

Docker Task -3

Task Description:

Create a custom docker image for nginx and deploy it using docker compose, where the volume bind mount should be at /var/opt/nginx location. Push the created custom docker image to your docker-hub.

Created a Dockerfile:

```
FROM nginx:latest
COPY nginx.conf /etc/nginx/nginx.conf
EXPOSE 80
```

Created nginx.conf:

```

events {}
http {
    server {
        listen 80;

        # Set document root to the bind mount folder
        root /var/opt/nginx;
        index index.html;

        location / {
            try_files $uri $uri/ =404;
        }
    }
}

~
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~
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~
~

```

Created a **index.html** in the same folder:

```
mkdir -p nginx-data
```

```
echo '<h1>Hello from custom Nginx!</h1>' > nginx-data/index.html
```

Create docker-compose file:

```
version: "3.8"

services:
  nginx:
    image: sudheerttech/custom-nginx:latest
    container_name: custom-nginx
    ports:
      - "80:80"
    volumes:
      - ./nginx-data:/var/opt/nginx
```

```
~
~
~
~
~
```

```
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# tree
```

```
├── Dockerfile
├── docker-compose.yml
├── nginx-data
│   └── index.html
└── nginx.conf
```

```
2 directories, 4 files
```

```
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx#
```

Build the custom Docker image:

```

root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker build -t sudheerttech/custom-nginx:latest .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/

Sending build context to Docker daemon 6.656kB
Step 1/3 : FROM nginx:latest
latest: Pulling from library/nginx
0c8d55a45c0d: Pulling fs layer
46bf3a120c8e: Pulling fs layer
4f4efe02d542: Pulling fs layer
7b6cb8ccac7b: Pulling fs layer
f73400a233fd: Pulling fs layer
47cd406a84ef: Pulling fs layer
bae5a1799a80: Pulling fs layer
f73400a233fd: Waiting
47cd406a84ef: Waiting
bae5a1799a80: Waiting
7b6cb8ccac7b: Waiting
4f4efe02d542: Verifying Checksum
4f4efe02d542: Download complete
7b6cb8ccac7b: Verifying Checksum
7b6cb8ccac7b: Download complete
0c8d55a45c0d: Verifying Checksum
0c8d55a45c0d: Download complete
46bf3a120c8e: Verifying Checksum
46bf3a120c8e: Download complete
f73400a233fd: Verifying Checksum
f73400a233fd: Download complete
bae5a1799a80: Verifying Checksum
bae5a1799a80: Download complete
47cd406a84ef: Verifying Checksum
47cd406a84ef: Download complete
0c8d55a45c0d: Pull complete
46bf3a120c8e: Pull complete
4f4efe02d542: Pull complete
7b6cb8ccac7b: Pull complete
f73400a233fd: Pull complete
47cd406a84ef: Pull complete
bae5a1799a80: Pull complete
Digest: sha256:341bf0f3ce6c5277d6002cf6e1fb0319fa4252add24ab6a0e262e0056d313208
Status: Downloaded newer image for nginx:latest
--> 5cdef4ac3335
Step 2/3 : COPY index.html /usr/share/nginx/html/index.html
--> dcfe6179b1d9
Step 3/3 : EXPOSE 80
--> Running in 9590628a193c
--> Removed intermediate container 9590628a193c
--> 82f5401d3699
Successfully built 82f5401d3699
Successfully tagged sudheerttech/custom-nginx:latest
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker images

```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
sudheerttech/custom-nginx	latest	82f5401d3699	5 seconds ago	161MB
nginx	latest	5cdef4ac3335	12 days ago	161MB

```

root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx#

```

Push the image to Docker Hub:

```

root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker login

USING WEB-BASED LOGIN

Info → To sign in with credentials on the command line, use 'docker login -u <username>'

Your one-time device confirmation code is: HVMJ-MBRC
Press ENTER to open your browser or submit your device code here: https://login.docker.com/activate

Waiting for authentication in the browser...

WARNING! Your credentials are stored unencrypted in '/root/.docker/config.json'.
Configure a credential helper to remove this warning. See
https://docs.docker.com/go/credential-store/

Login Succeeded
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker push sudheerttech/custom-nginx:latest
The push refers to repository [docker.io/sudheerttech/custom-nginx]
2c75cd2411f2: Pushed
4952de04fe7e: Mounted from library/nginx
627c009aa115: Mounted from library/nginx
b9390f60b84f: Mounted from library/nginx
bcd0e9a39b0: Mounted from library/nginx
18b09c39ca9f: Mounted from library/nginx
edcb98f6af68: Mounted from library/nginx
a8ff6f8cbdfd: Mounted from library/nginx
latest: digest: sha256:60474eb98844c7d1f5fa9acc4f8306eb978a5d6f6ea049a8627acb24bbd5f081 size: 1986

```

The screenshot shows the Docker Hub web interface. The browser address bar displays `https://hub.docker.com/repositories/sudheerttech`. The page header includes the Docker Hub logo and navigation links. The left sidebar shows the 'Repositories' section selected. The main content area is titled 'Repositories' and shows a list of repositories within the 'sudheerttech' namespace. A table lists the repository 'sudheerttech/custom-nginx' with details: 'Last Pushed' (2 minutes ago), 'Contains' (IMAGE), 'Visibility' (Public), and 'Scout' (Inactive).

Run the custom-nginx image locally:

Maps **ports** from host → container.

```

root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker run -d -p 8080:80 sudheerttech/custom-nginx:latest
1fadcf76752ff242577fc33fb0e03128ce9670db6acd5a96be23b5b0a5c1b4046

```

Start the container with Docker Compose:

```

root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker-compose up -d
Creating custom-nginx ... done

```

```
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker-compose ps
      Name                  Command                  State      Ports
-----
custom-nginx  /docker-entrypoint.sh nginx ...  Up        0.0.0.0:80->80/tcp, :::80->80/tcp
```

← ↻ ⚠ Not secure 50.17.137.112:8080

Hello from Custom Nginx Docker Image!

Verify volume bind mount:

```
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker exec -it custom-nginx ls /var/opt/nginx
index.html
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# echo '<h1>updated content</h1>' > nginx-data/index.html
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker inspect custom-nginx | grep -A 5 mounts
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# docker inspect custom-nginx | grep -A 5 Mounts
  "Mounts": [
    {
      "Type": "bind",
      "Source": "/home/ubuntu/temp/custom-nginx/nginx-data",
      "Destination": "/var/opt/nginx",
      "Mode": "rw",
      "Propagation": "rprivate"
    }
  ]
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx#
```

Any changes you make in **nginx-data** will be reflected immediately in the browser.

← ↻ 🌐 50.17.137.112/8080

updated content

```
root@ip-172-31-26-11:/home/ubuntu/temp/custom-nginx# tree
.
├── Dockerfile
├── docker-compose.yml
├── nginx-data
│   └── index.html
└── nginx.conf

2 directories, 4 files
```