7 kB]
Hit:6 http://security.ubuntu.com/ubuntu jammy-security InRelease
Fetched 94.5 kB in 3s (30.5 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
master@master-vm:~$ sudo apt install -y docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  docker-ce-rootless-extras git git-man liberror-perl libslirp0 pigz
  slirp4netns
Suggested packages:
  cgroupfs-mount | cgroup-lite git-daemon-run | git-daemon-sysvinit git-doc
  git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli
  docker-ce-rootless-extras docker-compose-plugin git git-man liberror-perl
  libslirp0 pigz slirp4netns
0 upgraded, 12 newly installed, 0 to remove and 0 not upgraded.
Need to get 124 MB of archives.
After this operation, 458 MB of additional disk space will be used.
Get:1 https://download.docker.com/linux/ubuntu jammy/stable amd64 containerd.io amd64 1.7.25-1 [29.6 MB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 liberror-perl all 0.17029-1 [26.5 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 git-man all 1:2.34.1-1ubuntu1.12 [955 kB]
Get:5 https://download.docker.com/linux/ubuntu jammy/stable amd64 docker-buildx-plugin amd64 0.21.1-1-ubuntu.22.04-jammy [35.3 MB]

```

```

master@master-vm: ~
master@master-vm: ~/Desktop
b/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/sy
stemd/system/docker.socket.
Setting up git (1:2.34.1-1ubuntu1.12) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.9) ...
master@master-vm:~$ sudo systemctl start docker
master@master-vm:~$ sudo systemctl enable docker
Synchronizing state of docker.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable docker
master@master-vm:~$ sudo docker --version
Docker version 28.0.1, build 068a01e
master@master-vm:~$ sudo usermod -aG docker $USER
master@master-vm:~$ newgrp docker
master@master-vm:~$ sudo docker pull portainer/portainer-ce
Using default tag: latest
latest: Pulling from portainer/portainer-ce
436768c74267: Pull complete
d61825c69234: Pull complete
04de093ad5ed: Pull complete
a528983d077c: Pull complete
26eb502a78ed: Pull complete
b2724536dfda: Pull complete
5b45cfb2ea0c: Pull complete
20b115ea6339: Pull complete
8e73efb50b28: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:99c3047d44991af08f2a34df16e69ae2654bee43444b2e9857aa6b5864c4f602
Status: Downloaded newer image for portainer/portainer-ce:latest
docker.io/portainer/portainer-ce:latest
master@master-vm:~$ sudo docker run -d -p 9000:9000 --name=portainer --restart=always \
-v /var/run/docker.sock:/var/run/docker.sock \
-v portainer_data:/data \portainer/portainer-ce
4785ed75f535d799cf3a70592bd0889975c55b9e1b18fcf0a85c6a24e5174437
master@master-vm:~$ sudo docker --version
Docker version 28.0.1, build 068a01e
master@master-vm:~$

```



```
master@master-vm:~$ docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
7cf63256a31a: Pull complete
bf9acace214a: Pull complete
513c3649bb14: Pull complete
d014f92d532d: Pull complete
9dd21ad5a4a6: Pull complete
943ea0f0c2e4: Pull complete
103f50cb3e9f: Pull complete
Digest: sha256:9d6b58feebd2dbd3c56ab585333d627cc6e281011cfd6050fa4bcf2072c9496
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
master@master-vm:~$ docker run -d -p 8080:80 --name my-nginx nginx
e7ac5be0db814ac7f7a18068a42718ef987962cb0d141e42401ab90c73bf996b
master@master-vm:~$ mkdir nginx_project && cd nginx_project
master@master-vm:~/nginx_project$ nano index.html
master@master-vm:~/nginx_project$ chmod 755 index.html
master@master-vm:~/nginx_project$ docker run -d -p 8081:80 --name custom-nginx -v
flag needs an argument: 'v' in -v

Usage: docker run [OPTIONS] IMAGE [COMMAND] [ARG...]

Run 'docker run --help' for more information
master@master-vm:~/nginx_project$ docker run -d -p 8081:80 --name custom-nginx -v
$(pwd):/usr/share/nginx/html nginx
flag needs an argument: 'v' in -v


Usage: docker run [OPTIONS] IMAGE [COMMAND] [ARG...]

Run 'docker run --help' for more information
bash: /home/master/nginx_project:/usr/share/nginx/html: No such file or directory
master@master-vm:~/nginx_project$ docker run -d -p 8081:80 --name custom-nginx -v $(pwd):/usr/share/nginx/html nginx
1ea5a5e0686f088ccf0f075785e0bb88a9ef162a5fe4a56581ef00b987d88e48
master@master-vm:~/nginx_project$
```



Hello, this is a custom Nginx page inside Docker!

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Image list

Pull image

Registry

Docker Hub (anonymous)

Image*

docker.io

e.g. my-image:my-tag

Search

Image name is required.

Advanced mode

Pull the image

Your authorized pull count quota as an anonymous user is now exceeded. You will not be able to pull any image from the DockerHub registry.

Images

Search...

Remove

Import


Export

Build a new image

<input type="checkbox"/>	Id	Filter	Tags	Size	Created
<input type="checkbox"/>	sha256:b52e0b094bc0e26c9eddc9e4ab7a64...		nginx:latest	192 MB	2025-02-06 02:57:16
<input type="checkbox"/>	sha256:ac6e9f6834c85757f7433797741a05...		portainer/portainer-ce:latest	268 MB	2025-02-27 04:18:46

Items per page 10

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Containers

Container list

Containers

Search..

Start

Stop

Kill













Restart

Pause

Resume

Remove

Add container

<input type="checkbox"/>	Name	State	Filter	Quick Actions	Stack	Image	Created	IP Address	P
<input type="checkbox"/>	custom-nginx	running		   	-	nginx	2025-03-05 12:31:10	172.17.0.4	<input checked="" type="checkbox"/>
<input type="checkbox"/>	my-nginx	running		   	-	nginx	2025-03-05 12:17:14	172.17.0.3	<input checked="" type="checkbox"/>
<input type="checkbox"/>	portainer	running		   	-	portainer/portainer-ce	2025-03-05 12:04:52	172.17.0.2	<input checked="" type="checkbox"/>

Items per page 10